MITSUBISHI ELECTRIC

GRAPHIC OPERATION TERMINAL MELHMI

GOT3000

GOT3000 Series
User's Manual (Connection)

-GT37 wide model
-GT37 model

Safety precautions

Always read the precautions before using this product.

Also read this manual and the relevant manuals mentioned in this manual carefully, and use the product properly while paying full attention to safety.

Note that the precautions in this manual apply only to this product.

The safety precautions are divided into the following levels: ⚠ WARNING and ⚠ CAUTION.

⚠ **WARNING**	**Indicates that incorrect handling may cause hazardous conditions, resulting in death or severe injury.**
⚠ **CAUTION**	**Indicates that incorrect handling may cause hazardous conditions, resulting in minor or moderate injury or property damage.**

Note that failure to observe ⚠ CAUTION may lead to a serious accident depending on the circumstances.

Make sure to observe both warnings and cautions to ensure personal safety.

Ensure that this manual is easily accessible to all users of this product.

[Design precautions]

⚠WARNING

- To check the operating status of each station if a network communication error occurs, refer to the manual for the interface module used.
  Not doing so may cause an accident due to false output or malfunction.
- If you change the data during operation, provide an interlock using the program of the PLC to ensure that the entire system always works safely.
  Establish a mechanism to handle data communication between the personal computer and PLC CPU if a data communication error occurs in the system.
- To maintain the security (availability, integrity, and confidentiality) of the GOT and the system against unauthorized access, DoS[*1] attacks, computer viruses, and other cyberattacks from unreliable networks and devices via network, take appropriate measures such as firewalls, virtual private networks (VPNs), and antivirus solutions.
  Mitsubishi Electric shall have no responsibility or liability for any problems involving GOT trouble and system trouble by unauthorized access, DoS attacks, computer viruses, and other cyberattacks.
  *1 DoS: A denial-of-service (DoS) attack disrupts services by overloading systems or exploiting vulnerabilities, resulting in a denial-of-service (DoS) state.
- Periodically check our vulnerability site, and if any vulnerabilities are found, upgrade the software and related components.
- Some failures of the GOT, communication unit or cable may keep the outputs on or off.
  Some failures of the touch panel may cause a malfunction of input objects such as a touch switch.
  Create an external monitoring circuit to check for output signals which may lead to a serious accident.
  Not doing so may cause an accident due to false output or malfunction.

[Design precautions]

⚠WARNING

- Do not use the GOT as the warning device that warns you of serious accidents.
  For the device that displays or outputs serious warnings, provide an independent redundant hardware or mechanical interlock.
  Not doing so may cause an accident due to false output or malfunction.
- When the GOT backlight has a failure, the POWER LED blinks (lime green/unlit) and the display section dims. In such a case, the input by the touch switch(es) is disabled.
- When multiple points of the display section are touched simultaneously, an accident may occur due to false output or malfunction.
  [GT37-W]
  The display section of the GOT is capacitive.
  Touching three points or more simultaneously on the display section may cause an accident due to false output or malfunction.
  Do not do so.
  [GT37-X]
  The display section of the GOT is an analog-resistive type touch panel.
  Touching two points or more simultaneously on the display section may cause an accident due to false output or malfunction.
  If you do so, a touch switch near the touched points may operate.
  Do not touch two points or more simultaneously on the display section.
- If you have changed a program or parameter of the controller (such as a PLC) that is monitored by the GOT, reset the GOT or turn off the GOT and immediately turn it on again.
  Not doing so may cause an accident due to false output or malfunction.
- If a communication fault (including cable disconnection) occurs during monitoring on the GOT, communication between the GOT and PLC CPU is suspended and the GOT becomes inoperative.
  A system where the GOT is used should be configured to perform any significant operation to the system by using the switches of a device other than the GOT on the assumption that a GOT communication fault will occur.
  Not doing so may cause an accident due to false output or malfunction.

[Design precautions]

⚠ CAUTION

- When the GOT connects to an Ethernet network, the IP address setting is restricted according to the system configuration.
  When a GOT1000 series model is on an Ethernet network, do not set the IP address 192.168.0.18 for the GOT and the controller on this network.
  Doing so may cause IP address duplication at the GOT startup, adversely affecting the communication of the device with the IP address 192.168.0.18.
  The operation at IP address duplication depends on the devices and the system.
- When using the Ethernet interfaces, set an IP address for each interface to access a different network.
- Turn on the controllers and the network devices to be ready for communication before they communicate with the GOT.
  Not doing so may cause a communication error on the GOT.
- Do not run control line cables and communication cables together with or near main circuit cables, power line cables, or other cables.
  Run these cables separately from such wiring and keep them a minimum of 100 mm apart.
  Not doing so may cause a malfunction due to noise.
- Turn on the controllers and the network devices to be ready for communication before they communicate with GT SoftGOT3000.
  Not doing so may cause a communication error on GT SoftGOT3000.

[Installation precautions]

⚠WARNING

- Before installing or removing the GOT on or from the control panel, shut off all phases of the external power supply used by the system.
  Not doing so may result in an electric shock, product damage or malfunction.
- Before installing/removing the communication unit or the option unit on/from the GOT, shut off all phases of the external power supply used by the system.
  Not doing so may result in an electric shock, product damage or malfunction.

[Installation precautions]

⚠CAUTION

- Use the GOT in the environment that satisfies the general specifications described in the User's Manual (Hardware) of the GOT used.
  Not doing so can cause an electric shock, fire, malfunction, or product damage or deterioration.
- When installing the GOT on the control panel, use a Phillips-head screwdriver No. 2 to tighten mounting screws within the specified torque range as shown below.
  • Specified torque range: (0.36 N·m to 0.48 N·m)
  Undertightening may cause the unit to fall off, short circuit, or malfunction.
  Overtightening may cause the unit to fall off, short circuit, or malfunction due to damage to the screws or the unit.
- To install a communication unit or an option unit on the GOT, the extension interface converter unit must be installed onto the extension interface of the GOT.
  When installing the extension interface converter unit and a communication unit or an option unit, tighten the mounting screws within the specified torque range (0.36 N·m to 0.48 N·m) with a cross-head screwdriver No. 2.
- When closing the USB environmental protection cover, fix the cover to the GOT by pushing the [△] mark on the latch firmly to comply with the protective structure.
- Remove the protective film of the GOT.
  Continued use of the GOT with the protective film attached may prevent the film from being removed.
  In addition, for the models equipped with the human sensor function, using the GOT with the protective film may cause the human sensor not to function properly.
- Do not use or store the product in an environment subject to direct sunlight, rain, high temperatures, dust, high humidity, or frequent vibration.
- When using the GOT in the environment of oil or chemicals, use the protective cover for oil.
  Not doing so can cause failure or malfunction due to the oil or chemical entering into the GOT.
- Do not operate the product with its display section frozen.
  The water droplets on the display section may freeze at a low temperature.
  Touch switches and other input objects may malfunction if the display section is frozen.

[Wiring precautions]

⚠WARNING

- Before wiring, make sure to shut off all phases of the external power supply used by the system.
  Not doing so may result in an electric shock, product damage or malfunction.

[Wiring precautions]

⚠CAUTION

- Connect the communication cable to the interface connector of the personal computer, and tighten the mounting screws and terminal screws within the specified torque range.
  Undertightening may cause a short circuit or malfunction.
  Overtightening may damage the screws or personal computer interface, causing a short circuit or malfunction.
  Also, do not apply excessive force to the connector or bend the cable excessively.
  Doing so may cause contact failure or disconnection.
- Make sure to ground the FG terminal and LG terminal of the GOT power supply section using a grounding wire dedicated to the GOT. (Ground resistance: 100 Ω or less, ground cable diameter: 1.6 mm or more)
  Not doing so may result in an electric shock or malfunction.
- When wiring the GOT power section, tighten the terminal screws using a Phillips-head screwdriver No. 2 within the specified torque range below.
  • Specified torque range: (0.5 N·m to 0.8 N·m)
- Use an applicable solderless terminal for terminal processing of a wire to the GOT power supply section and tighten them with the specified torque.
  Using a solderless spade terminal can cause it to fall off and lead to a malfunction if the terminal screws become loose.
- Correctly wire the GOT power supply section after confirming the rated voltage and terminal layout of the product.
  Not doing so can cause a fire or malfunction.
- Plug the communication cable into the GOT interface or the connector of the connected unit, and tighten the mounting screws and the terminal screws within the specified torque range (0.5 N·m to 0.8 N·m).
  Undertightening may cause a short circuit or malfunction.
  Overtightening may cause a short circuit or malfunction due to damage to the screws or unit.
- Exercise care to avoid foreign matter such as chips and wire offcuts entering the unit.
  Not doing so can cause a fire, failure or malfunction.

[Input operation precautions]

⚠ WARNING

- Thoroughly read the manual to fully understand the operating procedures before performing input operations on a user-created screen (such as turning a bit device on or off, changing the current value of a word device, changing the set or current value of a timer or counter, or changing the current value of a buffer memory or parameter).
  During the input operation, never change the data of the devices which are used to perform significant operation for the system.
  Doing so may cause an accident due to an incorrect output or malfunction.

[Startup/maintenance precautions]

⚠ WARNING

- Do not touch the terminals while power is on.
  Close the terminal block cover before supplying power.
  Not doing so may cause an electric shock or malfunction.
- Before cleaning or terminal screw retightening, make sure to shut off the external power supply in all phases.
  Not doing so may cause damage to the personal computer interface or malfunction.
  Undertightening may cause a short circuit or malfunction.
  Overtightening may damage the screws or personal computer interface, causing a short circuit or malfunction.
- Correctly connect the battery connector.
  Do not perform the following actions on the battery:
  • Charging, disassembling, heating, throwing into fire, short-circuiting, soldering, etc.
  Improper handling of the battery may cause heat generation, explosion, or ignition, resulting in injury or fire hazards.
- Before cleaning or terminal screw retightening, make sure to shut off all phrases of the external power supply.
  Not doing so may cause the unit to fail or malfunction.
  Undertightening may cause a short circuit or malfunction.
  Overtightening may cause a short circuit or malfunction due to damage to the screws or unit.

[Startup/maintenance precautions]

⚠ CAUTION

- Do not disassemble or modify the unit.
  Doing so can cause a failure, malfunction, injury or fire.
- Do not touch the conductive and electronic parts of the unit directly.
  Doing so may cause a unit malfunction or failure.
- The cables connected to the unit must be run in ducts or clamped.
  Not doing so can cause the unit or cable to be damaged due to the dangling, motion or accidental pulling of the cables, or can cause a malfunction due to a cable connection fault.
- When unplugging the cable connected to the unit, do not hold and pull from the cable portion.
  Doing so can cause the unit or cable to be damaged or can cause a malfunction due to a cable connection fault.
- Do not drop the unit or subject it to strong shock.
  A unit damage may result.
- Do not drop or give an impact to the battery mounted to the unit.
  Doing so may damage the battery, causing the battery fluid to leak inside the battery.
  If the battery is dropped or given an impact, dispose of it without using it.
- Before touching the unit, always touch grounded metals, etc. to discharge static electricity from human body, etc.
  Not doing so may cause the unit to fail or malfunction.
- Use the battery manufactured by Mitsubishi Electric Corporation.
  Use of other batteries may cause a risk of fire or explosion.
- Dispose of the used battery promptly.
  Keep it away from children.
  Do not disassemble and dispose of it in fire.
- Before replacing the battery or setting the terminating resistor using a selector switch, make sure to shut off all phases of the external power supply.
  Not doing so can cause the unit to fail or malfunction due to static electricity.
- When setting the terminating resistor using the selector switch, do not use a pointed metal object.
- When the extension unit is not used, do not leave it uncovered.
  Otherwise, the unit may fail or malfunction due to static electricity.
- Turn off the power when cleaning the GOT.
  Also, before cleaning, ensure that the GOT is properly installed on the control panel.

[Touch panel precautions]

⚠WARNING

- For the analog-resistive film type touch panels, normally the adjustment is not required. However, the difference between a touched position and the object position may occur as the period of use elapses. When any difference between a touched position and the object position occurs, execute the touch panel calibration.
  When any difference between a touched position and the object position occurs, other object may be activated. This may cause an unexpected operation due to incorrect output or malfunction.
- For the capacitive touch panel, pay attention to the following points.
  • If the FG terminal of the GOT is not grounded, operability deterioration or malfunction may result.
  • If water, oil, or any other conductive material adheres to the GOT display, the GOT may malfunction. In such a case, wipe it off before use.

[Precautions for use of the data storage]

⚠WARNING

- If the SD card in drive A of the GOT is removed while the GOT is accessing it, the GOT may stop processing for about 20 seconds.
  During this stop, you cannot operate the GOT, and the functions running in the background, including the screen refresh, alarm, logging, and script, also stop.
  This stop may affect the system operation, causing an accident.
  Before removing the SD card, check that the SD card access LED is off.

[Precautions for use of the data storage]

⚠CAUTION

- If you remove the data storage from the GOT while the GOT is accessing it, the data storage or files may get damaged.
  Before removing the data storage, check the SD card access LED, relevant system signal, or others to make sure that the data storage is not being accessed.
  If the data storage is damaged, the GOT may not function properly.
- Turning off the GOT while it accesses the SD card results in damage to the SD card and files.
- After inserting an SD card into the GOT, make sure to close the SD card cover.
  Not doing so may prevent the data from being read or written.
- To remove the data storage from the GOT, follow the procedure for removal on the utility screen of the GOT. After the successful completion dialog appears, remove the data storage while holding it carefully.
  Not doing so may cause the data storage to drop, resulting in damage or failure.

[Precautions for use]

⚠CAUTION

- Do not press the GOT display section with a pointed object such as a pen or screwdriver.
  Doing so may result in damage or failure.
- When inserting a USB device into a USB interface of the GOT, make sure to insert the device into the interface firmly.
  Not doing so may cause a malfunction due to poor contact.
- The digital video output interface of the GOT is intended solely for output.
  Do not connect this interface to the output terminal of another device.
  Doing so may result in failure.
- Do not touch the edges of the analog resistive touch panel (display section) repeatedly.
  Doing so may result in failure.
- When the extension unit is not used, do not leave it uncovered.
  Otherwise, the unit may fail or malfunction due to static electricity.
- Do not turn off the GOT while data is being written to the storage memory (ROM) or SD card.
  Doing so may corrupt the data, rendering the GOT inoperative.

[Remote control precautions]

⚠WARNING

- Remote control is available through a network by using GOT functions, including the VNC server function and the GOT Mobile function.
  If these functions are used to perform remote control of control equipment, the field operator may not notice the remote control, possibly leading to an accident.
  In addition, a communication delay or interruption may occur depending on the network environment, and remote control of control equipment cannot be performed normally in some cases.
  Before using the above functions to perform remote control, fully grasp the circumstances of the field site and ensure safety.
- When operating the server (GOT) of the GOT Mobile function to disconnect a client, notify the operator of the client about the disconnection beforehand.
  Not doing so may cause an accident.

[Disposal precautions]

⚠ CAUTION

- Dispose of the product as industrial waste.
  When disposing of batteries, separate them from other wastes according to the local regulations.
  (For details on the battery directive in the EU member states, refer to the User's Manual (Hardware) of the GOT used.)

[Transportation precautions]

⚠ CAUTION

- When transporting lithium batteries, make sure to treat them based on the transport regulations.
  (For details on the regulated models, refer to the User's Manual (Hardware) of the GOT used.)
- Since the unit is a precision device, avoid any impact that exceeds the general specifications described in the User's Manual (Hardware) of the GOT used during transportation.
  Not doing so may cause the unit to fail.
  Check if the unit operates correctly after transportation.
- Prevent the entry of halogens (including fluorine, chlorine, bromine, and iodine) contained in fumigants used for fumigating wood packaging materials, or a product failure may occur.
  Make sure that fumigant residues will not enter the product, or use an alternative (heat treatment or others) to fumigation.
  Before packing the product, disinfect wood packaging materials and eliminate insects from the materials.

Product application

(1) Mitsubishi graphic operation terminal ("the PRODUCT") shall be used in conditions;
i) where any problem, fault or failure occurring in the PRODUCT, if any, shall not lead to any major or serious accident;
and
ii) where the backup and fail-safe function are systematically or automatically provided outside of the PRODUCT for the case of any problem, fault or failure occurring in the PRODUCT.

(2) The PRODUCT has been designed and manufactured for the purpose of being used in general industries.
MITSUBISHI ELECTRIC SHALL HAVE NO RESPONSIBILITY OR LIABILITY (INCLUDING, BUT NOT LIMITED TO ANY AND ALL RESPONSIBILITY OR LIABILITY BASED ON CONTRACT, WARRANTY, TORT, PRODUCT LIABILITY) FOR ANY INJURY OR DEATH TO PERSONS OR LOSS OR DAMAGE TO PROPERTY CAUSED BY the PRODUCT THAT ARE OPERATED OR USED IN APPLICATION NOT INTENDED OR EXCLUDED BY INSTRUCTIONS, PRECAUTIONS, OR WARNING CONTAINED IN MITSUBISHI ELECTRIC USER'S, INSTRUCTION AND/OR SAFETY MANUALS, TECHNICAL BULLETINS AND GUIDELINES FOR the PRODUCT. ("Prohibited Application")
- Nuclear Power Plants and any other power plants operated by Power companies, and/or any other cases in which the public could be affected if any problem or fault occurs in the PRODUCT.
- Railway companies or Public service purposes, and/or any other cases in which establishment of a special quality assurance system is required by the Purchaser or End User.
- Aircraft or Aerospace, Medical applications, Train equipment, transport equipment such as Elevator and Escalator, Incineration and Fuel devices, Vehicles, Manned transportation, Equipment for Recreation and Amusement, and Safety devices, handling of Nuclear or Hazardous Materials or Chemicals, Mining and Drilling, and/or other applications where there is a significant risk of injury to the public or property.

Notwithstanding the above restrictions, Mitsubishi Electric may in its sole discretion, authorize use of the PRODUCT in one or more of the Prohibited Applications, provided that the usage of the PRODUCT is limited only for the specific applications agreed to by Mitsubishi Electric and provided further that no special quality assurance or fail-safe, redundant or other safety features which exceed the general specifications of the PRODUCTs are required. For details, please contact the Mitsubishi Electric representative in your region.

(3) Mitsubishi Electric shall have no responsibility or liability for any problems involving graphic operation terminal trouble and system trouble caused by DoS attacks, unauthorized access, computer viruses, and other cyberattacks.

Introduction

Thank you for choosing Mitsubishi Electric Graphic Operation Terminal (GOT).
Before using the product, read this manual carefully and make sure you understand the functions and performance of the GOT for correct use.

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Relevant manuals

Point

e-Manual refers to the Mitsubishi Electric FA electronic book manuals that can be browsed using a dedicated tool.

e-Manual has the following features:

- Required information can be cross-searched in multiple manuals.
- Other manuals can be accessed from the links in the manual.
- Hardware specifications of each part can be found from the product figures.
- Pages that users often browse can be bookmarked.
- Sample programs can be copied to the engineering tool.

Screen design software-related manuals

Manual name	Manual number	Format
GT Works3 Installation Instructions	—	PDF e-Manual
GT Designer3 (GOT3000) Screen Design Manual	SH-082590ENG	PDF e-Manual

Connection manuals

Manual name	Manual number	Format
GOT3000 Series User's Manual (Connection)	SH-082593ENG	PDF e-Manual

GT SoftGOT3000 manual

Manual name	Manual number	Format
GT SoftGOT3000 User's Manual	SH-082594ENG	PDF e-Manual

GOT3000 series user manuals

Manual name	Manual number	Format
GOT3000 Series User's Manual (Hardware)	SH-082591ENG	PDF e-Manual Bound document
GOT3000 Series User's Manual (Utility & Maintenance Functions)	SH-082592ENG	PDF e-Manual

Abbreviations, generic terms, and model icons

The following shows the abbreviations, generic terms, and model icons used in this manual.

GOT3000 series

Abbreviations and generic terms			Model	Meaning of icon	
				Available	Unavailable
GT37	GT37-W		GT3715-FHCBD	GT37	GT37
			GT3712-WXCBD		
	GT37-X	GT3715-X	GT3715-XRBA GT3715-XRBD		
		GT3712-X	GT3712-XRBA GT3712-XRBD		
		GT3710-X	GT3710-XRBA GT3710-XRBD		
		GT3708-X	GT3708-XRBA GT3708-XRBD		
GT SoftGOT3000			GT SoftGOT3000	SoftGOT3000	SoftGOT3000

GOT2000 series and GOT1000 series

Abbreviations and generic terms	Model	Meaning of icon	
		Available	Unavailable
GOT2000 series	GOT2000 series	—	—
GOT1000 series	GOT1000 series	—	—

GOT units and option units

Abbreviations and generic terms		Description
Extension interface converter unit		This unit connects the extension unit of the GOT2000 series and GOT1000 series to the GOT3000 series.
Extension unit	Communication unit	A unit, such as the serial communication unit or CC-Link IE TSN communication unit, installed on the GOT to enable communication with other devices
	Option unit	A unit, such as an external I/O unit, installed on the GOT to provide specific functions
Option		Options, such as SD cards, batteries, and protective sheets, installed on the GOT for use

Software

■Software related to GOT

Abbreviations and generic terms	Description
GT Works3	Software that comprehensively supports screen design for the GOT
GT Works3 Version1	
GT Designer3	Screen design software for the GOT3000 series, GOT2000 series, and GOT1000 series
GT Designer3 (GOT3000)	Screen design software for the GOT3000 series
Speech synthesis license	License to use the speech synthesis function
VNC server function license	License to use the VNC server function with the GOT3000
VPN function license	License to use the VPN function with the GOT3000
License for the remote personal computer operation function (Ethernet)	License to use the remote personal computer operation function (Ethernet) in the GOT3000
Multimedia function license	License to perform the following with the GOT3000 • Use a network camera. • Record or play images taken by a network camera or web camera.
License for GT SoftGOT3000	License to use GT SoftGOT3000
GOT Mobile function license for GOT3000	License to use the GOT Mobile function with the GOT3000
GOT Mobile function license for GT SoftGOT3000	License to use the GOT Mobile function with GT SoftGOT3000
GENESIS64 Advanced	GENESIS64 server application (GEN64-APP)
GENESIS64 Basic SCADA	GENESIS64 server application (GEN64-BASIC)
GENESIS64	Generic term of GENESIS64 Advanced and GENESIS64 Basic SCADA
GT Simulator3	Screen simulator GT Simulator3 for the GOT3000 series
GT SoftGOT3000	Software that performs the same functions as the GOT3000 on a personal computer or panel computer
GT OPC UA Client	OPC UA server connection setting software

■Software related to iQ Works

Abbreviations and generic terms	Description
iQ Works	iQ Platform compatible engineering environment MELSOFT iQ Works
MELSOFT Navigator	Integrated development environment software included in the iQ Platform-compatible engineering environment, MELSOFT iQ Works
MELSOFT iQ AppPortal	Integrated application management software

■Other software

Abbreviations and generic terms		Description
GX Works3		Programmable controller engineering software
GX Works2		
Controller simulator	GX Simulator3	Simulation function of GX Works3
	GX Simulator2	Simulation function of GX Works2
	GX Simulator	Ladder logic test tool function software package
GX Developer		Programmable controller programming software
GX LogViewer		Dedicated logging data viewer
MI Configurator		Configuration and monitor tool for Mitsubishi Electric industrial computers
PX Developer		FBD software package for process control
MT Works2		Motion controller engineering software
MT Developer		Integrated start-up support software for motion controller Q series
CW Configurator		Setting/monitoring tools for the C Controller module and MELSECWinCPU
MR Configurator2		Servo configuration software
MR Configurator		Servo configuration software
FR Configurator2		Inverter setup software
FR Configurator		Inverter setup software
NC Configurator2		CNC parameter setting support software
NC Configurator		CNC parameter setting support tool
FX Configurator-FP		Parameter setting, monitoring, and testing software
FX Configurator-EN-L		FX3U-ENET-L type Ethernet module setting software
RT ToolBox3		Robot program creation software
RT ToolBox2		Robot program creation software
MX Component		Communication library
MX Sheet		Communication support software package
CPU Module Logging Configuration Tool		CPU Module Logging Configuration Tool

PART 1 How to read this manual

1 Useful information

1 Useful information

☞ Page 32 Finding the reference manual

1.1 Finding the reference manual

This section describes the main GOT manuals and their contents.
The following abbreviations are used for the manual names.

Manual name	Abbreviation	Main contents
GT Designer3 (GOT3000) Screen Design Manual	GTD	• Screen operation with GT Designer3 • Settings of the functions that run on the GOT • Functions enabled by connecting the GOT and controllers
GOT3000 Series User's Manual (Hardware)	HW	• GOT hardware specifications • How to connect cables to and install units on the GOT
GOT3000 Series User's Manual (Utility & Maintenance Functions)	UT	• How to operate the utility • How to use dedicated screens such as the sequence program monitor • System alarms and corrective actions
GOT3000 Series User's Manual (Connection)	Connection	• Devices connectable with the GOT • System configuration • Communication settings • FA transparent function (reading and writing programs between a personal computer and a controller via the GOT)
GT SoftGOT3000 User's Manual	SGT	• How to operate GT SoftGOT3000

The following contents and their reference manuals are shown below.

☞ Page 33 Operations related to package data, BootOS, and CoreOS (data transfer)
☞ Page 33 How to protect the GOT and data
☞ Page 33 Operating the GOT using gestures
☞ Page 34 How to use GOT peripherals
☞ Page 34 Settings that can be changed in the utility or in GT Designer3
☞ Page 36 Devices, labels, and tags that can be monitored with the GOT
☞ Page 36 Drive configuration and capacity of the GOT
☞ Page 36 Differences between GT SoftGOT3000 functions and other functions

1.1.1 Operations related to package data, BootOS, and CoreOS (data transfer)

○: Available
—: Not available

Information on...	Reference				
	GTD	HW	UT	Connection	SGT
Reading/writing the package data	○	—	—	—	—
Writing the BootOS and the CoreOS (version upgrade)	○	—	—	—	—
How to use the package data of the GOT with another GOT (uploading and downloading)	—	—	○	—	—

1.1.2 How to protect the GOT and data

○: Available
—: Not available

Information on...	Reference				
	GTD	HW	UT	Connection	SGT
Security functions of the GOT and GT Designer3	○	—	—	—	○

1.1.3 Operating the GOT using gestures

○: Available
—: Not available

Information on...	Reference				
	GTD	HW	UT	Connection	SGT
Operating the GOT screen using gestures	○	—	—	—	—
Operating objects using gestures	○	—	—	—	—

1.1.4 How to use GOT peripherals

○: Available

—: Not available

Information on...	Reference				
	GTD	HW	UT	Connection	SGT
How to use a barcode reader	○	—	—	○ ☞ Page 2507 Barcode reader connection	—
How to use an RFID controller	○	—	—	○ ☞ Page 2546 RFID connection	—
How to operate the personal computer from the GOT	○	—	—	○ ☞ Page 2520 Remote personal computer connection (Ethernet connection)	—
How to use a VNC server	○	—	—	○ ☞ Page 2530 VNC server connection	—
How to display or record images from a camera, video device, or other equipment on the GOT	○	—	—	○ ☞ Page 2535 Camera, video device, and external display connection	—
How to display the GOT screen on an external display	○	—	—	○ ☞ Page 2535 Camera, video device, and external display connection	—
How to play a sound file through speakers	○	—	—	○ ☞ Page 2488 Sound output device connection	—
How to use an external I/O device or an operation panel	○	—	—	○ ☞ Page 2490 External I/O device connection	—
How to monitor a controller on a tablet via the GOT	○	—	—	○ ☞ Page 2525 GOT Mobile connection	—
How to use the GOT as an OPC UA server	○	—	—	—	—
How to monitor a controller via the GOT	○	—	—	—	—
How to access GOT files from a peripheral	○	—	—	—	—
How to access files on an external server from the GOT	○	—	—	—	—

1.1.5 Settings that can be changed in the utility or in GT Designer3

The following shows whether utility menus can be set in GT Designer3.

When the package data is written to the GOT, the utility settings of the GOT can be updated to those of GT Designer3.

○: Available

—: Not available

Information on...		Reference				
		GTD	HW	UT	Connection	SGT
[GOT basic set] tab	[Display]	○	—	○	—	—
	[Language]	○	—	○	—	—
	[Unique info]	○	—	○	—	—
	[IP address]	○	—	○	—	—
	[IP filter setting]	○	—	○	—	—
	[Operation]	○	—	○	—	—
	[Utility call key]	○	—	○	—	—
	[USB device/host]	○	—	○	—	—
	[Time]	○	—	○	—	—
	[Controller]	○	—	○	—	—
	[Ethernet]	○	—	○	—	—
	[Transparent mode]	○	—	○	—	—
	[GOT internal device monitor]	○	—	○	—	—
	[Security]*1	○	—	○	—	—
	[Operator authentication management]	—	—	○	—	—
	[Opr authn. Password change]	—	—	○	—	—
	[Brightness adjustment]	○	—	○	—	—
[Add-on setting] tab	[SoftGOT-GOT link function]	○	—	○	—	—
	[VNC server function]	○	—	○	—	—
	[Seq. program monitor]	○	—	○	—	—
	[Backup restoration]	○	—	○	—	—
	[License management]	—	—	○	—	—
	[System launcher]	○	—	○	—	—
	[iQSS utility]	○	—	○	—	—
	[File transfer]	○	—	○	—	—
	[Mail]	○	—	○	—	—
	[Web browser function]	○	—	○	—	—
	[ANDON connection]	—	—	○	—	—
	[VPN connection function]	○	—	○	—	—
	[Contactless tag function]	○	—	○	—	—
[Maintenance]		—	—	○	—	—
[Monitor]		—	—	○	—	—
[Data mng.]		—	—	○	—	—

*1 Appears only when the security mode is set to mode 1.

1.1.6 Devices, labels, and tags that can be monitored with the GOT

○: Available

—: Not available

Information on...	Reference				
	GTD	HW	UT	Connection	SGT
GOT internal device list	○	—	—	—	—
Mitsubishi Electric products device list	○	—	—	○ • Mitsubishi Electric PLC ☞ Page 1188 Settable device range • Mitsubishi Electric MELIPC ☞ Page 1401 Settable device range • Mitsubishi Electric inverter ☞ Page 1694 Settable device range • Mitsubishi Electric servo amplifier ☞ Page 1791 Settable device range • Mitsubishi Electric robot controller ☞ Page 1942 Settable device range	—
Non-Mitsubishi Electric products device list	○	—	—	○ • ALLEN-BRADLEY equipment ☞ Page 2186 Settable device range • SIEMENS equipment ☞ Page 2224 Settable device range • Microcomputer ☞ Page 2378 Settable device range • MODBUS ☞ Page 2429 Settable device range • CLPA ☞ Page 2464 Settable device range	—
Types of devices that can be monitored with the GOT	○	—	—	—	—
Types of labels and tags that can be monitored with the GOT	○	—	—	—	—

1.1.7 Drive configuration and capacity of the GOT

○: Available

—: Not available

Information on...	Reference				
	GTD	HW	UT	Connection	SGT
Drive configuration and capacity of the GOT	○	—	—	—	—
Virtual drive of GT SoftGOT3000	○	—	—	—	○

1.1.8 Differences between GT SoftGOT3000 functions and other functions

○: Available

—: Not available

Information on...	Reference				
	GTD	HW	UT	Connection	SGT
List of differences between GT SoftGOT3000 functions and other functions	—	—	—	—	○

PART 2 Procedure for starting the GOT

2 Procedure before operation

3 Multi-channel function

2 Procedure before operation

GT37 SoftGOT3000

This section explains the general procedure before operation.
The procedure before operation differs between GT SoftGOT3000 and the other GOTs.
The procedure also differs depending on the security mode set for the project.
For the procedure before operating a GOT other than GT SoftGOT3000 and the differences depending on the security mode, refer to the following.
☞ Page 39 Procedure before operating the GOT
For the procedure before operating GT SoftGOT3000 and the differences depending on the security mode, refer to the following.
☞ Page 40 Procedure before operating GT SoftGOT3000

What is the security mode?

The GOT's security function has two security modes.

Security mode	Description
Mode 1	The security functions compatible with the GOT2000 series can be used.
Mode 2 (default)	More robust security functions than mode 1 can be used.

Security mode settings can be configured only with GT Designer3.
For details, refer to the following.
📖GT Designer3 (GOT3000) Screen Design Manual

2.1 Procedure before operating the GOT

GT37 SoftGOT3000

This section explains the procedure before operating the GOT and the manuals describing the details.
The procedure before operation differs depending on the security mode.
The necessity of each step is shown below.
○: Required, △: Optional, —: Not required

Step		Security mode		Reference
		Mode 1	Mode 2	
1	Install GT Designer3 on the personal computer.	○	○	GT Works3 Version1 Installation Instructions
2	Create a project with GT Designer3.	○	○	GT Designer3 (GOT3000) Screen Design Manual
	Set the Ethernet interface of the GOT when connecting the GOT and the controller via Ethernet.	△	△	GT Designer3 (GOT3000) Screen Design Manual
	Configure the settings for connecting the controller to the GOT.	○	○	☞ GOT side settings in each chapter
3	Install the battery (sold separately) in the GOT.	△*1	○	GOT3000 Series User's Manual (Hardware)
4	Install the extension unit and options on the GOT.	△	△	GOT3000 Series User's Manual (Hardware)
5	Install the GOT on the control panel.	○	○	GOT3000 Series User's Manual (Hardware)
6	Provide wiring to the power supply section of the GOT.	○	○	GOT3000 Series User's Manual (Hardware)
7	Turn on the GOT. The GOT includes a preinstalled demo screen project at the time of factory shipment. After the GOT is started and the initial settings are configured, the demo screen is displayed.	○	○	—
8	Write the project created with GT Designer3 to the GOT.*2	○	○	GT Designer3 (GOT3000) Screen Design Manual
	Enter the password when the file protection function is enabled.	△	△	GT Designer3 (GOT3000) Screen Design Manual
	If the security mode set for the project is mode 2, register the information of the operator with administrator privileges in the GOT.	—	○	GT Designer3 (GOT3000) Screen Design Manual
9	Turn off the GOT and connect the GOT and the controller.	○	○	☞ System configuration in each chapter
10	Turn on the GOT and the controller to start monitoring. You can check whether the GOT is monitoring normally.	○	○	☞ Page 39 How to check whether the GOT is operating correctly

*1 Install a battery to retain the clock data even when the GOT is powered off.
*2 When a project is written to the GOT, the demo screen project is overwritten.

How to check whether the GOT is operating correctly

The following methods can be used to check for any issues with the operation of the project written to the GOT or the communication status with the controller.

Check	Method
Check whether the GOT recognizes the controller.	This can be checked on the [Communication setting] screen of the utility. GOT3000 Series User's Manual (Utility & Maintenance Functions)
Check if an error (system alarm) has occurred in the GOT, controller, or network.	When an error occurs in the GOT, controller, or network, the GOT outputs a system alarm (error code and error message). The system alarm can be checked on the [System alarm] of the utility. GOT3000 Series User's Manual (Utility & Maintenance Functions)
Check that the settings enable the GOT to communicate with the controller correctly and that the connection cable is connected properly.	This can be checked on the [I/O check] of the utility. GOT3000 Series User's Manual (Utility & Maintenance Functions)

2.2 Procedure before operating GT SoftGOT3000

GT37 SoftGOT3000

This section explains the procedure before operating GT SoftGOT3000 and the manuals describing the details.
The procedure before operation differs depending on the security mode.
The necessity of each step is shown below.
○: Required, △: Optional, —: Not required

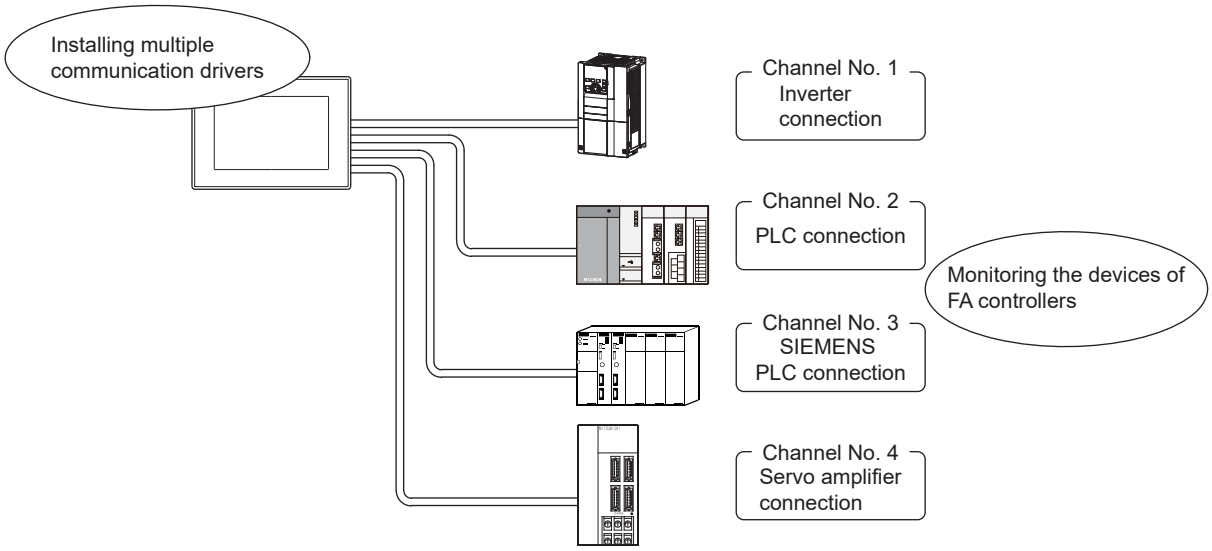
Step		Security mode		Reference
		Mode 1	Mode 2	
1	Install GT SoftGOT3000 on the personal computer.	○	○	GT Works3 Version1 Installation Instructions
	When creating a project, install GT Designer3 on the personal computer.	○	○	GT Works3 Version1 Installation Instructions
2	Start GT SoftGOT3000 and register the GT SoftGOT3000 license.	○	○	GT SoftGOT3000 User's Manual
	When starting GT SoftGOT3000 for the first time, set a password for the GT SoftGOT3000 application log file.	○	○	GT SoftGOT3000 User's Manual
3	Create a project with GT Designer3.	○	○	GT Designer3 (GOT3000) Screen Design Manual
	Configure the settings to connect GT SoftGOT3000 and the controller.	○	○	GOT3000 Series User's Manual (Connection)
4	Connect the personal computer with GT SoftGOT3000 installed to the controller.	○	○	☞ System configuration in each chapter
5	Open the project in GT SoftGOT3000.	○	○	GT SoftGOT3000 User's Manual
	Enter the password when the file protection function is enabled.	△	△	GT Designer3 (GOT3000) Screen Design Manual GT SoftGOT3000 User's Manual
	When the security mode set for the project is mode 2, register the information of the operator with administrator privileges to GT SoftGOT3000.	—	○	GT Designer3 (GOT3000) Screen Design Manual GT SoftGOT3000 User's Manual
6	Perform monitoring with GT SoftGOT3000 using the project.	○	○	GT SoftGOT3000 User's Manual
	The following shows how to check if GT SoftGOT3000 is monitoring correctly. • When an error occurs, the details of the error can be checked on the [System alarm] screen of the utility.	○	○	GOT3000 Series User's Manual (Utility & Maintenance Functions)

3 Multi-channel function

☞ Page 41 What is multi-channel function?
☞ Page 43 System configuration example
☞ Page 44 GOT side settings
☞ Page 56 Precautions
☞ Page 57 Multi-channel Function Check Sheet

3.1 What is multi-channel function?

Multi-channel Function is a function to monitor up to four FA controllers (PLC CPU, inverter, servo amplifier, etc.) on one GOT by writing multiple communication drivers in the GOT.



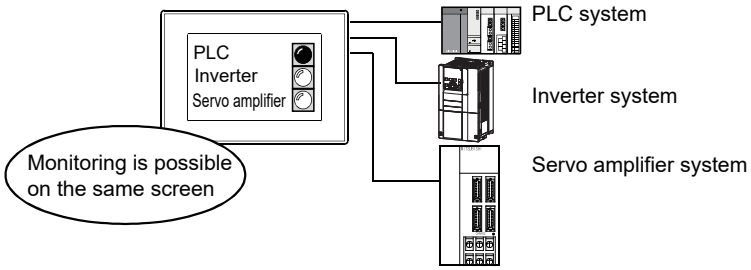
This manual describes the procedure to use the multi-channel function, based on the following system configuration example.
☞ Page 43 System configuration example
The system configuration between GOT and the controllers when using the multi-channel function is the same as that of when not using the multi-channel function.
For details, refer to the following.
☞ Each chapter indicating the system configuration

Features of the multi-channel function

■With a single unit of GOT, the system consisting of PLC CPU, inverter, servo amplifier and other controllers can be configured.

One GOT can monitor a PLC CPU, inverter and servo amplifier, etc. Therefore, the system configuration, in which several controllers are mixed, can be easily established.

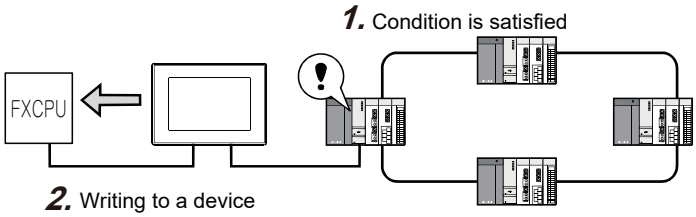
In addition, each system can be monitored on the GOT screen, and the unified management of the information is possible.



■Controlling FXCPU/third party PLC, etc. through the network (CC-Link IE Field Network, etc.)

It is possible to control FXCPU/third party PLC, etc. through the network (CC-Link IE Field Network, etc.).

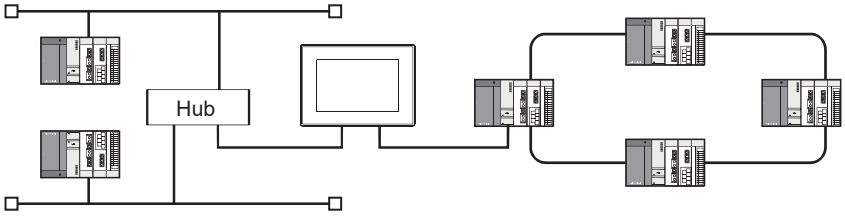
For example, it is possible to execute read/write of a device such as FXCPU when the condition is satisfied, using the device of the PLC CPU on the network (CC-Link IE Field Network, etc.) as the trigger for action.



■With one GOT, the Ethernet connection and the network connection are available in combination.

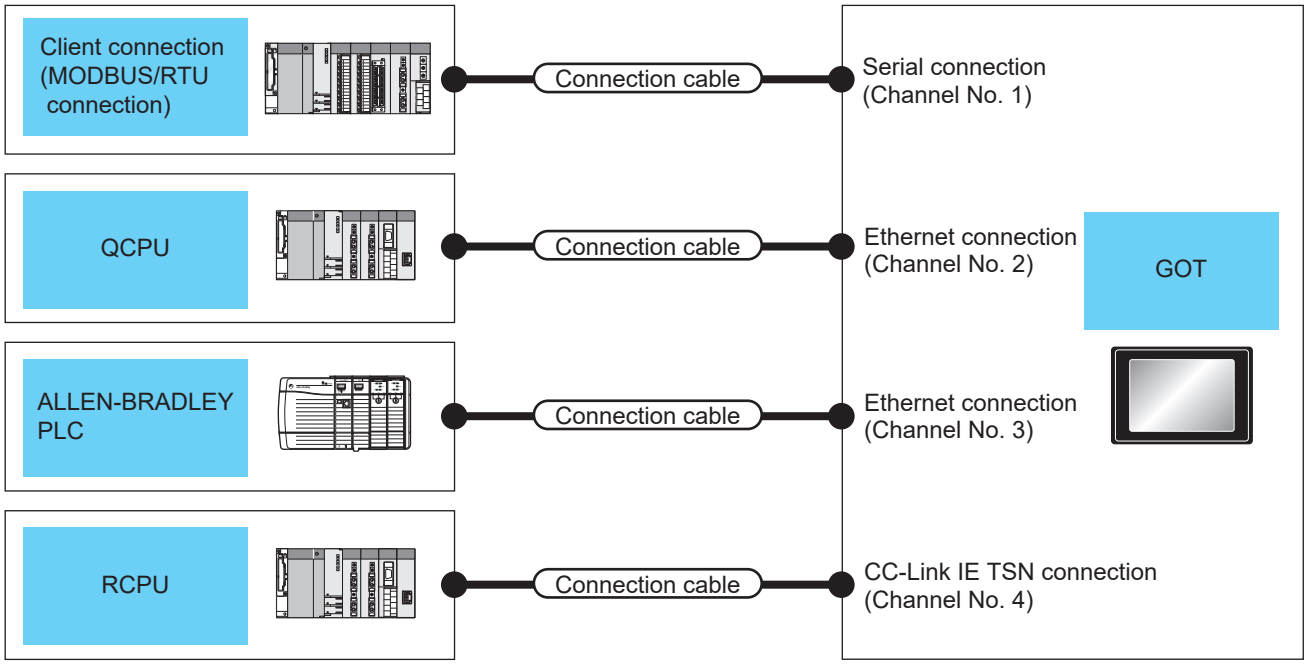
One GOT can make the Ethernet connections and the network connection. Therefore, the system configuration, in which several networks are linked, can be established.

Also, the GOT can monitor multiple controllers on an Ethernet network. (Multi-channel Ethernet connection)



3.2 System configuration example

Each system can be monitored on the GOT screen, and the unified management of the information is possible.
The system configuration, in which several connection types such as the serial connection, Ethernet connections and the network connection are mixed, can be established with one GOT.
For details on the connection type and channel number to be used, refer to the following.
☞ Page 46 Determining the connection type and channel No. (System selection)



Controller	Connection type	Connection cable	GOT			Number of connectable equipment
			Channel No.	Interface	Model	
MODBUS/RTU	Serial connection	For the system configuration between the GOT and the controller, refer to the following. ☞ Each chapter indicating the system configuration	1	Built-in RS-232 interface	GT37 SoftGOT3000	Varies depending on the connection type. ☞ System configuration in each chapter
QCPU	Ethernet connection		2	Built-in Ethernet interface of GOT		
ALLEN-BRADLEY PLC	Ethernet connection		3			
RCPU	CC-Link IE TSN connection		4	GT37-IF2000 + GT25-J71GN13-T2		

Point

The following shows the drivers that can be set to Channels No. 5 to 8.
For the system configuration and connection condition with the controller, refer to the chapter of each controller.

Channel No.	Driver *1	Reference
5 to 8	Barcode reader, RFID controller	➠ Barcode reader connection ➠ RFID connection

*1 Only one channel number can be assigned to one driver.

3.3 GOT side settings

3.3.1 Basics of interface selection

This section explains basic knowledge of the multi-channel function.

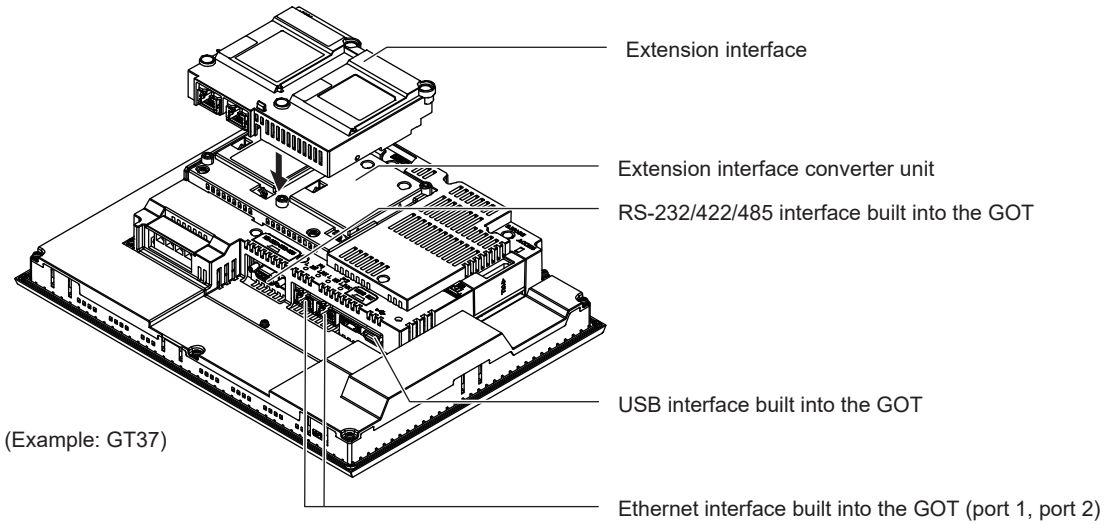
For the steps from system selection to screen design, refer to the following.

☞ Page 45 General flow from system selection to drawing

Multi-channel function specifications

How the units are installed and the multi-channel function specifications are described below.

■Image drawing of unit installation



(Example: GT37)

■Specifications

Item	Specifications	Description
Max. number of channels	Max. 4 channels	In the CC-Link IE TSN and CC-Link IE Field Network connections, only 1 channel can be set for one GOT. For the Ethernet connection and the MODBUS/TCP connection, up to 4 channels can be set. When the Ethernet interface built in the GOT is used for the Ethernet download, the connection is not included in the count of the number of channels. The interface used for connecting external devices or other functions is not included in the channel count.*1
Max. installable number of modules	1	Install the GT37-IF2000, then install the extension unit.
Allowable number of stages	Max. 1 stage	One extension unit can be installed.

*1 The following external devices and functions can be used.
- Barcode reader
- RFID controller
- FA transparent function
- OS install
- Writing project data

3.3.2 General flow from system selection to drawing

System selection for using the multi-channel function is explained below.

Make selection and setting for the multi-channel function by following the order shown below.

1. System selection

Determine the connection type and the channel No. to be used.

☞ Page 46 Determining the connection type and channel No. (System selection)

2. Interface selection

Determine the GOT side interface and communication units to be used for the multichannel function.

☞ Page 48 Determining the GOT side interface (Interface selection)

3. Make settings for Communication Settings.

☞ Page 52 Setting for communication settings

4. Confirm items to know before starting drawing.

☞ Page 54 Items to be checked before starting drawing

3.3.3 Determining the connection type and channel No. (System selection)

Determining the connection type

The combinations of the network connection, Ethernet connection, and the serial connection are available as shown in the following table.

Connection type		Reference
Network connection	CC-Link IE TSN connection	☞ Page 743 CC-Link IE TSN connection
	CC-Link IE Field Network connection	☞ Page 921 CC-Link IE Field Network connection
Ethernet connection	Ethernet connection CC-Link IE TSN connection (built-in Ethernet)	☞ Page 61 Ethernet connection
	Robot controller connection	☞ Page 1919 Ethernet connection
	Third party PLC connection (Ethernet connection)	☞ Page 2148 PLC (Ethernet connection) ☞ Page 2213 PLC (Ethernet connection)
	Microcomputer connection (Ethernet)	☞ Page 2234 Microcomputer (Ethernet connection)
	MODBUS/TCP connection	☞ Page 2382 MODBUS/TCP
Serial connection	MODBUS/RTU connection	☞ Page 2404 MODBUS/RTU

The following shows the applicable combinations of connection types, the number of channels, and restricted functions.
○: Allowable △: Restricted —: Unavailable

Allowable combination of connection types	GOT to be used	Functions that are restricted by the connection type*1	
	GT37	FA transparent function	
		USB	Ethernet
• Network connection: 1 channel • Ethernet connection: 1 to 3 channels	Max. 4 channels	○	○
• Ethernet connection: 4 channels	Max. 4 channels	○	○

*1 When the functions below are used, the connectable number of channels may be restricted depending on the combination of the functions to be used.
• Barcode function, RFID function
• Digital image input function
• Sound output function
For details, refer to the following.
☞ Page 48 Determining the GOT side interface (Interface selection)

Determining the channel No.

■Channel No. of PLC, inverter, servo amplifier, robot controller

After determining the connection type to be used, determine the channel Nos. (CH No. 1 to CH No. 4) to be used for the respective connection types.

There are no special cautions to be attended to for determining channel Nos.

Set the channel No. by selecting [Common] → [Controller Setting] from the menu.

📖GT Designer3 (GOT3000) Screen Design Manual

■Channel No. of external devices (barcode reader, RFID controller, and personal computer)

When connecting a barcode reader, RFID controller, or personal computer, select the channel No. (No. 5 to No. 8) for each external device.

- Number of external devices that can be connected to the GOT

One barcode reader, RFID controller, or personal computer can be connected to one GOT.

One driver must be set for one channel No. (No. 5 to No. 8) in the communication settings.

- Operator authentication (external authentication)

When using the operator authentication (external authentication), the RFID controller or barcode reader is available for the channel No. 8 only.

Write down the following items selected in this section on the check sheet.

Selection of connection type

Write down the name of the connection type to be used.

(1) Channel No. of PLC, Motion controller, inverter, servo amplifier, robot controller (CH No. 1 to 4)

CH No.	1 Selection of connection type	2 Selection of interface (communication unit)
1	Connection name PLC connection	
2	Connection name Inverter connection	
3	Connection name Servo amplifier connection	
4	Connection name PLC connection	

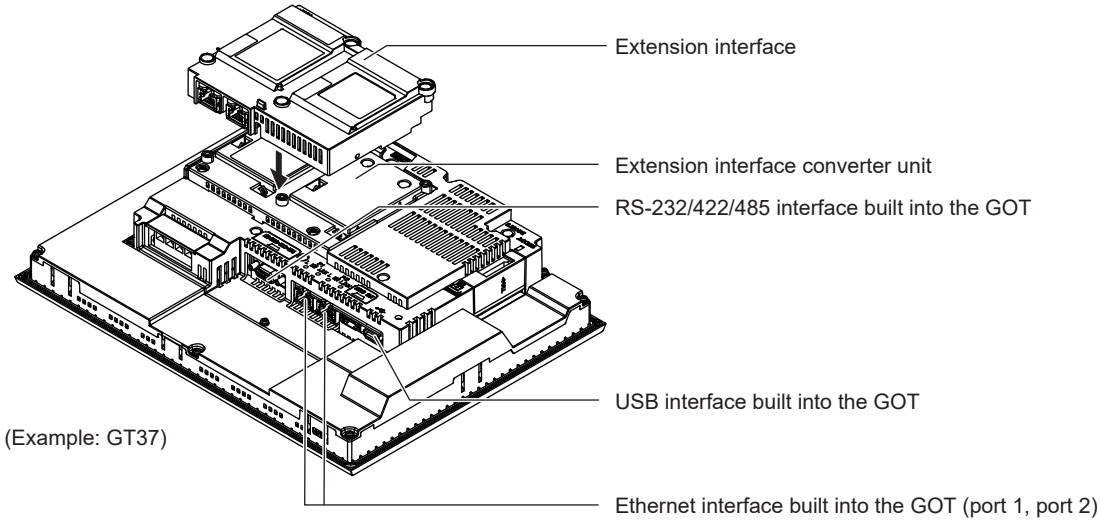
(2) Channel No. of barcode reader, RFID controller, personal computer (CH No. 5 to 8)

CH No.	1 Selection of connection type	2 Selection of interface (communication unit)
5	Connection name Barcode reader connection	
6	Connection name	
7	Connection name	
8	Connection name RFID controller connection	

3.3.4 Determining the GOT side interface (Interface selection)

To use the multi-channel function, add interfaces to the GOT with the following methods if required.

- Use communication units installed on the extension interfaces with the RS-232/422/485 interface, and/or the Ethernet interface built in the GOT.



Select the interface to be used to enable the selected connection.

Select the interfaces according to the connection type by referring to the following.

Selected connection type	Reference for required interface and communication unit
• CC-Link IE TSN connection • CC-Link IE Field Network connection	☞ Page 49 GOT interface used for network connection
• Ethernet connection	☞ Page 49 GOT interface used for Ethernet connection or CC-Link IE TSN connection (built-in Ethernet)
• Third party PLC connection (Ethernet connection)	
• Robot controller connection	
• Microcomputer connection (Ethernet)	
• MODBUS/TCP connection	
• MODBUS/RTU connection	☞ Page 49 GOT interface used for serial connection
• Other functions	☞ Page 49 GOT interface used for other functions

GOT interface used for network connection

For the network connection, use the following communication units.

Type	Communication unit
CC-Link IE TSN communication unit	GT37-IF2000+GT25-J71GN13-T2
CC-Link IE Field Network communication unit	GT37-IF2000+GT15-J71GF13-T2

GOT interface used for Ethernet connection or CC-Link IE TSN connection (built-in Ethernet)

For the Ethernet connection or CC-Link IE TSN connection (built-in Ethernet), use the following interface built in the GOT.

Type	Interface built in the GOT
Interface built in the GOT	Ethernet interface*1

*1 Up to four channels can be used.

GOT interface used for serial connection

For the serial connection, use the following interfaces built in the GOT and communication units in combinations.
Provide interfaces equivalent to the number of channels used for serial connection.

Type	Interface built in the GOT, communication unit
Interface built in the GOT	RS-232/422/485 interface
Serial communication module	• GT37-IF2000+GT15-RS2-9P • GT37-IF2000+GT15-RS4-9S • GT37-IF2000+GT15-RS4-TE

GOT interface used for other functions

For the following functions, use the interfaces built in the GOT and communication units.

Function	Interface built in the GOT, communication unit
Ethernet download	• Ethernet interface
Barcode function	• RS-232/422/485 interface • USB interface • GT37-IF2000+GT15-RS2-9P • GT37-IF2000+GT15-RS4-9S • GT37-IF2000+GT15-RS4-TE
RFID function	• RS-232/422/485 interface • GT37-IF2000+GT15-RS2-9P • GT37-IF2000+GT15-RS4-9S • GT37-IF2000+GT15-RS4-TE

Precautions

Check if the number of channels for the multi-channel function to be used is restricted or not. If it is restricted, review the system configuration.

Write Check Sheet

Write down the following items selected in this section on the check sheet.

② Selection of interface (communication unit)

Write down the interface name and the model name of the communication unit to be used for each connection type.

(1) Channel No. of PLC, Motion controller, inverter, servo amplifier, robot controller (CH No. 1 to 4)

CH No.	① Selection of connection type	② Selection of interface (communication unit)
1	Connection name PLC connection	Ethernet interface built into the GOT
2	Connection name Inverter connection	Ethernet interface built into the GOT
3	Connection name Servo amplifier connection	Ethernet interface built into the GOT
4	Connection name PLC connection	Ethernet interface built into the GOT

(2) Channel No. of barcode reader, RFID controller, personal computer (CH No. 5 to 8)

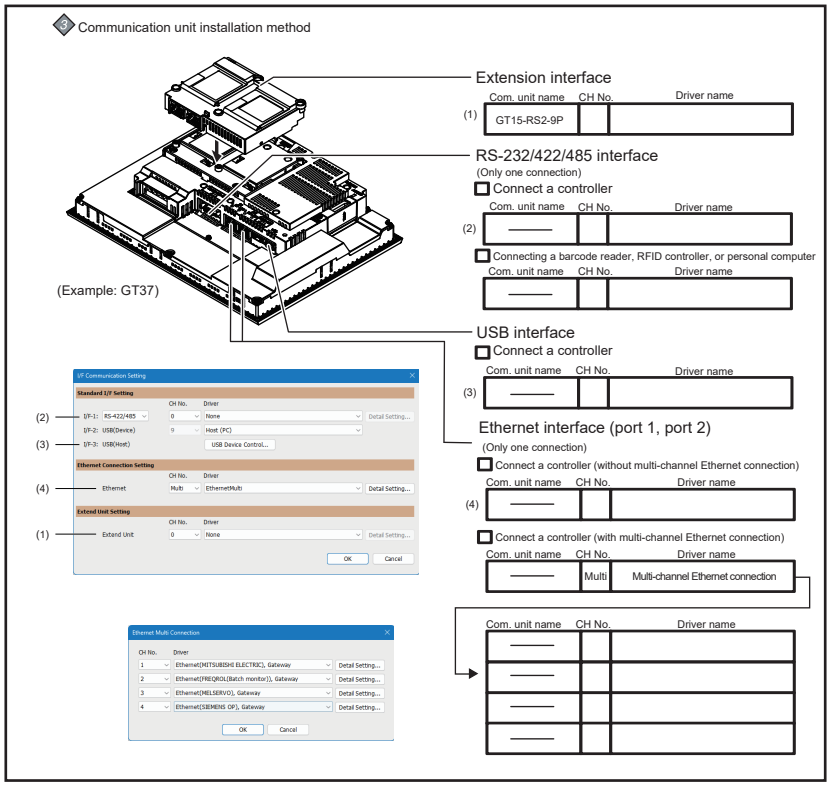
CH No.	① Selection of connection type	② Selection of interface (communication unit)
5	Connection name Barcode reader connection	GT37-IF2000+GT15-RS2-9P
6	Connection name	
7	Connection name	
8	Connection name RFID controller connection	RS-232 interface built into the GOT

Write Check Sheet

Write down the following items on the check sheet.

③ Communication unit installation method

1. Write down the name of the communication unit to be used for each connection type.



2. After writing down the names of communication units, write down the CH No. to be assigned to each unit based on the entries in Check sheet No. 1 (selection of connection type and interface).

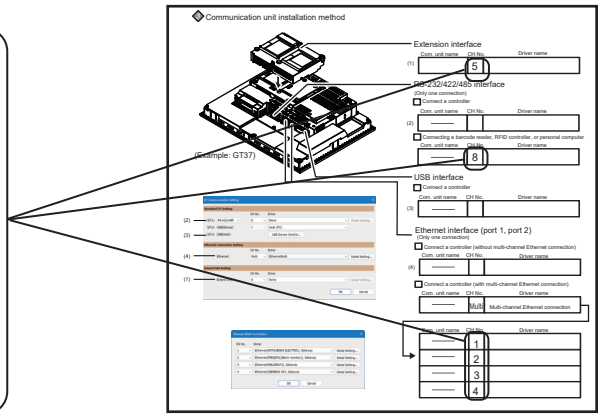
Check sheet No.1 (selection of the connection type and interface)

(1) Channel No. of PLC, Motion controller, inverter, servo amplifier, robot controller (CH No. 1 to 4)

CH No.	Selection of connection type	Selection of interface (communication unit)
1	Connection name PLC connection	Ethernet interface built into the GOT
2	Connection name Inverter connection	Ethernet interface built into the GOT
3	Connection name Servo amplifier connection	Ethernet interface built into the GOT
4	Connection name PLC connection	Ethernet interface built into the GOT

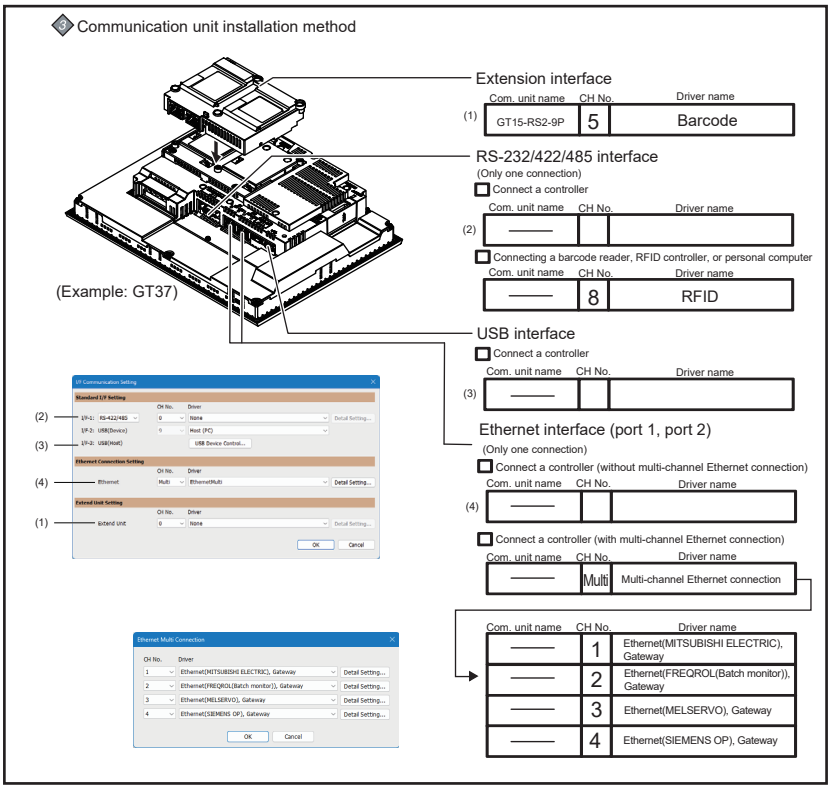
(2) Channel No. of barcode reader, RFID controller, personal computer (CH No. 5 to 8)

CH No.	Selection of connection type	Selection of interface (communication unit)
5	Connection name Barcode reader connection	GT37-IF2000+GT15-RS2-9P
6	Connection name	
7	Connection name	
8	Connection name RFID controller connection	RS-232 interface built into the GOT



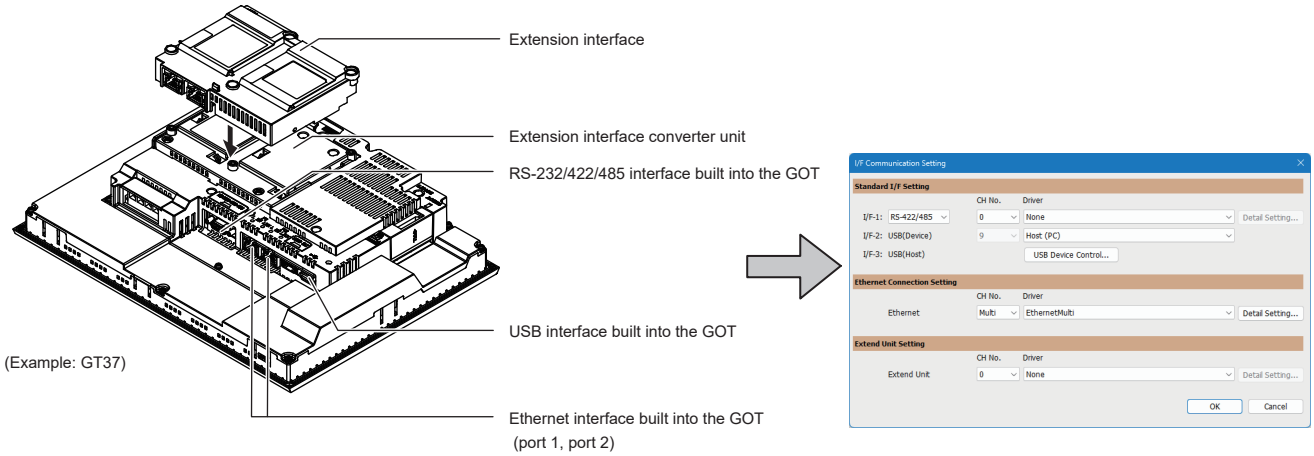
3. After writing down the CH No., write down the communication driver name for each connection type. For the communication drivers used for the respective connection types, refer to the following.

➡ Chapter of each connection type



3.3.5 Setting for communication settings

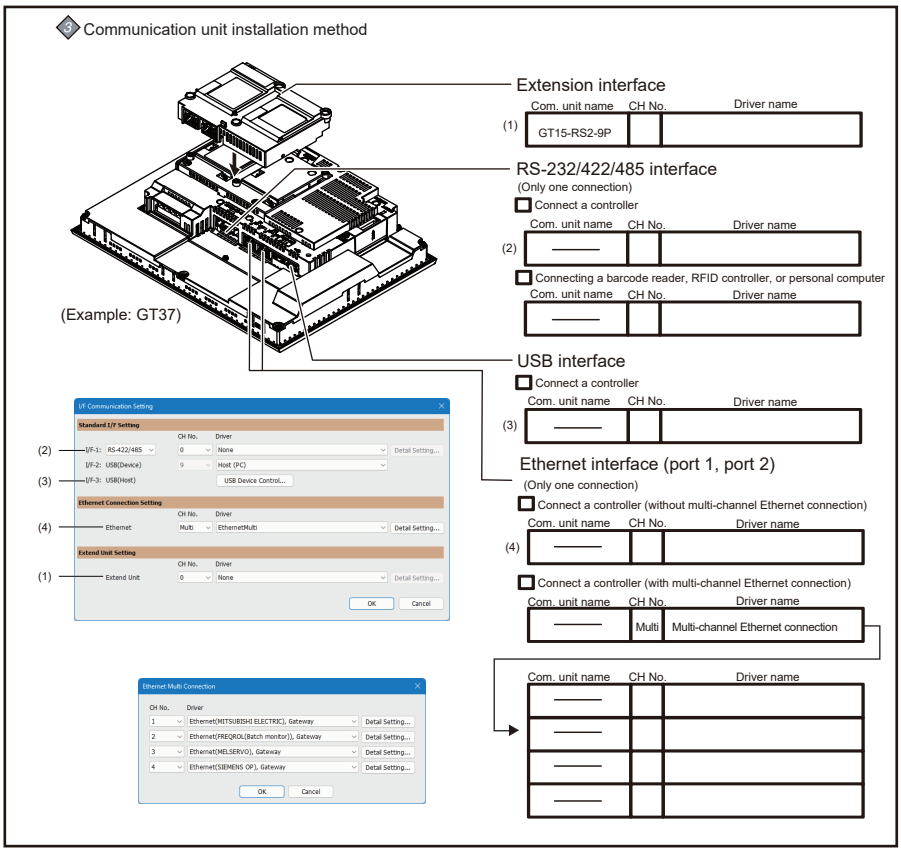
Make communication settings based on the interface and the installation position of the respective communication units.



Check

Configure the controller settings in GT Designer3 by referring to the check sheet where the necessary information has been written.

The positions on the check sheet indicate the positions of the settings on the controller settings screen.

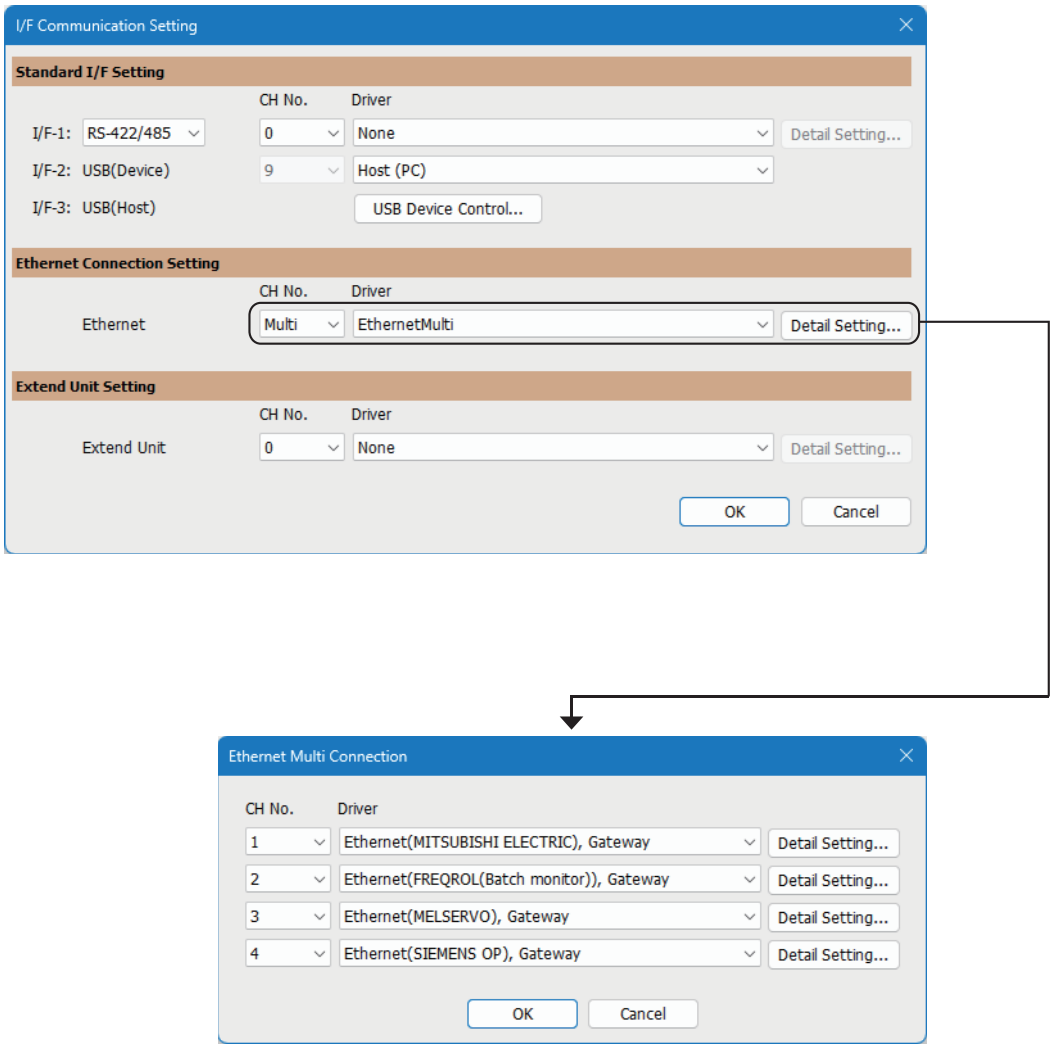


This completes the controller settings for the multi-channel function.

Create a screen with GT Designer3.

Ex.

Setting example for Ethernet connection (4 channels)



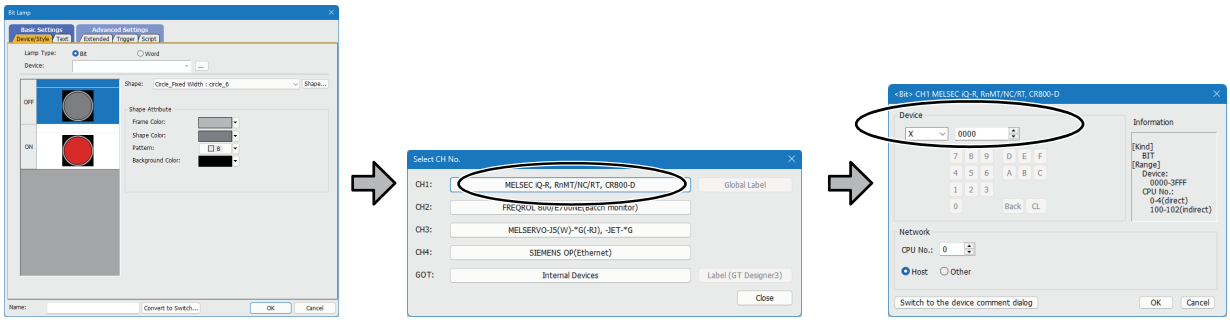
3.3.6 Items to be checked before starting drawing

The following describes that should be understood before starting drawing and the functions that should be set beforehand when using the multi-channel function.

Device settings

It is necessary to set the device to be used together with the CH No.

📖GT Designer3 (GOT3000) Screen Design Manual

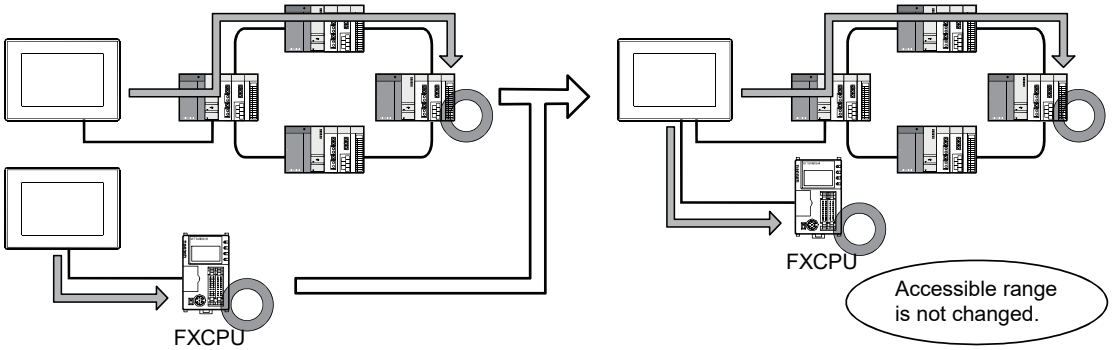


1. Click the device setting button. ***2.*** Click the controller to be set. ***3.*** Set the device.

Access range for monitoring

The access range for monitoring is not changed even when the multi-channel function is used.

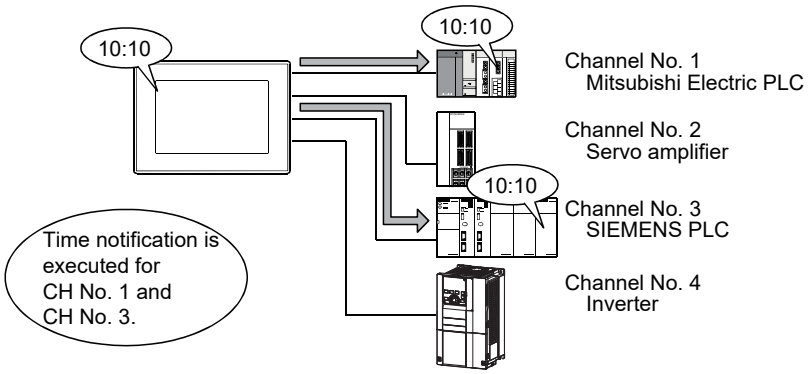
☞ Access range for monitoring in each chapter



Clock function

Set the controller for which adjust/broadcast should be executed by the CH No.

📖GT Designer3 (GOT3000) Screen Design Manual



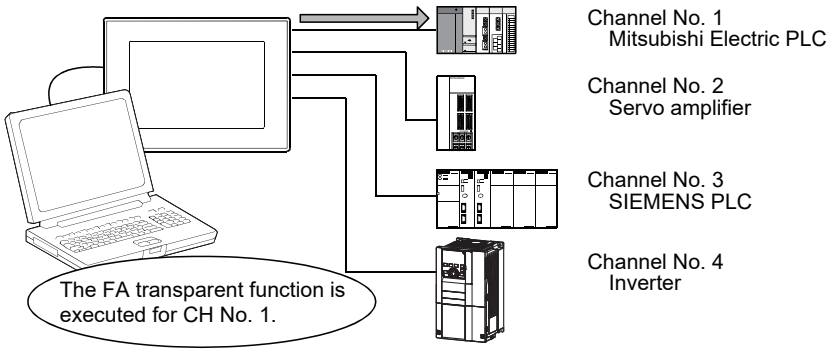
FA transparent function

Set the controller for which the FA transparent function should be executed by the CH No.

☞ Setting communication interface in each chapter in FA transparent

The set CH No. can be changed by the Utility.

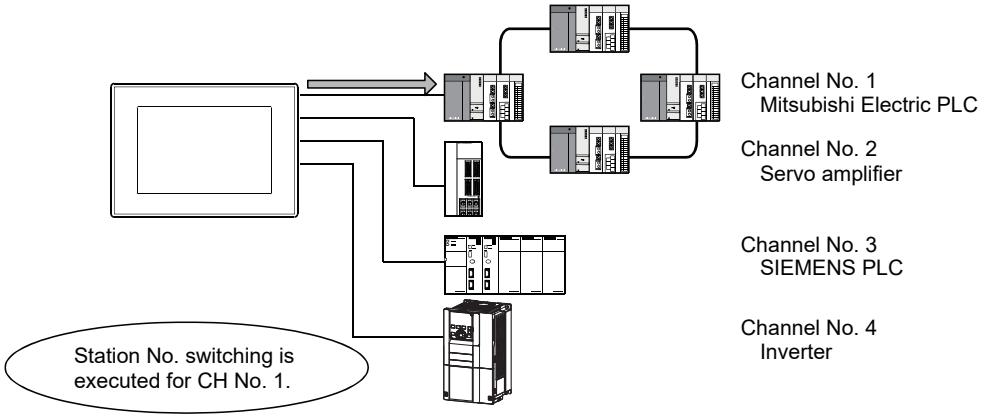
To execute the FA transparent function for other CH No., change the CH No. using the Utility.



Station No. switching function

Set the controller for which the station No. switching function should be executed by the CH No.

📖GT Designer3 (GOT3000) Screen Design Manual



3.4 Precautions

3.4.1 Occurrence of the same system alarm at different channels

When the advanced system alarm is used, if the system alarms with the same error code occur in different channels the GOT treats the alarms as the same system alarm.
Therefore, if the system alarms with the same error code occur one by one, the time of later system alarm occurrence is not reflected to the GOT.

3.4.2 Confirmation of the channel No. at which a system alarm occurred

When a system alarm occurred, confirm the channel No. where the alarm occurred, using the procedure indicated below.

- Check by [System alarm display] of the utility.

📖GOT3000 Series User's Manual (Utility & Maintenance Functions)

- Monitor the internal devices of the GOT.

📖GT Designer3 (GOT3000) Screen Design Manual

3.5 Multi-channel Function Check Sheet

This section provides the check sheet to be used for Communication Settings when the multi-channel function is used. Checking items explained in these sections using the check sheet on the following page allows you to complete the setting for the multi-channel function.

Write Check Sheet

Write down the following items selected in this section on the check sheet.

1 Selection of connection type

Write down the name of the connection type to be used.

The items and details to be written on the check sheet are shown. Also describes an example of the check sheet.

(1) Channel No. of PLC, Motion controller, inverter, servo amplifier, robot controller (CH No. 1 to 4)

CH No.	1 Selection of connection type	2 Selection of interface (communication unit)
1	Connection name PLC connection	
2	Connection name Inverter connection	
3	Connection name Servo amplifier connection	
4	Connection name PLC connection	

(2) Channel No. of barcode reader, RFID controller, personal computer (CH No. 5 to 8)

CH No.	1 Selection of connection type	2 Selection of interface (communication unit)
5	Connection name Barcode reader connection	
6	Connection name	
7	Connection name	
8	Connection name RFID controller connection	

The following symbols are used for each purpose.

Write Check Sheet

Indicates parts where items and details are to be written.
Confirm the details and write them on the check sheet.

Check

Indicates parts where written details are to be checked.
Confirm the details and configure the controller settings.

Check sheet No.1 (selection of connection type and interface)

(1) Channel No. of PLC, Motion controller, inverter, servo amplifier, robot controller (CH No. 1 to 4)

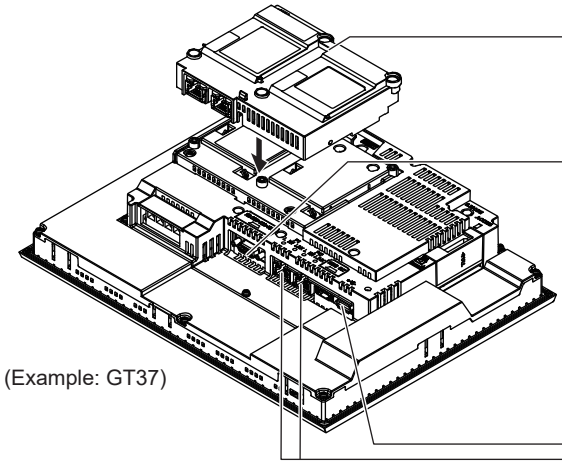
CH No.	1 Selection of connection type	2 Selection of interface (communication unit)
1	Connection name	
2	Connection name	
3	Connection name	
4	Connection name	

(2) Channel No. of barcode reader, RFID controller, personal computer (CH No. 5 to 8)

CH No.	1 Selection of connection type	2 Selection of interface (communication unit)
5	Connection name	
6	Connection name	
7	Connection name	
8	Connection name	

Check sheet No. 2 (selection of GOT side interface)

3 Communication unit installation method



Extension interface

	Com. unit name	CH No.	Driver name
(1)			

S-232/422/485 interface

(Only one connection)

☐ Connect a controller

	Com. unit name	CH No.	Driver name
(2)	———		

☐ Connecting a barcode reader, RFID controller, or personal computer

Com. unit name	CH No.	Driver name
———		

USB interface

☐ Connect a controller

	Com. unit name	CH No.	Driver name
(3)	———		

Ethernet interface (port 1, port 2)

(Only one connection)

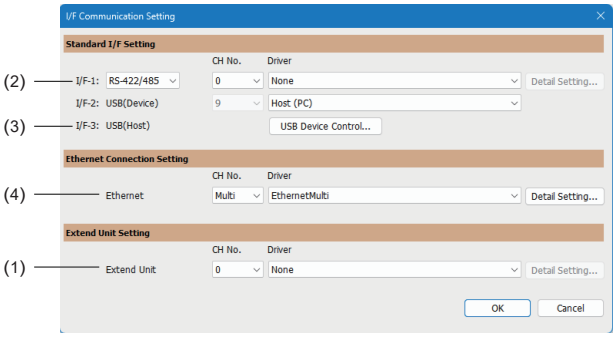
☐ Connect a controller (without multi-channel Ethernet connection)

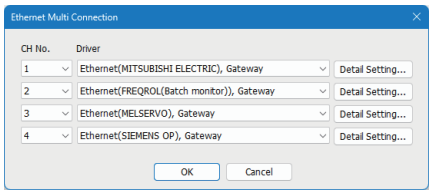
	Com. unit name	CH No.	Driver name
(4)	———		

☐ Connect a controller (with multi-channel Ethernet connection)

Com. unit name	CH No.	Driver name
———	Multi	Multi-channel Ethernet connection

Com. unit name	CH No.	Driver name
———		
———		
———		
———		





PART 3 Mitsubishi Electric PLC

4 Ethernet connection

5 Serial connection

6 USB connection

7 Bus connection

8 MELSECNET/H connection

9 CC-Link IE TSN connection

10 CC-Link IE Controller Network connection

11 CC-Link IE Field Network connection

12 CC-Link connection (intelligent device station)

13 Settable device range

4 Ethernet connection

☞ Page 62 MELSEC MX Controller (MX-R Model) (Built-in Ethernet port connection)
☞ Page 94 MELSEC MX Controller (MX-R Model) (Ethernet module connection)
☞ Page 125 MELSEC MX Controller (MX-F Model) (Built-in Ethernet port connection)
☞ Page 158 MELSEC MX Controller (MX-F Model) (Ethernet module connection)
☞ Page 188 MELSEC iQ-R series (Built-in Ethernet port connection)
☞ Page 242 MELSEC iQ-R series (Ethernet module connection)
☞ Page 291 MELSEC iQ-F series (Built-in Ethernet port connection)
☞ Page 308 MELSEC iQ-F series (Ethernet module connection)
☞ Page 341 MELSEC-Q series (Built-in Ethernet port connection)
☞ Page 391 MELSEC-Q series (Ethernet module connection)
☞ Page 436 MELSEC-L series (Built-in Ethernet port connection)
☞ Page 461 MELSEC-L series (Ethernet module connection)
☞ Page 480 MELSEC-A series (Ethernet module connection)
☞ Page 500 MELSEC-F series (Ethernet module connection)

4.1 MELSEC MX Controller (MX-R Model) (Built-in Ethernet port connection)

☞ Page 62 Connectable devices
☞ Page 63 System configuration
☞ Page 66 GOT side settings
☞ Page 76 PLC side settings
☞ Page 89 Encrypted communication
☞ Page 91 Connection to the PLC with the authentication function enabled
☞ Page 93 Access range for monitoring

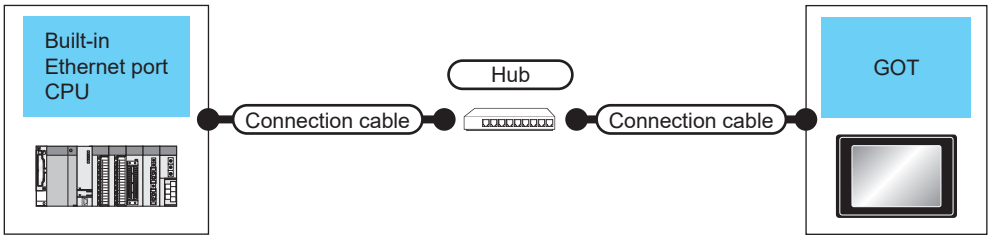
4.1.1 Connectable devices

The following table shows the connectable models.

○: Supported, —: Not supported

Controller	Model	Clock	Connectable model
MELSEC MX Controller (MX-R Model)	MXR300-16 MXR300-32 MXR300-64	○	GT37 SoftGOT3000
	MXR500-128 MXR500-256	○	GT37 SoftGOT3000

4.1.2 System configuration



For details on the connection cables and the maximum segment length, refer to the following.

☞ Page 64 Connection cable
☞ Page 64 Maximum segment length

For details on the maximum number of connected devices, refer to the following.

☞ Page 64 Maximum number of connected devices

Controller	Connection cable	GOT	
		Interface	Model
MELSEC MX Controller (MX-R Model)*1*2*3*4	Twisted pair cable	Built-in Ethernet interface of GOT	GT37 SoftGOT3000
		Ethernet interface of personal computer	GT37 SoftGOT3000

*1 For the system configuration of the built-in Ethernet port CPU, refer to the manual of the PLC to be used.

*2 For [Unit Type] to be selected in [Connected Ethernet Controller Setting] in GT Designer3, refer to the following.
☞ Page 73 [Connected Ethernet Controller Setting]

*3 Connect to the Ethernet port (P3) of the MELSEC MX Controller.

*4 When the GOT monitors the PLC with the authentication function enabled, logon to the PLC is required.
For information on how to logon and logoff, refer to the following.
☞ Page 91 Logon to the PLC
☞ Page 91 Logoff from the PLC
The GOT cannot monitor the PLC devices until logon to the PLC from the GOT is complete.
Therefore, create a project assuming that the GOT cannot communicate with the PLC for a certain period.
☞ Page 91 Creating a project

Connection cable

Use a connection cable that meets the following standards.

Standard	Category
10BASE-T	Shielded twisted pair cable (STP) or unshielded twisted pair cable (UTP) of category 3 or higher
100BASE-TX	Shielded twisted pair cable (STP) or unshielded twisted pair cable (UTP) of category 5 or higher
1000BASE-T	Shielded twisted pair cable (STP) or unshielded twisted pair cable (UTP) of category 5e or higher

The destination device connected with the twisted pair cable varies with the configuration of the Ethernet network system used.

Connect the cable to the Ethernet module, hub, or other system equipment corresponding to the applicable Ethernet network system.

Use cables, connectors, and hubs that meet the IEEE802.3 10BASE-T/100BASE-TX/1000BASE-T standards.

When only one GOT is connected, the GOT can be directly connected to the controller without a hub.

Maximum segment length

The maximum segment length (length between a hub and a node) is 100 m.

The maximum length depends on the Ethernet equipment used.

The following shows the number of connectable hubs when a repeater hub is used.

- 10BASE-T: Up to 4 for a cascade connection (within 500 m)
- 100BASE-TX: Up to 2 for a cascade connection (within 205 m)
- 1000BASE-T: The number differs depending on the hub to be used.

When switching hubs are used, there is no theoretical limit to the number of cascade connections between switching hubs.

For the limit, contact the switching hub manufacturer.

Precautions

When multiple network devices (including GOTs) are connected in the same segment, the network load increases and the transmission speed between the GOT and PLC may be reduced.

The following actions may improve the communication performance.

- Use a switching hub compatible with 1000BASE-T (1 Gbps) or more.
- Reduce the number of devices monitored by the GOT.

Maximum number of connected devices

Up to 128 CPU modules can be connected to channels No. 1 to No. 4 of one GOT. (16 or less recommended)

The following shows the number of connectable controllers per GOT channel and the number of GOTs connectable to one controller.

■When [Unit Type] in [Connected Ethernet Controller Setting] is [MX-R(Ethernet)] or [MX-R(Ethernet Encryption)]

Controller			GOT	
Model	Number of GOTs connectable to one PLC		Model	Number of connectable controllers per GOT channel
	UDP	TCP+TLS+DTLS		
MELSEC MX Controller (MX-R Model)	120	64	GT37 SoftGOT3000	119 (16 or less recommended)

■When [Unit Type] in [Connected Ethernet Controller Setting] is [MX-R(CC-Link IE TSN)]

Controller			GOT	
Model	Number of GOTs connectable to one PLC		Model	Number of connectable controllers per GOT channel
	UDP	TCP		
MELSEC MX Controller (MX-R Model)	8	8	GT37 SoftGOT3000	119 (8 or less recommended)

Connection to the built-in Ethernet port of the built-in Ethernet port CPU

Connect the GOT after turning on the network equipment such as the built-in Ethernet port CPU or hub to enable communications.

If the GOT cannot communicate with the built-in Ethernet port CPU, a communication error may occur on the GOT.

4.1.3 GOT side settings

[GOT Ethernet Setting]

Set the GOT Ethernet interface in GT Designer3.

Item	Description
[GOT IP Address Setting]	Set the IP address of the GOT.
[GOT Ethernet Common Setting]	Set the default gateway and other common items for GOT Ethernet interfaces.
[IP filter Setting]	The GOT allows or blocks access from IP addresses specified in the filtering list.

For details on the setting, refer to the following.

📖GT Designer3 (GOT3000) Screen Design Manual

Set the GT SoftGOT3000 Ethernet interface on the personal computer.

Precautions

Do not use 0 and 255 at the end of an IP address.

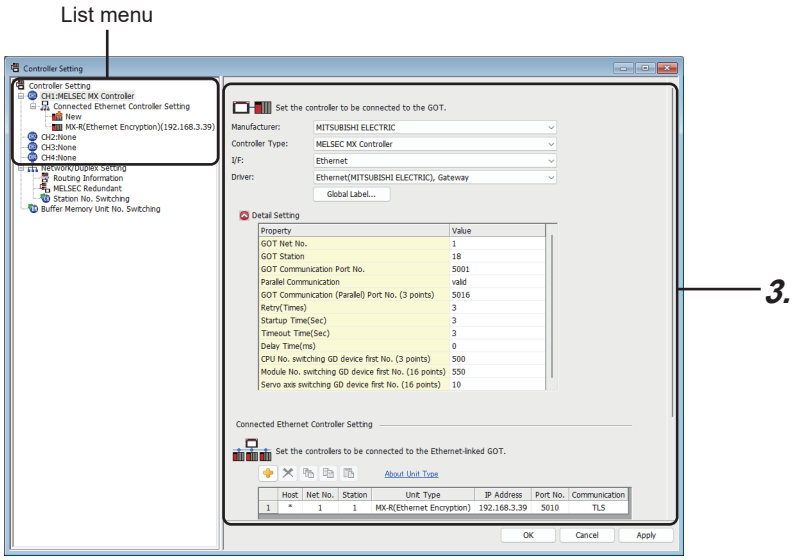
(Numbers of *.*.*.0 and *.*.*.255 are used by the system.)

The GOT may not monitor the controller correctly with the above numbers.

Consult with the administrator of the network before setting an IP address to the GOT.

[Controller Setting]

Set the channel of the connected controller.



Operating procedure

1. Select [Common] → [Controller Setting] from the menu.

2. In the [Controller Setting] window, select the channel number to be used from the list menu.

3. Set the following items.

Item	Description
[Manufacturer]	[MITSUBISHI ELECTRIC]
[Controller Type]	[MELSEC MX Controller]
[I/F]	[Ethernet]
[Driver]	[Ethernet(MITSUBISHI ELECTRIC), Gateway]
[Detail Setting]	Configure the settings according to the usage environment. ☞ Page 68 [Detail Setting]
[Connected Ethernet Controller Setting]	Configure the settings according to the controller to be connected. ☞ Page 73 [Connected Ethernet Controller Setting]

4. When you have completed the settings, click the [OK] button.

Point

The controller settings can be checked in [I/F Communication Setting].

For details, refer to the following.

📖GT Designer3 (GOT3000) Screen Design Manual

■[Detail Setting]

Configure the settings according to the usage environment.

Detail Setting

Property	Value
GOT Net No.	1
GOT Station	18
GOT Communication Port No.	5001
Parallel Communication	valid
GOT Communication (Parallel) Port No. (3 points)	5016
Retry(Times)	3
Startup Time(Sec)	3
Timeout Time(Sec)	3
Delay Time(ms)	0
CPU No. switching GD device first No. (3 points)	500
Module No. switching GD device first No. (16 points)	550
Servo axis switching GD device first No. (16 points)	10

Item	Description	Range
[GOT Net No.]	Set the network number of the GOT.	[1] to [239]
[GOT Station]*1*2	Set the station number of the GOT.	[1] to [120]
[GOT Communication Port No.]	Set the GOT port number for connection with the Ethernet module.	[1024] to [5010], [5014] to [49152], [49171] to [65534]
[Parallel Communication]	Enables or disables the parallel communication. When this setting is enabled, [GOT Communication (Parallel) Port No. (3 points)] can be set. When communicating with multiple devices on a single channel, distributing the communication ports can reduce the communication load.	[valid], [invalid]
[GOT Communication (Parallel) Port No. (3 points)]	Set the GOT port number used for the parallel communication.	• [Parallel Communication] is [invalid]: [0] • [Parallel Communication] is [valid]: [1024] to [5008], [5014] to [49150], [49171] to [65532]
[Retry(Times)]	Set the number of retries to be performed when a communication timeout occurs. When receiving no response after retries, the communication times out.	GOT: [0] times to [5] times GT SoftGOT3000: [0] times to [10] times
[Startup Time]	Set the time period from the GOT startup until the start of communication with the PLC CPU.	[3] seconds to [255] seconds
[Timeout Time]	Set the time period for a communication to time out.	[1] second to [90] seconds
[Delay Time]	Set the delay time for reducing the load of the network and destination PLC.	[0] ms to [10000] ms
[CPU No. switching GD device first No. (3 points)]*3	Set this item when using other models together. Set the start device number of the GD devices for CPU number switching. For details, refer to the following. ☞ Page 70 Start device number of the GD devices for CPU number switching	[0] to [65520]
[Module No. switching GD device first No. (16 points)]*3	Set the start device number of the GD devices for module number switching. For details, refer to the following. ☞ Page 71 Start device number of the GD devices for module number switching	[0] to [65520]
[Servo axis switching GD device first No. (16 points)]	Set the start device number of the GD devices for servo axis switching. For details, refer to the following. ☞ Page 72 Start device number of the GD devices for servo axis switching	[0] to [65520]

*1 Set values not set for [Station] in [Connected Ethernet Controller Setting].
☞ Page 73 [Connected Ethernet Controller Setting]

*2 When connecting multiple GOTs in the Ethernet network, set a different value for [GOT Station] for each GOT.

*3 Set values when using MELSEC iQ-R series or MELSEC-Q series mixed.

Point

• Controller settings using the GT37 utility

The controller settings can be changed in [Communication Settings] of the GT37 utility after writing [Communication Settings] of project data to GT37.

For details on the GT37 utility, refer to the following manual.

📖GOT3000 Series User's Manual (Utility & Maintenance Functions)

• Priority of the settings in [Controller Setting]

When the settings are configured in GT Designer3 or in the GT37 utility, the latest settings are effective.

■When connecting multiple GOTs

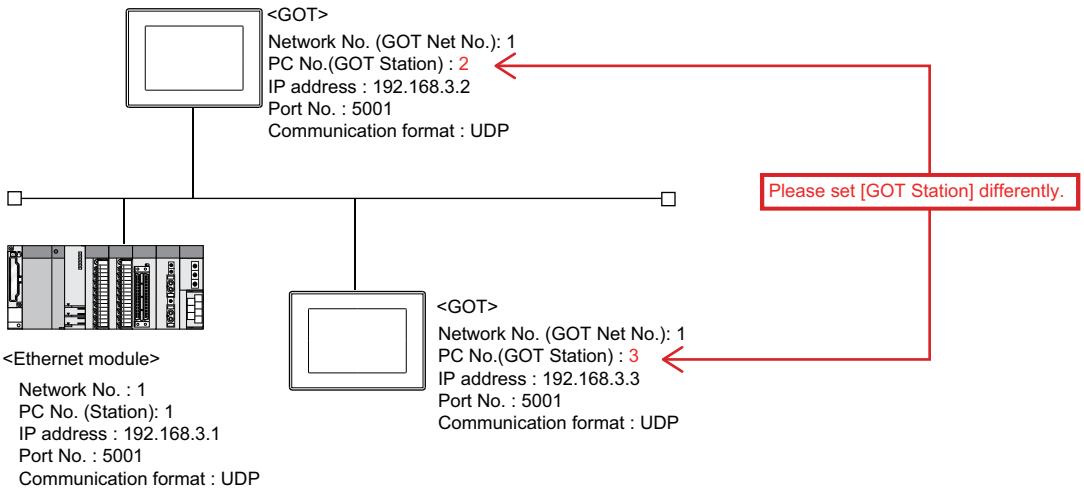
• Settings for [GOT Station]

When connecting multiple GOTs in the Ethernet network, set a different value for [GOT Station] for each GOT.

☞ Page 68 [Detail Setting]

The following shows a system configuration example.

Ex.



• Settings to start up multiple GOTs simultaneously

When connecting multiple GOTs to one built-in Ethernet port CPU, adjust the timing of GOT communication start.

When the communication concentrates on the PLC, the communication between GOT and PLC becomes difficult, and the monitoring by GOT may not start.

As a method for adjusting the timing, communicating one GOT alone first, and then communicating the other GOTs is effective.

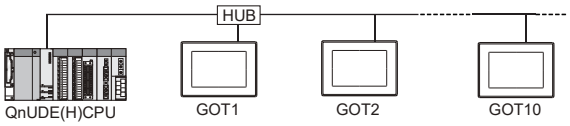
Set the following items on each GOT.

[Startup Time] in [Detail Setting] or [Title Display Time] of [GOT Setup]

[Timeout Time] in [Detail Setting]

The following shows a setting example.

Ex.



Item	GOT1	GOT2	GOT10
Startup Time	3sec (default)	4sec	4sec
Timeout Time	3sec (default)	4sec	4sec

■Start device number of the GD devices for CPU number switching

• Indirect specification of a CPU number

[CPU No.] can be indirectly specified with the GOT internal registers (GD devices) by specifying a value (100 to 102) to [CPU No.] in the device setting dialog in GT Designer3.

Set the start device number of the GD devices to be used in [CPU No. switching GD device first No. (3 points)].

[CPU No.] is specified with three consecutive GD devices, starting from the set device number.

When [500] is set to [CPU No. switching GD device first No. (3 points)], GD500 to GD502 are used to specify [CPU No.] as shown in the following table.

CPU No.	GD device	Setting range
100	GD500	1 to 4 Setting a value outside the range causes a communication timeout error. Specifying a nonexistent CPU number or a CPU number not supporting a multiple CPU system with a device causes a controller error.
101	GD501	
102	GD502	

• Indirect specification of a CPU number on the initially displayed screen

Set [CPU No. switching GD device first No. (3 points)] so that the values of the GD devices are retained and monitored upon the GOT startup.

• Indirect specification of a CPU number for multi-channel connection

If the setting range of [CPU No. switching GD device first No. (3 points)] set for each channel overlaps, the monitoring target CPU number set to each channel is switched simultaneously.

Set [CPU No. switching GD device first No. (3 points)] for each channel so that the setting range does not overlap.

• Indirect specification of a station number and a CPU number for multi-channel connection

When GD10 to GD25 are used to specify the station number of an inverter or non-Mitsubishi temperature controller connected, setting [10] to [CPU No. switching GD device first No. (3 points)] in a different channel switches the monitoring target CPU number and station number of an inverter or non-Mitsubishi temperature controller set to each channel simultaneously.

Set [CPU No. switching GD device first No. (3 points)] so that the setting range does not overlap the station number of an inverter or non-Mitsubishi temperature controller.

■Start device number of the GD devices for module number switching

• Indirect specification of a module number

For connection via a Simple Motion module, [Unit No.] can be specified with the GOT internal registers (GD devices) by specifying a value (100 to 10F) to [Unit No.] in the device setting dialog in GT Designer3.

Set the start device number of the GD devices to be used in [Module No. switching GD device first No. (16 points)].

[Unit No.] is specified with 16 consecutive GD devices, starting from the set device number.

When [550] is set to [Module No. switching GD device first No. (16 points)], GD550 to GD565 are used to specify [Unit No.] as shown in the following table.

Module No.	GD device	Setting range
100	GD550	00 to FF Setting a value outside the above range causes a device range error.
101	GD551	
102	GD552	
103	GD553	
104	GD554	
105	GD555	
106	GD556	
107	GD557	
108	GD558	
109	GD559	
10A	GD560	
10B	GD561	
10C	GD562	
10D	GD563	
10E	GD564	
10F	GD565	

• Indirect specification of a module number on the initially displayed screen

Set [Module No. switching GD device first No. (16 points)] so that the values of the GD devices are retained and monitored upon the GOT startup.

• Indirect specification of a module number for multi-channel connection

If the setting range of [Module No. switching GD device first No. (16 points)] set for each channel overlaps, the module number of the Simple Motion module via the servo amplifier device of each channel is switched simultaneously.

Set [Module No. switching GD device first No. (16 points)] for each channel so that the setting range does not overlap.

• Indirect specification of a station number and a module number for multi-channel connection

When GD10 to GD25 are used to specify the station number of an inverter or non-Mitsubishi temperature controller connected, setting [10] to [Module No. switching GD device first No. (16 points)] switches the module number of the Simple Motion module via the servo amplifier device and the station number of an inverter or non-Mitsubishi temperature controller set to each channel simultaneously.

Set [Module No. switching GD device first No. (16 points)] so that the setting range does not overlap the station number of an inverter or non-Mitsubishi temperature controller.

■Start device number of the GD devices for servo axis switching

• Indirect specification of a servo axis number

For connection via a Motion CPU or Simple Motion module, a servo axis number can be indirectly specified with GOT internal registers (GD devices) by specifying a value (100 to 115) to the axis number of the servo amplifier device.

Set the start device number of the GD devices to be used in [Servo axis switching GD device first No. (16 points)].

Specify a servo axis number with 16 consecutive GD devices, starting the set device number.

When [10] is set to [Servo axis switching GD device first No. (16 points)], GD10 to GD25 are used to specify a servo axis number as shown in the following table.

Servo axis No.	GD device	Setting range
100	GD10	1 to 64 Setting a value outside the above range causes a device range error.
101	GD11	
102	GD12	
103	GD13	
104	GD14	
105	GD15	
106	GD16	
107	GD17	
108	GD18	
109	GD19	
110	GD20	
111	GD21	
112	GD22	
113	GD23	
114	GD24	
115	GD25	

• Indirect specification of a servo axis number on the initially displayed screen

Set [Servo axis switching GD device first No. (16 points)] so that the values of the GD devices are retained and monitored upon the GOT startup.

• Indirect specification of a servo axis number for multi-channel connection

If the setting rage of [Servo axis switching GD device first No. (16 points)] set for each channel overlaps, the axis number of the servo amplifier of each channel is switched simultaneously.

Set [Servo axis switching GD device first No. (16 points)] for each channel so that the setting range does not overlap.

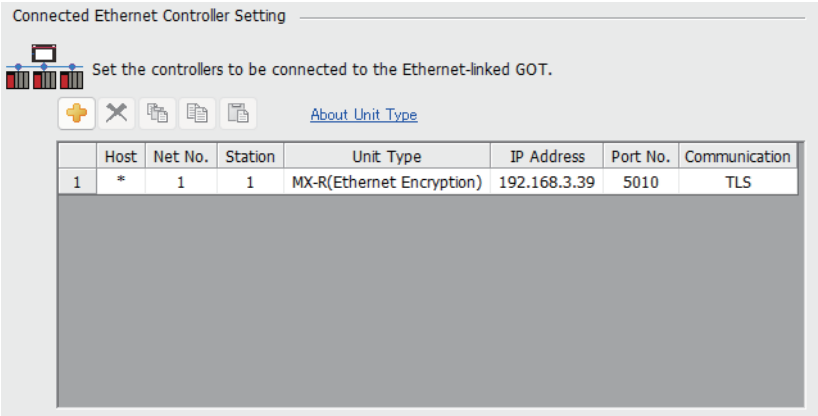
• Indirect specification of a station number and a servo axis number for multi-channel connection

When GD10 to GD25 are used to specify the station number of an inverter or non-Mitsubishi temperature controller connected, setting [10] to [Servo axis switching GD device first No. (16 points)] switches the axis number of the servo amplifier and the station number of an inverter or non-Mitsubishi temperature controller set to each channel simultaneously.

Set [Servo axis switching GD device first No. (16 points)] so that the setting range does not overlap the station number of an inverter or non-Mitsubishi temperature controller.

■[Connected Ethernet Controller Setting]

Set the controller to be connected to the GOT by Ethernet.



Item	Description	Range
[Host]	The host is displayed. It refers to a station that can be connected without setting a station number. The host is indicated with an asterisk (*).	—
[Net No.]	Set the network number of the connected Ethernet equipment.	[1] to [239]
[Station]*2	Set the station number of the connected Ethernet equipment.	☞ Page 73 [Station]
[Unit Type]	Select the model of the connected Ethernet equipment.	☞ Page 73 [Unit Type]
[IP Address]	Set the IP address of the connected Ethernet equipment.	[0.0.0.0] to [255.255.255.255]
[Port No.]*1	Set the port number of the connected Ethernet equipment.	☞ Page 73 [Port No.], [Communication]
[Communication]	Set the communication format of the connected Ethernet equipment.	☞ Page 73 [Port No.], [Communication]

*1 Match the port number of the CPU and [Port No.] of [Connected Ethernet Controller Setting].

*2 Set values not set for [GOT Station] in [Detail Setting].
☞ Page 68 [Detail Setting]

■[Unit Type]

Select an item for [Unit Type] as shown below.

GOT connection destination	[Unit Type]
MELSEC MX Controller (MX-R Model)	• When using the built-in Ethernet port for communication: [MX-R(Ethernet)] • When using the built-in CC-Link IE TSN port for communication: [MX-R(CC-Link IE TSN)] • When using the built-in Ethernet port for encrypted communication: [MX-R(Ethernet Encryption)]*1

*1 For details on encrypted communication, refer to the following.
☞ Page 89 Encrypted communication

■[Station]

The setting range is as follows:

[Unit Type]	[Station]
[MX-R(Ethernet)] [MX-R(Ethernet Encryption)]	[1] to [120]
[MX-R(CC-Link IE TSN)]	[0]

■[Port No.], [Communication]

The setting range is as follows:

[Unit Type]	[Port No.]	[Communication]
[MX-R(Ethernet)]	[5006]	[UDP]
	[5007]	[TCP]
[MX-R(CC-Link IE TSN)]	[5001]	[UDP]
	[5002]	[TCP]
[MX-R(Ethernet Encryption)]	[1] to [4999], [5010] to [65534]	[TLS], [DTLS]

■When [Unit Type] is [MX-R(Ethernet)] or [MX-R(Ethernet Encryption)]

When [MX-R(Ethernet)], [MX-R(Ethernet Encryption)] is selected for [Unit Type], [Port No.] can be changed.
There is no setting for the network number and PLC number of built-in Ethernet port CPU (Port number: 5006, 5007).
The values of [Network No.] and [Station No.] in the object setting dialog must be the same as the values of [Net No.] and [Station] in [Connected Ethernet Controller Setting].

■Connection to the built-in Ethernet port PLC with [Communication] set to [TCP]

During communication with the built-in Ethernet port PLC with [Communication] set to [TCP], using the FA transparent function may change the setting from [TCP] to [UDP] and start communication with the PLC with the new setting.
In this case, communication with the built-in Ethernet port PLC cannot be executed normally.
Take the following corrective action.

Phenomenon	Cause	Corrective action
Communication fails when using the FA transparent function.	When the multi-channel Ethernet connection is used, [TCP] and [UDP] are used to the same IP address, and then the FA transparent function is used for the channel set to [TCP].	Execute the FA transparent function for the channel set to [UDP].

Point

Changing the host station on the GOT
[Host] can be changed with the utility function of the GOT.
For details on the setting method, refer to the following manual.
📖GOT3000 Series User's Manual (Utility & Maintenance Functions)

■Routing parameter settings

Up to 64 settings can be configured for [Transfer Net No.].

However, the same number cannot be set in [Transfer Net No.] twice or more (multiple times).

The GOT (host station) can access 64 different networks specified under [Transfer Net No.].

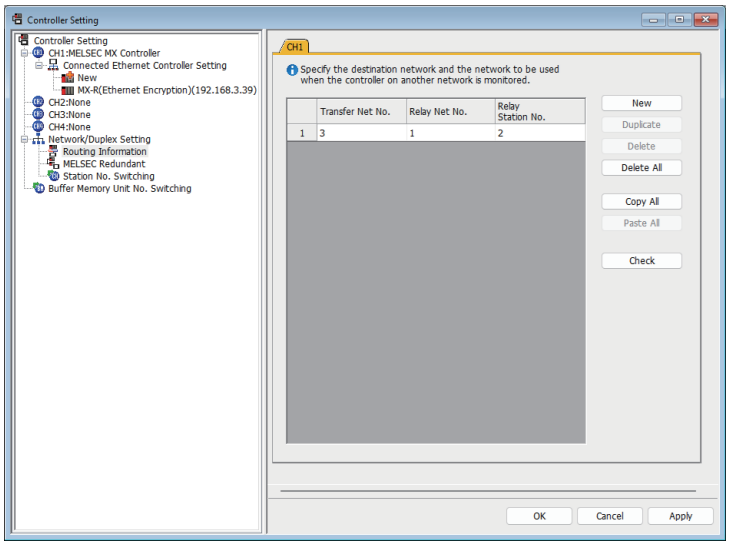
Point

Routing parameter settings

When communicating within the host network, routing parameter settings are not required.

For details on routing parameters, refer to the following manual.

GT Designer3 (GOT3000) Screen Design Manual



Item	Range
[Transfer Net No.]	[1] to [239]
[Relay Net No.]*1	[1] to [239]
[Relay Station No.]*1	[0] to [120]

*1 To access a different network via the built-in Ethernet port CPU, set the values of [Net No.] and [Station] that are set in [Connected Ethernet Controller Setting] in GT Designer3.

Point

Routing parameter settings for the relay station

Routing parameter settings are also necessary for the relay station.

For the setting, refer to the following.

Page 76 PLC side settings

Precautions

If the network numbers of the GOT and PLC do not match on the same Ethernet network, monitoring of the PLC is not possible.

To enable monitoring, set the same network number as that of the GOT or connect an Ethernet module to the PLC and configure the routing settings to monitor the PLC as a different network.

When the multi-channel connection can be used, set a different network number for each channel.

4.1.4 PLC side settings

Model		Reference
MELSEC MX Controller (MX-R Model)	MXR300-16 MXR300-32 MXR300-64 MXR500-128 MXR500-256	☞ Page 76 Connection to the built-in Ethernet port CPU of the MELSEC MX Controller (MX-R Model)

Connection to the built-in Ethernet port CPU of the MELSEC MX Controller (MX-R Model)

This section describes the settings of the GOT and the built-in Ethernet port CPU in the system configuration shown below.

☞ Page 76 One-to-one connection with the GOT side communication format set to UDP
☞ Page 79 One-to-one connection with the GOT side communication format set to TCP, TLS, or DTLS
☞ Page 82 Multi-connection with the GOT side communication format set to UDP
☞ Page 85 Multi-connection with the GOT side communication format set to TCP, TLS, or DTLS

Point

- Built-in Ethernet port CPU

For details on the built-in Ethernet port CPU, refer to the following manual.

📖Manual of the MELSEC MX Controller

- Connecting multiple GOTs

When connecting multiple GOTs in the Ethernet network, set a different value for [GOT Station] for each GOT.

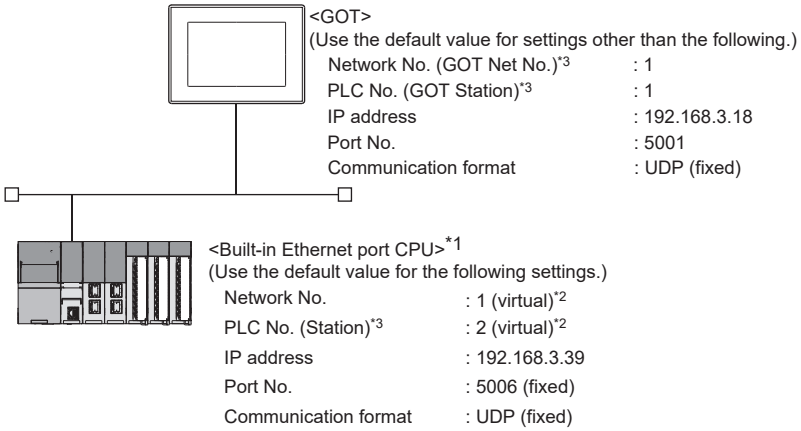
☞ Page 69 When connecting multiple GOTs

■One-to-one connection with the GOT side communication format set to UDP

- System configuration

For one-to-one connection, no settings are required on the PLC side.

Configure the settings in [Controller Setting] and [Connected Ethernet Controller Setting] in GT Designer3, and then connect the built-in Ethernet port CPU and the GOT.



*1 For the settings when using system devices such as a hub, refer to the following.
☞ Page 82 Multi-connection with the GOT side communication format set to UDP

*2 Although the setting is nonexistent on the PLC side, set a virtual value on the GOT side.
☞ • [Controller Setting] and [Connected Ethernet Controller Setting] of GT Designer3

*3 For the following settings, the setting names are different on the PLC side and the GOT side.

Setting	Setting name		
	PLC side	GOT side	
		Controller setting	Connected Ethernet controller setting
Network number	[Network No.]	[GOT Net No.]	[Net No.]
PLC number	[Station]	[GOT Station]	[Station]

• [Controller Setting] and [Connected Ethernet Controller Setting] of GT Designer3

For the setting method of [Controller Setting] and [Connected Ethernet Controller Setting] in GT Designer3, refer to the following.

☞ Page 66 GOT side settings

Point

[Connected Ethernet Controller Setting] for connection to the Built-in Ethernet port RCPU

The setting items for the network number and station number do not exist on the PLC side.

Set the network number and station number on the GOT side.

When doing so, set a network number not used in the system.

Controller settings

Item	Setting value
[GOT Net No.]	1
[GOT Station]	1
[GOT Communication Port No.]	5001
[Retry]	3 times
[Startup Time]	3 seconds
[Timeout Time]	3 seconds
[Delay Time]	0 ms

GOT Ethernet settings

Item	Setting value
[GOT IP Address]	192.168.3.18
[Subnet Mask]	255.255.255.0
[Default Gateway]	0.0.0.0
[Peripheral S/W Communication Port No.]	5015
[Transparent Port No.]	5014

Connected Ethernet controller settings

Item		Setting value
Ethernet setting No. 1	[Host]	*
	[Net No.]	1*1
	[Station]	2*2
	[Unit Type]	MX-R(Ethernet)
	[IP Address]	192.168.3.39
	[Port No.]	5006
	[Communication]	UDP

*1 Set the same value as [GOT Net No.].

*2 Set a value not set for [GOT Station].

• Checking the communication state of the built-in Ethernet port CPU

When using Windows Command Prompt

Execute a ping command in Windows Command Prompt.

1) At normal end

C:\>Ping 192.168.3.39

Reply from 192.168.3.39:bytes=32 time<1ms TTL=32

2) At abnormal end

C:\>Ping 192.168.3.39

Request timed out.

In the case of abnormal end

In the case of abnormal end, check the following and execute the ping command again.

Cable connecting condition

Switch settings and network parameter settings

Operation state of PLC CPU (faulty or not)

IP address of the built-in Ethernet port CPU specified by the ping command

Point

Ethernet diagnostics of GX Works3

The Ethernet diagnostics of GX Works3 enables ping tests from the PLC.

For details on the Ethernet diagnostics of GX Works3, refer to the following manual.

📖Manual of the MELSEC MX Controller

■One-to-one connection with the GOT side communication format set to TCP, TLS, or DTLS

The following shows an example when the communication format is TCP.

Point

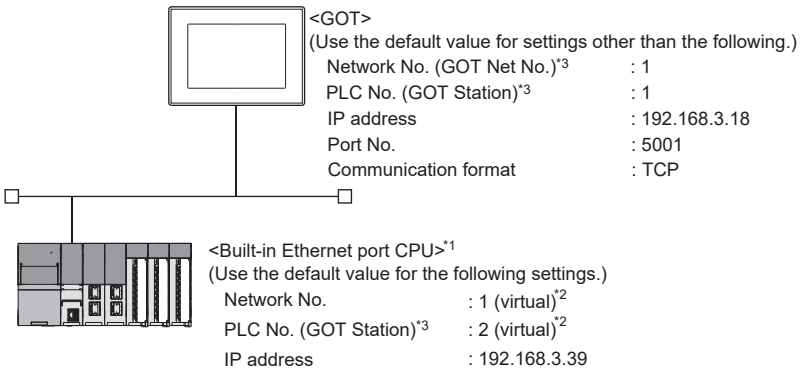
For information on encrypted communication settings, refer to the following.

☞ Page 89 Encrypted communication

- System configuration

For one-to-one connection, no settings are required on the PLC side.

Configure the settings in [Controller Setting] and [Connected Ethernet Controller Setting] in GT Designer3, and then connect the built-in Ethernet port CPU and the GOT.



*1 For the settings when using system devices such as a hub, refer to the following.

☞ Page 85 Multi-connection with the GOT side communication format set to TCP, TLS, or DTLS

*2 Although the setting is nonexistent on the PLC side, set a virtual value on the GOT side.

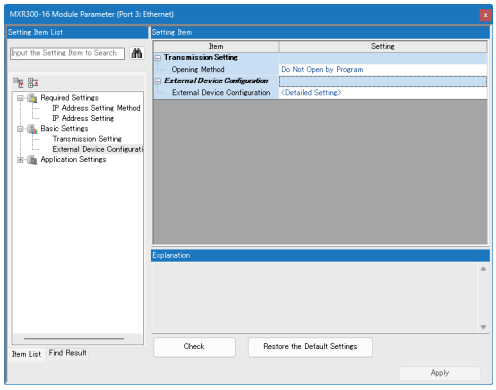
☞ • [Controller Setting] and [Connected Ethernet Controller Setting] of GT Designer3

*3 For the following settings, the setting names are different on the PLC side and the GOT side.

Setting	Setting name		
	PLC side	GOT side	
		Controller setting	Connected Ethernet controller setting
Network number	[Network No.]	[GOT Net No.]	[Net No.]
PLC number	[Station]	[GOT Station]	[Station]

• [Module Parameter] of GX Works3

Built-in Ethernet port settings

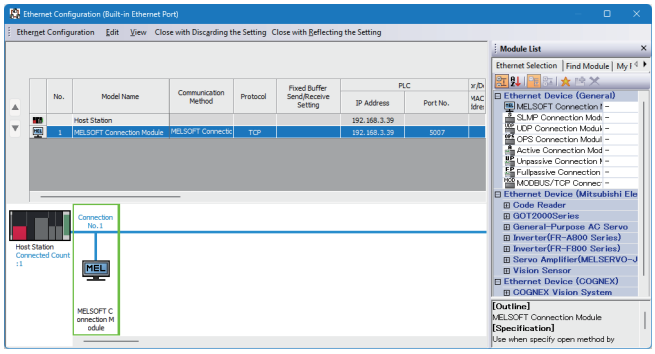


○: Necessary, △: As necessary, —: Not necessary

Item	Setting value	Setting for GOT connection
[IP Address]	(Use default value)	△
[External Device Configuration]	☞ Target device connection configuration settings	○

Target device connection configuration settings

Configure the settings for all the connected GOTs.



Item	Setting value
[Protocol]	(Use default value)
[Communication Method]	MELSOFT connection
[Port No.]*1	—

*1 When the communication format is TCP, the setting is not required.
When the communication format is TLS or DTLS, set a value.

• [Controller Setting] and [Connected Ethernet Controller Setting] of GT Designer3

For the setting method of [Controller Setting] and [Connected Ethernet Controller Setting] in GT Designer3, refer to the following.

☞ Page 66 GOT side settings

Point

[Connected Ethernet Controller Setting] for connection to the Built-in Ethernet port RCPU

The setting items for the network number and station number do not exist on the PLC side.

Set the network number and station number on the GOT side.

When doing so, set a network number not used in the system.

Controller settings

Item	Setting value
[GOT Net No.]	1
[GOT Station]	1
[GOT Communication Port No.]	5001
[Retry]	3 times
[Startup Time]	3 seconds
[Timeout Time]	3 seconds
[Delay Time]	0 ms

GOT Ethernet settings

Item	Setting value
[GOT IP Address]	192.168.3.18
[Subnet Mask]	255.255.255.0
[Default Gateway]	0.0.0.0
[Peripheral S/W Communication Port No.]	5015
[Transparent Port No.]	5014

Connected Ethernet controller settings

Item		Setting value
Ethernet setting No. 1	[Host]	*
	[Net No.]	1*1
	[Station]	2*2
	[Unit Type]	[MX-R(Ethernet)]*3
	[IP Address]	192.168.3.39
	[Port No.]	5007
	[Communication]	TCP*3

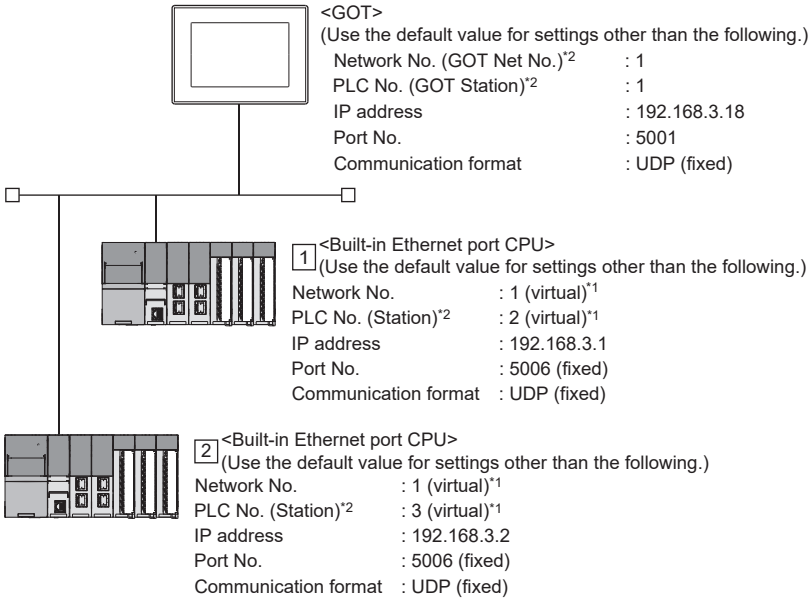
*1 Set the same value as the GOT net number.

*2 Set a value different from the GOT station number.

*3 When [MX-R(Ethernet Encryption)] is set for [Unit Type], set TLS or DTLS.

■Multi-connection with the GOT side communication format set to UDP

- System configuration



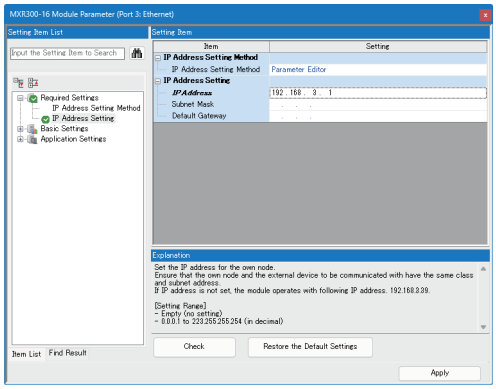
*1 Although the setting is nonexistent on the PLC side, set a virtual value on the GOT side.
☞ • [Controller Setting] and [Connected Ethernet Controller Setting] of GT Designer3

*2 For the following settings, the setting names are different on the PLC side and the GOT side.

Setting	Setting name		
	PLC side	GOT side	
		Controller setting	Connected Ethernet controller setting
Network number	[Network No.]	[GOT Net No.]	[Net No.]
PLC number	[Station]	[GOT Station]	[Station]

- [Module Parameter] of GX Works3

Built-in Ethernet port settings



○: Necessary, △: As necessary, —: Not necessary

Item	Setting value	Setting for GOT connection
[IP Address]	192.168.3.1	○
[External Device Configuration]	—	—

• [Controller Setting] and [Connected Ethernet Controller Setting] of GT Designer3

For the setting method of [Controller Setting] and [Connected Ethernet Controller Setting] in GT Designer3, refer to the following.

☞ Page 66 GOT side settings

Point

[Connected Ethernet Controller Setting] for connection to the built-in Ethernet port CPU
The setting items for the network number and station number do not exist on the PLC side.
Set the network number and station number on the GOT side.
When doing so, set a network number not used in the system.

Controller settings

Item	Setting value
[GOT Net No.]	1
[GOT Station]	1
[GOT Communication Port No.]	5001
[Retry]	3 times
[Startup Time]	3 seconds
[Timeout Time]	3 seconds
[Delay Time]	0 ms

GOT Ethernet settings

Item	Setting value
[GOT IP Address]	192.168.3.18
[Subnet Mask]	255.255.255.0
[Default Gateway]	0.0.0.0
[Peripheral S/W Communication Port No.]	5015
[Transparent Port No.]	5014

Connected Ethernet controller settings

Item		Setting value	
		1	2
Ethernet setting No. 1	[Host]	*	—
	[Net No.]	1*1	1*1
	[Station]	2*2	3*2
	[Unit Type]	MX-R(Ethernet)	MX-R(Ethernet)
	[IP Address]	192.168.3.1	192.168.3.2
	[Port No.]	5006	5006
	[Communication]	UDP	UDP

*1 Set the same value as the GOT net number.
*2 Set a value different from the GOT station number and PLC numbers of other PLCs on the same network.

• Checking the communication state of the built-in Ethernet port CPU

When using Windows Command Prompt

Execute a ping command in Windows Command Prompt.

1) At normal end

C:\>Ping 192.168.3.1

Reply from 192.168.3.1:bytes=32 time<1ms TTL=32

2) At abnormal end

C:\>Ping 192.168.3.1

Request timed out.

In the case of abnormal end

In the case of abnormal end, check the following and execute the ping command again.

Cable connecting condition

Switch settings and network parameter settings

Operation state of PLC CPU (faulty or not)

IP address of the built-in Ethernet port CPU specified by the ping command

Point

Ethernet diagnostics of GX Works3

The Ethernet diagnostics of GX Works3 enables ping tests from the PLC.

For details on the Ethernet diagnostics of GX Works3, refer to the following manual.

📖Manual of the MELSEC MX Controller

■Multi-connection with the GOT side communication format set to TCP, TLS, or DTLS

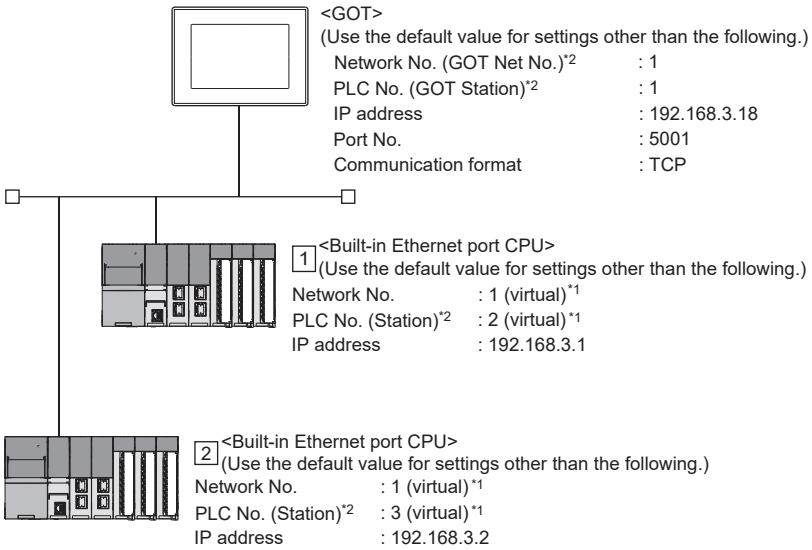
The following shows an example when the communication format is TCP.

Point

For information on encrypted communication settings, refer to the following.

☞ Page 89 Encrypted communication

- System configuration



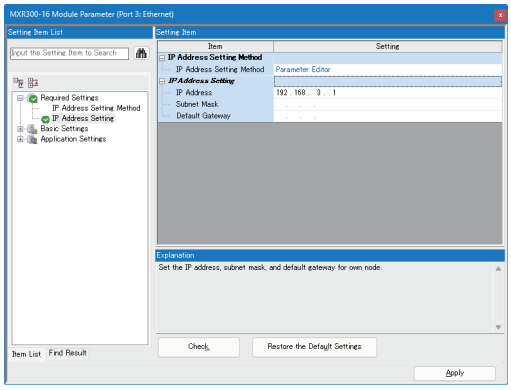
*1 Although the setting is nonexistent on the PLC side, set a virtual value on the GOT side.
☞ • [Controller Setting] and [Connected Ethernet Controller Setting] of GT Designer3

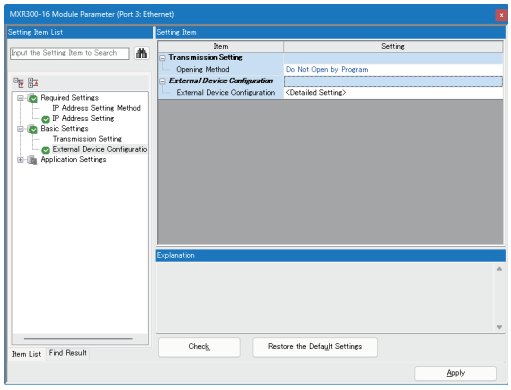
*2 For the following settings, the setting names are different on the PLC side and the GOT side.

Setting	Setting name		
	PLC side	GOT side	
		Controller setting	Connected Ethernet controller setting
Network number	[Network No.]	[GOT Net No.]	[Net No.]
PLC number	[Station No.]	[GOT Station]	[Station No.]

• [Module Parameter] of GX Works3

Built-in Ethernet port settings



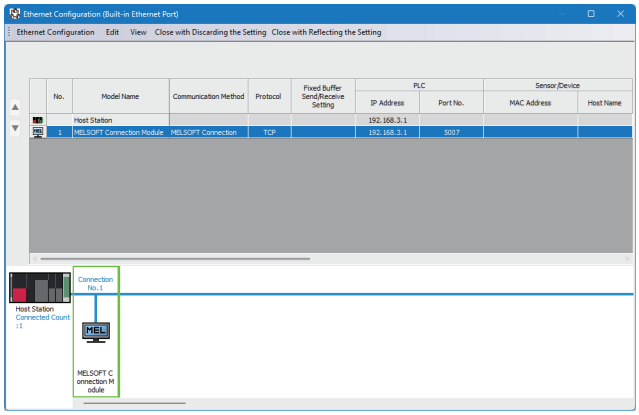


○: Necessary, △: As necessary, —: Not necessary

Item	Setting value	Setting for GOT connection
[IP Address]	192.168.3.1	○
[External Device Configuration]	☞ Target device connection configuration settings	○

Target device connection configuration settings

Configure the settings for all the connected GOTs.



Item	Setting value
[Protocol]	(Use default value)
[Communication Method]	MELSOFT connection
[Port No.][*1]	—

*1 When the communication format is TCP, the setting is not required.
When the communication format is TLS or DTLS, set a value.

• [Controller Setting] and [Connected Ethernet Controller Setting] of GT Designer3

For the setting method of [Controller Setting] and [Connected Ethernet Controller Setting] in GT Designer3, refer to the following.

☞ Page 66 GOT side settings

Point

[Connected Ethernet Controller Setting] for connection to the built-in Ethernet port CPU
The setting items for the network number and station number do not exist on the PLC side.
Set the network number and station number on the GOT side.
When doing so, set a network number not used in the system.

Controller settings

Item	Setting value
[GOT Net No.]	1
[GOT Station]	1
[GOT Communication Port No.]	5001
[Retry]	3 times
[Startup Time]	3 seconds
[Timeout Time]	3 seconds
[Delay Time]	0 ms

GOT Ethernet settings

Item	Setting value
[GOT IP Address]	192.168.3.18
[Subnet Mask]	255.255.255.0
[Default Gateway]	0.0.0.0
[Peripheral S/W Communication Port No.]	5015
[Transparent Port No.]	5014

Connected Ethernet controller settings

Item		Setting value	
		[1]	[2]
Ethernet setting No. 1	[Host]	*	—
	[Net No.]	1*1	1*1
	[Station]	2*2	3*2
	[Unit Type]	MX-R(Ethernet)*3	MX-R(Ethernet)*3
	[IP Address]	192.168.3.1	192.168.3.2
	[Port No.]	5007	5007
	[Communication]	TCP*3	TCP*3

*1 Set the same value as the GOT net number.
*2 Set a value different from the GOT station number.
*3 When [MX-R(Ethernet Encryption)] is set for [Unit Type], set TLS or DTLS.

• Checking the communication state of the built-in Ethernet port CPU

When using Windows Command Prompt

Execute a ping command in Windows Command Prompt.

1) At normal end

C:\>Ping 192.168.3.1

Reply from 192.168.3.1:bytes=32 time<1ms TTL=32

2) At abnormal end

\>Ping 192.168.3.1

Request timed out.

In the case of abnormal end

In the case of abnormal end, check the following and execute the ping command again.

Cable connecting condition

Switch settings and network parameter settings

Operation state of PLC CPU (faulty or not)

IP address of the built-in Ethernet port CPU specified by the ping command

Point

Ethernet diagnostics of GX Works3

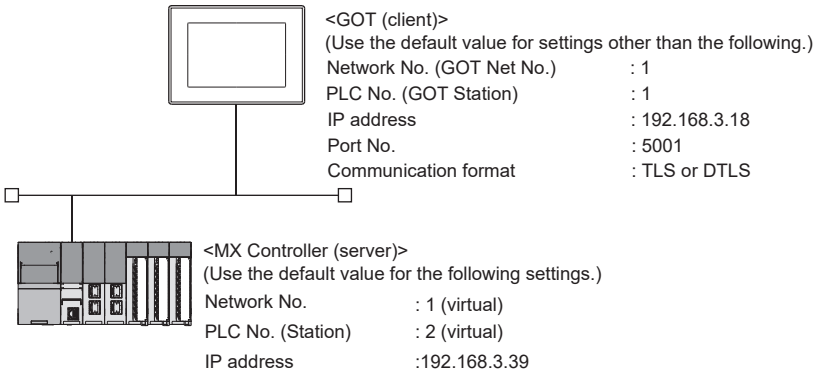
The Ethernet diagnostics of GX Works3 enables ping tests from the PLC.

For details on the Ethernet diagnostics of GX Works3, refer to the following manual.

📖Manual of the MELSEC MX Controller

4.1.5 Encrypted communication

The following describes the encrypted communication.



Client	Server
GOT	MELSEC MX Controller

For the PLC side settings, refer to the following.

☞ Page 79 One-to-one connection with the GOT side communication format set to TCP, TLS, or DTLS
☞ Page 85 Multi-connection with the GOT side communication format set to TCP, TLS, or DTLS

Precautions

■When the faulty monitor CPU station repeatedly turns on and off

When DTLS encrypted communication fails, the GS device of the faulty monitor CPU station turns on and the station monitoring turns on.

After that, if ping test with the controller is successful, the GS device of the faulty monitor CPU station turns off.

If DTLS encrypted communication remains unsuccessful, the GS device of the faulty monitor CPU station repeatedly turns on and off.

In that case, correct the DTLS encrypted communication settings.

■When communication is terminated without notifying the encrypted communication stop

The connection may not be reestablished if the communication is terminated, such as by powering off the GOT or disconnecting the Ethernet cable between the GOT and the controller, without issuing the encrypted communication stop notification to the controller.

To reestablish the connection, perform one of the following operation.

- Restart the controller.
- Set a connection monitoring timer to the encrypted communication port of the controller, and reconnect it after the specified time in seconds has elapsed.

Encrypted communication version

The version of the encrypted communication used by the GOT depends on the MELSEC MX Controller settings.

Version setting of the encrypted communication for the MELSEC MX Controller	Version of the encrypted communication used by the GOT
TLS1.3	TLS1.3
TLS1.3/TLS1.2	TLS1.3
TLS1.2	TLS1.2
DTLS1.2	DTLS1.2
Other than the above	Unsupported

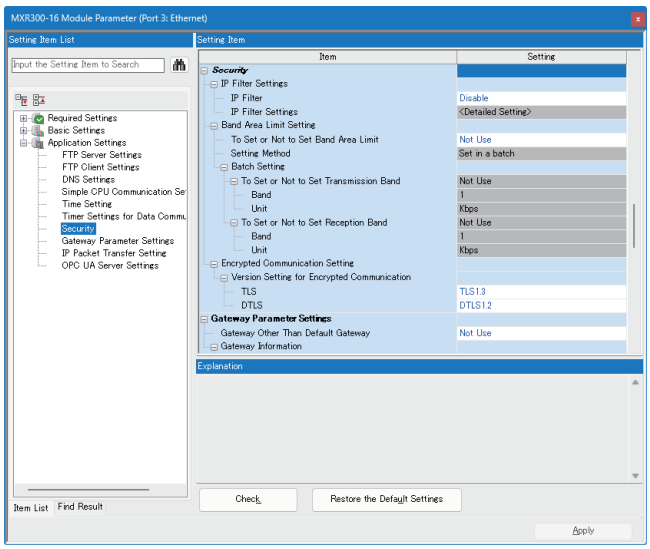
Setting procedure of the encrypted communication

The following shows the setting procedure of the encrypted communication.

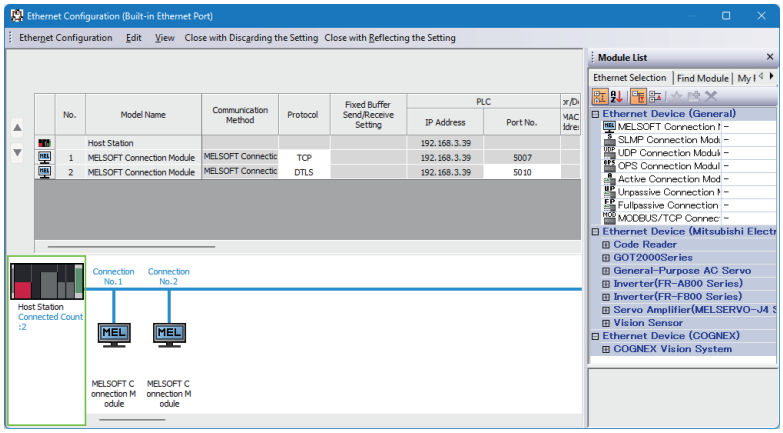
■Settings in GX Works3

Operating procedure

1. Select [Application Setting] → [Security] → [Version Setting for Encrypted Communication] to set the version.



2. Select [Basic Setting] → [External Device Configuration], and select a port number for the encrypted communication port.



3. Select [Project] → [Security] → [Certificate Management] to create a server certificate.

For information on how to create a server certificate, refer to the following.

📖Manual of the MELSEC MX Controller

4. Write a project to the MELSEC MX Controller.

■Settings in GT Designer3 and the GOT

For details on the GT Designer3 and GOT settings, refer to the following.

📖GT Designer3 (GOT3000) Screen Design Manual
📖GOT3000 Series User's Manual (Utility & Maintenance Functions)

Operating procedure

1. Set [MX-R(Ethernet Encryption)] for [Unit Type] in [Connected Ethernet Controller Setting] in GT Designer3.

2. Download the project data in the GOT.

3. Import the server certificate of the MELSEC MX Controller created and saved in GX Works3 from the utility screen.

4.1.6 Connection to the PLC with the authentication function enabled

Logon to the PLC

When the GOT monitors the PLC with the authentication function enabled, logon to the PLC is required.

Touch a special function switch (Destination Authentication) set in the project to display the key window.

Enter the [User Name] and [Password] to log on.

For information on how to set a special function switch, refer to the following.

📖GT Designer3 (GOT3000) Screen Design Manual

Logoff from the PLC

Touch a special function switch (Destination Authentication) set in the project to log off.

Reading and writing of cyclic devices

Cyclic devices communicate using an expansion unit, allowing read and write operations even in the logged-off state.

Precautions

■Creating a project

At GOT startup, the PLC is in logoff state.

The GOT cannot monitor the PLC devices until logon to the PLC from the GOT is complete.

Therefore, create a project assuming that the GOT cannot communicate with the PLC for a certain period.

For information on how to set screens and functions, refer to the following.

📖GT Designer3 (GOT3000) Screen Design Manual

Take the following precautions when creating a project.

Item		Precautions for using the destination authentication function
[Environmental Setting]	[Screen Switching/Window]	Set the GOT internal device as the screen switching device. As well as logoff operation by GOT, reset on the PLC side or other operations can also make the PLC in logoff state. By setting the GOT internal device as the screen switching device, a screen can be switched even in logoff state due to reset on the PLC side or other operations.
	[Language Switching]	Set the GOT internal device as the language switching device. When a PLC device is set, comments cannot be displayed in logoff state.
	[System Information]	Set the GOT internal device as the system information device. When a PLC device is set, a system alarm occurs in logoff state.
	[Security]	It is recommended not to use screen security (level authentication and operator authentication) for connection with the PLC with the destination authentication function enabled.
		When using the level authentication, set the GOT internal device as the security level device.
Screen setting	Screen displayed immediately after GOT startup	Place a special function switch (Destination Authentication) to perform destination authentication for logging on to the PLC. Do not configure the setting to monitor the PLC devices.
	Screen number	Specify the screen number ranges separately for the screen displayed in logoff state and the screen displayed in logon state. Separating the screen number ranges makes screen transition in logoff state easy to consider. Example) Before authentication: 1 to 100, after authentication: 101 or later
	Screen switching control at logoff	Configure the setting using trigger actions or other methods so that the screen switches at logoff to the screen displayed before authentication.
Function that is not recommended for use when connecting with the PLC with the destination authentication function enabled		• Screen security (level authentication and operator authentication) • GOT Mobile function (Destination authentication cannot be performed on a mobile screen.)
Others	Function to specify the conditions other than the trigger device	Specify the trigger indirectly by using trigger actions or other methods. Example) When the PLC device controls the input range for a numerical input
	Function that cannot specify the trigger device	By scripts or device data transfer using the GOT internal device, read and write the PLC device only in logon state. Example) Alarm monitoring of the connected device

■Character code applicable for [User Name].

For logon to the PLC from the GOT, only ASCII code characters can be available for [User Name] in the key window and the [Destination Authentication] window.

When setting [User Name] for the PLC, set [User Name] of the user operating the PLC from the GOT in the ASCII code.

For the list of the ASCII code available in GOT, refer to the following.

📖GT Designer3 (GOT3000) Screen Design Manual

■Access level of the user who can log on

When logging on to the PLC from the GOT, only the users whose access level is [Users] can log on.

Users with the access level [Administrators] or [Developers] cannot log on.

When monitoring the PLC from the GOT, set the users whose access level is [Users] for the PLC.

■Changing the user authentication function settings

The user authentication settings (user name and password) cannot be changed from the GOT.

Use GX Works3 to change the settings registered in the PLC.

■Obtaining and updating CPU errors

The GOT cannot obtain CPU errors unless you log on to the PLC.

To update the CPU error of the system alarm displayed on the GOT, log on to the PLC from the GOT.

4.1.7 Access range for monitoring

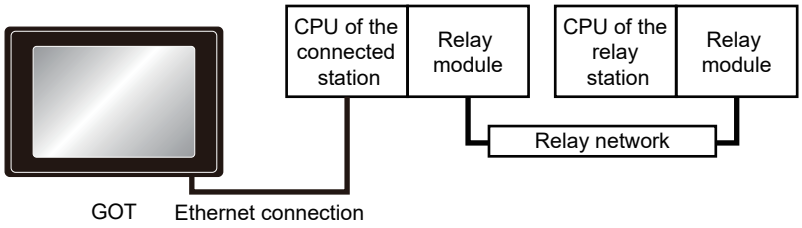
When the GOT is connected to the CPU of the station connected via Ethernet, the range accessible via the CPU is as follows.

Point

• When monitoring other networks (Routing parameter settings)

To monitor other networks, routing parameter settings are necessary.

For the routing parameter settings, refer to the reference manual of the network connected.



○: Accessible, —: Inaccessible

CPU of the connected station	Relay station							
	Relay network	CPU of the relay station						
		MXR	MXF	RCPU	LCPU	QCPU (Q mode)	QSCPU	FX5CPU
MX-R	Ethernet	○*7	—	○*5	○	○*6	○	○*3
	CC-Link IE TSN	○*7	○*7	○*1	—	—	—	○*3
	CC-Link IE Controller Network	○*7	—	○	—	○	○	—
	CC-Link IE Field Network	○*7	—	○	○	○*2	○	○*4

*1 RnCPU, RnENCPU, RnSFCPU, C Controller module (MELSEC iQ-R series), and WinCPU (MELSEC iQ-R series) are supported.
*2 QnUDVCPU, QnUDECPU, QnUDEHCPU, QnUCPU, QnUDCPU, and QnUDHCPU are supported.
*3 FX5U and FX5UC are supported.
*4 FX5U, FX5UC, and FX5UJ are supported.
*5 The C Controller module (MELSEC iQ-R series) is not supported.
*6 The C Controller module (MELSEC-Q series) is not supported.
*7 Regardless of whether encrypted communications are performed, the MELSEC MX Controller can be used as the relay station.
To perform encrypted communication, settings need to be configured.
For details, refer to the following.
• For MELSEC MX Controller (MX-R Model)
☞ Page 90 Setting procedure of the encrypted communication
• For MELSEC MX Controller (MX-F Model)
☞ Page 153 Setting procedure of the encrypted communication

4.2 MELSEC MX Controller (MX-R Model) (Ethernet module connection)

☞ Page 94 Connectable devices
☞ Page 95 System configuration
☞ Page 99 GOT side settings
☞ Page 109 PLC side settings
☞ Page 122 Connection to the PLC with the authentication function enabled
☞ Page 124 Access range for monitoring

4.2.1 Connectable devices

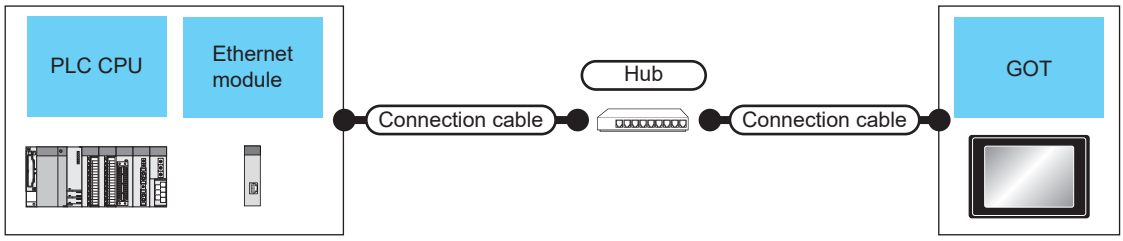
The following table shows the connectable models.

○: Supported, —: Not supported

Controller	Model	Clock	Ethernet module	Connectable model
MELSEC MX Controller (MX-R Model)	MXR300-16 MXR300-32 MXR300-64	○	RJ71EN71 RJ71GN11-T2 RJ71GN11-EIP	GT37 SoftGOT3000
	MXR500-128 MXR500-256	○	RJ71EN71 RJ71GN11-T2 RJ71GN11-EIP	GT37 SoftGOT3000

4.2.2 System configuration

Connection to Ethernet module



For details on the connection cables and the maximum segment length, refer to the following.

☞ Page 96 Connection cable
☞ Page 96 Maximum segment length

For details on the maximum number of connected devices, refer to the following.

☞ Page 96 Maximum number of connected devices

Controller	Ethernet module*1*2	Connection cable	GOT	
			Interface	Model
MELSEC MX Controller (MX-R Model)*3	RJ71EN71	Twisted pair cable	Built-in Ethernet interface of GOT	GT37 SoftGOT3000
			Ethernet interface of personal computer	GT37 SoftGOT3000

*1 For the system configuration of the Ethernet module, refer to the following manual.
📖MELSEC iQ-R Ethernet/CC-Link IE User's Manual (Startup)

*2 Select [RJ71EN71] for [Unit Type] in [Connected Ethernet Controller Setting] in GT Designer3.
For [Connected Ethernet Controller Setting] in GT Designer3, refer to the following.
☞ Page 106 [Connected Ethernet Controller Setting]

*3 When the GOT monitors the PLC with the authentication function enabled, logon to the PLC is required.
For information on how to logon and logoff, refer to the following.
☞ Page 122 Logon to the PLC
☞ Page 122 Logoff from the PLC
The GOT cannot monitor the PLC devices until logon to the PLC from the GOT is complete.
Therefore, create a project assuming that the GOT cannot communicate with the PLC for a certain period.
☞ Page 122 Creating a project

■Connection cable

Use a connection cable that meets the following standards.

Standard	Category
10BASE-T	Shielded twisted pair cable (STP) or unshielded twisted pair cable (UTP) of category 3 or higher
100BASE-TX	Shielded twisted pair cable (STP) or unshielded twisted pair cable (UTP) of category 5 or higher
1000BASE-T	Shielded twisted pair cable (STP) or unshielded twisted pair cable (UTP) of category 5e or higher

The destination device connected with the twisted pair cable varies with the configuration of the Ethernet network system used.

Connect the cable to the Ethernet module, hub, or other system equipment corresponding to the applicable Ethernet network system.

Use cables, connectors, and hubs that meet the IEEE802.3 10BASE-T/100BASE-TX/1000BASE-T standards.

When only one GOT is connected, the GOT can be directly connected to the controller without a hub.

■Maximum segment length

The maximum segment length (length between a hub and a node) is 100 m.

The maximum length depends on the Ethernet equipment used.

The following shows the number of connectable hubs when a repeater hub is used.

- 10BASE-T: Up to 4 for a cascade connection (within 500 m)
- 100BASE-TX: Up to 2 for a cascade connection (within 205 m)
- 1000BASE-T: The number differs depending on the hub to be used.

When switching hubs are used, there is no theoretical limit to the number of cascade connections between switching hubs.

For the limit, contact the switching hub manufacturer.

Precautions

When multiple network devices (including GOTs) are connected in the same segment, the network load increases and the transmission speed between the GOT and PLC may be reduced.

The following actions may improve the communication performance.

- Use a switching hub compatible with 1000BASE-T (1 Gbps) or more.
- Reduce the number of devices monitored by the GOT.

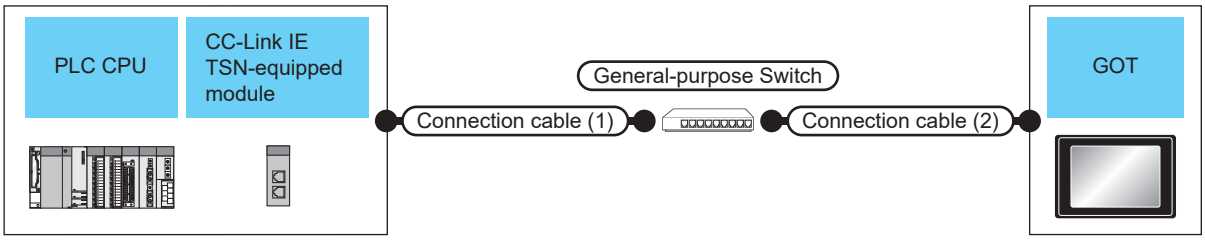
■Maximum number of connected devices

Up to 128 CPU modules can be connected to channels No. 1 to No. 4 of one GOT. (16 or less recommended)

The following shows the number of connectable controllers per GOT channel and the number of GOTs connectable to one controller.

Controller				GOT	
Model		Number of GOTs connectable to one Ethernet module		Model	Number of connectable controllers per GOT channel
PLC CPU	Module	UDP	TCP		
MELSEC MX Controller (MX-R Model)	RJ71EN71	119	17	GT37 SoftGOT3000	119 (16 or less recommended)

Connection to CC-Link IE TSN-equipped module



For details on the connection cables and the maximum segment length, refer to the following.

☞ Page 98 Connection cable
☞ Page 98 Maximum segment length

For details on the maximum number of connected devices, refer to the following.

☞ Page 98 Maximum number of connected devices

Controller	CC-Link IE TSN-equipped module*2*3	Connection cable (1)	External device	Connection cable (2)	GOT	
					Interface	Model
MELSEC MX Controller (MX-R Model)*5	RJ71GN11-T2 RJ71GN11-EIP*4	Twisted pair cable	General-purpose Switch*1	Twisted pair cable	Built-in Ethernet interface of GOT	GT37 SoftGOT3000
					Ethernet interface of personal computer	GT37 SoftGOT3000

*1 For usable General-purpose Switches, refer to the following.
📖MELSEC iQ-R CC-Link IE TSN User's Manual (Startup)
📖MELSEC iQ-R CC-Link IE TSN Plus Master/Local Module User's Manual

*2 For the system configuration of the CC-Link IE TSN-equipped module, refer to the following manuals.
📖MELSEC iQ-R CC-Link IE TSN User's Manual (Startup)
📖MELSEC iQ-R CC-Link IE TSN Plus Master/Local Module User's Manual

*3 Select [RJ71GN11-T2/RD78G(H)] for [Unit Type] in [Connected Ethernet Controller Setting] in GT Designer3.
For [Connected Ethernet Controller Setting] in GT Designer3, refer to the following.
☞ Page 106 [Connected Ethernet Controller Setting]

*4 Connect the cable to the P1 port of the RJ71GN11-EIP.

*5 When the GOT monitors the PLC with the authentication function enabled, logon to the PLC is required.
For information on how to logon and logoff, refer to the following.
☞ Page 122 Logon to the PLC
☞ Page 122 Logoff from the PLC
The GOT cannot monitor the PLC devices until logon to the PLC from the GOT is complete.
Therefore, create a project assuming that the GOT cannot communicate with the PLC for a certain period.
☞ Page 122 Creating a project

■Connection cable

Use a connection cable that meets the following standards.

Standard	Category
100BASE-TX	Shielded twisted pair cable (STP) or unshielded twisted pair cable (UTP) of category 5 or higher
1000BASE-T	Shielded twisted pair cable (STP) or unshielded twisted pair cable (UTP) of category 5e or higher

For the twisted pair cable, use a straight cable.

Use cables and connectors that meet the IEEE802.3 100BASE-TX/1000BASE-T standards.

■Maximum segment length

The maximum segment length (length between a hub and a node) is 100 m.

■Maximum number of connected devices

Up to 128 CPU modules can be connected to channels No. 1 to No. 4 of one GOT. (16 or less recommended)

The following shows the number of connectable controllers per GOT channel and the number of GOTs connectable to one controller.

Controller				GOT	
Model		Number of GOTs connectable to one CC-Link IE TSN-equipped module		Model	Number of connectable controllers per GOT channel
PLC CPU	Module	UDP	TCP		
MELSEC MX Controller (MX-R Model)	RJ71GN11-T2 RJ71GN11-EIP	8	8	GT37 SoftGOT3000	119 (8 or less recommended)

4.2.3 GOT side settings

[GOT Ethernet Setting]

Set the GOT Ethernet interface in GT Designer3.

Item	Description
[GOT IP Address Setting]	Set the IP address of the GOT.
[GOT Ethernet Common Setting]	Set the default gateway and other common items for GOT Ethernet interfaces.
[IP filter Setting]	The GOT allows or blocks access from IP addresses specified in the filtering list.

For details on the setting, refer to the following.

📖GT Designer3 (GOT3000) Screen Design Manual

Set the GT SoftGOT3000 Ethernet interface on the personal computer.

Precautions

Do not use 0 and 255 at the end of an IP address.

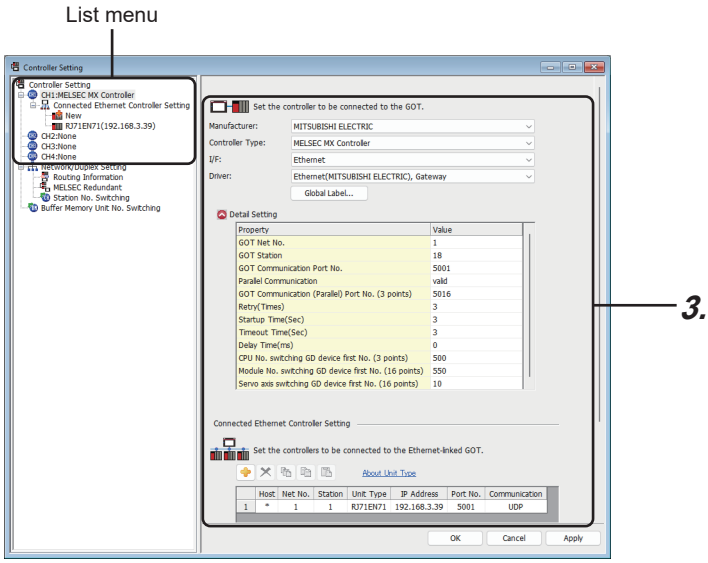
(Numbers of *.*.*.0 and *.*.*.255 are used by the system.)

The GOT may not monitor the controller correctly with the above numbers.

Consult with the administrator of the network before setting an IP address to the GOT.

[Controller Setting]

Set the channel of the connected controller.



Operating procedure

1. Select [Common] → [Controller Setting] from the menu.

2. In the [Controller Setting] window, select the channel number to be used from the list menu.

3. Set the following items.

Item	Description
[Manufacturer]	[MITSUBISHI ELECTRIC]
[Controller Type]	[MELSEC MX Controller]
[I/F]	[Ethernet]
[Driver]	[Ethernet(MITSUBISHI ELECTRIC), Gateway]
[Detail Setting]	Configure the settings according to the usage environment. ☞ Page 101 [Detail Setting]
[Connected Ethernet Controller Setting]	Configure the settings according to the controller to be connected. ☞ Page 106 [Connected Ethernet Controller Setting]

4. When you have completed the settings, click the [OK] button.

Point

The controller settings can be checked in [I/F Communication Setting].

For details, refer to the following.

📖GT Designer3 (GOT3000) Screen Design Manual

■[Detail Setting]

Configure the settings according to the usage environment.

Detail Setting

Property	Value
GOT Net No.	1
GOT Station	18
GOT Communication Port No.	5001
Parallel Communication	valid
GOT Communication (Parallel) Port No. (3 points)	5016
Retry(Times)	3
Startup Time(Sec)	3
Timeout Time(Sec)	3
Delay Time(ms)	0
CPU No. switching GD device first No. (3 points)	500
Module No. switching GD device first No. (16 points)	550
Servo axis switching GD device first No. (16 points)	10

Item	Description	Range
[GOT Net No.]	Set the network number of the GOT.	[1] to [239]
[GOT Station]*1*2	Set the station number of the GOT.	[1] to [120]
[GOT Communication Port No.]	Set the GOT port number for connection with the Ethernet module.	[1024] to [5010], [5014] to [49152], [49171] to [65534]
[Parallel Communication]	Enables or disables the parallel communication. When this setting is enabled, [GOT Communication (Parallel) Port No. (3 points)] can be set. When communicating with multiple devices on a single channel, distributing the communication ports can reduce the communication load.	[valid], [invalid]
[GOT Communication (Parallel) Port No. (3 points)]	Set the GOT port number used for the parallel communication.	• [Parallel Communication] is [invalid]: [0] • [Parallel Communication] is [valid]: [1024] to [5008], [5014] to [49150], [49171] to [65532]
[Retry(Times)]	Set the number of retries to be performed when a communication timeout occurs. When receiving no response after retries, the communication times out.	GOT: [0] times to [5] times GT SoftGOT3000: [0] times to [10] times
[Startup Time]	Set the time period from the GOT startup until the start of communication with the PLC CPU.	[3] seconds to [255] seconds
[Timeout Time]	Set the time period for a communication to time out.	[1] second to [90] seconds
[Delay Time]	Set the delay time for reducing the load of the network and destination PLC.	[0] ms to [10000] ms
[CPU No. switching GD device first No. (3 points)]*3	Set the start device number of the GD devices for CPU number switching. For details, refer to the following. ☞ Page 103 Start device number of the GD devices for CPU number switching	[0] to [65520]
[Module No. switching GD device first No. (16 points)]*3	Set the start device number of the GD devices for module number switching. For details, refer to the following. ☞ Page 104 Start device number of the GD devices for module number switching	[0] to [65520]
[Servo axis switching GD device first No. (16 points)]	Set the start device number of the GD devices for servo axis switching. For details, refer to the following. ☞ Page 105 Start device number of the GD devices for servo axis switching	[0] to [65520]

*1 Set values not set for [Station] in [Connected Ethernet Controller Setting].
☞ Page 106 [Connected Ethernet Controller Setting]

*2 When connecting multiple GOTs in the Ethernet network, set a different value for [GOT Station] for each GOT.

*3 Set values when using MELSEC iQ-R series or MELSEC-Q series mixed.

Point

• Controller settings using the GT37 utility

The controller settings can be changed in [Communication Settings] of the GT37 utility after writing [Communication Settings] of project data to GT37.

For details on the GT37 utility, refer to the following manual.

📖GOT3000 Series User's Manual (Utility & Maintenance Functions)

• Priority of the settings in [Controller Setting]

When the settings are configured in GT Designer3 or in the GT37 utility, the latest settings are effective.

■When connecting multiple GOTs

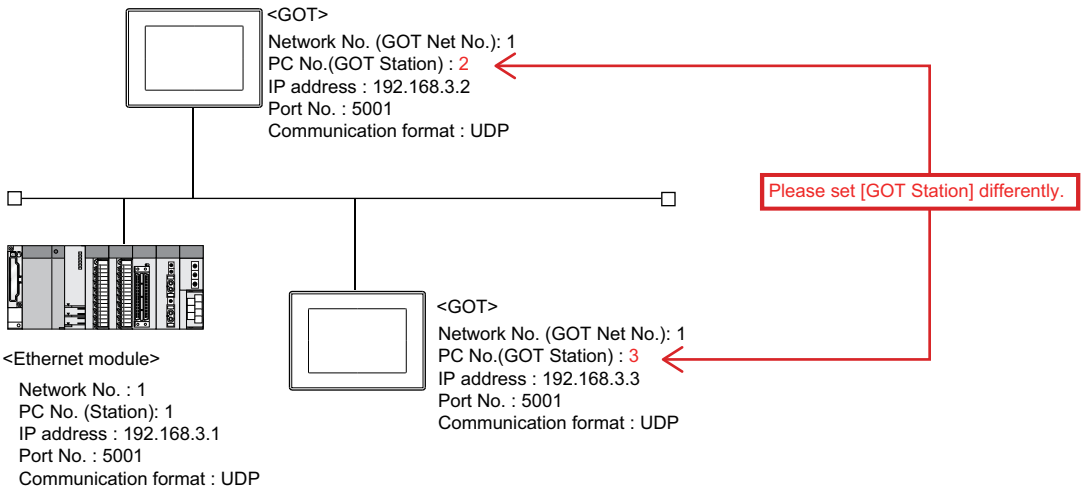
• Settings for [GOT Station]

When connecting multiple GOTs in the Ethernet network, set a different value for [GOT Station] for each GOT.

☞ Page 101 [Detail Setting]

The following shows a system configuration example.

Ex.



• Settings to start up multiple GOTs simultaneously

When connecting multiple GOTs to one built-in Ethernet port CPU, adjust the timing of GOT communication start.

When the communication concentrates on the PLC, the communication between GOT and PLC becomes difficult, and the monitoring by GOT may not start.

As a method for adjusting the timing, communicating one GOT alone first, and then communicating the other GOTs is effective.

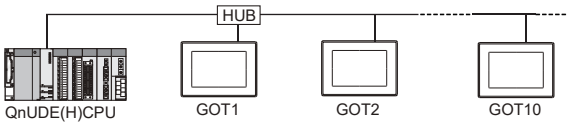
Set the following items on each GOT.

[Startup Time] in [Detail Setting] or [Title Display Time] of [GOT Setup]

[Timeout Time] in [Detail Setting]

The following shows a setting example.

Ex.



Item	GOT1	GOT2	GOT10
Startup Time	3sec (default)	4sec	4sec
Timeout Time	3sec (default)	4sec	4sec

■Start device number of the GD devices for CPU number switching

• Indirect specification of a CPU number

[CPU No.] can be indirectly specified with the GOT internal registers (GD devices) by specifying a value (100 to 102) to [CPU No.] in the device setting dialog in GT Designer3.

Set the start device number of the GD devices to be used in [CPU No. switching GD device first No. (3 points)].

[CPU No.] is specified with three consecutive GD devices, starting from the set device number.

When [500] is set to [CPU No. switching GD device first No. (3 points)], GD500 to GD502 are used to specify [CPU No.] as shown in the following table.

CPU No.	GD device	Setting range
100	GD500	1 to 4 Setting a value outside the range causes a communication timeout error. Specifying a nonexistent CPU number or a CPU number not supporting a multiple CPU system with a device causes a controller error.
101	GD501	
102	GD502	

• Indirect specification of a CPU number on the initially displayed screen

Set [CPU No. switching GD device first No. (3 points)] so that the values of the GD devices are retained and monitored upon the GOT startup.

• Indirect specification of a CPU number for multi-channel connection

If the setting range of [CPU No. switching GD device first No. (3 points)] set for each channel overlaps, the monitoring target CPU number set to each channel is switched simultaneously.

Set [CPU No. switching GD device first No. (3 points)] for each channel so that the setting range does not overlap.

• Indirect specification of a station number and a CPU number for multi-channel connection

When GD10 to GD25 are used to specify the station number of an inverter or non-Mitsubishi temperature controller connected, setting [10] to [CPU No. switching GD device first No. (3 points)] in a different channel switches the monitoring target CPU number and station number of an inverter or non-Mitsubishi temperature controller set to each channel simultaneously.

Set [CPU No. switching GD device first No. (3 points)] so that the setting range does not overlap the station number of an inverter or non-Mitsubishi temperature controller.

■Start device number of the GD devices for module number switching

• Indirect specification of a module number

For connection via a Simple Motion module, [Unit No.] can be specified with the GOT internal registers (GD devices) by specifying a value (100 to 10F) to [Unit No.] in the device setting dialog in GT Designer3.

Set the start device number of the GD devices to be used in [Module No. switching GD device first No. (16 points)].

[Unit No.] is specified with 16 consecutive GD devices, starting from the set device number.

When [550] is set to [Module No. switching GD device first No. (16 points)], GD550 to GD565 are used to specify [Unit No.] as shown in the following table.

Module No.	GD device	Setting range
100	GD550	00 to FF Setting a value outside the above range causes a device range error.
101	GD551	
102	GD552	
103	GD553	
104	GD554	
105	GD555	
106	GD556	
107	GD557	
108	GD558	
109	GD559	
10A	GD560	
10B	GD561	
10C	GD562	
10D	GD563	
10E	GD564	
10F	GD565	

• Indirect specification of a module number on the initially displayed screen

Set [Module No. switching GD device first No. (16 points)] so that the values of the GD devices are retained and monitored upon the GOT startup.

• Indirect specification of a module number for multi-channel connection

If the setting range of [Module No. switching GD device first No. (16 points)] set for each channel overlaps, the module number of the Simple Motion module via the servo amplifier device of each channel is switched simultaneously.

Set [Module No. switching GD device first No. (16 points)] for each channel so that the setting range does not overlap.

• Indirect specification of a station number and a module number for multi-channel connection

When GD10 to GD25 are used to specify the station number of an inverter or non-Mitsubishi temperature controller connected, setting [10] to [Module No. switching GD device first No. (16 points)] switches the module number of the Simple Motion module via the servo amplifier device and the station number of an inverter or non-Mitsubishi temperature controller set to each channel simultaneously.

Set [Module No. switching GD device first No. (16 points)] so that the setting range does not overlap the station number of an inverter or non-Mitsubishi temperature controller.

■Start device number of the GD devices for servo axis switching

• Indirect specification of a servo axis number

For connection via a Motion CPU or Simple Motion module, a servo axis number can be indirectly specified with GOT internal registers (GD devices) by specifying a value (100 to 115) to the axis number of the servo amplifier device.

Set the start device number of the GD devices to be used in [Servo axis switching GD device first No. (16 points)].

Specify a servo axis number with 16 consecutive GD devices, starting the set device number.

When [10] is set to [Servo axis switching GD device first No. (16 points)], GD10 to GD25 are used to specify a servo axis number as shown in the following table.

Servo axis No.	GD device	Setting range
100	GD10	1 to 64 Setting a value outside the above range causes a device range error.
101	GD11	
102	GD12	
103	GD13	
104	GD14	
105	GD15	
106	GD16	
107	GD17	
108	GD18	
109	GD19	
110	GD20	
111	GD21	
112	GD22	
113	GD23	
114	GD24	
115	GD25	

• Indirect specification of a servo axis number on the initially displayed screen

Set [Servo axis switching GD device first No. (16 points)] so that the values of the GD devices are retained and monitored upon the GOT startup.

• Indirect specification of a servo axis number for multi-channel connection

If the setting rage of [Servo axis switching GD device first No. (16 points)] set for each channel overlaps, the axis number of the servo amplifier of each channel is switched simultaneously.

Set [Servo axis switching GD device first No. (16 points)] for each channel so that the setting range does not overlap.

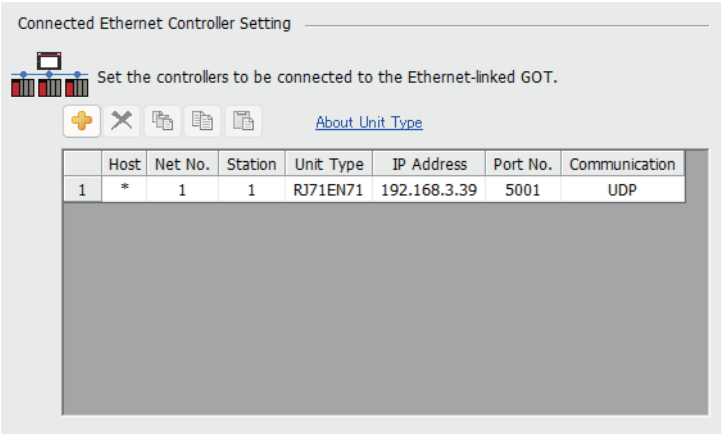
• Indirect specification of a station number and a servo axis number for multi-channel connection

When GD10 to GD25 are used to specify the station number of an inverter or non-Mitsubishi temperature controller connected, setting [10] to [Servo axis switching GD device first No. (16 points)] switches the axis number of the servo amplifier and the station number of an inverter or non-Mitsubishi temperature controller set to each channel simultaneously.

Set [Servo axis switching GD device first No. (16 points)] so that the setting range does not overlap the station number of an inverter or non-Mitsubishi temperature controller.

■[Connected Ethernet Controller Setting]

Set the controller to be connected to the GOT by Ethernet.



Item	Description	Range
[Host]	The host is displayed. It refers to a station that can be connected without setting a station number. The host is indicated with an asterisk (*).	—
[Net No.]	Set the network number of the connected Ethernet equipment.	[1] to [239]
[Station]*2	Set the station number of the connected Ethernet equipment.	☞ Page 106 [Station]
[Unit Type]	Select the model of the connected Ethernet equipment.	☞ Page 106 [Unit Type]
[IP Address]	Set the IP address of the connected Ethernet equipment.	[0.0.0.0] to [255.255.255.255]
[Port No.]*1	Set the port number of the connected Ethernet equipment.	☞ Page 106 [Port No.]
[Communication]	Set the communication format of the connected Ethernet equipment.	[UDP], [TCP]

*1 Match the port number of the CPU and [Port No.] of [Connected Ethernet Controller Setting].

*2 Set values not set for [GOT Station] in [Detail Setting].
☞ Page 101 [Detail Setting]

■[Unit Type]

Select an item for [Unit Type] as shown below.

GOT connection destination	[Unit Type]
Ethernet module (MELSEC iQ-R series)	[RJ71EN71]
CC-Link IE TSN master/local module (MELSEC iQ-R series)	[RJ71GN11-T2/RD78G(H)]

■[Port No.]

The setting range is as follows:

[Unit Type]	[Port No.]	[Communication]
[RJ71EN71], [RJ71GN11-T2/RD78G(H)]	[5001]	[UDP]
	[5002]	[TCP]

■[Station]

The setting range of the station number differs depending on the setting for [Controller Type].

[Unit Type]	Setting range for [Station]
[RJ71EN71]	[1] to [120]
[RJ71GN11-T2/RD78G(H)]	[0] to [120]

■Connection to the PLC via the Ethernet module with [Communication] set to [TCP]

During communication with the PLC via the Ethernet module with [Communication] set to [TCP], using the FA transparent function may change the setting from [TCP] to [UDP] and start communication with the PLC via the Ethernet module with the new setting.

In this case, communication with the PLC via the Ethernet module cannot be executed normally.

Take the following corrective action.

Phenomenon	Cause	Corrective action
Communication fails when using the FA transparent function.	When the multi-channel Ethernet connection is used, [TCP] and [UDP] are used to the same IP address, and then the FA transparent function is used for the channel set to [TCP].	Execute the FA transparent function for the channel set to [UDP].

Point

Changing the host station on the GOT

[Host] can be changed with the utility function of the GOT.

For details on the setting method, refer to the following manual.

GOT3000 Series User's Manual (Utility & Maintenance Functions)

■Routing parameter settings

Up to 64 settings can be configured for [Transfer Net No.].

However, the same number cannot be set in [Transfer Net No.] twice or more (multiple times).

The GOT (host station) can access 64 different networks specified under [Transfer Net No.].

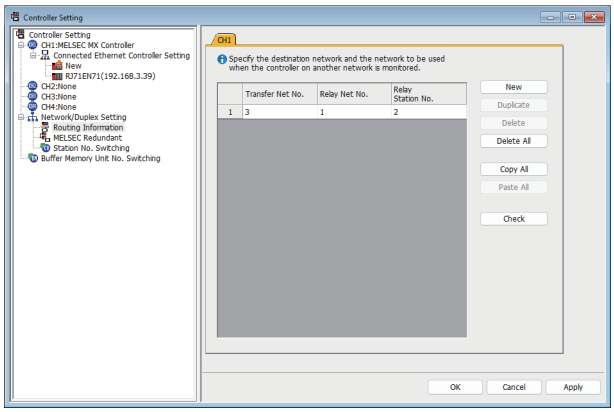
Point

Routing parameter settings

When communicating within the host network, routing parameter settings are not required.

For details on routing parameters, refer to the following manual.

Manual of the MELSEC MX Controller



Item	Range
[Transfer Net No.]	[1] to [239]
[Relay Net No.]*1	[1] to [239]
[Relay Station No.]*1	[0] to [120]

*1 To access a different network via the built-in Ethernet port CPU, set the values of [Net No.] and [Station] that are set in [Connected Ethernet Controller Setting] in GT Designer3.

Point

Routing parameter settings for the relay station

Routing parameter settings are also necessary for the relay station.

For the setting, refer to the following.

☞ Page 109 PLC side settings

Precautions

If the network numbers of the GOT and PLC do not match on the same Ethernet network, monitoring of the PLC is not possible.

To enable monitoring, set the same network number as that of the GOT or connect an Ethernet module to the PLC and configure the routing settings to monitor the PLC as a different network.

When the multi-channel connection can be used, set a different network number for each channel.

4.2.4 PLC side settings

Model		Reference
MELSEC MX Controller (MX-R Model)	MXR300-16 MXR300-32 MXR300-64	☞ Page 109 Connection to Ethernet module (MELSEC iQ-R series) ☞ Page 118 Connection to CC-Link IE TSN-equipped module
	MXR500-128 MXR500-256	

Connection to Ethernet module (MELSEC iQ-R series)

This section describes the settings of the GOT and the Ethernet module (MELSEC iQ-R series) in the system configuration shown below.

☞ Page 109 When the GOT's communication format is UDP
☞ Page 113 When the GOT's communication format is TCP

Point

- Ethernet module (MELSEC iQ-R series)

For details on the Ethernet module (MELSEC iQ-R series), refer to the following manual.

📖MELSEC iQ-R series manuals

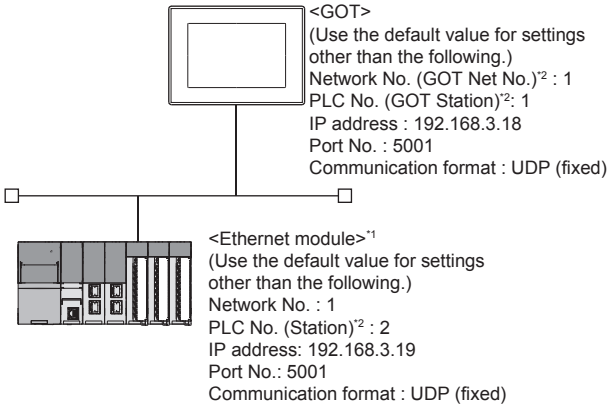
- Connecting multiple GOTs

When connecting multiple GOTs in the Ethernet network, set a different value for [GOT Station] for each GOT.

☞ Page 102 When connecting multiple GOTs

■When the GOT's communication format is UDP

- System configuration



*1 The Ethernet module is mounted on the base unit slot 0.
The Start XY No. of the Ethernet module is set to "0".

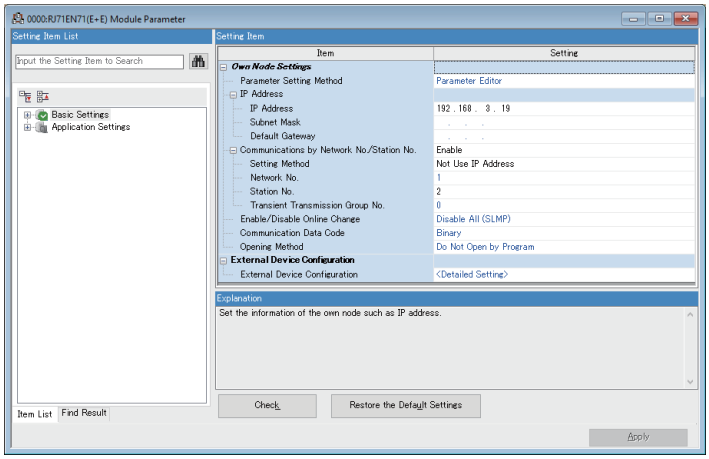
*2 For the following settings, the setting names are different on the PLC side and the GOT side.

Setting	Setting name		
	PLC side	GOT side	
		Controller setting	Connected Ethernet controller setting
Network number	[Network No.]	[GOT Net No.]	[Net No.]
PLC number	[Station No.]	[GOT Station]	[Station No.]

• [Module Parameter] of GX Works3

Module parameters of the Ethernet module

Set [Module Parameter] of the port under [Module information].



○: Necessary, △: As necessary, —: Not necessary

Item	Setting value	Setting for GOT connection
[IP Address]	192.168.3.19	○
[Subnet Mask]	—	—
[Default Gateway]	—	—
[Communications by Network No./Station No.]	Enable	○
[Setting Method]	IP address not used	○
[Network No.]*1	1	○
[Station No.]*2	2	○
[Transient Transmission Group No.]	(Use default value)	—
[Enable/Disable Online Change]		—
[Communication Data Code]		—
[Opening Method]		—
[External Device Configuration]	—	—

*1 Set the same network number as that of the GOT.

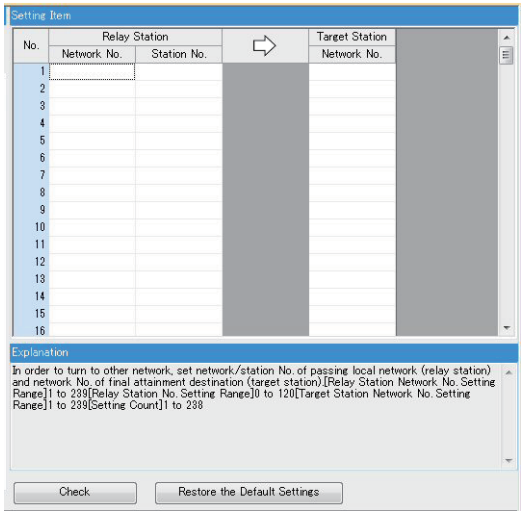
*2 Do not set the same station No. as that of the GOT.

Routing settings

Up to 238 target network numbers can be set.

However, the same number cannot be set twice or more (multiple times).

The GOT (host station) can access networks specified with 238 different target station network numbers.



Item		Range
[Relay Station]	[Network No.]	[1] to [239]
	[Station No.]	[0] to [120]
[Target Station]	[Network No.]	[1] to [239]

Point

Routing parameter settings for the request source

Routing parameter settings are also necessary for the request source GOT.

For the setting, refer to the following.

☞ Page 108 Routing parameter settings

Communication confirmation

The communication status can be checked with the LINK LED on the Ethernet module.

For checking the communication status, refer to the following.

☞ • Checking the communication status of the Ethernet module

• [Controller Setting] and [Connected Ethernet Controller Setting] of GT Designer3

For the setting method of [Controller Setting] and [Connected Ethernet Controller Setting] in GT Designer3, refer to the following.

☞ Page 99 GOT side settings

Controller settings

Item	Setting value
[GOT Net No.]	1
[GOT Station]	1
[GOT Communication Port No.]	5001
[Retry]	3 times
[Startup Time]	3 seconds
[Timeout Time]	3 seconds
[Delay Time]	0 ms

GOT Ethernet settings

Item	Setting value
[GOT IP Address]	192.168.3.18
[Subnet Mask]	255.255.255.0
[Default Gateway]	0.0.0.0
[Peripheral S/W Communication Port No.]	5015
[Transparent Port No.]	5014

Connected Ethernet controller settings

Item		Setting value
Ethernet setting No. 1	[Host]	*
	[Net No.]	1*1
	[Station]	2*2
	[Unit Type]	RJ71EN71
	[IP Address]	192.168.3.19
	[Port No.]	5001
	[Communication]	UDP

*1 Set the same value as the GOT net number.

*2 Set a value different from the GOT station number.

• Checking the communication status of the Ethernet module

When using Windows Command Prompt

Execute a ping command in Windows Command Prompt.

1) At normal end

C:\>Ping 192.168.3.19

Reply from 192.168.3.19:bytes=32 time<1ms TTL=32

2) At abnormal end

C:\>Ping 192.168.3.19

Request timed out.

In the case of abnormal end

In the case of abnormal end, check the following and execute the ping command again.

Cable connecting condition

Switch settings and network parameter settings

Operation state of PLC CPU (faulty or not)

IP address of the Ethernet module specified by the ping command

Point

Ethernet diagnostics of GX Works3

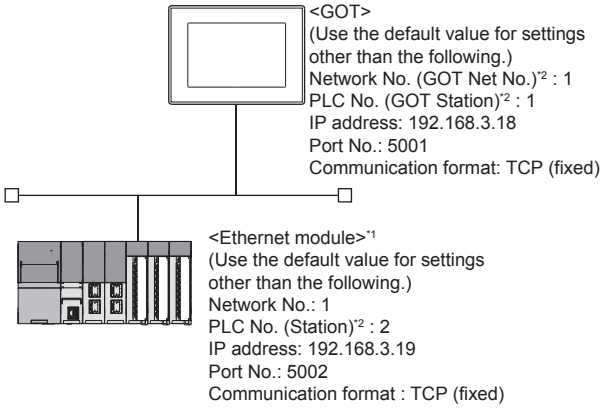
The Ethernet diagnostics of GX Works3 enables ping tests from the PLC.

For details on the Ethernet diagnostics of GX Works3, refer to the following manual.

📖MELSEC iQ-R series manuals

■When the GOT's communication format is TCP

- System configuration



*1 The Ethernet module is mounted on the base unit slot 0.
The Start XY No. of the Ethernet module is set to "0".

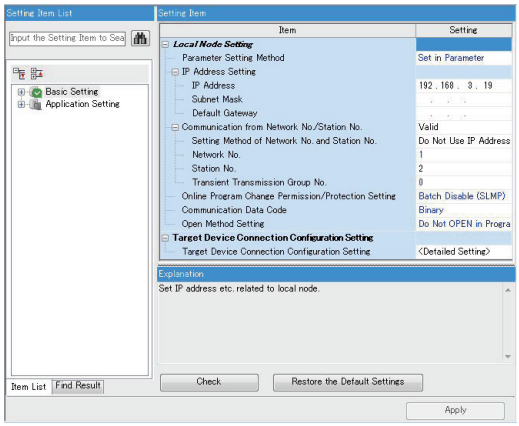
*2 For the following settings, the setting names are different on the PLC side and the GOT side.

Setting	Setting name		
	PLC side	GOT side	
		Controller setting	Connected Ethernet controller setting
Network number	[Network No.]	[GOT Net No.]	[Net No.]
PLC number	[Station No.]	[GOT Station]	[Station No.]

• [Module Parameter] of GX Works3

Module parameters of the Ethernet module

Set [Module Parameter] of the port under [Module information].



○: Necessary, △: As necessary, —: Not necessary

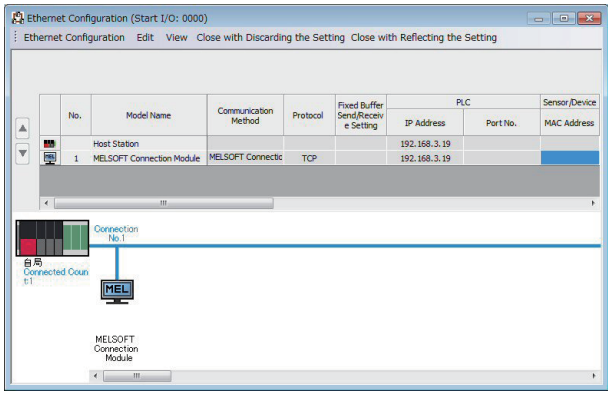
Item	Setting value	Setting for GOT connection
[IP Address]	192.168.3.19	○
[Subnet Mask]	—	—
[Default Gateway]	—	—
[Communications by Network No./Station No.]	Enable	○
[Setting Method]	IP address not used	○
[Network No.][*1]	1	○
[Station No.][*2]	2	○
[Transient Transmission Group No.]	(Use default value)	—
[Enable/Disable Online Change]		—
[Communication Data Code]		—
[Opening Method]		—
[External Device Configuration]	☞ Target device connection configuration settings	○

*1 Set the same network number as that of the GOT.

*2 Do not set the same station No. as that of the GOT.

Target device connection configuration settings

Configure the settings for all the connected GOTs.



Item	Setting value
[Protocol]	(Use default value)
[Communication Method]	MELSOFT connection
[Port No.]	(Use default value)

Point

When changing the module parameter

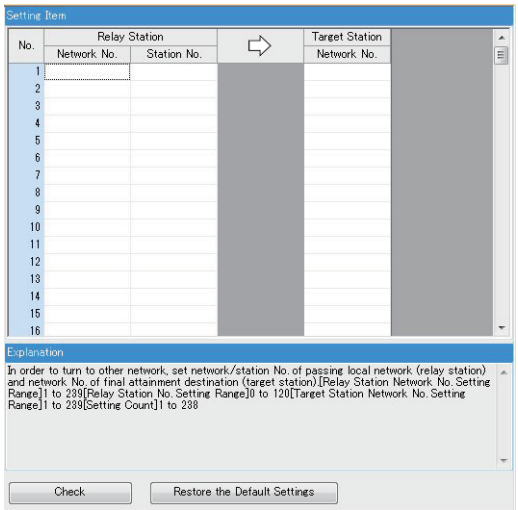
After writing module parameters to the PLC CPU, turn off then on or reset the PLC CPU.

Routing settings

Up to 238 target network numbers can be set.

However, the same number cannot be set twice or more (multiple times).

The GOT (host station) can access networks specified with 238 different target station network numbers.



Item		Range
[Relay Station]	[Network No.]	[1] to [239]
	[Station No.]	[0] to [120]
[Target Station]	[Network No.]	[1] to [239]

Point

Routing parameter settings for the request source

Routing parameter settings are also necessary for the request source GOT.

For the setting, refer to the following.

☞ Page 108 Routing parameter settings

Communication confirmation

The communication status can be checked with the LINK LED on the Ethernet module.

For checking the communication status, refer to the following.

☞ • Checking the communication status of the Ethernet module

• [Controller Setting] and [Connected Ethernet Controller Setting] of GT Designer3

For the setting method of [Controller Setting] and [Connected Ethernet Controller Setting] in GT Designer3, refer to the following.

☞ Page 99 GOT side settings

Controller settings

Item	Setting value
[GOT Net No.]	1
[GOT Station]	1
[GOT Communication Port No.]	5001
[Retry]	3 times
[Startup Time]	3 seconds
[Timeout Time]	3 seconds
[Delay Time]	0 ms

GOT Ethernet settings

Item	Setting value
[GOT IP Address]	192.168.3.18
[Subnet Mask]	255.255.255.0
[Default Gateway]	0.0.0.0
[Peripheral S/W Communication Port No.]	5015
[Transparent Port No.]	5014

Connected Ethernet controller settings

Item		Setting value
Ethernet setting No. 1	[Host]	*
	[Net No.]	1
	[Station No.]	2
	[Unit Type]	RJ71EN71
	[IP Address]	192.168.3.19
	[Port No.]	5002
	[Communication]	TCP

• Checking the communication status of the Ethernet module

When using Windows Command Prompt

Execute a ping command in Windows Command Prompt.

1) At normal end

C:\>Ping 192.168.3.19

Reply from 192.168.3.19:bytes=32 time<1ms TTL=32

2) At abnormal end

C:\>Ping 192.168.3.19

Request timed out.

In the case of abnormal end

In the case of abnormal end, check the following and execute the ping command again.

Mounting condition of the Ethernet module

Cable connecting condition

Switch settings and network parameter settings

Operation state of PLC CPU (faulty or not)

IP address of the Ethernet module specified by the ping command

Point

Ethernet diagnostics of GX Works3

The Ethernet diagnostics of GX Works3 enables ping tests from the PLC.

For details on the Ethernet diagnostics of GX Works3, refer to the following manual.

📖MELSEC iQ-R series manuals

Connection to CC-Link IE TSN-equipped module

This section describes the settings of the GOT and CC-Link IE TSN-equipped module in the system configuration shown below.

Point

- CC-Link IE TSN-equipped module

For details on the CC-Link IE TSN-equipped module, refer to the following manual.

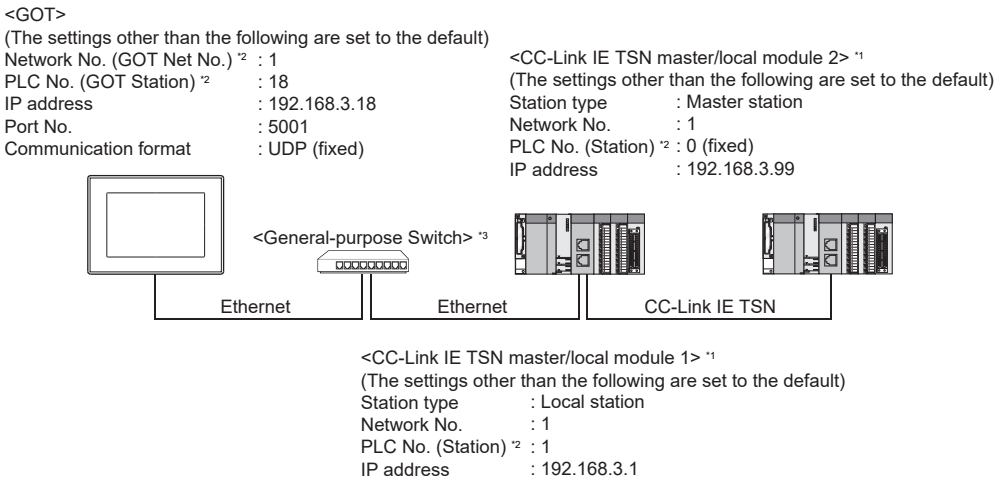
MELSEC iQ-R CC-Link IE TSN User's Manual (Startup)

- Connecting multiple GOTs

When connecting multiple GOTs in the Ethernet network, set a different value for [GOT Station] for each GOT.

Page 102 When connecting multiple GOTs

■System configuration



*1 The CC-Link IE TSN master/local module is mounted on slot 0 of the base unit.
The start XY number of the CC-Link IE TSN master/local module is set to "0".

*2 For the following settings, the setting names are different on the PLC side and the GOT side.

Setting	Setting name		
	PLC side	GOT side	
		Controller setting	Connected Ethernet controller setting
Network number	[Network No.]	[GOT Net No.]	[Net No.]
PLC number	[Station]	[GOT Station]	[Station]

*3 General-purpose Switch is required to connect the GOT and the CC-Link IE TSN master/local module.
For usable General-purpose Switches, refer to the following.
MELSEC iQ-R CC-Link IE TSN User's Manual (Startup)

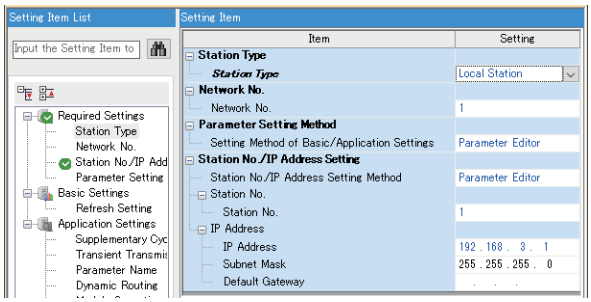
■[Module Parameter] of GX Works3

For details on the settings of the PLC, refer to the following manual.

📖MELSEC iQ-R CC-Link IE TSN User's Manual (Startup)

Ex.

Settings of CC-Link IE TSN master/local module 1



Item	Setting value	
	CC-Link IE TSN master/local module 1	CC-Link IE TSN master/local module 2
[Station Type]	Local station	Master station
[Network No.]	1	1
[Station No.]	1	0
[IP Address]	192.168.3.1	192.168.3.99

■[Controller Setting] and [Connected Ethernet Controller Setting] of GT Designer3

For the setting method of [Controller Setting] and [Connected Ethernet Controller Setting] in GT Designer3, refer to the following.

☞ Page 99 GOT side settings

• Controller settings

Item	Setting value
[GOT Net No.]	1
[GOT Station]	18
[GOT Communication Port No.]	5001
[Retry]	3 times
[Startup Time]	3 seconds
[Timeout Time]	3 seconds
[Delay Time]	0 ms

• GOT Ethernet settings

Item	Setting value
[GOT IP Address]	192.168.3.18
[Subnet Mask]	255.255.255.0
[Default Gateway]	0.0.0.0
[Peripheral S/W Communication Port No.]	5015
[Transparent Port No.]	5014

• Connected Ethernet controller settings

Item		Setting value
Ethernet setting No. 1	[Host]	*
	[Net No.]	1*1
	[Station]	1*2
	[Unit Type]	RJ71GN11-T2/RD78G(H)
	[IP Address]	192.168.3.1
	[Port No.]*3	5001
	[Communication]*3	UDP

*1 Set the same value as the GOT net number.
*2 Set a value different from the GOT station number.
*3 The following settings can also be configured for [Port No.] and [Communication].
[Port No.]: 5002
[Communication]: TCP

■Checking the communication status of the CC-Link IE TSN-equipped module

• When using Windows Command Prompt

Execute a ping command in Windows Command Prompt.

1) At normal end

C:\>Ping 192.168.3.1

Reply from 192.168.3.1:bytes=32 time<1ms TTL=32

2) At abnormal end

C:\>Ping 192.168.3.1

Request timed out.

• In the case of abnormal end

In the case of abnormal end, check the following and execute the ping command again.

Connection status of the CC-Link IE TSN-equipped module

Cable connecting condition

Switch settings and network parameter settings

Operation state of PLC CPU (faulty or not)

IP address of the CC-Link IE TSN-equipped module specified by the ping command

Point

Ethernet diagnostics of GX Works3

The Ethernet diagnostics of GX Works3 enables ping tests from the PLC.

For details on the Ethernet diagnostics of GX Works3, refer to the following manual.

📖MELSEC iQ-R series manuals

4.2.5 Connection to the PLC with the authentication function enabled

Logon to the PLC

When the GOT monitors the PLC with the authentication function enabled, logon to the PLC is required.

Touch a special function switch (Destination Authentication) set in the project to display the key window.

Enter the [User Name] and [Password] to log on.

For information on how to set a special function switch, refer to the following.

📖GT Designer3 (GOT3000) Screen Design Manual

Logoff from the PLC

Touch a special function switch (Destination Authentication) set in the project to log off.

Reading and writing of cyclic devices

Cyclic devices communicate using an expansion unit, allowing read and write operations even in the logged-off state.

Precautions

■Creating a project

At GOT startup, the PLC is in logoff state.

The GOT cannot monitor the PLC devices until logon to the PLC from the GOT is complete.

Therefore, create a project assuming that the GOT cannot communicate with the PLC for a certain period.

For information on how to set screens and functions, refer to the following.

📖GT Designer3 (GOT3000) Screen Design Manual

Take the following precautions when creating a project.

Item		Precautions for using the destination authentication function
[Environmental Setting]	[Screen Switching/Window]	Set the GOT internal device as the screen switching device. As well as logoff operation by GOT, reset on the PLC side or other operations can also make the PLC in logoff state. By setting the GOT internal device as the screen switching device, a screen can be switched even in logoff state due to reset on the PLC side or other operations.
	[Language Switching]	Set the GOT internal device as the language switching device. When a PLC device is set, comments cannot be displayed in logoff state.
	[System Information]	Set the GOT internal device as the system information device. When a PLC device is set, a system alarm occurs in logoff state.
	[Security]	It is recommended not to use screen security (level authentication and operator authentication) for connection with the PLC with the destination authentication function enabled.
		When using the level authentication, set the GOT internal device as the security level device.
Screen setting	Screen displayed immediately after GOT startup	Place a special function switch (Destination Authentication) to perform destination authentication for logging on to the PLC. Do not configure the setting to monitor the PLC devices.
	Screen number	Specify the screen number ranges separately for the screen displayed in logoff state and the screen displayed in logon state. Separating the screen number ranges makes screen transition in logoff state easy to consider. Example) Before authentication: 1 to 100, after authentication: 101 or later
	Screen switching control at logoff	Configure the setting using trigger actions or other methods so that the screen switches at logoff to the screen displayed before authentication.
Function that is not recommended for use when connecting with the PLC with the destination authentication function enabled		• Screen security (level authentication and operator authentication) • GOT Mobile function (Destination authentication cannot be performed on a mobile screen.)
Others	Function to specify the conditions other than the trigger device	Specify the trigger indirectly by using trigger actions or other methods. Example) When the PLC device controls the input range for a numerical input
	Function that cannot specify the trigger device	By scripts or device data transfer using the GOT internal device, read and write the PLC device only in logon state. Example) Alarm monitoring of the connected device

■Character code applicable for [User Name].

For logon to the PLC from the GOT, only ASCII code characters can be available for [User Name] in the key window and the [Destination Authentication] window.

When setting [User Name] for the PLC, set [User Name] of the user operating the PLC from the GOT in the ASCII code.

For the list of the ASCII code available in GOT, refer to the following.

📖GT Designer3 (GOT3000) Screen Design Manual

■Access level of the user who can log on

When logging on to the PLC from the GOT, only the users whose access level is [Users] can log on.

Users with the access level [Administrators] or [Developers] cannot log on.

When monitoring the PLC from the GOT, set the users whose access level is [Users] for the PLC.

■Changing the user authentication function settings

The user authentication settings (user name and password) cannot be changed from the GOT.

Use GX Works3 to change the settings registered in the PLC.

■Obtaining and updating CPU errors

The GOT cannot obtain CPU errors unless you log on to the PLC.

To update the CPU error of the system alarm displayed on the GOT, log on to the PLC from the GOT.

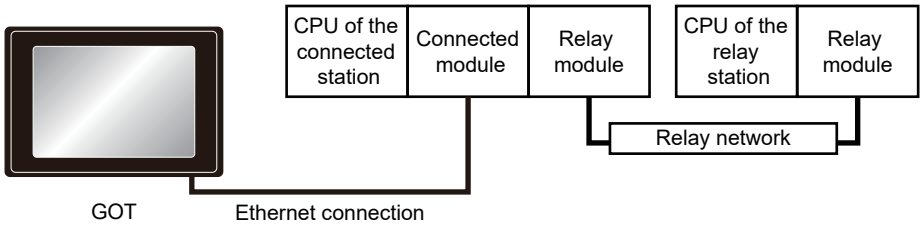
4.2.6 Access range for monitoring

When the GOT is connected to the CPU of the station connected via Ethernet, the range accessible via the CPU is as follows.

Point

- When monitoring other networks (Routing parameter settings)

To monitor other networks, routing parameter settings are necessary.
For the routing parameter settings, refer to the reference manual of the network connected.



○: Accessible, —: Inaccessible

CPU of the connected station	Connected module	Relay station						
		Relay network	CPU of the relay station					
			MXR	RCPU	LCPU	QCPU (Q mode)	QSCPU	FX5CPU
MX-R	☞ Page 94 Connectable devices	Ethernet	○*7	○*5	○	○*6	○	○*3
		CC-Link IE TSN	○*7	○*1	—	—	—	○*3
		CC-Link IE Field Network	○*7	○	○	○*2	○	○*4
RJ72GF15-T2	☞ Page 94 Connectable devices	CC-Link IE Field Network	○*7	○	○	○*2	○	○*4

*1 RnCPU, RnENCPU, RnSFCPU, and MELSECWinCPU (MELSEC iQ-R series) are supported.
*2 QnUDVCPU, QnUDECPU, QnUDEHCPU, QnUCPU, QnUDCPU, and QnUDHCPU are supported.
*3 FX5U and FX5UC are supported.
*4 FX5U, FX5UC, and FX5UJ are supported.
*5 The C Controller module (MELSEC iQ-R series) is not supported.
*6 The C Controller module (MELSEC-Q series) is not supported.
*7 Regardless of whether encrypted communications are performed, the MELSEC MX Controller can be used as the relay station.
To perform encrypted communication, settings need to be configured.
For details, refer to the following.
- For MELSEC MX Controller (MX-R Model)
☞ Page 90 Setting procedure of the encrypted communication
- For MELSEC MX Controller (MX-F Model)
☞ Page 153 Setting procedure of the encrypted communication

4.3 MELSEC MX Controller (MX-F Model) (Built-in Ethernet port connection)

☞ Page 125 Connectable devices
☞ Page 126 System configuration
☞ Page 129 GOT side settings
☞ Page 139 PLC side settings
☞ Page 152 Encrypted communication
☞ Page 155 Connection to the PLC with the authentication function enabled
☞ Page 157 Access range for monitoring

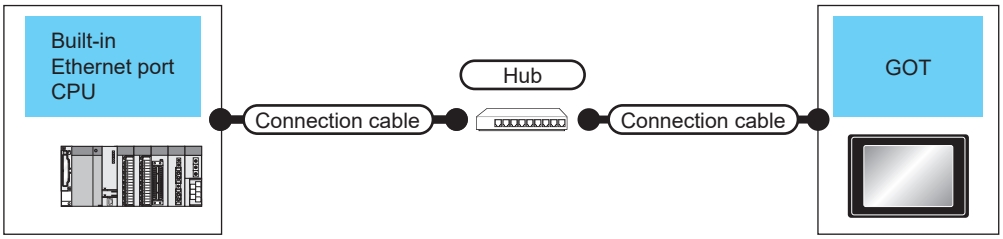
4.3.1 Connectable devices

The following table shows the connectable models.

○: Supported, —: Not supported

Controller	Model	Clock	Connectable model
MELSEC MX Controller (MX-F Model)	MXF100-8-N32 MXF100-8-P32 MXF100-16-N32 MXF100-16-P32	○	GT37 SoftGOT3000

4.3.2 System configuration



For details on the connection cables and the maximum segment length, refer to the following.

☞ Page 127 Connection cable
☞ Page 127 Maximum segment length

For details on the maximum number of connected devices, refer to the following.

☞ Page 127 Maximum number of connected devices

Controller	Connection cable	GOT	
		Interface	Model
MELSEC MX Controller (MX-F Model)*1*2*3*4	Twisted pair cable	Built-in Ethernet interface of GOT	GT37 SoftGOT3000
		Ethernet interface of personal computer	GT37 SoftGOT3000

*1 For the system configuration of the built-in Ethernet port CPU, refer to the manual of the PLC to be used.

*2 For [Unit Type] to be selected in [Connected Ethernet Controller Setting] in GT Designer3, refer to the following.
☞ Page 136 [Connected Ethernet Controller Setting]

*3 Connect to the Ethernet port (P3) of the MELSEC MX Controller.

*4 When the GOT monitors the PLC with the authentication function enabled, logon to the PLC is required.
For information on how to logon and logoff, refer to the following.
☞ Page 155 Logon to the PLC
☞ Page 155 Logoff from the PLC
The GOT cannot monitor the PLC devices until logon to the PLC from the GOT is complete.
Therefore, create a project assuming that the GOT cannot communicate with the PLC for a certain period.
☞ Page 155 Creating a project

Connection cable

Use a connection cable that meets the following standards.

Standard	Category
10BASE-T	Shielded twisted pair cable (STP) of category 3 or higher
100BASE-TX	Shielded twisted pair cable (STP) of category 5 or higher
1000BASE-T	Shielded twisted pair cable (STP) or unshielded twisted pair cable (UTP) of category 5e or higher

The destination device connected with the twisted pair cable varies with the configuration of the Ethernet network system used.

Connect the cable to the Ethernet module, hub, or other system equipment corresponding to the applicable Ethernet network system.

Use cables, connectors, and hubs that meet the IEEE802.3 10BASE-T/100BASE-TX/1000BASE-T standards.

When only one GOT is connected, the GOT can be directly connected to the controller without a hub.

Maximum segment length

The maximum segment length (length between a hub and a node) is 100 m.

The maximum length depends on the Ethernet equipment used.

The following shows the number of connectable hubs when a repeater hub is used.

- 10BASE-T: Up to 4 for a cascade connection (within 500 m)
- 100BASE-TX: Up to 2 for a cascade connection (within 205 m)
- 1000BASE-T: The number differs depending on the hub to be used.

When switching hubs are used, there is no theoretical limit to the number of cascade connections between switching hubs.

For the limit, contact the switching hub manufacturer.

Precautions

When multiple network devices (including GOTs) are connected in the same segment, the network load increases and the transmission speed between the GOT and PLC may be reduced.

The following actions may improve the communication performance.

- Use a switching hub compatible with 1000BASE-T (1 Gbps) or more.
- Reduce the number of devices monitored by the GOT.

Maximum number of connected devices

Up to 128 CPU modules can be connected to channels No. 1 to No. 4 of one GOT. (16 or less recommended)

The following shows the number of connectable controllers per GOT channel and the number of GOTs connectable to one controller.

■When [Unit Type] in [Connected Ethernet Controller Setting] is [MX-F(Ethernet)] or [MX-F(Ethernet Encryption)]

Controller			GOT	
Model	Number of GOTs connectable to one PLC		Model	Number of connectable controllers per GOT channel
	UDP	TCP+TLS+DTLS		
MELSEC MX Controller (MX-F Model)	120	32	GT37 SoftGOT3000	119 (16 or less recommended)

■When [Unit Type] in [Connected Ethernet Controller Setting] is [MX-F(CC-Link IE TSN)]

Controller			GOT	
Model	Number of GOTs connectable to one PLC		Model	Number of connectable controllers per GOT channel
	UDP	TCP		
MELSEC MX Controller (MX-F Model)	8	8	GT37 SoftGOT3000	119 (8 or less recommended)

Connection to the built-in Ethernet port of the built-in Ethernet port CPU

Connect the GOT after turning on the network equipment such as the built-in Ethernet port CPU or hub to enable communications.

If the GOT cannot communicate with the built-in Ethernet port CPU, a communication error may occur on the GOT.

4.3.3 GOT side settings

[GOT Ethernet Setting]

Set the GOT Ethernet interface in GT Designer3.

Item	Description
[GOT IP Address Setting]	Set the IP address of the GOT.
[GOT Ethernet Common Setting]	Set the default gateway and other common items for GOT Ethernet interfaces.
[IP filter Setting]	The GOT allows or blocks access from IP addresses specified in the filtering list.

For details on the setting, refer to the following.

📖GT Designer3 (GOT3000) Screen Design Manual

Set the GT SoftGOT3000 Ethernet interface on the personal computer.

Precautions

Do not use 0 and 255 at the end of an IP address.

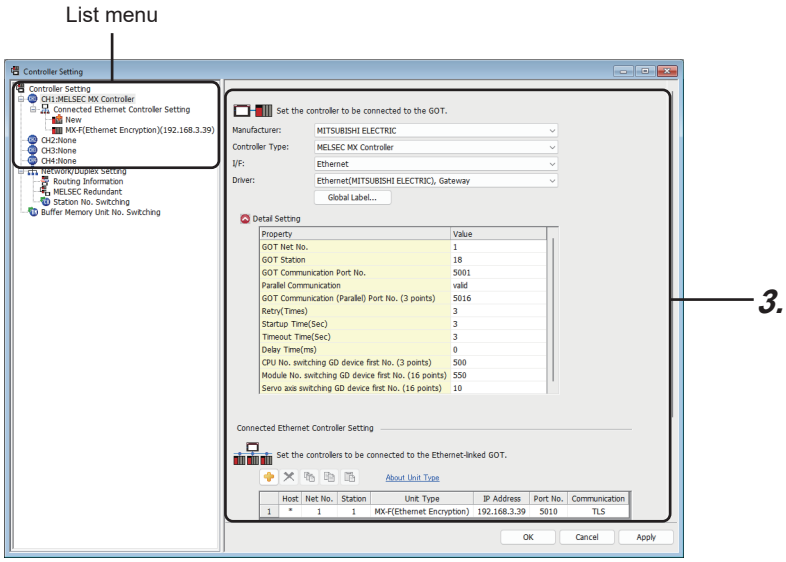
(Numbers of *.*.*.0 and *.*.*.255 are used by the system.)

The GOT may not monitor the controller correctly with the above numbers.

Consult with the administrator of the network before setting an IP address to the GOT.

[Controller Setting]

Set the channel of the connected controller.



Operating procedure

1. Select [Common] → [Controller Setting] from the menu.

2. In the [Controller Setting] window, select the channel number to be used from the list menu.

3. Set the following items.

Item	Description
[Manufacturer]	[MITSUBISHI ELECTRIC]
[Controller Type]	[MELSEC MX Controller]
[I/F]	[Ethernet]
[Driver]	[Ethernet(MITSUBISHI ELECTRIC), Gateway]
[Detail Setting]	Configure the settings according to the usage environment. ☞ Page 131 [Detail Setting]
[Connected Ethernet Controller Setting]	Configure the settings according to the controller to be connected. ☞ Page 136 [Connected Ethernet Controller Setting]

4. When you have completed the settings, click the [OK] button.

Point

The controller settings can be checked in [I/F Communication Setting].
For details, refer to the following.
📖GT Designer3 (GOT3000) Screen Design Manual

■[Detail Setting]

Configure the settings according to the usage environment.

Detail Setting

Property	Value
GOT Net No.	1
GOT Station	18
GOT Communication Port No.	5001
Parallel Communication	valid
GOT Communication (Parallel) Port No. (3 points)	5016
Retry(Times)	3
Startup Time(Sec)	3
Timeout Time(Sec)	3
Delay Time(ms)	0
CPU No. switching GD device first No. (3 points)	500
Module No. switching GD device first No. (16 points)	550
Servo axis switching GD device first No. (16 points)	10

Item	Description	Range
[GOT Net No.]	Set the network number of the GOT.	[1] to [239]
[GOT Station][*1*2]	Set the station number of the GOT.	[1] to [120]
[GOT Communication Port No.]	Set the GOT port number for connection with the Ethernet module.	[1024] to [5010], [5014] to [49152], [49171] to [65534]
[Parallel Communication]	Enables or disables the parallel communication. When this setting is enabled, [GOT Communication (Parallel) Port No. (3 points)] can be set. When communicating with multiple devices on a single channel, distributing the communication ports can reduce the communication load.	[valid], [invalid]
[GOT Communication (Parallel) Port No. (3 points)]	Set the GOT port number used for the parallel communication.	• [Parallel Communication] is [invalid]: [0] • [Parallel Communication] is [valid]: [1024] to [5008], [5014] to [49150], [49171] to [65532]
[Retry(Times)]	Set the number of retries to be performed when a communication timeout occurs. When receiving no response after retries, the communication times out.	GOT: [0] times to [5] times GT SoftGOT3000: [0] times to [10] times
[Startup Time]	Set the time period from the GOT startup until the start of communication with the PLC CPU.	[3] seconds to [255] seconds
[Timeout Time]	Set the time period for a communication to time out.	[1] second to [90] seconds
[Delay Time]	Set the delay time for reducing the load of the network and destination PLC.	[0] ms to [10000] ms
[CPU No. switching GD device first No. (3 points)][*3]	Set the start device number of the GD devices for CPU number switching. For details, refer to the following. ☞ Page 133 Start device number of the GD devices for CPU number switching	[0] to [65520]
[Module No. switching GD device first No. (16 points)][*3]	Set the start device number of the GD devices for module number switching. For details, refer to the following. ☞ Page 134 Start device number of the GD devices for module number switching	[0] to [65520]
[Servo axis switching GD device first No. (16 points)]	Set the start device number of the GD devices for servo axis switching. For details, refer to the following. ☞ Page 135 Start device number of the GD devices for servo axis switching	[0] to [65520]

*1 Set values not set for [Station] in [Connected Ethernet Controller Setting].
☞ Page 136 [Connected Ethernet Controller Setting]

*2 When connecting multiple GOTs in the Ethernet network, set a different value for [GOT Station] for each GOT.

*3 Set values when using MELSEC iQ-R series or MELSEC-Q series mixed.

Point

• Controller settings using the GT37 utility

The controller settings can be changed in [Communication Settings] of the GT37 utility after writing [Communication Settings] of project data to GT37.

For details on the GT37 utility, refer to the following manual.

📖GOT3000 Series User's Manual (Utility & Maintenance Functions)

• Priority of the settings in [Controller Setting]

When the settings are configured in GT Designer3 or in the GT37 utility, the latest settings are effective.

■When connecting multiple GOTs

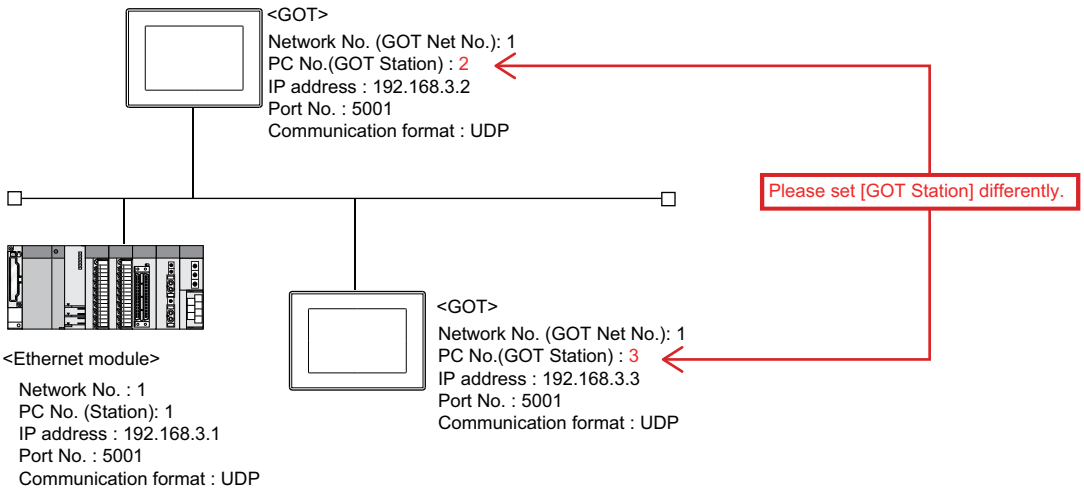
• Settings for [GOT Station]

When connecting multiple GOTs in the Ethernet network, set a different value for [GOT Station] for each GOT.

☞ Page 131 [Detail Setting]

The following shows a system configuration example.

Ex.



• Settings to start up multiple GOTs simultaneously

When connecting multiple GOTs to one built-in Ethernet port CPU, adjust the timing of GOT communication start.

When the communication concentrates on the PLC, the communication between GOT and PLC becomes difficult, and the monitoring by GOT may not start.

As a method for adjusting the timing, communicating one GOT alone first, and then communicating the other GOTs is effective.

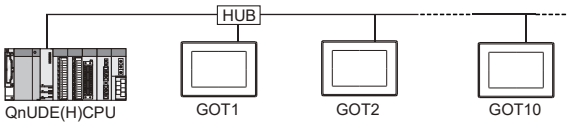
Set the following items on each GOT.

[Startup Time] in [Detail Setting] or [Title Display Time] of [GOT Setup]

[Timeout Time] in [Detail Setting]

The following shows a setting example.

Ex.



Item	GOT1	GOT2	GOT10
Startup Time	3sec (default)	4sec	4sec
Timeout Time	3sec (default)	4sec	4sec

■Start device number of the GD devices for CPU number switching

• Indirect specification of a CPU number

[CPU No.] can be indirectly specified with the GOT internal registers (GD devices) by specifying a value (100 to 102) to [CPU No.] in the device setting dialog in GT Designer3.

Set the start device number of the GD devices to be used in [CPU No. switching GD device first No. (3 points)].

[CPU No.] is specified with three consecutive GD devices, starting from the set device number.

When [500] is set to [CPU No. switching GD device first No. (3 points)], GD500 to GD502 are used to specify [CPU No.] as shown in the following table.

CPU No.	GD device	Setting range
100	GD500	1 to 4 Setting a value outside the range causes a communication timeout error. Specifying a nonexistent CPU number or a CPU number not supporting a multiple CPU system with a device causes a controller error.
101	GD501	
102	GD502	

• Indirect specification of a CPU number on the initially displayed screen

Set [CPU No. switching GD device first No. (3 points)] so that the values of the GD devices are retained and monitored upon the GOT startup.

• Indirect specification of a CPU number for multi-channel connection

If the setting range of [CPU No. switching GD device first No. (3 points)] set for each channel overlaps, the monitoring target CPU number set to each channel is switched simultaneously.

Set [CPU No. switching GD device first No. (3 points)] for each channel so that the setting range does not overlap.

• Indirect specification of a station number and a CPU number for multi-channel connection

When GD10 to GD25 are used to specify the station number of an inverter or non-Mitsubishi temperature controller connected, setting [10] to [CPU No. switching GD device first No. (3 points)] in a different channel switches the monitoring target CPU number and station number of an inverter or non-Mitsubishi temperature controller set to each channel simultaneously.

Set [CPU No. switching GD device first No. (3 points)] so that the setting range does not overlap the station number of an inverter or non-Mitsubishi temperature controller.

■Start device number of the GD devices for module number switching

• Indirect specification of a module number

For connection via a Simple Motion module, [Unit No.] can be specified with the GOT internal registers (GD devices) by specifying a value (100 to 10F) to [Unit No.] in the device setting dialog in GT Designer3.

Set the start device number of the GD devices to be used in [Module No. switching GD device first No. (16 points)].

[Unit No.] is specified with 16 consecutive GD devices, starting from the set device number.

When [550] is set to [Module No. switching GD device first No. (16 points)], GD550 to GD565 are used to specify [Unit No.] as shown in the following table.

Module No.	GD device	Setting range
100	GD550	01 to 10 Setting a value outside the above range causes a device range error.
101	GD551	
102	GD552	
103	GD553	
104	GD554	
105	GD555	
106	GD556	
107	GD557	
108	GD558	
109	GD559	
10A	GD560	
10B	GD561	
10C	GD562	
10D	GD563	
10E	GD564	
10F	GD565	

• Indirect specification of a module number on the initially displayed screen

Set [Module No. switching GD device first No. (16 points)] so that the values of the GD devices are retained and monitored upon the GOT startup.

• Indirect specification of a module number for multi-channel connection

If the setting range of [Module No. switching GD device first No. (16 points)] set for each channel overlaps, the module number of the Simple Motion module via the servo amplifier device of each channel is switched simultaneously.

Set [Module No. switching GD device first No. (16 points)] for each channel so that the setting range does not overlap.

• Indirect specification of a station number and a module number for multi-channel connection

When GD10 to GD25 are used to specify the station number of an inverter or non-Mitsubishi temperature controller connected, setting [10] to [Module No. switching GD device first No. (16 points)] switches the module number of the Simple Motion module via the servo amplifier device and the station number of an inverter or non-Mitsubishi temperature controller set to each channel simultaneously.

Set [Module No. switching GD device first No. (16 points)] so that the setting range does not overlap the station number of an inverter or non-Mitsubishi temperature controller.

■Start device number of the GD devices for servo axis switching

• Indirect specification of a servo axis number

For connection via a Motion CPU or Simple Motion module, a servo axis number can be indirectly specified with GOT internal registers (GD devices) by specifying a value (100 to 115) to the axis number of the servo amplifier device.

Set the start device number of the GD devices to be used in [Servo axis switching GD device first No. (16 points)].

Specify a servo axis number with 16 consecutive GD devices, starting the set device number.

When [10] is set to [Servo axis switching GD device first No. (16 points)], GD10 to GD25 are used to specify a servo axis number as shown in the following table.

Servo axis No.	GD device	Setting range
100	GD10	1 to 64 Setting a value outside the above range causes a device range error.
101	GD11	
102	GD12	
103	GD13	
104	GD14	
105	GD15	
106	GD16	
107	GD17	
108	GD18	
109	GD19	
110	GD20	
111	GD21	
112	GD22	
113	GD23	
114	GD24	
115	GD25	

• Indirect specification of a servo axis number on the initially displayed screen

Set [Servo axis switching GD device first No. (16 points)] so that the values of the GD devices are retained and monitored upon the GOT startup.

• Indirect specification of a servo axis number for multi-channel connection

If the setting rage of [Servo axis switching GD device first No. (16 points)] set for each channel overlaps, the axis number of the servo amplifier of each channel is switched simultaneously.

Set [Servo axis switching GD device first No. (16 points)] for each channel so that the setting range does not overlap.

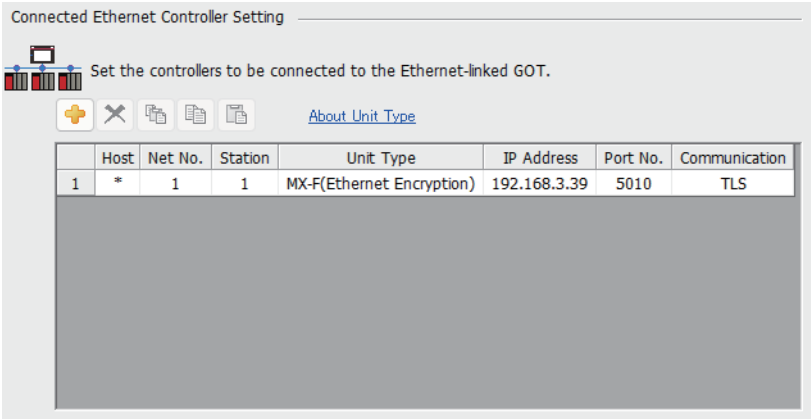
• Indirect specification of a station number and a servo axis number for multi-channel connection

When GD10 to GD25 are used to specify the station number of an inverter or non-Mitsubishi temperature controller connected, setting [10] to [Servo axis switching GD device first No. (16 points)] switches the axis number of the servo amplifier and the station number of an inverter or non-Mitsubishi temperature controller set to each channel simultaneously.

Set [Servo axis switching GD device first No. (16 points)] so that the setting range does not overlap the station number of an inverter or non-Mitsubishi temperature controller.

■[Connected Ethernet Controller Setting]

Set the controller to be connected to the GOT by Ethernet.



Item	Description	Range
[Host]	The host is displayed. It refers to a station that can be connected without setting a station number. The host is indicated with an asterisk (*).	—
[Net No.]	Set the network number of the connected Ethernet equipment.	[1] to [239]
[Station]*2	Set the station number of the connected Ethernet equipment.	[1] to [120]
[Unit Type]	Select the model of the connected Ethernet equipment.	☞ Page 136 [Unit Type]
[IP Address]	Set the IP address of the connected Ethernet equipment.	[0.0.0.0] to [255.255.255.255]
[Port No.]*1	Set the port number of the connected Ethernet equipment.	☞ Page 136 [Port No.], [Communication]
[Communication]	Set the communication format of the connected Ethernet equipment.	☞ Page 136 [Port No.], [Communication]

*1 Match the port number of the CPU and [Port No.] of [Connected Ethernet Controller Setting].

*2 Set values not set for [GOT Station] in [Detail Setting].
☞ Page 131 [Detail Setting]

■[Unit Type]

Select an item for [Unit Type] as shown below.

GOT connection destination	[Unit Type]
MELSEC MX Controller (MX-F Model)	• When using the built-in Ethernet port for communication: [MX-F(Ethernet)] • When using the built-in CC-Link IE TSN port for communication: [MX-F(CC-Link IE TSN)] • When using the built-in Ethernet port for encrypted communication: [MX-F(Ethernet Encryption)]*1

*1 For details on encrypted communication, refer to the following.
☞ Page 152 Encrypted communication

■[Station]

The setting range is as follows:

[Unit Type]	[Station]
[MX-F(Ethernet)] [MX-F(Ethernet Encryption)]	[1] to [120]
[MX-F(CC-Link IE TSN)]	[0]

■[Port No.], [Communication]

The setting range is as follows:

[Unit Type]	[Port No.]	[Communication]
[MX-F(Ethernet)]	[5006]	[UDP]
	[5007]	[TCP]
[MX-F(CC-Link IE TSN)]	[5001]	[UDP]
	[5554]	[TCP]
[MX-F(Ethernet Encryption)]	[1] to [4999], [5010] to [65534]	[TLS], [DTLS]

■When [Unit Type] is [MX-F(Ethernet)]

When [MX-F(Ethernet)] is selected for [Unit Type], the setting of [Port No.] can be changed.

There is no setting for the network number and PLC number of built-in Ethernet port CPU (Port number: 5006, 5007).

The values of [Network No.] and [Station No.] in the object setting dialog must be the same as the values of [Net No.] and [Station] in [Connected Ethernet Controller Setting].

■Connection to the built-in Ethernet port PLC with [Communication] set to [TCP]

During communication with the built-in Ethernet port PLC with [Communication] set to [TCP], using the FA transparent function may change the setting from [TCP] to [UDP] and start communication with the PLC with the new setting.

In this case, communication with the built-in Ethernet port PLC cannot be executed normally.

Take the following corrective action.

Phenomenon	Cause	Corrective action
Communication fails when using the FA transparent function.	[UDP] is not available in the open settings of the built-in Ethernet port PLC.	Add [UDP] to the PLC side open settings.
	When the multi-channel Ethernet connection is used, [TCP] and [UDP] are used to the same IP address, and then the FA transparent function is used for the channel set to [TCP].	Execute the FA transparent function for the channel set to [UDP].

Point

Changing the host station on the GOT

[Host] can be changed with the utility function of the GOT.

For details on the setting method, refer to the following manual.

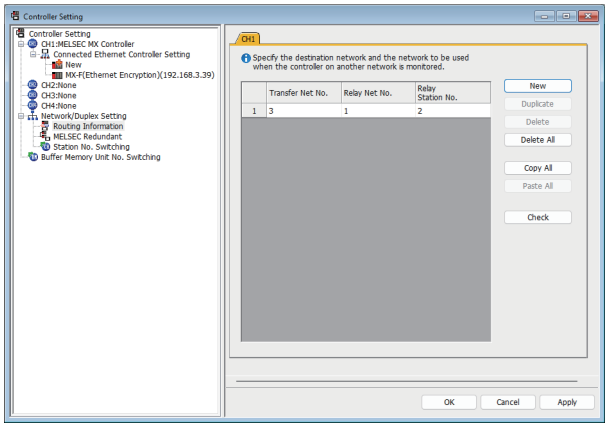
📖GOT3000 Series User's Manual (Utility & Maintenance Functions)

■Routing parameter settings

Up to 64 settings can be configured for [Transfer Net No.].

However, the same number cannot be set in [Transfer Net No.] twice or more (multiple times).

The GOT (host station) can access 64 different networks specified under [Transfer Net No.].



Item	Range
[Transfer Net No.]	[1] to [239]
[Relay Net No.]*1	[1] to [239]
[Relay Station No.]*1	[0] to [120]

*1 To access a different network via the built-in Ethernet port CPU, set the values of [Net No.] and [Station] that are set in [Connected Ethernet Controller Setting] in GT Designer3.

Point

Routing parameter settings for the relay station

Routing parameter settings are also necessary for the relay station.

For the setting, refer to the following.

☞ Page 139 PLC side settings

Precautions

If the network numbers of the GOT and PLC do not match on the same Ethernet network, monitoring of the PLC is not possible.

To enable monitoring, set the same network number as that of the GOT or connect an Ethernet module to the PLC and configure the routing settings to monitor the PLC as a different network.

When the multi-channel connection can be used, set a different network number for each channel.

4.3.4 PLC side settings

Model		Reference
MELSEC MX Controller (MX-F Model)	MXF100-8-N32 MXF100-8-P32 MXF100-16-N32 MXF100-16-P32	☞ Page 139 Connection to the built-in Ethernet port CPU of the MELSEC MX Controller (MX-F Model)

Connection to the built-in Ethernet port CPU of the MELSEC MX Controller (MX-F Model)

This section describes the settings of the GOT and the built-in Ethernet port CPU in the system configuration shown below.

☞ Page 139 One-to-one connection with the GOT side communication format set to UDP
☞ Page 142 One-to-one connection with the GOT side communication format set to TCP, TLS, or DTLS
☞ Page 145 Multi-connection with the GOT side communication format set to UDP
☞ Page 148 Multi-connection with the GOT side communication format set to TCP, TLS, or DTLS

Point

- Built-in Ethernet port CPU

For details on the built-in Ethernet port CPU, refer to the following manual.

📖Manual of the MELSEC MX Controller

- Connecting multiple GOTs

When connecting multiple GOTs in the Ethernet network, set a different value for [GOT Station] for each GOT.

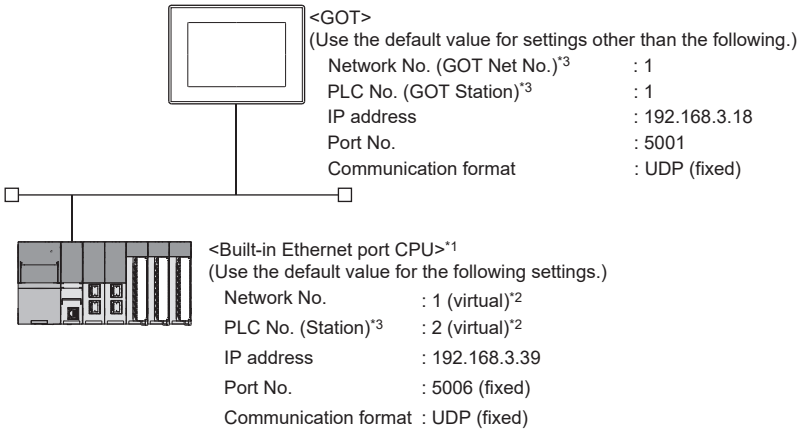
☞ Page 132 When connecting multiple GOTs

■One-to-one connection with the GOT side communication format set to UDP

- System configuration

For one-to-one connection, no settings are required on the PLC side.

Configure the settings in [Controller Setting] and [Connected Ethernet Controller Setting] in GT Designer3, and then connect the built-in Ethernet port CPU and the GOT.



*1 For the settings when using system devices such as a hub, refer to the following.
☞ Page 145 Multi-connection with the GOT side communication format set to UDP

*2 Although the setting is nonexistent on the PLC side, set a virtual value on the GOT side.
☞ • [Controller Setting] and [Connected Ethernet Controller Setting] of GT Designer3

*3 For the following settings, the setting names are different on the PLC side and the GOT side.

Setting	Setting name		
	PLC side	GOT side	
		Controller setting	Connected Ethernet controller setting
Network number	[Network No.]	[GOT Net No.]	[Net No.]
PLC number	[Station]	[GOT Station]	[Station]

• [Controller Setting] and [Connected Ethernet Controller Setting] of GT Designer3

For the setting method of [Controller Setting] and [Connected Ethernet Controller Setting] in GT Designer3, refer to the following.

☞ Page 129 GOT side settings

Point

[Connected Ethernet Controller Setting] for connection to the Built-in Ethernet port RCPU

The setting items for the network number and station number do not exist on the PLC side.

Set the network number and station number on the GOT side.

When doing so, set a network number not used in the system.

Controller settings

Item	Setting value
[GOT Net No.]	1
[GOT Station]	1
[GOT Communication Port No.]	5001
[Retry]	3 times
[Startup Time]	3 seconds
[Timeout Time]	3 seconds
[Delay Time]	0 ms

GOT Ethernet settings

Item	Setting value
[GOT IP Address]	192.168.3.18
[Subnet Mask]	255.255.255.0
[Default Gateway]	0.0.0.0
[Peripheral S/W Communication Port No.]	5015
[Transparent Port No.]	5014

Connected Ethernet controller settings

Item		Setting value
Ethernet setting No. 1	[Host]	*
	[Net No.]	1*1
	[Station]	2*2
	[Unit Type]	MX-F(Ethernet)
	[IP Address]	192.168.3.39
	[Port No.]	5006
	[Communication]	UDP

*1 Set the same value as [GOT Net No.].

*2 Set a value not set for [GOT Station].

• Checking the communication state of the built-in Ethernet port CPU

When using Windows Command Prompt

Execute a ping command in Windows Command Prompt.

1) At normal end

C:\>Ping 192.168.3.39

Reply from 192.168.3.39:bytes=32 time<1ms TTL=32

2) At abnormal end

C:\>Ping 192.168.3.39

Request timed out.

In the case of abnormal end

In the case of abnormal end, check the following and execute the ping command again.

Cable connecting condition

Switch settings and network parameter settings

Operation state of PLC CPU (faulty or not)

IP address of the built-in Ethernet port CPU specified by the ping command

Point

Ethernet diagnostics of GX Works3

The Ethernet diagnostics of GX Works3 enables ping tests from the PLC.

For details on the Ethernet diagnostics of GX Works3, refer to the following manual.

📖Manual of the MELSEC MX Controller

■One-to-one connection with the GOT side communication format set to TCP, TLS, or DTLS

The following shows an example when the communication format is TCP.

Point

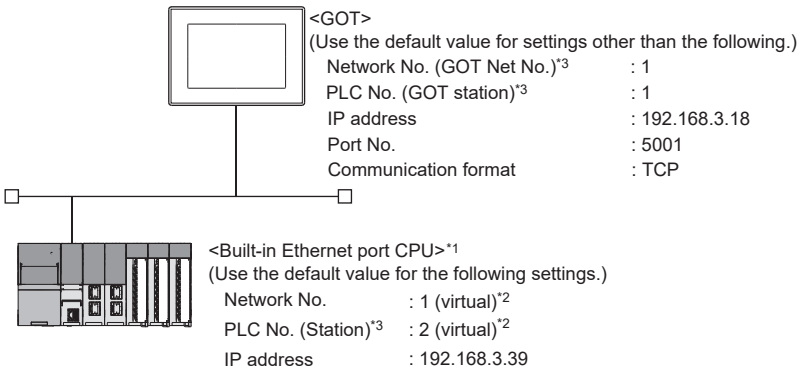
For information on encrypted communication settings, refer to the following.

☞ Page 152 Encrypted communication

• System configuration

For one-to-one connection, no settings are required on the PLC side.

Configure the settings in [Controller Setting] and [Connected Ethernet Controller Setting] in GT Designer3, and then connect the built-in Ethernet port CPU and the GOT.



*1 For the settings when using system devices such as a hub, refer to the following.

☞ Page 148 Multi-connection with the GOT side communication format set to TCP, TLS, or DTLS

*2 Although the setting is nonexistent on the PLC side, set a virtual value on the GOT side.

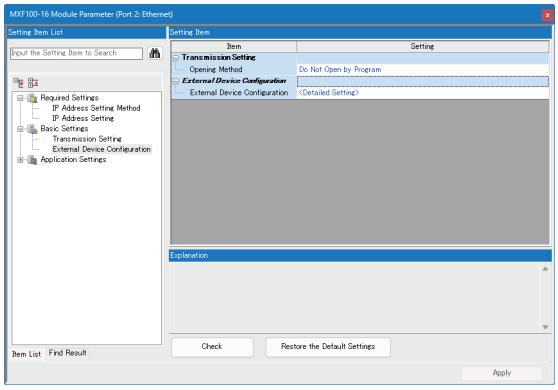
☞ • [Controller Setting] and [Connected Ethernet Controller Setting] of GT Designer3

*3 For the following settings, the setting names are different on the PLC side and the GOT side.

Setting	Setting name		
	PLC side	GOT side	
		Controller setting	Connected Ethernet controller setting
Network number	[Network No.]	[GOT Net No.]	[Net No.]
PLC number	[Station]	[GOT Station]	[Station]

• [Module Parameter] of GX Works3

Built-in Ethernet port settings

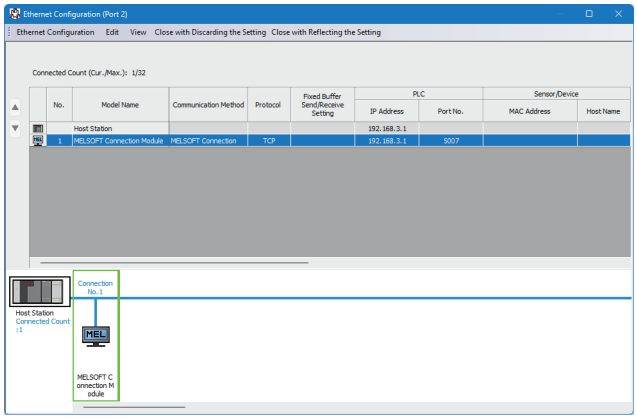


○: Necessary, △: As necessary, —: Not necessary

Item	Setting value	Setting for GOT connection
[IP Address]	(Use default value)	△
[External Device Configuration]	☞ Target device connection configuration settings	○

Target device connection configuration settings

Configure the settings for all the connected GOTs.



Item	Setting value
[Protocol]	(Use default value)
[Communication Method]	MELSOFT connection
[Port No.][*1]	—

*1 When the communication format is TCP, the setting is not required.
When the communication format is TLS or DTLS, set a value.

• [Controller Setting] and [Connected Ethernet Controller Setting] of GT Designer3

For the setting method of [Controller Setting] and [Connected Ethernet Controller Setting] in GT Designer3, refer to the following.

☞ Page 129 GOT side settings

Point

[Connected Ethernet Controller Setting] for connection to the Built-in Ethernet port RCPU

The setting items for the network number and station number do not exist on the PLC side.

Set the network number and station number on the GOT side.

When doing so, set a network number not used in the system.

Controller settings

Item	Setting value
[GOT Net No.]	1
[GOT Station]	1
[GOT Communication Port No.]	5001
[Retry]	3 times
[Startup Time]	3 seconds
[Timeout Time]	3 seconds
[Delay Time]	0 ms

GOT Ethernet settings

Item	Setting value
[GOT IP Address]	192.168.3.18
[Subnet Mask]	255.255.255.0
[Default Gateway]	0.0.0.0
[Peripheral S/W Communication Port No.]	5015
[Transparent Port No.]	5014

Connected Ethernet controller settings

Item		Setting value
Ethernet setting No. 1	[Host]	*
	[Net No.]	1*1
	[Station]	2*2
	[Unit Type]	MX-F(Ethernet)*3
	[IP Address]	192.168.3.39
	[Port No.]	5007
	[Communication]	TCP*3

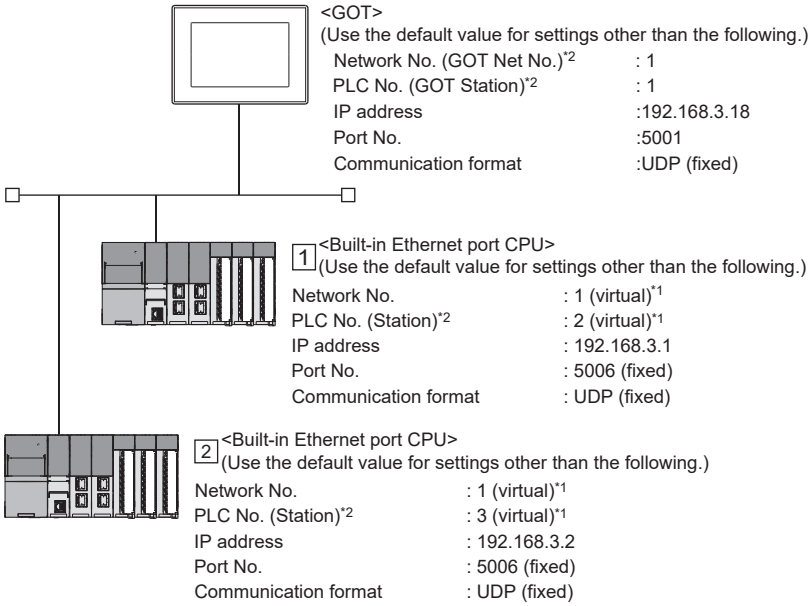
*1 Set the same value as the GOT net number.

*2 Set a value different from the GOT station number.

*3 When [MX-F(Ethernet Encryption)] is set for [Unit Type], set TLS or DTLS.

■Multi-connection with the GOT side communication format set to UDP

- System configuration



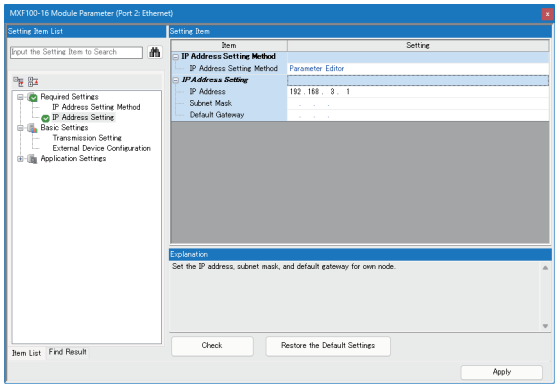
*1 Although the setting is nonexistent on the PLC side, set a virtual value on the GOT side.
☞ • [Controller Setting] and [Connected Ethernet Controller Setting] of GT Designer3

*2 For the following settings, the setting names are different on the PLC side and the GOT side.

Setting	Setting name		
	PLC side	GOT side	
		Controller setting	Connected Ethernet controller setting
Network number	[Network No.]	[GOT Net No.]	[Net No.]
PLC number	[Station]	[GOT Station]	[Station]

- [Module Parameter] of GX Works3

Built-in Ethernet port settings



○: Necessary, △: As necessary, —: Not necessary

Item	Setting value	Setting for GOT connection
[IP Address]	192.168.3.1	○
[External Device Configuration]	—	—

• [Controller Setting] and [Connected Ethernet Controller Setting] of GT Designer3

For the setting method of [Controller Setting] and [Connected Ethernet Controller Setting] in GT Designer3, refer to the following.

☞ Page 129 GOT side settings

Point

[Connected Ethernet Controller Setting] for connection to the built-in Ethernet port CPU
The setting items for the network number and station number do not exist on the PLC side.
Set the network number and station number on the GOT side.
When doing so, set a network number not used in the system.

Controller settings

Item	Setting value
[GOT Net No.]	1
[GOT Station]	1
[GOT Communication Port No.]	5001
[Retry]	3 times
[Startup Time]	3 seconds
[Timeout Time]	3 seconds
[Delay Time]	0 ms

GOT Ethernet settings

Item	Setting value
[GOT IP Address]	192.168.3.18
[Subnet Mask]	255.255.255.0
[Default Gateway]	0.0.0.0
[Peripheral S/W Communication Port No.]	5015
[Transparent Port No.]	5014

Connected Ethernet controller settings

Item		Setting value	
		1	2
Ethernet setting No. 1	[Host]	*	—
	[Net No.]	1*1	1*1
	[Station]	2*2	3*2
	[Unit Type]	MX-F(Ethernet)	MX-F(Ethernet)
	[IP Address]	192.168.3.1	192.168.3.2
	[Port No.]	5006	5006
	[Communication]	UDP	UDP

*1 Set the same value as the GOT net number.
*2 Set a value different from the GOT station number and PLC numbers of other PLCs on the same network.

• Checking the communication state of the built-in Ethernet port CPU

When using Windows Command Prompt

Execute a ping command in Windows Command Prompt.

1) At normal end

C:\>Ping 192.168.3.1

Reply from 192.168.3.1:bytes=32 time<1ms TTL=32

2) At abnormal end

C:\>Ping 192.168.3.1

Request timed out.

In the case of abnormal end

In the case of abnormal end, check the following and execute the ping command again.

Cable connecting condition

Switch settings and network parameter settings

Operation state of PLC CPU (faulty or not)

IP address of the built-in Ethernet port CPU specified by the ping command

Point

Ethernet diagnostics of GX Works3

The Ethernet diagnostics of GX Works3 enables ping tests from the PLC.

For details on the Ethernet diagnostics of GX Works3, refer to the following manual.

📖Manual of the MELSEC MX Controller

■Multi-connection with the GOT side communication format set to TCP, TLS, or DTLS

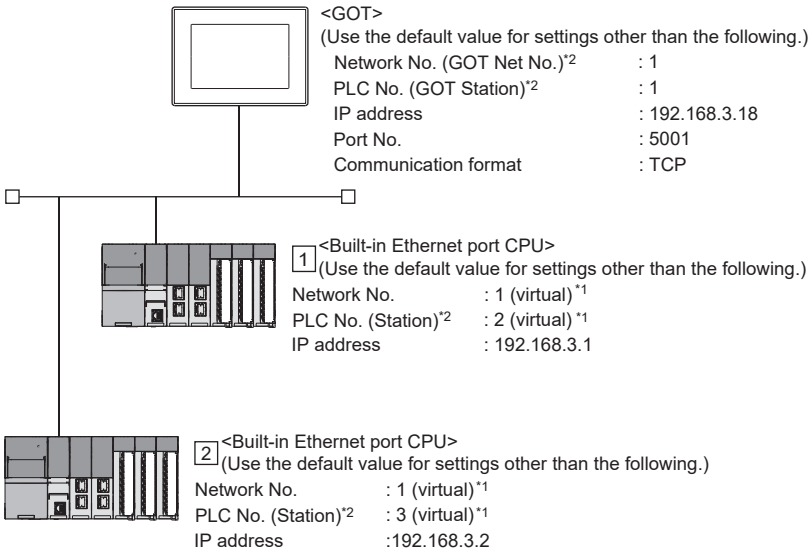
The following shows an example when the communication format is TCP.

Point

For information on encrypted communication settings, refer to the following.

☞ Page 152 Encrypted communication

- System configuration



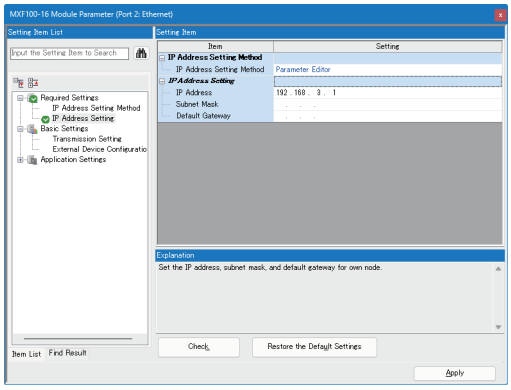
*1 Although the setting is nonexistent on the PLC side, set a virtual value on the GOT side.
☞ • [Controller Setting] and [Connected Ethernet Controller Setting] of GT Designer3

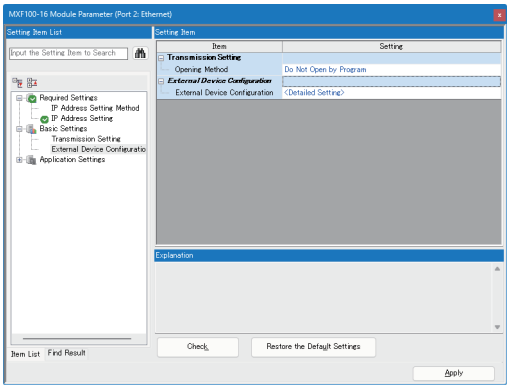
*2 For the following settings, the setting names are different on the PLC side and the GOT side.

Setting	Setting name		
	PLC side	GOT side	
		Controller setting	Connected Ethernet controller setting
Network number	[Network No.]	[GOT Net No.]	[Net No.]
PLC number	[Station No.]	[GOT Station]	[Station No.]

• [Module Parameter] of GX Works3

Built-in Ethernet port settings



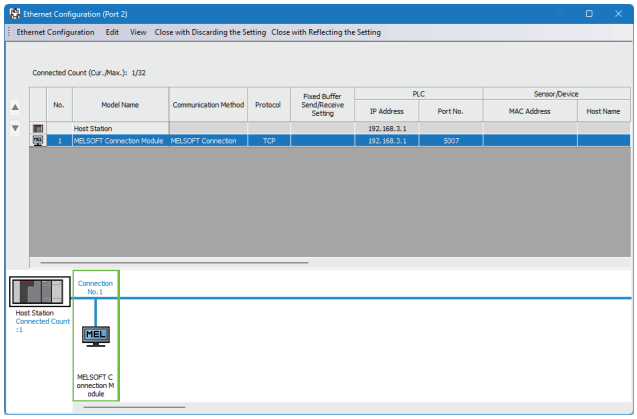


○: Necessary, △: As necessary, —: Not necessary

Item	Setting value	Setting for GOT connection
[IP Address]	192.168.3.1	○
[External Device Configuration]	☞ Target device connection configuration settings	○

Target device connection configuration settings

Configure the settings for all the connected GOTs.



Item	Setting value
[Protocol]	(Use default value)
[Communication Method]	MELSOFT connection
[Port No.]*1	—

*1 When the communication format is TCP, the setting is not required.
When the communication format is TLS or DTLS, set a value.

• [Controller Setting] and [Connected Ethernet Controller Setting] of GT Designer3

For the setting method of [Controller Setting] and [Connected Ethernet Controller Setting] in GT Designer3, refer to the following.

☞ Page 129 GOT side settings

Point

[Connected Ethernet Controller Setting] for connection to the built-in Ethernet port CPU
The setting items for the network number and station number do not exist on the PLC side.
Set the network number and station number on the GOT side.
When doing so, set a network number not used in the system.

Controller settings

Item	Setting value
[GOT Net No.]	1
[GOT Station]	1
[GOT Communication Port No.]	5001
[Retry]	3 times
[Startup Time]	3 seconds
[Timeout Time]	3 seconds
[Delay Time]	0 ms

GOT Ethernet settings

Item	Setting value
[GOT IP Address]	192.168.3.18
[Subnet Mask]	255.255.255.0
[Default Gateway]	0.0.0.0
[Peripheral S/W Communication Port No.]	5015
[Transparent Port No.]	5014

Connected Ethernet controller settings

Item		Setting value	
		[1]	[2]
Ethernet setting No. 1	[Host]	*	—
	[Net No.]	1*1	1*1
	[Station]	2*2	3*2
	[Unit Type]	MX-F(Ethernet)*3	MX-F(Ethernet)*3
	[IP Address]	192.168.3.1	192.168.3.2
	[Port No.]	5007	5007
	[Communication]	TCP*3	TCP*3

*1 Set the same value as the GOT net number.
*2 Set a value different from the GOT station number.
*3 When [MX-F(Ethernet Encryption)] is set for [Unit Type], set TLS or DTLS.

• Checking the communication state of the built-in Ethernet port CPU

When using Windows Command Prompt

Execute a ping command in Windows Command Prompt.

1) At normal end

C:\>Ping 192.168.3.1

Reply from 192.168.3.1:bytes=32 time<1ms TTL=32

2) At abnormal end

C:\>Ping 192.168.3.1

Request timed out.

In the case of abnormal end

In the case of abnormal end, check the following and execute the ping command again.

Cable connecting condition

Switch settings and network parameter settings

Operation state of PLC CPU (faulty or not)

IP address of the built-in Ethernet port CPU specified by the ping command

Point

Ethernet diagnostics of GX Works3

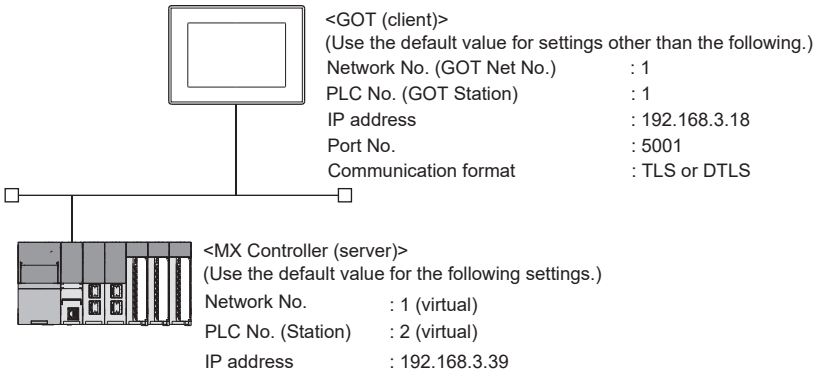
The Ethernet diagnostics of GX Works3 enables ping tests from the PLC.

For details on the Ethernet diagnostics of GX Works3, refer to the following manual.

📖Manual of the MELSEC MX Controller

4.3.5 Encrypted communication

The following describes the encrypted communication.



Client	Server
GOT	MELSEC MX Controller

For the PLC side settings, refer to the following.

☞ Page 142 One-to-one connection with the GOT side communication format set to TCP, TLS, or DTLS
☞ Page 148 Multi-connection with the GOT side communication format set to TCP, TLS, or DTLS

Precautions

■When the faulty monitor CPU station repeatedly turns on and off

When DTLS encrypted communication fails, the GS device of the faulty monitor CPU station turns on and the station monitoring turns on.

After that, if ping test with the controller is successful, the GS device of the faulty monitor CPU station turns off.

If DTLS encrypted communication remains unsuccessful, the GS device of the faulty monitor CPU station repeatedly turns on and off.

In that case, correct the DTLS encrypted communication settings.

■When communication is terminated without notifying the encrypted communication stop

The connection may not be reestablished if the communication is terminated, such as by powering off the GOT or disconnecting the Ethernet cable between the GOT and the controller, without issuing the encrypted communication stop notification to the controller.

To reestablish the connection, perform one of the following operation.

- Restart the controller.
- Set a connection monitoring timer to the encrypted communication port of the controller, and reconnect it after the specified time in seconds has elapsed.

Encrypted communication version

The version of the encrypted communication used by the GOT depends on the MELSEC MX Controller settings.

Version setting of the encrypted communication for the MELSEC MX Controller	Version of the encrypted communication used by the GOT
TLS1.3	TLS1.3
TLS1.3/TLS1.2	TLS1.3
TLS1.2	TLS1.2
DTLS1.2	DTLS1.2
Other than the above	Unsupported

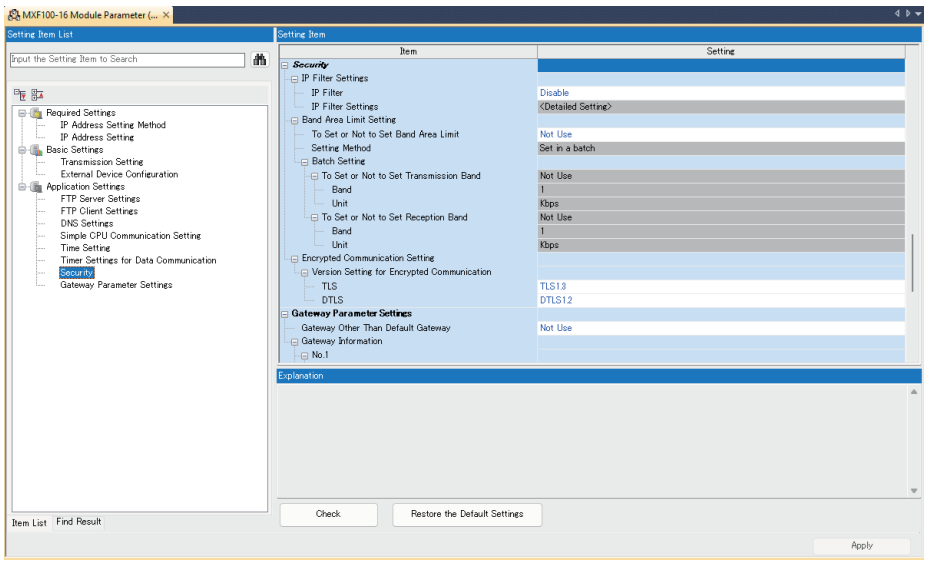
Setting procedure of the encrypted communication

The following shows the setting procedure of the encrypted communication.

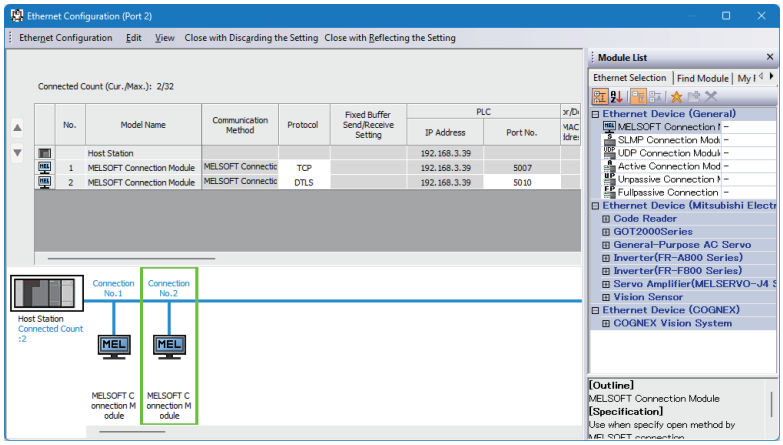
■Settings in GX Works3

Operating procedure

1. Select [Application Setting] → [Security] → [Version Setting for Encrypted Communication] to set the version.



2. Select [Basic Setting] → [External Device Configuration], and select a port number for the encrypted communication port.



3. Select [Project] → [Security] → [Certificate Management] to create a server certificate.

For information on how to create a server certificate, refer to the following.

📖Manual of the MELSEC MX Controller

4. Write a project to the MELSEC MX Controller.

■Settings in GT Designer3 and the GOT

For details on the GT Designer3 and GOT settings, refer to the following.

📖GT Designer3 (GOT3000) Screen Design Manual

📖GOT3000 Series User's Manual (Utility & Maintenance Functions)

Operating procedure

1. Set [MX-F(Ethernet Encryption)] for [Unit Type] in [Connected Ethernet Controller Setting] in GT Designer3.
2. Download the project data in the GOT.
3. Import the server certificate of the MELSEC MX Controller created and saved in GX Works3 from the utility screen.

4.3.6 Connection to the PLC with the authentication function enabled

Logon to the PLC

When the GOT monitors the PLC with the authentication function enabled, logon to the PLC is required.

Touch a special function switch (Destination Authentication) set in the project to display the key window.

Enter the [User Name] and [Password] to log on.

For information on how to set a special function switch, refer to the following.

📖GT Designer3 (GOT3000) Screen Design Manual

Logoff from the PLC

Touch a special function switch (Destination Authentication) set in the project to log off.

Reading and writing of cyclic devices

Cyclic devices communicate using an expansion unit, allowing read and write operations even in the logged-off state.

Precautions

■Creating a project

At GOT startup, the PLC is in logoff state.

The GOT cannot monitor the PLC devices until logon to the PLC from the GOT is complete.

Therefore, create a project assuming that the GOT cannot communicate with the PLC for a certain period.

For information on how to set screens and functions, refer to the following.

📖GT Designer3 (GOT3000) Screen Design Manual

Take the following precautions when creating a project.

Item		Precautions for using the destination authentication function
[Environmental Setting]	[Screen Switching/Window]	Set the GOT internal device as the screen switching device. As well as logoff operation by GOT, reset on the PLC side or other operations can also make the PLC in logoff state. By setting the GOT internal device as the screen switching device, a screen can be switched even in logoff state due to reset on the PLC side or other operations.
	[Language Switching]	Set the GOT internal device as the language switching device. When a PLC device is set, comments cannot be displayed in logoff state.
	[System Information]	Set the GOT internal device as the system information device. When a PLC device is set, a system alarm occurs in logoff state.
	[Security]	It is recommended not to use screen security (level authentication and operator authentication) for connection with the PLC with the destination authentication function enabled.
		When using the level authentication, set the GOT internal device as the security level device.
Screen setting	Screen displayed immediately after GOT startup	Place a special function switch (Destination Authentication) to perform destination authentication for logging on to the PLC. Do not configure the setting to monitor the PLC devices.
	Screen number	Specify the screen number ranges separately for the screen displayed in logoff state and the screen displayed in logon state. Separating the screen number ranges makes screen transition in logoff state easy to consider. Example) Before authentication: 1 to 100, after authentication: 101 or later
	Screen switching control at logoff	Configure the setting using trigger actions or other methods so that the screen switches at logoff to the screen displayed before authentication.
Function that is not recommended for use when connecting with the PLC with the destination authentication function enabled		• Screen security (level authentication and operator authentication) • GOT Mobile function (Destination authentication cannot be performed on a mobile screen.)
Others	Function to specify the conditions other than the trigger device	Specify the trigger indirectly by using trigger actions or other methods. Example) When the PLC device controls the input range for a numerical input
	Function that cannot specify the trigger device	By scripts or device data transfer using the GOT internal device, read and write the PLC device only in logon state. Example) Alarm monitoring of the connected device

■Character code applicable for [User Name].

For logon to the PLC from the GOT, only ASCII code characters can be available for [User Name] in the key window and the [Destination Authentication] window.

When setting [User Name] for the PLC, set [User Name] of the user operating the PLC from the GOT in the ASCII code.

For the list of the ASCII code available in GOT, refer to the following.

📖GT Designer3 (GOT3000) Screen Design Manual

■Access level of the user who can log on

When logging on to the PLC from the GOT, only the users whose access level is [Users] can log on.

Users with the access level [Administrators] or [Developers] cannot log on.

When monitoring the PLC from the GOT, set the users whose access level is [Users] for the PLC.

■Changing the user authentication function settings

The user authentication settings (user name and password) cannot be changed from the GOT.

Use GX Works3 to change the settings registered in the PLC.

■Obtaining and updating CPU errors

The GOT cannot obtain CPU errors unless you log on to the PLC.

To update the CPU error of the system alarm displayed on the GOT, log on to the PLC from the GOT.

4.3.7 Access range for monitoring

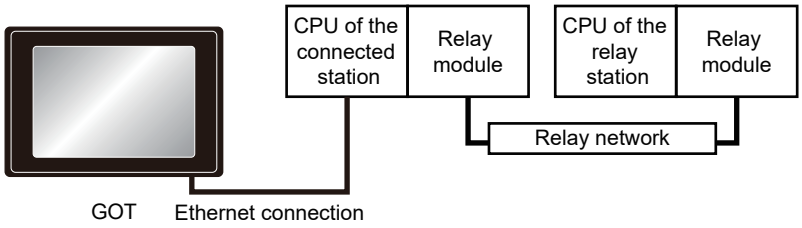
When the GOT is connected to the CPU of the station connected via Ethernet, the range accessible via the CPU is as follows.

Point

• When monitoring other networks (Routing parameter settings)

To monitor other networks, routing parameter settings are necessary.

For the routing parameter settings, refer to the reference manual of the network connected.



○: Accessible, —: Inaccessible

CPU of the connected station	Relay station							
	Relay network	CPU of the relay station						
		MXR	MXF	RCPU	LCPU	QCPU (Q mode)	QSCPU	FX5CPU
MX-F	CC-Link IE TSN	○*3	○*3	○*1	—	—	—	○*2

*1 RnCPU, RnENCPU, RnSFCPU, and MELSECWinCPU (MELSEC iQ-R series) are supported.

*2 FX5U and FX5UC are supported.

*3 Regardless of whether encrypted communications are performed, the MELSEC MX Controller can be used as the relay station.
To perform encrypted communication, settings need to be configured.
For details, refer to the following.
• For MELSEC MX Controller (MX-R Model)
☞ Page 90 Setting procedure of the encrypted communication
• For MELSEC MX Controller (MX-F Model)
☞ Page 153 Setting procedure of the encrypted communication

4.4 MELSEC MX Controller (MX-F Model) (Ethernet module connection)

☞ Page 158 Connectable devices
☞ Page 159 System configuration
☞ Page 163 GOT side settings
☞ Page 173 PLC side settings
☞ Page 185 Connection to the PLC with the authentication function enabled
☞ Page 187 Access range for monitoring

4.4.1 Connectable devices

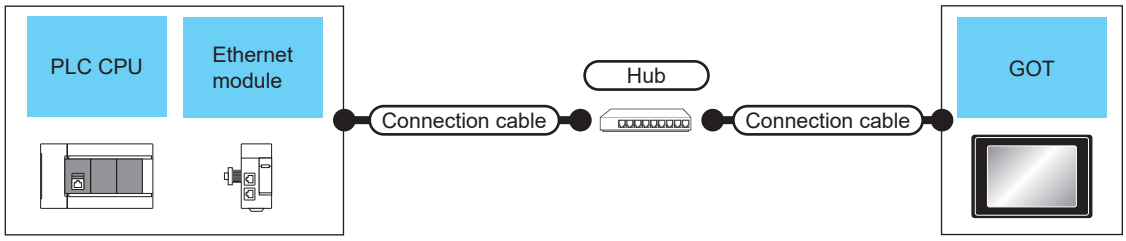
The following table shows the connectable models.

○: Supported, —: Not supported

Controller	Model	Clock	Ethernet module	Connectable model
MELSEC MX Controller (MX-F Model)	MXF100-8-N32 MXF100-8-P32 MXF100-16-N32 MXF100-16-P32	○	FX5-ENET/IP FX5-EIP FX5-CCLGN-MS	GT37 SoftGOT3000

4.4.2 System configuration

Connection to Ethernet module



For details on the connection cables and the maximum segment length, refer to the following.

☞ Page 160 Connection cable
☞ Page 160 Maximum segment length

For details on the maximum number of connected devices, refer to the following.

☞ Page 160 Maximum number of connected devices

Controller	Ethernet module*1*2	Connection cable	GOT	
			Interface	Model
MELSEC MX Controller (MX-F Model)*3	FX5-ENET/IP FX5-EIP	Twisted pair cable	Built-in Ethernet interface of GOT	GT37 SoftGOT3000
			Ethernet interface of personal computer	GT37 SoftGOT3000

*1 For the system configuration of the Ethernet module, refer to the following manual.
MELSEC iQ-F FX5-ENET/IP User's Manual
MELSEC iQ-F FX5-EIP User's Manual

*2 Select [FX5-ENET] for [Unit Type] in [Connected Ethernet Controller Setting] in GT Designer3.
For [Connected Ethernet Controller Setting] in GT Designer3, refer to the following.
☞ Page 170 [Connected Ethernet Controller Setting]

*3 When the GOT monitors the PLC with the authentication function enabled, logon to the PLC is required.
For information on how to logon and logoff, refer to the following.
☞ Page 185 Logon to the PLC
☞ Page 185 Logoff from the PLC
The GOT cannot monitor the PLC devices until logon to the PLC from the GOT is complete.
Therefore, create a project assuming that the GOT cannot communicate with the PLC for a certain period.
☞ Page 185 Creating a project

Connection cable

Use a connection cable that meets the following standards.

Standard	Category
10BASE-T	Shielded twisted pair cable (STP) of category 3 or higher
100BASE-TX	Shielded twisted pair cable (STP) of category 5 or higher
1000BASE-T	Shielded twisted pair cable (double-shielded STP or STP) of category 5e or higher

The destination device connected with the twisted pair cable varies with the configuration of the Ethernet network system used.

Connect the cable to the Ethernet module, hub, or other system equipment corresponding to the applicable Ethernet network system.

Use cables, connectors, and hubs that meet the IEEE802.3 10BASE-T/100BASE-TX/1000BASE-T standards.

When only one GOT is connected, the GOT can be directly connected to the controller without a hub.

Maximum segment length

The maximum segment length (length between a hub and a node) is 100 m.

The maximum length depends on the Ethernet equipment used.

The following shows the number of connectable hubs when a repeater hub is used.

- 10BASE-T: Up to 4 for a cascade connection (within 500 m)
- 100BASE-TX: Up to 2 for a cascade connection (within 205 m)
- 1000BASE-T: The number differs depending on the hub to be used.

When switching hubs are used, there is no theoretical limit to the number of cascade connections between switching hubs.

For the limit, contact the switching hub manufacturer.

Precautions

When multiple network devices (including GOTs) are connected in the same segment, the network load increases and the transmission speed between the GOT and PLC may be reduced.

The following actions may improve the communication performance.

- Use a switching hub compatible with 1000BASE-T (1 Gbps) or more.
- Reduce the number of devices monitored by the GOT.

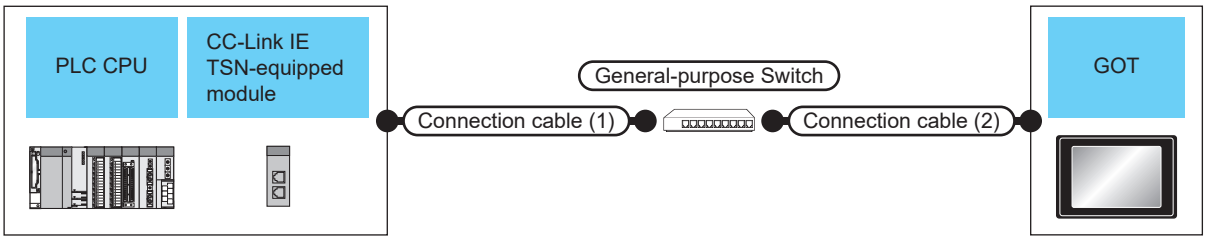
Maximum number of connected devices

Up to 128 CPU modules can be connected to channels No. 1 to No. 4 of one GOT. (16 or less recommended)

The following shows the number of connectable controllers per GOT channel and the number of GOTs connectable to one controller.

Controller				GOT	
Model		Number of GOTs connectable to one PLC		Model	Number of connectable controllers per GOT channel
PLC CPU	Module	UDP	TCP		
MELSEC MX Controller (MX-F Model)	FX5-ENET/IP FX5-EIP	32	32	GT37 SoftGOT3000	63 (16 or less recommended)

Connection to CC-Link IE TSN-equipped module



For details on the connection cables and the maximum segment length, refer to the following.

☞ Page 162 Connection cable
☞ Page 162 Maximum segment length

For details on the maximum number of connected devices, refer to the following.

☞ Page 162 Maximum number of connected devices

Controller	CC-Link IE TSN-equipped module*2*3	Connection cable (1)	External device	Connection cable (2)	GOT	
					Interface	Model
MELSEC MX Controller (MX-F Model)*4	FX5-CCLGN-MS	Twisted pair cable	General-purpose Switch*1	Twisted pair cable	Built-in Ethernet interface of GOT	GT37 SoftGOT3000
					Ethernet interface of personal computer	GT37 SoftGOT3000

*1 For usable General-purpose Switches, refer to the following.
MELSEC iQ-F FX5 User's Manual (CC-Link IE TSN)

*2 For the system configuration of the CC-Link IE TSN-equipped module, refer to the following manual.
MELSEC iQ-F FX5 User's Manual (CC-Link IE TSN)

*3 Select [FX5-CCLGN-MS/FX5-nSSC-G] for [Unit Type] in [Connected Ethernet Controller Setting] in GT Designer3.
For [Connected Ethernet Controller Setting] in GT Designer3, refer to the following.
☞ Page 170 [Connected Ethernet Controller Setting]

*4 When the GOT monitors the PLC with the authentication function enabled, logon to the PLC is required.
For information on how to logon and logoff, refer to the following.
☞ Page 185 Logon to the PLC
☞ Page 185 Logoff from the PLC
The GOT cannot monitor the PLC devices until logon to the PLC from the GOT is complete.
Therefore, create a project assuming that the GOT cannot communicate with the PLC for a certain period.
☞ Page 185 Creating a project

Connection cable

Use a connection cable that meets the following standards.

Standard	Category
100BASE-TX	Shielded twisted pair cable (STP) of category 5 or higher
1000BASE-T	Shielded twisted pair cable (double-shielded STP or STP) of category 5e or higher

For the twisted pair cable, use a straight cable.

Use cables and connectors that meet the IEEE802.3 100BASE-TX/1000BASE-T standards.

Maximum segment length

The maximum segment length (length between General-purpose Switch and a node) is 100 m.

Maximum number of connected devices

Up to 128 CPU modules can be connected to channels No. 1 to No. 4 of one GOT. (16 or less recommended)

The following shows the number of connectable controllers per GOT channel and the number of GOTs connectable to one controller.

Controller				GOT	
Model		Number of GOTs connectable to one PLC		Model	Number of connectable controllers per GOT channel
PLC CPU	Module	UDP	TCP		
MELSEC MX Controller (MX-F Model)	FX5-CCLGN-MS	8	8	GT37 SoftGOT3000	63 (8 or less recommended)

4.4.3 GOT side settings

[GOT Ethernet Setting]

Set the GOT Ethernet interface in GT Designer3.

Item	Description
[GOT IP Address Setting]	Set the IP address of the GOT.
[GOT Ethernet Common Setting]	Set the default gateway and other common items for GOT Ethernet interfaces.
[IP filter Setting]	The GOT allows or blocks access from IP addresses specified in the filtering list.

For details on the setting, refer to the following.

📖GT Designer3 (GOT3000) Screen Design Manual

Set the GT SoftGOT3000 Ethernet interface on the personal computer.

Precautions

Do not use 0 and 255 at the end of an IP address.

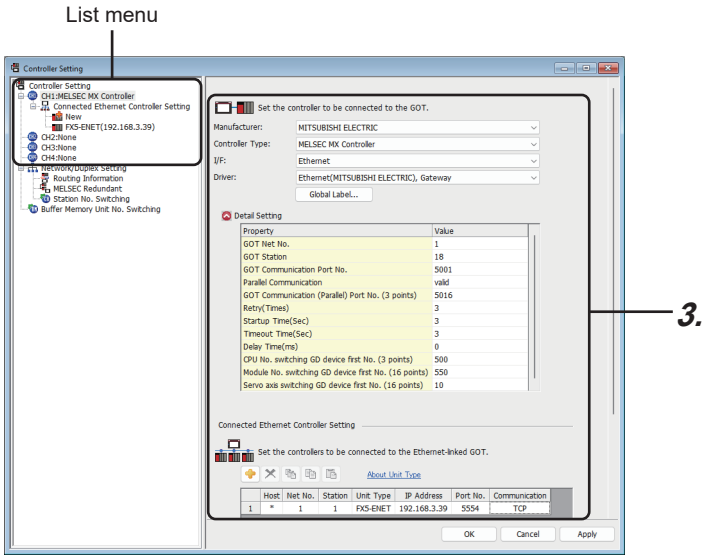
(Numbers of *.*.*.0 and *.*.*.255 are used by the system.)

The GOT may not monitor the controller correctly with the above numbers.

Consult with the administrator of the network before setting an IP address to the GOT.

[Controller Setting]

Set the channel of the connected controller.



Operating procedure

1. Select [Common] → [Controller Setting] from the menu.

2. In the [Controller Setting] window, select the channel number to be used from the list menu.

3. Set the following items.

Item	Description
[Manufacturer]	[MITSUBISHI ELECTRIC]
[Controller Type]	[MELSEC MX Controller]
[I/F]	[Ethernet]
[Driver]	[Ethernet(MITSUBISHI ELECTRIC), Gateway]
[Detail Setting]	Configure the settings according to the usage environment. ☞ Page 165 [Detail Setting]
[Connected Ethernet Controller Setting]	Configure the settings according to the controller to be connected. ☞ Page 170 [Connected Ethernet Controller Setting]

4. When you have completed the settings, click the [OK] button.

Point

The controller settings can be checked in [I/F Communication Setting].
For details, refer to the following.
📖GT Designer3 (GOT3000) Screen Design Manual

■[Detail Setting]

Configure the settings according to the usage environment.

Detail Setting

Property	Value
GOT Net No.	1
GOT Station	18
GOT Communication Port No.	5001
Parallel Communication	valid
GOT Communication (Parallel) Port No. (3 points)	5016
Retry(Times)	3
Startup Time(Sec)	3
Timeout Time(Sec)	3
Delay Time(ms)	0
CPU No. switching GD device first No. (3 points)	500
Module No. switching GD device first No. (16 points)	550
Servo axis switching GD device first No. (16 points)	10

Item	Description	Range
[GOT Net No.]	Set the network number of the GOT.	[1] to [239]
[GOT Station]*1*2	Set the station number of the GOT.	[1] to [120]
[GOT Communication Port No.]	Set the GOT port number for connection with the Ethernet module.	[1024] to [5010], [5014] to [49152], [49171] to [65534]
[Parallel Communication]	Enables or disables the parallel communication. When this setting is enabled, [GOT Communication (Parallel) Port No. (3 points)] can be set. When communicating with multiple devices on a single channel, distributing the communication ports can reduce the communication load.	[valid], [invalid]
[GOT Communication (Parallel) Port No. (3 points)]	Set the GOT port number used for the parallel communication.	• [Parallel Communication] is [invalid]: [0] • [Parallel Communication] is [valid]: [1024] to [5008], [5014] to [49150], [49171] to [65532]
[Retry(Times)]	Set the number of retries to be performed when a communication timeout occurs. When receiving no response after retries, the communication times out.	GOT: [0] times to [5] times GT SoftGOT3000: [0] times to [10] times
[Startup Time]	Set the time period from the GOT startup until the start of communication with the PLC CPU.	[3] seconds to [255] seconds
[Timeout Time]	Set the time period for a communication to time out.	[1] second to [90] seconds
[Delay Time]	Set the delay time for reducing the load of the network and destination PLC.	[0] ms to [10000] ms
[CPU No. switching GD device first No. (3 points)]*3	Set the start device number of the GD devices for CPU number switching. For details, refer to the following. ☞ Page 167 Start device number of the GD devices for CPU number switching	[0] to [65520]
[Module No. switching GD device first No. (16 points)]*3	Set the start device number of the GD devices for module number switching. For details, refer to the following. ☞ Page 167 Start device number of the GD devices for CPU number switching	[0] to [65520]
[Servo axis switching GD device first No. (16 points)]	Set the start device number of the GD devices for servo axis switching. For details, refer to the following. ☞ Page 169 Start device number of the GD devices for servo axis switching	[0] to [65520]

*1 Set values not set for [Station] in [Connected Ethernet Controller Setting].
☞ Page 170 [Connected Ethernet Controller Setting]

*2 When connecting multiple GOTs in the Ethernet network, set a different value for [GOT Station] for each GOT.

*3 Set values when using MELSEC iQ-R series or MELSEC-Q series mixed.

Point

• Controller settings using the GT37 utility

The controller settings can be changed in [Communication Settings] of the GT37 utility after writing [Communication Settings] of project data to GT37.

For details on the GT37 utility, refer to the following manual.

📖GOT3000 Series User's Manual (Utility & Maintenance Functions)

• Priority of the settings in [Controller Setting]

When the settings are configured in GT Designer3 or in the GT37 utility, the latest settings are effective.

■When connecting multiple GOTs

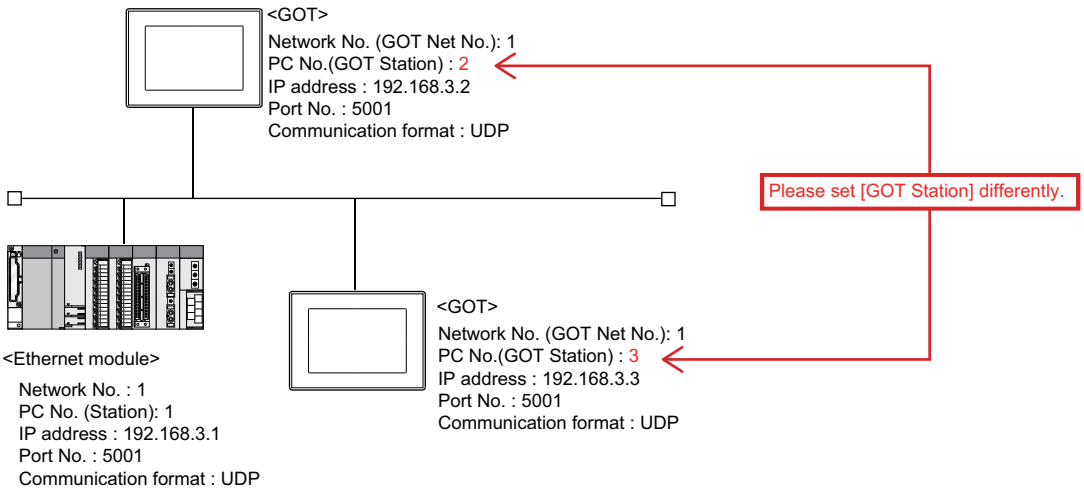
• Settings for [GOT Station]

When connecting multiple GOTs in the Ethernet network, set a different value for [GOT Station] for each GOT.

☞ Page 165 [Detail Setting]

The following shows a system configuration example.

Ex.



• Settings to start up multiple GOTs simultaneously

When connecting multiple GOTs to one built-in Ethernet port CPU, adjust the timing of GOT communication start.

When the communication concentrates on the PLC, the communication between GOT and PLC becomes difficult, and the monitoring by GOT may not start.

As a method for adjusting the timing, communicating one GOT alone first, and then communicating the other GOTs is effective.

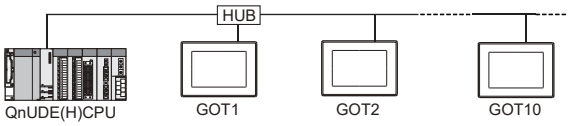
Set the following items on each GOT.

[Startup Time] in [Detail Setting] or [Title Display Time] of [GOT Setup]

[Timeout Time] in [Detail Setting]

The following shows a setting example.

Ex.



Item	GOT1	GOT2	GOT10
Startup Time	3sec (default)	4sec	4sec
Timeout Time	3sec (default)	4sec	4sec

■Start device number of the GD devices for CPU number switching

• Indirect specification of a CPU number

[CPU No.] can be indirectly specified with the GOT internal registers (GD devices) by specifying a value (100 to 102) to [CPU No.] in the device setting dialog in GT Designer3.

Set the start device number of the GD devices to be used in [CPU No. switching GD device first No. (3 points)].

[CPU No.] is specified with three consecutive GD devices, starting from the set device number.

When [500] is set to [CPU No. switching GD device first No. (3 points)], GD500 to GD502 are used to specify [CPU No.] as shown in the following table.

CPU No.	GD device	Setting range
100	GD500	1 to 4 Setting a value outside the range causes a communication timeout error. Specifying a nonexistent CPU number or a CPU number not supporting a multiple CPU system with a device causes a controller error.
101	GD501	
102	GD502	

• Indirect specification of a CPU number on the initially displayed screen

Set [CPU No. switching GD device first No. (3 points)] so that the values of the GD devices are retained and monitored upon the GOT startup.

• Indirect specification of a CPU number for multi-channel connection

If the setting range of [CPU No. switching GD device first No. (3 points)] set for each channel overlaps, the monitoring target CPU number set to each channel is switched simultaneously.

Set [CPU No. switching GD device first No. (3 points)] for each channel so that the setting range does not overlap.

• Indirect specification of a station number and a CPU number for multi-channel connection

When GD10 to GD25 are used to specify the station number of an inverter or non-Mitsubishi temperature controller connected, setting [10] to [CPU No. switching GD device first No. (3 points)] in a different channel switches the monitoring target CPU number and station number of an inverter or non-Mitsubishi temperature controller set to each channel simultaneously.

Set [CPU No. switching GD device first No. (3 points)] so that the setting range does not overlap the station number of an inverter or non-Mitsubishi temperature controller.

■Start device number of the GD devices for module number switching

• Indirect specification of a module number

For connection via a Simple Motion module, [Unit No.] can be specified with the GOT internal registers (GD devices) by specifying a value (100 to 10F) to [Unit No.] in the device setting dialog in GT Designer3.

Set the start device number of the GD devices to be used in [Module No. switching GD device first No. (16 points)].

[Unit No.] is specified with 16 consecutive GD devices, starting from the set device number.

When [550] is set to [Module No. switching GD device first No. (16 points)], GD550 to GD565 are used to specify [Unit No.] as shown in the following table.

Module No.	GD device	Setting range
100	GD550	01 to 10 Setting a value outside the above range causes a device range error.
101	GD551	
102	GD552	
103	GD553	
104	GD554	
105	GD555	
106	GD556	
107	GD557	
108	GD558	
109	GD559	
10A	GD560	
10B	GD561	
10C	GD562	
10D	GD563	
10E	GD564	
10F	GD565	

• Indirect specification of a module number on the initially displayed screen

Set [Module No. switching GD device first No. (16 points)] so that the values of the GD devices are retained and monitored upon the GOT startup.

• Indirect specification of a module number for multi-channel connection

If the setting range of [Module No. switching GD device first No. (16 points)] set for each channel overlaps, the module number of the Simple Motion module via the servo amplifier device of each channel is switched simultaneously.

Set [Module No. switching GD device first No. (16 points)] for each channel so that the setting range does not overlap.

• Indirect specification of a station number and a module number for multi-channel connection

When GD10 to GD25 are used to specify the station number of an inverter or non-Mitsubishi temperature controller connected, setting [10] to [Module No. switching GD device first No. (16 points)] switches the module number of the Simple Motion module via the servo amplifier device and the station number of an inverter or non-Mitsubishi temperature controller set to each channel simultaneously.

Set [Module No. switching GD device first No. (16 points)] so that the setting range does not overlap the station number of an inverter or non-Mitsubishi temperature controller.

■Start device number of the GD devices for servo axis switching

• Indirect specification of a servo axis number

For connection via a Motion CPU or Simple Motion module, a servo axis number can be indirectly specified with GOT internal registers (GD devices) by specifying a value (100 to 115) to the axis number of the servo amplifier device.

Set the start device number of the GD devices to be used in [Servo axis switching GD device first No. (16 points)].

Specify a servo axis number with 16 consecutive GD devices, starting the set device number.

When [10] is set to [Servo axis switching GD device first No. (16 points)], GD10 to GD25 are used to specify a servo axis number as shown in the following table.

Servo axis No.	GD device	Setting range
100	GD10	1 to 64 Setting a value outside the above range causes a device range error.
101	GD11	
102	GD12	
103	GD13	
104	GD14	
105	GD15	
106	GD16	
107	GD17	
108	GD18	
109	GD19	
110	GD20	
111	GD21	
112	GD22	
113	GD23	
114	GD24	
115	GD25	

• Indirect specification of a servo axis number on the initially displayed screen

Set [Servo axis switching GD device first No. (16 points)] so that the values of the GD devices are retained and monitored upon the GOT startup.

• Indirect specification of a servo axis number for multi-channel connection

If the setting rage of [Servo axis switching GD device first No. (16 points)] set for each channel overlaps, the axis number of the servo amplifier of each channel is switched simultaneously.

Set [Servo axis switching GD device first No. (16 points)] for each channel so that the setting range does not overlap.

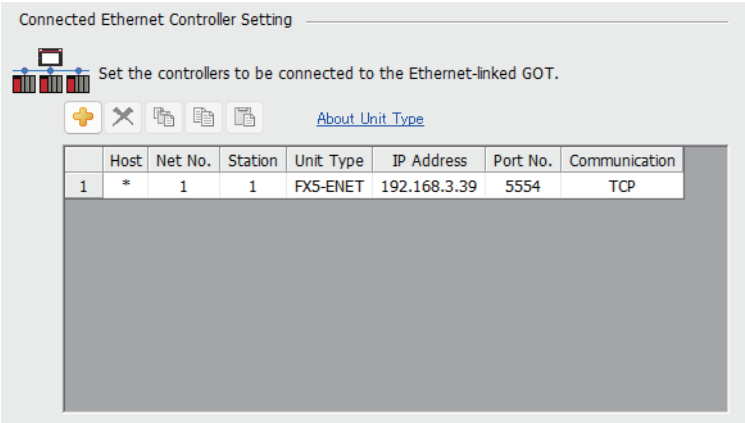
• Indirect specification of a station number and a servo axis number for multi-channel connection

When GD10 to GD25 are used to specify the station number of an inverter or non-Mitsubishi temperature controller connected, setting [10] to [Servo axis switching GD device first No. (16 points)] switches the axis number of the servo amplifier and the station number of an inverter or non-Mitsubishi temperature controller set to each channel simultaneously.

Set [Servo axis switching GD device first No. (16 points)] so that the setting range does not overlap the station number of an inverter or non-Mitsubishi temperature controller.

■[Connected Ethernet Controller Setting]

Set the controller to be connected to the GOT by Ethernet.



Item	Description	Range
[Host]	The host is displayed. It refers to a station that can be connected without setting a station number. The host is indicated with an asterisk (*).	—
[Net No.]	Set the network number of the connected Ethernet equipment.	[1] to [239]
[Station]*2	Set the station number of the connected Ethernet equipment.	☞ Page 170 [Station No.]
[Unit Type]	Select the model of the connected Ethernet equipment.	☞ Page 170 [Unit Type]
[IP Address]	Set the IP address of the connected Ethernet equipment.	[0.0.0.0] to [255.255.255.255]
[Port No.]*1	Set the port number of the connected Ethernet equipment.	☞ Page 170 [Port No.]
[Communication]	Set the communication format of the connected Ethernet equipment.	[UDP], [TCP]

*1 Match the port number of the CPU and [Port No.] of [Connected Ethernet Controller Setting].

*2 Set values not set for [GOT Station] in [Detail Setting].
☞ Page 165 [Detail Setting]

■[Unit Type]

Select an item for [Unit Type] as shown below.

GOT connection destination	[Unit Type]
Ethernet module (MELSEC iQ-F series)	[FX5-ENET]
CC-Link IE TSN master/local module(MELSEC iQ-F series)	[FX5-CCLGN-MS/FX5-nSSC-G]

■[Port No.]

The setting range is as follows:

[Unit Type]	[Port No.]	[Communication]
[FX5-ENET]	[5554]	[TCP]
	[5555]	[UDP]
[FX5-CCLGN-MS/FX5-nSSC-G]	[5001]	[UDP]
	[5554]	[TCP]

■[Station No.]

The setting range of the station number differs depending on the setting for [Controller Type].

[Unit Type]	Setting range for [Station]
[FX5-ENET]	[1] to [120]
[FX5-CCLGN-MS/FX5-nSSC-G]	[0] to [120]

■When the unit type is [FX5-ENET]

There is no setting for the network number and PLC number when the unit type is [FX5-ENET].

The values of [Network No.] and [Station No.] in the object setting dialog must be the same as the values of [Net No.] and [Station] in [Connected Ethernet Controller Setting].

■When the unit type is [FX5-CCLGN-MS/FX5-nSSC-G]

The network number and station number in the object setting dialog must match the network number and PLC number of the CPU connected via the Ethernet module.

Point

Changing the host station on the GOT

[Host] can be changed with the utility function of the GOT.

For details on the setting method, refer to the following manual.

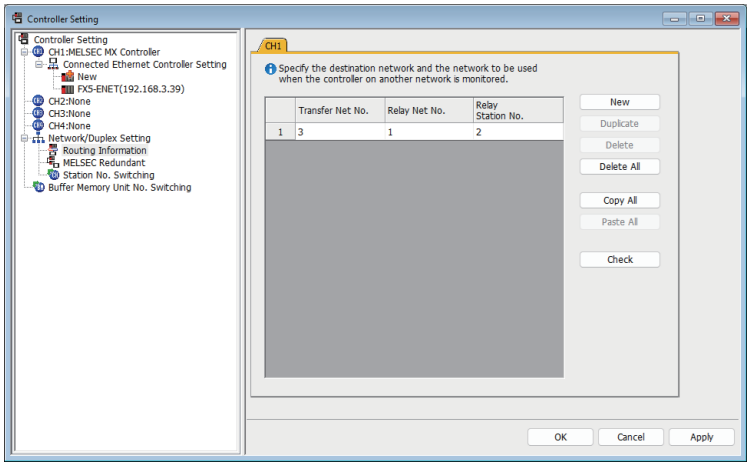
📖GOT3000 Series User's Manual (Utility & Maintenance Functions)

■Routing parameter settings

Up to 64 settings can be configured for [Transfer Net No.].

However, the same number cannot be set in [Transfer Net No.] twice or more (multiple times).

The GOT (host station) can access 64 different networks specified under [Transfer Net No.].



Item	Range
[Transfer Net No.]	[1] to [239]
[Relay Net No.]*1	[1] to [239]
[Relay Station No.]*1	[0] to [120]

*1 To access a different network via the built-in Ethernet port CPU, set the values of [Net No.] and [Station] that are set in [Connected Ethernet Controller Setting] in GT Designer3.

Point

Routing parameter settings for the relay station

Routing parameter settings are also necessary for the relay station.

For the setting, refer to the following.

☞ Page 173 PLC side settings

Precautions

If the network numbers of the GOT and PLC do not match on the same Ethernet network, monitoring of the PLC is not possible.

To enable monitoring, set the same network number as that of the GOT or connect an Ethernet module to the PLC and configure the routing settings to monitor the PLC as a different network.

When the multi-channel connection can be used, set a different network number for each channel.

4.4.4 PLC side settings

Model		Reference
MELSEC MX Controller (MX-F Model)	MXF100-8-N32 MXF100-8-P32 MXF100-16-N32 MXF100-16-P32	☞ Page 173 Connection to Ethernet module (MELSEC iQ-F series) ☞ Page 181 Connection to CC-Link IE TSN-equipped module

Connection to Ethernet module (MELSEC iQ-F series)

This section describes the settings of the GOT and the Ethernet module (MELSEC iQ-F series) in the system configuration shown below.

☞ Page 173 When the GOT's communication format is UDP
☞ Page 177 When the GOT's communication format is TCP

Point

- Ethernet module (MELSEC iQ-F series)

For details on the Ethernet module (MELSEC iQ-F series), refer to the following manual.

📖MELSEC iQ-F series manuals

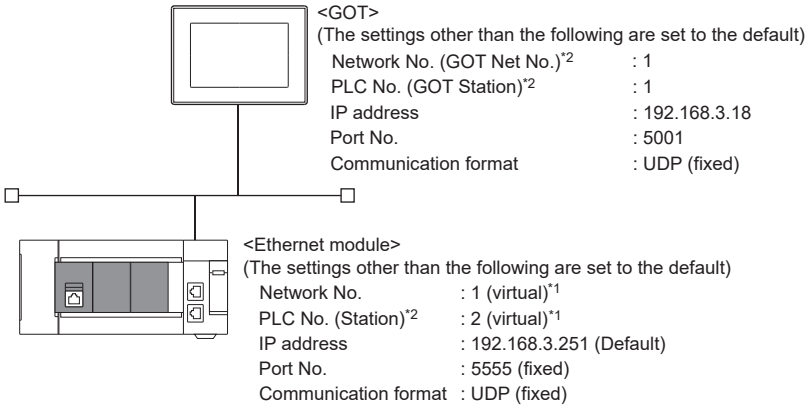
- Connecting multiple GOTs

When connecting multiple GOTs in the Ethernet network, set a different value for [GOT Station] for each GOT.

☞ Page 166 When connecting multiple GOTs

■When the GOT's communication format is UDP

- System configuration



*1 Although the setting is nonexistent on the PLC side, set a virtual value on the GOT side.
☞ • [Controller Setting] and [Connected Ethernet Controller Setting] of GT Designer3

*2 For the following settings, the setting names are different on the PLC side and the GOT side.

Setting	Setting name		
	PLC side	GOT side	
		Controller setting	Connected Ethernet controller setting
Network number	[Network No.]	[GOT Net No.]	[Net No.]
PLC number	[Station No.]	[GOT Station]	[Station No.]

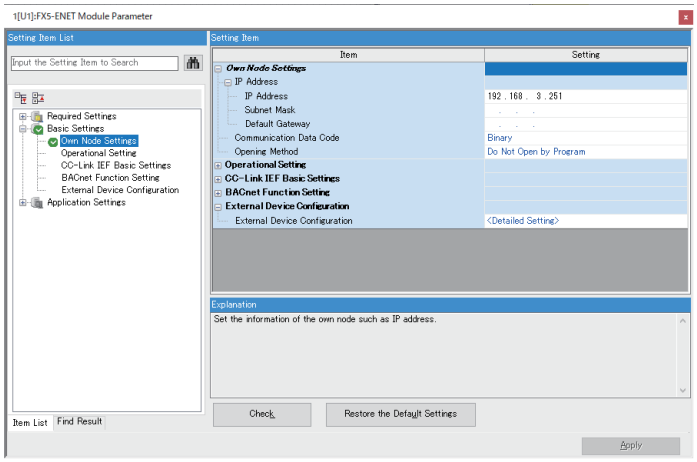
• [Module Parameter] of GX Works3

For the connection with FX5-ENET/IP, use GX Works3 version 1.075D or later.

For the connection with FX5-EIP, use GX Works3 version 1.120A or later.

Module parameters of the Ethernet module

Set [Module Parameter] of the port under [Module information].



○: Necessary, △: As necessary, —: Not necessary

Item	Setting value	Setting for GOT connection
[IP Address]	192.168.3.251	○
[Subnet Mask]	—	—
[Default Gateway]	—	—
[Communication Data Code]	(Use default value)	—
[Opening Method]	(Use default value)	—
[External Device Configuration]	—	—

• [Controller Setting] and [Connected Ethernet Controller Setting] of GT Designer3

For the setting method of [Controller Setting] and [Connected Ethernet Controller Setting] in GT Designer3, refer to the following.

☞ Page 163 GOT side settings

Point

[Connected Ethernet Controller Setting] for connection to Ethernet module (MELSEC iQ-F series)
The setting items for the network number and station number do not exist on the PLC side.
Set the network number and station number on the GOT side.
When doing so, set a network number not used in the system.

Controller settings

Item	Setting value
[GOT Net No.]	1
[GOT Station]	1
[GOT Communication Port No.]	5001
[Retry]	3 times
[Startup Time]	3 seconds
[Timeout Time]	3 seconds
[Delay Time]	0 ms

GOT Ethernet settings

Item	Setting value
[GOT IP Address]	192.168.3.18
[Subnet Mask]	255.255.255.0
[Default Gateway]	0.0.0.0
[Peripheral S/W Communication Port No.]	5015
[Transparent Port No.]	5014

Connected Ethernet controller settings

Item		Setting value
Ethernet setting No. 1	[Host]	*
	[Net No.]	1*1
	[Station]	2*2
	[Unit Type]	FX5-ENET
	[IP Address]	192.168.3.251
	[Port No.]	5555
	[Communication]	UDP

*1 Set the same value as the GOT net number.
*2 Set a value different from the GOT station number.

• Checking the communication state of the built-in Ethernet port CPU

When using Windows Command Prompt

Execute a ping command in Windows Command Prompt.

1) At normal end

C:\>Ping 192.168.3.251

Reply from 192.168.3.251:bytes=32 time<1ms TTL=32

2) At abnormal end

C:\>Ping 192.168.3.251

Request timed out.

In the case of abnormal end

In the case of abnormal end, check the following and execute the ping command again.

Cable connecting condition

Switch settings and network parameter settings

Operation state of PLC CPU (faulty or not)

IP address of the Ethernet module specified by the ping command

Point

Ethernet diagnostics of GX Works3

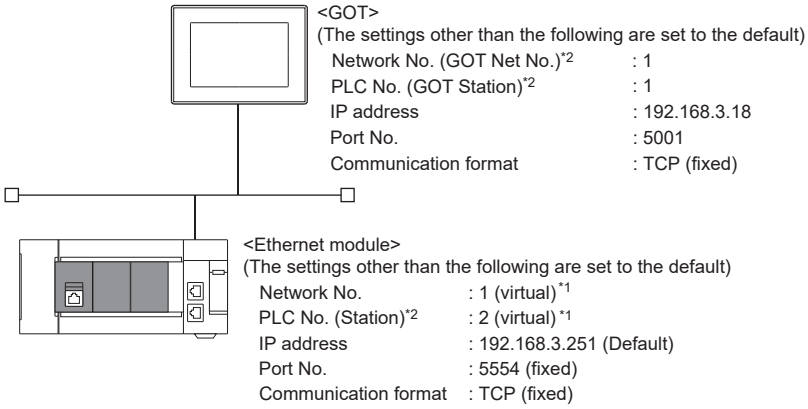
The Ethernet diagnostics of GX Works3 enables ping tests from the PLC.

For details on the Ethernet diagnostics of GX Works3, refer to the following manual.

📖MELSEC iQ-F series manuals

■When the GOT's communication format is TCP

- System configuration



*1 Although the setting is nonexistent on the PLC side, set a virtual value on the GOT side.

☞ • [Controller Setting] and [Connected Ethernet Controller Setting] of GT Designer3

*2 For the following settings, the setting names are different on the PLC side and the GOT side.

Setting	Setting name		
	PLC side	GOT side	
		Controller setting	Connected Ethernet controller setting
Network number	[Network No.]	[GOT Net No.]	[Net No.]
PLC number	[Station No.]	[GOT Station]	[Station No.]

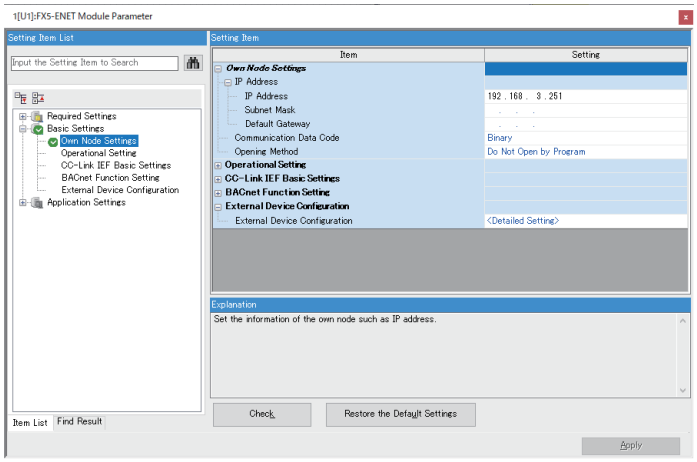
• [Module Parameter] of GX Works3

For the connection with FX5-ENET/IP, use GX Works3 version 1.075D or later.

For the connection with FX5-EIP, use GX Works3 version 1.120A or later.

Module parameters of the Ethernet module

Set [Module Parameter] of the port under [Module information].

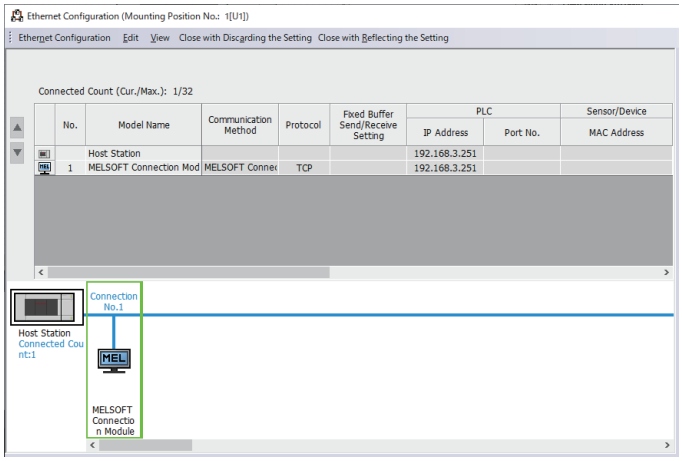


○: Necessary, △: As necessary, —: Not necessary

Item	Setting value	Setting for GOT connection
[IP Address]	192.168.3.251	○
[Subnet Mask]	—	—
[Default Gateway]	—	—
[Communication Data Code]	(Use default value)	—
[Opening Method]	(Use default value)	—
[External Device Configuration]	☞ Target device connection configuration settings	○

Target device connection configuration settings

Configure the settings for all the connected GOTs.



Item	Setting value
[Communication Method]	MELSOFT connection
[Protocol]	TCP

• [Controller Setting] and [Connected Ethernet Controller Setting] of GT Designer3

For the setting method of [Controller Setting] and [Connected Ethernet Controller Setting] in GT Designer3, refer to the following.

☞ Page 163 GOT side settings

Point

[Connected Ethernet Controller Setting] for connection to Ethernet module (MELSEC iQ-F series)
The setting items for the network number and station number do not exist on the PLC side.
Set the network number and station number on the GOT side.
When doing so, set a network number not used in the system.

Controller settings

Item	Setting value
[GOT Net No.]	1
[GOT Station]	1
[GOT Communication Port No.]	5001
[Retry]	3 times
[Startup Time]	3 seconds
[Timeout Time]	3 seconds
[Delay Time]	0 ms

GOT Ethernet settings

Item	Setting value
[GOT IP Address]	192.168.3.18
[Subnet Mask]	255.255.255.0
[Default Gateway]	0.0.0.0
[Peripheral S/W Communication Port No.]	5015
[Transparent Port No.]	5014

Connected Ethernet controller settings

Item		Setting value
Ethernet setting No. 1	[Host]	*
	[Net No.]	1*1
	[Station]	2*2
	[Unit Type]	FX5-ENET
	[IP Address]	192.168.3.251
	[Port No.]	5554
	[Communication]	TCP

*1 Set the same value as the GOT net number.
*2 Set a value different from the GOT station number.

• Checking the communication state of the built-in Ethernet port CPU

When using Windows Command Prompt

Execute a ping command in Windows Command Prompt.

1) At normal end

C:\>Ping 192.168.3.251

Reply from 192.168.3.251:bytes=32 time<1ms TTL=32

2) At abnormal end

C:\>Ping 192.168.3.251

Request timed out.

In the case of abnormal end

In the case of abnormal end, check the following and execute the ping command again.

Cable connecting condition

Switch settings and network parameter settings

Operation state of PLC CPU (faulty or not)

IP address of the Ethernet module specified by the ping command

Point

Ethernet diagnostics of GX Works3

The Ethernet diagnostics of GX Works3 enables ping tests from the PLC.

For details on the Ethernet diagnostics of GX Works3, refer to the following manual.

📖MELSEC iQ-F series manuals

Connection to CC-Link IE TSN-equipped module

This section describes the settings of the GOT and CC-Link IE TSN-equipped module in the system configuration shown below.

Point

- CC-Link IE TSN-equipped module

For details on the CC-Link IE TSN-equipped module, refer to the following manual.

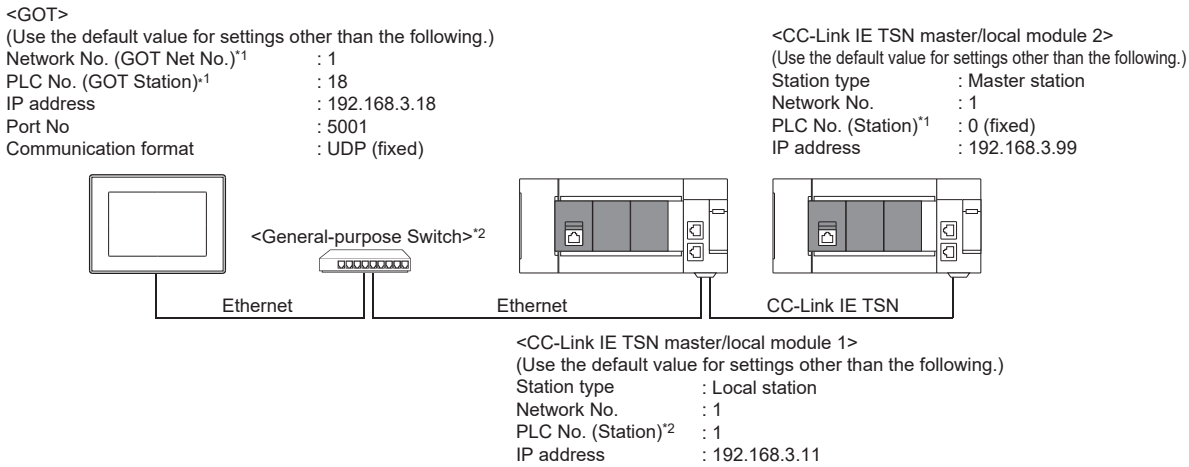
MELSEC iQ-F FX5 User's Manual (CC-Link IE TSN)

- Connecting multiple GOTs

When connecting multiple GOTs in the Ethernet network, set a different value for [GOT Station] for each GOT.

Page 166 When connecting multiple GOTs

■System configuration



*1 For the following settings, the setting names are different on the PLC side and the GOT side.

Setting	Setting name		
	PLC side	GOT side	
		Controller setting	Connected Ethernet controller setting
Network number	[Network No.]	[GOT Net No.]	[Net No.]
PLC number	[Station]	[GOT Station]	[Station]

*2 General-purpose Switch is required to connect the GOT and the CC-Link IE TSN master/local module.
For usable General-purpose Switches, refer to the following.
MELSEC iQ-F FX5 User's Manual (CC-Link IE TSN)

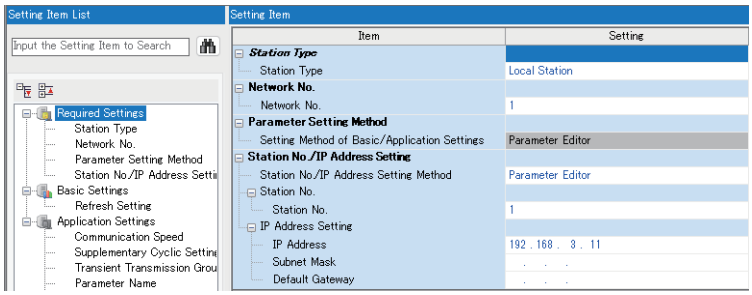
■[Module Parameter] of GX Works3

For details on the settings of the PLC, refer to the following manual.

📖MELSEC iQ-F FX5 User's Manual (CC-Link IE TSN)

Ex.

Settings of CC-Link IE TSN master/local module 1



Item	Setting value	
	CC-Link IE TSN master/local module 1	CC-Link IE TSN master/local module 2
[Station Type]	Local station	Master station
[Network No.]	1	1
[Station No.]	1	0
[IP Address]	192.168.3.11	192.168.3.99

■[Controller Setting] and [Connected Ethernet Controller Setting] of GT Designer3

For the setting method of [Controller Setting] and [Connected Ethernet Controller Setting] in GT Designer3, refer to the following.

☞ Page 163 GOT side settings

- Controller settings

Item	Setting value
[GOT Net No.]	1
[GOT Station]	18
[GOT Communication Port No.]	5001
[Retry]	3 times
[Startup Time]	3 seconds
[Timeout Time]	3 seconds
[Delay Time]	0 ms

- GOT Ethernet settings

Item	Setting value
[GOT IP Address]	192.168.3.18
[Subnet Mask]	255.255.255.0
[Default Gateway]	0.0.0.0
[Peripheral S/W Communication Port No.]	5015
[Transparent Port No.]	5014

- Connected Ethernet controller settings

Item		Setting value
Ethernet setting No. 1	[Host]	*
	[Net No.]	1*1
	[Station No.]	1*2
	[Unit Type]	FX5-CCLGN-MS/FX5-nSSC-G
	[IP Address]	192.168.3.11
	[Port No.]*3	5001
	[Communication]*3	UDP

*1 Set the same value as the GOT net number.
*2 Set a value different from the GOT station number.
*3 The following settings can also be configured for [Port No.] and [Communication].
[Port No.]: 5554
[Communication]: TCP

■Checking the communication status of the CC-Link IE TSN-equipped module

- When using Windows Command Prompt

1) At normal end

C:\>Ping 192.168.3.11

Reply from 192.168.3.11:bytes=32 time<1ms TTL=32

2) At abnormal end

C:\>Ping 192.168.3.11

Request timed out.

- In the case of abnormal end

In the case of abnormal end, check the following and execute the ping command again.

Cable connecting condition

Switch settings and network parameter settings

Operation state of PLC CPU (faulty or not)

IP address of the CC-Link IE TSN-equipped module specified by the ping command

Point

Ethernet diagnostics of GX Works3

The Ethernet diagnostics of GX Works3 enables ping tests from the PLC.

For details on the Ethernet diagnostics of GX Works3, refer to the following manual.

📖MELSEC iQ-F series manuals

4.4.5 Connection to the PLC with the authentication function enabled

Logon to the PLC

When the GOT monitors the PLC with the authentication function enabled, logon to the PLC is required.

Touch a special function switch (Destination Authentication) set in the project to display the key window.

Enter the [User Name] and [Password] to log on.

For information on how to set a special function switch, refer to the following.

📖GT Designer3 (GOT3000) Screen Design Manual

Logoff from the PLC

Touch a special function switch (Destination Authentication) set in the project to log off.

Reading and writing of cyclic devices

Cyclic devices communicate using an expansion unit, allowing read and write operations even in the logged-off state.

Precautions

■Creating a project

At GOT startup, the PLC is in logoff state.

The GOT cannot monitor the PLC devices until logon to the PLC from the GOT is complete.

Therefore, create a project assuming that the GOT cannot communicate with the PLC for a certain period.

For information on how to set screens and functions, refer to the following.

📖GT Designer3 (GOT3000) Screen Design Manual

Take the following precautions when creating a project.

Item		Precautions for using the destination authentication function
[Environmental Setting]	[Screen Switching/Window]	Set the GOT internal device as the screen switching device. As well as logoff operation by GOT, reset on the PLC side or other operations can also make the PLC in logoff state. By setting the GOT internal device as the screen switching device, a screen can be switched even in logoff state due to reset on the PLC side or other operations.
	[Language Switching]	Set the GOT internal device as the language switching device. When a PLC device is set, comments cannot be displayed in logoff state.
	[System Information]	Set the GOT internal device as the system information device. When a PLC device is set, a system alarm occurs in logoff state.
	[Security]	It is recommended not to use screen security (level authentication and operator authentication) for connection with the PLC with the destination authentication function enabled.
		When using the level authentication, set the GOT internal device as the security level device.
Screen setting	Screen displayed immediately after GOT startup	Place a special function switch (Destination Authentication) to perform destination authentication for logging on to the PLC. Do not configure the setting to monitor the PLC devices.
	Screen number	Specify the screen number ranges separately for the screen displayed in logoff state and the screen displayed in logon state. Separating the screen number ranges makes screen transition in logoff state easy to consider. Example) Before authentication: 1 to 100, after authentication: 101 or later
	Screen switching control at logoff	Configure the setting using trigger actions or other methods so that the screen switches at logoff to the screen displayed before authentication.
Function that is not recommended for use when connecting with the PLC with the destination authentication function enabled		• Screen security (level authentication and operator authentication) • GOT Mobile function (Destination authentication cannot be performed on a mobile screen.)
Others	Function to specify the conditions other than the trigger device	Specify the trigger indirectly by using trigger actions or other methods. Example) When the PLC device controls the input range for a numerical input
	Function that cannot specify the trigger device	By scripts or device data transfer using the GOT internal device, read and write the PLC device only in logon state. Example) Alarm monitoring of the connected device

■Character code applicable for [User Name].

For logon to the PLC from the GOT, only ASCII code characters can be available for [User Name] in the key window and the [Destination Authentication] window.

When setting [User Name] for the PLC, set [User Name] of the user operating the PLC from the GOT in the ASCII code.

For the list of the ASCII code available in GOT, refer to the following.

📖GT Designer3 (GOT3000) Screen Design Manual

■Access level of the user who can log on

When logging on to the PLC from the GOT, only the users whose access level is [Users] can log on.

Users with the access level [Administrators] or [Developers] cannot log on.

When monitoring the PLC from the GOT, set the users whose access level is [Users] for the PLC.

■Changing the user authentication function settings

The user authentication settings (user name and password) cannot be changed from the GOT.

Use GX Works3 to change the settings registered in the PLC.

■Obtaining and updating CPU errors

The GOT cannot obtain CPU errors unless you log on to the PLC.

To update the CPU error of the system alarm displayed on the GOT, log on to the PLC from the GOT.

4.4.6 Access range for monitoring

Only the connected CPU can be accessed.

4.5 MELSEC iQ-R series (Built-in Ethernet port connection)

☞ Page 188 Connectable devices
☞ Page 190 System configuration
☞ Page 198 GOT side settings
☞ Page 209 PLC side settings
☞ Page 231 Access range for monitoring
☞ Page 232 How to monitor a redundant system

4.5.1 Connectable devices

The following table shows the connectable models.

○: Supported, —: Not supported

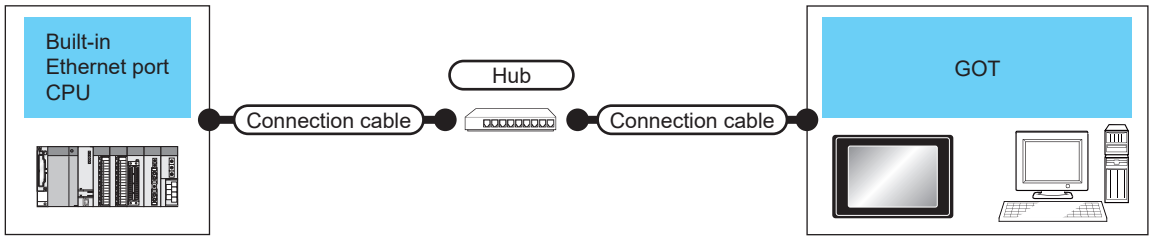
Controller	Model	Clock	Connectable model
MELSEC iQ-R series	R00CPU R01CPU R02CPU R04CPU R08CPU R16CPU R32CPU R120CPU	○	GT37 SoftGOT3000
	R08PCPU[*1] R16PCPU[*1] R32PCPU[*1] R120PCPU[*1]	○	GT37 SoftGOT3000
	R04ENCPU R08ENCPU R16ENCPU R32ENCPU R120ENCPU	○	GT37 SoftGOT3000
	R08PSFCPU[*2] R16PSFCPU[*2] R32PSFCPU[*2] R120PSFCPU[*2]	○	GT37 SoftGOT3000
	R08SFCPU[*3] R16SFCPU[*3] R32SFCPU[*3] R120SFCPU[*3]	○	GT37 SoftGOT3000
Motion CPU (MELSEC iQ-R series)	R16MTCPU R32MTCPU R64MTCPU[*5]	○	GT37 SoftGOT3000
C Controller module (MELSEC iQ-R series)	R12CCPU-V	○	GT37 SoftGOT3000
MELSECWinCPU (MELSEC iQ-R series)	R102WCPU-W	—	GT37 SoftGOT3000

Controller	Model	Clock	Connectable model
CNC C80	R16NCCPU-S1*4	○	GT37 SoftGOT3000
Robot controller (MELSEC iQ-R series)	CR800-R (R16RTCPU)	○	GT37 SoftGOT3000

*1 Mount a redundant function module R6RFM next to the RnPCPU on the base unit when building a redundant system.
*2 Mount the SIL2 function module R6PSFM and the redundant function module R6RFM next to the RnPSFCPU on the base unit.
*3 Mount a safety function module R6SFM next to the RnSFCPU on the base unit.
The RnSFCPU and the safety function module R6SFM must have the same pair version.
If their pair versions differ, the RnSFCPU does not operate.
*4 Connect the cable to the DISPLAY I/F on the R16NCCPU-S1.
*5 Use a module with OS software version 06 or later.

4.5.2 System configuration

Connection to the built-in Ethernet port CPU



For details on the connection cables and the maximum segment length, refer to the following.

☞ Page 191 Connection cable
☞ Page 191 Maximum segment length

For details on the maximum number of connected devices, refer to the following.

☞ Page 192 Maximum number of connected devices

Controller	Connection cable	GOT	
		Interface	Model
MELSEC iQ-R series[*1*2*3] Robot controller CR800-R (R16RTCPU)	Twisted pair cable	Built-in Ethernet interface of GOT	GT37 SoftGOT3000
		Ethernet interface of personal computer	GT37 SoftGOT3000
Motion CPU (MELSEC iQ-R series)[*1*2*3]	Twisted pair cable	Built-in Ethernet interface of GOT	GT37 SoftGOT3000
		Ethernet interface of personal computer	GT37 SoftGOT3000
C Controller module (MELSEC iQ-R series)[*3]	Twisted pair cable	Built-in Ethernet interface of GOT	GT37 SoftGOT3000
		Ethernet interface of personal computer	GT37 SoftGOT3000
MELSECWinCPU (MELSEC iQ-R series)[*3]	Twisted pair cable	Built-in Ethernet interface of GOT	GT37 SoftGOT3000
		Ethernet interface of personal computer	GT37 SoftGOT3000

*1 For the system configuration of the built-in Ethernet port CPU, refer to the manual of the PLC to be used.
*2 For [Unit Type] to be selected in [Connected Ethernet Controller Setting] in GT Designer3, refer to the following.
☞ Page 205 [Connected Ethernet Controller Setting]
*3 For connection to RnENCPU via the multiple CPU system, the firmware version of the RnENCPU must be 14 or later.

■Connection cable

Use a connection cable that meets the following standards.

Standard	Category
10BASE-T	Shielded twisted pair cable (STP) or unshielded twisted pair cable (UTP) of category 3 or higher
100BASE-TX	Shielded twisted pair cable (STP) or unshielded twisted pair cable (UTP) of category 5 or higher
1000BASE-T	Shielded twisted pair cable (STP) or unshielded twisted pair cable (UTP) of category 5e or higher

The destination device connected with the twisted pair cable varies with the configuration of the Ethernet network system used.
Connect the cable to the Ethernet module, hub, or other system equipment corresponding to the applicable Ethernet network system.
Use cables, connectors, and hubs that meet the IEEE802.3 10BASE-T/100BASE-TX/1000BASE-T standards.
When only one GOT is connected, the GOT can be directly connected to the controller without a hub.

■Maximum segment length

The maximum segment length (length between a hub and a node) is 100 m.
The maximum length depends on the Ethernet equipment used.
The following shows the number of connectable hubs when a repeater hub is used.

- 10BASE-T: Up to 4 for a cascade connection (within 500 m)
- 100BASE-TX: Up to 2 for a cascade connection (within 205 m)
- 1000BASE-T: The number differs depending on the hub to be used.

When switching hubs are used, there is no theoretical limit to the number of cascade connections between switching hubs.
For the limit, contact the switching hub manufacturer.

Precautions

When multiple network devices (including GOTs) are connected in the same segment, the network load increases and the transmission speed between the GOT and PLC may be reduced.
The following actions may improve the communication performance.

- Use a switching hub compatible with 1000BASE-T (1 Gbps) or more.
- Reduce the number of devices monitored by the GOT.

■Maximum number of connected devices

Up to 128 CPU modules can be connected to channels No. 1 to No. 4 of one GOT. (16 or less recommended)

The following shows the number of connectable controllers per GOT channel and the number of GOTs connectable to one controller.

Controller			GOT	
Model	Number of GOTs connectable to one PLC		Model	Number of connectable controllers per GOT channel
	UDP	TCP		
MELSEC iQ-R series	119	17	GT37 SoftGOT3000	119 (16 or less recommended)
Robot controller CR800-R (R16RTCPU)	119	17	GT37 SoftGOT3000	119 (16 or less recommended)
	16	16	GT37 SoftGOT3000	128
Motion CPU (MELSEC iQ-R series)	1	15	GT37 SoftGOT3000	119 (16 or less recommended)
	16	16	GT37 SoftGOT3000	128
C Controller module (MELSEC iQ-R series)	119	17	GT37 SoftGOT3000	119 (16 or less recommended)
	1	1	GT37 SoftGOT3000	128
MELSECWinCPU (MELSEC iQ-R series)	119	17	GT37 SoftGOT3000	119 (16 or less recommended)

■Connection to the built-in Ethernet port of the built-in Ethernet port CPU

Connect the GOT after turning on the network equipment such as the built-in Ethernet port CPU or hub to enable communications.

If the GOT cannot communicate with the built-in Ethernet port CPU, a communication error may occur on the GOT.

■Connection via the multiple CPU system

When the GOT is connected via the multiple CPU system, the PLC takes 10 seconds or more to run.

If you start the GOT before the PLC runs, a system alarm occurs.

Adjust the time to display the GOT startup screen to prevent a system alarm.

📖GT Designer3 (GOT3000) Screen Design Manual

■Connection to RnSFCPU

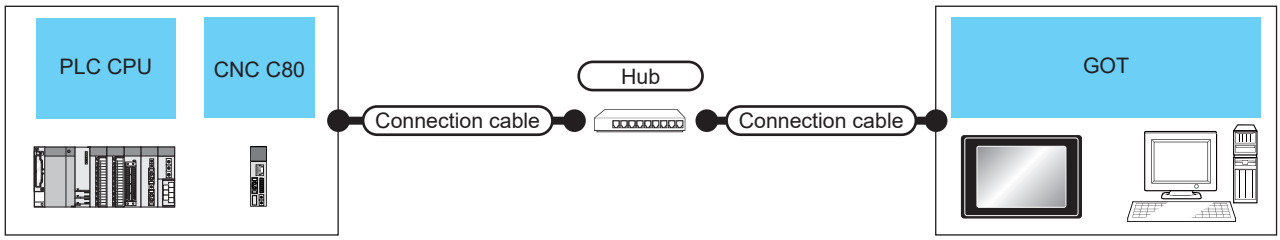
RnSFCPU takes 10 seconds or more to run.

If you start the GOT before the RnSFCPU runs, a system alarm occurs.

Adjust the time to display the GOT startup screen to prevent a system alarm.

📖GT Designer3 (GOT3000) Screen Design Manual

Connection to Display I/F



For details on the connection cables and the maximum segment length, refer to the following.

☞ Page 195 Connection cable
☞ Page 195 Maximum segment length

For details on the maximum number of connected devices, refer to the following.

☞ Page 195 Maximum number of connected devices

Controller	Connection cable	GOT	
		Interface	Model
CNC C80(R16NCCPU-S1)*1*2	Twisted pair cable	Built-in Ethernet interface of GOT	GT37 SoftGOT3000
		Ethernet interface of personal computer	GT37 SoftGOT3000

*1 For the system configuration of the CNC C80, refer to the following manual.
C80 Series Setup Manual

*2 Select [RnNCCPU] for [Unit Type] in [Connected Ethernet Controller Setting] of GT Designer3.
For [Connected Ethernet Controller Setting] in GT Designer3, refer to the following.
☞ Page 205 [Connected Ethernet Controller Setting]

■Connection cable

Use a connection cable that meets the following standards.

Standard	Category
10BASE-T	Shielded twisted pair cable (STP) or unshielded twisted pair cable (UTP) of category 3 or higher
100BASE-TX	Shielded twisted pair cable (STP) or unshielded twisted pair cable (UTP) of category 5 or higher
1000BASE-T	Shielded twisted pair cable (STP) or unshielded twisted pair cable (UTP) of category 5e or higher

The destination device connected with the twisted pair cable varies with the configuration of the Ethernet network system used.

Connect the cable to the Ethernet module, hub, or other system equipment corresponding to the applicable Ethernet network system.

Use cables, connectors, and hubs that meet the IEEE802.3 10BASE-T/100BASE-TX/1000BASE-T standards.

When only one GOT is connected, the GOT can be directly connected to the controller without a hub.

■Maximum segment length

The maximum segment length (length between a hub and a node) is 100 m.

The maximum length depends on the Ethernet equipment used.

The following shows the number of connectable hubs when a repeater hub is used.

- 10BASE-T: Up to 4 for a cascade connection (within 500 m)
- 100BASE-TX: Up to 2 for a cascade connection (within 205 m)
- 1000BASE-T: The number differs depending on the hub to be used.

When switching hubs are used, there is no theoretical limit to the number of cascade connections between switching hubs.

For the limit, contact the switching hub manufacturer.

Precautions

When multiple network devices (including GOTs) are connected in the same segment, the network load increases and the transmission speed between the GOT and PLC may be reduced.

The following actions may improve the communication performance.

- Use a switching hub compatible with 1000BASE-T (1 Gbps) or more.
- Reduce the number of devices monitored by the GOT.

■Maximum number of connected devices

Up to 128 CPU modules can be connected to channels No. 1 to No. 4 of one GOT. (16 or less recommended)

The following shows the number of connectable controllers per GOT channel and the number of GOTs connectable to one controller.

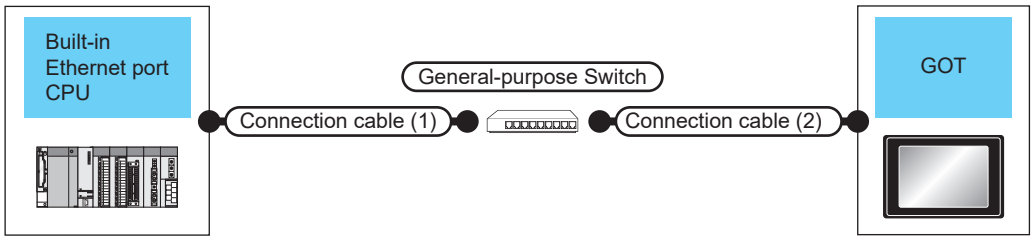
Controller			GOT	
Model	Number of GOTs connectable to one PLC		Model	Number of connectable controllers per GOT channel
	UDP	TCP		
CNC C80 (R16NCCPU-S1)	8	8	GT37 SoftGOT3000	128

Connection to Motion module through the built-in Ethernet port of PLC

The following shows the system configuration for monitoring the global labels of the Motion module with the GOT.

Point

To monitor the global labels of the Motion module with the GOT, connect the GOT and Motion module through the built-in Ethernet port of the PLC.
If the GOT is connected to the built-in port of the Motion module, the global labels of the Motion module cannot be monitored.



For details on the connection cables and the maximum segment length, refer to the following.

☞ Page 197 Connection cable
☞ Page 197 Maximum segment length

For details on the maximum number of connected devices, refer to the following.

☞ Page 197 Maximum number of connected devices

Controller	Motion module*2	Connection cable (1)	External device	Connection cable (2)	GOT	
					Interface	Model
MELSEC iQ-R series (RnCPU, RnENCPU, RnSFCPU)*3*5 C Controller module (MELSEC iQ-R series)*4	RD78G4 RD78G8 RD78G16 RD78G32 RD78G64 RD78GHV RD78GHW	Twisted pair cable	General-purpose Switch*1	Twisted pair cable	Built-in Ethernet interface of GOT	GT37 SoftGOT3000
					Ethernet interface of personal computer	GT37 SoftGOT3000

*1 For usable General-purpose Switches, refer to the following.
MELSEC iQ-R Motion Module User's Manual (Startup)

*2 For the system configuration of the Motion module, refer to the following manual.
MELSEC iQ-R Motion Module User's Manual (Startup)

*3 Select [RCPU] for [Unit Type] in [Connected Ethernet Controller Setting] in GT Designer3.
Set either of the following values for [Port No.].
• UDP: [5006]
• TCP: [5007]
For [Connected Ethernet Controller Setting] in GT Designer3, refer to the following.
☞ Page 198 GOT side settings

*4 Select [RnCCPU/RnWCPU] for [Unit Type] in [Connected Ethernet Controller Setting] in GT Designer3.
Set either of the following values for [Port No.].
• UDP: [5006]
• TCP: [5007]
For [Connected Ethernet Controller Setting] in GT Designer3, refer to the following.
☞ Page 205 [Connected Ethernet Controller Setting]

*5 To use the multiple CPU system when the GOT is connected to RnENCPU, the firmware version of the RnENCPU must be 10 or later.

■Connection cable

Use a connection cable that meets the following standards.

Standard	Category
100BASE-TX	Shielded twisted pair cable (STP) or unshielded twisted pair cable (UTP) of category 5 or higher
1000BASE-T	Shielded twisted pair cable (STP) or unshielded twisted pair cable (UTP) of category 5e or higher

For the twisted pair cable, use a straight cable.

Use cables, connectors, and hubs that meet the IEEE802.3 100BASE-TX/1000BASE-T standards.

■Maximum segment length

The maximum segment length (length between General-purpose Switch and a node) is 100 m.

■Maximum number of connected devices

Only one GOT can access one Motion module at a time.

Before accessing the Motion module being monitored by the GOT, end the monitoring by the GOT.

4.5.3 GOT side settings

[GOT Ethernet Setting]

Set the GOT Ethernet interface in GT Designer3.

Item	Description
[GOT IP Address Setting]	Set the IP address of the GOT.
[GOT Ethernet Common Setting]	Set the default gateway and other common items for GOT Ethernet interfaces.
[IP filter Setting]	The GOT allows or blocks access from IP addresses specified in the filtering list.

For details on the setting, refer to the following.

📖GT Designer3 (GOT3000) Screen Design Manual

Set the GT SoftGOT3000 Ethernet interface on the personal computer.

Precautions

Do not use 0 and 255 at the end of an IP address.

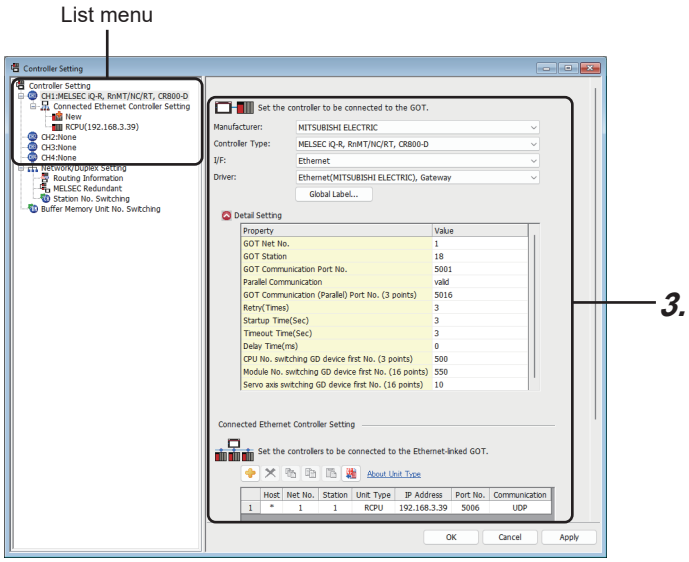
(Numbers of *.*.*.0 and *.*.*.255 are used by the system.)

The GOT may not monitor the controller correctly with the above numbers.

Consult with the administrator of the network before setting an IP address to the GOT.

[Controller Setting]

Set the channel of the connected controller.



Operating procedure

1. Select [Common] → [Controller Setting] from the menu.

2. In the [Controller Setting] window, select the channel number to be used from the list menu.

3. Set the following items.

Item	Description
[Manufacturer]	[MITSUBISHI ELECTRIC]
[Controller Type]	[MELSEC iQ-R, RnMT/NC/RT, CR800-D]
[I/F]	[Ethernet]
[Driver]	[Ethernet(MITSUBISHI ELECTRIC), Gateway]
[Detail Setting]	Configure the settings according to the usage environment. ☞ Page 200 [Detail Setting]
[Connected Ethernet Controller Setting]	Configure the settings according to the controller to be connected. ☞ Page 205 [Connected Ethernet Controller Setting]

4. When you have completed the settings, click the [OK] button.

Point

The controller settings can be checked in [I/F Communication Setting].

For details, refer to the following.

📖GT Designer3 (GOT3000) Screen Design Manual

■[Detail Setting]

Configure the settings according to the usage environment.

Detail Setting

Property	Value
GOT Net No.	1
GOT Station	18
GOT Communication Port No.	5001
Parallel Communication	valid
GOT Communication (Parallel) Port No. (3 points)	5016
Retry(Times)	3
Startup Time(Sec)	3
Timeout Time(Sec)	3
Delay Time(ms)	0
CPU No. switching GD device first No. (3 points)	500
Module No. switching GD device first No. (16 points)	550
Servo axis switching GD device first No. (16 points)	10

Item	Description	Range
[GOT Net No.]	Set the network number of the GOT.	[1] to [239]
[GOT Station]*1*2	Set the station number of the GOT.	[1] to [120]
[GOT Communication Port No.]	Set the GOT port number for connection with the Ethernet module.	[1024] to [5010], [5014] to [49152], [49171] to [65534]
[Parallel Communication]*3	Enables or disables the parallel communication. When this setting is enabled, [GOT Communication (Parallel) Port No. (3 points)] can be set. When communicating with multiple devices on a single channel, distributing the communication ports can reduce the communication load.	[valid], [invalid]
[GOT Communication (Parallel) Port No. (3 points)]	Set the GOT port number used for the parallel communication.	• [Parallel Communication] is [invalid]: [0] • [Parallel Communication] is [valid]: [1024] to [5008], [5014] to [49150], [49171] to [65532]
[Retry(Times)]	Set the number of retries to be performed when a communication timeout occurs. When receiving no response after retries, the communication times out.	GOT: [0] times to [5] times GT SoftGOT3000: [0] times to [10] times
[Startup Time]	Set the time period from the GOT startup until the start of communication with the PLC CPU.	[3] seconds to [255] seconds
[Timeout Time]	Set the time period for a communication to time out.	[1] second to [90] seconds
[Delay Time]	Set the delay time for reducing the load of the network and destination PLC.	[0] ms to [10000] ms
[CPU No. switching GD device first No. (3 points)]	Set the start device number of the GD devices for CPU number switching. For details, refer to the following. ☞ Page 202 Start device number of the GD devices for CPU number switching	[0] to [65520]
[Module No. switching GD device first No. (16 points)]	Set the start device number of the GD devices for module number switching. For details, refer to the following. ☞ Page 203 Start device number of the GD devices for module number switching	[0] to [65520]
[Servo axis switching GD device first No. (16 points)]	Set the start device number of the GD devices for servo axis switching. For details, refer to the following. ☞ Page 204 Start device number of the GD devices for servo axis switching	[0] to [65520]

*1 Set values not set for [Station] in [Connected Ethernet Controller Setting].
☞ Page 205 [Connected Ethernet Controller Setting]

*2 When connecting multiple GOTs in the Ethernet network, set a different value for [GOT Station] for each GOT.

*3 When the MELSEC redundant settings are enabled, [Parallel Communication] is set to [invalid].

Point

• Controller settings using the GT37 utility

The controller settings can be changed in [Communication Settings] of the GT37 utility after writing [Communication Settings] of project data to GT37.

For details on the GT37 utility, refer to the following manual.

📖GOT3000 Series User's Manual (Utility & Maintenance Functions)

• Priority of the settings in [Controller Setting]

When the settings are configured in GT Designer3 or in the GT37 utility, the latest settings are effective.

■When connecting multiple GOTs

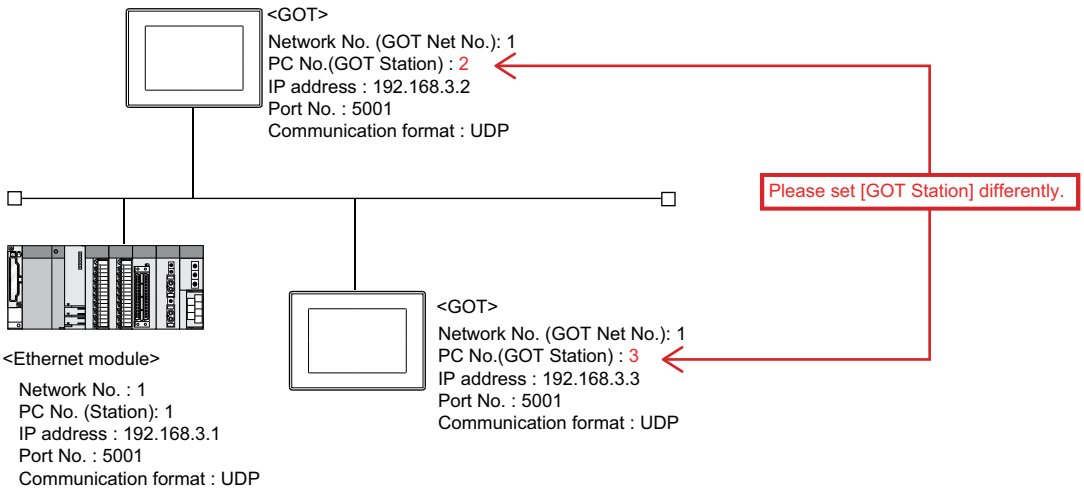
• Settings for [GOT Station]

When connecting multiple GOTs in the Ethernet network, set a different value for [GOT Station] for each GOT.

☞ Page 200 [Detail Setting]

The following shows a system configuration example.

Ex.



• Settings to start up multiple GOTs simultaneously

When connecting multiple GOTs to one built-in Ethernet port CPU, adjust the timing of GOT communication start.

When the communication concentrates on the PLC, the communication between GOT and PLC becomes difficult, and the monitoring by GOT may not start.

As a method for adjusting the timing, communicating one GOT alone first, and then communicating the other GOTs is effective.

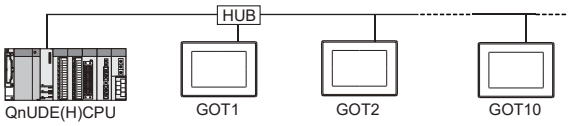
Set the following items on each GOT.

[Startup Time] in [Detail Setting] or [Title Display Time] of [GOT Setup]

[Timeout Time] in [Detail Setting]

The following shows a setting example.

Ex.



Item	GOT1	GOT2	GOT10
Startup Time	3sec (default)	4sec	4sec
Timeout Time	3sec (default)	4sec	4sec

■Start device number of the GD devices for CPU number switching

• Indirect specification of a CPU number

[CPU No.] can be indirectly specified with the GOT internal registers (GD devices) by specifying a value (100 to 102) to [CPU No.] in the device setting dialog in GT Designer3.

Set the start device number of the GD devices to be used in [CPU No. switching GD device first No. (3 points)].

[CPU No.] is specified with three consecutive GD devices, starting from the set device number.

When [500] is set to [CPU No. switching GD device first No. (3 points)], GD500 to GD502 are used to specify [CPU No.] as shown in the following table.

CPU No.	GD device	Setting range
100	GD500	1 to 4 Setting a value outside the range causes a communication timeout error. Specifying a nonexistent CPU number or a CPU number not supporting a multiple CPU system with a device causes a controller error.
101	GD501	
102	GD502	

• Indirect specification of a CPU number on the initially displayed screen

Set [CPU No. switching GD device first No. (3 points)] so that the values of the GD devices are retained and monitored upon the GOT startup.

• Indirect specification of a CPU number for multi-channel connection

If the setting range of [CPU No. switching GD device first No. (3 points)] set for each channel overlaps, the monitoring target CPU number set to each channel is switched simultaneously.

Set [CPU No. switching GD device first No. (3 points)] for each channel so that the setting range does not overlap.

• Indirect specification of a station number and a CPU number for multi-channel connection

When GD10 to GD25 are used to specify the station number of an inverter or non-Mitsubishi temperature controller connected, setting [10] to [CPU No. switching GD device first No. (3 points)] in a different channel switches the monitoring target CPU number and station number of an inverter or non-Mitsubishi temperature controller set to each channel simultaneously.

Set [CPU No. switching GD device first No. (3 points)] so that the setting range does not overlap the station number of an inverter or non-Mitsubishi temperature controller.

■Start device number of the GD devices for module number switching

• Indirect specification of a module number

For connection via a Simple Motion module, [Unit No.] can be specified with the GOT internal registers (GD devices) by specifying a value (100 to 10F) to [Unit No.] in the device setting dialog in GT Designer3.

Set the start device number of the GD devices to be used in [Module No. switching GD device first No. (16 points)].

[Unit No.] is specified with 16 consecutive GD devices, starting from the set device number.

When [550] is set to [Module No. switching GD device first No. (16 points)], GD550 to GD565 are used to specify [Unit No.] as shown in the following table.

Module No.	GD device	Setting range
100	GD550	00 to FF Setting a value outside the above range causes a device range error.
101	GD551	
102	GD552	
103	GD553	
104	GD554	
105	GD555	
106	GD556	
107	GD557	
108	GD558	
109	GD559	
10A	GD560	
10B	GD561	
10C	GD562	
10D	GD563	
10E	GD564	
10F	GD565	

• Indirect specification of a module number on the initially displayed screen

Set [Module No. switching GD device first No. (16 points)] so that the values of the GD devices are retained and monitored upon the GOT startup.

• Indirect specification of a module number for multi-channel connection

If the setting range of [Module No. switching GD device first No. (16 points)] set for each channel overlaps, the module number of the Simple Motion module via the servo amplifier device of each channel is switched simultaneously.

Set [Module No. switching GD device first No. (16 points)] for each channel so that the setting range does not overlap.

• Indirect specification of a station number and a module number for multi-channel connection

When GD10 to GD25 are used to specify the station number of an inverter or non-Mitsubishi temperature controller connected, setting [10] to [Module No. switching GD device first No. (16 points)] switches the module number of the Simple Motion module via the servo amplifier device and the station number of an inverter or non-Mitsubishi temperature controller set to each channel simultaneously.

Set [Module No. switching GD device first No. (16 points)] so that the setting range does not overlap the station number of an inverter or non-Mitsubishi temperature controller.

■Start device number of the GD devices for servo axis switching

• Indirect specification of a servo axis number

For connection via a Motion CPU or Simple Motion module, a servo axis number can be indirectly specified with GOT internal registers (GD devices) by specifying a value (100 to 115) to the axis number of the servo amplifier device.

Set the start device number of the GD devices to be used in [Servo axis switching GD device first No. (16 points)].

Specify a servo axis number with 16 consecutive GD devices, starting the set device number.

When [10] is set to [Servo axis switching GD device first No. (16 points)], GD10 to GD25 are used to specify a servo axis number as shown in the following table.

Servo axis No.	GD device	Setting range
100	GD10	1 to 64 Setting a value outside the above range causes a device range error.
101	GD11	
102	GD12	
103	GD13	
104	GD14	
105	GD15	
106	GD16	
107	GD17	
108	GD18	
109	GD19	
110	GD20	
111	GD21	
112	GD22	
113	GD23	
114	GD24	
115	GD25	

• Indirect specification of a servo axis number on the initially displayed screen

Set [Servo axis switching GD device first No. (16 points)] so that the values of the GD devices are retained and monitored upon the GOT startup.

• Indirect specification of a servo axis number for multi-channel connection

If the setting rage of [Servo axis switching GD device first No. (16 points)] set for each channel overlaps, the axis number of the servo amplifier of each channel is switched simultaneously.

Set [Servo axis switching GD device first No. (16 points)] for each channel so that the setting range does not overlap.

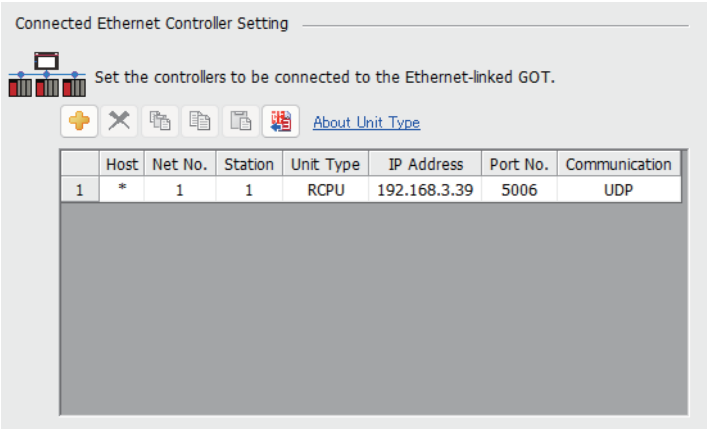
• Indirect specification of a station number and a servo axis number for multi-channel connection

When GD10 to GD25 are used to specify the station number of an inverter or non-Mitsubishi temperature controller connected, setting [10] to [Servo axis switching GD device first No. (16 points)] switches the axis number of the servo amplifier and the station number of an inverter or non-Mitsubishi temperature controller set to each channel simultaneously.

Set [Servo axis switching GD device first No. (16 points)] so that the setting range does not overlap the station number of an inverter or non-Mitsubishi temperature controller.

■[Connected Ethernet Controller Setting]

Set the controller to be connected to the GOT by Ethernet.



Item	Description	Range
[Host]	The host is displayed. It refers to a station that can be connected without setting a station number. The host is indicated with an asterisk (*).	—
[Net No.]	Set the network number of the connected Ethernet equipment.	[1] to [239]
[Station]*2	Set the station number of the connected Ethernet equipment.	☞ Page 206 [Station]
[Unit Type]	Select the model of the connected Ethernet equipment.	☞ Page 206 [Unit Type]
[IP Address]	Set the IP address of the connected Ethernet equipment.	[0.0.0.0] to [255.255.255.255]
[Port No.]*1	Set the port number of the connected Ethernet equipment.	☞ Page 206 [Port No.]
[Communication]	Set the communication format of the connected Ethernet equipment.	[UDP], [TCP]

*1 Match the port number of the CPU and [Port No.] of [Connected Ethernet Controller Setting].

*2 Set values not set for [GOT Station] in [Detail Setting].

☞ Page 200 [Detail Setting]

■[Unit Type]

Select an item for [Unit Type] as shown below.

GOT connection destination	[Unit Type]
RCPU,RnMTCPU	[RCPU]
C Controller module (MELSEC iQ-R series) MELSECWinCPU (MELSEC iQ-R series)	[RnCCPU/RnWCPU]
CNC C80	[RnNCCPU]
RnENCPU (Port CPU P1)	[RCPU]
RnENCPU (Port P1)	[RJ71EN71]
RnENCPU (Port P2)	
CR800-R (R16RTCPU)	[CR800]

■[Port No.]

The setting range is as follows:

[Unit Type]	[Port No.]	[Communication]
[RCPU]	[5001] (Select this item to enable the network number and PLC number of the built-in Ethernet port CPU.)	[UDP]
	[5006]	[UDP]
	[5007]	[TCP]
[RnCCPU/RnWCPU], [RnNCCPU], [CR800]	[5006]	[UDP]
	[5007]	[TCP]
[RJ71EN71]	[5001]	[UDP]
	[5002]	[TCP]

■[Station]

The setting range of the station number differs depending on the setting for [Controller Type].

[Unit Type]	Setting range for [Station]
[RCPU] [RnCCPU/RnWCPU] [RnNCCPU] [RJ71EN71]	[1] to [120]
[CR800]	[1] to [64]

■Selecting [RCPU] for [Unit Type]

When [RCPU] is selected for [Unit Type], the setting of [Port No.] can be changed.

- When [Port No.] is set to [5001]

For RCPU with the following firmware versions, the network number and PLC number can be set for built-in Ethernet port CPU (Port number: 5001).

R00CPU, R01CPU, R02CPU: 08 or later

Other RCPU: 40 or later

The network number and station number in the object setting dialog must match the network number and PLC number of the built-in Ethernet port CPU.

For connection to a built-in Ethernet port CPU with [Unit Type] other than [RCPU], do not set [5001] to [Port No.]. Otherwise, monitoring becomes unavailable.

- When [Port No.] is set to [5006] or [5007]

There is no setting for the network number and PLC number of built-in Ethernet port CPU (Port number: 5006, 5007).

The values of [Network No.] and [Station No.] in the object setting dialog must be the same as the values of [Net No.] and [Station] in [Connected Ethernet Controller Setting].

■Connection to the built-in Ethernet port PLC with [Communication] set to [TCP]

During communication with the built-in Ethernet port PLC with [Communication] set to [TCP], using the FA transparent function may change the setting from [TCP] to [UDP] and start communication with the PLC with the new setting.

In this case, communication with the built-in Ethernet port PLC cannot be executed normally.

Take the following corrective action.

Phenomenon	Cause	Corrective action
Communication fails when using the FA transparent function.	When the multi-channel Ethernet connection is used, [TCP] and [UDP] are used to the same IP address, and then the FA transparent function is used for the channel set to [TCP].	Execute the FA transparent function for the channel set to [UDP].

Point

Changing the host station on the GOT

[Host] can be changed with the utility function of the GOT.

For details on the setting method, refer to the following manual.

📖GOT3000 Series User's Manual (Utility & Maintenance Functions)

■Routing parameter settings

Up to 64 settings can be configured for [Transfer Net No.].

However, the same number cannot be set in [Transfer Net No.] twice or more (multiple times).

The GOT (host station) can access 64 different networks specified under [Transfer Net No.].

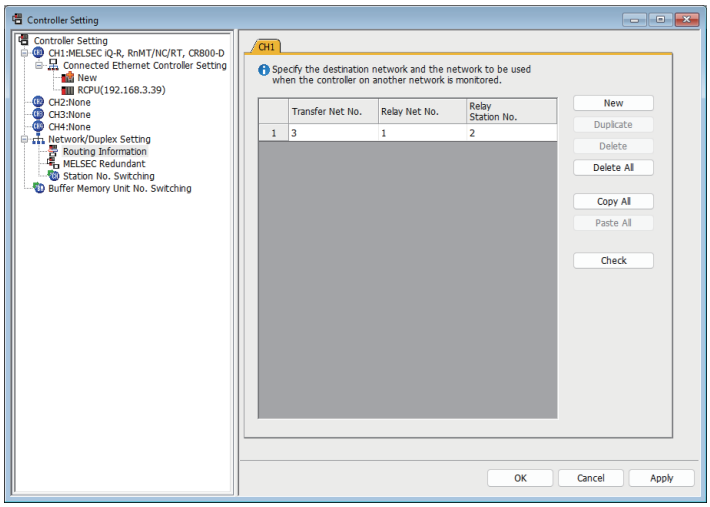
Point

Routing parameter settings

When communicating within the host network, routing parameter settings are not required.

For details on routing parameters, refer to the following manual.

MELSEC iQ-R CPU Module User's Manual (Application)



Item	Range
[Transfer Net No.]	[1] to [239]
[Relay Net No.]*1	[1] to [239]
[Relay Station No.]*1	[0] to [120]

*1 To access a different network via the built-in Ethernet port CPU, set the values of [Net No.] and [Station] that are set in [Connected Ethernet Controller Setting] in GT Designer3.

Point

Routing parameter settings for the relay station

Routing parameter settings are also necessary for the relay station.

For the setting, refer to the following.

☞ Page 209 PLC side settings

Precautions

If the network numbers of the GOT and PLC do not match on the same Ethernet network, monitoring of the PLC is not possible.

To enable monitoring, set the same network number as that of the GOT or connect an Ethernet module to the PLC and configure the routing settings to monitor the PLC as a different network.

When the multi-channel connection can be used, set a different network number for each channel.

4.5.4 PLC side settings

Model		Reference
MELSEC iQ-R series	R00CPU R01CPU R02CPU R04CPU R08CPU R16CPU R32CPU R120CPU R08PCPU R16PCPU R32PCPU R120PCPU R04ENCPU R08ENCPU R16ENCPU R32ENCPU R120ENCPU R08PSFCPU R16PSFCPU R32PSFCPU R120PSFCPU R08SFCPU R16SFCPU R32SFCPU R120SFCPU	☞ Page 210 Connection to the built-in Ethernet port CPU of the MELSEC iQ-R series
Motion CPU (MELSEC iQ-R series)	R16MTCPU R32MTCPU R64MTCPU	☞ Page 210 Connection to the built-in Ethernet port CPU of the MELSEC iQ-R series
C Controller module (MELSEC iQ-R series)	R12CCPU-V	☞ Page 223 Connection to C Controller module (MELSEC iQ-R series)
MELSECWinCPU (MELSEC iQ-R series)	R102WCPU-W	☞ Page 227 Connection to MELSECWinCPU (MELSEC iQ-R series)
CNC C80	R16NCCPU-S1	☞ Page 210 Connection to the built-in Ethernet port CPU of the MELSEC iQ-R series
Robot controller (MELSEC iQ-R series)	CR800-R (R16RTCPU)	☞ Page 210 Connection to the built-in Ethernet port CPU of the MELSEC iQ-R series

Precautions

Do not set a remote password on the RCPU.
Doing so disables monitoring with the GOT.

Connection to the built-in Ethernet port CPU of the MELSEC iQ-R series

This section describes the settings of the GOT and the built-in Ethernet port CPU in the system configuration shown below.

☞ Page 210 One-to-one connection with the GOT side communication format set to UDP
☞ Page 213 One-to-one connection with the GOT side communication format set to TCP
☞ Page 216 Multi-connection with the GOT side communication format set to UDP
☞ Page 219 Multi-connection with the GOT side communication format set to TCP

Point

- Built-in Ethernet port CPU

For details on the built-in Ethernet port CPU, refer to the following manual.

📖MELSEC iQ-R series manuals

- Connecting multiple GOTs

When connecting multiple GOTs in the Ethernet network, set a different value for [GOT Station] for each GOT.

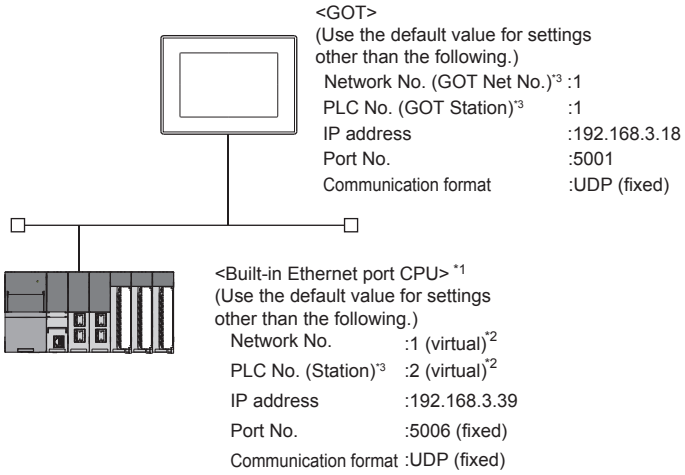
☞ Page 201 When connecting multiple GOTs

■One-to-one connection with the GOT side communication format set to UDP

- System configuration

For one-to-one connection, no settings are required on the PLC side.

Configure the settings in [Controller Setting] and [Connected Ethernet Controller Setting] in GT Designer3, and then connect the built-in Ethernet port CPU and the GOT.



*1 For the settings when using system devices such as a hub, refer to the following.
☞ Page 216 Multi-connection with the GOT side communication format set to UDP

*2 Although the setting is nonexistent on the PLC side, set a virtual value on the GOT side.
☞ • [Controller Setting] and [Connected Ethernet Controller Setting] of GT Designer3

*3 For the following settings, the setting names are different on the PLC side and the GOT side.

Setting	Setting name		
	PLC side	GOT side	
		Controller setting	Connected Ethernet controller setting
Network number	[Network No.]	[GOT Net No.]	[Net No.]
PLC number	[Station]	[GOT Station]	[Station]

• [Controller Setting] and [Connected Ethernet Controller Setting] of GT Designer3

For the setting method of [Controller Setting] and [Connected Ethernet Controller Setting] in GT Designer3, refer to the following.

☞ Page 198 GOT side settings

Point

[Connected Ethernet Controller Setting] for connection to the Built-in Ethernet port RCPU

The setting items for the network number and station number do not exist on the PLC side.

Set the network number and station number on the GOT side.

When doing so, set a network number not used in the system.

Controller settings

Item	Setting value
[GOT Net No.]	1
[GOT Station]	1
[GOT Communication Port No.]	5001
[Retry]	3 times
[Startup Time]	3 seconds
[Timeout Time]	3 seconds
[Delay Time]	0 ms

GOT Ethernet settings

Item	Setting value
[GOT IP Address]	192.168.3.18
[Subnet Mask]	255.255.255.0
[Default Gateway]	0.0.0.0
[Peripheral S/W Communication Port No.]	5015
[Transparent Port No.]	5014

Connected Ethernet controller settings

Item		Setting value
Ethernet setting No. 1	[Host]	*
	[Net No.]	1*1
	[Station]	2*2
	[Unit Type]	RCPU*3
	[IP Address]	192.168.3.39
	[Port No.]	5006
	[Communication]	UDP

*1 Set the same value as [GOT Net No.].

*2 Set a value not set for [GOT Station].

*3 For CR800-R (R16RTCPU), set [CR800].

• Checking the communication state of the built-in Ethernet port CPU

When using Windows Command Prompt

Execute a ping command in Windows Command Prompt.

1) At normal end

C:\>Ping 192.168.3.39

Reply from 192.168.3.39:bytes=32 time<1ms TTL=32

2) At abnormal end

C:\>Ping 192.168.3.39

Request timed out.

In the case of abnormal end

In the case of abnormal end, check the following and execute the ping command again.

Cable connecting condition

Switch settings and network parameter settings

Operation state of PLC CPU (faulty or not)

IP address of the built-in Ethernet port CPU specified by the ping command

Point

Ethernet diagnostics of GX Works3

The Ethernet diagnostics of GX Works3 enables ping tests from the PLC.

For details on the Ethernet diagnostics of GX Works3, refer to the following manual.

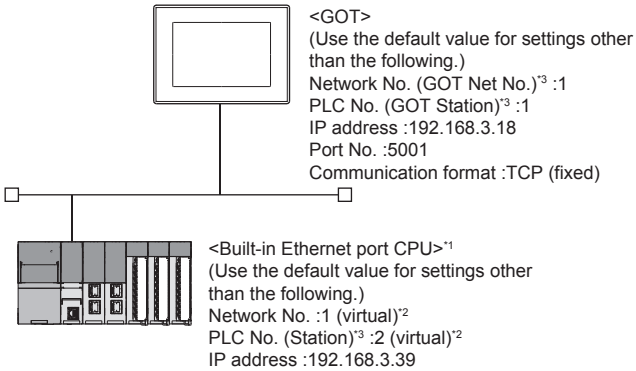
📖MELSEC iQ-R series manuals

■One-to-one connection with the GOT side communication format set to TCP

- System configuration

For one-to-one connection, no settings are required on the PLC side.

Configure the settings in [Controller Setting] and [Connected Ethernet Controller Setting] in GT Designer3, and then connect the built-in Ethernet port CPU and the GOT.



*1 For the settings when using system devices such as a hub, refer to the following.
☞ Page 219 Multi-connection with the GOT side communication format set to TCP

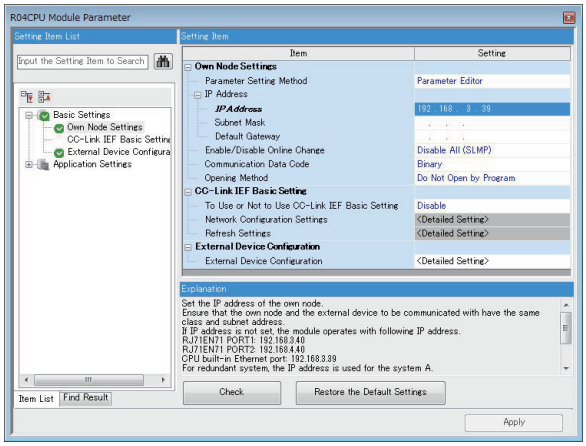
*2 Although the setting is nonexistent on the PLC side, set a virtual value on the GOT side.
☞ • [Controller Setting] and [Connected Ethernet Controller Setting] of GT Designer3

*3 For the following settings, the setting names are different on the PLC side and the GOT side.

Setting	Setting name		
	PLC side	GOT side	
		Controller setting	Connected Ethernet controller setting
Network number	[Network No.]	[GOT Net No.]	[Net No.]
PLC number	[Station No.]	[GOT Station]	[Station No.]

• [Module Parameter] of GX Works3

Built-in Ethernet port settings

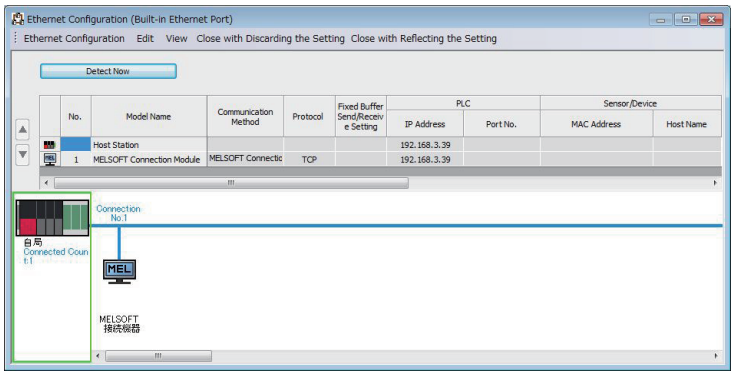


○: Necessary, △: As necessary, —: Not necessary

Item	Setting value	Setting for GOT connection
[IP Address]	(Use default value)	△
[Subnet Mask]	—	—
[Default Gateway]	—	—
[Communication Data Code]	(Use default value)	△
[External Device Configuration]	☞ Target device connection configuration settings	○

Target device connection configuration settings

Configure the settings for all the connected GOTs.



Item	Setting value
[Protocol]	(Use default value)
[Communication Method]	MELSOFT connection

• [Controller Setting] and [Connected Ethernet Controller Setting] of GT Designer3

For the setting method of [Controller Setting] and [Connected Ethernet Controller Setting] in GT Designer3, refer to the following.

☞ Page 198 GOT side settings

Point

[Connected Ethernet Controller Setting] for connection to the Built-in Ethernet port RCPU

The setting items for the network number and station number do not exist on the PLC side.

Set the network number and station number on the GOT side.

When doing so, set a network number not used in the system.

Controller settings

Item	Setting value
[GOT Net No.]	1
[GOT Station]	1
[GOT Communication Port No.]	5001
[Retry]	3 times
[Startup Time]	3 seconds
[Timeout Time]	3 seconds
[Delay Time]	0 ms

GOT Ethernet settings

Item	Setting value
[GOT IP Address]	192.168.3.18
[Subnet Mask]	255.255.255.0
[Default Gateway]	0.0.0.0
[Peripheral S/W Communication Port No.]	5015
[Transparent Port No.]	5014

Connected Ethernet controller settings

Item		Setting value
Ethernet setting No. 1	[Host]	*
	[Net No.]	1*1
	[Station]	2*2
	[Unit Type]	RCPU*3
	[IP Address]	192.168.3.39
	[Port No.]	5007
	[Communication]	TCP

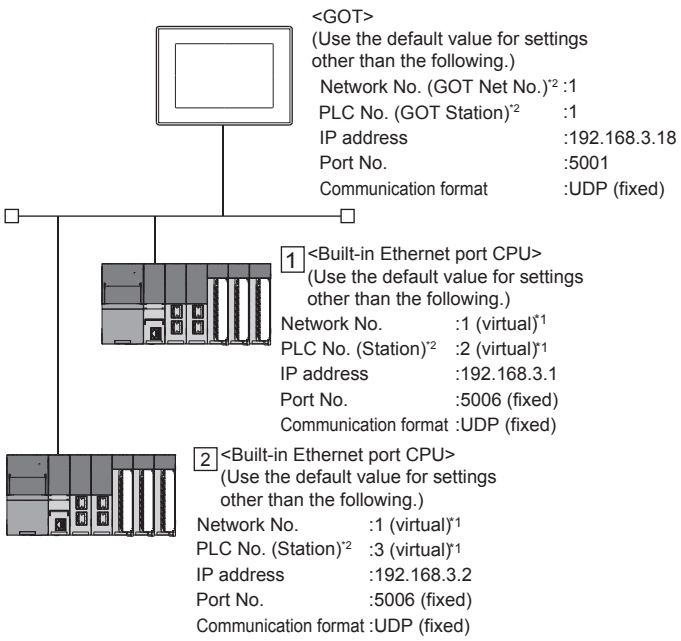
*1 Set the same value as the GOT net number.

*2 Set a value different from the GOT station number.

*3 For CR800-R (R16RTCPU), set [CR800].

■Multi-connection with the GOT side communication format set to UDP

- System configuration



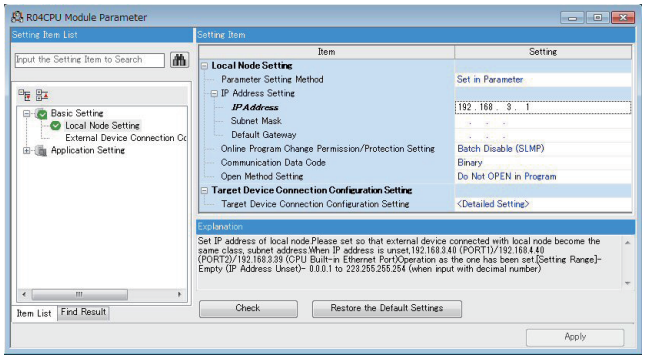
*1 Although the setting is nonexistent on the PLC side, set a virtual value on the GOT side.
☞ • [Controller Setting] and [Connected Ethernet Controller Setting] of GT Designer3

*2 For the following settings, the setting names are different on the PLC side and the GOT side.

Setting	Setting name		
	PLC side	GOT side	
		Controller setting	Connected Ethernet controller setting
Network number	[Network No.]	[GOT Net No.]	[Net No.]
PLC number	[Station No.]	[GOT Station]	[Station No.]

- [Module Parameter] of GX Works3

Built-in Ethernet port settings



○: Necessary, △: As necessary, —: Not necessary

Item	Setting value	Setting for GOT connection
[IP Address]	192.168.3.1	○
[Subnet Mask]	—	—
[Default Gateway]	—	—
[Enable/Disable Online Change]	(Use default value)	△
[Communication Data Code]		△
[Opening Method]		△
[External Device Configuration]	—	—

• [Controller Setting] and [Connected Ethernet Controller Setting] of GT Designer3

For the setting method of [Controller Setting] and [Connected Ethernet Controller Setting] in GT Designer3, refer to the following.

☞ Page 198 GOT side settings

Point

[Connected Ethernet Controller Setting] for connection to the built-in Ethernet port CPU
The setting items for the network number and station number do not exist on the PLC side.
Set the network number and station number on the GOT side.
When doing so, set a network number not used in the system.

Controller settings

Item	Setting value
[GOT Net No.]	1
[GOT Station]	1
[GOT Communication Port No.]	5001
[Retry]	3 times
[Startup Time]	3 seconds
[Timeout Time]	3 seconds
[Delay Time]	0 ms

GOT Ethernet settings

Item	Setting value
[GOT IP Address]	192.168.3.18
[Subnet Mask]	255.255.255.0
[Default Gateway]	0.0.0.0
[Peripheral S/W Communication Port No.]	5015
[Transparent Port No.]	5014

Connected Ethernet controller settings

Item		Setting value	
		1	2
Ethernet setting No. 1	[Host]	*	—
	[Net No.]	1*1	1*1
	[Station]	2*2	3*2
	[Unit Type]	RCPU	RCPU
	[IP Address]	192.168.3.1	192.168.3.2
	[Port No.]	5006	5006
	[Communication]	UDP	UDP

*1 Set the same value as the GOT net number.
*2 Set a value different from the GOT station number and PLC numbers of other PLCs on the same network.

• Checking the communication state of the built-in Ethernet port CPU

When using Windows Command Prompt

Execute a ping command in Windows Command Prompt.

1) At normal end

C:\>Ping 192.168.3.1

Reply from 192.168.3.1:bytes=32 time<1ms TTL=32

2) At abnormal end

C:\>Ping 192.168.3.1

Request timed out.

In the case of abnormal end

In the case of abnormal end, check the following and execute the ping command again.

Cable connecting condition

Switch settings and network parameter settings

Operation state of PLC CPU (faulty or not)

IP address of the built-in Ethernet port CPU specified by the ping command

Point

Ethernet diagnostics of GX Works3

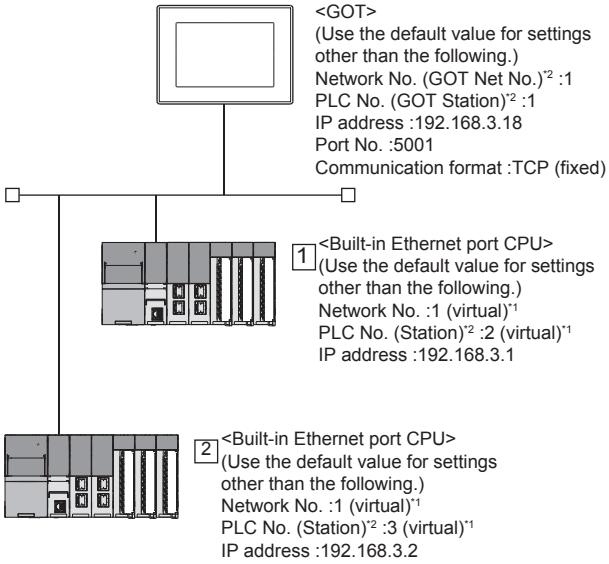
The Ethernet diagnostics of GX Works3 enables ping tests from the PLC.

For details on the Ethernet diagnostics of GX Works3, refer to the following manual.

📖MELSEC iQ-R series manuals

■Multi-connection with the GOT side communication format set to TCP

- System configuration



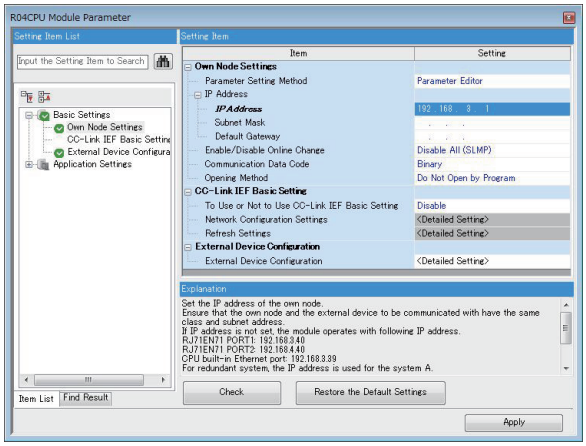
*1 Although the setting is nonexistent on the PLC side, set a virtual value on the GOT side.
☞ • [Controller Setting] and [Connected Ethernet Controller Setting] of GT Designer3

*2 For the following settings, the setting names are different on the PLC side and the GOT side.

Setting	Setting name		
	PLC side	GOT side	
		Controller setting	Connected Ethernet controller setting
Network number	[Network No.]	[GOT Net No.]	[Net No.]
PLC number	[Station No.]	[GOT Station]	[Station No.]

• [Module Parameter] of GX Works3

Built-in Ethernet port settings

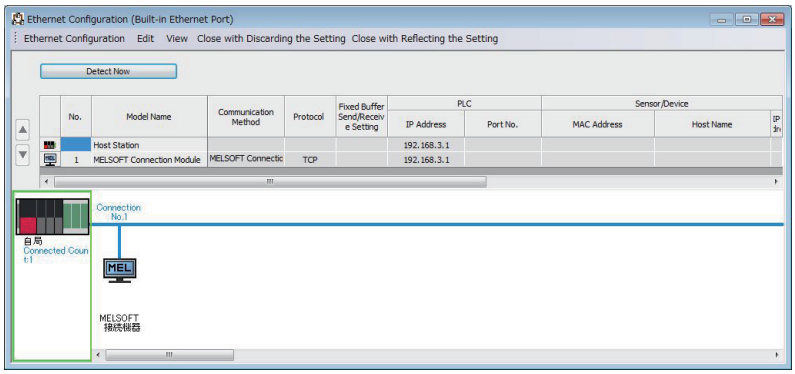


○: Necessary, △: As necessary, —: Not necessary

Item	Setting value	Setting for GOT connection
[IP Address]	192.168.3.1	○
[Subnet Mask]	—	—
[Default Gateway]	—	—
[Enable/Disable Online Change]	(Use default value)	△
[Communication Data Code]		△
[Opening Method]		△
[External Device Configuration]	☞ Target device connection configuration settings	○

Target device connection configuration settings

Configure the settings for all the connected GOTs.



Item	Setting value
[Protocol]	(Use default value)
[Communication Method]	MELSOFT connection

• [Controller Setting] and [Connected Ethernet Controller Setting] of GT Designer3

For the setting method of [Controller Setting] and [Connected Ethernet Controller Setting] in GT Designer3, refer to the following.

☞ Page 198 GOT side settings

Point

[Connected Ethernet Controller Setting] for connection to the built-in Ethernet port CPU
The setting items for the network number and station number do not exist on the PLC side.
Set the network number and station number on the GOT side.
When doing so, set a network number not used in the system.

Controller settings

Item	Setting value
[GOT Net No.]	1
[GOT Station]	1
[GOT Communication Port No.]	5001
[Retry]	3 times
[Startup Time]	3 seconds
[Timeout Time]	3 seconds
[Delay Time]	0 ms

GOT Ethernet settings

Item	Setting value
[GOT IP Address]	192.168.3.18
[Subnet Mask]	255.255.255.0
[Default Gateway]	0.0.0.0
[Peripheral S/W Communication Port No.]	5015
[Transparent Port No.]	5014

Connected Ethernet controller settings

Item		Setting value	
		[1]	[2]
Ethernet setting No. 1	[Host]	*	—
	[Net No.]	1*1	1*1
	[Station]	2*2	3*2
	[Unit Type]	RCPU	RCPU
	[IP Address]	192.168.3.1	192.168.3.2
	[Port No.]	5007	5007
	[Communication]	TCP	TCP

*1 Set the same value as the GOT net number.
*2 Set a value different from the GOT station number.

• Checking the communication state of the built-in Ethernet port CPU

When using Windows Command Prompt

Execute a ping command in Windows Command Prompt.

1) At normal end

C:\>Ping 192.168.3.1

Reply from 192.168.3.1:bytes=32 time<1ms TTL=32

2) At abnormal end

C:\>Ping 192.168.3.1

Request timed out.

In the case of abnormal end

In the case of abnormal end, check the following and execute the ping command again.

Cable connecting condition

Switch settings and network parameter settings

Operation state of PLC CPU (faulty or not)

IP address of the built-in Ethernet port CPU specified by the ping command

Point

Ethernet diagnostics of GX Works3

The Ethernet diagnostics of GX Works3 enables ping tests from the PLC.

For details on the Ethernet diagnostics of GX Works3, refer to the following manual.

📖MELSEC iQ-R series manuals

Connection to C Controller module (MELSEC iQ-R series)

This section describes the settings of the GOT and C Controller module (MELSEC iQ-R series) in the system configuration shown below.

Use CW Configurator for the C Controller module (MELSEC iQ-R series) communication settings.

Point

- C Controller module (MELSEC iQ-R series)

For details on the C Controller module (MELSEC iQ-R series), refer to the following manual.

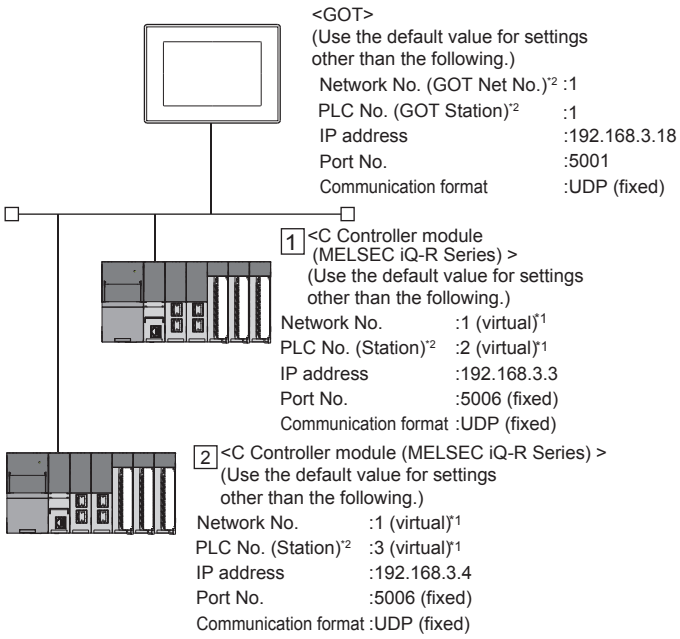
Manuals of the C Controller module (MELSEC iQ-R series)

- Connecting multiple GOTs

When connecting multiple GOTs in the Ethernet network, set a different value for [GOT Station] for each GOT.

☞ Page 201 When connecting multiple GOTs

■System configuration



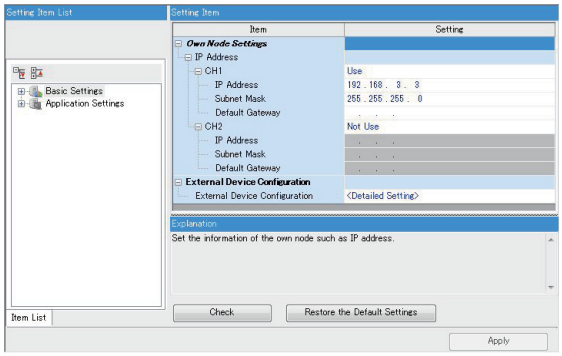
*1 Although the setting is nonexistent on the PLC side, set a virtual value on the GOT side.

☞ Page 225 [Controller Setting] and [Connected Ethernet Controller Setting] of GT Designer3

*2 For the following settings, the setting names are different on the PLC side and the GOT side.

Setting	Setting name		
	PLC side	GOT side	
		Controller setting	Connected Ethernet controller setting
Network number	[Network No.]	[GOT Net No.]	[Net No.]
PLC number	[Station]	[GOT Station]	[Station]

■[Module parameter] of CW Configurator



○: Necessary, △: As necessary, —: Not necessary

Item*1	Setting value	Setting for GOT connection
[CH1]	Use	—
[IP Address]	192.168.3.3	—
[Subnet Mask]	—	—
[Default Gateway]	—	—
[CH2]	Not used	—
[IP Address]	—	—
[Subnet Mask]	—	—
[Default Gateway]	—	—
[External Device Configuration]	—	—

*1 Set the IP address corresponding to the channel number to be used for connection to the GOT.

■[Controller Setting] and [Connected Ethernet Controller Setting] of GT Designer3

For the setting method of [Controller Setting] and [Connected Ethernet Controller Setting] in GT Designer3, refer to the following.

☞ Page 199 [Controller Setting]

Point

[Connected Ethernet Controller Setting] for connection to the built-in Ethernet port CPU
The setting items for the network number and station number do not exist on the PLC side.
Set the network number and station number on the GOT side.
When doing so, set a network number not used in the system.

- Controller settings

Item	Setting value
[GOT Net No.]	1
[GOT Station]	1
[GOT Communication Port No.]	5001
[Retry]	3 times
[Startup Time]	3 seconds
[Timeout Time]	3 seconds
[Delay Time]	0 ms

- GOT Ethernet settings

Item	Setting value
[GOT IP Address]	192.168.3.18
[Subnet Mask]	255.255.255.0
[Default Gateway]	0.0.0.0
[Peripheral S/W Communication Port No.]	5015
[Transparent Port No.]	5014

- Connected Ethernet controller settings

Item		Setting value	
		1	2
Ethernet setting No. 1	[Host]	*	—
	[Net No.]	1*1	1*1
	[Station]	2*2	3*2
	[Unit Type]	RnCCPU/RnWCPU	RnCCPU/RnWCPU
	[IP Address]	192.168.3.3	192.168.3.4
	[Port No.]*3	5006	5006
	[Communication]*3	UDP	UDP

*1 Set the same value as the GOT net number.
*2 Set a value different from the GOT station number and PLC numbers of other PLCs on the same network.
*3 The following settings can also be configured for [Port No.] and [Communication].
[Port No.]: 5007
[Communication]: TCP

■Checking the communication status of the C Controller module (MELSEC iQ-R series)

- When using Windows Command Prompt

Execute a ping command in Windows Command Prompt.

1) At normal end

C:\>Ping 192.168.3.3

Reply from 192.168.3.3:bytes=32 time<1ms TTL=32

2) At abnormal end

C:\>Ping 192.168.3.3

Request timed out.

- In the case of abnormal end

In the case of abnormal end, check the following and execute the ping command again.

Cable connecting condition

Switch settings and network parameter settings

Operation state of PLC CPU (faulty or not)

IP address of the C Controller module (MELSEC iQ-R series) specified by the ping command

Point

Ethernet diagnostics of CW Configurator

The Ethernet diagnostics of CW Configurator enables ping tests from the PLC.

For details on the Ethernet diagnostics of CW Configurator, refer to the following manual.

📖Manuals of the C Controller module (MELSEC iQ-R series)

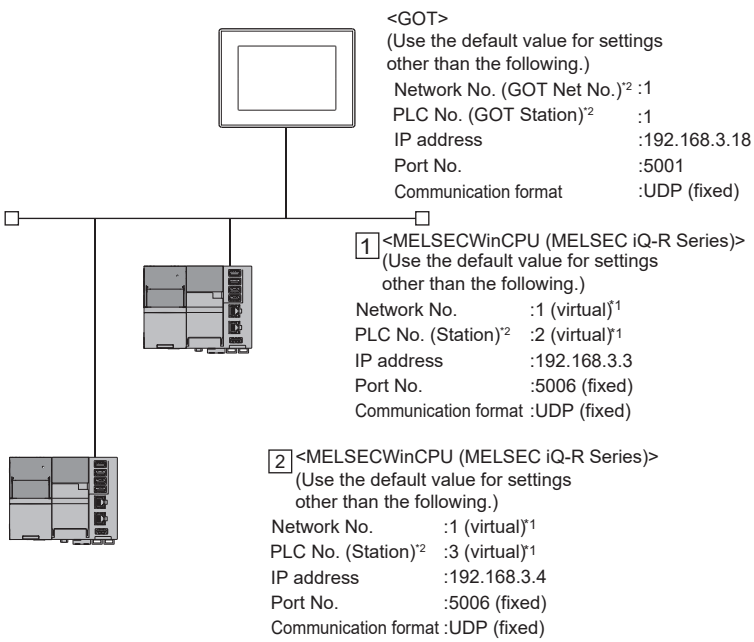
Connection to MELSECWinCPU (MELSEC iQ-R series)

This section describes the settings of the GOT and MELSECWinCPU (MELSEC iQ-R series) in the system configuration shown below.

Point

For details on MELSECWinCPU (MELSEC iQ-R series), refer to the following manual.
Manuals of MELSECWinCPU (MELSEC iQ-R series)

■System configuration



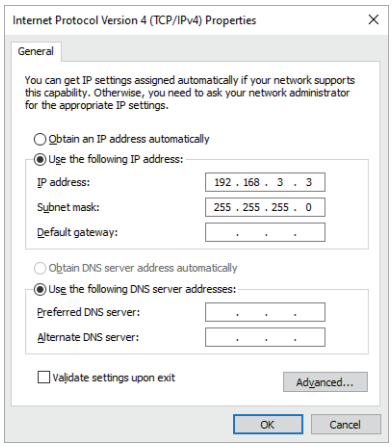
*1 Although the setting is nonexistent on the PLC side, set a virtual value on the GOT side.
☞ Page 229 [Controller Setting] and [Connected Ethernet Controller Setting] of GT Designer3

*2 For the following settings, the setting names are different on the PLC side and the GOT side.

Setting	Setting name		
	PLC side	GOT side	
		Controller setting	Connected Ethernet controller setting
Network number	[Network No.]	[GOT Net No.]	[Net No.]
PLC number	[Station]	[GOT Station]	[Station]

■[Internet Protocol Version 4 (TCP/IPv4) Properties]

Configure communication settings for MELSECWinCPU (MELSEC iQ-R series) in [Internet Protocol Version 4 (TCP/IPv4) Properties] in Windows installed in MELSECWinCPU (MELSEC iQ-R series).



○: Necessary, △: As necessary, —: Not necessary

Item*1	Setting value		Setting for GOT connection
	1	2	
[IP Address]	192.168.3.3	192.168.3.4	○
[Subnet Mask]	255.255.255.0	255.255.255.0	○
[Default Gateway]	—	—	—
[Preferred DNS server]	—	—	—
[Alternative DNS server]	—	—	—

*1 Set the IP address corresponding to the channel number to be used for connection to the GOT.

■Firewall settings

Firewall settings are required for connection to MELSECWinCPU (MELSEC iQ-R series).

For details, refer to the following.

📖MELSEC iQ-R MELSECWinCPU Module User's Manual

■[Controller Setting] and [Connected Ethernet Controller Setting] of GT Designer3

For the setting method of [Controller Setting] and [Connected Ethernet Controller Setting] in GT Designer3, refer to the following.

☞ Page 198 GOT side settings

Point

[Connected Ethernet Controller Setting] for connection to the built-in Ethernet port CPU
The setting items for the network number and station number do not exist on the PLC side.
Set the network number and station number on the GOT side.
When doing so, set a network number not used in the system.

- Controller settings

Item	Setting value
[GOT Net No.]	1
[GOT Station]	1
[GOT Communication Port No.]	5001
[Retry]	3 times
[Startup Time]	3 seconds
[Timeout Time]	3 seconds
[Delay Time]	0 ms

- GOT Ethernet settings

Item	Setting value
[GOT IP Address]	192.168.3.18
[Subnet Mask]	255.255.255.0
[Default Gateway]	0.0.0.0
[Peripheral S/W Communication Port No.]	5015
[Transparent Port No.]	5014

- Connected Ethernet controller settings

Item		Setting value	
		1	2
Ethernet setting No. 1	[Host]	*	—
	[Net No.]	1*1	1*1
	[Station]	2*2	3*2
	[Unit Type]	RnCCPU/RnWCPU	RnCCPU/RnWCPU
	[IP Address]	192.168.3.3	192.168.3.4
	[Port No.]*3	5006	5006
	[Communication]*3	UDP	UDP

*1 Set the same value as the GOT net number.
*2 Set a value different from the GOT station number and PLC numbers of other PLCs on the same network.
*3 The following settings can also be configured for [Port No.] and [Communication].
[Port No.]: 5007
[Communication]: TCP

■Checking the communication status of the MELSECWinCPU (MELSEC iQ-R series)

- When using Windows Command Prompt

Execute a ping command in Windows Command Prompt.

1) At normal end

C:\>Ping 192.168.3.3

Reply from 192.168.3.3:bytes=32 time<1ms TTL=32

2) At abnormal end

C:\>Ping 192.168.3.3

Request timed out.

- In the case of abnormal end

In the case of abnormal end, check the following and execute the ping command again.

Cable connecting condition

Switch settings and network parameter settings

Operation state of PLC CPU (faulty or not)

IP address of the MELSECWinCPU (MELSEC iQ-R series) specified by the ping command

Point

Ethernet diagnostics of CW Configurator

The Ethernet diagnostics of CW Configurator enables ping tests from the PLC.

For details on the Ethernet diagnostics of CW Configurator, refer to the following manual.

📖MELSEC iQ-R MELSECWinCPU Module User's Manual

Connection to Motion module through built-in Ethernet port of PLC

For the connection between the GOT and the built-in Ethernet port CPU of the MELSEC iQ-R series, refer to the following.

☞ Page 210 Connection to the built-in Ethernet port CPU of the MELSEC iQ-R series

For details on the Motion module, refer to the following manual.

📖MELSEC iQ-R Motion Module User's Manual (Startup)

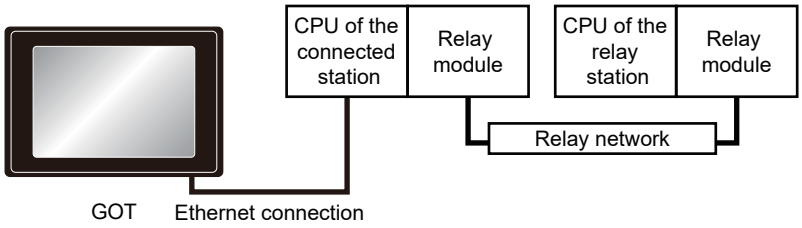
4.5.5 Access range for monitoring

When the GOT is connected to the CPU of the station connected via Ethernet, the range accessible via the CPU is as follows.

Point

- When monitoring other networks (Routing parameter settings)

To monitor other networks, routing parameter settings are necessary.
For the routing parameter settings, refer to the reference manual of the network connected.



○: Accessible, —: Inaccessible

CPU of the connected station	Relay station										
	Relay network	CPU of the relay station									
		MXR	MXF	RCPU	LCPU	QCPU (Q mode)	QSCPU	QCPU (A mode)	QnACPU	ACPU	FX5CPU
RCPU	Ethernet	○*7	—	○*5	○	○*6	○	—	○	—	○*3
	CC-Link IE TSN	○*7	○*7	○*1	—	—	—	—	—	—	○*3
	CC-Link IE Controller Network	○*7	—	○	—	○	○	—	—	—	—
	CC-Link IE Field Network	○*7	—	○	○	○*2	○	—	—	—	○*4
C Controller module (MELSEC iQ-R series)	Ethernet	—	—	—	—	—	—	—	—	—	—
	CC-Link IE TSN	○*7	○*7	○*1	—	—	—	—	—	—	○*3
	CC-Link IE Controller Network	○*7	—	○	—	○	○	—	—	—	—
	CC-Link IE Field Network	○*7	—	○	○	○*2	○	—	—	—	○*4
RnMTCPU	Ethernet	○*7	—	○*5	○	○*6	○	—	○	—	○*3
	CC-Link IE TSN	○*7	—	○*1	—	—	—	—	—	—	○*3
	CC-Link IE Controller Network	○*7	—	○	—	○	○	—	—	—	—
	CC-Link IE Field Network	○*7	—	○	○	○*2	○	—	—	—	○*4

*1 RnCPU, RnENCPU, RnSFCPU, and MELSECWinCPU (MELSEC iQ-R series) are supported.
*2 QnUDVCPU, QnUDECPU, QnUDEHCPU, QnUCPU, QnUDCPU, and QnUDHCPU are supported.
*3 FX5U and FX5UC are supported.
*4 FX5U, FX5UC, and FX5UJ are supported.
*5 The C Controller module (MELSEC iQ-R series) is not supported.
*6 The C Controller module (MELSEC-Q series) is not supported.
*7 Regardless of whether encrypted communications are performed, the MELSEC MX Controller can be used as the relay station.
To perform encrypted communication, settings need to be configured.
For details, refer to the following.
- For MELSEC MX Controller (MX-R Model)
☞ Page 90 Setting procedure of the encrypted communication
- For MELSEC MX Controller (MX-F Model)
☞ Page 153 Setting procedure of the encrypted communication

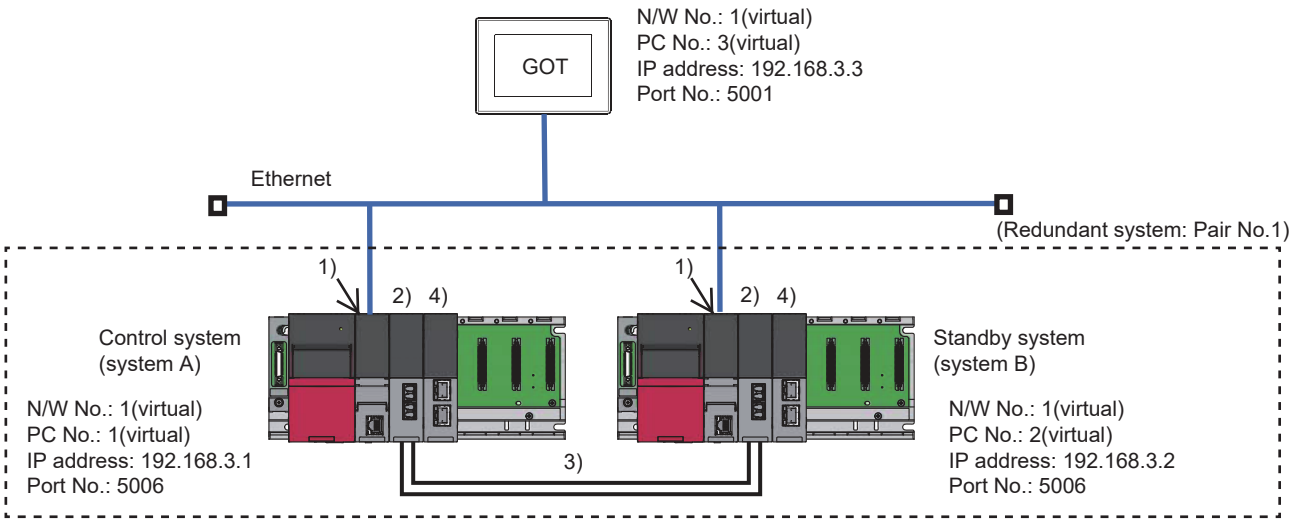
4.5.6 How to monitor a redundant system

☞ Page 232 One-to-one connection of the GOT and the redundant system
☞ Page 235 1:n connection with redundant system
☞ Page 237 Mixed connection of redundant system and non-redundant system
☞ Page 239 MELSEC redundant settings
☞ Page 241 Precautions

One-to-one connection of the GOT and the redundant system

■System configuration example

The following connection configuration examples are explained.



1) Process CPU
2) Redundant function module
3) Tracking cable
4) CC-Link IE Field Network Master/Local module

■Connection method

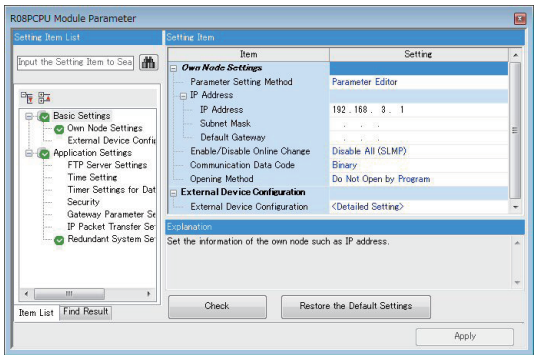
Connect the built-in Ethernet port CPU and the GOT.

☞ Page 188 MELSEC iQ-R series (Built-in Ethernet port connection)

■PLC side settings

- Control system (system A) PLC settings (GX Works3)

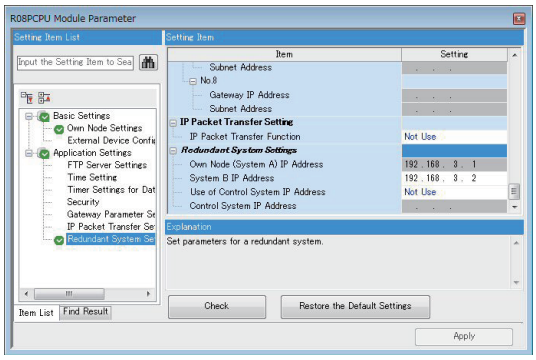
Built-in Ethernet port settings



Item	Setting value
[IP Address]	192.168.3.1
[Subnet Mask]	—
[Default Gateway]	—
[Enable/Disable Online Change]	(Use default value)
[Communication Data Code]	
[Open Method]	
[External Device Configuration]	—

- Standby system (system B) PLC settings (GX Works3)

Redundant Setting



Item	Setting value
[System B IP Address]	192.168.3.2
[Control system IP address availability]	Not used

Point

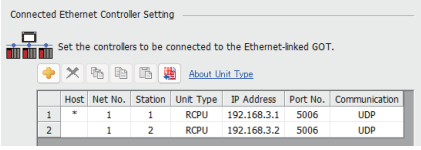
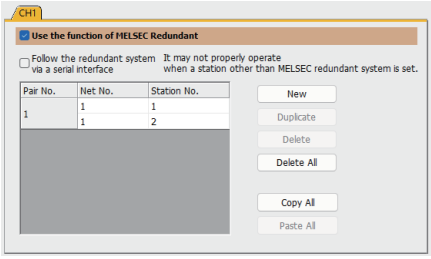
[Control system IP address availability] setting

Set [Control system IP address availability] to [Not Use].

If [Use] is selected, the GOT will not follow when the system is switched.

■GOT side settings

Set GT Designer3 as follows.

Setting item	Setting details		Model
[Controller Type]	MELSEC iQ-R, RnMT/NC/RT, CR800-D		GT37 SoftGOT3000
Device setting (Network setting)	[Host]	Host (The control system is monitored.)	
	[Other]	[Network No.]: Network number of Ethernet	
		[Station No.]: Station number of the control system	
	[Redundant System]	The system to be monitored ([Not Specified/Control System], [Standby System]) can be specified. This item can be set only when [Use the function of MELSEC Redundant] is selected in [MELSEC Redundant] shown below.	
Connected Ethernet controller settings	 ☞ Page 205 [Connected Ethernet Controller Setting]		
MELSEC redundant settings	 ☞ Page 239 MELSEC redundant settings		

■Monitoring target change when system switching occurs in a redundant system

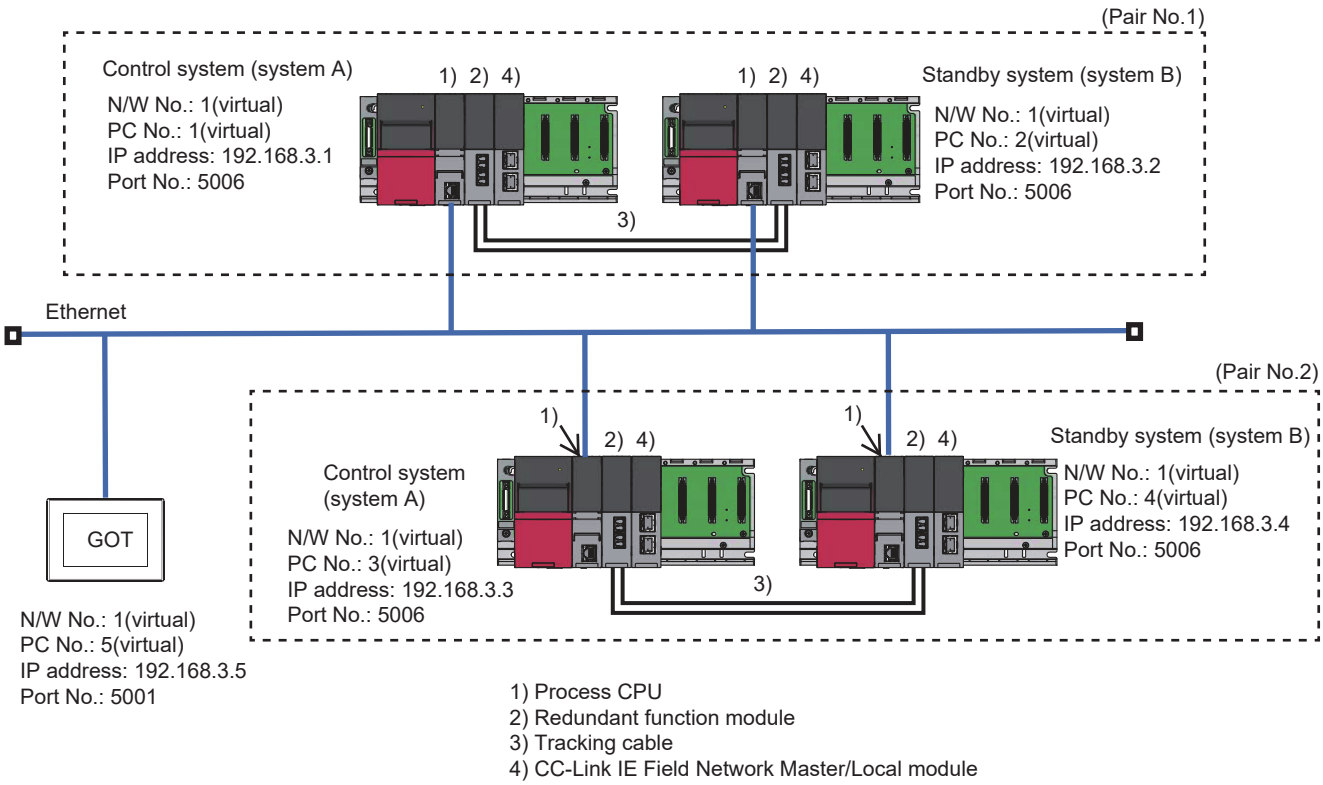
When system switching occurs, the CPU (PLC station No. 2) becomes the control system and continues the control.

The GOT automatically starts monitoring according to the specified system.

1:n connection with redundant system

■System configuration example

The following connection configuration examples are explained.



■Connection method

Connect the Ethernet network system and the GOT.

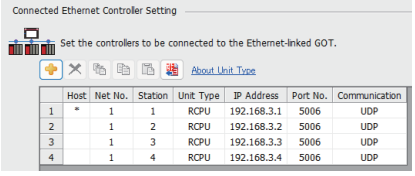
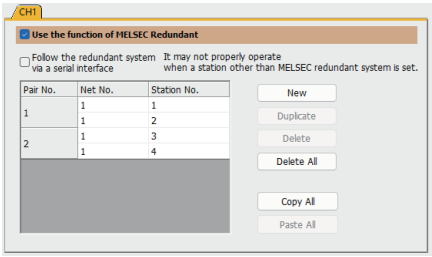
☞ Page 188 MELSEC iQ-R series (Built-in Ethernet port connection)

■PLC side settings

☞ Page 233 PLC side settings

■GOT side settings

Set GT Designer3 as follows.

Setting item	Setting details		Model
[Controller Type]	MELSEC iQ-R, RnMT/NC/RT, CR800-D		GT37 SoftGOT3000
Device setting (Network setting)	[Host]	Host (The control system is monitored.)	
	[Other]	[Network No.]: 1	
		[Station No.]: Station number of the control system	
	[Redundant System]	The system to be monitored ([Not Specified/Control System], [Standby System]) can be specified. This item can be set only when [Use the function of MELSEC Redundant] is selected in [MELSEC Redundant] shown below.	
Connected Ethernet controller settings	 ☞ Page 205 [Connected Ethernet Controller Setting]		
MELSEC redundant settings	 ☞ Page 239 MELSEC redundant settings		

■Monitoring target change when system switching occurs in a redundant system

- Redundant system-1

When system switching occurs, the CPU (PLC station No. 2) becomes the control system and continues the control.
The GOT automatically starts monitoring according to the specified system.

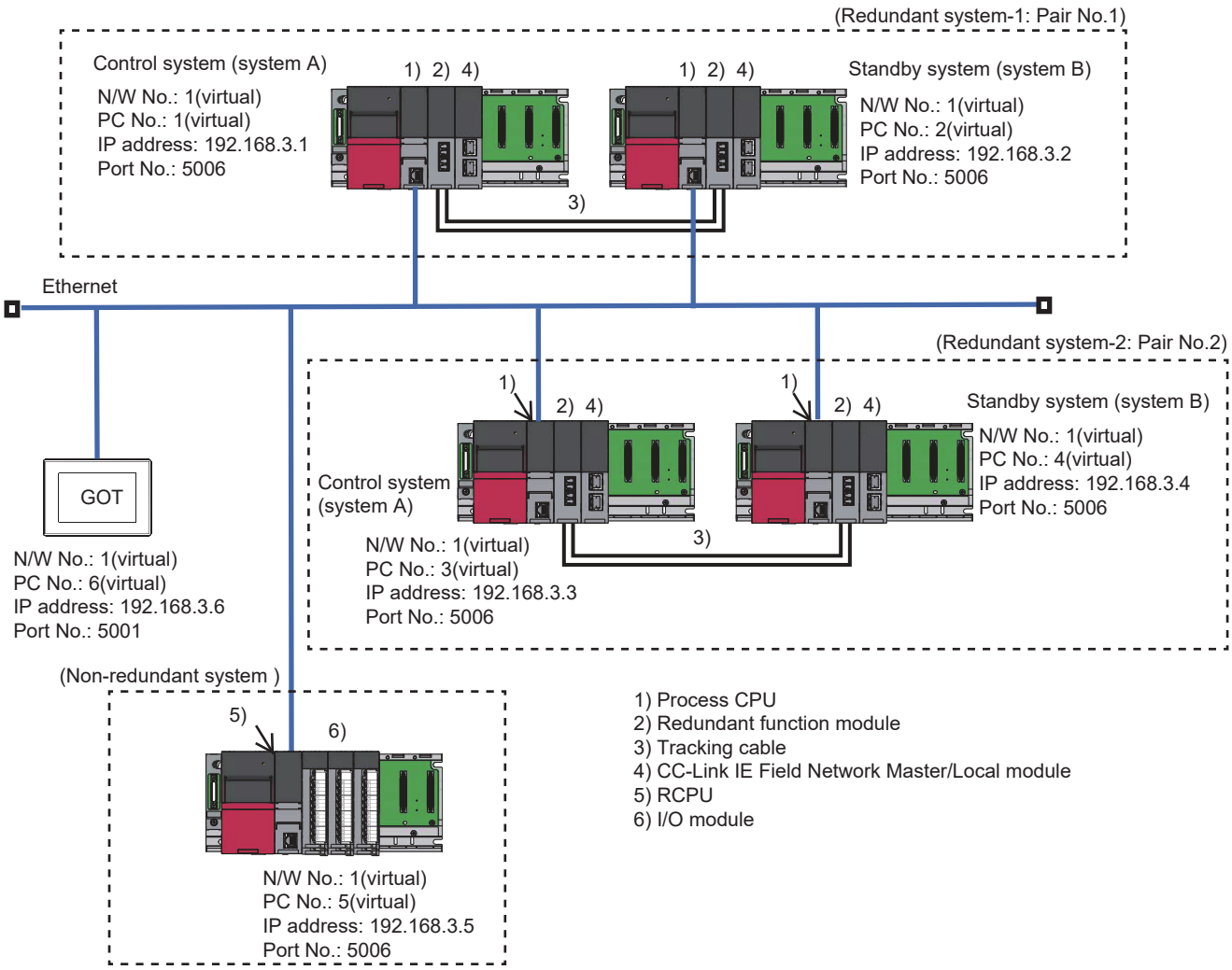
- Redundant system-2

When system switching occurs, the CPU (PLC station No. 4) becomes the control system and continues the control.
The GOT automatically starts monitoring according to the specified system.

Mixed connection of redundant system and non-redundant system

■System configuration example

The following connection configuration examples are explained.



■Connection method

Connect the Ethernet network system and the GOT.

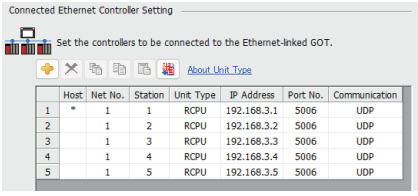
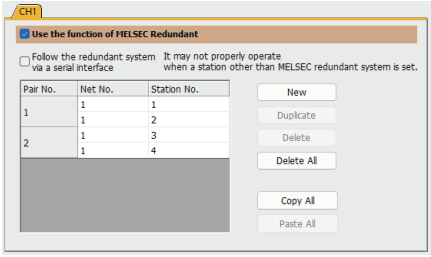
☞ Page 188 MELSEC iQ-R series (Built-in Ethernet port connection)

■PLC side settings

☞ Page 233 PLC side settings

■GOT side settings

Set GT Designer3 as follows.

Setting item	Setting details		Model
[Controller Type]	MELSEC iQ-R, RnMT/NC/RT, CR800-D		GT37 SoftGOT3000
Device setting (Network setting)	[Host]	Host (The control system is monitored.)	
	[Other]	[Network No.]: 1	
		[Station No.]: Station number of the control system	
	[Redundant System]	The system to be monitored ([Not Specified/Control System], [Standby System]) can be specified. This item can be set only when [Use the function of MELSEC Redundant] is selected in [MELSEC Redundant] shown below.	
Connected Ethernet controller settings	 ☞ Page 205 [Connected Ethernet Controller Setting]		
MELSEC redundant settings	 ☞ Page 239 MELSEC redundant settings		

■Monitoring target change when system switching occurs in a redundant system

☞ Page 236 Monitoring target change when system switching occurs in a redundant system

MELSEC redundant settings

This section describes the settings for the GOT to automatically change the monitoring target of the RCPU redundant system.

Point

Before configuring the MELSEC redundant settings

In the MELSEC redundant settings, do not set a station outside the redundant RCPU.

1. Select [Common] → [Controller Setting] → [MELSEC Redundant] from the menu.

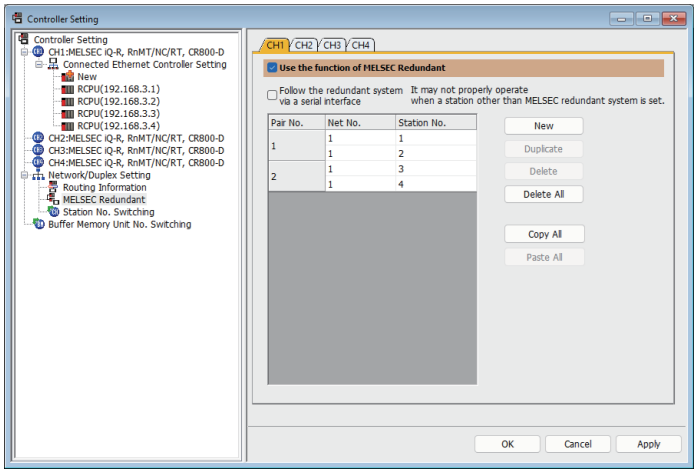
2. The setting dialog box appears. Configure the settings by referencing the explanation that follows.

3. Configure the MELSEC redundant settings.

In the MELSEC redundant setting dialog, settings can be made for each channel of the controller.

The following shows an example of redundant CPU pair numbers 1 to 2, network number 1, and redundant CPU station numbers 1 to 4 for the Ethernet connection (station number 5).

Ex.



Item		Description	Model
CH1 to CH4		Select the tab of the channel number to configure the MELSEC redundant settings.	GT37 SoftGOT3000
[Follow the redundant system via a serial interface]		Select this item to monitor the control system as a host station at serial connection.	
[Pair No.]*1	[Net No.]	Set the network number (1 to 255) for each pair number (1 to 64). • Upper row: Setting for the first redundant CPU • Lower row: Setting for the second redundant CPU (The same value as the value set for the first redundant CPU is displayed.)	
	[Station No.]	Set the station number (0 to 120) of the redundant CPU for each pair number (1 to 64). • Upper row: Setting for the first redundant CPU • Lower row: Setting for the second redundant CPU (The setting value for the first redundant CPU + 1 is displayed.)	
[New]		Adds a new pair number.	
[Duplicate]		Copies one setting of the selected pair number and adds it below the bottom row.	
[Delete]		Deletes one setting of the selected pair number. After deletion, the succeeding pair numbers are renumbered to fill the deleted pair number.	
[Delete All]		Deletes all the pair number settings.	
[Copy All]		Copies the MELSEC redundant setting on the selected CH No. tab.	
[Paste All]		Pastes the copied MELSEC redundant setting in the selected CH No. tab.	

*1 For details, refer to the following.

☞ Page 240 Pair number

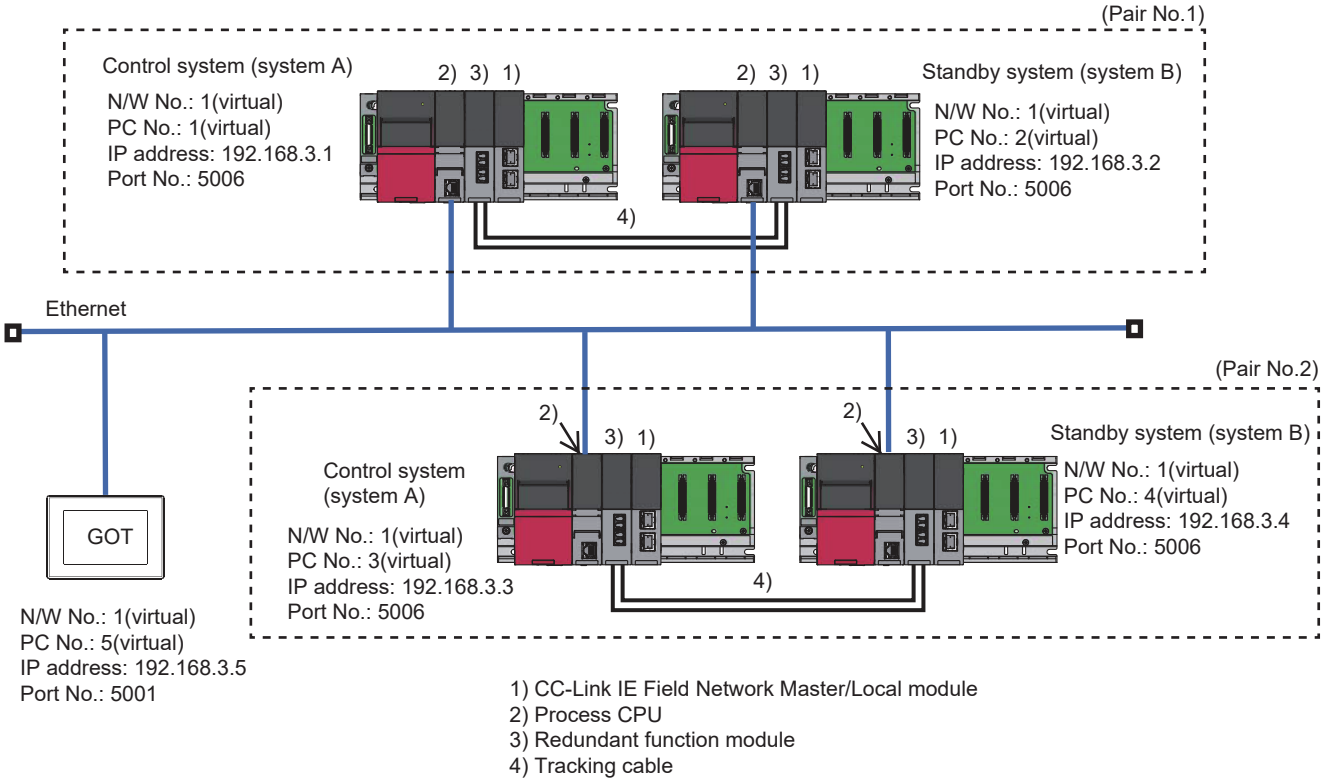
■Pair number

Redundant CPU pair means the redundant CPUs (System A / System B) in the redundant system configuration.

Pair number is the number assigned to each redundant CPU pair.

The following shows an example of Ethernet connection in the RCPU redundant system. (Pair No. 1 to No. 2)

Ex.



Point

Precautions for configuring the MELSEC redundant settings

Pay attention to the following items when configuring the MELSEC redundant settings.

- Pairing of the last station No. and station No. 1 (Example: Station No. 64 and station No. 1) is not allowed.
- Before configuring the settings, make sure to check the station numbers of the network modules. If the MELSEC redundant settings and the actual network module station numbers are inconsistent, the GOT fails to automatically change the monitoring target to the control system when the system is switched.
- GOT supports the backup mode, which is the redundant mode of the RCPU redundant system, and does not support the process mode and separate mode.

Precautions

■Start of the redundant system

The GOT starts monitoring the redundant system after the control system and standby system have been determined, regardless of the starting order of PLC systems A and B.

The GOT starts monitoring when both systems start.

(In a redundant system with a redundant extension base unit, the GOT monitors the control system that starts first.)

Power on the redundant system within the time set in the GOT (communication timeout time and number of retries) so that the GOT can start monitoring after the redundant system starts (after the control system is decided).

If the GOT does not start within the set time, the GOT stops monitoring for safety reasons, and the following system alarm occurs.

- 451: The MELSEC redundant setting and actual system configuration do not match.

If the system alarm occurs, restart the GOT (reapply or reset the power supply) to start monitoring again.

■System switching

When system switching occurs through the user program, the communication path remains unchanged, and the GOT will continue monitoring.

No system alarm occurs.

When system switching occurs due to disconnected cable or other causes, the GOT changes the communication path and continues monitoring.

[450: Path has changed or timeout occurred in redundant system.] appears as the system alarm.

■Redundant system configuration and operation mode

- System alarm display

If the MELSEC redundant settings do not match the actual configuration of the redundant system, or if the operation mode of the redundant system is not set to backup mode, [451: The MELSEC redundant setting and actual system configuration do not match.] appears as the system alarm, and the GOT will not be able to correctly monitor the redundant system's CPU.

If the system alarm occurs, restart the GOT (reapply or reset the power supply) to start monitoring again.

- Changing the MELSEC redundant settings

Always reset the GOT after changing the MELSEC redundant settings. If not reset, the changed MELSEC redundant settings will not be applied on the GOT.

■Monitoring a non-redundant system with the MELSEC redundant settings configured

If the MELSEC redundant settings were set for a non-redundant system, the GOT will operate normally.

In this case, if an abnormality (such as powering off or communication timeout error) occurs in the PLC CPU for which the MELSEC redundant settings are configured, the PLC CPU may not operate as intended.

■Monitoring a redundant system without configuring the MELSEC redundant settings

When the MELSEC redundant settings are not configured, the GOT does not automatically change the monitoring target even if system switching occurs in the redundant system.

When the GOT is connected to the standby system, data written to a device are overwritten by the data of the control system, failing to be reflected.

In this case, when data is written to a device in the standby system normally, the system alarm [315 Device writing error. Correct device.] is not detected.

4.6 MELSEC iQ-R series (Ethernet module connection)

☞ Page 242 Connectable devices
☞ Page 245 System configuration
☞ Page 252 GOT side settings
☞ Page 263 PLC side settings
☞ Page 280 Access range for monitoring
☞ Page 281 How to monitor a redundant system

4.6.1 Connectable devices

The following table shows the connectable models.

○: Supported, —: Not supported

Controller	Model	Clock	Ethernet module	Connectable model
MELSEC iQ-R series	R00CPU R01CPU R02CPU R04CPU R08CPU R16CPU R32CPU R120CPU	○	RJ71EN71 RJ71GN11-T2*5 RJ71GN11-EIP*5 RD78G4*5*6 RD78G8*5*6 RD78G16*5*6 RD78G32*5*6 RD78G64*5*6 RD78GHV*5*6 RD78GHW*5*6	GT37 SoftGOT3000
	R08PCPU*1 R16PCPU*1 R32PCPU*1 R120PCPU*1	○	RJ71EN71*4	GT37 SoftGOT3000
	R04ENCPU R08ENCPU R16ENCPU R32ENCPU R120ENCPU	○	RJ71EN71 RJ71GN11-T2*5 RJ71GN11-EIP*5 RD78G4*5*6 RD78G8*5*6 RD78G16*5*6 RD78G32*5*6 RD78G64*5*6 RD78GHV*5*6 RD78GHW*5*6	GT37 SoftGOT3000
	R08PSFCPU*2 R16PSFCPU*2 R32PSFCPU*2 R120PSFCPU*2	○	RJ71EN71*4	GT37 SoftGOT3000
	R08SFCPU*3 R16SFCPU*3 R32SFCPU*3 R120SFCPU*3	○	RJ71EN71 RJ71GN11-T2*5 RD78G4*5*6 RD78G8*5*6 RD78G16*5*6 RD78G32*5*6 RD78G64*5*6 RD78GHV*5*6 RD78GHW*5*6	GT37 SoftGOT3000
Motion CPU (MELSEC iQ-R series)	R16MTCPU R32MTCPU R64MTCPU*8	○	RJ71EN71	GT37 SoftGOT3000

Controller	Model	Clock	Ethernet module	Connectable model
C Controller module (MELSEC iQ-R series)*7	R12CCPU-V	○	RJ71GN11-T2 RD78G4 RD78G8 RD78G16 RD78G32 RD78G64 RD78GHV RD78GHW	GT37 SoftGOT3000
MELSECWinCPU (MELSEC iQ-R series)	R102WCPU-W	—	RJ71GN11-T2	GT37 SoftGOT3000
CNC C80	R16NCCPU-S1	○	RJ71EN71	GT37 SoftGOT3000
Robot controller (MELSEC iQ-R series)	CR800-R (R16RTCPU)	○	RJ71EN71	GT37 SoftGOT3000
CC-Link IE Field Network head module	RJ72GF15-T2	○	RJ71EN71*4	GT37 SoftGOT3000

*1 Mount a redundant function module R6RFM next to the RnPCPU on the base unit when building a redundant system.
*2 Mount the SIL2 function module R6PSFM and the redundant function module R6RFM next to the RnPSFCPU on the base unit.
*3 Mount a safety function module R6SFM next to the RnSFCPU on the base unit.
The RnSFCPU and the safety function module R6SFM must have the same pair version.
If their pair versions differ, the RnSFCPU does not operate.
*4 Use firmware version 12 or later when building a redundant system.
*5 The following shows the connectable PLC CPUs and their firmware versions for connection with each module.

Model	Firmware version			
	Connection to RJ71GN11-T2	Connection to RJ71GN11-EIP	Connection to RD78G4, RD78G8, RD78G16, RD78G32, or RD78G64	Connection to RD78GHV or RD78GHW
R00CPU	11 or later	29 or later	12 or later	14 or later
R01CPU				
R02CPU				
R04CPU	43 or later	62 or later	44 or later	46 or later
R08CPU				
R16CPU				
R32CPU				
R120CPU				
R04ENCPU				
R08ENCPU				
R16ENCPU				
R32ENCPU				
R120ENCPU				
R08SFCPU	20 or later	Unavailable	21 or later	21 or later
R16SFCPU				
R32SFCPU				
R120SFCPU				

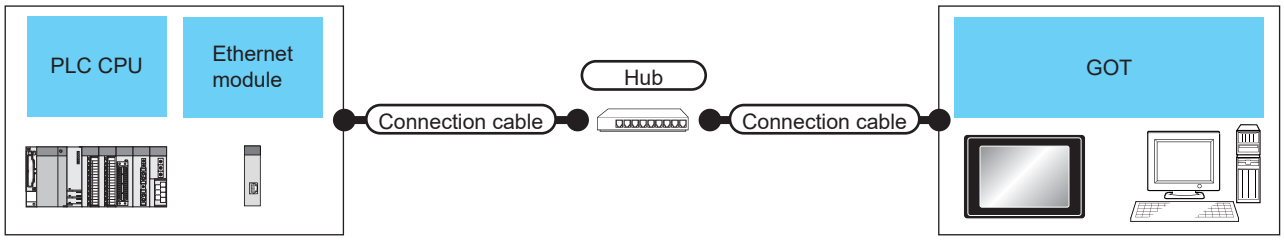
*6 Use a Motion module with software version 06 or later.
For the PLC CPU firmware version and GX Works3 version that support the Motion module, refer to the following.
📖MELSEC iQ-R Motion Module User's Manual (Application)

*7 For connection to the CC-Link IE TSN master/local module or Motion module, use the C Controller module (MELSEC iQ-R series) with firmware version 15 or later.

*8 Use a module with OS software version 06 or later.

4.6.2 System configuration

Connection to Ethernet module



For details on the connection cables and the maximum segment length, refer to the following.

☞ Page 246 Connection cable
☞ Page 246 Maximum segment length

For details on the maximum number of connected devices, refer to the following.

☞ Page 246 Maximum number of connected devices

Controller	Ethernet module*1*2	Connection cable	GOT	
			Interface	Model
MELSEC iQ-R series Motion CPU (MELSEC iQ-R series) CR800-R (R16RTCPU) CNC C80 (R16NCCPU-S1) CC-Link IE Field Network head module (MELSEC iQ-R series)	RJ71EN71	Twisted pair cable	Built-in Ethernet interface of GOT	GT37 SoftGOT3000
			Ethernet interface of personal computer	GT37 SoftGOT3000

*1 For the system configuration of the Ethernet module, refer to the following manual.
MELSEC iQ-R Ethernet/CC-Link IE User's Manual (Startup)

*2 Select [RJ71EN71] for [Unit Type] in [Connected Ethernet Controller Setting] in GT Designer3.
For [Connected Ethernet Controller Setting] in GT Designer3, refer to the following.
☞ Page 259 [Connected Ethernet Controller Setting]

■Connection cable

Use a connection cable that meets the following standards.

Standard	Category
10BASE-T	Shielded twisted pair cable (STP) or unshielded twisted pair cable (UTP) of category 3 or higher
100BASE-TX	Shielded twisted pair cable (STP) or unshielded twisted pair cable (UTP) of category 5 or higher
1000BASE-T	Shielded twisted pair cable (STP) or unshielded twisted pair cable (UTP) of category 5e or higher

The destination device connected with the twisted pair cable varies with the configuration of the Ethernet network system used.

Connect the cable to the Ethernet module, hub, or other system equipment corresponding to the applicable Ethernet network system.

Use cables, connectors, and hubs that meet the IEEE802.3 10BASE-T/100BASE-TX/1000BASE-T standards.

When only one GOT is connected, the GOT can be directly connected to the controller without a hub.

■Maximum segment length

The maximum segment length (length between a hub and a node) is 100 m.

The maximum length depends on the Ethernet equipment used.

The following shows the number of connectable hubs when a repeater hub is used.

- 10BASE-T: Up to 4 for a cascade connection (within 500 m)
- 100BASE-TX: Up to 2 for a cascade connection (within 205 m)
- 1000BASE-T: The number differs depending on the hub to be used.

When switching hubs are used, there is no theoretical limit to the number of cascade connections between switching hubs.

For the limit, contact the switching hub manufacturer.

Precautions

When multiple network devices (including GOTs) are connected in the same segment, the network load increases and the transmission speed between the GOT and PLC may be reduced.

The following actions may improve the communication performance.

- Use a switching hub compatible with 1000BASE-T (1 Gbps) or more.
- Reduce the number of devices monitored by the GOT.

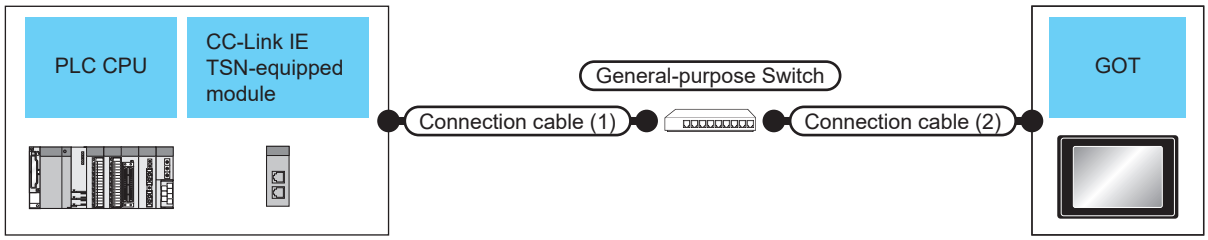
■Maximum number of connected devices

Up to 128 CPU modules can be connected to channels No. 1 to No. 4 of one GOT. (16 or less recommended)

The following shows the number of connectable controllers per GOT channel and the number of GOTs connectable to one controller.

Controller				GOT	
Model		Number of GOTs connectable to one Ethernet module		Model	Number of connectable controllers per GOT channel
PLC CPU	Module	UDP	TCP		
MELSEC iQ-R series Motion CPU (MELSEC iQ-R series) CR800-R (R16RTCPU)	RJ71EN71	119	17	GT37 SoftGOT3000	119 (16 or less recommended)
CNC C80 (R16NCCPU-S1)		8		GT37 SoftGOT3000	128
CC-Link IE Field Network head module (MELSEC iQ-R series)		119	17	GT37 SoftGOT3000	119 (16 or less recommended)
		64	64	GT37 SoftGOT3000	128

Connection to CC-Link IE TSN-equipped module



For details on the connection cables and the maximum segment length, refer to the following.

☞ Page 249 Connection cable
☞ Page 249 Maximum segment length

For details on the maximum number of connected devices, refer to the following.

☞ Page 249 Maximum number of connected devices

Controller	CC-Link IE TSN-equipped module*2*3	Connection cable (1)	External device	Connection cable (2)	GOT	
					Interface	Model
MELSEC iQ-R series (RnCPU, RnENCPU, RnSFCPU) C Controller module (MELSEC iQ-R series) MELSECWinCPU (MELSEC iQ-R series)	RJ71GN11-T2	Twisted pair cable	General-purpose Switch*1	Twisted pair cable	Built-in Ethernet interface of GOT	GT37 SoftGOT3000
					Ethernet interface of personal computer	GT37 SoftGOT3000
MELSEC iQ-R series (RnCPU, RnENCPU)	RJ71GN11-EIP*4	Twisted pair cable	General-purpose Switch*1	Twisted pair cable	Built-in Ethernet interface of GOT	GT37 SoftGOT3000
					Ethernet interface of personal computer	GT37 SoftGOT3000

*1 For usable General-purpose Switches, refer to the following.
MELSEC iQ-R CC-Link IE TSN User's Manual (Startup)
MELSEC iQ-R CC-Link IE TSN Plus Master/Local Module User's Manual

*2 For the system configuration of the CC-Link IE TSN-equipped module, refer to the following manuals.
MELSEC iQ-R CC-Link IE TSN User's Manual (Startup)
MELSEC iQ-R CC-Link IE TSN Plus Master/Local Module User's Manual

*3 Select [RJ71GN11-T2/RD78G(H)] for [Unit Type] in [Connected Ethernet Controller Setting] in GT Designer3.
For [Connected Ethernet Controller Setting] in GT Designer3, refer to the following.
☞ Page 259 [Connected Ethernet Controller Setting]

*4 Connect the cable to the P1 port of the RJ71GN11-EIP.

■Connection cable

Use a connection cable that meets the following standards.

Standard	Category
100BASE-TX	Shielded twisted pair cable (STP) or unshielded twisted pair cable (UTP) of category 5 or higher
1000BASE-T	Shielded twisted pair cable (STP) or unshielded twisted pair cable (UTP) of category 5e or higher

For the twisted pair cable, use a straight cable.

Use cables and connectors that meet the IEEE802.3 100BASE-TX/1000BASE-T standards.

■Maximum segment length

The maximum segment length (length between a hub and a node) is 100 m.

■Maximum number of connected devices

Up to 128 CPU modules can be connected to channels No. 1 to No. 4 of one GOT. (16 or less recommended)

The following shows the number of connectable controllers per GOT channel and the number of GOTs connectable to one controller.

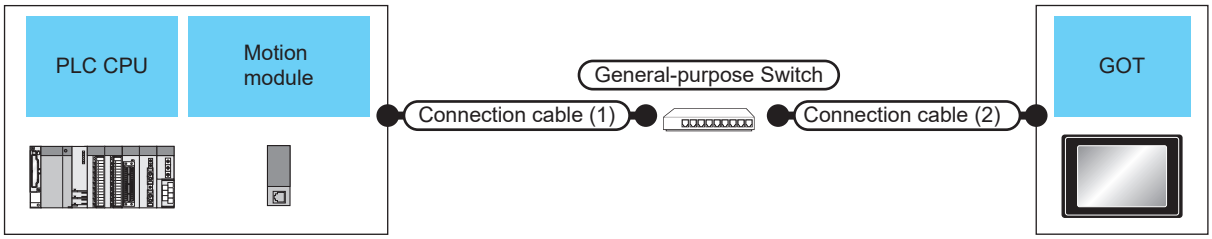
Controller				GOT	
Model		Number of GOTs connectable to one CC-Link IE TSN-equipped module		Model	Number of connectable controllers per GOT channel
PLC CPU	Module	UDP	TCP		
MELSEC iQ-R series (RnCPU, RnENCPU, RnSFCPU)	RJ71GN11-T2	8	8	GT37 SoftGOT3000	119 (8 or less recommended)
		119	17	GT37 SoftGOT3000	119 (16 or less recommended)
C Controller module (MELSEC iQ-R series)		8	8	GT37 SoftGOT3000	119 (8 or less recommended)
		64	64	GT37 SoftGOT3000	128
MELSECWinCPU (MELSEC iQ-R series)		8	8	GT37 SoftGOT3000	119 (8 or less recommended)
		64	64	GT37 SoftGOT3000	119 (16 or less recommended)
MELSEC iQ-R series (RnCPU, RnENCPU)	RJ71GN11-EIP	8	8	GT37 SoftGOT3000	119 (8 or less recommended)
		119	17	GT37 SoftGOT3000	119 (16 or less recommended)

Connection to built-in Ethernet port of Motion module

The following shows the system configuration for monitoring the devices of the PLC CPU with the GOT.

Point

To monitor the global labels of the Motion module with the GOT, connect the GOT and Motion module through the built-in Ethernet port of the PLC.
If the GOT is connected to the built-in port of the Motion module, the global labels of the Motion module cannot be monitored.



For details on the connection cables and the maximum segment length, refer to the following.

☞ Page 251 Connection cable
☞ Page 251 Maximum segment length

For details on the maximum number of connected devices, refer to the following.

☞ Page 251 Maximum number of connected devices

Controller	Motion module*2*3	Connection cable (1)	External device	Connection cable (2)	GOT	
					Interface	Model
MELSEC iQ-R series (RnCPU, RnENCPU, RnSFCPU) C Controller module (MELSEC iQ-R series)	RD78G4 RD78G8 RD78G16 RD78G32 RD78G64 RD78GHV RD78GHW	Twisted pair cable	General-purpose Switch*1	Twisted pair cable	Built-in Ethernet interface of GOT	GT37 SoftGOT3000
					Ethernet interface of personal computer	GT37 SoftGOT3000

*1 For usable General-purpose Switches, refer to the following.
MELSEC iQ-R Motion Module User's Manual (Startup)

*2 For the system configuration of the Motion module, refer to the following manual.
MELSEC iQ-R Motion Module User's Manual (Startup)

*3 Select [RJ71GN11-T2/RD78G(H)] for [Unit Type] in [Connected Ethernet Controller Setting] in GT Designer3.
For [Connected Ethernet Controller Setting] in GT Designer3, refer to the following.
☞ Page 259 [Connected Ethernet Controller Setting]

■Connection cable

Use a connection cable that meets the following standards.

Standard	Category
100BASE-TX	Shielded twisted pair cable (STP) or unshielded twisted pair cable (UTP) of category 5 or higher
1000BASE-T	Shielded twisted pair cable (STP) or unshielded twisted pair cable (UTP) of category 5e or higher

For the twisted pair cable, use a straight cable.

Use cables, connectors, and hubs that meet the IEEE802.3 100BASE-TX/1000BASE-T standards.

■Maximum segment length

The maximum segment length (length between General-purpose Switch and a node) is 100 m.

■Maximum number of connected devices

Up to 128 CPU modules can be connected to channels No. 1 to No. 4 of one GOT. (16 or less recommended)

The following shows the number of connectable controllers per GOT channel and the number of GOTs connectable to one controller.

Controller				GOT	
Model		Number of GOTs connectable to one Motion module		Model	Number of connectable controllers per GOT channel
PLC CPU	Module	UDP	TCP		
MELSEC iQ-R series (RnCPU, RnENCPU, RnSFCPU) C Controller module (MELSEC iQ-R series)	RD78G4 RD78G8 RD78G16 RD78G32 RD78G64 RD78GHV RD78GHW	8	8	GT37 SoftGOT3000	119 (8 or less recommended)
		64	64	GT37 SoftGOT3000	128

Connection via the multiple CPU system

When the GOT is connected via the multiple CPU system, the PLC takes 10 seconds or more to run.

If you start the GOT before the PLC runs, a system alarm occurs.

Adjust the time to display the GOT startup screen to prevent a system alarm.

📖GT Designer3 (GOT3000) Screen Design Manual

Connection to RnSFCPU

RnSFCPU takes 10 seconds or more to run.

If you start the GOT before the RnSFCPU runs, a system alarm occurs.

Adjust the time to display the GOT startup screen to prevent a system alarm.

📖GT Designer3 (GOT3000) Screen Design Manual

4.6.3 GOT side settings

[GOT Ethernet Setting]

Set the GOT Ethernet interface in GT Designer3.

Item	Description
[GOT IP Address Setting]	Set the IP address of the GOT.
[GOT Ethernet Common Setting]	Set the default gateway and other common items for GOT Ethernet interfaces.
[IP filter Setting]	The GOT allows or blocks access from IP addresses specified in the filtering list.

For details on the setting, refer to the following.

📖GT Designer3 (GOT3000) Screen Design Manual

Set the GT SoftGOT3000 Ethernet interface on the personal computer.

Precautions

Do not use 0 and 255 at the end of an IP address.

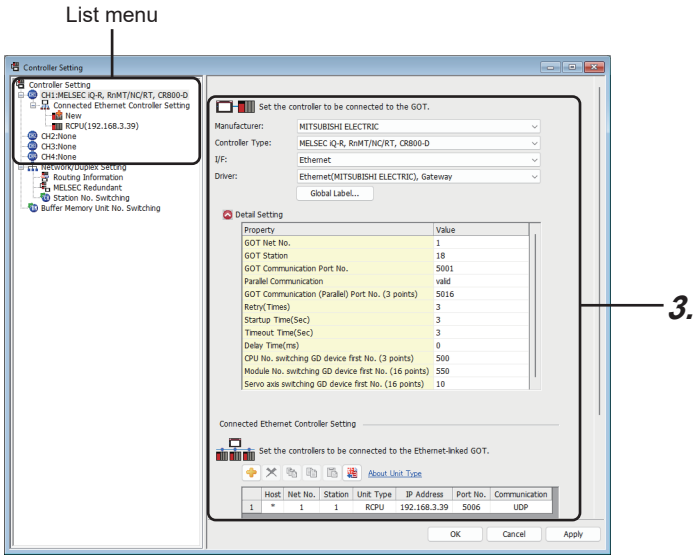
(Numbers of *.*.*.0 and *.*.*.255 are used by the system.)

The GOT may not monitor the controller correctly with the above numbers.

Consult with the administrator of the network before setting an IP address to the GOT.

[Controller Setting]

Set the channel of the connected controller.



Operating procedure

1. Select [Common] → [Controller Setting] from the menu.

2. In the [Controller Setting] window, select the channel number to be used from the list menu.

3. Set the following items.

Item	Description
[Manufacturer]	[MITSUBISHI ELECTRIC]
[Controller Type]	[MELSEC iQ-R, RnMT/NC/RT, CR800-D]
[I/F]	[Ethernet]
[Driver]	[Ethernet(MITSUBISHI ELECTRIC), Gateway]
[Detail Setting]	Configure the settings according to the usage environment. ☞ Page 254 [Detail Setting]
[Connected Ethernet Controller Setting]	Configure the settings according to the controller to be connected. ☞ Page 259 [Connected Ethernet Controller Setting]

4. When you have completed the settings, click the [OK] button.

Point

The controller settings can be checked in [I/F Communication Setting].
For details, refer to the following.
📖GT Designer3 (GOT3000) Screen Design Manual

■[Detail Setting]

Configure the settings according to the usage environment.

Detail Setting

Property	Value
GOT Net No.	1
GOT Station	18
GOT Communication Port No.	5001
Parallel Communication	valid
GOT Communication (Parallel) Port No. (3 points)	5016
Retry(Times)	3
Startup Time(Sec)	3
Timeout Time(Sec)	3
Delay Time(ms)	0
CPU No. switching GD device first No. (3 points)	500
Module No. switching GD device first No. (16 points)	550
Servo axis switching GD device first No. (16 points)	10

Item	Description	Range
[GOT Net No.]	Set the network number of the GOT.	[1] to [239]
[GOT Station][*1*2]	Set the station number of the GOT.	[1] to [120]
[GOT Communication Port No.]	Set the GOT port number for connection with the Ethernet module.	[1024] to [5010], [5014] to [49152], [49171] to [65534]
[Parallel Communication][*3]	Enables or disables the parallel communication. When this setting is enabled, [GOT Communication (Parallel) Port No. (3 points)] can be set. When communicating with multiple devices on a single channel, distributing the communication ports can reduce the communication load.	[valid], [invalid]
[GOT Communication (Parallel) Port No. (3 points)]	Set the GOT port number used for the parallel communication.	• [Parallel Communication] is [invalid]: [0] • [Parallel Communication] is [valid]: [1024] to [5008], [5014] to [49150], [49171] to [65532]
[Retry(Times)]	Set the number of retries to be performed when a communication timeout occurs. When receiving no response after retries, the communication times out.	GOT: [0] times to [5] times GT SoftGOT3000: [0] times to [10] times
[Startup Time]	Set the time period from the GOT startup until the start of communication with the PLC CPU.	[3] seconds to [255] seconds
[Timeout Time]	Set the time period for a communication to time out.	[1] second to [90] seconds
[Delay Time]	Set the delay time for reducing the load of the network and destination PLC.	[0] ms to [10000] ms
[CPU No. switching GD device first No. (3 points)]	Set the start device number of the GD devices for CPU number switching. For details, refer to the following. ☞ Page 256 Start device number of the GD devices for CPU number switching	[0] to [65520]
[Module No. switching GD device first No. (16 points)]	Set the start device number of the GD devices for module number switching. For details, refer to the following. ☞ Page 257 Start device number of the GD devices for module number switching	[0] to [65520]
[Servo axis switching GD device first No. (16 points)]	Set the start device number of the GD devices for servo axis switching. For details, refer to the following. ☞ Page 258 Start device number of the GD devices for servo axis switching	[0] to [65520]

*1 Set values not set for [Station] in [Connected Ethernet Controller Setting].
☞ Page 259 [Connected Ethernet Controller Setting]

*2 When connecting multiple GOTs in the Ethernet network, set a different value for [GOT Station] for each GOT.

*3 When the MELSEC redundant settings are enabled, [Parallel Communication] is set to [invalid].

Point

• Controller settings using the GT37 utility

The controller settings can be changed in [Communication Settings] of the GT37 utility after writing [Communication Settings] of project data to GT37.

For details on the GT37 utility, refer to the following manual.

📖GOT3000 Series User's Manual (Utility & Maintenance Functions)

• Priority of the settings in [Controller Setting]

When the settings are configured in GT Designer3 or in the GT37 utility, the latest settings are effective.

■When connecting multiple GOTs

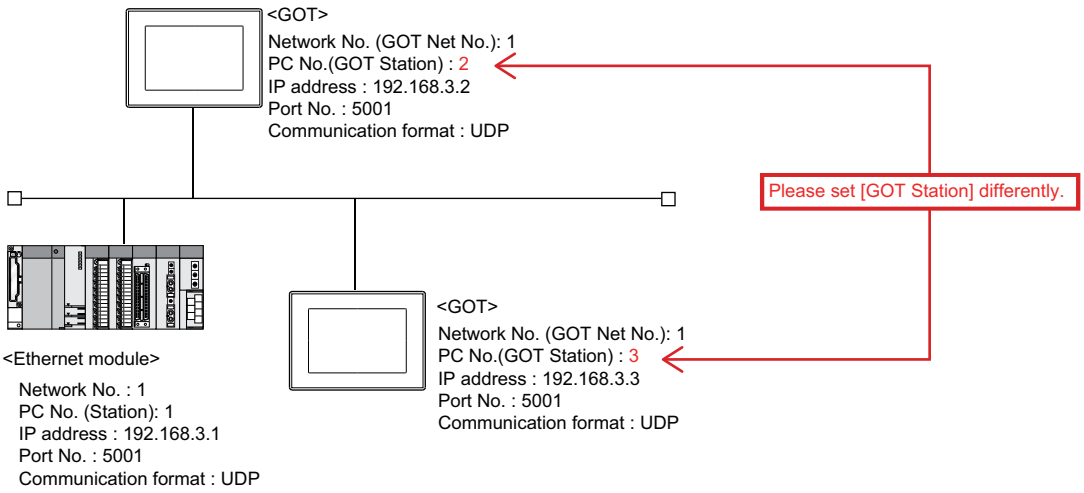
• Settings for [GOT Station]

When connecting multiple GOTs in the Ethernet network, set a different value for [GOT Station] for each GOT.

☞ Page 254 [Detail Setting]

The following shows a system configuration example.

Ex.



• Settings to start up multiple GOTs simultaneously

When connecting multiple GOTs to one built-in Ethernet port CPU, adjust the timing of GOT communication start.

When the communication concentrates on the PLC, the communication between GOT and PLC becomes difficult, and the monitoring by GOT may not start.

As a method for adjusting the timing, communicating one GOT alone first, and then communicating the other GOTs is effective.

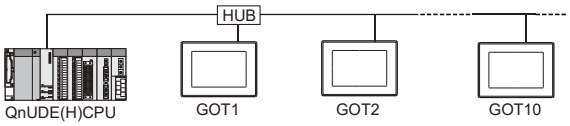
Set the following items on each GOT.

[Startup Time] in [Detail Setting] or [Title Display Time] of [GOT Setup]

[Timeout Time] in [Detail Setting]

The following shows a setting example.

Ex.



Item	GOT1	GOT2	GOT10
Startup Time	3sec (default)	4sec	4sec
Timeout Time	3sec (default)	4sec	4sec

■Start device number of the GD devices for CPU number switching

• Indirect specification of a CPU number

[CPU No.] can be indirectly specified with the GOT internal registers (GD devices) by specifying a value (100 to 102) to [CPU No.] in the device setting dialog in GT Designer3.

Set the start device number of the GD devices to be used in [CPU No. switching GD device first No. (3 points)].

[CPU No.] is specified with three consecutive GD devices, starting from the set device number.

When [500] is set to [CPU No. switching GD device first No. (3 points)], GD500 to GD502 are used to specify [CPU No.] as shown in the following table.

CPU No.	GD device	Setting range
100	GD500	1 to 4 Setting a value outside the range causes a communication timeout error. Specifying a nonexistent CPU number or a CPU number not supporting a multiple CPU system with a device causes a controller error.
101	GD501	
102	GD502	

• Indirect specification of a CPU number on the initially displayed screen

Set [CPU No. switching GD device first No. (3 points)] so that the values of the GD devices are retained and monitored upon the GOT startup.

• Indirect specification of a CPU number for multi-channel connection

If the setting range of [CPU No. switching GD device first No. (3 points)] set for each channel overlaps, the monitoring target CPU number set to each channel is switched simultaneously.

Set [CPU No. switching GD device first No. (3 points)] for each channel so that the setting range does not overlap.

• Indirect specification of a station number and a CPU number for multi-channel connection

When GD10 to GD25 are used to specify the station number of an inverter or non-Mitsubishi temperature controller connected, setting [10] to [CPU No. switching GD device first No. (3 points)] in a different channel switches the monitoring target CPU number and station number of an inverter or non-Mitsubishi temperature controller set to each channel simultaneously.

Set [CPU No. switching GD device first No. (3 points)] so that the setting range does not overlap the station number of an inverter or non-Mitsubishi temperature controller.

■Start device number of the GD devices for module number switching

• Indirect specification of a module number

For connection via a Simple Motion module, [Unit No.] can be specified with the GOT internal registers (GD devices) by specifying a value (100 to 10F) to [Unit No.] in the device setting dialog in GT Designer3.

Set the start device number of the GD devices to be used in [Module No. switching GD device first No. (16 points)].

[Unit No.] is specified with 16 consecutive GD devices, starting from the set device number.

When [550] is set to [Module No. switching GD device first No. (16 points)], GD550 to GD565 are used to specify [Unit No.] as shown in the following table.

Module No.	GD device	Setting range
100	GD550	00 to FF Setting a value outside the above range causes a device range error.
101	GD551	
102	GD552	
103	GD553	
104	GD554	
105	GD555	
106	GD556	
107	GD557	
108	GD558	
109	GD559	
10A	GD560	
10B	GD561	
10C	GD562	
10D	GD563	
10E	GD564	
10F	GD565	

• Indirect specification of a module number on the initially displayed screen

Set [Module No. switching GD device first No. (16 points)] so that the values of the GD devices are retained and monitored upon the GOT startup.

• Indirect specification of a module number for multi-channel connection

If the setting range of [Module No. switching GD device first No. (16 points)] set for each channel overlaps, the module number of the Simple Motion module via the servo amplifier device of each channel is switched simultaneously.

Set [Module No. switching GD device first No. (16 points)] for each channel so that the setting range does not overlap.

• Indirect specification of a station number and a module number for multi-channel connection

When GD10 to GD25 are used to specify the station number of an inverter or non-Mitsubishi temperature controller connected, setting [10] to [Module No. switching GD device first No. (16 points)] switches the module number of the Simple Motion module via the servo amplifier device and the station number of an inverter or non-Mitsubishi temperature controller set to each channel simultaneously.

Set [Module No. switching GD device first No. (16 points)] so that the setting range does not overlap the station number of an inverter or non-Mitsubishi temperature controller.

■Start device number of the GD devices for servo axis switching

• Indirect specification of a servo axis number

For connection via a Motion CPU or Simple Motion module, a servo axis number can be indirectly specified with GOT internal registers (GD devices) by specifying a value (100 to 115) to the axis number of the servo amplifier device.

Set the start device number of the GD devices to be used in [Servo axis switching GD device first No. (16 points)].

Specify a servo axis number with 16 consecutive GD devices, starting the set device number.

When [10] is set to [Servo axis switching GD device first No. (16 points)], GD10 to GD25 are used to specify a servo axis number as shown in the following table.

Servo axis No.	GD device	Setting range
100	GD10	1 to 64 Setting a value outside the above range causes a device range error.
101	GD11	
102	GD12	
103	GD13	
104	GD14	
105	GD15	
106	GD16	
107	GD17	
108	GD18	
109	GD19	
110	GD20	
111	GD21	
112	GD22	
113	GD23	
114	GD24	
115	GD25	

• Indirect specification of a servo axis number on the initially displayed screen

Set [Servo axis switching GD device first No. (16 points)] so that the values of the GD devices are retained and monitored upon the GOT startup.

• Indirect specification of a servo axis number for multi-channel connection

If the setting rage of [Servo axis switching GD device first No. (16 points)] set for each channel overlaps, the axis number of the servo amplifier of each channel is switched simultaneously.

Set [Servo axis switching GD device first No. (16 points)] for each channel so that the setting range does not overlap.

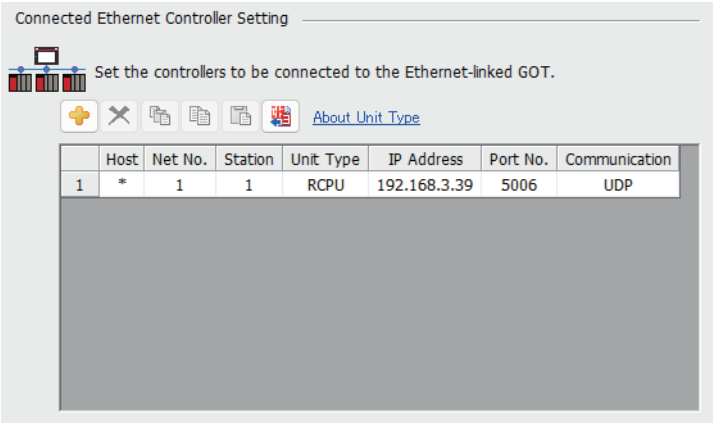
• Indirect specification of a station number and a servo axis number for multi-channel connection

When GD10 to GD25 are used to specify the station number of an inverter or non-Mitsubishi temperature controller connected, setting [10] to [Servo axis switching GD device first No. (16 points)] switches the axis number of the servo amplifier and the station number of an inverter or non-Mitsubishi temperature controller set to each channel simultaneously.

Set [Servo axis switching GD device first No. (16 points)] so that the setting range does not overlap the station number of an inverter or non-Mitsubishi temperature controller.

■[Connected Ethernet Controller Setting]

Set the controller to be connected to the GOT by Ethernet.



Item	Description	Range
[Host]	The host is displayed. It refers to a station that can be connected without setting a station number. The host is indicated with an asterisk (*).	—
[Net No.]	Set the network number of the connected Ethernet equipment.	[1] to [239]
[Station]*2	Set the station number of the connected Ethernet equipment.	☞ Page 260 [Station]
[Unit Type]	Select the model of the connected Ethernet equipment.	☞ Page 260 [Unit Type]
[IP Address]	Set the IP address of the connected Ethernet equipment.	[0.0.0.0] to [255.255.255.255]
[Port No.]*1	Set the port number of the connected Ethernet equipment.	☞ Page 260 [Port No.]
[Communication]	Set the communication format of the connected Ethernet equipment.	[UDP], [TCP]

*1 Match the port number of the CPU and [Port No.] of [Connected Ethernet Controller Setting].

*2 Set values not set for [GOT Station] in [Detail Setting].
☞ Page 254 [Detail Setting]

■[Unit Type]

Select an item for [Unit Type] as shown below.

GOT connection destination	[Unit Type]
RnCPU, RnSFCPU, RnENCPU (Port CPU P1)	[RCPU]
C Controller module (MELSEC iQ-R series)	[RnCCPU/RnWCPU]
Ethernet module (MELSEC iQ-R series)	[RJ71EN71]
CC-Link IE TSN master/local module (MELSEC iQ-R series) Motion module (MELSEC iQ-R series)	[RJ71GN11-T2/RD78G(H)]

■[Port No.]

The setting range is as follows:

[Unit Type]	[Port No.]	[Communication]
[RCPU], [RnCCPU/RnWCPU]	[5006]	[UDP]
	[5007]	[TCP]
[RJ71EN71], [RJ71GN11-T2/RD78G(H)]	[5001]	[UDP]
	[5002]	[TCP]

■[Station]

The setting range of the station number differs depending on the setting for [Controller Type].

[Unit Type]	Setting range for [Station]
[RCPU] [RnCCPU/RnWCPU] [RJ71EN71]	[1] to [120]
[RJ71GN11-T2/RD78G(H)]	[0] to [120]

■Selecting [RCPU] for [Unit Type]

There is no setting for the network number and PLC number of built-in Ethernet port CPU (Port number: 5006, 5007).
The values of [Network No.] and [Station No.] in the object setting dialog must be the same as the values of [Net No.] and [Station] in [Connected Ethernet Controller Setting].

■Connection to the PLC via the Ethernet module with [Communication] set to [TCP]

During communication with the PLC via the Ethernet module with [Communication] set to [TCP], using the FA transparent function may change the setting from [TCP] to [UDP] and start communication with the PLC via the Ethernet module with the new setting.
In this case, communication with the PLC via the Ethernet module cannot be executed normally.
Take the following corrective action.

Phenomenon	Cause	Corrective action
Communication fails when using the FA transparent function.	When the multi-channel Ethernet connection is used, [TCP] and [UDP] are used to the same IP address, and then the FA transparent function is used for the channel set to [TCP].	Execute the FA transparent function for the channel set to [UDP].

Point

Changing the host station on the GOT
[Host] can be changed with the utility function of the GOT.
For details on the setting method, refer to the following manual.
📖GOT3000 Series User's Manual (Utility & Maintenance Functions)

■Routing parameter settings

Up to 64 settings can be configured for [Transfer Net No.].

However, the same number cannot be set in [Transfer Net No.] twice or more (multiple times).

The GOT (host station) can access 64 different networks specified under [Transfer Net No.].

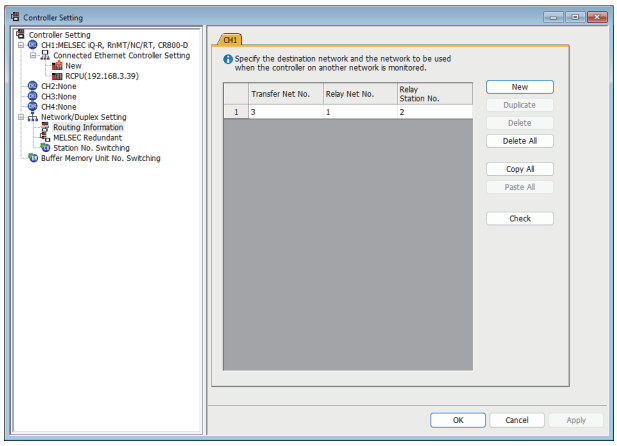
Point

Routing parameter settings

When communicating within the host network, routing parameter settings are not required.

For details on routing parameters, refer to the following manual.

MELSEC iQ-R CPU Module User's Manual (Application)



Item	Range
[Transfer Net No.]	[1] to [239]
[Relay Net No.]*1	[1] to [239]
[Relay Station No.]*1	[0] to [120]

*1 To access a different network via the built-in Ethernet port CPU, set the values of [Net No.] and [Station] that are set in [Connected Ethernet Controller Setting] in GT Designer3.

Point

Routing parameter settings for the relay station

Routing parameter settings are also necessary for the relay station.

For the setting, refer to the following.

☞ Page 263 PLC side settings

Precautions

If the network numbers of the GOT and PLC do not match on the same Ethernet network, monitoring of the PLC is not possible.

To enable monitoring, set the same network number as that of the GOT or connect an Ethernet module to the PLC and configure the routing settings to monitor the PLC as a different network.

When the multi-channel connection can be used, set a different network number for each channel.

4.6.4 PLC side settings

Model		Reference
MELSEC iQ-R series	R00CPU R01CPU R02CPU R04CPU R08CPU R16CPU R32CPU R120CPU	☞ Page 264 Connection to Ethernet module (MELSEC iQ-R series) ☞ Page 274 Connection to CC-Link IE TSN-equipped module ☞ Page 278 Connection to built-in Ethernet port of Motion module
	R08PCPU R16PCPU R32PCPU R120PCPU	☞ Page 264 Connection to Ethernet module (MELSEC iQ-R series)
	R04ENCPU R08ENCPU R16ENCPU R32ENCPU R120ENCPU	☞ Page 264 Connection to Ethernet module (MELSEC iQ-R series) ☞ Page 274 Connection to CC-Link IE TSN-equipped module ☞ Page 278 Connection to built-in Ethernet port of Motion module
	R08PSFCPU R16PSFCPU R32PSFCPU R120PSFCPU	☞ Page 264 Connection to Ethernet module (MELSEC iQ-R series)
	R08SFCPU R16SFCPU R32SFCPU R120SFCPU	☞ Page 264 Connection to Ethernet module (MELSEC iQ-R series) ☞ Page 274 Connection to CC-Link IE TSN-equipped module ☞ Page 278 Connection to built-in Ethernet port of Motion module
Motion CPU (MELSEC iQ-R series)	R16MTCPU R32MTCPU R64MTCPU	☞ Page 264 Connection to Ethernet module (MELSEC iQ-R series)
C Controller module (MELSEC iQ-R series)	R12CCPU-V	☞ Page 274 Connection to CC-Link IE TSN-equipped module
MELSECWinCPU (MELSEC iQ-R series)	R102WCPU-W	☞ Page 274 Connection to CC-Link IE TSN-equipped module
CNC C80	R16NCCPU-S1	☞ Page 264 Connection to Ethernet module (MELSEC iQ-R series)
Robot controller (MELSEC iQ-R series)	CR800-R (R16RTCPU)	☞ Page 264 Connection to Ethernet module (MELSEC iQ-R series)
CC-Link IE Field Network head module	RJ72GF15-T2	☞ Page 264 Connection to Ethernet module (MELSEC iQ-R series)

Precautions

Do not set a remote password on the RCPU.
Doing so disables monitoring with the GOT.

Connection to Ethernet module (MELSEC iQ-R series)

This section describes the settings of the GOT and the Ethernet module (MELSEC iQ-R series) in the system configuration shown below.

☞ Page 264 When the GOT's communication format is UDP
☞ Page 269 When the GOT's communication format is TCP

Point

- Ethernet module (MELSEC iQ-R series)

For details on the Ethernet module (MELSEC iQ-R series), refer to the following manual.

📖MELSEC iQ-R series manuals

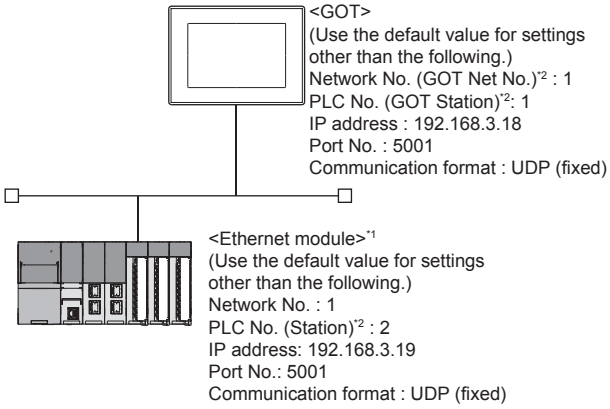
- Connecting multiple GOTs

When connecting multiple GOTs in the Ethernet network, set a different value for [GOT Station] for each GOT.

☞ Page 255 When connecting multiple GOTs

■When the GOT's communication format is UDP

- System configuration



*1 The Ethernet module is mounted on the base unit slot 0.
The Start XY No. of the Ethernet module is set to "0".

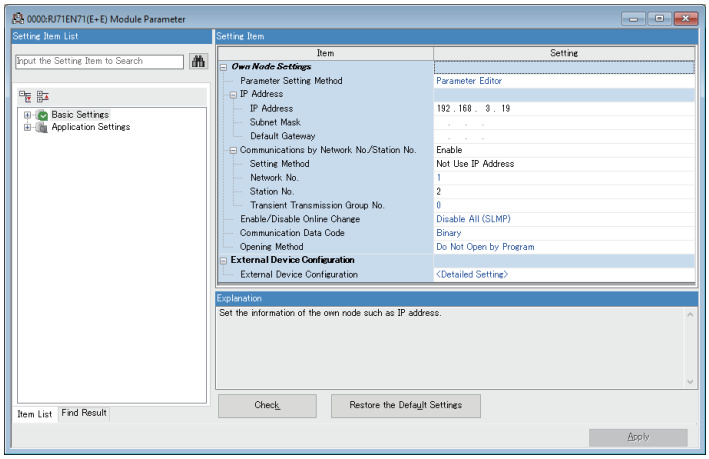
*2 For the following settings, the setting names are different on the PLC side and the GOT side.

Setting	Setting name		
	PLC side	GOT side	
		Controller setting	Connected Ethernet controller setting
Network number	[Network No.]	[GOT Net No.]	[Net No.]
PLC number	[Station No.]	[GOT Station]	[Station No.]

• [Module Parameter] of GX Works3

Module parameters of the Ethernet module

Set [Module Parameter] of the port under [Module information].



○: Necessary, △: As necessary, —: Not necessary

Item	Setting value	Setting for GOT connection
[IP Address]	192.168.3.19	○
[Subnet Mask]	—	—
[Default Gateway]	—	—
[Communications by Network No./Station No.]	Enable	○
[Setting Method]	IP address not used	○
[Network No.]*1	1	○
[Station No.]*2	2	○
[Transient Transmission Group No.]	(Use default value)	—
[Enable/Disable Online Change]		—
[Communication Data Code]		—
[Opening Method]		—
[External Device Configuration]	—	—

*1 Set the same network number as that of the GOT.

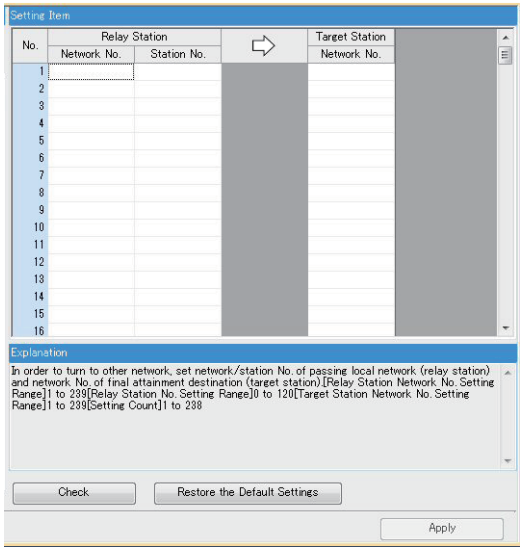
*2 Do not set the same station No. as that of the GOT.

Routing settings

Up to 238 target network numbers can be set.

However, the same number cannot be set twice or more (multiple times).

The GOT (host station) can access networks specified with 238 different target station network numbers.



Item		Range
[Relay Station]	[Network No.]	[1] to [239]
	[Station No.]	[0] to [120]
[Target Station]	[Network No.]	[1] to [239]

Point

Routing parameter settings for the request source

Routing parameter settings are also necessary for the request source GOT.

For the setting, refer to the following.

☞ Page 262 Routing parameter settings

Communication confirmation

The communication status can be checked with the LINK LED on the Ethernet module.

For checking the communication status, refer to the following.

☞ • Checking the communication status of the Ethernet module

• [Controller Setting] and [Connected Ethernet Controller Setting] of GT Designer3

For the setting method of [Controller Setting] and [Connected Ethernet Controller Setting] in GT Designer3, refer to the following.

☞ Page 252 GOT side settings

Controller settings

Item	Setting value
[GOT Net No.]	1
[GOT Station]	1
[GOT Communication Port No.]	5001
[Retry]	3 times
[Startup Time]	3 seconds
[Timeout Time]	3 seconds
[Delay Time]	0 ms

GOT Ethernet settings

Item	Setting value
[GOT IP Address]	192.168.3.18
[Subnet Mask]	255.255.255.0
[Default Gateway]	0.0.0.0
[Peripheral S/W Communication Port No.]	5015
[Transparent Port No.]	5014

Connected Ethernet controller settings

Item		Setting value
Ethernet setting No. 1	[Host]	*
	[Net No.]	1*1
	[Station]	2*2
	[Unit Type]	RJ71EN71
	[IP Address]	192.168.3.19
	[Port No.]	5001
	[Communication]	UDP

*1 Set the same value as the GOT net number.

*2 Set a value different from the GOT station number.

• Checking the communication status of the Ethernet module

When using Windows Command Prompt

Execute a ping command in Windows Command Prompt.

1) At normal end

C:\>Ping 192.168.3.19

Reply from 192.168.3.19:bytes=32 time<1ms TTL=32

2) At abnormal end

C:\>Ping 192.168.3.19

Request timed out.

In the case of abnormal end

In the case of abnormal end, check the following and execute the ping command again.

Cable connecting condition

Switch settings and network parameter settings

Operation state of PLC CPU (faulty or not)

IP address of the Ethernet module specified by the ping command

Point

Ethernet diagnostics of GX Works3

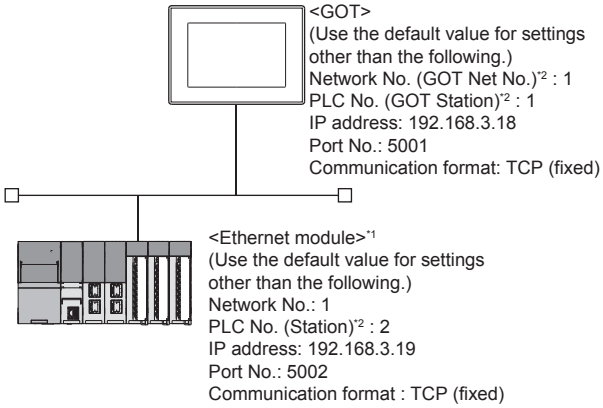
The Ethernet diagnostics of GX Works3 enables ping tests from the PLC.

For details on the Ethernet diagnostics of GX Works3, refer to the following manual.

MELSEC iQ-R series manuals

■When the GOT's communication format is TCP

- System configuration



*1 The Ethernet module is mounted on the base unit slot 0.
The Start XY No. of the Ethernet module is set to "0".

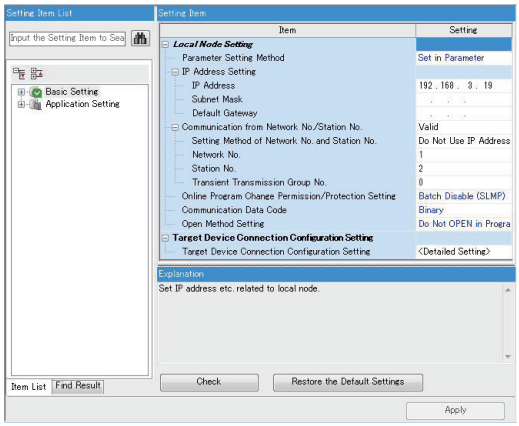
*2 For the following settings, the setting names are different on the PLC side and the GOT side.

Setting	Setting name		
	PLC side	GOT side	
		Controller setting	Connected Ethernet controller setting
Network number	[Network No.]	[GOT Net No.]	[Net No.]
PLC number	[Station No.]	[GOT Station]	[Station No.]

• [Module Parameter] of GX Works3

Module parameters of the Ethernet module

Set [Module Parameter] of the port under [Module information].



○: Necessary, △: As necessary, —: Not necessary

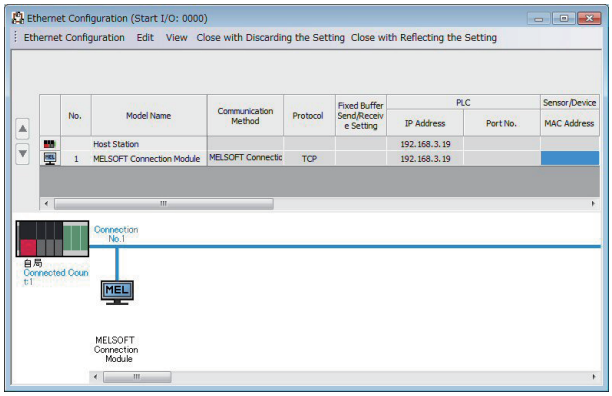
Item	Setting value	Setting for GOT connection
[IP Address]	192.168.3.19	○
[Subnet Mask]	—	—
[Default Gateway]	—	—
[Communications by Network No./Station No.]	Enable	○
[Setting Method]	IP address not used	○
[Network No.]*1	1	○
[Station No.]*2	2	○
[Transient Transmission Group No.]	(Use default value)	—
[Enable/Disable Online Change]		—
[Communication Data Code]		—
[Opening Method]		—
[External Device Configuration]	☞ Target device connection configuration settings	○

*1 Set the same network number as that of the GOT.

*2 Do not set the same station No. as that of the GOT.

Target device connection configuration settings

Configure the settings for all the connected GOTs.



Item	Setting value
[Protocol]	(Use default value)
[Communication Method]	MELSOFT connection
[Port No.]	(Use default value)

Point

When changing the module parameter

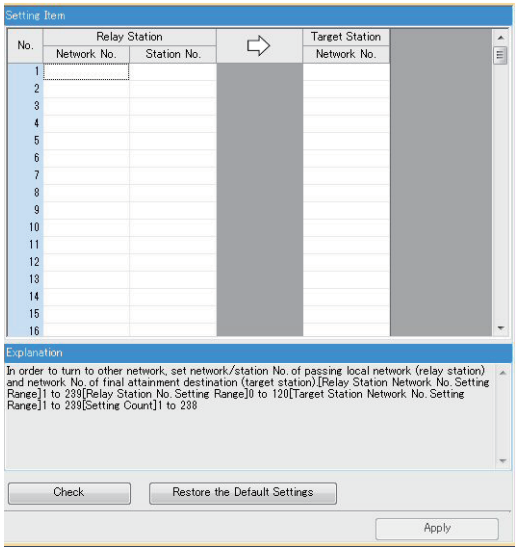
After writing module parameters to the PLC CPU, turn off then on or reset the PLC CPU.

Routing settings

Up to 238 target network numbers can be set.

However, the same number cannot be set twice or more (multiple times).

The GOT (host station) can access networks specified with 238 different target station network numbers.



Item		Range
[Relay Station]	[Network No.]	[1] to [239]
	[Station No.]	[0] to [120]
[Target Station]	[Network No.]	[1] to [239]

Point

Routing parameter settings for the request source

Routing parameter settings are also necessary for the request source GOT.

For the setting, refer to the following.

☞ Page 262 Routing parameter settings

Communication confirmation

The communication status can be checked with the LINK LED on the Ethernet module.

For checking the communication status, refer to the following.

☞ • Checking the communication status of the Ethernet module

• [Controller Setting] and [Connected Ethernet Controller Setting] of GT Designer3

For the setting method of [Controller Setting] and [Connected Ethernet Controller Setting] in GT Designer3, refer to the following.

☞ Page 252 GOT side settings

Controller settings

Item	Setting value
[GOT Net No.]	1
[GOT Station]	1
[GOT Communication Port No.]	5001
[Retry]	3 times
[Startup Time]	3 seconds
[Timeout Time]	3 seconds
[Delay Time]	0 ms

GOT Ethernet settings

Item	Setting value
[GOT IP Address]	192.168.3.18
[Subnet Mask]	255.255.255.0
[Default Gateway]	0.0.0.0
[Peripheral S/W Communication Port No.]	5015
[Transparent Port No.]	5014

Connected Ethernet controller settings

Item		Setting value
Ethernet setting No. 1	[Host]	*
	[Net No.]	1
	[Station No.]	2
	[Unit Type]	RJ71EN71
	[IP Address]	192.168.3.19
	[Port No.]	5002
	[Communication]	TCP

• Checking the communication status of the Ethernet module

When using Windows Command Prompt

Execute a ping command in Windows Command Prompt.

1) At normal end

C:\>Ping 192.168.3.19

Reply from 192.168.3.19:bytes=32 time<1ms TTL=32

2) At abnormal end

C:\>Ping 192.168.3.19

Request timed out.

In the case of abnormal end

In the case of abnormal end, check the following and execute the ping command again.

Mounting condition of the Ethernet module

Cable connecting condition

Switch settings and network parameter settings

Operation state of PLC CPU (faulty or not)

IP address of the Ethernet module specified by the ping command

Point

Ethernet diagnostics of GX Works3

The Ethernet diagnostics of GX Works3 enables ping tests from the PLC.

For details on the Ethernet diagnostics of GX Works3, refer to the following manual.

📖MELSEC iQ-R series manuals

Connection to CC-Link IE TSN-equipped module

This section describes the settings of the GOT and CC-Link IE TSN-equipped module in the system configuration shown below.

Point

- CC-Link IE TSN-equipped module

For details on the CC-Link IE TSN-equipped module, refer to the following manual.

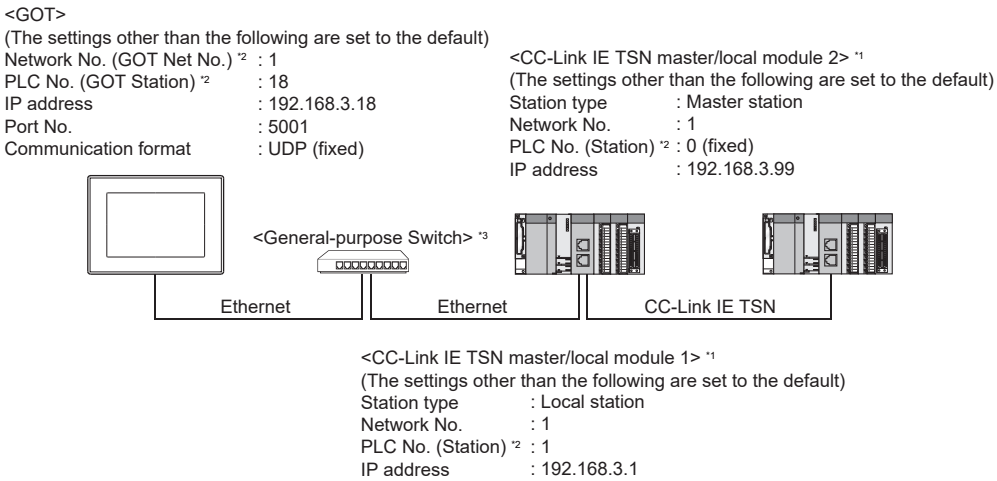
MELSEC iQ-R CC-Link IE TSN User's Manual (Startup)

- Connecting multiple GOTs

When connecting multiple GOTs in the Ethernet network, set a different value for [GOT Station] for each GOT.

Page 255 When connecting multiple GOTs

■System configuration



*1 The CC-Link IE TSN master/local module is mounted on slot 0 of the base unit.
The start XY number of the CC-Link IE TSN master/local module is set to "0".

*2 For the following settings, the setting names are different on the PLC side and the GOT side.

Setting	Setting name		
	PLC side	GOT side	
		Controller setting	Connected Ethernet controller setting
Network number	[Network No.]	[GOT Net No.]	[Net No.]
PLC number	[Station]	[GOT Station]	[Station]

*3 General-purpose Switch is required to connect the GOT and the CC-Link IE TSN master/local module.
For usable General-purpose Switches, refer to the following.
MELSEC iQ-R CC-Link IE TSN User's Manual (Startup)

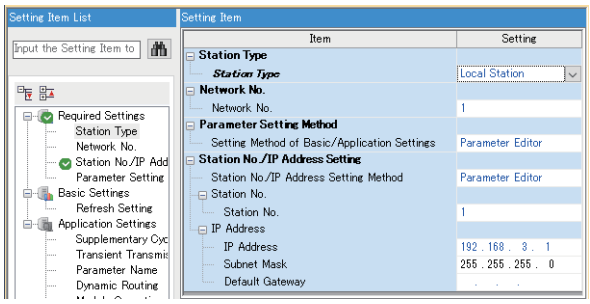
■[Module Parameter] of GX Works3

For details on the settings of the PLC, refer to the following manual.

📖MELSEC iQ-R CC-Link IE TSN User's Manual (Startup)

Ex.

Settings of CC-Link IE TSN master/local module 1



Item	Setting value	
	CC-Link IE TSN master/local module 1	CC-Link IE TSN master/local module 2
[Station Type]	Local station	Master station
[Network No.]	1	1
[Station No.]	1	0
[IP Address]	192.168.3.1	192.168.3.99

■[Controller Setting] and [Connected Ethernet Controller Setting] of GT Designer3

For the setting method of [Controller Setting] and [Connected Ethernet Controller Setting] in GT Designer3, refer to the following.

☞ Page 252 GOT side settings

- Controller settings

Item	Setting value
[GOT Net No.]	1
[GOT Station]	18
[GOT Communication Port No.]	5001
[Retry]	3 times
[Startup Time]	3 seconds
[Timeout Time]	3 seconds
[Delay Time]	0 ms

- GOT Ethernet settings

Item	Setting value
[GOT IP Address]	192.168.3.18
[Subnet Mask]	255.255.255.0
[Default Gateway]	0.0.0.0
[Peripheral S/W Communication Port No.]	5015
[Transparent Port No.]	5014

- Connected Ethernet controller settings

Item		Setting value
Ethernet setting No. 1	[Host]	*
	[Net No.]	1*1
	[Station]	1*2
	[Unit Type]	RJ71GN11-T2/RD78G(H)
	[IP Address]	192.168.3.1
	[Port No.]*3	5001
	[Communication]*3	UDP

*1 Set the same value as the GOT net number.
*2 Set a value different from the GOT station number.
*3 The following settings can also be configured for [Port No.] and [Communication].
[Port No.]: 5002
[Communication]: TCP

■Checking the communication status of the CC-Link IE TSN-equipped module

- When using Windows Command Prompt

Execute a ping command in Windows Command Prompt.

1) At normal end

C:\>Ping 192.168.3.1

Reply from 192.168.3.1:bytes=32 time<1ms TTL=32

2) At abnormal end

C:\>Ping 192.168.3.1

Request timed out.

- In the case of abnormal end

In the case of abnormal end, check the following and execute the ping command again.

Connection status of the CC-Link IE TSN-equipped module

Cable connecting condition

Switch settings and network parameter settings

Operation state of PLC CPU (faulty or not)

IP address of the CC-Link IE TSN-equipped module specified by the ping command

Point

Ethernet diagnostics of GX Works3

The Ethernet diagnostics of GX Works3 enables ping tests from the PLC.

For details on the Ethernet diagnostics of GX Works3, refer to the following manual.

📖MELSEC iQ-R series manuals

Connection to built-in Ethernet port of Motion module

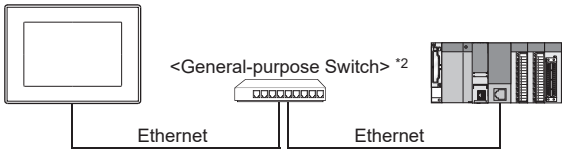
This section describes the settings of the GOT and Motion module in the system configuration shown below.

Point

For details on the Motion module, refer to the following manual.
MELSEC iQ-R Motion Module User's Manual (Startup)

■System configuration

<GOT>
(The settings other than the following are set to the default)
Network No. (GOT Net No.) *1 : 1
PLC No. (GOT Station) *1 : 18
IP address : 192.168.3.18
Port No. : 5001
Communication format : UDP



<Motion module>
(The settings other than the following are set to the default)
Network No. : 1
PLC No. (Station) *1 : 0(fixed)
IP address : 192.168.3.39

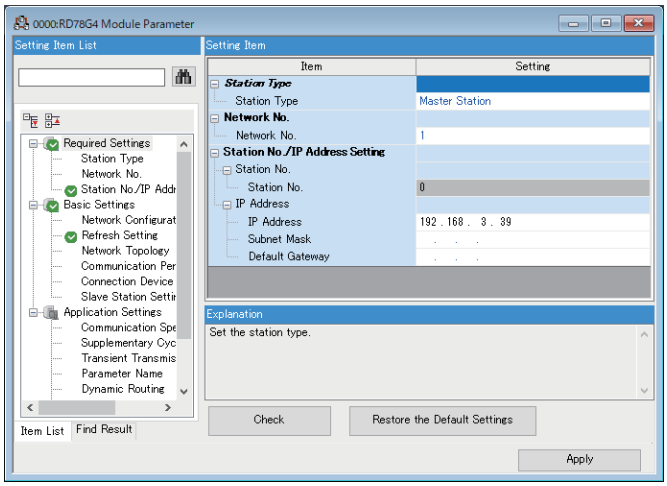
*1 For the following settings, the setting names differ on the PLC side and on the GOT side.

Setting	Setting name		
	PLC side	GOT side	
		Controller setting	Connected Ethernet controller setting
Network number	[Network No.]	[GOT Net No.]	[Net No.]
PLC number	[Station]	[GOT Station]	[Station]

*2 For usable General-purpose Switches, refer to the following.
MELSEC iQ-R Motion Module User's Manual (Startup)

■[Module Parameter (Network)] of GX Works3

For details on the Motion module side settings, refer to the following.
MELSEC iQ-R Motion Module User's Manual (Network)



Item	Setting value
[Network No.]	1
[IP Address]	192.168.3.39

■[Controller Setting] and [Connected Ethernet Controller Setting] of GT Designer3

For the setting method of [Controller Setting] and [Connected Ethernet Controller Setting] in GT Designer3, refer to the following.

☞ Page 252 GOT side settings

• Controller settings

Item	Setting value
[GOT Net No.]	1
[GOT Station]	18
[GOT Communication Port No.]	5001
[Retry]	3 times
[Startup Time]	3 seconds
[Timeout Time]	3 seconds
[Delay Time]	0 ms

• GOT Ethernet settings

Item	Setting value
[GOT IP Address]	192.168.3.18
[Subnet Mask]	255.255.255.0
[Default Gateway]	0.0.0.0
[Peripheral S/W Communication Port No.]	5015
[Transparent Port No.]	5014

• Connected Ethernet controller settings

Item		Setting value
Ethernet setting No. 1	[Host]	*
	[Net No.]	1*1
	[Station]	0
	[Unit Type]	RJ71GN11-T2/RD78G(H)
	[IP Address]	192.168.3.39
	[Port No.]	5001
	[Communication]*2	UDP

*1 Set the same value as the GOT net number.
*2 If you set [Communication] to [TCP], set [Port No.] to [5002].

■Checking the communication status of the Motion module

• When using Windows Command Prompt

Execute a ping command in Windows Command Prompt.

1) At normal end

C:\>Ping 192.168.3.39

Reply from 192.168.3.39:bytes=32 time<1ms TTL=32

2) At abnormal end

C:\>Ping 192.168.3.39

Request timed out.

• In the case of abnormal end

In the case of abnormal end, check the following and execute the ping command again.

IP address of the Motion module specified by the ping command

Operation state of PLC CPU (faulty or not)

Connection status of the Motion module

Cable connecting condition

Switch settings and network parameter settings

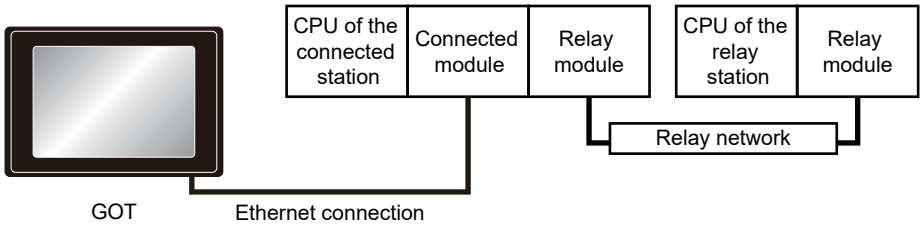
4.6.5 Access range for monitoring

When the GOT is connected to the CPU of the station connected via Ethernet, the range accessible via the CPU is as follows.

Point

- When monitoring other networks (Routing parameter settings)

To monitor other networks, routing parameter settings are necessary.
For the routing parameter settings, refer to the reference manual of the network connected.



○: Accessible, —: Inaccessible

CPU of the connected station	Connected module	Relay station									
		Relay network	CPU of the relay station								
			MXR	RCPU	LCPU	QCPU (Q mode)	QSCPU	QCPU (A mode)	QnACPU	ACPU	FX5CPU
RCPU	☞ Page 242 Connectable devices	Ethernet	○*7	○*5	○	○*6	○	—	○	—	○*3
		CC-Link IE TSN	○*7	○*1	—	—	—	—	—	—	○*3
		CC-Link IE Controller Network	○*7	○	—	○	○	—	—	—	—
		CC-Link IE Field Network	○*7	○	○	○*2	○	—	—	—	○*4
RJ72GF15-T2	☞ Page 242 Connectable devices	CC-Link IE Field Network	○*7	○	○	○*2	○	—	—	—	○*4

*1 RnCPU, RnENCPU, RnSFCPU, and MELSECWinCPU (MELSEC iQ-R series) are supported.
*2 QnUDVCPU, QnUDECPU, QnUDEHCPU, QnUCPU, QnUDCPU, and QnUDHCPU are supported.
*3 FX5U and FX5UC are supported.
*4 FX5U, FX5UC, and FX5UJ are supported.
*5 The C Controller module (MELSEC iQ-R series) is not supported.
*6 The C Controller module (MELSEC-Q series) is not supported.
*7 Regardless of whether encrypted communications are performed, the MELSEC MX Controller can be used as the relay station.
To perform encrypted communication, settings need to be configured.
For details, refer to the following.
☞ Page 90 Setting procedure of the encrypted communication

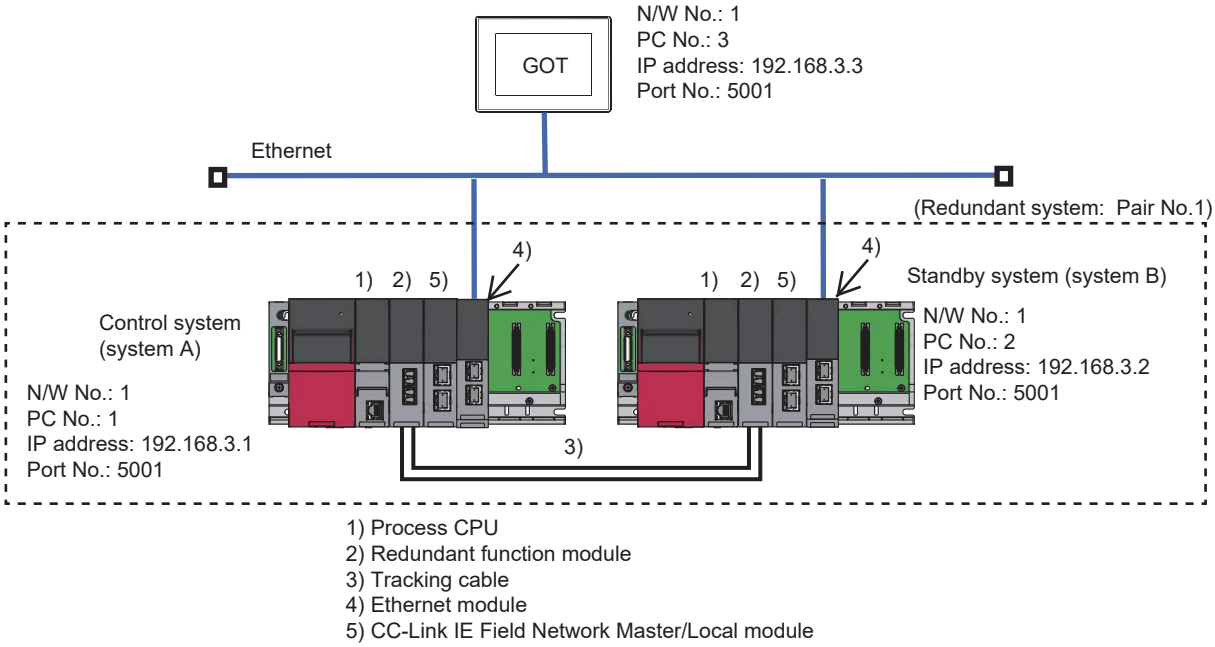
4.6.6 How to monitor a redundant system

☞ Page 281 One-to-one connection of the GOT and the redundant system
☞ Page 284 1:n connection of GOT and redundant system
☞ Page 286 Mixed connection of redundant system and non-redundant system
☞ Page 288 MELSEC redundant settings
☞ Page 290 Precautions

One-to-one connection of the GOT and the redundant system

■System configuration example

The following connection configuration examples are explained.



■Connection method

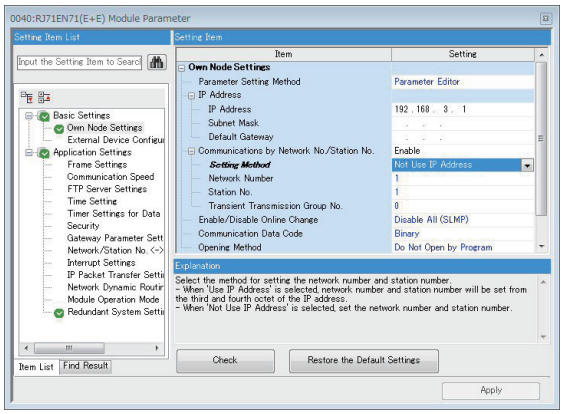
Connect the Ethernet network system and the GOT.

☞ Page 242 MELSEC iQ-R series (Ethernet module connection)

■PLC side settings (GX Works3)

- Control system (system A) PLC settings

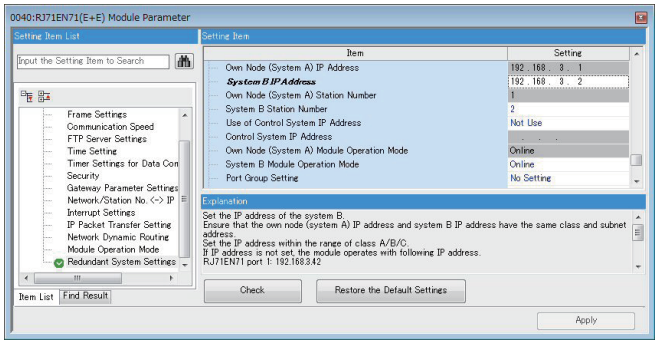
Module parameter settings of the Ethernet module



Item	Setting value
[IP Address]	192.168.3.1
[Subnet Mask]	—
[Default Gateway]	—
[Setting Method]	IP address not used
[Network No.]	1
[Station No.]	1
[Transient Transmission Group No.]	(Use default value)
[Enable/Disable Online Change]	
[Communication Data Code]	
[Opening Method]	
[External Device Configuration]	—

- Standby system (system B) PLC settings (GX Works3)

Redundant Setting



Item	Setting value
[System B IP Address]	192.168.3.2
[System B Station Number]	2
[Control system IP address availability]	Not used
[System B Module Operation Mode]	Online mode

Point

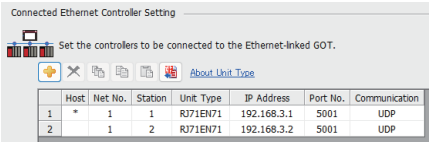
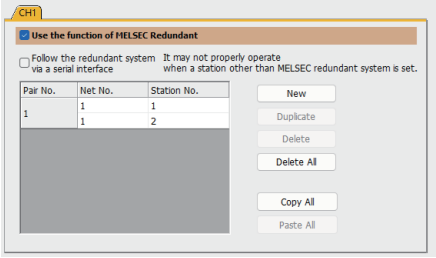
[Control system IP address availability] setting

Set [Control system IP address availability] to [Not use] (default).

If [Use] is selected, the GOT will not follow when the system is switched.

■GOT side settings

Set GT Designer3 as follows.

Setting item	Setting details		Model
[Controller Type]	MELSEC iQ-R, RnMT/NC/RT, CR800-D		GT37 SoftGOT3000
Device setting (Network setting)	[Host]	Host (The control system is monitored.)	
	[Other]	[Network No.]: 1	
		[Station No.]: Station number of the control system	
	[Redundant System]	The system to be monitored ([Not Specified/Control System], [Standby System]) can be specified. This item can be set only when [Use the function of MELSEC Redundant] is selected in [MELSEC Redundant] shown below.	
Connected Ethernet controller settings	 ☞ Page 259 [Connected Ethernet Controller Setting]		
MELSEC redundant settings	 ☞ Page 288 MELSEC redundant settings		

■Monitoring target change when system switching occurs in a redundant system

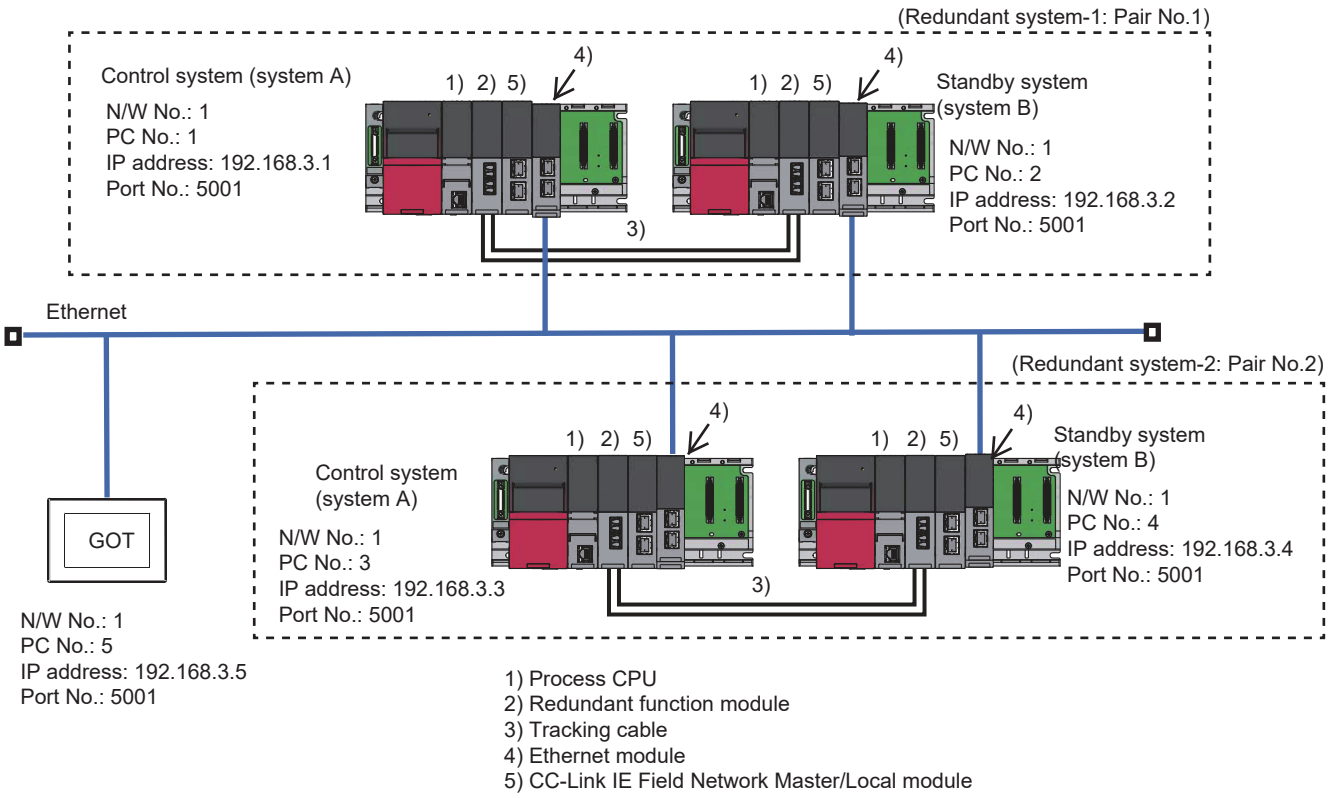
When system switching occurs, the CPU (PLC station No. 2) becomes the control system and continues the control.

The GOT automatically starts monitoring according to the specified system.

1:n connection of GOT and redundant system

■System configuration example

The following connection configuration examples are explained.



■Connection method

Connect the Ethernet network system and the GOT.

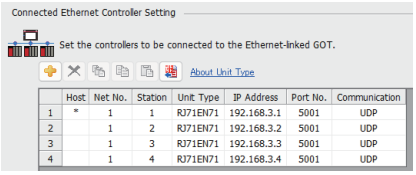
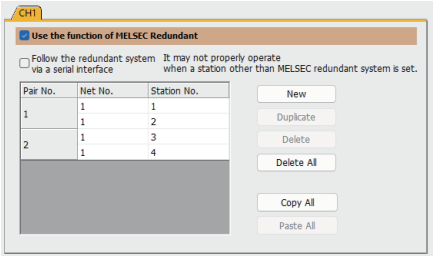
☞ Page 242 MELSEC iQ-R series (Ethernet module connection)

■PLC side settings (GX Works3)

☞ Page 282 PLC side settings (GX Works3)

■GOT side settings

Set GT Designer3 as follows.

Setting item	Setting details		Model
[Controller Type]	MELSEC iQ-R, RnMT/NC/RT, CR800-D		GT37 SoftGOT3000
Device setting (Network setting)	[Host]	Host (The control system is monitored.)	
	[Other]	[Network No.]: 1	
		[Station No.]: Station number of the control system	
	[Redundant System]	The system to be monitored ([Not Specified/Control System], [Standby System]) can be specified. This item can be set only when [Use the function of MELSEC Redundant] is selected in [MELSEC Redundant] shown below.	
Connected Ethernet controller settings	 ☞ Page 259 [Connected Ethernet Controller Setting]		
MELSEC redundant settings	 ☞ Page 288 MELSEC redundant settings		

■Monitoring target change when system switching occurs in a redundant system

- Redundant system-1

When system switching occurs, the CPU (PLC station No. 2) becomes the control system and continues the control.
The GOT automatically starts monitoring according to the specified system.

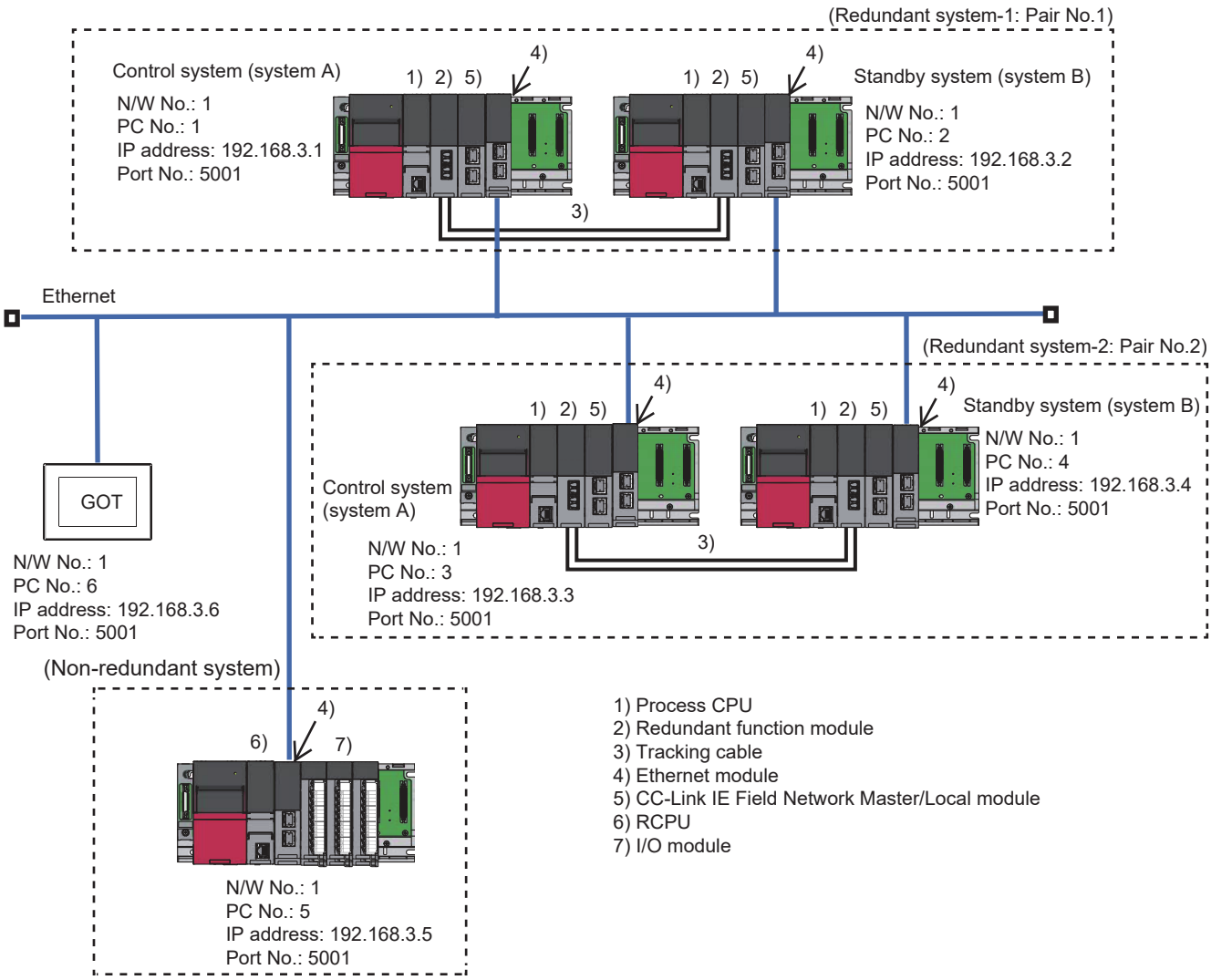
- Redundant system-2

When system switching occurs, the CPU (PLC station No. 4) becomes the control system and continues the control.
The GOT automatically starts monitoring according to the specified system.

Mixed connection of redundant system and non-redundant system

■System configuration example

The following connection configuration examples are explained.



■Connection method

Connect the Ethernet network system and the GOT.

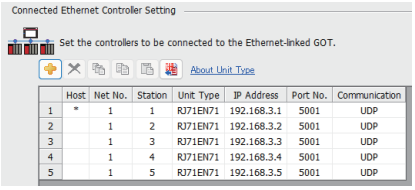
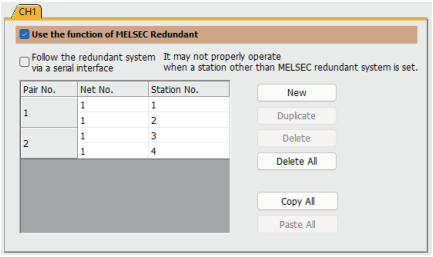
☞ Page 242 MELSEC iQ-R series (Ethernet module connection)

■PLC side settings (GX Works3)

☞ Page 282 PLC side settings (GX Works3)

■GOT side settings

Set GT Designer3 as follows.

Setting item	Setting details		Model
[Controller Type]	MELSEC iQ-R, RnMT/NC/RT, CR800-D		GT37 SoftGOT3000
Device setting (Network setting)	[Host]	Host (The control system is monitored.)	
	[Other]	[Network No.]: 1	
		[Station No.]: Station number of the control system	
	[Redundant System]	The system to be monitored ([Not Specified/Control System], [Standby System]) can be specified. This item can be set only when [Use the function of MELSEC Redundant] is selected in [MELSEC Redundant] shown below.	
Connected Ethernet controller settings	 ☞ Page 259 [Connected Ethernet Controller Setting]		
MELSEC redundant settings	 ☞ Page 288 MELSEC redundant settings		

■Monitoring target change when system switching occurs in a redundant system

☞ Page 285 Monitoring target change when system switching occurs in a redundant system

MELSEC redundant settings

This section describes the settings for the GOT to automatically change the monitoring target of the RCPU redundant system.

Point

Before configuring the MELSEC redundant settings

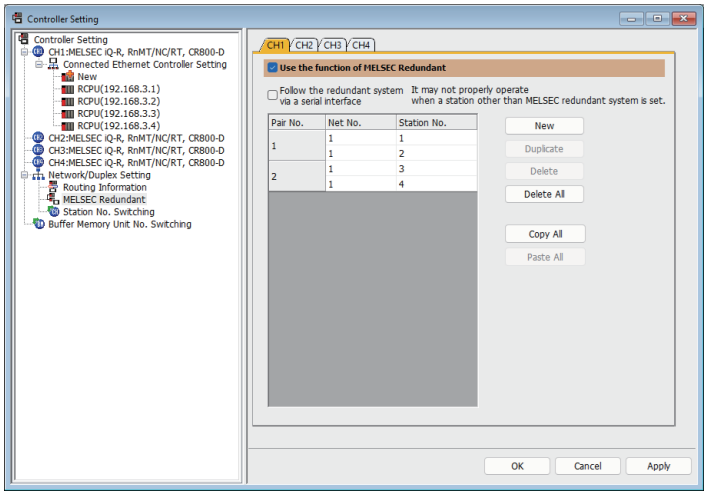
In the MELSEC redundant settings, do not set a station outside the redundant RCPU.

1. Select [Common] → [Controller Setting] → [MELSEC Redundant] from the menu.
2. The setting dialog box appears. Configure the settings by referencing the explanation that follows.
3. Configure the MELSEC redundant settings.

In the MELSEC redundant setting dialog, settings can be made for each channel of the controller.

The following shows an example of redundant CPU pair numbers 1 to 2, network number 1, and redundant CPU station numbers 1 to 4 for the Ethernet connection (station number 5).

Ex.



Item		Description	Model
CH1 to CH4		Select the tab of the channel number to configure the MELSEC redundant settings.	GT37 SoftGOT3000
[Follow the redundant system via a serial interface]		Select this item to monitor the control system as a host station at serial connection.	
[Pair No.]*1	[Net No.]	Set the network number (1 to 255) for each pair number (1 to 64). • Upper row: Setting for the first redundant CPU • Lower row: Setting for the second redundant CPU (The same value as the value set for the first redundant CPU is displayed.)	
	[Station No.]	Set the station number (0 to 120) of the redundant CPU for each pair number (1 to 64). • Upper row: Setting for the first redundant CPU • Lower row: Setting for the second redundant CPU (The setting value for the first redundant CPU + 1 is displayed.)	
[New]		Adds a new pair number.	
[Duplicate]		Copies one setting of the selected pair number and adds it below the bottom row.	
[Delete]		Deletes one setting of the selected pair number. After deletion, the succeeding pair numbers are renumbered to fill the deleted pair number.	
[Delete All]		Deletes all the pair number settings.	
[Copy All]		Copies the MELSEC redundant setting on the selected CH No. tab.	
[Paste All]		Pastes the copied MELSEC redundant setting in the selected CH No. tab.	

*1 For details, refer to the following.
☞ Page 289 Pair number

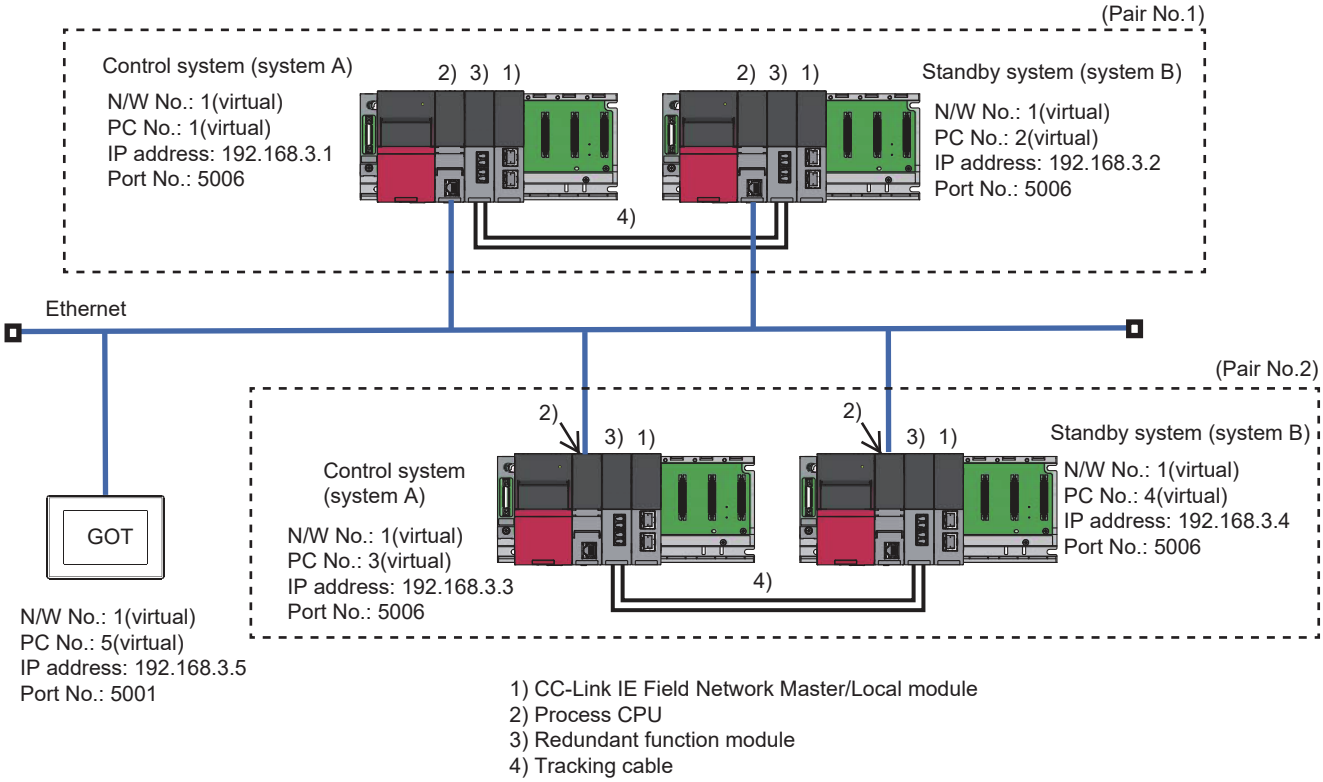
■Pair number

Redundant CPU pair means the redundant CPUs (System A / System B) in the redundant system configuration.

Pair number is the number assigned to each redundant CPU pair.

The following shows an example of Ethernet connection in the RCPU redundant system. (Pair No. 1 to No. 2)

Ex.



Point

Precautions for configuring the MELSEC redundant settings

Pay attention to the following items when configuring the MELSEC redundant settings.

- Pairing of the last station No. and station No. 1 (Example: Station No. 64 and station No. 1) is not allowed.
- Before configuring the settings, make sure to check the station numbers of the network modules. If the MELSEC redundant settings and the actual network module station numbers are inconsistent, the GOT fails to automatically change the monitoring target to the control system when the system is switched.
- GOT supports the backup mode, which is the redundant mode of the RCPU redundant system, and does not support the process mode and separate mode.

Precautions

■Start of the redundant system

The GOT starts monitoring the redundant system after the control system and standby system have been determined, regardless of the starting order of PLC systems A and B.
The GOT starts monitoring when both systems start.
(In a redundant system with a redundant extension base unit, the GOT monitors the control system that starts first.)
Power on the redundant system within the time set in the GOT (communication timeout time and number of retries) so that the GOT can start monitoring after the redundant system starts (after the control system is decided).
If the GOT does not start within the set time, the GOT stops monitoring for safety reasons, and the following system alarm occurs.

- 451: The MELSEC redundant setting and actual system configuration do not match.

If the system alarm occurs, restart the GOT (reapply or reset the power supply) to start monitoring again.

■System switching

When system switching occurs through the user program, the communication path remains unchanged, and the GOT will continue monitoring.
No system alarm occurs.
When system switching occurs due to disconnected cable or other causes, the GOT changes the communication path and continues monitoring.
[450: Path has changed or timeout occurred in redundant system.] appears as the system alarm.

■Redundant system configuration and operation mode

- System alarm display

If the MELSEC redundant settings do not match the actual configuration of the redundant system, or if the operation mode of the redundant system is not set to backup mode, [451: The MELSEC redundant setting and actual system configuration do not match.] appears as the system alarm, and the GOT will not be able to correctly monitor the redundant system's CPU.
If the system alarm occurs, restart the GOT (reapply or reset the power supply) to start monitoring again.

- Changing the MELSEC redundant settings

Always reset the GOT after changing the MELSEC redundant settings. If not reset, the changed MELSEC redundant settings will not be applied on the GOT.

■Monitoring a non-redundant system with the MELSEC redundant settings configured

If the MELSEC redundant settings were set for a non-redundant system, the GOT will operate normally.
In this case, if an abnormality (such as powering off or communication timeout error) occurs in the PLC CPU for which the MELSEC redundant settings are configured, the PLC CPU may not operate as intended.

■Monitoring a redundant system without configuring the MELSEC redundant settings

When the MELSEC redundant settings are not configured, the GOT does not automatically change the monitoring target even if system switching occurs in the redundant system.
When the GOT is connected to the standby system, data written to a device are overwritten by the data of the control system, failing to be reflected.
In this case, when data is written to a device in the standby system normally, the system alarm [315 Device writing error. Correct device.] is not detected.

4.7 MELSEC iQ-F series (Built-in Ethernet port connection)

☞ Page 291 Connectable devices
☞ Page 292 System configuration
☞ Page 294 GOT side settings
☞ Page 303 PLC side settings
☞ Page 307 Access range for monitoring

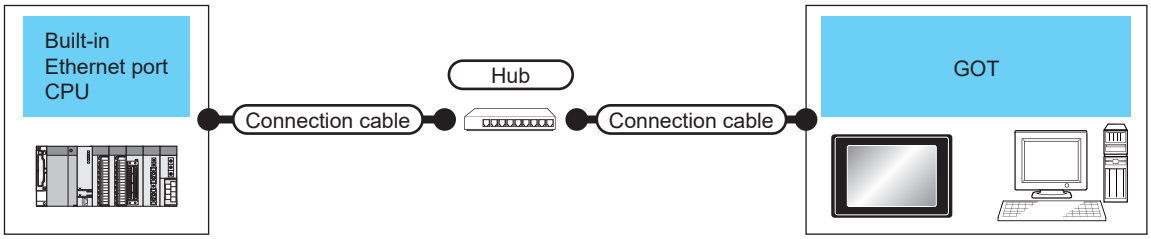
4.7.1 Connectable devices

The following table shows the connectable models.

○: Supported, —: Not supported

Controller	Model	Clock	Connectable model
MELSEC iQ-F series	FX5U FX5UC	○	GT37 SoftGOT3000
	FX5UJ	○	GT37 SoftGOT3000
	FX5S	○	GT37 SoftGOT3000

4.7.2 System configuration



For details on the connection cables and the maximum segment length, refer to the following.

☞ Page 293 Connection cable
☞ Page 293 Maximum segment length

For details on the maximum number of connected devices, refer to the following.

☞ Page 293 Maximum number of connected devices

Controller	Connection cable	GOT	
		Interface	Model
MELSEC iQ-F series*1*2	Twisted pair cable	Built-in Ethernet interface of GOT	GT37 SoftGOT3000
		Ethernet interface of personal computer	GT37 SoftGOT3000

*1 For the system configuration of the built-in Ethernet port CPU, refer to the manual of the PLC to be used.
*2 For [Unit Type] to be selected in [Connected Ethernet Controller Setting] in GT Designer3, refer to the following.
☞ Page 301 [Connected Ethernet Controller Setting]

Connection cable

Use a connection cable that meets the following standards.

Standard	Category
10BASE-T	Shielded twisted pair cable (STP) of category 3 or higher
100BASE-TX	Shielded twisted pair cable (STP) of category 5 or higher
1000BASE-T	Shielded twisted pair cable (double-shielded STP or STP) of category 5e or higher

The destination device connected with the twisted pair cable varies with the configuration of the Ethernet network system used.

Connect the cable to the Ethernet module, hub, or other system equipment corresponding to the applicable Ethernet network system.

Use cables, connectors, and hubs that meet the IEEE802.3 10BASE-T/100BASE-TX/1000BASE-T standards.

When only one GOT is connected, the GOT can be directly connected to the controller without a hub.

Maximum segment length

The maximum segment length (length between a hub and a node) is 100 m.

The maximum length depends on the Ethernet equipment used.

The following shows the number of connectable hubs when a repeater hub is used.

- 10BASE-T: Up to 4 for a cascade connection (within 500 m)
- 100BASE-TX: Up to 2 for a cascade connection (within 205 m)
- 1000BASE-T: The number differs depending on the hub to be used.

When switching hubs are used, there is no theoretical limit to the number of cascade connections between switching hubs.

For the limit, contact the switching hub manufacturer.

Precautions

When multiple network devices (including GOTs) are connected in the same segment, the network load increases and the transmission speed between the GOT and PLC may be reduced.

The following actions may improve the communication performance.

- Use a switching hub compatible with 1000BASE-T (1 Gbps) or more.
- Reduce the number of devices monitored by the GOT.

Maximum number of connected devices

Up to 128 CPU modules can be connected to channels No. 1 to No. 4 of one GOT. (16 or less recommended)

The following shows the number of connectable controllers per GOT channel and the number of GOTs connectable to one controller.

Controller			GOT	
Model	Number of GOTs connectable to one PLC		Model	Number of connectable controllers per GOT channel
	UDP	TCP		
MELSEC iQ-F series	—	8	GT37 SoftGOT3000	63 (16 or less recommended)

Connection to the built-in Ethernet port of the built-in Ethernet port CPU

Connect the GOT after turning on the network equipment such as the built-in Ethernet port CPU or hub to enable communications.

If the GOT cannot communicate with the built-in Ethernet port CPU, a communication error may occur on the GOT.

4.7.3 GOT side settings

[GOT Ethernet Setting]

Set the GOT Ethernet interface in GT Designer3.

Item	Description
[GOT IP Address Setting]	Set the IP address of the GOT.
[GOT Ethernet Common Setting]	Set the default gateway and other common items for GOT Ethernet interfaces.
[IP filter Setting]	The GOT allows or blocks access from IP addresses specified in the filtering list.

For details on the setting, refer to the following.

📖GT Designer3 (GOT3000) Screen Design Manual

Set the GT SoftGOT3000 Ethernet interface on the personal computer.

Precautions

Do not use 0 and 255 at the end of an IP address.

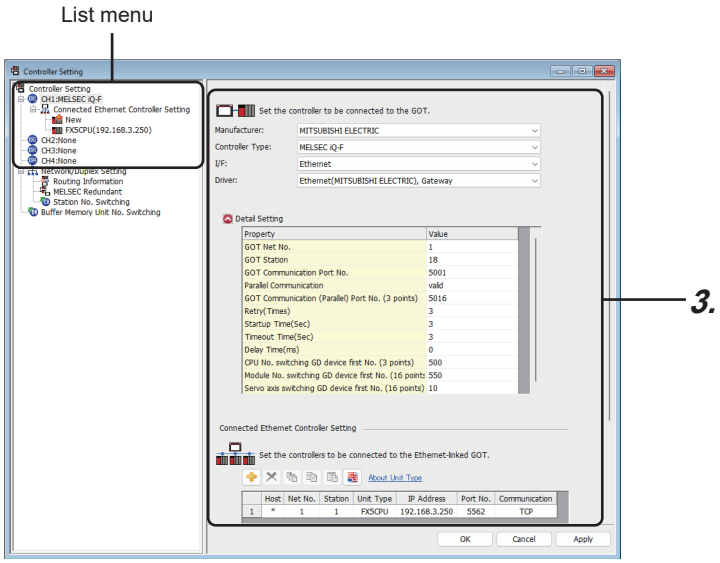
(Numbers of *.*.*.0 and *.*.*.255 are used by the system.)

The GOT may not monitor the controller correctly with the above numbers.

Consult with the administrator of the network before setting an IP address to the GOT.

[Controller Setting]

Set the channel of the connected controller.



Operating procedure

1. Select [Common] → [Controller Setting] from the menu.

2. In the [Controller Setting] window, select the channel number to be used from the list menu.

3. Set the following items.

Item	Description
[Manufacturer]	[MITSUBISHI ELECTRIC]
[Controller Type]	[MELSEC iQ-F]
[I/F]	[Ethernet]
[Driver]	[Ethernet(MITSUBISHI ELECTRIC), Gateway]
[Detail Setting]	Configure the settings according to the usage environment. ☞ Page 296 [Detail Setting]
[Connected Ethernet Controller Setting]	Configure the settings according to the controller to be connected. ☞ Page 301 [Connected Ethernet Controller Setting]

4. When you have completed the settings, click the [OK] button.

Point

The controller settings can be checked in [I/F Communication Setting].
For details, refer to the following.
📖GT Designer3 (GOT3000) Screen Design Manual

■[Detail Setting]

Configure the settings according to the usage environment.

Detail Setting

Property	Value
GOT Net No.	1
GOT Station	18
GOT Communication Port No.	5001
Parallel Communication	valid
GOT Communication (Parallel) Port No. (3 points)	5016
Retry(Times)	3
Startup Time(Sec)	3
Timeout Time(Sec)	3
Delay Time(ms)	0
CPU No. switching GD device first No. (3 points)	500
Module No. switching GD device first No. (16 points	550
Servo axis switching GD device first No. (16 points)	10

Item	Description	Range
[GOT Net No.]	Set the network number of the GOT.	[1] to [239]
[GOT Station]*1*2	Set the station number of the GOT.	[1] to [120]
[GOT Communication Port No.]	Set the GOT port number for connection with the Ethernet module.	[1024] to [5010], [5014] to [49152], [49171] to [65534]
[Parallel Communication]	Enables or disables the parallel communication. When this setting is enabled, [GOT Communication (Parallel) Port No. (3 points)] can be set. When communicating with multiple devices on a single channel, distributing the communication ports can reduce the communication load.	[valid], [invalid]
[GOT Communication (Parallel) Port No. (3 points)]	Set the GOT port number used for the parallel communication.	• [Parallel Communication] is [invalid]: [0] • [Parallel Communication] is [valid]: [1024] to [5008], [5014] to [49150], [49171] to [65532]
[Retry(Times)]	Set the number of retries to be performed when a communication timeout occurs. When receiving no response after retries, the communication times out.	GOT: [0] times to [5] times GT SoftGOT3000: [0] times to [10] times
[Startup Time]	Set the time period from the GOT startup until the start of communication with the PLC CPU.	[3] seconds to [255] seconds
[Timeout Time]	Set the time period for a communication to time out.	[1] second to [90] seconds
[Delay Time]	Set the delay time for reducing the load of the network and destination PLC.	[0] ms to [10000] ms
[CPU No. switching GD device first No. (3 points)]	Set the start device number of the GD devices for CPU number switching. For details, refer to the following. ☞ Page 298 Start device number of the GD devices for CPU number switching	[0] to [65520]
[Module No. switching GD device first No. (16 points)]	Set the start device number of the GD devices for module number switching. For details, refer to the following. ☞ Page 299 Start device number of the GD devices for module number switching	[0] to [65520]
[Servo axis switching GD device first No. (16 points)]	Set the start device number of the GD devices for servo axis switching. For details, refer to the following. ☞ Page 300 Start device number of the GD devices for servo axis switching	[0] to [65520]

*1 Set values not set for [Station] in [Connected Ethernet Controller Setting].
☞ Page 301 [Connected Ethernet Controller Setting]

*2 When connecting multiple GOTs in the Ethernet network, set a different value for [GOT Station] for each GOT.

Point

• Controller settings using the GT37 utility

The controller settings can be changed in [Communication Settings] of the GT37 utility after writing [Communication Settings] of project data to GT37.

For details on the GT37 utility, refer to the following manual.

📖GOT3000 Series User's Manual (Utility & Maintenance Functions)

• Priority of the settings in [Controller Setting]

When the settings are configured in GT Designer3 or in the GT37 utility, the latest settings are effective.

■When connecting multiple GOTs

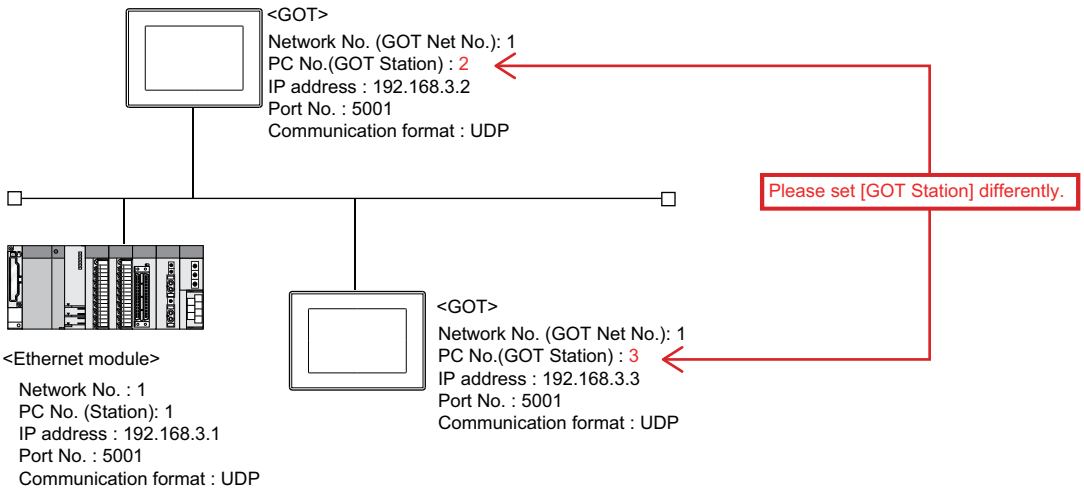
• Settings for [GOT Station]

When connecting multiple GOTs in the Ethernet network, set a different value for [GOT Station] for each GOT.

☞ Page 296 [Detail Setting]

The following shows a system configuration example.

Ex.



• Settings to start up multiple GOTs simultaneously

When connecting multiple GOTs to one built-in Ethernet port CPU, adjust the timing of GOT communication start.

When the communication concentrates on the PLC, the communication between GOT and PLC becomes difficult, and the monitoring by GOT may not start.

As a method for adjusting the timing, communicating one GOT alone first, and then communicating the other GOTs is effective.

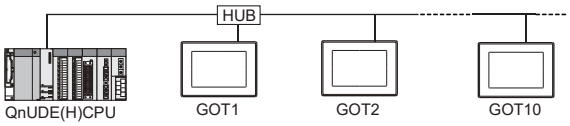
Set the following items on each GOT.

[Startup Time] in [Detail Setting] or [Title Display Time] of [GOT Setup]

[Timeout Time] in [Detail Setting]

The following shows a setting example.

Ex.



Item	GOT1	GOT2	GOT10
Startup Time	3sec (default)	4sec	4sec
Timeout Time	3sec (default)	4sec	4sec

■Start device number of the GD devices for CPU number switching

• Indirect specification of a CPU number

[CPU No.] can be indirectly specified with the GOT internal registers (GD devices) by specifying a value (100 to 102) to [CPU No.] in the device setting dialog in GT Designer3.

Set the start device number of the GD devices to be used in [CPU No. switching GD device first No. (3 points)].

[CPU No.] is specified with three consecutive GD devices, starting from the set device number.

When [500] is set to [CPU No. switching GD device first No. (3 points)], GD500 to GD502 are used to specify [CPU No.] as shown in the following table.

CPU No.	GD device	Setting range
100	GD500	1 to 4 Setting a value outside the range causes a communication timeout error. Specifying a nonexistent CPU number or a CPU number not supporting a multiple CPU system with a device causes a controller error.
101	GD501	
102	GD502	

• Indirect specification of a CPU number on the initially displayed screen

Set [CPU No. switching GD device first No. (3 points)] so that the values of the GD devices are retained and monitored upon the GOT startup.

• Indirect specification of a CPU number for multi-channel connection

If the setting range of [CPU No. switching GD device first No. (3 points)] set for each channel overlaps, the monitoring target CPU number set to each channel is switched simultaneously.

Set [CPU No. switching GD device first No. (3 points)] for each channel so that the setting range does not overlap.

• Indirect specification of a station number and a CPU number for multi-channel connection

When GD10 to GD25 are used to specify the station number of an inverter or non-Mitsubishi temperature controller connected, setting [10] to [CPU No. switching GD device first No. (3 points)] in a different channel switches the monitoring target CPU number and station number of an inverter or non-Mitsubishi temperature controller set to each channel simultaneously.

Set [CPU No. switching GD device first No. (3 points)] so that the setting range does not overlap the station number of an inverter or non-Mitsubishi temperature controller.

■Start device number of the GD devices for module number switching

• Indirect specification of a module number

For connection via a Simple Motion module, [Unit No.] can be specified with the GOT internal registers (GD devices) by specifying a value (100 to 10F) to [Unit No.] in the device setting dialog in GT Designer3.

Set the start device number of the GD devices to be used in [Module No. switching GD device first No. (16 points)].

[Unit No.] is specified with 16 consecutive GD devices, starting from the set device number.

When [550] is set to [Module No. switching GD device first No. (16 points)], GD550 to GD565 are used to specify [Unit No.] as shown in the following table.

Module No.	GD device	Setting range
100	GD550	01 to 10 Setting a value outside the above range causes a device range error.
101	GD551	
102	GD552	
103	GD553	
104	GD554	
105	GD555	
106	GD556	
107	GD557	
108	GD558	
109	GD559	
10A	GD560	
10B	GD561	
10C	GD562	
10D	GD563	
10E	GD564	
10F	GD565	

• Indirect specification of a module number on the initially displayed screen

Set [Module No. switching GD device first No. (16 points)] so that the values of the GD devices are retained and monitored upon the GOT startup.

• Indirect specification of a module number for multi-channel connection

If the setting range of [Module No. switching GD device first No. (16 points)] set for each channel overlaps, the module number of the Simple Motion module via the servo amplifier device of each channel is switched simultaneously.

Set [Module No. switching GD device first No. (16 points)] for each channel so that the setting range does not overlap.

• Indirect specification of a station number and a module number for multi-channel connection

When GD10 to GD25 are used to specify the station number of an inverter or non-Mitsubishi temperature controller connected, setting [10] to [Module No. switching GD device first No. (16 points)] switches the module number of the Simple Motion module via the servo amplifier device and the station number of an inverter or non-Mitsubishi temperature controller set to each channel simultaneously.

Set [Module No. switching GD device first No. (16 points)] so that the setting range does not overlap the station number of an inverter or non-Mitsubishi temperature controller.

■Start device number of the GD devices for servo axis switching

• Indirect specification of a servo axis number

For connection via a Motion CPU or Simple Motion module, a servo axis number can be indirectly specified with GOT internal registers (GD devices) by specifying a value (100 to 115) to the axis number of the servo amplifier device.

Set the start device number of the GD devices to be used in [Servo axis switching GD device first No. (16 points)].

Specify a servo axis number with 16 consecutive GD devices, starting the set device number.

When [10] is set to [Servo axis switching GD device first No. (16 points)], GD10 to GD25 are used to specify a servo axis number as shown in the following table.

Servo axis No.	GD device	Setting range
100	GD10	1 to 64 Setting a value outside the above range causes a device range error.
101	GD11	
102	GD12	
103	GD13	
104	GD14	
105	GD15	
106	GD16	
107	GD17	
108	GD18	
109	GD19	
110	GD20	
111	GD21	
112	GD22	
113	GD23	
114	GD24	
115	GD25	

• Indirect specification of a servo axis number on the initially displayed screen

Set [Servo axis switching GD device first No. (16 points)] so that the values of the GD devices are retained and monitored upon the GOT startup.

• Indirect specification of a servo axis number for multi-channel connection

If the setting rage of [Servo axis switching GD device first No. (16 points)] set for each channel overlaps, the axis number of the servo amplifier of each channel is switched simultaneously.

Set [Servo axis switching GD device first No. (16 points)] for each channel so that the setting range does not overlap.

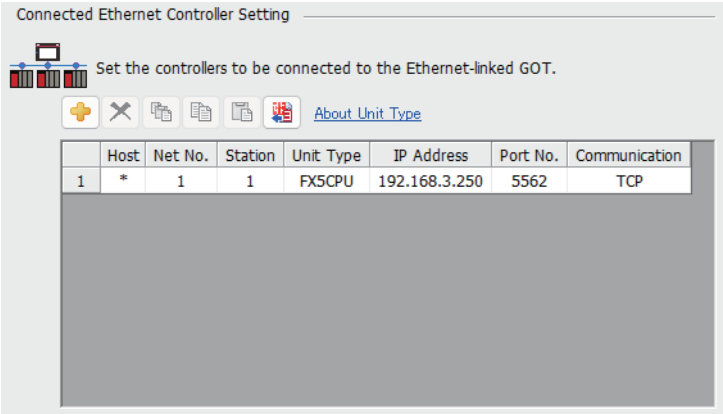
• Indirect specification of a station number and a servo axis number for multi-channel connection

When GD10 to GD25 are used to specify the station number of an inverter or non-Mitsubishi temperature controller connected, setting [10] to [Servo axis switching GD device first No. (16 points)] switches the axis number of the servo amplifier and the station number of an inverter or non-Mitsubishi temperature controller set to each channel simultaneously.

Set [Servo axis switching GD device first No. (16 points)] so that the setting range does not overlap the station number of an inverter or non-Mitsubishi temperature controller.

■[Connected Ethernet Controller Setting]

Set the controller to be connected to the GOT by Ethernet.



Item	Description	Range
[Host]	The host is displayed. It refers to a station that can be connected without setting a station number. The host is indicated with an asterisk (*).	—
[Net No.]	Set the network number of the connected Ethernet equipment.	[1] to [239]
[Station]*2	Set the station number of the connected Ethernet equipment.	[1] to [120]
[Unit Type]	Select the model of the connected Ethernet equipment.	[FX5CPU]
[IP Address]	Set the IP address of the connected Ethernet equipment.	[0.0.0.0] to [255.255.255.255]
[Port No.]*1	Set the port number of the connected Ethernet equipment.	[5562]
[Communication]	Set the communication format of the connected Ethernet equipment.	[TCP]

*1 Match the port number of the CPU and [Port No.] of [Connected Ethernet Controller Setting].

*2 Set values not set for [GOT Station] in [Detail Setting].

☞ Page 296 [Detail Setting]

■Network number and PLC number of FX5CPU

There is no setting for the network number and PLC number of FX5CPU.

The values of [Network No.] and [Station No.] in the object setting dialog must be the same as the values of [Net No.] and [Station] in [Connected Ethernet Controller Setting].

Point

Changing the host station on the GOT

[Host] can be changed with the utility function of the GOT.

For details on the setting method, refer to the following manual.

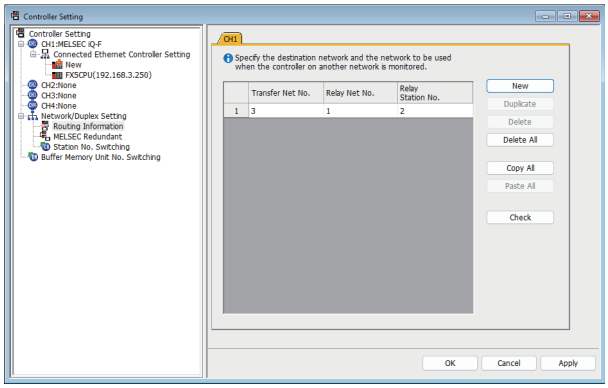
📖GOT3000 Series User's Manual (Utility & Maintenance Functions)

■Routing parameter settings

Up to 64 settings can be configured for [Transfer Net No.].

However, the same number cannot be set in [Transfer Net No.] twice or more (multiple times).

The GOT (host station) can access 64 different networks specified under [Transfer Net No.].



Item	Range
[Transfer Net No.]	[1] to [239]
[Relay Net No.]*1	[1] to [239]
[Relay Station No.]*1	[0] to [120]

*1 To access a different network via the built-in Ethernet port CPU, set the values of [Net No.] and [Station] that are set in [Connected Ethernet Controller Setting] in GT Designer3.

Point

Routing parameter settings for the relay station

Routing parameter settings are also necessary for the relay station.

For the setting, refer to the following.

☞ Page 303 PLC side settings

Precautions

If the network numbers of the GOT and PLC do not match on the same Ethernet network, monitoring of the PLC is not possible.

To enable monitoring, set the same network number as that of the GOT or connect an Ethernet module to the PLC and configure the routing settings to monitor the PLC as a different network.

When the multi-channel connection can be used, set a different network number for each channel.

4.7.4 PLC side settings

Model		Reference
MELSEC iQ-F series	FX5U FX5UC FX5UJ FX5S	☞ Page 303 Connection to the built-in Ethernet port CPU of the MELSEC iQ-F series

Precautions

Do not set a remote password on the FX5CPU.
Doing so disables monitoring with the GOT.

Connection to the built-in Ethernet port CPU of the MELSEC iQ-F series

This section describes the settings of the GOT and the built-in Ethernet port CPU in the system configuration shown below.

Point

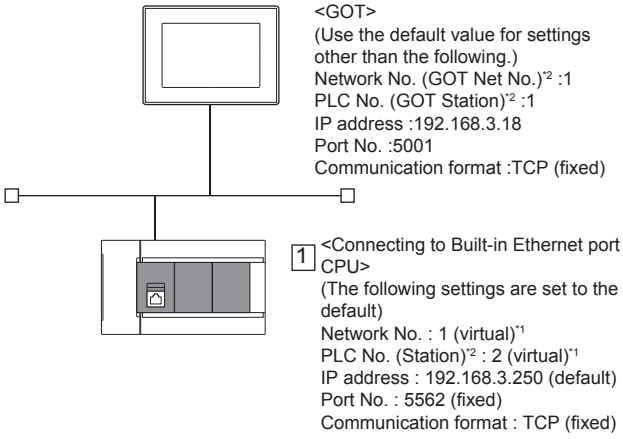
- Built-in Ethernet port CPU

For details on the built-in Ethernet port CPU, refer to the following manual.
📖MELSEC iQ-F series manuals

- Connecting multiple GOTs

When connecting multiple GOTs in the Ethernet network, set a different value for [GOT Station] for each GOT.
☞ Page 297 When connecting multiple GOTs

■System configuration



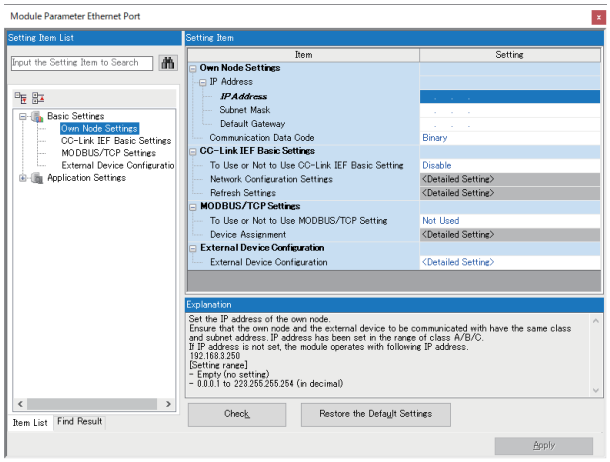
*1 Although the setting is nonexistent on the PLC side, set a virtual value on the GOT side.
☞ Page 305 [Controller Setting] and [Connected Ethernet Controller Setting] of GT Designer3

*2 For the following settings, the setting names are different on the PLC side and the GOT side.

Setting	Setting name		
	PLC side	GOT side	
		Controller setting	Connected Ethernet controller setting
Network number	[Network No.]	[GOT Net No.]	[Net No.]
PLC number	[Station]	[GOT Station]	[Station]

■[Module Parameter] of GX Works3

- Built-in Ethernet port settings



○: Necessary, △: As necessary, —: Not necessary

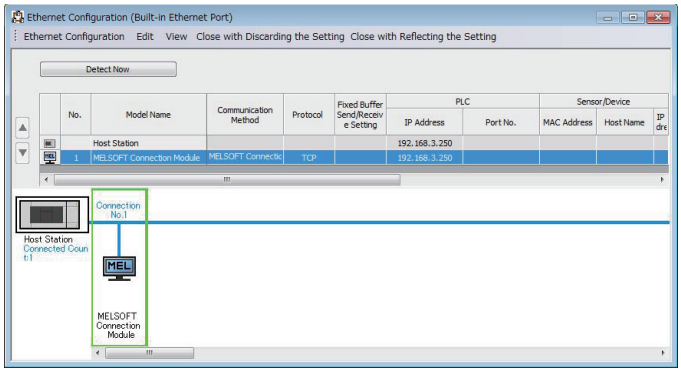
Item	Setting value	Setting for GOT connection
[IP Address]	(Use default value)	△
[Subnet Mask]	—	—
[Default Gateway]	—	—
[Communication Data Code]	(Use default value)	△
[External Device Configuration]	☞ • Target device connection configuration settings	○

- Target device connection configuration settings

Configure the settings for all the connected GOTs.

Point

Even if the target device connection configuration setting is not executed, 1 GOT can be connected.
When connecting to the PLC in Ethernet connection with programming tools such as GX Works3, these programming tools and PLC may not be connected.
In this case, configure the settings for all the connected GOTs.



Item	Setting value
[Protocol]	(Use default value)
[Communication Method]	MELSOFT connection
[Port No.]	(Use default value)

■[Controller Setting] and [Connected Ethernet Controller Setting] of GT Designer3

For the setting method of [Controller Setting] and [Connected Ethernet Controller Setting] in GT Designer3, refer to the following.

☞ Page 294 GOT side settings

Point

[Connected Ethernet Controller Setting] for connection to the built-in Ethernet port CPU
The setting items for the network number and station number do not exist on the PLC side.
Set the network number and station number on the GOT side.
When doing so, set a network number not used in the system.

- Built-in Ethernet port settings

Item	Setting value
[GOT Net No.]	1
[GOT Station]	1
[GOT Communication Port No.]	5001
[Retry]	3 times
[Startup Time]	3 seconds
[Timeout Time]	3 seconds
[Delay Time]	0 ms

- GOT Ethernet settings

Item	Setting value
[GOT IP Address]	192.168.3.18
[Subnet Mask]	255.255.255.0
[Default Gateway]	0.0.0.0
[Peripheral S/W Communication Port No.]	5015
[Transparent Port No.]	5014

- Connected Ethernet controller settings

Item		Setting value
Ethernet setting No. 1	[Host]	*
	[Net No.]	1*1
	[Station]	2*2
	[Unit Type]	FX5CPU
	[IP Address]	192.168.3.250
	[Port No.]	5562
	[Communication]	TCP

*1 Set the same value as the GOT net number.
*2 Set a value different from the GOT station number and PLC numbers of other PLCs on the same network.

■Checking the communication state of the built-in Ethernet port CPU

- When using Windows Command Prompt

1) At normal end

C:\>Ping 192.168.3.250

Reply from 192.168.3.250:bytes=32 time<1ms TTL=32

2) At abnormal end

C:\>Ping 192.168.3.250

Request timed out.

- In the case of abnormal end

In the case of abnormal end, check the following and execute the ping command again.

Cable connecting condition

Switch settings and network parameter settings

Operation state of PLC CPU (faulty or not)

IP address of the built-in Ethernet port CPU specified by the ping command

4.7.5 Access range for monitoring

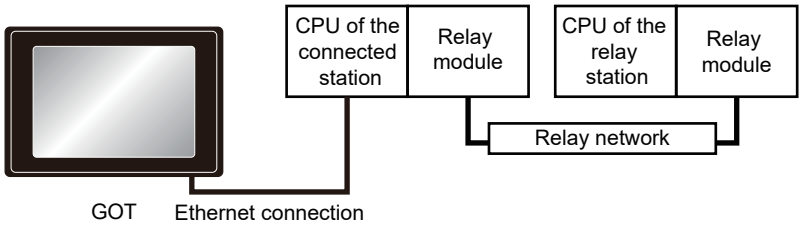
When the GOT is connected to the CPU of the station connected via Ethernet, the range accessible via the CPU is as follows.

Point

- When monitoring other networks (Routing parameter settings)

To monitor other networks, routing parameter settings are necessary.

For the routing parameter settings, refer to the reference manual of the network connected.



○: Accessible, —: Inaccessible

CPU of the connected station	Relay station										
	Relay network	CPU of the relay station									
		MXR	MXF	RCPU	LCPU	QCPU (Q mode)	QSCPU	QCPU (A mode)	QnACPU	ACPU	FX5CPU
FX5CPU*4	Ethernet	—	—	○*5	○	○*6	○	—	○	—	○*3
	CC-Link IE TSN	○*7	○*7	○*1	—	—	—	—	—	—	○*3
	CC-Link IE Field Network	○*7	—	○	○	○*2	○	—	—	—	○*4

*1 RnCPU, RnENCPU, RnSFCPU, and MELSECWinCPU (MELSEC iQ-R series) are supported.
*2 QnUDVCPU, QnUDECPU, QnUDEHCPU, QnUCPU, QnUDCPU, and QnUDHCPU are supported.
*3 FX5U and FX5UC are supported.
*4 FX5U, FX5UC, and FX5UJ are supported.
*5 The C Controller module (MELSEC iQ-R series) is not supported.
*6 The C Controller module (MELSEC-Q series) is not supported.
*7 Regardless of whether encrypted communications are performed, the MELSEC MX Controller can be used as the relay station.
To perform encrypted communication, settings need to be configured.
For details, refer to the following.
- For MELSEC MX Controller (MX-R Model)
☞ Page 90 Setting procedure of the encrypted communication
- For MELSEC MX Controller (MX-F Model)
☞ Page 153 Setting procedure of the encrypted communication

4.8 MELSEC iQ-F series (Ethernet module connection)

☞ Page 308 Connectable devices
☞ Page 309 System configuration
☞ Page 315 GOT side settings
☞ Page 325 PLC side settings
☞ Page 340 Access range for monitoring

4.8.1 Connectable devices

The following table shows the connectable models.

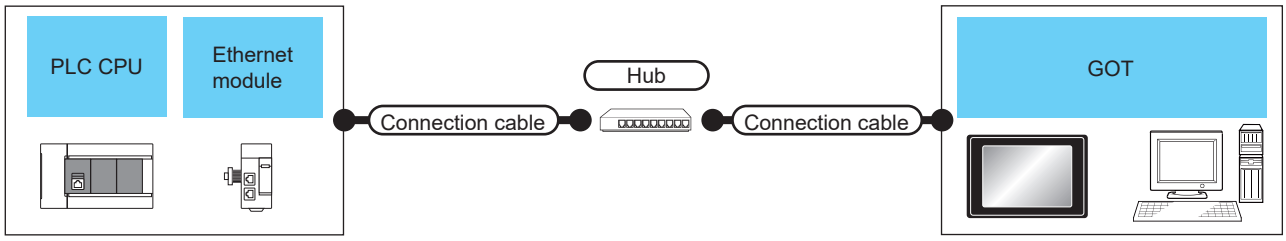
○: Supported, —: Not supported

Controller	Model	Clock	Ethernet module	Connectable model
MELSEC iQ-F series	FX5U*1*2 FX5UC*1*2	○	FX5-ENET FX5-ENET/IP FX5-EIP FX5-CCLGN-MS FX5-40SSC-G FX5-80SSC-G	GT37 SoftGOT3000
	FX5UJ*3	○	FX5-ENET FX5-ENET/IP FX5-EIP FX5-CCLGN-MS	GT37 SoftGOT3000

*1 When using FX5-ENET or FX5-ENET/IP, use firmware Ver. 1.240 or later.
*2 When using FX5-EIP, use firmware Ver. 1.340 or later.
*3 When using FX5-EIP, use firmware Ver. 1.100 or later.

4.8.2 System configuration

Connection to Ethernet module



For details on the connection cables and the maximum segment length, refer to the following.

☞ Page 310 Connection cable
☞ Page 310 Maximum segment length

For details on the maximum number of connected devices, refer to the following.

☞ Page 310 Maximum number of connected devices

Controller	Ethernet module*1*2	Connection cable	GOT	
			Interface	Model
MELSEC iQ-F series (FX5U, FX5UC, FX5UJ)	FX5-ENET FX5-ENET/IP FX5-EIP	Twisted pair cable	Built-in Ethernet interface of GOT	GT37 SoftGOT3000
			Ethernet interface of personal computer	GT37 SoftGOT3000

*1 For the system configuration of the Ethernet module, refer to the following manuals.
MELSEC iQ-F FX5-ENET User's Manual
MELSEC iQ-F FX5-ENET/IP User's Manual
MELSEC iQ-F FX5-EIP User's Manual

*2 Select [FX5-ENET] for [Unit Type] in [Connected Ethernet Controller Setting] in GT Designer3.
For [Connected Ethernet Controller Setting] in GT Designer3, refer to the following.
☞ Page 322 [Connected Ethernet Controller Setting]

Connection cable

Use a connection cable that meets the following standards.

Standard	Category
10BASE-T	Shielded twisted pair cable (STP) of category 3 or higher
100BASE-TX	Shielded twisted pair cable (STP) of category 5 or higher
1000BASE-T	Shielded twisted pair cable (double-shielded STP or STP) of category 5e or higher

The destination device connected with the twisted pair cable varies with the configuration of the Ethernet network system used.

Connect the cable to the Ethernet module, hub, or other system equipment corresponding to the applicable Ethernet network system.

Use cables, connectors, and hubs that meet the IEEE802.3 10BASE-T/100BASE-TX/1000BASE-T standards.

When only one GOT is connected, the GOT can be directly connected to the controller without a hub.

Maximum segment length

The maximum segment length (length between a hub and a node) is 100 m.

The maximum length depends on the Ethernet equipment used.

The following shows the number of connectable hubs when a repeater hub is used.

- 10BASE-T: Up to 4 for a cascade connection (within 500 m)
- 100BASE-TX: Up to 2 for a cascade connection (within 205 m)
- 1000BASE-T: The number differs depending on the hub to be used.

When switching hubs are used, there is no theoretical limit to the number of cascade connections between switching hubs.

For the limit, contact the switching hub manufacturer.

Precautions

When multiple network devices (including GOTs) are connected in the same segment, the network load increases and the transmission speed between the GOT and PLC may be reduced.

The following actions may improve the communication performance.

- Use a switching hub compatible with 1000BASE-T (1 Gbps) or more.
- Reduce the number of devices monitored by the GOT.

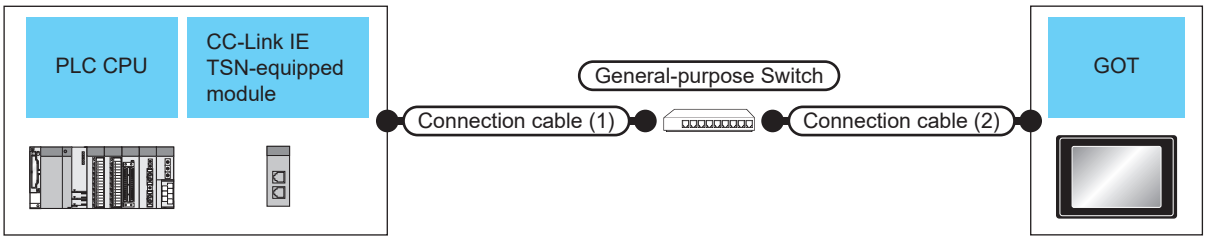
Maximum number of connected devices

Up to 128 CPU modules can be connected to channels No. 1 to No. 4 of one GOT. (16 or less recommended)

The following shows the number of connectable controllers per GOT channel and the number of GOTs connectable to one controller.

Controller				GOT	
Model		Number of GOTs connectable to one Ethernet module		Model	Number of connectable controllers per GOT channel
PLC CPU	Module	UDP	TCP		
MELSEC iQ-F series (FX5U, FX5UC, FX5UJ)	FX5-ENET FX5-ENET/IP FX5-EIP	32	32	GT37 SoftGOT3000	63 (16 or less recommended)

Connection to CC-Link IE TSN-equipped module



For details on the connection cables and the maximum segment length, refer to the following.

☞ Page 312 Connection cable
☞ Page 312 Maximum segment length

For details on the maximum number of connected devices, refer to the following.

☞ Page 312 Maximum number of connected devices

Controller	CC-Link IE TSN-equipped module*2*3	Connection cable (1)	External device	Connection cable (2)	GOT	
					Interface	Model
MELSEC iQ-F series (FX5U, FX5UC, FX5UJ)	FX5-CCLGN-MS	Twisted pair cable	General-purpose Switch*1	Twisted pair cable	Built-in Ethernet interface of GOT	GT37 SoftGOT3000
					Ethernet interface of personal computer	GT37 SoftGOT3000

*1 For usable General-purpose Switches, refer to the following.
📖MELSEC iQ-F FX5 User's Manual (CC-Link IE TSN)

*2 For the system configuration of the CC-Link IE TSN-equipped module, refer to the following manual.
📖MELSEC iQ-F FX5 User's Manual (CC-Link IE TSN)

*3 Select [FX5-CCLGN-MS/FX5-nSSC-G] for [Unit Type] in [Connected Ethernet Controller Setting] in GT Designer3.
For [Connected Ethernet Controller Setting] in GT Designer3, refer to the following.
☞ Page 322 [Connected Ethernet Controller Setting]

Connection cable

Use a connection cable that meets the following standards.

Standard	Category
100BASE-TX	Shielded twisted pair cable (STP) of category 5 or higher
1000BASE-T	Shielded twisted pair cable (double-shielded STP or STP) of category 5e or higher

For the twisted pair cable, use a straight cable.

Use cables and connectors that meet the IEEE802.3 100BASE-TX/1000BASE-T standards.

Maximum segment length

The maximum segment length (length between General-purpose Switch and a node) is 100 m.

Maximum number of connected devices

Up to 128 CPU modules can be connected to channels No. 1 to No. 4 of one GOT. (16 or less recommended)

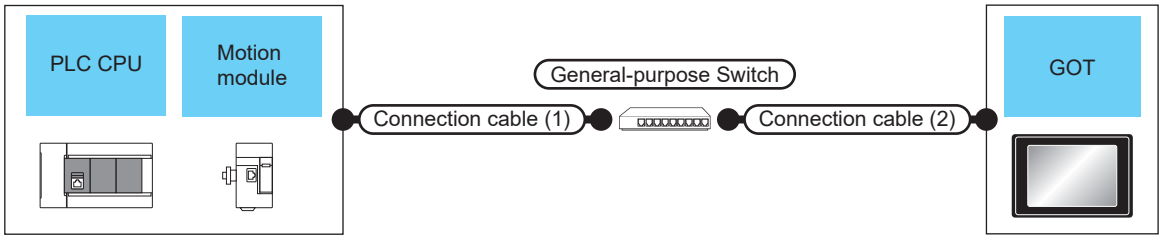
The following shows the number of connectable controllers per GOT channel and the number of GOTs connectable to one controller.

Controller				GOT	
Model		Number of GOTs connectable to one CC-Link IE TSN-equipped module		Model	Number of connectable controllers per GOT channel
PLC CPU	Module	UDP	TCP		
MELSEC iQ-F series (FX5U, FX5UC, FX5UJ)	FX5-CCLGN-MS	8	8	GT37 SoftGOT3000	63 (8 or less recommended)

Connection to Motion module

Point

To monitor the global labels of the Motion module with the GOT, connect the GOT and Motion module through the built-in Ethernet port of the PLC.
If the GOT is connected to the built-in port of the Motion module, the global labels of the Motion module cannot be monitored.



For details on the connection cables and the maximum segment length, refer to the following.

☞ Page 314 Connection cable
☞ Page 314 Maximum segment length

For details on the maximum number of connected devices, refer to the following.

☞ Page 314 Maximum number of connected devices

Controller	Motion module *2*3	Connection cable (1)	External device	Connection cable (2)	GOT	
					Interface	Model
MELSEC iQ-F series (FX5U, FX5UC)	FX5-40SSC-G FX5-80SSC-G	Twisted pair cable	General-purpose Switch*1	Twisted pair cable	Built-in Ethernet interface of GOT	GT37 SoftGOT3000
					Ethernet interface of personal computer	GT37 SoftGOT3000

*1 For usable General-purpose Switches, refer to the following.
MELSEC iQ-F FX5 Motion Module/Simple Motion Module User's Manual (Startup)

*2 For the system configuration of the Motion module, refer to the following manual.
MELSEC iQ-F FX5 Motion Module/Simple Motion Module User's Manual (Startup)

*3 Select [FX5-CCLGN-MS/FX5-nSSC-G] for [Unit Type] in [Connected Ethernet Controller Setting] in GT Designer3.
For [Connected Ethernet Controller Setting] in GT Designer3, refer to the following.
☞ Page 322 [Connected Ethernet Controller Setting]

Connection cable

Use a connection cable that meets the following standards.

Standard	Category
100BASE-TX	Shielded twisted pair cable (STP) of category 5 or higher
1000BASE-T	Shielded twisted pair cable (double-shielded STP or STP) of category 5e or higher

For the twisted pair cable, use a straight cable.

Use cables and connectors that meet the IEEE802.3 100BASE-TX/1000BASE-T standards.

Maximum segment length

The maximum segment length (length between General-purpose Switch and a node) is 100 m.

Maximum number of connected devices

Up to 128 CPU modules can be connected to channels No. 1 to No. 4 of one GOT. (16 or less recommended)

The following shows the number of connectable controllers per GOT channel and the number of GOTs connectable to one controller.

Controller				GOT	
Model		Number of GOTs connectable to one Motion module		Model	Number of connectable controllers per GOT channel
PLC CPU	Module	UDP	TCP		
MELSEC iQ-F series (FX5U, FX5UC)	FX5-40SSC-G FX5-80SSC-G	8	8	GT37 SoftGOT3000	63 (8 or less recommended)

4.8.3 GOT side settings

[GOT Ethernet Setting]

Set the GOT Ethernet interface in GT Designer3.

Item	Description
[GOT IP Address Setting]	Set the IP address of the GOT.
[GOT Ethernet Common Setting]	Set the default gateway and other common items for GOT Ethernet interfaces.
[IP filter Setting]	The GOT allows or blocks access from IP addresses specified in the filtering list.

For details on the setting, refer to the following.

📖GT Designer3 (GOT3000) Screen Design Manual

Set the GT SoftGOT3000 Ethernet interface on the personal computer.

Precautions

Do not use 0 and 255 at the end of an IP address.

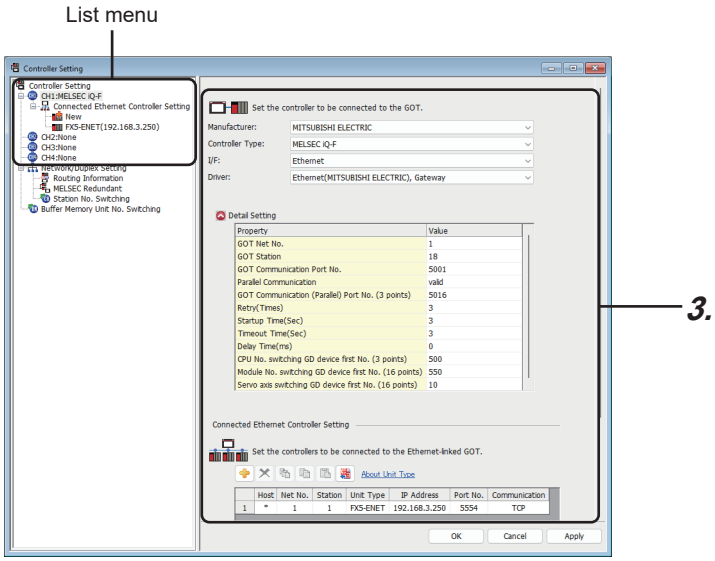
(Numbers of *.*.*.0 and *.*.*.255 are used by the system.)

The GOT may not monitor the controller correctly with the above numbers.

Consult with the administrator of the network before setting an IP address to the GOT.

[Controller Setting]

Set the channel of the connected controller.



Operating procedure

1. Select [Common] → [Controller Setting] from the menu.
2. In the [Controller Setting] window, select the channel number to be used from the list menu.
3. Set the following items.

Item	Description
[Manufacturer]	[MITSUBISHI ELECTRIC]
[Controller Type]	[MELSEC iQ-F]
[I/F]	[Ethernet]
[Driver]	[Ethernet(MITSUBISHI ELECTRIC), Gateway]
[Detail Setting]	Configure the settings according to the usage environment. ☞ Page 317 [Detail Setting]
[Connected Ethernet Controller Setting]	Configure the settings according to the controller to be connected. ☞ Page 322 [Connected Ethernet Controller Setting]

4. When you have completed the settings, click the [OK] button.

Point

The controller settings can be checked in [I/F Communication Setting].
For details, refer to the following.
📖GT Designer3 (GOT3000) Screen Design Manual

■[Detail Setting]

Configure the settings according to the usage environment.

Detail Setting

Property	Value
GOT Net No.	1
GOT Station	18
GOT Communication Port No.	5001
Parallel Communication	valid
GOT Communication (Parallel) Port No. (3 points)	5016
Retry(Times)	3
Startup Time(Sec)	3
Timeout Time(Sec)	3
Delay Time(ms)	0
CPU No. switching GD device first No. (3 points)	500
Module No. switching GD device first No. (16 points)	550
Servo axis switching GD device first No. (16 points)	10

Item	Description	Range
[GOT Net No.]	Set the network number of the GOT.	[1] to [239]
[GOT Station][*1*2]	Set the station number of the GOT.	[1] to [120]
[GOT Communication Port No.]	Set the GOT port number for connection with the Ethernet module.	[1024] to [5010], [5014] to [49152], [49171] to [65534]
[Parallel Communication]	Enables or disables the parallel communication. When this setting is enabled, [GOT Communication (Parallel) Port No. (3 points)] can be set. When communicating with multiple devices on a single channel, distributing the communication ports can reduce the communication load.	[valid], [invalid]
[GOT Communication (Parallel) Port No. (3 points)]	Set the GOT port number used for the parallel communication.	• [Parallel Communication] is [invalid]: [0] • [Parallel Communication] is [valid]: [1024] to [5008], [5014] to [49150], [49171] to [65532]
[Retry(Times)]	Set the number of retries to be performed when a communication timeout occurs. When receiving no response after retries, the communication times out.	GOT: [0] times to [5] times GT SoftGOT3000: [0] times to [10] times
[Startup Time]	Set the time period from the GOT startup until the start of communication with the PLC CPU.	[3] seconds to [255] seconds
[Timeout Time]	Set the time period for a communication to time out.	[1] second to [90] seconds
[Delay Time]	Set the delay time for reducing the load of the network and destination PLC.	[0] ms to [10000] ms
[CPU No. switching GD device first No. (3 points)]	Set the start device number of the GD devices for CPU number switching. For details, refer to the following. ☞ Page 319 Start device number of the GD devices for CPU number switching	[0] to [65520]
[Module No. switching GD device first No. (16 points)]	Set the start device number of the GD devices for module number switching. For details, refer to the following. ☞ Page 320 Start device number of the GD devices for module number switching	[0] to [65520]
[Servo axis switching GD device first No. (16 points)]	Set the start device number of the GD devices for servo axis switching. For details, refer to the following. ☞ Page 321 Start device number of the GD devices for servo axis switching	[0] to [65520]

*1 Set values not set for [Station] in [Connected Ethernet Controller Setting].
☞ Page 322 [Connected Ethernet Controller Setting]

*2 When connecting multiple GOTs in the Ethernet network, set a different value for [GOT Station] for each GOT.

Point

• Controller settings using the GT37 utility

The controller settings can be changed in [Communication Settings] of the GT37 utility after writing [Communication Settings] of project data to GT37.

For details on the GT37 utility, refer to the following manual.

📖GOT3000 Series User's Manual (Utility & Maintenance Functions)

• Priority of the settings in [Controller Setting]

When the settings are configured in GT Designer3 or in the GT37 utility, the latest settings are effective.

■When connecting multiple GOTs

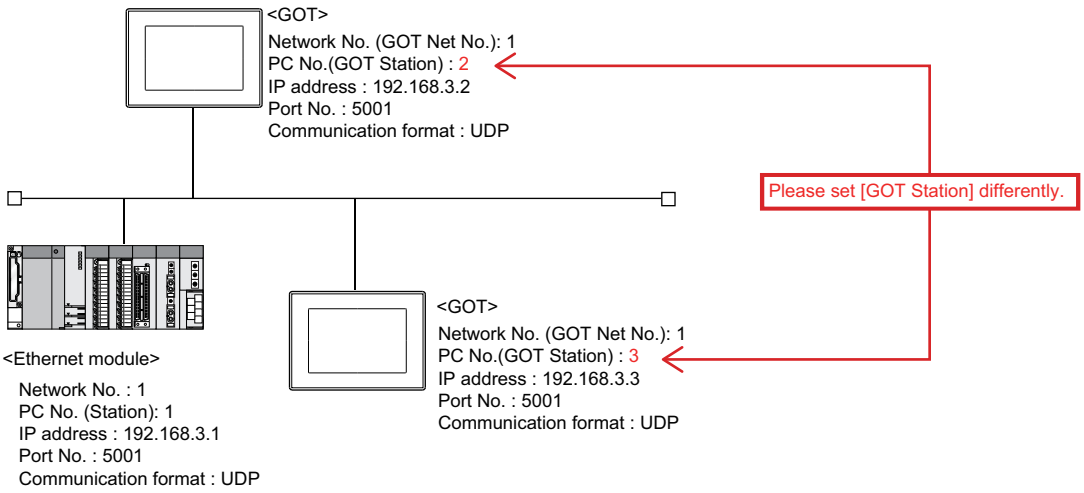
• Settings for [GOT Station]

When connecting multiple GOTs in the Ethernet network, set a different value for [GOT Station] for each GOT.

☞ Page 317 [Detail Setting]

The following shows a system configuration example.

Ex.



• Settings to start up multiple GOTs simultaneously

When connecting multiple GOTs to one built-in Ethernet port CPU, adjust the timing of GOT communication start.

When the communication concentrates on the PLC, the communication between GOT and PLC becomes difficult, and the monitoring by GOT may not start.

As a method for adjusting the timing, communicating one GOT alone first, and then communicating the other GOTs is effective.

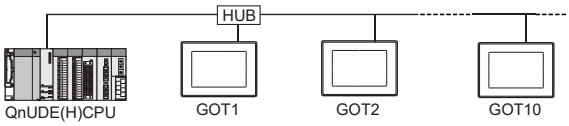
Set the following items on each GOT.

[Startup Time] in [Detail Setting] or [Title Display Time] of [GOT Setup]

[Timeout Time] in [Detail Setting]

The following shows a setting example.

Ex.



Item	GOT1	GOT2	GOT10
Startup Time	3sec (default)	4sec	4sec
Timeout Time	3sec (default)	4sec	4sec

■Start device number of the GD devices for CPU number switching

• Indirect specification of a CPU number

[CPU No.] can be indirectly specified with the GOT internal registers (GD devices) by specifying a value (100 to 102) to [CPU No.] in the device setting dialog in GT Designer3.

Set the start device number of the GD devices to be used in [CPU No. switching GD device first No. (3 points)].

[CPU No.] is specified with three consecutive GD devices, starting from the set device number.

When [500] is set to [CPU No. switching GD device first No. (3 points)], GD500 to GD502 are used to specify [CPU No.] as shown in the following table.

CPU No.	GD device	Setting range
100	GD500	1 to 4 Setting a value outside the range causes a communication timeout error. Specifying a nonexistent CPU number or a CPU number not supporting a multiple CPU system with a device causes a controller error.
101	GD501	
102	GD502	

• Indirect specification of a CPU number on the initially displayed screen

Set [CPU No. switching GD device first No. (3 points)] so that the values of the GD devices are retained and monitored upon the GOT startup.

• Indirect specification of a CPU number for multi-channel connection

If the setting range of [CPU No. switching GD device first No. (3 points)] set for each channel overlaps, the monitoring target CPU number set to each channel is switched simultaneously.

Set [CPU No. switching GD device first No. (3 points)] for each channel so that the setting range does not overlap.

• Indirect specification of a station number and a CPU number for multi-channel connection

When GD10 to GD25 are used to specify the station number of an inverter or non-Mitsubishi temperature controller connected, setting [10] to [CPU No. switching GD device first No. (3 points)] in a different channel switches the monitoring target CPU number and station number of an inverter or non-Mitsubishi temperature controller set to each channel simultaneously.

Set [CPU No. switching GD device first No. (3 points)] so that the setting range does not overlap the station number of an inverter or non-Mitsubishi temperature controller.

■Start device number of the GD devices for module number switching

• Indirect specification of a module number

For connection via a Simple Motion module, [Unit No.] can be specified with the GOT internal registers (GD devices) by specifying a value (100 to 10F) to [Unit No.] in the device setting dialog in GT Designer3.

Set the start device number of the GD devices to be used in [Module No. switching GD device first No. (16 points)].

[Unit No.] is specified with 16 consecutive GD devices, starting from the set device number.

When [550] is set to [Module No. switching GD device first No. (16 points)], GD550 to GD565 are used to specify [Unit No.] as shown in the following table.

Module No.	GD device	Setting range
100	GD550	01 to 10 Setting a value outside the above range causes a device range error.
101	GD551	
102	GD552	
103	GD553	
104	GD554	
105	GD555	
106	GD556	
107	GD557	
108	GD558	
109	GD559	
10A	GD560	
10B	GD561	
10C	GD562	
10D	GD563	
10E	GD564	
10F	GD565	

• Indirect specification of a module number on the initially displayed screen

Set [Module No. switching GD device first No. (16 points)] so that the values of the GD devices are retained and monitored upon the GOT startup.

• Indirect specification of a module number for multi-channel connection

If the setting range of [Module No. switching GD device first No. (16 points)] set for each channel overlaps, the module number of the Simple Motion module via the servo amplifier device of each channel is switched simultaneously.

Set [Module No. switching GD device first No. (16 points)] for each channel so that the setting range does not overlap.

• Indirect specification of a station number and a module number for multi-channel connection

When GD10 to GD25 are used to specify the station number of an inverter or non-Mitsubishi temperature controller connected, setting [10] to [Module No. switching GD device first No. (16 points)] switches the module number of the Simple Motion module via the servo amplifier device and the station number of an inverter or non-Mitsubishi temperature controller set to each channel simultaneously.

Set [Module No. switching GD device first No. (16 points)] so that the setting range does not overlap the station number of an inverter or non-Mitsubishi temperature controller.

■Start device number of the GD devices for servo axis switching

• Indirect specification of a servo axis number

For connection via a Motion CPU or Simple Motion module, a servo axis number can be indirectly specified with GOT internal registers (GD devices) by specifying a value (100 to 115) to the axis number of the servo amplifier device.

Set the start device number of the GD devices to be used in [Servo axis switching GD device first No. (16 points)].

Specify a servo axis number with 16 consecutive GD devices, starting the set device number.

When [10] is set to [Servo axis switching GD device first No. (16 points)], GD10 to GD25 are used to specify a servo axis number as shown in the following table.

Servo axis No.	GD device	Setting range
100	GD10	1 to 64 Setting a value outside the above range causes a device range error.
101	GD11	
102	GD12	
103	GD13	
104	GD14	
105	GD15	
106	GD16	
107	GD17	
108	GD18	
109	GD19	
110	GD20	
111	GD21	
112	GD22	
113	GD23	
114	GD24	
115	GD25	

• Indirect specification of a servo axis number on the initially displayed screen

Set [Servo axis switching GD device first No. (16 points)] so that the values of the GD devices are retained and monitored upon the GOT startup.

• Indirect specification of a servo axis number for multi-channel connection

If the setting rage of [Servo axis switching GD device first No. (16 points)] set for each channel overlaps, the axis number of the servo amplifier of each channel is switched simultaneously.

Set [Servo axis switching GD device first No. (16 points)] for each channel so that the setting range does not overlap.

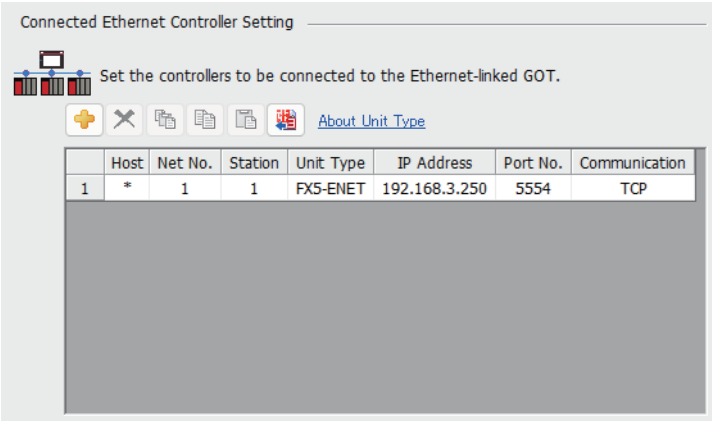
• Indirect specification of a station number and a servo axis number for multi-channel connection

When GD10 to GD25 are used to specify the station number of an inverter or non-Mitsubishi temperature controller connected, setting [10] to [Servo axis switching GD device first No. (16 points)] switches the axis number of the servo amplifier and the station number of an inverter or non-Mitsubishi temperature controller set to each channel simultaneously.

Set [Servo axis switching GD device first No. (16 points)] so that the setting range does not overlap the station number of an inverter or non-Mitsubishi temperature controller.

■[Connected Ethernet Controller Setting]

Set the controller to be connected to the GOT by Ethernet.



Item	Description	Range
[Host]	The host is displayed. It refers to a station that can be connected without setting a station number. The host is indicated with an asterisk (*).	—
[Net No.]	Set the network number of the connected Ethernet equipment.	[1] to [239]
[Station]*2	Set the station number of the connected Ethernet equipment.	☞ Page 323 [Station No.]
[Unit Type]	Select the model of the connected Ethernet equipment.	☞ Page 323 [Unit Type]
[IP Address]	Set the IP address of the connected Ethernet equipment.	[0.0.0.0] to [255.255.255.255]
[Port No.]*1	Set the port number of the connected Ethernet equipment.	☞ Page 323 [Port No.]
[Communication]	Set the communication format of the connected Ethernet equipment.	[UDP], [TCP]

*1 Match the port number of the CPU and [Port No.] of [Connected Ethernet Controller Setting].

*2 Set values not set for [GOT Station] in [Detail Setting].
☞ Page 317 [Detail Setting]

■[Unit Type]

Select an item for [Unit Type] as shown below.

GOT connection destination	[Unit Type]
Ethernet module (MELSEC iQ-F series)	[FX5-ENET]
CC-Link IE TSN master/local module(MELSEC iQ-F series) Motion module (MELSEC iQ-F series)	[FX5-CCLGN-MS/FX5-nSSC-G]

■[Port No.]

The setting range is as follows:

[Unit Type]	[Port No.]	[Communication]
[FX5-ENET]	[5554]	[TCP]
	[5555]	[UDP]
[FX5-CCLGN-MS/FX5-nSSC-G]	[5001]	[UDP]
	[5554]	[TCP]

■[Station No.]

The setting range of the station number differs depending on the setting for [Controller Type].

[Unit Type]	Setting range for [Station]
[FX5-ENET]	[1] to [120]
[FX5-CCLGN-MS/FX5-nSSC-G]	[0] to [120]

■Network number and PLC number of FX5CPU

There is no setting for the network number and PLC number of FX5CPU.

The values of [Network No.] and [Station No.] in the object setting dialog must be the same as the values of [Net No.] and [Station] in [Connected Ethernet Controller Setting].

Point

Changing the host station on the GOT

[Host] can be changed with the utility function of the GOT.

For details on the setting method, refer to the following manual.

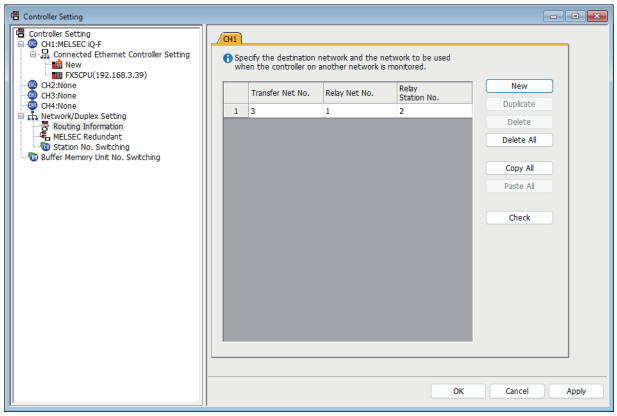
📖GOT3000 Series User's Manual (Utility & Maintenance Functions)

■Routing parameter settings

Up to 64 settings can be configured for [Transfer Net No.].

However, the same number cannot be set in [Transfer Net No.] twice or more (multiple times).

The GOT (host station) can access 64 different networks specified under [Transfer Net No.].



Item	Range
[Transfer Net No.]	[1] to [239]
[Relay Net No.]*1	[1] to [239]
[Relay Station No.]*1	[0] to [120]

*1 To access a different network via the built-in Ethernet port CPU, set the values of [Net No.] and [Station] that are set in [Connected Ethernet Controller Setting] in GT Designer3.

Point

Routing parameter settings for the relay station

Routing parameter settings are also necessary for the relay station.

For the setting, refer to the following.

☞ Page 325 PLC side settings

Precautions

If the network numbers of the GOT and PLC do not match on the same Ethernet network, monitoring of the PLC is not possible.

To enable monitoring, set the same network number as that of the GOT or connect an Ethernet module to the PLC and configure the routing settings to monitor the PLC as a different network.

When the multi-channel connection can be used, set a different network number for each channel.

4.8.4 PLC side settings

Model		Reference
MELSEC iQ-F series	FX5U FX5UC	☞ Page 325 Connection to Ethernet module (MELSEC iQ-F series) ☞ Page 333 Connection to CC-Link IE TSN-equipped module ☞ Page 337 Connection to built-in Ethernet port of Motion module
	FX5UJ	☞ Page 325 Connection to Ethernet module (MELSEC iQ-F series) ☞ Page 333 Connection to CC-Link IE TSN-equipped module

Precautions

Do not set a remote password on the FX5CPU.
Doing so disables monitoring with the GOT.

Connection to Ethernet module (MELSEC iQ-F series)

This section describes the settings of the GOT and the Ethernet module (MELSEC iQ-F series) in the system configuration shown below.

☞ Page 325 When the GOT's communication format is UDP
☞ Page 329 When the GOT's communication format is TCP

Point

- Ethernet module (MELSEC iQ-F series)

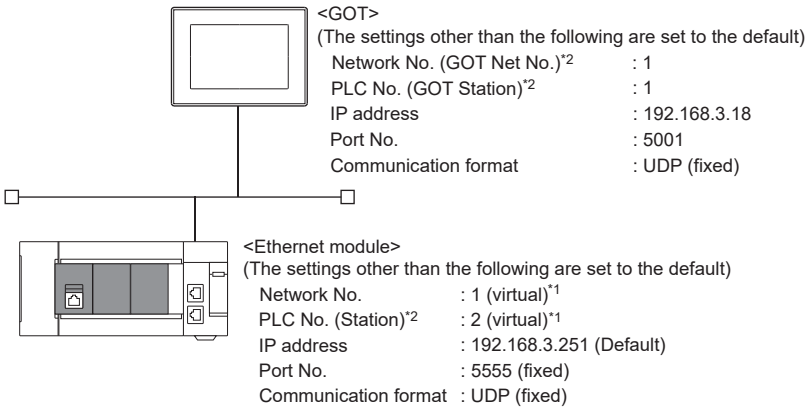
For details on the Ethernet module (MELSEC iQ-F series), refer to the following manual.
📖MELSEC iQ-F series manuals

- Connecting multiple GOTs

When connecting multiple GOTs in the Ethernet network, set a different value for [GOT Station] for each GOT.
☞ Page 318 When connecting multiple GOTs

■When the GOT's communication format is UDP

- System configuration



*1 Although the setting is nonexistent on the PLC side, set a virtual value on the GOT side.
☞ • [Controller Setting] and [Connected Ethernet Controller Setting] of GT Designer3

*2 For the following settings, the setting names are different on the PLC side and the GOT side.

Setting	Setting name		
	PLC side	GOT side	
		Controller setting	Connected Ethernet controller setting
Network number	[Network No.]	[GOT Net No.]	[Net No.]
PLC number	[Station No.]	[GOT Station]	[Station No.]

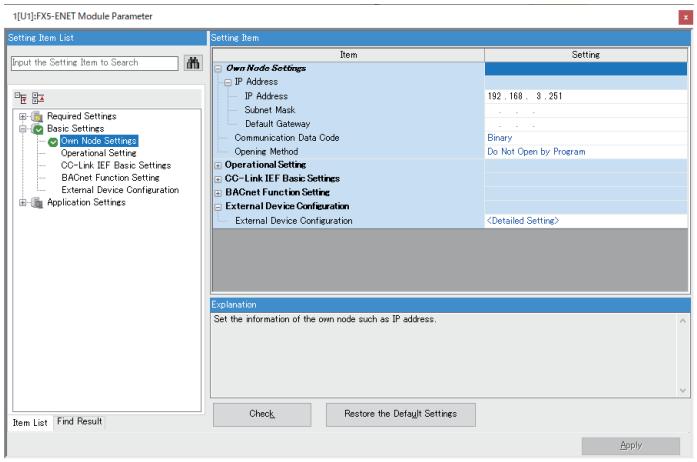
• [Module Parameter] of GX Works3

For the connection with FX5-ENET or FX5-ENET/IP, use GX Works3 version 1.075D or later.

For the connection with FX5-EIP, use GX Works3 version 1.120A or later.

Module parameters of the Ethernet module

Set [Module Parameter] of the port under [Module information].



○: Necessary, △: As necessary, —: Not necessary

Item	Setting value	Setting for GOT connection
[IP Address]	192.168.3.251	○
[Subnet Mask]	—	—
[Default Gateway]	—	—
[Communication Data Code]	(Use default value)	—
[Opening Method]	(Use default value)	—
[External Device Configuration]	—	—

• [Controller Setting] and [Connected Ethernet Controller Setting] of GT Designer3

For the setting method of [Controller Setting] and [Connected Ethernet Controller Setting] in GT Designer3, refer to the following.

☞ Page 315 GOT side settings

Point

[Connected Ethernet Controller Setting] for connection to Ethernet module (MELSEC iQ-F series)
The setting items for the network number and station number do not exist on the PLC side.
Set the network number and station number on the GOT side.
When doing so, set a network number not used in the system.

Controller settings

Item	Setting value
[GOT Net No.]	1
[GOT Station]	1
[GOT Communication Port No.]	5001
[Retry]	3 times
[Startup Time]	3 seconds
[Timeout Time]	3 seconds
[Delay Time]	0 ms

GOT Ethernet settings

Item	Setting value
[GOT IP Address]	192.168.3.18
[Subnet Mask]	255.255.255.0
[Default Gateway]	0.0.0.0
[Peripheral S/W Communication Port No.]	5015
[Transparent Port No.]	5014

Connected Ethernet controller settings

Item		Setting value
Ethernet setting No. 1	[Host]	*
	[Net No.]	1*1
	[Station]	2*2
	[Unit Type]	FX5-ENET
	[IP Address]	192.168.3.251
	[Port No.]	5555
	[Communication]	UDP

*1 Set the same value as the GOT net number.
*2 Set a value different from the GOT station number.

• Checking the communication state of the built-in Ethernet port CPU

When using Windows Command Prompt

Execute a ping command in Windows Command Prompt.

1) At normal end

C:\>Ping 192.168.3.251

Reply from 192.168.3.251:bytes=32 time<1ms TTL=32

2) At abnormal end

C:\>Ping 192.168.3.251

Request timed out.

In the case of abnormal end

In the case of abnormal end, check the following and execute the ping command again.

Cable connecting condition

Switch settings and network parameter settings

Operation state of PLC CPU (faulty or not)

IP address of the Ethernet module specified by the ping command

Point

Ethernet diagnostics of GX Works3

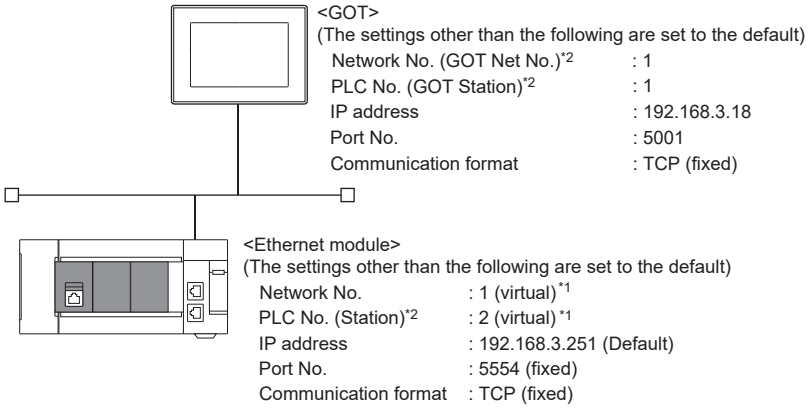
The Ethernet diagnostics of GX Works3 enables ping tests from the PLC.

For details on the Ethernet diagnostics of GX Works3, refer to the following manual.

📖MELSEC iQ-F series manuals

■When the GOT's communication format is TCP

- System configuration



*1 Although the setting is nonexistent on the PLC side, set a virtual value on the GOT side.

☞ • [Controller Setting] and [Connected Ethernet Controller Setting] of GT Designer3

*2 For the following settings, the setting names are different on the PLC side and the GOT side.

Setting	Setting name		
	PLC side	GOT side	
		Controller setting	Connected Ethernet controller setting
Network number	[Network No.]	[GOT Net No.]	[Net No.]
PLC number	[Station No.]	[GOT Station]	[Station No.]

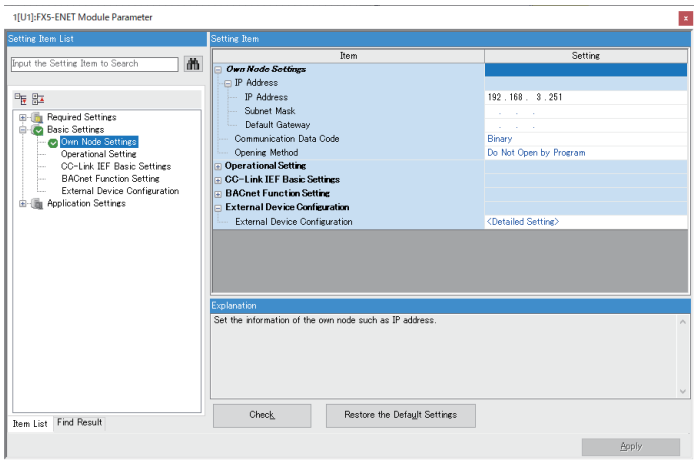
• [Module Parameter] of GX Works3

For the connection with FX5-ENET or FX5-ENET/IP, use GX Works3 version 1.075D or later.

For the connection with FX5-EIP, use GX Works3 version 1.120A or later.

Module parameters of the Ethernet module

Set [Module Parameter] of the port under [Module information].

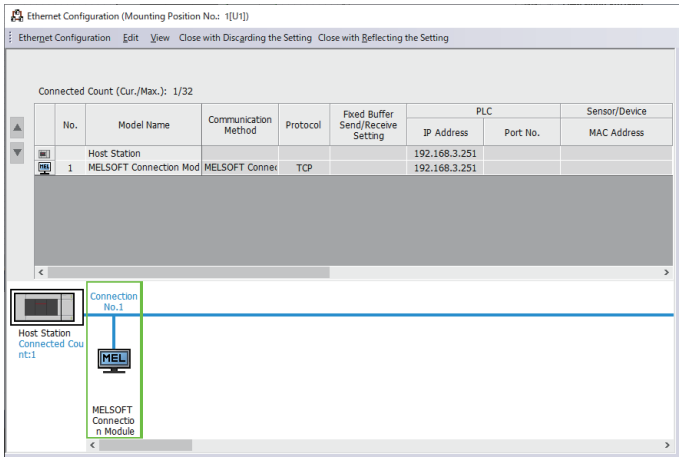


○: Necessary, △: As necessary, —: Not necessary

Item	Setting value	Setting for GOT connection
[IP Address]	192.168.3.251	○
[Subnet Mask]	—	—
[Default Gateway]	—	—
[Communication Data Code]	(Use default value)	—
[Opening Method]	(Use default value)	—
[External Device Configuration]	☞ Target device connection configuration settings	○

Target device connection configuration settings

Configure the settings for all the connected GOTs.



Item	Setting value
[Communication Method]	MELSOFT connection
[Protocol]	TCP

• [Controller Setting] and [Connected Ethernet Controller Setting] of GT Designer3

For the setting method of [Controller Setting] and [Connected Ethernet Controller Setting] in GT Designer3, refer to the following.

☞ Page 315 GOT side settings

Point

[Connected Ethernet Controller Setting] for connection to Ethernet module (MELSEC iQ-F series)
The setting items for the network number and station number do not exist on the PLC side.
Set the network number and station number on the GOT side.
When doing so, set a network number not used in the system.

Controller settings

Item	Setting value
[GOT Net No.]	1
[GOT Station]	1
[GOT Communication Port No.]	5001
[Retry]	3 times
[Startup Time]	3 seconds
[Timeout Time]	3 seconds
[Delay Time]	0 ms

GOT Ethernet settings

Item	Setting value
[GOT IP Address]	192.168.3.18
[Subnet Mask]	255.255.255.0
[Default Gateway]	0.0.0.0
[Peripheral S/W Communication Port No.]	5015
[Transparent Port No.]	5014

Connected Ethernet controller settings

Item		Setting value
Ethernet setting No. 1	[Host]	*
	[Net No.]	1*1
	[Station No.]	2*2
	[Unit Type]	FX5-ENET
	[IP Address]	192.168.3.251
	[Port No.]	5554
	[Communication]	TCP

*1 Set the same value as the GOT net number.
*2 Set a value different from the GOT station number.

• Checking the communication state of the built-in Ethernet port CPU

When using Windows Command Prompt

Execute a ping command in Windows Command Prompt.

1) At normal end

C:\>Ping 192.168.3.251

Reply from 192.168.3.251:bytes=32 time<1ms TTL=32

2) At abnormal end

C:\>Ping 192.168.3.251

Request timed out.

In the case of abnormal end

In the case of abnormal end, check the following and execute the ping command again.

Cable connecting condition

Switch settings and network parameter settings

Operation state of PLC CPU (faulty or not)

IP address of the Ethernet module specified by the ping command

Point

Ethernet diagnostics of GX Works3

The Ethernet diagnostics of GX Works3 enables ping tests from the PLC.

For details on the Ethernet diagnostics of GX Works3, refer to the following manual.

📖MELSEC iQ-F series manuals

Connection to CC-Link IE TSN-equipped module

This section describes the settings of the GOT and CC-Link IE TSN-equipped module in the system configuration shown below.

Point

- CC-Link IE TSN-equipped module

For details on the CC-Link IE TSN-equipped module, refer to the following manual.

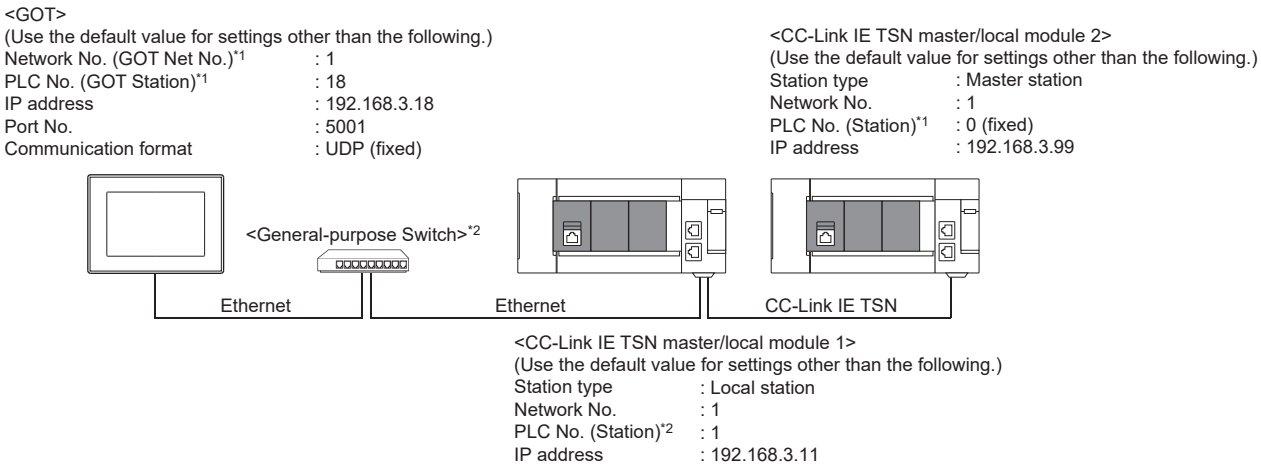
MELSEC iQ-F FX5 User's Manual (CC-Link IE TSN)

- Connecting multiple GOTs

When connecting multiple GOTs in the Ethernet network, set a different value for [GOT Station] for each GOT.

Page 318 When connecting multiple GOTs

■System configuration



*1 For the following settings, the setting names are different on the PLC side and the GOT side.

Setting	Setting name		
	PLC side	GOT side	
		Controller setting	Connected Ethernet controller setting
Network number	[Network No.]	[GOT Net No.]	[Net No.]
PLC number	[Station]	[GOT Station]	[Station]

*2 General-purpose Switch is required to connect the GOT and the CC-Link IE TSN master/local module.
For usable General-purpose Switches, refer to the following.
MELSEC iQ-F FX5 User's Manual (CC-Link IE TSN)

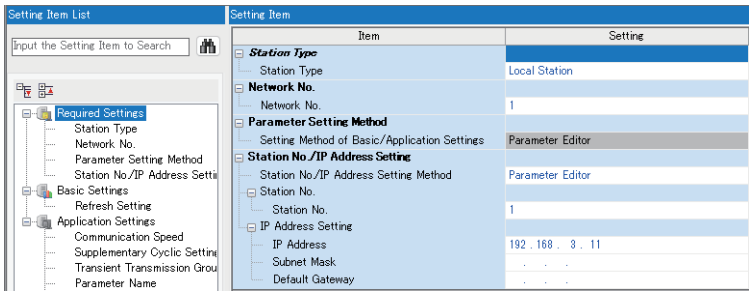
■[Module Parameter] of GX Works3

For details on the settings of the PLC, refer to the following manual.

📖MELSEC iQ-F FX5 User's Manual (CC-Link IE TSN)

Ex.

Settings of CC-Link IE TSN master/local module 1



Item	Setting value	
	CC-Link IE TSN master/local module 1	CC-Link IE TSN master/local module 2
[Station Type]	Local station	Master station
[Network No.]	1	1
[Station No.]	1	0
[IP Address]	192.168.3.11	192.168.3.99

■[Controller Setting] and [Connected Ethernet Controller Setting] of GT Designer3

For the setting method of [Controller Setting] and [Connected Ethernet Controller Setting] in GT Designer3, refer to the following.

☞ Page 315 GOT side settings

- Controller settings

Item	Setting value
[GOT Net No.]	1
[GOT Station]	18
[GOT Communication Port No.]	5001
[Retry]	3 times
[Startup Time]	3 seconds
[Timeout Time]	3 seconds
[Delay Time]	0 ms

- GOT Ethernet settings

Item	Setting value
[GOT IP Address]	192.168.3.18
[Subnet Mask]	255.255.255.0
[Default Gateway]	0.0.0.0
[Peripheral S/W Communication Port No.]	5015
[Transparent Port No.]	5014

- Connected Ethernet controller settings

Item		Setting value
Ethernet setting No. 1	[Host]	*
	[Net No.]	1*1
	[Station No.]	1*2
	[Unit Type]	FX5-CCLGN-MS/FX5-nSSC-G
	[IP Address]	192.168.3.11
	[Port No.]*3	5001
	[Communication]*3	UDP

*1 Set the same value as the GOT net number.
*2 Set a value different from the GOT station number.
*3 The following settings can also be configured for [Port No.] and [Communication].
[Port No.]: 5554
[Communication]: TCP

■Checking the communication status of the CC-Link IE TSN-equipped module

- When using Windows Command Prompt

1) At normal end

C:\>Ping 192.168.3.11

Reply from 192.168.3.11:bytes=32 time<1ms TTL=32

2) At abnormal end

C:\>Ping 192.168.3.11

Request timed out.

- In the case of abnormal end

In the case of abnormal end, check the following and execute the ping command again.

Cable connecting condition

Switch settings and network parameter settings

Operation state of PLC CPU (faulty or not)

IP address of the CC-Link IE TSN-equipped module specified by the ping command

Point

Ethernet diagnostics of GX Works3

The Ethernet diagnostics of GX Works3 enables ping tests from the PLC.

For details on the Ethernet diagnostics of GX Works3, refer to the following manual.

📖MELSEC iQ-F series manuals

Connection to built-in Ethernet port of Motion module

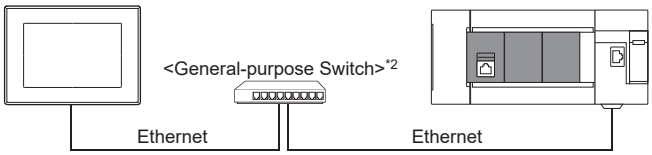
This section describes the settings of the GOT and Motion module in the system configuration shown below.

Point

For details on the Motion module, refer to the following manual.
MELSEC iQ-F FX5 Motion Module/Simple Motion Module User's Manual (Startup)

■System configuration

<GOT>
(Use the default value for settings other than the following.)
Network No. (GOT Net No.)*1 : 1
PLC No. (GOT Station)*1 : 18
IP address : 192.168.3.18
Port No. : 5001
Communication format : UDP



<Motion module>
(Use the default value for settings other than the following.)
Network No. : 1
PLC No. (Station)*1 : 0 (fixed)
IP address : 192.168.3.249

*1 For the following settings, the setting names differ on the PLC side and on the GOT side.

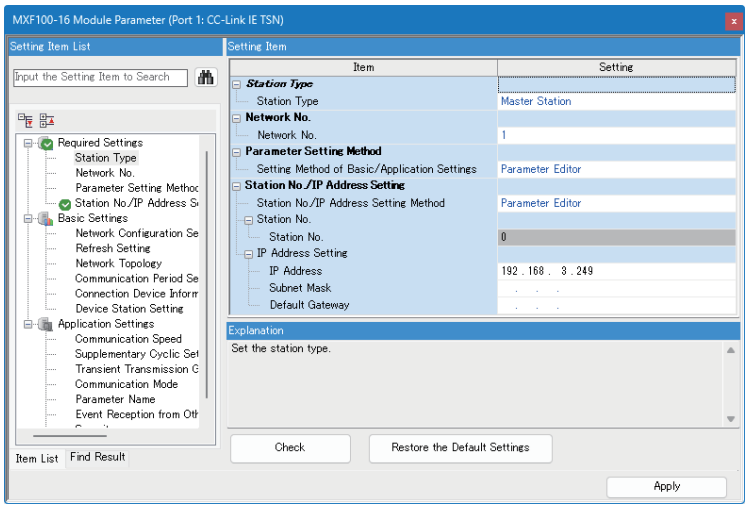
Setting	Setting name		
	PLC side	GOT side	
		Controller setting	Connected Ethernet controller setting
Network number	[Network No.]	[GOT Net No.]	[Net No.]
PLC number	[Station]	[GOT Station]	[Station]

*2 For usable General-purpose Switches, refer to the following.
MELSEC iQ-F FX5 Motion Module/Simple Motion Module User's Manual (Startup)

■[Module Parameter (Network)] of GX Works3

For details on the Motion module side settings, refer to the following.

📖MELSEC iQ-F FX5 Motion Module/Simple Motion Module User's Manual (Startup)



Item	Setting value
[Network No.]	1
[IP Address]	192.168.3.249

■[Controller Setting] and [Connected Ethernet Controller Setting] of GT Designer3

For the setting method of [Controller Setting] and [Connected Ethernet Controller Setting] in GT Designer3, refer to the following.

☞ Page 315 GOT side settings

- Controller settings

Item	Setting value
[GOT Net No.]	1
[GOT Station]	18
[GOT Communication Port No.]	5001
[Retry]	3 times
[Startup Time]	3 seconds
[Timeout Time]	3 seconds
[Delay Time]	0 ms

- GOT Ethernet settings

Item	Setting value
[GOT IP Address]	192.168.3.18
[Subnet Mask]	255.255.255.0
[Default Gateway]	0.0.0.0
[Peripheral S/W Communication Port No.]	5015
[Transparent Port No.]	5014

- Connected Ethernet controller settings

Item		Setting value
Ethernet setting No. 1	[Host]	*
	[Net No.]	1*1
	[Station]	0
	[Unit Type]	FX5-CCLGN-MS/FX5-nSSC-G
	[IP Address]	192.168.3.249
	[Port No.]	5001
	[Communication]*2	UDP

*1 Set the same value as the GOT net number.

*2 If you set [Communication] to [TCP], set [Port No.] to [5002].

■Checking the communication status of the Motion module

• When using Windows Command Prompt

Execute a ping command in Windows Command Prompt.

1) At normal end

C:\>Ping 192.168.3.249

Reply from 192.168.3.249:bytes=32 time<1ms TTL=32

2) At abnormal end

C:\>Ping 192.168.3.249

Request timed out.

• In the case of abnormal end

In the case of abnormal end, check the following and execute the ping command again.

IP address of the Motion module specified by the ping command

Operation state of PLC CPU (faulty or not)

Connection status of the Motion module

Cable connecting condition

Switch settings and network parameter settings

Connection to Motion module through built-in Ethernet port of PLC

For the connection between the GOT and the built-in Ethernet port CPU of the MELSEC iQ-F series, refer to the following.

☞ Page 303 Connection to the built-in Ethernet port CPU of the MELSEC iQ-F series

For details on the Motion module, refer to the following manual.

📖MELSEC iQ-F FX5 Motion Module/Simple Motion Module User's Manual (Startup)

4.8.5 Access range for monitoring

Only the connected CPU can be accessed.

4.9 MELSEC-Q series (Built-in Ethernet port connection)

☞ Page 341 Connectable devices
☞ Page 342 System configuration
☞ Page 349 GOT side settings
☞ Page 359 PLC side settings
☞ Page 390 Access range for monitoring

4.9.1 Connectable devices

The following table shows the connectable models.

○: Supported, —: Not supported

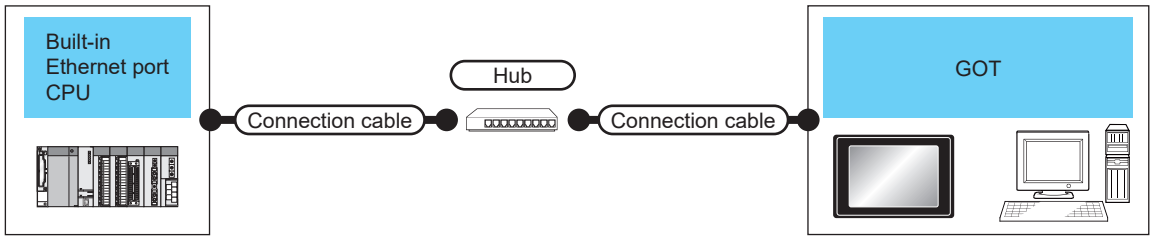
Controller	Model	Clock	Connectable model
MELSEC-Q (Q mode)	Q03UDECPU Q04UDEHCPU Q06UDEHCPU Q10UDEHCPU Q13UDEHCPU Q20UDEHCPU Q26UDEHCPU Q50UDEHCPU Q100UDEHCPU	○	GT37 SoftGOT3000
	Q03UDVCPU Q04UDVCPU Q06UDVCPU Q13UDVCPU Q26UDVCPU	○	GT37 SoftGOT3000
CNC C70	Q173NCCPU*3	○	GT37 SoftGOT3000
C Controller module (Q series)	Q12DCCPU-V*1 Q24DHCCPU-V/VG Q24DHCCPU-LS Q26DHCCPU-LS	○	GT37 SoftGOT3000
Robot controller (Q series)	CR800-Q (Q172DSRCPU)*2	○	GT37 SoftGOT3000

*1 Use a module having a serial number stating with 12042 or later in the first 5 digits.
*2 Ethernet connections can be established via the PERIPHERAL I/F of the robot controller or either of the following.
- Ethernet module (QJ71E71)
- Ethernet port built in the PLC CPU

*3 Connect the cable to the DISPLAY I/F on the Q173NCCPU.

4.9.2 System configuration

Connection to the built-in Ethernet port CPU



For details on the connection cables and the maximum segment length, refer to the following.

☞ Page 343 Connection cable
☞ Page 343 Maximum segment length

For details on the maximum number of connected devices, refer to the following.

☞ Page 344 Maximum number of connected devices

Controller	Connection cable	GOT	
		Interface	Model
MELSEC-QnUDE(H)*1*2 MELSEC-QnUD(P)V*1*2 CR800-Q (Q172DSRCPU)	Twisted pair cable	Built-in Ethernet interface of GOT	GT37 SoftGOT3000
		Ethernet interface of personal computer	GT37 SoftGOT3000
C Controller module (Q series)	Twisted pair cable	Built-in Ethernet interface of GOT	GT37 SoftGOT3000
		Ethernet interface of personal computer	GT37 SoftGOT3000

*1 For the system configuration of the built-in Ethernet port CPU, refer to the manual of the PLC to be used.
*2 For [Unit Type] to be selected in [Connected Ethernet Controller Setting] in GT Designer3, refer to the following.
☞ Page 356 [Connected Ethernet Controller Setting]

■Connection cable

Use a connection cable that meets the following standards.

Standard	Category
10BASE-T	Shielded twisted pair cable (STP) or unshielded twisted pair cable (UTP) of category 3 or higher
100BASE-TX	Shielded twisted pair cable (STP) or unshielded twisted pair cable (UTP) of category 5 or higher
1000BASE-T	Shielded twisted pair cable (STP) or unshielded twisted pair cable (UTP) of category 5e or higher

The destination device connected with the twisted pair cable varies with the configuration of the Ethernet network system used.

Connect the cable to the Ethernet module, hub, or other system equipment corresponding to the applicable Ethernet network system.

Use cables, connectors, and hubs that meet the IEEE802.3 10BASE-T/100BASE-TX/1000BASE-T standards.

When only one GOT is connected, the GOT can be directly connected to the controller without a hub.

■Maximum segment length

The maximum segment length (length between a hub and a node) is 100 m.

The maximum length depends on the Ethernet equipment used.

The following shows the number of connectable hubs when a repeater hub is used.

- 10BASE-T: Up to 4 for a cascade connection (within 500 m)
- 100BASE-TX: Up to 2 for a cascade connection (within 205 m)
- 1000BASE-T: The number differs depending on the hub to be used.

When switching hubs are used, there is no theoretical limit to the number of cascade connections between switching hubs.

For the limit, contact the switching hub manufacturer.

Precautions

When multiple network devices (including GOTs) are connected in the same segment, the network load increases and the transmission speed between the GOT and PLC may be reduced.

The following actions may improve the communication performance.

- Use a switching hub compatible with 1000BASE-T (1 Gbps) or more.
- Reduce the number of devices monitored by the GOT.

■Maximum number of connected devices

Up to 128 CPU modules can be connected to channels No. 1 to No. 4 of one GOT. (16 or less recommended)

The following shows the number of connectable controllers per GOT channel and the number of GOTs connectable to one controller.

Controller				GOT	
Model		Number of GOTs connectable to one PLC		Model	Number of connectable controllers per GOT channel
		UDP	TCP		
MELSEC-QnUDE(H) MELSEC-QnUD(P)V		16 (UDP and TCP in total)		GT37 SoftGOT3000	63 (16 or less recommended)
CR800-Q (Q172DSRCPU)		16 (UDP and TCP in total)		GT37 SoftGOT3000	63 (16 or less recommended)
C Controller module (Q series)	Q12DCCPU-V	Basic mode: 1 Extended mode: 16	Basic mode: 1 Extended mode: 16	GT37 SoftGOT3000	63 (16 or less recommended)
	Q24DHCCPU-V/VG/LS	16	16	GT37 SoftGOT3000	63 (16 or less recommended)

■Connection to the built-in Ethernet port of the built-in Ethernet port CPU

Connect the GOT after turning on the network equipment such as the built-in Ethernet port CPU or hub to enable communications.

If the GOT cannot communicate with the built-in Ethernet port CPU, a communication error may occur on the GOT.

■Connection via the multiple CPU system

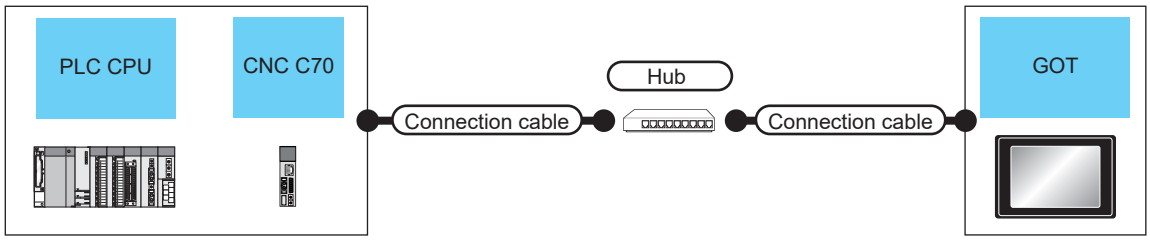
When the GOT is connected via the multiple CPU system, the PLC takes 10 seconds or more to run.

If you start the GOT before the PLC runs, a system alarm occurs.

Adjust the time to display the GOT startup screen to prevent a system alarm.

📖GT Designer3 (GOT3000) Screen Design Manual

Connection to Display I/F



For details on the connection cables and the maximum segment length, refer to the following.

☞ Page 346 Connection cable
☞ Page 346 Maximum segment length

For details on the maximum number of connected devices, refer to the following.

☞ Page 346 Maximum number of connected devices

Controller	Connection cable	GOT	
		Interface	Model
CNC C70 (Q173NCCPU)*1*2	Twisted pair cable	Built-in Ethernet interface of GOT	GT37 SoftGOT3000
		Ethernet interface of personal computer	GT37 SoftGOT3000

*1 For the system configuration of the CNC C70, refer to the following manual.
📖C70 Series SET UP MANUAL

*2 Select [Q17nNC] for [Unit Type] in [Connected Ethernet Controller Setting] of GT Designer3.
For [Connected Ethernet Controller Setting] in GT Designer3, refer to the following.
☞ Page 356 [Connected Ethernet Controller Setting]

■Connection cable

Use a connection cable that meets the following standards.

Standard	Category
10BASE-T	Shielded twisted pair cable (STP) or unshielded twisted pair cable (UTP) of category 3 or higher
100BASE-TX	Shielded twisted pair cable (STP) or unshielded twisted pair cable (UTP) of category 5 or higher
1000BASE-T	Shielded twisted pair cable (STP) or unshielded twisted pair cable (UTP) of category 5e or higher

The destination device connected with the twisted pair cable varies with the configuration of the Ethernet network system used.

Connect the cable to the Ethernet module, hub, or other system equipment corresponding to the applicable Ethernet network system.

Use cables, connectors, and hubs that meet the IEEE802.3 10BASE-T/100BASE-TX/1000BASE-T standards.

When only one GOT is connected, the GOT can be directly connected to the controller without a hub.

■Maximum segment length

The maximum segment length (length between a hub and a node) is 100 m.

The maximum length depends on the Ethernet equipment used.

The following shows the number of connectable hubs when a repeater hub is used.

- 10BASE-T: Up to 4 for a cascade connection (within 500 m)
- 100BASE-TX: Up to 2 for a cascade connection (within 205 m)
- 1000BASE-T: The number differs depending on the hub to be used.

When switching hubs are used, there is no theoretical limit to the number of cascade connections between switching hubs.

For the limit, contact the switching hub manufacturer.

Precautions

When multiple network devices (including GOTs) are connected in the same segment, the network load increases and the transmission speed between the GOT and PLC may be reduced.

The following actions may improve the communication performance.

- Use a switching hub compatible with 1000BASE-T (1 Gbps) or more.
- Reduce the number of devices monitored by the GOT.

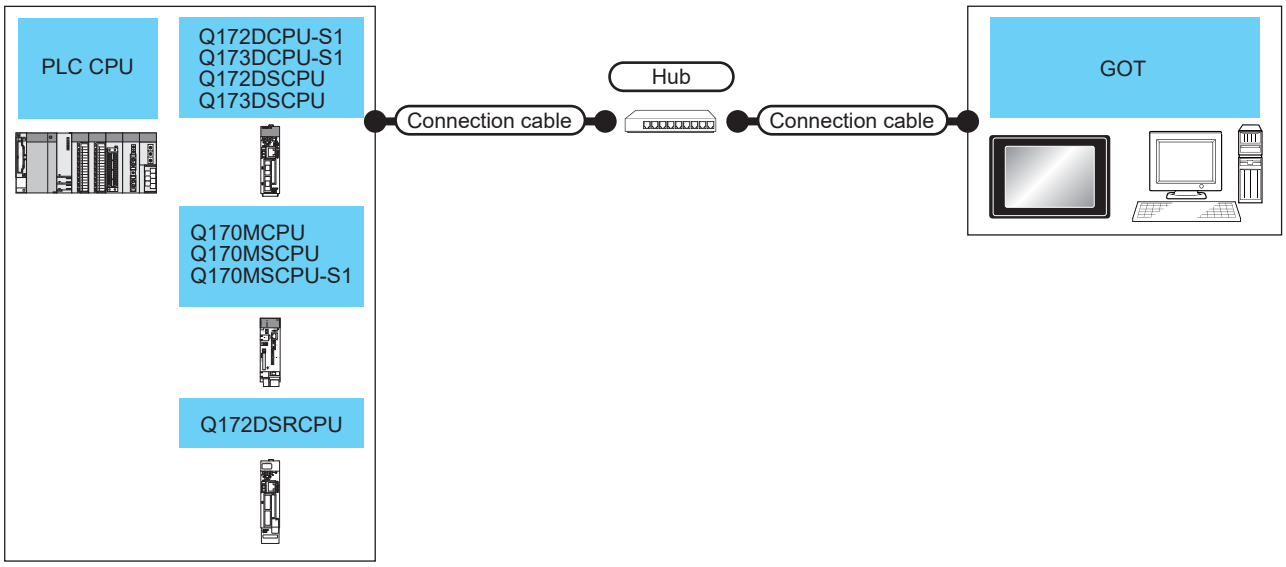
■Maximum number of connected devices

Up to 128 CPU modules can be connected to channels No. 1 to No. 4 of one GOT. (16 or less recommended)

The following shows the number of connectable controllers per GOT channel and the number of GOTs connectable to one controller.

Controller		GOT	
Model	**Number of GOTs connectable to one PLC**	**Model**	**Number of connectable controllers per GOT channel**
CNC C70 (Q173NCCPU)	16 GOTs for 1 network	GT37 SoftGOT3000	63 (16 or less recommended)

Connection to PERIPHERAL I/F



For details on the connection cables and the maximum segment length, refer to the following.

☞ Page 348 Connection cable
☞ Page 348 Maximum segment length

For details on the maximum number of connected devices, refer to the following.

☞ Page 348 Maximum number of connected devices

Controller*1	Connection cable	GOT	
		Interface	Model
Motion CPU (Q series) Q172DCPU-S1 Q173DCPU-S1 Q172DSCPU Q173DSCPU Q170MCPU Q170MSCPU Q170MSCPU-S1 MR-MQ100 CR800-Q (Q172DSRCPU)	Twisted pair cable	Built-in Ethernet interface of GOT	GT37 SoftGOT3000
		Ethernet interface of personal computer	GT37 SoftGOT3000

*1 Select [QnUD(P)V/QnUDE(H)] for [Unit Type] in [Connected Ethernet Controller Setting] of GT Designer3.
For [Connected Ethernet Controller Setting] in GT Designer3, refer to the following.
☞ Page 356 [Connected Ethernet Controller Setting]

Point

Access to other networks

Other networks cannot be accessed through the PERIPHERAL I/F.

■Connection cable

Use a connection cable that meets the following standards.

Standard	Category
10BASE-T	Shielded twisted pair cable (STP) or unshielded twisted pair cable (UTP) of category 3 or higher
100BASE-TX	Shielded twisted pair cable (STP) or unshielded twisted pair cable (UTP) of category 5 or higher
1000BASE-T	Shielded twisted pair cable (STP) or unshielded twisted pair cable (UTP) of category 5e or higher

The destination device connected with the twisted pair cable varies with the configuration of the Ethernet network system used.

Connect the cable to the Ethernet module, hub, or other system equipment corresponding to the applicable Ethernet network system.

Use cables, connectors, and hubs that meet the IEEE802.3 10BASE-T/100BASE-TX/1000BASE-T standards.

When only one GOT is connected, the GOT can be directly connected to the controller without a hub.

■Maximum segment length

The maximum segment length (length between a hub and a node) is 30 m.

The maximum length depends on the Ethernet equipment used.

The following shows the number of connectable hubs when a repeater hub is used.

- 10BASE-T: Up to 4 for a cascade connection (within 500 m)
- 100BASE-TX: Up to 2 for a cascade connection (within 205 m)
- 1000BASE-T: The number differs depending on the hub to be used.

When switching hubs are used, there is no theoretical limit to the number of cascade connections between switching hubs.

For the limit, contact the switching hub manufacturer.

Precautions

When multiple network devices (including GOTs) are connected in the same segment, the network load increases and the transmission speed between the GOT and PLC may be reduced.

The following actions may improve the communication performance.

- Use a switching hub compatible with 1000BASE-T (1 Gbps) or more.
- Reduce the number of devices monitored by the GOT.

■Maximum number of connected devices

Up to 128 CPU modules can be connected to channels No. 1 to No. 4 of one GOT. (16 or less recommended)

The following shows the number of connectable controllers per GOT channel and the number of GOTs connectable to one controller.

Controller			GOT	
Model	Number of GOTs connectable to one PLC		Model	Number of connectable controllers per GOT channel
	UDP	TCP		
Motion CPU (Q series) Q172DCPU-S1 Q173DCPU-S1 Q172DSCPU Q173DSCPU Q170MCPU Q170MSCPU Q170MSCPU-S1 MR-MQ100 CR800-Q (Q172DSRCPU)	16	16	GT37 SoftGOT3000	128

4.9.3 GOT side settings

[GOT Ethernet Setting]

Set the GOT Ethernet interface in GT Designer3.

Item	Description
[GOT IP Address Setting]	Set the IP address of the GOT.
[GOT Ethernet Common Setting]	Set the default gateway and other common items for GOT Ethernet interfaces.
[IP filter Setting]	The GOT allows or blocks access from IP addresses specified in the filtering list.

For details on the setting, refer to the following.

📖GT Designer3 (GOT3000) Screen Design Manual

Set the GT SoftGOT3000 Ethernet interface on the personal computer.

Precautions

Do not use 0 and 255 at the end of an IP address.

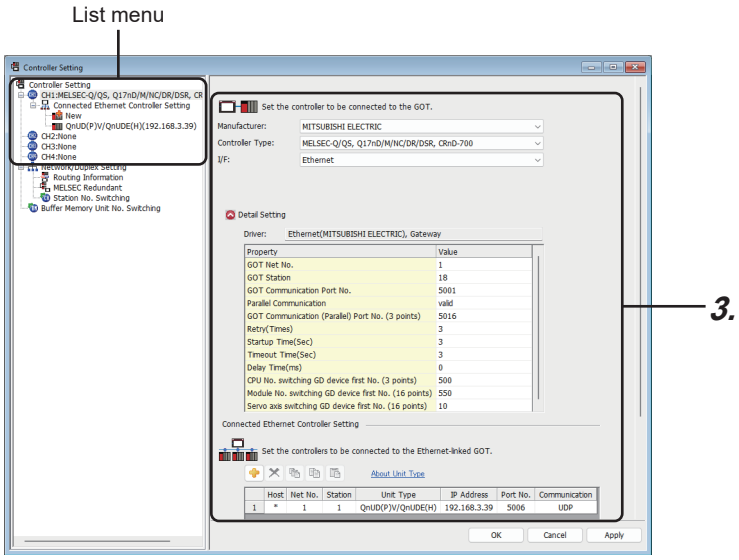
(Numbers of *.*.*.0 and *.*.*.255 are used by the system.)

The GOT may not monitor the controller correctly with the above numbers.

Consult with the administrator of the network before setting an IP address to the GOT.

[Controller Setting]

Set the channel of the connected controller.



Operating procedure

1. Select [Common] → [Controller Setting] from the menu.

2. In the [Controller Setting] window, select the channel number to be used from the list menu.

3. Set the following items.

Item	Description
[Manufacturer]	[MITSUBISHI ELECTRIC]
[Controller Type]	[MELSEC-Q/QS,Q17nD/M/NC/DR/DSR,CRnD-700]
[I/F]	[Ethernet]
[Detail Setting]	Configure the settings according to the usage environment. ☞ Page 351 [Detail Setting]
[Connected Ethernet Controller Setting]	Configure the settings according to the controller to be connected. ☞ Page 356 [Connected Ethernet Controller Setting]

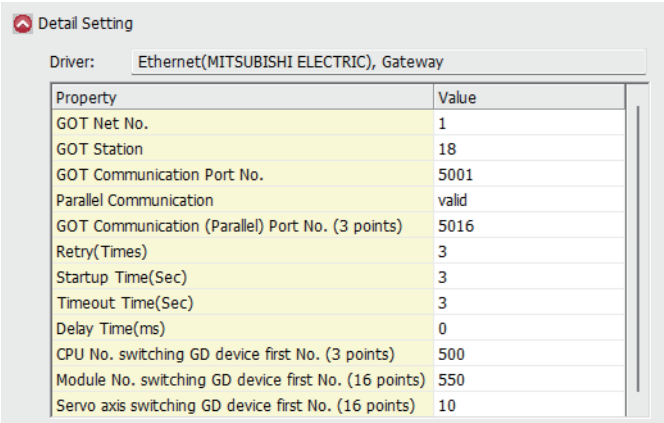
4. When you have completed the settings, click the [OK] button.

Point

The controller settings can be checked in [I/F Communication Setting].
For details, refer to the following.
📖GT Designer3 (GOT3000) Screen Design Manual

■[Detail Setting]

Configure the settings according to the usage environment.



Item	Description	Range
[Driver]	This item appears when communication drivers are selectable according to the settings of [Controller Type] and [I/F].	[Ethernet(MITSUBISHI ELECTRIC), Gateway]
[GOT Net No.]	Set the network number of the GOT.	[1] to [239]
[GOT Station]*1*2	Set the station number of the GOT.	[1] to [120]
[GOT Communication Port No.]*3	Set the GOT port number for connection with the Ethernet module.	[1024] to [5010], [5014] to [49152], [49171] to [65534]
[Parallel Communication]	Enables or disables the parallel communication. When this setting is enabled, [GOT Communication (Parallel) Port No. (3 points)] can be set. When communicating with multiple devices on a single channel, distributing the communication ports can reduce the communication load.	[valid], [invalid]
[GOT Communication (Parallel) Port No. (3 points)]	Set the GOT port number used for the parallel communication.	• [Parallel Communication] is [invalid]: [0] • [Parallel Communication] is [valid]: [1024] to [5008], [5014] to [49150], [49171] to [65532]
[Retry(Times)]	Set the number of retries to be performed when a communication timeout occurs. When receiving no response after retries, the communication times out.	GOT: [0] times to [5] times GT SoftGOT3000: [0] times to [10] times
[Startup Time]	Set the time period from the GOT startup until the start of communication with the PLC CPU.	[3] seconds to [255] seconds
[Timeout Time]	Set the time period for a communication to time out.	[1] second to [90] seconds
[Delay Time]	Set the delay time for reducing the load of the network and destination PLC.	[0] ms to [10000] ms
[CPU No. switching GD device first No. (3 points)]	Set the start device number of the GD devices for CPU number switching. For details, refer to the following. ☞ Page 353 Start device number of the GD devices for CPU number switching	[0] to [65520]
[Module No. switching GD device first No. (16 points)]	Set the start device number of the GD devices for module number switching. For details, refer to the following. ☞ Page 354 Start device number of the GD devices for module number switching	[0] to [65520]
[Servo axis switching GD device first No. (16 points)]	Set the start device number of the GD devices for servo axis switching. For details, refer to the following. ☞ Page 355 Start device number of the GD devices for servo axis switching	[0] to [65520]

*1 Set values not set for [Station] in [Connected Ethernet Controller Setting].
☞ Page 356 [Connected Ethernet Controller Setting]

*2 When connecting multiple GOTs in the Ethernet network, set a different value for [GOT Station] for each GOT.

*3 For connection to the QCPU, do not set [5009] for the GOT communication port number. Doing so disables communications.

Point

• Controller settings using the GT37 utility

The controller settings can be changed in [Communication Settings] of the GT37 utility after writing [Communication Settings] of project data to GT37.

For details on the GT37 utility, refer to the following manual.

GOT3000 Series User's Manual (Utility & Maintenance Functions)

• Priority of the settings in [Controller Setting]

When the settings are configured in GT Designer3 or in the GT37 utility, the latest settings are effective.

■When connecting multiple GOTs

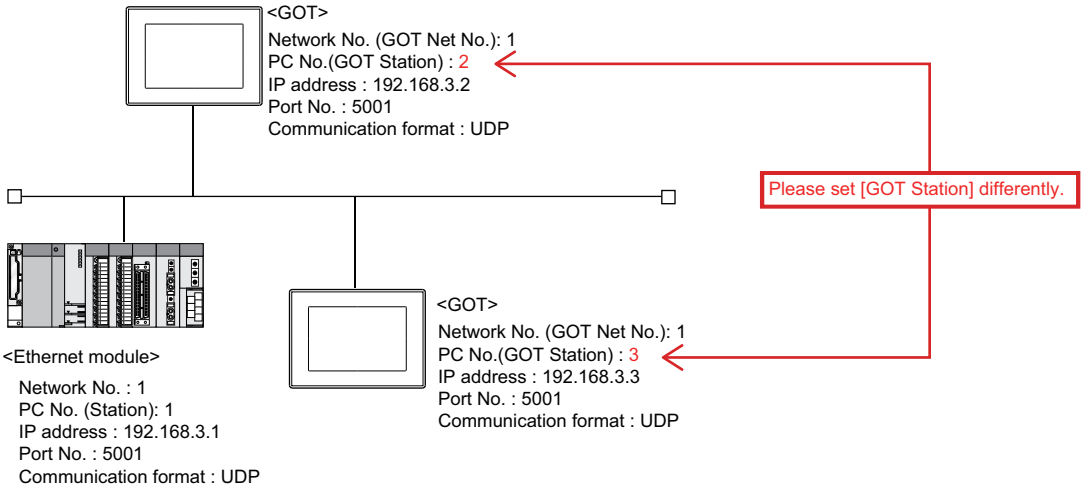
• Settings for [GOT Station]

When connecting multiple GOTs in the Ethernet network, set a different value for [GOT Station] for each GOT.

☞ Page 351 [Detail Setting]

The following shows a system configuration example.

Ex.



• Settings to start up multiple GOTs simultaneously

When connecting multiple GOTs to one built-in Ethernet port CPU, adjust the timing of GOT communication start.

When the communication concentrates on the PLC, the communication between GOT and PLC becomes difficult, and the monitoring by GOT may not start.

As a method for adjusting the timing, communicating one GOT alone first, and then communicating the other GOTs is effective.

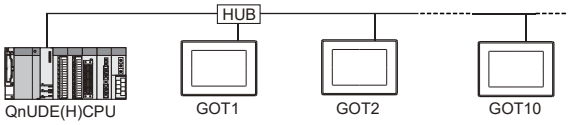
Set the following items on each GOT.

[Startup Time] in [Detail Setting] or [Title Display Time] of [GOT Setup]

[Timeout Time] in [Detail Setting]

The following shows a setting example.

Ex.



Item	GOT1	GOT2	GOT10
Startup Time	3sec (default)	4sec	4sec
Timeout Time	3sec (default)	4sec	4sec

■Start device number of the GD devices for CPU number switching

• Indirect specification of a CPU number

[CPU No.] can be indirectly specified with the GOT internal registers (GD devices) by specifying a value (100 to 102) to [CPU No.] in the device setting dialog in GT Designer3.

Set the start device number of the GD devices to be used in [CPU No. switching GD device first No. (3 points)].

[CPU No.] is specified with three consecutive GD devices, starting from the set device number.

When [500] is set to [CPU No. switching GD device first No. (3 points)], GD500 to GD502 are used to specify [CPU No.] as shown in the following table.

CPU No.	GD device	Setting range
100	GD500	1 to 4 Setting a value outside the range causes a communication timeout error. Specifying a nonexistent CPU number or a CPU number not supporting a multiple CPU system with a device causes a controller error.
101	GD501	
102	GD502	

• Indirect specification of a CPU number on the initially displayed screen

Set [CPU No. switching GD device first No. (3 points)] so that the values of the GD devices are retained and monitored upon the GOT startup.

• Indirect specification of a CPU number for multi-channel connection

If the setting range of [CPU No. switching GD device first No. (3 points)] set for each channel overlaps, the monitoring target CPU number set to each channel is switched simultaneously.

Set [CPU No. switching GD device first No. (3 points)] for each channel so that the setting range does not overlap.

• Indirect specification of a station number and a CPU number for multi-channel connection

When GD10 to GD25 are used to specify the station number of an inverter or non-Mitsubishi temperature controller connected, setting [10] to [CPU No. switching GD device first No. (3 points)] in a different channel switches the monitoring target CPU number and station number of an inverter or non-Mitsubishi temperature controller set to each channel simultaneously.

Set [CPU No. switching GD device first No. (3 points)] so that the setting range does not overlap the station number of an inverter or non-Mitsubishi temperature controller.

■Start device number of the GD devices for module number switching

• Indirect specification of a module number

For connection via a Simple Motion module, [Unit No.] can be specified with the GOT internal registers (GD devices) by specifying a value (100 to 10F) to [Unit No.] in the device setting dialog in GT Designer3.

Set the start device number of the GD devices to be used in [Module No. switching GD device first No. (16 points)].

[Unit No.] is specified with 16 consecutive GD devices, starting from the set device number.

When [550] is set to [Module No. switching GD device first No. (16 points)], GD550 to GD565 are used to specify [Unit No.] as shown in the following table.

Module No.	GD device	Setting range
100	GD550	00 to FF Setting a value outside the above range causes a device range error.
101	GD551	
102	GD552	
103	GD553	
104	GD554	
105	GD555	
106	GD556	
107	GD557	
108	GD558	
109	GD559	
10A	GD560	
10B	GD561	
10C	GD562	
10D	GD563	
10E	GD564	
10F	GD565	

• Indirect specification of a module number on the initially displayed screen

Set [Module No. switching GD device first No. (16 points)] so that the values of the GD devices are retained and monitored upon the GOT startup.

• Indirect specification of a module number for multi-channel connection

If the setting range of [Module No. switching GD device first No. (16 points)] set for each channel overlaps, the module number of the Simple Motion module via the servo amplifier device of each channel is switched simultaneously.

Set [Module No. switching GD device first No. (16 points)] for each channel so that the setting range does not overlap.

• Indirect specification of a station number and a module number for multi-channel connection

When GD10 to GD25 are used to specify the station number of an inverter or non-Mitsubishi temperature controller connected, setting [10] to [Module No. switching GD device first No. (16 points)] switches the module number of the Simple Motion module via the servo amplifier device and the station number of an inverter or non-Mitsubishi temperature controller set to each channel simultaneously.

Set [Module No. switching GD device first No. (16 points)] so that the setting range does not overlap the station number of an inverter or non-Mitsubishi temperature controller.

■Start device number of the GD devices for servo axis switching

• Indirect specification of a servo axis number

For connection via a Motion CPU or Simple Motion module, a servo axis number can be indirectly specified with GOT internal registers (GD devices) by specifying a value (100 to 115) to the axis number of the servo amplifier device.

Set the start device number of the GD devices to be used in [Servo axis switching GD device first No. (16 points)].

Specify a servo axis number with 16 consecutive GD devices, starting the set device number.

When [10] is set to [Servo axis switching GD device first No. (16 points)], GD10 to GD25 are used to specify a servo axis number as shown in the following table.

Servo axis No.	GD device	Setting range
100	GD10	1 to 64 Setting a value outside the above range causes a device range error.
101	GD11	
102	GD12	
103	GD13	
104	GD14	
105	GD15	
106	GD16	
107	GD17	
108	GD18	
109	GD19	
110	GD20	
111	GD21	
112	GD22	
113	GD23	
114	GD24	
115	GD25	

• Indirect specification of a servo axis number on the initially displayed screen

Set [Servo axis switching GD device first No. (16 points)] so that the values of the GD devices are retained and monitored upon the GOT startup.

• Indirect specification of a servo axis number for multi-channel connection

If the setting rage of [Servo axis switching GD device first No. (16 points)] set for each channel overlaps, the axis number of the servo amplifier of each channel is switched simultaneously.

Set [Servo axis switching GD device first No. (16 points)] for each channel so that the setting range does not overlap.

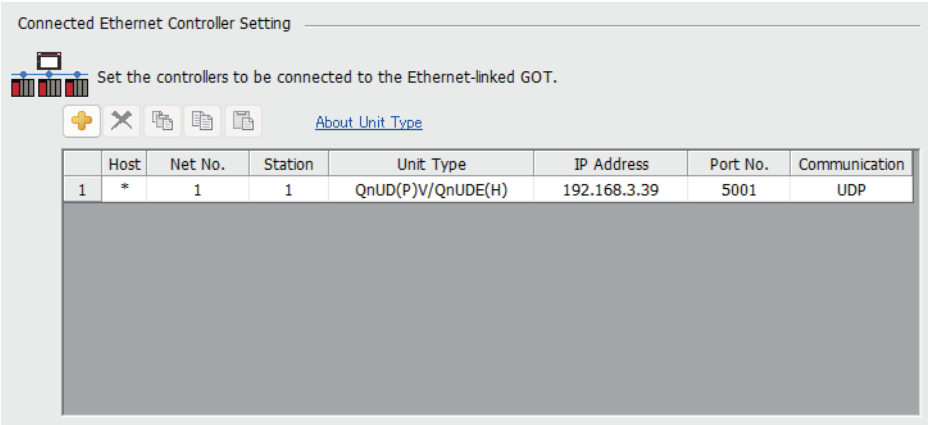
• Indirect specification of a station number and a servo axis number for multi-channel connection

When GD10 to GD25 are used to specify the station number of an inverter or non-Mitsubishi temperature controller connected, setting [10] to [Servo axis switching GD device first No. (16 points)] switches the axis number of the servo amplifier and the station number of an inverter or non-Mitsubishi temperature controller set to each channel simultaneously.

Set [Servo axis switching GD device first No. (16 points)] so that the setting range does not overlap the station number of an inverter or non-Mitsubishi temperature controller.

■[Connected Ethernet Controller Setting]

Set the controller to be connected to the GOT by Ethernet.



Item	Description	Range
[Host]	The host is displayed. It refers to a station that can be connected without setting a station number. The host is indicated with an asterisk (*).	—
[Net No.]	Set the network number of the connected Ethernet equipment.	[1] to [239]
[Station]*2	Set the station number of the connected Ethernet equipment.	[1] to [64]
[Unit Type]	Select the model of the connected Ethernet equipment.	☞ Page 356 [Unit Type]
[IP Address]	Set the IP address of the connected Ethernet equipment.	[0.0.0.0] to [255.255.255.255]
[Port No.]*1	Set the port number of the connected Ethernet equipment.	☞ Page 356 [Port No.]
[Communication]	Set the communication format of the connected Ethernet equipment.	[UDP], [TCP]

*1 Match the port number of the CPU and [Port No.] of [Connected Ethernet Controller Setting].

*2 Set values not set for [GOT Station] in [Detail Setting].
☞ Page 351 [Detail Setting]

■[Unit Type]

Select an item for [Unit Type] as shown below.

GOT connection destination	[Unit Type]
QnUD(P)V, QnUDE(H)	[QnUD(P)V/QnUDE(H)]
Q17nNCCPU	[Q17nNC]
C Controller module (Q series)	[QnD(H)CCPU]
CR800-Q (Q172DSRCPU)	[Q17nDSR]

■[Port No.]

The setting range is as follows:

[Unit Type]	[Port No.]	[Communication]
[QnUD(P)V/QnUDE(H)]	[5001] (Select this item to enable the network number and PLC number of the built-in Ethernet port CPU.)	[UDP]
	[5006]	[UDP]
	[5007]	[TCP]
[Q17nNC]	[5001]	[UDP]
	[5002]	[TCP]
[QnD(H)CCPU]	[5006]	[UDP]
	[5007]	[TCP]
[Q17nDSR]	[5001]	[UDP]

■When selecting [QnUD(P)V/QnUDE(H)] for [Unit Type]

When [QnUD(P)V/QnUDE(H)] is selected for [Unit Type], [Port No.] can be changed.

- When [Port No.] is set to [5001]

For QnUDVCPU having a serial number starting with 17052 or later in the first 5 digits, a network number and a PLC number can be set for the built-in Ethernet port CPU (Port number: 5001).

The network number and station number in the object setting dialog must match the network number and PLC number of the built-in Ethernet port CPU.

For connection to a built-in Ethernet port CPU with [Unit Type] other than [QnUD(P)V/QnUDE(H), do not set [5001] to [Port No.].

Otherwise, monitoring becomes unavailable.

- When [Port No.] is set to [5006] or [5007]

There is no setting for the network number and PLC number of built-in Ethernet port CPU (Port number: 5006, 5007).

The values of [Network No.] and [Station No.] in the object setting dialog must be the same as the values of [Net No.] and [Station] in [Connected Ethernet Controller Setting].

■Connection to the built-in Ethernet port PLC with [Communication] set to [TCP]

During communication with the built-in Ethernet port PLC with [Communication] set to [TCP], using the FA transparent function may change the setting from [TCP] to [UDP] and start communication with the PLC with the new setting.

In this case, communication with the built-in Ethernet port PLC cannot be executed normally.

Take the following corrective action.

Phenomenon	Cause	Corrective action
Communication fails when using the FA transparent function.	[UDP] is not available in the open settings of the built-in Ethernet port PLC.	Add [UDP] to the PLC side open settings.
	When the multi-channel Ethernet connection is used, [TCP] and [UDP] are used to the same IP address, and then the FA transparent function is used for the channel set to [TCP].	Execute the FA transparent function for the channel set to [UDP].

Point

Changing the host station on the GOT

[Host] can be changed with the utility function of the GOT.

For details on the setting method, refer to the following manual.

GOT3000 Series User's Manual (Utility & Maintenance Functions)

■Routing parameter settings

Up to 64 settings can be configured for [Transfer Net No.].

However, the same number cannot be set in [Transfer Net No.] twice or more (multiple times).

The GOT (host station) can access 64 different networks specified under [Transfer Net No.].

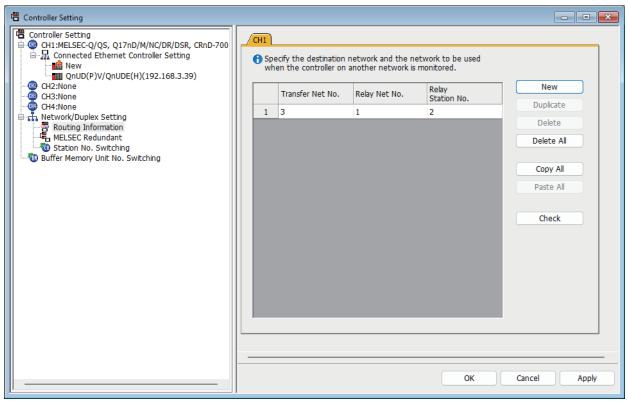
Point

Routing parameter settings

When communicating within the host network, routing parameter settings are not required.

For details on routing parameters, refer to the following manual.

MELSEC-Q/L Ethernet Interface Module User's Manual (Application)



Item	Range
[Transfer Net No.]	[1] to [239]
[Relay Net No.]*1	[1] to [239]
[Relay Station No.]*1	[0] to [120]

*1 To access a different network via the built-in Ethernet port CPU, set the values of [Net No.] and [Station] that are set in [Connected Ethernet Controller Setting] in GT Designer3.

Point

Routing parameter settings for the relay station

Routing parameter settings are also necessary for the relay station.

For the setting, refer to the following.

Page 359 PLC side settings

Precautions

If the network numbers of the GOT and PLC do not match on the same Ethernet network, monitoring of the PLC is not possible.

To enable monitoring, set the same network number as that of the GOT or connect an Ethernet module to the PLC and configure the routing settings to monitor the PLC as a different network.

When the multi-channel connection can be used, set a different network number for each channel.

4.9.4 PLC side settings

Model		Reference
MELSEC-Q (Q mode)	Q03UDECPU Q04UDEHCPU Q06UDEHCPU Q10UDEHCPU Q13UDEHCPU Q20UDEHCPU Q26UDEHCPU Q50UDEHCPU Q100UDEHCPU Q03UDVCPU Q04UDVCPU Q06UDVCPU Q13UDVCPU Q26UDVCPU	☞ Page 360 Connection to the built-in Ethernet port CPU of the MELSEC-Q series
CNC C70	Q173NCCPU	☞ Page 381 Connection to Display I/F (CNC C70)
C Controller module (Q series)	Q12DCCPU-V Q24DHCCPU-V/VG Q24DHCCPU-LS Q26DHCCPU-LS	☞ Page 384 Connection to C Controller module (Q series)
Robot controller (Q series)	CR800-Q (Q172DSRCPU)	☞ Page 360 Connection to the built-in Ethernet port CPU of the MELSEC-Q series ☞ Page 377 Connection to PERIPHERAL I/F
Motion CPU (Q series)	Q172CPUN Q173CPUN Q172HCPU Q173HCPU Q172DCPU Q173DCPU Q172DCPU-S1 Q173DCPU-S1 Q172DSCPU Q173DSCPU Q170MCPU Q170MSCPU Q170MSCPU-S MR-MQ100	☞ Page 377 Connection to PERIPHERAL I/F

Precautions

Do not set a remote password on the QCPU (Q mode).
Doing so disables monitoring with the GOT.

Connection to the built-in Ethernet port CPU of the MELSEC-Q series

This section describes the settings of the GOT and the built-in Ethernet port CPU in the system configuration shown below.

☞ Page 360 One-to-one connection with the PLC side [MELSOFT Connection Extended Setting] set to the default value
☞ Page 363 One-to-one connection with the PLC side [MELSOFT Connection Extended Setting] set to [Use]
☞ Page 368 Multiple connection with the PLC side [MELSOFT Connection Extended Setting] set to the default value
☞ Page 372 Multiple connection with the PLC side [MELSOFT Connection Extended Setting] set to [Use]

Point

- Built-in Ethernet port CPU

For details on the built-in Ethernet port CPU, refer to the following manual.

📖QnUCPU User's Manual (Communication via Built-in Ethernet Port)

- Connecting multiple GOTs

When connecting two or more GOTs in the Ethernet network, set each [GOT Station] to the GOT.

☞ Page 352 When connecting multiple GOTs

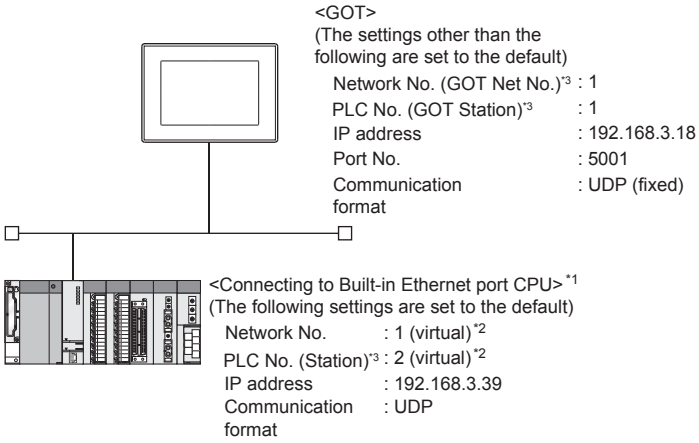
■One-to-one connection with the PLC side [MELSOFT Connection Extended Setting] set to the default value

- System configuration

For one-to-one connection, no settings are required on the PLC side.

Set [Port No.] to [5006] and [Communication] to [UDP] to communicate with the PLC.

Configure the settings in [Controller Setting] and [Connected Ethernet Controller Setting] in GT Designer3, and then connect the built-in Ethernet port CPU and the GOT.



*1 For the settings when using system devices such as a hub, refer to the following.
☞ Page 368 Multiple connection with the PLC side [MELSOFT Connection Extended Setting] set to the default value

*2 Although the setting is nonexistent on the PLC side, set a virtual value on the GOT side.
☞ • [Controller Setting] and [Connected Ethernet Controller Setting] of GT Designer3

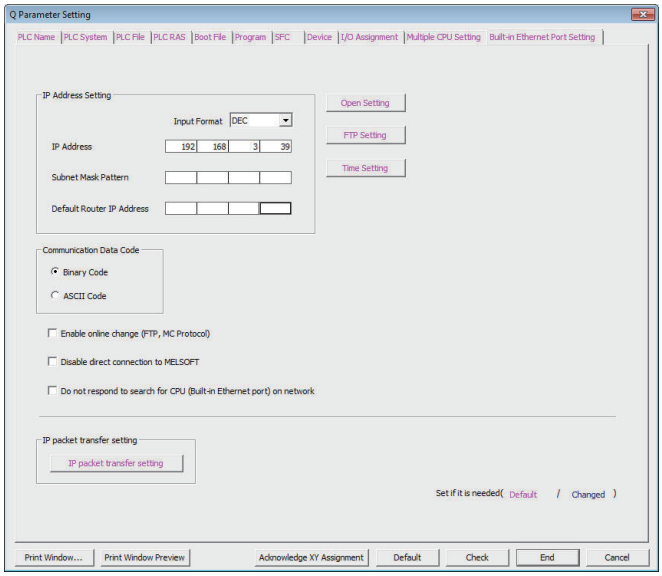
*3 For the following settings, the setting names are different on the PLC side and the GOT side.

Setting	Setting name		
	PLC side	GOT side	
		Controller setting	Connected Ethernet controller setting
Network number	[Network No.]	[GOT Net No.]	[Net No.]
PLC number	[Station No.]	[GOT Station]	[Station No.]

• [PLC parameter] of GX Works2

Use GX Works2 Version 1.535H or later.

Built-in Ethernet port settings

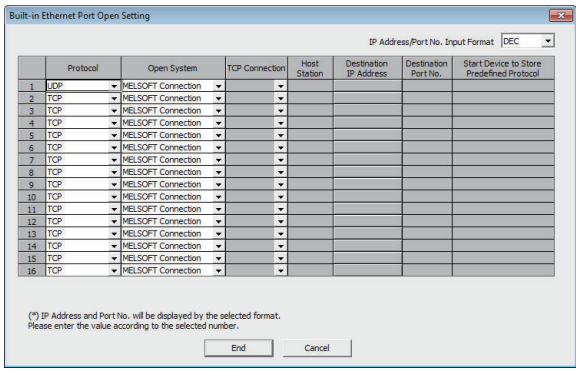


○: Necessary, △: As necessary, —: Not necessary

Item	Setting value	Setting for GOT connection
[IP Address]	192.168.3.39	○
[Subnet Mask Pattern]	—	—
[Default Router IP Address]	—	—
[Communication Data Code]	(Use default value)	△
[Enable online change (FTP, MC protocol)]		△
[Disable direct connection to MELSOFT]		△
[Do not respond to search for CPU (Built-in Ethernet port) on network]		△
[Open settings]	☞ • Open settings	○
[FTP Setting]	(Use default value)	△
[Time Setting]		△
[MELSOFT Connection Extended Setting]		△

Open settings

Configure the settings for all the connected GOTs.



Item	Setting value
[Protocol]	UDP, TCP
[Open System]	MELSOFT connection

• [Controller Setting] and [Connected Ethernet Controller Setting] of GT Designer3

For the setting method of [Controller Setting] and [Connected Ethernet Controller Setting] in GT Designer3, refer to the following.

☞ Page 349 GOT side settings

Point

[Connected Ethernet Controller Setting] for connection to the Built-in Ethernet port QCPU or LCPU
The setting items for the network number and station number do not exist on the PLC side.
Set the network number and station number on the GOT side.
When doing so, set a network number not used in the system.

Controller settings

Item	Setting value
[GOT Net No.]	1
[GOT Station]	1
[GOT Communication Port No.]	5001
[Retry]	3 times
[Startup Time]	3 seconds
[Timeout Time]	3 seconds
[Delay Time]	0 ms

GOT Ethernet settings

Item	Setting value
[GOT IP Address]	192.168.3.18
[Subnet Mask]	255.255.255.0
[Default Gateway]	0.0.0.0
[Peripheral S/W Communication Port No.]	5015
[Transparent Port No.]	5014

Connected Ethernet controller settings

Item		Setting value
Ethernet setting No. 1	[Host]	*
	[Net No.]	1*1
	[Station]	2*2
	[Unit Type]	QnUD(P)V/QnUDE(H)*4
	[IP Address]	192.168.3.39
	[Port No.]*3	5006
	[Communication]*3	UDP

*1 Set the same value as the GOT net number.
*2 Set a value different from the GOT station number.
*3 The following settings can also be configured for [Port No.] and [Communication].
[Port No.]: 5007
[Communication]: TCP
*4 For CR800-Q (Q172DSRCPU), set [Q17nDSR].

• Checking the communication state of the built-in Ethernet port CPU

When using Windows Command Prompt

Execute a ping command in Windows Command Prompt.

1) At normal end

C:\>Ping 192.168.3.39

Reply from 192.168.3.39:bytes=32 time<1ms TTL=32

2) At abnormal end

C:\>Ping 192.168.3.39

Request timed out.

In the case of abnormal end

In the case of abnormal end, check the following and execute the ping command again.

Cable connecting condition

Switch settings and network parameter settings

Operation state of PLC CPU (faulty or not)

IP address of the built-in Ethernet port CPU specified by the ping command

Point

Ethernet diagnostics of GX Works2

The Ethernet diagnostics of GX Works2 enables ping tests from the PLC.

For details on the Ethernet diagnostics of GX Works2, refer to the following manual.

QCPU User's Manual (Hardware Design, Maintenance and Inspection)

■One-to-one connection with the PLC side [MELSOFT Connection Extended Setting] set to [Use]

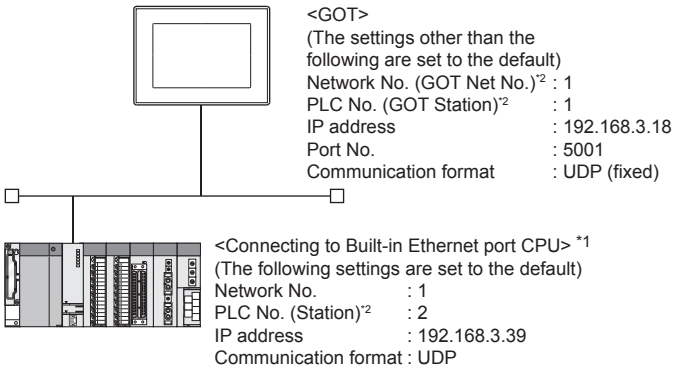
• System configuration

Set [Port No.] to [5001] and [Communication] to [UDP] to communicate with the PLC.

[MELSOFT Connection Extended Setting] is available for QnUDVCPU.

Set [MELSOFT Connection Extended Setting] to [Use], and configure the other settings.

Configure the settings in [Controller Setting] and [Connected Ethernet Controller Setting] in GT Designer3, and then connect the built-in Ethernet port CPU and the GOT.



*1 Use the QnUDVCPU having a serial number starting with 17052 or later in the first 5 digits.

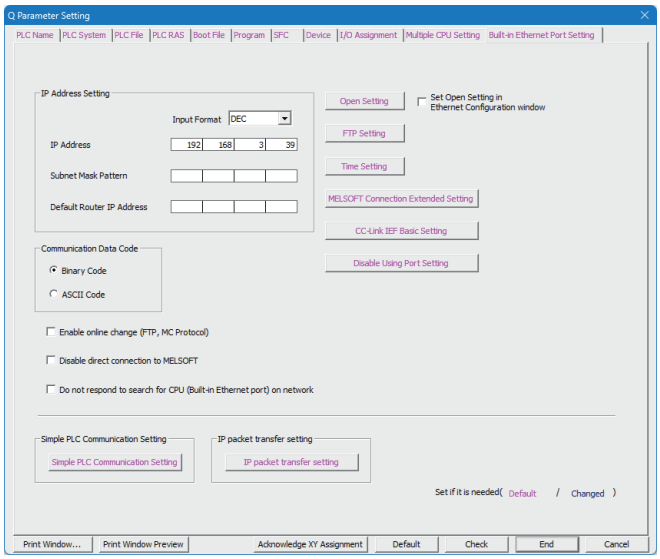
*2 For the following settings, the setting names are different on the PLC side and the GOT side.

Setting	Setting name		
	PLC side	GOT side	
		Controller setting	Connected Ethernet controller setting
Network number	[Network No.]	[GOT Net No.]	[Net No.]
PLC number	[Station No.]	[GOT Station]	[Station No.]

• [PLC parameter] of GX Works2

Use GX Works2 Version 1.535H or later.

Built-in Ethernet port settings

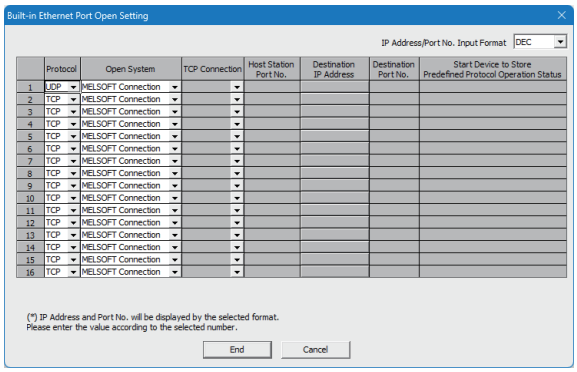


○: Necessary, △: As necessary, —: Not necessary

Item	Setting value	Setting for GOT connection
[IP Address]	192.168.3.39	○
[Subnet Mask Pattern]	—	—
[Default Router IP Address]	—	—
[Communication Data Code]	(Use default value)	△
[Enable online change (FTP, MC protocol)]		△
[Disable direct connection to MELSOFT]		△
[Do not respond to search for CPU (Built-in Ethernet port) on network]		△
[Open settings]	☞ • Open settings	○
[FTP Setting]	(Use default value)	△
[Time Setting]		△
[MELSOFT Connection Extended Setting]	☞ • MELSOFT connection extended settings	○

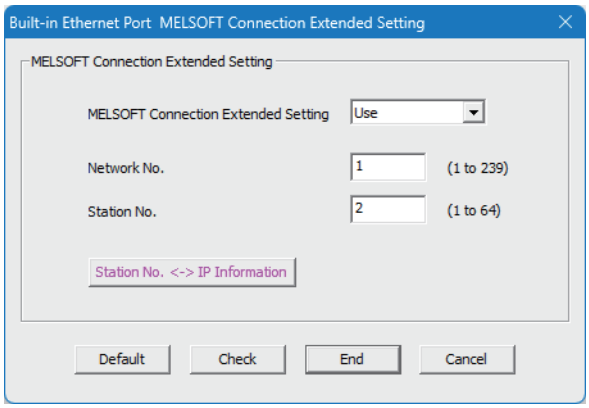
Open settings

Configure the settings for all the connected GOTs.



Item	Setting value
[Protocol]	UDP, TCP
[Open System]	MELSOFT connection

MELSOFT Connection Extended Setting



○: Necessary, △: As necessary, —: Not necessary

Item	Setting value	Setting for GOT connection
[MELSOFT Connection Extended Setting]	Use	○
[Network No.]	1	○
[Station No.]	2	○

• [Controller Setting] and [Connected Ethernet Controller Setting] of GT Designer3

For the setting method of [Controller Setting] and [Connected Ethernet Controller Setting] in GT Designer3, refer to the following.

☞ Page 349 GOT side settings

Point

[Connected Ethernet Controller Setting] for connection to the Built-in Ethernet port QCPU or LCPU

The setting items for the network number and station number do not exist on the PLC side.

Set the network number and station number on the GOT side.

When doing so, set a network number not used in the system.

Controller settings

Item	Setting value
[GOT Net No.]	1
[GOT Station]	1
[GOT Communication Port No.]	5001
[Retry]	3 times
[Startup Time]	3 seconds
[Timeout Time]	3 seconds
[Delay Time]	0 ms

GOT Ethernet settings

Item	Setting value
[GOT IP Address]	192.168.3.18
[Subnet Mask]	255.255.255.0
[Default Gateway]	0.0.0.0
[Peripheral S/W Communication Port No.]	5015
[Transparent Port No.]	5014

Connected Ethernet controller settings

Item		Setting value
Ethernet setting No. 1	[Host]	*
	[Net No.]	1*1
	[Station]	2*2
	[Unit Type]	QnUD(P)V/QnUDE(H)*3
	[IP Address]	192.168.3.39
	[Port No.]	5001
	[Communication]	UDP

*1 Set the same value as the GOT net number.

*2 Set a value different from the GOT station number.

*3 For CR800-Q (Q172DSRCPU), set [Q17nDSR].

• Checking the communication state of the built-in Ethernet port CPU

When using Windows Command Prompt

Execute a ping command in Windows Command Prompt.

1) At normal end

C:\>Ping 192.168.3.39

Reply from 192.168.3.39:bytes=32 time<1ms TTL=32

2) At abnormal end

C:\>Ping 192.168.3.39

Request timed out.

In the case of abnormal end

In the case of abnormal end, check the following and execute the ping command again.

Cable connecting condition

Switch settings and network parameter settings

Operation state of PLC CPU (faulty or not)

IP address of the built-in Ethernet port CPU specified by the ping command

Point

Ethernet diagnostics of GX Works2

The Ethernet diagnostics of GX Works2 enables ping tests from the PLC.

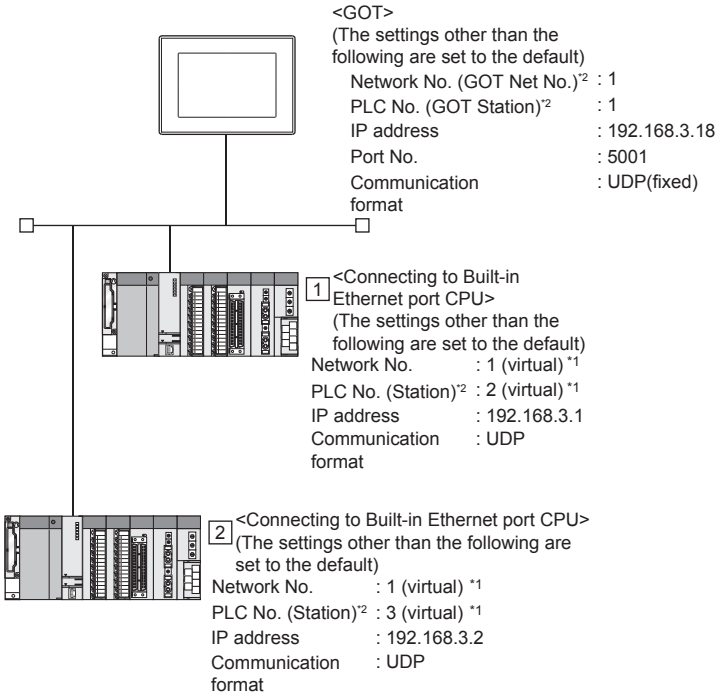
For details on the Ethernet diagnostics of GX Works2, refer to the following manual.

📖QCPU User's Manual (Hardware Design, Maintenance and Inspection)

■Multiple connection with the PLC side [MELSOFT Connection Extended Setting] set to the default value

- System configuration

Set [Port No.] to [5006] and [Communication] to [UDP] to communicate with the PLC.



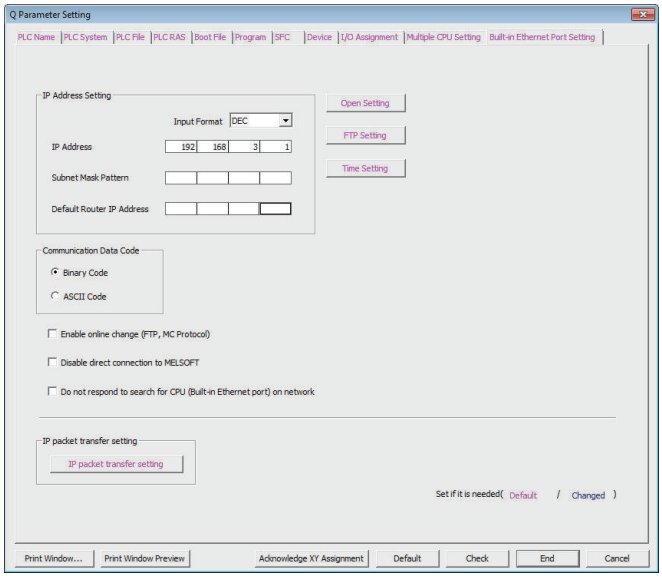
*1 Although the setting is nonexistent on the PLC side, set a virtual value on the GOT side.
☞ • [Controller Setting] and [Connected Ethernet Controller Setting] of GT Designer3

*2 For the following settings, the setting names are different on the PLC side and the GOT side.

Setting	Setting name		
	PLC side	GOT side	
		Controller setting	Connected Ethernet controller setting
Network number	[Network No.]	[GOT Net No.]	[Net No.]
PLC number	[Station No.]	[GOT Station]	[Station No.]

• [PLC parameter] of GX Works2

Built-in Ethernet port settings

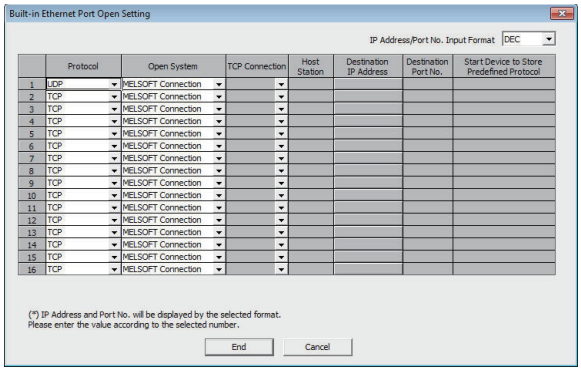


○: Necessary, △: As necessary, —: Not necessary

Item	Setting value	Setting for GOT connection
[IP Address]	192.168.3.1	○
[Subnet Mask Pattern]	—	—
[Default Router IP Address]	—	—
[Communication Data Code]	(Use default value)	△
[Enable online change (FTP, MC protocol)]		△
[Disable direct connection to MELSOFT]		△
[Do not respond to search for CPU (Built-in Ethernet port) on network]		△
[Open settings]	☞ • Open settings	○
[MELSOFT Connection Extended Setting]	(Use default value)	—
[FTP Setting]		△
[Time Setting]		△

Open settings

Configure the settings for all the connected GOTs.



Item	Setting value
[Protocol]	UDP, TCP
[Open System]	MELSOFT connection

• [Controller Setting] and [Connected Ethernet Controller Setting] of GT Designer3

For the setting method of [Controller Setting] and [Connected Ethernet Controller Setting] in GT Designer3, refer to the following.

☞ Page 349 GOT side settings

Point

[Connected Ethernet Controller Setting] for connection to the built-in Ethernet port CPU
The setting items for the network number and station number do not exist on the PLC side.
Set the network number and station number on the GOT side.
When doing so, set a network number not used in the system.

Controller settings

Item	Setting value
[GOT Net No.]	1
[GOT Station]	1
[GOT Communication Port No.]	5001
[Retry]	3 times
[Startup Time]	3 seconds
[Timeout Time]	3 seconds
[Delay Time]	0 ms

GOT Ethernet settings

Item	Setting value
[GOT IP Address]	192.168.3.18
[Subnet Mask]	255.255.255.0
[Default Gateway]	0.0.0.0
[Peripheral S/W Communication Port No.]	5015
[Transparent Port No.]	5014

Connected Ethernet controller settings

Item		Setting value	
		1	2
Ethernet setting No. 1	[Host]	*	—
	[Net No.]	1*1	1*1
	[Station]	2*2	3*2
	[Unit Type]	QnUD(P)V/QnUDE(H)	QnUD(P)V/QnUDE(H)
	[IP Address]	192.168.3.1	192.168.3.2
	[Port No.]*3	5006	5006
	[Communication]*3	UDP	UDP

*1 Set the same value as the GOT net number.
*2 Set a value different from the GOT station number and PLC numbers of other PLCs on the same network.
*3 The following settings can also be configured for [Port No.] and [Communication].
[Port No.]: 5007
[Communication]: TCP

• Checking the communication state of the built-in Ethernet port CPU

When using Windows Command Prompt

Execute a ping command in Windows Command Prompt.

1) At normal end

C:\>Ping 192.168.3.1

Reply from 192.168.3.1:bytes=32 time<1ms TTL=32

2) At abnormal end

C:\>Ping 192.168.3.1

Request timed out.

In the case of abnormal end

In the case of abnormal end, check the following and execute the ping command again.

Cable connecting condition

Switch settings and network parameter settings

Operation state of PLC CPU (faulty or not)

IP address of the built-in Ethernet port CPU specified by the ping command

Point

Ethernet diagnostics of GX Works2

The Ethernet diagnostics of GX Works2 enables ping tests from the PLC.

For details on the Ethernet diagnostics of GX Works2, refer to the following manual.

📖QCPU User's Manual (Hardware Design, Maintenance and Inspection)

■Multiple connection with the PLC side [MELSOFT Connection Extended Setting] set to [Use]

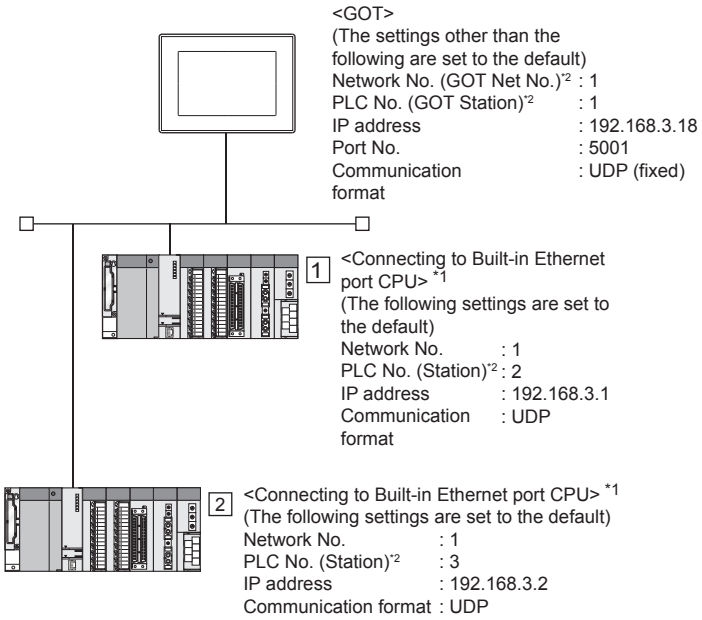
• System configuration

Set [Port No.] to [5001] and [Communication] to [UDP] to communicate with the PLC.

[MELSOFT Connection Extended Setting] is available for QnUDVCPU.

Set [MELSOFT Connection Extended Setting] to [Use], and configure the other settings.

Configure the settings in [Controller Setting] and [Connected Ethernet Controller Setting] in GT Designer3, and then connect the built-in Ethernet port CPU and the GOT.



*1 Use the QnUDVCPU having a serial number starting with 17052 or later in the first 5 digits.

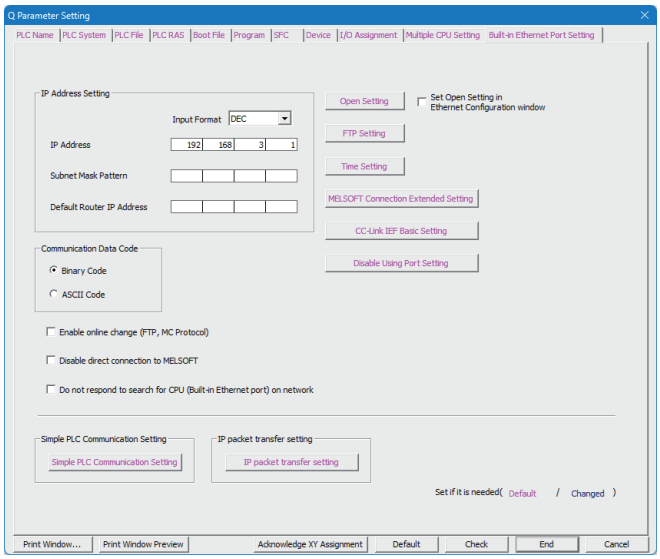
*2 For the following settings, the setting names are different on the PLC side and the GOT side.

Setting	Setting name		
	PLC side	GOT side	
		Controller setting	Connected Ethernet controller setting
Network number	[Network No.]	[GOT Net No.]	[Net No.]
PLC number	[Station No.]	[GOT Station]	[Station No.]

• [PLC parameter] of GX Works2

Use GX Works2 Version 1.535H or later.

Built-in Ethernet port settings

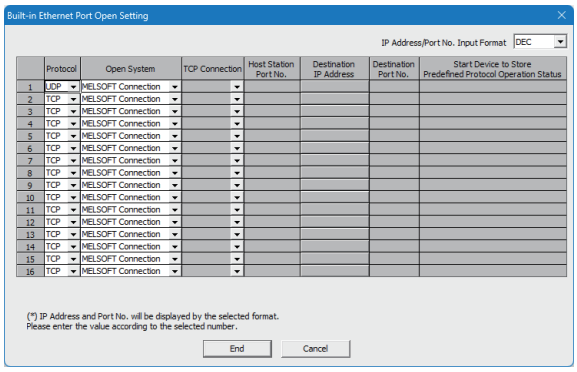


○: Necessary, △: As necessary, —: Not necessary

Item	Setting value	Setting for GOT connection
[IP Address]	192.168.3.1	○
[Subnet Mask Pattern]	—	—
[Default Router IP Address]	—	—
[Communication Data Code]	(Use default value)	△
[Enable online change (FTP, MC protocol)]		△
[Disable direct connection to MELSOFT]		△
[Do not respond to search for CPU (Built-in Ethernet port) on network]		△
[Open settings]	☞ • Open settings	○
[FTP Setting]	(Use default value)	△
[Time Setting]		△
[MELSOFT Connection Extended Setting]	☞ • MELSOFT connection extended settings	○

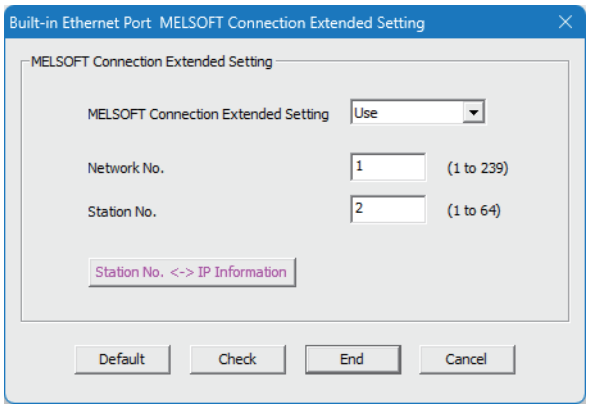
Open settings

Configure the settings for all the connected GOTs.



Item	Setting value
[Protocol]	UDP, TCP
[Open System]	MELSOFT connection

MELSOFT Connection Extended Setting



○: Necessary, △: As necessary, —: Not necessary

Item	Setting value	Setting for GOT connection
[MELSOFT Connection Extended Setting]	Use	○
[Network No.]	1	○
[Station No.]	2	○

• [Controller Setting] and [Connected Ethernet Controller Setting] of GT Designer3

For the setting method of [Controller Setting] and [Connected Ethernet Controller Setting] in GT Designer3, refer to the following.

☞ Page 349 GOT side settings

Point

[Connected Ethernet Controller Setting] for connection to the built-in Ethernet port CPU
The setting items for the network number and station number do not exist on the PLC side.
Set the network number and station number on the GOT side.
When doing so, set a network number not used in the system.

Controller settings

Item	Setting value
[GOT Net No.]	1
[GOT Station]	1
[GOT Communication Port No.]	5001
[Retry]	3 times
[Startup Time]	3 seconds
[Timeout Time]	3 seconds
[Delay Time]	0 ms

GOT Ethernet settings

Item	Setting value
[GOT IP Address]	192.168.3.18
[Subnet Mask]	255.255.255.0
[Default Gateway]	0.0.0.0
[Peripheral S/W Communication Port No.]	5015
[Transparent Port No.]	5014

Connected Ethernet controller settings

Item		Setting value	
		1	2
Ethernet setting No. 1	[Host]	*	—
	[Net No.]	1*1	1*1
	[Station]	2*2	3*2
	[Unit Type]	QnUD(P)V/QnUDE(H)	QnUD(P)V/QnUDE(H)
	[IP Address]	192.168.3.1	192.168.3.2
	[Port No.]	5001	5001
	[Communication]	UDP	UDP

*1 Set the same value as the GOT net number.
*2 Set a value different from the GOT station number and PLC numbers of other PLCs on the same network.

• Checking the communication state of the built-in Ethernet port CPU

When using Windows Command Prompt

Execute a ping command in Windows Command Prompt.

1) At normal end

C:\>Ping 192.168.3.1

Reply from 192.168.3.1:bytes=32 time<1ms TTL=32

2) At abnormal end

C:\>Ping 192.168.3.1

Request timed out.

In the case of abnormal end

In the case of abnormal end, check the following and execute the ping command again.

Cable connecting condition

Switch settings and network parameter settings

Operation state of PLC CPU (faulty or not)

IP address of the built-in Ethernet port CPU specified by the ping command

Point

Ethernet diagnostics of GX Works2

The Ethernet diagnostics of GX Works2 enables ping tests from the PLC.

For details on the Ethernet diagnostics of GX Works2, refer to the following manual.

📖QCPU User's Manual (Hardware Design, Maintenance and Inspection)

Connection to PERIPHERAL I/F

This section describes the settings of the GOT and the Built-in Ethernet port Motion CPU in the following system configuration.

Point

• GOT type setting

For details, refer to the following.

📖GT Designer3 (GOT3000) Screen Design Manual

• CPU No. specification of Q170MCPU and Q170MSCPU(-S1)

Set whether to monitor the PLC CPU area or the Motion CPU area of Q170MCPU or Q170MSCPU(-S1) by the CPU No. specification. For details, refer to the following.

☞ Page 398 Connection to Q170MCPU or Q170MSCPU(-S1)

• PLC type of GX Works2, GX Developer

When creating a program, set the following PLC type:

For Q173D(S)CPU and Q172D(S)CPU: QnUD(E)(H)CPU

For Q170MCPU and Q170MSCPU(-S1): Q03UDCPU

• Built-in Ethernet port CPU

For details on the built-in Ethernet port CPU, refer to the following manual.

📖User's manual of Q173D(S)CPU/Q172D(S)CPU, Q170MCPU, and Q170MS(-S1)CPU

• Connecting multiple GOTs

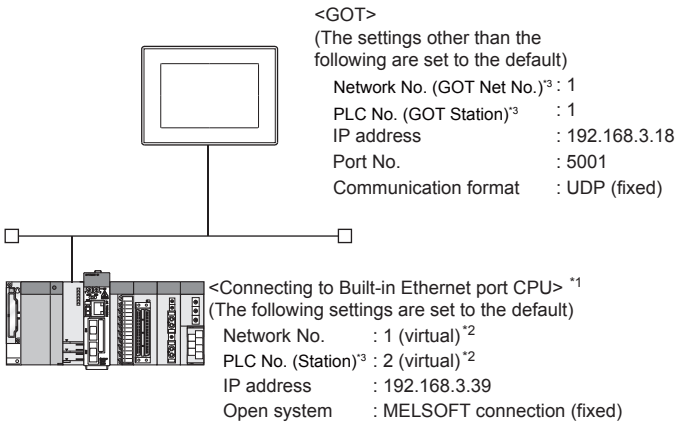
When connecting multiple GOTs in the Ethernet network, set a different value for [GOT Station] for each GOT.

☞ Page 352 When connecting multiple GOTs

■System configuration

Leave the Built-in Ethernet port Motion CPU settings as default in the following system configuration.

Configure the settings in [Controller Setting] and [Connected Ethernet Controller Setting] in GT Designer3, and then connect the built-in Ethernet port CPU and the GOT.



*1 For the settings when using system devices such as a hub, refer to the following.

☞ Page 360 Connection to the built-in Ethernet port CPU of the MELSEC-Q series

*2 Although the setting is nonexistent on the PLC side, set a virtual value on the GOT side.

☞ Page 379 [Controller Setting] and [Connected Ethernet Controller Setting] of GT Designer3

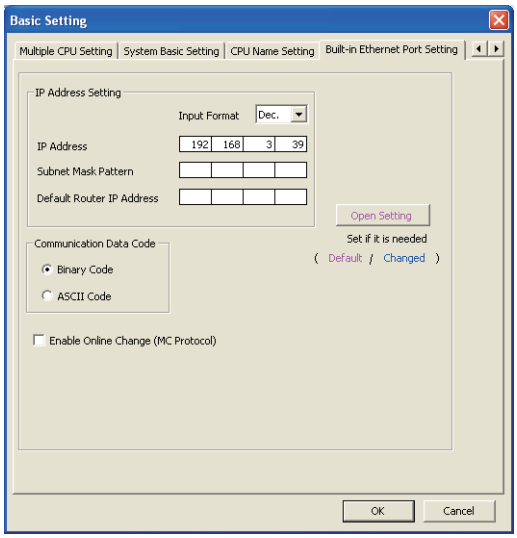
*3 For the following settings, the setting names are different on the PLC side and the GOT side.

Setting	Setting name		
	PLC side	GOT side	
		Controller setting	Connected Ethernet controller setting
Network number	[Network No.]	[GOT Net No.]	[Net No.]
PLC number	[Station]	[GOT Station]	[Station]

■Basic setting of MT Works2

Use the default values of the basic setting for the system configuration above.

- Built-in Ethernet port settings

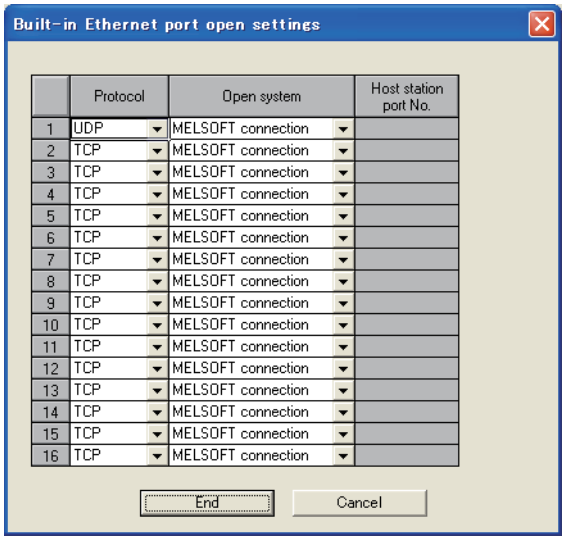


○: Necessary, △: As necessary, —: Not necessary

Item	Setting value	Setting for GOT connection
[IP Address]	192.168.3.39	○
[Subnet Mask Pattern]	—	—
[Default Router IP Address]	—	—
[Communication Data Code]	(Use default value)	△
[Enable online change (FTP, MC protocol)]		△
[Open settings]	☞ • Open settings	○

- Open settings

Configure the settings for all the connected GOTs.



Item	Setting value
[Protocol]	UDP
[Open System]	MELSOFT connection
[Host Station Port No.]	—

■[Controller Setting] and [Connected Ethernet Controller Setting] of GT Designer3

For the setting method of [Controller Setting] and [Connected Ethernet Controller Setting] in GT Designer3, refer to the following.

☞ Page 349 GOT side settings

Point

[Connected Ethernet Controller Setting] for connection to the Built-in Ethernet port Motion CPU
The setting items for the network No. and station No. do not exist on the motion CPU side.
Set the network number and station number on the GOT side.
When doing so, set a network number not used in the system.

- Controller settings

Item	Setting value
[GOT Net No.]	1
[GOT Station]	1
[GOT Communication Port No.]	5001
[Retry]	3 times
[Startup Time]	3 seconds
[Timeout Time]	3 seconds
[Delay Time]	0 ms

- GOT Ethernet settings

Item	Setting value
[GOT IP Address]	192.168.3.18
[Subnet Mask]	255.255.255.0
[Default Gateway]	0.0.0.0
[Peripheral S/W Communication Port No.]	5015
[Transparent Port No.]	5014

- Connected Ethernet controller settings

Item		Setting value
Ethernet setting No. 1	[Host]	*
	[Net No.]	1*1
	[Station]	2*2
	[Unit Type]	QnUD(P)V/QnUDE(H)
	[IP Address]	192.168.3.39*3
	[Port No.]*4	5006
	[Communication]*4	UDP

*1 Set the same value as the GOT net number.
*2 Set a value different from the GOT station number.
*3 Set the value to the IP address of the Built-in Ethernet port Motion CPU.
*4 The following settings can also be configured for [Port No.] and [Communication].
[Port No.]: 5007
[Communication]: TCP

■Checking the communication state of the built-in Ethernet port CPU

• When using Windows Command Prompt

Execute a ping command in Windows Command Prompt.

1) At normal end

C:\>Ping 192.168.3.39

Reply from 192.168.3.39:bytes=32 time<1ms TTL=32

2) At abnormal end

C:\>Ping 192.168.3.39

Request timed out.

• In the case of abnormal end

In the case of abnormal end, check the following and execute the ping command again.

Cable connecting condition

Switch settings and network parameter settings

Operation state of PLC CPU (faulty or not)

IP address of the built-in Ethernet port CPU specified by the ping command

Point

Ethernet diagnostics of GX Works2 and GX Developer

The Ethernet diagnostics of GX Works2 and GX Developer enables ping tests from the PLC.

For details on the Ethernet diagnostics of GX Works2 and GX Developer, refer to the following manuals.

📖GX Works2 Version1 Operating Manual (Common)

📖GX Developer Version8 Operating Manual

Connection to Display I/F (CNC C70)

This section describes the settings of the GOT and Display I/F (CNC C70) in the system configuration shown below.

Point

- Display I/F (CNC C70)

For details on the Display I/F (CNC C70), refer to the following manual.

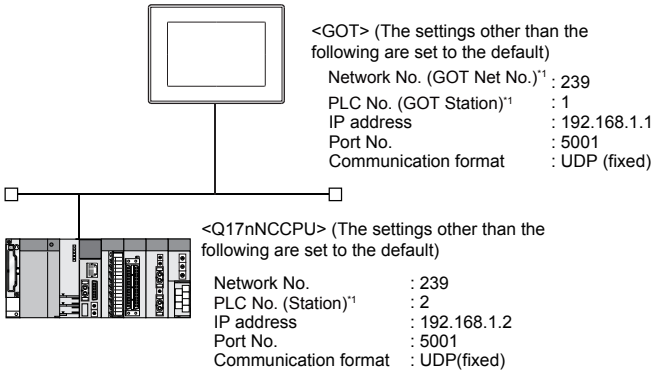
C70 Series SET UP MANUAL

- Connecting multiple GOTs

When connecting two or more GOTs in the Ethernet network, set each [GOT Station] to the GOT.

Page 352 When connecting multiple GOTs

■System configuration

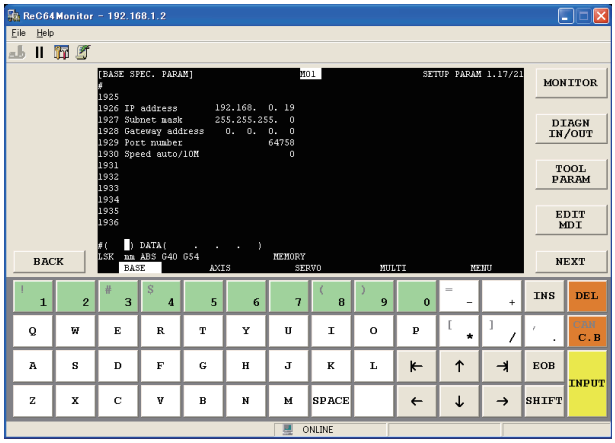


*1 For the following settings, the setting names are different on the PLC side and the GOT side.

Setting	Setting name		
	PLC side	GOT side	
		Controller setting	Connected Ethernet controller setting
Network number	[Network No.]	[GOT Net No.]	[Net No.]
PLC number	[Station]	[GOT Station]	[Station]

■IP address settings of CNC C70

- Remote monitor tool



○: Necessary, △: As necessary, —: Not necessary

Item	Setting value	Setting for GOT connection
[IP address]	192.168.1.2	○
[Subnet mask]	255.255.255.0	○
[Gateway address]	0.0.0.0	○
[Port number]	64758	○
[Speed auto/10M]	0	○

- Communication confirmation

The CNC C70 can communicate with the GOT when INIT.LED of the CNC C70 is lit.

For checking the communication status, refer to the following.

☞ Page 383 Checking the communication state of the CNC C70

■[Controller Setting] and [Connected Ethernet Controller Setting] of GT Designer3

For the setting method of [Controller Setting] and [Connected Ethernet Controller Setting] in GT Designer3, refer to the following.

☞ Page 349 GOT side settings

• Controller settings

Item	Setting value
[GOT Net No.]	239
[GOT Station]	1
[GOT Communication Port No.]	5001
[Retry]	3 times
[Startup Time]	3 seconds
[Timeout Time]	3 seconds
[Delay Time]	0 ms

• GOT Ethernet settings

Item	Setting value
[GOT IP Address]	192.168.1.1
[Subnet Mask]	255.255.255.0
[Default Gateway]	0.0.0.0
[Peripheral S/W Communication Port No.]	5015
[Transparent Port No.]	5014

• Connected Ethernet controller settings

Item		Setting value
Ethernet setting No. 1	[Host]	*
	[Net No.]	239
	[Station No.]	2
	[Unit Type]	Q17nNC
	[IP Address]	192.168.1.2
	[Port No.]*1	5001
	[Communication]*1	UDP

*1 The following settings can also be configured for [Port No.] and [Communication].
[Port No.]: 5002
[Communication]: TCP

■Checking the communication state of the CNC C70

• When using Windows Command Prompt

Execute a ping command in Windows Command Prompt.

1) At normal end

C:\>Ping 192.168.1.2

Reply from 192.168.1.2:bytes=32 time<1ms TTL=32

2) At abnormal end

C:\>Ping 192.168.1.2

Request timed out.

• In the case of abnormal end

In the case of abnormal end, check the following and execute the ping command again.

Mounting condition of CNC C70

Cable connecting condition

Switch settings and network parameter settings

Operation state of PLC CPU (faulty or not)

IP address of the CNC C70 specified by the ping command

Connection to C Controller module (Q series)

This section describes the settings of the GOT and C Controller module (Q series) in the system configuration shown below.

Point

- C Controller module (Q series)

For details on the C Controller module (Q series), refer to the following manual.

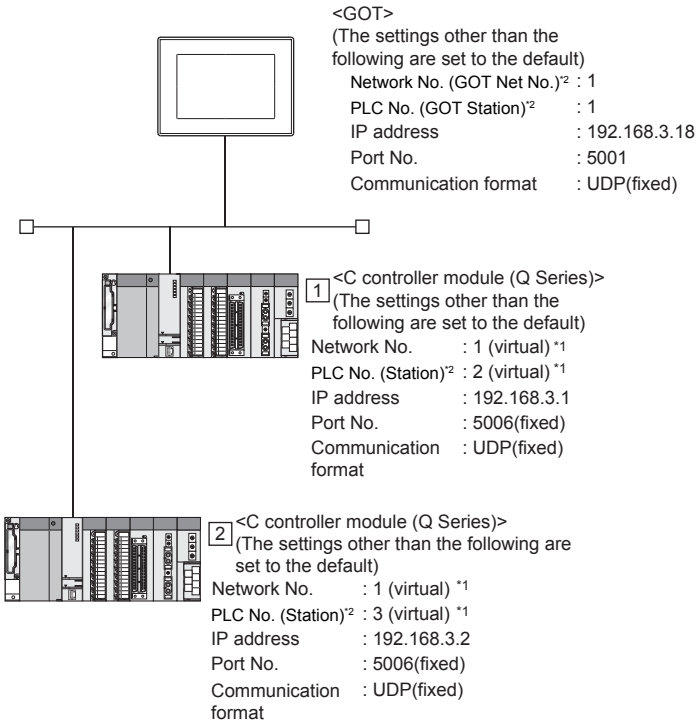
C Controller Module User's Manual (Hardware Design, Function Explanation)

- Connecting multiple GOTs

When connecting two or more GOTs in the Ethernet network, set each [GOT Station] to the GOT.

Page 352 When connecting multiple GOTs

■System configuration



*1 Although the setting is nonexistent on the PLC side, set a virtual value on the GOT side.

Page 388 [Controller Setting] and [Connected Ethernet Controller Setting] of GT Designer3

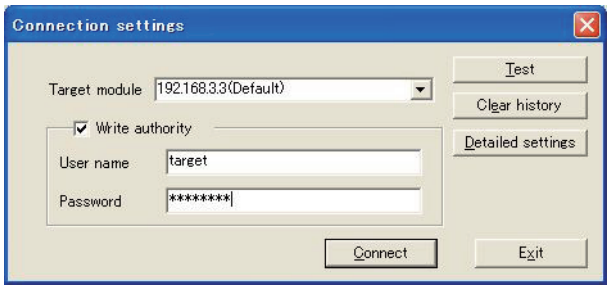
*2 For the following settings, the setting names are different on the PLC side and the GOT side.

Setting	Setting name		
	PLC side	GOT side	
		Controller setting	Connected Ethernet controller setting
Network number	[Network No.]	[GOT Net No.]	[Net No.]
PLC number	[Station]	[GOT Station]	[Station]

■Setting the utility of the C Controller module (Q series) (for Q12DCCPU-V)

Use SW3PVC-CCPU-E Ver.3.05F or later for the C Controller (Q series) setting utility.

- Connection settings

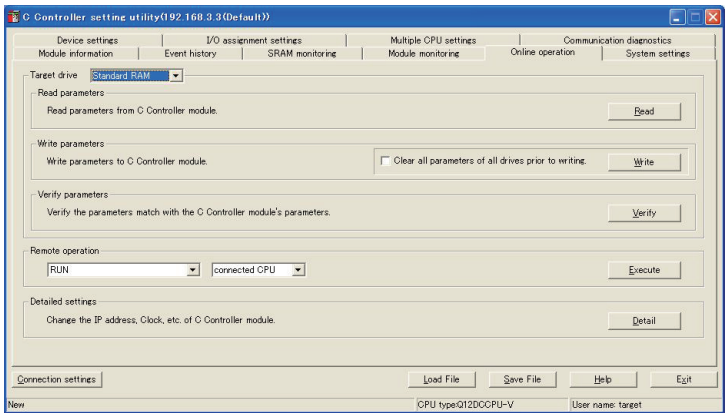


○: Necessary, △: As necessary, —: Not necessary

Item	Setting value	Setting for GOT connection
[Target module]*1	192.168.3.3	○
[Write authority]	Selected	○
[User name]*2	target	○
[Password]*2	password	○
[Detail Setting]	—	△

*1 If the IP address of the C Controller module (Q series) has been changed, input the changed IP address or host name.
*2 If the account of the C Controller module (Q series) has been changed, input the changed user name and password.

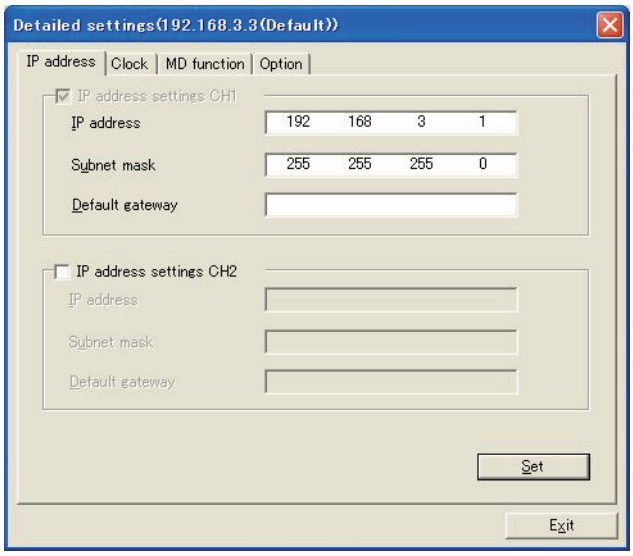
- Online operation



○: Necessary, △: As necessary, —: Not necessary

Item	Setting value	Setting for GOT connection
[Detailed settings]	☞ • Detail settings	○

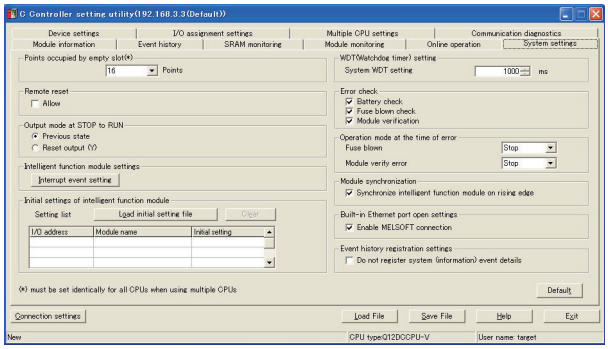
• Detail settings



○: Necessary, △: As necessary, —: Not necessary

Item	Setting value	Setting for GOT connection
[IP Address]	192.168.3.1	○
[Subnet Mask]	255.255.255.0	○
[Default Gateway]	—	—
[IP address settings CH2]	—	—

• System settings



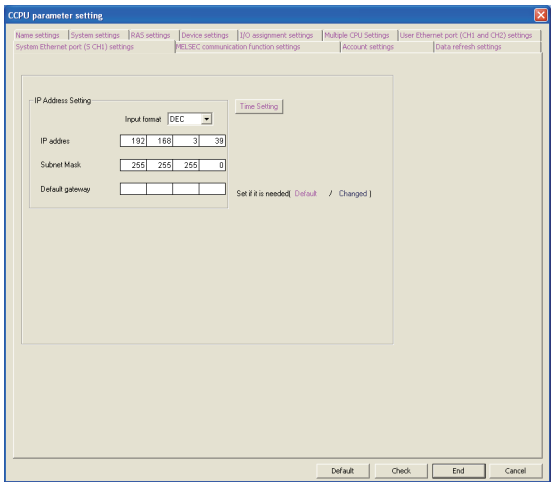
○: Necessary, △: As necessary, —: Not necessary

Item	Setting value	Setting for GOT connection
[Points occupied by empty slot]	(Use default value)	△
[Remote reset]		△
[Output mode at STOP to RUN]		△
[Intelligent function module settings]		△
[Initial settings of intelligent function module]		△
[WDT (Watchdog timer) setting]		△
[Error check]		△
[Operation mode at the time of error]		△
[Module synchronization]		△
[Built-in Ethernet port open settings]	Selected	○
[Event history registration settings]	(Use default value)	△

■Setting the utility of the C Controller module (Q series) (for Q24DHCCPU-V/VG/LS)

Use SW4PVC-CCPU-E for the C Controller (Q series) setting utility.

- Connection settings



○: Necessary, △: As necessary, —: Not necessary

Item	Setting value	Setting for GOT connection
[IP Address]*1	192.168.3.39	○
[Subnet Mask]	255.255.255.0	○
[Default Gateway]	—	—

*1 If the IP address of the C Controller module (Q series) has been changed, input the changed IP address.

■[Controller Setting] and [Connected Ethernet Controller Setting] of GT Designer3

For the setting method of [Controller Setting] and [Connected Ethernet Controller Setting] in GT Designer3, refer to the following.

☞ Page 349 GOT side settings

Point

[Connected Ethernet Controller Setting] for connection to C Controller module (Q series)
The setting items for the network number and station number do not exist on the PLC side.
Set the network number and station number on the GOT side.
When doing so, set a network number not used in the system.

- Controller settings

Item	Setting value
[GOT Net No.]	1
[GOT Station]	1
[GOT Communication Port No.]	5001
[Retry]	3 times
[Startup Time]	3 seconds
[Timeout Time]	3 seconds
[Delay Time]	0 ms

- GOT Ethernet settings

Item	Setting value
[GOT IP Address]	192.168.3.18
[Subnet Mask]	255.255.255.0
[Default Gateway]	0.0.0.0
[Peripheral S/W Communication Port No.]	5015
[Transparent Port No.]	5014

- Connected Ethernet controller settings

Item		Setting value	
		1	2
Ethernet setting No. 1	[Host]	*	—
	[Net No.]	1*1	1*1
	[Station]	2*2	3*2
	[Unit Type]	QnD(H)CCPU	QnD(H)CCPU
	[IP Address]	192.168.3.1	192.168.3.2
	[Port No.]*3	5006	5006
	[Communication]*3	UDP	UDP

*1 Set the same value as the GOT net number.
*2 Set a value different from the GOT station number and PLC numbers of other PLCs on the same network.
*3 The following settings can also be configured for [Port No.] and [Communication].
[Port No.]: 5007
[Communication]: TCP

■Checking the communication state of the C Controller module (Q series)

- When using Windows Command Prompt

Execute a ping command in Windows Command Prompt.

1) At normal end

C:\>Ping 192.168.3.1

Reply from 192.168.3.1:bytes=32 time<1ms TTL=32

2) At abnormal end

C:\>Ping 192.168.3.1

Request timed out.

- In the case of abnormal end

In the case of abnormal end, check the following and execute the ping command again.

Cable connecting condition

Switch settings and network parameter settings

Operation state of PLC CPU (faulty or not)

IP address of the C Controller module (Q series) specified by the ping command

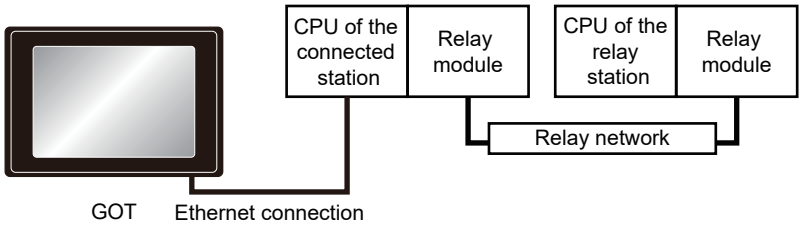
4.9.5 Access range for monitoring

When the GOT is connected to the CPU of the station connected via Ethernet, the range accessible via the CPU is as follows.

Point

- When monitoring other networks (Routing parameter settings)

To monitor other networks, routing parameter settings are necessary.
For the routing parameter settings, refer to the reference manual of the network connected.



○: Accessible, —: Inaccessible

CPU of the connected station	Relay station									
	Relay network	CPU of the relay station								
		MXR	RCPU	LCPU	QCPU (Q mode)	QSCPU	QCPU (A mode)	QnACPU	ACPU	FX5CPU
QCPU*1	Ethernet	○*8	○*6	○	○*7	○	—	○	—	○*4
	CC-Link IE Controller Network	○*8	○	—	○	○	—	—	—	—
	CC-Link IE Field Network	○*8	○	○	○*2	○	—	—	—	○*5
	MELSECNET/H, MELSECNET/10	—	—	—	○	○	○	○	○*3	—
C Controller module (MELSEC-Q series)	Ethernet	—	—	—	—	—	—	—	—	—
	CC-Link IE Controller Network	—	—	—	○	○	—	—	—	—
	CC-Link IE Field Network	—	—	○	○*2	○	—	—	—	—
	MELSECNET/H, MELSECNET/10	—	—	—	○	○	○	○	○*3	—
Q172DSRCPU	Ethernet	—	—	○	○*7	○	—	○	—	—
	CC-Link IE Controller Network	—	—	—	○	○	—	—	—	—
	CC-Link IE Field Network	—	—	○	○*2	○	—	—	—	—
	MELSECNET/H, MELSECNET/10	—	—	—	○	○	○	○	○*3	—

*1 QnUDVCPU, QnUDECPU, and QnUDEHCPU are supported.
*2 QnUDVCPU, QnUDECPU, QnUDEHCPU, QnUCPU, QnUDCPU, and QnUDHCPU are supported.
*3 AnUCPU and AnUSCPU are supported.
*4 FX5U and FX5UC are supported.
*5 FX5U, FX5UC, and FX5UJ are supported.
*6 The C Controller module (MELSEC iQ-R series) is not supported.
*7 The C Controller module (MELSEC-Q series) is not supported.
*8 Regardless of whether encrypted communications are performed, the MELSEC MX Controller can be used as the relay station.
To perform encrypted communication, settings need to be configured.
For details, refer to the following.
☞ Page 90 Setting procedure of the encrypted communication

4.10 MELSEC-Q series (Ethernet module connection)

☞ Page 392 Connectable devices
☞ Page 394 System configuration
☞ Page 399 GOT side settings
☞ Page 410 PLC side settings
☞ Page 422 Access range for monitoring
☞ Page 423 How to monitor a redundant system

4.10.1 Connectable devices

The following table shows the connectable models.

○: Supported, —: Not supported

Controller	Model	Clock	Ethernet module	Connectable model
MELSEC-Q (Q mode)	Q00JCPU Q00CPU*1 Q01CPU*1 Q02CPU*1	○	QJ71E71-100 QJ71E71-B5 QJ71E71-B2 QJ71E71	GT37 SoftGOT3000
	Q02HCPU*1 Q06HCPU*1 Q12HCPU*1 Q25HCPU*1	○	QJ71E71-100 QJ71E71-B5 QJ71E71-B2 QJ71E71	GT37 SoftGOT3000
	Q02PHCPU Q06PHCPU Q12PHCPU Q25PHCPU	○	QJ71E71-100 QJ71E71-B5 QJ71E71-B2 QJ71E71	GT37 SoftGOT3000
	Q12PRHCPU (main base) Q25PRHCPU (main base) Q12PRHCPU (remote extension base) Q25PRHCPU (remote extension base) Q12PRHCPU (extension base) Q25PRHCPU (extension base)	○	QJ71E71-100 QJ71E71-B5 QJ71E71-B2 QJ71E71	GT37 SoftGOT3000
	Q00UJCPU Q00UJCPU-S8	○	QJ71E71-100 QJ71E71-B5 QJ71E71-B2 QJ71E71	GT37 SoftGOT3000
	Q00UCPU Q01UCPU Q02UCPU Q03UDCPU	○	QJ71E71-100 QJ71E71-B5 QJ71E71-B2 QJ71E71	GT37 SoftGOT3000
	Q04UDHCPU Q06UDHCPU Q10UDHCPU Q13UDHCPU Q20UDHCPU Q26UDHCPU	○	QJ71E71-100 QJ71E71-B5 QJ71E71-B2 QJ71E71	GT37 SoftGOT3000
	Q03UDECPU Q04UDEHCPU Q06UDEHCPU Q10UDEHCPU Q13UDEHCPU Q20UDEHCPU Q26UDEHCPU Q50UDEHCPU Q100UDEHCPU	○	QJ71E71-100 QJ71E71-B5 QJ71E71-B2 QJ71E71	GT37 SoftGOT3000
	Q03UDVCPU Q04UDVCPU Q06UDVCPU Q13UDVCPU Q26UDVCPU	○	QJ71E71-100 QJ71E71-B5 QJ71E71-B2 QJ71E71	GT37 SoftGOT3000
MELSEC-QS	QS001CPU	○	QJ71E71-100 QJ71E71-B5 QJ71E71-B2 QJ71E71	GT37 SoftGOT3000

Controller	Model	Clock	Ethernet module	Connectable model
Motion CPU (Q series)	Q172CPUN*2 Q173CPUN*2 Q172HCPU Q173HCPU Q172DCPU Q173DCPU	○	QJ71E71-100 QJ71E71-B5 QJ71E71-B2 QJ71E71	GT37 SoftGOT3000
	Q172DCPU-S1 Q173DCPU-S1 Q172DSCPU Q173DSCPU Q170MCPU*3 Q170MSCPU*4 Q170MSCPU-S1*4 MR-MQ100	○	QJ71E71-100 QJ71E71-B5 QJ71E71-B2 QJ71E71	GT37 SoftGOT3000
MELSECNET/H remote I/O station	QJ72LP25-25 QJ72LP25G QJ72BR15	—	QJ71E71-100 QJ71E71-B5 QJ71E71-B2 QJ71E71	GT37 SoftGOT3000
CC-Link IE Field Network Ethernet adapter module	NZ2GF-ETB	—	—	GT37 SoftGOT3000
CNC C70	Q173NCCPU	○	QJ71E71-100 QJ71E71-B5 QJ71E71-B2 QJ71E71	GT37 SoftGOT3000
Robot controller (Q series)	CRnQ-700 (Q172DRCPU)*5 CR750-Q (Q172DRCPU)*5 CR751-Q (Q172DRCPU)*5 CR800-Q (Q172DSRCPU)*6	○	QJ71E71-100 QJ71E71-B5 QJ71E71-B2 QJ71E71	GT37 SoftGOT3000

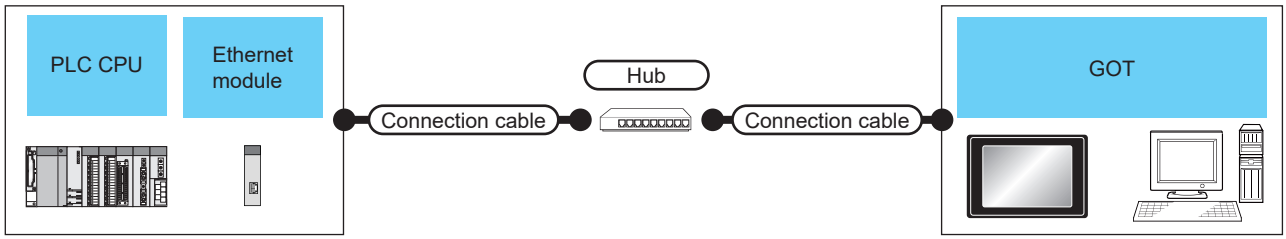
*1 To configure a multiple CPU system, use a CPU with function version B or later.
*2 When using SV13, SV22, or SV43, use a Motion CPU with the following version of OS installed.
- SW6RN-SV13Q□: 00H or later
- SW6RN-SV22Q□: 00H or later
- SW6RN-SV43Q□: 00B or later

*3 When using Ethernet module, only the first step can be used on the extension base unit (Q52B/Q55B).
*4 When using Ethernet module, the extension base unit (Q5□B/Q6□B) can be used.
*5 The Display I/F of the robot controller cannot be connected.
Ethernet connections can be established via either of the following.
- Ethernet module (QJ71E71)
- Ethernet port built in the PLC CPU

*6 Ethernet connections can be established via the PERIPHERAL I/F of the robot controller or either of the following.
- Ethernet module (QJ71E71)
- Ethernet port built in the PLC CPU

4.10.2 System configuration

Connection to Ethernet module



For details on the connection cables and the maximum segment length, refer to the following.

☞ Page 395 Connection cable
☞ Page 395 Maximum segment length

For details on the maximum number of connected devices, refer to the following.

☞ Page 395 Maximum number of connected devices

Controller	Ethernet module*1*2	Connection cable	GOT	
			Interface	Model
MELSEC-Q (Q mode) Motion CPU (Q series)*3 CNC C70 (Q173NCCPU) Robot controller (CRnQ-700) CR800-Q (Q172DSRCPU) MELSEC-QS	QJ71E71-100 QJ71E71-B5 QJ71E71-B2 QJ71E71	Twisted pair cable	Built-in Ethernet interface of GOT	GT37 SoftGOT3000
			Ethernet interface of personal computer	GT37 SoftGOT3000

*1 For the system configuration of the Ethernet module, refer to the following manual.
📖Q Corresponding Ethernet Interface Module User's Manual (Basic)

*2 Select [QJ71E71] for [Unit Type] in [Connected Ethernet Controller Setting] in GT Designer3.
For [Connected Ethernet Controller Setting] in GT Designer3, refer to the following.
☞ Page 407 [Connected Ethernet Controller Setting]

*3 When using the peripheral I/F of Q170MCPU, Q17nDCPU-S1 or MR-MQ100, refer to the following.
☞ Page 347 Connection to PERIPHERAL I/F

■Connection cable

Use a connection cable that meets the following standards.

Standard	Category
10BASE-T	Shielded twisted pair cable (STP) or unshielded twisted pair cable (UTP) of category 3 or higher
100BASE-TX	Shielded twisted pair cable (STP) or unshielded twisted pair cable (UTP) of category 5 or higher
1000BASE-T	Shielded twisted pair cable (STP) or unshielded twisted pair cable (UTP) of category 5e or higher

The destination device connected with the twisted pair cable varies with the configuration of the Ethernet network system used.

Connect the cable to the Ethernet module, hub, or other system equipment corresponding to the applicable Ethernet network system.

Use cables, connectors, and hubs that meet the IEEE802.3 10BASE-T/100BASE-TX/1000BASE-T standards.

When only one GOT is connected, the GOT can be directly connected to the controller without a hub.

■Maximum segment length

The maximum segment length (length between a hub and a node) is 100 m.

The maximum length depends on the Ethernet equipment used.

The following shows the number of connectable hubs when a repeater hub is used.

- 10BASE-T: Up to 4 for a cascade connection (within 500 m)
- 100BASE-TX: Up to 2 for a cascade connection (within 205 m)
- 1000BASE-T: The number differs depending on the hub to be used.

When switching hubs are used, there is no theoretical limit to the number of cascade connections between switching hubs.

For the limit, contact the switching hub manufacturer.

Precautions

When multiple network devices (including GOTs) are connected in the same segment, the network load increases and the transmission speed between the GOT and PLC may be reduced.

The following actions may improve the communication performance.

- Use a switching hub compatible with 1000BASE-T (1 Gbps) or more.
- Reduce the number of devices monitored by the GOT.

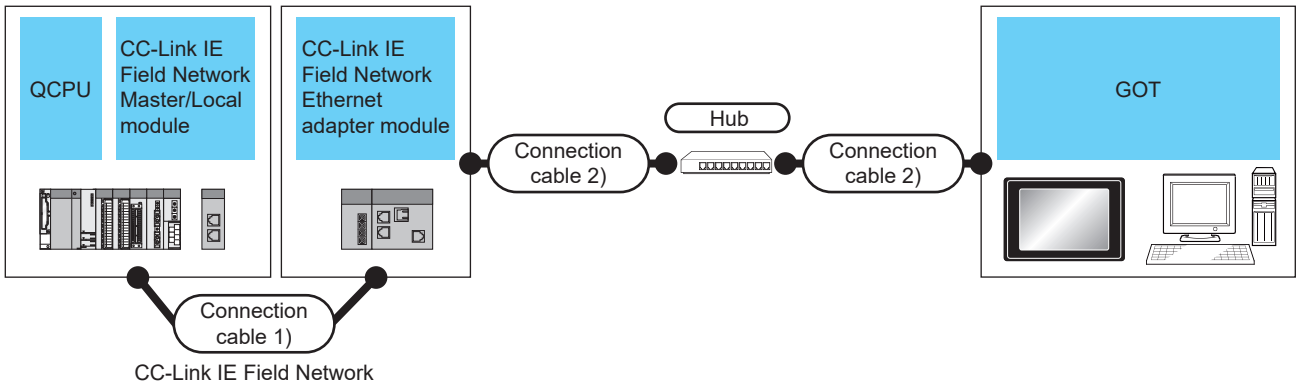
■Maximum number of connected devices

Up to 128 CPU modules can be connected to channels No. 1 to No. 4 of one GOT. (16 or less recommended)

The following shows the number of connectable controllers per GOT channel and the number of GOTs connectable to one controller.

Controller				GOT	
Model		Number of GOTs connectable to one Ethernet module		Model	Number of connectable controllers per GOT channel
PLC CPU	Module	UDP	TCP		
MELSEC-Q (Q mode) Motion CPU (Q series) Robot controller (CRnQ-700) CR800-Q (Q172DSRCPU) MELSEC-QS	QJ71E71-100 QJ71E71-B5 QJ71E71-B2 QJ71E71	63	17	GT37 SoftGOT3000	63 (16 or less recommended)
CNC C70 (Q173NCCPU)					128

Connection to NZ2GF-ETB



For details on the connection cables and the maximum segment length, refer to the following.

☞ Page 397 Connection cable

☞ Page 397 Maximum segment length

For details on the maximum number of connected devices, refer to the following.

☞ Page 397 Maximum number of connected devices

Controller	CC-Link IE Field Network Master/Local module	Connection cable (1)	CC-Link IE Field Network Ethernet adapter module	Connection cable (2)	GOT	
					Interface	Model
Universal model QCPU C Controller module (Q series)	QJ71GF11-T2*2	Double-shielded twisted pair cable*1	NZ2GF-ETB	Twisted pair cable	Built-in Ethernet interface of GOT	GT37 SoftGOT3000
					Ethernet interface of personal computer	GT37 SoftGOT3000

*1 Use cables with the following specifications.

Connector	Range
Category 5e or higher Shielded RJ-45	Cable that satisfies the following specifications: IEEE802.3 1000BASE-T ANSI/TIA/EIA-568-B (Category 5e)

*2 For the system configuration on the CC-Link IE Field Network module side, refer to the following manual.
CC-Link IE Field Network Ethernet Adapter Module User's Manual

■Connection cable

Use a connection cable that meets the following standards.

Standard	Category
10BASE-T	Shielded twisted pair cable (STP) or unshielded twisted pair cable (UTP) of category 3 or higher
100BASE-TX	Shielded twisted pair cable (STP) or unshielded twisted pair cable (UTP) of category 5 or higher
1000BASE-T	Shielded twisted pair cable (STP) or unshielded twisted pair cable (UTP) of category 5e or higher

The destination device connected with the twisted pair cable varies with the configuration of the Ethernet network system used.

Connect the cable to the Ethernet module, hub, or other system equipment corresponding to the applicable Ethernet network system.

Use cables, connectors, and hubs that meet the IEEE802.3 10BASE-T/100BASE-TX/1000BASE-T standards.

When only one GOT is connected, the GOT can be directly connected to the controller without a hub.

■Maximum segment length

The maximum segment length (length between a hub and a node) is 100 m.

The maximum length depends on the Ethernet equipment used.

The following shows the number of connectable hubs when a repeater hub is used.

- 10BASE-T: Up to 4 for a cascade connection (within 500 m)
- 100BASE-TX: Up to 2 for a cascade connection (within 205 m)
- 1000BASE-T: The number differs depending on the hub to be used.

When switching hubs are used, there is no theoretical limit to the number of cascade connections between switching hubs.

For the limit, contact the switching hub manufacturer.

Precautions

When multiple network devices (including GOTs) are connected in the same segment, the network load increases and the transmission speed between the GOT and PLC may be reduced.

The following actions may improve the communication performance.

- Use a switching hub compatible with 1000BASE-T (1 Gbps) or more.
- Reduce the number of devices monitored by the GOT.

■Maximum number of connected devices

Up to 128 CPU modules can be connected to channels No. 1 to No. 4 of one GOT. (16 or less recommended)

The following shows the number of connectable controllers per GOT channel and the number of GOTs connectable to one controller.

Controller				GOT	
Model		Number of GOTs connectable to one Ethernet module		Model	Number of connectable controllers per GOT channel
PLC CPU	Module	UDP	TCP		
Universal model QCPU C Controller module (Q series)	QJ71GF11-T2	128*1 (16 or less recommended)	128*1 (16 or less recommended)	GT37 SoftGOT3000	63 (16 or less recommended)

*1 The number of connectable GOTs for one network is 63 units (at most).

Connection to QSCPU

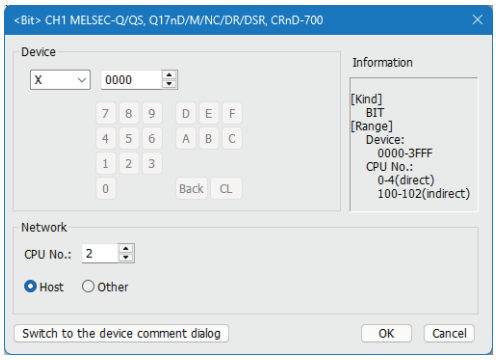
The GOT can only read device data and sequence programs by the ladder monitor function in the QSCPU.
The GOT cannot write any data to the QSCPU.

Connection to Q170MCPU or Q170MSCPU(-S1)

Set [CPU No.] to 2 in the device setting to monitor the device of the Motion CPU area (CPU No. 2).
When [CPU No.] is set to 1, the device on the PLC CPU area (CPU No. 1) is monitored.
When [CPU No.] is set to 0, the monitoring target differs depending on the GOT connection destination.
Refer to the following.

GOT connection destination	Monitoring target
QJ71E71 module	PLC CPU area (CPU No. 1)
Q170MCPU Q170MSCPU(-S1)	Motion CPU area (CPU No. 2)

When [CPU No.] is set to the number other than 0 to 2, a communication error occurs and the monitoring cannot be executed.
For the setting of [CPU No.], refer to the following.
GT Designer3 (GOT3000) Screen Design Manual



Connection via the multiple CPU system

When the GOT is connected via the multiple CPU system, the PLC takes 10 seconds or more to run.
If you start the GOT before the PLC runs, a system alarm occurs.
Adjust the time to display the GOT startup screen to prevent a system alarm.
GT Designer3 (GOT3000) Screen Design Manual

Connection to PERIPHERAL I/F

- Monitoring other stations

The GOT cannot monitor other stations. Routing parameter settings are invalid.

- Monitoring servo amplifiers from a robot controller through a simple motion module

When a GOT is connected to the PERIPHERAL I/F of the robot controller, servo amplifiers cannot be monitored through a simple motion module.

- Monitoring a CPU module on a different network from CR800-Q (Q172DSRCPU)

When a CPU module number on a different network is specified for PERIPHERAL I/F of CR800-Q (Q172DSRCPU), the specified CPU module number within the host network is monitored.

4.10.3 GOT side settings

[GOT Ethernet Setting]

Set the GOT Ethernet interface in GT Designer3.

Item	Description
[GOT IP Address Setting]	Set the IP address of the GOT.
[GOT Ethernet Common Setting]	Set the default gateway and other common items for GOT Ethernet interfaces.
[IP filter Setting]	The GOT allows or blocks access from IP addresses specified in the filtering list.

For details on the setting, refer to the following.

📖GT Designer3 (GOT3000) Screen Design Manual

Set the GT SoftGOT3000 Ethernet interface on the personal computer.

Precautions

Do not use 0 and 255 at the end of an IP address.

(Numbers of *.*.*.0 and *.*.*.255 are used by the system.)

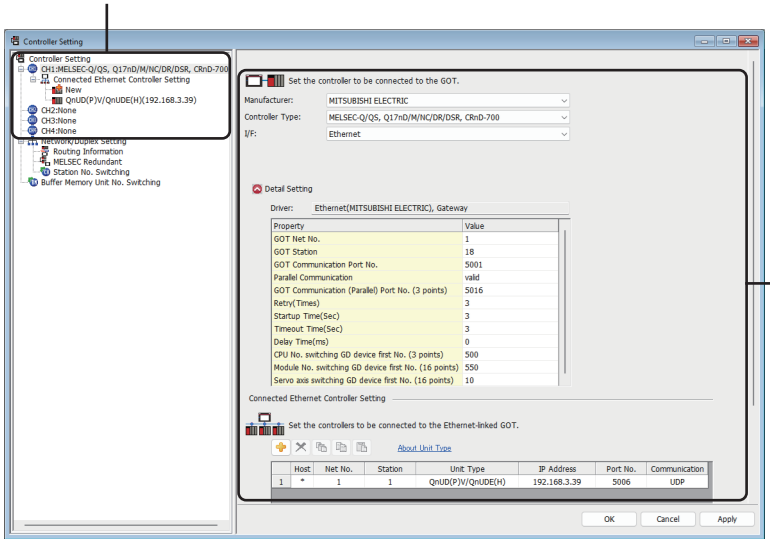
The GOT may not monitor the controller correctly with the above numbers.

Consult with the administrator of the network before setting an IP address to the GOT.

[Controller Setting]

Set the channel of the connected controller.

List menu



Operating procedure

1. Select [Common] → [Controller Setting] from the menu.

2. In the [Controller Setting] window, select the channel number to be used from the list menu.

3. Set the following items.

Item	Description
[Manufacturer]	[MITSUBISHI ELECTRIC]
[Controller Type]	[MELSEC-Q/QS, Q17nD/M/NC/DR/DSR, CRnD-700]
[I/F]	[Ethernet]
[Detail Setting]	Configure the settings according to the usage environment. ☞ Page 401 [Detail Setting]
[Connected Ethernet Controller Setting]	Configure the settings according to the controller to be connected. ☞ Page 407 [Connected Ethernet Controller Setting]

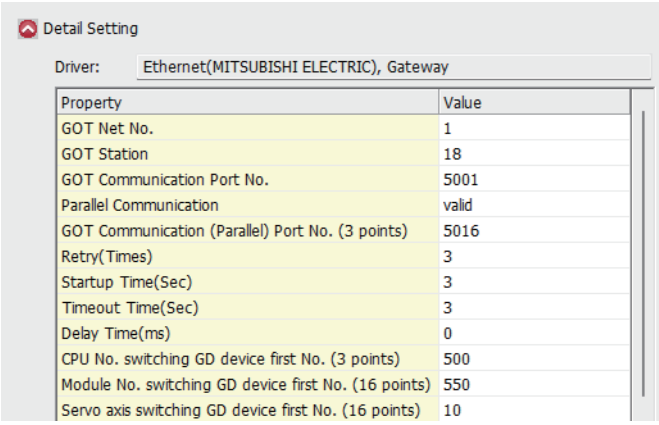
4. When you have completed the settings, click the [OK] button.

Point

The controller settings can be checked in [I/F Communication Setting].
For details, refer to the following.
📖GT Designer3 (GOT3000) Screen Design Manual

■[Detail Setting]

Configure the settings according to the usage environment.



Item	Description	Range
[Driver]	This item appears when communication drivers are selectable according to the settings of [Controller Type] and [I/F].	[Ethernet(MITSUBISHI ELECTRIC), Gateway]
[GOT Net No.]	Set the network number of the GOT.	[1] to [239]
[GOT Station]*2*4	Set the station number of the GOT.	[1] to [120]
[GOT Communication Port No.]*3	Set the GOT port number for connection with the Ethernet module.	[1024] to [5010], [5014] to [49152], [49171] to [65534]
[Parallel Communication]*5	Enables or disables the parallel communication. When this setting is enabled, [GOT Communication (Parallel) Port No. (3 points)] can be set. When communicating with multiple devices on a single channel, distributing the communication ports can reduce the communication load.	[valid], [invalid]
[GOT Communication (Parallel) Port No. (3 points)]	Set the GOT port number used for the parallel communication.	• [Parallel Communication] is [invalid]: [0] • [Parallel Communication] is [valid]: [1024] to [5008], [5014] to [49150], [49171] to [65532]
[Retry(Times)]	Set the number of retries to be performed when a communication timeout occurs. When receiving no response after retries, the communication times out.	GOT: [0] times to [5] times GT SoftGOT3000: [0] times to [10] times
[Startup Time]	Set the time period from the GOT startup until the start of communication with the PLC CPU.	[3] seconds to [255] seconds
[Timeout Time]*1	Set the time period for a communication to time out.	[1] second to [90] seconds
[Delay Time]	Set the delay time for reducing the load of the network and destination PLC.	[0] ms to [10000] ms
[CPU No. switching GD device first No. (3 points)]	Set the start device number of the GD devices for CPU number switching. For details, refer to the following. ☞ Page 404 Start device number of the GD devices for CPU number switching	[0] to [65520]
[Module No. switching GD device first No. (16 points)]	Set the start device number of the GD devices for module number switching. For details, refer to the following. ☞ Page 405 Start device number of the GD devices for module number switching	[0] to [65520]
[Servo axis switching GD device first No. (16 points)]	Set the start device number of the GD devices for servo axis switching. For details, refer to the following. ☞ Page 406 Start device number of the GD devices for servo axis switching	[0] to [65520]

*1 To connect the GOT with the Ethernet module (Q series) in the one-on-one relationship without using a hub, set [Timeout Time] to 6 seconds or longer.
*2 Set values not set for [Station] in [Connected Ethernet Controller Setting].
☞ Page 407 [Connected Ethernet Controller Setting]
*3 For connection to the QCPU, do not set [5009] for the GOT communication port number. Doing so disables communications.
*4 When connecting multiple GOTs in the Ethernet network, set a different value for [GOT Station] for each GOT.
*5 When the MELSEC redundant settings are enabled, [Parallel Communication] is set to [invalid].

Point

• Controller settings using the GT37 utility

The controller settings can be changed in [Communication Settings] of the GT37 utility after writing [Communication Settings] of project data to GT37.

For details on the GT37 utility, refer to the following manual.

📖GOT3000 Series User's Manual (Utility & Maintenance Functions)

• Priority of the settings in [Controller Setting]

When the settings are configured in GT Designer3 or in the GT37 utility, the latest settings are effective.

■When connecting multiple GOTs

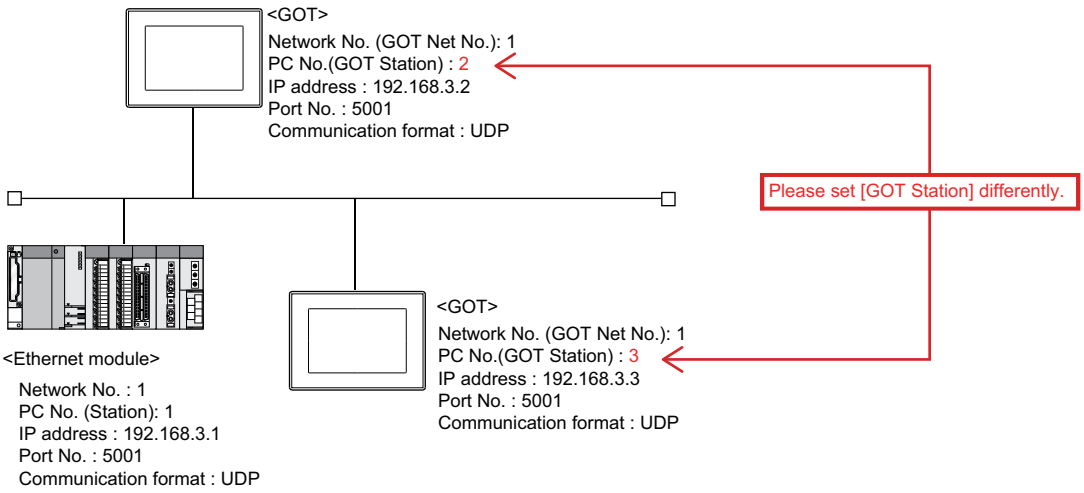
• Settings for [GOT Station]

When connecting multiple GOTs in the Ethernet network, set a different value for [GOT Station] for each GOT.

☞ Page 401 [Detail Setting]

The following shows a system configuration example.

Ex.



• Settings to start up multiple GOTs simultaneously

When connecting multiple GOTs to one built-in Ethernet port CPU, adjust the timing of GOT communication start.

When the communication concentrates on the PLC, the communication between GOT and PLC becomes difficult, and the monitoring by GOT may not start.

As a method for adjusting the timing, communicating one GOT alone first, and then communicating the other GOTs is effective.

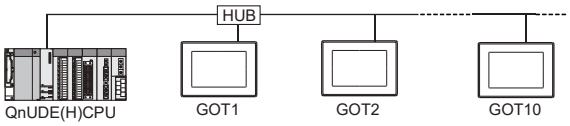
Set the following items on each GOT.

[Startup Time] in [Detail Setting] or [Title Display Time] of [GOT Setup]

[Timeout Time] in [Detail Setting]

The following shows a setting example.

Ex.



Item	GOT1	GOT2	GOT10
Startup Time	3sec (default)	4sec	4sec
Timeout Time	3sec (default)	4sec	4sec

■Start device number of the GD devices for CPU number switching

• Indirect specification of a CPU number

[CPU No.] can be indirectly specified with the GOT internal registers (GD devices) by specifying a value (100 to 102) to [CPU No.] in the device setting dialog in GT Designer3.

Set the start device number of the GD devices to be used in [CPU No. switching GD device first No. (3 points)].

[CPU No.] is specified with three consecutive GD devices, starting from the set device number.

When [500] is set to [CPU No. switching GD device first No. (3 points)], GD500 to GD502 are used to specify [CPU No.] as shown in the following table.

CPU No.	GD device	Setting range
100	GD500	1 to 4 Setting a value outside the range causes a communication timeout error. Specifying a nonexistent CPU number or a CPU number not supporting a multiple CPU system with a device causes a controller error.
101	GD501	
102	GD502	

• Indirect specification of a CPU number on the initially displayed screen

Set [CPU No. switching GD device first No. (3 points)] so that the values of the GD devices are retained and monitored upon the GOT startup.

• Indirect specification of a CPU number for multi-channel connection

If the setting range of [CPU No. switching GD device first No. (3 points)] set for each channel overlaps, the monitoring target CPU number set to each channel is switched simultaneously.

Set [CPU No. switching GD device first No. (3 points)] for each channel so that the setting range does not overlap.

• Indirect specification of a station number and a CPU number for multi-channel connection

When GD10 to GD25 are used to specify the station number of an inverter or non-Mitsubishi temperature controller connected, setting [10] to [CPU No. switching GD device first No. (3 points)] in a different channel switches the monitoring target CPU number and station number of an inverter or non-Mitsubishi temperature controller set to each channel simultaneously.

Set [CPU No. switching GD device first No. (3 points)] so that the setting range does not overlap the station number of an inverter or non-Mitsubishi temperature controller.

■Start device number of the GD devices for module number switching

• Indirect specification of a module number

For connection via a Simple Motion module, [Unit No.] can be specified with the GOT internal registers (GD devices) by specifying a value (100 to 10F) to [Unit No.] in the device setting dialog in GT Designer3.

Set the start device number of the GD devices to be used in [Module No. switching GD device first No. (16 points)].

[Unit No.] is specified with 16 consecutive GD devices, starting from the set device number.

When [550] is set to [Module No. switching GD device first No. (16 points)], GD550 to GD565 are used to specify [Unit No.] as shown in the following table.

Module No.	GD device	Setting range
100	GD550	00 to FF Setting a value outside the above range causes a device range error.
101	GD551	
102	GD552	
103	GD553	
104	GD554	
105	GD555	
106	GD556	
107	GD557	
108	GD558	
109	GD559	
10A	GD560	
10B	GD561	
10C	GD562	
10D	GD563	
10E	GD564	
10F	GD565	

• Indirect specification of a module number on the initially displayed screen

Set [Module No. switching GD device first No. (16 points)] so that the values of the GD devices are retained and monitored upon the GOT startup.

• Indirect specification of a module number for multi-channel connection

If the setting range of [Module No. switching GD device first No. (16 points)] set for each channel overlaps, the module number of the Simple Motion module via the servo amplifier device of each channel is switched simultaneously.

Set [Module No. switching GD device first No. (16 points)] for each channel so that the setting range does not overlap.

• Indirect specification of a station number and a module number for multi-channel connection

When GD10 to GD25 are used to specify the station number of an inverter or non-Mitsubishi temperature controller connected, setting [10] to [Module No. switching GD device first No. (16 points)] switches the module number of the Simple Motion module via the servo amplifier device and the station number of an inverter or non-Mitsubishi temperature controller set to each channel simultaneously.

Set [Module No. switching GD device first No. (16 points)] so that the setting range does not overlap the station number of an inverter or non-Mitsubishi temperature controller.

■Start device number of the GD devices for servo axis switching

• Indirect specification of a servo axis number

For connection via a Motion CPU or Simple Motion module, a servo axis number can be indirectly specified with GOT internal registers (GD devices) by specifying a value (100 to 115) to the axis number of the servo amplifier device.

Set the start device number of the GD devices to be used in [Servo axis switching GD device first No. (16 points)].

Specify a servo axis number with 16 consecutive GD devices, starting the set device number.

When [10] is set to [Servo axis switching GD device first No. (16 points)], GD10 to GD25 are used to specify a servo axis number as shown in the following table.

Servo axis No.	GD device	Setting range
100	GD10	1 to 64 Setting a value outside the above range causes a device range error.
101	GD11	
102	GD12	
103	GD13	
104	GD14	
105	GD15	
106	GD16	
107	GD17	
108	GD18	
109	GD19	
110	GD20	
111	GD21	
112	GD22	
113	GD23	
114	GD24	
115	GD25	

• Indirect specification of a servo axis number on the initially displayed screen

Set [Servo axis switching GD device first No. (16 points)] so that the values of the GD devices are retained and monitored upon the GOT startup.

• Indirect specification of a servo axis number for multi-channel connection

If the setting rage of [Servo axis switching GD device first No. (16 points)] set for each channel overlaps, the axis number of the servo amplifier of each channel is switched simultaneously.

Set [Servo axis switching GD device first No. (16 points)] for each channel so that the setting range does not overlap.

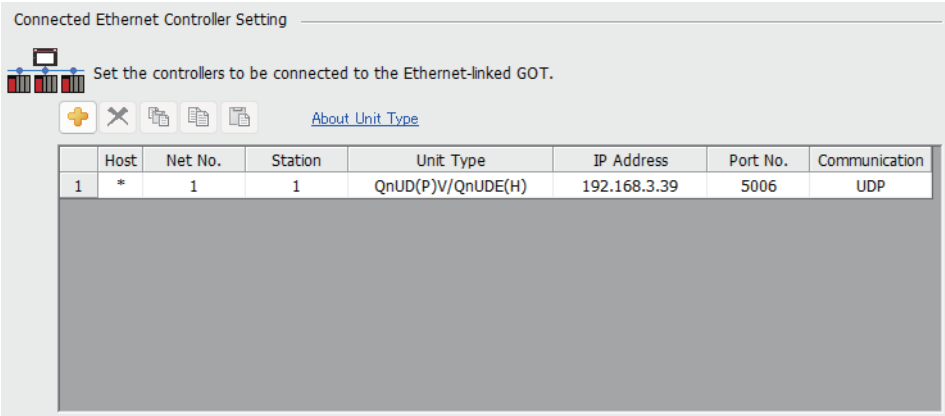
• Indirect specification of a station number and a servo axis number for multi-channel connection

When GD10 to GD25 are used to specify the station number of an inverter or non-Mitsubishi temperature controller connected, setting [10] to [Servo axis switching GD device first No. (16 points)] switches the axis number of the servo amplifier and the station number of an inverter or non-Mitsubishi temperature controller set to each channel simultaneously.

Set [Servo axis switching GD device first No. (16 points)] so that the setting range does not overlap the station number of an inverter or non-Mitsubishi temperature controller.

■[Connected Ethernet Controller Setting]

Set the controller to be connected to the GOT by Ethernet.



Item	Description	Range
[Host]	The host is displayed. It refers to a station that can be connected without setting a station number. The host is indicated with an asterisk (*).	—
[Net No.]	Set the network number of the connected Ethernet equipment.	[1] to [239]
[Station]*2	Set the station number of the connected Ethernet equipment.	[1] to [64]
[Unit Type]	Select the model of the connected Ethernet equipment.	☞ Page 407 [Unit Type]
[IP Address]	Set the IP address of the connected Ethernet equipment.	[0.0.0.0] to [255.255.255.255]
[Port No.]*1	Set the port number of the connected Ethernet equipment.	☞ Page 407 [Port No.]
[Communication]	Set the communication format of the connected Ethernet equipment.	[UDP], [TCP]

*1 Match the port number of the CPU and [Port No.] of [Connected Ethernet Controller Setting].

*2 Set values not set for [GOT Station] in [Detail Setting].
☞ Page 401 [Detail Setting]

■[Unit Type]

Select an item for [Unit Type] as shown below.

GOT connection destination	[Unit Type]
Ethernet module	[QJ71E71/LJ71E71]
NZ2GF-ETB	[NZ2GF-ETB]
QnUD(P)V, QnUDE(H), QCPU, Q170MCPU, Q170MSCPU(-S1), Q173D(S)CPU(-S1), Q172D(S)CPU(-S1)	[QnUD(P)V/QnUDE(H)]
CR800-Q (Q172DSRCPU)	[Q17nDSR]

■[Port No.]

The setting range is as follows:

[Unit Type]	[Port No.]	[Communication]
[QJ71E71/LJ71E71], [NZ2GF-ETB]	[5001]	[UDP]
	[5002]	[TCP]
[QnUD(P)V/QnUDE(H)]	[5006]	[UDP]
	[5007]	[TCP]
[Q17nDSR]	[5001]	[UDP]

■When selecting [QnUD(P)V/QnUDE(H)] for [Unit Type]

There is no setting for the network number and PLC number of built-in Ethernet port CPU (Port number: 5006, 5007).
The values of [Network No.] and [Station No.] in the object setting dialog must be the same as the values of [Net No.] and [Station] in [Connected Ethernet Controller Setting].

■Connection to the PLC via the Ethernet module with [Communication] set to [TCP]

During communication with the PLC via the Ethernet module with [Communication] set to [TCP], using the FA transparent function may change the setting from [TCP] to [UDP] and start communication with the PLC via the Ethernet module with the new setting.
In this case, communication with the PLC via the Ethernet module cannot be executed normally.
Take the following corrective action.

Phenomenon	Cause	Corrective action
Communication fails when using the FA transparent function.	[UDP] is not available in the open settings of the built-in Ethernet port PLC.	Add [UDP] to the PLC side open settings.
	When the multi-channel Ethernet connection is used, [TCP] and [UDP] are used to the same IP address, and then the FA transparent function is used for the channel set to [TCP].	Execute the FA transparent function for the channel set to [UDP].

Point

Changing the host station on the GOT
[Host] can be changed with the utility function of the GOT.
For details on the setting method, refer to the following manual.
📖GOT3000 Series User's Manual (Utility & Maintenance Functions)

■Routing parameter settings

Up to 64 settings can be configured for [Transfer Net No.].

However, the same number cannot be set in [Transfer Net No.] twice or more (multiple times).

The GOT (host station) can access 64 different networks specified under [Transfer Net No.].

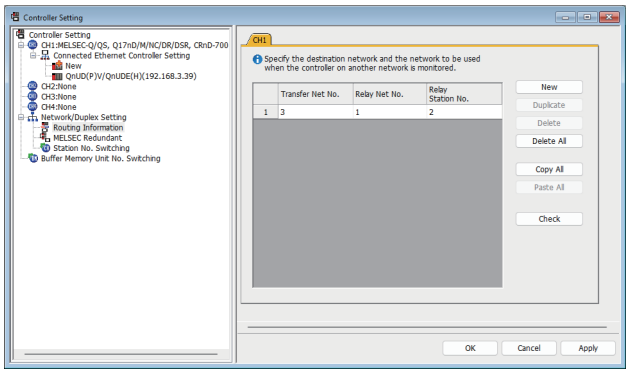
Point

Routing parameter settings

When communicating within the host network, routing parameter settings are not required.

For details on routing parameters, refer to the following manual.

📖MELSEC-Q/L Ethernet Interface Module User's Manual (Application)



Item	Range
[Transfer Net No.]	[1] to [239]
[Relay Net No.]*1	[1] to [239]
[Relay Station No.]*1	[0] to [120]

*1 To access a different network via the built-in Ethernet port CPU, set the values of [Net No.] and [Station] that are set in [Connected Ethernet Controller Setting] in GT Designer3.

Point

Routing parameter settings for the relay station

Routing parameter settings are also necessary for the relay station.

For the setting, refer to the following.

☞ Page 410 PLC side settings

Precautions

If the network numbers of the GOT and PLC do not match on the same Ethernet network, monitoring of the PLC is not possible.

To enable monitoring, set the same network number as that of the GOT or connect an Ethernet module to the PLC and configure the routing settings to monitor the PLC as a different network.

When the multi-channel connection can be used, set a different network number for each channel.

4.10.4 PLC side settings

Model		Reference
MELSEC-Q (Q mode)	Q00JCPU Q00CPU Q01CPU Q02CPU Q02HCPU Q06HCPU Q12HCPU Q25HCPU Q02PHCPU Q06PHCPU Q12PHCPU Q25PHCPU Q12PRHCPU (main base) Q25PRHCPU (main base) Q12PRHCPU (remote extension base) Q25PRHCPU (remote extension base) Q12PRHCPU (extension base) Q25PRHCPU (extension base)	☞ Page 412 Connection to Ethernet module (MELSEC-Q series)
	Q00UJCPU Q00UJCPU-S8 Q00UCPU Q01UCPU Q02UCPU Q03UDCPU Q04UDHCPU Q06UDHCPU Q10UDHCPU Q13UDHCPU Q20UDHCPU Q26UDHCPU Q03UDECPU Q04UDEHCPU Q06UDEHCPU Q10UDEHCPU Q13UDEHCPU Q20UDEHCPU Q26UDEHCPU Q50UDEHCPU Q100UDEHCPU Q03UDVCPU Q04UDVCPU Q06UDVCPU Q13UDVCPU Q26UDVCPU	☞ Page 412 Connection to Ethernet module (MELSEC-Q series) ☞ Page 418 Connection to NZ2GF-ETB
MELSEC-QS	QS001CPU	☞ Page 412 Connection to Ethernet module (MELSEC-Q series)
Motion CPU (Q series)	Q172CPUN Q173CPUN Q172HCPU Q173HCPU Q172DCPU Q173DCPU Q172DCPU-S1 Q173DCPU-S1 Q172DSCPU Q173DSCPU Q170MCPU Q170MSCPU Q170MSCPU-S MR-MQ100	☞ Page 412 Connection to Ethernet module (MELSEC-Q series)
MELSECNET/H remote I/O station	QJ72LP25-25 QJ72LP25G QJ72BR15	☞ Page 412 Connection to Ethernet module (MELSEC-Q series)
CNC C70	Q173NCCPU	☞ Page 412 Connection to Ethernet module (MELSEC-Q series)

Model		Reference
Robot controller (Q series)	CRnQ-700 (Q172DRCPU) CR750-Q (Q172DRCPU) CR751-Q (Q172DRCPU)	☞ Page 412 Connection to Ethernet module (MELSEC-Q series)
	CR800-Q (Q172DSRCPU)	☞ Page 412 Connection to Ethernet module (MELSEC-Q series)

Precautions

Do not set a remote password on the QCPU (Q mode).
Doing so disables monitoring with the GOT.

Connection to Ethernet module (MELSEC-Q series)

This section describes the settings of the GOT and the Ethernet module (MELSEC-Q series) in the system configuration shown below.

Point

- Ethernet module (MELSEC-Q series)

For details on the Ethernet module (MELSEC-Q series), refer to the following manual.

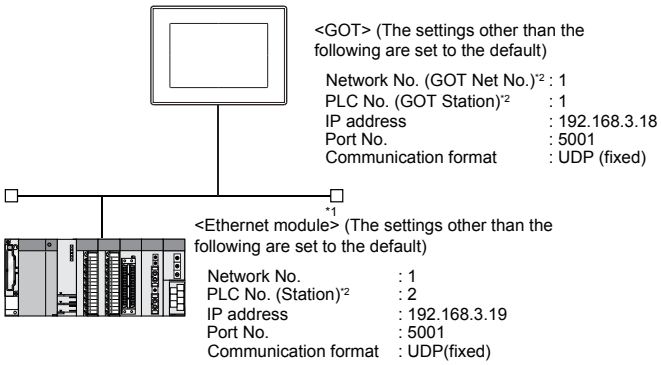
Q Corresponding Ethernet Interface Module User's Manual (Basic)

- Connecting multiple GOTs

When connecting two or more GOTs in the Ethernet network, set each [GOT Station] to the GOT.

Page 403 When connecting multiple GOTs

■System configuration



Setting	Setting name		
	PLC side	GOT side	
		Controller setting	Connected Ethernet controller setting
Network number	[Network No.]	[GOT Net No.]	[Net No.]
PLC number	[Station No.]	[GOT Station]	[Station No.]

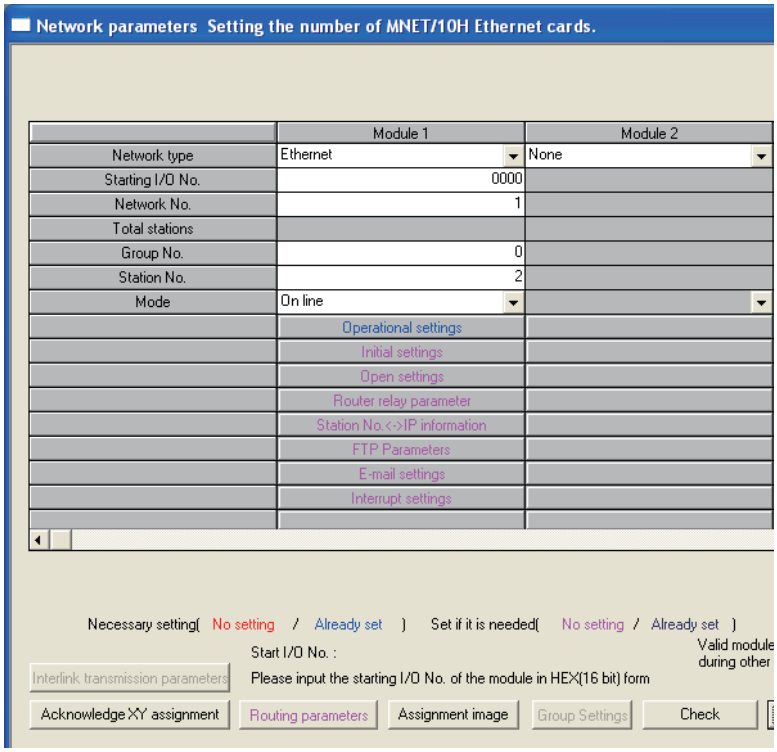
Point

When connecting to Q170MCPU

For connection to Q170MCPU, the start I/O number of the Ethernet module is set to 70.

■[Network parameter] of GX Developer

- Network parameter

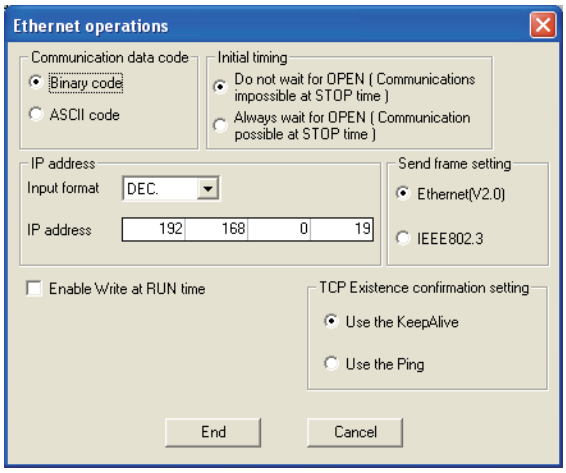


○: Necessary, △: As necessary, —: Not necessary

Item	Setting value	Setting for GOT connection
[Network Type]	Ethernet	○
[Starting I/O No.][*1]	0000H	○
[Network No.][*2]	1	○
[Group No.]	0	○
[Station No.][*3]	2	○
[Mode]	Online	○
[Operation setting]	☞ • Operation settings	○
[Initial settings]	(Use default value)	△
[Open settings]		—
[Router relay parameter]		—
[Station No.<->IP information]		—
[FTP Parameters]		—
[E-mail settings]		—
[Interrupt settings]		—
[Redundant settings][*4]		△
[Routing parameters]	☞ • Routing parameters	△

*1 When using Q170MCPU or Q170MSCPU(-S1), set the start I/O No. to 0070H.
*2 Set the same network number as that of the GOT.
*3 Do not set the same station No. as that of the GOT.
*4 Set when using Ethernet module in a redundant QnPRHCPU system.

• Operation settings



○: Necessary, △: As necessary, —: Not necessary

Item	Setting value	Setting for GOT connection
[Communication Data Code]*1	(Use default value)	—
[IP address]	192.168.3.19	○
[Initial timing]*1	(Use default value)	—
[Send frame setting]		—
[Enable Write at RUN time]*1		—
[TCP Existence confirmation setting]		—

*1 Because port number 5001 is fixed, the GOT operates as follows regardless of this setting.
• [Communication Data Code]: [Binary Code]
• [Initial timing]: [Always wait for OPEN (Communication possible at STOP time)] (Communications are possible while the PLC CPU is stopped.)
• [Enable Write at RUN time]: Enable write at RUN time (Data can be written while the PLC CPU is running.)

Point

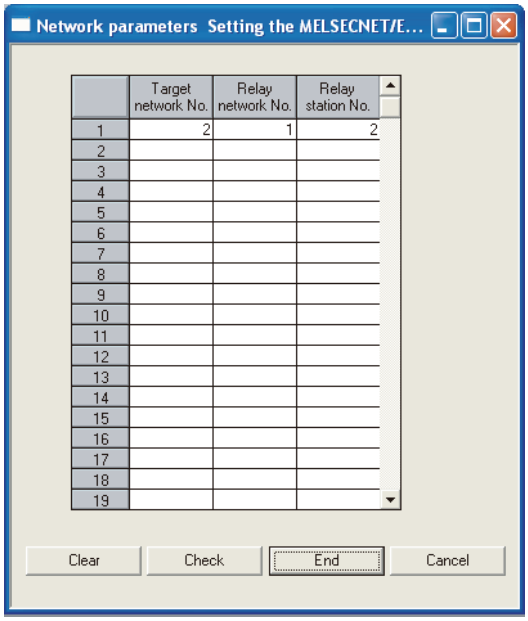
When changing the network parameter
After writing network parameters to the PLC CPU, turn off then on or reset the PLC CPU.

• Routing parameters

Up to 64 network numbers can be set for [Target network No.].

However, the same number cannot be set in [Target network No.] twice or more (multiple times).

The GOT (host station) can access 64 different networks specified under [Target network No.].



Item	Range
[Target network No.]	[1] to [239]
[Relay network No.]	[1] to [239]
[Relay station No.]	[0] to [64]

Point

Routing parameter settings for the request source

Routing parameter settings are also necessary for the request source GOT.

For the setting, refer to the following.

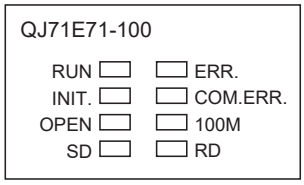
☞ Page 409 [Controller Setting]

• Communication confirmation

The INIT.LED on the Ethernet module turns on when the module is ready to communicate.

For checking the communication status, refer to the following.

☞ Page 417 Checking the communication status of the Ethernet module



*1

*1 The LED indications shown in the figure are for the QJ71E71-100.

■[Controller Setting] and [Connected Ethernet Controller Setting] of GT Designer3

For the setting method of [Controller Setting] and [Connected Ethernet Controller Setting] in GT Designer3, refer to the following.

☞ Page 399 GOT side settings

- Controller settings

Item	Setting value
[GOT Net No.]	1
[GOT Station]	1
[GOT Communication Port No.]	5001
[Retry]	3 times
[Startup Time]	3 seconds
[Timeout Time]	3 seconds
[Delay Time]	0 ms

- GOT Ethernet settings

Item	Setting value
[GOT IP Address]	192.168.3.18
[Subnet Mask]	255.255.255.0
[Default Gateway]	0.0.0.0
[Peripheral S/W Communication Port No.]	5015
[Transparent Port No.]	5014

- Connected Ethernet controller settings

Item		Setting value
Ethernet setting No. 1	[Host]	*
	[Net No.]	1
	[Station No.]	2
	[Unit Type]	QJ71E71
	[IP Address]	192.168.3.19
	[Port No.]*1	5001
	[Communication]*1	UDP

*1 The following settings can also be configured for [Port No.] and [Communication].
[Port No.]: 5002
[Communication]: TCP

■Checking the communication status of the Ethernet module

• When using Windows Command Prompt

Execute a ping command in Windows Command Prompt.

1) At normal end

C:\>Ping 192.168.3.19

Reply from 192.168.3.19:bytes=32 time<1ms TTL=32

2) At abnormal end

C:\>Ping 192.168.3.19

Request timed out.

• In the case of abnormal end

In the case of abnormal end, check the following and execute the ping command again.

Mounting condition of the Ethernet module

Cable connecting condition

Switch settings and network parameter settings

Operation state of PLC CPU (faulty or not)

IP address of the Ethernet module specified by the ping command

Point

Ethernet diagnostics of GX Developer

The Ethernet diagnostics of GX Developer enables ping tests from the PLC.

For details on the Ethernet diagnostics of GX Developer, refer to the following manual.

User's manual of the Ethernet module used

Connection to NZ2GF-ETB

This section describes the settings of the GOT, CC-Link IE Field Network Ethernet adapter module (NZ2GF-ETB), and PLC in the system configuration shown below.

Point

- CC-Link IE Field Network Ethernet adapter module (NZ2GF-ETB)

For details on the CC-Link IE Field Network Ethernet adapter module (NZ2GF-ETB), refer to the following.

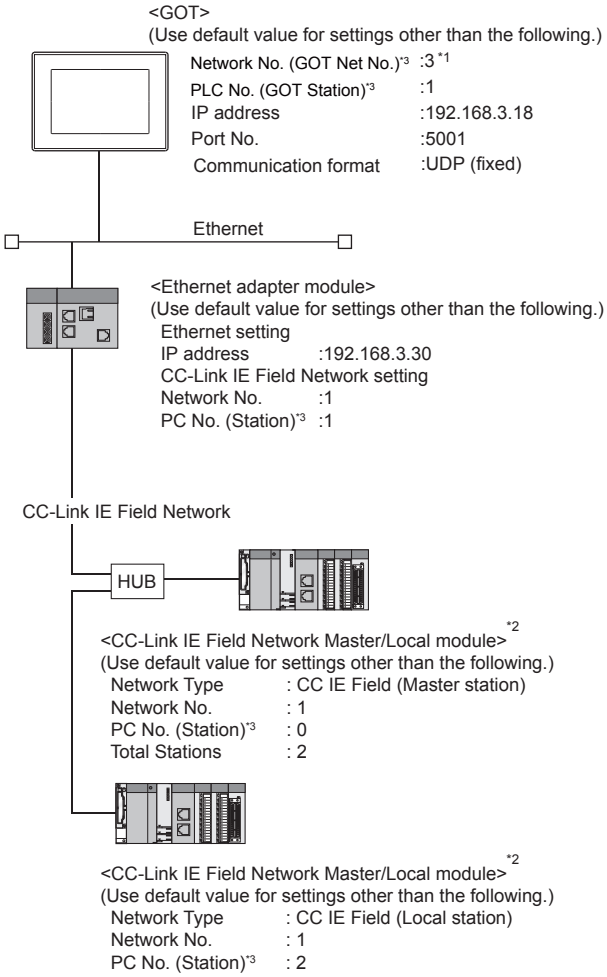
Manual of the CC-Link IE Field Network Ethernet adapter module

- Connecting multiple GOTs

When connecting two or more GOTs in the Ethernet network, set each [GOT Station] to the GOT.

☞ Page 403 When connecting multiple GOTs

■System configuration



*1 Apply the third octet (network number) of the Ethernet adapter module's IP address to the GOT network number.

*2 The CC-Link IE Field Network Master/Local module is mounted on slot 0 of the base unit.
The start I/O number of the CC-Link IE Field Network master/local module is set to 0.

*3 For the following settings, the setting names are different on the PLC side and the GOT side.

Setting	Setting name		
	PLC side	GOT side	
		Controller setting	Connected Ethernet controller setting
Network number	[Network No.]	[GOT Net No.]	[Net No.]
PLC number	[Station]	[GOT Station]	[Station]

■GX Works2 network parameter Ethernet, CC IE, MELSECNET

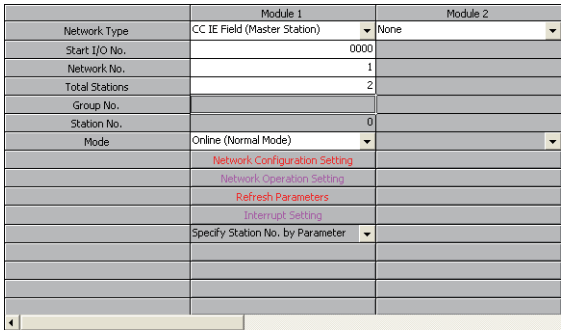
For details on the settings of the PLC, refer to the following manual.

📖MELSEC-Q CC-Link IE Field Network Master/Local Module User's Manual

- Settings of network type, network number, and total number of stations

Ex.

Master station settings



Item	Setting value	
	Master station	Local station
[Network Type]	CC IE Field (Master station)	CC IE Field (Local station)
[Network No.]	1	1
[Total Stations]	2	—
[Station No.]	0	2

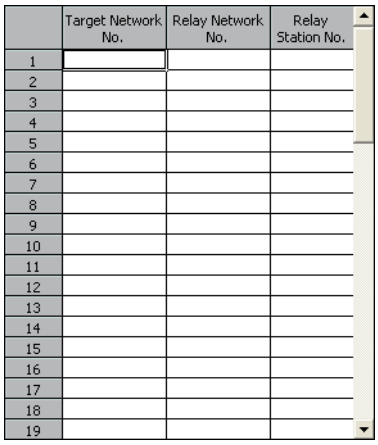
- Routing parameter settings

Set the following as necessary.

Up to 64 network numbers can be set for [Target Network No.].

However, the same number cannot be set in [Transfer Network No.] twice or more (multiple times).

The GOT (host station) can access 64 different networks specified under [Target Network No.].



Item	Range
[Target Network No.]	[1] to [239]
[Relay Network No.]	[1] to [239]
[Relay Station No.]	[0] to [64]

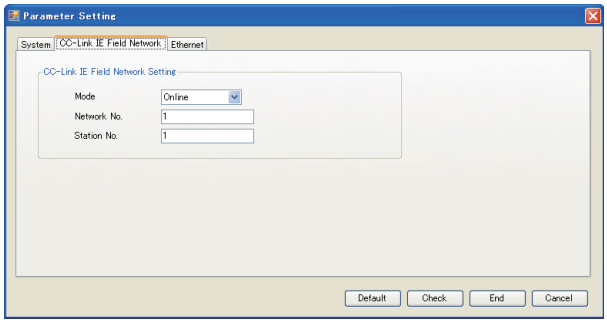
■Ethernet Adapter Module setting

Set the parameter with the Ethernet adapter module setting tool.

For details on the setting method, refer to the following manual.

📖CC-Link IE Field Network Ethernet Adapter Module User's Manual

- CC-Link IE Field Network setting

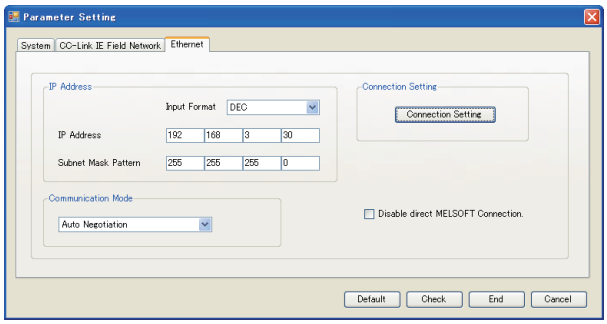


Item	Setting value
[Network No.]	1*1
[Station No.]	1*2

*1 Set the same value as the network number set on the PLC side.

*2 Set a value other than the network No. set on the PLC side.

- Ethernet settings



Item	Setting value
[IP Address]	192.168.3.30*1

*1 Set [IP Address] within the following ranges.

192.168.3.30

Set the fourth octet within the range from 1 to 64.

Set the third octet within the range from 1 to 239.

■[Controller Setting] and [Connected Ethernet Controller Setting] of GT Designer3

For the setting method of [Controller Setting] and [Connected Ethernet Controller Setting] in GT Designer3, refer to the following.

☞ Page 399 GOT side settings

- Controller settings

Item	Setting value
[GOT Net No.]	3*1
[GOT Station]	1
[GOT Communication Port No.]	5001
[Retry]	3 times
[Startup Time]	3 seconds
[Timeout Time]	3 seconds
[Delay Time]	0 ms

*1 Apply the third octet (network number) of the Ethernet adapter module's IP address to [GOT Net No.].

- GOT Ethernet settings

Item	Setting value
[GOT IP Address]	192.168.3.18
[Subnet Mask]	255.255.255.0
[Default Gateway]	0.0.0.0
[Peripheral S/W Communication Port No.]	5015
[Transparent Port No.]	5014

- Connected Ethernet controller settings

Item		Setting value
Ethernet setting No. 1	[Host]	*
	[Net No.]	3*1
	[Station]	30*2
	[Unit Type]	NZ2GF-ETB
	[IP Address]	192.168.3.30*3
	[Port No.]*4	5001
	[Communication]*4	UDP

*1 Apply the third octet (network number) of the Ethernet adapter module's IP address.
*2 Apply the fourth octet (PLC number) of the Ethernet adapter module's IP address.
*3 Set according to the Ethernet adapter module IP address.
*4 The following settings can also be configured for [Port No.] and [Communication].
[Port No.]: 5002
[Communication]: TCP

- Routing parameter settings

Item	Setting value
[Target network No.]	1*1
[Relay network No.]	3*2
[Relay Station No.]	30*3

*1 Set the same value as the network number of the Ethernet adapter module.
*2 Apply the third octet (network number) of the Ethernet adapter module's IP address.
*3 Apply the fourth octet (PLC number) of the Ethernet adapter module's IP address.

4.10.5 Access range for monitoring

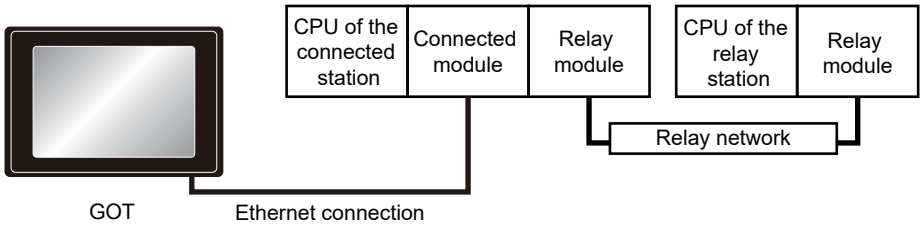
When the GOT is connected to the CPU of the station connected via Ethernet, the range accessible via the CPU is as follows.

Point

- When monitoring other networks (Routing parameter settings)

To monitor other networks, routing parameter settings are necessary.

For the routing parameter settings, refer to the reference manual of the network connected.



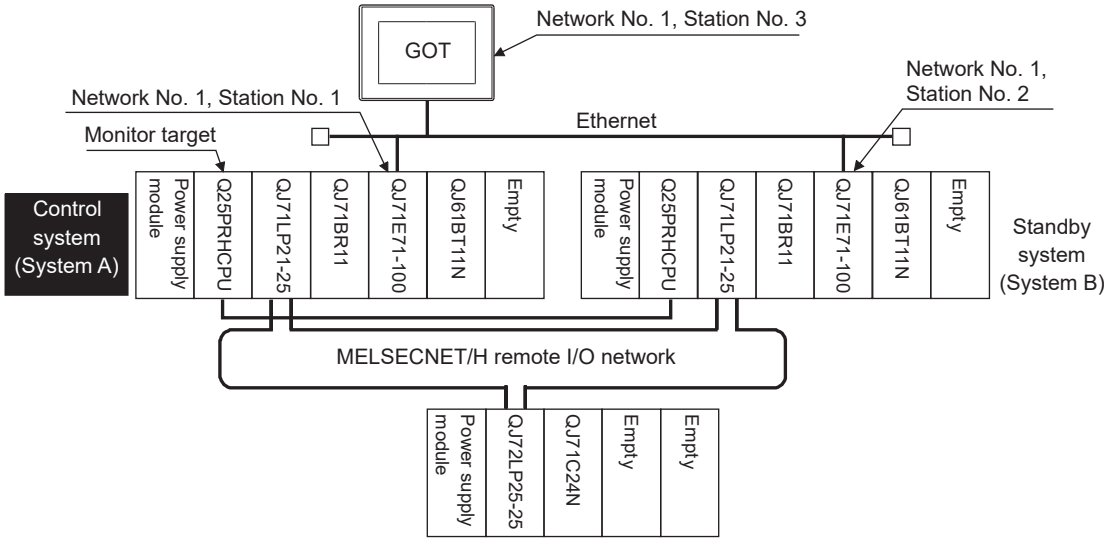
○: Accessible, —: Inaccessible

CPU of the connected station	Connected module	Relay station								
		Relay network	CPU of the relay station							
			RCPU	LCPU	QCPU (Q mode)	QSCPU	QCPU (A mode)	QnACPU	ACPU	FX5CPU
QnUCPU QnUDCPU QnUDHCPU QnUDECPU QnUDEHCPU QnUDVCPU	☞ Page 392 Connectable devices	Ethernet	—	○	○*3	○	—	○	—	—
		CC-Link IE Controller Network	—	—	○	○	—	—	—	—
		CC-Link IE Field Network	—	○	○*1	○	—	—	—	—
		MELSECNET/H, MELSECNET/10	—	—	○	○	○	○	○*2	—
QnJCPU QnCPU QnHCPU QnPHCPU QnPRHCPU	☞ Page 392 Connectable devices	Ethernet	—	○	○*3	○	—	○	—	—
		CC-Link IE Controller Network	—	—	○	○	—	—	—	—
		MELSECNET/H, MELSECNET/10	—	—	○	○	○	○	○*2	—
NZ2GF-ETB	☞ Page 392 Connectable devices	CC-Link IE Field Network	—	—	○*1	—	—	—	—	—
QJ72LP25-25 QJ72LP25G	☞ Page 392 Connectable devices	MELSECNET/H, MELSECNET/10	—	—	○	—	—	—	—	—

*1 QnUDVCPU, QnUDECPU, QnUDEHCPU, QnUCPU, QnUDCPU, and QnUDHCPU are supported.
*2 AnUCPU and AnUSCPU are supported.
*3 The C Controller module (MELSEC-Q series) is not supported.

4.10.6 How to monitor a redundant system

This section explains the Ethernet connection that connects the GOT to the Ethernet network system.
The following shows an example of connecting the GOT to the Ethernet network.



Connection method

Connect the Ethernet network system and the GOT.
Configure the Ethernet module settings (network number, station number, and IP address, and others) for the Ethernet modules of systems A and B on the GOT side.
For details, refer to the following.
☞ Page 391 MELSEC-Q series (Ethernet module connection)

Settings in GT Designer3

Set GT Designer3 as follows.

Setting item	Setting details		Model
[Controller Type]	MELSEC-Q/QS, Q17nD/M/NC/DR/DSR, CRnD-700		GT37 SoftGOT3000
Device setting (Network setting)	[Host]	Host (The control system is monitored.)	
	[Other]	[Network No.]: Network number of Ethernet	
		[Station No.]: Station number of the control system	
MELSEC redundant settings	☞ Page 432 MELSEC redundant settings		

To specify the station number which was set for the MELSEC redundant settings in the device settings, set the station number as the other station.

Monitoring target change when system switching occurs in a redundant system

When system switching occurs, the Ethernet module station No. 2 continues to control the Ethernet network system as the control system.
Since the GOT monitors the control system, he monitoring target is automatically changed to the Ethernet module station No. 2.

Point

When monitoring control system without MELSEC redundant settings
When system switching occurs, the Ethernet module station No. 2 continues to control the Ethernet network system as the control system.
Since the GOT monitors the station of the specified station number, the monitoring target cannot be changed to the station No. 2 in response to the system switching.
As a countermeasure, create a screen to monitor the PLC CPU of the control system by switching the station numbers between System A and System B using the script function.
☞ Page 425 Switch the Monitor Target to the Control System Using the Script Function

Switch the Monitor Target to the Control System Using the Script Function

This section describes how to create a script screen to automatically change the monitoring target (station number) at the occurrence of system switching even if the MELSEC redundant settings are not configured.
The script executes the station No. switching function or screen switching function.
The following shows the advantages and disadvantages of the station number switching function and screen switching function.

Function	Advantage	Disadvantage
Station No. switching function	The monitor screens for Station No. 1 (control system) and Station No. 2 (standby system) can be created on one screen.	Some objects do not allow the station number to be switched.
Screen switching function	All objects can be used since monitor screens are created for each station number.	Monitor screens must be created separately for Station No. 1 (control system) and Station No. 2 (standby system).

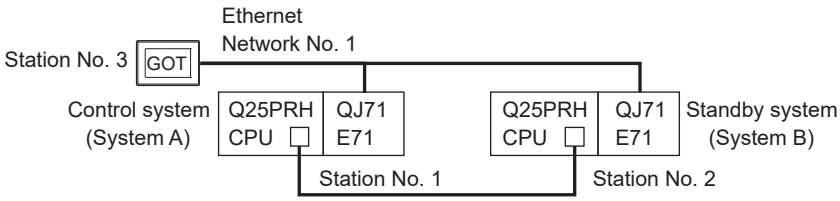
The following explains how to use each function.

■Method for using the station No. switching function

As a feature of this function, monitor screens for Station No. 1 (control system) and Station No. 2 (standby system) can be created on one screen.
If the system switching occurs, the GOT can change the monitoring target to the control system PLC CPU on the same monitor screen.
To achieve this, the script of the GOT monitors the special relay SM1515 (Control system identification flag) of the PLC CPU and stores the station number of the latest control system into the station number switching device.
Restrictions: Some objects do not allow the station number to be switched.
📖GT Designer3 (GOT3000) Screen Design Manual

- Setting procedure

System configuration example



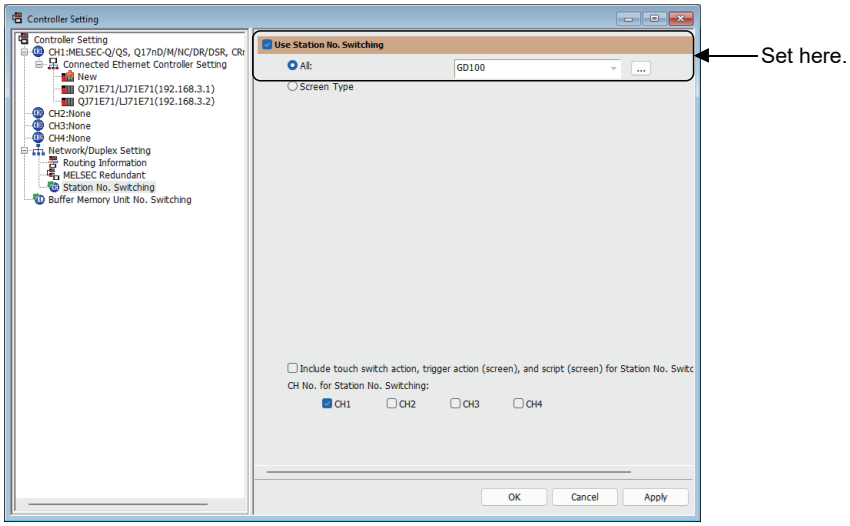
Connected module	Network number	Station No.
Ethernet module of control system	1	1
Ethernet module of standby system		2
GOT connected to the Ethernet network		3

1. Set the station number switching device.

Select [Common] → [Controller Setting] → [Station No. switching] → [All], and set the internal device GD100 as the station number switching device.

Do not use a PLC CPU device as a screen switching device.

Since the device information is transferred by the tracking transfer function of the redundant system, the trigger action may be disabled.



2. Set the trigger action.

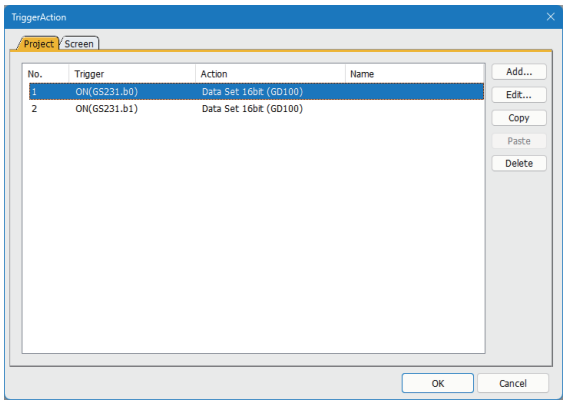
Select [Common] → [Trigger Action] and configure the settings to switch the station number when the faulty station information (GS231) from the station monitoring turns on.

For network number 1 and station number 2, set 258 (0102H).

Condition 1	: GS231.b0 (while ON)	← When b0 is ON, Station No. 1 is abnormal.
Operation	: GD100=258(0102H)	← Station No. is changed to 2.

Condition 1	: GS231.b1 (while ON)	← When b1 is ON, Station No. 2 is abnormal.
Operation	: GD100=257(0101H)	← Station No. is changed to 1.

Create the trigger action in the project on the Project tab.



Point

Setting for the trigger action function

For the trigger action function, hexadecimals cannot be used.

To use the trigger action function, set the N/W No. and the station No. of the PLC CPU in [Unsigned BIN]. (For the trigger action function, set [Unsigned BIN] for [Storing Device])

The following shows a setting example.

- For network number 1 and station number 1 (0101H), set 257.
- For network number 10 and station number 10 (0A0AH), set 2570.

3. Create a monitor screen.

In the device setting (network setting) of each object, set network number 1 and station number 1 of the control system.

4. On the screen 1, set the switch for writing the station No. 1 to the station number switching device.

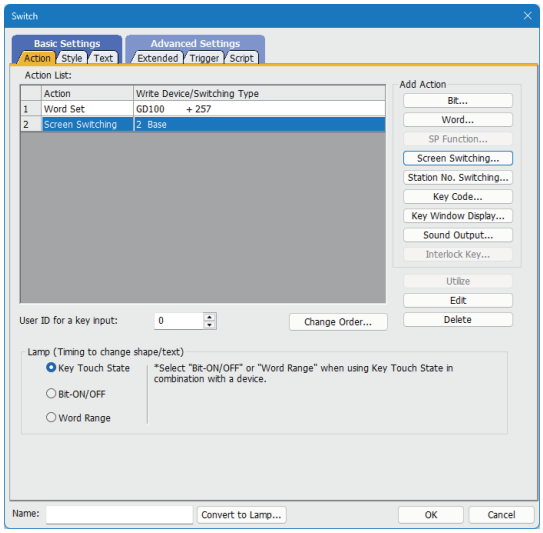
After the GOT is started up, the station number switching device value of the GOT is 0.

For Ethernet connection, the monitor becomes abnormal when the station number switching device value is "0".

Therefore, set the switch for writing the station number to the station number switching device and the switch for shifting to the monitor screen on the screen 1.

To make this setting, select [Object] → [Switch] → [Bit Switch].

The following shows an example of setting GD100=257 (0101H: Network No. 1, Station No. 1) and base screen=2 to one switch. (Base screen 2 is the actually monitoring screen)



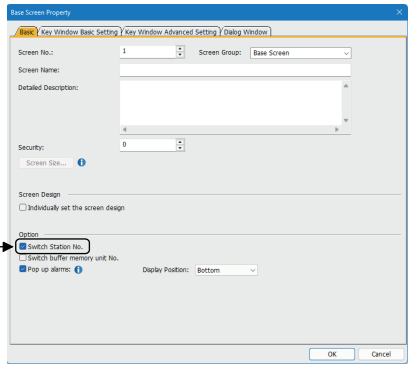
5. Validate the station No. switching function.

Select [Screen] → [Base Screen Property], and select [Switch Station No.] in the [Basic] tab to enable the station No. switching function.

Make this setting for each monitor screen.

However, do not make this setting on the screen 1 created in step 4.

Check here.



6. Change the station number switching device value in the script.

Select [Common] → [Script] → [Script], and create a script of checking the SM1515 status of the current monitor station and changing the station number switching device if the status is OFF (standby system). You will create the script for each monitor screen.

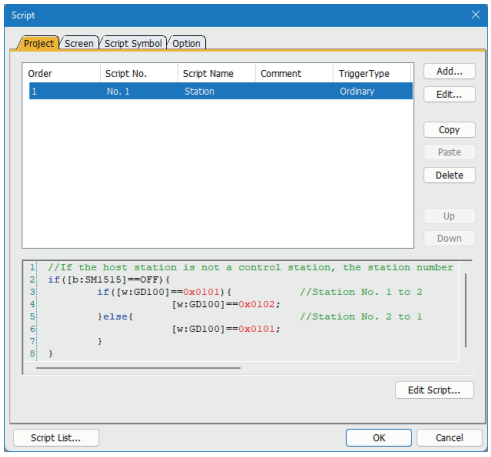
Set the trigger type of the script to [Ordinary] or [Sampling(about 3s)].

```
// If the host station is not a control station, the station number is switched to that of the other station.
if([b:SM1515]==OFF){
        if([w:GD100]==0x0101){                  // Station No. 1 to 2
                [w:GD100]=0x0102;
        }else{                                  // Station No. 2 to 1
                [w:GD100]=0x0101;
        }
}
```

Create a script so that the network number and station number are set to the station switching device.

If the network number is 1 and station number is 2, create a script as [w:GD100]=0x0102.

Set the created script for each screen on the Screen tab.



■Method for using the screen changing function

As a feature of this function, monitor screens are created for each station number. When the system switching occurs, the GOT can change the monitoring target to the control system PLC CPU on the other monitor screen.

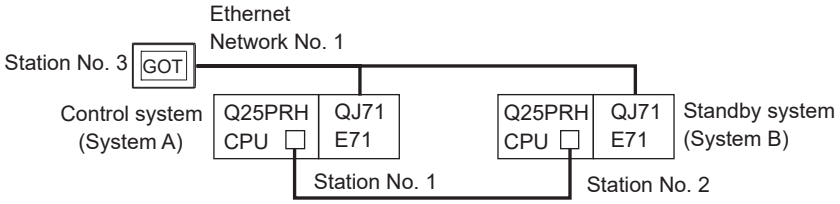
To achieve this, the script of the GOT monitors the special relay SM1515 (Control system identification flag) of the PLC CPU and stores the screen number corresponding to the latest station number of the control system into the screen switching devices.

There are the following 8 different screen switching devices. Set the screen switching devices for all screens to be used.

(1) Base screen switching device
(2) Overlap window 1 switching device
(3) Overlap window 2 switching device
(4) Overlap window 3 switching device
(5) Overlap window 4 switching device
(6) Overlap window 5 switching device
(7) Superimpose window 1 switching device
(8) Superimpose window 2 switching device

• Setting procedure

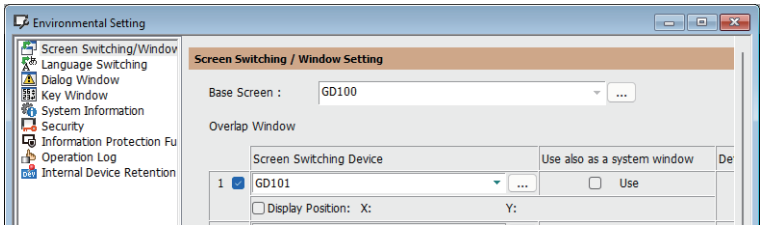
System configuration example



Connected module	Network number	Station No.
Ethernet module of control system	1	1
Ethernet module of standby system		2
GOT connected to the Ethernet network		3

1. Set the screen switching device of the base screen.

Select [Common] → [GOT Environmental Setting] → [Screen Switching/Window], and set the internal device GD100 as the base screen switching device.

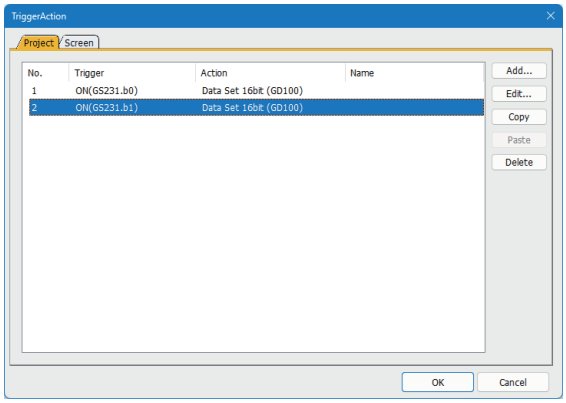


2. Set the trigger action.

Select [Common] → [Trigger Action] and configure the settings to switch the station number when the faulty station information (GS231) from the station monitoring turns on.

Condition 1	: GS231.b0 (while ON)	← When b0 is ON, Station No. 1 is abnormal.
Operation	: GD100=2	← Screen No. is changed to 2.

Condition 1	: GS231.b1 (while ON)	← When b1 is ON, Station No. 2 is abnormal.
Operation	: GD100=1	← Screen No. is changed to 1.



3. Set a monitor screen.

- Create a monitor screen with objects whose network settings set to station No. 1 on screen No. 1 (1-1).
- Create a monitor screen with objects whose network settings set to station No. 2 on screen No. 2 (1-2).

4. Change the screen switching device value in the script.

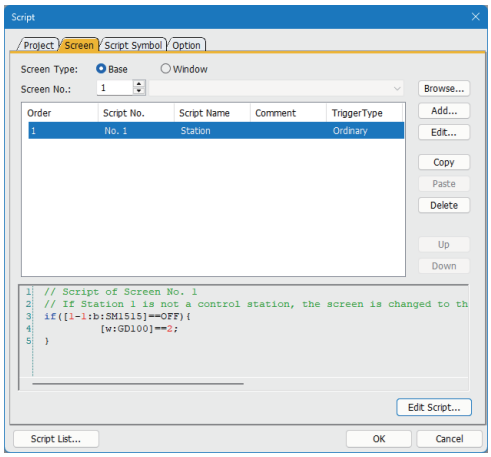
By selecting [Common] → [Script] → [Script], create a script for each monitor screen that checks the SM1515 status of the current monitor station, and if it is OFF (standby system), changes the station number switching device value.

Set the trigger type of the script to [Ordinary] or [Sampling(about 3s)].

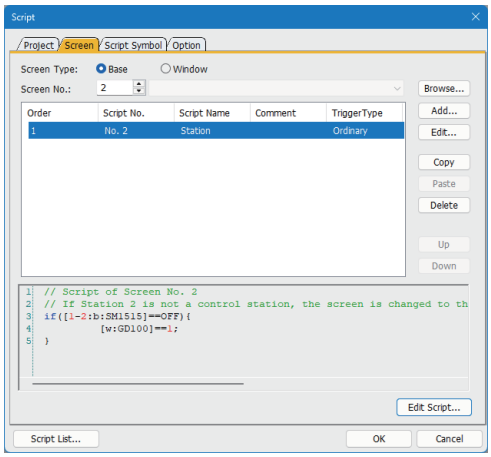
```
// Script of Screen No. 1
// If Station 1 is not a control station, the screen is changed to that of Station 2.
if([1-1:b:SM1515]==OFF){
[w:GD100]=2;
}
```

```
// Script of Screen No. 2
// If Station 2 is not a control station, the screen is changed to that of Station 1.
if([1-2:b:SM1515]==OFF){
[w:GD100]=1;
}
```

- Script screen of screen No. 1



- Script screen of screen No. 2



MELSEC redundant settings

This section describes the settings for the GOT to automatically change the monitoring target of the QCPU redundant system.

Point

Before configuring the MELSEC redundant settings

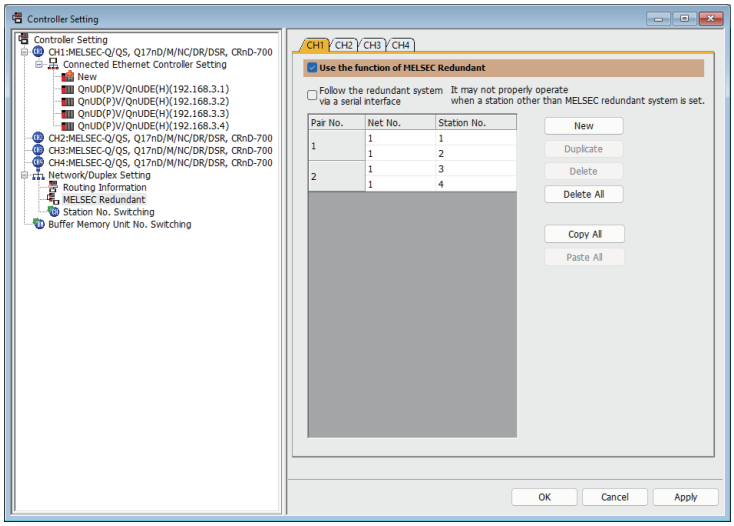
In the MELSEC redundant settings, do not set a station outside the redundant QCPU.

1. Select [Common] → [Controller Setting] → [MELSEC Redundant] from the menu.
2. The setting dialog box appears. Configure the settings by referencing the explanation that follows.
3. Configure the MELSEC redundant settings.

In the MELSEC redundant setting dialog, settings can be made for each channel of the controller.

The following shows an example of redundant CPU pair numbers 1 to 2, network number 1, and redundant CPU station numbers 1 to 4 for the Ethernet connection (station number 5).

Ex.



Item		Description	Model
CH1 to CH4		Select the tab of the channel number to configure the MELSEC redundant settings.	GT37 SoftGOT3000
[Follow the redundant system via a serial interface]		Select this item to monitor the control system as a host station at serial connection.	
[Pair No.]*1	[Net No.]	Set the network number (1 to 255) for each pair number (1 to 64). • Upper row: Setting for the first redundant CPU • Lower row: Setting for the second redundant CPU (The same value as the value set for the first redundant CPU is displayed.)	
	[Station No.]	Set the station number (0 to 120) of the redundant CPU for each pair number (1 to 64). • Upper row: Setting for the first redundant CPU • Lower row: Setting for the second redundant CPU (The setting value for the first redundant CPU + 1 is displayed.)	
[New]		Adds a new pair number.	
[Duplicate]		Copies one setting of the selected pair number and adds it below the bottom row.	
[Delete]		Deletes one setting of the selected pair number. After deletion, the succeeding pair numbers are renumbered to fill the deleted pair number.	
[Delete All]		Deletes all the pair number settings.	
[Copy All]		Copies the MELSEC redundant setting on the selected CH No. tab.	
[Paste All]		Pastes the copied MELSEC redundant setting in the selected CH No. tab.	

*1 For details, refer to the following.

☞ Page 433 Pair number

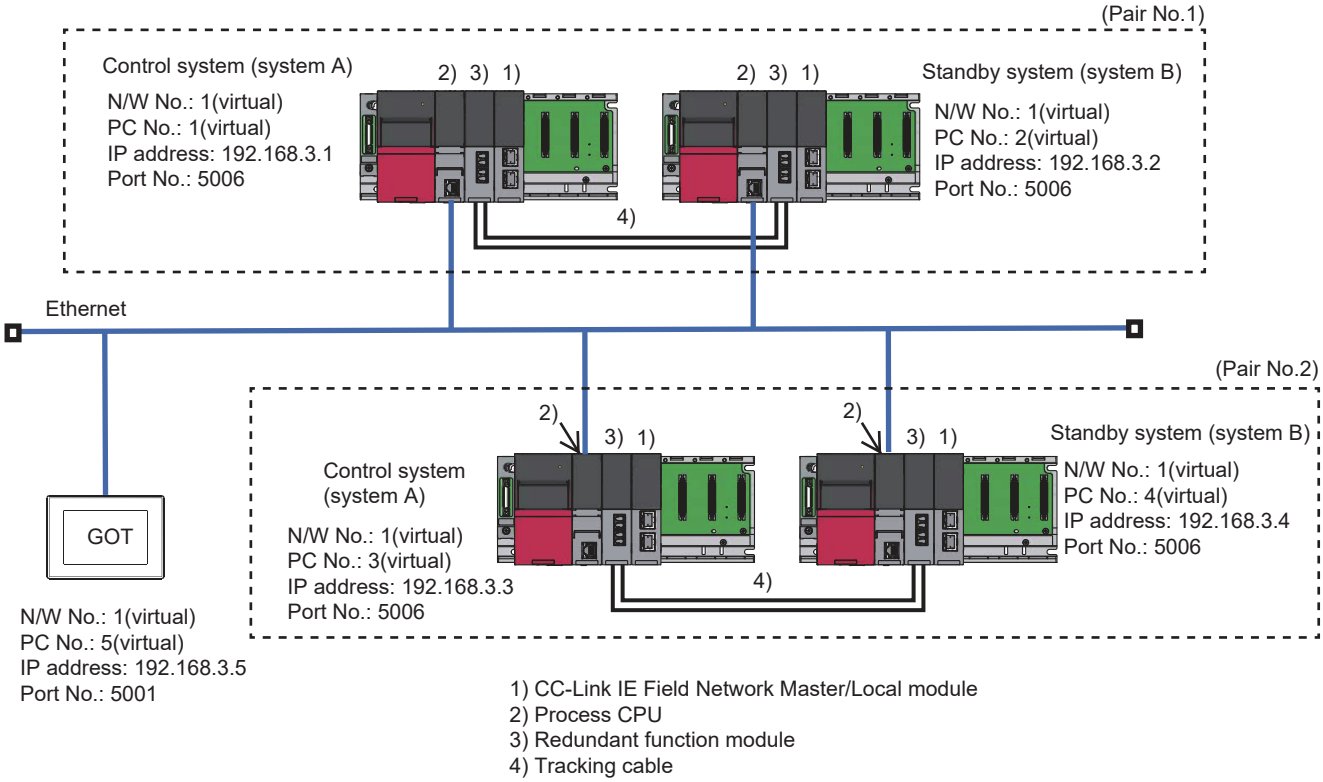
■Pair number

Redundant CPU pair means the redundant CPUs (System A / System B) in the redundant system configuration.

Pair number is the number assigned to each redundant CPU pair.

The following shows an example of Ethernet connection in the RCPU redundant system. (Pair No. 1 to No. 2)

Ex.



Point

Precautions for configuring the MELSEC redundant settings

Pay attention to the following items when configuring the MELSEC redundant settings.

- Pairing of the last station No. and station No. 1 (Example: Station No. 64 and station No. 1) is not allowed.
- Make sure that the QCPU in the station for which MELSEC redundant settings are configured is a redundant CPU. If any of the QCPUs to which the MELSEC redundant settings are configured is not a redundant CPU, the GOT fails to automatically change the monitoring target to the control system when the system is switched.
- Before configuring the settings, make sure to check the station numbers of the network modules. If the MELSEC redundant settings and the actual network module station numbers are inconsistent, the GOT fails to automatically change the monitoring target to the control system when the system is switched.
- GOT supports the backup mode, which is the operation mode of the QCPU redundant system, and does not support the debug mode and separate mode.

Precautions

■Start of the redundant system

The GOT starts monitoring the redundant system after the control system and standby system have been determined, regardless of the starting order of PLC systems A and B.
The GOT starts monitoring when both systems start.
(In a redundant system with a redundant extension base unit, the GOT monitors the control system that starts first.)
Power on the redundant system within the time set in the GOT (communication timeout time and number of retries) so that the GOT can start monitoring after the redundant system starts (after the control system is decided).
If the GOT does not start within the set time, the GOT stops monitoring for safety reasons, and the following system alarm occurs.

- 451: The MELSEC redundant setting and actual system configuration do not match.

If the system alarm occurs, restart the GOT (reapply or reset the power supply) to start monitoring again.

■System switching

When system switching occurs through the user program, the communication path remains unchanged, and the GOT will continue monitoring.
No system alarm occurs.
When system switching occurs due to disconnected cable or other causes, the GOT changes the communication path and continues monitoring.
[450: Path has changed or timeout occurred in redundant system.] appears as the system alarm.

■Redundant system configuration and operation mode

- System alarm display

If the MELSEC redundant settings do not match the actual configuration of the redundant system, or if the operation mode of the redundant system is not set to backup mode, [451: The MELSEC redundant setting and actual system configuration do not match.] appears as the system alarm, and the GOT will not be able to correctly monitor the redundant system's CPU.
If the system alarm occurs, restart the GOT (reapply or reset the power supply) to start monitoring again.

- Changing the MELSEC redundant settings

Always reset the GOT after changing the MELSEC redundant settings. If not reset, the changed MELSEC redundant settings will not be applied on the GOT.

■Monitoring a non-redundant system with the MELSEC redundant settings configured

If the MELSEC redundant settings were set for a non-redundant system, the GOT will operate normally.
In this case, if an abnormality (such as powering off or communication timeout error) occurs in the PLC CPU for which the MELSEC redundant settings are configured, the PLC CPU may not operate as intended.

■Monitoring a redundant system without configuring the MELSEC redundant settings

When the MELSEC redundant settings are not configured, the GOT does not automatically change the monitoring target even if system switching occurs in the redundant system.
When the GOT is connected to the standby system, data written to a device are overwritten by the data of the control system, failing to be reflected.
In this case, when data is written to a device in the standby system normally, the system alarm [315 Device writing error. Correct device.] is not detected.

■Connection to the remote I/O station

- The GOT can monitor only the following GOT functions.

Monitor function and device monitor function

- The GOT does not allow the PLC CPU clock of the master station to be set in the clock setting of the utility.

The master station clock will not change even if the clock setting is made.
Use GX Works2 or similar software to set the PLC CPU clock of the master station.

■Option functions including the ladder monitor

A message "Unable to communicate with CPU." is displayed when system switching occurs while an option function such as the ladder monitor is used.

■When the QCPU redundant system is in the debug mode

When the QCPU redundant system is in the debug mode, do not configure the MELSEC redundant system settings on the GOT side when connecting the GOT.

4.11 MELSEC-L series (Built-in Ethernet port connection)

☞ Page 436 Connectable devices
☞ Page 437 System configuration
☞ Page 440 GOT side settings
☞ Page 451 PLC side settings
☞ Page 460 Access range for monitoring

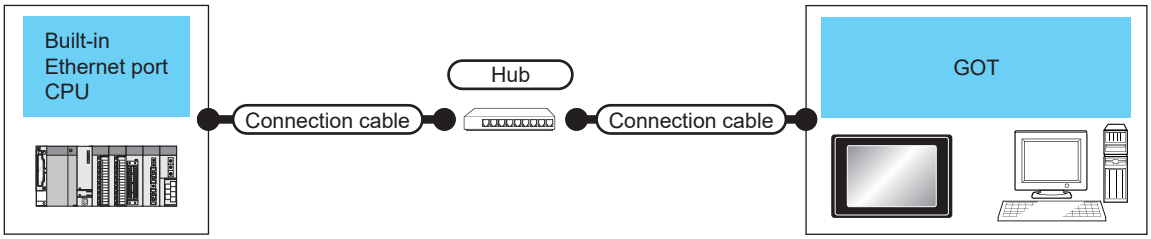
4.11.1 Connectable devices

The following table shows the connectable models.

○: Supported, —: Not supported

Controller	Model	Clock	Connectable model
MELSEC-L series	L02CPU L06CPU L26CPU L26CPU-BT L02CPU-P L06CPU-P L26CPU-P L26CPU-PBT	○	GT37 SoftGOT3000

4.11.2 System configuration



For details on the connection cables and the maximum segment length, refer to the following.

☞ Page 438 Connection cable
☞ Page 438 Maximum segment length

For details on the maximum number of connected devices, refer to the following.

☞ Page 438 Maximum number of connected devices

Controller	Connection cable	GOT	
		Interface	Model
MELSEC-L*1*2	Twisted pair cable	Built-in Ethernet interface of GOT	GT37 SoftGOT3000
		Ethernet interface of personal computer	GT37 SoftGOT3000

*1 For the system configuration of the built-in Ethernet port CPU, refer to the manual of the PLC to be used.

*2 For [Unit Type] to be selected in [Connected Ethernet Controller Setting] in GT Designer3, refer to the following.
☞ Page 448 [Connected Ethernet Controller Setting]

Connection cable

Use a connection cable that meets the following standards.

Standard	Category
10BASE-T	Shielded twisted pair cable (STP) or unshielded twisted pair cable (UTP) of category 3 or higher
100BASE-TX	Shielded twisted pair cable (STP) or unshielded twisted pair cable (UTP) of category 5 or higher
1000BASE-T	Shielded twisted pair cable (STP) or unshielded twisted pair cable (UTP) of category 5e or higher

The destination device connected with the twisted pair cable varies with the configuration of the Ethernet network system used.

Connect the cable to the Ethernet module, hub, or other system equipment corresponding to the applicable Ethernet network system.

Use cables, connectors, and hubs that meet the IEEE802.3 10BASE-T/100BASE-TX/1000BASE-T standards.

When only one GOT is connected, the GOT can be directly connected to the controller without a hub.

Maximum segment length

The maximum segment length (length between a hub and a node) is 100 m.

The maximum length depends on the Ethernet equipment used.

The following shows the number of connectable hubs when a repeater hub is used.

- 10BASE-T: Up to 4 for a cascade connection (within 500 m)
- 100BASE-TX: Up to 2 for a cascade connection (within 205 m)
- 1000BASE-T: The number differs depending on the hub to be used.

When switching hubs are used, there is no theoretical limit to the number of cascade connections between switching hubs.

For the limit, contact the switching hub manufacturer.

Precautions

When multiple network devices (including GOTs) are connected in the same segment, the network load increases and the transmission speed between the GOT and PLC may be reduced.

The following actions may improve the communication performance.

- Use a switching hub compatible with 1000BASE-T (1 Gbps) or more.
- Reduce the number of devices monitored by the GOT.

Maximum number of connected devices

Up to 128 CPU modules can be connected to channels No. 1 to No. 4 of one GOT. (16 or less recommended)

The following shows the number of connectable controllers per GOT channel and the number of GOTs connectable to one controller.

Controller			GOT	
Model	Number of GOTs connectable to one PLC		Model	Number of connectable controllers per GOT channel
	UDP	TCP		
MELSEC-L	16 (UDP and TCP in total)		GT37 SoftGOT3000	63 (16 or less recommended)
	16	16	GT37 SoftGOT3000	63 (16 or less recommended)

Connection to the built-in Ethernet port of the built-in Ethernet port CPU

Connect the GOT after turning on the network equipment such as the built-in Ethernet port CPU or hub to enable communications.

If the GOT cannot communicate with the built-in Ethernet port CPU, a communication error may occur on the GOT.

GOT startup for connection to LCPU

LCPU may diagnose the SD card (file system check, recovery processing, etc.) when the LCPU is turned off then on or reset. Therefore, it takes time until the SD card becomes available.

If the GOT is started during this time, a system alarm occurs.

Adjust the time to display the GOT startup screen to prevent a system alarm.

📖GT Designer3 (GOT3000) Screen Design Manual

4.11.3 GOT side settings

[GOT Ethernet Setting]

Set the GOT Ethernet interface in GT Designer3.

Item	Description
[GOT IP Address Setting]	Set the IP address of the GOT.
[GOT Ethernet Common Setting]	Set the default gateway and other common items for GOT Ethernet interfaces.
[IP filter Setting]	The GOT allows or blocks access from IP addresses specified in the filtering list.

For details on the setting, refer to the following.

📖GT Designer3 (GOT3000) Screen Design Manual

Set the GT SoftGOT3000 Ethernet interface on the personal computer.

Precautions

Do not use 0 and 255 at the end of an IP address.

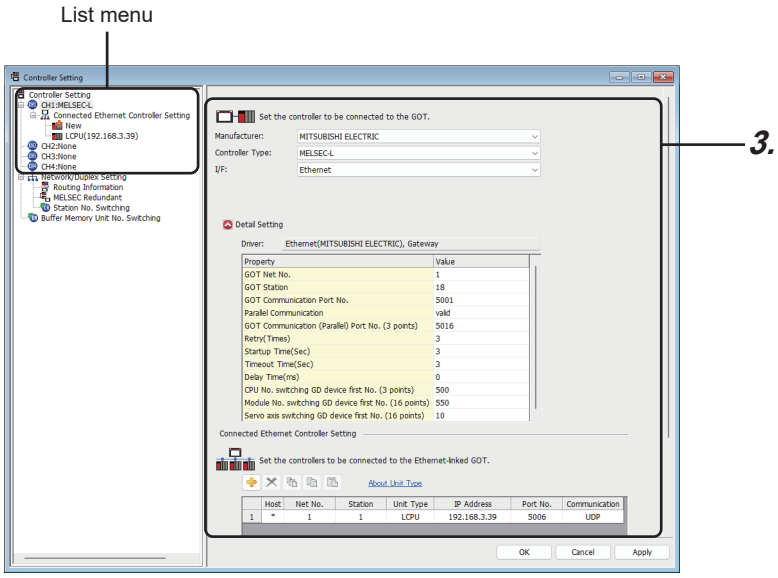
(Numbers of *.*.*.0 and *.*.*.255 are used by the system.)

The GOT may not monitor the controller correctly with the above numbers.

Consult with the administrator of the network before setting an IP address to the GOT.

[Controller Setting]

Set the channel of the connected controller.



Operating procedure

1. Select [Common] → [Controller Setting] from the menu.

2. In the [Controller Setting] window, select the channel number to be used from the list menu.

3. Set the following items.

Item	Description
[Manufacturer]	[MITSUBISHI ELECTRIC]
[Controller Type]	[MELSEC-L]
[I/F]	[Ethernet]
[Detail Setting]	Configure the settings according to the usage environment. ☞ Page 442 [Detail Setting]
[Connected Ethernet Controller Setting]	Configure the settings according to the controller to be connected. ☞ Page 448 [Connected Ethernet Controller Setting]

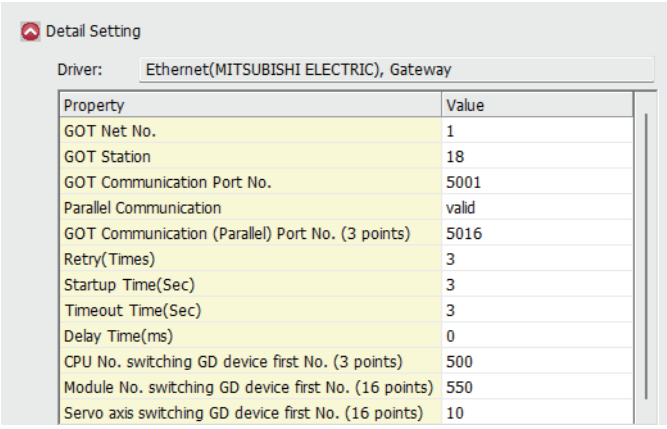
4. When you have completed the settings, click the [OK] button.

Point

The controller settings can be checked in [I/F Communication Setting].
For details, refer to the following.
📖GT Designer3 (GOT3000) Screen Design Manual

■[Detail Setting]

Configure the settings according to the usage environment.



Item	Description	Range
[Driver]	This item appears when communication drivers are selectable according to the settings of [Controller Type] and [I/F].	[Ethernet(MITSUBISHI ELECTRIC), Gateway]
[GOT Net No.]	Set the network number of the GOT.	[1] to [239]
[GOT Station][*1*2]	Set the station number of the GOT.	[1] to [120]
[GOT Communication Port No.][*3]	Set the GOT port number for connection with the Ethernet module.	[1024] to [5010], [5014] to [49152], [49171] to [65534]
[Parallel Communication]	Enables or disables the parallel communication. When this setting is enabled, [GOT Communication (Parallel) Port No. (3 points)] can be set. When communicating with multiple devices on a single channel, distributing the communication ports can reduce the communication load.	[valid], [invalid]
[GOT Communication (Parallel) Port No. (3 points)]	Set the GOT port number used for the parallel communication.	• [Parallel Communication] is [invalid]: [0] • [Parallel Communication] is [valid]: [1024] to [5008], [5014] to [49150], [49171] to [65532]
[Retry(Times)]	Set the number of retries to be performed when a communication timeout occurs. When receiving no response after retries, the communication times out.	GOT: [0] times to [5] times GT SoftGOT3000: [0] times to [10] times
[Startup Time]	Set the time period from the GOT startup until the start of communication with the PLC CPU.	[3] seconds to [255] seconds
[Timeout Time]	Set the time period for a communication to time out.	[1] second to [90] seconds
[Delay Time]	Set the delay time for reducing the load of the network and destination PLC.	[0] ms to [10000] ms
[CPU No. switching GD device first No. (3 points)]	Set the start device number of the GD devices for CPU number switching. For details, refer to the following. ☞ Page 445 Start device number of the GD devices for CPU number switching	[0] to [65520]
[Module No. switching GD device first No. (16 points)]	Set the start device number of the GD devices for module number switching. For details, refer to the following. ☞ Page 446 Start device number of the GD devices for module number switching	[0] to [65520]
[Servo axis switching GD device first No. (16 points)]	Set the start device number of the GD devices for servo axis switching. For details, refer to the following. ☞ Page 447 Start device number of the GD devices for servo axis switching	[0] to [65520]

*1 Set values not set for [Station] in [Connected Ethernet Controller Setting].
☞ Page 448 [Connected Ethernet Controller Setting]
*2 When connecting multiple GOTs in the Ethernet network, set a different value for [GOT Station] for each GOT.
*3 For connection to the LCPU, do not set [5009] for the GOT communication port number.
Doing so disables communications.

Point

• Controller settings using the GT37 utility

The controller settings can be changed in [Communication Settings] of the GT37 utility after writing [Communication Settings] of project data to GT37.

For details on the GT37 utility, refer to the following manual.

📖GOT3000 Series User's Manual (Utility & Maintenance Functions)

• Priority of the settings in [Controller Setting]

When the settings are configured in GT Designer3 or in the GT37 utility, the latest settings are effective.

■When connecting multiple GOTs

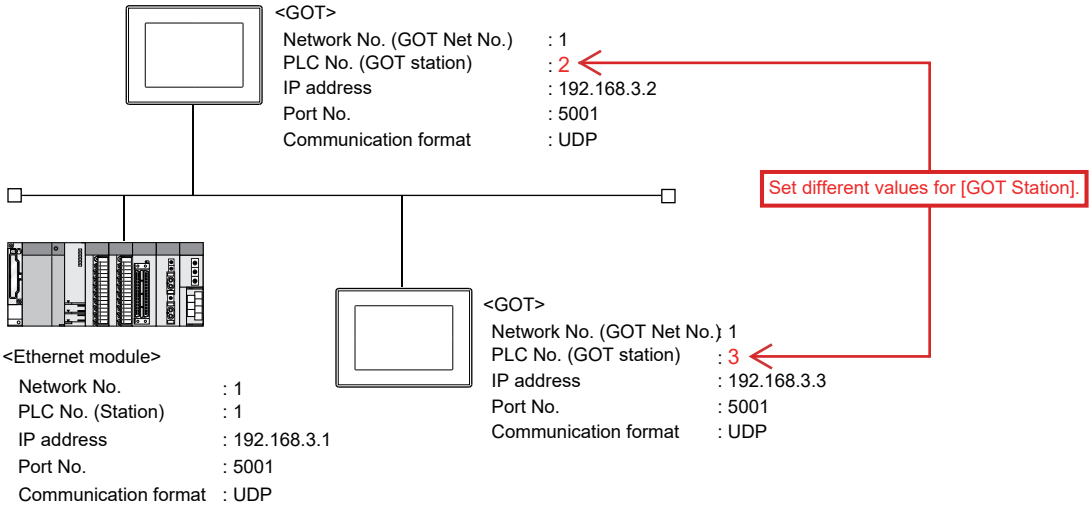
• Settings for [GOT Station]

When connecting multiple GOTs in the Ethernet network, set a different value for [GOT Station] for each GOT.

☞ Page 442 [Detail Setting]

The following shows a system configuration example.

Ex.



• Settings to start up multiple GOTs simultaneously

When connecting multiple GOTs to one built-in Ethernet port CPU, adjust the timing of GOT communication start.

When the communication concentrates on the PLC, the communication between GOT and PLC becomes difficult, and the monitoring by GOT may not start.

As a method for adjusting the timing, communicating one GOT alone first, and then communicating the other GOTs is effective.

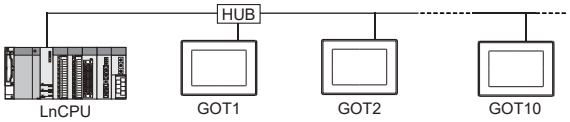
Set the following items on each GOT.

[Startup Time] in [Detail Setting] or [Title Display Time] of [GOT Setup]

[Timeout Time] in [Detail Setting]

The following shows a setting example.

Ex.



Item	GOT1	GOT2	GOT10
Startup time	3 s (default)	4 s	4 s
Timeout time	3 s (default)	4 s	4 s

■Start device number of the GD devices for CPU number switching

• Indirect specification of a CPU number

[CPU No.] can be indirectly specified with the GOT internal registers (GD devices) by specifying a value (100 to 102) to [CPU No.] in the device setting dialog in GT Designer3.

Set the start device number of the GD devices to be used in [CPU No. switching GD device first No. (3 points)].

[CPU No.] is specified with three consecutive GD devices, starting from the set device number.

When [500] is set to [CPU No. switching GD device first No. (3 points)], GD500 to GD502 are used to specify [CPU No.] as shown in the following table.

CPU No.	GD device	Setting range
100	GD500	1 to 4 Setting a value outside the range causes a communication timeout error. Specifying a nonexistent CPU number or a CPU number not supporting a multiple CPU system with a device causes a controller error.
101	GD501	
102	GD502	

• Indirect specification of a CPU number on the initially displayed screen

Set [CPU No. switching GD device first No. (3 points)] so that the values of the GD devices are retained and monitored upon the GOT startup.

• Indirect specification of a CPU number for multi-channel connection

If the setting range of [CPU No. switching GD device first No. (3 points)] set for each channel overlaps, the monitoring target CPU number set to each channel is switched simultaneously.

Set [CPU No. switching GD device first No. (3 points)] for each channel so that the setting range does not overlap.

• Indirect specification of a station number and a CPU number for multi-channel connection

When GD10 to GD25 are used to specify the station number of an inverter or non-Mitsubishi temperature controller connected, setting [10] to [CPU No. switching GD device first No. (3 points)] in a different channel switches the monitoring target CPU number and station number of an inverter or non-Mitsubishi temperature controller set to each channel simultaneously.

Set [CPU No. switching GD device first No. (3 points)] so that the setting range does not overlap the station number of an inverter or non-Mitsubishi temperature controller.

■Start device number of the GD devices for module number switching

• Indirect specification of a module number

For connection via a Simple Motion module, [Unit No.] can be specified with the GOT internal registers (GD devices) by specifying a value (100 to 10F) to [Unit No.] in the device setting dialog in GT Designer3.

Set the start device number of the GD devices to be used in [Module No. switching GD device first No. (16 points)].

[Unit No.] is specified with 16 consecutive GD devices, starting from the set device number.

When [550] is set to [Module No. switching GD device first No. (16 points)], GD550 to GD565 are used to specify [Unit No.] as shown in the following table.

Module No.	GD device	Setting range
100	GD550	00 to FF Setting a value outside the above range causes a device range error.
101	GD551	
102	GD552	
103	GD553	
104	GD554	
105	GD555	
106	GD556	
107	GD557	
108	GD558	
109	GD559	
10A	GD560	
10B	GD561	
10C	GD562	
10D	GD563	
10E	GD564	
10F	GD565	

• Indirect specification of a module number on the initially displayed screen

Set [Module No. switching GD device first No. (16 points)] so that the values of the GD devices are retained and monitored upon the GOT startup.

• Indirect specification of a module number for multi-channel connection

If the setting range of [Module No. switching GD device first No. (16 points)] set for each channel overlaps, the module number of the Simple Motion module via the servo amplifier device of each channel is switched simultaneously.

Set [Module No. switching GD device first No. (16 points)] for each channel so that the setting range does not overlap.

• Indirect specification of a station number and a module number for multi-channel connection

When GD10 to GD25 are used to specify the station number of an inverter or non-Mitsubishi temperature controller connected, setting [10] to [Module No. switching GD device first No. (16 points)] switches the module number of the Simple Motion module via the servo amplifier device and the station number of an inverter or non-Mitsubishi temperature controller set to each channel simultaneously.

Set [Module No. switching GD device first No. (16 points)] so that the setting range does not overlap the station number of an inverter or non-Mitsubishi temperature controller.

■Start device number of the GD devices for servo axis switching

• Indirect specification of a servo axis number

For connection via a Motion CPU or Simple Motion module, a servo axis number can be indirectly specified with GOT internal registers (GD devices) by specifying a value (100 to 115) to the axis number of the servo amplifier device.

Set the start device number of the GD devices to be used in [Servo axis switching GD device first No. (16 points)].

Specify a servo axis number with 16 consecutive GD devices, starting the set device number.

When [10] is set to [Servo axis switching GD device first No. (16 points)], GD10 to GD25 are used to specify a servo axis number as shown in the following table.

Servo axis No.	GD device	Setting range
100	GD10	1 to 64 Setting a value outside the above range causes a device range error.
101	GD11	
102	GD12	
103	GD13	
104	GD14	
105	GD15	
106	GD16	
107	GD17	
108	GD18	
109	GD19	
110	GD20	
111	GD21	
112	GD22	
113	GD23	
114	GD24	
115	GD25	

• Indirect specification of a servo axis number on the initially displayed screen

Set [Servo axis switching GD device first No. (16 points)] so that the values of the GD devices are retained and monitored upon the GOT startup.

• Indirect specification of a servo axis number for multi-channel connection

If the setting rage of [Servo axis switching GD device first No. (16 points)] set for each channel overlaps, the axis number of the servo amplifier of each channel is switched simultaneously.

Set [Servo axis switching GD device first No. (16 points)] for each channel so that the setting range does not overlap.

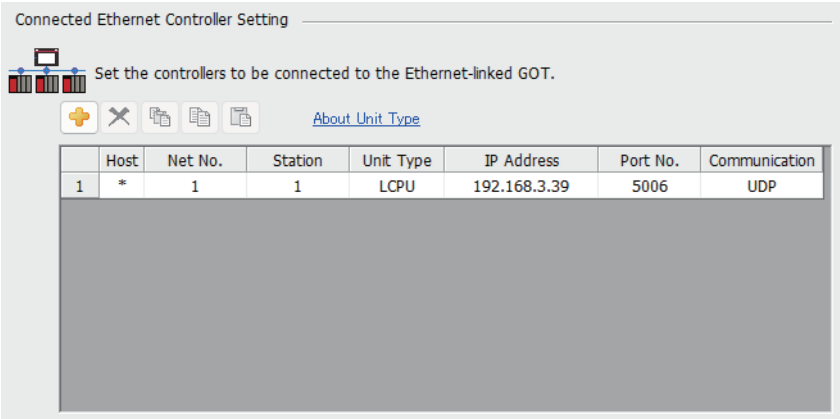
• Indirect specification of a station number and a servo axis number for multi-channel connection

When GD10 to GD25 are used to specify the station number of an inverter or non-Mitsubishi temperature controller connected, setting [10] to [Servo axis switching GD device first No. (16 points)] switches the axis number of the servo amplifier and the station number of an inverter or non-Mitsubishi temperature controller set to each channel simultaneously.

Set [Servo axis switching GD device first No. (16 points)] so that the setting range does not overlap the station number of an inverter or non-Mitsubishi temperature controller.

■[Connected Ethernet Controller Setting]

Set the controller to be connected to the GOT by Ethernet.



Item	Description	Range
[Host]	The host is displayed. It refers to a station that can be connected without setting a station number. The host is indicated with an asterisk (*).	—
[Net No.]	Set the network number of the connected Ethernet equipment.	[1] to [239]
[Station]*2	Set the station number of the connected Ethernet equipment.	[1] to [64]
[Unit Type]	Select the model of the connected Ethernet equipment.	[LCPU]
[IP Address]	Set the IP address of the connected Ethernet equipment.	[0.0.0.0] to [255.255.255.255]
[Port No.]*1	Set the port number of the connected Ethernet equipment.	☞ Page 448 [Port No.]
[Communication]	Set the communication format of the connected Ethernet equipment.	[UDP], [TCP]

*1 Match the port number of the CPU and [Port No.] of [Connected Ethernet Controller Setting].

*2 Set values not set for [GOT Station] in [Detail Setting].
☞ Page 442 [Detail Setting]

■[Port No.]

The setting range is as follows:

[Unit Type]	[Port No.]	[Communication]
[LCPU]	[5006]	[UDP]
	[5007]	[TCP]

■Network number and PLC number of LCPU

There is no setting for the network number and PLC number of built-in Ethernet port CPU (Port number: 5006, 5007).
The values of [Network No.] and [Station No.] in the object setting dialog must be the same as the values of [Net No.] and [Station] in [Connected Ethernet Controller Setting].

■Connection to the built-in Ethernet port PLC with [Communication] set to [TCP]

During communication with the built-in Ethernet port PLC with [Communication] set to [TCP], using the FA transparent function may change the setting from [TCP] to [UDP] and start communication with the PLC with the new setting.
In this case, communication with the built-in Ethernet port PLC cannot be executed normally.
Take the following corrective action.

Phenomenon	Cause	Corrective action
Communication fails when using the FA transparent function.	[UDP] is not available in the open settings of the built-in Ethernet port PLC.	Add [UDP] to the PLC side open settings.
	When the multi-channel Ethernet connection is used, [TCP] and [UDP] are used to the same IP address, and then the FA transparent function is used for the channel set to [TCP].	Execute the FA transparent function for the channel set to [UDP].

Point

Changing the host station on the GOT
[Host] can be changed with the utility function of the GOT.
For details on the setting method, refer to the following manual.
📖GOT3000 Series User's Manual (Utility & Maintenance Functions)

■Routing parameter settings

Up to 64 settings can be configured for [Transfer Net No.].

However, the same number cannot be set in [Transfer Net No.] twice or more (multiple times).

The GOT (host station) can access 64 different networks specified under [Transfer Net No.].

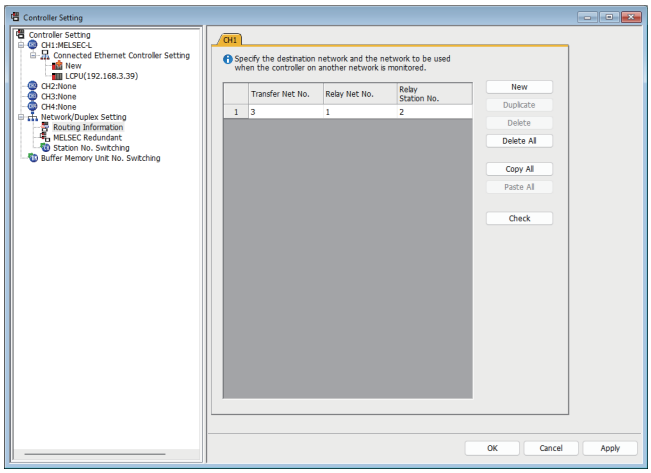
Point

Routing parameter settings

When communicating within the host network, routing parameter settings are not required.

For details on routing parameters, refer to the following manual.

MELSEC-Q/L Ethernet Interface Module User's Manual (Application)



Item	Range
[Transfer Net No.]	[1] to [239]
[Relay Net No.]*1	[1] to [239]
[Relay Station No.]*1	[0] to [120]

*1 To access a different network via the built-in Ethernet port CPU, set the values of [Net No.] and [Station] that are set in [Connected Ethernet Controller Setting] in GT Designer3.

Point

Routing parameter settings for the relay station

Routing parameter settings are also necessary for the relay station.

For the setting, refer to the following.

Page 451 PLC side settings

Precautions

If the network numbers of the GOT and PLC do not match on the same Ethernet network, monitoring of the PLC is not possible.

To enable monitoring, set the same network number as that of the GOT or connect an Ethernet module to the PLC and configure the routing settings to monitor the PLC as a different network.

When the multi-channel connection can be used, set a different network number for each channel.

4.11.4 PLC side settings

Model		Reference
MELSEC-L series	L02CPU L06CPU L26CPU L26CPU-BT L02CPU-P L06CPU-P L26CPU-P L26CPU-PBT	☞ Page 452 Connection to the built-in Ethernet port CPU of the MELSEC-L series

Precautions

Do not set a remote password on the LCPU.
Doing so disables monitoring with the GOT.

Connection to the built-in Ethernet port CPU of the MELSEC-L series

This section describes the settings of the GOT and the built-in Ethernet port CPU in the system configuration shown below.

☞ Page 452 One-to-one connection
☞ Page 456 Multi-connection

Point

- Built-in Ethernet port CPU

For details on the built-in Ethernet port CPU, refer to the following manual.

📖MELSEC-L CPU Module User's Manual (Built-In Ethernet Function)

- Connecting multiple GOTs

When connecting multiple GOTs in the Ethernet network, set a different value for [GOT Station] for each GOT.

☞ Page 444 When connecting multiple GOTs

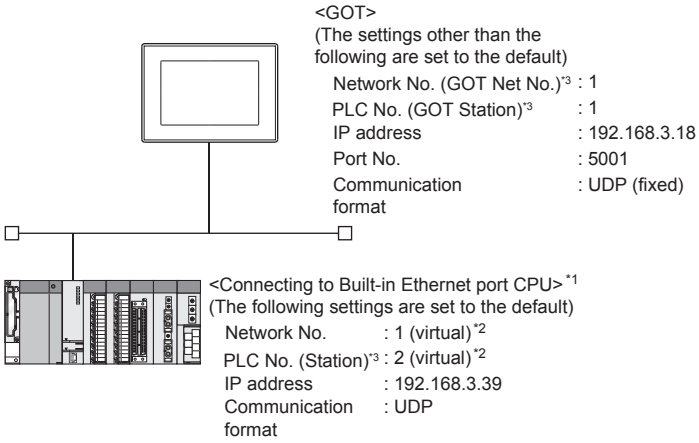
■One-to-one connection

- System configuration

For one-to-one connection, no settings are required on the PLC side.

Set [Port No.] to [5006] and [Communication] to [UDP] to communicate with the PLC.

Configure the settings in [Controller Setting] and [Connected Ethernet Controller Setting] in GT Designer3, and then connect the built-in Ethernet port CPU and the GOT.



*1 For the settings when using system devices such as a hub, refer to the following.
☞ Page 456 Multi-connection

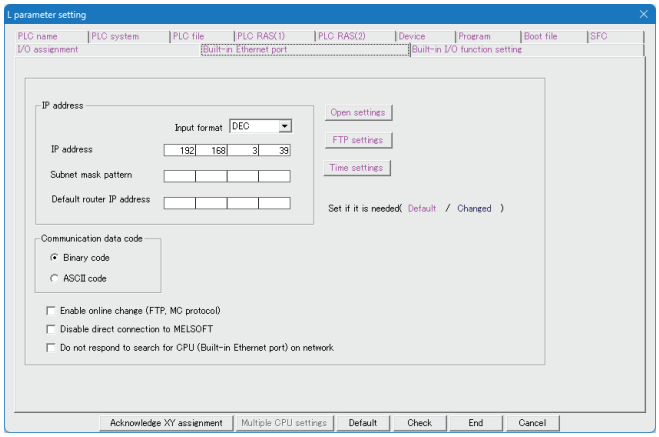
*2 Although the setting is nonexistent on the PLC side, set a virtual value on the GOT side.
☞ • [Controller Setting] and [Connected Ethernet Controller Setting] of GT Designer3

*3 For the following settings, the setting names are different on the PLC side and the GOT side.

Setting	Setting name		
	PLC side	GOT side	
		Controller setting	Connected Ethernet controller setting
Network number	[Network No.]	[GOT Net No.]	[Net No.]
PLC number	[Station No.]	[GOT Station]	[Station No.]

• [PLC parameter] of GX Developer

[Built-in Ethernet Port Setting]

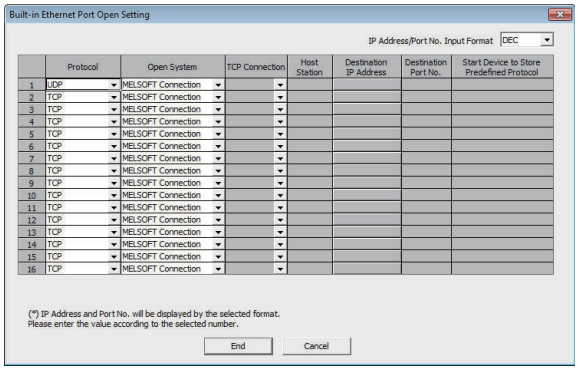


○: Necessary, △: As necessary, —: Not necessary

Item	Setting value	Setting for GOT connection
[IP Address]	192.168.3.39	○
[Subnet Mask Pattern]	—	—
[Default Router IP Address]	—	—
[Communication Data Code]	(Use default value)	△
[Enable online change (FTP, MC protocol)]		△
[Disable direct connection to MELSOFT]		△
[Do not respond to search for CPU (Built-in Ethernet port) on network]		△
[Open settings]	☞ Open settings	○
[FTP Setting]	(Use default value)	△
[Time Setting]		△

Open settings

Configure the settings for all the connected GOTs.



Item	Setting value
[Protocol]	UDP, TCP
[Open System]	MELSOFT connection

• [Controller Setting] and [Connected Ethernet Controller Setting] of GT Designer3

For the setting method of [Controller Setting] and [Connected Ethernet Controller Setting] in GT Designer3, refer to the following.

☞ Page 440 GOT side settings

Point

[Connected Ethernet Controller Setting] for connection to the Built-in Ethernet port LCPU

The setting items for the network number and station number do not exist on the PLC side.

Set the network number and station number on the GOT side.

When doing so, set a network number not used in the system.

Controller settings

Item	Setting value
[GOT Net No.]	1
[GOT Station]	1
[GOT Communication Port No.]	5001
[Retry]	3 times
[Startup Time]	3 seconds
[Timeout Time]	3 seconds
[Delay Time]	0 ms

GOT Ethernet settings

Item	Setting value
[GOT IP Address]	192.168.3.18
[Subnet Mask]	255.255.255.0
[Default Gateway]	0.0.0.0
[Peripheral S/W Communication Port No.]	5015
[Transparent Port No.]	5014

Connected Ethernet controller settings

Item		Setting value
Ethernet setting No. 1	[Host]	*
	[Net No.]	1*1
	[Station]	2*2
	[Unit Type]	LCPU
	[IP Address]	192.168.3.39
	[Port No.]*3	5006
	[Communication]*3	UDP

*1 Set the same value as the GOT net number.

*2 Set a value different from the GOT station number.

*3 The following settings can also be configured for [Port No.] and [Communication].
[Port No.]: 5007
[Communication]: TCP

• Checking the communication state of the built-in Ethernet port CPU

When using Windows Command Prompt

Execute a ping command in Windows Command Prompt.

1) At normal end

C:\>Ping 192.168.3.39

Reply from 192.168.3.39:bytes=32 time<1ms TTL=32

2) At abnormal end

C:\>Ping 192.168.3.39

Request timed out.

In the case of abnormal end

In the case of abnormal end, check the following and execute the ping command again.

Cable connecting condition

Switch settings and network parameter settings

Operation state of PLC CPU (faulty or not)

IP address of the built-in Ethernet port CPU specified by the ping command

Point

Ethernet diagnostics of GX Works2

The Ethernet diagnostics of GX Works2 enables ping tests from the PLC.

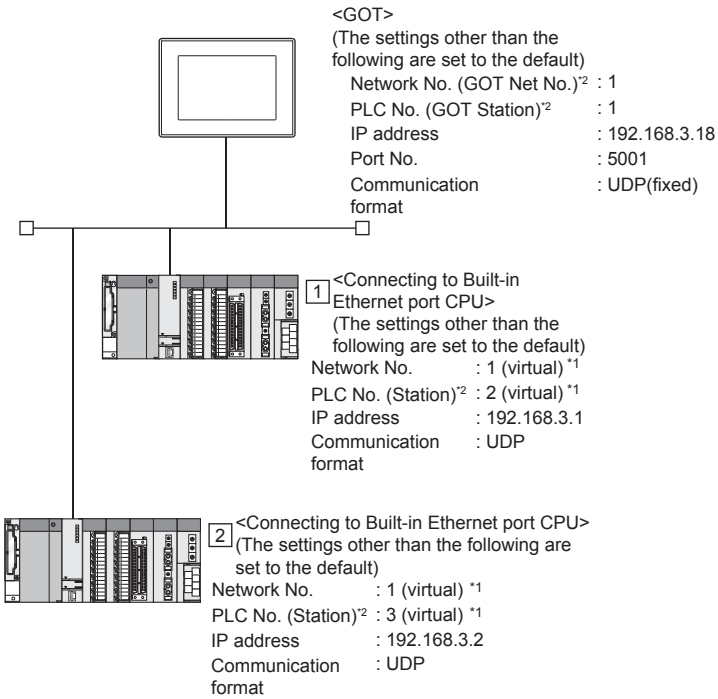
For details on the Ethernet diagnostics of GX Works2, refer to the following manual.

📖MELSEC-L CPU Module User's Manual (Hardware Design, Maintenance and Inspection)

■Multi-connection

- System configuration

Set [Port No.] to [5006] and [Communication] to [UDP] to communicate with the PLC.



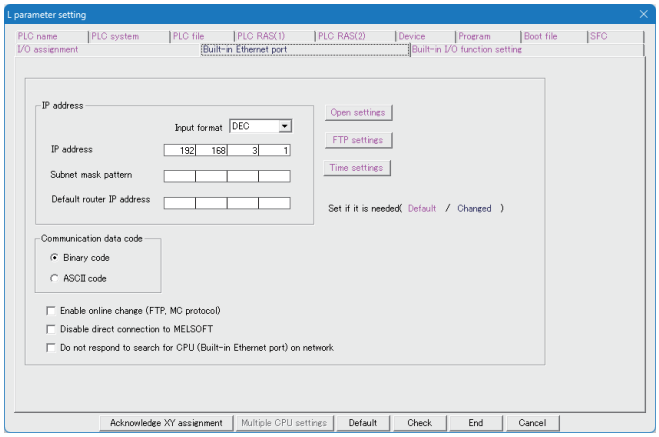
*1 Although the setting is nonexistent on the PLC side, set a virtual value on the GOT side.
☞ • [Controller Setting] and [Connected Ethernet Controller Setting] of GT Designer3

*2 For the following settings, the setting names are different on the PLC side and the GOT side.

Setting	Setting name		
	PLC side	GOT side	
		Controller setting	Connected Ethernet controller setting
Network number	[Network No.]	[GOT Net No.]	[Net No.]
PLC number	[Station No.]	[GOT Station]	[Station No.]

• [PLC parameter] of GX Developer

[Built-in Ethernet Port Setting]

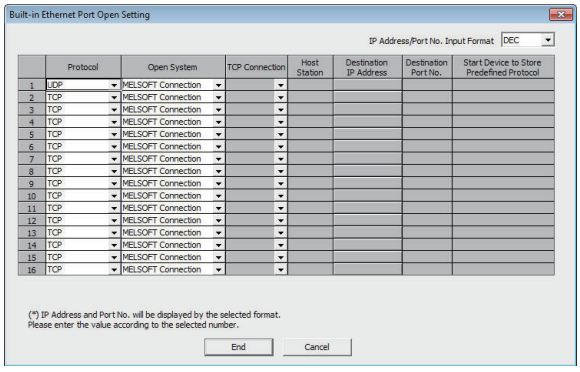


○: Necessary, △: As necessary, —: Not necessary

Item	Setting value	Setting for GOT connection
[IP Address]	192.168.3.1	○
[Subnet Mask Pattern]	—	—
[Default Router IP Address]	—	—
[Communication Data Code]	(Use default value)	△
[Enable online change (FTP, MC protocol)]		△
[Disable direct connection to MELSOFT]		△
[Do not respond to search for CPU (Built-in Ethernet port) on network]		△
[Open settings]	☞ Open settings	○
[FTP Setting]	(Use default value)	△
[Time Setting]		△

Open settings

Configure the settings for all the connected GOTs.



Item	Setting value
[Protocol]	UDP, TCP
[Open System]	MELSOFT connection

• [Controller Setting] and [Connected Ethernet Controller Setting] of GT Designer3

For the setting method of [Controller Setting] and [Connected Ethernet Controller Setting] in GT Designer3, refer to the following.

☞ Page 440 GOT side settings

Point

[Connected Ethernet Controller Setting] for connection to the built-in Ethernet port CPU
The setting items for the network number and station number do not exist on the PLC side.
Set the network number and station number on the GOT side.
When doing so, set a network number not used in the system.

Controller settings

Item	Setting value
[GOT Net No.]	1
[GOT Station]	1
[GOT Communication Port No.]	5001
[Retry]	3 times
[Startup Time]	3 seconds
[Timeout Time]	3 seconds
[Delay Time]	0 ms

GOT Ethernet settings

Item	Setting value
[GOT IP Address]	192.168.3.18
[Subnet Mask]	255.255.255.0
[Default Gateway]	0.0.0.0
[Peripheral S/W Communication Port No.]	5015
[Transparent Port No.]	5014

Connected Ethernet controller settings

Item		Setting value	
		1	2
Ethernet setting No. 1	[Host]	*	—
	[Net No.]	1*1	1*1
	[Station]	2*2	3*2
	[Unit Type]	LCPU	LCPU
	[IP Address]	192.168.3.1	192.168.3.2
	[Port No.]*3	5006	5006
	[Communication]*3	UDP	UDP

*1 Set the same value as the GOT net number.
*2 Set a value different from the GOT station number and PLC numbers of other PLCs on the same network.
*3 The following settings can also be configured for [Port No.] and [Communication].
[Port No.]: 5007
[Communication]: TCP

• Checking the communication state of the built-in Ethernet port CPU

When using Windows Command Prompt

Execute a ping command in Windows Command Prompt.

1) At normal end

C:\>Ping 192.168.3.1

Reply from 192.168.3.1:bytes=32 time<1ms TTL=32

2) At abnormal end

C:\>Ping 192.168.3.1

Request timed out.

In the case of abnormal end

In the case of abnormal end, check the following and execute the ping command again.

Cable connecting condition

Switch settings and network parameter settings

Operation state of PLC CPU (faulty or not)

IP address of the built-in Ethernet port CPU specified by the ping command

Point

Ethernet diagnostics of GX Works2

The Ethernet diagnostics of GX Works2 enables ping tests from the PLC.

For details on the Ethernet diagnostics of GX Works2, refer to the following manual.

📖MELSEC-L CPU Module User's Manual (Hardware Design, Maintenance and Inspection)

4.11.5 Access range for monitoring

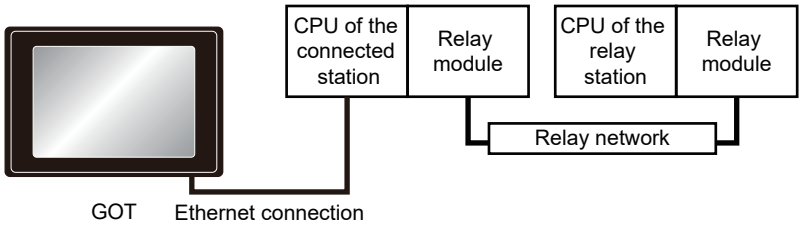
When the GOT is connected to the CPU of the station connected via Ethernet, the range accessible via the CPU is as follows.

Point

- When monitoring other networks (Routing parameter settings)

To monitor other networks, routing parameter settings are necessary.

For the routing parameter settings, refer to the reference manual of the network connected.



○: Accessible, —: Inaccessible

CPU of the connected station	Relay station								
	Relay network	CPU of the relay station							
		RCPU	LCPU	QCPU (Q mode)	QSCPU	QCPU (A mode)	QnACPU	ACPU	FX5CPU
LCPU	Ethernet	—	○	○*2	○	—	○	—	—
	CC-Link IE Field Network	—	○	○*1	○	—	—	—	—

*1 QnUDVCPU, QnUDECPU, QnUDEHCPU, QnUCPU, QnUDCPU, and QnUDHCPU are supported.

*2 The C Controller module (MELSEC-Q series) is not supported.

4.12 MELSEC-L series (Ethernet module connection)

☞ Page 461 Connectable devices
☞ Page 462 System configuration
☞ Page 464 GOT side settings
☞ Page 473 PLC side settings
☞ Page 479 Access range for monitoring

4.12.1 Connectable devices

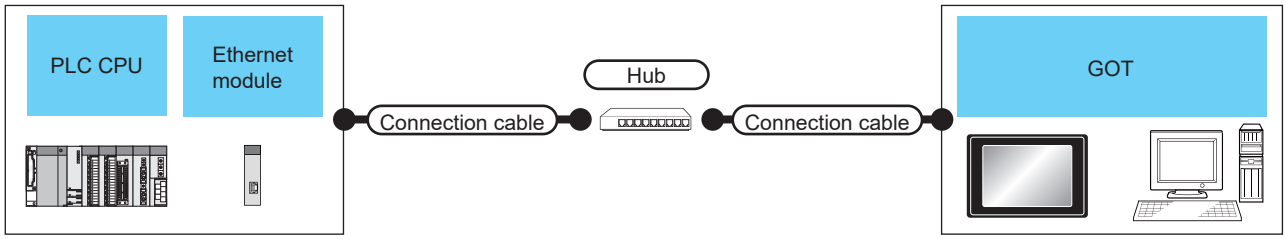
The following table shows the connectable models.

○: Supported, —: Not supported

Controller	Model	Clock	Ethernet module	Connectable model
MELSEC-L series	L02CPU L06CPU L26CPU L26CPU-BT L02CPU-P L06CPU-P L26CPU-P L26CPU-PBT	○	LJ71E71-100	GT37 SoftGOT3000
	L02SCPU*1 L02SCPU-P*1	○	LJ71E71-100	GT37 SoftGOT3000

*1 Use a module having a serial number stating with 12042 or later in the first 5 digits.

4.12.2 System configuration



For details on the connection cables and the maximum segment length, refer to the following.

☞ Page 463 Connection cable
☞ Page 463 Maximum segment length

For details on the maximum number of connected devices, refer to the following.

☞ Page 463 Maximum number of connected devices

Controller	Ethernet module*1*2	Connection cable	GOT	
			Interface	Model
MELSEC-L	LJ71E71-100	Twisted pair cable	Built-in Ethernet interface of GOT	GT37 SoftGOT3000
			Ethernet interface of personal computer	GT37 SoftGOT3000

*1 For the system configuration of the Ethernet module, refer to the following manual.
📖MELSEC-L Ethernet Interface Module User's Manual (Basic)

*2 Select [LJ71E71] for [Unit Type] in [Connected Ethernet Controller Setting] in GT Designer3.
For [Connected Ethernet Controller Setting] in GT Designer3, refer to the following.
☞ Page 471 [Connected Ethernet Controller Setting]

Connection cable

Use a connection cable that meets the following standards.

Standard	Category
10BASE-T	Shielded twisted pair cable (STP) or unshielded twisted pair cable (UTP) of category 3 or higher
100BASE-TX	Shielded twisted pair cable (STP) or unshielded twisted pair cable (UTP) of category 5 or higher
1000BASE-T	Shielded twisted pair cable (STP) or unshielded twisted pair cable (UTP) of category 5e or higher

The destination device connected with the twisted pair cable varies with the configuration of the Ethernet network system used.

Connect the cable to the Ethernet module, hub, or other system equipment corresponding to the applicable Ethernet network system.

Use cables, connectors, and hubs that meet the IEEE802.3 10BASE-T/100BASE-TX/1000BASE-T standards.

When only one GOT is connected, the GOT can be directly connected to the controller without a hub.

Maximum segment length

The maximum segment length (length between a hub and a node) is 100 m.

The maximum length depends on the Ethernet equipment used.

The following shows the number of connectable hubs when a repeater hub is used.

- 10BASE-T: Up to 4 for a cascade connection (within 500 m)
- 100BASE-TX: Up to 2 for a cascade connection (within 205 m)
- 1000BASE-T: The number differs depending on the hub to be used.

When switching hubs are used, there is no theoretical limit to the number of cascade connections between switching hubs.

For the limit, contact the switching hub manufacturer.

Precautions

When multiple network devices (including GOTs) are connected in the same segment, the network load increases and the transmission speed between the GOT and PLC may be reduced.

The following actions may improve the communication performance.

- Use a switching hub compatible with 1000BASE-T (1 Gbps) or more.
- Reduce the number of devices monitored by the GOT.

Maximum number of connected devices

Up to 128 CPU modules can be connected to channels No. 1 to No. 4 of one GOT. (16 or less recommended)

The following shows the number of connectable controllers per GOT channel and the number of GOTs connectable to one controller.

Controller				GOT	
Model		Number of GOTs connectable to one Ethernet module		Model	Number of connectable controllers per GOT channel
PLC CPU	Module	UDP	TCP		
MELSEC-L	LJ71E71-100	63	17	GT37 SoftGOT3000	63 (16 or less recommended)

GOT startup for connection to LCPU

LCPU may diagnose the SD card (file system check, recovery processing, etc.) when the LCPU is turned off then on or reset.

Therefore, it takes time until the SD card becomes available.

If the GOT is started during this time, a system alarm occurs.

Adjust the time to display the GOT startup screen to prevent a system alarm.

GT Designer3 (GOT3000) Screen Design Manual

4.12.3 GOT side settings

[GOT Ethernet Setting]

Set the GOT Ethernet interface in GT Designer3.

Item	Description
[GOT IP Address Setting]	Set the IP address of the GOT.
[GOT Ethernet Common Setting]	Set the default gateway and other common items for GOT Ethernet interfaces.
[IP filter Setting]	The GOT allows or blocks access from IP addresses specified in the filtering list.

For details on the setting, refer to the following.

📖GT Designer3 (GOT3000) Screen Design Manual

Set the GT SoftGOT3000 Ethernet interface on the personal computer.

Precautions

Do not use 0 and 255 at the end of an IP address.

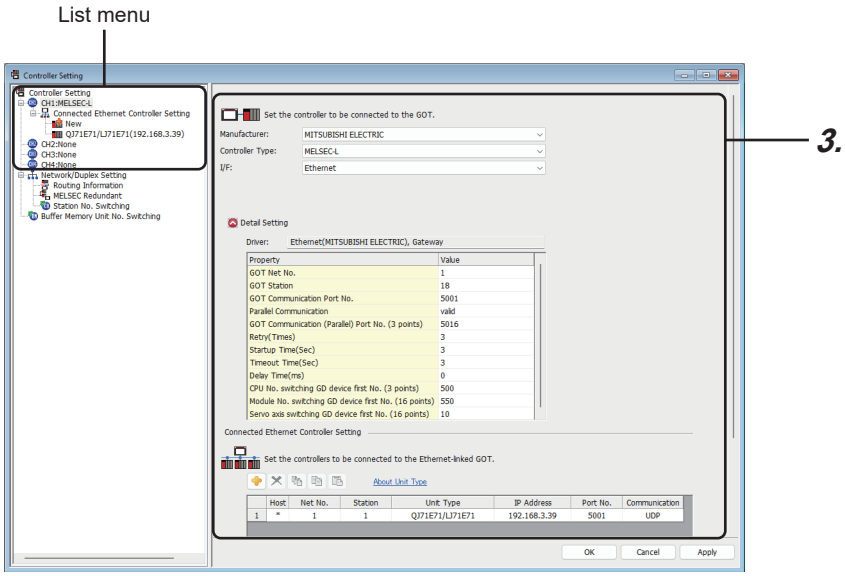
(Numbers of *.*.*.0 and *.*.*.255 are used by the system.)

The GOT may not monitor the controller correctly with the above numbers.

Consult with the administrator of the network before setting an IP address to the GOT.

[Controller Setting]

Set the channel of the connected controller.



Operating procedure

1. Select [Common] → [Controller Setting] from the menu.

2. In the [Controller Setting] window, select the channel number to be used from the list menu.

3. Set the following items.

Item	Description
[Manufacturer]	[MITSUBISHI ELECTRIC]
[Controller Type]	[MELSEC-L]
[I/F]	[Ethernet]
[Detail Setting]	Configure the settings according to the usage environment. ☞ Page 466 [Detail Setting]
[Connected Ethernet Controller Setting]	Configure the settings according to the controller to be connected. ☞ Page 471 [Connected Ethernet Controller Setting]

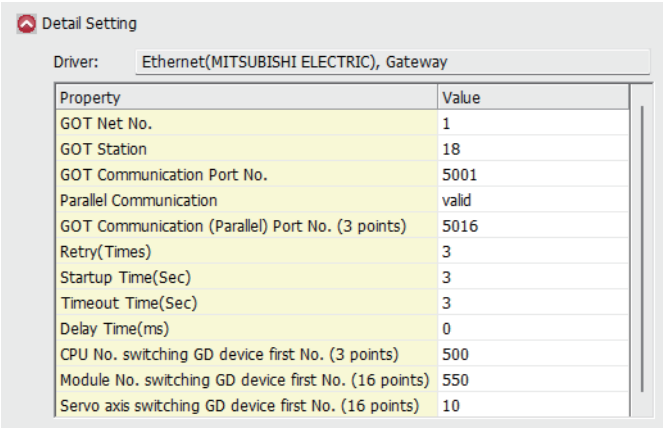
4. When you have completed the settings, click the [OK] button.

Point

The controller settings can be checked in [I/F Communication Setting].
For details, refer to the following.
📖GT Designer3 (GOT3000) Screen Design Manual

■[Detail Setting]

Configure the settings according to the usage environment.



Item	Description	Range
[Driver]	This item appears when communication drivers are selectable according to the settings of [Controller Type] and [I/F].	[Ethernet(MITSUBISHI ELECTRIC), Gateway]
[GOT Net No.]	Set the network number of the GOT.	[1] to [239]
[GOT Station][*1*2]	Set the station number of the GOT.	[1] to [120]
[GOT Communication Port No.][*3]	Set the GOT port number for connection with the Ethernet module.	[1024] to [5010], [5014] to [49152], [49171] to [65534]
[Parallel Communication]	Enables or disables the parallel communication. When this setting is enabled, [GOT Communication (Parallel) Port No. (3 points)] can be set. When communicating with multiple devices on a single channel, distributing the communication ports can reduce the communication load.	[valid], [invalid]
[GOT Communication (Parallel) Port No. (3 points)]	Set the GOT port number used for the parallel communication.	• [Parallel Communication] is [invalid]: [0] • [Parallel Communication] is [valid]: [1024] to [5008], [5014] to [49150], [49171] to [65532]
[Retry(Times)]	Set the number of retries to be performed when a communication timeout occurs. When receiving no response after retries, the communication times out.	GOT: [0] times to [5] times GT SoftGOT3000: [0] times to [10] times
[Startup Time]	Set the time period from the GOT startup until the start of communication with the PLC CPU.	[3] seconds to [255] seconds
[Timeout Time]	Set the time period for a communication to time out.	[1] second to [90] seconds
[Delay Time]	Set the delay time for reducing the load of the network and destination PLC.	[0] ms to [10000] ms
[CPU No. switching GD device first No. (3 points)]	Set the start device number of the GD devices for CPU number switching. For details, refer to the following. ☞ Page 468 Start device number of the GD devices for CPU number switching	[0] to [65520]
[Module No. switching GD device first No. (16 points)]	Set the start device number of the GD devices for module number switching. For details, refer to the following. ☞ Page 469 Start device number of the GD devices for module number switching	[0] to [65520]
[Servo axis switching GD device first No. (16 points)]	Set the start device number of the GD devices for servo axis switching. For details, refer to the following. ☞ Page 470 Start device number of the GD devices for servo axis switching	[0] to [65520]

*1 Set values not set for [Station] in [Connected Ethernet Controller Setting].
☞ Page 471 [Connected Ethernet Controller Setting]
*2 When connecting multiple GOTs in the Ethernet network, set a different value for [GOT Station] for each GOT.
*3 For connection to the LCPU, do not set [5009] for the GOT communication port number.
Doing so disables communications.

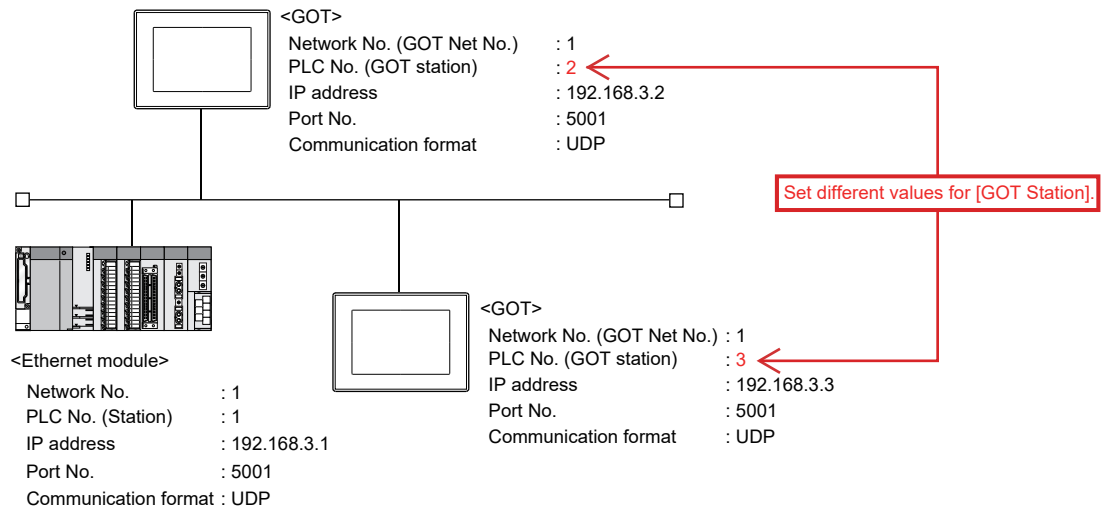
Point

• Controller settings using the GT37 utility
The controller settings can be changed in [Communication Settings] of the GT37 utility after writing [Communication Settings] of project data to GT37.
For details on the GT37 utility, refer to the following manual.
📖GOT3000 Series User's Manual (Utility & Maintenance Functions)
• Priority of the settings in [Controller Setting]
When the settings are configured in GT Designer3 or in the GT37 utility, the latest settings are effective.

■When connecting multiple GOTs

When connecting multiple GOTs in the Ethernet network, set a different value for [GOT Station] for each GOT.
☞ Page 466 [Detail Setting]
The following shows a system configuration example.

Ex.



■Start device number of the GD devices for CPU number switching

• Indirect specification of a CPU number

[CPU No.] can be indirectly specified with the GOT internal registers (GD devices) by specifying a value (100 to 102) to [CPU No.] in the device setting dialog in GT Designer3.

Set the start device number of the GD devices to be used in [CPU No. switching GD device first No. (3 points)].

[CPU No.] is specified with three consecutive GD devices, starting from the set device number.

When [500] is set to [CPU No. switching GD device first No. (3 points)], GD500 to GD502 are used to specify [CPU No.] as shown in the following table.

CPU No.	GD device	Setting range
100	GD500	1 to 4 Setting a value outside the range causes a communication timeout error. Specifying a nonexistent CPU number or a CPU number not supporting a multiple CPU system with a device causes a controller error.
101	GD501	
102	GD502	

• Indirect specification of a CPU number on the initially displayed screen

Set [CPU No. switching GD device first No. (3 points)] so that the values of the GD devices are retained and monitored upon the GOT startup.

• Indirect specification of a CPU number for multi-channel connection

If the setting range of [CPU No. switching GD device first No. (3 points)] set for each channel overlaps, the monitoring target CPU number set to each channel is switched simultaneously.

Set [CPU No. switching GD device first No. (3 points)] for each channel so that the setting range does not overlap.

• Indirect specification of a station number and a CPU number for multi-channel connection

When GD10 to GD25 are used to specify the station number of an inverter or non-Mitsubishi temperature controller connected, setting [10] to [CPU No. switching GD device first No. (3 points)] in a different channel switches the monitoring target CPU number and station number of an inverter or non-Mitsubishi temperature controller set to each channel simultaneously.

Set [CPU No. switching GD device first No. (3 points)] so that the setting range does not overlap the station number of an inverter or non-Mitsubishi temperature controller.

■Start device number of the GD devices for module number switching

• Indirect specification of a module number

For connection via a Simple Motion module, [Unit No.] can be specified with the GOT internal registers (GD devices) by specifying a value (100 to 10F) to [Unit No.] in the device setting dialog in GT Designer3.

Set the start device number of the GD devices to be used in [Module No. switching GD device first No. (16 points)].

[Unit No.] is specified with 16 consecutive GD devices, starting from the set device number.

When [550] is set to [Module No. switching GD device first No. (16 points)], GD550 to GD565 are used to specify [Unit No.] as shown in the following table.

Module No.	GD device	Setting range
100	GD550	00 to FF Setting a value outside the above range causes a device range error.
101	GD551	
102	GD552	
103	GD553	
104	GD554	
105	GD555	
106	GD556	
107	GD557	
108	GD558	
109	GD559	
10A	GD560	
10B	GD561	
10C	GD562	
10D	GD563	
10E	GD564	
10F	GD565	

• Indirect specification of a module number on the initially displayed screen

Set [Module No. switching GD device first No. (16 points)] so that the values of the GD devices are retained and monitored upon the GOT startup.

• Indirect specification of a module number for multi-channel connection

If the setting range of [Module No. switching GD device first No. (16 points)] set for each channel overlaps, the module number of the Simple Motion module via the servo amplifier device of each channel is switched simultaneously.

Set [Module No. switching GD device first No. (16 points)] for each channel so that the setting range does not overlap.

• Indirect specification of a station number and a module number for multi-channel connection

When GD10 to GD25 are used to specify the station number of an inverter or non-Mitsubishi temperature controller connected, setting [10] to [Module No. switching GD device first No. (16 points)] switches the module number of the Simple Motion module via the servo amplifier device and the station number of an inverter or non-Mitsubishi temperature controller set to each channel simultaneously.

Set [Module No. switching GD device first No. (16 points)] so that the setting range does not overlap the station number of an inverter or non-Mitsubishi temperature controller.

■Start device number of the GD devices for servo axis switching

• Indirect specification of a servo axis number

For connection via a Motion CPU or Simple Motion module, a servo axis number can be indirectly specified with GOT internal registers (GD devices) by specifying a value (100 to 115) to the axis number of the servo amplifier device.

Set the start device number of the GD devices to be used in [Servo axis switching GD device first No. (16 points)].

Specify a servo axis number with 16 consecutive GD devices, starting the set device number.

When [10] is set to [Servo axis switching GD device first No. (16 points)], GD10 to GD25 are used to specify a servo axis number as shown in the following table.

Servo axis No.	GD device	Setting range
100	GD10	1 to 64 Setting a value outside the above range causes a device range error.
101	GD11	
102	GD12	
103	GD13	
104	GD14	
105	GD15	
106	GD16	
107	GD17	
108	GD18	
109	GD19	
110	GD20	
111	GD21	
112	GD22	
113	GD23	
114	GD24	
115	GD25	

• Indirect specification of a servo axis number on the initially displayed screen

Set [Servo axis switching GD device first No. (16 points)] so that the values of the GD devices are retained and monitored upon the GOT startup.

• Indirect specification of a servo axis number for multi-channel connection

If the setting rage of [Servo axis switching GD device first No. (16 points)] set for each channel overlaps, the axis number of the servo amplifier of each channel is switched simultaneously.

Set [Servo axis switching GD device first No. (16 points)] for each channel so that the setting range does not overlap.

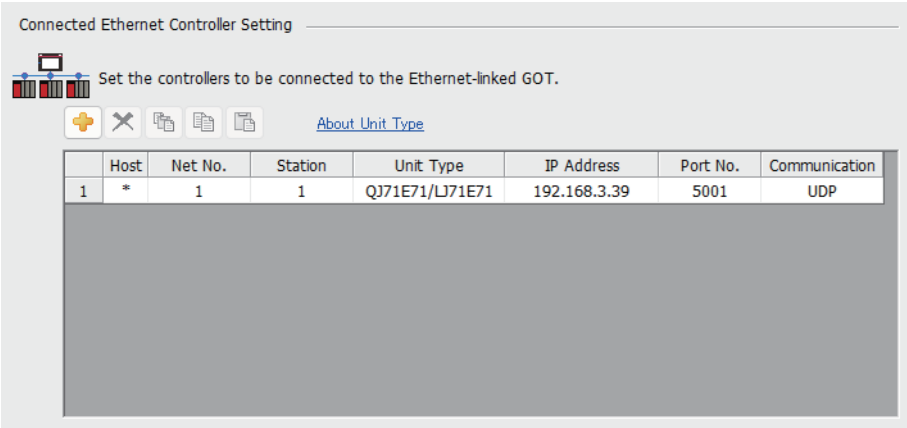
• Indirect specification of a station number and a servo axis number for multi-channel connection

When GD10 to GD25 are used to specify the station number of an inverter or non-Mitsubishi temperature controller connected, setting [10] to [Servo axis switching GD device first No. (16 points)] switches the axis number of the servo amplifier and the station number of an inverter or non-Mitsubishi temperature controller set to each channel simultaneously.

Set [Servo axis switching GD device first No. (16 points)] so that the setting range does not overlap the station number of an inverter or non-Mitsubishi temperature controller.

■[Connected Ethernet Controller Setting]

Set the controller to be connected to the GOT by Ethernet.



Item	Description	Range
[Host]	The host is displayed. It refers to a station that can be connected without setting a station number. The host is indicated with an asterisk (*).	—
[Net No.]	Set the network number of the connected Ethernet equipment.	[1] to [239]
[Station]*2	Set the station number of the connected Ethernet equipment.	[1] to [64]
[Unit Type]	Select the model of the connected Ethernet equipment.	[QJ71E71/LJ71E71]
[IP Address]	Set the IP address of the connected Ethernet equipment.	[0.0.0.0] to [255.255.255.255]
[Port No.]*1	Set the port number of the connected Ethernet equipment.	☞ Page 471 [Port No.]
[Communication]	Set the communication format of the connected Ethernet equipment.	[UDP], [TCP]

*1 Match the port number of the CPU and [Port No.] of [Connected Ethernet Controller Setting].

*2 Set values not set for [GOT Station] in [Detail Setting].

☞ Page 466 [Detail Setting]

■[Port No.]

The setting range is as follows:

[Unit Type]	[Port No.]	[Communication]
[QJ71E71/LJ71E71]	[5001]	[UDP]
	[5002]	[TCP]

Point

Changing the host station on the GOT

[Host] can be changed with the utility function of the GOT.

For details on the setting method, refer to the following manual.

📖GOT3000 Series User's Manual (Utility & Maintenance Functions)

■Routing parameter settings

Up to 64 settings can be configured for [Transfer Net No.].

However, the same number cannot be set in [Transfer Net No.] twice or more (multiple times).

The GOT (host station) can access 64 different networks specified under [Transfer Net No.].

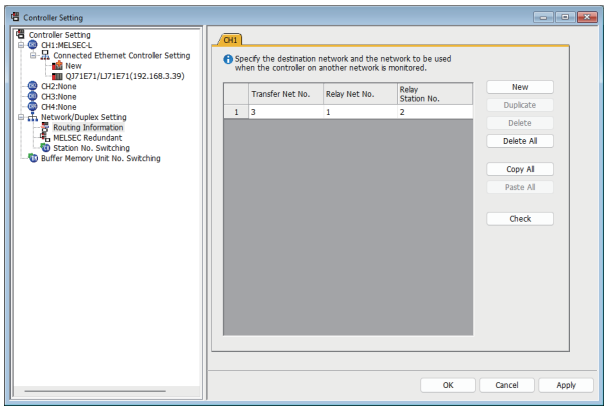
Point

Routing parameter settings

When communicating within the host network, routing parameter settings are not required.

For details on routing parameters, refer to the following manual.

📖MELSEC-Q/L Ethernet Interface Module User's Manual (Application)



Item	Range
[Transfer Net No.]	[1] to [239]
[Relay Net No.]	[1] to [239]
[Relay Station No.]	[0] to [120]

Point

Routing parameter settings for the relay station

Routing parameter settings are also necessary for the relay station.

For the setting, refer to the following.

☞ Page 473 PLC side settings

Precautions

If the network numbers of the GOT and PLC do not match on the same Ethernet network, monitoring of the PLC is not possible.

To enable monitoring, set the same network number as that of the GOT or connect an Ethernet module to the PLC and configure the routing settings to monitor the PLC as a different network.

When the multi-channel connection can be used, set a different network number for each channel.

4.12.4 PLC side settings

Model		Reference
MELSEC-L series	L02CPU L06CPU L26CPU L26CPU-BT L02CPU-P L06CPU-P L26CPU-P L26CPU-PBT L02SCPU L02SCPU-P	☞ Page 473 Connection to Ethernet module (MELSEC-L series)

Precautions

Do not set a remote password on the LCPU.
Doing so disables monitoring with the GOT.

Connection to Ethernet module (MELSEC-L series)

This section describes the settings of the GOT and the Ethernet module (MELSEC-L series) in the system configuration shown below.

Point

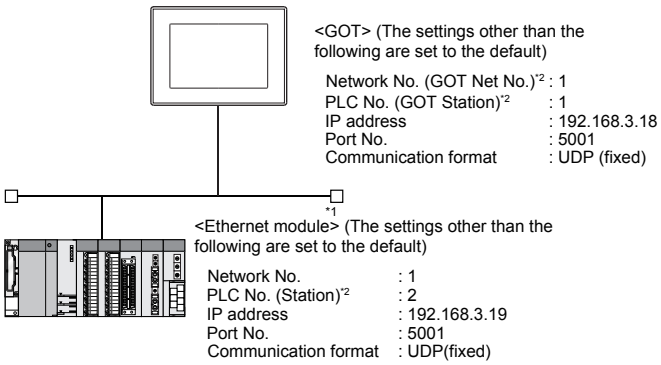
- Ethernet module (MELSEC-L series)

For details on the Ethernet module (MELSEC-L series), refer to the following manual.
📖MELSEC-L Ethernet Interface Module User's Manual (Basic)

- Connecting multiple GOTs

When connecting multiple GOTs in the Ethernet network, set a different value for [GOT Station] for each GOT.
☞ Page 467 When connecting multiple GOTs

■System configuration

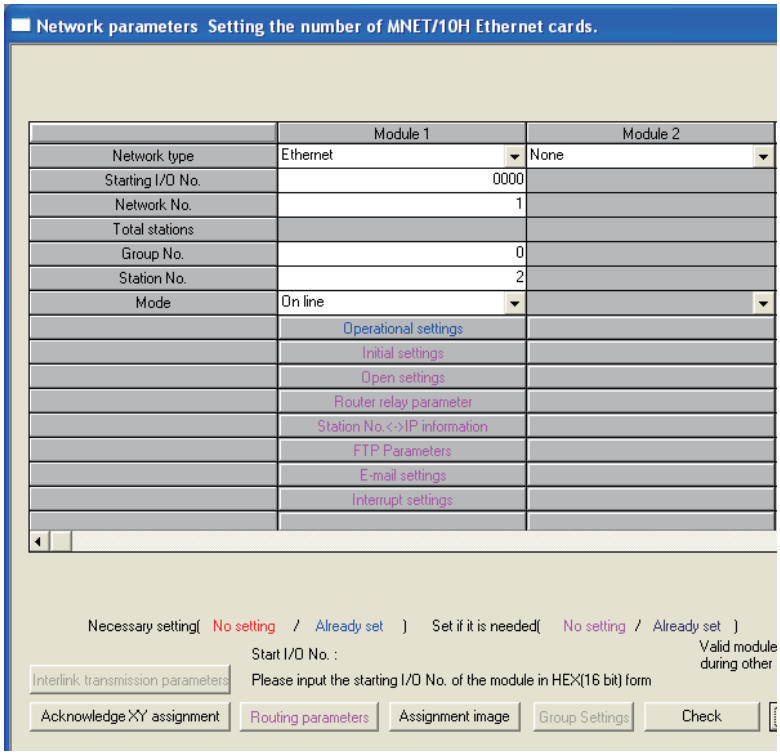


*1 The Ethernet module is mounted on the base unit slot 0.
The start I/O number of the Ethernet module is set to 0.
*2 For the following settings, the setting names are different on the PLC side and the GOT side.

Setting	Setting name		
	PLC side	GOT side	
		Controller setting	Connected Ethernet controller setting
Network number	[Network No.]	[GOT Net No.]	[Net No.]
PLC number	[Station]	[GOT Station]	[Station]

■[Network parameter] of GX Developer

- Network parameter



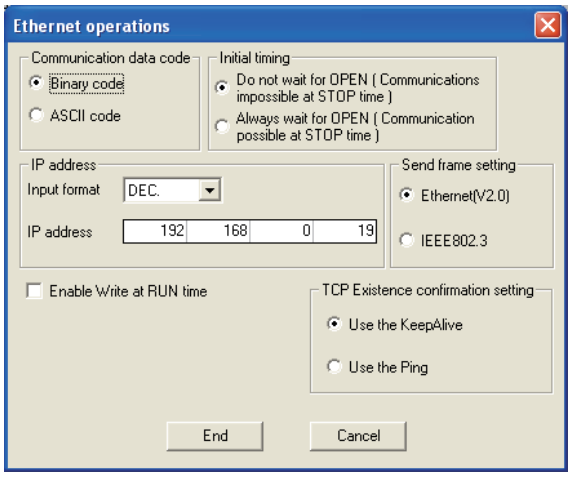
○: Necessary, △: As necessary, —: Not necessary

Item	Setting value	Setting for GOT connection
[Network Type]	Ethernet	○
[Starting I/O No.]	0000H	○
[Network No.]*1	1	○
[Group No.]	0	○
[Station No.]*2	2	○
[Mode]	Online	○
[Operation setting]	☞ • Operation settings	○
[Initial settings]	(Use default value)	△
[Open settings]		—
[Router relay parameter]		—
[Station No.<->IP information]		—
[FTP Parameters]		—
[E-mail settings]		—
[Interrupt settings]		—

*1 Set the same network number as that of the GOT.

*2 Do not set the same station No. as that of the GOT.

• Operation settings



○: Necessary, △: As necessary, —: Not necessary

Item	Setting value	Setting for GOT connection
[Communication Data Code]*1	(Use default value)	—
[IP address]	192.168.3.19	○
[Initial timing]*1	(Use default value)	—
[Send frame setting]		—
[Enable Write at RUN time]*1		—
[TCP Existence confirmation setting]		—

*1 Because port number 5001 is fixed, the GOT operates as follows regardless of this setting.
- Communication date code: [Binary code]
- Initial timing: [Always wait for OPEN] (Communications are possible while the PLC CPU is stopped.)
- Enable Write at RUN time: [Enable Write at RUN time] (Data can be written while the PLC CPU is running.)

Point

When changing the network parameter

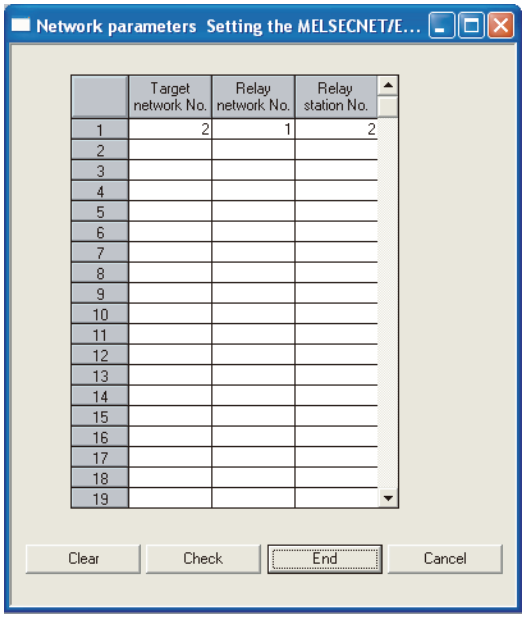
After writing network parameters to the PLC CPU, turn off then on or reset the PLC CPU.

• Routing parameters

Up to 64 network numbers can be set for [Target network No.].

However, the same destination network number cannot be set twice or more (multiple times).

The GOT (host station) can access 64 different networks specified under [Target network No.].



Item	Range
[Target network No.]	[1] to [239]
[Relay network No.]	[1] to [239]
[Relay station No.]	[0] to [64]

Point

Routing parameter settings for the request source

Routing parameter settings are also necessary for the request source GOT.

For the setting, refer to the following.

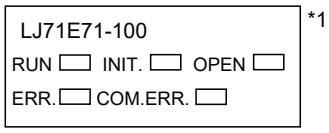
☞ Page 472 Routing parameter settings

• Communication confirmation

The INIT.LED on the Ethernet module turns on when the module is ready to communicate.

For checking the communication status, refer to the following.

☞ Page 478 Checking the communication status of the Ethernet module



*1 The LED indications shown in the figure are for the LJ71E71-100.

■[Controller Setting] and [Connected Ethernet Controller Setting] of GT Designer3

For the setting method of [Controller Setting] and [Connected Ethernet Controller Setting] in GT Designer3, refer to the following.

☞ Page 464 GOT side settings

- Controller settings

Item	Setting value
[GOT Net No.]	1
[GOT Station]	1
[GOT Communication Port No.]	5001
[Retry]	3 times
[Startup Time]	3 seconds
[Timeout Time]	3 seconds
[Delay Time]	0 ms

- GOT Ethernet settings

Item	Setting value
[GOT IP Address]	192.168.3.18
[Subnet Mask]	255.255.255.0
[Default Gateway]	0.0.0.0
[Peripheral S/W Communication Port No.]	5015
[Transparent Port No.]	5014

- Connected Ethernet controller settings

Item		Setting value
Ethernet setting No. 1	[Host]	*
	[Net No.]	1
	[Station No.]	2
	[Unit Type]	QJ71E71/LJ71E71
	[IP Address]	192.168.3.19
	[Port No.]*1	5001
	[Communication]*1	UDP

*1 The following settings can also be configured for [Port No.] and [Communication].
[Port No.]: 5002
[Communication]: TCP

■Checking the communication status of the Ethernet module

• When using Windows Command Prompt

Execute a ping command in Windows Command Prompt.

1) At normal end

C:\>Ping 192.168.3.19

Reply from 192.168.3.19:bytes=32 time<1ms TTL=32

2) At abnormal end

C:\>Ping 192.168.3.19

Request timed out.

• In the case of abnormal end

In the case of abnormal end, check the following and execute the ping command again.

Mounting condition of the Ethernet module

Cable connecting condition

Switch settings and network parameter settings

Operation state of PLC CPU (faulty or not)

IP address of the Ethernet module specified by the ping command

Point

Ethernet diagnostics of GX Developer

The Ethernet diagnostics of GX Developer enables ping tests from the PLC.

For details on the Ethernet diagnostics of GX Works3, refer to the following manual.

User's manual of the Ethernet module used

4.12.5 Access range for monitoring

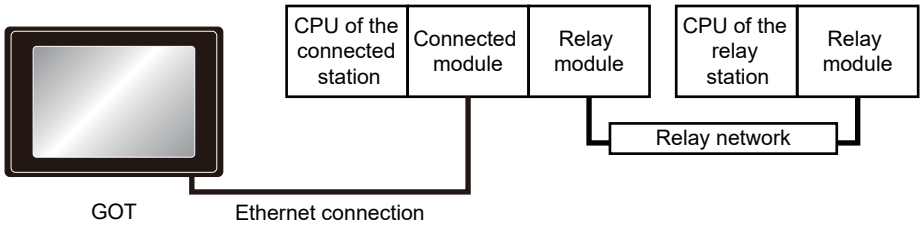
When the GOT is connected to the CPU of the station connected via Ethernet, the range accessible via the CPU is as follows.

Point

• When monitoring other networks (Routing parameter settings)

To monitor other networks, routing parameter settings are necessary.

For the routing parameter settings, refer to the reference manual of the network connected.



○: Accessible, —: Inaccessible

CPU of the connected station	Connected module	Relay station								
		Relay network	CPU of the relay station							
			RCPU	LCPU	QCPU (Q mode)	QSCPU	QCPU (A mode)	QnACPU	ACPU	FX5CPU
LCPU	☞ Page 461 Connectable devices	Ethernet	—	○	○*2	○	—	○	—	—
		CC-Link IE Field Network	—	○	○*1	○	—	—	—	—
		SSCNETIII/H	—	—	○*3	—	—	—	—	—

*1 QnUDVCPU, QnUDECPU, QnUDEHCPU, QnUCPU, QnUDCPU, and QnUDHCPU are supported.
*2 The C Controller module (MELSEC-Q series) is not supported.
*3 Only the C Controller module (MELSEC-Q series) is supported.

4.13 MELSEC-A series (Ethernet module connection)

☞ Page 481 Connectable devices
☞ Page 482 System configuration
☞ Page 485 GOT side settings
☞ Page 491 PLC side settings
☞ Page 499 Access range for monitoring

4.13.1 Connectable devices

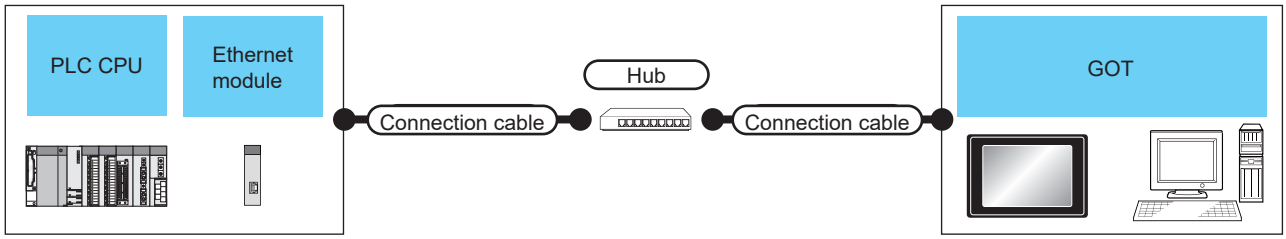
The following table shows the connectable models.

○: Supported, —: Not supported

Controller	Model	Clock	Ethernet module	Connectable model
MELSEC-A (AnCPU)	A2UCPU A2UCPU-S1 A3UCPU A4UCPU A2ACPU A2ACPUP21 A2ACPUR21 A2ACPU-S1 A2ACPUP21-S1 A2ACPUR21-S1 A3ACPU A3ACPUP21 A3ACPUR21 A1NCPU A1NCPUP21 A1NCPUR21 A2NCPU A2NCPUP21 A2NCPUR21 A2NCPU-S1 A2NCPUP21-S1 A2NCPUR21-S1 A3NCPU A3NCPUP21 A3NCPUR21	○	AJ71E71N3-T AJ71E71N-B5 AJ71E71N-B2 AJ71E71N-T AJ71E71N-B5T AJ71E71-S3	GT37 SoftGOT3000
MELSEC-A (AnSCPU)	A2USCPU A2USCPU-S1 A2USHCPU-S1 A1SCPU A1SCPUC24-R2 A1SHCPU A2SCPU A2SCPU-S1 A2SHCPU A2SHCPU-S1 A1SJCPU A1SJCPU-S3 A1SJHCPU	○	A1SJ71E71N3-T A1SJ71E71N-B5 A1SJ71E71N-B2 A1SJ71E71N-T A1SJ71E71N-B5T A1SJ71E71-B5-S3 A1SJ71E71-B2-S3	GT37 SoftGOT3000
MELSEC-A*1	A0J2HCPU A0J2HCPUP21 A0J2HCPUR21 A0J2HCPU-DC24	—	AJ71E71N3-T AJ71E71N-B5 AJ71E71N-B2 AJ71E71N-T AJ71E71N-B5T AJ71E71-S3	GT37 SoftGOT3000
Motion CPU (A series)	A273UCPU A273UHCPU A273UHCPU-S3 A373UCPU A373UCPU-S3	○	AJ71E71N3-T AJ71E71N-B5 AJ71E71N-B2 AJ71E71N-T AJ71E71N-B5T	GT37 SoftGOT3000
	A171SCPU A171SCPU-S3 A171SCPU-S3N A171SHCPU A171SHCPUN A172SHCPU A172SHCPUN A173UHCPU A173UHCPU-S1	○	A1SJ71E71N3-T A1SJ71E71N-B5 A1SJ71E71N-B2 A1SJ71E71N-T A1SJ71E71N-B5T	GT37 SoftGOT3000

*1 When GT SoftGOT3000 is connected, the monitoring range varies depending on the Ethernet module to be used.
For details, refer to the following.
User's manual of the Ethernet module used

4.13.2 System configuration



For details on the connection cables and the maximum segment length, refer to the following.

☞ Page 483 Connection cable
☞ Page 483 Maximum segment length

For details on the maximum number of connected devices, refer to the following.

☞ Page 484 Maximum number of connected devices

Controller	Ethernet module*1*2	Connection cable	GOT	
			Interface	Model
MELSEC-A (AnCPU) MELSEC-A	AJ71E71N3-T AJ71E71N-B5 AJ71E71N-B2 AJ71E71N-T AJ71E71N-B5T AJ71E71-S3	Twisted pair cable	Built-in Ethernet interface of GOT	GT37 SoftGOT3000
			Ethernet interface of personal computer	GT37 SoftGOT3000
MELSEC-A (AnSCPU)	A1SJ71E71N3-T A1SJ71E71N-B5 A1SJ71E71N-B2 A1SJ71E71N-T A1SJ71E71N-B5T A1SJ71E71-B5-S3 A1SJ71E71-B2-S3	Twisted pair cable	Built-in Ethernet interface of GOT	GT37 SoftGOT3000
			Ethernet interface of personal computer	GT37 SoftGOT3000
Motion CPU (A series) large type	AJ71E71N3-T AJ71E71N-B5 AJ71E71N-B2 AJ71E71N-T AJ71E71N-B5T	Twisted pair cable	Built-in Ethernet interface of GOT	GT37 SoftGOT3000
			Ethernet interface of personal computer	GT37 SoftGOT3000
Motion CPU (A series) small type	A1SJ71E71N3-T A1SJ71E71N-B5 A1SJ71E71N-B2 A1SJ71E71N-T A1SJ71E71N-B5T	Twisted pair cable	Built-in Ethernet interface of GOT	GT37 SoftGOT3000
			Ethernet interface of personal computer	GT37 SoftGOT3000

*1 For the system configuration of the Ethernet module, refer to the following manual.
For A Ethernet Interface Module User's Manual
*2 Select [AJ71E71] for [Unit Type] in [Connected Ethernet Controller Setting] in GT Designer3.
For [Connected Ethernet Controller Setting] in GT Designer3, refer to the following.
Page 489 [Connected Ethernet Controller Setting]

Connection cable

Use a connection cable that meets the following standards.

Standard	Category
10BASE-T	Shielded twisted pair cable (STP) or unshielded twisted pair cable (UTP) of category 3 or higher
100BASE-TX	Shielded twisted pair cable (STP) or unshielded twisted pair cable (UTP) of category 5 or higher
1000BASE-T	Shielded twisted pair cable (STP) or unshielded twisted pair cable (UTP) of category 5e or higher

The destination device connected with the twisted pair cable varies with the configuration of the Ethernet network system used.
Connect the cable to the Ethernet module, hub, or other system equipment corresponding to the applicable Ethernet network system.
Use cables, connectors, and hubs that meet the IEEE802.3 10BASE-T/100BASE-TX/1000BASE-T standards.
When only one GOT is connected, the GOT can be directly connected to the controller without a hub.

Maximum segment length

The maximum segment length (length between a hub and a node) is 100 m.
The maximum length depends on the Ethernet equipment used.
The following shows the number of connectable hubs when a repeater hub is used.

- 10BASE-T: Up to 4 for a cascade connection (within 500 m)
- 100BASE-TX: Up to 2 for a cascade connection (within 205 m)
- 1000BASE-T: The number differs depending on the hub to be used.

When switching hubs are used, there is no theoretical limit to the number of cascade connections between switching hubs.
For the limit, contact the switching hub manufacturer.

Precautions

When multiple network devices (including GOTs) are connected in the same segment, the network load increases and the transmission speed between the GOT and PLC may be reduced.
The following actions may improve the communication performance.

- Use a switching hub compatible with 1000BASE-T (1 Gbps) or more.
- Reduce the number of devices monitored by the GOT.

Maximum number of connected devices

Up to 128 CPU modules can be connected to channels No. 1 to No. 4 of one GOT. (16 or less recommended)

The following shows the number of connectable controllers per GOT channel and the number of GOTs connectable to one controller.

Controller				GOT	
Model		Number of GOTs connectable to one Ethernet module		Model	Number of connectable controllers per GOT channel
PLC CPU	Module	UDP	TCP		
MELSEC-A series Motion CPU (A series)	AJ71E71N3-T AJ71E71N-B5 AJ71E71N-B2 AJ71E71N-T AJ71E71N-B5T AJ71E71-S3 A1SJ71E71N3-T A1SJ71E71N-B5 A1SJ71E71N-B2 A1SJ71E71N-T A1SJ71E71N-B5T A1SJ71E71-B5-S3 A1SJ71E71-B2-S3	8	—	GT37 SoftGOT3000	63 (4 or less recommended)

Communication using Ethernet module (A series)

When using an Ethernet module (A series), communication is available only in the same segment.

Communication via a router or the gateway is not available.

4.13.3 GOT side settings

[GOT Ethernet Setting]

Set the GOT Ethernet interface in GT Designer3.

Item	Description
[GOT IP Address Setting]	Set the IP address of the GOT.
[GOT Ethernet Common Setting]	Set the default gateway and other common items for GOT Ethernet interfaces.
[IP filter Setting]	The GOT allows or blocks access from IP addresses specified in the filtering list.

For details on the setting, refer to the following.

📖GT Designer3 (GOT3000) Screen Design Manual

Set the GT SoftGOT3000 Ethernet interface on the personal computer.

Precautions

Do not use 0 and 255 at the end of an IP address.

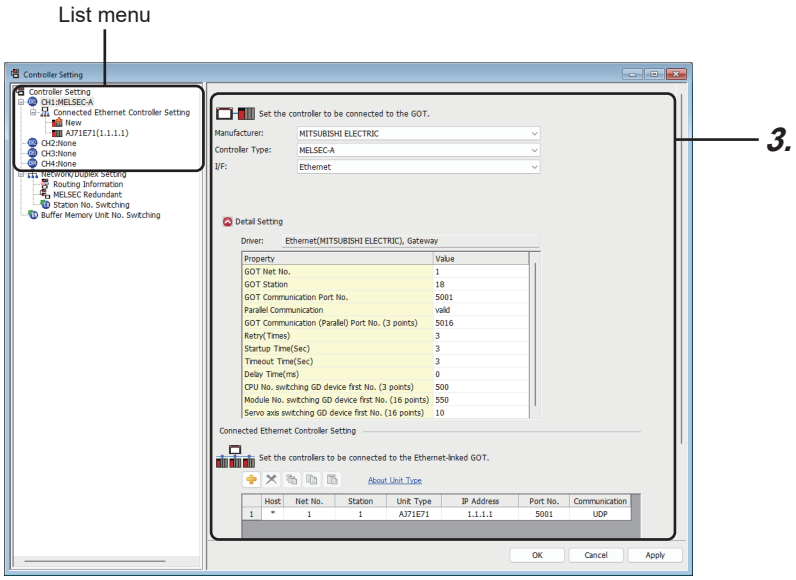
(Numbers of *.*.*.0 and *.*.*.255 are used by the system.)

The GOT may not monitor the controller correctly with the above numbers.

Consult with the administrator of the network before setting an IP address to the GOT.

[Controller Setting]

Set the channel of the connected controller.



Operating procedure

1. Select [Common] → [Controller Setting] from the menu.

2. In the [Controller Setting] window, select the channel number to be used from the list menu.

3. Set the following items.

Item	Description
[Manufacturer]	[MITSUBISHI ELECTRIC]
[Controller Type]	[MELSEC-A]
[I/F]	[Ethernet]
[Detail Setting]	Configure the settings according to the usage environment. ☞ Page 487 [Detail Setting]
[Connected Ethernet Controller Setting]	Configure the settings according to the controller to be connected. ☞ Page 489 [Connected Ethernet Controller Setting]

4. When you have completed the settings, click the [OK] button.

Point

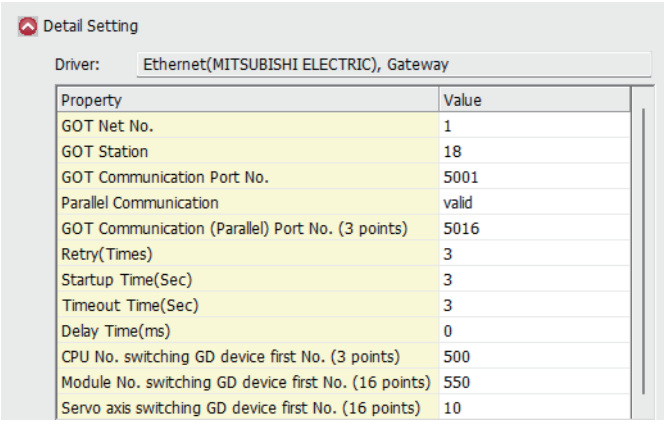
The controller settings can be checked in [I/F Communication Setting].

For details, refer to the following.

📖GT Designer3 (GOT3000) Screen Design Manual

■[Detail Setting]

Configure the settings according to the usage environment.



Item	Description	Range
[Driver]	This item appears when communication drivers are selectable according to the settings of [Controller Type] and [I/F].	[Ethernet(MITSUBISHI ELECTRIC), Gateway]
[GOT Net No.]	Set the network number of the GOT.	[1] to [239]
[GOT Station][*1*2]	Set the station number of the GOT.	[1] to [120]
[GOT Communication Port No.]	Set the GOT port number for connection with the Ethernet module.	[1024] to [5010], [5014] to [49152], [49171] to [65534]
[Parallel Communication]	Enables or disables the parallel communication. When this setting is enabled, [GOT Communication (Parallel) Port No. (3 points)] can be set. When communicating with multiple devices on a single channel, distributing the communication ports can reduce the communication load.	[valid], [invalid]
[GOT Communication (Parallel) Port No. (3 points)]	Set the GOT port number used for the parallel communication.	• [Parallel Communication] is [invalid]: [0] • [Parallel Communication] is [valid]: [1024] to [5008], [5014] to [49150], [49171] to [65532]
[Retry(Times)]	Set the number of retries to be performed when a communication timeout occurs. When receiving no response after retries, the communication times out.	GOT: [0] times to [5] times GT SoftGOT3000: [0] times to [10] times
[Startup Time]	Set the time period from the GOT startup until the start of communication with the PLC CPU.	[3] seconds to [255] seconds
[Timeout Time]	Set the time period for a communication to time out.	[1] second to [90] seconds
[Delay Time]	Set the delay time for reducing the load of the network and destination PLC.	[0] ms to [10000] ms
[CPU No. switching GD device first No. (3 points)]	The item is displayed but cannot be set.	—
[Module No. switching GD device first No. (16 points)]	The item is displayed but cannot be set.	—
[Servo axis switching GD device first No. (16 points)]	The item is displayed but cannot be set.	—

*1 Set values not set for [Station] in [Connected Ethernet Controller Setting].
☞ Page 489 [Connected Ethernet Controller Setting]

*2 When connecting multiple GOTs in the Ethernet network, set a different value for [GOT Station] for each GOT.

Point

- Controller settings using the GT37 utility

The controller settings can be changed in [Communication Settings] of the GT37 utility after writing [Communication Settings] of project data to GT37.

For details on the GT37 utility, refer to the following manual.

GOT3000 Series User's Manual (Utility & Maintenance Functions)

- Priority of the settings in [Controller Setting]

When the settings are configured in GT Designer3 or in the GT37 utility, the latest settings are effective.

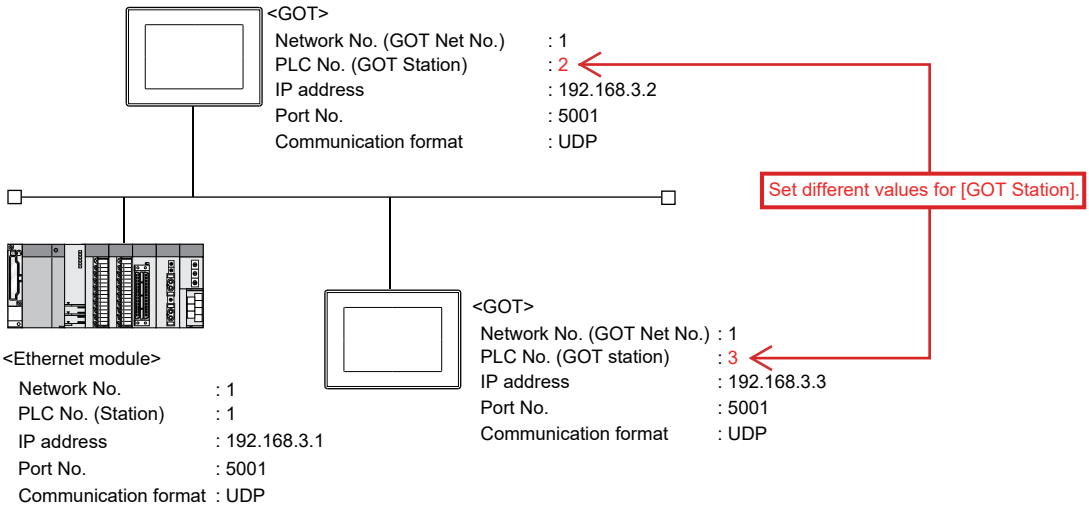
■When connecting multiple GOTs

When connecting multiple GOTs in the Ethernet network, set a different value for [GOT Station] for each GOT.

☞ Page 487 [Detail Setting]

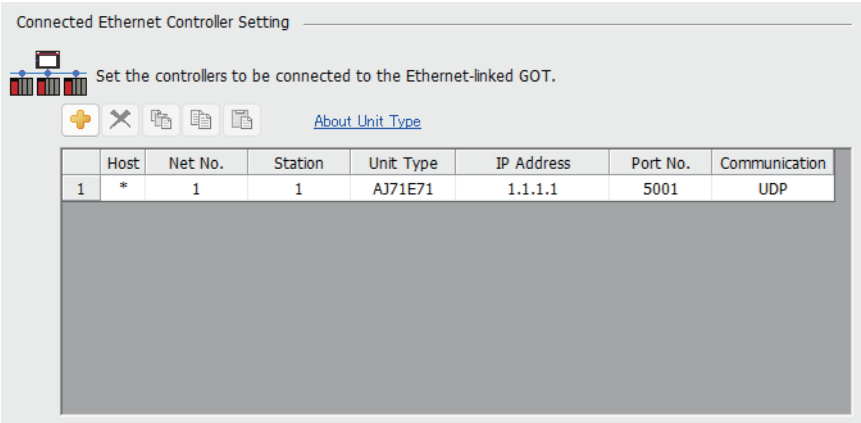
The following shows a system configuration example.

Ex.



■[Connected Ethernet Controller Setting]

Set the controller to be connected to the GOT by Ethernet.



Item	Description	Range
[Host]	The host is displayed. It refers to a station that can be connected without setting a station number. The host is indicated with an asterisk (*).	—
[Net No.]	Set the network number of the connected Ethernet equipment.	[1] to [239]
[Station]*2	Set the station number of the connected Ethernet equipment.	[1] to [64]
[Unit Type]	Select the model of the connected Ethernet equipment.	[AJ71E71]
[IP Address]	Set the IP address of the connected Ethernet equipment.	[0.0.0.0] to [255.255.255.255]
[Port No.]*1	Set the port number of the connected Ethernet equipment.	[1024] to [65535]
[Communication]	Set the communication format of the connected Ethernet equipment.	[UDP]

*1 Match the port number of the CPU and [Port No.] of [Connected Ethernet Controller Setting].

*2 Set values not set for [GOT Station] in [Detail Setting].

☞ Page 487 [Detail Setting]

Point

Changing the host station on the GOT

[Host] can be changed with the utility function of the GOT.

For details on the setting method, refer to the following manual.

📖GOT3000 Series User's Manual (Utility & Maintenance Functions)

Precautions

If the network numbers of the GOT and PLC do not match on the same Ethernet network, monitoring of the PLC is not possible.
To enable monitoring, set the same network number as that of the GOT or connect an Ethernet module to the PLC and configure the routing settings to monitor the PLC as a different network.
When the multi-channel connection can be used, set a different network number for each channel.

4.13.4 PLC side settings

Model		Reference
MELSEC-A (AnCPU)	A2UCPU A2UCPU-S1 A3UCPU A4UCPU A2ACPU A2ACPUP21 A2ACPUR21 A2ACPU-S1 A2ACPUP21-S1 A2ACPUR21-S1 A3ACPU A3ACPUP21 A3ACPUR21 A1NCPU A1NCPUP21 A1NCPUR21 A2NCPU A2NCPUP21 A2NCPUR21 A2NCPU-S1 A2NCPUP21-S1 A2NCPUR21-S1 A3NCPU A3NCPUP21 A3NCPUR21	☞ Page 492 Connection to Ethernet module (A series)
MELSEC-A (AnSCPU)	A2USCPU A2USCPU-S1 A2USHCPU-S1 A1SCPU A1SCPUC24-R2 A1SHCPU A2SCPU A2SCPU-S1 A2SHCPU A2SHCPU-S1 A1SJCPU A1SJCPU-S3 A1SJHCPU	☞ Page 492 Connection to Ethernet module (A series)
MELSEC-A	A0J2HCPU A0J2HCPUP21 A0J2HCPUR21 A0J2HCPU-DC24	☞ Page 492 Connection to Ethernet module (A series)
Motion CPU (A series)	A273UCPU A273UHCPU A273UHCPU-S3 A373UCPU A373UCPU-S3	☞ Page 492 Connection to Ethernet module (A series)
	A171SCPU A171SCPU-S3 A171SCPU-S3N A171SHCPU A171SHCPUN A172SHCPU A172SHCPUN A173UHCPU A173UHCPU-S1	☞ Page 492 Connection to Ethernet module (A series)

Connection to Ethernet module (A series)

This section describes the settings of the GOT and the Ethernet module (A series) in the system configuration shown below.

Point

- Ethernet module (A series)

For details on the Ethernet module (A series), refer to the following manual.

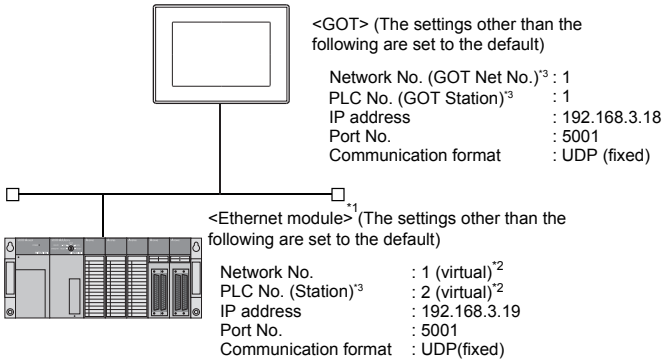
For A Ethernet Interface Module User's Manual

- Connecting multiple GOTs

When connecting multiple GOTs in the Ethernet network, set a different value for [GOT Station] for each GOT.

Page 488 When connecting multiple GOTs

■System configuration



*1 The Ethernet module is mounted on the base unit slot 0.
The start I/O number of the Ethernet module is set to 0.

*2 Although the setting is nonexistent on the PLC side, set a virtual value on the GOT side.
Page 498 [Controller Setting] and [Connected Ethernet Controller Setting] of GT Designer3

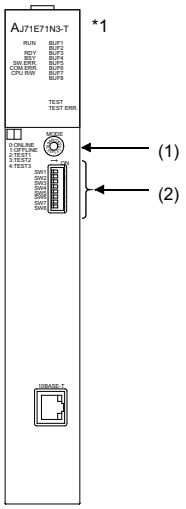
*3 For the following settings, the setting names are different on the PLC side and the GOT side.

Setting	Setting name		
	PLC side	GOT side	
		Controller setting	Connected Ethernet controller setting
Network number	[Network No.]	[GOT Net No.]	[Net No.]
PLC number	[Station]	[GOT Station]	[Station]

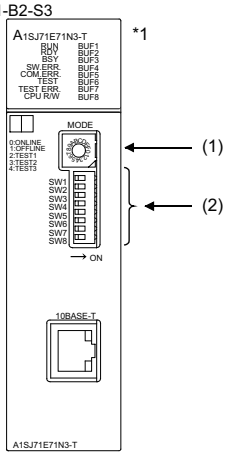
■Switch settings for the Ethernet module

Set the operation mode setting switch and exchange condition setting switch.

AJ71E71N3-T, AJ71E71N-B5, AJ71E71N-B2, AJ71E71N-T, AJ71E71N-B5T, AJ71E71-S3



A1SJ71E71N3-T, A1SJ71E71N-B5, A1SJ71E71N-B2, A1SJ71E71N-T, A1SJ71E71N-B5T, A1SJ71E71-B5-S3, A1SJ71E71-B2-S3

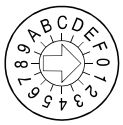


*1 The figures are of AJ71E71N3-T and A1SJ71E71N3-T.

PART 3

• Operation mode setting switch

○: Necessary, △: As necessary, —: Not necessary

Operation mode setting switch	Description	Setting value	Setting for GOT connection
	Online	0	○

• Exchange condition setting switch

The exchange condition setting switches of A1SJ71E71-B5-S3 and A1SJ71E71-B2-S3 are specified as the below.

○: Necessary, △: As necessary, —: Not necessary

Exchange condition setting switch	Setting switch	Description	Setting value	Setting for GOT connection
	SW1	Selection of line processing at TCP timeout error	OFF	△
	SW2	Data code setting (binary code)	OFF	○
	SW3	(Must not to be used)	OFF	—
	SW4			
	SW5			
	SW6			
	SW7	CPU exchange timing setting (Enable write at RUN time)	ON	○
	SW8	Initial timing setting	OFF	△
	SW1	Selection of line processing at TCP timeout error	OFF	△
	SW2	Data code setting (binary code)	OFF	○
	SW3	CPU exchange timing setting (Enable write at RUN time)	ON	○
	SW4	Initial timing setting	OFF	△

Point

When the switch setting has been changed

Turn off then on or reset the PLC CPU.

■Sequence program

The sequence program for initial processing and communication line opening processing are required.

- Programming condition

This program performs the initial processing of the Ethernet module and the opening processing of connection number 1 when the PLC CPU stops, then starts running.

I/O signal of Ethernet module

📖For A Ethernet Interface Module User's Manual

Device used by user

Device	Application
M102	COM.ERR turned off command
D100	IP address of Ethernet module
D110	Application setting
D111	Port No. of Ethernet module
D112 to D113	IP address of GOT
D114	Port No. of GOT
D200	Initial fault code

Buffer memory settings used in the present example

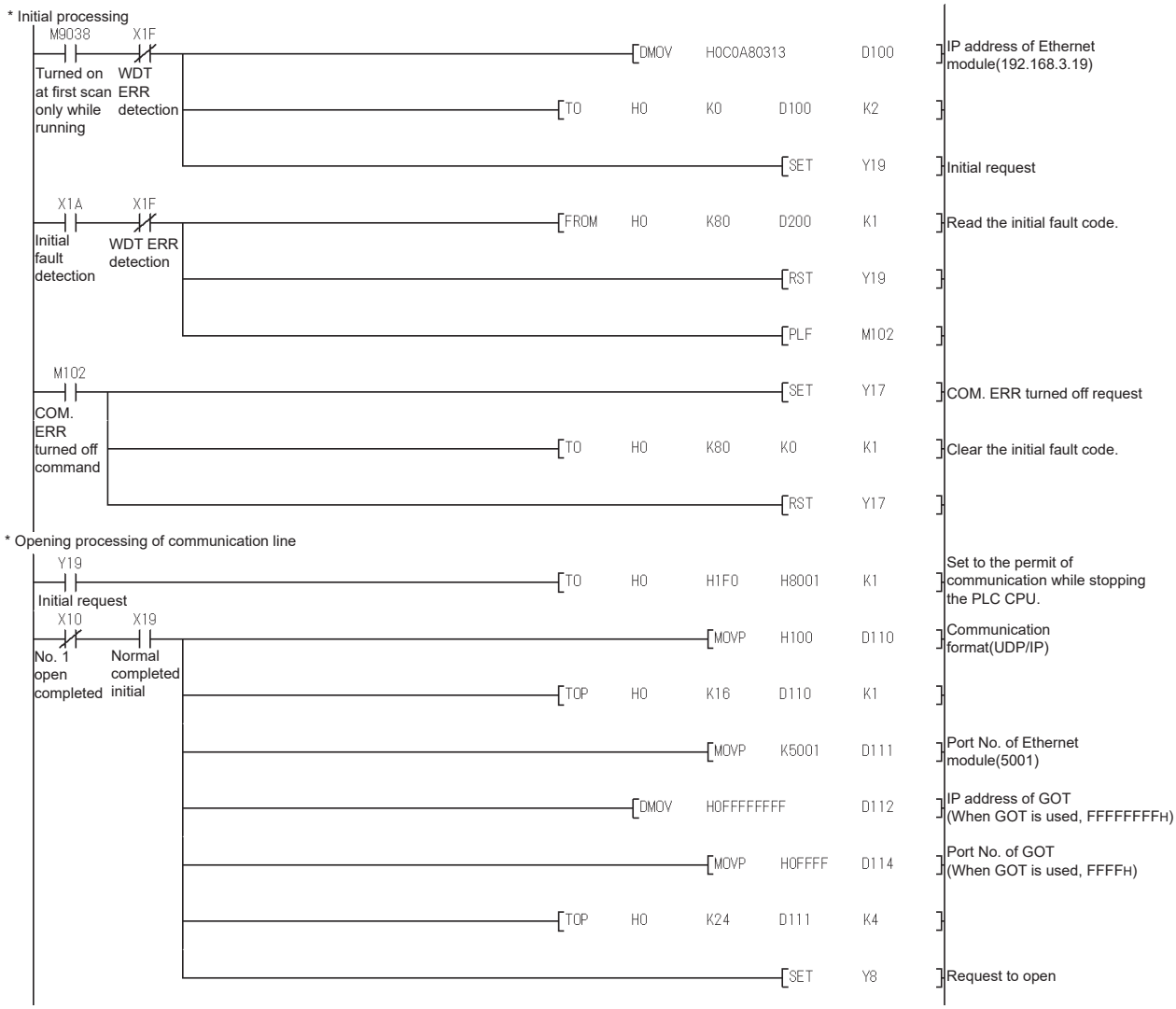
Buffer memory address Dec (Hex)	Item	Setting value
0 to 1 (0 to 1H)	IP address of Ethernet module	C0A80313H (192.168.3.19)
16 (10H)	Application setting*1	100H
24 (18H)	Port No. of Ethernet module	5001
25 to 26 (19 to 1AH)	IP address of GOT	FFFFFFFFH
27 (1BH)	Port No. of GOT	FFFFH
80 (50H)	Initial fault code	—

*1 The details of the application settings are shown below.
Settings (1), (2), and (3) can be changed by the user.
Settings (4), (5), and (6) are fixed.

b15	b14	b13	b12	b11	b10	b9	b8	b7	b6	b5	b4	b3	b2	b1	b0
0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0
(6)						(5)	(4)	(3)						(2)	(1)

(1) Fixed buffer application
0: For sending; no exchange
1: For receiving
(2) Existence check
0: No
1: Yes
(3) Pairing open
0: No
1: Yes
(4) Communication format (Set to "1" (UDP/IP).)
0: TCP/IP
1: UDP/IP
(5) Fixed buffer exchange (Set to "0" (With procedure).)
0: With procedure
1: Without procedure
(6) Open method (Set to "00" (Active, UDP/IP).)
00: Active, UDP/IP
10: Unpassive
11: Fullpassive

- Example of sequence program



Point

When changing the sequence program

After writing the sequence program to the PLC CPU, turn off then on or reset the PLC CPU.

- Communication confirmation

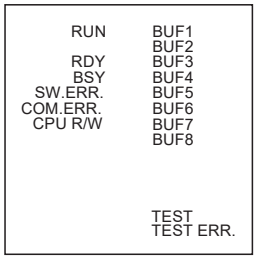
The RDY LED on the Ethernet module turn on when the module is ready to communicate.

For checking the communication status, refer to the following.

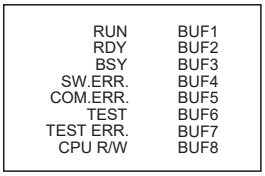
☞ Page 498 Checking the communication status of the Ethernet module

The BUF1 LED turns on when the opening processing of connection number 1 is completed successfully at execution of the sequence program example described above.

AJ71E71N3-T, AJ71E71N-B5, AJ71E71N-B2, AJ71E71N-T, AJ71E71N-B5T, AJ71E71-S3



A1SJ71E71N3-T, A1SJ71E71N-B5, A1SJ71E71N-B2, A1SJ71E71N-T, A1SJ71E71N-B5T, A1SJ71E71-B5-S3, A1SJ71E71-B2-S3



■[Controller Setting] and [Connected Ethernet Controller Setting] of GT Designer3

For the setting method of [Controller Setting] and [Connected Ethernet Controller Setting] in GT Designer3, refer to the following.

☞ Page 485 GOT side settings

• Controller settings

Item	Setting value
[GOT Net No.]	1
[GOT Station]	1
[GOT Communication Port No.]	5002
[Retry]	3 times
[Startup Time]	3 seconds
[Timeout Time]	3 seconds
[Delay Time]	0 ms

• GOT Ethernet settings

Item	Setting value
[GOT IP Address]	192.168.3.18
[Subnet Mask]	255.255.255.0
[Default Gateway]	0.0.0.0
[Peripheral S/W Communication Port No.]	5015
[Transparent Port No.]	5014

• Connected Ethernet controller settings

Item		Setting value
Ethernet setting No. 1	[Host]	*
	[Net No.]	1
	[Station No.]	2
	[Unit Type]	AJ71E71
	[IP Address]	192.168.3.19
	[Port No.]	5001
	[Communication]	UDP

■Checking the communication status of the Ethernet module

• When using Windows Command Prompt

Execute a ping command in Windows Command Prompt.

1) At normal end

C:\>Ping 192.168.3.19

Reply from 192.168.3.19:bytes=32 time<1ms TTL=32

2) At abnormal end

C:\>Ping 192.168.3.19

Request timed out.

• In the case of abnormal end

In the case of abnormal end, check the following and execute the ping command again.

Mounting condition of the Ethernet module

Cable connecting condition

Switch settings and network parameter settings

Operation state of PLC CPU (faulty or not)

IP address of the Ethernet module specified by the ping command

Point

Ethernet diagnostics of GX Developer

The Ethernet diagnostics of GX Developer enables ping tests from the PLC.

For details on the Ethernet diagnostics of GX Works3, refer to the following manual.

📖User's manual of the Ethernet module used

4.13.5 Access range for monitoring

Only the connected CPU can be accessed.

4.14 MELSEC-F series (Ethernet module connection)

☞ Page 500 Connectable devices
☞ Page 501 System configuration
☞ Page 505 GOT side settings
☞ Page 511 PLC side settings
☞ Page 517 Access range for monitoring

4.14.1 Connectable devices

The following table shows the connectable models.

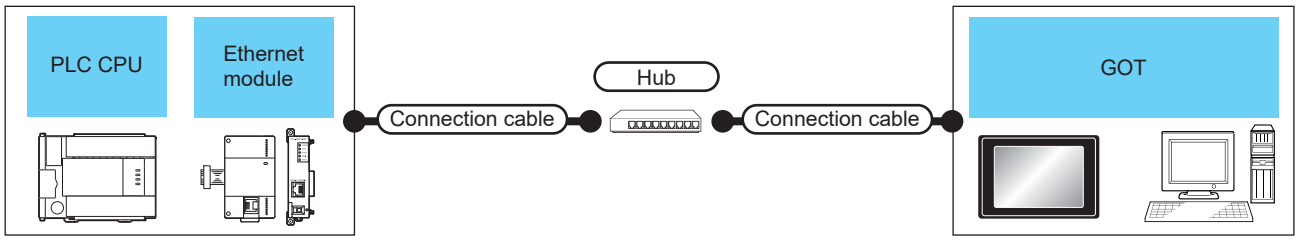
○: Supported, —: Not supported

Controller	Model	Clock	Ethernet module	Connectable model
MELSECMELSEC-F series*1	FX3S FX3G FX3GC FX3GE FX3U FX3UC	○	FX3U-ENET-L FX3U-ENET-ADP FX3U-ENET	GT37 SoftGOT3000

*1 The supported version of the main units varies depending on the Ethernet module to be used as shown below.

Ethernet module	FX3U(C)	FX3G(C)	FX3S
FX3U-ENET-L	Ver. 2.21 or later	FX3U-ENET-L is not supported.	
FX3U-ENET	Ver. 2.21 or later	FX3U-ENET is not supported.	
FX3U-ENET-ADP	Ver. 3.10 or later	Ver. 2.00 or later	Ver. 1.20 or later

4.14.2 System configuration



For details on the connection cables and the maximum segment length, refer to the following.

☞ Page 504 Connection cable
☞ Page 504 Maximum segment length

For details on the maximum number of connected devices, refer to the following.

☞ Page 504 Maximum number of connected devices

Controller	Ethernet module*1*2	Connection cable	GOT	
			Interface	Model
FX3U	FX3U-ENET-L	Twisted pair cable	Built-in Ethernet interface of GOT	GT37 SoftGOT3000
			Ethernet interface of personal computer	GT37 SoftGOT3000
FX3U, FX3G	FX3U-ENET	Twisted pair cable	Built-in Ethernet interface of GOT	GT37 SoftGOT3000
			Ethernet interface of personal computer	GT37 SoftGOT3000
FX3UC	FX3UC-1PS-5V, FX2NC-CNV-IF + FX3U-ENET-L*3	Twisted pair cable	Built-in Ethernet interface of GOT	GT37 SoftGOT3000
			Ethernet interface of personal computer	GT37 SoftGOT3000
FX3UC, FX3GC	FX3UC-1PS-5V, FX2NC-CNV-IF + FX3U-ENET*3	Twisted pair cable	Built-in Ethernet interface of GOT	GT37 SoftGOT3000
			Ethernet interface of personal computer	GT37 SoftGOT3000

Controller	Ethernet module*1*2	Connection cable	GOT	
			Interface	Model
FX3U FX3UC-32MT-LT(-2)	FX3U-232-BD, FX3U-485-BD, FX3U-422-BD, FX3U-USB-BD, FX3U-8AV-BD, FX3U-CNV-BD + FX3U-ENET-ADP*4*5	Twisted pair cable	Built-in Ethernet interface of GOT	GT37 SoftGOT3000
			Ethernet interface of personal computer	GT37 SoftGOT3000
FX3UC-□□/DS FX3UC-□□/DSS	FX3U-ENET-ADP	Twisted pair cable	Built-in Ethernet interface of GOT	GT37 SoftGOT3000
			Ethernet interface of personal computer	GT37 SoftGOT3000
FX3G	FX3G-CNV-ADP + FX3U-ENET-ADP*5	Twisted pair cable	Built-in Ethernet interface of GOT	GT37 SoftGOT3000
			Ethernet interface of personal computer	GT37 SoftGOT3000
FX3GC	FX3U-ENET-ADP*5	Twisted pair cable	Built-in Ethernet interface of GOT	GT37 SoftGOT3000
			Ethernet interface of personal computer	GT37 SoftGOT3000
FX3S	FX3S-CNV-ADP + FX3U-ENET-ADP*5	Twisted pair cable	Built-in Ethernet interface of GOT	GT37 SoftGOT3000
			Ethernet interface of personal computer	GT37 SoftGOT3000

*1 For the system configuration of the Ethernet module, refer to the following manual.
📖FX series Ethernet interface manual

*2 Select [FX] for [Unit Type] in [Connected Ethernet Controller Setting] in GT Designer3.
For [Connected Ethernet Controller Setting] in GT Designer3, refer to the following.
☞ Page 509 [Connected Ethernet Controller Setting]

*3 When using an Ethernet module with the FX3UC series, FX2NC-CNV-IF or FX3UC-1PS-5V is required.

*4 When using an Ethernet module with the FX3U series, FX3U-232-BD, FX3U-485-BD, FX3U-422-BD, FX3U-USB-BD, FX3U-8AV-BD, or FX3U-CNV-BD is required.

*5 The FX3U-ENET-ADP occupies one channel of the extension communication adapter (two channels max.) of FX3U(C) or FX3G(C), or one channel of the extension communication adapter (one channel max.) of FX3S.
One CPU allows the connection of only one FX3U-ENET-ADP.

Connection cable

Use a connection cable that meets the following standards.

Standard	Category
10BASE-T	Shielded twisted pair cable (STP) or unshielded twisted pair cable (UTP) of category 3 or higher
100BASE-TX	Shielded twisted pair cable (STP) or unshielded twisted pair cable (UTP) of category 5 or higher
1000BASE-T	Shielded twisted pair cable (STP) or unshielded twisted pair cable (UTP) of category 5e or higher

The destination device connected with the twisted pair cable varies with the configuration of the Ethernet network system used.

Connect the cable to the Ethernet module, hub, or other system equipment corresponding to the applicable Ethernet network system.

Use cables, connectors, and hubs that meet the IEEE802.3 10BASE-T/100BASE-TX/1000BASE-T standards.

When only one GOT is connected, the GOT can be directly connected to the controller without a hub.

Maximum segment length

The maximum segment length (length between a hub and a node) is 100 m.

The maximum length depends on the Ethernet equipment used.

The following shows the number of connectable hubs when a repeater hub is used.

- 10BASE-T: Up to 4 for a cascade connection (within 500 m)
- 100BASE-TX: Up to 2 for a cascade connection (within 205 m)
- 1000BASE-T: The number differs depending on the hub to be used.

When switching hubs are used, there is no theoretical limit to the number of cascade connections between switching hubs.

For the limit, contact the switching hub manufacturer.

Precautions

When multiple network devices (including GOTs) are connected in the same segment, the network load increases and the transmission speed between the GOT and PLC may be reduced.

The following actions may improve the communication performance.

- Use a switching hub compatible with 1000BASE-T (1 Gbps) or more.
- Reduce the number of devices monitored by the GOT.

Maximum number of connected devices

Up to 128 CPU modules can be connected to channels No. 1 to No. 4 of one GOT. (16 or less recommended)

The following shows the number of connectable controllers per GOT channel and the number of GOTs connectable to one controller.

Controller				GOT	
Model		Number of GOTs connectable to one Ethernet module		Model	Number of connectable controllers per GOT channel
PLC CPU	Module	UDP	TCP		
MELSEC-F series	FX3U-ENET-L	—	2	GT37 SoftGOT3000	63 (16 or less recommended)
	FX3U-ENET FX3U-ENET-ADP	—	4	GT37 SoftGOT3000	63 (16 or less recommended)

4.14.3 GOT side settings

[GOT Ethernet Setting]

Set the GOT Ethernet interface in GT Designer3.

Item	Description
[GOT IP Address Setting]	Set the IP address of the GOT.
[GOT Ethernet Common Setting]	Set the default gateway and other common items for GOT Ethernet interfaces.
[IP filter Setting]	The GOT allows or blocks access from IP addresses specified in the filtering list.

For details on the setting, refer to the following.

📖GT Designer3 (GOT3000) Screen Design Manual

Set the GT SoftGOT3000 Ethernet interface on the personal computer.

Precautions

Do not use 0 and 255 at the end of an IP address.

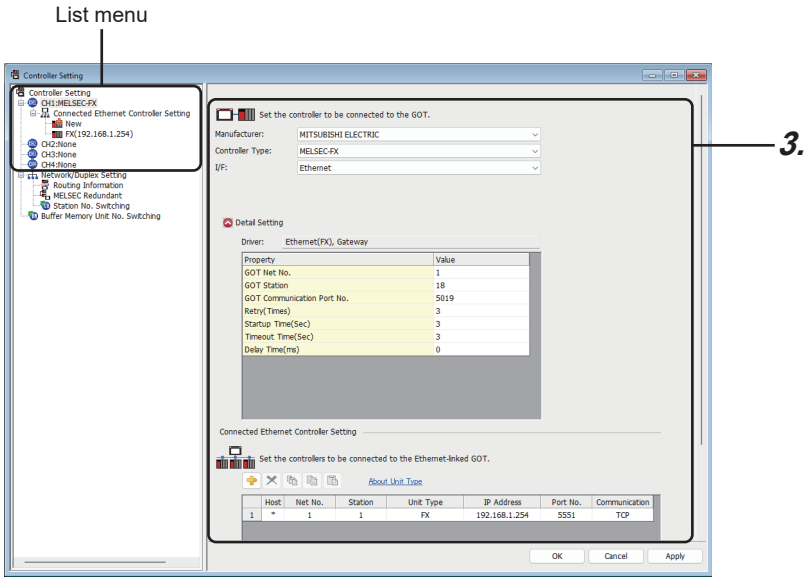
(Numbers of *.*.*.0 and *.*.*.255 are used by the system.)

The GOT may not monitor the controller correctly with the above numbers.

Consult with the administrator of the network before setting an IP address to the GOT.

[Controller Setting]

Set the channel of the connected controller.



Operating procedure

1. Select [Common] → [Controller Setting] from the menu.

2. In the [Controller Setting] window, select the channel number to be used from the list menu.

3. Set the following items.

Item	Description
[Manufacturer]	[MITSUBISHI ELECTRIC]
[Controller Type]	[MELSEC-FX]
[I/F]	[Ethernet]
[Detail Setting]	Configure the settings according to the usage environment. ☞ Page 507 [Detail Setting]
[Connected Ethernet Controller Setting]	Configure the settings according to the controller to be connected. ☞ Page 509 [Connected Ethernet Controller Setting]

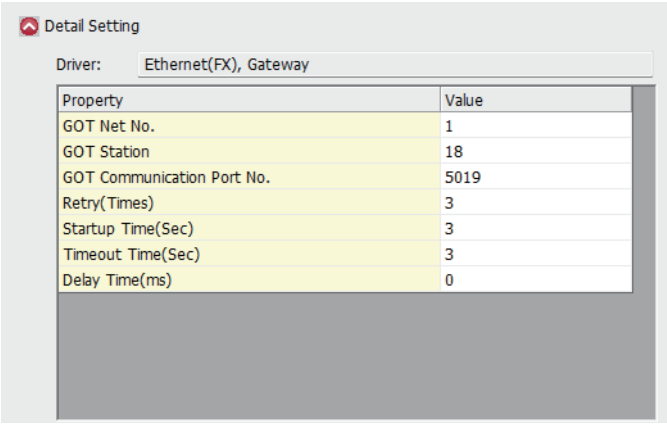
4. When you have completed the settings, click the [OK] button.

Point

The controller settings can be checked in [I/F Communication Setting].
For details, refer to the following.
📖GT Designer3 (GOT3000) Screen Design Manual

■[Detail Setting]

Configure the settings according to the usage environment.



Item	Description	Range
[Driver]	This item appears when communication drivers are selectable according to the settings of [Controller Type] and [I/F].	[Ethernet(FX), Gateway]
[GOT Net No.]	Set the network number of the GOT.	[1] to [239]
[GOT Station]*1*2	Set the station number of the GOT.	[1] to [64]
[GOT Communication Port No.]	Set the GOT port number for connection with the Ethernet module.	[1024] to [5010], [5014] to [49152], [49171] to [65534]
[Retry]	Set the number of retries to be performed when a communication timeout occurs. When receiving no response after retries, the communication times out.	GOT: [0] times to [5] times GT SoftGOT3000: [0] times to [10] times
[Startup Time]	Set the time period from the GOT startup until the start of communication with the PLC CPU.	[3] seconds to [255] seconds
[Timeout Time]	Set the time period for a communication to time out.	[1] second to [90] seconds
[Delay Time]	Set the delay time for reducing the load of the network and destination PLC.	[0] ms to [10000] ms

*1 Set values not set for [Station] in [Connected Ethernet Controller Setting].
☞ Page 509 [Connected Ethernet Controller Setting]

*2 When connecting multiple GOTs in the Ethernet network, set a different value for [GOT Station] for each GOT.

Point

• Controller settings using the GT37 utility

The controller settings can be changed in [Communication Settings] of the GT37 utility after writing [Communication Settings] of project data to GT37.

For details on the GT37 utility, refer to the following manual.

📖GOT3000 Series User's Manual (Utility & Maintenance Functions)

• Priority of the settings in [Controller Setting]

When the settings are configured in GT Designer3 or in the GT37 utility, the latest settings are effective.

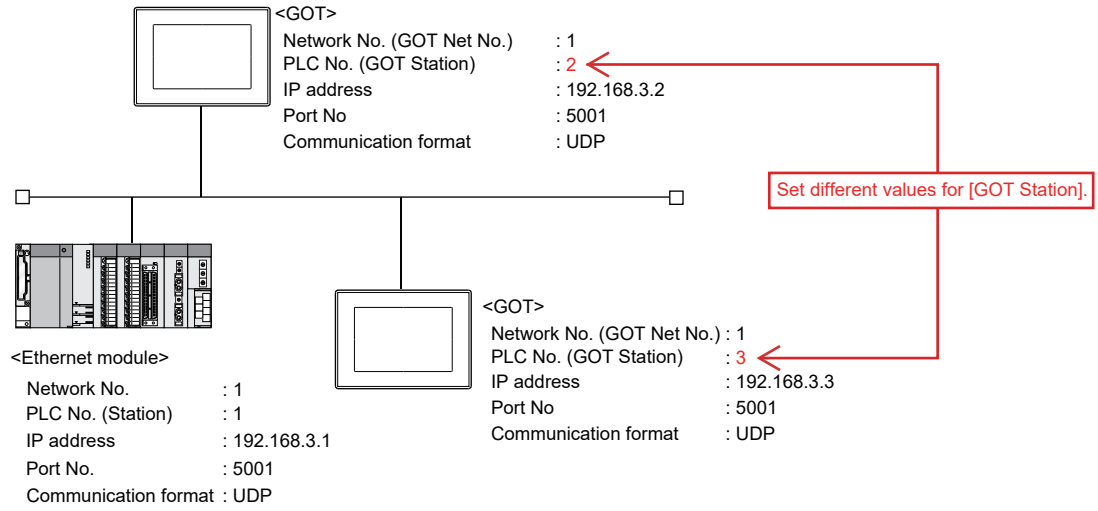
■When connecting multiple GOTs

When connecting multiple GOTs in the Ethernet network, set a different value for [GOT Station] for each GOT.

☞ Page 507 [Detail Setting]

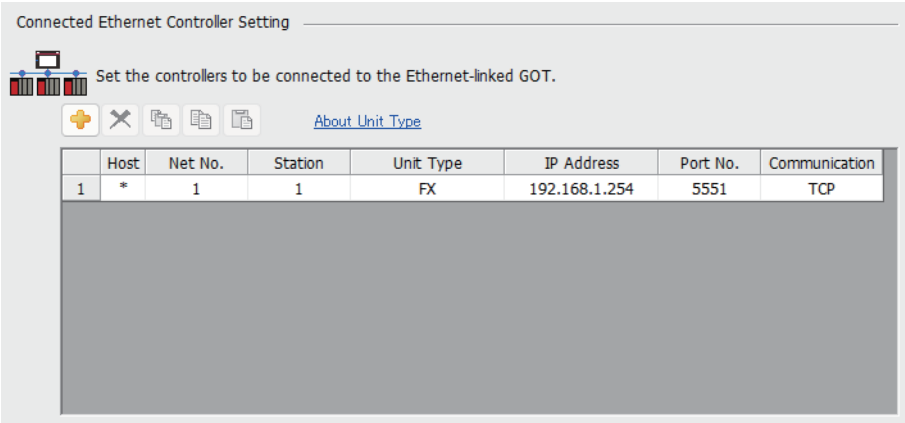
The following shows a system configuration example.

Ex.



■[Connected Ethernet Controller Setting]

Set the controller to be connected to the GOT by Ethernet.



Item	Description	Range
[Host]	The host is displayed. It refers to a station that can be connected without setting a station number. The host is indicated with an asterisk (*).	—
[Net No.]	Set the network number of the connected Ethernet equipment.	[1] to [239]
[Station]*2	Set the station number of the connected Ethernet equipment.	[1] to [64]
[Unit Type]	Select the model of the connected Ethernet equipment.	[FX]
[IP Address]	Set the IP address of the connected Ethernet equipment.	[0.0.0.0] to [255.255.255.255]
[Port No.]*1	Set the port number of the connected Ethernet equipment.	☞ Page 509 [Port No.]
[Communication]	Set the communication format of the connected Ethernet equipment.	[TCP]

*1 Match the port number of the CPU and [Port No.] of [Connected Ethernet Controller Setting].

*2 Set values not set for [GOT Station] in [Detail Setting].

☞ Page 507 [Detail Setting]

■[Port No.]

The setting range is as follows:

[Unit Type]	[Port No.]	[Communication]
[FX]	[5551] (When using FX3U-ENET-L or FX3U-ENET)	[TCP]
	[5556] (When using FX3U-ENET-ADP)	[TCP]

■Network number and PLC number of FXCPU

There is no setting for the network number and PLC number of FXCPU.

The values of [Network No.] and [Station No.] in the object setting dialog must be the same as the values of [Net No.] and [Station] in [Connected Ethernet Controller Setting].

Point

Changing the host station on the GOT

[Host] can be changed with the utility function of the GOT.

For details on the setting method, refer to the following manual.

GOT3000 Series User's Manual (Utility & Maintenance Functions)

Precautions

If the network numbers of the GOT and PLC do not match on the same Ethernet network, monitoring of the PLC is not possible.

To enable monitoring, set the same network number as that of the GOT or connect an Ethernet module to the PLC and configure the routing settings to monitor the PLC as a different network.

When the multi-channel connection can be used, set a different network number for each channel.

4.14.4 PLC side settings

Model		Reference
MELSEC-FX	FX3S FX3G FX3GC FX3U FX3UC	☞ Page 511 Connection to Ethernet module (FX series)

Connection to Ethernet module (FX series)

This section describes the settings of the GOT and the Ethernet module (FX series) in the system configuration shown below.

Point

- Ethernet module (FX series)

For details on the Ethernet module (FX series), refer to the following manual.

📖FX3U-ENET-L User's Manual

📖FX3U-ENET User's Manual

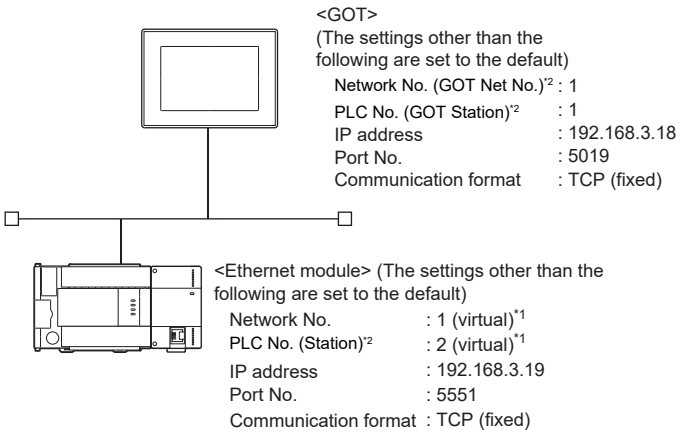
📖FX3U-ENET-ADP User's Manual

- Connecting multiple GOTs

When connecting multiple GOTs in the Ethernet network, set a different value for [GOT Station] for each GOT.

☞ Page 508 When connecting multiple GOTs

■System configuration



*1 Although the setting is nonexistent on the PLC side, set a virtual value on the GOT side.
☞ Page 516 [Controller Setting] and [Connected Ethernet Controller Setting] of GT Designer3

*2 For the following settings, the setting names are different on the PLC side and the GOT side.

Setting	Setting name		
	PLC side	GOT side	
		Controller setting	Connected Ethernet controller setting
Network number	[Network No.]	[GOT Net No.]	[Net No.]
PLC number	[Station]	[GOT Station]	[Station]

■Ethernet parameter settings of FX Configurator-EN-L and FX Configurator-EN

• Ethernet settings

Set the Ethernet parameter using FX Configurator-EN-L or FX Configurator-EN.

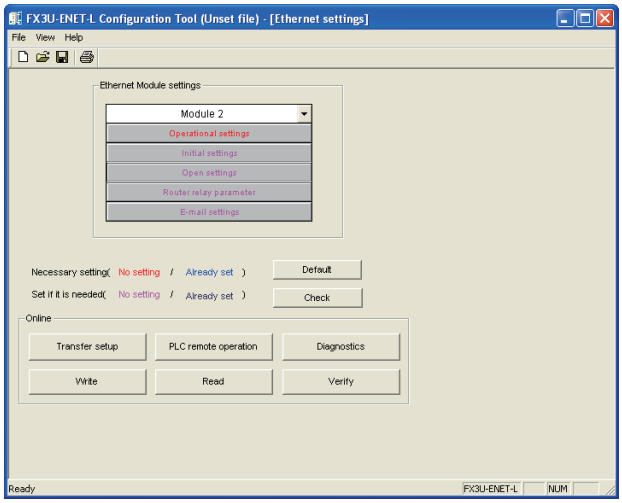
For using FX Configurator-EN-L, install GX Developer Ver. 8.88S or later on the personal computer.

For using FX Configurator-EN, install GX Developer Ver. 8.25B or later on the personal computer.

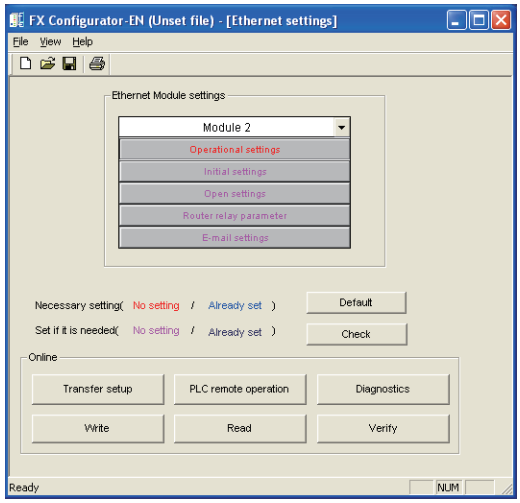
For details on the engineering tools, refer to the following manuals.

📖FX Configurator-EN-L Operation Manual

📖FX Configurator-EN Operation Manual



FX Configurator-EN-L



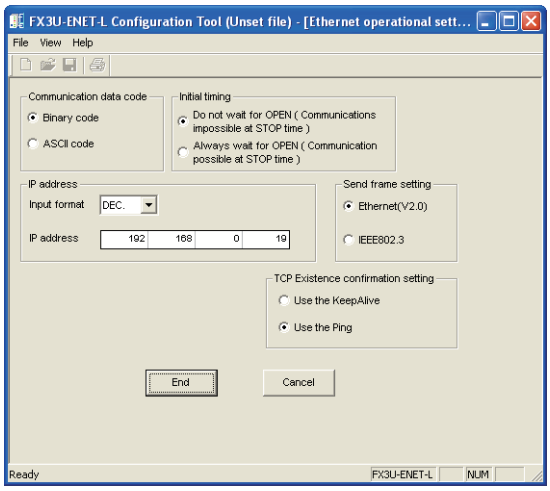
FX Configurator-EN

○: Necessary, △: As necessary, —: Not necessary

Item	Setting value	Setting for GOT connection
Module	Module 0*1	○
[Operation setting]	☞ • Operation settings	○
[Initial settings]	(Use default value)	—
[Open settings]	☞ • Open settings	○
[Router relay parameter]	(Use default value)	—
[E-mail settings]		—

*1 Set the number of the Ethernet module.

• Operation settings



○: Necessary, △: As necessary, —: Not necessary

Item	Setting value	Setting for GOT connection
[Communication Data Code]*1	(Use default value)	—
[IP address]	192.168.3.19*2	○
[Initial timing]*1	(Use default value)	—
[Send frame setting]		—
[TCP Existence confirmation setting]		—

*1 Because port number 5551 is fixed, the GOT operates as follows regardless of this setting.
• Communication date code: [Binary code]
• Initial timing: [Always wait for OPEN] (Communications are possible while the PLC CPU is stopped.)

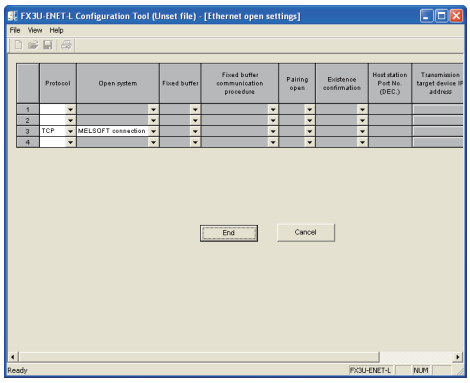
*2 The default value of IP address is 192.168.1.254. Set the IP address corresponding to the system configuration.

Point

When changing Ethernet parameter

After writing Ethernet parameters to the PLC CPU, turn off then on the or reset the PLC CPU.

• Open settings



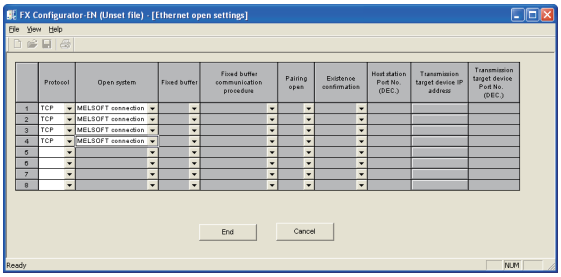
○: Necessary, △: As necessary, —: Not necessary

Item	Setting value	Setting for GOT connection
[Protocol]	TCP	○
[Open System]	MELSOFT connection	○
[Fixed buffer]	(Use default value)	—
[Fixed buffer communication procedure]		—
[Pairing open]		—
[Existence confirmation]		—
[Host station Port No. (DEC.)]		—
[Transmission target device IP address]		—
[Transmission target device Port No. (DEC.)]		—

Point

When connecting multiple devices

The number of protocols equivalent to that of the GOTs and devices must be set.



■Ethernet parameter settings of FX3U-ENET-ADP

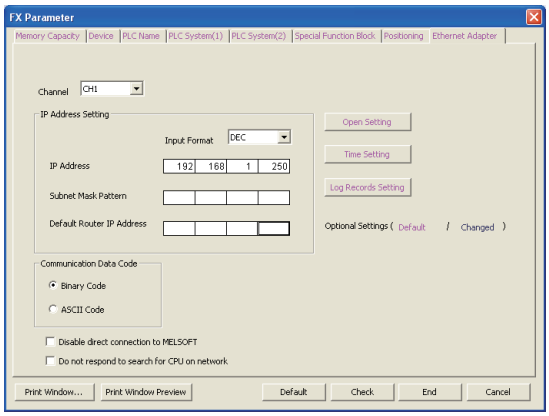
• Ethernet settings

Set the Ethernet parameters in [FX Parameter] of GX Works2.

To set FX3U-ENET-ADP, GX Works2 Ver.1.90U or later is required.

For details on FX3U-ENET-ADP, refer to the following manual.

📖FX3U-ENET-ADP User's Manual



○: Necessary, △: As necessary, —: Not necessary

Item	Setting value	Setting for GOT connection
[Channel]	CH1 or CH2*1	—
[IP Address Setting]	192.168.3.19*2	○
[Open settings]	☞ • Open settings	○
[Communication Data Code]	(Use default value)	—
[Disable direct connection to MELSOFT]		—
[Do not respond to search for CPU on network]		—

*1 Set a channel according to the installation position of FX3U-ENET-ADP on the CPU body.

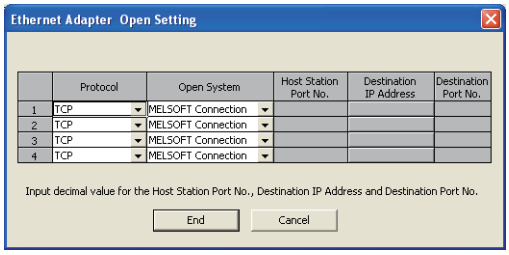
*2 The default value of IP address is 192.168.1.250. Set the IP address corresponding to the system configuration.

Point

When changing Ethernet parameter

After writing Ethernet parameters to the PLC CPU, turn off then on the PLC CPU.

• Open settings



○: Necessary, △: As necessary, —: Not necessary

Item	Setting value	Setting for GOT connection
[Protocol]	TCP	○
[Open System]	MELSOFT connection	○
[Host Station Port No.]	(Use default value)	—
[Transmission target device IP address]		—
[Destination Port No.]		—

Point

When connecting multiple devices

The number of protocols equivalent to that of the GOTs and devices must be set.

■[Controller Setting] and [Connected Ethernet Controller Setting] of GT Designer3

For the setting method of [Controller Setting] and [Connected Ethernet Controller Setting] in GT Designer3, refer to the following.

☞ Page 505 GOT side settings

- Controller settings

Item	Setting value
[GOT Net No.]	1
[GOT Station]	1
[GOT Communication Port No.]	5019
[Retry]	3 times
[Startup Time]	3 seconds
[Timeout Time]	3 seconds
[Delay Time]	0 ms

- GOT Ethernet settings

Item	Setting value
[GOT IP Address]	192.168.3.18
[Subnet Mask]	255.255.255.0
[Default Gateway]	0.0.0.0
[Peripheral S/W Communication Port No.]	5015
[Transparent Port No.]	5014

- Connected Ethernet controller settings

Item		Setting value
Ethernet setting No. 1	[Host]	*
	[Net No.]	1
	[Station No.]	2
	[Unit Type]	FX
	[IP Address]	192.168.3.19*1
	[Port No.]	< When using FX3U-ENET-L or FX3U-ENET> 5551 <When using FX3U-ENET-ADP> 5556
	[Communication]	TCP

*1 Set the value according to the IP address of the connected PLC.

■Checking the communication status of the Ethernet module

• When using Windows Command Prompt

Execute a ping command in Windows Command Prompt.

1) At normal end

C:\>Ping 192.168.3.19

Reply from 192.168.3.19:bytes=32 time<1ms TTL=32

2) At abnormal end

C:\>Ping 192.168.3.19

Request timed out.

• In the case of abnormal end

In the case of abnormal end, check the following and execute the ping command again.

Mounting condition of the Ethernet module

Cable connecting condition

Switch settings and network parameter settings

Operation state of PLC CPU (faulty or not)

IP address of the Ethernet module specified by the ping command

Point

The Ethernet diagnostics of FX Configurator-EN-L or FX Configurator-EN enables ping tests from the PLC.
For details on the Ethernet diagnostics of the engineering tools, refer to the following manuals.

📖FX Configurator-EN-L Operation Manual

📖FX Configurator-EN Operation Manual

4.14.5 Access range for monitoring

Only the connected CPU can be accessed.

5 Serial connection

☞ Page 518 MELSEC MX Controller (MX-R Model) (serial communication connection)
☞ Page 530 MELSEC iQ-R series (serial communication connection)
☞ Page 549 MELSEC iQ-F series (Built-in serial port connection)
☞ Page 563 MELSEC-Q series (Built-in serial port connection)
☞ Page 584 MELSEC-Q series (serial communication connection)
☞ Page 604 MELSEC-L series (Built-in serial port connection)
☞ Page 618 MELSEC-L series (serial communication connection)
☞ Page 634 MELSEC-A series (Built-in serial port connection)
☞ Page 640 MELSEC-F series (Built-in serial port connection)

5.1 MELSEC MX Controller (MX-R Model) (serial communication connection)

☞ Page 518 Connectable devices
☞ Page 519 System configuration
☞ Page 521 Connection diagram
☞ Page 524 GOT side settings
☞ Page 529 PLC side settings
☞ Page 529 Access range for monitoring

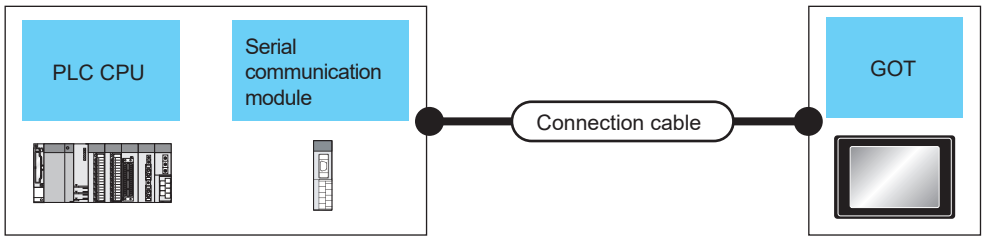
5.1.1 Connectable devices

The following table shows the connectable models.

○: Supported, —: Not supported

Controller	Model	Clock	Serial communication module	Connectable model
MELSEC MX Controller (MX-R Model)	MXR300-16 MXR300-32 MXR300-64	○	RJ71C24 RJ71C24-R2 RJ71C24-R4	GT37 SoftGOT3000
	MXR500-128 MXR500-256	○	RJ71C24 RJ71C24-R2 J71C24-R4	GT37 SoftGOT3000

5.1.2 System configuration



For details on the maximum number of connected devices, refer to the following.

☞ Page 520 Maximum number of connected devices

PLC			Connection cable		GOT	
Controller	**Serial communication module*1**	**Communication type**	**Cable model**	**Maximum length**	**Interface**	**Model**
MELSEC MX Controller (MX-R Model)	RJ71C24 RJ71C24-R2	RS-232	GT09-C30R2-9P (3 m) + GT35-C02HR2-9P or ☞ Page 521 RS-232 connection diagram (1)	15 m	Built-in RS-232 interface	GT37 SoftGOT3000
			GT09-C30R2-9P (3 m) or ☞ Page 521 RS-232 connection diagram (1)		GT37-IF2000 + GT15-RS2-9P	GT37 SoftGOT3000
	RJ71C24 RJ71C24-R4	RS-422	GT09-C30R4-6C (3 m) GT09-C100R4-6C (10 m) GT09-C200R4-6C (20 m) GT09-C300R4-6C (30 m) or ☞ Page 521 RS-422 connection diagram (1)	1200 m	Built-in RS-422 interface	GT37 SoftGOT3000
			☞ Page 522 RS-422 connection diagram (2)(4-wire) or ☞ Page 523 RS-422 connection diagram (3)(2-wire)	1200 m*2*4	Built-in RS-422 interface + FA-LTBGT2R4CBL05 (0.5 m)*3 FA-LTBGT2R4CBL10 (1 m)*3 FA-LTBGT2R4CBL20 (2 m)*3	GT37 SoftGOT3000
			GT09-C30R4-6C (3 m) GT09-C100R4-6C (10 m) GT09-C200R4-6C (20 m) GT09-C300R4-6C (30 m) or ☞ Page 521 RS-422 connection diagram (1)	1200 m	GT37-IF2000 + GT15-RS4-9S	GT37 SoftGOT3000
			☞ Page 522 RS-422 connection diagram (2)(4-wire) or ☞ Page 523 RS-422 connection diagram (3)(2-wire)	1200 m*2*4	GT37-IF2000 + GT15-RS4-9S + FA-LTBGT2R4CBL05 (0.5 m)*3 FA-LTBGT2R4CBL10 (1 m)*3 FA-LTBGT2R4CBL20 (2 m)*3	GT37 SoftGOT3000

*1 For the system configuration of the serial communication module, refer to the following manual.
📖MELSEC iQ-R series manuals

*2 The shortest specification on the PLC side is prioritized.

*3 The terminal block converter module is manufactured by MITSUBISHI ELECTRIC ENGINEERING COMPANY LIMITED.
For details on the product, contact MITSUBISHI ELECTRIC ENGINEERING COMPANY LIMITED.

*4 The cable length of the terminal block converter module is included.

Maximum number of connected devices

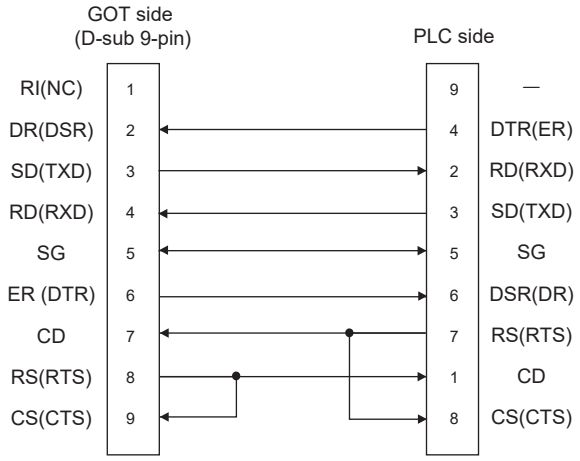
The following shows the number of connectable GOTs.

Controller	
Model	**Number of connectable devices**
MELSEC MX Controller (MX-R Model)	Two GOTs for one serial communication module

5.1.3 Connection diagram

The following diagram shows the connection between the GOT and the controller.

RS-232 connection diagram (1)



Preparation of the RS-232 cable

■Cable length

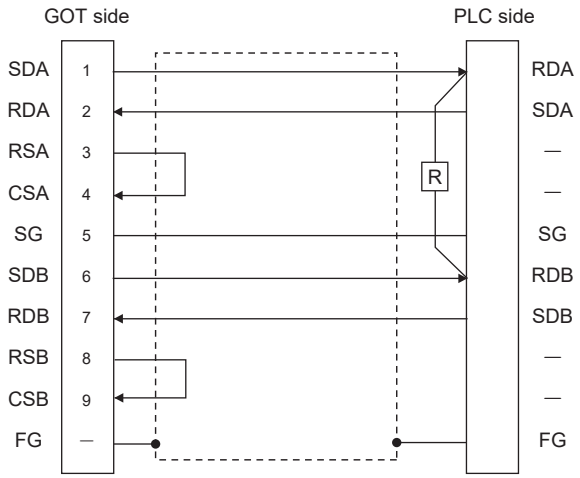
The length of the RS-232 cable must be 15 m or less.

■GOT side connector

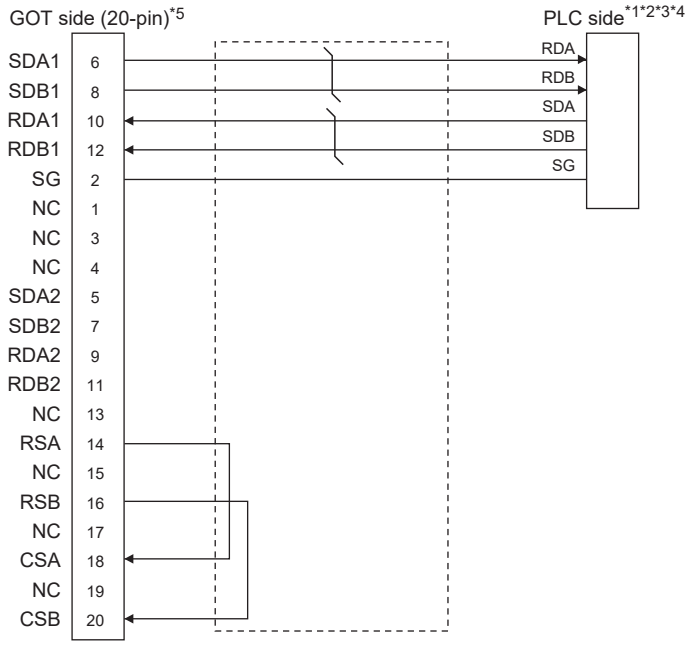
For the GOT side connector, refer to the following.

☞ Page 2954 GOT connector specifications

RS-422 connection diagram (1)



RS-422 connection diagram (2)



*1 The pin arrangement on the PLC side may differ from the arrangement shown above, for example, when the SDA/SDB and RDA/RDB pins are independent.
In this case, connect the cables and wires as described in the PLC manual.

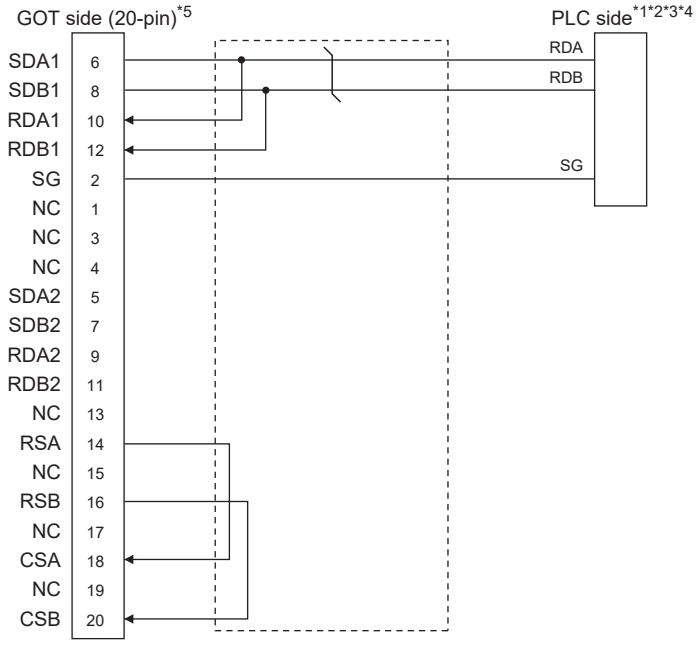
*2 Some PLCs do not have SG.
In this case, wiring between the GOT and SG is unnecessary.

*3 Some PLCs require the control line (CSA, CSB, RSA, RSB, etc.) to be controlled.
Make sure to connect the cables and wires as described in the PLC manual.

*4 For the terminating resistor of the PLC, refer to the manual of the PLC to be used.

*5 The GOT at the end requires a terminating resistor setting.
Set the terminating resistor setting switch on the GOT to 100Ω.
☞ Page 2956 Terminating resistors of GOT

RS-422 connection diagram (3)



*1 The pin arrangement on the PLC side may differ from the arrangement shown above, for example, when the SDA/SDB and RDA/RDB pins are independent.
In this case, connect the cables and wires as described in the PLC manual.

*2 Some PLCs do not have SG.
In this case, wiring between the GOT and SG is unnecessary.

*3 Some PLCs require the control line (CTS, RTS, etc.) to be controlled.
Make sure to connect the cables and wires as described in the PLC manual.

*4 For the terminating resistor of the PLC, refer to the manual of the PLC to be used.

*5 The GOT at the end requires a terminating resistor setting.
Set the terminating resistor setting switch on the GOT to 100Ω.
☞ Page 2956 Terminating resistors of GOT

Preparation of the RS-422 cable

■Cable length

The length of the RS-422 cable must be 1200 m or less.

■GOT side connector

For the GOT side connector, refer to the following.

☞ Page 2954 GOT connector specifications

Connecting terminating resistors

■GOT side

When connecting a PLC to the GOT, a terminating resistor must be connected to the GOT.

Set the terminating resistor setting switch to "Not used".

For the procedure to set the terminating resistor, refer to the following.

☞ Page 2956 Terminating resistors of GOT

■Serial communication module or computer link module side

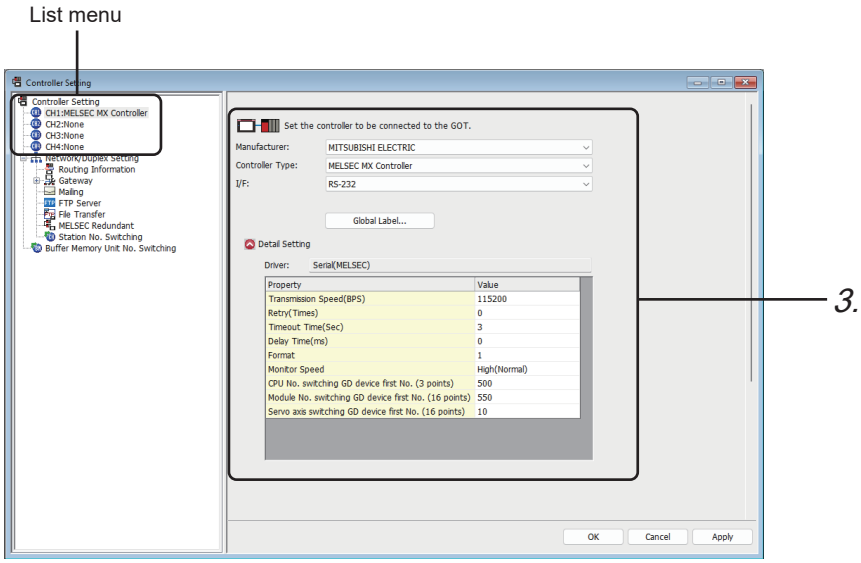
Connect a terminating resistor (330 Ω 1/4 W) to the serial communication module or computer link module side. For instructions on connecting terminating registers, refer to the following manual.

📖User's manual of the serial communication module or computer link module used

5.1.4 GOT side settings

[Controller Setting]

Set the channel of the connected controller.



Operating procedure

1. Select [Common] → [Controller Setting] from the menu.

2. In the [Controller Setting] window, select the channel number to be used from the list menu.

3. Set the following items.

Item		Description
[Manufacturer]		[MITSUBISHI ELECTRIC]
[Controller Type]		[MELSEC MX Controller]
[I/F]	For GOT	• [RS-232] • [RS-422/485] • [Extend Unit]
	For GT SoftGOT3000	• [Serial 1] • [Serial 2]
[Detail Setting]		Configure the settings according to the usage environment. ☞ Page 525 [Detail Setting]

4. When you have completed the settings, click the [OK] button.

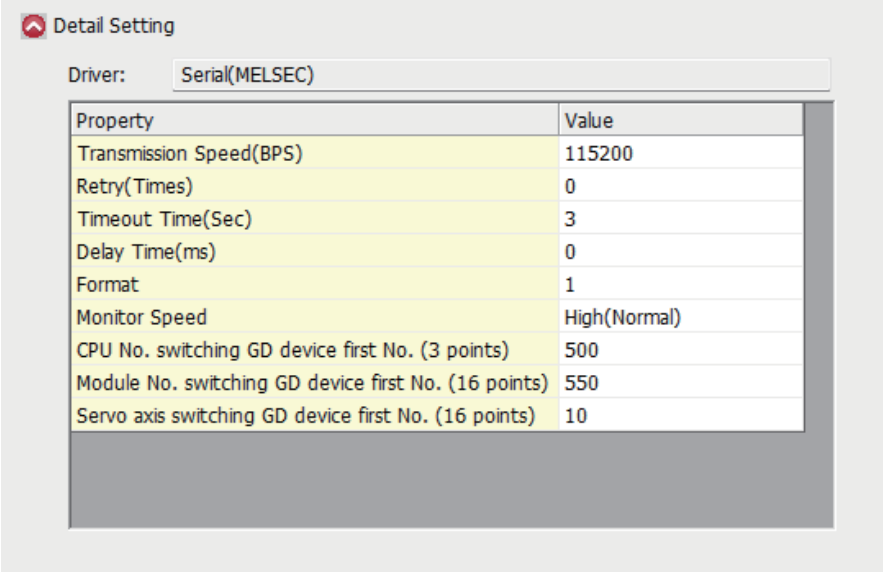
Point

The controller settings can be configured and checked in [I/F Communication Setting].
For details, refer to the following.
📖GT Designer3 (GOT3000) Screen Design Manual

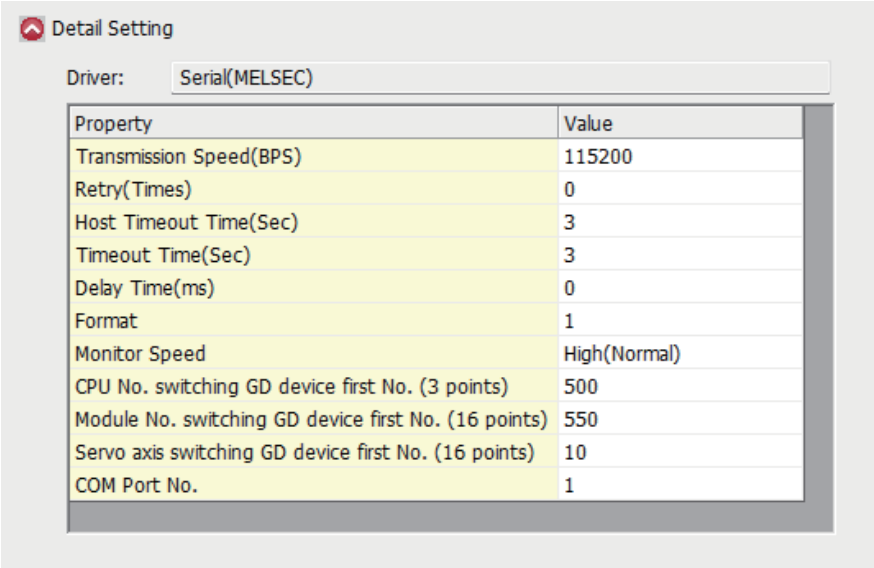
■[Detail Setting]

Configure the settings according to the usage environment.

- For GOT



- For GT SoftGOT3000



Item	Description	Range
[Driver]	This item appears when communication drivers are selectable according to the settings of [Controller Type] and [I/F].	[Serial (MELSEC)]
[Transmission Speed]	Set this item to change the transmission speed used for communication with the connected equipment.	[9600] bps, [19200] bps, [38400] bps, [57600] bps, [115200] bps
[Retry]	Specify the number of retries to be performed during communication.	GOT: [0] times to [5] times GT SoftGOT3000: [0] times to [10] times
[Host Timeout Time]*1	Set the time period until a communication timeout during monitoring of the host station.	[1] second to [90] seconds
[Timeout Time]	Specify the time period for a communication to time out.	[1] second to [30] seconds
[Delay Time]	Set this item to adjust the transmission timing of the communication request from the GOT.	[0] ms to [300] ms
[Format]*4	Set the communication format.	[1], [2]
[Monitor Speed]*3	Set the monitor speed of the GOT. This setting is not valid in all systems.	[High(Normal)]*2 [Middle] [Low]

Item	Description	Range
[CPU No. switching GD device first No. (3 points)]	Set the start device number of the GD devices for CPU number switching. For details, refer to the following. ☞ Page 527 Start device number of the GD devices for CPU number switching	[0] to [65520]
[Module No. switching GD device first No. (16 points)]	Set the start device number of the GD devices for module number switching. For details, refer to the following. ☞ Page 528 Start device number of the GD devices for module number switching	[0] to [65520]
[Servo axis switching GD device first No. (16 points)]	Set the start device number of the GD devices for servo axis switching. For details, refer to the following. ☞ Page 528 Start device number of the GD devices for module number switching	[0] to [65520]
[COM Port No.]*1	Specify the COM port number for communication.	[1] to [63]

*1 This item is displayed in GT SoftGOT3000 only.
*2 This setting is effective for collecting large data with the logging, recipe, or such function on a screen other than the monitor screen.
*3 When using a global label to read or write more than 235 two-byte characters, set [Monitor speed] to [High(Normal)] or [Middle].
If [Monitor speed] is set to [Low], a system error occurs when reading or writing.
For details, refer to the following manual.
📖GT Designer3 (GOT3000) Screen Design Manual
*4 Set this item when replacing the F900 series with the GOT3000 series.

- To change the transmission speed of the serial communication module connected to the F900 to 115200 bps, configure the settings as follows.

[Intelligent function module switch setting] of PLC

Switch No.	CH1 side	CH2 side
Switch 1	0000H	-
Switch 2	0000H	-
Switch 3	-	0000H
Switch 4	-	0000H
Switch 5	0000H	0000H

GOT communication settings

Item	Setting value
Format	1

- To continue using the transmission speed of 38400 bps for the serial communication module connected to the F900, configure the settings as follows.

GOT communication settings

Item	Setting value
Format	2

Point

- Communication interface settings in the GT37 utility

The communication interface setting can be changed in [Communication setting] of the GT37 utility after writing [Controller Setting] in project data.
For details on the GT37 utility, refer to the following manual.
📖GOT3000 Series User's Manual (Utility & Maintenance Functions)

- Priority of the settings in [Controller Setting]

When settings are configured in GT Designer3 or the GT37 utility, the most recent settings are effective.

■Start device number of the GD devices for CPU number switching

• Indirect specification of a CPU number

[CPU No.] can be indirectly specified with the GOT internal registers (GD devices) by specifying a value (100 to 102) to [CPU No.] in the device setting dialog in GT Designer3.

Set the start device number of the GD devices to be used in [CPU No. switching GD device first No. (3 points)].

[CPU No.] is specified with three consecutive GD devices, starting from the set device number.

When [500] is set to [CPU No. switching GD device first No. (3 points)], GD500 to GD502 are used to specify [CPU No.] as shown in the following table.

CPU No.	GD device	Setting range
100	GD500	1 to 4 Setting a value outside the range causes a communication timeout error. Specifying a nonexistent CPU number or a CPU number not supporting a multiple CPU system with a device causes a controller error.
101	GD501	
102	GD502	

• Indirect specification of a CPU number on the initially displayed screen

Set [CPU No. switching GD device first No. (3 points)] so that the values of the GD devices are retained and monitored upon the GOT startup.

• Indirect specification of a CPU number for multi-channel connection

If the setting range of [CPU No. switching GD device first No. (3 points)] set for each channel overlaps, the monitoring target CPU number set to each channel is switched simultaneously.

Set [CPU No. switching GD device first No. (3 points)] for each channel so that the setting range does not overlap.

• Indirect specification of a station number and a CPU number for multi-channel connection

When GD10 to GD25 are used to specify the station number of an inverter or non-Mitsubishi temperature controller connected, setting [10] to [CPU No. switching GD device first No. (3 points)] in a different channel switches the monitoring target CPU number and station number of an inverter or non-Mitsubishi temperature controller set to each channel simultaneously.

Set [CPU No. switching GD device first No. (3 points)] so that the setting range does not overlap the station number of an inverter or non-Mitsubishi temperature controller.

■Start device number of the GD devices for module number switching

• Specifying a module number with a device

For connection via a Simple Motion module, [Unit No.] can be specified with the GOT internal registers (GD devices) by specifying a value (100 to 10F) to [Unit No.] in the device setting dialog in GT Designer3.

Set the start device number of the GD devices to be used in [Module No. switching GD device first No. (16 points)].

[Unit No.] is specified with 16 consecutive GD devices, starting from the set device number.

When [550] is set to [Module No. switching GD device first No. (16 points)], GD550 to GD565 are used to specify [Unit No.] as shown in the following table.

Module No.	GD device	Setting range
100	GD550	00 to FF Setting a value outside the above range causes a device range error.
101	GD551	
102	GD552	
103	GD553	
104	GD554	
105	GD555	
106	GD556	
107	GD557	
108	GD558	
109	GD559	
10A	GD560	
10B	GD561	
10C	GD562	
10D	GD563	
10E	GD564	
10F	GD565	

• Indirect specification of a module number on the initially displayed screen

Set [Module No. switching GD device first No. (16 points)] so that the values of the GD devices are retained and monitored upon the GOT startup.

• Indirect specification of a module number for multi-channel connection

If the setting range of [Module No. switching GD device first No. (16 points)] set for each channel overlaps, the module number of the Simple Motion module via the servo amplifier device of each channel is switched simultaneously.

Set [Module No. switching GD device first No. (16 points)] for each channel so that the setting range does not overlap.

• Indirect specification of a station number and a module number for multi-channel connection

When GD10 to GD25 are used to specify the station number of an inverter or non-Mitsubishi temperature controller connected, setting [10] to [Module No. switching GD device first No. (16 points)] switches the module number of the Simple Motion module via the servo amplifier device and the station number of an inverter or non-Mitsubishi temperature controller set to each channel simultaneously.

Set [Module No. switching GD device first No. (16 points)] so that the setting range does not overlap the station number of an inverter or non-Mitsubishi temperature controller.

■Start device number of the GD devices for servo axis switching

• Indirect specification of a servo axis number

For connection via a Motion CPU or Simple Motion module, a servo axis number can be indirectly specified with GOT internal registers (GD devices) by specifying a value (100 to 115) to the axis number of the servo amplifier device.

Set the start device number of the GD devices to be used in [Servo axis switching GD device first No. (16 points)].

Specify a servo axis number with 16 consecutive GD devices, starting the set device number.

When [10] is set to [Servo axis switching GD device first No. (16 points)], GD10 to GD25 are used to specify a servo axis number as shown in the following table.

Servo axis No.	GD device	Setting range
100	GD10	1 to 64 Setting a value outside the above range causes a device range error.
101	GD11	
102	GD12	
103	GD13	
104	GD14	
105	GD15	
106	GD16	
107	GD17	
108	GD18	
109	GD19	
110	GD20	
111	GD21	
112	GD22	
113	GD23	
114	GD24	
115	GD25	

• Indirect specification of a servo axis number on the initially displayed screen

Set [Servo axis switching GD device first No. (16 points)] so that the values of the GD devices are retained and monitored upon the GOT startup.

• Indirect specification of a servo axis number for multi-channel connection

If the setting rage of [Servo axis switching GD device first No. (16 points)] set for each channel overlaps, the axis number of the servo amplifier of each channel is switched simultaneously.

Set [Servo axis switching GD device first No. (16 points)] for each channel so that the setting range does not overlap.

• Indirect specification of a station number and a servo axis number for multi-channel connection

When GD10 to GD25 are used to specify the station number of an inverter or non-Mitsubishi temperature controller connected, setting [10] to [Servo axis switching GD device first No. (16 points)] switches the axis number of the servo amplifier and the station number of an inverter or non-Mitsubishi temperature controller set to each channel simultaneously.

Set [Servo axis switching GD device first No. (16 points)] so that the setting range does not overlap the station number of an inverter or non-Mitsubishi temperature controller.

Point

By setting the GOT internal device, the GOT can disconnect specific parts from the controller's multiple connections.

For example, a faulty station that has a communication timeout can be disconnected from the system.

For details on the setting contents of the GOT internal device, refer to the following manual.

GT Designer3 (GOT3000) Screen Design Manual

5.1.5 PLC side settings

No setting is required on the controller.

5.1.6 Access range for monitoring

Only the connected CPU can be accessed.

5.2 MELSEC iQ-R series (serial communication connection)

☞ Page 530 Connectable devices
☞ Page 532 System configuration
☞ Page 534 Connection diagram
☞ Page 537 GOT side settings
☞ Page 542 PLC side settings
☞ Page 543 Access range for monitoring
☞ Page 544 How to monitor a redundant system

5.2.1 Connectable devices

The following table shows the connectable models.

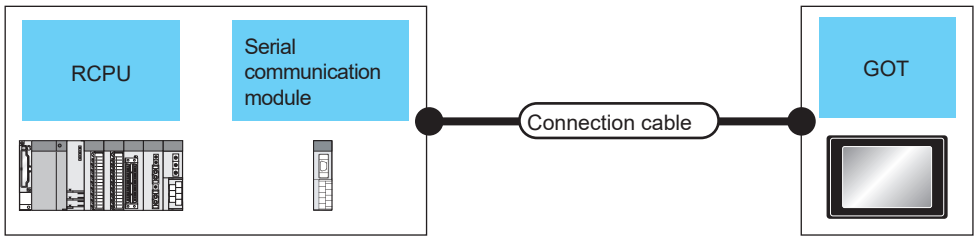
○: Supported, —: Not supported

Controller	Model	Clock	Serial communication module*4*5	Connectable model
MELSEC iQ-R series	R00CPU R01CPU R02CPU R04CPU R08CPU R16CPU R32CPU R120CPU	○	RJ71C24 RJ71C24-R2 RJ71C24-R4	GT37 SoftGOT3000
	R08PCPU*1 R16PCPU*1 R32PCPU*1 R120PCPU*1	○	RJ71C24 RJ71C24-R2 RJ71C24-R4	GT37 SoftGOT3000
	R04ENCPU R08ENCPU R16ENCPU R32ENCPU R120ENCPU	○	RJ71C24 RJ71C24-R2 RJ71C24-R4	GT37 SoftGOT3000
	R08SFCPU*2 R16SFCPU*2 R32SFCPU*2 R120SFCPU*2	○	RJ71C24 RJ71C24-R2 RJ71C24-R4	GT37 SoftGOT3000
Motion CPU (MELSEC iQ-R series)	R16MTCPU R32MTCPU R64MTCPU*6	○	RJ71C24 RJ71C24-R2 RJ71C24-R4	GT37 SoftGOT3000
C Controller module (MELSEC iQ-R series)*3	R12CCPU-V	○	RJ71C24 RJ71C24-R2 RJ71C24-R4	GT37 SoftGOT3000
MELSECWinCPU (MELSEC iQ-R series)*3	R102WCPU-W	—	RJ71C24 RJ71C24-R2 RJ71C24-R4	GT37 SoftGOT3000
CNC C80	R16NCCPU-S1	○	RJ71C24 RJ71C24-R2 RJ71C24-R4	GT37 SoftGOT3000

Controller	Model	Clock	Serial communication module*4*5	Connectable model
Robot controller (MELSEC iQ-R series)	CR800-R (R16RTCPU)	○	RJ71C24 RJ71C24-R2 RJ71C24-R4	GT37 SoftGOT3000
CC-Link IE Field Network head module	RJ72GF15-T2	—	RJ71C24 RJ71C24-R2 RJ71C24-R4	GT37 SoftGOT3000

*1 Mount a redundant function module R6RFM next to the RnPCPU on the base unit when building a redundant system.
*2 Mount a safety function module R6SFM next to the RnSFCPU on the base unit.
The RnSFCPU and the safety function module R6SFM must have the same pair version.
If their pair versions differ, the RnSFCPU does not operate.
*3 Use a serial port of the serial communication module controlled by another module in the multiple CPU system.
*4 Use firmware version 07 or later when building a redundant system.
*5 RS-485 communication cannot be performed.
The A0J2-C214-S1 cannot be used.
*6 Use a module with OS software version 06 or later.

5.2.2 System configuration



For details on the maximum number of connected devices, refer to the following.

☞ Page 533 Maximum number of connected devices

PLC			Connection cable		GOT	
Controller	**Serial communication module*1**	**Communication type**	**Cable model**	**Maximum length**	**Interface**	**Model**
MELSEC iQ-R series Motion CPU (MELSEC iQ-R series) C Controller module (MELSEC iQ-R series) MELSECWinCPU (MELSEC iQ-R series) CNC C80 Robot controller (MELSEC iQ-R series) CC-Link IE Field Network head module	RJ71C24 RJ71C24-R2	RS-232	GT09-C30R2-9P (3 m) + GT35-C02HR2-9P or ☞ Page 534 RS-232 connection diagram (1)	15 m	Built-in RS-232 interface	GT37 SoftGOT3000
			GT09-C30R2-9P (3 m) or ☞ Page 534 RS-232 connection diagram (1)		GT37-IF2000 + GT15-RS2-9P	GT37 SoftGOT3000
	RJ71C24 RJ71C24-R4	RS-422	GT09-C30R4-6C (3 m) GT09-C100R4-6C (10 m) GT09-C200R4-6C (20 m) GT09-C300R4-6C (30 m) or ☞ Page 534 RS-422 connection diagram (1)	1200 m	Built-in RS-422 interface	GT37 SoftGOT3000
			☞ Page 535 RS-422 connection diagram (2)(4-wire) or ☞ Page 536 RS-422 connection diagram (3)(2-wire)	1200 m*2*4	Built-in RS-422 interface + FA-LTBGT2R4CBL05 (0.5 m)*3 FA-LTBGT2R4CBL10 (1 m)*3 FA-LTBGT2R4CBL20 (2 m)*3	GT37 SoftGOT3000
			GT09-C30R4-6C (3 m) GT09-C100R4-6C (10 m) GT09-C200R4-6C (20 m) GT09-C300R4-6C (30 m) or ☞ Page 534 RS-422 connection diagram (1)	1200 m	GT37-IF2000 + GT15-RS4-9S	GT37 SoftGOT3000
			☞ Page 535 RS-422 connection diagram (2)(4-wire) or ☞ Page 536 RS-422 connection diagram (3)(2-wire)	1200 m*2*4	GT37-IF2000 + GT15-RS4-9S + FA-LTBGT2R4CBL05 (0.5 m)*3 FA-LTBGT2R4CBL10 (1 m)*3 FA-LTBGT2R4CBL20 (2 m)*3	GT37 SoftGOT3000

*1 For the system configuration of the serial communication module, refer to the following manual.
📖MELSEC iQ-R series manuals

*2 The shortest specification on the PLC side is prioritized.

*3 The terminal block converter module is manufactured by MITSUBISHI ELECTRIC ENGINEERING COMPANY LIMITED.
For details on the product, contact MITSUBISHI ELECTRIC ENGINEERING COMPANY LIMITED.

*4 The cable length of the terminal block converter module is included.

Maximum number of connected devices

The following shows the number of connectable GOTs.

Controller	
Model	**Number of connectable devices**
MELSEC iQ-R series Motion CPU (MELSEC iQ-R series) C Controller module (MELSEC iQ-R series) MELSECWinCPU (MELSEC iQ-R series) CNC C80 Robot controller (MELSEC iQ-R series) CC-Link IE Field Network head module	Two GOTs for one serial communication module

Connection via the multiple CPU system

When the GOT is connected via the multiple CPU system, the PLC takes 10 seconds or more to run.

If you start the GOT before the PLC runs, a system alarm occurs.

Adjust the time to display the GOT startup screen to prevent a system alarm.

📖GT Designer3 (GOT3000) Screen Design Manual

Connection to RnSFCPU

The RnSFCPU takes 10 seconds or more to run.

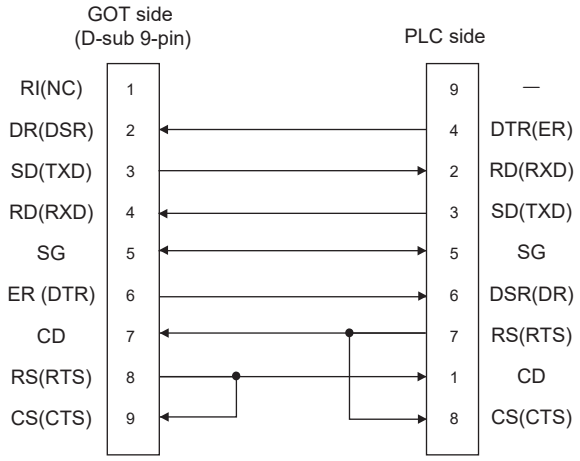
If the GOT is started during this time, a system alarm occurs. Adjust the time to display the GOT startup screen to prevent a system alarm.

📖GT Designer3 (GOT3000) Screen Design Manual

5.2.3 Connection diagram

The following diagram shows the connection between the GOT and the controller.

RS-232 connection diagram (1)



Preparation of the RS-232 cable

■Cable length

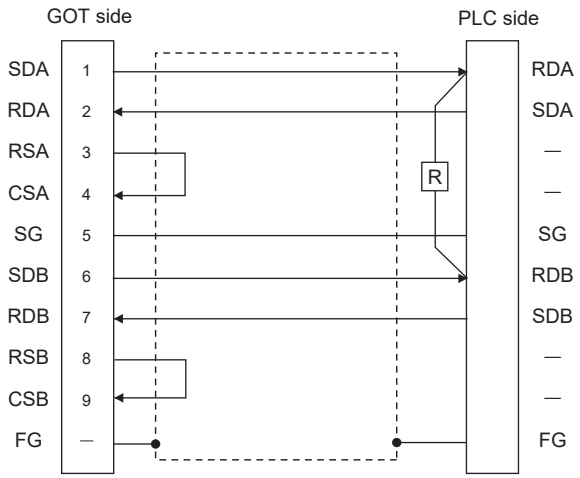
The length of the RS-232 cable must be 15 m or less.

■GOT side connector

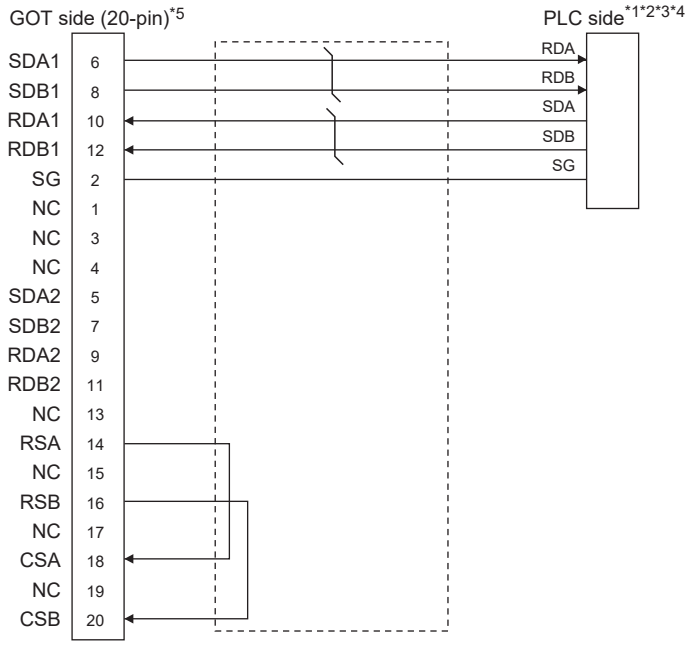
For the GOT side connector, refer to the following.

☞ Page 2954 GOT connector specifications

RS-422 connection diagram (1)



RS-422 connection diagram (2)



*1 The pin arrangement on the PLC side may differ from the arrangement shown above, for example, when the SDA/SDB and RDA/RDB pins are independent.
In this case, connect the cables and wires as described in the PLC manual.

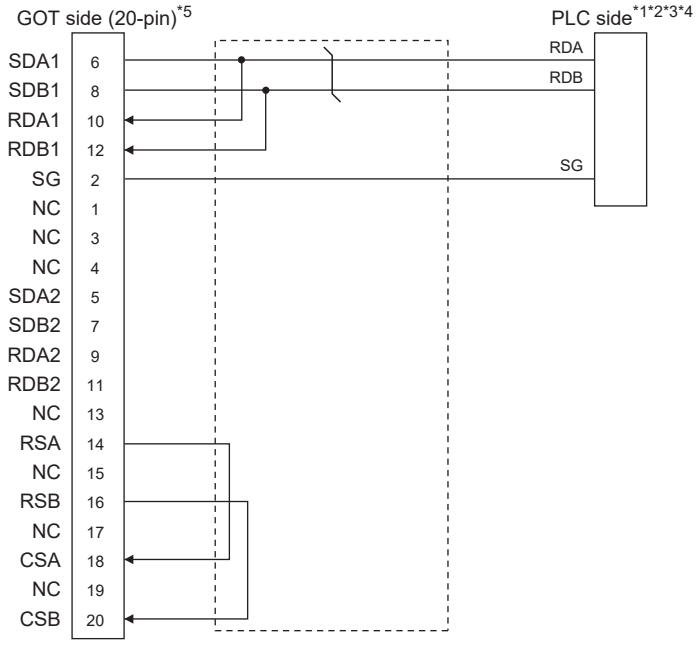
*2 Some PLCs do not have SG.
In this case, wiring between the GOT and SG is unnecessary.

*3 Some PLCs require the control line (CSA, CSB, RSA, RSB, etc.) to be controlled.
Make sure to connect the cables and wires as described in the PLC manual.

*4 For the terminating resistor of the PLC, refer to the manual of the PLC to be used.

*5 The GOT at the end requires a terminating resistor setting.
Set the terminating resistor setting switch on the GOT to 100Ω.
☞ Page 2956 Terminating resistors of GOT

RS-422 connection diagram (3)



*1 The pin arrangement on the PLC side may differ from the arrangement shown above, for example, when the SDA/SDB and RDA/RDB pins are independent.
In this case, connect the cables and wires as described in the PLC manual.

*2 Some PLCs do not have SG.
In this case, wiring between the GOT and SG is unnecessary.

*3 Some PLCs require the control line (CSA, CSB, RSA, RSB, etc.) to be controlled.
Make sure to connect the cables and wires as described in the PLC manual.

*4 For the terminating resistor of the PLC, refer to the manual of the PLC to be used.

*5 The GOT at the end requires a terminating resistor setting.
Set the terminating resistor setting switch on the GOT to 100Ω.
☞ Page 2956 Terminating resistors of GOT

Preparation of the RS-422 cable

■Cable length

The length of the RS-422 cable must be 1200 m or less.

■GOT side connector

For the GOT side connector, refer to the following.

☞ Page 2954 GOT connector specifications

Connecting terminating resistors

■GOT side

When connecting a PLC to the GOT, a terminating resistor must be connected to the GOT.

Set the terminating resistor setting switch to "Not used".

For the procedure to set the terminating resistor, refer to the following.

☞ Page 2956 Terminating resistors of GOT

■Serial communication module or computer link module side

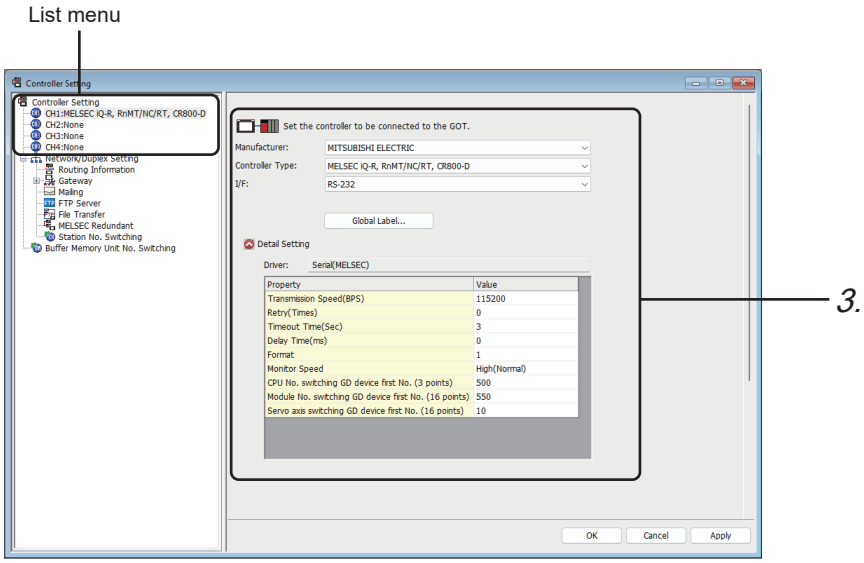
Connect a terminating resistor (330 Ω 1/4 W) to the serial communication module or computer link module side. For instructions on connecting terminating registers, refer to the following manual.

📖User's manual of the serial communication module or computer link module used

5.2.4 GOT side settings

[Controller Setting]

Set the channel of the connected controller.



Operating procedure

1. Select [Common] → [Controller Setting] from the menu.

2. In the [Controller Setting] window, select the channel number to be used from the list menu.

3. Set the following items.

Item		Description
[Manufacturer]		[MITSUBISHI ELECTRIC]
[Controller Type]		[MELSEC iQ-R, RnMT/NC/RT, CR800-D]
[I/F]	For GOT	• [RS-232] • [RS-422/485] • [Extend Unit]
	For GT SoftGOT3000	• [Serial 1] • [Serial 2]
[Detail Setting]		Configure the settings according to the usage environment. ☞ Page 538 [Detail Setting]

4. When you have completed the settings, click the [OK] button.

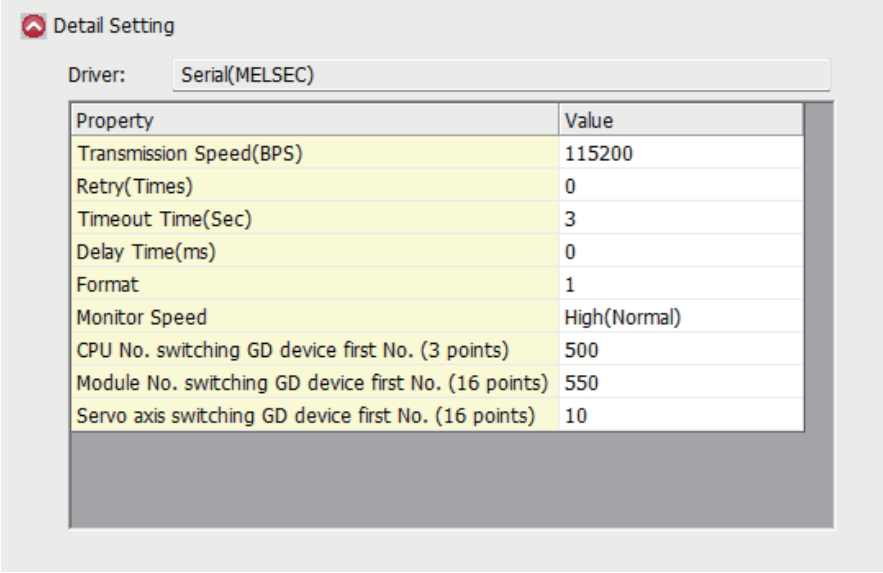
Point

The controller settings can be configured and checked in [I/F Communication Setting].
For details, refer to the following.
📖GT Designer3 (GOT3000) Screen Design Manual

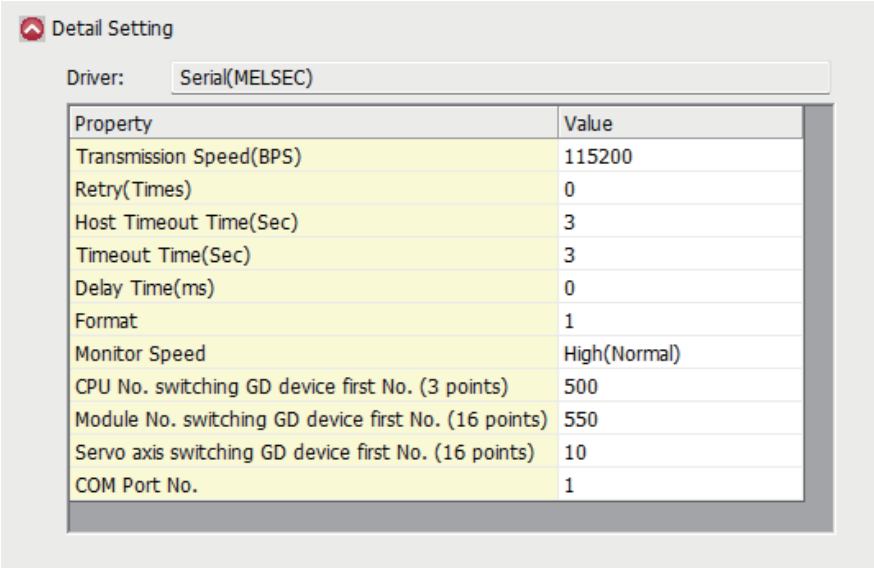
■[Detail Setting]

Configure the settings according to the usage environment.

- For GOT



- For GT SoftGOT3000



Item	Description	Range
[Driver]	This item appears when communication drivers are selectable according to the settings of [Controller Type] and [I/F].	[Serial (MELSEC)]
[Transmission Speed]	Set this item to change the transmission speed used for communication with the connected equipment.	[9600] bps, [19200] bps, [38400] bps, [57600] bps, [115200] bps
[Retry]	Specify the number of retries to be performed during communication.	GOT: [0] times to [5] times GT SoftGOT3000: [0] times to [10] times
[Host Timeout Time]*1	Set the time period until a communication timeout during monitoring of the host station.	[1] second to [90] seconds
[Timeout Time]	Specify the time period for a communication to time out.	[1] second to [30] seconds
[Delay Time]	Set this item to adjust the transmission timing of the communication request from the GOT.	[0] ms to [300] ms
[Format]*4	Set the communication format.	[1], [2]
[Monitor Speed]*3	Set the monitor speed of the GOT. This setting is not valid in all systems.	[High(Normal)]*2 [Middle] [Low]

Item	Description	Range
[CPU No. switching GD device first No. (3 points)]	Set the start device number of the GD devices for CPU number switching. For details, refer to the following. ☞ Page 540 Start device number of the GD devices for CPU number switching	[0] to [65520]
[Module No. switching GD device first No. (16 points)]	Set the start device number of the GD devices for module number switching. For details, refer to the following. ☞ Page 541 Start device number of the GD devices for module number switching	[0] to [65520]
[Servo axis switching GD device first No. (16 points)]	Set the start device number of the GD devices for servo axis switching. For details, refer to the following. ☞ Page 542 Start device number of the GD devices for servo axis switching	[0] to [65520]
[COM Port No.]*1	Specify the COM port number for communication.	[1] to [63]

*1 This item is displayed in GT SoftGOT3000 only.
*2 This setting is effective for collecting large data with the logging, recipe, or such function on a screen other than the monitor screen.
*3 When using a global label to read or write more than 235 two-byte characters, set [Monitor speed] to [High(Normal)] or [Middle].
If [Monitor speed] is set to [Low], a system error occurs when reading or writing.
For details, refer to the following manual.
📖GT Designer3 (GOT3000) Screen Design Manual
*4 Set this item when replacing the F900 series with the GOT3000 series.

- To change the transmission speed of the serial communication module connected to the F900 to 115200 bps, configure the settings as follows.

[Intelligent function module switch setting] of PLC

Switch No.	CH1 side	CH2 side
Switch 1	0000H	-
Switch 2	0000H	-
Switch 3	-	0000H
Switch 4	-	0000H
Switch 5	0000H	0000H

GOT communication settings

Item	Setting value
Format	1

- To continue using the transmission speed of 38400 bps for the serial communication module connected to the F900, configure the settings as follows.

GOT communication settings

Item	Setting value
Format	2

Point

- Communication interface settings in the GT37 utility

The communication interface setting can be changed in [Communication setting] of the GT37 utility after writing [Controller Setting] in project data.
For details on the GT37 utility, refer to the following manual.
📖GOT3000 Series User's Manual (Utility & Maintenance Functions)

- Priority of the settings in [Controller Setting]

When settings are configured in GT Designer3 or the GT37 utility, the most recent settings are effective.

■Start device number of the GD devices for CPU number switching

• Indirect specification of a CPU number

[CPU No.] can be indirectly specified with the GOT internal registers (GD devices) by specifying a value (100 to 102) to [CPU No.] in the device setting dialog in GT Designer3.

Set the start device number of the GD devices to be used in [CPU No. switching GD device first No. (3 points)].

[CPU No.] is specified with three consecutive GD devices, starting from the set device number.

When [500] is set to [CPU No. switching GD device first No. (3 points)], GD500 to GD502 are used to specify [CPU No.] as shown in the following table.

CPU No.	GD device	Setting range
100	GD500	1 to 4 Setting a value outside the range causes a communication timeout error. Specifying a nonexistent CPU number or a CPU number not supporting a multiple CPU system with a device causes a controller error.
101	GD501	
102	GD502	

• Indirect specification of a CPU number on the initially displayed screen

Set [CPU No. switching GD device first No. (3 points)] so that the values of the GD devices are retained and monitored upon the GOT startup.

• Indirect specification of a CPU number for multi-channel connection

If the setting range of [CPU No. switching GD device first No. (3 points)] set for each channel overlaps, the monitoring target CPU number set to each channel is switched simultaneously.

Set [CPU No. switching GD device first No. (3 points)] for each channel so that the setting range does not overlap.

• Indirect specification of a station number and a CPU number for multi-channel connection

When GD10 to GD25 are used to specify the station number of an inverter or non-Mitsubishi temperature controller connected, setting [10] to [CPU No. switching GD device first No. (3 points)] in a different channel switches the monitoring target CPU number and station number of an inverter or non-Mitsubishi temperature controller set to each channel simultaneously.

Set [CPU No. switching GD device first No. (3 points)] so that the setting range does not overlap the station number of an inverter or non-Mitsubishi temperature controller.

■Start device number of the GD devices for module number switching

• Specifying a module number with a device

For connection via a Simple Motion module, [Unit No.] can be specified with the GOT internal registers (GD devices) by specifying a value (100 to 10F) to [Unit No.] in the device setting dialog in GT Designer3.

Set the start device number of the GD devices to be used in [Module No. switching GD device first No. (16 points)].

[Unit No.] is specified with 16 consecutive GD devices, starting from the set device number.

When [550] is set to [Module No. switching GD device first No. (16 points)], GD550 to GD565 are used to specify [Unit No.] as shown in the following table.

Module No.	GD device	Setting range
100	GD550	00 to FF Setting a value outside the above range causes a device range error.
101	GD551	
102	GD552	
103	GD553	
104	GD554	
105	GD555	
106	GD556	
107	GD557	
108	GD558	
109	GD559	
10A	GD560	
10B	GD561	
10C	GD562	
10D	GD563	
10E	GD564	
10F	GD565	

• Indirect specification of a module number on the initially displayed screen

Set [Module No. switching GD device first No. (16 points)] so that the values of the GD devices are retained and monitored upon the GOT startup.

• Indirect specification of a module number for multi-channel connection

If the setting range of [Module No. switching GD device first No. (16 points)] set for each channel overlaps, the module number of the Simple Motion module via the servo amplifier device of each channel is switched simultaneously.

Set [Module No. switching GD device first No. (16 points)] for each channel so that the setting range does not overlap.

• Indirect specification of a station number and a module number for multi-channel connection

When GD10 to GD25 are used to specify the station number of an inverter or non-Mitsubishi temperature controller connected, setting [10] to [Module No. switching GD device first No. (16 points)] switches the module number of the Simple Motion module via the servo amplifier device and the station number of an inverter or non-Mitsubishi temperature controller set to each channel simultaneously.

Set [Module No. switching GD device first No. (16 points)] so that the setting range does not overlap the station number of an inverter or non-Mitsubishi temperature controller.

■Start device number of the GD devices for servo axis switching

• Indirect specification of a servo axis number

For connection via a Motion CPU or Simple Motion module, a servo axis number can be indirectly specified with GOT internal registers (GD devices) by specifying a value (100 to 115) to the axis number of the servo amplifier device.

Set the start device number of the GD devices to be used in [Servo axis switching GD device first No. (16 points)].

Specify a servo axis number with 16 consecutive GD devices, starting the set device number.

When [10] is set to [Servo axis switching GD device first No. (16 points)], GD10 to GD25 are used to specify a servo axis number as shown in the following table.

Servo axis No.	GD device	Setting range
100	GD10	1 to 64 Setting a value outside the above range causes a device range error.
101	GD11	
102	GD12	
103	GD13	
104	GD14	
105	GD15	
106	GD16	
107	GD17	
108	GD18	
109	GD19	
110	GD20	
111	GD21	
112	GD22	
113	GD23	
114	GD24	
115	GD25	

• Indirect specification of a servo axis number on the initially displayed screen

Set [Servo axis switching GD device first No. (16 points)] so that the values of the GD devices are retained and monitored upon the GOT startup.

• Indirect specification of a servo axis number for multi-channel connection

If the setting rage of [Servo axis switching GD device first No. (16 points)] set for each channel overlaps, the axis number of the servo amplifier of each channel is switched simultaneously.

Set [Servo axis switching GD device first No. (16 points)] for each channel so that the setting range does not overlap.

• Indirect specification of a station number and a servo axis number for multi-channel connection

When GD10 to GD25 are used to specify the station number of an inverter or non-Mitsubishi temperature controller connected, setting [10] to [Servo axis switching GD device first No. (16 points)] switches the axis number of the servo amplifier and the station number of an inverter or non-Mitsubishi temperature controller set to each channel simultaneously.

Set [Servo axis switching GD device first No. (16 points)] so that the setting range does not overlap the station number of an inverter or non-Mitsubishi temperature controller.

Point

By setting the GOT internal device, the GOT can disconnect specific parts from the controller's multiple connections.

For example, a faulty station that has a communication timeout can be disconnected from the system.

For details on the setting contents of the GOT internal device, refer to the following manual.

GT Designer3 (GOT3000) Screen Design Manual

5.2.5 PLC side settings

No setting is required on the controller.

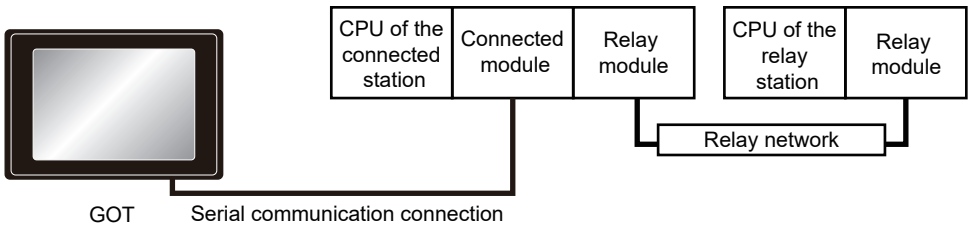
5.2.6 Access range for monitoring

When the GOT is connected to the CPU of the station connected by serial communication connection, the range accessible via the CPU is as follows.

Point

- When monitoring other networks (Routing parameter settings)

To monitor other networks, routing parameter settings are necessary.
For the routing parameter settings, refer to the reference manual of the network connected.



○: Accessible, —: Inaccessible

CPU of the connected station	Connected module	Relay station									
		Relay network	CPU of the relay station								
			MXR	RCPU	LCPU	QCPU (Q mode)	QSCPU	QCPU (A mode)	QnACPU	ACPU	FX5CPU
RCPU	☞ Page 530 [Controller Setting]	Ethernet	○*7	○*5	○	○*6	○	—	○	—	○*3
		CC-Link IE TSN	○*7	○*1	—	—	—	—	—	—	○*3
		CC-Link IE Controller Network	○*7	○	—	○	○	—	—	—	—
		CC-Link IE Field Network	○*7	○	○	○*2	○	—	—	—	○*4
		MELSECNET/H, MELSECNET/10	—	—	—	○	○	○	○	○*8	—
C Controller module (MELSEC iQ-R series)	☞ Page 530 [Controller Setting]	CC-Link IE TSN	○*7	○*1	—	—	—	—	—	—	○*3
		CC-Link IE Controller Network	○*7	○	—	○	○	—	—	—	—
		CC-Link IE Field Network	○*7	○	○	○*2	○	—	—	—	○*4
		MELSECNET/H, MELSECNET/10	—	—	—	○	○	○	○	○*8	—
RJ72GF15-T2	☞ Page 530 [Controller Setting]	CC-Link IE Field Network	—	○	○	○*2	○	—	—	—	○*4

*1 RnCPU, RnENCPU, RnSFCPU, and MELSECWinCPU (MELSEC iQ-R series) are supported.
*2 QnUDVCPU, QnUDECPU, QnUDEHCPU, QnUCPU, QnUDCPU, and QnUDHCPU are supported.
*3 FX5U and FX5UC are supported.
*4 FX5U, FX5UC, and FX5UJ are supported.
*5 The C Controller module (MELSEC iQ-R series) is not supported.
*6 The C Controller module (MELSEC-Q series) is not supported.
*7 Regardless of whether encrypted communications are performed, the MELSEC MX Controller can be used as the relay station.
To perform encrypted communication, settings need to be configured.
For details, refer to the following.
☞ Page 90 Setting procedure of the encrypted communication
*8 AnUCPU and AnUSCPU are supported.

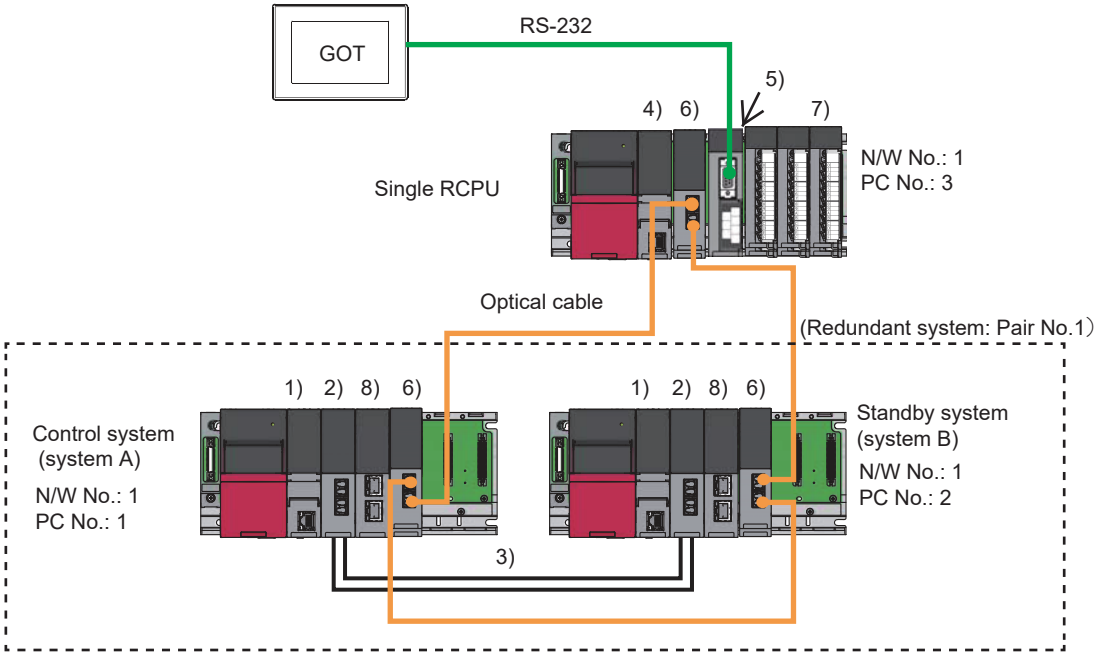
5.2.7 How to monitor a redundant system

☞ Page 544 One-to-one connection of the GOT and the redundant system
☞ Page 546 MELSEC redundant settings
☞ Page 548 Precautions

One-to-one connection of the GOT and the redundant system

■System configuration example

The following describes a connection configuration example for connecting the GOT to a redundant CPU via the serial communication module mounted on the extension base unit for the redundant system.



1) Process CPU
2) Redundant function module
3) Tracking cable
4) RCPU
5) Serial communication module
6) CC-Link IE Controller Network module
7) I/O module
8) CC-Link IE Field Network master/local module

■Connection method

Connect the serial communication module (mounted on remote I/O station) to the GOT.

☞ Page 518 Serial connection

■PLC side settings (GX Works3)

- Redundant CPU

☞ Page 885 How to monitor a redundant system

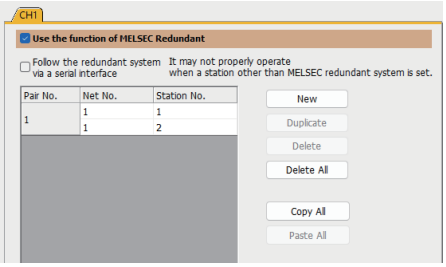
- Single RCPU

Item	Setting value
Network No.	1
PLC station No.	3

☞ Page 885 How to monitor a redundant system

■GOT side settings

Set GT Designer3 as follows.

Setting item	Contents of setting		Model
Model	MELSEC iQ-R, RnMT/NC/RT, CR800-D		GT37 SoftGOT3000
Device setting (Network setting)	Host	-	
	Other	Network No.: 1	
		PLC station No.: Station number of the control system	
	Control system/ standby system	The system (control system/standby system) to be monitored can be specified. This item can be set only when [Use the function of MELSEC Redundant] is selected in [MELSEC Redundant] shown below.	
MELSEC redundant setting	 ☞ Page 546 MELSEC redundant settings		

■Monitoring target change when system switching occurs in a redundant system

When system switching occurs, the CPU (Network No. 1, PLC station No. 2) becomes the control system and continues the control.

The GOT automatically starts monitoring according to the specified system.

MELSEC redundant settings

This section describes the settings for the GOT to automatically change the monitoring target of the RCPU redundant system.

Point

Before configuring the MELSEC redundant settings

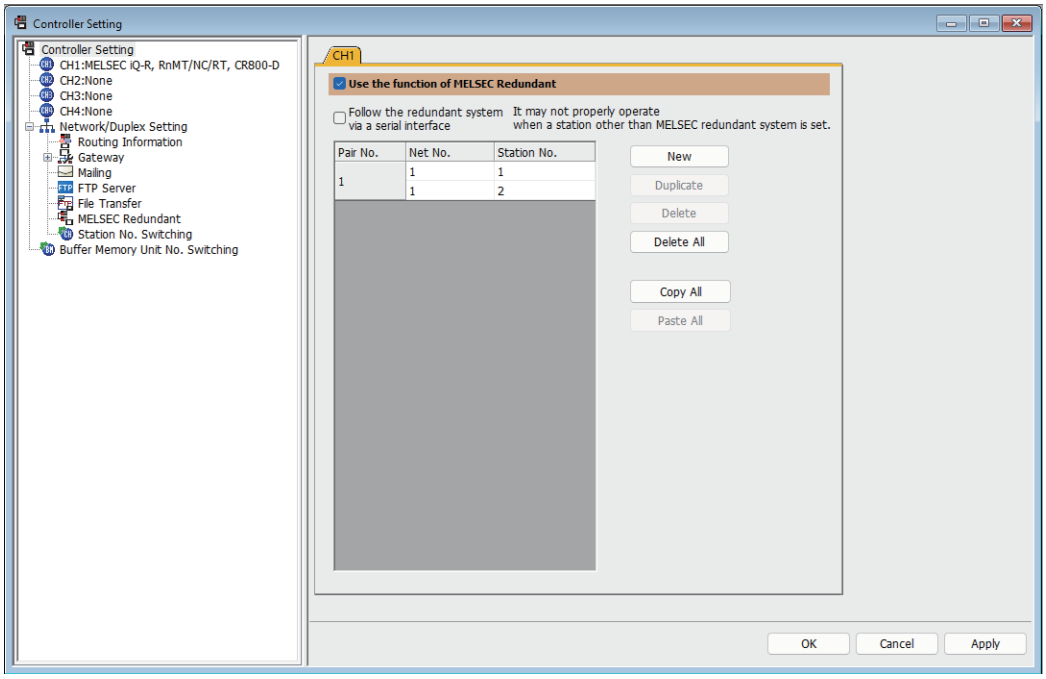
In the MELSEC redundant settings, do not set a station outside the redundant RCPU.

1. Select [Common] → [Controller Setting] → [MELSEC Redundant] from the menu.
2. The setting dialog box appears. Configure the settings by referencing the explanation that follows.
3. Configure the MELSEC redundant settings.

In the MELSEC redundant setting dialog, settings can be made for each channel of the controller.

The following shows an example of the serial connection (station No. 4) with redundant CPU pair No. 1 to No. 2, network No. 1, and redundant CPU station No. 0 to No. 3.

Ex.



Item		Description	Model
CH1 to CH4		Select the tab of the channel number to configure the MELSEC redundant settings.	GT37 SoftGOT3000
[Follow the redundant system via a serial interface]		Select this item to monitor the control system as a host station at serial connection.	
[Pair No.][*1]	[Net No.]	Set the network number (1 to 255) for each pair number (1 to 64). • Upper row: Setting for the first redundant CPU • Lower row: Setting for the second redundant CPU (The same value as the value set for the first redundant CPU is displayed.)	
	[Station No.]	Set the station number (0 to 120) of the redundant CPU for each pair number (1 to 64). • Upper row: Setting for the first redundant CPU • Lower row: Setting for the second redundant CPU (The setting value for the first redundant CPU + 1 is displayed.)	
[New]		Adds a new pair number.	
[Duplicate]		Copies one setting of the selected pair number and adds it below the bottom row.	
[Delete]		Deletes one setting of the selected pair number. After deletion, the succeeding pair numbers are renumbered to fill the deleted pair number.	
[Delete All]		Deletes all the pair number settings.	
[Copy All]		Copies the MELSEC redundant setting on the selected CH No. tab.	
[Paste All]		Pastes the copied MELSEC redundant setting in the selected CH No. tab.	

*1 For details, refer to the following.

☞ Page 547 Pair number

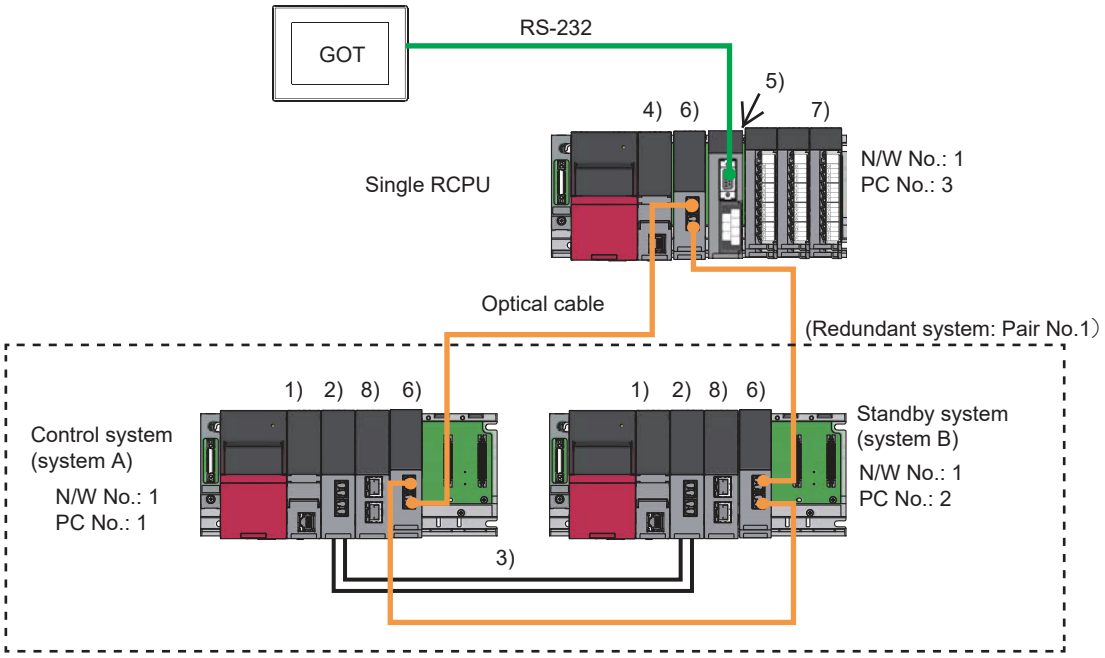
■Pair number

Redundant CPU pair means the redundant CPUs (System A / System B) in the redundant system configuration.

Pair number is the number assigned to each redundant CPU pair.

The following shows an example of serial connection in the RCPU redundant system. (Pair No. 1 to No. 2)

Ex.



1) Process CPU
2) Redundant function module
3) Tracking cable
4) RCPU
5) Serial communication module
6) CC-Link IE Controller Network module
7) I/O module
8) CC-Link IE Field Network master/local module

Point

Precautions for configuring the MELSEC redundant settings

Pay attention to the following items when configuring the MELSEC redundant settings.

- The last station number and station number 1 (example: station number 64 and station number 1) cannot be paired.
- Before configuring the settings, make sure to check the station numbers of the network modules. If the MELSEC redundant settings and the actual network module station numbers are inconsistent, the GOT fails to automatically change the monitoring target to the control system when the system is switched.
- GOT supports the backup mode, which is the redundant mode of the RCPU redundant system, and does not support the process mode and separate mode.

Precautions

■Start of the redundant system

The GOT starts monitoring the redundant system after the control system and standby system have been determined, regardless of the starting order of PLC systems A and B.
The GOT starts monitoring when both systems start.
(In a redundant system with a redundant extension base unit, the GOT monitors the control system that starts first.)
Power on the redundant system within the time set in the GOT (communication timeout time and number of retries) so that the GOT can start monitoring after the redundant system starts (after the control system is decided).
If the GOT does not start within the set time, the GOT stops monitoring for safety reasons, and the following system alarm occurs.

- 451: The MELSEC redundant setting and actual system configuration do not match.

If the system alarm occurs, restart the GOT (reapply or reset the power supply) to start monitoring again.

■System switching

When system switching occurs through the user program, the communication path remains unchanged, and the GOT will continue monitoring.
No system alarm occurs.
When system switching occurs due to disconnected cable or other causes, the GOT changes the communication path and continues monitoring.
[450: Path has changed or timeout occurred in redundant system.] appears as the system alarm.

■Redundant system configuration and operation mode

- System alarm display

If the MELSEC redundant settings do not match the actual configuration of the redundant system, or if the operation mode of the redundant system is not set to backup mode, [451: The MELSEC redundant setting and actual system configuration do not match.] appears as the system alarm, and the GOT will not be able to correctly monitor the redundant system's CPU.
If the system alarm occurs, restart the GOT (reapply or reset the power supply) to start monitoring again.

- Changing the MELSEC redundant settings

Always reset the GOT after changing the MELSEC redundant settings. If not reset, the changed MELSEC redundant settings will not be applied on the GOT.

■Monitoring a non-redundant system with the MELSEC redundant settings configured

If the MELSEC redundant settings were set for a non-redundant system, the GOT will operate normally.
In this case, if an abnormality (such as powering off or communication timeout error) occurs in the PLC CPU for which the MELSEC redundant settings are configured, the PLC CPU may not operate as intended.

■Monitoring a redundant system without configuring the MELSEC redundant settings

When the MELSEC redundant settings are not configured, the GOT does not automatically change the monitoring target even if system switching occurs in the redundant system.
When the GOT is connected to the standby system, data written to a device are overwritten by the data of the control system, failing to be reflected.
In this case, when data is written to a device in the standby system normally, the system alarm [315 Device writing error. Correct device.] is not detected.

5.3 MELSEC iQ-F series (Built-in serial port connection)

☞ Page 549 Connectable devices
☞ Page 550 System configuration
☞ Page 555 Connection diagram
☞ Page 558 GOT side settings
☞ Page 562 PLC side settings
☞ Page 562 Access range for monitoring

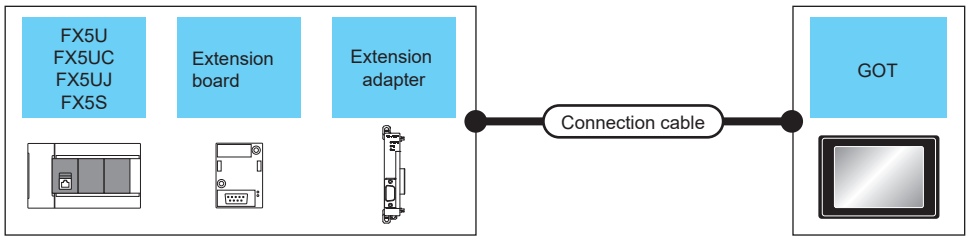
5.3.1 Connectable devices

The following table shows the connectable models.

○: Supported, —: Not supported

Controller	Model	Clock	Connectable model
MELSEC iQ-F series	FX5U FX5UC FX5UJ FX5S	○	GT37 SoftGOT3000

5.3.2 System configuration



☞ Page 550 When connecting via RS-232 communication
☞ Page 551 When connecting via RS-422 communication

For details on the maximum number of connected devices, refer to the following.

☞ Page 553 Maximum number of connected devices

When connecting via RS-232 communication

PLC				Connection cable		GOT	
Controller	Function extension board	Extension adapter	Communication type	Cable model	Maximum length	Interface	Model
FX5U FX5UJ FX5S	FX5-232-BD	—	RS-232	GT01-C30R2-9S (3 m) + GT35-C02HR2-9P or ☞ Page 555 RS-232 connection diagram (1)	15 m	Built-in RS-232 interface	GT37 SoftGOT3000
				GT01-C30R2-9S (3 m) or ☞ Page 555 RS-232 connection diagram (1)		GT37-IF2000 + GT15-RS2-9P	GT37 SoftGOT3000
FX5U FX5UC FX5UJ FX5S	—	FX5-232ADP	RS-232	GT01-C30R2-9S (3 m) + GT35-C02HR2-9P or ☞ Page 555 RS-232 connection diagram (1)	15 m	Built-in RS-232 interface	GT37 SoftGOT3000
				GT01-C30R2-9S (3 m) or ☞ Page 555 RS-232 connection diagram (1)		GT37-IF2000 + GT15-RS2-9P	GT37 SoftGOT3000

When connecting via RS-422 communication

PLC				Connection cable		GOT	
Controller	Function extension board	Extension adapter	Communication type	Cable model	Maximum length	Interface	Model
FX5U FX5UJ FX5S	FX5-422-BD-GOT	—	RS-422	GT01-C10R4-8P (1 m) GT01-C30R4-8P (3 m) GT01-C100R4-8P (10 m) GT01-C200R4-8P (20 m)	30 m	Built-in RS-422 interface	GT37 SoftGOT3000
						GT37-IF2000 + GT15-RS4-9S	GT37 SoftGOT3000
FX5U FX5UC	—	—	RS-422[*1]	☞ Page 555 RS-422 connection diagram (1)	30 m	Built-in RS-422 interface	GT37 SoftGOT3000
				☞ Page 556 RS-422 connection diagram (2)(4-wire) or ☞ Page 557 RS-422 connection diagram (3)(2-wire)	30 m[*2*4]	Built-in RS-422 interface + FA-LTBGT2R4CBL05 (0.5 m)[*3] FA-LTBGT2R4CBL10 (1 m)[*3] FA-LTBGT2R4CBL20 (2 m)[*3]	GT37 SoftGOT3000
				☞ Page 555 RS-422 connection diagram (1)	30m	GT37-IF2000 + GT15-RS4-9S	GT37 SoftGOT3000
				☞ Page 556 RS-422 connection diagram (2)(4-wire) or ☞ Page 557 RS-422 connection diagram (3)(2-wire)	30 m[*2*4]	GT37-IF2000 + GT15-RS4-9S + FA-LTBGT2R4CBL05 (0.5 m)[*3] FA-LTBGT2R4CBL10 (1 m)[*3] FA-LTBGT2R4CBL20 (2 m)[*3]	GT37 SoftGOT3000
FX5U FX5UJ FX5S	FX5-485-BD	—	RS-422[*1]	☞ Page 555 RS-422 connection diagram (1)	30 m	Built-in RS-422 interface	GT37 SoftGOT3000
				☞ Page 556 RS-422 connection diagram (2)(4-wire) or ☞ Page 557 RS-422 connection diagram (3)(2-wire)	30 m[*2*4]	Built-in RS-422 interface + FA-LTBGT2R4CBL05 (0.5 m)[*3] FA-LTBGT2R4CBL10 (1 m)[*3] FA-LTBGT2R4CBL20 (2 m)[*3]	GT37 SoftGOT3000
				☞ Page 555 RS-422 connection diagram (1)	30m	GT37-IF2000 + GT15-RS4-9S	GT37 SoftGOT3000
				☞ Page 556 RS-422 connection diagram (2)(4-wire) or ☞ Page 557 RS-422 connection diagram (3)(2-wire)	30 m[*2*4]	GT37-IF2000 + GT15-RS4-9S + FA-LTBGT2R4CBL05 (0.5 m)[*3] FA-LTBGT2R4CBL10 (1 m)[*3] FA-LTBGT2R4CBL20 (2 m)[*3]	GT37 SoftGOT3000

PLC				Connection cable		GOT	
Controller	Function extension board	Extension adapter	Communication type	Cable model	Maximum length	Interface	Model
FX5U FX5UC FX5UJ FX5S	—	FX5-485ADP	RS-422*1	☞ Page 555 RS-422 connection diagram (1)	30 m	Built-in RS-422 interface	GT37 SoftGOT3000
				☞ Page 556 RS-422 connection diagram (2)(4-wire) or ☞ Page 557 RS-422 connection diagram (3)(2-wire)	30 m*2*4	Built-in RS-422 interface + FA-LTBGT2R4CBL05 (0.5 m)*3 FA-LTBGT2R4CBL10 (1 m)*3 FA-LTBGT2R4CBL20 (2 m)*3	GT37 SoftGOT3000
				☞ Page 555 RS-422 connection diagram (1)	30 m	GT37-IF2000 + GT15-RS4-9S	GT37 SoftGOT3000
				☞ Page 556 RS-422 connection diagram (2)(4-wire) or ☞ Page 557 RS-422 connection diagram (3)(2-wire)	30 m*2*4	GT37-IF2000 + GT15-RS4-9S + FA-LTBGT2R4CBL05 (0.5 m)*3 FA-LTBGT2R4CBL10 (1 m)*3 FA-LTBGT2R4CBL20 (2 m)*3	GT37 SoftGOT3000

*1 Use the RS-485 communication terminal block of the PLC to perform RS-422 communications.
*2 The shortest specification on the PLC side is prioritized.
*3 The terminal block converter module is manufactured by MITSUBISHI ELECTRIC ENGINEERING COMPANY LIMITED.
For details on the product, contact MITSUBISHI ELECTRIC ENGINEERING COMPANY LIMITED.
*4 The cable length of the terminal block converter module is included.

Maximum number of connected devices

The following shows the number of connectable GOTs.

■When connecting via RS-232 communication

Controller				
Model	**Function extension board**	**Extension adapter**	**Communication type**	**Number of connectable devices*1**
FX5U FX5UJ FX5S	FX5-232-BD	—	RS-232	One GOT for one extension board
FX5U FX5UC FX5UJ FX5S	—	FX5-232ADP	RS-232	One GOT for one extension adapter

*1 When an extension board (communication board) and an extension adapter are connected, one GOT and one peripheral device such as a personal computer with GX Works3 installed can be connected to the board and the adapter, respectively.

■When connecting via RS-422 communication

Controller				
Model	**Function extension board**	**Extension adapter**	**Communication type**	**Number of connectable devices*2**
FX5U FX5UJ FX5S	FX5-422-BD-GOT	—	RS-422	One GOT for one extension board
FX5U FX5UC	—	—	RS-422*1	One GOT for one PLC built-in port
FX5U FX5UJ FX5S	FX5-485-BD	—	RS-422*1	One GOT for one extension board
FX5U FX5UC FX5UJ FX5S	—	FX5-485ADP	RS-422*1	One GOT for one extension adapter

*1 Use the RS-485 communication terminal block of the PLC to perform RS-422 communications.

*2 When an extension board (communication board) and an extension adapter are connected, one GOT and one peripheral device such as a personal computer with GX Works3 installed can be connected to the board and the adapter, respectively.

Connection to MELSEC iQ-F series

Point

MELSEC iQ-F series communication settings

For details on the MELSEC iQ-F series communication settings, refer to the following manual.

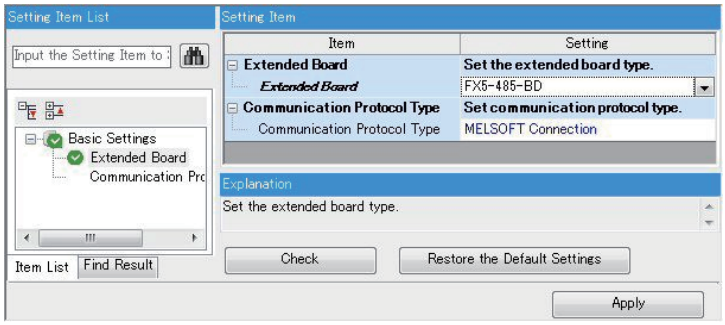
MELSEC iQ-F series manuals

Leave the module parameter settings as default (MELSOFT connection).

Setting a value other than the default disables communication with the GOT.

■Module parameter setting

(When using the FX5-485-BD)



Point

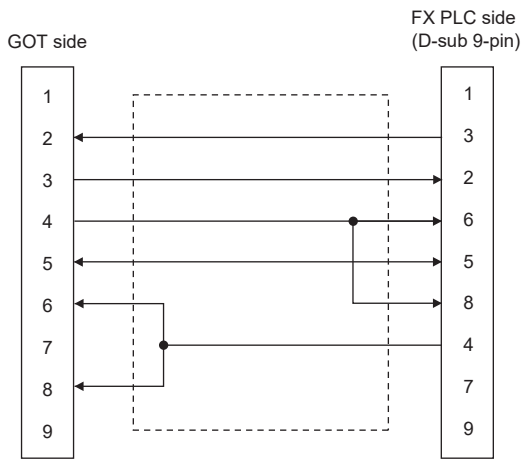
When changing the module parameter

After writing module parameters to the PLC CPU, turn off then on or reset the PLC CPU.

5.3.3 Connection diagram

The following diagram shows the connection between the GOT and the controller.

RS-232 connection diagram (1)



Preparation of the RS-232 cable

■Cable length

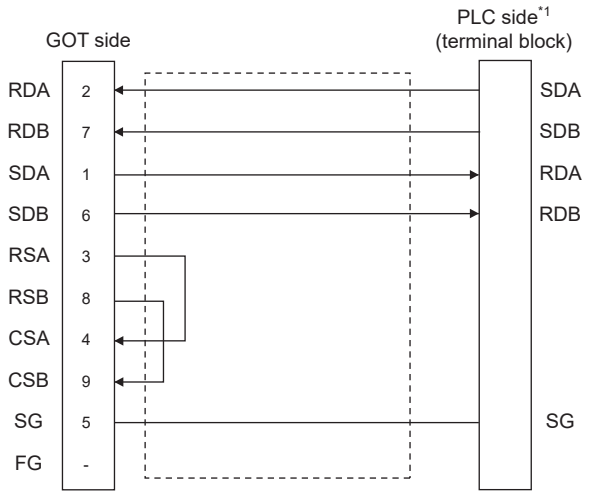
The length of the RS-232 cable must be 15 m or less.

■GOT side connector

For the GOT side connector, refer to the following.

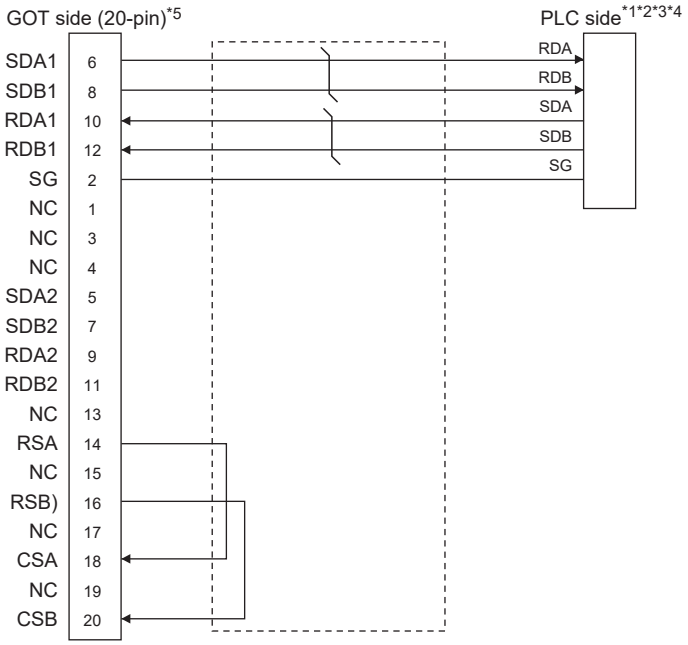
☞ Page 2954 GOT connector specifications

RS-422 connection diagram (1)



*1 Set the terminating resistor of the PLC side to "330Ω ".

RS-422 connection diagram (2)



*1 The pin arrangement on the PLC side may differ from the arrangement shown above, for example, when the SDA/SDB and RDA/RDB pins are independent.
In this case, connect the cables and wires as described in the PLC manual.

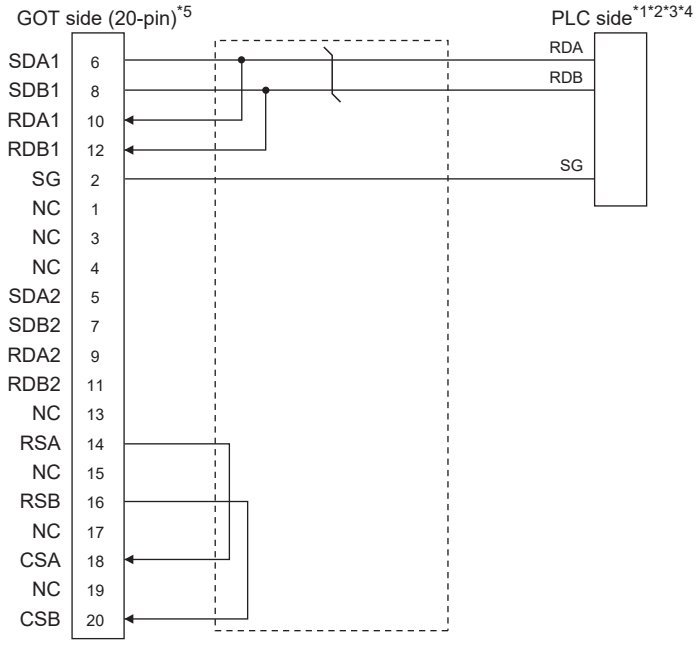
*2 Some PLCs do not have SG.
In this case, wiring between the GOT and SG is unnecessary.

*3 Some PLCs require the control line (CSA, CSB, RSA, RSB, etc.) to be controlled.
Make sure to connect the cables and wires as described in the PLC manual.

*4 For the terminating resistor of the PLC, refer to the manual of the PLC to be used.

*5 The GOT at the end requires a terminating resistor setting.
Set the terminating resistor setting switch on the GOT to 100Ω.
☞ Page 2956 Terminating resistors of GOT

RS-422 connection diagram (3)



*1 The pin arrangement on the PLC side may differ from the arrangement shown above, for example, when the SDA/SDB and RDA/RDB pins are independent.
In this case, connect the cables and wires as described in the PLC manual.

*2 Some PLCs do not have SG.
In this case, wiring between the GOT and SG is unnecessary.

*3 Some PLCs require the control line (CSA, CSB, RSA, RSB, etc.) to be controlled.
Make sure to connect the cables and wires as described in the PLC manual.

*4 For the terminating resistor of the PLC, refer to the manual of the PLC to be used.

*5 The GOT at the end requires a terminating resistor setting.
Set the terminating resistor setting switch on the GOT to 100Ω.
☞ Page 2956 Terminating resistors of GOT

Preparation of the RS-422 cable

■Cable length

The length of the RS-422 cable must be 30 m or less.

■GOT side connector

For the GOT side connector, refer to the following.

☞ Page 2954 GOT connector specifications

Connecting terminating resistors

■GOT side

When connecting a PLC to the GOT, a terminating resistor must be connected to the GOT.

Set the terminating resistor setting switch to "Not used".

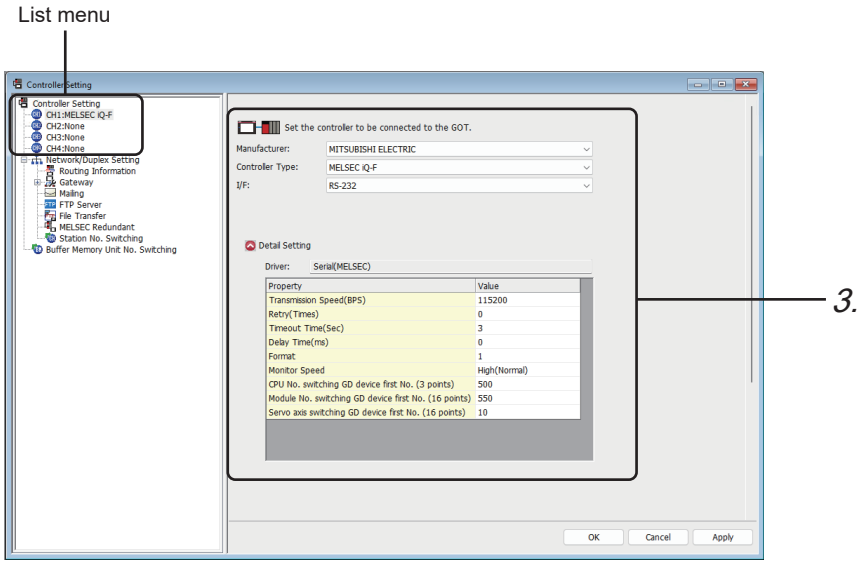
For the procedure to set the terminating resistor, refer to the following.

☞ Page 2956 Terminating resistors of GOT

5.3.4 GOT side settings

[Controller Setting]

Set the channel of the connected controller.



Operating procedure

1. Select [Common] → [Controller Setting] from the menu.

2. In the [Controller Setting] window, select the channel number to be used from the list menu.

3. Set the following items.

Item		Description
[Manufacturer]		[MITSUBISHI ELECTRIC]
[Controller Type]		[MELSEC iQ-F]
[I/F]	For GOT	• [RS-232] • [RS-422/485] • [Extend Unit]
	For GT SoftGOT3000	• [Serial 1] • [Serial 2]
[Detail Setting]		Configure the settings according to the usage environment. ☞ Page 559 [Detail Setting]

4. When you have completed the settings, click the [OK] button.

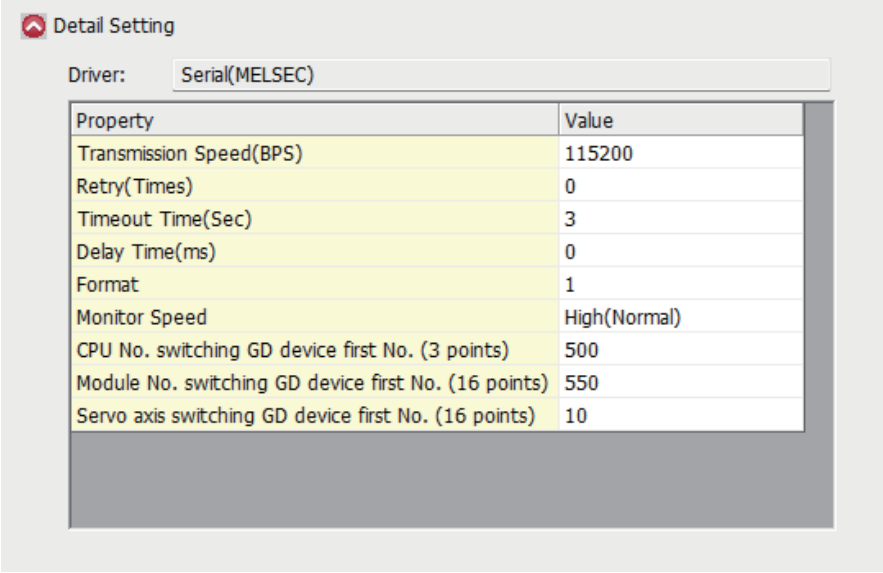
Point

The controller settings can be configured and checked in [I/F Communication Setting].
For details, refer to the following.
📖GT Designer3 (GOT3000) Screen Design Manual

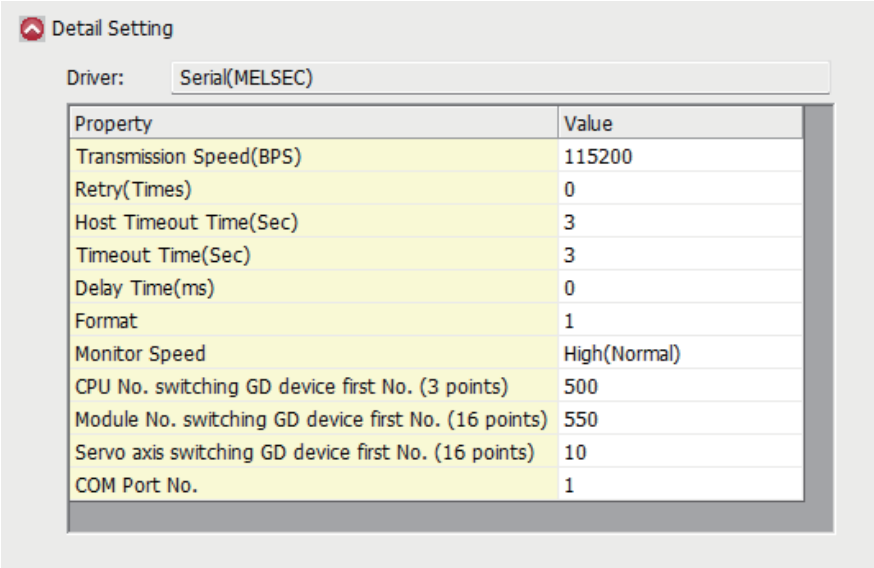
■[Detail Setting]

Configure the settings according to the usage environment.

- For GOT



- For GT SoftGOT3000



Item	Description	Range
[Driver]	This item appears when communication drivers are selectable according to the settings of [Controller Type] and [I/F].	[Serial (MELSEC)]
[Transmission Speed]	Set this item to change the transmission speed used for communication with the connected equipment.	[9600] bps, [19200] bps, [38400] bps, [57600] bps, [115200] bps
[Retry]	Specify the number of retries to be performed during communication.	GOT: [0] times to [5] times GT SoftGOT3000: [0] times to [10] times
[Host Timeout Time]*1	Set the time period until a communication timeout during monitoring of the host station.	[1] second to [90] seconds
[Timeout Time]	Specify the time period for a communication to time out.	[1] second to [30] seconds
[Delay Time]	Set this item to adjust the transmission timing of the communication request from the GOT.	[0] ms to [300] ms
[Format]	Set the communication format.	[1], [2]
[Monitor Speed]*3	Set the monitor speed of the GOT. This setting is not valid in all systems.	[High(Normal)]*2 [Middle] [Low]

Item	Description	Range
[CPU No. switching GD device first No. (3 points)]	Set the start device number of the GD devices for CPU number switching. For details, refer to the following. ☞ Page 560 Start device number of the GD devices for CPU number switching	[0] to [65520]
[Module No. switching GD device first No. (16 points)]	Set the start device number of the GD devices for module number switching. For details, refer to the following. ☞ Page 561 Start device number of the GD devices for module number switching	[0] to [65520]
[Servo axis switching GD device first No. (16 points)]	Set the start device number of the GD devices for servo axis switching. For details, refer to the following. ☞ Page 561 Start device number of the GD devices for servo axis switching	[0] to [65520]
[COM Port No.]*1	Specify the COM port number for communication.	[1] to [63]

*1 This item is displayed in GT SoftGOT3000 only.
*2 This setting is effective for collecting large data with the logging, recipe, or such function on a screen other than the monitor screen.
*3 When using a global label to read or write more than 235 two-byte characters, set [Monitor speed] to [High(Normal)] or [Middle].
If [Monitor speed] is set to [Low], a system error occurs when reading or writing.
For details, refer to the following manual.
📖GT Designer3 (GOT3000) Screen Design Manual

Point

• Communication interface settings in the GT37 utility
The communication interface setting can be changed in [Communication setting] of the GT37 utility after writing [Controller Setting] in project data.
For details on the GT37 utility, refer to the following manual.
📖GOT3000 Series User's Manual (Utility & Maintenance Functions)
• Priority of the settings in [Controller Setting]
When settings are configured in GT Designer3 or the GT37 utility, the most recent settings are effective.

■Start device number of the GD devices for CPU number switching

• Indirect specification of a CPU number
[CPU No.] can be indirectly specified with the GOT internal registers (GD devices) by specifying a value (100 to 102) to [CPU No.] in the device setting dialog in GT Designer3.
Set the start device number of the GD devices to be used in [CPU No. switching GD device first No. (3 points)].
[CPU No.] is specified with three consecutive GD devices, starting from the set device number.
When [500] is set to [CPU No. switching GD device first No. (3 points)], GD500 to GD502 are used to specify [CPU No.] as shown in the following table.

CPU No.	GD device	Setting range
100	GD500	1 to 4 Setting a value outside the range causes a communication timeout error. Specifying a nonexistent CPU number or a CPU number not supporting a multiple CPU system with a device causes a controller error.
101	GD501	
102	GD502	

• Indirect specification of a CPU number on the initially displayed screen
Set [CPU No. switching GD device first No. (3 points)] so that the values of the GD devices are retained and monitored upon the GOT startup.
• Indirect specification of a CPU number for multi-channel connection
If the setting range of [CPU No. switching GD device first No. (3 points)] set for each channel overlaps, the monitoring target CPU number set to each channel is switched simultaneously.
Set [CPU No. switching GD device first No. (3 points)] for each channel so that the setting range does not overlap.
• Indirect specification of a station number and a CPU number for multi-channel connection
When GD10 to GD25 are used to specify the station number of an inverter or non-Mitsubishi temperature controller connected, setting [10] to [CPU No. switching GD device first No. (3 points)] in a different channel switches the monitoring target CPU number and station number of an inverter or non-Mitsubishi temperature controller set to each channel simultaneously.
Set [CPU No. switching GD device first No. (3 points)] so that the setting range does not overlap the station number of an inverter or non-Mitsubishi temperature controller.

■Start device number of the GD devices for module number switching

• Specifying a module number with a device

For connection via a Simple Motion module, [Unit No.] can be specified with the GOT internal registers (GD devices) by specifying a value (100 to 10F) to [Unit No.] in the device setting dialog in GT Designer3.

Set the start device number of the GD devices to be used in [Module No. switching GD device first No. (16 points)].

[Unit No.] is specified with 16 consecutive GD devices, starting from the set device number.

When [550] is set to [Module No. switching GD device first No. (16 points)], GD550 to GD565 are used to specify [Unit No.] as shown in the following table.

Unit No.	GD device	Setting range
100	GD550	01 to 10 Setting a value outside the above range causes a device range error.
101	GD551	
102	GD552	
103	GD553	
104	GD554	
105	GD555	
106	GD556	
107	GD557	
108	GD558	
109	GD559	
10A	GD560	
10B	GD561	
10C	GD562	
10D	GD563	
10E	GD564	
10F	GD565	

• Indirect specification of a module number on the initially displayed screen

Set [Module No. switching GD device first No. (16 points)] so that the values of the GD devices are retained and monitored upon the GOT startup.

• Indirect specification of a module number for multi-channel connection

If the setting range of [Module No. switching GD device first No. (16 points)] set for each channel overlaps, the module number of the Simple Motion module via the servo amplifier device of each channel is switched simultaneously.

Set [Module No. switching GD device first No. (16 points)] for each channel so that the setting range does not overlap.

• Indirect specification of a station number and a module number for multi-channel connection

When GD10 to GD25 are used to specify the station number of an inverter or non-Mitsubishi temperature controller connected, setting [10] to [Module No. switching GD device first No. (16 points)] switches the module number of the Simple Motion module via the servo amplifier device and the station number of an inverter or non-Mitsubishi temperature controller set to each channel simultaneously.

Set [Module No. switching GD device first No. (16 points)] so that the setting range does not overlap the station number of an inverter or non-Mitsubishi temperature controller.

■Start device number of the GD devices for servo axis switching

• Indirect specification of a servo axis number

For connection via a Motion CPU or Simple Motion module, a servo axis number can be indirectly specified with GOT internal registers (GD devices) by specifying a value (100 to 115) to the axis number of the servo amplifier device.

Set the start device number of the GD devices to be used in [Servo axis switching GD device first No. (16 points)].

Specify a servo axis number with 16 consecutive GD devices, starting the set device number.

When [10] is set to [Servo axis switching GD device first No. (16 points)], GD10 to GD25 are used to specify a servo axis number as shown in the following table.

Servo axis No.	GD device	Setting range
100	GD10	1 to 64 Setting a value outside the above range causes a device range error.
101	GD11	
102	GD12	
103	GD13	
104	GD14	
105	GD15	
106	GD16	
107	GD17	
108	GD18	
109	GD19	
110	GD20	
111	GD21	
112	GD22	
113	GD23	
114	GD24	
115	GD25	

- Indirect specification of a servo axis number on the initially displayed screen

Set [Servo axis switching GD device first No. (16 points)] so that the values of the GD devices are retained and monitored upon the GOT startup.

- Indirect specification of a servo axis number for multi-channel connection

If the setting rage of [Servo axis switching GD device first No. (16 points)] set for each channel overlaps, the axis number of the servo amplifier of each channel is switched simultaneously.
Set [Servo axis switching GD device first No. (16 points)] for each channel so that the setting range does not overlap.

- Indirect specification of a station number and a servo axis number for multi-channel connection

When GD10 to GD25 are used to specify the station number of an inverter or non-Mitsubishi temperature controller connected, setting [10] to [Servo axis switching GD device first No. (16 points)] switches the axis number of the servo amplifier and the station number of an inverter or non-Mitsubishi temperature controller set to each channel simultaneously.
Set [Servo axis switching GD device first No. (16 points)] so that the setting range does not overlap the station number of an inverter or non-Mitsubishi temperature controller.

Point

By setting the GOT internal device, the GOT can disconnect specific parts from the controller's multiple connections.
For example, a faulty station that has a communication timeout can be disconnected from the system.
For details on the setting contents of the GOT internal device, refer to the following manual.
GT Designer3 (GOT3000) Screen Design Manual

5.3.5 PLC side settings

No setting is required on the controller.

5.3.6 Access range for monitoring

Only the connected CPU can be accessed.

5.4 MELSEC-Q series (Built-in serial port connection)

☞ Page 564 Connectable devices
☞ Page 566 System configuration
☞ Page 568 GOT side settings
☞ Page 574 PLC side settings
☞ Page 574 Access range for monitoring
☞ Page 575 How to monitor a redundant system

5.4.1 Connectable devices

The following table shows the connectable models.

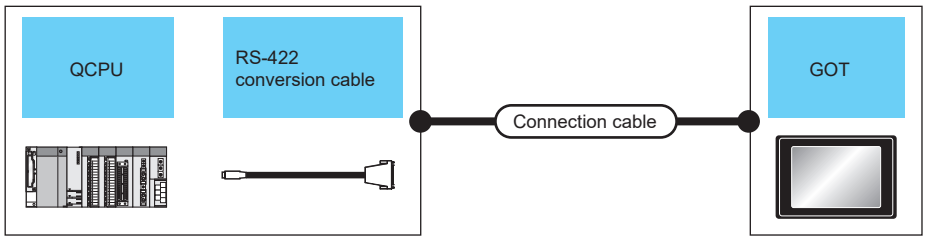
○: Supported, —: Not supported

Controller	Model	Clock	Connectable model
MELSEC-Q (Q mode)	Q00JCPU Q00CPU*1 Q01CPU*1 Q02CPU*1	○	GT37 SoftGOT3000
	Q02HCPU*1 Q06HCPU*1 Q12HCPU*1 Q25HCPU*1	○	GT37 SoftGOT3000
	Q02PHCPU Q06PHCPU Q12PHCPU Q25PHCPU	○	GT37 SoftGOT3000
	Q12PRHCPU (main base) Q25PRHCPU (main base) Q12PRHCPU (remote extension base) Q25PRHCPU (remote extension base)	○	GT37 SoftGOT3000
	Q00UJCPU Q00UJCPU-S8	○	GT37 SoftGOT3000
	Q00UCPU Q01UCPU Q02UCPU Q03UDCPU	○	GT37 SoftGOT3000
	Q04UDHCPU Q06UDHCPU Q10UDHCPU Q13UDHCPU Q20UDHCPU Q26UDHCPU	○	GT37 SoftGOT3000
	Q03UDECPU Q04UDEHCPU Q06UDEHCPU Q10UDEHCPU Q13UDEHCPU Q20UDEHCPU Q26UDEHCPU Q50UDEHCPU Q100UDEHCPU	○	GT37 SoftGOT3000
	Q03UDVCPU Q04UDVCPU Q06UDVCPU Q13UDVCPU Q26UDVCPU	○	GT37 SoftGOT3000
C Controller module (Q series)	Q12DCCPU-V*2 Q24DHCCPU-V/VG Q24DHCCPU-LS Q26DHCCPU-LS	○	GT37 SoftGOT3000

Controller	Model	Clock	Connectable model
Motion CPU (Q series)	Q172CPUN*3 Q173CPUN*3 Q172HCPU Q173HCPU Q172DCPU Q173DCPU	○	GT37 SoftGOT3000
	Q172DCPU-S1 Q173DCPU-S1 Q172DSCPU Q173DSCPU Q170MCPU Q170MSCPU Q170MSCPU-S1 MR-MQ100	○	GT37 SoftGOT3000
MELSECNET/H remote I/O station	QJ72LP25-25 QJ72LP25G QJ72BR15	—	GT37 SoftGOT3000
CNC C70	Q173NCCPU	○	GT37 SoftGOT3000
Robot controller (Q series)	CRnQ-700(Q172DRCPU) CR750-Q (Q172DRCPU) CR751-Q (Q172DRCPU) CR800-Q (Q172DSRCPU)	○	GT37 SoftGOT3000

*1 To configure a multiple CPU system, use a CPU with function version B or later.
*2 Use a module having a serial number starting with 12042 or later.
*3 When using SV13, SV22, or SV43, use a Motion CPU with the following version of OS installed.
- SW6RN-SV13Q□: 00E or later
- SW6RN-SV22Q□: 00E or later
- SW6RN-SV43Q□: 00B or later

5.4.2 System configuration



For details on the maximum number of connected devices, refer to the following.

☞ Page 566 Maximum number of connected devices

PLC			Connection cable		GOT	
Controller	**RS-422 connector conversion cable**	**Communication type**	**Cable model**	**Maximum length**	**Interface**	**Model**
MELSEC-Q	—	RS-232	GT01-C30R2-6P (3 m) + GT35-C02HR2-9P	3 m	Built-in RS-232 interface	GT37 SoftGOT3000
			GT01-C30R2-6P (3 m)		GT37-IF2000 + GT15-RS2-9P	GT37 SoftGOT3000
	FA-CNV2402CBL (0.2 m)*1 FA-CNV2405CBL (0.5 m)*1	RS-422	GT01-C30R4-25P (3 m) GT01-C100R4-25P (10 m) GT01-C200R4-25P (20 m) GT01-C300R4-25P (30 m)	30 m	Built-in RS-422 interface	GT37 SoftGOT3000
					GT37-IF2000 + GT15-RS4-9S	GT37 SoftGOT3000

*1 Product manufactured by MITSUBISHI ELECTRIC ENGINEERING COMPANY LIMITED.
For details on the product, contact MITSUBISHI ELECTRIC ENGINEERING COMPANY LIMITED.

Maximum number of connected devices

The following shows the number of connectable GOTs.

Controller	
Model	**Number of connectable devices**
MELSEC-Q	One GOT for one PLC

Connection via the multiple CPU system

When the GOT is connected via the multiple CPU system, the PLC takes 10 seconds or more to run.

If you start the GOT before the PLC runs, a system alarm occurs.

Adjust the time to display the GOT startup screen to prevent a system alarm.

📖GT Designer3 (GOT3000) Screen Design Manual

Connection to QCPU

Do not set the serial communication function of Q00UJ/Q00U/Q01U/Q02U/Q03UD/Q04UDH/Q06UDH/Q10UDH/Q13UDH/Q20UDH/Q26UDHCPU, Q00/Q01CPU.

If it is set, communications may be unavailable.

Connection to Q170MCPU or Q170MSCPU(-S1)

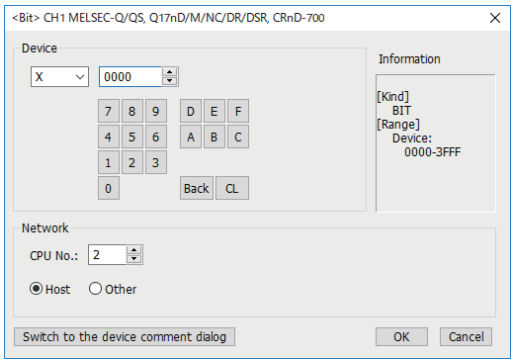
Set [CPU No.] to 2 in the device setting to monitor the device of the Motion CPU area (CPU No. 2).

When [CPU No.] is set to 0 or 1, the device on the PLC CPU area (CPU No. 1) is monitored.

When [CPU No.] is set to the number other than 0 to 2, a communication error occurs and the monitoring cannot be executed.

For the setting of [CPU No.], refer to the following.

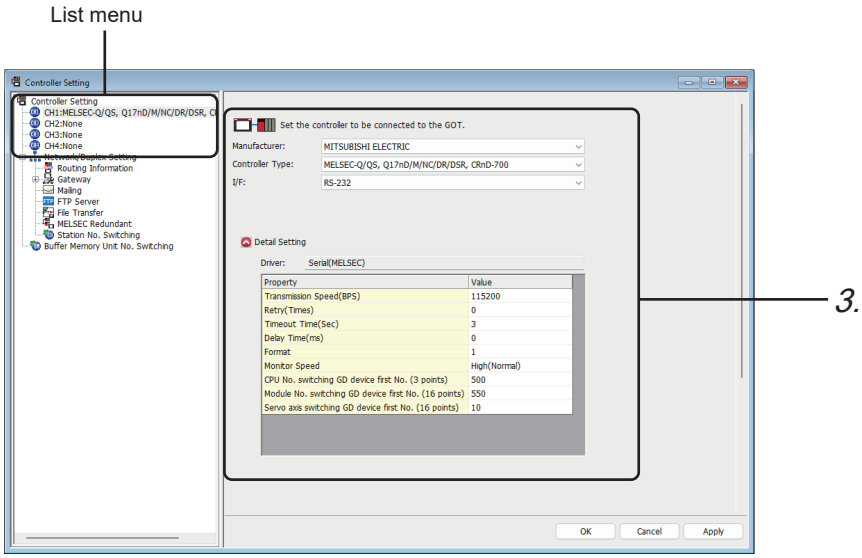
📖GT Designer3 (GOT3000) Screen Design Manual



5.4.3 GOT side settings

[Controller Setting]

Set the channel of the connected controller.



Operating procedure

1. Select [Common] → [Controller Setting] from the menu.

2. In the [Controller Setting] window, select the channel number to be used from the list menu.

3. Set the following items.

Item		Description
[Manufacturer]		[MITSUBISHI ELECTRIC]
[Controller Type]		[MELSEC-Q/QS, Q17nD/M/NC/DR/DSR, CRnD-700]
[I/F]	For GOT	• [RS-232] • [RS-422/485] • [Extend Unit]
	For GT SoftGOT3000	• [Serial 1] • [Serial 2]
[Detail Setting]		Configure the settings according to the usage environment. ☞ Page 569 [Detail Setting]

4. When you have completed the settings, click the [OK] button.

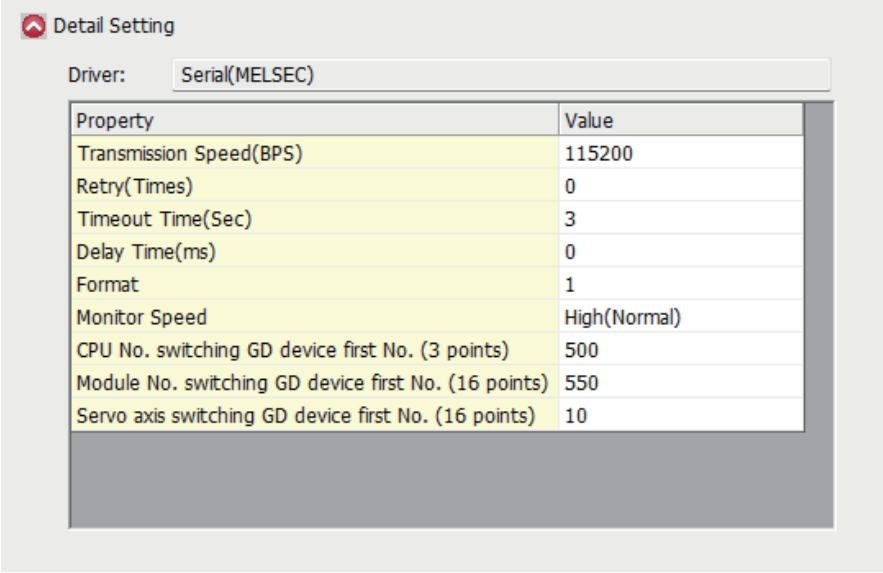
Point

The controller settings can be configured and checked in [I/F Communication Setting].
For details, refer to the following.
📖GT Designer3 (GOT3000) Screen Design Manual

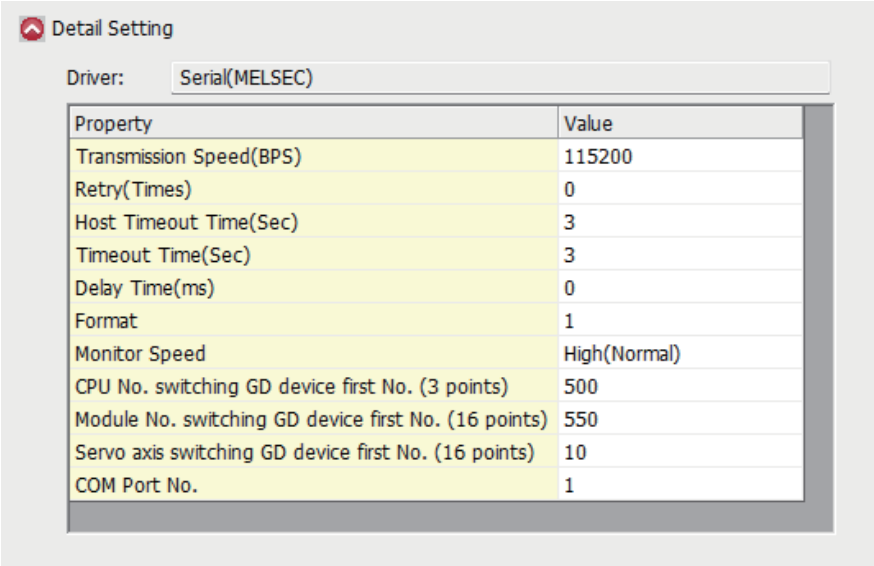
■[Detail Setting]

Configure the settings according to the usage environment.

- For GOT



- For GT SoftGOT3000



Item	Description	Range
[Driver]	This item appears when communication drivers are selectable according to the settings of [Controller Type] and [I/F].	[Serial (MELSEC)]
[Transmission Speed]	Set this item to change the transmission speed used for communication with the connected equipment.	[9600] bps, [19200] bps, [38400] bps, [57600] bps, [115200] bps
[Retry]	Specify the number of retries to be performed during communication.	GOT: [0] times to [5] times GT SoftGOT3000: [0] times to [10] times
[Host Timeout Time]*1	Set the time period until a communication timeout during monitoring of the host station.	[1] second to [90] seconds
[Timeout Time]	Specify the time period for a communication to time out.	[1] second to [30] seconds
[Delay Time]	Set this item to adjust the transmission timing of the communication request from the GOT.	[0] ms to [300] ms
[Format]	Set the communication format.	[1], [2]
[Monitor Speed]*4	Set the monitor speed of the GOT. This setting is not valid in all systems.	[High(Normal)]*2 [Middle] [Low]*3

Item	Description	Range
[CPU No. switching GD device first No. (3 points)]	Set the start device number of the GD devices for CPU number switching. For details, refer to the following. ☞ Page 571 Start device number of the GD devices for CPU number switching	[0] to [65520]
[Module No. switching GD device first No. (16 points)]	Set the start device number of the GD devices for module number switching. For details, refer to the following. ☞ Page 572 Start device number of the GD devices for module number switching	[0] to [65520]
[Servo axis switching GD device first No. (16 points)]	Set the start device number of the GD devices for servo axis switching. For details, refer to the following. ☞ Page 573 Start device number of the GD devices for servo axis switching	[0] to [65520]
[COM Port No.]*1	Specify the COM port number for communication.	[1] to [63]

*1 This item is displayed in GT SoftGOT3000 only.

*2 This setting is effective for collecting large data with the logging, recipe, or such function on a screen other than the monitor screen.
However, when connected to Q00UJ/Q00U/Q01U/Q02UCPU or Q00J/Q00/Q01CPU, the sequence scan time may be affected.
If you want to avoid the influence on the sequence scan time, do not set [High(Normal)].

*3 Set this range if you want to avoid the influence on the sequence scan time further than the [Middle] setting for connection to Q00UJ/Q00U/Q01U/Q02UCPU and Q00J/Q00/Q01CPU.
However, the monitor speed may be reduced.

*4 When using a global label to read or write more than 235 two-byte characters, set [Monitor speed] to [High(Normal)] or [Middle].
If [Monitor speed] is set to [Low], a system error occurs when reading or writing.
For details, refer to the following manual.
📖GT Designer3 (GOT3000) Screen Design Manual

Point

• Communication interface settings in the GT37 utility

The communication interface setting can be changed in [Communication setting] of the GT37 utility after writing [Controller Setting] in project data.
For details on the GT37 utility, refer to the following manual.
📖GOT3000 Series User's Manual (Utility & Maintenance Functions)

• Priority of the settings in [Controller Setting]

When settings are configured in GT Designer3 or the GT37 utility, the most recent settings are effective.

■Start device number of the GD devices for CPU number switching

• Indirect specification of a CPU number

[CPU No.] can be indirectly specified with the GOT internal registers (GD devices) by specifying a value (100 to 102) to [CPU No.] in the device setting dialog in GT Designer3.

Set the start device number of the GD devices to be used in [CPU No. switching GD device first No. (3 points)].

[CPU No.] is specified with three consecutive GD devices, starting from the set device number.

When [500] is set to [CPU No. switching GD device first No. (3 points)], GD500 to GD502 are used to specify [CPU No.] as shown in the following table.

CPU No.	GD device	Setting range
100	GD500	1 to 4 Setting a value outside the range causes a communication timeout error. Specifying a nonexistent CPU number or a CPU number not supporting a multiple CPU system with a device causes a controller error.
101	GD501	
102	GD502	

• Indirect specification of a CPU number on the initially displayed screen

Set [CPU No. switching GD device first No. (3 points)] so that the values of the GD devices are retained and monitored upon the GOT startup.

• Indirect specification of a CPU number for multi-channel connection

If the setting range of [CPU No. switching GD device first No. (3 points)] set for each channel overlaps, the monitoring target CPU number set to each channel is switched simultaneously.

Set [CPU No. switching GD device first No. (3 points)] for each channel so that the setting range does not overlap.

• Indirect specification of a station number and a CPU number for multi-channel connection

When GD10 to GD25 are used to specify the station number of an inverter or non-Mitsubishi temperature controller connected, setting [10] to [CPU No. switching GD device first No. (3 points)] in a different channel switches the monitoring target CPU number and station number of an inverter or non-Mitsubishi temperature controller set to each channel simultaneously.

Set [CPU No. switching GD device first No. (3 points)] so that the setting range does not overlap the station number of an inverter or non-Mitsubishi temperature controller.

■Start device number of the GD devices for module number switching

• Specifying a module number with a device

For connection via a Simple Motion module, [Unit No.] can be specified with the GOT internal registers (GD devices) by specifying a value (100 to 10F) to [Unit No.] in the device setting dialog in GT Designer3.

Set the start device number of the GD devices to be used in [Module No. switching GD device first No. (16 points)].

[Unit No.] is specified with 16 consecutive GD devices, starting from the set device number.

When [550] is set to [Module No. switching GD device first No. (16 points)], GD550 to GD565 are used to specify [Unit No.] as shown in the following table.

Module No.	GD device	Setting range
100	GD550	00 to FF Setting a value outside the above range causes a device range error.
101	GD551	
102	GD552	
103	GD553	
104	GD554	
105	GD555	
106	GD556	
107	GD557	
108	GD558	
109	GD559	
10A	GD560	
10B	GD561	
10C	GD562	
10D	GD563	
10E	GD564	
10F	GD565	

• Indirect specification of a module number on the initially displayed screen

Set [Module No. switching GD device first No. (16 points)] so that the values of the GD devices are retained and monitored upon the GOT startup.

• Indirect specification of a module number for multi-channel connection

If the setting range of [Module No. switching GD device first No. (16 points)] set for each channel overlaps, the module number of the Simple Motion module via the servo amplifier device of each channel is switched simultaneously.

Set [Module No. switching GD device first No. (16 points)] for each channel so that the setting range does not overlap.

• Indirect specification of a station number and a module number for multi-channel connection

When GD10 to GD25 are used to specify the station number of an inverter or non-Mitsubishi temperature controller connected, setting [10] to [Module No. switching GD device first No. (16 points)] switches the module number of the Simple Motion module via the servo amplifier device and the station number of an inverter or non-Mitsubishi temperature controller set to each channel simultaneously.

Set [Module No. switching GD device first No. (16 points)] so that the setting range does not overlap the station number of an inverter or non-Mitsubishi temperature controller.

■Start device number of the GD devices for servo axis switching

• Indirect specification of a servo axis number

For connection via a Motion CPU or Simple Motion module, a servo axis number can be indirectly specified with GOT internal registers (GD devices) by specifying a value (100 to 115) to the axis number of the servo amplifier device.

Set the start device number of the GD devices to be used in [Servo axis switching GD device first No. (16 points)].

Specify a servo axis number with 16 consecutive GD devices, starting the set device number.

When [10] is set to [Servo axis switching GD device first No. (16 points)], GD10 to GD25 are used to specify a servo axis number as shown in the following table.

Servo axis No.	GD device	Setting range
100	GD10	1 to 64 Setting a value outside the above range causes a device range error.
101	GD11	
102	GD12	
103	GD13	
104	GD14	
105	GD15	
106	GD16	
107	GD17	
108	GD18	
109	GD19	
110	GD20	
111	GD21	
112	GD22	
113	GD23	
114	GD24	
115	GD25	

• Indirect specification of a servo axis number on the initially displayed screen

Set [Servo axis switching GD device first No. (16 points)] so that the values of the GD devices are retained and monitored upon the GOT startup.

• Indirect specification of a servo axis number for multi-channel connection

If the setting rage of [Servo axis switching GD device first No. (16 points)] set for each channel overlaps, the axis number of the servo amplifier of each channel is switched simultaneously.

Set [Servo axis switching GD device first No. (16 points)] for each channel so that the setting range does not overlap.

• Indirect specification of a station number and a servo axis number for multi-channel connection

When GD10 to GD25 are used to specify the station number of an inverter or non-Mitsubishi temperature controller connected, setting [10] to [Servo axis switching GD device first No. (16 points)] switches the axis number of the servo amplifier and the station number of an inverter or non-Mitsubishi temperature controller set to each channel simultaneously.

Set [Servo axis switching GD device first No. (16 points)] so that the setting range does not overlap the station number of an inverter or non-Mitsubishi temperature controller.

Point

By setting the GOT internal device, the GOT can disconnect specific parts from the controller's multiple connections.

For example, a faulty station that has a communication timeout can be disconnected from the system.

For details on the setting contents of the GOT internal device, refer to the following manual.

GT Designer3 (GOT3000) Screen Design Manual

5.4.4 PLC side settings

No setting is required on the controller.

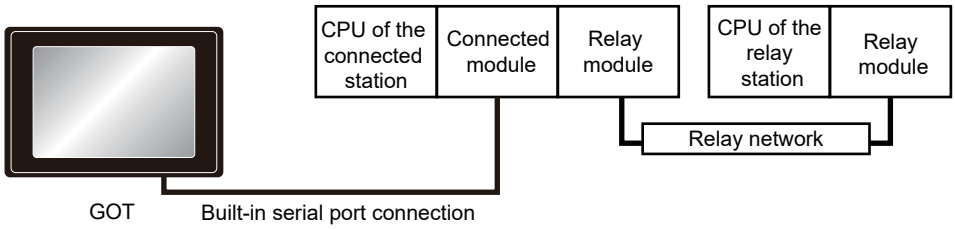
5.4.5 Access range for monitoring

When the GOT is connected to the CPU of the station connected by built-in serial port connection, the range accessible via the CPU is as follows.

Point

- When monitoring other networks (Routing parameter settings)

To monitor other networks, routing parameter settings are necessary.
For the routing parameter settings, refer to the reference manual of the network connected.



○: Accessible, —: Inaccessible

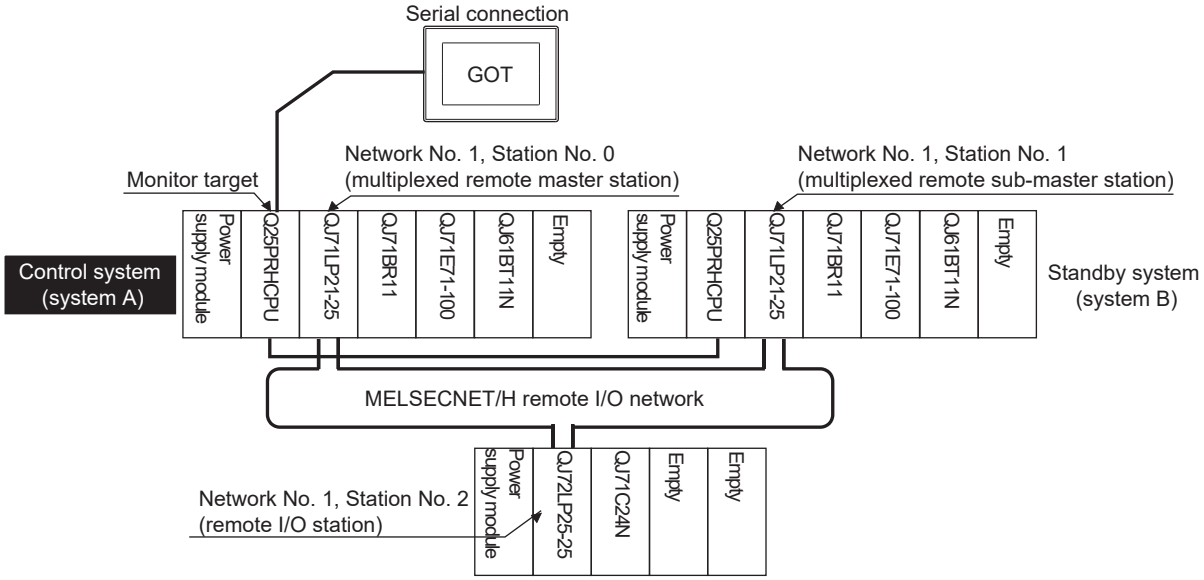
CPU of the connected station	Relay station								
	Relay network	CPU of the relay station							
		RCPU	LCPU	QCPU (Q mode)	QSCPU	QCPU (A mode)	QnACPU	ACPU	FX5CPU
QnUCPU QnUHCPU	Ethernet	—	○	○*3	○	—	○	—	—
	CC-Link IE Controller Network	—	—	○	○	—	—	—	—
	CC-Link IE Field Network	—	○	○*1	○	—	—	—	—
	MELSECNET/H, MELSECNET/10	—	—	○	○	○	○	○*2	—
QnJCPU QnCPU QnHCPU QnPHRCPU	Ethernet	—	○	○*3	○	—	○	—	—
	CC-Link IE Controller Network	—	—	○	○	—	—	—	—
	MELSECNET/H, MELSECNET/10	—	—	○	○	○	○	○*2	—
QJ72LP25-25 QJ72LP25G	MELSECNET/H, MELSECNET/10	—	—	○	—	—	—	—	—

*1 QnUDVCPU, QnUDECPU, QnUDEHCPU, QnUCPU, QnUDCPU, and QnUDHCPU are supported.
*2 AnUCPU and AnUSCPU are supported.
*3 The C Controller module (MELSEC-Q series) is not supported.

5.4.6 How to monitor a redundant system

This section explains the built-in serial port connection used to connect the GOT to a PLC CPU in the redundant system.
For the built-in serial port connection, use one GOT or two GOTs.

Example using a single GOT



■Connection method

Connect the GOT to the RS-232 interface of the PLC CPU (Q12PRHCPU, Q25PRHCPU) in the control system of the redundant system.
For details, refer to the following.
☞ Page 563 MELSEC-Q series (Built-in serial port connection)

■Settings in GT Designer3

Set GT Designer3 as follows.

Setting item	Contents of setting	Model
Model	MELSEC-Q/QS, Q17nD/M/NC/DR/DSR, CRnD-700	GT37 SoftGOT3000
Device setting (Network setting)	Host station	
MELSEC redundant setting	☞ Page 581 MELSEC redundant settings	

■Monitoring target change when system switching occurs in a redundant system

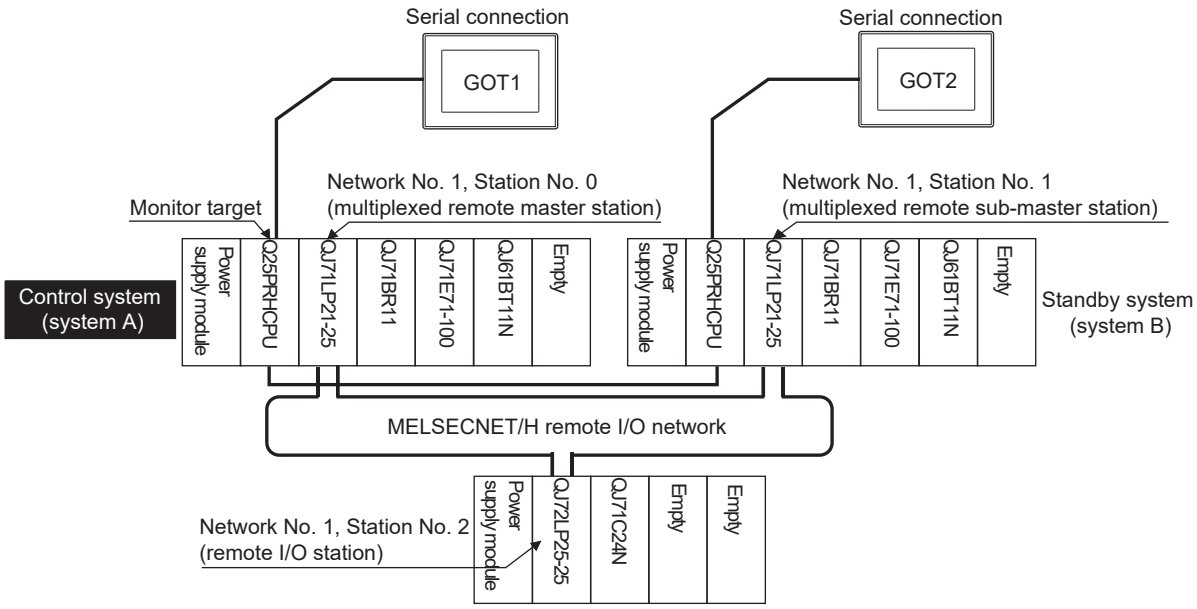
When system switching occurs, the PLC CPU (another station) that has switched to the control system continues the operation of the host station.
Since the GOT monitors the control system, the monitoring target is automatically changed to the other station.

Point

When monitoring control system without MELSEC redundant settings
If system switching occurs without the MELSEC redundant settings, the GOT cannot change the monitoring target at the time of system switching since it monitors the connected PLC CPU (host station).
As a countermeasure, reconnect the cable from the PLC CPU of the previous control system to the PLC CPU of the control system after system switching.

Example using two GOTs

Connect one GOT to each PLC CPU to support system switching.



■Connection method

Connect the GOTs to the RS-232 interfaces of the PLC CPUs (Q12PRHCPU and Q25PRHCPU) in the control and standby systems of the redundant system.

For details, refer to the following.

☞ Page 518 Serial connection

■Settings in GT Designer3

Set GT Designer3 as follows.

Setting item	Contents of setting	Model
Model	MELSEC-Q/QS, Q17nD/M/NC/DR/DSR, CRnD-700	GT37 SoftGOT3000
Device setting (Network setting)	Host station	
MELSEC redundant setting	☞ Page 581 MELSEC redundant settings	

■Monitoring target change when system switching occurs in a redundant system

When system switching occurs, the GOT cannot change the monitoring target automatically.

After system switching, monitoring continues on the GOT connected to the PLC CPU.

Unlike when using a single GOT, there is no need for cable reconnection to the connected PLC CPU.

Point

To automatically monitor the control system after system switching with a single GOT, configure the MELSEC redundant settings.

☞ Page 581 MELSEC redundant settings

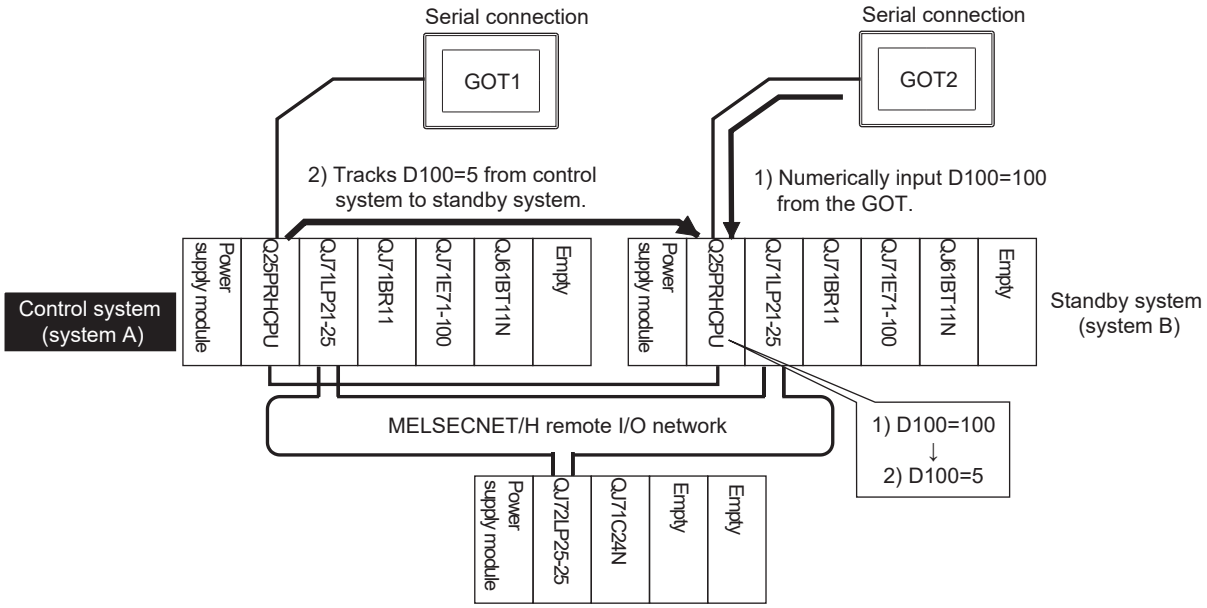
Precautions for built-in serial port connection to a CPU in the redundant system without MELSEC redundant settings

- The GOT monitors only the connected PLC CPU and cannot change the monitoring target in a redundant system.

To enable monitoring target change, reconnect the cable between the GOT and the PLC CPU to another PLC CPU, or connect a GOT to each PLC CPU.

- When monitoring a PLC CPU in a redundant system using the direct CPU connection (serial), only the PLC CPU connected to the GOT can be monitored.
- When connected to the standby system PLC CPU, the writing of the GOT to a device in the connected PLC CPU is not reflected. Design a monitor screen that disables writing to the standby system.

In the redundant system, the tracking function transfers device data from control system to standby system.
When the tracking function is enabled, the device value of the standby system PLC CPU is overwritten by the device value transferred from the control system to the standby system even if the GOT writes to the standby system PLC CPU (Numerical input, Ascii input, Script, Recipe, or others).



As countermeasures to the above, perform the following.

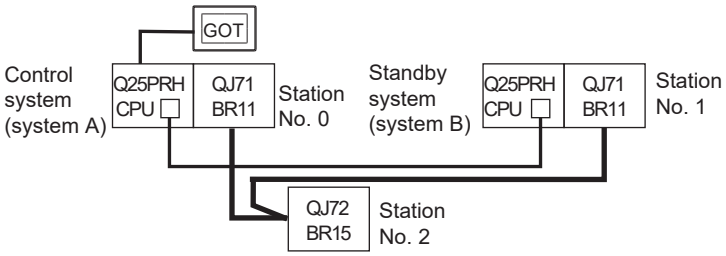
- Display a monitor screen which indicates that "the connected PLC CPU is the standby system" on a GOT when connecting the GOT to the standby system PLC CPU.
- To display the specified monitor screen when connecting the GOT to the standby system PLC CPU, use the special relay SM1515 (Control status identification flag) of the PLC CPU.

(When the SM1515 is OFF, the connected PLC CPU is the standby system)

- Control the operation of each object by the SM1515, which is set for the operation condition.
- For the screen switching device, use a GOT internal device.

If a device of the PLC CPU is used, the trigger action operation of the GOT may be disabled since the device data of the PLC CPU will is overwritten by the device value transferred with the redundant system tracking function.
The following diagram shows an example of screen setting using SM1515.

System configuration example: when using one GOT

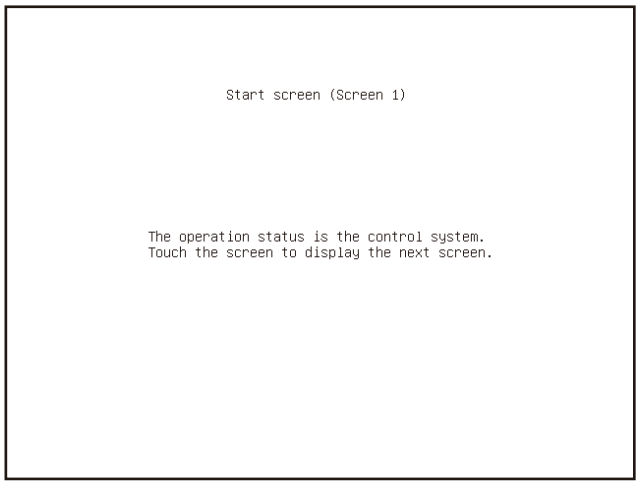


Create a monitor screen on the base screen 1 that performs the following operations for when connecting a GOT to control system and standby system.

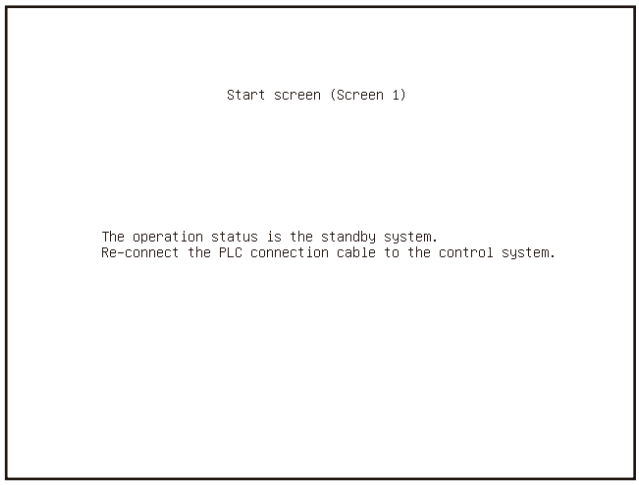
1) When connecting to the control system, the monitor screen displays a message calling a touch switch operation, by which the screen switches to the next screen.

2) When connecting to the standby system, the monitor screen displays a message calling the reconnection of the connection cable.

1) When connecting to the control system



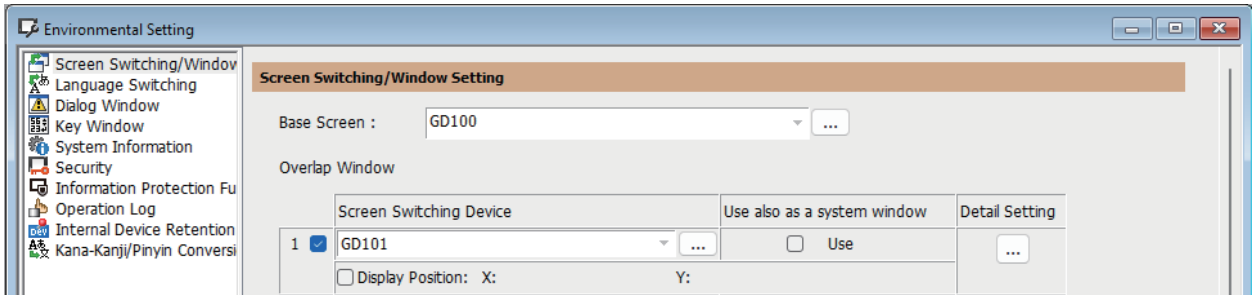
2) When connecting to the standby system



1. Set the screen switching device of the base screen.

Select [Common] → [GOT Environmental Setting] → [Screen Switching/Window], and set the internal device GD100 as the base screen switching device.

(Do not use PLC CPU devices for the screen switching device. If used, the Trigger Action operation of the GOT may be disabled since the device data of the PLC CPU is overwritten by the device value transferred with the redundant system tracking function.)

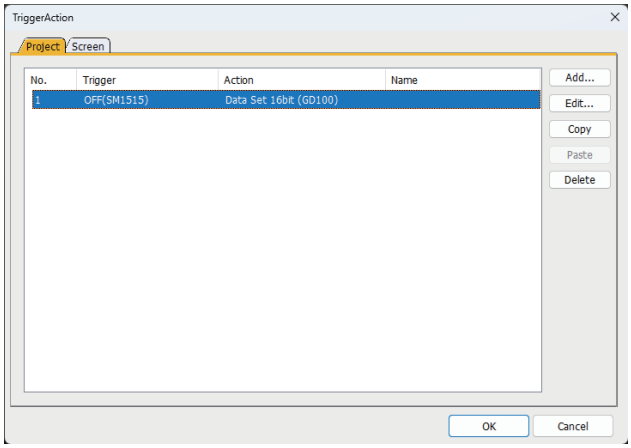


2. Set the trigger action.

Make the setting so that the base screen 1 is displayed when the connected PLC CPU is the standby system (SM1515 is OFF) in the project specified by selecting [Common] → [Trigger Action].

Condition 1: SM1515 (while OFF)	← When SM1515 is OFF, the connected PLC CPU is the standby system.
Operation: GD100=1	← Switch the screen to base screen 1.

Create the trigger action in the project on the Project tab.



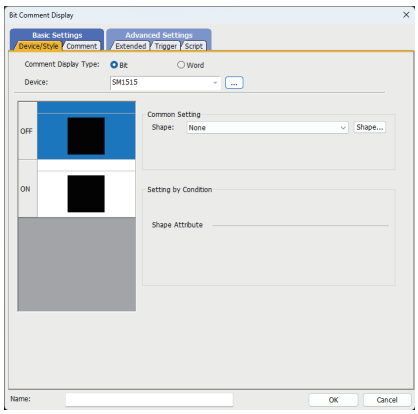
3. Set the comment display on the base screen 1.

Set a comment to be displayed on the base screen 1 depending on the system status (ON/OFF of the SM1515) of the connected PLC CPU using the Comment Display (Bit).

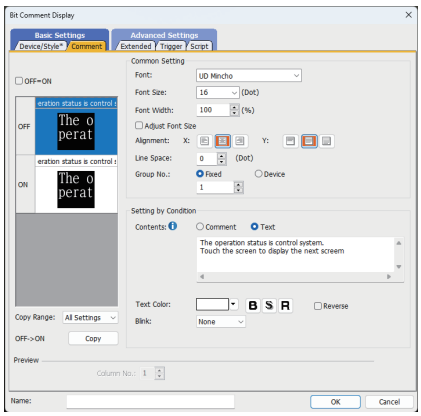
Select [Object] → [Comment Display] → [Bit Comment] and set Comment Display (Bit).

Device/Style tab
Device: SM1515
Shape: None
Comment tab: Basic Comment
Comment Display Type, Text (ON): The operation status is control system.
Touch the screen to display the next screen.
Comment Display Type, Text (OFF): The operation status is standby system.
Reconnect the PLC connection cable to the control system.

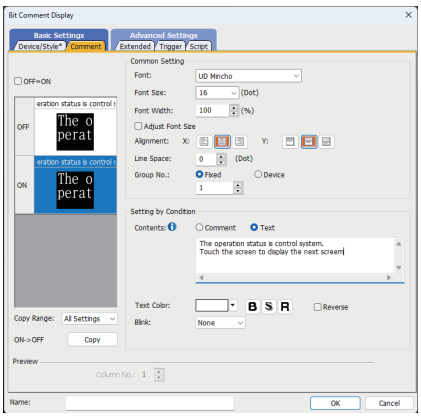
1) Device/Style tab screen



2) Comment tab screen (ON status)



3) Comment tab screen (OFF status)



4. Set the touch switches on the base screen 1.

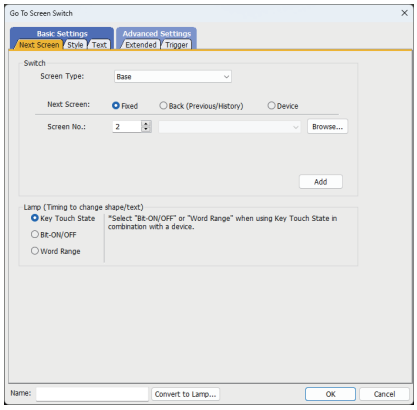
By using the go to screen switch function, set a touch switch for shifting the screen to the next screen with a screen touch, when the connected PLC CPU is the control system (SM1515 is ON).

Select [Object] → [Switch] → [Go To Screen Switch] and set the screen switching function.

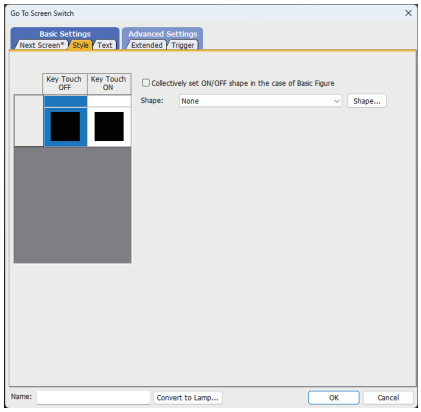
Set the same size for the touch switch as the base screen size so that touching any place of the screen enables the switch operation.

Next Screen tab
Screen Type: Base
Next Screen: Fixed, 2
Style tab
Display Style: None (Shape)
Trigger tab
Trigger Type: ON
Trigger Device: SM1515

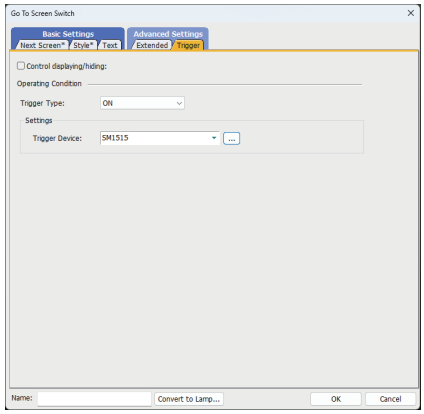
1) Next Screen tab



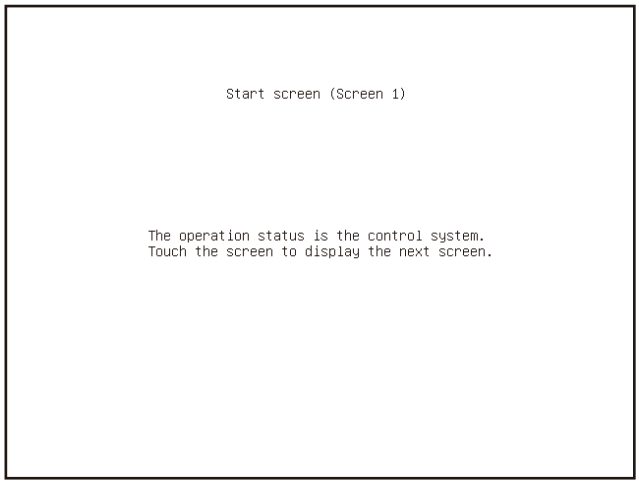
2) Style tab screen



3) Trigger tab screen



The following shows the created base screen 1.



MELSEC redundant settings

This section describes the settings for the GOT to automatically change the monitoring target of the QCPU redundant system.

Point

Before configuring the MELSEC redundant settings

In the MELSEC redundant settings, do not set a station outside the redundant QCPU.

1. Select [Common] → [Controller Setting] → [MELSEC Redundant] from the menu.

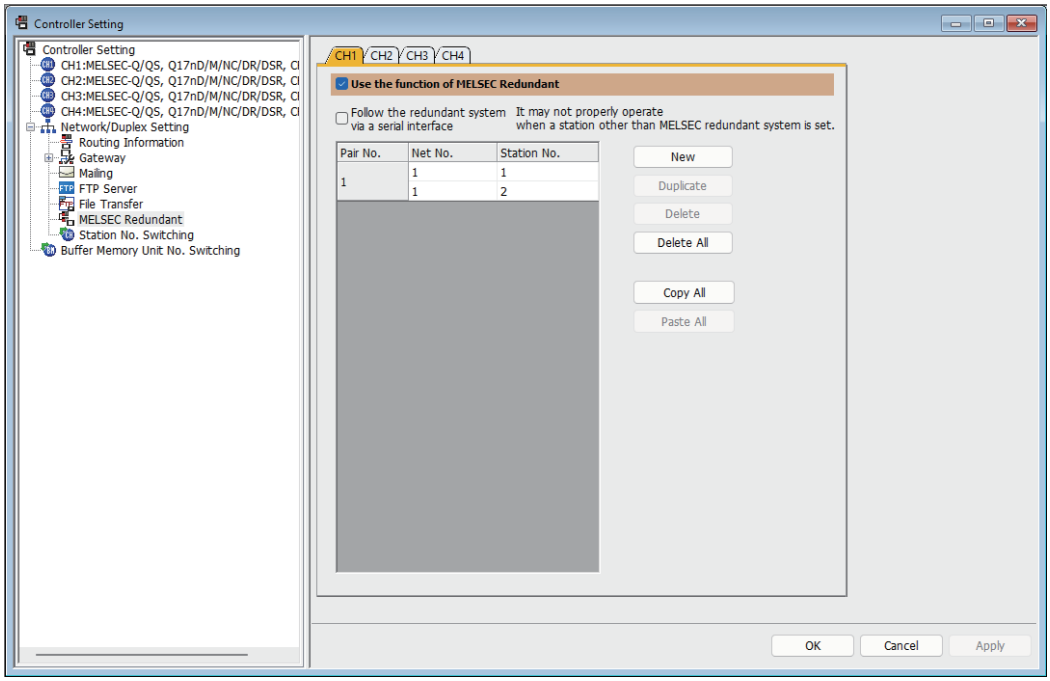
2. The setting dialog box appears. Configure the settings by referencing the explanation that follows.

3. Configure the MELSEC redundant settings.

In the MELSEC redundant setting dialog, settings can be made for each channel of the controller.

The following shows an example of the serial connection (station No. 4) with redundant CPU pair No. 1 to No. 2, network No. 1, and redundant CPU station No. 0 to No. 3.

Ex.



Item		Description	Model
CH1 to CH4		Select the tab of the channel number to configure the MELSEC redundant settings.	GT37 SoftGOT3000
[Follow the redundant system via a serial interface]		Select this item to monitor the control system as a host station at serial connection.	
[Pair No.]*1	[Net No.]	Set the network number (1 to 255) for each pair number (1 to 64). • Upper row: Setting for the first redundant CPU • Lower row: Setting for the second redundant CPU (The same value as the value set for the first redundant CPU is displayed.)	
	[Station No.]	Set the station number (0 to 120) of the redundant CPU for each pair number (1 to 64). • Upper row: Setting for the first redundant CPU • Lower row: Setting for the second redundant CPU (The setting value for the first redundant CPU + 1 is displayed.)	
[New]		Adds a new pair number.	
[Duplicate]		Copies one setting of the selected pair number and adds it below the bottom row.	
[Delete]		Deletes one setting of the selected pair number. After deletion, the succeeding pair numbers are renumbered to fill the deleted pair number.	
[Delete All]		Deletes all the pair number settings.	
[Copy All]		Copies the MELSEC redundant setting on the selected CH No. tab.	
[Paste All]		Pastes the copied MELSEC redundant setting in the selected CH No. tab.	

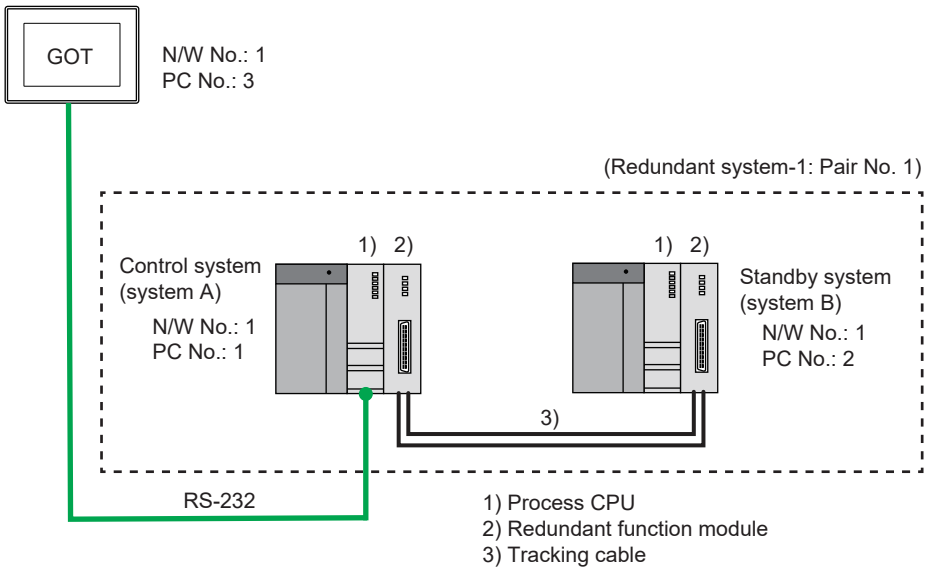
*1 For details, refer to the following.

☞ Page 582 Pair number

■Pair number

Redundant CPU pair means the redundant CPUs (System A / System B) in the redundant system configuration.
Pair number is the number assigned to each redundant CPU pair.
The following shows an example of serial connection in the QCPU redundant system. (Pair No.1)

Ex.



Point

Precautions for configuring the MELSEC redundant settings
Pay attention to the following items when configuring the MELSEC redundant settings.

- The last station number and station number 1 (example: station number 64 and station number 1) cannot be paired.
- Before configuring the settings, make sure to check the station numbers of the network modules. If the MELSEC redundant settings and the actual network module station numbers are inconsistent, the GOT fails to automatically change the monitoring target to the control system when the system is switched.
- GOT supports the backup mode, which is the operation mode of the QCPU redundant system, and does not support the debug mode and separate mode.

Precautions

■Start of the redundant system

The GOT starts monitoring the redundant system after the control system and standby system have been determined, regardless of the starting order of PLC systems A and B.
The GOT starts monitoring when both systems start.
(In a redundant system with a redundant extension base unit, the GOT monitors the control system that starts first.)
Power on the redundant system within the time set in the GOT (communication timeout time and number of retries) so that the GOT can start monitoring after the redundant system starts (after the control system is decided).
If the GOT does not start within the set time, the GOT stops monitoring for safety reasons, and the following system alarm occurs.

- 451: The MELSEC redundant setting and actual system configuration do not match.

If the system alarm occurs, restart the GOT (reapply or reset the power supply) to start monitoring again.

■System switching

When system switching occurs through the user program, the communication path remains unchanged, and the GOT will continue monitoring.
No system alarm occurs.
When system switching occurs due to disconnected cable or other causes, the GOT changes the communication path and continues monitoring.
[450: Path has changed or timeout occurred in redundant system.] appears as the system alarm.

■Redundant system configuration and operation mode

- System alarm display

If the MELSEC redundant settings do not match the actual configuration of the redundant system, or if the operation mode of the redundant system is not set to backup mode, [451: The MELSEC redundant setting and actual system configuration do not match.] appears as the system alarm, and the GOT will not be able to correctly monitor the redundant system's CPU.
If the system alarm occurs, restart the GOT (reapply or reset the power supply) to start monitoring again.

- Changing the MELSEC redundant settings

Always reset the GOT after changing the MELSEC redundant settings. If not reset, the changed MELSEC redundant settings will not be applied on the GOT.

■Monitoring a non-redundant system with the MELSEC redundant settings configured

If the MELSEC redundant settings were set for a non-redundant system, the GOT will operate normally.
In this case, if an abnormality (such as powering off or communication timeout error) occurs in the PLC CPU for which the MELSEC redundant settings are configured, the PLC CPU may not operate as intended.

■Monitoring a redundant system without configuring the MELSEC redundant settings

When the MELSEC redundant settings are not configured, the GOT does not automatically change the monitoring target even if system switching occurs in the redundant system.
When the GOT is connected to the standby system, data written to a device are overwritten by the data of the control system, failing to be reflected.
In this case, when data is written to a device in the standby system normally, the system alarm [315 Device writing error. Correct device.] is not detected.

■Connection to the remote I/O station

- The GOT can monitor only the following GOT functions.

Monitor function, system monitor function

- The GOT does not allow the PLC CPU clock of the master station to be set in the clock setting of the utility.

The master station clock will not change even if the clock setting is made.
Use GX Works2 or similar software to set the PLC CPU clock of the master station.

■Option functions including the ladder monitor

A message "Unable to communicate with CPU." is displayed when system switching occurs while an option function such as the ladder monitor is used.

■In the built-in serial port connection

In the built-in serial port connection, the GOT fails to automatically change the monitoring target in the following cases.

- When the power supply to the CPU where the GOT is connected is OFF
- When the cable connecting the GOT with the CPU is broken
- When the tracking is disabled

■When the QCPU redundant system is in the debug mode

When the QCPU redundant system is in the debug mode, do not make the MELSEC redundant system setting for the GOT side when connecting the GOT.

5.5 MELSEC-Q series (serial communication connection)

☞ Page 584 Connectable devices
☞ Page 587 System configuration
☞ Page 589 Connection diagram
☞ Page 592 GOT side settings
☞ Page 598 PLC side settings
☞ Page 603 Access range for monitoring

5.5.1 Connectable devices

The following table shows the connectable models.

○: Supported, —: Not supported

Controller	Model	Clock	Serial communication module*5	Connectable model
MELSEC-Q (Q mode)	Q00JCPU Q00CPU*1 Q01CPU*1 Q02CPU*1	○	QJ71C24*6 QJ71C24-R2*6 QJ71C24N-R2 QJ71C24N-R4 QJ71CMO*7 QJ71CMON*7	GT37 SoftGOT3000
	Q02HCPU*1 Q06HCPU*1 Q12HCPU*1 Q25HCPU*1	○	QJ71C24*6 QJ71C24-R2*6 QJ71C24N-R2 QJ71C24N-R4 QJ71CMO*7 QJ71CMON*7	GT37 SoftGOT3000
	Q02PHCPU Q06PHCPU Q12PHCPU Q25PHCPU	○	QJ71C24*6 QJ71C24-R2*6 QJ71C24N-R2 QJ71C24N-R4 QJ71CMO*7 QJ71CMON*7	GT37 SoftGOT3000
	Q12PRHCPU (remote extension base) Q25PRHCPU (remote extension base) Q12PRHCPU (extension base) Q25PRHCPU (extension base)	○	QJ71C24*6 QJ71C24-R2*6 QJ71C24N-R2 QJ71C24N-R4 QJ71CMO*7 QJ71CMON*7	GT37 SoftGOT3000
	Q00UJCPU Q00UJCPU-S8	○	QJ71C24*6 QJ71C24-R2*6 QJ71C24N-R2 QJ71C24N-R4 QJ71CMO*7 QJ71CMON*7	GT37 SoftGOT3000
	Q00UCPU Q01UCPU Q02UCPU Q03UDCPU	○	QJ71C24*6 QJ71C24-R2*6 QJ71C24N-R2 QJ71C24N-R4 QJ71CMO*7 QJ71CMON*7	GT37 SoftGOT3000
	Q04UDHCPU Q06UDHCPU Q10UDHCPU Q13UDHCPU Q20UDHCPU Q26UDHCPU	○	QJ71C24*6 QJ71C24-R2*6 QJ71C24N-R2 QJ71C24N-R4 QJ71CMO*7 QJ71CMON*7	GT37 SoftGOT3000

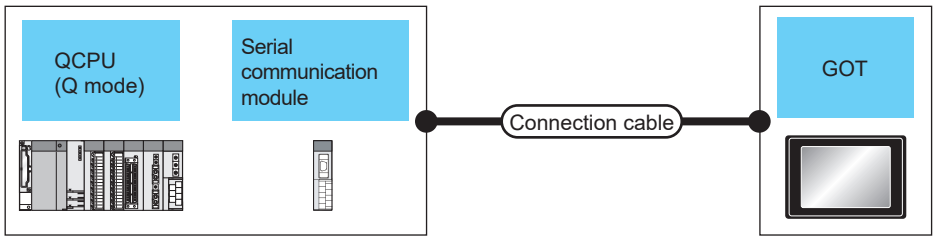
Controller	Model	Clock	Serial communication module*5	Connectable model
MELSEC-Q (Q mode)	Q03UDECPU Q04UDEHCPU Q06UDEHCPU Q10UDEHCPU Q13UDEHCPU Q20UDEHCPU Q26UDEHCPU Q50UDEHCPU Q100UDEHCPU	○	QJ71C24*6 QJ71C24-R2*6 QJ71C24N-R2 QJ71C24N-R4 QJ71CMO*7 QJ71CMON*7	GT37 SoftGOT3000
	Q03UDVCPU Q04UDVCPU Q06UDVCPU Q13UDVCPU Q26UDVCPU	○	QJ71C24*6 QJ71C24-R2*6 QJ71C24N-R2 QJ71C24N-R4 QJ71CMO*7 QJ71CMON*7	GT37 SoftGOT3000
C Controller module (Q series)*8	Q12DCCPU-V*2 Q24DHCCPU-V/VG Q24DHCCPU-LS Q26DHCCPU-LS	○	QJ71C24*6 QJ71C24-R2*6 QJ71C24N-R2 QJ71C24N-R4 QJ71CMO*7 QJ71CMON*7	GT37 SoftGOT3000
Motion CPU (Q series)	Q172CPU*3*4 Q173CPU*3*4 Q172CPUN*3 Q173CPUN*3 Q172HCPU Q173HCPU Q172DCPU Q173DCPU	○	QJ71C24*6 QJ71C24-R2*6 QJ71C24N-R2 QJ71C24N-R4 QJ71CMO*7 QJ71CMON*7	GT37 SoftGOT3000
	Q172DCPU-S1 Q173DCPU-S1 Q172DSCPU Q173DSCPU Q170MCPU Q170MSCPU Q170MSCPU-S1 MR-MQ100	○	QJ71C24*6 QJ71C24-R2*6 QJ71C24N-R2 QJ71C24N-R4 QJ71CMO*7 QJ71CMON*7	GT37 SoftGOT3000
MELSECNET/H remote I/O station	QJ72LP25-25 QJ72LP25G QJ72BR15	—	QJ71C24*6 QJ71C24-R2*6 QJ71C24N-R2 QJ71C24N-R4 QJ71CMO*7 QJ71CMON*7	GT37 SoftGOT3000
CNC C70	Q173NCCPU	○	QJ71C24*6 QJ71C24-R2*6 QJ71C24N-R2 QJ71C24N-R4 QJ71CMO*7 QJ71CMON*7	GT37 SoftGOT3000
Robot controller (Q series)	CRnQ-700(Q172DRCPU) CR750-Q (Q172DRCPU) CR751-Q (Q172DRCPU) CR800-Q (Q172DSRCPU)	○	QJ71C24*6 QJ71C24-R2*6 QJ71C24N-R2 QJ71C24N-R4 QJ71CMO*7 QJ71CMON*7	GT37 SoftGOT3000

*1 To configure a multiple CPU system, use a CPU with function version B or later.
*2 Use a module having a serial number starting with 12042 or later.
*3 When using SV13, SV22, or SV43, use a Motion CPU with the following version of OS installed.
- SW6RN-SV13Q□: 00E or later
- SW6RN-SV22Q□: 00E or later
- SW6RN-SV43Q□: 00B or later

*4 Use main modules with the following product numbers.
- Q172CPU: Product number K******* or later
- Q173CPU: Product number J******* or later

*5 RS-485 communication cannot be performed.
The A0J2-C214-S1 cannot be used.
*6 Either CH1 or CH2 can be used for the function version A.
Both CH1 and CH2 can be used together for the function version B or later.
*7 Only CH2 can be connected.
*8 Use a serial port of the serial communication module controlled by another module in the multiple CPU system.

5.5.2 System configuration



For details on the maximum number of connected devices, refer to the following.

☞ Page 588 Maximum number of connected devices

PLC			Connection cable		GOT	
Controller	**Serial communication module*1**	**Communication type**	**Cable model**	**Maximum length**	**Interface**	**Model**
MELSEC-Q (Q mode)	QJ71C24 QJ71C24N QJ71C24-R2 QJ71C24N-R2 QJ71CMO QJ71CMON	RS-232	GT09-C30R2-9P (3 m) + GT35-C02HR2-9P or ☞ Page 589 RS-232 connection diagram (1)	15 m	Built-in RS-232 interface	GT37 SoftGOT3000
			GT09-C30R2-9P (3 m) or ☞ Page 589 RS-232 connection diagram (1)		GT37-IF2000 + GT15-RS2-9P	GT37 SoftGOT3000
	QJ71C24 QJ71C24N QJ71C24N-R4	RS-422	GT09-C30R4-6C (3 m) GT09-C100R4-6C (10 m) GT09-C200R4-6C (20 m) GT09-C300R4-6C (30 m) or ☞ Page 589 RS-422 connection diagram (1)	1200 m	Built-in RS-422 interface	GT37 SoftGOT3000
			☞ Page 590 RS-422 connection diagram (2)(4-wire) or ☞ Page 591 RS-422 connection diagram (3)(2-wire)	1200 m*2*4	Built-in RS-422 interface + FA-LTBGT2R4CBL05 (0.5 m)*3 FA-LTBGT2R4CBL10 (1 m)*3 FA-LTBGT2R4CBL20 (2 m)*3	GT37 SoftGOT3000
			GT09-C30R4-6C (3 m) GT09-C100R4-6C (10 m) GT09-C200R4-6C (20 m) GT09-C300R4-6C (30 m) or ☞ Page 589 RS-422 connection diagram (1)	1200 m	GT37-IF2000 + GT15-RS4-9S	GT37 SoftGOT3000
			☞ Page 590 RS-422 connection diagram (2)(4-wire) or ☞ Page 591 RS-422 connection diagram (3)(2-wire)	1200 m*2*4	GT37-IF2000 + GT15-RS4-9S + FA-LTBGT2R4CBL05 (0.5 m)*3 FA-LTBGT2R4CBL10 (1 m)*3 FA-LTBGT2R4CBL20 (2 m)*3	GT37 SoftGOT3000

*1 For the system configuration of the serial communication module, refer to the following manual.
Q Corresponding Serial Communication Module User's Manual (Basic)
For details on the system configuration on the modem interface module side, refer to the following manual.
Modem Interface Module User's Manual
*2 The shortest specification on the PLC side is prioritized.
*3 The terminal block converter module is manufactured by MITSUBISHI ELECTRIC ENGINEERING COMPANY LIMITED.
For details on the product, contact MITSUBISHI ELECTRIC ENGINEERING COMPANY LIMITED.
*4 The cable length of the terminal block converter module is included.

Maximum number of connected devices

The following shows the number of connectable GOTs.

Controller	
Model	**Number of connectable devices**
MELSEC-Q	Two GOTs for one serial communication module*1 One GOT for one modem interface module

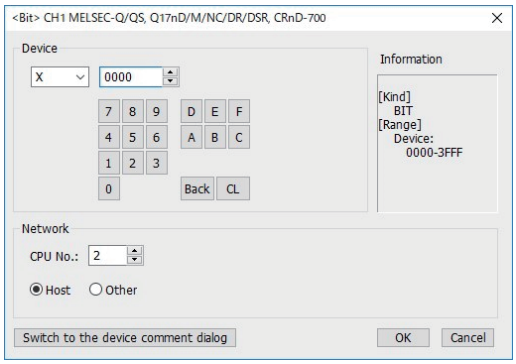
*1 Two GOTs can be connected with the function version B or later of the serial communication module.

Connection via the multiple CPU system

When the GOT is connected via the multiple CPU system, the PLC takes 10 seconds or more to run.
If you start the GOT before the PLC runs, a system alarm occurs.
Adjust the time to display the GOT startup screen to prevent a system alarm.
GT Designer3 (GOT3000) Screen Design Manual

When monitoring the Q170MCPU or Q170MSCPU(-S1)

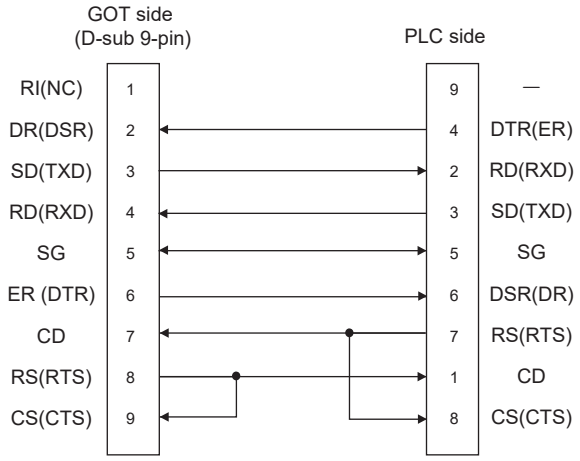
Set [CPU No.] to 2 in the device setting to monitor the device of the Motion CPU area (CPU No. 2).
When [CPU No.] is set to 0 or 1, the device on the PLC CPU area (CPU No. 1) is monitored.
When [CPU No.] is set to the number other than 0 to 2, a communication error occurs and the monitoring cannot be executed.
For the setting of [CPU No.], refer to the following.
GT Designer3 (GOT3000) Screen Design Manual



5.5.3 Connection diagram

The following diagram shows the connection between the GOT and the controller.

RS-232 connection diagram (1)



Preparation of the RS-232 cable

■Cable length

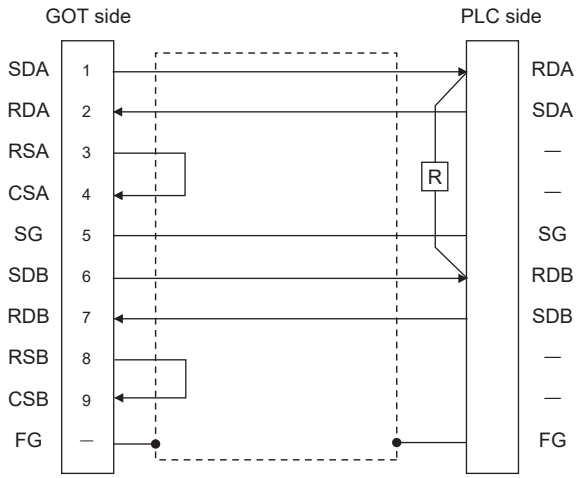
The length of the RS-232 cable must be 15 m or less.

■GOT side connector

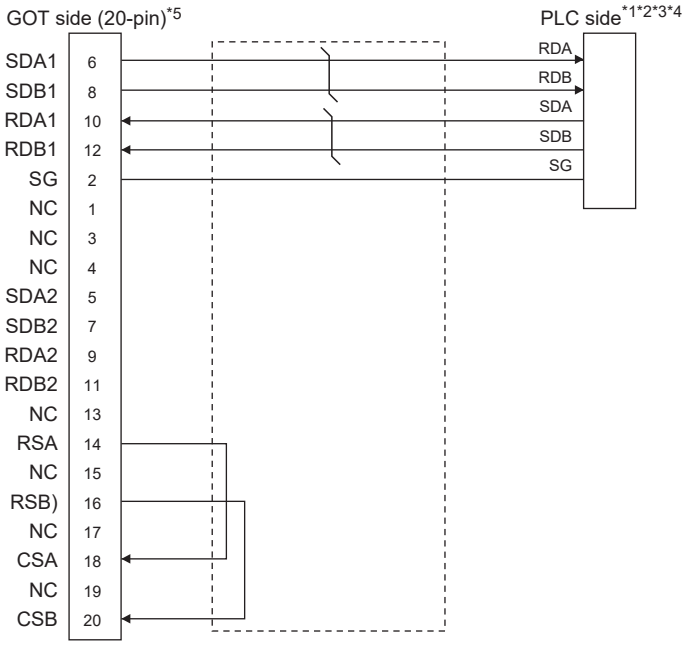
For the GOT side connector, refer to the following.

☞ Page 2954 GOT connector specifications

RS-422 connection diagram (1)



RS-422 connection diagram (2)



*1 The pin arrangement on the PLC side may differ from the arrangement shown above, for example, when the SDA/SDB and RDA/RDB pins are independent.
In this case, connect the cables and wires as described in the PLC manual.

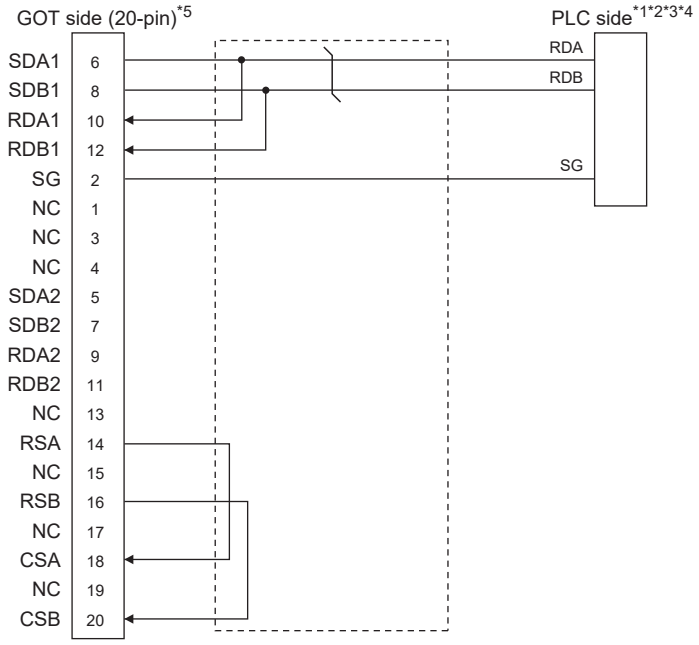
*2 Some PLCs do not have SG.
In this case, wiring between the GOT and SG is unnecessary.

*3 Some PLCs require the control line (CSA, CSB, RSA, RSB, etc.) to be controlled.
Make sure to connect the cables and wires as described in the PLC manual.

*4 For the terminating resistor of the PLC, refer to the manual of the PLC to be used.

*5 The GOT at the end requires a terminating resistor setting.
Set the terminating resistor setting switch on the GOT to 100Ω.
☞ Page 2956 Terminating resistors of GOT

RS-422 connection diagram (3)



*1 The pin arrangement on the PLC side may differ from the arrangement shown above, for example, when the SDA/SDB and RDA/RDB pins are independent.
In this case, connect the cables and wires as described in the PLC manual.

*2 Some PLCs do not have SG.
In this case, wiring between the GOT and SG is unnecessary.

*3 Some PLCs require the control line (CSA, CSB, RSA, RSB, etc.) to be controlled.
Make sure to connect the cables and wires as described in the PLC manual.

*4 For the terminating resistor of the PLC, refer to the manual of the PLC to be used.

*5 The GOT at the end requires a terminating resistor setting.
Set the terminating resistor setting switch on the GOT to 100Ω.
☞ Page 2956 Terminating resistors of GOT

Preparation of the RS-422 cable

■Cable length

The length of the RS-422 cable must be 1200 m or less.

■GOT side connector

For the GOT side connector, refer to the following.

☞ Page 2954 GOT connector specifications

Connecting terminating resistors

■GOT side

When connecting a PLC to the GOT, a terminating resistor must be connected to the GOT.

Set the terminating resistor setting switch to "Not used".

For the procedure to set the terminating resistor, refer to the following.

☞ Page 2956 Terminating resistors of GOT

■Serial communication module or computer link module side

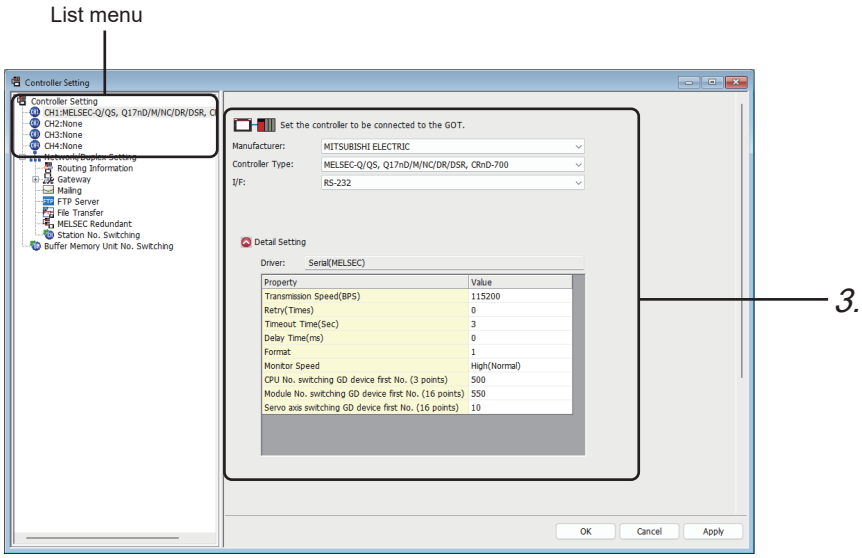
Connect a terminating resistor (330 Ω 1/4 W) to the serial communication module or computer link module side. For instructions on connecting terminating registers, refer to the following manual.

📖User's manual of the serial communication module or computer link module used

5.5.4 GOT side settings

[Controller Setting]

Set the channel of the connected controller.



Operating procedure

1. Select [Common] → [Controller Setting] from the menu.

2. In the [Controller Setting] window, select the channel number to be used from the list menu.

3. Set the following items.

Item		Description
[Manufacturer]		[MITSUBISHI ELECTRIC]
[Controller Type]		[MELSEC-Q/QS, Q17nD/M/NC/DR/DSR, CRnD-700]
[I/F]	For GOT	• [RS-232] • [RS-422/485] • [Extend Unit]
	For GT SoftGOT3000	• [Serial 1] • [Serial 2]
[Detail Setting]		Configure the settings according to the usage environment. ☞ Page 593 [Detail Setting]

4. When you have completed the settings, click the [OK] button.

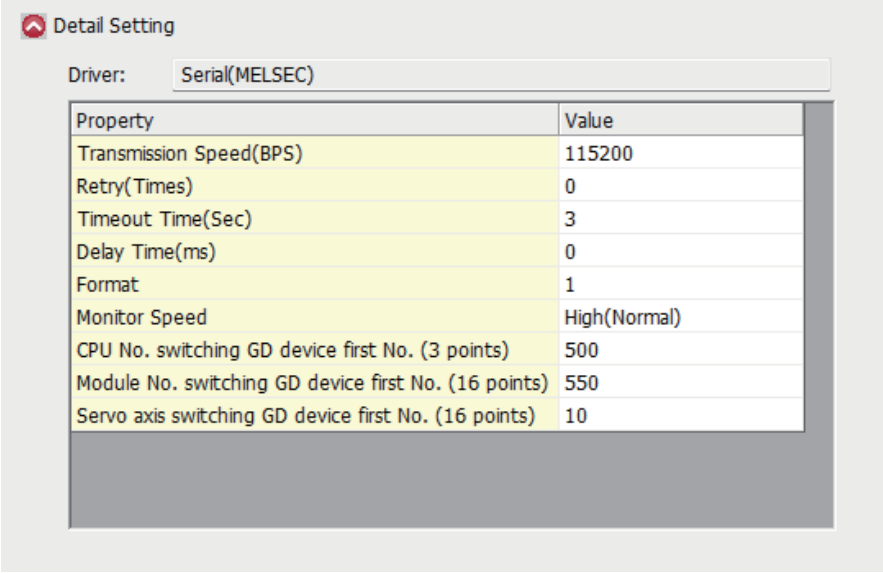
Point

The controller settings can be configured and checked in [I/F Communication Setting].
For details, refer to the following.
📖GT Designer3 (GOT3000) Screen Design Manual

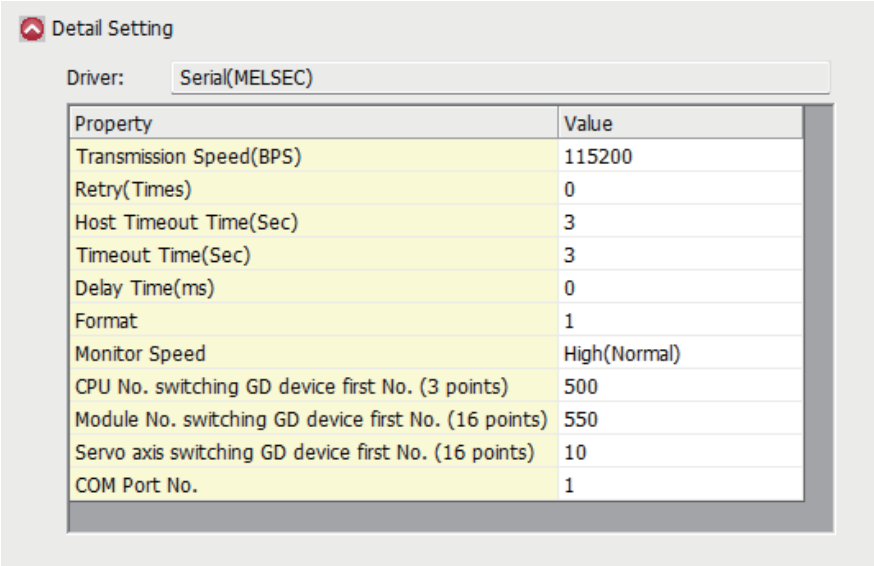
■[Detail Setting]

Configure the settings according to the usage environment.

- For GOT



- For GT SoftGOT3000



Item	Description	Range
[Driver]	This item appears when communication drivers are selectable according to the settings of [Controller Type] and [I/F].	[Serial (MELSEC)]
[Transmission Speed]	Set this item to change the transmission speed used for communication with the connected equipment.	[9600] bps, [19200] bps, [38400] bps, [57600] bps, [115200] bps
[Retry]	Specify the number of retries to be performed during communication.	GOT: [0] times to [5] times GT SoftGOT3000: [0] times to [10] times
[Host Timeout Time]*1	Set the time period until a communication timeout during monitoring of the host station.	[1] second to [90] seconds
[Timeout Time]	Specify the time period for a communication to time out.	[1] second to [30] seconds
[Delay Time]	Set this item to adjust the transmission timing of the communication request from the GOT.	[0] ms to [300] ms
[Format]*5	Set the communication format.	[1], [2]
[Monitor Speed]*4	Set the monitor speed of the GOT. This setting is not valid in all systems.	[High(Normal)]*2 [Middle] [Low]*3

Item	Description	Range
[CPU No. switching GD device first No. (3 points)]	Set the start device number of the GD devices for CPU number switching. For details, refer to the following. ☞ Page 595 Start device number of the GD devices for CPU number switching	[0] to [65520]
[Module No. switching GD device first No. (16 points)]	Set the start device number of the GD devices for module number switching. For details, refer to the following. ☞ Page 596 Start device number of the GD devices for module number switching	[0] to [65520]
[Servo axis switching GD device first No. (16 points)]	Set the start device number of the GD devices for servo axis switching. For details, refer to the following. ☞ Page 597 Start device number of the GD devices for servo axis switching	[0] to [65520]
[COM Port No.]*1	Specify the COM port number for communication.	[1] to [63]

*1 This item is displayed in GT SoftGOT3000 only.
*2 This setting is effective for collecting large data with the logging, recipe, or such function on a screen other than the monitor screen.
However, when connected to Q00UJ/Q00U/Q01U/Q02UCPU or Q00J/Q00/Q01CPU, the sequence scan time may be affected.
If you want to avoid the influence on the sequence scan time, do not set [High(Normal)].
*3 Set this range if you want to avoid the influence on the sequence scan time further than the [Middle] setting for connection to Q00UJ/Q00U/Q01U/Q02UCPU and Q00J/Q00/Q01CPU.
However, the monitor speed may be reduced.
*4 When using a global label to read or write more than 235 two-byte characters, set [Monitor speed] to [High(Normal)] or [Middle].
If [Monitor speed] is set to [Low], a system error occurs when reading or writing.
For details, refer to the following manual.
📖GT Designer3 (GOT3000) Screen Design Manual
*5 Set this item when replacing the F900 series with the GOT3000 series.

- To change the transmission speed of the serial communication module connected to the F900 to 115200 bps, configure the settings as follows.

[Intelligent function module switch setting] of PLC

Switch No.	CH1 side	CH2 side
Switch 1	0000H	-
Switch 2	0000H	-
Switch 3	-	0000H
Switch 4	-	0000H
Switch 5	0000H	0000H

GOT communication settings

Item	Setting value
Format	1

- To continue using the transmission speed of 38400 bps for the serial communication module connected to the F900, configure the settings as follows.

GOT communication settings

Item	Setting value
Format	2

Point

- Communication interface settings in the GT37 utility

The communication interface setting can be changed in [Communication setting] of the GT37 utility after writing [Controller Setting] in project data.
For details on the GT37 utility, refer to the following manual.
📖GOT3000 Series User's Manual (Utility & Maintenance Functions)

- Priority of the settings in [Controller Setting]

When settings are configured in GT Designer3 or the GT37 utility, the most recent settings are effective.

■Start device number of the GD devices for CPU number switching

• Indirect specification of a CPU number

[CPU No.] can be indirectly specified with the GOT internal registers (GD devices) by specifying a value (100 to 102) to [CPU No.] in the device setting dialog in GT Designer3.

Set the start device number of the GD devices to be used in [CPU No. switching GD device first No. (3 points)].

[CPU No.] is specified with three consecutive GD devices, starting from the set device number.

When [500] is set to [CPU No. switching GD device first No. (3 points)], GD500 to GD502 are used to specify [CPU No.] as shown in the following table.

CPU No.	GD device	Setting range
100	GD500	1 to 4 Setting a value outside the range causes a communication timeout error. Specifying a nonexistent CPU number or a CPU number not supporting a multiple CPU system with a device causes a controller error.
101	GD501	
102	GD502	

• Indirect specification of a CPU number on the initially displayed screen

Set [CPU No. switching GD device first No. (3 points)] so that the values of the GD devices are retained and monitored upon the GOT startup.

• Indirect specification of a CPU number for multi-channel connection

If the setting range of [CPU No. switching GD device first No. (3 points)] set for each channel overlaps, the monitoring target CPU number set to each channel is switched simultaneously.

Set [CPU No. switching GD device first No. (3 points)] for each channel so that the setting range does not overlap.

• Indirect specification of a station number and a CPU number for multi-channel connection

When GD10 to GD25 are used to specify the station number of an inverter or non-Mitsubishi temperature controller connected, setting [10] to [CPU No. switching GD device first No. (3 points)] in a different channel switches the monitoring target CPU number and station number of an inverter or non-Mitsubishi temperature controller set to each channel simultaneously.

Set [CPU No. switching GD device first No. (3 points)] so that the setting range does not overlap the station number of an inverter or non-Mitsubishi temperature controller.

■Start device number of the GD devices for module number switching

• Specifying a module number with a device

For connection via a Simple Motion module, [Unit No.] can be specified with the GOT internal registers (GD devices) by specifying a value (100 to 10F) to [Unit No.] in the device setting dialog in GT Designer3.

Set the start device number of the GD devices to be used in [Module No. switching GD device first No. (16 points)].

[Unit No.] is specified with 16 consecutive GD devices, starting from the set device number.

When [550] is set to [Module No. switching GD device first No. (16 points)], GD550 to GD565 are used to specify [Unit No.] as shown in the following table.

Module No.	GD device	Setting range
100	GD550	00 to FF Setting a value outside the above range causes a device range error.
101	GD551	
102	GD552	
103	GD553	
104	GD554	
105	GD555	
106	GD556	
107	GD557	
108	GD558	
109	GD559	
10A	GD560	
10B	GD561	
10C	GD562	
10D	GD563	
10E	GD564	
10F	GD565	

• Indirect specification of a module number on the initially displayed screen

Set [Module No. switching GD device first No. (16 points)] so that the values of the GD devices are retained and monitored upon the GOT startup.

• Indirect specification of a module number for multi-channel connection

If the setting range of [Module No. switching GD device first No. (16 points)] set for each channel overlaps, the module number of the Simple Motion module via the servo amplifier device of each channel is switched simultaneously.

Set [Module No. switching GD device first No. (16 points)] for each channel so that the setting range does not overlap.

• Indirect specification of a station number and a module number for multi-channel connection

When GD10 to GD25 are used to specify the station number of an inverter or non-Mitsubishi temperature controller connected, setting [10] to [Module No. switching GD device first No. (16 points)] switches the module number of the Simple Motion module via the servo amplifier device and the station number of an inverter or non-Mitsubishi temperature controller set to each channel simultaneously.

Set [Module No. switching GD device first No. (16 points)] so that the setting range does not overlap the station number of an inverter or non-Mitsubishi temperature controller.

■Start device number of the GD devices for servo axis switching

• Indirect specification of a servo axis number

For connection via a Motion CPU or Simple Motion module, a servo axis number can be indirectly specified with GOT internal registers (GD devices) by specifying a value (100 to 115) to the axis number of the servo amplifier device.

Set the start device number of the GD devices to be used in [Servo axis switching GD device first No. (16 points)].

Specify a servo axis number with 16 consecutive GD devices, starting the set device number.

When [10] is set to [Servo axis switching GD device first No. (16 points)], GD10 to GD25 are used to specify a servo axis number as shown in the following table.

Servo axis No.	GD device	Setting range
100	GD10	1 to 64 Setting a value outside the above range causes a device range error.
101	GD11	
102	GD12	
103	GD13	
104	GD14	
105	GD15	
106	GD16	
107	GD17	
108	GD18	
109	GD19	
110	GD20	
111	GD21	
112	GD22	
113	GD23	
114	GD24	
115	GD25	

• Indirect specification of a servo axis number on the initially displayed screen

Set [Servo axis switching GD device first No. (16 points)] so that the values of the GD devices are retained and monitored upon the GOT startup.

• Indirect specification of a servo axis number for multi-channel connection

If the setting rage of [Servo axis switching GD device first No. (16 points)] set for each channel overlaps, the axis number of the servo amplifier of each channel is switched simultaneously.

Set [Servo axis switching GD device first No. (16 points)] for each channel so that the setting range does not overlap.

• Indirect specification of a station number and a servo axis number for multi-channel connection

When GD10 to GD25 are used to specify the station number of an inverter or non-Mitsubishi temperature controller connected, setting [10] to [Servo axis switching GD device first No. (16 points)] switches the axis number of the servo amplifier and the station number of an inverter or non-Mitsubishi temperature controller set to each channel simultaneously.

Set [Servo axis switching GD device first No. (16 points)] so that the setting range does not overlap the station number of an inverter or non-Mitsubishi temperature controller.

Point

By setting the GOT internal device, the GOT can disconnect specific parts from the controller's multiple connections.

For example, a faulty station that has a communication timeout can be disconnected from the system.

For details on the setting contents of the GOT internal device, refer to the following manual.

GT Designer3 (GOT3000) Screen Design Manual

5.5.5 PLC side settings

Model		Refer to
MELSEC-Q (Q mode)	Q00JCPU Q00CPU Q01CPU Q02CPU Q02HCPU Q06HCPU Q12HCPU Q25HCPU Q02PHCPU Q06PHCPU Q12PHCPU Q25PHCPU Q12PRHCPU (remote extension base) Q25PRHCPU (remote extension base) Q12PRHCPU (extension base) Q25PRHCPU (extension base) Q00UJCPU Q00UJCPU-S8 Q00UCPU Q01UCPU Q02UCPU Q03UDCPU Q04UDHCPU Q06UDHCPU Q10UDHCPU Q13UDHCPU Q20UDHCPU Q26UDHCPU Q03UDECPU Q04UDEHCPU Q06UDEHCPU Q10UDEHCPU Q13UDEHCPU Q20UDEHCPU Q26UDEHCPU Q50UDEHCPU Q100UDEHCPU Q03UDVCPU Q04UDVCPU Q06UDVCPU Q13UDVCPU Q26UDVCPU	☞ Page 600 Connecting to MELSEC-Q series
C Controller module (Q series)	Q12DCCPU-V Q24DHCCPU-V/VG Q24DHCCPU-LS Q26DHCCPU-LS	☞ Page 600 Connecting to MELSEC-Q series
MELSEC-Q (A mode)	Q02CPU-A Q02HCPU-A Q06HCPU-A	☞ Page 600 Connecting to MELSEC-Q series
Motion CPU (Q series)	Q172CPU Q173CPU Q172CPUN Q173CPUN Q172HCPU Q173HCPU Q172DCPU Q173DCPU Q172DCPU-S1 Q173DCPU-S1 Q172DSCPU Q173DSCPU Q170MCPU Q170MSCPU Q170MSCPU-S1 MR-MQ100	☞ Page 600 Connecting to MELSEC-Q series

Model		Refer to
MELSECNET/H remote I/O station	QJ72LP25-25 QJ72LP25G QJ72BR15	☞ Page 600 Connecting to MELSEC-Q series
CNC C70	Q173NCCPU	☞ Page 600 Connecting to MELSEC-Q series
Robot controller (Q series)	CRnQ-700(Q172DRCPU) CR750-Q (Q172DRCPU) CR751-Q (Q172DRCPU) CR800-Q (Q172DSRCPU)	☞ Page 600 Connecting to MELSEC-Q series

The GOT operates under the following transmission specifications when it is connected to a Mitsubishi Electric PLC in the computer link connection.

Transmission specifications	Setting
Data bit	8 bits
Parity bit	Yes (Odd)
Stop bit	1 bit
Sum check	Yes
Transmission speed (Baud rate)	Set the same transmission speed on both the GOT and the PLC.

Connecting to MELSEC-Q series

Point

- Serial communication module (MELSEC-Q series)

For details on the serial communication module (MELSEC-Q series), refer to the following manual.

Q Corresponding Serial Communication Module User's Manual (Basic)

- Modem interface module

For details on the modem interface module, refer to the following manual.

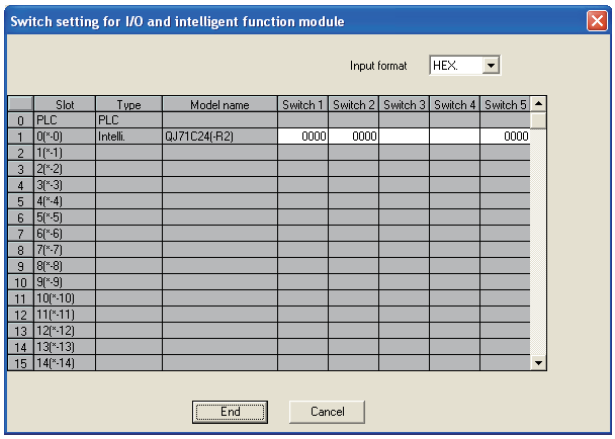
Modem Interface Module User's Manual

■[Intelligent function module switch setting] in GX Developer

[Intelligent function module switch setting] in GX Developer is not necessary. (When [Intelligent function module switch setting] is not configured, the module runs in GX Developer connection mode.)

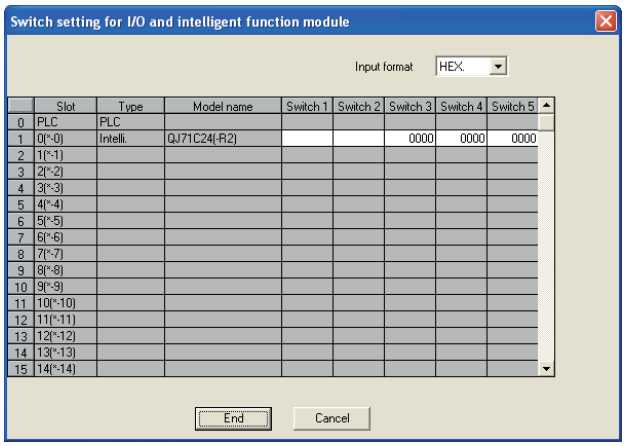
A module can be also connected to the GOT by configuring [Intelligent function module switch setting] in GX Developer as shown below.

- When connecting to the CH1 side



Switch No.	Bit		Description			Setting value*3
	Position	Specified value				
Switch 1	b0	OFF	CH1 transmission settings*1	Operation setting	(Operates according to the GOT side specifications.)	0000H
	b1	OFF		Data bit		
	b2	OFF		Parity bit		
	b3	OFF		Even/odd parity		
	b4	OFF		Stop bit		
	b5	OFF		Sum check code		
	b6	OFF		Write during RUN		
	b7	OFF		Setting modifications		
	b8 to b15	—	CH1 transmission speed setting*2			
Switch 2	—		CH1 Communication protocol setting		GX Developer connection	0000H
Switch 5	—		Station number setting		0th station	0000H

• When connecting to the CH2 side



Switch No.	Bit		Description			Setting value*3
	Position	Specified value				
Switch 3	b0	OFF	CH2 transmission settings*1	Operation setting	(Operates according to the GOT side specifications.)	0000H
	b1	OFF		Data bit		
	b2	OFF		Parity bit		
	b3	OFF		Even/odd parity		
	b4	OFF		Stop bit		
	b5	OFF		Sum check code		
	b6	OFF		Write during RUN		
	b7	OFF		Setting modifications		
	b8 to b15	—	CH2 transmission speed setting*2			
Switch 4	—		CH2 Communication protocol setting		GX Developer connection	0000H
Switch 5	—		Station number setting		0th station	0000H

*1 The module operates under the following transmission specifications.

Transmission specifications	Setting details
Operation setting	Independent
Data bit	8 bits
Parity bit	Yes
Even/odd parity	Odd
Stop bit	1 bit
Sum check code	Yes

*2 The serial communication module operates at the transmission speed set on the GOT.

*3 When the value of switch setting is other than [0], the setting of [Format] and [Transmission Speed] on the GOT side are required to be changed.

☞ Page 593 [Detail Setting]

Point

• When [Intelligent function module switch setting] is configured

After writing PLC parameters to the PLC CPU, turn off then on or reset the PLC CPU.

• Connection of multiple GOTs

To some serial communication module models, two GOTs can be connected using both CH1 and CH2.

Model	Connection of 2 GOTs	
	Function version A	Function version B
QJ71C24(-R2)	△	○
QJ71C24N(-R2/R4)	-	○

○: 2 GOTs connectable, △: 1 GOT connectable, -: Not applicable

• When connecting to the modem interface module

When the modem interface module is connected, only CH2 can be used.

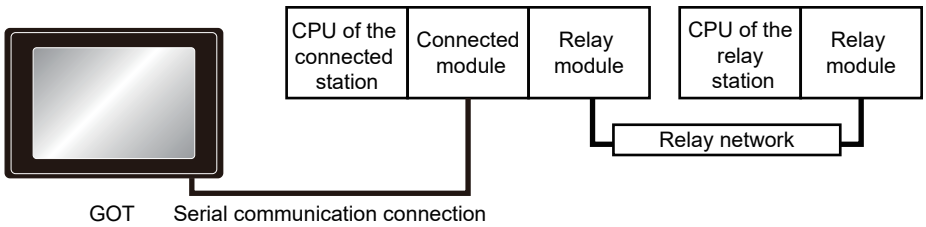
5.5.6 Access range for monitoring

When the GOT is connected to the CPU of the station connected by serial communication connection, the range accessible via the CPU is as follows.

Point

- When monitoring other networks (Routing parameter settings)

To monitor other networks, routing parameter settings are necessary.
For the routing parameter settings, refer to the reference manual of the network connected.



○: Accessible, —: Inaccessible

CPU of the connected station	Connected module	Relay station								
		Relay network	CPU of the relay station							
			RCPU	LCPU	QCPU (Q mode)	QSCPU	QCPU (A mode)	QnACPU	ACPU	FX5CPU
QCPU*1	☞ Page 584 Connectable devices	Ethernet	—	○	○*3	○	—	○	—	—
		CC-Link IE Controller Network	—	—	○	○	—	—	—	—
		CC-Link IE Field Network	—	○	○*1	○	—	—	—	—
		MELSECNET/H, MELSECNET/10	—	—	○	○	○	○	○*2	—
C Controller module (MELSEC-Q series)	☞ Page 584 Connectable devices	CC-Link IE Controller Network	—	—	○	○	—	—	—	—
		CC-Link IE Field Network	—	○	○*1	○	—	—	—	—
		MELSECNET/H, MELSECNET/10	—	—	○	○	○	○	○*2	—
QJ72LP25-25 QJ72LP25G	☞ Page 584 Connectable devices	MELSECNET/H, MELSECNET/10	—	—	○	—	—	—	—	—

*1 QnUDVCPU, QnUDECPU, QnUDEHCPU, QnUCPU, QnUDCPU, and QnUDHCPU are supported.
*2 AnUCPU and AnUSCPU are supported.
*3 The C Controller module (MELSEC-Q series) is not supported.

5.6 MELSEC-L series (Built-in serial port connection)

☞ Page 604 Connectable devices
☞ Page 605 System configuration
☞ Page 607 Connection diagram
☞ Page 609 GOT side settings
☞ Page 615 PLC side settings
☞ Page 617 Access range for monitoring

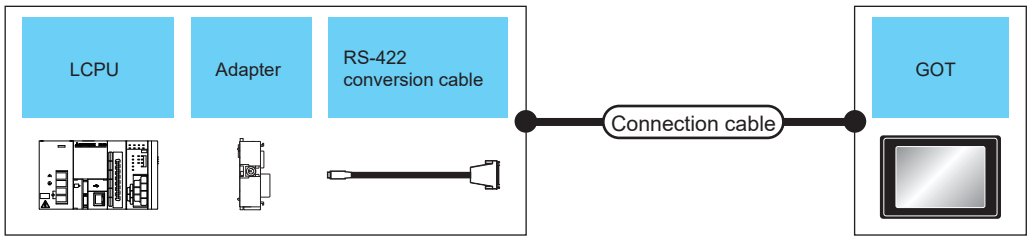
5.6.1 Connectable devices

○: Supported, —: Not supported

Controller	Model	Clock	Connectable model
MELSEC-L	L02CPU*1 L06CPU*1 L26CPU*1 L26CPU-BT*1 L02CPU-P*1 L06CPU-P*1 L26CPU-P*1 L26CPU-PBT*1 L02SCPU L02SCPU-P	○	GT37 SoftGOT3000

*1 The adapter L6ADP-R2 or L6ADP-R4 is required for the built-in serial port connection.
When using L6ADP-R4, use an LCPU whose upper five digits are "15102" or later.

5.6.2 System configuration



For details on the maximum number of connected devices, refer to the following.

☞ Page 606 Maximum number of connected devices

PLC				Connection cable		GOT	
Controller	**Adapter**	**RS-422 connector conversion cable**	**Communication type**	**Cable model**	**Maximum length**	**Interface**	**Model**
L02CPU L06CPU L26CPU L26CPU-BT L02CPU-P L06CPU-P L26CPU-P L26CPU-PBT	L6ADP-R2	—	RS-232	GT01-C30R2-6P (3 m) + GT35-C02HR2-9P	3 m	Built-in RS-232 interface	GT37 SoftGOT3000
				GT01-C30R2-6P (3 m)		GT37-IF2000 + GT15-RS2-9P	GT37 SoftGOT3000
L02CPU L06CPU L26CPU L26CPU-BT L02CPU-P L06CPU-P L26CPU-P L26CPU-PBT	L6ADP-R4	—	RS-422	☞ Page 607 RS-422 connection diagram (1)	1200 m	Built-in RS-422 interface	GT37 SoftGOT3000
				☞ Page 607 RS-422 connection diagram (2)(4-wire) or ☞ Page 608 RS-422 connection diagram (3)(2-wire)	1200 m*1*3	Built-in RS-422 interface + FA-LTBGT2R4CBL05 (0.5 m)*2 FA-LTBGT2R4CBL10 (1 m)*2 FA-LTBGT2R4CBL20 (2 m)*2	GT37 SoftGOT3000
				☞ Page 607 RS-422 connection diagram (1)	1200 m	GT37-IF2000 + GT15-RS4-9S	GT37 SoftGOT3000
				☞ Page 607 RS-422 connection diagram (2)(4-wire) or ☞ Page 608 RS-422 connection diagram (3)(2-wire)	1200 m*1*3	GT37-IF2000 + GT15-RS4-9S + FA-LTBGT2R4CBL05 (0.5 m)*2 FA-LTBGT2R4CBL10 (1 m)*2 FA-LTBGT2R4CBL20 (2 m)*2	GT37 SoftGOT3000

PLC				Connection cable		GOT	
Controller	Adapter	RS-422 connector conversion cable	Communication type	Cable model	Maximum length	Interface	Model
L02SCPU L02SCPU-P	—	—	RS-232	GT01-C30R2-6P (3 m) + GT35-C02HR2-9P	3 m	Built-in RS-232 interface	GT37 SoftGOT3000
				GT01-C30R2-6P (3 m)		GT37-IF2000 + GT15-RS4-9S	GT37 SoftGOT3000
	—	FA-CNV2402CBL (0.2 m)*2 FA-CNV2405CBL (0.5 m)*2	RS-422	GT01-C30R4-25P (3 m) GT01-C100R4-25P (10 m) GT01-C200R4-25P (20 m) GT01-C300R4-25P (30 m)	30 m	Built-in RS-422 interface	GT37 SoftGOT3000
						GT37-IF2000 + GT15-RS4-9S	GT37 SoftGOT3000

*1 The shortest specification on the PLC side is prioritized.
*2 Product manufactured by MITSUBISHI ELECTRIC ENGINEERING COMPANY LIMITED.
For details on the product, contact MITSUBISHI ELECTRIC ENGINEERING COMPANY LIMITED.
*3 The cable length of the terminal block converter module is included.

Maximum number of connected devices

The following shows the number of connectable GOTs.

Controller	
Model	Number of connectable devices
MELSEC-L	One GOT for one PLC

GOT startup for connection to LCPU

■When a system alarm occurs at GOT startup

LCPU may diagnose the SD card (file system check, recovery processing, etc.) when the LCPU is turned off then on or reset.
Therefore, it takes time until the SD card becomes available.
If the GOT is started during this time, a system alarm occurs.
Adjust the time to display the GOT startup screen to prevent a system alarm.
📖GT Designer3 (GOT3000) Screen Design Manual

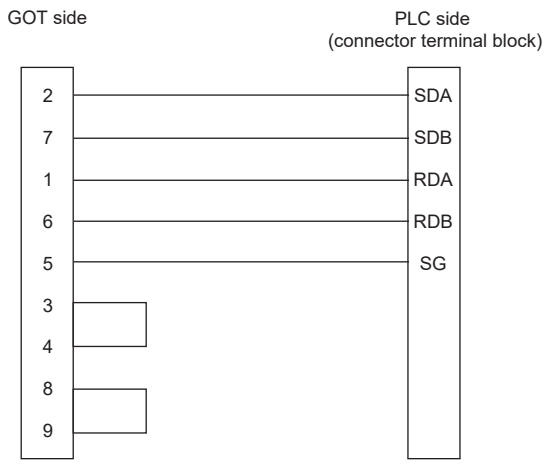
■When the module is L02SCPU or L02SCPU-P

Do not set the serial communication function of L02SCPU or L02SCPU-P.
If it is set, communications may be unavailable.

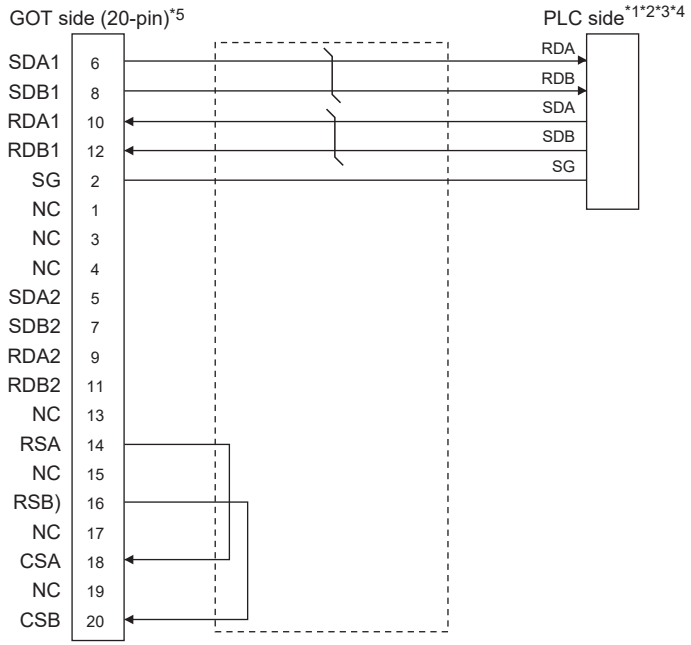
5.6.3 Connection diagram

The following diagram shows the connection between the GOT and the controller.

RS-422 connection diagram (1)



RS-422 connection diagram (2)



*1 The pin arrangement on the PLC side may differ from the arrangement shown above, for example, when the SDA/SDB and RDA/RDB pins are independent.
In this case, connect the cables and wires as described in the PLC manual.

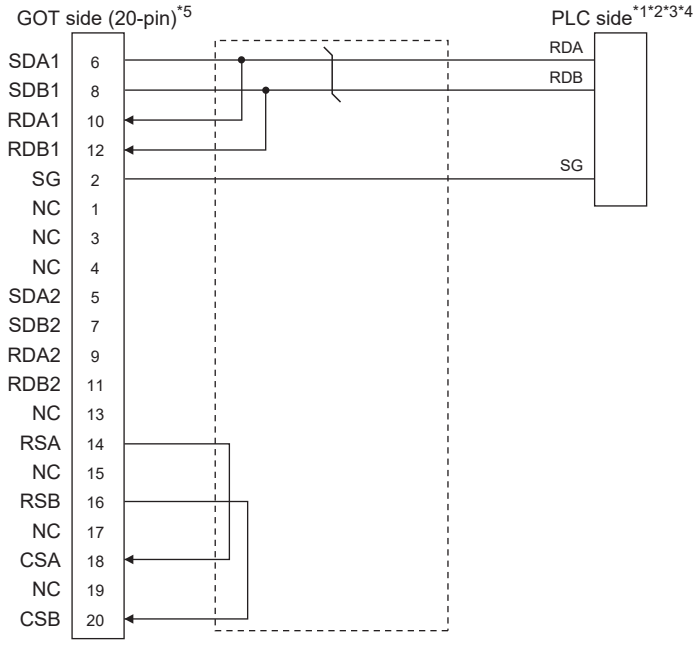
*2 Some PLCs do not have SG.
In this case, wiring between the GOT and SG is unnecessary.

*3 Some PLCs require the control line (CSA, CSB, RSA, RSB, etc.) to be controlled.
Make sure to connect the cables and wires as described in the PLC manual.

*4 For the terminating resistor of the PLC, refer to the manual of the PLC to be used.

*5 The GOT at the end requires a terminating resistor setting.
Set the terminating resistor setting switch on the GOT to 100Ω.
☞ Page 2956 Terminating resistors of GOT

RS-422 connection diagram (3)



*1 The pin arrangement on the PLC side may differ from the arrangement shown above, for example, when the SDA/SDB and RDA/RDB pins are independent.
In this case, connect the cables and wires as described in the PLC manual.

*2 Some PLCs do not have SG.
In this case, wiring between the GOT and SG is unnecessary.

*3 Some PLCs require the control line (CSA, CSB, RSA, RSB, etc.) to be controlled.
Make sure to connect the cables and wires as described in the PLC manual.

*4 For the terminating resistor of the PLC, refer to the manual of the PLC to be used.

*5 The GOT at the end requires a terminating resistor setting.
Set the terminating resistor setting switch on the GOT to 100Ω.
☞ Page 2956 Terminating resistors of GOT

Preparation of the RS-422 cable

■Cable length

The length of the RS-422 cable must be 1200 m or less.

■GOT side connector

For the GOT side connector, refer to the following.

☞ Page 2954 GOT connector specifications

Connecting terminating resistors

■GOT side

When connecting a PLC to the GOT, a terminating resistor must be connected to the GOT.

Set the terminating resistor setting switch to "Not used".

For the procedure to set the terminating resistor, refer to the following.

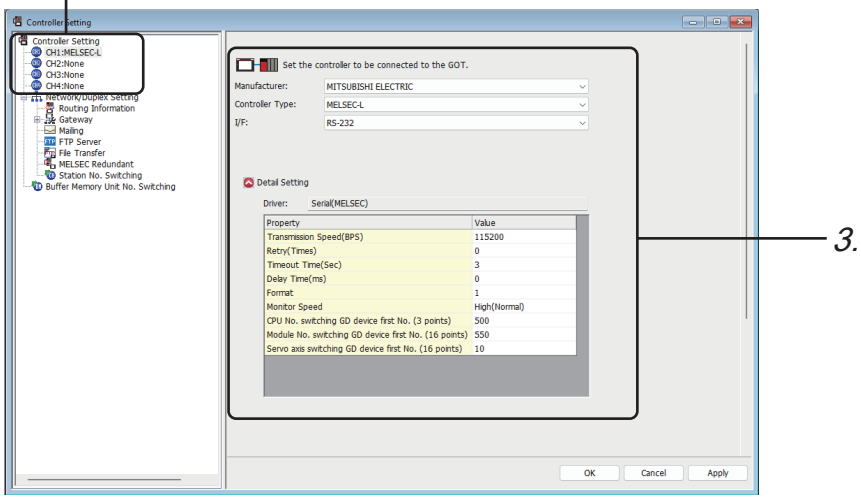
☞ Page 2956 Terminating resistors of GOT

5.6.4 GOT side settings

[Controller Setting]

Set the channel of the connected controller.

List menu



Operating procedure

1. Select [Common] → [Controller Setting] from the menu.

2. In the [Controller Setting] window, select the channel number to be used from the list menu.

3. Set the following items.

Item		Description
[Manufacturer]		[MITSUBISHI ELECTRIC]
[Controller Type]		[MELSEC-L]
[I/F]	For GOT	• [RS-232] • [RS-422/485] • [Extend Unit]
	For GT SoftGOT3000	• [Serial 1] • [Serial 2]
[Detail Setting]		Configure the settings according to the usage environment. ☞ Page 610 [Detail Setting]

4. When you have completed the settings, click the [OK] button.

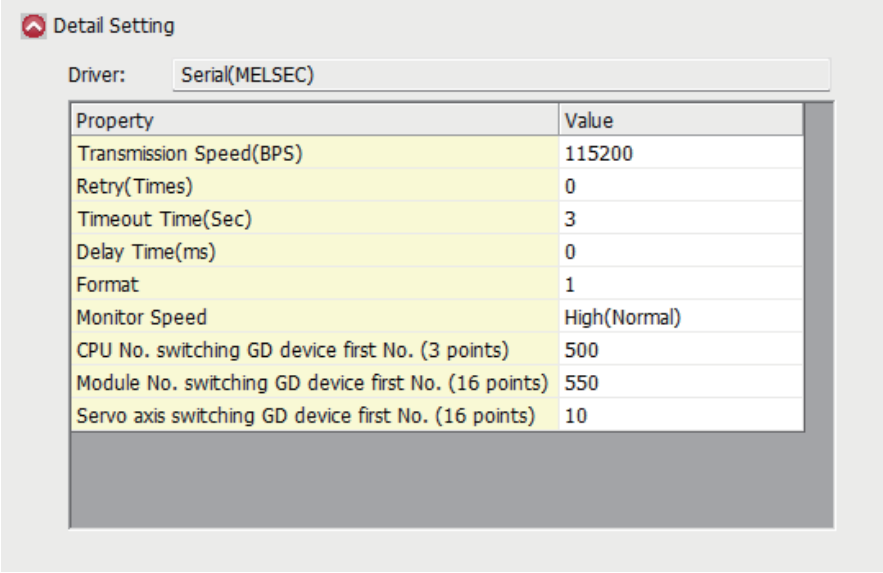
Point

The controller settings can be configured and checked in [I/F Communication Setting].
For details, refer to the following.
📖GT Designer3 (GOT3000) Screen Design Manual

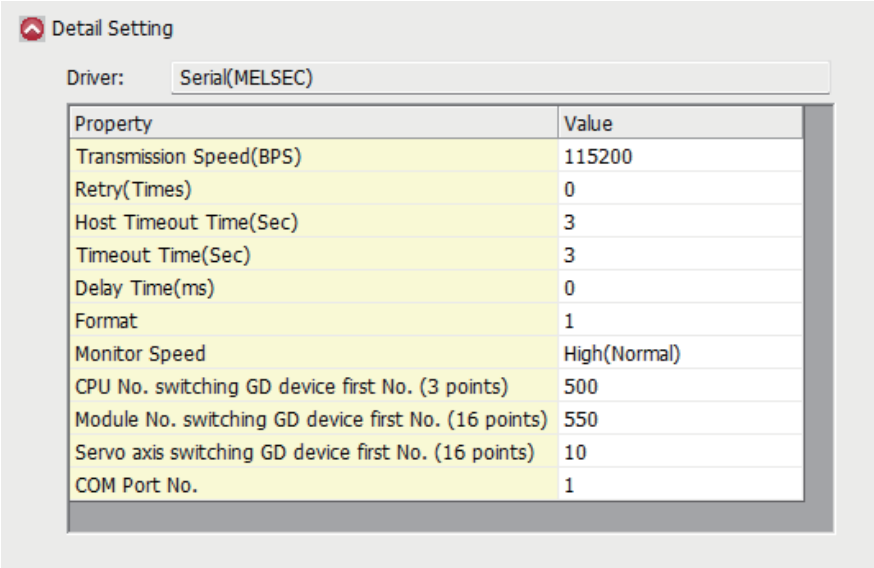
■[Detail Setting]

Configure the settings according to the usage environment.

- For GOT



- For GT SoftGOT3000



Item	Description	Range
[Driver]	This item appears when communication drivers are selectable according to the settings of [Controller Type] and [I/F].	[Serial (MELSEC)]
[Transmission Speed]	Set this item to change the transmission speed used for communication with the connected equipment.	[9600] bps, [19200] bps, [38400] bps, [57600] bps, [115200] bps
[Retry]	Specify the number of retries to be performed during communication.	GOT: [0] times to [5] times GT SoftGOT3000: [0] times to [10] times
[Host Timeout Time]*1	Set the time period until a communication timeout during monitoring of the host station.	[1] second to [90] seconds
[Timeout Time]	Specify the time period for a communication to time out.	[1] second to [30] seconds
[Delay Time]	Set this item to adjust the transmission timing of the communication request from the GOT.	[0] ms to [300] ms
[Format]*3	Set the communication format.	[1], [2]
[Monitor Speed]*4	Set the monitor speed of the GOT. This setting is not valid in all systems.	[High(Normal)]*2 [Middle] [Low]

Item	Description	Range
[CPU No. switching GD device first No. (3 points)]	Set the start device number of the GD devices for CPU number switching. For details, refer to the following. ☞ Page 612 Start device number of the GD devices for CPU number switching	[0] to [65520]
[Module No. switching GD device first No. (16 points)]	Set the start device number of the GD devices for module number switching. For details, refer to the following. ☞ Page 613 Start device number of the GD devices for module number switching	[0] to [65520]
[Servo axis switching GD device first No. (16 points)]	Set the start device number of the GD devices for servo axis switching. For details, refer to the following. ☞ Page 614 Start device number of the GD devices for servo axis switching	[0] to [65520]
[COM Port No.]*1	Specify the COM port number for communication.	[1] to [63]

*1 This item is displayed in GT SoftGOT3000 only.
*2 This setting is effective for collecting large data with the logging, recipe, or such function on a screen other than the monitor screen.
*3 The format setting differs depending on the controller.
L6ADP-R4 adapter: [2]
Other than L6ADP-R4 adapter: [1]
*4 When using a global label to read or write more than 235 two-byte characters, set [Monitor speed] to [High(Normal)] or [Middle].
If [Monitor speed] is set to [Low], a system error occurs when reading or writing.
For details, refer to the following manual.
📖GT Designer3 (GOT3000) Screen Design Manual

Point

• Communication interface settings in the GT37 utility
The communication interface setting can be changed in [Communication setting] of the GT37 utility after writing [Controller Setting] in project data.
For details on the GT37 utility, refer to the following manual.
📖GOT3000 Series User's Manual (Utility & Maintenance Functions)
• Priority of the settings in [Controller Setting]
When settings are configured in GT Designer3 or the GT37 utility, the most recent settings are effective.

■Start device number of the GD devices for CPU number switching

• Indirect specification of a CPU number

[CPU No.] can be indirectly specified with the GOT internal registers (GD devices) by specifying a value (100 to 102) to [CPU No.] in the device setting dialog in GT Designer3.

Set the start device number of the GD devices to be used in [CPU No. switching GD device first No. (3 points)].

[CPU No.] is specified with three consecutive GD devices, starting from the set device number.

When [500] is set to [CPU No. switching GD device first No. (3 points)], GD500 to GD502 are used to specify [CPU No.] as shown in the following table.

CPU No.	GD device	Setting range
100	GD500	1 to 4 Setting a value outside the range causes a communication timeout error. Specifying a nonexistent CPU number or a CPU number not supporting a multiple CPU system with a device causes a controller error.
101	GD501	
102	GD502	

• Indirect specification of a CPU number on the initially displayed screen

Set [CPU No. switching GD device first No. (3 points)] so that the values of the GD devices are retained and monitored upon the GOT startup.

• Indirect specification of a CPU number for multi-channel connection

If the setting range of [CPU No. switching GD device first No. (3 points)] set for each channel overlaps, the monitoring target CPU number set to each channel is switched simultaneously.

Set [CPU No. switching GD device first No. (3 points)] for each channel so that the setting range does not overlap.

• Indirect specification of a station number and a CPU number for multi-channel connection

When GD10 to GD25 are used to specify the station number of an inverter or non-Mitsubishi temperature controller connected, setting [10] to [CPU No. switching GD device first No. (3 points)] in a different channel switches the monitoring target CPU number and station number of an inverter or non-Mitsubishi temperature controller set to each channel simultaneously.

Set [CPU No. switching GD device first No. (3 points)] so that the setting range does not overlap the station number of an inverter or non-Mitsubishi temperature controller.

■Start device number of the GD devices for module number switching

• Specifying a module number with a device

For connection via a Simple Motion module, [Unit No.] can be specified with the GOT internal registers (GD devices) by specifying a value (100 to 10F) to [Unit No.] in the device setting dialog in GT Designer3.

Set the start device number of the GD devices to be used in [Module No. switching GD device first No. (16 points)].

[Unit No.] is specified with 16 consecutive GD devices, starting from the set device number.

When [550] is set to [Module No. switching GD device first No. (16 points)], GD550 to GD565 are used to specify [Unit No.] as shown in the following table.

Module No.	GD device	Setting range
100	GD550	00 to FF Setting a value outside the above range causes a device range error.
101	GD551	
102	GD552	
103	GD553	
104	GD554	
105	GD555	
106	GD556	
107	GD557	
108	GD558	
109	GD559	
10A	GD560	
10B	GD561	
10C	GD562	
10D	GD563	
10E	GD564	
10F	GD565	

• Indirect specification of a module number on the initially displayed screen

Set [Module No. switching GD device first No. (16 points)] so that the values of the GD devices are retained and monitored upon the GOT startup.

• Indirect specification of a module number for multi-channel connection

If the setting range of [Module No. switching GD device first No. (16 points)] set for each channel overlaps, the module number of the Simple Motion module via the servo amplifier device of each channel is switched simultaneously.

Set [Module No. switching GD device first No. (16 points)] for each channel so that the setting range does not overlap.

• Indirect specification of a station number and a module number for multi-channel connection

When GD10 to GD25 are used to specify the station number of an inverter or non-Mitsubishi temperature controller connected, setting [10] to [Module No. switching GD device first No. (16 points)] switches the module number of the Simple Motion module via the servo amplifier device and the station number of an inverter or non-Mitsubishi temperature controller set to each channel simultaneously.

Set [Module No. switching GD device first No. (16 points)] so that the setting range does not overlap the station number of an inverter or non-Mitsubishi temperature controller.

■Start device number of the GD devices for servo axis switching

• Indirect specification of a servo axis number

For connection via a Motion CPU or Simple Motion module, a servo axis number can be indirectly specified with GOT internal registers (GD devices) by specifying a value (100 to 115) to the axis number of the servo amplifier device.

Set the start device number of the GD devices to be used in [Servo axis switching GD device first No. (16 points)].

Specify a servo axis number with 16 consecutive GD devices, starting the set device number.

When [10] is set to [Servo axis switching GD device first No. (16 points)], GD10 to GD25 are used to specify a servo axis number as shown in the following table.

Servo axis No.	GD device	Setting range
100	GD10	1 to 64 Setting a value outside the above range causes a device range error.
101	GD11	
102	GD12	
103	GD13	
104	GD14	
105	GD15	
106	GD16	
107	GD17	
108	GD18	
109	GD19	
110	GD20	
111	GD21	
112	GD22	
113	GD23	
114	GD24	
115	GD25	

• Indirect specification of a servo axis number on the initially displayed screen

Set [Servo axis switching GD device first No. (16 points)] so that the values of the GD devices are retained and monitored upon the GOT startup.

• Indirect specification of a servo axis number for multi-channel connection

If the setting rage of [Servo axis switching GD device first No. (16 points)] set for each channel overlaps, the axis number of the servo amplifier of each channel is switched simultaneously.

Set [Servo axis switching GD device first No. (16 points)] for each channel so that the setting range does not overlap.

• Indirect specification of a station number and a servo axis number for multi-channel connection

When GD10 to GD25 are used to specify the station number of an inverter or non-Mitsubishi temperature controller connected, setting [10] to [Servo axis switching GD device first No. (16 points)] switches the axis number of the servo amplifier and the station number of an inverter or non-Mitsubishi temperature controller set to each channel simultaneously.

Set [Servo axis switching GD device first No. (16 points)] so that the setting range does not overlap the station number of an inverter or non-Mitsubishi temperature controller.

Point

By setting the GOT internal device, the GOT can disconnect specific parts from the controller's multiple connections.

For example, a faulty station that has a communication timeout can be disconnected from the system.

For details on the setting contents of the GOT internal device, refer to the following manual.

📖GT Designer3 (GOT3000) Screen Design Manual

5.6.5 PLC side settings

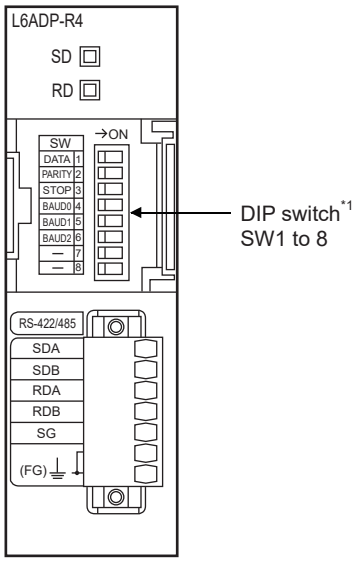
No setting is required on the controller.

When a GOT and an LCPU are connected via an L6ADP-R4/L6ADP-R2 adapter, set the following communication setting.

For L6ADP-R2 adopter, only the communication setting of GX Works2 is performed.

L6ADP-R4 adapter settings

Set the communication settings using the DIP switches of the L6ADP-R4 adapter.



*1 SW7 and SW8 are not used.

■DIP switches (SW1 to SW3)

Set the data length, parity bit, and stop bit.

Setting switch	Description	Setting value	
SW1	Data length*1	OFF	7bit
		ON	8bit
SW2	Parity*1	OFF	Disable
		ON	Enable
SW3	Stop bit*1	OFF	1bit
		ON	2bit

*1 Adjust the settings with GOT settings.
☞ Page 610 [Detail Setting]

■DIP switches (SW4 to SW6)

Set the transmission speed.

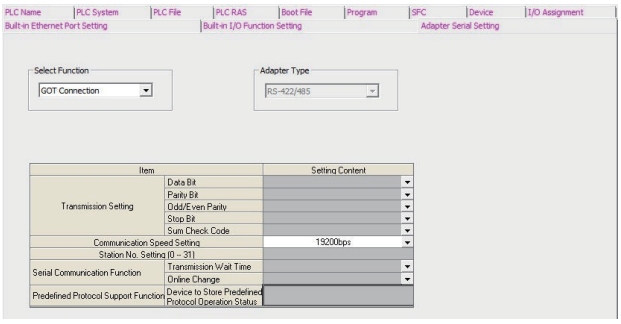
Setting switch	Transmission speed*1				
	9600 bps	19200 bps	38400 bps	57600 bps	115200 bps
SW4	ON	OFF	ON	OFF	ON
SW5	ON	OFF	OFF	ON	ON
SW6	OFF	ON	ON	ON	ON

*1 Adjust the settings with GOT settings.
☞ Page 610 [Detail Setting]

GX Works2 settings

Set the communication speed in GX Works2.

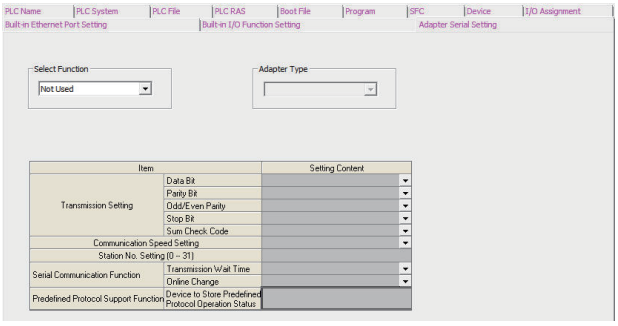
■For L6ADP-R4 adapter



1. Click [PLC parameter] → [Adapter Serial Setting].
2. Set [GOT Connection] in [Select Function].
3. Adjust [Communication Speed Setting] with the GOT communication setting.

☞ Page 610 [Detail Setting]

■For L6ADP-R2 adapter



1. Click [PLC parameter] → [Adapter Serial Setting].
2. Check that [Not Used] (default) is set in [Select Function].

Point

L6ADP-R4/L6ADP-R2 adapter

For details on the L6ADP-R4/L6ADP-R2 adapter, refer to the following manual.

📖MELSEC-L CPU Module User's Manual (Hardware Design, Maintenance and Inspection)

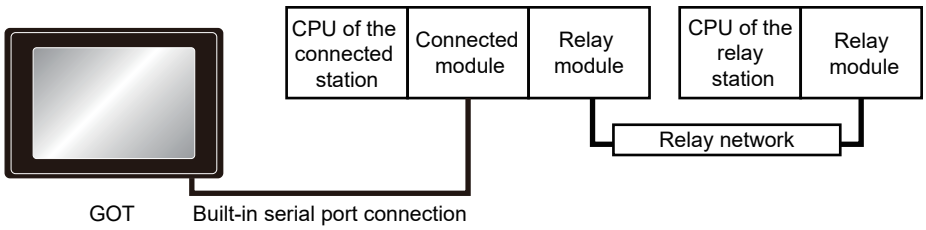
5.6.6 Access range for monitoring

When the GOT is connected to the CPU of the station connected by built-in serial port connection, the range accessible via the CPU is as follows.

Point

- When monitoring other networks (Routing parameter settings)

To monitor other networks, routing parameter settings are necessary.
For the routing parameter settings, refer to the reference manual of the network connected.



○: Accessible, —: Inaccessible

CPU of the connected station	Relay station								
	Relay network	CPU of the relay station							
		RCPU	LCPU	QCPU (Q mode)	QSCPU	QCPU (A mode)	QnACPU	ACPU	FX5CPU
LCPU	Ethernet	—	○	○*2	○	—	○	—	—
	CC-Link IE Field Network	—	○	○*1	○	—	—	—	—

*1 QnUDVCPU, QnUDECPU, QnUDEHCPU, QnUCPU, QnUDCPU, and QnUDHCPU are supported.
*2 The C Controller module (MELSEC-Q series) is not supported.

5.7 MELSEC-L series (serial communication connection)

☞ Page 618 Connectable devices
☞ Page 619 System configuration
☞ Page 621 Connection diagram
☞ Page 624 GOT side settings
☞ Page 630 PLC side settings
☞ Page 633 Access range for monitoring

5.7.1 Connectable devices

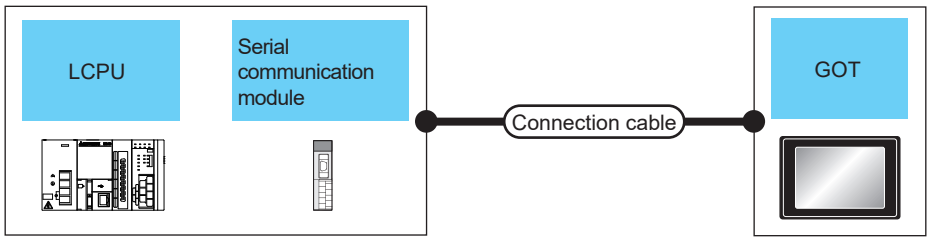
The following table shows the connectable models.

○: Supported, —: Not supported

Controller	Model	Clock	Serial communication module*1	Connectable model
MELSEC-L	L02CPU L06CPU L26CPU L26CPU-BT L02CPU-P L06CPU-P L26CPU-P L26CPU-PBT L02SCPU L02SCPU-P	○	LJ71C24 LJ71C24-R2	GT37 SoftGOT3000

*1 Communication cannot be performed with RS-485.

5.7.2 System configuration



For details on the maximum number of connected devices, refer to the following.

☞ Page 620 Maximum number of connected devices

PLC			Connection cable		GOT	
Controller	**Serial communication module*1**	**Communication type**	**Cable model**	**Maximum length**	**Interface**	**Model**
MELSEC-L	LJ71C24 LJ71C24-R2	RS-232	GT09-C30R2-9P (3 m) + GT35-C02HR2-9P or ☞ Page 621 RS-232 connection diagram (1)	15 m	Built-in RS-232 interface	GT37 SoftGOT3000
			GT09-C30R2-9P (3 m) or ☞ Page 621 RS-232 connection diagram (1)		GT37-IF2000 + GT15-RS2-9P	GT37 SoftGOT3000
	LJ71C24	RS-422	GT09-C30R4-6C (3 m) GT09-C100R4-6C (10 m) GT09-C200R4-6C (20 m) GT09-C300R4-6C (30 m) or ☞ Page 621 RS-422 connection diagram (1)	1200 m	Built-in RS-422 interface	GT37 SoftGOT3000
			☞ Page 622 RS-422 connection diagram (2)(4-wire) or ☞ Page 623 RS-422 connection diagram (3)(2-wire)	1200 m*2*4	Built-in RS-422 interface + FA-LTBGT2R4CBL05 (0.5 m)*3 FA-LTBGT2R4CBL10 (1 m)*3 FA-LTBGT2R4CBL20 (2 m)*3	GT37 SoftGOT3000
			GT09-C30R4-6C (3 m) GT09-C100R4-6C (10 m) GT09-C200R4-6C (20 m) GT09-C300R4-6C (30 m) or ☞ Page 621 RS-422 connection diagram (1)	1200 m	GT37-IF2000 + GT15-RS4-9S	GT37 SoftGOT3000
			☞ Page 622 RS-422 connection diagram (2)(4-wire) or ☞ Page 623 RS-422 connection diagram (3)(2-wire)	1200 m*2*4	GT37-IF2000 + GT15-RS4-9S + FA-LTBGT2R4CBL05 (0.5 m)*3 FA-LTBGT2R4CBL10 (1 m)*3 FA-LTBGT2R4CBL20 (2 m)*3	GT37 SoftGOT3000

*1 For the system configuration of the serial communication module, refer to the following manual.
📖MELSEC-L Serial Communication Module User's Manual (Basic)

*2 The shortest specification on the PLC side is prioritized.

*3 The terminal block converter module is manufactured by MITSUBISHI ELECTRIC ENGINEERING COMPANY LIMITED.
For details on the product, contact MITSUBISHI ELECTRIC ENGINEERING COMPANY LIMITED.

*4 The cable length of the terminal block converter module is included.

Maximum number of connected devices

The following shows the number of connectable GOTs.

Controller	
Model	**Number of connectable devices**
MELSEC-L	Two GOTs for one serial communication module

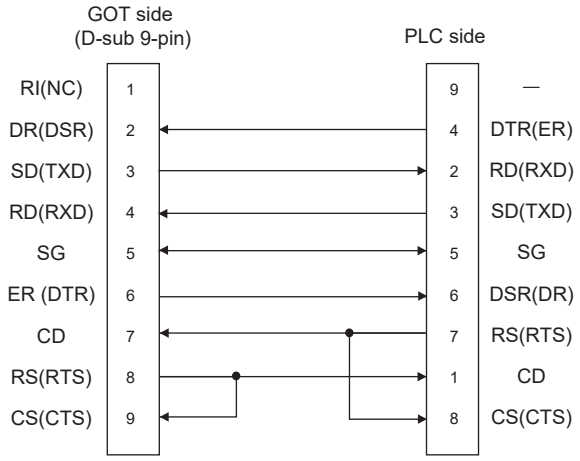
GOT startup for connection to LCPU

LCPU may diagnose the SD card (file system check, recovery processing, etc.) when
the LCPU is turned off then on or reset.
Therefore, it takes time until the SD card becomes available. If the GOT is started during this time, a system alarm occurs.
Adjust the time to display the GOT startup screen to prevent a system alarm.
📖GT Designer3 (GOT3000) Screen Design Manual

5.7.3 Connection diagram

The following diagram shows the connection between the GOT and the controller.

RS-232 connection diagram (1)



Preparation of the RS-232 cable

■Cable length

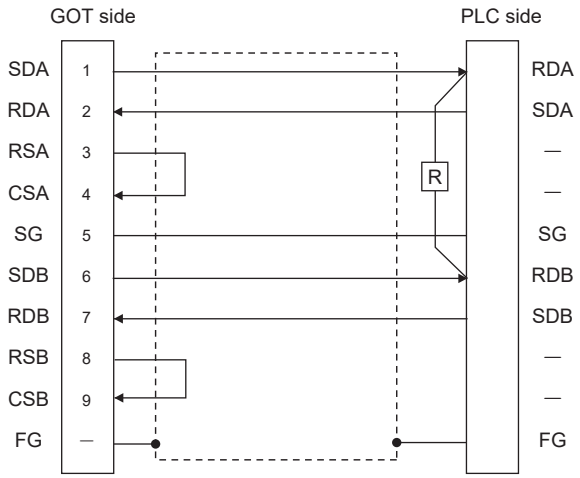
The length of the RS-232 cable must be 15 m or less.

■GOT side connector

For the GOT side connector, refer to the following.

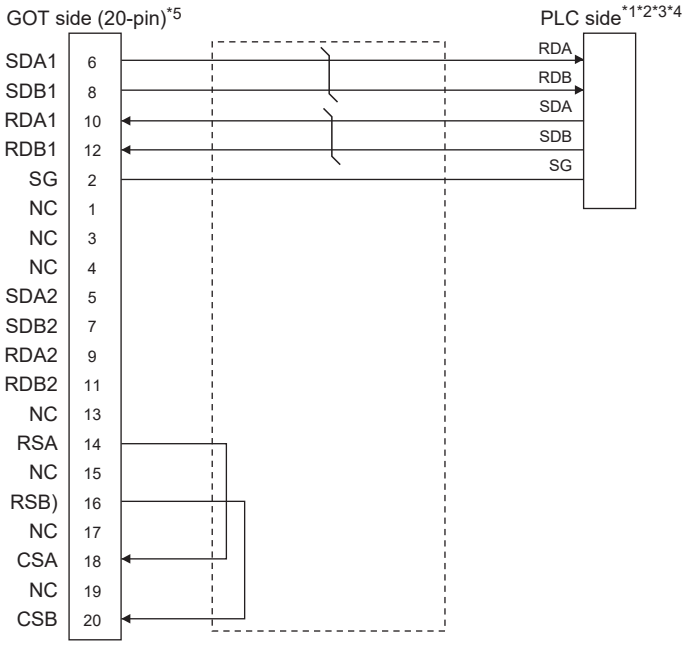
☞ Page 2954 GOT connector specifications

RS-422 connection diagram (1)



PART 3

RS-422 connection diagram (2)



*1 The pin arrangement on the PLC side may differ from the arrangement shown above, for example, when the SDA/SDB and RDA/RDB pins are independent.
In this case, connect the cables and wires as described in the PLC manual.

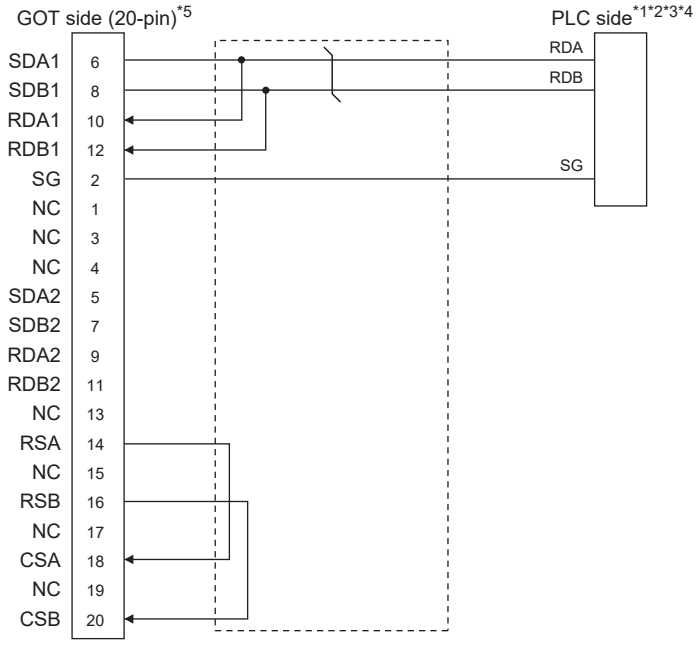
*2 Some PLCs do not have SG.
In this case, wiring between the GOT and SG is unnecessary.

*3 Some PLCs require the control line (CSA, CSB, RSA, RSB, etc.) to be controlled.
Make sure to connect the cables and wires as described in the PLC manual.

*4 For the terminating resistor of the PLC, refer to the manual of the PLC to be used.

*5 The GOT at the end requires a terminating resistor setting.
Set the terminating resistor setting switch on the GOT to 100Ω.
☞ Page 2956 Terminating resistors of GOT

RS-422 connection diagram (3)



*1 The pin arrangement on the PLC side may differ from the arrangement shown above, for example, when the SDA/SDB and RDA/RDB pins are independent.
In this case, connect the cables and wires as described in the PLC manual.

*2 Some PLCs do not have SG.
In this case, wiring between the GOT and SG is unnecessary.

*3 Some PLCs require the control line (CSA, CSB, RSA, RSB, etc.) to be controlled.
Make sure to connect the cables and wires as described in the PLC manual.

*4 For the terminating resistor of the PLC, refer to the manual of the PLC to be used.

*5 The GOT at the end requires a terminating resistor setting.
Set the terminating resistor setting switch on the GOT to 100Ω.
☞ Page 2956 Terminating resistors of GOT

Preparation of the RS-422 cable

■Cable length

The length of the RS-422 cable must be 1200 m or less.

■GOT side connector

For the GOT side connector, refer to the following.

☞ Page 2954 GOT connector specifications

Connecting terminating resistors

■GOT side

When connecting a PLC to the GOT, a terminating resistor must be connected to the GOT.

Set the terminating resistor setting switch to "Not used".

For the procedure to set the terminating resistor, refer to the following.

☞ Page 2956 Terminating resistors of GOT

■Serial communication module or computer link module side

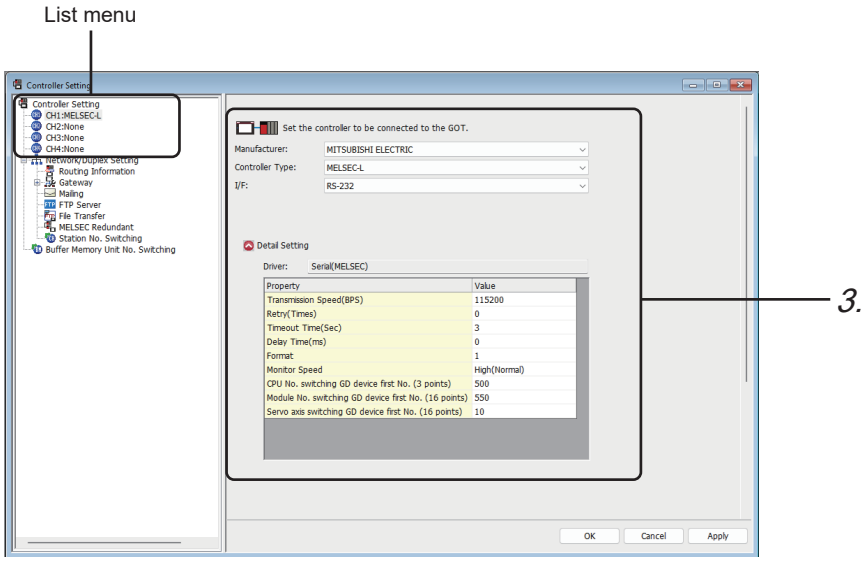
Connect a terminating resistor (330 Ω 1/4 W) to the serial communication module or computer link module side. For instructions on connecting terminating registers, refer to the following manual.

📖User's manual of the serial communication module or computer link module used

5.7.4 GOT side settings

[Controller Setting]

Set the channel of the connected controller.



Operating procedure

1. Select [Common] → [Controller Setting] from the menu.

2. In the [Controller Setting] window, select the channel number to be used from the list menu.

3. Set the following items.

Item		Description
[Manufacturer]		[MITSUBISHI ELECTRIC]
[Controller Type]		[MELSEC-L]
[I/F]	For GOT	• [RS-232] • [RS-422/485] • [Extend Unit]
	For GT SoftGOT3000	• [Serial 1] • [Serial 2]
[Detail Setting]		Configure the settings according to the usage environment. ☞ Page 625 [Detail Setting]

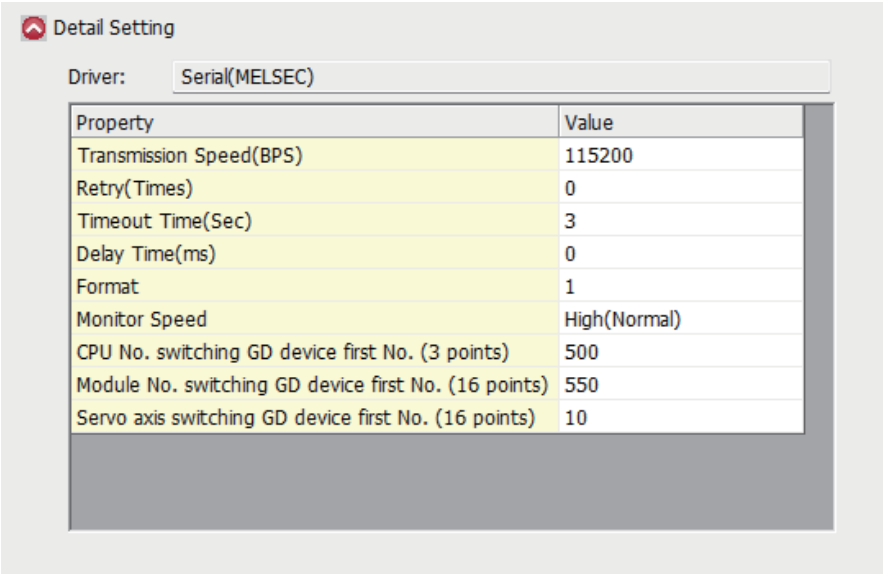
4. When you have completed the settings, click the [OK] button.

Point

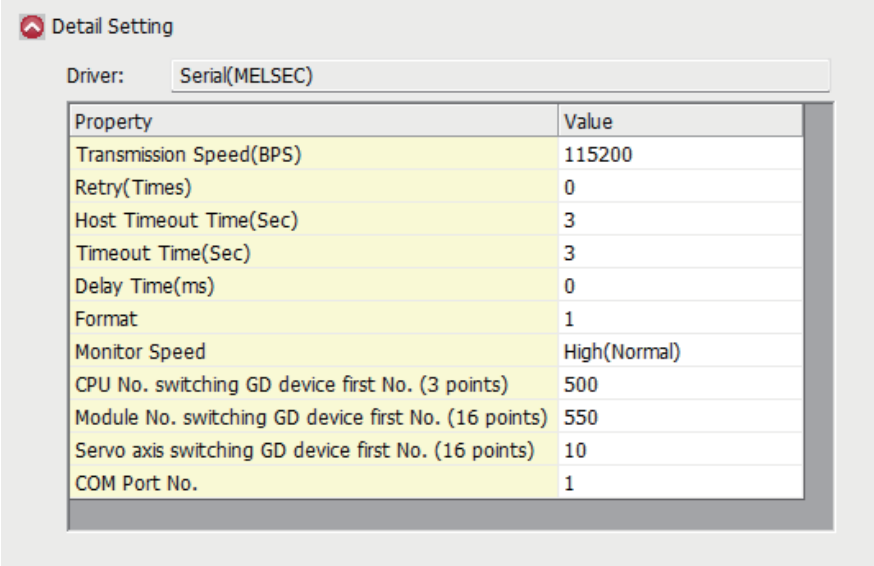
The controller settings can be configured and checked in [I/F Communication Setting].
For details, refer to the following.
📖GT Designer3 (GOT3000) Screen Design Manual

■[Detail Setting]

Configure the settings according to the usage environment.



- For GT SoftGOT3000



Item	Description	Range
[Driver]	This item appears when communication drivers are selectable according to the settings of [Controller Type] and [I/F].	[Serial (MELSEC)]
[Transmission Speed]	Set this item to change the transmission speed used for communication with the connected equipment.	[9600] bps, [19200] bps, [38400] bps, [57600] bps, [115200] bps
[Retry]	Specify the number of retries to be performed during communication.	GOT: [0] times to [5] times GT SoftGOT3000: [0] times to [10] times
[Host Timeout Time][*1]	Set the time period until a communication timeout during monitoring of the host station.	[1] second to [90] seconds
[Timeout Time]	Specify the time period for a communication to time out.	[1] second to [30] seconds
[Delay Time]	Set this item to adjust the transmission timing of the communication request from the GOT.	[0] ms to [300] ms
[Format][*3]	Set the communication format.	[1], [2]
[Monitor Speed][*4]	Set the monitor speed of the GOT. This setting is not valid in all systems.	[High(Normal)][*2] [Middle] [Low]
[CPU No. switching GD device first No. (3 points)]	Set the start device number of the GD devices for CPU number switching. For details, refer to the following. ☞ Page 627 Start device number of the GD devices for CPU number switching	[0] to [65520]

Item	Description	Range
[Module No. switching GD device first No. (16 points)]	Set the start device number of the GD devices for module number switching. For details, refer to the following. ☞ Page 628 Start device number of the GD devices for module number switching	[0] to [65520]
[Servo axis switching GD device first No. (16 points)]	Set the start device number of the GD devices for servo axis switching. For details, refer to the following. ☞ Page 629 Start device number of the GD devices for servo axis switching	[0] to [65520]
[COM Port No.]*1	Specify the COM port number for communication.	[1] to [63]

*1 This item is displayed in GT SoftGOT3000 only.
*2 This setting is effective for collecting large data with the logging, recipe, or such function on a screen other than the monitor screen.
*3 Set this item when replacing the F900 series with the GOT3000 series.

- To change the transmission speed of the serial communication module connected to the F900 to 115200 bps, configure the settings as follows.

[Intelligent function module switch setting] of PLC

Switch No.	CH1 side	CH2 side
Switch 1	0000H	-
Switch 2	0000H	-
Switch 3	-	0000H
Switch 4	-	0000H
Switch 5	0000H	0000H

GOT communication settings

Item	Setting value
Format	1

- To continue using the transmission speed of 38400 bps for the serial communication module connected to the F900, configure the settings as follows.

GOT communication settings

Item	Setting value
Format	2

*4 When using a global label to read or write more than 235 two-byte characters, set [Monitor speed] to [High(Normal)] or [Middle].
If [Monitor speed] is set to [Low], a system error occurs when reading or writing.
For details, refer to the following manual.
📖GT Designer3 (GOT3000) Screen Design Manual

Point

- Communication interface settings in the GT37 utility

The communication interface setting can be changed in [Communication setting] of the GT37 utility after writing [Controller Setting] in project data.
For details on the GT37 utility, refer to the following manual.
📖GOT3000 Series User's Manual (Utility & Maintenance Functions)

- Priority of the settings in [Controller Setting]

When settings are configured in GT Designer3 or the GT37 utility, the most recent settings are effective.

■Start device number of the GD devices for CPU number switching

• Indirect specification of a CPU number

[CPU No.] can be indirectly specified with the GOT internal registers (GD devices) by specifying a value (100 to 102) to [CPU No.] in the device setting dialog in GT Designer3.

Set the start device number of the GD devices to be used in [CPU No. switching GD device first No. (3 points)].

[CPU No.] is specified with three consecutive GD devices, starting from the set device number.

When [500] is set to [CPU No. switching GD device first No. (3 points)], GD500 to GD502 are used to specify [CPU No.] as shown in the following table.

CPU No.	GD device	Setting range
100	GD500	1 to 4 Setting a value outside the range causes a communication timeout error. Specifying a nonexistent CPU number or a CPU number not supporting a multiple CPU system with a device causes a controller error.
101	GD501	
102	GD502	

• Indirect specification of a CPU number on the initially displayed screen

Set [CPU No. switching GD device first No. (3 points)] so that the values of the GD devices are retained and monitored upon the GOT startup.

• Indirect specification of a CPU number for multi-channel connection

If the setting range of [CPU No. switching GD device first No. (3 points)] set for each channel overlaps, the monitoring target CPU number set to each channel is switched simultaneously.

Set [CPU No. switching GD device first No. (3 points)] for each channel so that the setting range does not overlap.

• Indirect specification of a station number and a CPU number for multi-channel connection

When GD10 to GD25 are used to specify the station number of an inverter or non-Mitsubishi temperature controller connected, setting [10] to [CPU No. switching GD device first No. (3 points)] in a different channel switches the monitoring target CPU number and station number of an inverter or non-Mitsubishi temperature controller set to each channel simultaneously.

Set [CPU No. switching GD device first No. (3 points)] so that the setting range does not overlap the station number of an inverter or non-Mitsubishi temperature controller.

■Start device number of the GD devices for module number switching

• Specifying a module number with a device

For connection via a Simple Motion module, [Unit No.] can be specified with the GOT internal registers (GD devices) by specifying a value (100 to 10F) to [Unit No.] in the device setting dialog in GT Designer3.

Set the start device number of the GD devices to be used in [Module No. switching GD device first No. (16 points)].

[Unit No.] is specified with 16 consecutive GD devices, starting from the set device number.

When [550] is set to [Module No. switching GD device first No. (16 points)], GD550 to GD565 are used to specify [Unit No.] as shown in the following table.

Module No.	GD device	Setting range
100	GD550	00 to FF Setting a value outside the above range causes a device range error.
101	GD551	
102	GD552	
103	GD553	
104	GD554	
105	GD555	
106	GD556	
107	GD557	
108	GD558	
109	GD559	
10A	GD560	
10B	GD561	
10C	GD562	
10D	GD563	
10E	GD564	
10F	GD565	

• Indirect specification of a module number on the initially displayed screen

Set [Module No. switching GD device first No. (16 points)] so that the values of the GD devices are retained and monitored upon the GOT startup.

• Indirect specification of a module number for multi-channel connection

If the setting range of [Module No. switching GD device first No. (16 points)] set for each channel overlaps, the module number of the Simple Motion module via the servo amplifier device of each channel is switched simultaneously.

Set [Module No. switching GD device first No. (16 points)] for each channel so that the setting range does not overlap.

• Indirect specification of a station number and a module number for multi-channel connection

When GD10 to GD25 are used to specify the station number of an inverter or non-Mitsubishi temperature controller connected, setting [10] to [Module No. switching GD device first No. (16 points)] switches the module number of the Simple Motion module via the servo amplifier device and the station number of an inverter or non-Mitsubishi temperature controller set to each channel simultaneously.

Set [Module No. switching GD device first No. (16 points)] so that the setting range does not overlap the station number of an inverter or non-Mitsubishi temperature controller.

■Start device number of the GD devices for servo axis switching

• Indirect specification of a servo axis number

For connection via a Motion CPU or Simple Motion module, a servo axis number can be indirectly specified with GOT internal registers (GD devices) by specifying a value (100 to 115) to the axis number of the servo amplifier device.

Set the start device number of the GD devices to be used in [Servo axis switching GD device first No. (16 points)].

Specify a servo axis number with 16 consecutive GD devices, starting the set device number.

When [10] is set to [Servo axis switching GD device first No. (16 points)], GD10 to GD25 are used to specify a servo axis number as shown in the following table.

Servo axis No.	GD device	Setting range
100	GD10	1 to 64 Setting a value outside the above range causes a device range error.
101	GD11	
102	GD12	
103	GD13	
104	GD14	
105	GD15	
106	GD16	
107	GD17	
108	GD18	
109	GD19	
110	GD20	
111	GD21	
112	GD22	
113	GD23	
114	GD24	
115	GD25	

• Indirect specification of a servo axis number on the initially displayed screen

Set [Servo axis switching GD device first No. (16 points)] so that the values of the GD devices are retained and monitored upon the GOT startup.

• Indirect specification of a servo axis number for multi-channel connection

If the setting rage of [Servo axis switching GD device first No. (16 points)] set for each channel overlaps, the axis number of the servo amplifier of each channel is switched simultaneously.

Set [Servo axis switching GD device first No. (16 points)] for each channel so that the setting range does not overlap.

• Indirect specification of a station number and a servo axis number for multi-channel connection

When GD10 to GD25 are used to specify the station number of an inverter or non-Mitsubishi temperature controller connected, setting [10] to [Servo axis switching GD device first No. (16 points)] switches the axis number of the servo amplifier and the station number of an inverter or non-Mitsubishi temperature controller set to each channel simultaneously.

Set [Servo axis switching GD device first No. (16 points)] so that the setting range does not overlap the station number of an inverter or non-Mitsubishi temperature controller.

Point

By setting the GOT internal device, the GOT can disconnect specific parts from the controller's multiple connections.

For example, a faulty station that has a communication timeout can be disconnected from the system.

For details on the setting contents of the GOT internal device, refer to the following manual.

📖GT Designer3 (GOT3000) Screen Design Manual

5.7.5 PLC side settings

Model		Refer to
MELSEC-L	L02CPU L06CPU L26CPU L26CPU-BT L02CPU-P L06CPU-P L26CPU-P L26CPU-PBT L02SCPU L02SCPU-P	☞ Page 631 Connection to MELSEC-L series

The GOT operates under the following transmission specifications when it is connected to a Mitsubishi Electric PLC in the computer link connection.

Transmission specifications	Setting
Data bit	8 bits
Parity bit	Yes (Odd)
Stop bit	1 bit
Sum check	Yes
Transmission speed (Baud rate)	Set the same transmission speed on both the GOT and the PLC.

Connection to MELSEC-L series

Point

- Serial communication module (MELSEC-L series)

For details on the serial communication module (MELSEC-L series), refer to the following manual.

MELSEC-L Serial Communication Module User's Manual (Basic)

- Modem interface module

For details on the modem interface module, refer to the following manual.

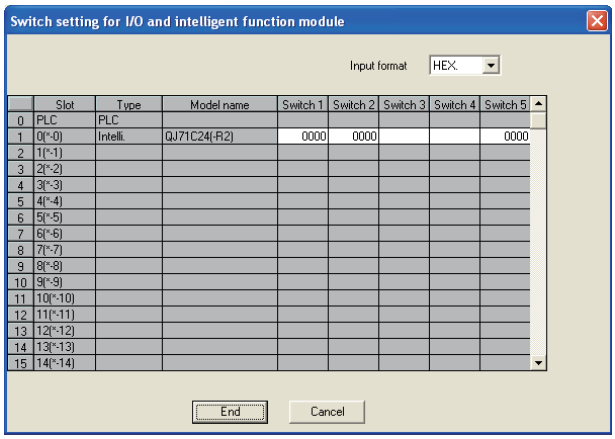
Modem Interface Module User's Manual

■[Intelligent function module switch setting] in GX Developer

[Intelligent function module switch setting] in GX Developer is not necessary. (When [Intelligent function module switch setting] is not configured, the module runs in GX Developer connection mode.)

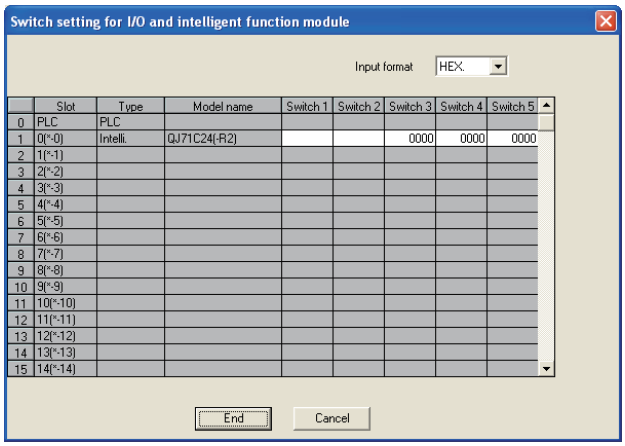
A module can be also connected to the GOT by configuring [Intelligent function module switch setting] in GX Developer as shown below.

- When connecting to the CH1 side



Switch No.	Bit		Description			Setting value*3
	Position	Specified value				
Switch 1	b0	OFF	CH1 transmission settings*1	Operation setting	(Operates according to the GOT side specifications.)	0000H
	b1	OFF		Data bit		
	b2	OFF		Parity bit		
	b3	OFF		Even/odd parity		
	b4	OFF		Stop bit		
	b5	OFF		Sum check code		
	b6	OFF		Write during RUN		
	b7	OFF		Setting modifications		
	b8 to b15	—	CH1 transmission speed setting*2			
Switch 2	—		CH1 Communication protocol setting		GX Developer connection	0000H
Switch 5	—		Station number setting		0th station	0000H

• When connecting to the CH2 side



Switch No.	Bit		Description			Setting value*3
	Position	Specified value				
Switch 3	b0	OFF	CH2 transmission settings*1	Operation setting	(Operates according to the GOT side specifications.)	0000H
	b1	OFF		Data bit		
	b2	OFF		Parity bit		
	b3	OFF		Even/odd parity		
	b4	OFF		Stop bit		
	b5	OFF		Sum check code		
	b6	OFF		Write during RUN		
	b7	OFF		Setting modifications		
	b8 to b15	—	CH2 transmission speed setting*2			
Switch 4	—		CH2 Communication protocol setting		GX Developer connection	0000H
Switch 5	—		Station number setting		0th station	0000H

*1 The module operates under the following transmission specifications.

Transmission specifications	Setting details
Operation setting	Independent
Data bit	8 bits
Parity bit	Yes
Even/odd parity	Odd
Stop bit	1 bit
Sum check code	Yes

*2 The serial communication module operates at the transmission speed set on the GOT.

*3 When the value of switch setting is other than [0], the setting of [Format] and [Transmission Speed] on the GOT side are required to be changed.

☞ Page 625 [Detail Setting]

Point

• When [Intelligent function module switch setting] is configured

After writing PLC parameters to the PLC CPU, turn off then on or reset the PLC CPU.

• Connection of multiple GOTs

To some serial communication module models, two GOTs can be connected using both CH1 and CH2.

Model	Connection of 2 GOTs	
	Function version A	Function version B
LJ71C24(-R2)	○	-

○: 2 GOTs connectable, -: Not applicable

• When connecting to the modem interface module

When the modem interface module is connected, only CH2 can be used.

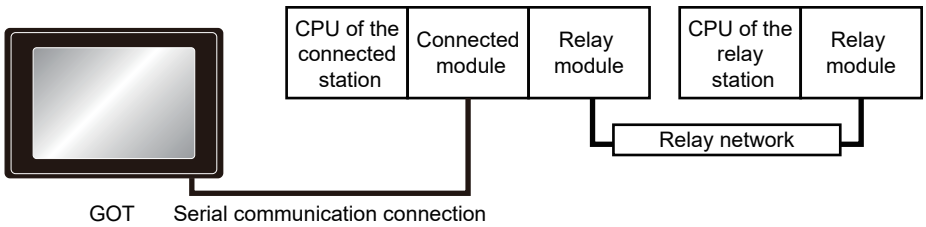
5.7.6 Access range for monitoring

When the GOT is connected to the CPU of the station connected by serial communication connection, the range accessible via the CPU is as follows.

Point

- When monitoring other networks (Routing parameter settings)

To monitor other networks, routing parameter settings are necessary.
For the routing parameter settings, refer to the reference manual of the network connected.



○: Accessible, —: Inaccessible

CPU of the connected station	Connected module	Relay station								
		Relay network	CPU of the relay station							
			RCPU	LCPU	QCPU (Q mode)	QSCPU	QCPU (A mode)	QnACPU	ACPU	FX5CPU
LCPU	☞ Page 618 Connectable devices	Ethernet	—	○	○*2	○	—	○	—	—
		CC-Link IE Field Network	—	○	○*1	○	—	—	—	—
LJ72GF15-T2	☞ Page 618 Connectable devices	CC-Link IE Field Network	—	○	○*1	○	—	—	—	—

*1 QnUDVCPU, QnUDECPU, QnUDEHCPU, QnUCPU, QnUDCPU, and QnUDHCPU are supported.
*2 The C Controller module (MELSEC-Q series) is not supported.

5.8 MELSEC-A series (Built-in serial port connection)

☞ Page 634 Connectable devices
☞ Page 636 System configuration
☞ Page 637 GOT side settings
☞ Page 639 PLC side settings
☞ Page 639 Access range for monitoring

5.8.1 Connectable devices

○: Supported, —: Not supported

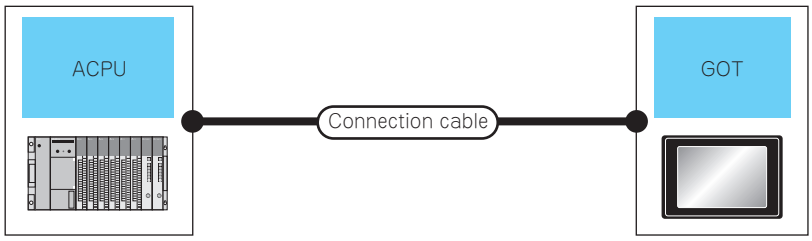
Controller	Model	Clock	Connectable model
MELSEC-A (AnCPU)	A2UCPU A2UCPU-S1 A3UCPU A4UCPU A2ACPU A2ACPUP21 A2ACPUR21 A2ACPU-S1 A2ACPUP21-S1 A2ACPUR21-S1 A3ACPU A3ACPUP21 A3ACPUR21 A1NCPU *1 A1NCPUP21 *1 A1NCPUR21 *1 A2NCPU *1 A2NCPUP21 *1 A2NCPUR21 *1 A2NCPU-S1 *1 A2NCPUP21-S1 *1 A2NCPUR21-S1 *1 A3NCPU *1 A3NCPUP21 *1 A3NCPUR21 *1	○	GT37 SoftGOT3000
MELSEC-A (AnSCPU)	A2USCPU A2USCPU-S1 A2USHCPU-S1 A1SCPU A1SCPUC24-R2 A1SHCPU A2SCPU*2 A2SCPU-S1*2 A2SHCPU A2SHCPU-S1 A1SJCPU A1SJCPU-S3 A1SJHCPU	○	GT37 SoftGOT3000

Controller	Model	Clock	Connectable model
MELSEC-A	A0J2CPU A0J2CPUP23 A0J2CPUR23 M0J2CPU A0J2HCPU*2 A0J2HCPUP21*2 A0J2HCPUR21*2 A0J2HCPU-DC24*2	—	GT37 SoftGOT3000
	A2CCPUP21 A2CCPUR21 A2CCPUC24 A2CCPUC24-PRF A2CJCPU-S3 A1FXCPU	○	GT37 SoftGOT3000
Motion CPU (A series)	A273UCPU A273UHCPU A273UHCPU-S3 A373UCPU A373UCPU-S3 A171SCPU A171SCPU-S3 A171SCPU-S3N A171SHCPU A171SHCPUN A172SHCPU A172SHCPUN A173UHCPU A173UHCPU-S1	○	GT37 SoftGOT3000

*1 When monitoring AnNCPU, only the following or later software version is used to write to the CPU.
- AnNCPU(S1) with link: Version L or later, AnNCPU(S1) without link: Version H or later

*2 When monitoring A0J2HCPU or A2SCPU, only the following or later software version is used to write to the CPU.
- A0J2HCPU (with/without link): Version E or later
- A0J2HCPU-DC24: Version B or later
- A2SCPU: Version H or later

5.8.2 System configuration



For details on the maximum number of connected devices, refer to the following.

☞ Page 636 Maximum number of connected devices

PLC		Connection cable		GOT	
Controller	**Communication type**	**Cable model**	**Maximum length**	**Interface**	**Model**
MELSEC-A	RS-422	GT01-C30R4-25P (3 m) GT01-C100R4-25P (10 m) GT01-C200R4-25P (20 m) GT01-C300R4-25P (30 m)	30 m	Built-in RS-422 interface	GT37 SoftGOT3000
				GT37-IF2000 + GT15-RS2-9S	GT37 SoftGOT3000
Motion CPU (A series)	RS-422	GT01-C30R4-25P (3 m) GT01-C100R4-25P (10 m) GT01-C200R4-25P (20 m) GT01-C300R4-25P (30 m)	30 m	Built-in RS-422 interface	GT37 SoftGOT3000
				GT37-IF2000 + GT15-RS4-9S	GT37 SoftGOT3000

Maximum number of connected devices

The following shows the number of connectable GOTs.

Controller	
Model	**Number of connectable devices**
MELSEC-A	One GOT for one PLC

Connection with the motion controller A series

When the following motion controller A series is connected, LINK UNIT ERROR (42) may occur in the SCPU (CPU for PLC control) depending on the content of the displayed screen.

- A171SHCPU, A171SHCPUN, A172SHCPU, A172SHCPUN

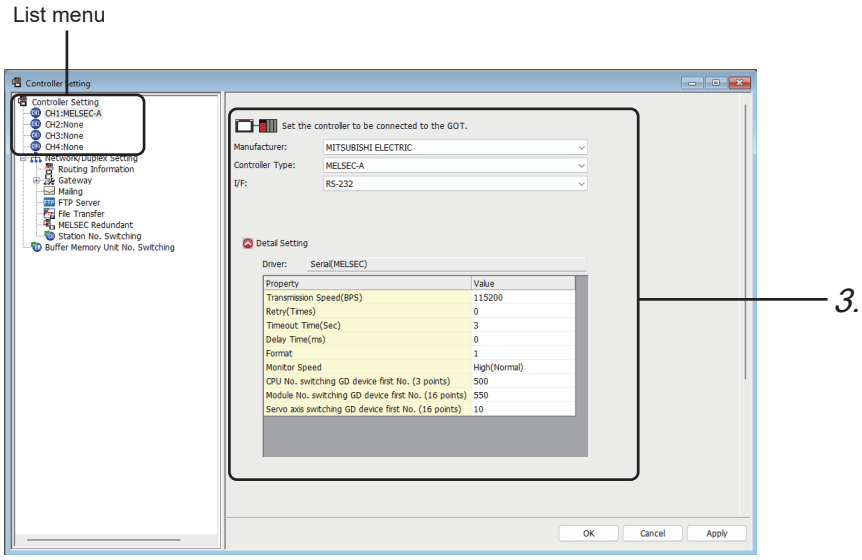
In this case, reduce the number of monitored devices to less than 128.

The number of monitored devices includes the number of devices of functions running in the background such as alarm, logging, and script in addition to the displayed base screens and window screens.

5.8.3 GOT side settings

[Controller Setting]

Set the channel of the connected controller.



Operating procedure

1. Select [Common] → [Controller Setting] from the menu.

2. In the [Controller Setting] window, select the channel number to be used from the list menu.

3. Set the following items.

Item		Description
[Manufacturer]		[MITSUBISHI ELECTRIC]
[Controller Type]		[MELSEC-A]
[I/F]	For GOT	• [RS-232] • [RS-422/485] • [Extend Unit]
	For GT SoftGOT3000	• [Serial 1] • [Serial 2]
[Detail Setting]		Configure the settings according to the usage environment. ☞ Page 638 [Detail Setting]

4. When you have completed the settings, click the [OK] button.

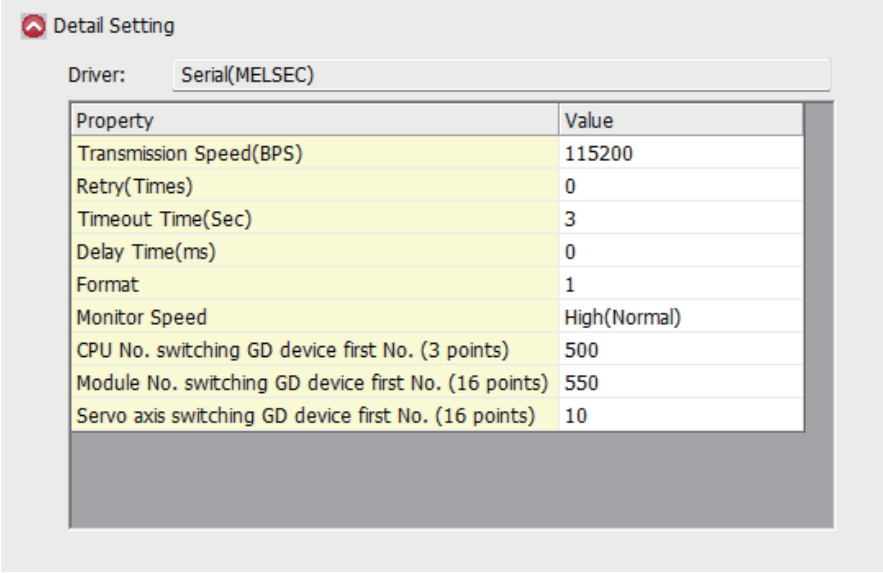
Point

The controller settings can be configured and checked in [I/F Communication Setting].
For details, refer to the following.
📖GT Designer3 (GOT3000) Screen Design Manual

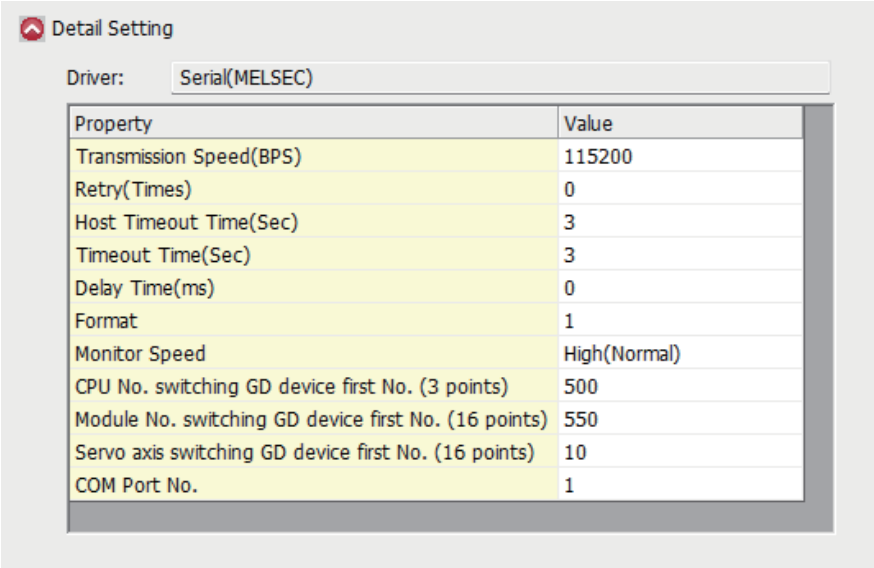
■[Detail Setting]

Configure the settings according to the usage environment.

- For GOT



- For GT SoftGOT3000



Item	Description	Range
[Driver]	This item appears when communication drivers are selectable according to the settings of [Controller Type] and [I/F].	[Serial (MELSEC)]
[Transmission Speed]	Set this item to change the transmission speed used for communication with the connected equipment.	[9600] bps, [19200] bps, [38400] bps, [57600] bps, [115200] bps
[Retry]	Specify the number of retries to be performed during communication.	GOT: [0] times to [5] times GT SoftGOT3000: [0] times to [10] times
[Host Timeout Time]*1	Set the time period until a communication timeout during monitoring of the host station.	[1] second to [90] seconds
[Timeout Time]	Specify the time period for a communication to time out.	[1] second to [30] seconds
[Delay Time]	Set this item to adjust the transmission timing of the communication request from the GOT.	[0] ms to [300] ms
[Format]	Set the communication format.	[1], [2]
[Monitor Speed]*3	Set the monitor speed of the GOT. This setting is not valid in all systems.	[High(Normal)]*2 [Middle] [Low]

Item	Description	Range
[CPU No. switching GD device first No. (3 points)]	The item is displayed but cannot be set.	—
[Module No. switching GD device first No. (16 points)]	The item is displayed but cannot be set.	—
[Servo axis switching GD device first No. (16 points)]	The item is displayed but cannot be set.	—
[COM Port No.][*1]	Specify the COM port number for communication.	[1] to [63]

*1 This item is displayed in GT SoftGOT3000 only.
*2 This setting is effective for collecting large data with the logging, recipe, or such function on a screen other than the monitor screen.
*3 When using a global label to read or write more than 235 two-byte characters, set [Monitor speed] to [High(Normal)] or [Middle].
If [Monitor speed] is set to [Low], a system error occurs when reading or writing.
For details, refer to the following manual.
GT Designer3 (GOT3000) Screen Design Manual

Point

• Communication interface settings in the GT37 utility
The communication interface setting can be changed in [Communication setting] of the GT37 utility after writing [Controller Setting] in project data.
For details on the GT37 utility, refer to the following manual.
GOT3000 Series User's Manual (Utility & Maintenance Functions)
• Priority of the settings in [Controller Setting]
When settings are configured in GT Designer3 or the GT37 utility, the most recent settings are effective.

5.8.4 PLC side settings

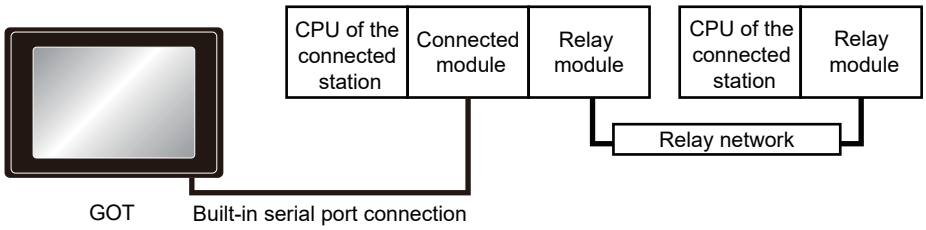
No setting is required on the controller.

5.8.5 Access range for monitoring

When the GOT is connected to the CPU of the station connected by built-in serial port connection, the range accessible via the CPU is as follows.

Point

• When monitoring other networks (Routing parameter settings)
To monitor other networks, routing parameter settings are necessary.
For the routing parameter settings, refer to the reference manual of the network connected.



○: Accessible, —: Inaccessible

CPU of the connected station	Relay station								
	Relay network	CPU of the relay station							
		RCPU	LCPU	QCPU (Q mode)	QSCPU	QCPU (A mode)	QnACPU	ACPU	FX5CPU
ACPU[*1]	MELSECNET/H, MELSECNET/10	—	—	—	—	○	—	○[*1]	—

*1 AnUCPU and AnUSCPU are supported.

5.9 MELSEC-F series (Built-in serial port connection)

☞ Page 640 Connectable devices
☞ Page 641 System configuration
☞ Page 647 Connection diagram
☞ Page 648 GOT side settings
☞ Page 650 PLC side settings
☞ Page 650 Access range for monitoring

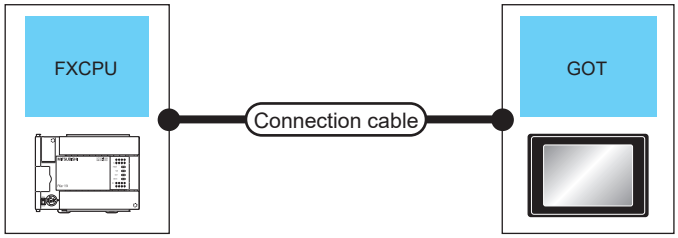
5.9.1 Connectable devices

○: Supported, —: Not supported

Controller	Model	Clock	Connectable model
MELSEC-F series	FX3G FX3GC FX3U FX3UC FX3S FX3GE	○	GT37 SoftGOT3000

5.9.2 System configuration

When connecting to a PLC directly



For details on the maximum number of connected devices, refer to the following.

☞ Page 641 Maximum number of connected devices

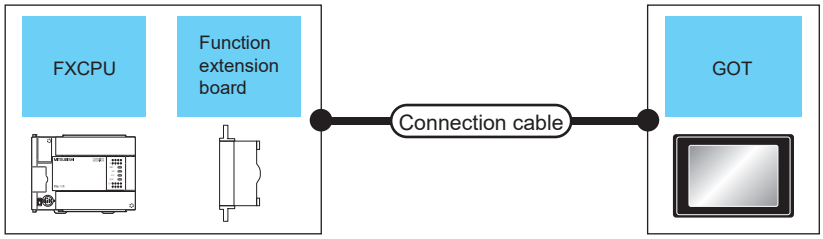
PLC		Connection cable		GOT	
Controller	**Communication type**	**Cable model**	**Maximum length**	**Interface**	**Model**
FX3G FX3S FX3GE FX3GC-□□/D FX3GC-□□/DSS FX3U FX3UC-□□-LT(-2) FX3UC-□□/D FX3UC-□□/DS FX3UC-□□/DSS	RS-422	GT01-C10R4-8P (1 m) GT01-C30R4-8P (3 m) GT01-C100R4-8P (10 m) GT01-C200R4-8P (20 m) GT01-C300R4-8P (30 m)	30 m	Built-in RS-422 interface	GT37 SoftGOT3000
				GT37-IF2000 + GT15-RS4-9S	GT37 SoftGOT3000

■Maximum number of connected devices

The following shows the number of connectable GOTs.

Controller	
Model	**Number of connectable devices**
FX3G FX3S FX3GE FX3GC-□□/D FX3GC-□□/DSS FX3U FX3UC-□□-LT(-2) FX3UC-□□/D FX3UC-□□/DS FX3UC-□□/DSS	One GOT for one PLC built-in port

When using the function extension board



For details on the maximum number of connected devices, refer to the following.

☞ Page 643 Maximum number of connected devices

PLC			Connection cable		GOT	
Controller	**Function extension board*1**	**Communication type**	**Cable model**	**Maximum length**	**Interface**	**Model**
FX3G FX3S FX3GE	FX3G-232-BD	RS-232	GT01-C30R2-9S (3 m) + GT35-C02HR2-9P or ☞ Page 647 RS-232 connection diagram (1)	15 m	Built-in RS-232 interface	GT37 SoftGOT3000
			GT01-C30R2-9S (3 m) or ☞ Page 647 RS-232 connection diagram (1)		GT37-IF2000 + GT15-RS2-9S	GT37 SoftGOT3000
	FX3G-422-BD	RS-422	GT01-C10R4-8P (1 m) GT01-C30R4-8P (3 m) GT01-C100R4-8P (10 m) GT01-C200R4-8P (20 m) GT01-C300R4-8P (30 m)	30 m	Built-in RS-422 interface	GT37 SoftGOT3000
					GT37-IF2000 + GT15-RS4-9S	GT37 SoftGOT3000
FX3U FX3UC-□□-LT(-2)	FX3U-232-BD	RS-232	GT01-C30R2-9S (3 m) + GT35-C02HR2-9P or ☞ Page 647 RS-232 connection diagram (1)	15 m	Built-in RS-232 interface	GT37 SoftGOT3000
			GT01-C30R2-9S (3 m) or ☞ Page 647 RS-232 connection diagram (1)		GT37-IF2000 + GT15-RS2-9S	GT37 SoftGOT3000
	FX3U-422-BD	RS-422	GT01-C10R4-8P (1 m) GT01-C30R4-8P (3 m) GT01-C100R4-8P (10 m) GT01-C200R4-8P (20 m) GT01-C300R4-8P (30 m)	30 m	Built-in RS-422 interface	GT37 SoftGOT3000
					GT37-IF2000 + GT15-RS4-9S	GT37 SoftGOT3000

*1 When connecting using a function extension board or a special adapter, check the communication settings.
☞ Page 645 When using the function extension board and special adapter

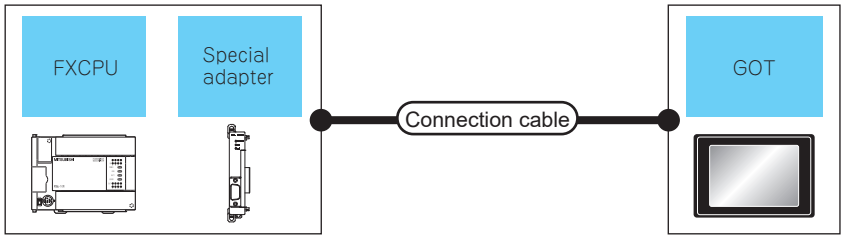
■Maximum number of connected devices

The following shows the number of connectable GOTs.

Controller	
Model	**Number of connectable devices*1**
FX3G FX3S FX3GE FX3U FX3UC-□□-LT(-2)	One GOT for one function extension board

*1 When connecting a function extension board (communication board) and a special adapter, one GOT and one peripheral such as a personal computer with GX Developer installed can be connected to the board and the adapter, respectively.

When using the special adapter



For details on the maximum number of connected devices, refer to the following.

☞ Page 644 Maximum number of connected devices

PLC			Connection cable		GOT	
Controller	**Special adapter*1**	**Communication type**	**Cable model**	**Maximum length**	**Interface**	**Model**
FX3G FX3S	FX3G-CNV-ADP + FX3U-232ADP FX3U-232ADP-MB	RS-232	GT01-C30R2-9S (3 m) + GT35-C02HR2-9P or ☞ Page 647 RS-232 connection diagram (1)	15 m	Built-in RS-232 interface	GT37 SoftGOT3000
			GT01-C30R2-9S (3 m) or ☞ Page 647 RS-232 connection diagram (1)		GT37-IF2000 + GT15-RS2-9S	GT37 SoftGOT3000
FX3GE FX3GC-□□/DSS FX3UC-□□/D FX3UC-□□/DS FX3UC-□□/DSS	FX3U-232ADP FX3U-232ADP-MB	RS-232	GT01-C30R2-9S (3 m) + GT35-C02HR2-9P or ☞ Page 647 RS-232 connection diagram (1)	15 m	Built-in RS-232 interface	GT37 SoftGOT3000
			GT01-C30R2-9S (3 m) or ☞ Page 647 RS-232 connection diagram (1)		GT37-IF2000 + GT15-RS2-9S	GT37 SoftGOT3000

*1 When connecting using a function extension board or a special adapter, check the communication settings.
☞ Page 645 When using the function extension board and special adapter

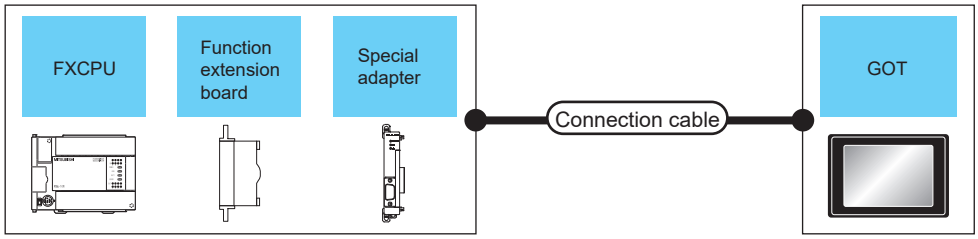
■Maximum number of connected devices

The following shows the number of connectable GOTs.

Controller	
Model	**Number of connectable devices*1**
FX3G FX3S FX3GE FX3GC-□□/D FX3GC-□□/DSS FX3UC-□□/D FX3UC-□□/DS FX3UC-□□/DSS	One GOT for one special adapter

*1 When connecting a function extension board (communication board) and a special adapter, one GOT and one peripheral such as a personal computer with GX Developer installed can be connected to the board and the adapter, respectively.

When using the function extension board and special adapter



For details on the maximum number of connected devices, refer to the following.

☞ Page 645 Maximum number of connected devices

PLC				Connection cable		GOT	
Controller	**Function extension board**	**Expansion adapter**	**Communication type**	**Cable model**	**Maximum length**	**Interface**	**Model**
FX3U FX3UC-□□-LT(-2)	FX3G-232-BD FX3U-232-BD FX3G-422-BD FX3U-422-BD	FX3U-232ADPFX3U-232ADP-MB	RS-232	GT01-C30R2-9S (3 m) + GT35-C02HR2-9P or ☞ Page 647 RS-232 connection diagram (1)	15 m	Built-in RS-232 interface	GT37 SoftGOT3000
				GT01-C30R2-9S (3 m) or ☞ Page 647 RS-232 connection diagram (1)		GT37-IF2000 + GT15-RS2-9S	GT37 SoftGOT3000

*1 When connecting using a function extension board or a special adapter, check the communication settings.
☞ Page 645 When using the function extension board and special adapter

■Maximum number of connected devices

The following shows the number of connectable GOTs.

Controller	
Model	**Number of connectable devices*1**
FX3U FX3UC-□□-LT(-2)	One GOT for one special adapter

*1 When connecting a function extension board (communication board) and a special adapter, one GOT and one peripheral such as a personal computer with GX Developer installed can be connected to the board and the adapter, respectively.

Connection to FXCPU

■When connecting to FX3 series

When the keyword of FXCPU (FX3 series) has been set, GOT may not be able to monitoring.

Perform an I/O check again.

☞ (Page 39 How to check whether the GOT is operating correctly) If the I/O check result is normal, check keyword registration status of the CPU.

■When connecting with function extension board or communication special adapter

When a sequence program and settings that the FXCPU communicates with devices other than the GOT are set with software, including GX Developer, the FXCPU cannot communicate with the GOT.

- Settings with sequence program

Check the sequence program and delete the following.

📖FX SERIES PROGRAMMABLE CONTROLLERS USER'S MANUAL - Data Communication Edition

No protocol communication (RS instruction)

Sequence program with the computer link, N:N network, and parallel link

Parameter setting

Set the following special registers to 0.

Other than FX3U and FX3UC: D8120

FX3U, FX3UC: D8120, D8400, D8420

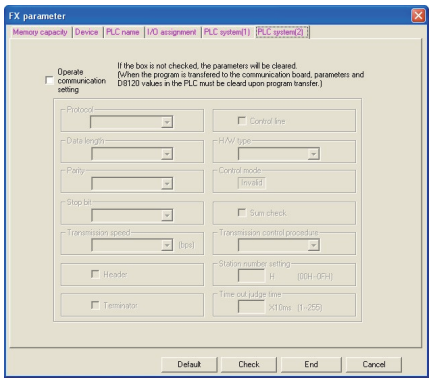
FX3G, FX3GC, FX3GE: D8120, D8400, D8420, D8370

FX3S: D8120, D8400

- Settings with GX Developer

Select [PLC parameter] in [Parameter], and then click the PLC system(2) tab on the FX parameter screen.

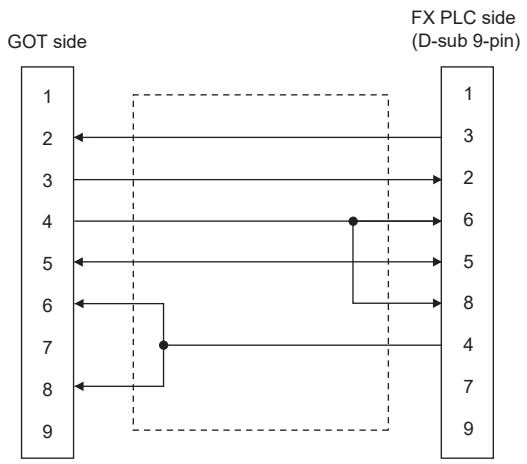
Uncheck [Operate communication setting], and then transfer the parameter to the programmable controller. After the transfer, turn off the programmable controller, and then turn on the programmable controller again.



5.9.3 Connection diagram

The following diagram shows the connection between the GOT and the controller.

RS-232 connection diagram (1)



Preparation of the RS-232 cable

■Cable length

The length of the RS-232 cable must be 15 m or less.

■GOT side connector

For the GOT side connector, refer to the following.

☞ Page 2954 GOT connector specifications

Connecting terminating resistors

■GOT side

When connecting a PLC to the GOT, a terminating resistor must be connected to the GOT.

Set the terminating resistor setting switch to "Not used".

For the procedure to set the terminating resistor, refer to the following.

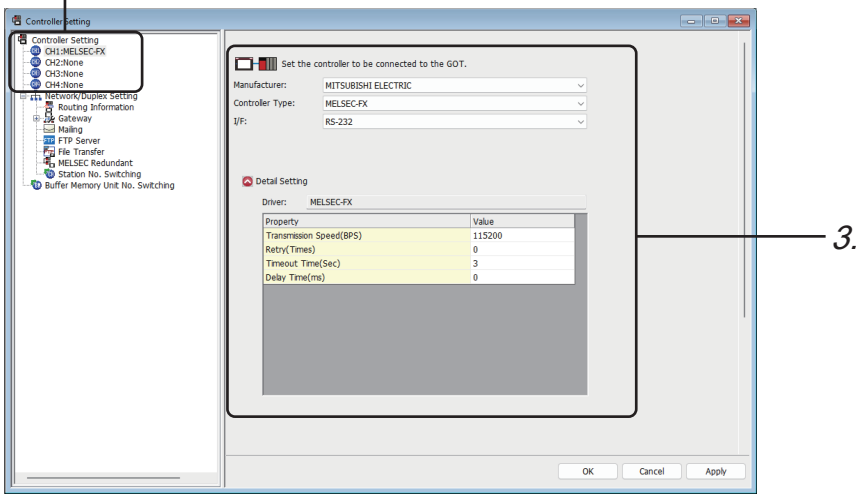
☞ Page 2956 Terminating resistors of GOT

5.9.4 GOT side settings

[Controller Setting]

Set the channel of the connected controller.

List menu



Operating procedure

1. Select [Common] → [Controller Setting] from the menu.

2. In the [Controller Setting] window, select the channel number to be used from the list menu.

3. Set the following items.

Item		Description
[Manufacturer]		[MITSUBISHI ELECTRIC]
[Controller Type]		[MELSEC-FX]
[I/F]	For GOT	• [RS-232] • [RS-422/485] • [Extend Unit]
	For GT SoftGOT3000	• [Serial 1] • [Serial 2]
[Detail Setting]		Configure the settings according to the usage environment. ☞ Page 538 [Detail Setting]

4. When you have completed the settings, click the [OK] button.

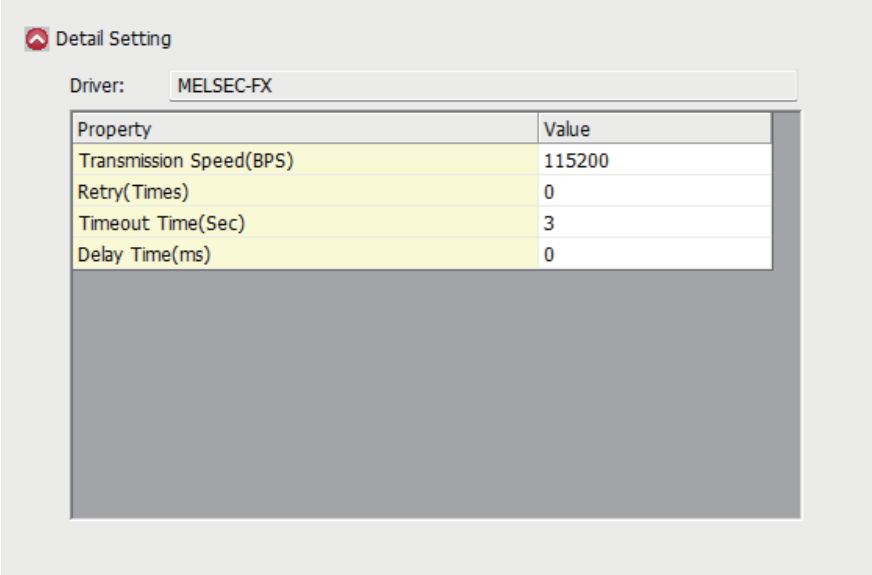
Point

The controller settings can be configured and checked in [I/F Communication Setting].
For details, refer to the following.
📖GT Designer3 (GOT3000) Screen Design Manual

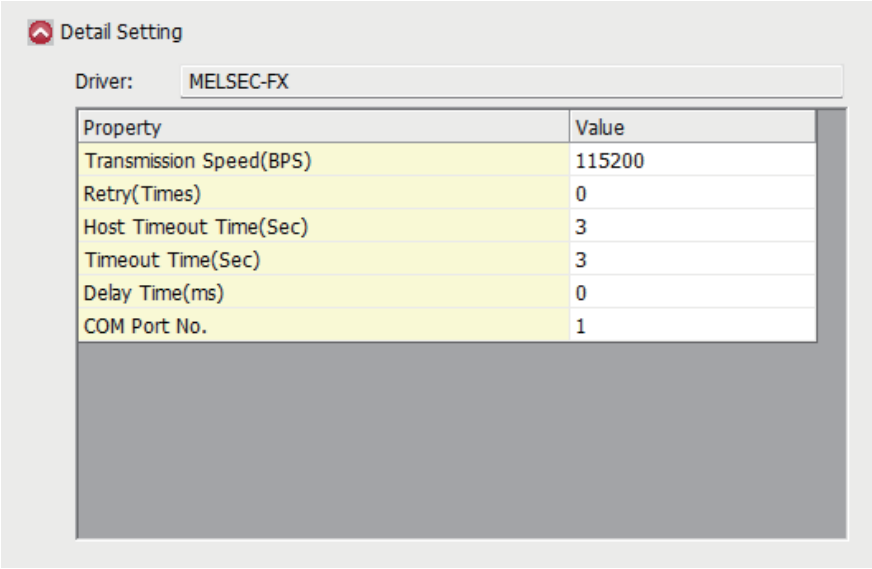
■[Detail Setting]

Configure the settings according to the usage environment.

- For GOT



- For GT SoftGOT3000



Item	Description	Range
[Driver]	This item appears when communication drivers are selectable according to the settings of [Controller Type] and [I/F].	[Serial (MELSEC)]
[Transmission Speed]	Set this item to change the transmission speed used for communication with the connected equipment.	[9600] bps, [19200] bps, [38400] bps, [57600] bps, [115200] bps
[Retry]	Specify the number of retries to be performed during communication.	GOT: [0] times to [5] times GT SoftGOT3000: [0] times to [10] times
[Host Timeout Time]*1	Set the time period until a communication timeout during monitoring of the host station.	[1] second to [90] seconds
[Timeout Time]	Specify the time period for a communication to time out.	[1] second to [30] seconds
[Delay Time]	Set this item to adjust the transmission timing of the communication request from the GOT.	[0] ms to [300] ms
[COM Port No.]*1	Specify the COM port number for communication.	[1] to [63]

*1 This item is displayed in GT SoftGOT3000 only.

Point

• Communication interface settings in the GT37 utility

The communication interface setting can be changed in [Communication setting] of the GT37 utility after writing [Controller Setting] in project data.

For details on the GT37 utility, refer to the following manual.

GOT3000 Series User's Manual (Utility & Maintenance Functions)

• Priority of the settings in [Controller Setting]

When settings are configured in GT Designer3 or the GT37 utility, the most recent settings are effective.

5.9.5 PLC side settings

No setting is required on the controller.

5.9.6 Access range for monitoring

Only the connected CPU can be accessed.

6 USB connection

☞ Page 651 MELSEC iQ-R series (USB connection)
☞ Page 659 MELSEC iQ-F series (USB connection)
☞ Page 665 MELSEC-Q series (USB connection)
☞ Page 673 MELSEC-L series (USB connection)
☞ Page 678 MELSEC-F series (USB connection)

6.1 MELSEC iQ-R series (USB connection)

☞ Page 651 Connectable devices
☞ Page 652 System configuration
☞ Page 654 Connection cable
☞ Page 654 GOT side settings
☞ Page 657 PLC side settings
☞ Page 658 Access range for monitoring

6.1.1 Connectable devices

The following table shows the connectable models.

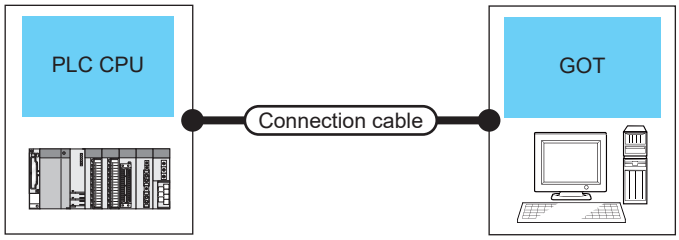
○: Supported, —: Not supported

Controller	Model	Clock	Connectable model
MELSEC iQ-R series	R00CPU R01CPU R02CPU R04CPU R08CPU R16CPU R32CPU R120CPU	○	GT37 SoftGOT3000
	R08PCPU*2 R16PCPU*2 R32PCPU*2 R120PCPU*2	○	GT37 SoftGOT3000
	R04ENCPU R08ENCPU R16ENCPU R32ENCPU R120ENCPU	○	GT37 SoftGOT3000
	R08SFCPU*1 R16SFCPU*1 R32SFCPU*1 R120SFCPU*1	○	GT37 SoftGOT3000
	R08PSFCPU*3 R16PSFCPU*3 R32PSFCPU*3 R120PSFCPU*3	○	GT37 SoftGOT3000
Motion CPU (MELSEC iQ-R series)	R16MTCPU R32MTCPU R64MTCPU	○	GT37 SoftGOT3000

Controller	Model	Clock	Connectable model
C Controller module (MELSEC iQ-R series)	R12CCPU-V*4	○	GT37 SoftGOT3000
CNC C80	R16NCCPU-S1*4	○	GT37 SoftGOT3000
Robot controller (MELSEC iQ-R series)	CR800-R (R16RTCPU)*4	○	GT37 SoftGOT3000

*1 Mount the safety function module (R6SFM) next to the CPU module on the base unit.
The CPU module and the safety function module (R6SFM) must have the same pair version.
If their pair versions differ, the CPU module does not operate.
*2 The redundant system is configurable by mounting the redundant function module (R6RFM).
*3 Mount a SIL2 function module (R6PSFM) and a redundant function module (R6RFM) next to a SIL2 process CPU on the base unit.
*4 This module has no USB port to connect to a personal computer. Monitor the module via an RCPU in the multiple CPU system.

6.1.2 System configuration



For details on the connection cable, refer to the following.
☞ Page 654 Connection cable
For details on the maximum number of connected devices, refer to the following.
☞ Page 653 Maximum number of connected devices

PLC	Maximum length	GOT	
Model		Interface	Model
MELSEC iQ-R series C Controller module (MELSEC iQ-R series)	3 m	USB interface of personal computer	GT37 SoftGOT3000
Motion CPU (MELSEC iQ-R series)	5 m	USB interface of personal computer	GT37 SoftGOT3000
CNC C80 Robot controller CR800-R (R16RTCPU)	Access these models via an RCPU in the multiple CPU system.		

Precautions

Stop monitoring before connecting or disconnecting the USB cable, resetting the PLC, or turning the power on or off. Otherwise, a communication timeout may occur and monitoring may not recover.
If the communication error is not fixed, remove the USB cable. After 5 seconds or more elapse, reconnect the cable. (The error may occur at first communication after the above operation. From the next time, the programmable controller functions normally.)

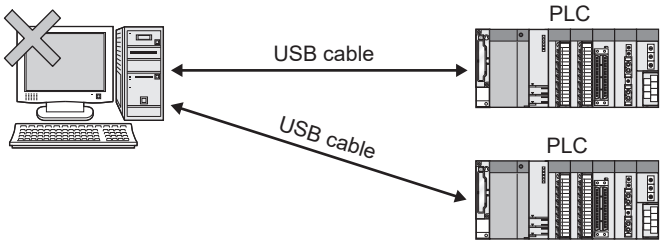
Maximum number of connected devices

The USB connection allows one PLC to connect to one of the GT SoftGOT3000 channels 1 to 4.
One GT SoftGOT3000 module is connectable to one PLC.

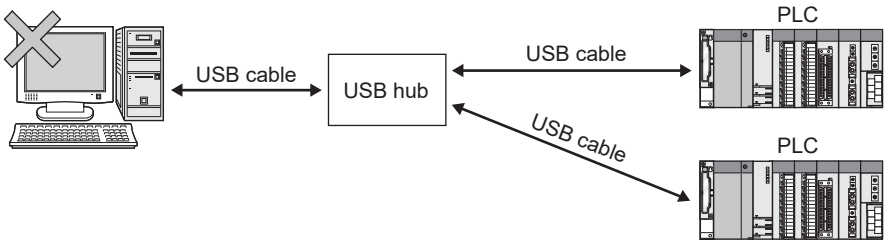
Precautions

Multiple PLCs are not connectable to one personal computer via a USB port or USB hub.
The following shows the system configurations that cannot be used.

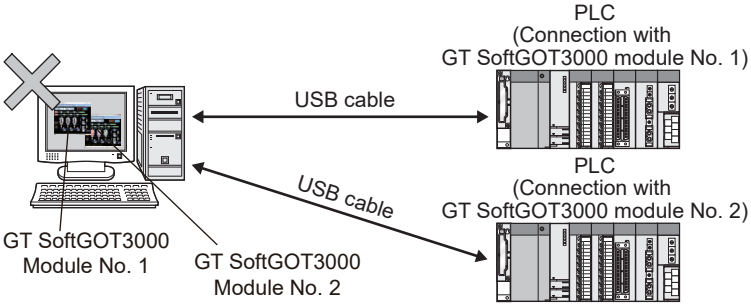
• Connection from a personal computer with multiple USB ports to multiple PLCs



• Connection to multiple PLCs via a USB hub



• Connection from multiple GT SoftGOT3000 modules to multiple PLCs



6.1.3 Connection cable

For the USB cables validated by Mitsubishi Electric Corporation, refer to the following Technical Bulletin.

📖List of Valid Devices Applicable for GOT3000 Series (GOT-A-0233)

For Technical Bulletins, go to the Mitsubishi Electric Factory Automation Global Website.

www.MitsubishiElectric.com/fa

Precautions

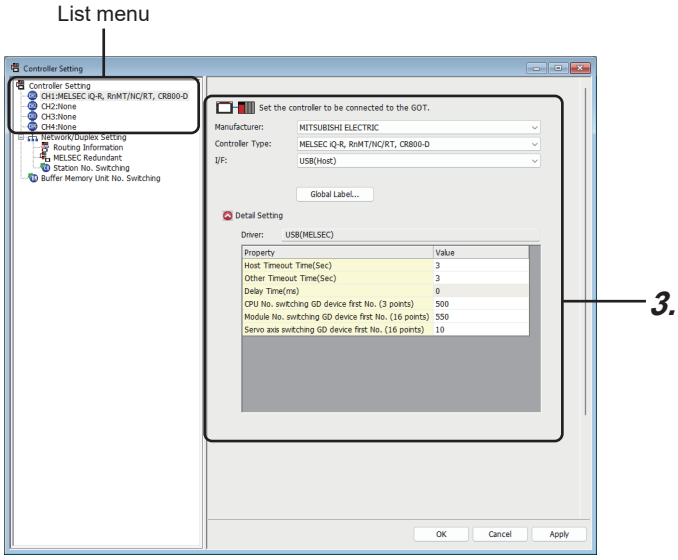
The USB cable can be used with the USB driver already installed.

For the specifications and precautions for cables, refer to the manual of each product.

6.1.4 GOT side settings

[Controller Setting]

Set the channel of the connected controller.



Operating procedure

1. Select [Common] → [Controller Setting] from the menu.
2. In the [Controller Setting] window, select the channel number to be used from the list menu.
3. Set the following items.

Item	Description
[Manufacturer]	[MITSUBISHI ELECTRIC]
[Controller Type]	[MELSEC iQ-R, RnMT/NC/RT, CR800-D]
[I/F]	[USB(Host)]
[Detail Setting]	Configure the settings according to the usage environment. ☞ Page 655 [Detail Setting]

4. When you have completed the settings, click the [OK] button.

Point

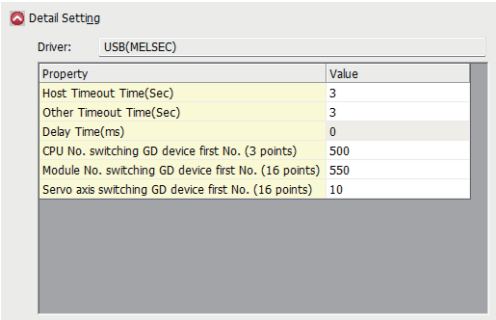
The controller settings can be checked in [I/F Communication Setting].

For details, refer to the following.

📖GT Designer3 (GOT3000) Screen Design Manual

■[Detail Setting]

Configure the settings according to the usage environment.



Item	Description	Range
[Driver]	This item appears when communication drivers are selectable according to the settings of [Controller Type] and [I/F].	[USB(MELSEC)]
[Host Timeout Time(Sec)]	Set the time period until a communication timeout during monitoring of the host station.	[1] (second) to [90] (seconds)
[Other Timeout Time(Sec)]	Set the time period until a communication timeout during monitoring of other stations.	[1] (second) to [30] (seconds)
[Delay Time(ms)]	Set the delay time for reducing the load of the network and destination PLC.	[0](ms)
[CPU No. switching GD device first No. (3 points)]	Set the start device number of the GD devices for CPU number switching. For details, refer to the following. ☞ Page 655 Start device number of the GD devices for CPU number switching	[0] to [65520]
[Module No. switching GD device first No. (16 points)]	Set the start device number of the GD devices for module number switching. For details, refer to the following. ☞ Page 656 Start device number of the GD devices for module number switching	[0] to [65520]
[Servo axis switching GD device first No. (16 points)]	Set the start device number of the GD devices for servo axis switching. For details, refer to the following. ☞ Page 657 Start device number of the GD devices for servo axis switching	[0] to [65520]

■Start device number of the GD devices for CPU number switching

- Indirect specification of a CPU number

[CPU No.] can be indirectly specified with the GOT internal registers (GD devices) by specifying a value (100 to 102) to [CPU No.] in the device setting dialog in GT Designer3.

Set the start device number of the GD devices to be used in [CPU No. switching GD device first No. (3 points)].

[CPU No.] is specified with three consecutive GD devices, starting from the set device number.

When [500] is set to [CPU No. switching GD device first No. (3 points)], GD500 to GD502 are used to specify [CPU No.] as shown in the following table.

CPU No.	GD device	Setting range
100	GD500	1 to 4 Setting a value outside the range causes a communication timeout error. Specifying a nonexistent CPU number or a CPU number not supporting a multiple CPU system with a device causes a controller error.
101	GD501	
102	GD502	

- Indirect specification of a CPU number on the initially displayed screen

Set [CPU No. switching GD device first No. (3 points)] so that the values of the GD devices are retained and monitored upon the GOT startup.

- Indirect specification of a CPU number for multi-channel connection

If the setting range of [CPU No. switching GD device first No. (3 points)] set for each channel overlaps, the monitoring target CPU number set to each channel is switched simultaneously.

Set [CPU No. switching GD device first No. (3 points)] for each channel so that the setting range does not overlap.

■Start device number of the GD devices for module number switching

• Indirect specification of a module number

For connection via a Simple Motion module, [Unit No.] can be specified with the GOT internal registers (GD devices) by specifying a value (100 to 10F) to [Unit No.] in the device setting dialog in GT Designer3.

Set the start device number of the GD devices to be used in [Module No. switching GD device first No. (16 points)].

[Unit No.] is specified with 16 consecutive GD devices, starting from the set device number.

When [550] is set to [Module No. switching GD device first No. (16 points)], GD550 to GD565 are used to specify [Unit No.] as shown in the following table.

Module No.	GD device	Setting range
100	GD550	00 to FF Setting a value outside the above range causes a device range error.
101	GD551	
102	GD552	
103	GD553	
104	GD554	
105	GD555	
106	GD556	
107	GD557	
108	GD558	
109	GD559	
10A	GD560	
10B	GD561	
10C	GD562	
10D	GD563	
10E	GD564	
10F	GD565	

• Indirect specification of a module number on the initially displayed screen

Set [Module No. switching GD device first No. (16 points)] so that the values of the GD devices are retained and monitored upon the GOT startup.

• Indirect specification of a module number for multi-channel connection

If the setting range of [Module No. switching GD device first No. (16 points)] set for each channel overlaps, the module number of the Simple Motion module via the servo amplifier device of each channel is switched simultaneously.

Set [Module No. switching GD device first No. (16 points)] for each channel so that the setting range does not overlap.

■Start device number of the GD devices for servo axis switching

• Indirect specification of a servo axis number

For connection via a Motion CPU or Simple Motion module, a servo axis number can be indirectly specified with GOT internal registers (GD devices) by specifying a value (100 to 115) to the axis number of the servo amplifier device.

Set the start device number of the GD devices to be used in [Servo axis switching GD device first No. (16 points)].

Specify a servo axis number with 16 consecutive GD devices, starting the set device number.

When [10] is set to [Servo axis switching GD device first No. (16 points)], GD10 to GD25 are used to specify a servo axis number as shown in the following table.

Servo axis No.	GD device	Setting range
100	GD10	1 to 64 Setting a value outside the above range causes a device range error.
101	GD11	
102	GD12	
103	GD13	
104	GD14	
105	GD15	
106	GD16	
107	GD17	
108	GD18	
109	GD19	
110	GD20	
111	GD21	
112	GD22	
113	GD23	
114	GD24	
115	GD25	

• Indirect specification of a servo axis number on the initially displayed screen

Set [Servo axis switching GD device first No. (16 points)] so that the values of the GD devices are retained and monitored upon the GOT startup.

• Indirect specification of a servo axis number for multi-channel connection

If the setting rage of [Servo axis switching GD device first No. (16 points)] set for each channel overlaps, the axis number of the servo amplifier of each channel is switched simultaneously.

Set [Servo axis switching GD device first No. (16 points)] for each channel so that the setting range does not overlap.

6.1.5 PLC side settings

No setting is required on the controller.

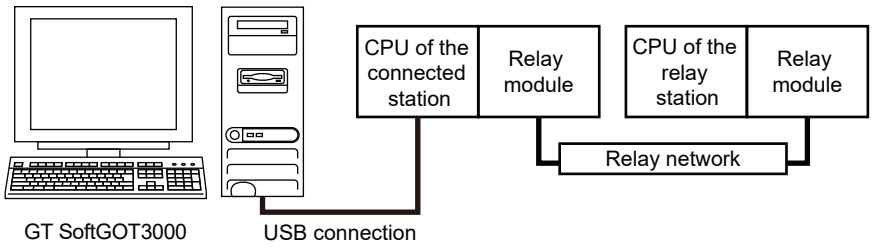
6.1.6 Access range for monitoring

When GT SoftGOT3000 is connected to the CPU of the station connected via USB, the range accessible via the CPU is as follows.

Point

- When monitoring other networks (Routing parameter settings)

To monitor other networks, routing parameter settings are necessary.
For the routing parameter settings, refer to the reference manual of the network connected.



○: Accessible, —: Inaccessible

CPU of the connected station	Relay station								
	Relay network	CPU of the relay station							
		RCPU	LCPU	QCPU (Q mode)	QSCPU*1	QCPU (A mode)	QnACPU	ACPU	FX5CPU
RCPU	Ethernet	○*3	○	○	○	—	—	—	—
	CC-Link IE TSN	○	—	—	—	—	—	—	—
	CC-Link IE Controller Network	○	—	○	○	—	—	—	—
	CC-Link IE Field Network	○	○	○	○	—	—	—	○*2

*1 The routing parameter cannot be set for the QSCPU, and therefore the networks on which the CPU is not located are inaccessible.
*2 Use an intelligent function module (FX5-CCLIEF) as an intelligent device station to connect to the CC-Link IE Field Network.
*3 When connecting to the built-in Ethernet port of the RCPU (relay station CPU), access is possible only when the following conditions are satisfied.
- RCPU firmware version 39 or later
- In GX Works3, communications using the network number and the station number are enabled, and the network number and the station number are set.

6.2 MELSEC iQ-F series (USB connection)

☞ Page 659 Connectable devices
☞ Page 659 System configuration
☞ Page 660 Connection cable
☞ Page 661 GOT side settings
☞ Page 663 PLC side settings
☞ Page 664 Access range for monitoring

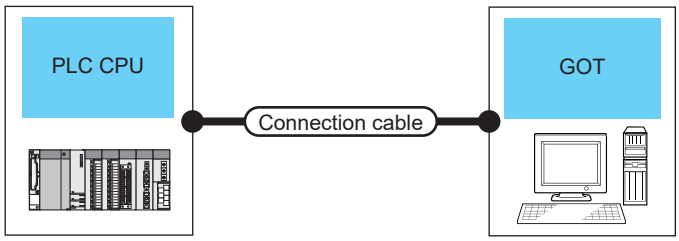
6.2.1 Connectable devices

The following table shows the connectable models.
○: Supported, —: Not supported

Controller	Model	Clock	Connectable model
MELSEC iQ-F series	FX5UJ FX5S	○*1	GT37 SoftGOT3000

*1 The time setting function or the time notification function is performed to CPU No. 1.

6.2.2 System configuration



For details on the connection cable, refer to the following.
☞ Page 660 Connection cable
For details on the maximum number of connected devices, refer to the following.
☞ Page 660 Maximum number of connected devices

PLC	Maximum length	GOT	
Model		Interface	Model
MELSEC iQ-F series (FX5UJ, FX5S)	3 m	USB interface of personal computer	GT37 SoftGOT3000

Precautions

Stop monitoring before connecting or disconnecting the USB cable, resetting the PLC, or turning the power on or off. Otherwise, a communication timeout may occur and monitoring may not recover.
If the communication error is not fixed, remove the USB cable. After 5 seconds or more elapse, reconnect the cable. (The error may occur at first communication after the above operation. From the next time, the programmable controller functions normally.)

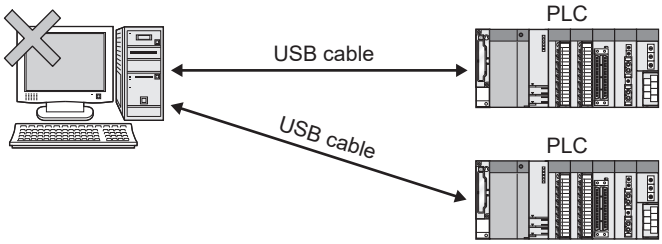
Maximum number of connected devices

The USB connection allows one PLC to connect to one of the GT SoftGOT3000 channels 1 to 4.
One GT SoftGOT3000 module is connectable to one PLC.

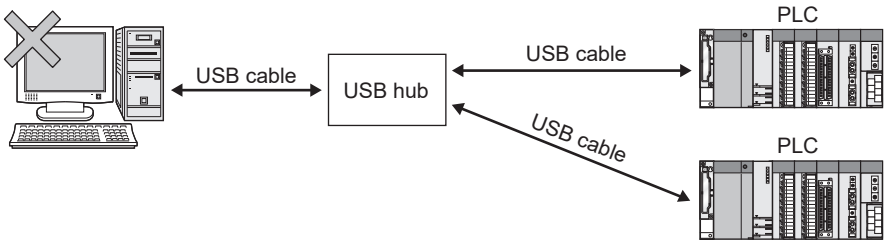
Precautions

Multiple PLCs are not connectable to one personal computer via a USB port or USB hub.
The following shows the system configurations that cannot be used.

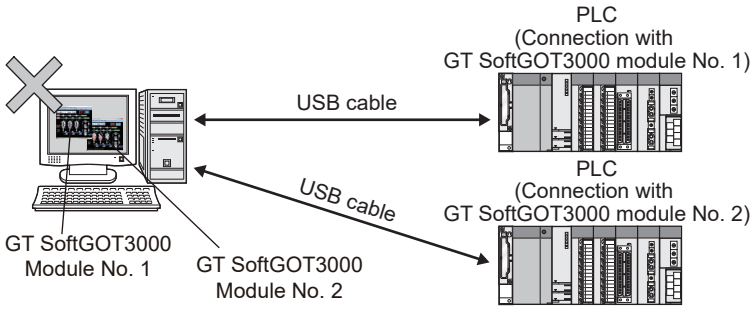
• Connection from a personal computer with multiple USB ports to multiple PLCs



• Connection to multiple PLCs via a USB hub



• Connection from multiple GT SoftGOT3000 modules to multiple PLCs



6.2.3 Connection cable

For the USB cables validated by Mitsubishi Electric Corporation, refer to the following Technical Bulletin.
List of Valid Devices Applicable for GOT3000 Series (GOT-A-0233)
For Technical Bulletins, go to the Mitsubishi Electric Factory Automation Global Website.
www.MitsubishiElectric.com/fa

Precautions

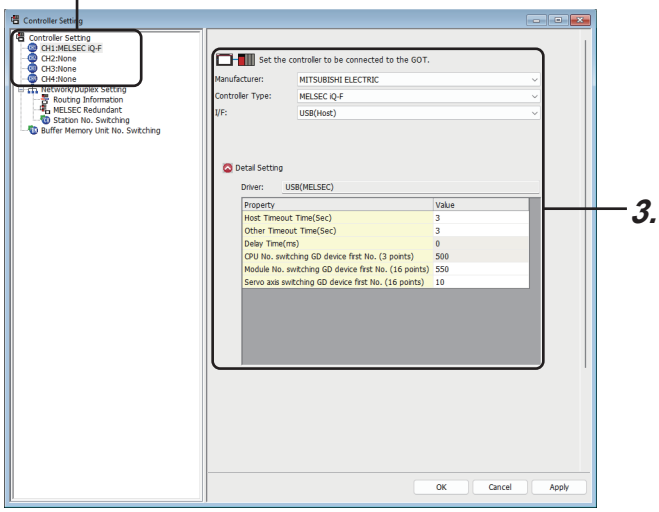
The USB cable can be used with the USB driver already installed.
For the specifications and precautions for cables, refer to the manual of each product.

6.2.4 GOT side settings

[Controller Setting]

Set the channel of the connected controller.

List menu



Operating procedure

1. Select [Common] → [Controller Setting] from the menu.
2. In the [Controller Setting] window, select the channel number to be used from the list menu.
3. Set the following items.

Item	Description
[Manufacturer]	[MITSUBISHI ELECTRIC]
[Controller Type]	[MELSEC iQ-F]
[I/F]	[USB(Host)]
[Detail Setting]	Configure the settings according to the usage environment. ☞ Page 662 [Detail Setting]

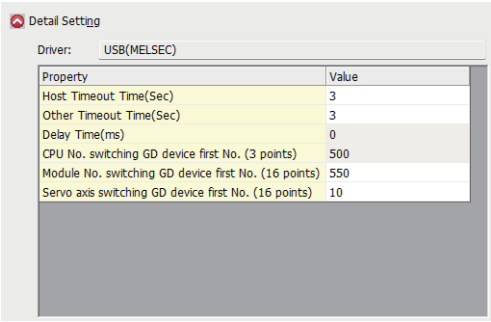
4. When you have completed the settings, click the [OK] button.

Point

The controller settings can be checked in [I/F Communication Setting].
For details, refer to the following.
📖GT Designer3 (GOT3000) Screen Design Manual

■[Detail Setting]

Configure the settings according to the usage environment.



Item	Description	Range
[Driver]	This item appears when communication drivers are selectable according to the settings of [Controller Type] and [I/F].	[USB(MELSEC)]
[Host Timeout Time(Sec)]	Set the time period until a communication timeout during monitoring of the host station.	[1] (second) to [90] (seconds)
[Other Timeout Time(Sec)]	Set the time period until a communication timeout during monitoring of other stations.	[1] (second) to [30] (seconds)
[Delay Time(ms)]	Set the delay time for reducing the load of the network and destination PLC.	[0](ms)
[CPU No. switching GD device first No. (3 points)]	Not used	—
[Module No. switching GD device first No. (16 points)]	Set the start device number of the GD devices for module number switching. For details, refer to the following. ☞ Page 662 Start device number of the GD devices for module number switching	[0] to [65520]
[Servo axis switching GD device first No. (16 points)]	Set the start device number of the GD devices for servo axis switching. For details, refer to the following. ☞ Page 663 Start device number of the GD devices for servo axis switching	[0] to [65520]

■Start device number of the GD devices for module number switching

- Indirect specification of a module number

For connection via a Simple Motion module, [Unit No.] can be specified with the GOT internal registers (GD devices) by specifying a value (100 to 10F) to [Unit No.] in the device setting dialog in GT Designer3.

Set the start device number of the GD devices to be used in [Module No. switching GD device first No. (16 points)].

[Unit No.] is specified with 16 consecutive GD devices, starting from the set device number.

When [550] is set to [Module No. switching GD device first No. (16 points)], GD550 to GD565 are used to specify [Unit No.] as shown in the following table.

Module No.	GD device	Setting range
100	GD550	01 to 10 Setting a value outside the above range causes a device range error.
101	GD551	
102	GD552	
103	GD553	
104	GD554	
105	GD555	
106	GD556	
107	GD557	
108	GD558	
109	GD559	
10A	GD560	
10B	GD561	
10C	GD562	
10D	GD563	
10E	GD564	
10F	GD565	

• Indirect specification of a module number on the initially displayed screen

Set [Module No. switching GD device first No. (16 points)] so that the values of the GD devices are retained and monitored upon the GOT startup.

• Indirect specification of a module number for multi-channel connection

If the setting range of [Module No. switching GD device first No. (16 points)] set for each channel overlaps, the module number of the Simple Motion module via the servo amplifier device of each channel is switched simultaneously.

Set [Module No. switching GD device first No. (16 points)] for each channel so that the setting range does not overlap.

■Start device number of the GD devices for servo axis switching

• Indirect specification of a servo axis number

For connection via a Motion CPU or Simple Motion module, a servo axis number can be indirectly specified with GOT internal registers (GD devices) by specifying a value (100 to 115) to the axis number of the servo amplifier device.

Set the start device number of the GD devices to be used in [Servo axis switching GD device first No. (16 points)].

Specify a servo axis number with 16 consecutive GD devices, starting the set device number.

When [10] is set to [Servo axis switching GD device first No. (16 points)], GD10 to GD25 are used to specify a servo axis number as shown in the following table.

Servo axis No.	GD device	Setting range
100	GD10	1 to 64 Setting a value outside the above range causes a device range error.
101	GD11	
102	GD12	
103	GD13	
104	GD14	
105	GD15	
106	GD16	
107	GD17	
108	GD18	
109	GD19	
110	GD20	
111	GD21	
112	GD22	
113	GD23	
114	GD24	
115	GD25	

• Indirect specification of a servo axis number on the initially displayed screen

Set [Servo axis switching GD device first No. (16 points)] so that the values of the GD devices are retained and monitored upon the GOT startup.

• Indirect specification of a servo axis number for multi-channel connection

If the setting rage of [Servo axis switching GD device first No. (16 points)] set for each channel overlaps, the axis number of the servo amplifier of each channel is switched simultaneously.

Set [Servo axis switching GD device first No. (16 points)] for each channel so that the setting range does not overlap.

6.2.5 PLC side settings

No setting is required on the controller.

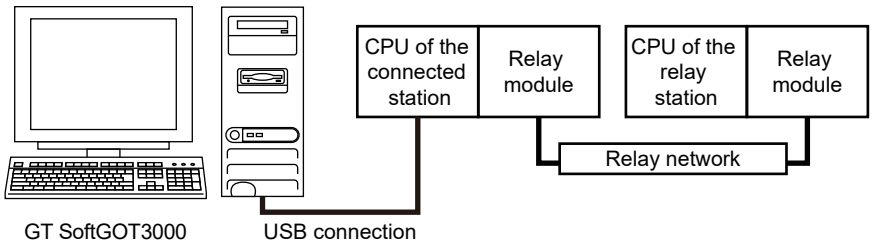
6.2.6 Access range for monitoring

When GT SoftGOT3000 is connected to the CPU of the station connected via USB, the range accessible via the CPU is as follows.

Point

- When monitoring other networks (Routing parameter settings)

To monitor other networks, routing parameter settings are necessary.
For the routing parameter settings, refer to the reference manual of the network connected.



○: Accessible, —: Inaccessible

CPU of the connected station	Relay station								
	Relay network	CPU of the relay station							
		RCPU	LCPU	QCPU (Q mode)	QSCPU	QCPU (A mode)	QnACPU	ACPU	FX5CPU
FX5CPU	CC-Link IE Field Network	—	—	—	—	—	—	—	○*1

*1 Use an intelligent function module (FX5-CCLIEF) as an intelligent device station to connect to the CC-Link IE Field Network.

6.3 MELSEC-Q series (USB connection)

☞ Page 666 Connectable devices
☞ Page 668 System configuration
☞ Page 670 Connection cable
☞ Page 670 GOT side settings
☞ Page 672 PLC side settings
☞ Page 672 Access range for monitoring

6.3.1 Connectable devices

The following table shows the connectable models.

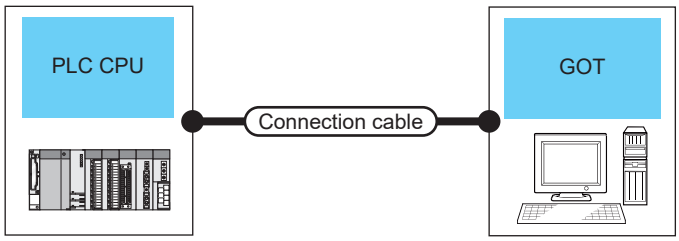
○: Supported, —: Not supported

Controller	Model	Clock	Connectable model
MELSEC-Q (Q mode)	Q02HCPU[*1] Q06HCPU[*1] Q12HCPU[*1] Q25HCPU[*1]	○	GT37 SoftGOT3000
	Q02PHCPU Q06PHCPU Q12PHCPU Q25PHCPU	○	GT37 SoftGOT3000
	Q00UJCPU Q00UJCPU(-S8)	○	GT37 SoftGOT3000
	Q00UCPU Q01UCPU Q02UCPU Q03UDCPU	○	GT37 SoftGOT3000
	Q04UDHCPU Q06UDHCPU Q10UDHCPU Q13UDHCPU Q20UDHCPU Q26UDHCPU	○	GT37 SoftGOT3000
	Q03UDECPU Q04UDEHCPU Q06UDEHCPU Q10UDEHCPU Q13UDEHCPU Q20UDEHCPU Q26UDEHCPU Q50UDEHCPU Q100UDEHCPU	○	GT37 SoftGOT3000
	Q03UDVCPU Q04UDVCPU Q06UDVCPU Q13UDVCPU Q26UDVCPU	○	GT37 SoftGOT3000
C Controller module (Q series)	Q12DCCPU-V[*2] Q24DHCCPU-V[*2] Q24DHCCPU-LS[*2] Q26DHCCPU-LS[*2] Q24DHCCPU-VG[*2]	○	GT37 SoftGOT3000
MELSEC-QS	QS001CPU[*3*8]	○	GT37 SoftGOT3000
Motion CPU (Q series)	Q172DSCPU Q173DSCPU Q170MCPU[*4*5*6] Q170MSCPU[*4*5] Q170MSCPU-S1[*4*5]	○	GT37 SoftGOT3000

Controller	Model	Clock	Connectable model
CNC C70	Q173NCCPU*7	○	GT37 SoftGOT3000
Robot controller (Q series)	CRnQ-700 (Q172DRCPU)*7 CR750-Q (Q172DRCPU)*7 CR751-Q (Q172DRCPU)*7 CR800-Q (Q172DSRCPU)*7	○	GT37 SoftGOT3000

*1 To configure a multiple CPU system, use a CPU with function version B or later.
*2 Use a C Controller module having a serial number starting with 12012 or later in the first 5 digits.
*3 Writing data to a QS001CPU always causes an error.
*4 Only the PLC CPU area (CPU number 1) can be monitored. The PERIPHERAL I/F cannot be used.
*5 Monitor the CPU as a Q03UDCPU.
*6 The following requirements must be satisfied.
Software: MT Works2 version 1.23Z
CPU model: Q170M SV43
*7 This module has no USB port for connection to a personal computer. Monitor the module via an QCPU in the multiple CPU system.
*8 To communicate with the CPU, configure the following settings in the device setting dialog on GT Designer3.
Set [CPU No.] to 0.
Select [Host].

6.3.2 System configuration



For details on the connection cable, refer to the following.

☞ Page 670 Connection cable

For details on the maximum number of connected devices, refer to the following.

☞ Page 669 Maximum number of connected devices

PLC	Maximum length	GOT	
Model		**Interface**	**Model**
QCPU (Q mode) C Controller module QSCPU Motion CPU (Q series)*1	3 m	USB interface of personal computer	GT37 SoftGOT3000
CNC C70 CRnQ-700 CR750-Q CR751-Q	Access these models via a QnUCPU in the multiple CPU system.		
CR800-Q (Q172DSRCPU)	Access the model via any of the following CPUs in the multiple CPU system. • QnUDECPU • QnUDVCPU • QnUDEHCPU		

*1 For the Motion CPUs (Q series), only the PLC CPU area (CPU number 1) of Q170MCPU or Q170MSCPU can be accessed.

Precautions

Stop monitoring before connecting or disconnecting the USB cable, resetting the PLC, or turning the power on or off. Otherwise, a communication timeout may occur and monitoring may not recover.

If the communication error is not fixed, remove the USB cable. After 5 seconds or more elapse, reconnect the cable. (The error may occur at first communication after the above operation. From the next time, the programmable controller functions normally.)

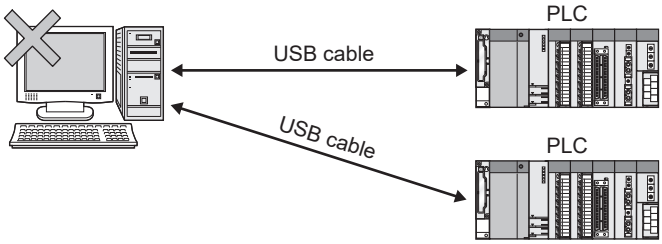
Maximum number of connected devices

The USB connection allows one PLC to connect to one of the GT SoftGOT3000 channels 1 to 4.
One GT SoftGOT3000 module is connectable to one PLC.

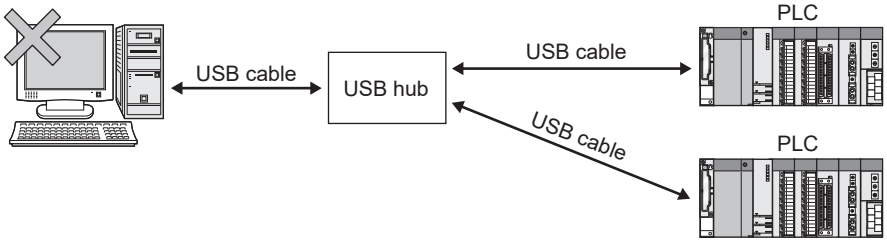
Precautions

Multiple PLCs are not connectable to one personal computer via a USB port or USB hub.
The following shows the system configurations that cannot be used.

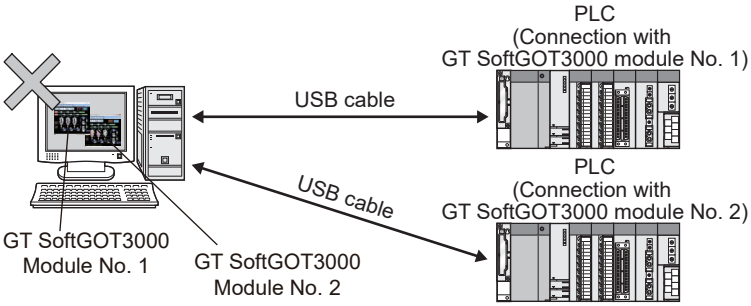
• Connection from a personal computer with multiple USB ports to multiple PLCs



• Connection to multiple PLCs via a USB hub



• Connection from multiple GT SoftGOT3000 modules to multiple PLCs



6.3.3 Connection cable

For the USB cables validated by Mitsubishi Electric Corporation, refer to the following Technical Bulletin.

📖List of Valid Devices Applicable for GOT3000 Series (GOT-A-0233)

For Technical Bulletins, go to the Mitsubishi Electric Factory Automation Global Website.

www.MitsubishiElectric.com/fa

Precautions

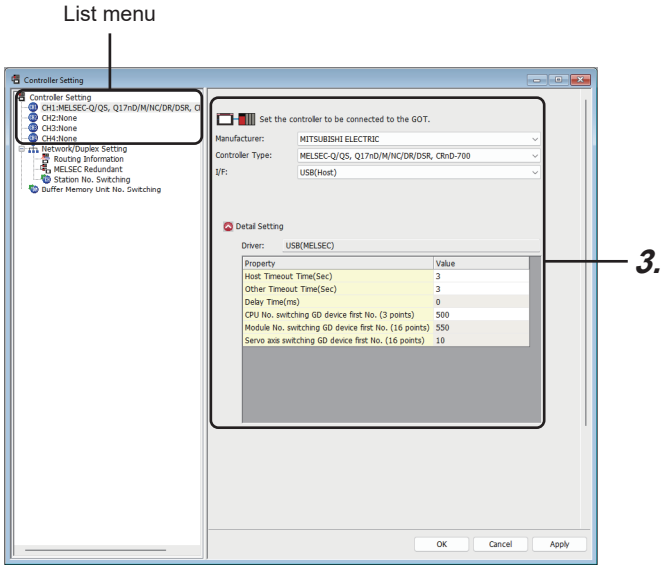
The USB cable can be used with the USB driver already installed.

For the specifications and precautions for cables, refer to the manual of each product.

6.3.4 GOT side settings

[Controller Setting]

Set the channel of the connected controller.



Operating procedure

1. Select [Common] → [Controller Setting] from the menu.
2. In the [Controller Setting] window, select the channel number to be used from the list menu.
3. Set the following items.

Item	Description
[Manufacturer]	[MITSUBISHI ELECTRIC]
[Controller Type]	[MELSEC-Q/QS, Q17nD/M/NC/DR/DSR, CRnD-700]
[I/F]	[USB(Host)]
[Detail Setting]	Configure the settings according to the usage environment. ☞ Page 671 [Detail Setting]

4. When you have completed the settings, click the [OK] button.

Point

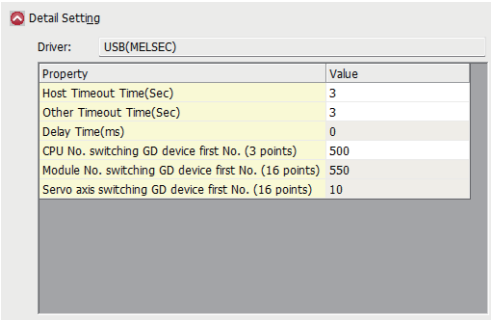
The controller settings can be checked in [I/F Communication Setting].

For details, refer to the following.

📖GT Designer3 (GOT3000) Screen Design Manual

■[Detail Setting]

Configure the settings according to the usage environment.



Item	Description	Range
[Driver]	This item appears when communication drivers are selectable according to the settings of [Controller Type] and [I/F].	[USB(MELSEC)]
[Host Timeout Time(Sec)]	Set the time period until a communication timeout during monitoring of the host station.	[1] (second) to [90] (seconds)
[Other Timeout Time(Sec)]	Set the time period until a communication timeout during monitoring of other stations.	[1] (second) to [30] (seconds)
[Delay Time(ms)]	Set the delay time for reducing the load of the network and destination PLC.	[0](ms)
[CPU No. switching GD device first No. (3 points)]	Set the start device number of the GD devices for CPU number switching. For details, refer to the following. ☞ Page 671 Start device number of the GD devices for CPU number switching	[0] to [65520]
[Module No. switching GD device first No. (16 points)]	Not used	—
[Servo axis switching GD device first No. (16 points)]	Not used	—

■Start device number of the GD devices for CPU number switching

• Indirect specification of a CPU number

[CPU No.] can be indirectly specified with the GOT internal registers (GD devices) by specifying a value (100 to 102) to [CPU No.] in the device setting dialog in GT Designer3.

Set the start device number of the GD devices to be used in [CPU No. switching GD device first No. (3 points)].

[CPU No.] is specified with three consecutive GD devices, starting from the set device number.

When [500] is set to [CPU No. switching GD device first No. (3 points)], GD500 to GD502 are used to specify [CPU No.] as shown in the following table.

CPU No.	GD device	Setting range
100	GD500	1 to 4 Setting a value outside the range causes a communication timeout error. Specifying a nonexistent CPU number or a CPU number not supporting a multiple CPU system with a device causes a controller error.
101	GD501	
102	GD502	

• Indirect specification of a CPU number on the initially displayed screen

Set [CPU No. switching GD device first No. (3 points)] so that the values of the GD devices are retained and monitored upon the GOT startup.

• Indirect specification of a CPU number for multi-channel connection

If the setting range of [CPU No. switching GD device first No. (3 points)] set for each channel overlaps, the monitoring target CPU number set to each channel is switched simultaneously.

Set [CPU No. switching GD device first No. (3 points)] for each channel so that the setting range does not overlap.

6.3.5 PLC side settings

No setting is required on the controller.

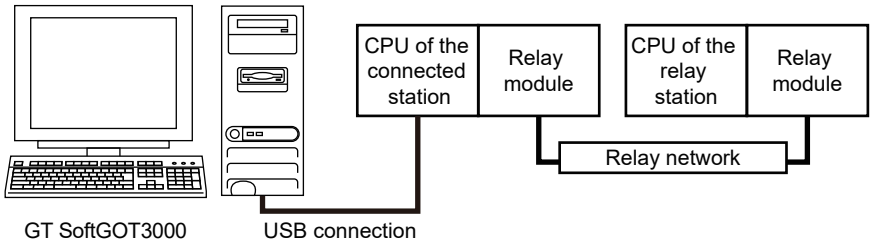
6.3.6 Access range for monitoring

When GT SoftGOT3000 is connected to the CPU of the station connected via USB, the range accessible via the CPU is as follows.

Point

- When monitoring other networks (Routing parameter settings)

To monitor other networks, routing parameter settings are necessary.
For the routing parameter settings, refer to the reference manual of the network connected.



○: Accessible, —: Inaccessible

CPU of the connected station	Relay station								
	Relay network	CPU of the relay station							
		RCPU	LCPU	QCPU (Q mode)	QSCPU	QCPU (A mode)	QnACPU*2	ACPU*3	FX5CPU
QCPU QSCPU	Ethernet	○	○	○	○	—	○	—	○
	CC-Link IE Controller Network	○	—	○	○	—	—	—	○
	CC-Link IE Field Network	○	○	○*1	○	—	—	—	○
	MELSECNET/H, MELSECNET/10	○	—	○	○	○	○	○	○

*1 Only the Universal model QCPU is supported.
2 MELDAS C6 is inaccessible.
*3 Depending on the CPU type, the access range is different.
Refer to the following table.
○: Accessible, △: Accessible when the connected CPU is the control station

Connected station	CPU of the relay station	
	AnA(AnN)CPU	AnUCPU
QCPU	△	○

6.4 MELSEC-L series (USB connection)

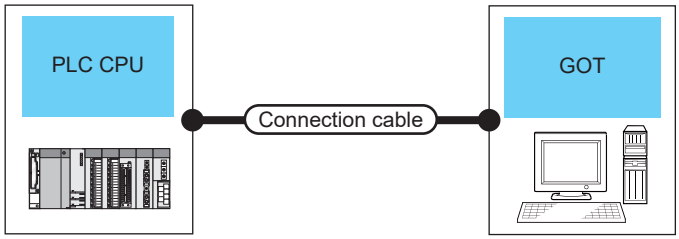
☞ Page 673 Connectable devices
☞ Page 673 System configuration
☞ Page 674 Connection cable
☞ Page 675 GOT side settings
☞ Page 676 PLC side settings
☞ Page 677 Access range for monitoring

6.4.1 Connectable devices

The following table shows the connectable models.
○: Supported, —: Not supported

Controller	Model	Clock	Connectable model
MELSEC-L series	L02CPU L06CPU L26CPU L26CPU-BT L02CPU-P L06CPU-P L26CPU-P L26CPU-PBT	○	GT37 SoftGOT3000
	L02SCPU L02SCPU-P	○	GT37 SoftGOT3000

6.4.2 System configuration



For details on the connection cable, refer to the following.
☞ Page 674 Connection cable
For details on the maximum number of connected devices, refer to the following.
☞ Page 674 Maximum number of connected devices

PLC	Maximum length	GOT	
Model		Interface	Model
LCPU	3 m	USB interface of personal computer	GT37 SoftGOT3000

Precautions

Stop monitoring before connecting or disconnecting the USB cable, resetting the PLC, or turning the power on or off. Otherwise, a communication timeout may occur and monitoring may not recover.
If the communication error is not fixed, remove the USB cable. After 5 seconds or more elapse, reconnect the cable. (The error may occur at first communication after the above operation. From the next time, the programmable controller functions normally.)

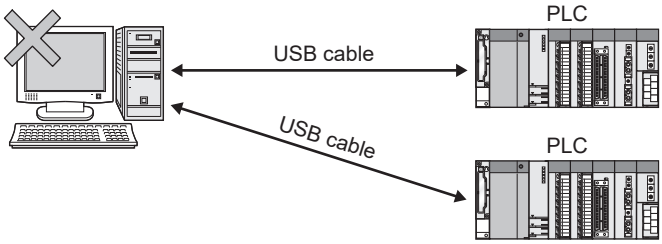
Maximum number of connected devices

The USB connection allows one PLC to connect to one of the GT SoftGOT3000 channels 1 to 4.
One GT SoftGOT3000 module is connectable to one PLC.

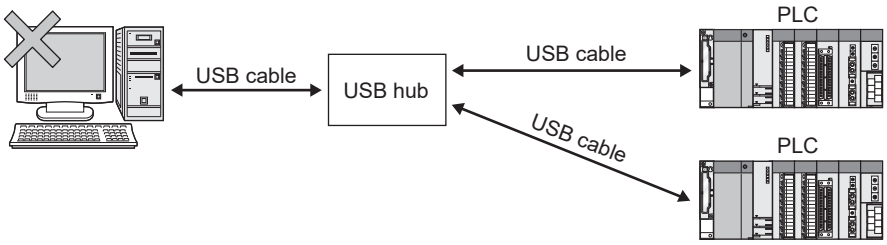
Precautions

Multiple PLCs are not connectable to one personal computer via a USB port or USB hub.
The following shows the system configurations that cannot be used.

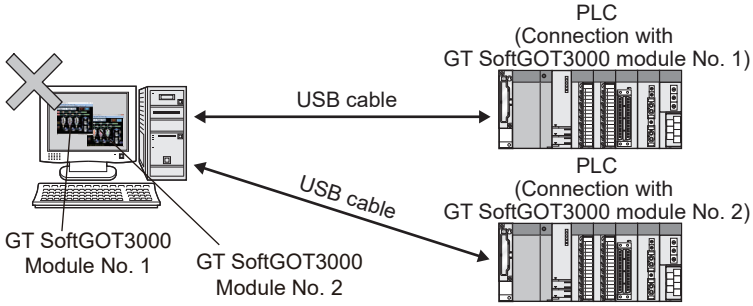
• Connection from a personal computer with multiple USB ports to multiple PLCs



• Connection to multiple PLCs via a USB hub



• Connection from multiple GT SoftGOT3000 modules to multiple PLCs



6.4.3 Connection cable

For the USB cables validated by Mitsubishi Electric Corporation, refer to the following Technical Bulletin.
List of Valid Devices Applicable for GOT3000 Series (GOT-A-0233)
For Technical Bulletins, go to the Mitsubishi Electric Factory Automation Global Website.
www.MitsubishiElectric.com/fa

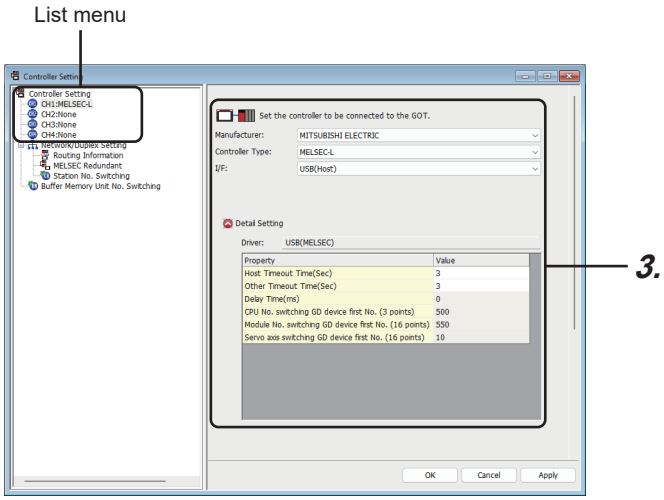
Precautions

The USB cable can be used with the USB driver already installed.
For the specifications and precautions for cables, refer to the manual of each product.

6.4.4 GOT side settings

[Controller Setting]

Set the channel of the connected controller.



Operating procedure

1. Select [Common] → [Controller Setting] from the menu.

2. In the [Controller Setting] window, select the channel number to be used from the list menu.

3. Set the following items.

Item	Description
[Manufacturer]	[MITSUBISHI ELECTRIC]
[Controller Type]	[MELSEC-L]
[I/F]	[USB(Host)]
[Detail Setting]	Configure the settings according to the usage environment. ☞ Page 676 [Detail Setting]

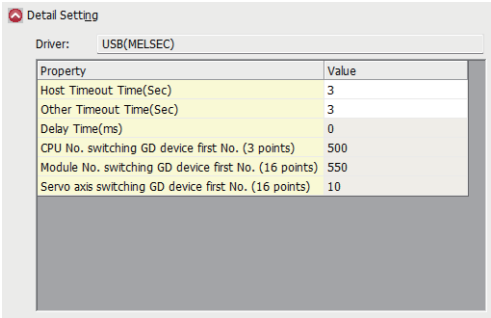
4. When you have completed the settings, click the [OK] button.

Point

The controller settings can be checked in [I/F Communication Setting].
For details, refer to the following.
📖GT Designer3 (GOT3000) Screen Design Manual

■[Detail Setting]

Configure the settings according to the usage environment.

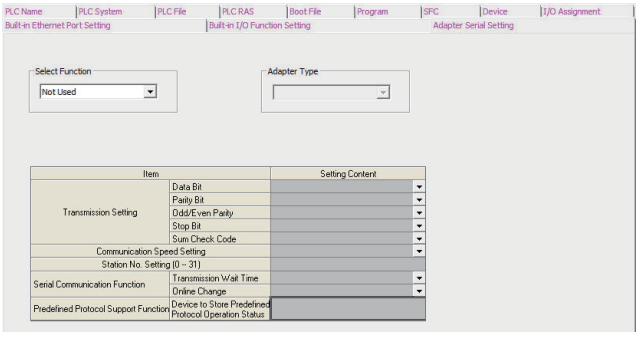


Item	Description	Range
[Driver]	This item appears when communication drivers are selectable according to the settings of [Controller Type] and [I/F].	[USB(MELSEC)]
[Host Timeout Time(Sec)]	Set the time period until a communication timeout during monitoring of the host station.	[1] (second) to [90] (seconds)
[Other Timeout Time(Sec)]	Set the time period until a communication timeout during monitoring of other stations.	[1] (second) to [30] (seconds)
[Delay Time(ms)]	Set the delay time for reducing the load of the network and destination PLC.	[0](ms)
[CPU No. switching GD device first No. (3 points)]	Not used	—
[Module No. switching GD device first No. (16 points)]	Not used	—
[Servo axis switching GD device first No. (16 points)]	Not used	—

6.4.5 PLC side settings

For connection of GT SoftGOT3000 and LCPU via the L6ADP-R2 adapter, configure the communication settings using GX Works2.

For other configurations, no setting is required on the controller.



1. Click [PLC parameter] → [Adapter Serial Setting].
2. Check that [Not Used] is set to [Select Function].

Point

L6ADP-R2 adapter

For details on the L6ADP-R2 adapter, refer to the following manual.

📖MELSEC-L CPU Module User's Manual (Hardware Design, Maintenance and Inspection)

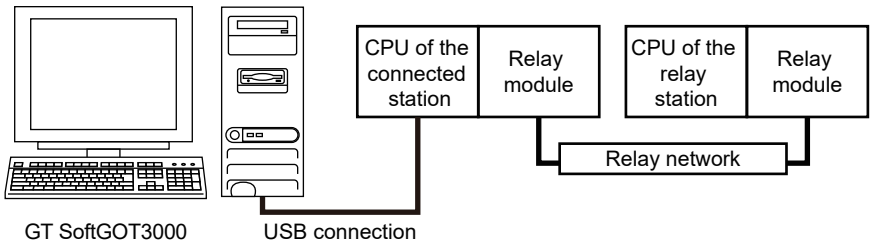
6.4.6 Access range for monitoring

When GT SoftGOT3000 is connected to the CPU of the station connected via USB, the range accessible via the CPU is as follows.

Point

- When monitoring other networks (Routing parameter settings)

To monitor other networks, routing parameter settings are necessary.
For the routing parameter settings, refer to the reference manual of the network connected.



○: Accessible, —: Inaccessible

CPU of the connected station	Relay station								
	Relay network	CPU of the relay station							
		RCPU	LCPU	QCPU (Q mode)	QSCPU	QCPU (A mode)	QnACPU	ACPU	FX5CPU
LCPU	Ethernet	○	○	○	○	—	—	—	○
	CC-Link IE Field Network	○	○	○*1	○	—	—	—	○

*1 Only the Universal model QCPU is supported.

6.5 MELSEC-F series (USB connection)

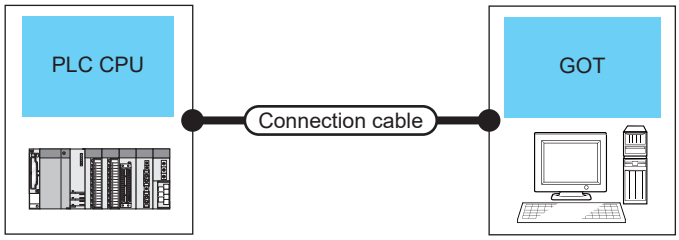
☞ Page 678 Connectable devices
☞ Page 678 System configuration
☞ Page 679 Connection cable
☞ Page 680 GOT side settings
☞ Page 681 PLC side settings
☞ Page 681 Access range for monitoring

6.5.1 Connectable devices

The following table shows the connectable models.
○: Supported, —: Not supported

Controller	Model	Clock	Connectable model
MELSEC-F series	FX3S FX3G FX3GC FX3GE	○	GT37 SoftGOT3000

6.5.2 System configuration



For details on the connection cable, refer to the following.
☞ Page 679 Connection cable
For details on the maximum number of connected devices, refer to the following.
☞ Page 679 Maximum number of connected devices

PLC	Maximum length	GOT	
Model		Interface	Model
FXCPU	3 m	USB interface of personal computer	GT37 SoftGOT3000

Precautions

Stop monitoring before connecting or disconnecting the USB cable, resetting the PLC, or turning the power on or off. Otherwise, a communication timeout may occur and monitoring may not recover.
If the communication error is not fixed, remove the USB cable. After 5 seconds or more elapse, reconnect the cable. (The error may occur at first communication after the above operation. From the next time, the programmable controller functions normally.)

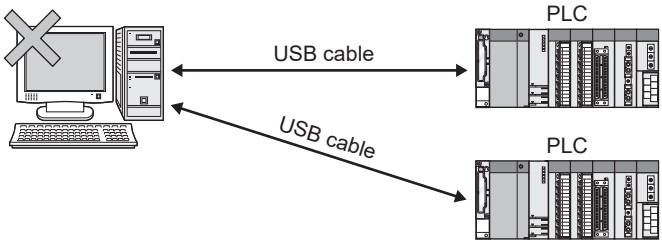
Maximum number of connected devices

The USB connection allows one PLC to connect to one of the GT SoftGOT3000 channels 1 to 4.
One GT SoftGOT3000 module is connectable to one PLC.

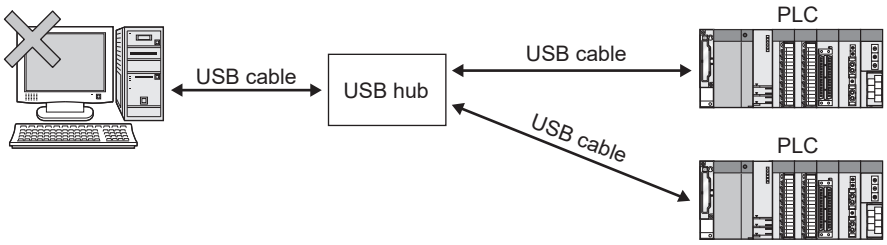
Precautions

Multiple PLCs are not connectable to one personal computer via a USB port or USB hub.
The following shows the system configurations that cannot be used.

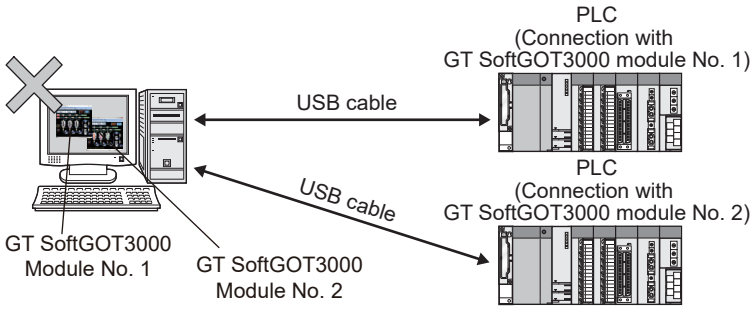
• Connection from a personal computer with multiple USB ports to multiple PLCs



• Connection to multiple PLCs via a USB hub



• Connection from multiple GT SoftGOT3000 modules to multiple PLCs



6.5.3 Connection cable

For the USB cables validated by Mitsubishi Electric Corporation, refer to the following Technical Bulletin.
List of Valid Devices Applicable for GOT3000 Series (GOT-A-0233)
For Technical Bulletins, go to the Mitsubishi Electric Factory Automation Global Website.
www.MitsubishiElectric.com/fa

Precautions

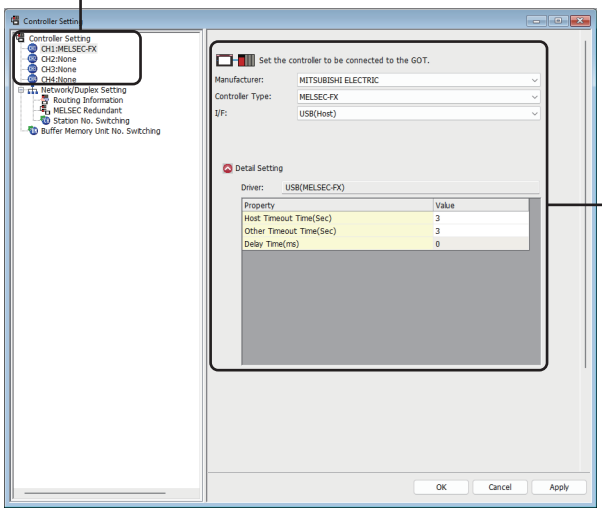
The USB cable can be used with the USB driver already installed.
For the specifications and precautions for cables, refer to the manual of each product.

6.5.4 GOT side settings

[Controller Setting]

Set the channel of the connected controller.

List menu



3.

Operating procedure

1. Select [Common] → [Controller Setting] from the menu.
2. In the [Controller Setting] window, select the channel number to be used from the list menu.
3. Set the following items.

Item	Description
[Manufacturer]	[MITSUBISHI ELECTRIC]
[Controller Type]	[MELSEC-FX]
[I/F]	[USB(Host)]
[Detail Setting]	Configure the settings according to the usage environment. ☞ Page 681 [Detail Setting]

4. When you have completed the settings, click the [OK] button.

Point

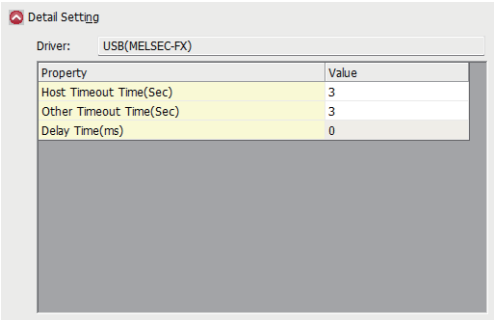
The controller settings can be checked in [I/F Communication Setting].

For details, refer to the following.

📖GT Designer3 (GOT3000) Screen Design Manual

■[Detail Setting]

Configure the settings according to the usage environment.



Item	Description	Range
[Driver]	This item appears when communication drivers are selectable according to the settings of [Controller Type] and [I/F].	[USB(MELSEC-FX)]
[Host Timeout Time(Sec)]	Set the time period until a communication timeout during monitoring of the host station.	[1] (second) to [90] (seconds)
[Other Timeout Time(Sec)]	Set the time period until a communication timeout during monitoring of other stations.	[1] (second) to [30] (seconds)
[Delay Time(ms)]	Set the delay time for reducing the load of the network and destination PLC.	[0](ms)

6.5.5 PLC side settings

No setting is required on the controller.

6.5.6 Access range for monitoring

Only the connected CPU can be accessed.

7 Bus connection

☞ Page 682 MELSEC-Q series (bus connection)

7.1 MELSEC-Q series (bus connection)

☞ Page 683 Connectable devices
☞ Page 685 System configuration
☞ Page 688 GOT side settings
☞ Page 697 Precautions
☞ Page 702 Access range for monitoring

7.1.1 Connectable devices

The following table shows the connectable models.

○: Supported, —: Not supported

Controller	Model	Clock	Connectable model
MELSEC-Q series (Q mode)	Q00JCPU[*1] Q00CPU[*2] Q01CPU[*2] Q02CPU[*2]	○	GT37 SoftGOT3000
	Q02HCPU[*2] Q06HCPU[*2] Q12HCPU[*2] Q25HCPU[*2]	○	GT37 SoftGOT3000
	Q02PHCPU Q06PHCPU Q12PHCPU Q25PHCPU	○	GT37 SoftGOT3000
	Q00UJCPU Q00UJCPU-S8	○	GT37 SoftGOT3000
	Q00UCPU Q01UCPU Q02UCPU Q03UDCPU	○	GT37 SoftGOT3000
	Q04UDHCPU Q06UDHCPU Q10UDHCPU Q13UDHCPU Q20UDHCPU Q26UDHCPU	○	GT37 SoftGOT3000
	Q03UDECPU Q04UDEHCPU Q06UDEHCPU Q10UDEHCPU Q13UDEHCPU Q20UDEHCPU Q26UDEHCPU Q50UDEHCPU Q100UDEHCPU	○	GT37 SoftGOT3000
	Q03UDVCPU Q04UDVCPU Q06UDVCPU Q13UDVCPU Q26UDVCPU	○	GT37 SoftGOT3000
C Controller module (Q series)	Q12DCCPU-V[*3] Q24DHCCPU-V/VG Q24DHCCPU-LS Q26DHCCPU-LS	○	GT37 SoftGOT3000

Controller	Model	Clock	Connectable model
Motion CPU (Q series)	Q172CPUN*4 Q173CPUN*4 Q172HCPU Q173HCPU Q172DCPU Q173DCPU	○	GT37 SoftGOT3000
	Q172DCPU-S1 Q173DCPU-S1 Q172DSCPU Q173DSCPU Q170MCPU Q170MSCPU Q170MSCPU-S1	○	GT37 SoftGOT3000
CNC C70	Q173NCCPU	○	GT37 SoftGOT3000
Robot controller (Q series)	CRnQ-700(Q172DRCPU) CR750-Q (Q172DRCPU) CR751-Q (Q172DRCPU) CR800-Q (Q172DSRCPU)	○	GT37 SoftGOT3000

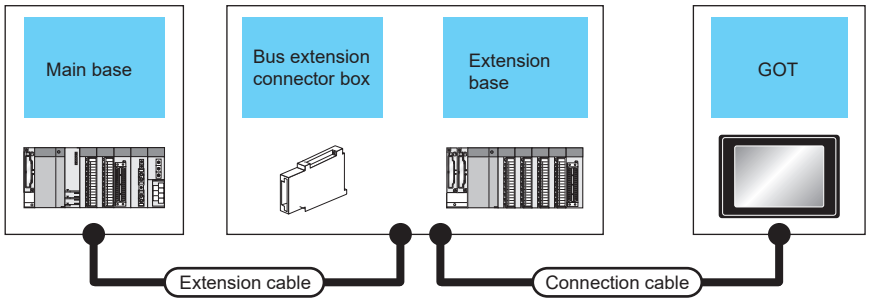
*1 When using the bus extension connector box, attach it to the extension base. (Connecting it to the main base is not allowed.)
*2 To configure a multiple CPU system, use a CPU with function version B or later.
*3 Use a module having a serial number starting with 12042 or later.
*4 When using SV13, SV22, or SV43, use a Motion CPU with the following version of OS installed.
- SW6RN-SV13Q□: 00E or later
- SW6RN-SV22Q□: 00E or later
- SW6RN-SV43Q□: 00B or later

7.1.2 System configuration

Point

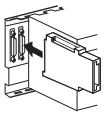
When [CONTROL BUS ERR] or [UNIT VERIFY ERR] occurs
Noise due to a long bus connection cable may cause a malfunction.
Check whether a signal line such as bus cable is placed near the equipment to operate.
If the line is close to the equipment, make a distance of 100 mm or more from the equipment.

When one GOT is connected



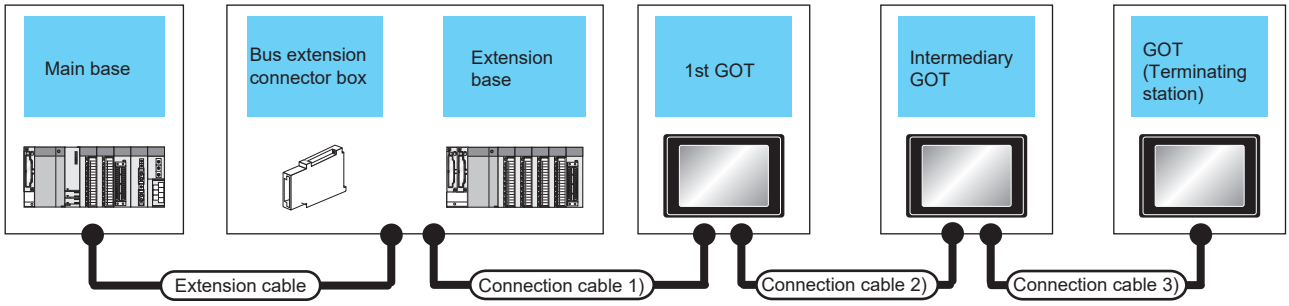
PLC					Connection cable	GOT		Maximum length
Main base		Extension cable*1	Extension base			Interface	Model	
Main base	Bus extension connector box*2		Extension base	Bus extension connector box*2				
Main base	—	—	—	—	GT15-QC06B (0.6 m) GT15-QC12B (1.2 m) GT15-QC30B (3 m) GT15-QC50B (5 m) GT15-QC100B (10 m)	GT37-IF2000 + GT15-75QBUSL GT15-75QBUS2L GT15-QBUS GT15-QBUS2	GT37 SoftGOT3000	Between main base and GOT: 13.2 m (including extension cable length)
	—	Extension cable (13.2 m or less)	Extension base	—				
	A9GT-QCNB*3	—	—	—	GT15-QC06B (0.6 m) GT15-QC12B (1.2 m) GT15-QC30B (3 m) GT15-QC50B (5 m) GT15-QC100B (10 m) GT15-QC150BS (15 m) GT15-QC200BS (20 m) GT15-QC250BS (25 m) GT15-QC300BS (30 m) GT15-QC350BS (35 m)	GT37-IF2000 + GT15-75QBUSL GT15-75QBUS2L GT15-QBUS GT15-QBUS2	GT37 SoftGOT3000	Between main base and GOT: 37 m (including extension cable length)
	—	Extension cable (13.2 m or less)	Extension base	A9GT-QCNB				

*1 For the extension cables, refer to the MELSEC-Q catalog (L(NA)08032).
*2 When installing the GOT 13.2 m or more away from the main base unit, the bus extension connector box is required.
Attach the bus extension connector box to the extension connector of the base unit.
Also, connect the connection cable to the bus extension connector box.
When using no extension base unit: Attach it to the main base unit.
When using the extension base unit: Attach it to the extension base unit on the last stage.



*3 When using Q00JCPU, Q00UJCPU, or Q00UJCPU-S8, attach the bus extension connector box to the extension base.
(Connecting it to the main base is not allowed. When the GOT is connected to the main base, the distance between the main base and the GOT must be within 13.2 m.)

When two to five GOTs are connected

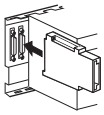


PLC					Connection cable 1)	GOT (1st)		
Main base		Extension cable*1	Extension base			Interface*5	Model	
Main base	Bus extension connector box*2		Extension base	Bus extension connector box*2				
Main base	—	—	—	—	GT15-QC06B (0.6 m) GT15-QC12B (1.2 m) GT15-QC30B (3 m) GT15-QC50B (5 m) GT15-QC100B (10 m)	GT37-IF2000 + GT15-75QBUS2L GT15-QBUS2	GT37 SoftGOT3000	Refer to 1) in the table below. →
	—	Extension cable (13.2 m or less)	Extension base	—		GT37-IF2000 + GT15-75QBUS2L GT15-QBUS2	GT37 SoftGOT3000	2) →
	A9GT-QCNB*3	—	—	—	GT15-QC06B (0.6 m) GT15-QC12B (1.2 m) GT15-QC30B (3 m) GT15-QC50B (5 m) GT15-QC100B (10 m) GT15-QC150BS (15 m) GT15-QC200BS (20 m) GT15-QC250BS (25 m) GT15-QC300BS (30 m) GT15-QC350BS (35 m)	GT37-IF2000 + GT15-75QBUS2L GT15-QBUS2	GT37 SoftGOT3000	3) →
	—	Extension cable (13.2 m or less)	Extension base	A9GT-QCNB		GT37-IF2000 + GT15-75QBUS2L GT15-QBUS2	GT37 SoftGOT3000	4) →

Connection cable 2)		GOT (intermediary)*3		Connection cable 3)	GOT (terminating station)*4		Maximum length
		Interface*5	Model		Interface*5	Model	
1)	GT15-QC06B (0.6 m) GT15-QC12B (1.2 m) GT15-QC30B (3 m) GT15-QC50B (5 m) GT15-QC100B (10 m) GT15-QC150BS (15 m) GT15-QC200BS (20 m) GT15-QC250BS (25 m) GT15-QC300BS (30 m) GT15-QC350BS (35 m)	GT37-IF2000 + GT15-75QBUS2L GT15-QBUS2	GT37 SoftGOT3000	GT15-QC06B (0.6 m) GT15-QC12B (1.2 m) GT15-QC30B (3 m) GT15-QC50B (5 m) GT15-QC100B (10 m) GT15-QC150BS (15 m) GT15-QC200BS (20 m) GT15-QC250BS (25 m) GT15-QC300BS (30 m) GT15-QC350BS (35 m)	GT37-IF2000 + GT15-75QBUSL GT15-75QBUS2L GT15-QBUS GT15-QBUS2	GT37 SoftGOT3000	Between main base and GOT (1st): 13.2 m Between main base and GOT (last): 37 m
2)		GT37-IF2000 + GT15-75QBUS2L GT15-QBUS2	GT37 SoftGOT3000		GT37-IF2000 + GT15-75QBUSL GT15-75QBUS2L GT15-QBUS GT15-QBUS2	GT37 SoftGOT3000	Between main base and GOT (1st): 13.2 m (incl. extension cable length) Between main base and GOT (last): 37 m (incl. extension cable length)
3)		GT37-IF2000 + GT15-75QBUS2L GT15-QBUS2	GT37 SoftGOT3000		GT37-IF2000 + GT15-75QBUSL GT15-75QBUS2L GT15-QBUS GT15-QBUS2	GT37 SoftGOT3000	Between main base and GOT (last): 37 m
4)		GT37-IF2000 + GT15-75QBUS2L GT15-QBUS2	GT37 SoftGOT3000		GT37-IF2000 + GT15-75QBUSL GT15-75QBUS2L GT15-QBUS GT15-QBUS2	GT37 SoftGOT3000	Between main base and GOT (last): 37 m (incl. extension cable length)

*1 For the extension cables, refer to the MELSEC-Q catalog (L(NA)08032).

*2 When installing the GOT 13.2 m or more away from the main base unit, the bus extension connector box is required.
Attach the bus extension connector box to the extension connector of the base unit.
When using no extension base unit: Attach it to the main base unit.
When using the extension base unit: Attach it to the extension base unit on the last stage.
Also, connect the connection cable to the bus extension connector box.
Set the same stage number as that of the GOT for the bus extension connector box.
For details on the stage number setting, refer to the following.
☞ Page 688 [Controller Setting]



*3 When using Q00JCPU, Q00UJCPU, or Q00UJCPU-S8, attach the bus extension connector box to the extension base.
(Connecting it to the main base is not allowed. When the GOT is connected to the main base, the distance between the main base and the first GOT must be within 13.2 m.)

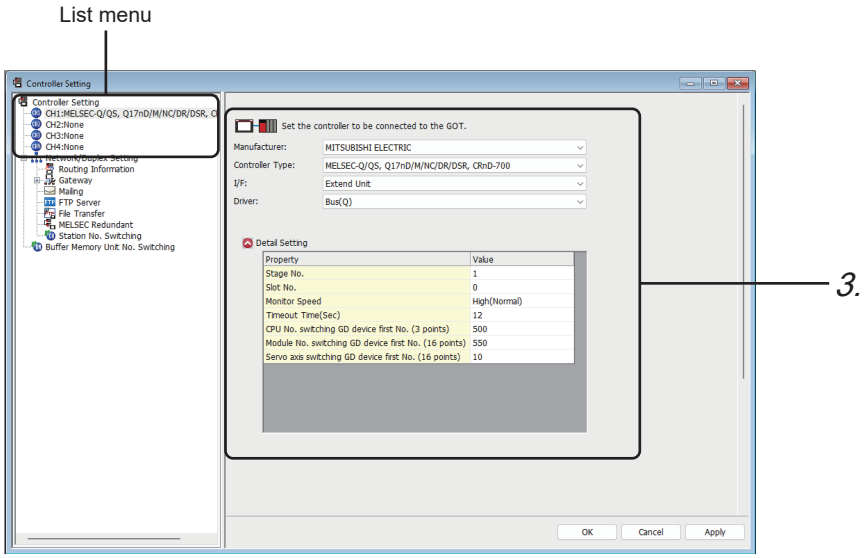
*4 When connecting three or more GOTs, the overall cable length is restricted.
☞ Page 700 When connecting multiple GOTs

*5 Bus connection unit
GT15-75QBUSL, GT15-QBUS: Used for the terminating GOT (not used for an intermediary GOT).
GT15-75QBUS2L, GT15-QBUS2: Used for an intermediary GOT (also used for the terminating GOT).

7.1.3 GOT side settings

[Controller Setting]

Set the channel of the connected controller.



Operating procedure

1. Select [Common] → [Controller Setting] from the menu.

2. In the [Controller Setting] window, select the channel number to be used from the list menu.

3. Set the following items.

Item	Description
[Manufacturer]	[MITSUBISHI ELECTRIC]
[Controller Type]	[MELSEC-Q/QS, Q17nD/M/NC/DR/DSR, CRnD-700]
[I/F]	[Extend Unit]
[Driver]	[Bus(Q)]
[Detail Setting]	Configure the settings according to the usage environment. ☞ Page 689 [Detail Setting]

4. When you have completed the settings, click the [OK] button.

Point

The controller settings can be configured and checked in [I/F Communication Setting].
For details, refer to the following.
📖GT Designer3 (GOT3000) Screen Design Manual

■[Detail Setting]

Configure the settings according to the usage environment.

Detail Setting

Property	Value
Stage No.	1
Slot No.	0
Monitor Speed	High(Normal)
Timeout Time(Sec)	12
CPU No. switching GD device first No. (3 points)	500
Module No. switching GD device first No. (16 points)	550
Servo axis switching GD device first No. (16 points)	10

Item	Description	Range
[Number of Stages][*1]	Set the number of the base unit stage to which the CPU module is installed in the PLC.	[1] to [7]
[Slot No.]	Set the slot number to which the CPU module is installed in the PLC.	[0] to [9]
[Monitor Speed][*4]	Set the monitor speed of the GOT. This setting is not valid in all systems.	[High(Normal)][*2] [Middle] [Low][*3]
[Timeout Time]	Set the time period for a communication to time out.	[12] seconds to [90] seconds
[CPU No. switching GD device first No. (3 points)]	Set the start device number of the GD devices for CPU number switching. For details, refer to the following. ☞ Page 690 Start device number of the GD devices for CPU number switching	[0] to [65520]
[Module No. switching GD device first No. (16 points)]	Set the start device number of the GD devices for module number switching. For details, refer to the following. ☞ Page 691 Start device number of the GD devices for module number switching	[0] to [65520]
[Servo axis switching GD device first No. (16 points)]	Set the start device number of the GD devices for servo axis switching. For details, refer to the following. ☞ Page 692 Start device number of the GD devices for servo axis switching	[0] to [65520]

*1 When using a QA1S6□B extension base unit, assign the GOT as a stage next to the Q□□B extension base unit in the stage number setting.
For details, refer to the following.
☞ Page 700 When using the QA1S6□B extension base unit

*2 This setting is effective for collecting large data with the logging, recipe, or such function on a screen other than the monitor screen.
However, when connected to Q00UJ/Q00U/Q01U/Q02UCPU or Q00J/Q00/Q01CPU, the sequence scan time may be affected.
If you want to avoid the influence on the sequence scan time, do not set [High(Normal)].
(This setting hardly affects QCPUs other than the above.)

*3 Set this range if you want to avoid the influence on the sequence scan time further than the [Middle] setting when connecting to Q00UJ/Q00U/Q01U/Q02UCPU or Q00J/Q00/Q01CPU.
However, the monitor speed may be reduced.

*4 When using a global label to read or write more than 235 two-byte characters, set [Monitor speed] to [High(Normal)] or [Middle].
If [Monitor speed] is set to [Low], a system error occurs when reading or writing.
For details, refer to the following manual.
📖GT Designer3 (GOT3000) Screen Design Manual

Point

• Communication interface settings in the GT37 utility

The communication interface setting can be changed in [Communication setting] of the GT37 utility after writing [Controller Setting] in project data.

For details on the GT37 utility, refer to the following manual.

GOT3000 Series User's Manual (Utility & Maintenance Functions)

• Precedence in communication settings

When settings are configured in GT Designer3 or the GT37 utility, the most recent settings are effective.

■Start device number of the GD devices for CPU number switching

• Indirect specification of a CPU number

[CPU No.] can be indirectly specified with the GOT internal registers (GD devices) by specifying a value (100 to 102) to [CPU No.] in the device setting dialog in GT Designer3.

Set the start device number of the GD devices to be used in [CPU No. switching GD device first No. (3 points)].

[CPU No.] is specified with three consecutive GD devices, starting from the set device number.

When [500] is set to [CPU No. switching GD device first No. (3 points)], GD500 to GD502 are used to specify [CPU No.] as shown in the following table.

CPU No.	GD device	Setting range
100	GD500	1 to 4 Setting a value outside the range causes a communication timeout error. Specifying a nonexistent CPU number or a CPU number not supporting a multiple CPU system with a device causes a controller error.
101	GD501	
102	GD502	

• Indirect specification of a CPU number on the initially displayed screen

Set [CPU No. switching GD device first No. (3 points)] so that the values of the GD devices are retained and monitored upon the GOT startup.

• Indirect specification of a CPU number for multi-channel connection

If the setting range of [CPU No. switching GD device first No. (3 points)] set for each channel overlaps, the monitoring target CPU number set to each channel is switched simultaneously.

Set [CPU No. switching GD device first No. (3 points)] for each channel so that the setting range does not overlap.

• Indirect specification of a station number and a CPU number for multi-channel connection

When GD10 to GD25 are used to specify the station number of an inverter or non-Mitsubishi temperature controller connected, setting [10] to [CPU No. switching GD device first No. (3 points)] in a different channel switches the monitoring target CPU number and station number of an inverter or non-Mitsubishi temperature controller set to each channel simultaneously.

Set [CPU No. switching GD device first No. (3 points)] so that the setting range does not overlap the station number of an inverter or non-Mitsubishi temperature controller.

■Start device number of the GD devices for module number switching

• Indirect specification of a module number

For connection via a Simple Motion module, [Unit No.] can be specified with the GOT internal registers (GD devices) by specifying a value (100 to 10F) to [Unit No.] in the device setting dialog in GT Designer3.

Set the start device number of the GD devices to be used in [Module No. switching GD device first No. (16 points)].

[Unit No.] is specified with 16 consecutive GD devices, starting from the set device number.

When [550] is set to [Module No. switching GD device first No. (16 points)], GD550 to GD565 are used to specify [Unit No.] as shown in the following table.

Module No.	GD device	Setting range
100	GD550	00 to FF Setting a value outside the above range causes a device range error.
101	GD551	
102	GD552	
103	GD553	
104	GD554	
105	GD555	
106	GD556	
107	GD557	
108	GD558	
109	GD559	
10A	GD560	
10B	GD561	
10C	GD562	
10D	GD563	
10E	GD564	
10F	GD565	

• Indirect specification of a module number on the initially displayed screen

Set [Module No. switching GD device first No. (16 points)] so that the values of the GD devices are retained and monitored upon the GOT startup.

• Indirect specification of a module number for multi-channel connection

If the setting range of [Module No. switching GD device first No. (16 points)] set for each channel overlaps, the module number of the Simple Motion module via the servo amplifier device of each channel is switched simultaneously.

Set [Module No. switching GD device first No. (16 points)] for each channel so that the setting range does not overlap.

• Indirect specification of a station number and a module number for multi-channel connection

When GD10 to GD25 are used to specify the station number of an inverter or non-Mitsubishi temperature controller connected, setting [10] to [Module No. switching GD device first No. (16 points)] switches the module number of the Simple Motion module via the servo amplifier device and the station number of an inverter or non-Mitsubishi temperature controller set to each channel simultaneously.

Set [Module No. switching GD device first No. (16 points)] so that the setting range does not overlap the station number of an inverter or non-Mitsubishi temperature controller.

■Start device number of the GD devices for servo axis switching

• Indirect specification of a servo axis number

For connection via a Motion CPU or Simple Motion module, a servo axis number can be indirectly specified with GOT internal registers (GD devices) by specifying a value (100 to 115) to the axis number of the servo amplifier device.

Set the start device number of the GD devices to be used in [Servo axis switching GD device first No. (16 points)].

Specify a servo axis number with 16 consecutive GD devices, starting the set device number.

When [10] is set to [Servo axis switching GD device first No. (16 points)], GD10 to GD25 are used to specify a servo axis number as shown in the following table.

Servo axis No.	GD device	Setting range
100	GD10	1 to 64 Setting a value outside the above range causes a device range error.
101	GD11	
102	GD12	
103	GD13	
104	GD14	
105	GD15	
106	GD16	
107	GD17	
108	GD18	
109	GD19	
110	GD20	
111	GD21	
112	GD22	
113	GD23	
114	GD24	
115	GD25	

• Indirect specification of a servo axis number on the initially displayed screen

Set [Servo axis switching GD device first No. (16 points)] so that the values of the GD devices are retained and monitored upon the GOT startup.

• Indirect specification of a servo axis number for multi-channel connection

If the setting rage of [Servo axis switching GD device first No. (16 points)] set for each channel overlaps, the axis number of the servo amplifier of each channel is switched simultaneously.

Set [Servo axis switching GD device first No. (16 points)] for each channel so that the setting range does not overlap.

• Indirect specification of a station number and a servo axis number for multi-channel connection

When GD10 to GD25 are used to specify the station number of an inverter or non-Mitsubishi temperature controller connected, setting [10] to [Servo axis switching GD device first No. (16 points)] switches the axis number of the servo amplifier and the station number of an inverter or non-Mitsubishi temperature controller set to each channel simultaneously.

Set [Servo axis switching GD device first No. (16 points)] so that the setting range does not overlap the station number of an inverter or non-Mitsubishi temperature controller.

Point

By setting the GOT internal device, the GOT can disconnect specific parts from the controller's multiple connections.

For example, a faulty station that has a communication timeout can be disconnected from the system.

For details on the setting contents of the GOT internal device, refer to the following manual.

GT Designer3 (GOT3000) Screen Design Manual

■Setting the number of stages and the slot number

Point

Before setting the number of sages and the slot number

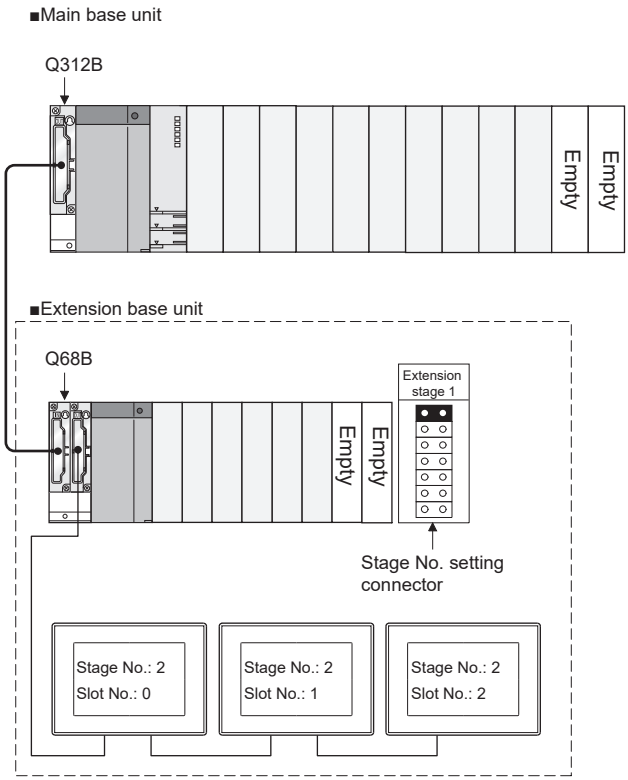
The PLC CPU recognizes the GOT as follows.

- QCPU (Q mode): Intelligent function module of 16 I/O points
- Other than QCPU (Q mode): Intelligent function module of 32 I/O points

In [Detail setting], assign the GOT to an empty I/O slot on the PLC CPU.

- When connecting to QCPU (Q mode)

Set an additional stage (16 points × 10 slots) for GOT connection, and assign a GOT to one of the I/O slots.
(Assigning the GOT to an empty slot on the main base or extension base is not allowed.)



Point

When using the bus extension connector box

Set the stage number switch on the bus extension connector box to the same stage number as the GOT.

For details on the setting method, refer to the following manual.

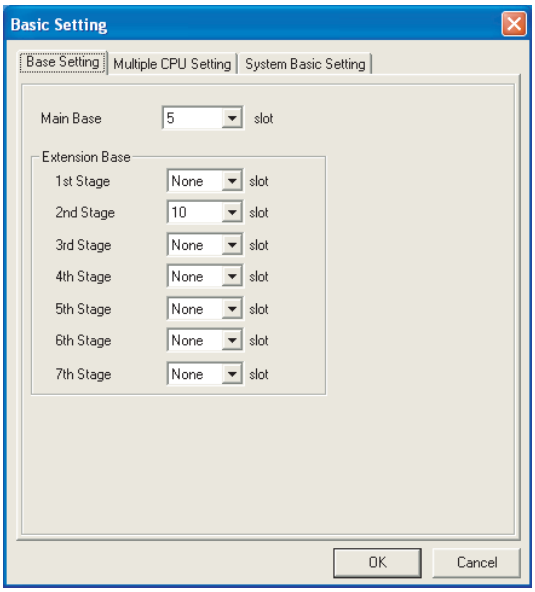
A9GT-QCNB Type Bus Extension Connector Box User's Manual

Point

When connecting to Motion CPU (Q series)

In the [Base Setting] on MT Developer, set "10" to the number of slots for the extension base used for GOT connection.

Example: When setting "2" to the stage number and "0" to the slot number in the communication interface settings, set "10" to the number of slots on the second stage.



Point

Setting unused I/O slots to empty (0 points) (only when connecting to QCPU (Q mode))

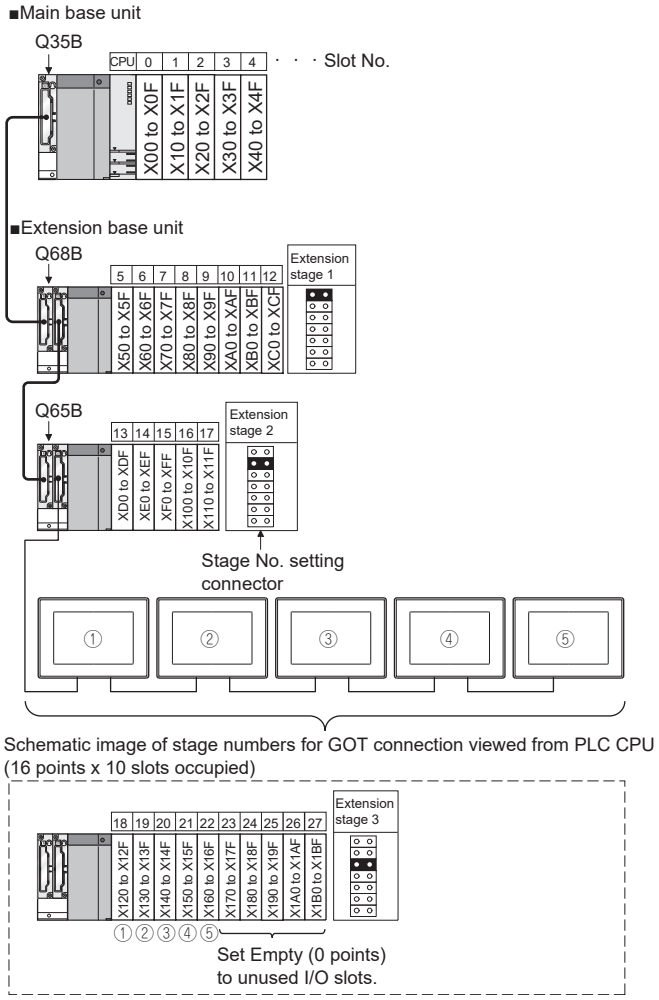
Setting unused I/O slots as empty slots (0 points) from [PC parameters] → [I/O assignments] of GX Developer allows you to use I/O numbers of "16 points × number of empty slots" for other purposes.

For details on I/O assignment settings, refer to the following manuals.

📖QnUCPU User's Manual (Function Explanation, Program Fundamentals)

📖Qn(H)/QnPH/QnPRHCPU User's Manual (Function Explanation, Program Fundamentals)

Example) I/O assignment (when 16 points are assigned to each of all modules installed with the PLC CPU)



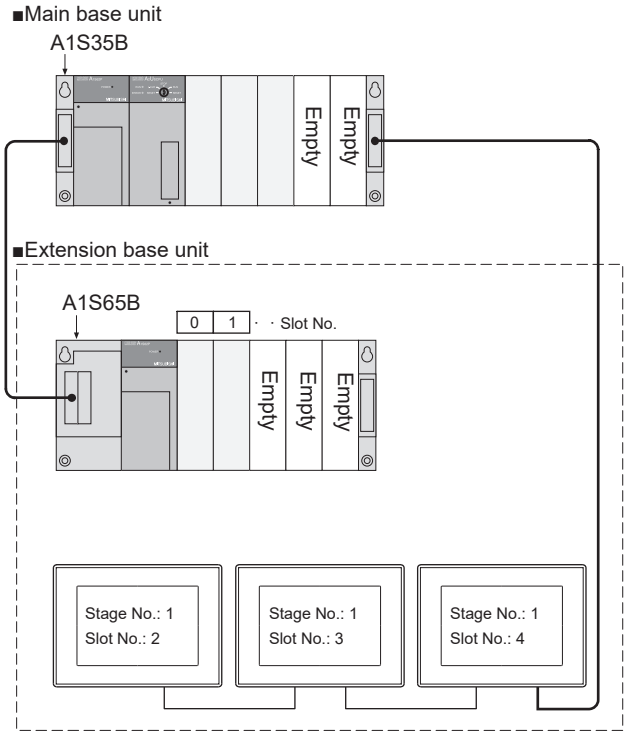
• When connecting to a controller other than QCPU (Q mode)

Assign the GOT to an empty I/O slot on the extension base.

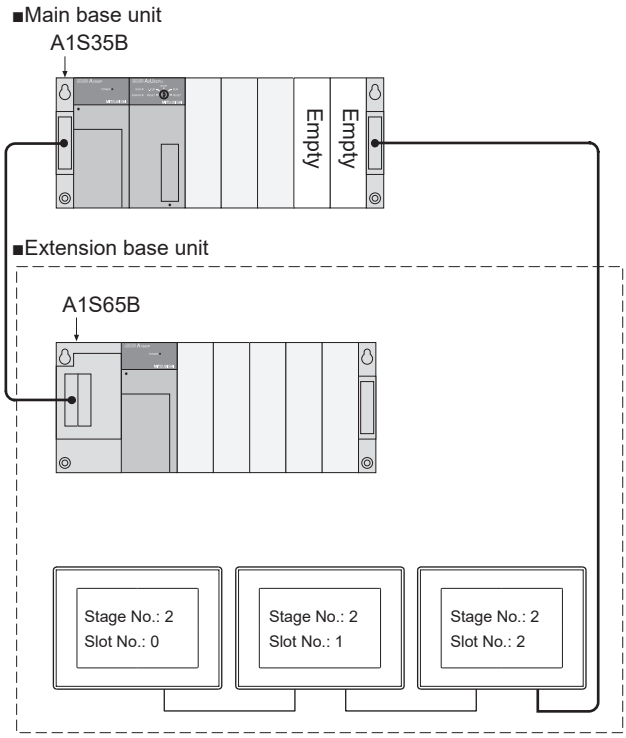
When there is no extension base or no empty I/O slots are left on an extension base, set an additional stage, and assign the GOT to one of the I/O slots.

(Assigning the GOT to an empty slot on the main base is not allowed.)

◇ When there is an empty I/O slot on the extension base



◇ When there are no empty I/O slots on the extension base



7.1.4 Precautions

When turning on the GOT

■System configuration

The PLC CPU remains in the reset status until the GOT is started.
Therefore, no sequence program will run until then.
A system configuration in which the GOT is turned on from a sequence program is not available.

■Time taken until the PLC runs after power-on of the GOT

When the GOT is connected via the multiple CPU system, the PLC takes 10 seconds or more to run.
If you start the GOT before the PLC runs, a system alarm occurs.
Adjust the startup logo display time in the GOT setup so that no system alarm occurs.
For details, refer to the following manual.
📖GT Designer3 (GOT3000) Screen Design Manual

■Power-on order of the GOTs and PLC

- Power-on order for connection of three GOTs or more (when connecting QCPU (Q mode))

For the power-on order, refer to the following.
☞ Page 699 Restrictions on the overall cable length by the number of connected GOTs

- Power-on order of the other GOTs and PLCs

The GOT and PLC can both be started up whichever of these devices is turned on first. (There is no specific order in which they are powered on.)
However, the operation is as follows when the GOT is turned on followed by the PLC.
If the PLC power is off when the GOT power is turned on, a system alarm (No. 402: timeout error) occurs.
Upon power-on of the PLC CPU, the GOT automatically starts monitoring.
Use the system information to reset the alarm.
For information on the system Information, refer to the following manual.
📖GT Designer3 (GOT3000) Screen Design Manual

When turning off or cycling the power to the GOT

■Precautions for cycling the power to the GOT

Do not cycle the power to the GOT while the GOT is communicating with the PLC.
Depending on the power-off timing, communication with the PLC is disabled.
Before doing so, be sure to turn off the PLC first.

Point

When one of the following operations is performed, the GOT is automatically restarted. You do not need to turn off the PLC.

- When writing a package data from GT Designer3 or a data storage location
- When changing utility settings

■When turning off the GOT before a user-created screen is displayed

When the GOT is turned off before a user-created screen is displayed on the GOT, subsequent communications may be no longer possible.
In such a case, cycle the power to the PLC CPU and GOT.

■Precautions for connection of three GOTs or more (when connecting QCPU (Q mode))

☞ Page 699 Restrictions on the overall cable length by the number of connected GOTs

Reset switch on the GOT

When bus connection is used, the reset switch on the GOT does not function.

When powering off or resetting the PLC

■When powering off or resetting the PLC during monitoring

If the PLC is powered off or reset during monitoring, a system alarm (No. 402: timeout error) occurs.
When the PLC CPU is restored, the GOT automatically resumes monitoring.
Use the system information to reset the alarm.
For information on the system Information, refer to the following manual.
📖GT Designer3 (GOT3000) Screen Design Manual

■When turning off or resetting the PLC CPU before a user-created screen is displayed

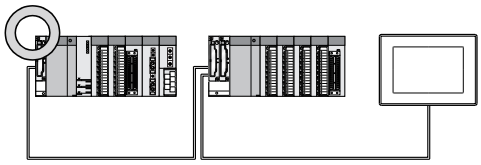
When the PLC CPU is turned off or reset before the user-created screen is displayed on the GOT, subsequent communications may be no longer possible.
In such a case, cycle the power to the PLC CPU and GOT.

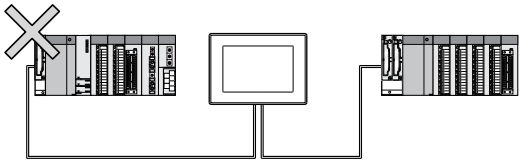
■Precautions for connection of three GOTs or more (when connecting QCPU (Q mode))

☞ Page 699 Restrictions on the overall cable length by the number of connected GOTs

Position of the GOT

Always connect the GOT to the last base unit.
Connecting a GOT between base units is not allowed.





When the GOT is bus-connected to a PLC CPU without installing the communication driver

When the GOT is bus-connected to a PLC CPU without installing the standard monitor OS and the communication driver for the bus connection to the GOT, the PLC CPU is reset. (GX Developer cannot communicate with the PLC CPU.)
In this case, disconnecting the bus connection cable from the GOT will cancel the reset status of the PLC CPU.

When designing the system

When the GOT power is off, the following currents are supplied to the GOT from the PLC CPU side (the power supply module on the main base unit). (The GOT does not operate when the power is off.)
Design the system so that the 5 V DC current consumption of the modules on the main base unit and the total current consumption of the GOTs will not exceed the rated output current of 5 V DC of the power supply module in use.

Connected CPU	No. of connected GOTs	Total current consumption
When connecting to QCPU (Q mode)	5	2200 mA
	4	1760 mA
	3	1320 mA
	2	880 mA
	1	440 mA
When connecting to a controller other than QCPU (Q mode)	3	360 mA
	2	240 mA
	1	120 mA

When assigning GOT I/O signals

Do not use the I/O signals assigned to the PLC CPU in sequence programs, as these signals are used by the GOT system. When these signals are used, GOT functions cannot be assured.

When connecting to QCPU (Q mode)

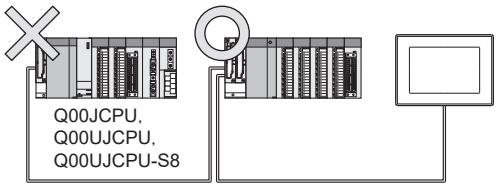
■Restrictions on the overall cable length by the number of connected GOTs

The following restrictions apply when three or more GOTs are connected.

No. of connected GOTs	Overall cable length	Restrictions	Overall cable length	Restrictions
1	(No restrictions)			
2				
3	Less than 25 m	(No restrictions)	25 to 37 m	Use the same power supply for the PLC and all the GOTs, and power on/off these devices simultaneously.
4	Less than 20 m		20 to 37 m	
5	Less than 15 m		15 to 37 m	

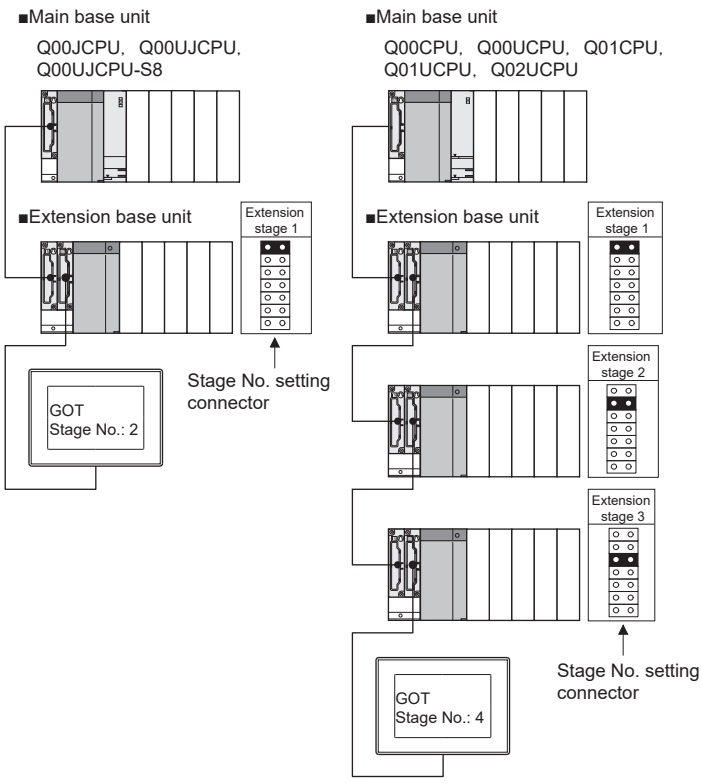
■When using the Q00JCPU, Q00UJCPU, or Q00UJCPU-S8

The bus extension connector box can be connected only to the extension base unit.
(Connecting it to the main base unit is not allowed.)



■When using Q00J/Q00UJ/Q00/Q00U/Q01/Q01U/Q02UCPU

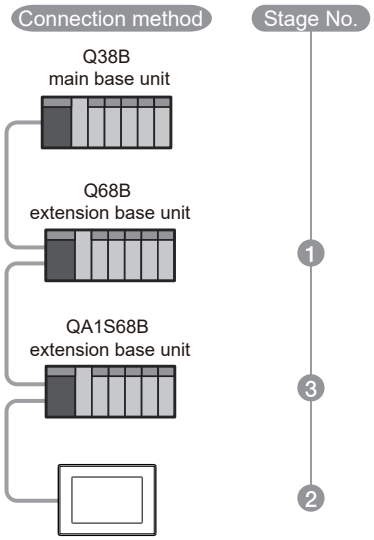
When a GOT is bus-connected to Q00JCPU, Q00UJCPU, or Q00UJCPU-S8, the number of extension stages including the GOT must be 2 or less.
When a GOT is bus-connected to Q00CPU, Q00UCPU, Q01CPU, Q01UCPU or Q02UCPU, the number of extension stages including the GOT must be 4 or less.



■When using the QA1S6□B extension base unit

Although a GOT is physically connected to the last of all extension base units, in the stage number setting, assign the GOT as a stage next to the last Q□□B type extension base unit.

Assign the QA1S6□B type extension base unit as a stage next to the GOT.

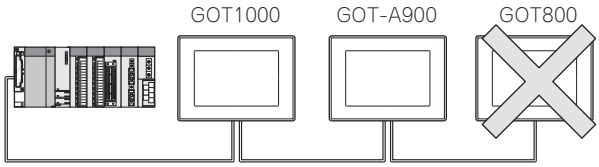


When connecting multiple GOTs

■System including different GOT series

The GOT3000 series can be connected with GOT2000 series, GOT1000 series, and GOT-A900 series.

The GOT3000 series cannot be connected with GOTs other than GOT2000 series, GOT1000 series, and GOT-A900 series.



■Restrictions on the number of connected GOTs

The number of connected GOTs is restricted according to the connected CPU and the number of intelligent function modules.

Connected CPU	Number of connectable GOTs	Total number of connectable GOTs and intelligent function modules*1
QCPU (Q mode), Motion CPU (Q series)	5	5 GOTs + 6 intelligent function modules*2

*1 Indicates the following models:
AD51(S3), AD51H(S3), AD51FD(S3), AD57G(S3), AJ71C21(S1), AJ71C22(S1), AJ71C23, AJ71C24(S3/S6/S8), AJ71UC24, AJ71E71(-S3), AJ71E71N-B2/B5/T/B5T, AJ71E71N3-T, AJ61BT11 (in intelligent mode only), A1SJ71C24(-R2/PRF/R4), A1SJ71UC24(-R2/PRF/R4), A1SJ71E71-B2/B5(-S3), A1SJ71E71N-B2/B5/T/B5T, A1SJ71E71N3-T, A1SD51S, A1SJ61BT11 (in intelligent mode only)

*2 Only the A1SD51S can be connected to the QCPU (Q mode).

When using a PLC CPU in the direct mode

Note that when the I/O control mode of the PLC CPU is the direct mode, and if the first GOT is connected to the main or extension base unit with a 5 m extension cable (GT15-AC50B, GT15-A1SC50NB), the input X of the empty I/O slot cannot be used.

No restrictions apply when the I/O control mode is the refresh mode.

On PLC CPUs whose I/O control mode can be selected by a switch, set the I/O control mode to the refresh mode before use.

Point

Example of using input X of an empty I/O slot

- When input X is assigned on the MELSECNET/10 network
- When input X of an empty I/O slot is turned on/off by the computer link module
- When input X of an empty I/O slot is turned on/off by the touch switch function (Bit SET/RST/Alternate/Momentary) of GOT

When monitoring the Q170MCPU or Q170MSCPU(-S1)

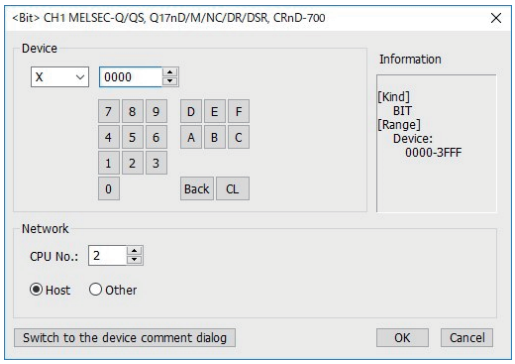
Set [CPU No.] to 2 in the device setting to monitor the device of the Motion CPU area (CPU No. 2).

When [CPU No.] is set to 0 or 1, the device on the PLC CPU area (CPU No. 1) is monitored.

When [CPU No.] is set to the number other than 0 to 2, a communication error occurs and the monitoring cannot be executed.

For the setting of [CPU No.], refer to the following.

GT Designer3 (GOT3000) Screen Design Manual



Troubleshooting

For troubleshooting, refer to the User's Manual of the GOT used.

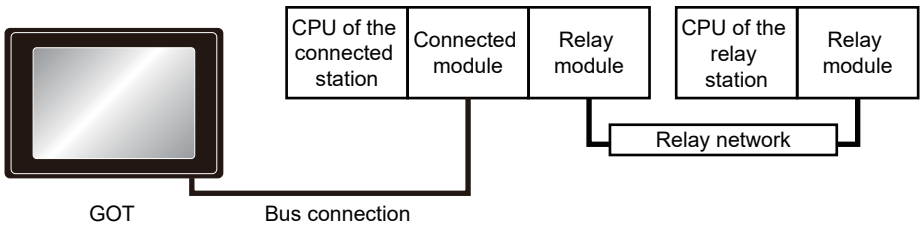
7.1.5 Access range for monitoring

When the GOT is connected to the CPU of the station connected by bus connection, the range accessible via the CPU is as follows.

Point

- When monitoring other networks (Routing parameter settings)

To monitor other networks, routing parameter settings are necessary.
For the routing parameter settings, refer to the reference manual of the network connected.



○: Accessible, —: Inaccessible

CPU of the connected station	Relay station								
	Relay network	CPU of the relay station							
		RCPU	LCPU	QCPU (Q mode)	QSCPU	QCPU (A mode)	QnACPU	ACPU	FX5CPU
QnUCPU QnUDCPU QnUDHCPU QnUDECPU QnUDEHCPU QnUDVCPU	Ethernet	—	○	○*3	○	—	○	—	—
	CC-Link IE Controller Network	—	—	○	○	—	—	—	—
	CC-Link IE Field Network	—	○	○*1	○	—	—	—	—
	MELSECNET/H, MELSECNET/10	—	—	○	○	○	○	○*2	—
QnJCPU QnCPU QnHCPU QnPHCPU QnPRHCPU	Ethernet	—	○	○*3	○	—	○	—	—
	CC-Link IE Controller Network	—	—	○	○	—	—	—	—
	MELSECNET/H, MELSECNET/10	—	—	○	○	○	○	○*2	—
C Controller module (MELSEC-Q series)	Ethernet	—	—	—	—	—	—	—	—
	CC-Link IE Controller Network	—	—	○	○	—	—	—	—
	CC-Link IE Field Network	—	○	○*1	○	—	—	—	—
	MELSECNET/H, MELSECNET/10	—	—	○	○	○	○	○*2	—

*1 QnUDVCPU, QnUDECPU, QnUDEHCPU, QnUCPU, QnUDCPU, and QnUDHCPU are supported.
*2 AnUCPU and AnUSCPU are supported.
*3 The C Controller module (MELSEC-Q series) is not supported.

8 MELSECNET/H connection

☞ Page 703 MELSEC-Q series (MELSECNET/H connection)

8.1 MELSEC-Q series (MELSECNET/H connection)

☞ Page 703 Connectable devices
☞ Page 706 System configuration
☞ Page 711 GOT side settings
☞ Page 717 PLC side settings when connecting to MELSECNET/H
☞ Page 724 PLC side settings when connecting to MELSECNET/10
☞ Page 732 Access range for monitoring
☞ Page 733 How to monitor a redundant system

8.1.1 Connectable devices

Point

• Connectable network

For MELSECNET/H connection, use the MNET/H mode or MNET/H extension mode with MELSECNET/H.
Connect the GOT to the following network systems as a normal station.
MELSECNET/H network system (PLC to PLC network) optical loop system
MELSECNET/H network system (PLC to PLC network) coaxial bus system
Connection to the remote I/O network is not allowed.
For MELSECNET/10 connection, use the MNET/10 mode with MELSECNET/H.
Connect the GOT to the following network systems as a normal station.
MELSECNET/10 network system (PLC to PLC network) optical loop system
MELSECNET/10 network system (PLC to PLC network) coaxial bus system
Connection to the remote I/O network is not allowed.

• MELSECNET/H network module

When connecting the MELSECNET/H network module to the MELSECNET/H network system, specify the MELSECNET/H mode or the MELSECNET/H extended mode as a network type.
When connecting the MELSECNET/H network module to the MELSECNET/10 network system, specify the MNET/10 mode as a network type.

The following table shows the connectable models.
○: Supported, —: Not supported

Controller	Model	Clock	MELSECNET/H network module		Connectable model
			Optical loop	Coaxial bus	
MELSEC-Q series (Q mode)	Q00JCPU Q00CPU*1 Q01CPU*1 Q02CPU*1	○	QJ71LP21 QJ71LP21-25 QJ71LP21S-25	QJ71BR11*1	GT37 SoftGOT3000
	Q02HCPU*1 Q06HCPU*1 Q12HCPU*1 Q25HCPU*1	○	QJ71LP21 QJ71LP21-25 QJ71LP21S-25	QJ71BR11*1	GT37 SoftGOT3000
	Q02PHCPU Q06PHCPU Q12PHCPU Q25PHCPU	○	QJ71LP21 QJ71LP21-25 QJ71LP21S-25	QJ71BR11*1	GT37 SoftGOT3000

Controller	Model	Clock	MELSECNET/H network module		Connectable model
			Optical loop	Coaxial bus	
MELSEC-Q series (Q mode)	Q12PRHCPU (main base) Q25PRHCPU (main base)	○	QJ71LP21 QJ71LP21-25 QJ71LP21S-25	QJ71BR11[*1]	GT37 SoftGOT3000
	Q00UJCPU Q00UJCPU-S8	○	QJ71LP21 QJ71LP21-25 QJ71LP21S-25	QJ71BR11[*1]	GT37 SoftGOT3000
	Q00UCPU Q01UCPU Q02UCPU Q03UDCPU	○	QJ71LP21 QJ71LP21-25 QJ71LP21S-25	QJ71BR11[*1]	GT37 SoftGOT3000
	Q04UDHCPU Q06UDHCPU Q10UDHCPU Q13UDHCPU Q20UDHCPU Q26UDHCPU	○	QJ71LP21 QJ71LP21-25 QJ71LP21S-25	QJ71BR11[*1]	GT37 SoftGOT3000
	Q03UDECPU Q04UDEHCPU Q06UDEHCPU Q10UDEHCPU Q13UDEHCPU Q20UDEHCPU Q26UDEHCPU Q50UDEHCPU Q100UDEHCPU	○	QJ71LP21 QJ71LP21-25 QJ71LP21S-25	QJ71BR11[*1]	GT37 SoftGOT3000
	Q03UDVCPU Q04UDVCPU Q06UDVCPU Q13UDVCPU Q26UDVCPU	○	QJ71LP21 QJ71LP21-25 QJ71LP21S-25	QJ71BR11[*1]	GT37 SoftGOT3000
C Controller module (Q series)	Q12DCCPU-V[*2] Q24DHCCPU-V/VG Q24DHCCPU-LS Q26DHCCPU-LS	○	QJ71LP21-25 QJ71LP21S-25	QJ71BR11[*1]	GT37 SoftGOT3000
MELSEC-QS	QS001CPU	○	QJ71LP21 QJ71LP21-25 QJ71LP21S-25	QJ71BR11[*1]	GT37 SoftGOT3000
Motion CPU (Q series)	Q172CPUN[*3] Q173CPUN[*3] Q172HCPU Q173HCPU Q172DCPU Q173DCPU	○	QJ71LP21 QJ71LP21-25 QJ71LP21S-25	QJ71BR11[*1]	GT37 SoftGOT3000
	Q172DCPU-S1 Q173DCPU-S1 Q172DSCPU Q173DSCPU Q170MCPU Q170MSCPU Q170MSCPU-S1	○	QJ71LP21 QJ71LP21-25 QJ71LP21S-25	QJ71BR11[*1]	GT37 SoftGOT3000
CNC C70	Q173NCCPU	○	QJ71LP21 QJ71LP21-25 QJ71LP21S-25	QJ71BR11[*1]	GT37 SoftGOT3000

Controller	Model	Clock	MELSECNET/H network module		Connectable model
			Optical loop	Coaxial bus	
Robot controller (Q series)	CRnQ-700(Q172DRCPU) CR750-Q(Q172DRCPU) CR751-Q(Q172DRCPU) CR800-Q(Q172DSRCPU)	○	QJ71LP21 QJ71LP21-25 QJ71LP21S-25	QJ71BR11*1	GT37 SoftGOT3000

*1 Use a CPU and an MELSECNET/H network module with function version B or later.
*2 Use a module having a serial number stating with 12042 or later in the first 5 digits.
*3 When using SV13, SV22, or SV43, use a Motion CPU with the following version of OS installed.
- SW6RN-SV13Q□: 00E or later
- SW6RN-SV22Q□: 00E or later
- SW6RN-SV43Q□: 00B or later

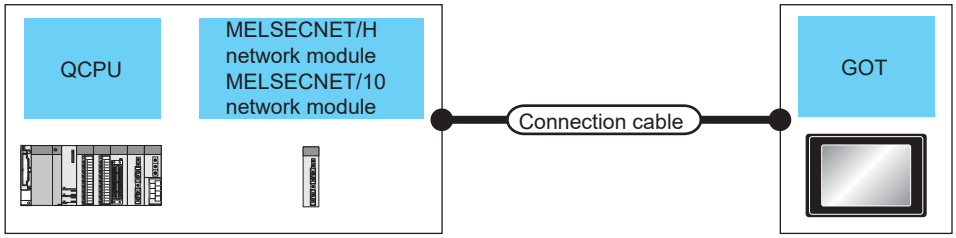
Precautions

For information on the version restrictions of the MELSECNET/H network module, refer to the following manual.

Q Corresponding MELSECNET/H Network System Reference Manual (PLC to PLC network)

8.1.2 System configuration

Connection to optical loop system



For details on the maximum length, refer to the following.

☞ Page 706 Maximum length

For details on the maximum number of connected devices, refer to the following.

☞ Page 707 Maximum number of connected devices

PLC			Connection cable	GOT	
Model	**MELSECNET/H network module*1**	**Communication type**	**Cable model**	**Interface**	**Model**
MELSEC-Q (Q mode) MELSEC-QS Motion CPU (Q series) CNC C70 Robot controller (Q series)	QJ71LP21 QJ71LP21-25 QJ71LP21S-25	MELSECNET/H	Optical fiber cable*2	GT37-IF2000 + GT15-J71LP23-25	GT37 SoftGOT3000
		MELSECNET/10	Optical fiber cable*2	GT37-IF2000 + GT15-J71LP23-25*3	GT37 SoftGOT3000
C Controller module (Q series)	QJ71LP21-25 QJ71LP21S-25	MELSECNET/H	Optical fiber cable*2	GT37-IF2000 + GT15-J71LP23-25	GT37 SoftGOT3000
		MELSECNET/10	Optical fiber cable*2	GT37-IF2000 + GT15-J71LP23-25*3	GT37 SoftGOT3000

*1 For the system configuration of the MELSECNET/H network module, refer to the following manual.
📖Q Corresponding MELSECNET/H Network System Reference Manual (PLC to PLC network)

*2 For details on the optical fiber cable, refer to the following manual.
📖Q Corresponding MELSECNET/H Network System Reference Manual (PLC to PLC network)

*3 In the controller settings, select the MELSECNET/10 mode. For the setting method, refer to the following.
☞ Page 711 [Controller Setting]

■Maximum length

The overall cable length and cable length between stations vary depending on the conditions such as the type of the cable used and the total number of stations.

For details, refer to the following manual.

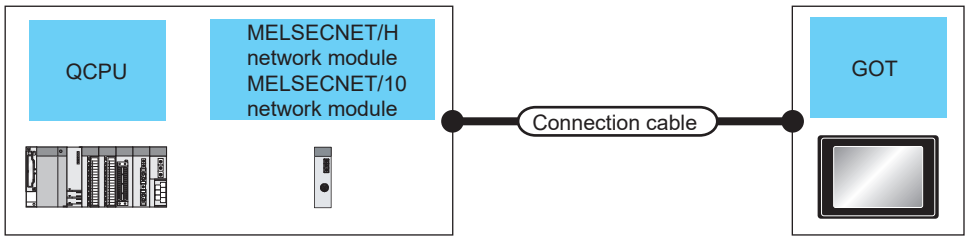
📖Q Corresponding MELSECNET/H Network System Reference Manual (PLC to PLC network)

■Maximum number of connected devices

The following shows the number of connectable GOTs.

Controller	
Model	**Number of connectable devices**
MELSEC-Q (Q mode) C Controller module (Q series) MELSEC-QS Motion CPU (Q series) CNC C70 Robot controller (Q series)	63 GOTs

Connection to the coaxial bus system



For details on the maximum length, refer to the following.

☞ Page 707 Maximum length

For details on the maximum number of connected devices, refer to the following.

☞ Page 708 Maximum number of connected devices

PLC			Connection cable	GOT	
Model	**MELSECNET/H network module*1**	**Communication type**	**Cable model**	**Interface**	**Model**
MELSEC-Q (Q mode) MELSEC-QS Motion CPU (Q series) CNC C70 Robot controller (Q series)	QJ71BR11	MELSECNET/H	Coaxial cable*2	GT37-IF2000 + GT15-J71BR13	GT37 SoftGOT3000
		MELSECNET/10	Coaxial cable*2	GT37-IF2000 + GT15-J71BR13*3	GT37 SoftGOT3000
C Controller module (Q series)	QJ71BR11	MELSECNET/H	Coaxial cable*2	GT37-IF2000 + GT15-J71BR13	GT37 SoftGOT3000
		MELSECNET/10	Coaxial cable*2	GT37-IF2000 + GT15-J71BR13*3	GT37 SoftGOT3000

*1 For the system configuration of the MELSECNET/H network module, refer to the following manual.
📖Q Corresponding MELSECNET/H Network System Reference Manual (PLC to PLC network)

*2 For the coaxial cable, refer to the following manual.
📖Q Corresponding MELSECNET/H Network System Reference Manual (PLC to PLC network)

*3 In the controller settings, select the MELSECNET/10 mode.
For the setting method, refer to the following.
☞ Page 711 [Controller Setting]

■Maximum length

The overall cable length and cable length between stations vary depending on the conditions such as the type of the cable used and the total number of stations.

For details, refer to the following manual.

📖Q Corresponding MELSECNET/H Network System Reference Manual (PLC to PLC network)

■Maximum number of connected devices

The following shows the number of connectable GOTs.

Controller	
Model	**Number of connectable devices**
MELSEC-Q (Q mode) C Controller module (Q series) MELSEC-QS Motion CPU (Q series) CNC C70 Robot controller (Q series)	31 GOTs

Connection via the multiple CPU system

When the GOT is connected via the multiple CPU system, the PLC takes 10 seconds or more to run.

If you start the GOT before the PLC runs, a system alarm occurs.

Adjust the time to display the GOT startup screen to prevent a system alarm.

📖GT Designer3 (GOT3000) Screen Design Manual

Connection to QCPU (Q mode)

Use function version B or later of the MELSECNET/H network module and QCPU (Q mode).

Connection to Q17nDCPU, Q170MCPU, Q170MSCPU(-S1), CNC C70, CRnQ-700, or CR800-Q (Q172DSRCPU)

The Q17nDCPU, Q170MCPU, Q170MSCPU(-S1), CNC C70, CRnQ-700, and CR800-Q (Q172DSRCPU) are applicable to the MELSECNET/H connection (PLC to PLC network) only.

For connecting the GOT to the MELSECNET/10 network system (PLC to PLC network), set the MELSECNET/H network system (PLC to PLC network) to the MELSECNET/10 mode.

Connection to QSCPU

The GOT can only read device data and sequence programs by the ladder monitor function in the QSCPU.

The GOT cannot write any data to the QSCPU.

Connection to Q170MCPU or Q170MSCPU(-S1)

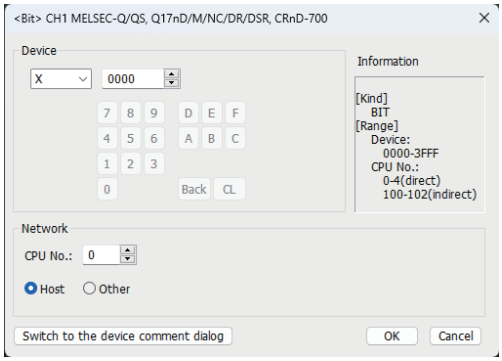
Set [CPU No.] to 2 in the device setting to monitor the device of the Motion CPU area (CPU No. 2).

When [CPU No.] is set to 0 or 1, the device on the PLC CPU area (CPU No. 1) is monitored.

When [CPU No.] is set to the number other than 0 to 2, a communication error occurs and the monitoring cannot be executed.

For the setting of [CPU No.], refer to the following.

📖GT Designer3 (GOT3000) Screen Design Manual



Connecting one PLC to multiple GOTs

When multiple GOT units are simultaneously accessing one PLC, the GOT writing process (transient/cyclic) and reading process (transient) may slow down.

This slow access can be remedied with the following countermeasures.

<Countermeasures>

■Improve response speed on PLC side

Insert a COM instruction on the PLC to increase the response speed.

Note that caution is required as the scan time will increase.

■Screen design using cyclic devices

Create the screen with cyclic devices instead of using transient devices.

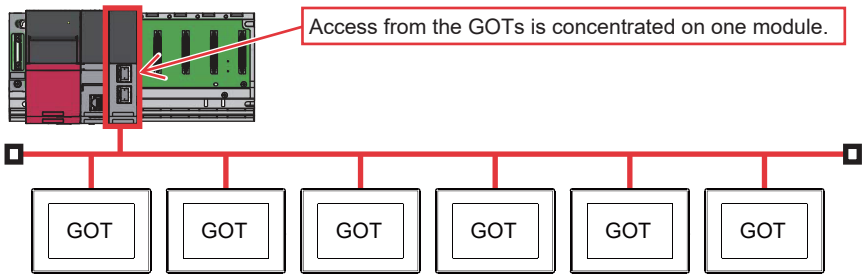
■Split GOT connection destinations into several systems

Add a master/local module to the PLC side, and split the GOT connection destinations into several systems.

Improve the current system configuration.

(Example of current system configuration)

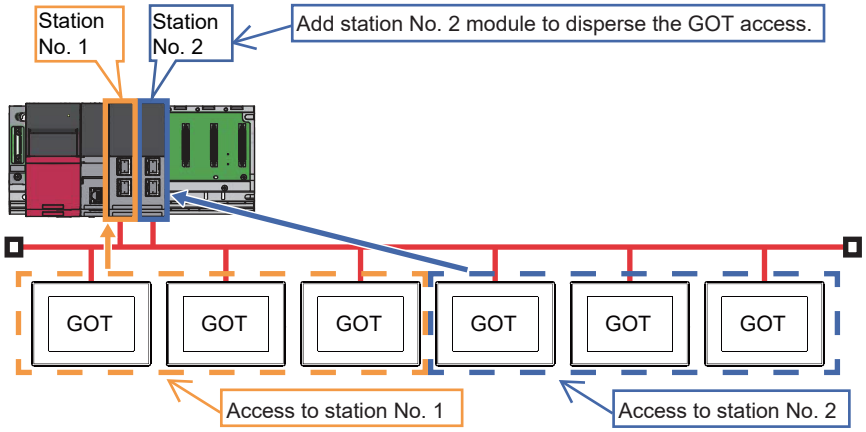
In the following system configuration, access from the GOT is concentrated on one module.



(Improvement measure)

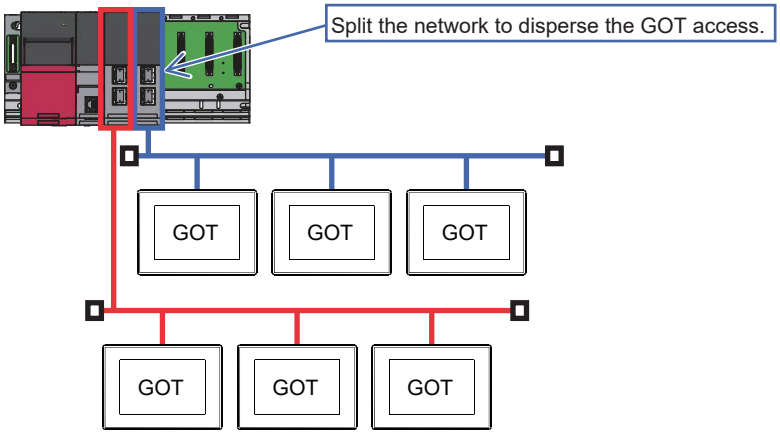
- Adding a module to the PLC side

Add a module to the PLC side to disperse the GOT access destinations.



• Split the network

Split the network to disperse the GOT access.



Precautions

■Network configuration

Use MELSECNET/H connection (PLC to PLC network), MELSECNET/H connection (PLC to PLC network) in the MNET/10 mode, or MELSECNET/10 connection (PLC to PLC network) to configure a network including the GOT.

The following networks including the GOT cannot be configured.

• MELSECNET/H (Remote I/O network)

• MELSECNET/10 (Remote I/O network)

■GOT startup in the MELSECNET/H or MELSECNET/10 connection

In the MELSECNET/H or MELSECNET/10 connection, the data link is started approximately 10 seconds after the GOT startup.

■When a network error occurs in the system alarm

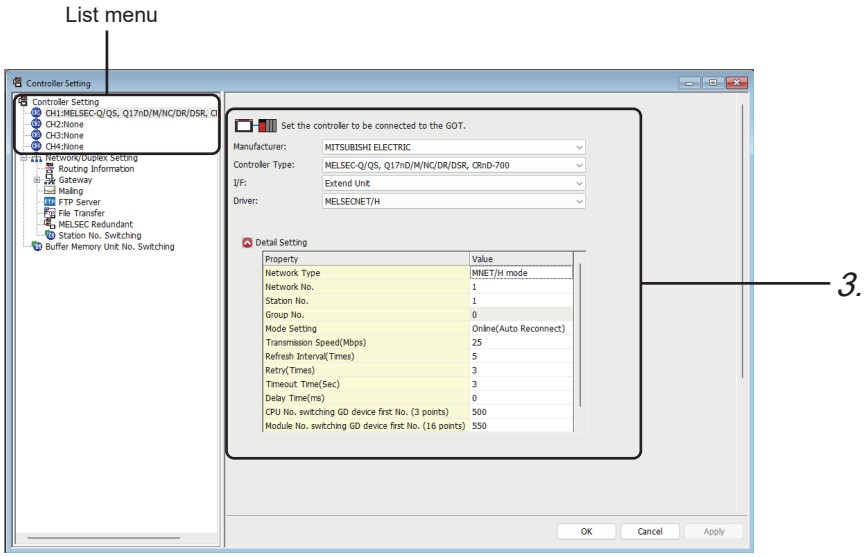
In the MELSECNET/H or MELSECNET/10 connection, when a network error occurs in the system alarm, the system alarm message cannot be canceled even though the causes are removed.

To cancel the system alarm display, restart the GOT.

8.1.3 GOT side settings

[Controller Setting]

Set the channel of the connected controller.



Operating procedure

1. Select [Common] → [Controller Setting] from the menu.

2. In the [Controller Setting] window, select the channel number to be used from the list menu.

3. Set the following items.

Item	Description
[Manufacturer]	[MITSUBISHI ELECTRIC]
[Controller Type]	[MELSEC-Q/QS, Q17nD/M/NC/DR/DSR, CRnD-700]
[I/F]	[Extend Unit]
[Driver]	[MELSECNET/H]
[Detail Setting]	Configure the settings according to the usage environment. ☞ Page 712 [Detail Setting]

4. When you have completed the settings, click the [OK] button.

Point

The controller settings can be configured and checked in [I/F Communication Setting].
For details, refer to the following.
📖GT Designer3 (GOT3000) Screen Design Manual

■[Detail Setting]

Configure the settings according to the usage environment.

Detail Setting

Property	Value
Network Type	MNET/H mode
Network No.	1
Station No.	1
Group No.	0
Mode Setting	Online(Auto Reconnect)
Transmission Speed(Mbps)	25
Refresh Interval(Times)	5
Retry(Times)	3
Timeout Time(Sec)	3
Delay Time(ms)	0
CPU No. switching GD device first No. (3 points)	500
Module No. switching GD device first No. (16 points)	550

Item	Description	Range
[Network Type]	Set the network type.	[MNET/H mode], [MNET/10 mode], [MNET/H Extended mode][*1]
[Network No.]	Set the network number.	[1] to [239]
[Station No.]	Set the station number of the GOT.	[1] to [64]
[Group No.]	—	[0]
[Mode Setting]	Set the operation mode of the GOT.	[Online(Auto Reconnect)], [Offline], [Forward loop][*2], [Reverse loop][*2], [Test between master stations][*2], [Test between slave stations][*2], [Self-loopback test][*2], [Internal self-loopback test][*2], [H/W test][*2]
[Transmission Speed]	—	[10] Mbps, [25] Mbps
[Refresh Interval]	Set the number of refreshes to secure the send/receive data per station during communication.	[1] time to [1000] times
[Retry]	Set the number of retries to be performed when a communication timeout occurs. When receiving no response after retries, the communication times out.	[0] times to [5] times
[Timeout Time]	Set the time period for a communication to time out.	[1] second to [90] seconds
[Delay Time]	Set the delay time for reducing the load of the network and destination PLC.	[0] ms to [300] ms
[CPU No. switching GD device first No. (3 points)]	Set the start device number of the GD devices for CPU number switching. For details, refer to the following. ☞ Page 713 Start device number of the GD devices for CPU number switching	[0] to [65520]
[Module No. switching GD device first No. (16 points)]	Set the start device number of the GD devices for module number switching. For details, refer to the following. ☞ Page 714 Start device number of the GD devices for module number switching	[0] to [65520]
[Servo axis switching GD device first No. (16 points)]	Set the start device number of the GD devices for servo axis switching. For details, refer to the following. ☞ Page 715 Start device number of the GD devices for servo axis switching	[0] to [65520]

*1 To monitor the redundant QCPU system, use function version D or later of QCPU having a serial number starting with 07102 or later in the first 5 digits.
Use GX Developer Version 8.29F or later.

*2 For details, refer to the following manual.
📖Q Corresponding MELSECNET/H Network System Reference Manual (PLC to PLC network)

Point

• When connecting to the MELSECNET/10 network
When connecting to the MELSECNET/10 network using the MELSECNET/H communication unit, set [MNET/10 mode] in [Network Type].
• Communication interface settings in the utility
The communication interface setting can be changed on the utility's [Communication setting] after writing [Controller Setting] of project data.
For details on the utility, refer to the following manual.
GOT3000 Series User's Manual (Utility & Maintenance Functions)
• Priority of the settings in [Controller Setting]
When the settings are configured in GT Designer3 or in the utility, the latest settings are effective.

■Start device number of the GD devices for CPU number switching

• Indirect specification of a CPU number
[CPU No.] can be indirectly specified with the GOT internal registers (GD devices) by specifying a value (100 to 102) to [CPU No.] in the device setting dialog in GT Designer3.
Set the start device number of the GD devices to be used in [CPU No. switching GD device first No. (3 points)].
[CPU No.] is specified with three consecutive GD devices, starting from the set device number.
When [500] is set to [CPU No. switching GD device first No. (3 points)], GD500 to GD502 are used to specify [CPU No.] as shown in the following table.

CPU No.	GD device	Setting range
100	GD500	1 to 4 Setting a value outside the range causes a communication timeout error. Specifying a nonexistent CPU number or a CPU number not supporting a multiple CPU system with a device causes a controller error.
101	GD501	
102	GD502	

• Indirect specification of a CPU number on the initially displayed screen
Set [CPU No. switching GD device first No. (3 points)] so that the values of the GD devices are retained and monitored upon the GOT startup.
• Indirect specification of a CPU number for multi-channel connection
If the setting range of [CPU No. switching GD device first No. (3 points)] set for each channel overlaps, the monitoring target CPU number set to each channel is switched simultaneously.
Set [CPU No. switching GD device first No. (3 points)] for each channel so that the setting range does not overlap.
• Indirect specification of a station number and a CPU number for multi-channel connection
When GD10 to GD25 are used to specify the station number of an inverter or non-Mitsubishi temperature controller connected, setting [10] to [CPU No. switching GD device first No. (3 points)] in a different channel switches the monitoring target CPU number and station number of an inverter or non-Mitsubishi temperature controller set to each channel simultaneously.
Set [CPU No. switching GD device first No. (3 points)] so that the setting range does not overlap the station number of an inverter or non-Mitsubishi temperature controller.

■Start device number of the GD devices for module number switching

• Indirect specification of a module number

For connection via a Simple Motion module, [Unit No.] can be specified with the GOT internal registers (GD devices) by specifying a value (100 to 10F) to [Unit No.] in the device setting dialog in GT Designer3.

Set the start device number of the GD devices to be used in [Module No. switching GD device first No. (16 points)].

[Unit No.] is specified with 16 consecutive GD devices, starting from the set device number.

When [550] is set to [Module No. switching GD device first No. (16 points)], GD550 to GD565 are used to specify [Unit No.] as shown in the following table.

Module No.	GD device	Setting range
100	GD550	00 to FF Setting a value outside the above range causes a device range error.
101	GD551	
102	GD552	
103	GD553	
104	GD554	
105	GD555	
106	GD556	
107	GD557	
108	GD558	
109	GD559	
10A	GD560	
10B	GD561	
10C	GD562	
10D	GD563	
10E	GD564	
10F	GD565	

• Indirect specification of a module number on the initially displayed screen

Set [Module No. switching GD device first No. (16 points)] so that the values of the GD devices are retained and monitored upon the GOT startup.

• Indirect specification of a module number for multi-channel connection

If the setting range of [Module No. switching GD device first No. (16 points)] set for each channel overlaps, the module number of the Simple Motion module via the servo amplifier device of each channel is switched simultaneously.

Set [Module No. switching GD device first No. (16 points)] for each channel so that the setting range does not overlap.

• Indirect specification of a station number and a module number for multi-channel connection

When GD10 to GD25 are used to specify the station number of an inverter or non-Mitsubishi temperature controller connected, setting [10] to [Module No. switching GD device first No. (16 points)] switches the module number of the Simple Motion module via the servo amplifier device and the station number of an inverter or non-Mitsubishi temperature controller set to each channel simultaneously.

Set [Module No. switching GD device first No. (16 points)] so that the setting range does not overlap the station number of an inverter or non-Mitsubishi temperature controller.

■Start device number of the GD devices for servo axis switching

• Indirect specification of a servo axis number

For connection via a Motion CPU or Simple Motion module, a servo axis number can be indirectly specified with GOT internal registers (GD devices) by specifying a value (100 to 115) to the axis number of the servo amplifier device.

Set the start device number of the GD devices to be used in [Servo axis switching GD device first No. (16 points)].

Specify a servo axis number with 16 consecutive GD devices, starting the set device number.

When [10] is set to [Servo axis switching GD device first No. (16 points)], GD10 to GD25 are used to specify a servo axis number as shown in the following table.

Servo axis No.	GD device	Setting range
100	GD10	1 to 64 Setting a value outside the above range causes a device range error.
101	GD11	
102	GD12	
103	GD13	
104	GD14	
105	GD15	
106	GD16	
107	GD17	
108	GD18	
109	GD19	
110	GD20	
111	GD21	
112	GD22	
113	GD23	
114	GD24	
115	GD25	

• Indirect specification of a servo axis number on the initially displayed screen

Set [Servo axis switching GD device first No. (16 points)] so that the values of the GD devices are retained and monitored upon the GOT startup.

• Indirect specification of a servo axis number for multi-channel connection

If the setting rage of [Servo axis switching GD device first No. (16 points)] set for each channel overlaps, the axis number of the servo amplifier of each channel is switched simultaneously.

Set [Servo axis switching GD device first No. (16 points)] for each channel so that the setting range does not overlap.

• Indirect specification of a station number and a servo axis number for multi-channel connection

When GD10 to GD25 are used to specify the station number of an inverter or non-Mitsubishi temperature controller connected, setting [10] to [Servo axis switching GD device first No. (16 points)] switches the axis number of the servo amplifier and the station number of an inverter or non-Mitsubishi temperature controller set to each channel simultaneously.

Set [Servo axis switching GD device first No. (16 points)] so that the setting range does not overlap the station number of an inverter or non-Mitsubishi temperature controller.

■Routing parameter settings

Up to 64 settings can be configured for [Transfer Net No.].

However, the same number cannot be set in [Transfer Net No.] twice or more (multiple times).

The GOT (host station) can access 64 different networks specified under [Transfer Net No.].

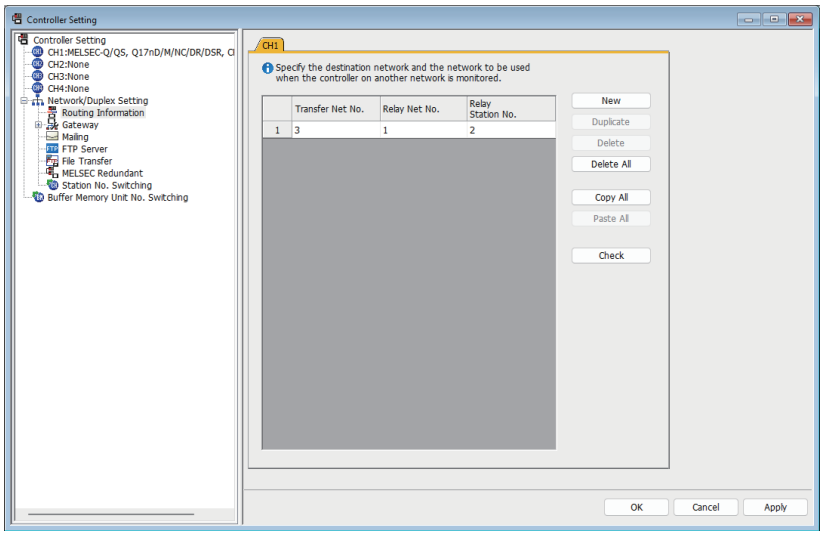
Point

Routing parameter settings

When communicating within the host network, routing parameter settings are not required.

For details on routing parameters, refer to the following manual.

📖Q Corresponding MELSECNET/H Network System Reference Manual (PLC to PLC network)



Item	Range
[Transfer Net No.]	[1] to [239]
[Relay Net No.]	[1] to [239]
[Relay Station No.]	[0] to [120]

Point

Routing parameter settings for the relay station

Routing parameter settings are also necessary for the relay station.

For the setting, refer to the following.

☞ Page 717 PLC side settings when connecting to MELSECNET/H

Precautions

Specify all the network modules on the same network as the same network type.

(The MELSECNET/H mode and the MELSECNET/H extended mode cannot be mixed.)

When connecting to MELSECNET/H in the QCPU redundant system, [MELSECNET/H Extended Mode] cannot be specified as the network type.

8.1.4 PLC side settings when connecting to MELSECNET/H

This section describes the settings of the GOT and MELSECNET/H network module in the following system configuration. When connecting the MELSECNET/H network module to the MELSECNET/H network system, specify the MELSECNET/H mode or the MELSECNET/H extended mode as a network type.

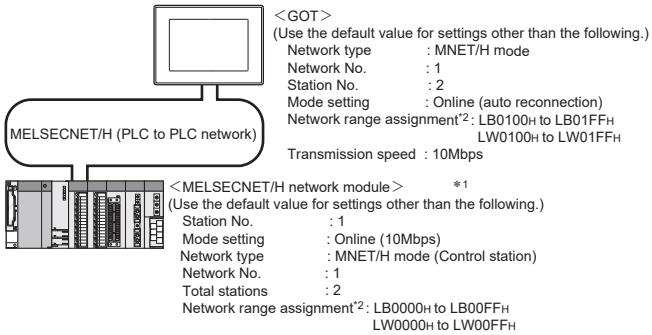
Point

MELSECNET/H network module

For details on the MELSECNET/H network module, refer to the following manual.

Q Corresponding MELSECNET/H Network System Reference Manual (PLC to PLC network)

System configuration



*1 The MELSECNET/H network module is mounted on slot 0 of the base unit.
The start I/O number of the MELSECNET/H network module is set to "0".

*2 The network type must be set according to the number of assignment of send points for each station.
When the number of assignment is 2000 bytes or less: MELSECNET/H mode
When the number of assignment is more than 2000 bytes: MELSECNET/H extended mode

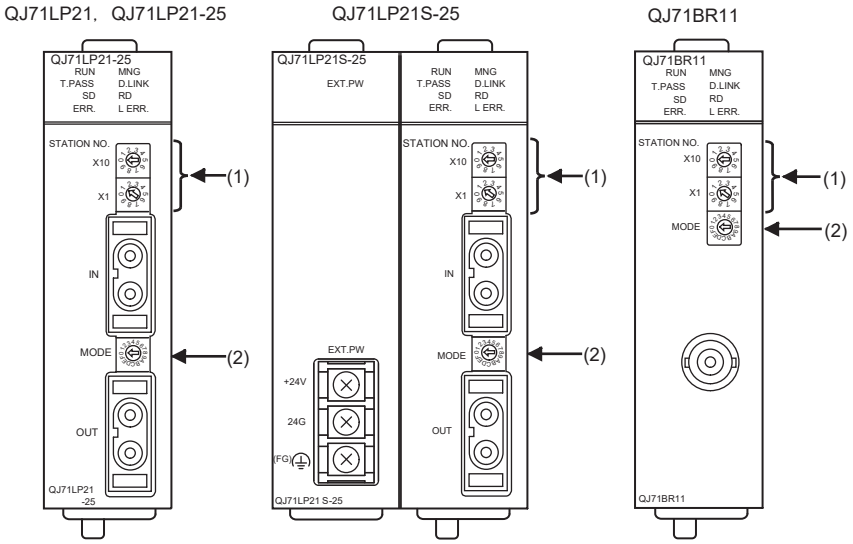
Point

Connection to Q170MCPU or Q170MSCPU(-S1)

For connection to Q170MCPU or Q170MSCPU(-S1), the start I/O No. of the MELSECNET/H network module is set to "70".

Switch settings for the MELSECNET/H network module

Set the station number setting switch and mode setting switch.



■Station number setting switch

○: Necessary, △: As necessary, —: Not necessary

Station number setting switch	Description	Setting value	Setting for GOT connection
STATION NO. X10 X1	Station number setting (station No. 1)*1	1	○

*1 Do not set the same station No. as that of the GOT.

■Mode setting switch

○: Necessary, △: As necessary, —: Not necessary

Mode setting switch	Description	Setting value	Setting for GOT connection
MODE	Mode setting (online: 10 Mbps)*1	0	○

*1 Set the same mode setting and transmission speed as those of the GOT.

Point

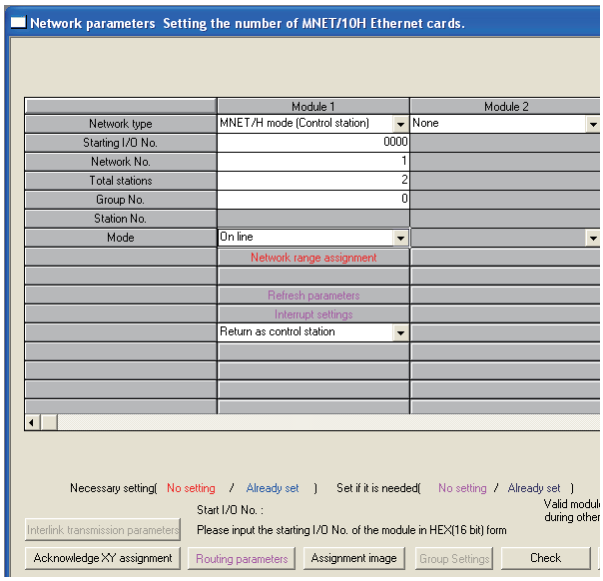
When the switch setting has been changed
Turn off then on or reset the PLC CPU.

Parameter settings

■Connecting to MELSEC-Q or QS series

- [Network parameter] of GX Developer

Network parameter



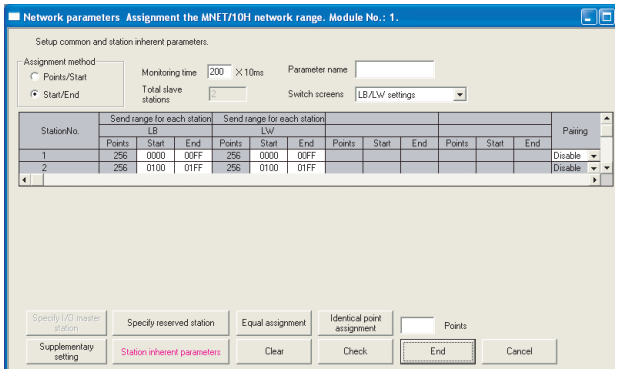
○: Necessary, △: As necessary, —: Not necessary

Item	Setting value	Setting for GOT connection
[Network type]	MNET/H mode (Control station) (fixed)	○
[Starting I/O No.]*1	0000H	○
[Network No.]*2	1	○
[Total stations]	2	○
[Group No.]	0 (fixed)	○
[Mode]*3	Online	○
[Network range assignment]	☞ Network range assignment	△

Item	Setting value	Setting for GOT connection
[Refresh parameters]	(Use default value)	△
[Interrupt settings]		—
[Control station return setting]		△
[Redundant settings]*4		△
[Interlink transmission parameters]		—
[Routing parameters]	☞ ◇ Routing parameters	△

*1 When using Q170MCPU or Q170MSCPU(-S1), set it according to the system configuration.
*2 Set the same network number as that of the GOT.
*3 Set the same mode setting as that of the GOT.
*4 Set when using the MELSECNET/H network module in a redundant QnPRHCPU system.

◇Network range assignment



○: Necessary, △: As necessary, —: Not necessary

Item				Setting value	Setting for GOT connection
[Monitoring time]				200	△
[LB/LW settings]*1	[Send range for each station (LB)]	[Station No.1]	[Start]	0000H	△
			[End]	00FFH	△
		[Station No.2]	[Start]	0100H	△
			[End]	01FFH	△
	[Send range for each station (LW)]	[Station No.1]	[Start]	0000H	△
			[End]	00FFH	△
		[Station No.2]	[Start]	0100H	△
			[End]	01FFH	△
	[Pairing setting]*2			Disable	△
[LX/LY settings]*1				No setting	△
[Specify I/O master station]*1				No setting	△
[Specify reserved station]				No setting	△
[Supplementary setting]				(Use default value)	△
[Station inherent parameters]					△

*1 Be sure to set it to perform the cyclic transmission.
*2 Set when using the MELSECNET/H network module in a redundant QnPRHCPU system.

Point

When changing the network parameter

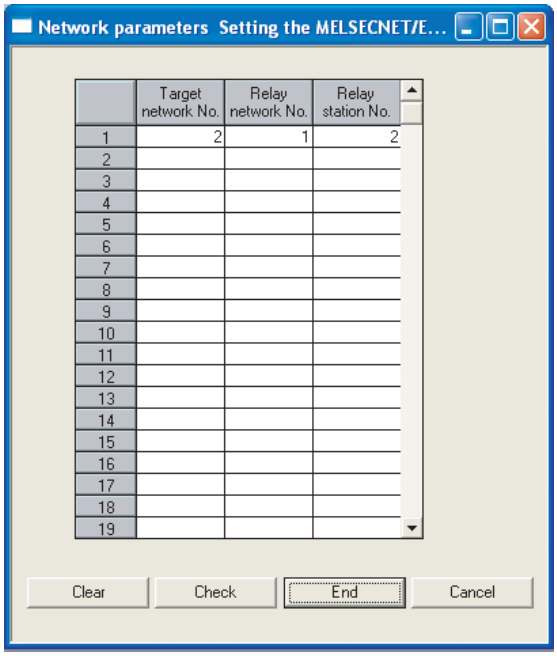
After writing network parameters to the PLC CPU, turn off then on or reset the PLC CPU.

Routing parameters

Up to 64 network numbers can be set for [Target network No.].

However, the same destination network number cannot be set twice or more (multiple times).

The GOT (host station) can access 64 different networks specified under [Target network No.].



Item	Range
[Target network No.]	1 to 239
[Relay network No.]	1 to 239
[Relay station No.]	0 to 64

Point

Routing parameter settings for the request source

Routing parameter settings are also necessary for the request source GOT.

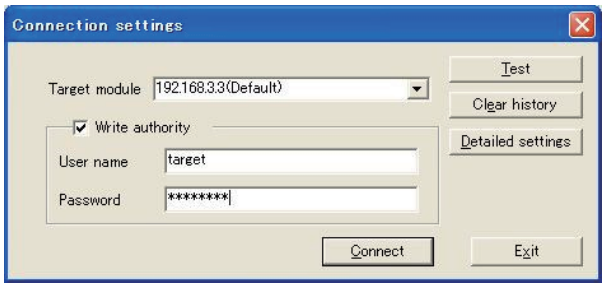
For the setting, refer to the following.

☞ Page 716 Routing parameter settings

■Connection to C Controller module (Q series)

Use SW3PVC-CCPU-E Ver.3.05F or later for the MELSECNET/H utility.

- Connection settings



○: Necessary, △: As necessary, —: Not necessary

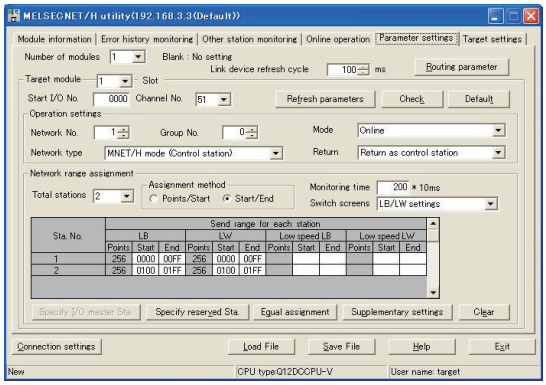
Item	Setting value	Setting for GOT connection
[Target module]*1	192.168.3.3 (Default)	○
[Write authority]	Selected	○
[User name]*2	target	○
[Password]*2	password	○
[Detailed settings]	—	△

*1 If the IP address of the C Controller module (Q series) has been changed, input the changed IP address or host name.

*2 If the account of the C Controller module (Q series) has been changed, input the changed user name and password.

- MELSECNET/H utility's [Parameter settings]

Parameter settings



○: Necessary, △: As necessary, —: Not necessary

Item		Setting value	Setting for GOT connection
[Numbers of modules]		1	○
[Link device refresh cycle]		(Use default value)	△
[Routing parameter]		☞ Routing parameters	△
[Target module]		1	○
[Start I/O No.]		0000H	○
[Channel No.]		(Use default value)	○
[Operation settings]	[Network Type]	MNET/H mode (Control station)	○
	[Network No.]*1	1	○
	[Group No.]	0	○
	[Mode]*2	Online	○
	[Return]	(Use default value)	△
[Refresh Parameters]		(Use default value)	△

Item					Setting value	Setting for GOT connection
[Network range assignment]	[Total stations]				2	○
	[Assignment method]				Start/End	○
	[LB/LW settings]*3	[Send range for each station (LB)]	[Station No.1]	[Start]	0000H	△
				[End]	00FFH	△
			[Station No.2]	[Start]	0100H	△
				[End]	01FFH	△
		[Send range for each station (LW)]	[Station No.1]	[Start]	0000H	△
				[End]	00FFH	△
			[Station No.2]	[Start]	0100H	△
				[End]	01FFH	△
	[LX/LY settings]*3				No setting	△
	[Monitoring time]				(Use default value)	△
	[Specify I/O master Sta.]*3				No setting	△
	[Specify reserved Sta.]				No setting	△
	[Supplementary settings]				(Use default value)	△

*1 Set the same network number as that of the GOT.
*2 Set the same mode setting as that of the GOT.
*3 Be sure to set it to perform the cyclic transmission.

Point

When changing the network parameter

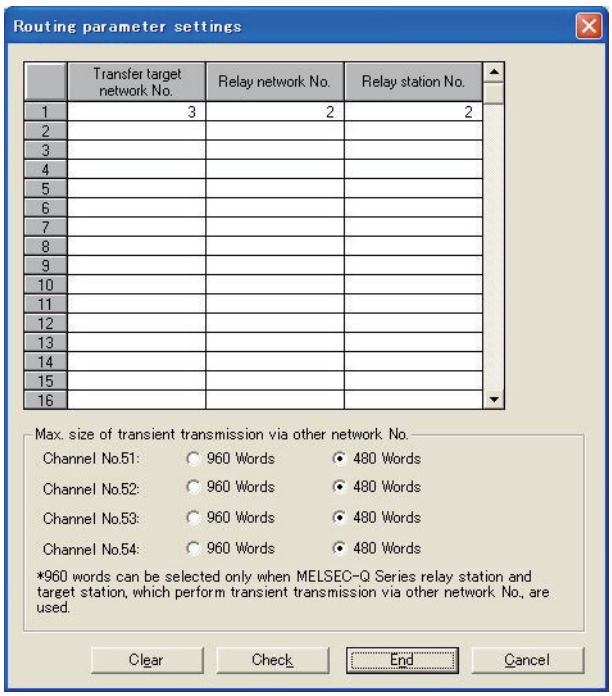
After writing network parameters to the C Controller module (Q series), turn off then on or reset the C Controller module (Q series).

Routing parameters

Up to 64 network numbers can be set for [Transfer target network No.].

However, the same destination network number cannot be set twice or more (multiple times).

The GOT (host station) can access 64 different networks specified under [Transfer target network No.].



Item	Range
[Transfer target network No.]	1 to 239
[Relay network No.]	1 to 239
[Relay station No.]	0 to 120

Point

Routing parameter settings for the request source

Routing parameter settings are also necessary for the request source GOT.

For the setting, refer to the following.

☞ Page 716 Routing parameter settings

[Controller Setting] in GT Designer3

Item	Setting value
[Network Type]	MNET/H mode
[Network No.]	1: Network No. 1
[Station No.]	2: Station No. 2
[Mode Setting]	Online (auto reconnection)
[Retry]	3 times (Use default value)
[Timeout Time]	3 seconds (Use default value)
[Delay Time]	0 seconds (Use default value)
[Refresh Interval]	1 time (Use default value)
[Transmission Speed]	10 Mbps

Point

[Controller Setting] in GT Designer3

For the setting method of [Controller Setting] in GT Designer3, refer to the following.

☞ Page 711 [Controller Setting]

8.1.5 PLC side settings when connecting to MELSECNET/10

Model		Reference
MELSECNET/H network module	QJ71LP21, QJ71LP21-25, QJ71LP21S-25, QJ71BR11	☞ Page 724 Connection to MELSECNET/H network module

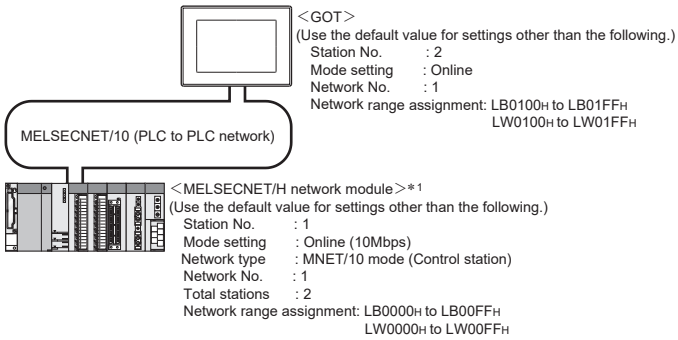
Connection to MELSECNET/H network module

This section describes the settings of the GOT and MELSECNET/H network module in the following system configuration.
When connecting the MELSECNET/H network module to the MELSECNET/10 network system, specify the MELSECNET/10 mode as a network type.

Point

MELSECNET/H network module
For details on the MELSECNET/H network module, refer to the following manual.
📖Q Corresponding MELSECNET/H Network System Reference Manual (PLC to PLC network)

■System configuration



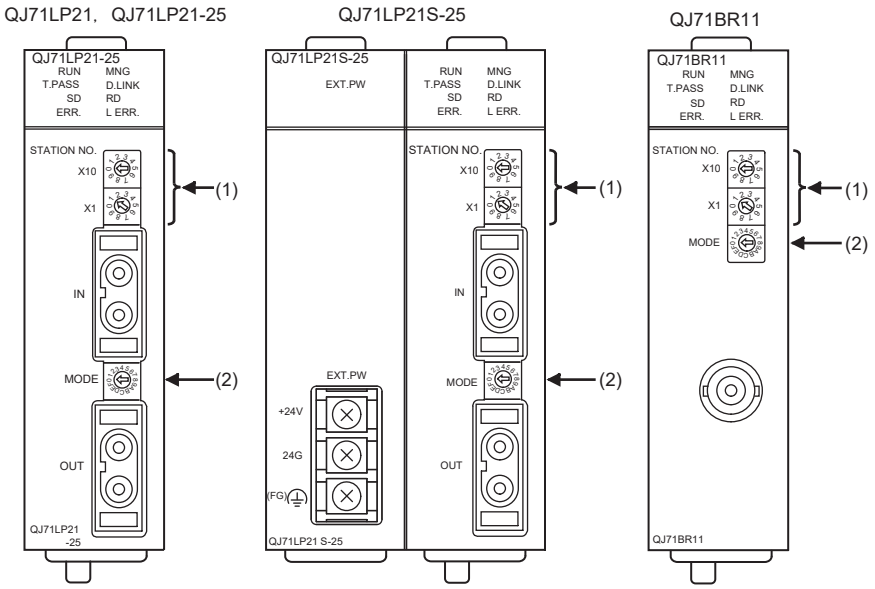
*1 The MELSECNET/H network module is mounted on slot 0 of the base unit.
The start I/O number of the MELSECNET/H network module is set to "0".

Point

Connection to Q170MCPU or Q170MSCPU(-S1)
For connection to Q170MCPU or Q170MSCPU(-S1), the start I/O number of the MELSECNET/H network module is set to "70".

■Switch settings for the MELSECNET/H network module

Set the station number setting switch and mode setting switch.



- Station number setting switch

○: Necessary, △: As necessary, —: Not necessary

Station number setting switch	Description	Setting value	Setting for GOT connection
STATION NO. X10 X1	Station number setting (station No. 1)*1	1	○

*1 Do not set the same station No. as that of the GOT.

- Mode setting switch

○: Necessary, △: As necessary, —: Not necessary

Mode setting switch	Description	Setting value	Setting for GOT connection
MODE	Mode setting (online: 10 Mbps)	0 (fixed)	○

Point

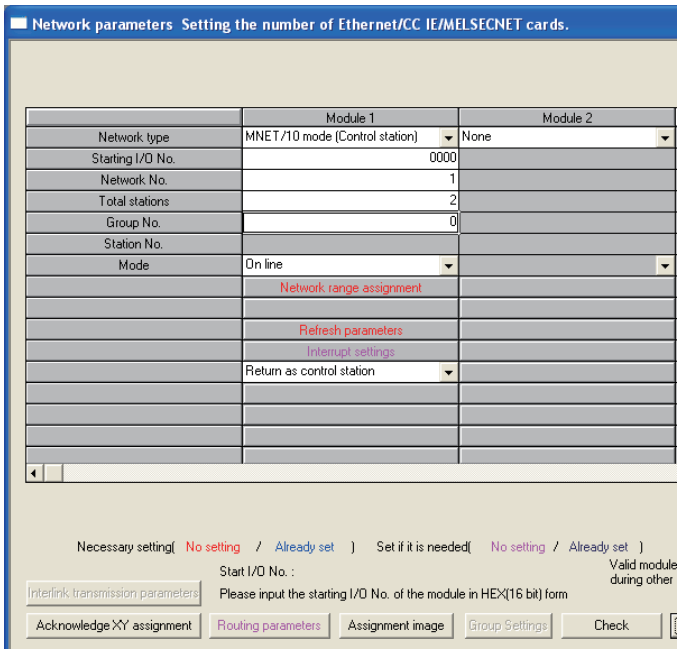
When the switch setting has been changed

Turn off then on or reset the PLC CPU.

■Parameter settings (when connecting to MELSEC-Q or QS series)

- [Network parameter] of GX Developer

Network parameter

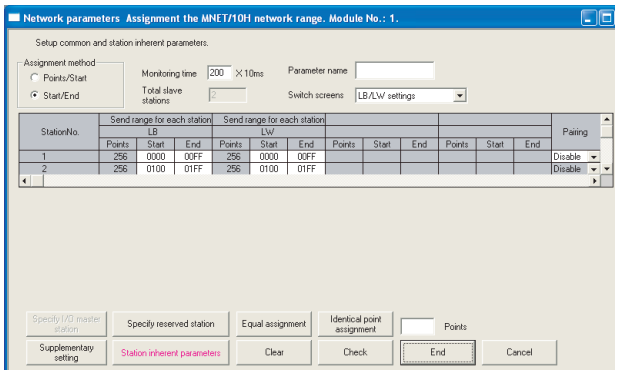


○: Necessary, △: As necessary, —: Not necessary

Item	Setting value	Setting for GOT connection
[Network type]	MNET/10 mode (Control station) (fixed)	○
[Starting I/O No.][*1]	0000H	○
[Network No.][*2]	1	○
[Total stations]	2	○
[Group No.]	0 (fixed)	○
[Mode]	Online (fixed)	○
[Network range assignment]	☞ Network range assignment	△
[Refresh parameters]	(Use default value)	△
[Interrupt settings]		—
[Control station return setting]		△
[Redundant settings][*3]		△
[Interlink transmission parameters]		—
[Routing parameters]	☞ Routing parameters	△

*1 When using Q170MCPU, set it according to the system configuration.
*2 Set the same network number as that of the GOT.
*3 Set when using the MELSECNET/H network module in a redundant QnPRHCPU system.

Network range assignment



○: Necessary, △: As necessary, —: Not necessary

Item				Setting value	Setting for GOT connection
[Monitoring time]				200	△
[LB/LW settings]*1	[Send range for each station (LB)]	[Station No.1]	[Start]	0000H	△
			[End]	00FFH	△
		[Station No.2]	[Start]	0100H	△
			[End]	01FFH	△
	[Send range for each station (LW)]	[Station No.1]	[Start]	0000H	△
			[End]	00FFH	△
		[Station No.2]	[Start]	0100H	△
			[End]	01FFH	△
	[Pairing setting]*2			Disable	△
[LX/LY settings]*1				No setting	△
[Specify I/O master station]*1				No setting	△
[Specify reserved station]				No setting	△
[Supplementary setting]				(Use default value)	△
[Station inherent parameters]					△

*1 Be sure to set it to perform the cyclic transmission.
*2 Set when using the MELSECNET/H network module in a redundant QnPRHCPU system.

Point

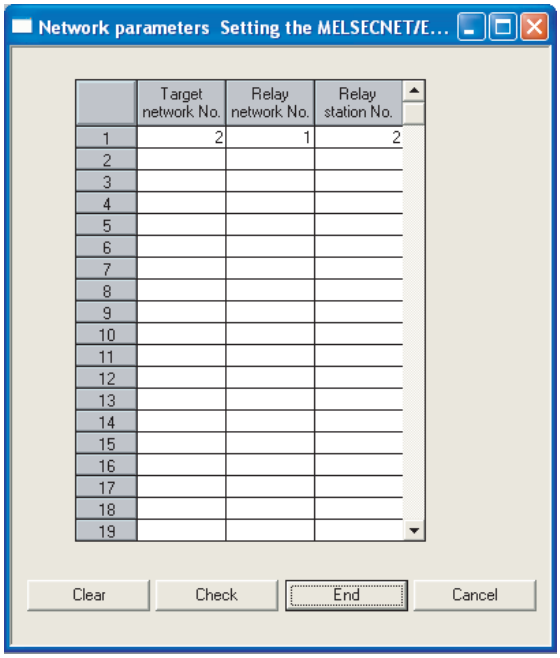
When changing the network parameter
After writing network parameters to the PLC CPU, turn off then on or reset the PLC CPU.

Routing parameters

Up to 64 network numbers can be set for [Target network No.].

However, the same destination network number cannot be set twice or more (multiple times).

The GOT (host station) can access 64 different networks specified under [Target network No.].



Item	Range
[Target network No.]	1 to 239
[Relay network No.]	1 to 239
[Relay station No.]	0 to 64

Point

Routing parameter settings for the request source

Routing parameter settings are also necessary for the request source GOT.

For the setting, refer to the following.

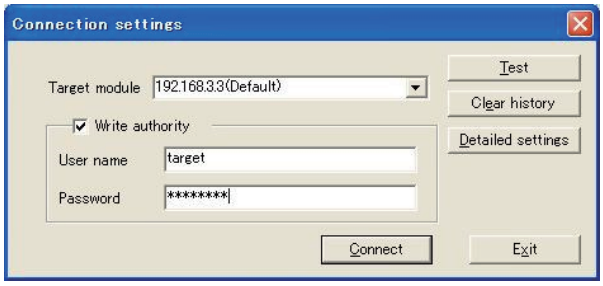
☞ Page 716 Routing parameter settings

■Parameter settings (when connecting to C Controller module (Q series))

Use SW3PVC-CCPU-E Ver.3.05F or later for the MELSECNET/H utility.

- Connection to C Controller module (Q series)

Connection settings



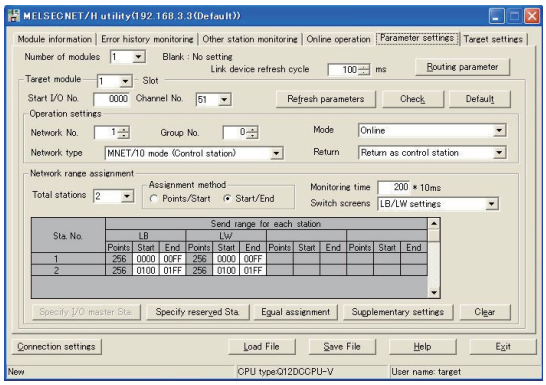
○: Necessary, △: As necessary, —: Not necessary

Item	Setting value	Setting for GOT connection
[Target module]*1	192.168.3.3 (Default)	○
[Write authority]	Selected	○
[User name]*2	target	○
[Password]*2	password	○
[Detailed settings]	—	△

*1 If the IP address of the C Controller module (Q series) has been changed, input the changed IP address or host name.
*2 If the account of the C Controller module (Q series) has been changed, input the changed user name and password.

- MELSECNET/H utility's [Parameter settings]

Network parameter



○: Necessary, △: As necessary, —: Not necessary

Item		Setting value	Setting for GOT connection
[Numbers of modules]		1	○
[Link device refresh cycle]		(Use default value)	△
[Routing parameter]		☞ Routing parameters	△
[Target module]		1	○
[Start I/O No.]		0000H	○
[Channel No.]		(Use default value)	○
[Operation settings]	[Network Type]	MNET/10 mode (Control station)	○
	[Network No.]*1	1	○
	[Group No.]	0	○
	[Mode]	Online	○
	[Return]	(Use default value)	△
[Refresh parameters]		(Use default value)	△

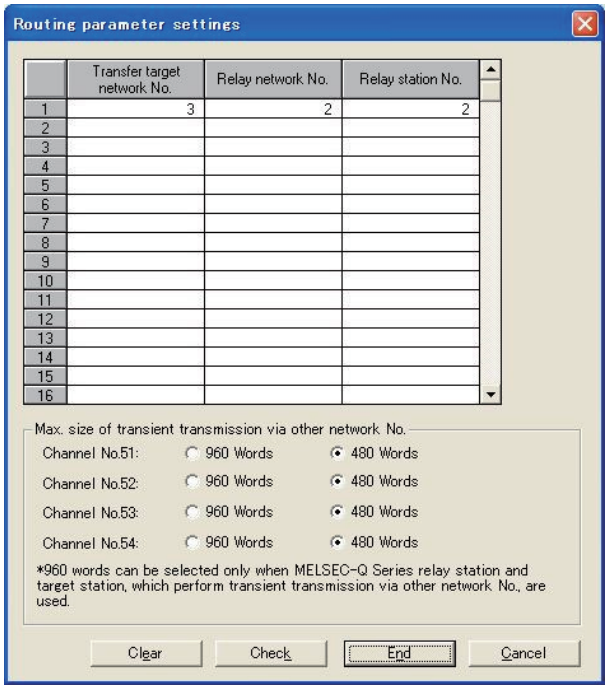
Item					Setting value	Setting for GOT connection
[Network range assignment]	[Total stations]				2	○
	[Assignment method]				Start/End	○
	[LB/LW settings]*2	[Send range for each station (LB)]	[Sta. No.1]	[Start]	0000H	△
				[End]	00FFH	△
			[Sta. No.2]	[Start]	0100H	△
				[End]	01FFH	△
		[Send range for each station (LW)]	[Sta. No.1]	[Start]	0000H	△
				[End]	00FFH	△
			[Sta. No.2]	[Start]	0100H	△
				[End]	01FFH	△
	[LX/LY settings]*2				No setting	△
	[Monitoring time]				(Use default value)	△
	[Specify I/O master Sta.]*2				No setting	△
	[Specify reserved Sta.]				No setting	△
	[Supplementary settings]				(Use default value)	△

*1 Set the same network number as that of the GOT.
*2 Be sure to set it to perform the cyclic transmission.

Point

When changing the network parameter
After writing network parameters to the C Controller module (Q series), turn off then on or reset the C Controller module (Q series).

Routing parameters
Up to 64 network numbers can be set for [Transfer target network No.].
However, the same destination network number cannot be set twice or more (multiple times).
The GOT (host station) can access 64 different networks specified under [Transfer target network No.].



Item	Range
[Transfer target network No.]	1 to 239
[Relay network No.]	1 to 239
[Relay station No.]	0 to 120

Point

Routing parameter settings for the request source

Routing parameter settings are also necessary for the request source GOT.

For the setting, refer to the following.

☞ Page 716 Routing parameter settings

■[Controller Setting] in GT Designer3

Item	Setting value (Use default value.)
[Retry]	3 times
[Timeout Time]	3 seconds

Point

[Controller Setting] in GT Designer3

For the setting method of [Controller Setting] in GT Designer3, refer to the following.

☞ Page 711 [Controller Setting]

■Settings for the MELSECNET/10 communication unit

Item	Setting value
Network number setting switch	1: Network No. 1
Group number setting switch	0: No group setting (fixed)
Station number setting switch	2: Station No. 2
Mode setting switch	0: Online (fixed)

Point

Settings for the MELSECNET/10 communication unit

For the setting method of the MELSECNET/10 communication unit, refer to the following.

☞ Page 711 [Controller Setting]

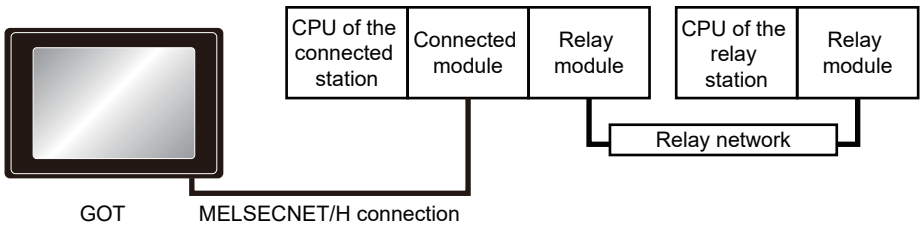
8.1.6 Access range for monitoring

When the GOT is connected to the CPU of the station connected by MELSECNET/H connection, the range accessible via the CPU is as follows.

Point

- When monitoring other networks (Routing parameter settings)

To monitor other networks, routing parameter settings are necessary.
For the routing parameter settings, refer to the reference manual of the network connected.



○: Accessible, —: Inaccessible

CPU of the connected station	Relay station								
	Relay network	CPU of the relay station							
		RCPU	LCPU	QCPU (Q mode)	QSCPU	QCPU (A mode)	QnACPU	ACPU	FX5CPU
QnUCPU QnUDCPU QnUDHCPU QnUDECPU QnUDEHCPU QnUDVCPU	Ethernet	—	○	○*3	○	—	○	—	—
	CC-Link IE Controller Network	—	—	○	○	—	—	—	—
	CC-Link IE Field Network	—	○	○*1	○	—	—	—	—
	MELSECNET/H, MELSECNET/10	—	—	○	○	○	○	○*2	—
QnJCPU QnCPU QnHCPU QnPHCPU QnPRHCPU	Ethernet	—	○	○*3	○	—	○	—	—
	CC-Link IE Controller Network	—	—	○	○	—	—	—	—
	MELSECNET/H, MELSECNET/10	—	—	○	○	○	○	○*2	—
C Controller module (MELSEC-Q series)	Ethernet	—	—	—	—	—	—	—	—
	CC-Link IE Controller Network	—	—	○	○	—	—	—	—
	CC-Link IE Field Network	—	○	○*1	○	—	—	—	—
	MELSECNET/H, MELSECNET/10	—	—	○	○	○	○	○*2	—

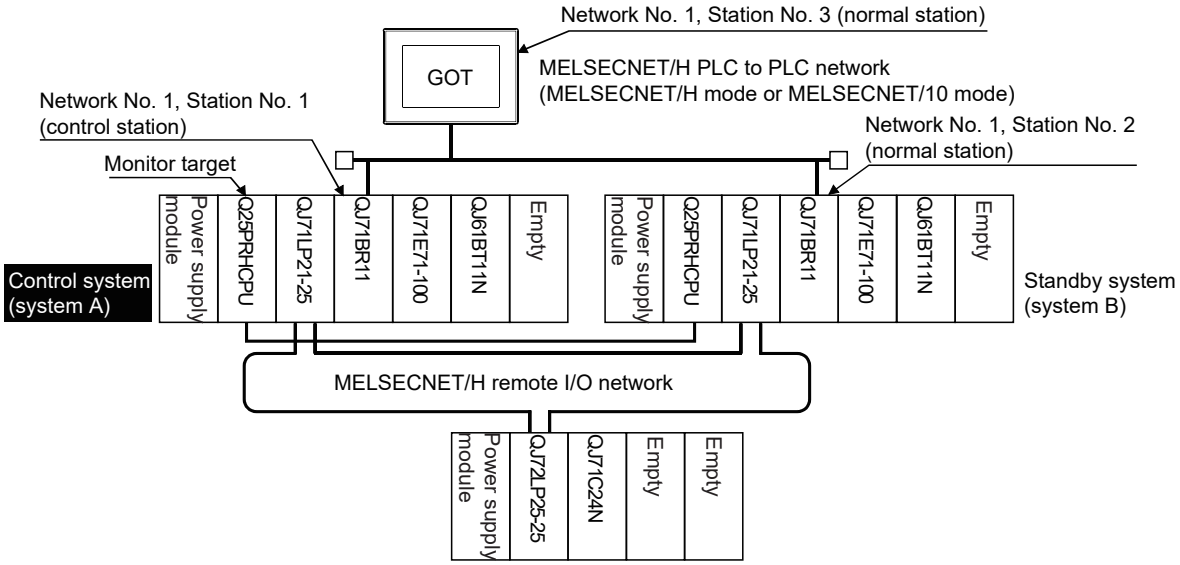
*1 QnUDVCPU, QnUDECPU, QnUDEHCPU, QnUCPU, QnUDCPU, and QnUDHCPU are supported.
*2 AnUCPU and AnUSCPU are supported.
*3 The C Controller module (MELSEC-Q series) is not supported.

Precautions

Only the PLC CPU of the same network number can be monitored in the GOT.
For details, refer to the following manual.
GT Designer3 (GOT3000) Screen Design Manual

8.1.7 How to monitor a redundant system

This section explains the MELSECNET/H connection and MELSECNET/10 connection (network system) that connect the GOT to the MELSECNET/H and MELSECNET/10 network system.
The following shows an example of connecting the GOT set as the normal station to the MELSECNET/H network system.



Connection method

Connect the MELSECNET/H network system and the GOT.
For details, refer to the following.
☞ Page 703 MELSECNET/H connection

Settings in GT Designer3

Set GT Designer3 as follows.

Setting item	Setting details		Model
Model	MELSEC-Q/QS, Q17nD/M/NC/DR/DSR, CRnD-700		GT37 SoftGOT3000
Device setting (Network setting)	Other	NW No.: Network No. of MELSECNET/H PLC to PLC network	
		PLC station No.: Station number of the control system	
MELSEC redundant settings	☞ Page 740 MELSEC redundant settings		

Monitoring target change when system switching occurs in a redundant system

When system switching occurs, the network module station No. 2 switches from the normal station to the sub-control station, and continues to control the MELSECNET/H network system as the control system.
Since the GOT monitors the control system, the monitoring target is automatically changed to the network module station No. 2.

Point

When monitoring control system without MELSEC redundant settings
When system switching occurs, the network module station No. 2 switches from the normal station to the sub-control station, and continues to control the MELSECNET/H network system as the control system.
Since the GOT monitors the station of the specified station number, the monitoring target cannot be changed to the station No. 2 in response to the system switching.
As a countermeasure, create a screen to monitor the PLC CPU of the control system by switching the station numbers between System A and System B using the script function.
☞ Page 734 Switch the Monitor Target to the Control System Using the Script Function

Switch the Monitor Target to the Control System Using the Script Function

This section describes how to create a script screen to automatically change the monitoring target (station number) at the occurrence of system switching even if the MELSEC redundant settings are not configured.
The script executes the station number switching function or screen switching function.
The following shows the advantages and disadvantages of the station number switching function and screen switching function.

Function	Advantage	Disadvantage
Station number switching function	The monitor screens for Station No. 1 (control system) and Station No. 2 (standby system) can be created on one screen.	Some objects do not allow the station number to be switched.
Screen switching function	All objects can be used since monitor screens are created for each station number.	Monitor screens must be created separately for Station No. 1 (control system) and Station No. 2 (standby system).

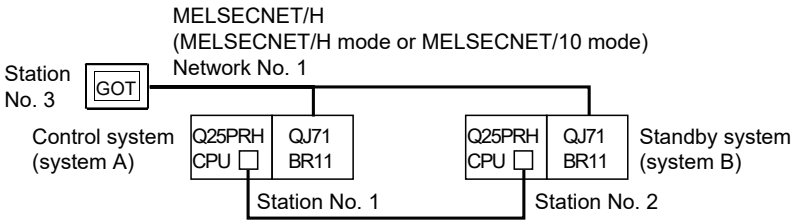
The following explains how to use each function.

■Method for using the station number switching function

As a feature of this function, monitor screens for Station No. 1 (control system) and Station No. 2 (standby system) can be created on one screen.
If the system switching occurs, the GOT can change the monitoring target to the control system PLC CPU on the same monitor screen.
To achieve this, the script of the GOT monitors the special relay SM1515 (Control system identification flag) of the PLC CPU and stores the station number of the latest control system into the station number switching device.
Restrictions: Some objects do not allow the station number to be switched.
📖GT Designer3 (GOT3000) Screen Design Manual

- Setting procedure

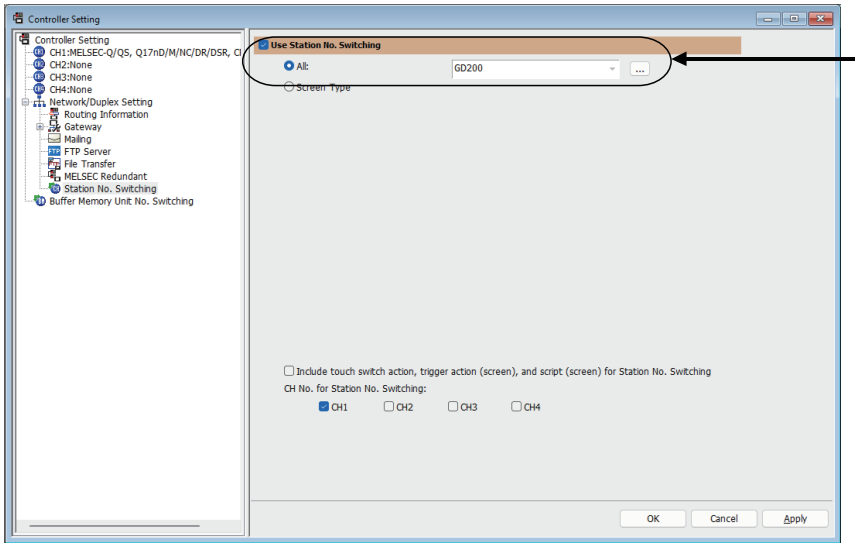
System configuration example



Connected module	Network number	Station No.
MELSECNET/H network module of control system	1	1
MELSECNET/H network module of standby system		2
GOT connected to MELSECNET/H network or MELSECNET/10 network		3

1. Set the station number switching device.

Select [Common] → [Controller Setting] → [Station No. switching], and set the internal device GD200 as the station number switching device.



Configure the setting here.

2. Set the trigger action.

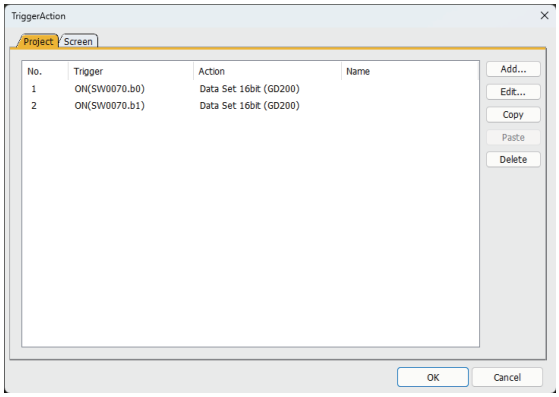
Select [Common] → [Trigger Action] and configure the settings to switch the station number when the faulty station information (GS231) from the station monitoring turns on.

For network number 1 and station number 2, set 258 (0102H).

Condition 1	: SW70.b0 (while ON)	← When b0 is ON, station No. 1 is faulty.
Operation	: GD200 = 2	← Station number is changed to No. 2.

Condition 1	: SW70.b1 (while ON)	← When b1 is ON, station No. 2 is faulty.
Operation	: GD200 = 1	← Station number is changed to No. 1.

Create the trigger action in the project on the Project tab.



Point

Setting for the trigger action function

For the trigger action function, hexadecimals cannot be used.

To use the trigger action function, set the N/W No. and the station No. of the PLC CPU in [Unsigned BIN]. (For the trigger action function, set [Unsigned BIN] for [Storing Device])

The following shows a setting example.

- For network number 1 and station number 1 (0101H), set 257.
- For network number 10 and station number 10 (0A0AH), set 2570.

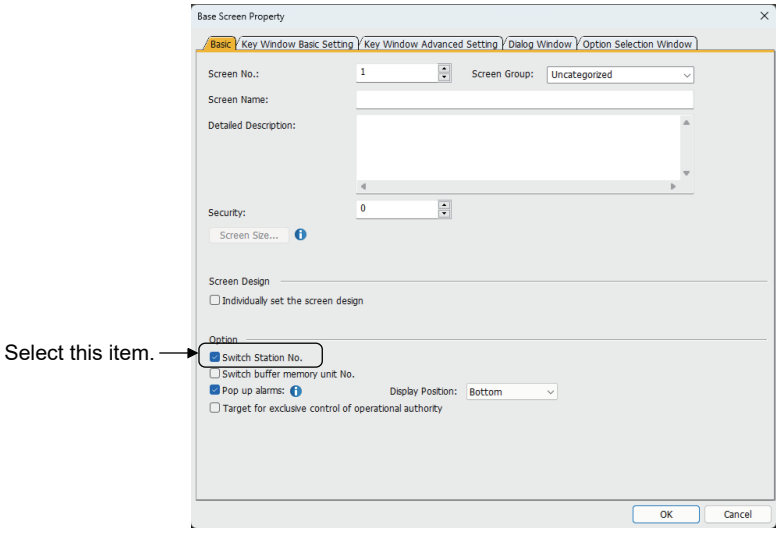
3. Create a monitor screen.

In the device setting (network setting) of each object, set network number 1 and station number 1 of the control system.

4. Validate the station number switching function.

Select [Screen] → [Screen Property], and select [Switch Station No.] in the [Basic] tab to enable the station number switching function.

Make this setting for each monitor screen.



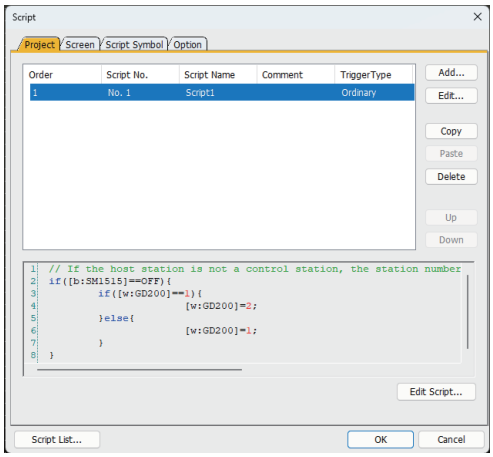
5. Change the station number switching device value in the script.

Select [Common] → [Script] → [Script], and create a script of checking the SM1515 status of the current monitor station and changing the station number switching device if the status is OFF (standby system). You will create the script for each monitor screen.

Set the trigger type of the script to [Ordinary] or [Sampling(about 3s)].

```
// If the host station is not a control station, the station number is switched to that of the other station.
if([b:SM1515]==OFF){
        if([w:GD200]==1){
                [w:GD200]=2;
        }else{
                [w:GD200]=1;
        }
}
```

Set the created script for each screen on the Screen tab.



Point

When a redundant system is only connected to the MELSECNET/H network, SW56 (Current control station) can be set as the station number switching device.

In this case, even if the system switching occurs, the GOT continuously monitors the station number of the currently active control station.

■Method for using the screen changing function

As a feature of this function, monitor screens are created for each station number. When the system switching occurs, the GOT can change the monitoring target to the control system PLC CPU on the other monitor screen.

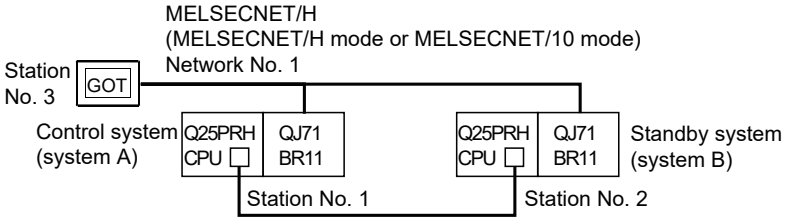
To achieve this, the script of the GOT monitors the special relay SM1515 (Control system identification flag) of the PLC CPU and stores the screen number corresponding to the latest station number of the control system into the screen switching devices.

There are the following 8 different screen switching devices. Set the screen switching devices for all screens to be used.

(1) Base screen switching device
(2) Overlap window 1 switching device
(3) Overlap window 2 switching device
(4) Overlap window 3 switching device
(5) Overlap window 4 switching device
(6) Overlap window 5 switching device
(7) Superimpose window 1 switching device
(8) Superimpose window 2 switching device

• Setting procedure

System configuration example

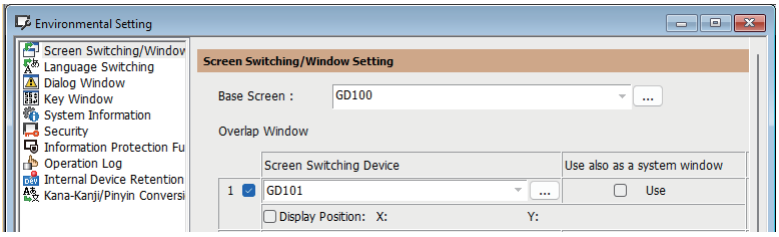


Connected module	Network No.	Station No.
MELSECNET/H network module of control system	1	1
MELSECNET/H network module of standby system		2
GOT connected to MELSECNET/H network or MELSECNET/10 network		3

1. Set the screen switching device of the base screen.

Select [Common] → [GOT Environmental Setting] → [Screen Switching/Window], and set the internal device GD100 as the base screen switching device.

(Do not use PLC CPU devices for the screen switching device. If used, the Trigger Action operation of the GOT may be disabled since the device data of the PLC CPU is overwritten by the device value transferred with the redundant system tracking function.)

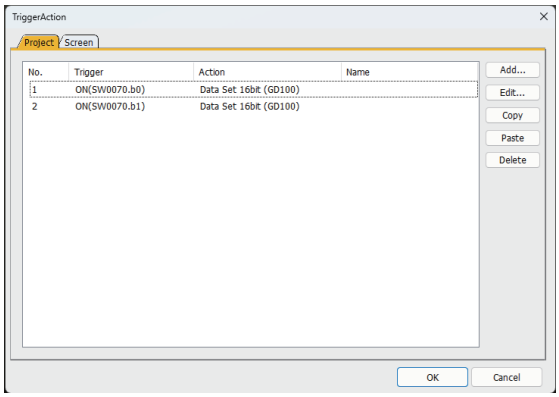


2. Set the trigger action.

Select [Common] → [Trigger Action] and configure the settings to switch the station number when the faulty station information (GS231) from the station monitoring turns on.

Condition 1	: SW70.b0 (while ON)	← When b0 is ON, station No. 1 is faulty.
Operation	: GD100 = 2	← Station number is changed to No. 2.

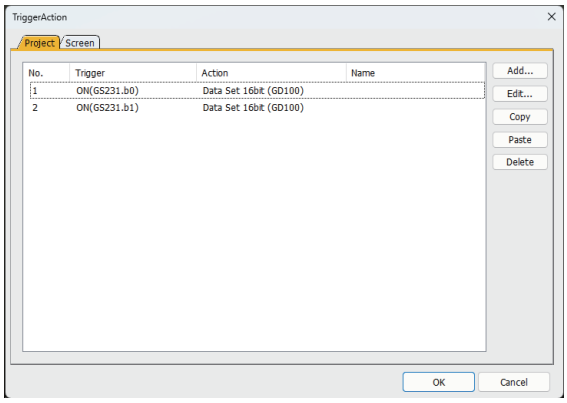
Condition 1	: SW70.b0 (while ON)	← When b1 is ON, station No. 2 is faulty.
Operation	: GD100 = 1	← Station number is changed to No. 1.



Select [Common] → [Trigger Action] and configure the settings to switch the station number when the faulty station information (GS231) from the station monitoring turns on.

Condition 1	: GS231.b0 (while ON)	← When b0 is ON, station No. 1 is faulty.
Operation	: GD100 = 2	← Screen number is changed to No. 2.

Condition 1	: GS231.b1 (while ON)	← When b1 is ON, station No. 2 is faulty.
Operation	: GD100 = 1	← Screen number is changed to No. 1.



3. Set a monitor screen.

- Create a monitor screen with objects whose network settings set to station No. 1 on screen No. 1 (1-1).
- Create a monitor screen with objects whose network settings set to station No. 2 on screen No. 2 (1-2).

4. Change the screen switching device value in the script.

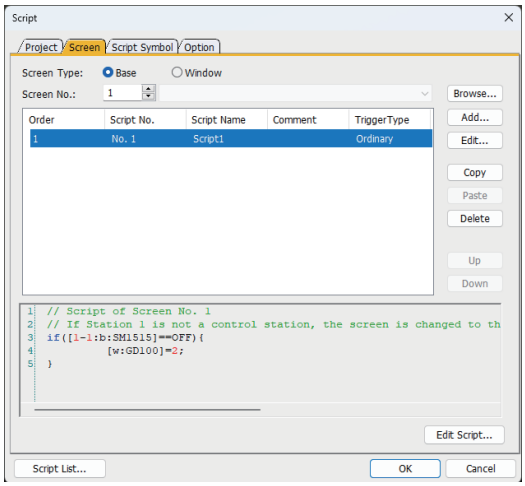
By selecting [Common] → [Script] → [Script], create a script for each monitor screen that checks the SM1515 status of the current monitor station, and if it is OFF (standby system), changes the station number switching device value.

Set the trigger type of the script to [Ordinary] or [Sampling(about 3s)].

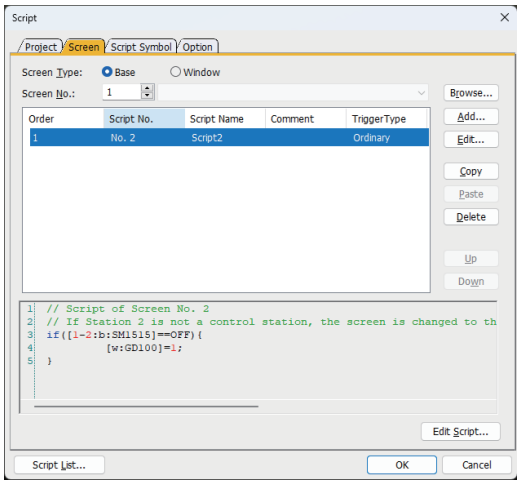
```
// Script of screen No. 1
// If station 1 is not a control station, the screen is switched to that of station 2.
if([1-1:b:SM1515]==OFF){
        [w:GD100]=2;
}
```

```
// Script of screen No. 2
// If station 2 is not a control station, the screen is switched to that of station 1.
if([1-2:b:SM1515]==OFF){
        [w:GD100]=1;
}
```

- Script screen of screen No. 1



- Script screen of screen No. 2



Point

When a redundant system is only connected to the MELSECNET/H network, SW56 (Current control station) can be set as the screen number switching device.

In this case, even if the system switching occurs, the GOT continuously monitors the station number of the currently active control station.

MELSEC redundant settings

This section describes the settings for the GOT to automatically change the monitoring target of the QCPU redundant system.

Point

Before configuring the MELSEC redundant settings

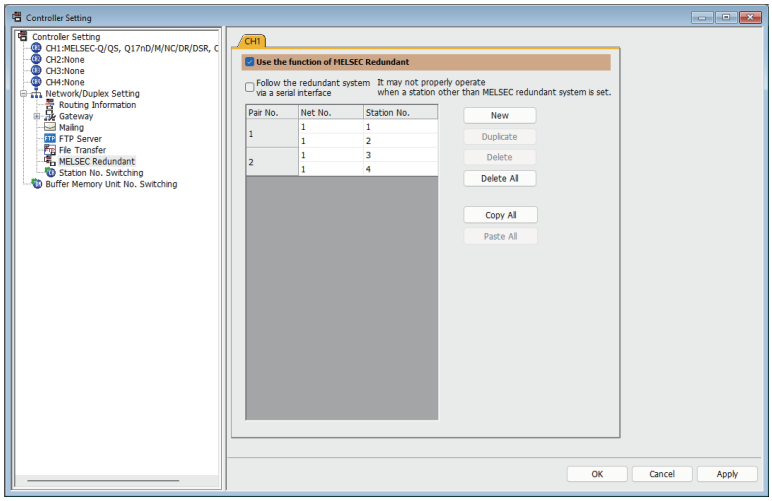
In the MELSEC redundant settings, do not set a station outside the redundant QCPU.

1. Select [Common] → [Controller Setting] → [MELSEC Redundant] from the menu.
2. The setting dialog box appears. Configure the settings by referencing the explanation that follows.
3. Configure the MELSEC redundant settings.

In the MELSEC redundant setting dialog, settings can be made for each channel of the controller.

The following shows an example of the MELSECNET/H connection (station No. 4) with redundant CPU pair No. 1 to No. 2, network No. 1, and redundant CPU station No. 0 to No. 3.

Ex.



Item		Description	Model
CH1 to CH4		Select the tab of the channel number to configure the MELSEC redundant settings.	GT37 SoftGOT3000
[Follow the redundant system via a serial interface]		Select this item to monitor the control system as a host station at serial connection.	
[Pair No.]*1	[Net No.]	Set the network number (1 to 255) for each pair number (1 to 64). • Upper row: Setting for the first redundant CPU • Lower row: Setting for the second redundant CPU (The same value as the value set for the first redundant CPU is displayed.)	
	[Station No.]	Set the station number (0 to 120) of the redundant CPU for each pair number (1 to 64). • Upper row: Setting for the first redundant CPU • Lower row: Setting for the second redundant CPU (The setting value for the first redundant CPU + 1 is displayed.)	
[New]		Adds a new pair number.	
[Duplicate]		Copies one setting of the selected pair number and adds it below the bottom row.	
[Delete]		Deletes one setting of the selected pair number. After deletion, the succeeding pair numbers are renumbered to fill the deleted pair number.	
[Delete All]		Deletes all the pair number settings.	
[Copy All]		Copies the MELSEC redundant setting on the selected CH No. tab.	
[Paste All]		Pastes the copied MELSEC redundant setting in the selected CH No. tab.	

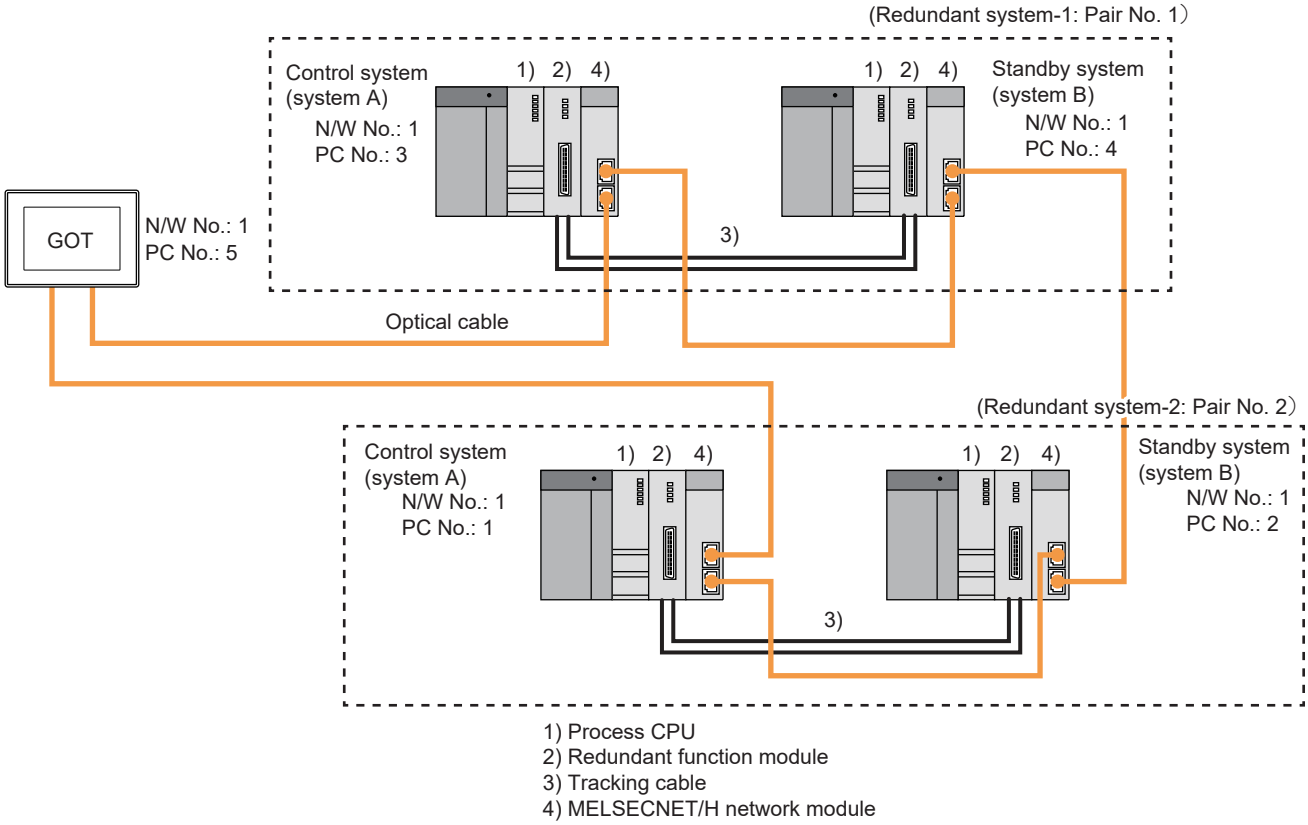
*1 For details, refer to the following.

☞ Page 741 Pair number

■Pair number

Redundant CPU pair means the redundant CPUs (System A / System B) in the redundant system configuration.
Pair number is the number assigned to each redundant CPU pair.
The following shows an example of MELSECNET/H connection in the QCPU redundant system. (Pair No. 1 to No. 2)

Ex.



Point

Precautions for configuring the MELSEC redundant settings
Pay attention to the following items when configuring the MELSEC redundant settings.

- The last station number and station number 1 (example: station number 64 and station number 1) cannot be paired.
- Before configuring the settings, make sure to check the station numbers of the network modules. If the MELSEC redundant settings and the actual network module station numbers are inconsistent, the GOT fails to automatically change the monitoring target to the control system when the system is switched.
- GOT supports the backup mode, which is the operation mode of the QCPU redundant system, and does not support the debug mode and separate mode.

Precautions

■Start of the redundant system

The GOT starts monitoring the redundant system after the control system and standby system have been determined, regardless of the starting order of PLC systems A and B.
The GOT starts monitoring when both systems start.
(In a redundant system with a redundant extension base unit, the GOT monitors the control system that starts first.)
Power on the redundant system within the time set in the GOT (communication timeout time and number of retries) so that the GOT can start monitoring after the redundant system starts (after the control system is decided).
If the GOT does not start within the set time, the GOT stops monitoring for safety reasons, and the following system alarm occurs.

- 451: The MELSEC redundant setting and actual system configuration do not match.

If the system alarm occurs, restart the GOT (reapply or reset the power supply) to start monitoring again.

■System switching

When system switching occurs through the user program, the communication path remains unchanged, and the GOT will continue monitoring.
No system alarm occurs.
When system switching occurs due to disconnected cable or other causes, the GOT changes the communication path and continues monitoring.
[450: Path has changed or timeout occurred in redundant system.] appears as the system alarm.

■Redundant system configuration and operation mode

• System alarm display

If the MELSEC redundant settings do not match the actual configuration of the redundant system, or if the operation mode of the redundant system is not set to backup mode, [451: The MELSEC redundant setting and actual system configuration do not match.] appears as the system alarm, and the GOT will not be able to correctly monitor the redundant system's CPU.
If the system alarm occurs, restart the GOT (reapply or reset the power supply) to start monitoring again.

• Changing the MELSEC redundant settings

Always reset the GOT after changing the MELSEC redundant settings.
If not reset, the changed MELSEC redundant settings will not be applied on the GOT.

■Monitoring a non-redundant system with the MELSEC redundant settings configured

If the MELSEC redundant settings were set for a non-redundant system, the GOT will operate normally.
In this case, if an abnormality (such as powering off or communication timeout error) occurs in the PLC CPU for which the MELSEC redundant settings are configured, the PLC CPU may not operate as intended.

■Monitoring a redundant system without configuring the MELSEC redundant settings

When the MELSEC redundant settings are not configured, the GOT does not automatically change the monitoring target even if system switching occurs in the redundant system.
When the GOT is connected to the standby system, data written to a device are overwritten by the data of the control system, failing to be reflected.
In this case, when data is written to a device in the standby system normally, the system alarm [315 Device writing error. Correct device.] is not detected.

■Connection to the remote I/O station

• The GOT can monitor only the following GOT functions.

Monitor function and device monitor function

• The GOT does not allow the PLC CPU clock of the master station to be set in the clock setting of the utility.

The master station clock will not change even if the clock setting is made.
Use GX Works2 or similar software to set the PLC CPU clock of the master station.

■MELSECNET/H connection

To monitor the redundant QCPU system using the MELSECNET/H connection, use function version D or later of QCPU having a serial number starting with "07102" or later in the first 5 digits. Use GX Developer Version 8.29F or later.

■Option functions including the ladder monitor

A message "Unable to communicate with CPU." is displayed when system switching occurs while an option function such as the ladder monitor is used.

■Monitor display speed

For the MELSECNET/H connection, if the control station on the MELSECNET/H network or MELSECNET/10 network fails and is taken over by a station other than the redundant system (QCPU), a timeout occurs as a system alarm.
If this occurs, the monitor display speed may slow down.

■When the QCPU redundant system is in the debug mode

When the QCPU redundant system is in the debug mode, do not configure the MELSEC redundant system settings on the GOT side when connecting the GOT.

9 CC-Link IE TSN connection

☞ Page 744 MELSEC MX Controller (MX-R Model) (CC-Link IE TSN connection)
☞ Page 772 MELSEC MX Controller (MX-F Model) (CC-Link IE TSN connection)
☞ Page 796 MELSEC iQ-R series (CC-Link IE TSN connection)
☞ Page 822 MELSEC iQ-F series (CC-Link IE TSN connection)

9.1 MELSEC MX Controller (MX-R Model) (CC-Link IE TSN connection)

☞ Page 744 Connectable devices
☞ Page 745 System configuration
☞ Page 749 GOT side settings
☞ Page 758 PLC side settings
☞ Page 764 Connection to the PLC with the authentication function enabled
☞ Page 766 Access range for monitoring
☞ Page 767 Firmware of the CC-Link IE TSN communication unit

9.1.1 Connectable devices

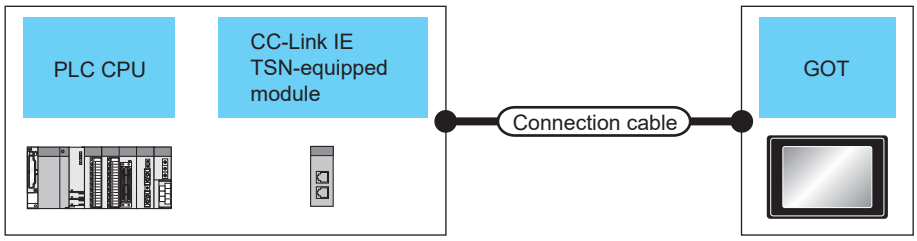
The following table shows the connectable models.

○: Supported, —: Not supported

Controller	Model	Clock	CC-Link IE TSN-equipped module	Connectable model
MELSEC MX Controller (MX-R Model)*1	MXR300-16 MXR300-32 MXR300-64	○	RJ71GN11-T2 RJ71GN11-EIP RJ71GN11-SX	GT37 SoftGOT3000
	MXR500-128 MXR500-256	○	RJ71GN11-T2 RJ71GN11-EIP RJ71GN11-SX	GT37 SoftGOT3000

*1 When using the CC-Link IE TSN (built-in Ethernet) communication driver, connect the GOT to the built-in Ethernet port (P1, P2) of the MX Controller.

9.1.2 System configuration



For details on the connection cable and overall cable length, refer to the following.

☞ Page 746 Connection cable
☞ Page 746 Overall length

For details on the maximum number of connected devices, refer to the following.

☞ Page 746 Maximum number of connected devices

Controller	CC-Link IE TSN-equipped module*1	Connection cable	GOT	
			Interface	Model
MELSEC MX Controller (MX-R Model)*6	RJ71GN11-T2*3 RJ71GN11-EIP*4*5 RJ71GN11-SX*7	Twisted pair cable	Built-in Ethernet interface of GOT	GT37 SoftGOT3000
			GT37-IF2000 + GT25-J71GN13-T2*1*2	

*1 Depending on the combination of the firmware version of the CC-Link IE TSN-equipped module on the master station and the firmware version of the CC-Link IE TSN communication unit (GT25-J71GN13-T2), the GOT cannot access the network.
For the combinations of firmware versions, refer to the following.
☞ Page 771 Firmware versions of the CC-Link IE TSN-equipped module on the master station and the CC-Link IE TSN communication unit

*2 The firmware version must be 05 or later when monitoring a network where a controller compatible with CC-Link IE TSN protocol version 2.0 exists.
For information on how to check or update the firmware version of the CC-Link IE TSN communication unit, refer to the following.
☞ Page 770 Firmware of the CC-Link IE TSN communication unit

*3 For the ring connection, use firmware version 10 or later.

*4 The ring connection is not supported.

*5 Connect the cable to the P1 port of the RJ71GN11-EIP.

*6 When the GOT monitors the PLC with the authentication function enabled, logon to the PLC is required.
For information on how to logon and logoff, refer to the following.
☞ Page 764 Logon to the PLC
☞ Page 764 Logoff from the PLC
The GOT cannot monitor the PLC devices until logon to the PLC from the GOT is complete.
Therefore, create a project assuming that the GOT cannot communicate with the PLC for a certain period.
☞ Page 764 Creating a project

*7 This module can be used only when a connection to the PLC with the authentication function enabled.

Point

For the system configuration of the CC-Link IE TSN-equipped module, refer to the following manuals.
📖MELSEC iQ-R CC-Link IE TSN User's Manual (Startup)
📖MELSEC iQ-R CC-Link IE TSN Plus Master/Local Module User's Manual

Precautions

■Connection to a CC-Link IE TSN-equipped module by Ethernet

The CC-Link IE TSN communication unit (GT25-J71GN13-T2) does not support the Ethernet connection.

For the Ethernet connection, use an Ethernet interface built in the GOT.

For details on the Ethernet connection, refer to the following.

☞ Page 97 Connection to CC-Link IE TSN-equipped module

■Connection status check after the GOT startup

The connection with the network cannot be established until the connection check with the master station is completed after the GOT startup.

To check the status of connection with the master station, use the CC-Link IE TSN Connection Status (GS1297) of the GOT internal device.

For details on the CC-Link IE TSN Connection Status (GS1297), refer to the following.

📖GT Designer3 (GOT3000) Screen Design Manual

Connection cable

Use a connection cable that meets the following standards.

Standard	Category
100BASE-TX	Shielded twisted pair cable (double-shielded, STP) or shielded twisted pair cable (STP) of category 5 or higher
1000BASE-T	Shielded twisted pair cable (double-shielded, STP) or shielded twisted pair cable (STP) of category 5e or higher

For the twisted pair cable, use a straight cable.

Use cables that meet the IEEE802.3 100BASE-TX/1000BASE-T standards.

When using a hub, use a TSN Switch or General-purpose Switch according to the system configuration.

For usable TSN Switches and General-purpose Switches, refer to the following.

📖MELSEC iQ-R CC-Link IE TSN User's Manual (Startup)
📖MELSEC iQ-R CC-Link IE TSN Plus Master/Local Module User's Manual

Overall length

The overall cable length is 12100 m.

The overall cable length and cable length between stations vary depending on the connection method (line, star, or ring), the system configuration, etc.

For details, refer to the following manuals.

📖MELSEC iQ-R CC-Link IE TSN User's Manual (Startup)
📖MELSEC iQ-R CC-Link IE TSN Plus Master/Local Module User's Manual

Maximum number of connected devices

The following shows the applicable GOT and the maximum number of connected devices.

Controller			GOT	
Model	Number of GOTs connectable to one PLC		Model	Number of connectable controllers per GOT channel
	UDP	TCP		
MELSEC MX Controller (MX-R Model)	119	119	GT37 SoftGOT3000	1

Connecting one PLC to multiple GOTs

When multiple GOT units are simultaneously accessing one PLC, the GOT writing process (transient/cyclic) and reading process (transient) may slow down.

This slow access can be remedied with the following countermeasures.

<Countermeasures>

■Improve response speed on PLC side

Insert a COM instruction on the PLC to increase the response speed.

Note that caution is required as the scan time will increase.

■Screen design using cyclic devices

Create the screen with cyclic devices instead of using transient devices.

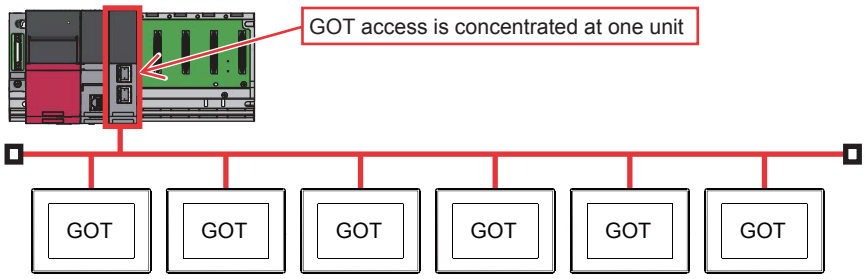
■Split GOT connection destinations into several systems

Add a master/local module to the PLC side, and split the GOT connection destinations into several systems.

Improve the current system configuration.

(Example of current system configuration)

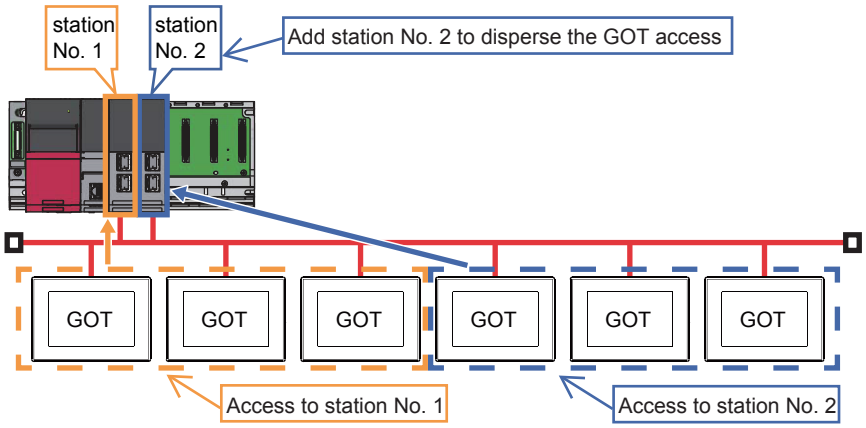
In the following system configuration, access from the GOT is concentrated on one module.



(Improvement measure)

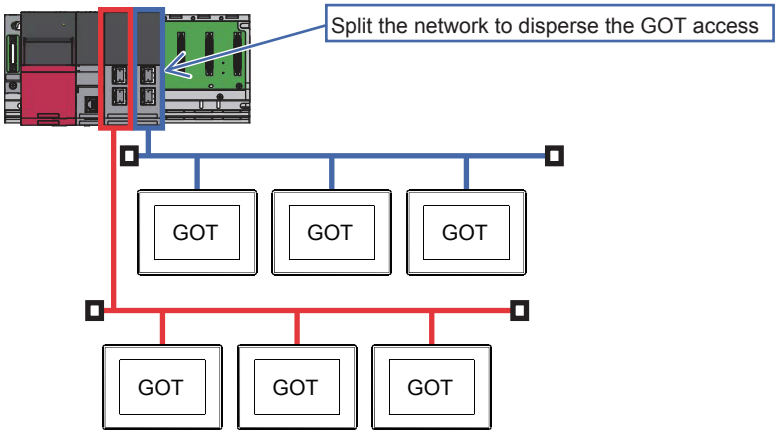
- Adding a module to the PLC side

Add a module to the PLC side to disperse the GOT access destinations.



• Split the network

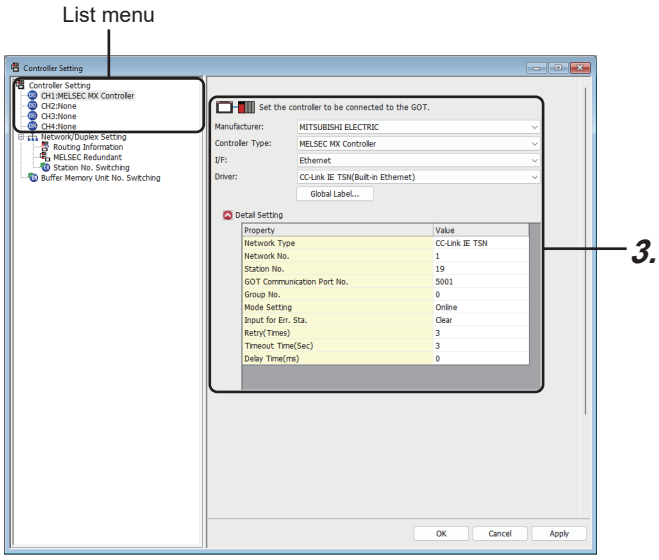
Split the network to disperse the GOT access.



9.1.3 GOT side settings

[Controller Setting]

Set the channel of the connected controller.



Operating procedure

1. Select [Common] → [Controller Setting] from the menu.

2. In the [Controller Setting] window, select the channel number to be used from the list menu.

3. Set the following items.

Item	Description
[Manufacturer]	[MITSUBISHI ELECTRIC]
[Controller Type]	[MELSEC MX Controller]
[I/F]	• [Ethernet] • [Extend Unit]
[Driver]	• When [Ethernet] is selected for [I/F]: [CC-Link IE TSN (Built-in Ethernet)] • When [Extend Unit] is selected for [I/F]: [CC-Link IE TSN]
[Detail Setting]	Configure the settings according to the usage environment. ☞ Page 750 [Detail Setting]

4. When you have completed the settings, click the [OK] button.

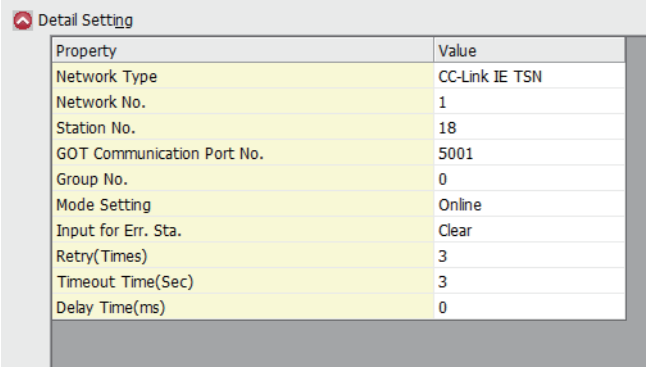
Point

The controller settings can be checked in [I/F Communication Setting].
For details, refer to the following.
📖GT Designer3 (GOT3000) Screen Design Manual

■[Detail Setting]

Configure the settings according to the usage environment.

- [CC-Link IE TSN (built-in Ethernet)]



Item	Description	Range
[Network Type]	Set the network type.	[CC-Link IE TSN]
[Network No.]	Set the network number.	[1] to [239]
[Station No.]	Set the station number of the GOT.	[1] to [120]
[GOT Communication Port No.]	Set the GOT port number for connection with the Ethernet module.	[1024] to [5010], [5014] to [49152], [49171] to [65534]
[Group No.]	—	[0]
[Mode Setting]	Set the operation mode of the GOT. For details on the unit communication test mode, refer to the following. ☞ Page 753 Unit communication test	[Online]
[Input for Err. Sta.]	Set whether to hold or clear the input from the station where the data link has failed due to power-off or other reasons.	[Clear], [Hold]
[Retry]	Set the number of retries to be performed when a communication timeout occurs. When receiving no response after retries, the communication times out.	[0] times to [5] times
[Timeout Time]	Set the time period for a communication to time out.	[1] second to [90] seconds
[Delay Time]	Set the delay time for reducing the load of the network and destination PLC.	[0] ms to [300] ms

Precautions

■Communication driver

To set CC-Link IE TSN (built-in Ethernet), use port 1 on the built-in Ethernet interface of the GOT.

Two or more CC-Link IE TSN (built-in Ethernet) cannot be set in one GOT at the same time.

■Authentication class for communication

When CC-Link IE TSN (built-in Ethernet) is used for connection, communication is available only for the master station of authentication class B.

• [CC-Link IE TSN]

Detail Setting

Property	Value
Network Type	CC-Link IE TSN
Network No.	1
Station No.	1
IP Address	192.168.3.24
Subnet Mask	255.255.255.0
Default Gateway	0.0.0.0
Group No.	0
Mode Setting	Online
Communication Speed	1Gbps
Refresh Interval(ms)	25
Input for Err. Sta.	Clear
Retry(Times)	3
Timeout Time(Sec)	3
Delay Time(ms)	0
Monitor Speed	High(Normal)
CPU No. switching GD device first No. (3 points)	500
Module No. switching GD device first No. (16 points)	550
Servo axis switching GD device first No. (16 points)	10

Item	Description	Range
[Network Type]	Set the network type.	[CC-Link IE TSN]
[Network No.]	Set the network number.	[1] to [239]
[Station No.]	Set the station number of the GOT.	[1] to [120]
[IP Address][*1]	Set the IP address of the GOT.	[0.0.0.1] to [223.255.255.254]
[Subnet Mask]	When a subnetwork is used, set the subnet mask. (Only for connection via router) If the sub network is not used, the default value is set.	[0.0.0.0] to [255.255.255.255][*2]
[Default Gateway]	Set the router address of the default gateway where the GOT is connected. (Only for connection via router)	[0.0.0.0] to [223.255.255.254]
[Group No.]	—	[0]
[Mode Setting]	Set the operation mode of the GOT. For details on the unit communication test mode, refer to the following. ☞ Page 753 Unit communication test	[Online], [Offline], [Module Communication Test]
[Communication Speed]	Set the communication speed of the GOT.	[1Gbps], [100Mbps][*3]
[Refresh Interval]	Set the number of refreshes to secure the send/receive data per station during communication.	[1] ms to [1000] ms
[Input for Err. Sta.]	Set whether to hold or clear the input from the station where the data link has failed due to power-off or other reasons.	[Clear], [Hold]
[Retry]	Set the number of retries to be performed when a communication timeout occurs. When receiving no response after retries, the communication times out.	[0] times to [5] times
[Timeout Time]	Set the time period for a communication to time out.	[1] second to [90] seconds
[Delay Time]	Set the delay time for reducing the load of the network and destination PLC.	[0] ms to [300] ms
[Monitor Speed]	Set the monitor speed of the CC-Link IE TSN network. This setting is not valid in all systems.	[High(Normal)], [Middle], [Low]
[CPU No. switching GD device first No. (3 points)]	Set the start device number of the GD devices for CPU number switching. For details, refer to the following. ☞ Page 754 Start device number of the GD devices for CPU number switching	[0] to [65520]
[Module No. switching GD device first No. (16 points)]	Set the start device number of the GD devices for module number switching. For details, refer to the following. ☞ Page 755 Start device number of the GD devices for module number switching	[0] to [65520]
[Servo axis switching GD device first No. (16 points)]	Set the start device number of the GD devices for servo axis switching. For details, refer to the following. ☞ Page 756 Start device number of the GD devices for servo axis switching	[0] to [65520]

*1 If any of the following settings is configured in the IP address, a communication timeout error occurs.
- The third octet and fourth octet are all 1 (*.*.255.255) or all 0 (*.*.0.0).
- The host part is all 1 (*.*.*.255) or all 0 (*.*.*.0).
- Some reserved addresses determined for special applications

For details, refer to the following manuals.
MELSEC iQ-R CC-Link IE TSN User's Manual (Application)
MELSEC iQ-R CC-Link IE TSN Plus Master/Local Module User's Manual

*2 When the subnet mask field is filled with 0, the operation is the same as when the field is left blank.

*3 When setting to 100Mbps, the following conditions must be satisfied.
- CC-Link IE TSN communication unit (GT25-J71GN13-T2): Firmware version 02 or later
- CC-Link IE TSN master/local module (RJ71GN11-T2): Firmware version 04 or later

Point

- Controller settings using the GT37 utility

The controller settings can be changed in [Communication Settings] of the GT37 utility after writing [Communication Settings] of project data to GT37.
For details on the GT37 utility, refer to the following manual.
GOT3000 Series User's Manual (Utility & Maintenance Functions)

- Priority of the settings in [Controller Setting]

When the settings are configured in GT Designer3 or in the GT37 utility, the latest settings are effective.

- Setting the refresh interval

For [Refresh Interval(ms)] in [Controller Setting] in GT Designer3, set 5 ms or more per 1K words for the total size of the device set in [Network Configuration Settings] in GX Works3.
Setting less than 5 ms may affect the processing of the GOT such as a decrease of the monitoring speed.
The following shows setting examples of the total device size and refresh interval.

Total device size	Refresh Interval
1K words	5 ms or more
2K words	10 ms or more
3K words	15 ms or more
5K words	25 ms or more
36K words	180 ms or more

■Unit communication test

In the unit communication test, connect port 1 and port 2 of the CC-Link IE TSN communication unit mounted on the GOT with a network cable, and check if the unit operates properly with the GOT.

The following shows the test procedure and how to check the test result.

1. Perform either of the following operations to set the GOT to the unit communication test mode.

- Write the project data for which [Mode Setting] in [Detail Setting] is set to [Stand-alone test mode] to the GOT.
- Set [Mode setting] in [Detail setting] to [Module Communication Test] in the GOT utility.

2. A unit communication test will start at GOT startup.

3. After the test is complete, check the result with the ERR LED on the communication unit and GOT internal devices (CC-Link IE TSN Module Communication Test Status (GS1114) or CC-Link IE TSN Module Communication Test Error (GS1115)).

Check		Test result
ERR LED on the communication unit		OFF: Normal ON: Error
GOT internal device	CC-Link IE TSN Module Communication Test Status (GS1114)	Notifies the execution status of a communication test of the CC-Link IE TSN communication unit. • b0: Turns on when a communication test is executed. • b1: Turns on while a communication test is being executed. • b2: Turns on when a communication test is complete. • b3 to b15: Use prohibited
	CC-Link IE TSN Module Communication Test Error (GS1115)	Notifies that an error has occurred during a communication test of the CC-Link IE TSN communication unit. • b0: Turns on if there is a problem with the port 1 side of the CC-Link IE TSN communication unit. • b1: Turns on if there is a problem with the connection interface (port 1) of the CC-Link IE TSN communication unit or the Ethernet cable terminal. • b2: Turns on if there is a problem with the port 1 side Ethernet cable of the CC-Link IE TSN communication unit. • b3 to b7: Use prohibited • b8: Turns on if there is a problem with the port 2 side of the CC-Link IE TSN communication unit. • b9: Turns on if there is a problem with the connection interface (port 2) of the CC-Link IE TSN communication unit or the Ethernet cable terminal. • b10: Turns on if there is a problem with the port 2 side Ethernet cable of the CC-Link IE TSN communication unit. • b11 to b15: Use prohibited

For details on the GOT internal devices (CC-Link IE TSN Module Communication Test Status (GS1114) and CC-Link IE TSN Module Communication Test Error (GS1115)), refer to the following.

📖GT Designer3 (GOT3000) Screen Design Manual

4. If no error is detected, change the setting of [Mode Setting] from [Module Communication Test] in [Detail setting].

Since the communication with the controller is not performed when [Mode setting] is set to [Module Communication Test], the communication timeout error occurs when the device of controller is monitored.

5. If any error is detected, replace the communication unit.

■Start device number of the GD devices for CPU number switching

• Indirect specification of a CPU number

[CPU No.] can be indirectly specified with the GOT internal registers (GD devices) by specifying a value (100 to 102) to [CPU No.] in the device setting dialog in GT Designer3.

Set the start device number of the GD devices to be used in [CPU No. switching GD device first No. (3 points)].

[CPU No.] is specified with three consecutive GD devices, starting from the set device number.

When [500] is set to [CPU No. switching GD device first No. (3 points)], GD500 to GD502 are used to specify [CPU No.] as shown in the following table.

CPU No.	GD device	Setting range
100	GD500	1 to 4 Setting a value outside the range causes a communication timeout error. Specifying a nonexistent CPU number or a CPU number not supporting a multiple CPU system with a device causes a controller error.
101	GD501	
102	GD502	

• Indirect specification of a CPU number on the initially displayed screen

Set [CPU No. switching GD device first No. (3 points)] so that the values of the GD devices are retained and monitored upon the GOT startup.

• Indirect specification of a CPU number for multi-channel connection

If the setting range of [CPU No. switching GD device first No. (3 points)] set for each channel overlaps, the monitoring target CPU number set to each channel is switched simultaneously.

Set [CPU No. switching GD device first No. (3 points)] for each channel so that the setting range does not overlap.

• Indirect specification of a station number and a CPU number for multi-channel connection

When GD10 to GD25 are used to specify the station number of an inverter or non-Mitsubishi temperature controller connected, setting [10] to [CPU No. switching GD device first No. (3 points)] in a different channel switches the monitoring target CPU number and station number of an inverter or non-Mitsubishi temperature controller set to each channel simultaneously.

Set [CPU No. switching GD device first No. (3 points)] so that the setting range does not overlap the station number of an inverter or non-Mitsubishi temperature controller.

■Start device number of the GD devices for module number switching

• Indirect specification of a module number

For connection via a Simple Motion module, [Unit No.] can be specified with the GOT internal registers (GD devices) by specifying a value (100 to 10F) to [Unit No.] in the device setting dialog in GT Designer3.

Set the start device number of the GD devices to be used in [Module No. switching GD device first No. (16 points)].

[Unit No.] is specified with 16 consecutive GD devices, starting from the set device number.

When [550] is set to [Module No. switching GD device first No. (16 points)], GD550 to GD565 are used to specify [Unit No.] as shown in the following table.

Module No.	GD device	Setting range
100	GD550	00 to FF Setting a value outside the above range causes a device range error.
101	GD551	
102	GD552	
103	GD553	
104	GD554	
105	GD555	
106	GD556	
107	GD557	
108	GD558	
109	GD559	
10A	GD560	
10B	GD561	
10C	GD562	
10D	GD563	
10E	GD564	
10F	GD565	

• Indirect specification of a module number on the initially displayed screen

Set [Module No. switching GD device first No. (16 points)] so that the values of the GD devices are retained and monitored upon the GOT startup.

• Indirect specification of a module number for multi-channel connection

If the setting range of [Module No. switching GD device first No. (16 points)] set for each channel overlaps, the module number of the Simple Motion module via the servo amplifier device of each channel is switched simultaneously.

Set [Module No. switching GD device first No. (16 points)] for each channel so that the setting range does not overlap.

• Indirect specification of a station number and a module number for multi-channel connection

When GD10 to GD25 are used to specify the station number of an inverter or non-Mitsubishi temperature controller connected, setting [10] to [Module No. switching GD device first No. (16 points)] switches the module number of the Simple Motion module via the servo amplifier device and the station number of an inverter or non-Mitsubishi temperature controller set to each channel simultaneously.

Set [Module No. switching GD device first No. (16 points)] so that the setting range does not overlap the station number of an inverter or non-Mitsubishi temperature controller.

■Start device number of the GD devices for servo axis switching

• Indirect specification of a servo axis number

For connection via a Motion CPU or Simple Motion module, a servo axis number can be indirectly specified with GOT internal registers (GD devices) by specifying a value (100 to 115) to the axis number of the servo amplifier device.

Set the start device number of the GD devices to be used in [Servo axis switching GD device first No. (16 points)].

Specify a servo axis number with 16 consecutive GD devices, starting the set device number.

When [10] is set to [Servo axis switching GD device first No. (16 points)], GD10 to GD25 are used to specify a servo axis number as shown in the following table.

Servo axis No.	GD device	Setting range
100	GD10	1 to 64 Setting a value outside the above range causes a device range error.
101	GD11	
102	GD12	
103	GD13	
104	GD14	
105	GD15	
106	GD16	
107	GD17	
108	GD18	
109	GD19	
110	GD20	
111	GD21	
112	GD22	
113	GD23	
114	GD24	
115	GD25	

• Indirect specification of a servo axis number on the initially displayed screen

Set [Servo axis switching GD device first No. (16 points)] so that the values of the GD devices are retained and monitored upon the GOT startup.

• Indirect specification of a servo axis number for multi-channel connection

If the setting rage of [Servo axis switching GD device first No. (16 points)] set for each channel overlaps, the axis number of the servo amplifier of each channel is switched simultaneously.

Set [Servo axis switching GD device first No. (16 points)] for each channel so that the setting range does not overlap.

• Indirect specification of a station number and a servo axis number for multi-channel connection

When GD10 to GD25 are used to specify the station number of an inverter or non-Mitsubishi temperature controller connected, setting [10] to [Servo axis switching GD device first No. (16 points)] switches the axis number of the servo amplifier and the station number of an inverter or non-Mitsubishi temperature controller set to each channel simultaneously.

Set [Servo axis switching GD device first No. (16 points)] so that the setting range does not overlap the station number of an inverter or non-Mitsubishi temperature controller.

■Routing parameter settings

Up to 64 settings can be configured for [Transfer Net No.].

However, the same number cannot be set in [Transfer Net No.] twice or more (multiple times).

The GOT (host station) can access 64 different networks specified under [Transfer Net No.].

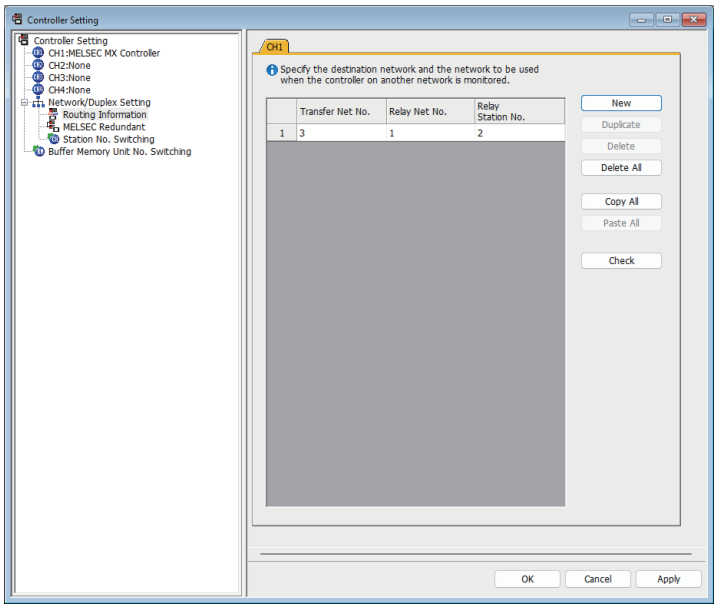
Point

Routing parameter settings

When communicating within the host network, routing parameter settings are not required.

For details on routing parameters, refer to the following manual.

📖Manual of the MELSEC MX Controller



Item	Range
[Transfer Net No.]	[1] to [239]
[Relay Net No.]	[1] to [239]
[Relay Station No.]	[0] to [120]

Point

Routing parameter settings for the relay station

Routing parameter settings are also necessary for the relay station.

For the setting, refer to the following.

☞ Page 758 PLC side settings

9.1.4 PLC side settings

Model		Reference
MELSEC MX Controller (MX-R Model)	MXR300-16 MXR300-32 MXR300-64 MXR500-128 MXR500-256	☞ Page 758 Connection to the MELSEC MX Controller (MX-R Model)

Connection to the MELSEC MX Controller (MX-R Model)

This section describes the settings of the GOT and CC-Link IE TSN-equipped module in the system configuration shown below.

Point

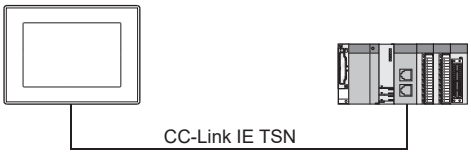
For details on the CC-Link IE TSN-equipped module, refer to the following manual.
📖MELSEC iQ-R CC-Link IE TSN User's Manual (Startup)
📖MELSEC iQ-R CC-Link IE TSN Plus Master/Local Module User's Manual

■System configuration

The following shows a system configuration example for connection to the CC-Link IE TSN master/local module (RJ71GN11-T2).

Ex.

<GOT>
(Use the default value for settings other than the following.)
Network type : CC-Link IE TSN
Network No. : 1
PLC No. (GOT Station) : 1
IP address : 192.168.3.24
Mode Setting : Online



<CC-Link IE TSN Master/Local module>*1
(Use the default value for settings other than the following.)
Station type : Master Station
Network No. : 1
PLC No. (Station) : 0
IP address : 192.168.3.253

*1 The CC-Link IE TSN master/local module is mounted on slot 0 of the base unit.
The start I/O number of the CC-Link IE TSN master/local module is set to 0.

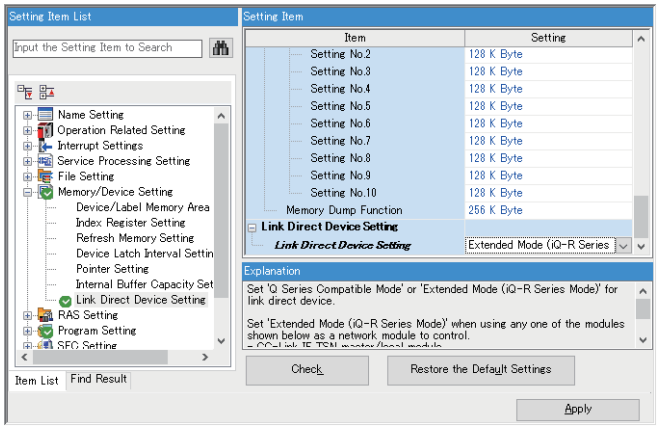
■[Parameter] in GX Works3

The following shows a parameter setting example for connecting to the CC-Link IE TSN master/local module (RJ71GN11-T2).

Point

- For the ring connection with the CC-Link IE TSN master/local module (RJ71GN11-T2), use GX Works3 version 1.065T or later.
- For connection with the CC-Link IE TSN Plus master/local module (RJ71GN11-EIP), use GX Works3 version 1.082L or later.

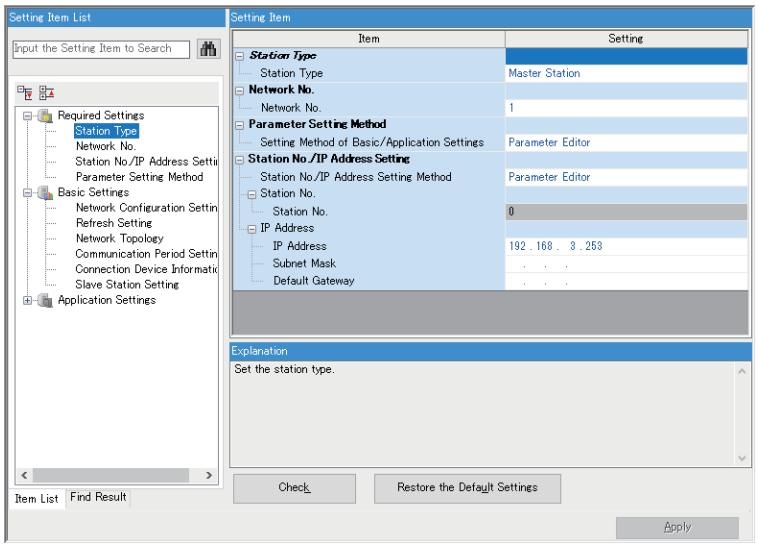
- CPU parameter



○: Necessary, △: As necessary, —: Not necessary

Item	Setting value	Setting for GOT connection
[Link Direct Device Setting]	Extended Mode (iQ-R Series Mode)	○

• Module parameter



○: Necessary, △: As necessary, —: Not necessary

Item		Setting value	Setting for GOT connection
[Station Type]		Master station	○
[Network No.][*1]		1	○
[Setting Method of Basic/Application Settings]		Set in parameter	○
[Station No./IP Address Setting Method]		Set in parameter	○
[Station No.]		0	○
[IP Address]		192.168.3.253	△
[Subnet Mask]		—	—
[Default Gateway]		—	—
[Network Configuration Settings]		☞ • Network configuration settings	○
[Refresh Setting]		Use default value.	△
[Network Topology]		Line, star, line and star mixed	○
[Basic Period Setting]	[Setting in Units of 1μs]	Not set	○
	[Communication Period Interval Setting (Do not Set it in Units of 1μs)]	1000.00 μs	○
	[System Reservation Time]	20.00 μs	○
	[Cyclic Transmission Time (CC IE TSN)]	500.00 μs	○
[Multiple Period Setting]	[Normal-Speed]	×4	○
	[Low-Speed]	×16	○
	[Authentication Class Setting]	• When the communication driver is [CC-Link IE TSN]: Authentication class B • When the communication driver is [CC-Link IE TSN (Built-in Ethernet)]: Authentication class A	○
	[Disconnection Detection Setting]	4 times	○

*1 Set the same network number as that of the GOT.

Point

• When changing the module parameter

After writing module parameters to the PLC CPU, turn off then on or reset the PLC CPU.

• When the GOT monitors a cyclic device of other stations

Set [Communication Mode] of the master station to [Multicast].

Precautions

When monitoring the master and local stations on the same network as the GOT using transient transmission, the stations that can be monitored differ depending on the setting of [Communication Mode] of the CC-Link IE TSN-equipped module.

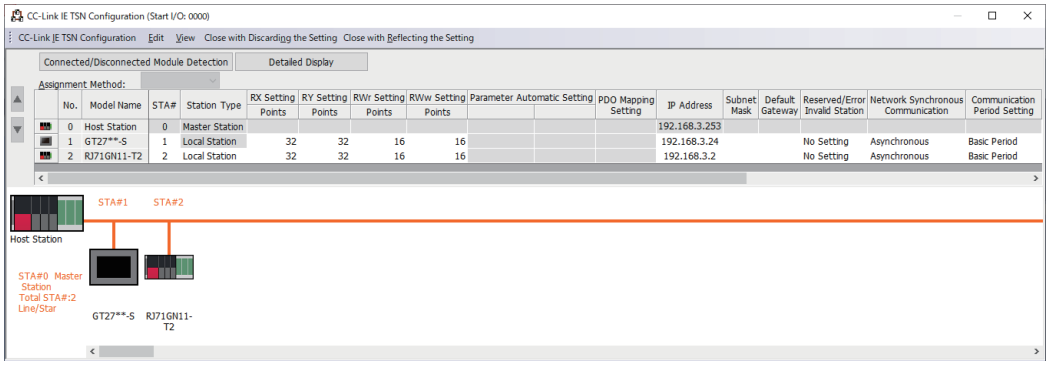
[Communication Mode]	Availability of monitoring
[Unicast]	Master station only
[Multicast]	Master station
	Local station that satisfies the following conditions • Being set as a local station in the network configuration setting • Not being a reserved or error invalid station

For the settings of the CC-Link IE TSN-equipped module, refer to the following.

📖MELSEC iQ-R CC-Link IE TSN User's Manual (Application)
📖MELSEC iQ-R CC-Link IE TSN Plus Master/Local Module User's Manual

To monitor the master and local stations on other networks using transient transmission, use a master station or local station that can be monitored on the same network as the GOT as a relay station.

- Network configuration settings



○: Necessary, △: As necessary, —: Not necessary

Item		Setting value	Setting for GOT connection
[Station No.]		1	△
[Station Type]		• When the communication driver is [CC-Link IE TSN]: Local station • When the communication driver is [CC-Link IE TSN (Built-in Ethernet)]: Remote station	△
[RX Setting]	[Points]	32	△
[RY Setting]	[Points]	32	△
[RWr Setting]	[Points]	• When the communication driver is [CC-Link IE TSN]: 16 • When the communication driver is [CC-Link IE TSN (Built-in Ethernet)]: 4	△
[RWw Setting]	[Points]	• When the communication driver is [CC-Link IE TSN]: 16 • When the communication driver is [CC-Link IE TSN (Built-in Ethernet)]: 4	△
[IP Address]		192.168.3.24	△
[Reserved/Error Invalid Station]		No setting	△
[Network Synchronous Communication]		Asynchronous	△
[Communication Period Setting]		Basic Period	△ *1

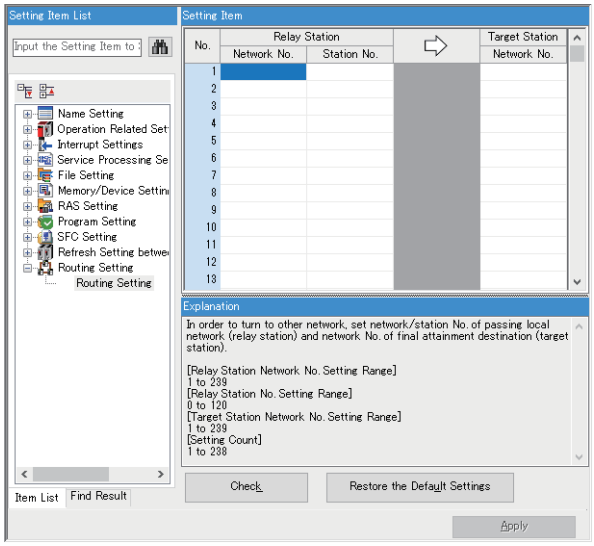
*1 When communication is performed at 100 Mbps using [CC-Link IE TSN (built-in Ethernet)], connection may not be established if [Communication Period Setting] is not set to [Low] in the device station setting.

Precautions

When a local station with the CC-Link IE TSN-compatible switching hub connected (linked-up) is added, IP address duplication is not detected at the destination station.
If IP address duplication (error code 1802H) is detected, disconnect the relevant local station from the network.
Otherwise, transient transmission may be performed to an unintended station because multiple stations with the same IP address exist on the network.

- Routing settings

Up to 238 target network numbers can be set.
However, the same number cannot be set twice or more (multiple times).
The GOT (host station) can access 238 different networks specified in the column of [Target Station Network No.].



Item		Range
[Relay Station]	[Network No.]	[1] to [239]
	[Station No.]	[0] to [120]
[Target Station]	[Network No.]	[1] to [239]

Point

Routing parameter settings for the request source
Routing parameter settings are also necessary for the request source GOT.
For the setting, refer to the following.
☞ Page 757 Routing parameter settings

■[Controller Setting] in GT Designer3

Item	Setting value
[Network Type]	CC-Link IE TSN
[Network No.]	1: Network No. 1
[Station No.]	1: Station No. 1
[IP Address]	192.168.3.24
[Subnet Mask]	255.255.255.0
[Default Gateway]	0.0.0.0
[Group No.]	0
[Mode Setting]	Online
[Communication Speed]	1 Gbps
[Refresh Interval]	25 ms
[Input for Err. Sta.]	Clear
[Retry]	3 times
[Timeout Time]	3 seconds
[Delay Time]	0 ms
[Monitor Speed]	High(Normal)

Point

• [Controller Setting] in GT Designer3

For the setting method of [Controller Setting] in GT Designer3, refer to the following.

☞ Page 749 [Controller Setting]

9.1.5 Connection to the PLC with the authentication function enabled

Logon to the PLC

When the GOT monitors the PLC with the authentication function enabled, logon to the PLC is required.

Touch a special function switch (Destination Authentication) set in the project to display the key window.

Enter the [User Name] and [Password] to log on.

For information on how to set a special function switch, refer to the following.

📖GT Designer3 (GOT3000) Screen Design Manual

Logoff from the PLC

Touch a special function switch (Destination Authentication) set in the project to log off.

Precautions

■Creating a project

At GOT startup, the PLC is in logoff state.

The GOT cannot monitor the PLC devices until logon to the PLC from the GOT is complete.

Therefore, create a project assuming that the GOT cannot communicate with the PLC for a certain period.

For information on how to set screens and functions, refer to the following.

📖GT Designer3 (GOT3000) Screen Design Manual

Take the following precautions when creating a project.

Item		Precautions for using the destination authentication function
[Environmental Setting]	[Screen Switching/Window]	Set the GOT internal device as the screen switching device. As well as logoff operation by GOT, reset on the PLC side or other operations can also make the PLC in logoff state. By setting the GOT internal device as the screen switching device, a screen can be switched even in logoff state due to reset on the PLC side or other operations.
	[Language Switching]	Set the GOT internal device as the language switching device. When a PLC device is set, comments cannot be displayed in logoff state.
	[System Information]	Set the GOT internal device as the system information device. When a PLC device is set, a system alarm occurs in logoff state.
	[Security]	It is recommended not to use screen security (level authentication and operator authentication) for connection with the PLC with the destination authentication function enabled.
		When using the level authentication, set the GOT internal device as the security level device.
Screen setting	Screen displayed immediately after GOT startup	Place a special function switch (Destination Authentication) to perform destination authentication for logging on to the PLC. Do not configure the setting to monitor the PLC devices.
	Screen number	Specify the screen number ranges separately for the screen displayed in logoff state and the screen displayed in logon state. Separating the screen number ranges makes screen transition in logoff state easy to consider. Example) Before authentication: 1 to 100, after authentication: 101 or later
	Screen switching control at logoff	Configure the setting using trigger actions or other methods so that the screen switches at logoff to the screen displayed before authentication.
Function that is not recommended for use when connecting with the PLC with the destination authentication function enabled		• Screen security (level authentication and operator authentication) • GOT Mobile function (Destination authentication cannot be performed on a mobile screen.)
Others	Function to specify the conditions other than the trigger device	Specify the trigger indirectly by using trigger actions or other methods. Example) When the PLC device controls the input range for a numerical input
	Function that cannot specify the trigger device	By scripts or device data transfer using the GOT internal device, read and write the PLC device only in logon state. Example) Alarm monitoring of the connected device

■Character code applicable for [User Name].

For logon to the PLC from the GOT, only ASCII code characters can be available for [User Name] in the key window and the [Destination Authentication] window.

When setting [User Name] for the PLC, set [User Name] of the user operating the PLC from the GOT in the ASCII code.

For the list of the ASCII code available in GOT, refer to the following.

📖GT Designer3 (GOT3000) Screen Design Manual

■Access level of the user who can log on

When logging on to the PLC from the GOT, only the users whose access level is [Users] can log on.

Users with the access level [Administrators] or [Developers] cannot log on.

When monitoring the PLC from the GOT, set the users whose access level is [Users] for the PLC.

■Changing the user authentication function settings

The user authentication settings (user name and password) cannot be changed from the GOT.

Use GX Works3 to change the settings registered in the PLC.

■Obtaining and updating CPU errors

The GOT cannot obtain CPU errors unless you log on to the PLC.

To update the CPU error of the system alarm displayed on the GOT, log on to the PLC from the GOT.

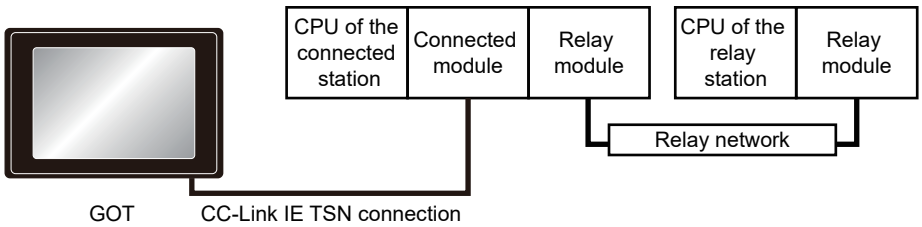
9.1.6 Access range for monitoring

When GOT is connected to the CPU of the station connected via CC-Link IE TSN, the range accessible via the CPU is as follows.

Point

- When monitoring other networks (Routing parameter settings)

To monitor other networks, routing parameter settings are necessary.
For the routing parameter settings, refer to the reference manual of the network connected.



○: Accessible, —: Inaccessible

CPU of the connected station	Connected module	Relay station									
		Relay network	CPU of the relay station								
			MXR	RCPU	LCPU	QCPU (Q mode)	QSCPU	QCPU (A mode)	QnACPU	ACPU	FX5CPU
MX-R	☞ Page 744 Connectable devices	Ethernet	○*7	○*5	○	○*6	○	—	○	—	○*3
		CC-Link IE TSN	○*7	○*1	—	—	—	—	—	—	○*3
		CC-Link IE Field Network	○*7	○	○	○*2	○	—	—	—	○*4

*1 RnCPU, RnENCPU, RnSFCPU, and MELSECWinCPU (MELSEC iQ-R series) are supported.
*2 QnUDVCPU, QnUDECPU, QnUDEHCPU, QnUCPU, QnUDCPU, and QnUDHCPU are supported.
*3 FX5U and FX5UC are supported.
*4 FX5U, FX5UC, and FX5UJ are supported.
*5 The C Controller module (MELSEC iQ-R series) is not supported.
*6 The C Controller module (MELSEC-Q series) is not supported.
*7 Regardless of whether encrypted communications are performed, the MELSEC MX Controller can be used as the relay station.
To perform encrypted communication, settings need to be configured.
For details, refer to the following.
☞ Page 90 Setting procedure of the encrypted communication

9.1.7 Firmware of the CC-Link IE TSN communication unit

Firmware versions and supported functions

Available functions differ depending on the firmware version of the CC-Link IE TSN communication unit.

Firmware version	Supported function
01	Cyclic transmission (line connection, star connection)
02	• Multicast mode • Communication speed 100Mbps • Time setting function • Firmware update function
03	Ring connection
05	CC-Link IE TSN protocol version 2.0

How to check the firmware version

Check the firmware version in the text display on the GOT.

Set the text display as follows.

- Device: SW003D
- Number of displayed digits: 2

For details on the text display object, refer to the following.

📖GT Designer3 (GOT3000) Screen Design Manual

Firmware update

Use the firmware update tool installed to a personal computer to update the firmware of the CC-Link IE TSN communication unit through a network.
The following shows how to execute firmware update.

Point

- CC-Link IE TSN firmware update tool

For details on the firmware update tool, such as the operating environment, installation procedure, and operating procedure, refer to the following.
CC-Link IE TSN Firmware Update Tool Reference Manual

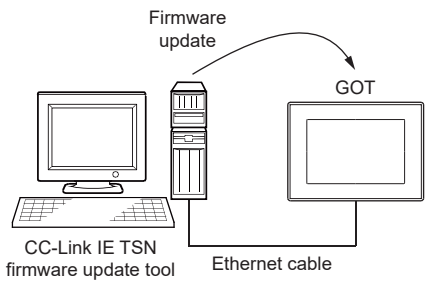
- CC-Link IE TSN communication unit

For details on the CC-Link IE TSN communication unit, refer to the following.
CC-Link IE TSN Communication Unit User's Manual

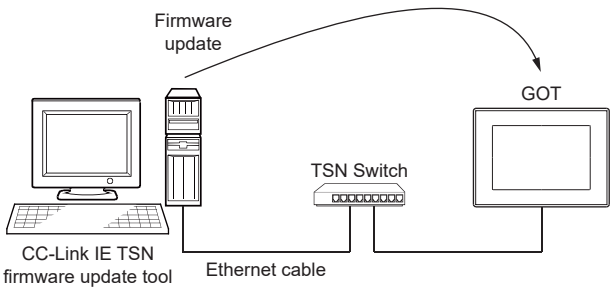
■Connection method

Use one of the following methods to connect the personal computer on which the firmware update tool is to run and the CC-Link IE TSN communication unit on the GOT.

- Direct connection



- Connection via a hub



Point

For the connection via a hub, use a TSN Switch.
For details on the TSN Switch, refer to the following.
MELSEC iQ-R CC-Link IE TSN User's Manual (Startup)
MELSEC iQ-R CC-Link IE TSN Plus Master/Local Module User's Manual

■Firmware update procedure

Update the firmware as follows.

1. Stop communication of the CC-Link IE TSN communication unit in which the firmware is updated.

Perform one of the following operations to stop communication.

- Disconnect the master station from the network.
- Disconnect the host station from the network.

2. Configure the settings required for the firmware update tool.

- Network configuration settings

Item	Setting
Module	GT25-J71GN13-T2
IP Address	IP address of the CC-Link IE TSN communication unit
FTP Username	GT25-J71GN13
FTP Password	GT25-J71GN13

- Application settings

Item	Setting
FTP Mode	Active Mode
Firmware Update Timeout(s)	900sec

For the settings other than the above, refer to the following.

📖CC-Link IE TSN Firmware Update Tool Reference Manual

3. Update the firmware of the CC-Link IE TSN communication unit.

4. After the update, the GOT on which the unit is mounted is restarted.

After the restart, the CC-Link IE TSN communication unit operates with the updated firmware.

Point

Firmware file

For the firmware file used for update, contact your local sales office.

Precautions for firmware update

The following shows the precautions for executing firmware update.

■When firmware update is not performed

Make sure to stop communication of the CC-Link IE TSN communication unit, and then execute firmware update.

In the following cases, firmware update of the CC-Link IE TSN communication unit is not performed.

- While CC-Link IE TSN Control (GS620.b0) is on

Turn off this bit.

For details on the CC-Link IE TSN Control (GS620.b0), refer to the following.

📖GT Designer3 (GOT3000) Screen Design Manual

- While the CC-Link IE TSN communication unit is communicating

Disconnect the master station or host station from the network to stop communication of the CC-Link IE TSN communication unit.

- While the GOT is being operated with GT Designer3

Do not perform operations such as writing the package data and executing the GOT diagnostics with GT Designer3.

- Performing an operation that makes the GOT offline

Do not perform any operation that makes the GOT offline in the utility.

■Power-off during firmware update

Do not turn off the GOT during firmware update.

Doing so may cause the CC-Link IE TSN communication unit to become unusable.

■Hardware version of the CC-Link IE TSN communication unit

Firmware update may not be available depending on the combination of the hardware and firmware versions of the CC-Link IE TSN communication unit.

If firmware update cannot be performed, check the error code of the firmware update tool.

■Firmware downgrade

If the version of the firmware file used for the update tool is earlier than the firmware version of the target CC-Link IE TSN communication unit, a warning message prompting for downgrading is displayed.

Select a new firmware file to execute firmware update.

Otherwise, execute downgrading.

■GT Designer3 version and CC-Link IE TSN communication unit firmware version

The combination of the GT Designer3 version and CC-Link IE TSN communication unit (GT25-J71GN13-T2) firmware version is restricted.

The following shows the combinations of the GT Designer3 version and the CC-Link IE TSN communication unit firmware version.

○: Supported, —: Not supported

GT Designer3 version	CC-Link IE TSN communication unit (GT25-J71GN13-T2)	
	01	02 or later
Version1.217B to Version1.220E	○	—
Version1.225K or later	—	○

Update the firmware of the CC-Link IE TSN communication unit (GT25-J71GN13-T2) with firmware version 01 so that the GT Designer3 version 1.225K or later supports the unit.

For firmware update of the CC-Link IE TSN communication unit (GT25-J71GN13-T2), refer to the following.

☞ Page 767 Firmware of the CC-Link IE TSN communication unit

■Firmware versions of the CC-Link IE TSN-equipped module on the master station and the CC-Link IE TSN communication unit

Depending on the combination of firmware versions of the modules and units, the GOT cannot access the network.

The following shows the module and unit firmware version combinations.

○: Accessible, —: Inaccessible

CC-Link IE TSN-equipped module on the master station		CC-Link IE TSN communication unit (GT25-J71GN13-T2)	
		01	02 or later
RJ71GN11-T2	03 or earlier	○	—
	04 or later	—	○
RJ71GN11-EIP	From the first product	—	○

Update the firmware of the module or unit so that the GOT can access the network.

For firmware update of the CC-Link IE TSN equipped module (RJ71GN11-T2, RJ71GN11-EIP), refer to the following.

📖MELSEC iQ-R Module Configuration Manual

📖MELSEC iQ-R CC-Link IE TSN Plus Master/Local Module User's Manual

For firmware update of the CC-Link IE TSN communication unit (GT25-J71GN13-T2), refer to the following.

☞ Page 767 Firmware of the CC-Link IE TSN communication unit

9.2 MELSEC MX Controller (MX-F Model) (CC-Link IE TSN connection)

☞ Page 772 Connectable devices
☞ Page 773 System configuration
☞ Page 777 GOT side settings
☞ Page 786 PLC side settings
☞ Page 790 Connection to the PLC with the authentication function enabled
☞ Page 791 Access range for monitoring
☞ Page 792 Firmware of the CC-Link IE TSN communication unit

9.2.1 Connectable devices

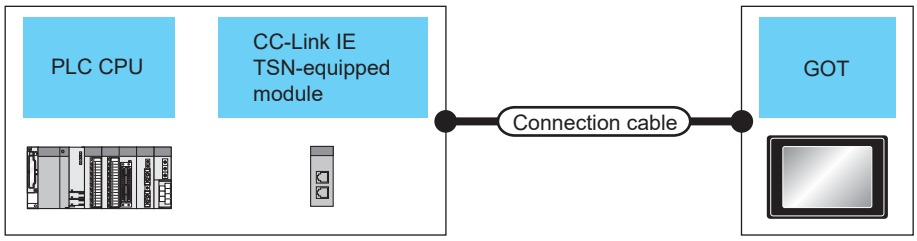
The following table shows the connectable models.

○: Supported, —: Not supported

Controller	Model	Clock	CC-Link IE TSN-equipped module	Connectable model
MELSEC MX Controller (MX-F Model)*1	MXF100-8-N32 MXF100-8-P32 MXF100-16-N32 MXF100-16-P32	○	FX5-CCLGN-MS	GT37 SoftGOT3000

*1 When using the CC-Link IE TSN (built-in Ethernet) communication driver, connect the GOT to the built-in Ethernet port (P1, P2) of the MX Controller.

9.2.2 System configuration



For details on the connection cable and overall cable length, refer to the following.

☞ Page 774 Connection cable
☞ Page 774 Overall length

For details on the maximum number of connected devices, refer to the following.

☞ Page 774 Maximum number of connected devices

Controller	CC-Link IE TSN-equipped module	Connection cable	GOT	
			Interface	Model
MELSEC MX Controller (MX-F Model)*1	FX5-CCLGN-MS	Twisted pair cable	Built-in Ethernet interface of GOT	GT37 SoftGOT3000
			GT37-IF2000 + GT25-J71GN13-T2	

*1 When the GOT monitors the PLC with the authentication function enabled, logon to the PLC is required.
For information on how to logon and logoff, refer to the following.
☞ Page 790 Logon to the PLC
☞ Page 790 Logoff from the PLC
The GOT cannot monitor the PLC devices until logon to the PLC from the GOT is complete.
Therefore, create a project assuming that the GOT cannot communicate with the PLC for a certain period.
☞ Page 790 Creating a project

Point

For the system configuration of the CC-Link IE TSN-equipped module, refer to the following manual.
📖MELSEC iQ-F FX5 User's Manual (CC-Link IE TSN)

Precautions

■Connection to a CC-Link IE TSN-equipped module by Ethernet

The CC-Link IE TSN communication unit (GT25-J71GN13-T2) does not support the Ethernet connection.
For the Ethernet connection, use an Ethernet interface built in the GOT.
For details on the Ethernet connection, refer to the following.
☞ Page 97 Connection to CC-Link IE TSN-equipped module

■Connection status check after the GOT startup

The connection with the network cannot be established until the connection check with the master station is completed after the GOT startup.
To check the status of connection with the master station, use the CC-Link IE TSN Connection Status (GS1297) of the GOT internal device.
For details on the CC-Link IE TSN Connection Status (GS1297), refer to the following.
📖GT Designer3 (GOT3000) Screen Design Manual

Connection cable

Use a connection cable that meets the following standards.

Standard	Category
100BASE-TX	Shielded twisted pair cable (double-shielded, STP) or shielded twisted pair cable (STP) of category 5 or higher
1000BASE-T	Shielded twisted pair cable (double-shielded, STP) or shielded twisted pair cable (STP) of category 5e or higher

For the twisted pair cable, use a straight cable.

Use cables that meet the IEEE802.3 100BASE-TX/1000BASE-T standards.

When using a hub, use a TSN Switch or General-purpose Switch according to the system configuration.

For usable TSN Switches and General-purpose Switches, refer to the following.

📖MELSEC iQ-F FX5 User's Manual (CC-Link IE TSN)

Overall length

The overall cable length is 12100 m.

The overall cable length and cable length between stations vary depending on the connection method (line, star, or ring), the system configuration, etc.

For details, refer to the following manual.

📖MELSEC iQ-F FX5 User's Manual (CC-Link IE TSN)

Maximum number of connected devices

The following shows the applicable GOT and the maximum number of connected devices.

Controller			GOT	
Model	Number of GOTs connectable to one PLC		Model	Number of connectable controllers per GOT channel
	UDP	TCP		
MELSEC MX Controller (MX-F Model)	119	119	GT37 SoftGOT3000	1

Connecting one PLC to multiple GOTs

When multiple GOT units are simultaneously accessing one PLC, the GOT writing process (transient/cyclic) and reading process (transient) may slow down.

This slow access can be remedied with the following countermeasures.

<Countermeasures>

■Improve response speed on PLC side

Insert a COM instruction on the PLC to increase the response speed.

Note that caution is required as the scan time will increase.

■Screen design using cyclic devices

Create the screen with cyclic devices instead of using transient devices.

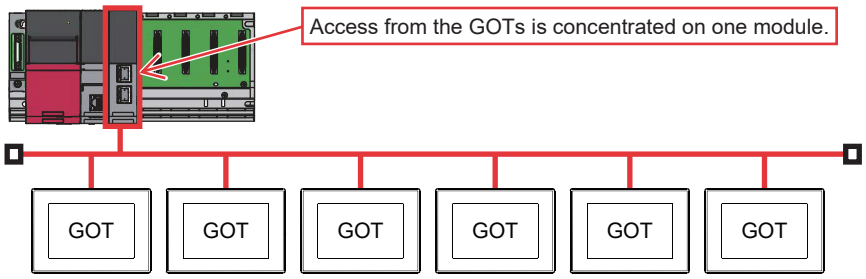
■Split GOT connection destinations into several systems

Add a master/local module to the PLC side, and split the GOT connection destinations into several systems.

Improve the current system configuration.

(Example of current system configuration)

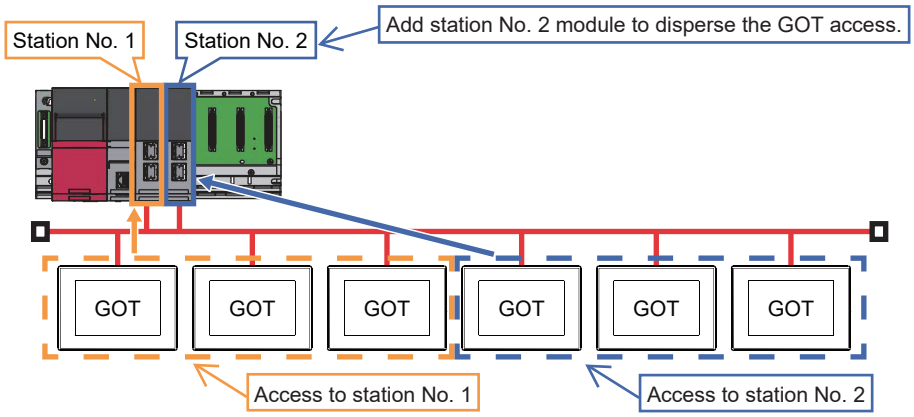
In the following system configuration, access from the GOT is concentrated on one module.



(Improvement measure)

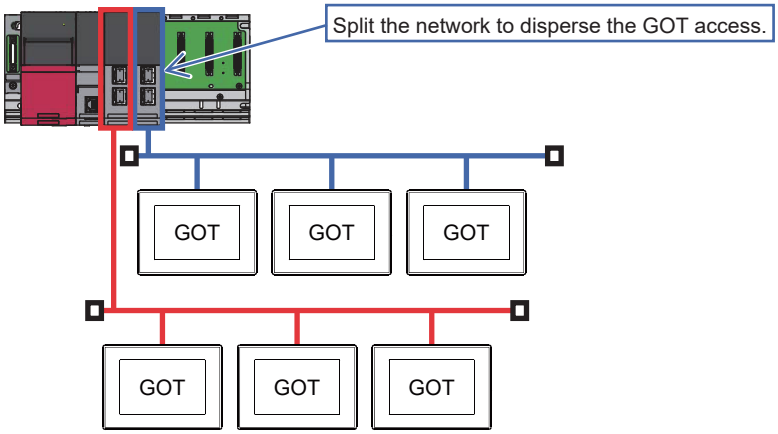
- Adding a module to the PLC side

Add a module to the PLC side to disperse the GOT access destinations.



• Split the network

Split the network to disperse the GOT access.

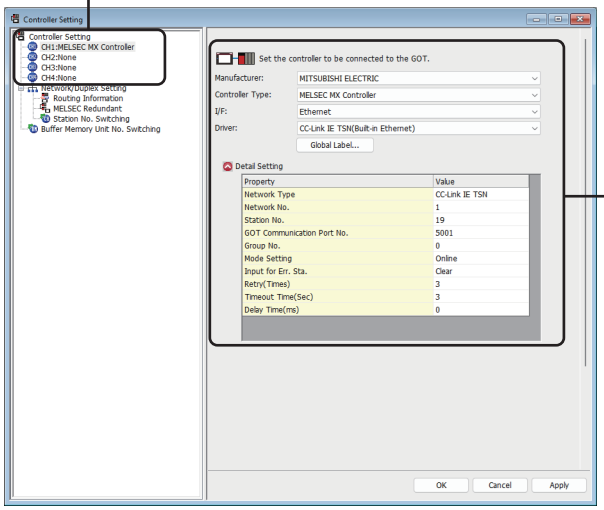


9.2.3 GOT side settings

[Controller Setting]

Set the channel of the connected controller.

List menu



Operating procedure

1. Select [Common] → [Controller Setting] from the menu.
2. In the [Controller Setting] window, select the channel number to be used from the list menu.
3. Set the following items.

Item	Description
[Manufacturer]	[MITSUBISHI ELECTRIC]
[Controller Type]	[MELSEC MX Controller]
[I/F]	• [Ethernet] • [Extend Unit]
[Driver]	• When [Ethernet] is selected for [I/F]: [CC-Link IE TSN (Built-in Ethernet)] • When [Extend Unit] is selected for [I/F]: [CC-Link IE TSN]
[Detail Setting]	Configure the settings according to the usage environment. ☞ Page 778 [Detail Setting]

4. When you have completed the settings, click the [OK] button.

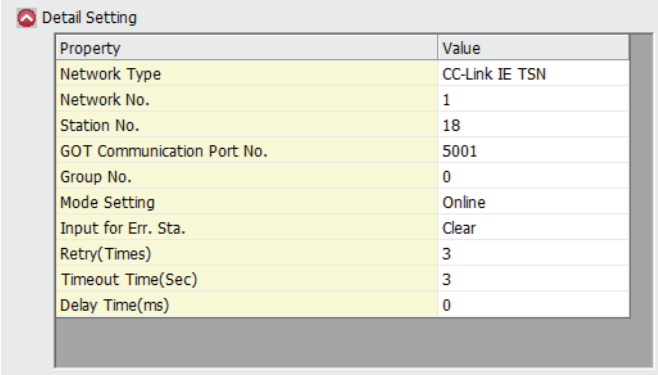
Point

The controller settings can be checked in [I/F Communication Setting].
For details, refer to the following.
📖GT Designer3 (GOT3000) Screen Design Manual

■[Detail Setting]

Configure the settings according to the usage environment.

- [CC-Link IE TSN (built-in Ethernet)]



Item	Description	Range
[Network Type]	Set the network type.	[CC-Link IE TSN]
[Network No.]	Set the network number.	[1] to [239]
[Station No.]	Set the station number of the GOT.	[1] to [120]
[GOT Communication Port No.]	Set the GOT port number for connection with the Ethernet module.	[1024 to 5010], [5014 to 49152], [49171 to 65534]
[Group No.]	—	[0]
[Mode Setting]	Set the operation mode of the GOT. For details on the unit communication test mode, refer to the following. ☞ Page 781 Unit communication test	[Online]
[Input for Err. Sta.]	Set whether to hold or clear the input from the station where the data link has failed due to power-off or other reasons.	[Clear], [Hold]
[Retry]	Set the number of retries to be performed when a communication timeout occurs. When receiving no response after retries, the communication times out.	[0] times to [5] times
[Timeout Time]	Set the time period for a communication to time out.	[1] second to [90] seconds
[Delay Time]	Set the delay time for reducing the load of the network and destination PLC.	[0] ms to [300] ms

Precautions

■Communication driver

To set CC-Link IE TSN (built-in Ethernet), use port 1 on the built-in Ethernet interface of the GOT.

Two or more CC-Link IE TSN (built-in Ethernet) cannot be set in one GOT at the same time.

■Authentication class for communication

When CC-Link IE TSN (built-in Ethernet) is used for connection, communication is available only for the master station of authentication class B.

• [CC-Link IE TSN]

Detail Setting

Property	Value
Network Type	CC-Link IE TSN
Network No.	1
Station No.	1
IP Address	192.168.3.24
Subnet Mask	255.255.255.0
Default Gateway	0.0.0.0
Group No.	0
Mode Setting	Online
Communication Speed	1Gbps
Refresh Interval(ms)	25
Input for Err. Sta.	Clear
Retry(Times)	3
Timeout Time(Sec)	3
Delay Time(ms)	0
Monitor Speed	High(Normal)
CPU No. switching GD device first No. (3 points)	500
Module No. switching GD device first No. (16 points)	550
Servo axis switching GD device first No. (16 points)	10

Item	Description	Range
[Network Type]	Set the network type.	[CC-Link IE TSN]
[Network No.]	Set the network number.	[1] to [239]
[Station No.]	Set the station number of the GOT.	[1] to [120]
[IP Address][*1]	Set the IP address of the GOT.	[0.0.0.1] to [223.255.255.254]
[Subnet Mask]	When a subnetwork is used, set the subnet mask. (Only for connection via router) If the sub network is not used, the default value is set.	[0.0.0.0] to [255.255.255.255][*2]
[Default Gateway]	Set the router address of the default gateway where the GOT is connected. (Only for connection via router)	[0.0.0.0] to [223.255.255.254]
[Group No.]	—	[0]
[Mode Setting]	Set the operation mode of the GOT. For details on the unit communication test mode, refer to the following. ☞ Page 781 Unit communication test	[Online], [Offline], [Module Communication Test]
[Communication Speed]	Set the communication speed of the GOT.	[1Gbps], [100Mbps]
[Refresh Interval]	Set the number of refreshes to secure the send/receive data per station during communication.	[1] ms to [1000] ms
[Input for Err. Sta.]	Set whether to hold or clear the input from the station where the data link has failed due to power-off or other reasons.	[Clear], [Hold]
[Retry]	Set the number of retries to be performed when a communication timeout occurs. When receiving no response after retries, the communication times out.	[0] times to [5] times
[Timeout Time]	Set the time period for a communication to time out.	[1] second to [90] seconds
[Delay Time]	Set the delay time for reducing the load of the network and destination PLC.	[0] ms to [300] ms
[Monitor Speed]	Set the monitor speed of the CC-Link IE TSN network. This setting is not valid in all systems.	[High(Normal)], [Middle], [Low]
[CPU No. switching GD device first No. (3 points)]	Set the start device number of the GD devices for CPU number switching. For details, refer to the following. ☞ Page 782 Start device number of the GD devices for CPU number switching	[0] to [65520]
[Module No. switching GD device first No. (16 points)]	Set the start device number of the GD devices for module number switching. For details, refer to the following. ☞ Page 783 Start device number of the GD devices for module number switching	[0] to [65520]
[Servo axis switching GD device first No. (16 points)]	Set the start device number of the GD devices for servo axis switching. For details, refer to the following. ☞ Page 784 Start device number of the GD devices for servo axis switching	[0] to [65520]

*1 If any of the following settings is configured in the IP address, a communication timeout error occurs.
- The third octet and fourth octet are all 1 (*.*.255.255) or all 0 (*.*.0.0).
- The host part is all 1 (*.*.*.255) or all 0 (*.*.*.0).
- Some reserved addresses determined for special applications

For details, refer to the following manuals.
MELSEC iQ-F FX5 User's Manual (CC-Link IE TSN)

*2 When the subnet mask field is filled with 0, the operation is the same as when the field is left blank.

Point

- Controller settings using the GT37 utility

The controller settings can be changed in [Communication Settings] of the GT37 utility after writing [Communication Settings] of project data to GT37.
For details on the GT37 utility, refer to the following manual.
GOT3000 Series User's Manual (Utility & Maintenance Functions)

- Priority of the settings in [Controller Setting]

When the settings are configured in GT Designer3 or in the GT37 utility, the latest settings are effective.

- Setting the refresh interval

For [Refresh Interval(ms)] in [Controller Setting] in GT Designer3, set 5 ms or more per 1K words for the total size of the device set in [Network Configuration Settings] in GX Works3.
Setting less than 5 ms may affect the processing of the GOT such as a decrease of the monitoring speed.
The following shows setting examples of the total device size and refresh interval.

Total device size	Refresh Interval
1K words	5 ms or more
2K words	10 ms or more
3K words	15 ms or more
5K words	25 ms or more
36K words	180 ms or more

■Unit communication test

In the unit communication test, connect port 1 and port 2 of the CC-Link IE TSN communication unit mounted on the GOT with a network cable, and check if the unit operates properly with the GOT.

The following shows the test procedure and how to check the test result.

1. Perform either of the following operations to set the GOT to the unit communication test mode.

- Write the project data for which [Mode Setting] in [Detail Setting] is set to [Stand-alone test mode] to the GOT.
- Set [Mode setting] in [Detail setting] to [Module Communication Test] in the GOT utility.

2. A unit communication test will start at GOT startup.

3. After the test is complete, check the result with the ERR LED on the communication unit and GOT internal devices (CC-Link IE TSN Module Communication Test Status (GS1114) or CC-Link IE TSN Module Communication Test Error (GS1115)).

Check		Test result
ERR LED on the communication unit		OFF: Normal ON: Error
GOT internal device	CC-Link IE TSN Module Communication Test Status (GS1114)	Notifies the execution status of a communication test of the CC-Link IE TSN communication unit. • b0: Turns on when a communication test is executed. • b1: Turns on while a communication test is being executed. • b2: Turns on when a communication test is complete. • b3 to b15: Use prohibited
	CC-Link IE TSN Module Communication Test Error (GS1115)	Notifies that an error has occurred during a communication test of the CC-Link IE TSN communication unit. • b0: Turns on if there is a problem with the port 1 side of the CC-Link IE TSN communication unit. • b1: Turns on if there is a problem with the connection interface (port 1) of the CC-Link IE TSN communication unit or the Ethernet cable terminal. • b2: Turns on if there is a problem with the port 1 side Ethernet cable of the CC-Link IE TSN communication unit. • b3 to b7: Use prohibited • b8: Turns on if there is a problem with the port 2 side of the CC-Link IE TSN communication unit. • b9: Turns on if there is a problem with the connection interface (port 2) of the CC-Link IE TSN communication unit or the Ethernet cable terminal. • b10: Turns on if there is a problem with the port 2 side Ethernet cable of the CC-Link IE TSN communication unit. • b11 to b15: Use prohibited

For details on the GOT internal devices (CC-Link IE TSN Module Communication Test Status (GS1114) and CC-Link IE TSN Module Communication Test Error (GS1115)), refer to the following.

📖GT Designer3 (GOT3000) Screen Design Manual

4. If no error is detected, change the setting of [Mode Setting] from [Module Communication Test] in [Detail setting].

Since the communication with the controller is not performed when [Mode setting] is set to [Module Communication Test], the communication timeout error occurs when the device of controller is monitored.

5. If any error is detected, replace the communication unit.

■Start device number of the GD devices for CPU number switching

• Indirect specification of a CPU number

[CPU No.] can be indirectly specified with the GOT internal registers (GD devices) by specifying a value (100 to 102) to [CPU No.] in the device setting dialog in GT Designer3.

Set the start device number of the GD devices to be used in [CPU No. switching GD device first No. (3 points)].

[CPU No.] is specified with three consecutive GD devices, starting from the set device number.

When [500] is set to [CPU No. switching GD device first No. (3 points)], GD500 to GD502 are used to specify [CPU No.] as shown in the following table.

CPU No.	GD device	Setting range
100	GD500	1 to 4 Setting a value outside the range causes a communication timeout error. Specifying a nonexistent CPU number or a CPU number not supporting a multiple CPU system with a device causes a controller error.
101	GD501	
102	GD502	

• Indirect specification of a CPU number on the initially displayed screen

Set [CPU No. switching GD device first No. (3 points)] so that the values of the GD devices are retained and monitored upon the GOT startup.

• Indirect specification of a CPU number for multi-channel connection

If the setting range of [CPU No. switching GD device first No. (3 points)] set for each channel overlaps, the monitoring target CPU number set to each channel is switched simultaneously.

Set [CPU No. switching GD device first No. (3 points)] for each channel so that the setting range does not overlap.

• Indirect specification of a station number and a CPU number for multi-channel connection

When GD10 to GD25 are used to specify the station number of an inverter or non-Mitsubishi temperature controller connected, setting [10] to [CPU No. switching GD device first No. (3 points)] in a different channel switches the monitoring target CPU number and station number of an inverter or non-Mitsubishi temperature controller set to each channel simultaneously.

Set [CPU No. switching GD device first No. (3 points)] so that the setting range does not overlap the station number of an inverter or non-Mitsubishi temperature controller.

■Start device number of the GD devices for module number switching

• Indirect specification of a module number

For connection via a Simple Motion module, [Unit No.] can be specified with the GOT internal registers (GD devices) by specifying a value (100 to 10F) to [Unit No.] in the device setting dialog in GT Designer3.

Set the start device number of the GD devices to be used in [Module No. switching GD device first No. (16 points)].

[Unit No.] is specified with 16 consecutive GD devices, starting from the set device number.

When [550] is set to [Module No. switching GD device first No. (16 points)], GD550 to GD565 are used to specify [Unit No.] as shown in the following table.

Module No.	GD device	Setting range
100	GD550	01 to 10 Setting a value outside the above range causes a device range error.
101	GD551	
102	GD552	
103	GD553	
104	GD554	
105	GD555	
106	GD556	
107	GD557	
108	GD558	
109	GD559	
10A	GD560	
10B	GD561	
10C	GD562	
10D	GD563	
10E	GD564	
10F	GD565	

• Indirect specification of a module number on the initially displayed screen

Set [Module No. switching GD device first No. (16 points)] so that the values of the GD devices are retained and monitored upon the GOT startup.

• Indirect specification of a module number for multi-channel connection

If the setting range of [Module No. switching GD device first No. (16 points)] set for each channel overlaps, the module number of the Simple Motion module via the servo amplifier device of each channel is switched simultaneously.

Set [Module No. switching GD device first No. (16 points)] for each channel so that the setting range does not overlap.

• Indirect specification of a station number and a module number for multi-channel connection

When GD10 to GD25 are used to specify the station number of an inverter or non-Mitsubishi temperature controller connected, setting [10] to [Module No. switching GD device first No. (16 points)] switches the module number of the Simple Motion module via the servo amplifier device and the station number of an inverter or non-Mitsubishi temperature controller set to each channel simultaneously.

Set [Module No. switching GD device first No. (16 points)] so that the setting range does not overlap the station number of an inverter or non-Mitsubishi temperature controller.

■Start device number of the GD devices for servo axis switching

• Indirect specification of a servo axis number

For connection via a Motion CPU or Simple Motion module, a servo axis number can be indirectly specified with GOT internal registers (GD devices) by specifying a value (100 to 115) to the axis number of the servo amplifier device.

Set the start device number of the GD devices to be used in [Servo axis switching GD device first No. (16 points)].

Specify a servo axis number with 16 consecutive GD devices, starting the set device number.

When [10] is set to [Servo axis switching GD device first No. (16 points)], GD10 to GD25 are used to specify a servo axis number as shown in the following table.

Servo axis No.	GD device	Setting range
100	GD10	1 to 64 Setting a value outside the above range causes a device range error.
101	GD11	
102	GD12	
103	GD13	
104	GD14	
105	GD15	
106	GD16	
107	GD17	
108	GD18	
109	GD19	
110	GD20	
111	GD21	
112	GD22	
113	GD23	
114	GD24	
115	GD25	

• Indirect specification of a servo axis number on the initially displayed screen

Set [Servo axis switching GD device first No. (16 points)] so that the values of the GD devices are retained and monitored upon the GOT startup.

• Indirect specification of a servo axis number for multi-channel connection

If the setting rage of [Servo axis switching GD device first No. (16 points)] set for each channel overlaps, the axis number of the servo amplifier of each channel is switched simultaneously.

Set [Servo axis switching GD device first No. (16 points)] for each channel so that the setting range does not overlap.

• Indirect specification of a station number and a servo axis number for multi-channel connection

When GD10 to GD25 are used to specify the station number of an inverter or non-Mitsubishi temperature controller connected, setting [10] to [Servo axis switching GD device first No. (16 points)] switches the axis number of the servo amplifier and the station number of an inverter or non-Mitsubishi temperature controller set to each channel simultaneously.

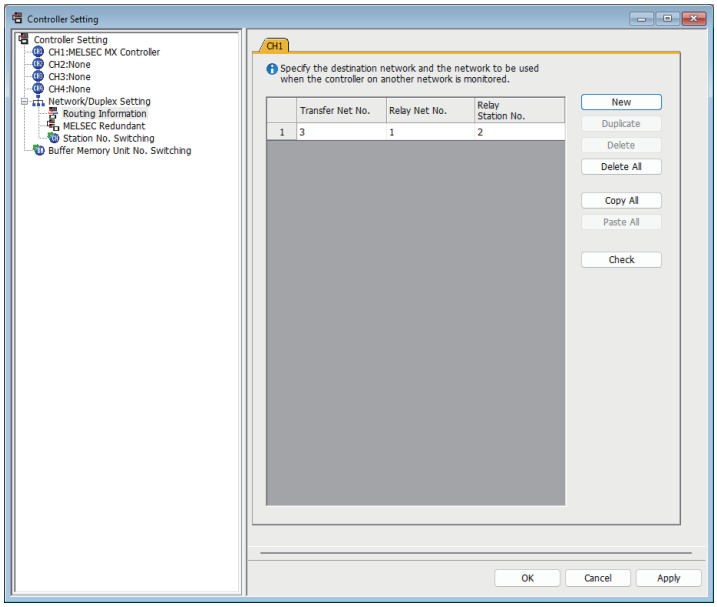
Set [Servo axis switching GD device first No. (16 points)] so that the setting range does not overlap the station number of an inverter or non-Mitsubishi temperature controller.

■Routing parameter settings

Up to 64 settings can be configured for [Transfer Net No.].

However, the same number cannot be set in [Transfer Net No.] twice or more (multiple times).

The GOT (host station) can access 64 different networks specified under [Transfer Net No.].



Item	Range
[Transfer Net No.]	[1] to [239]
[Relay Net No.]	[1] to [239]
[Relay Station No.]	[0] to [120]

Point

Routing parameter settings for the relay station

Routing parameter settings are also necessary for the relay station.

For the setting, refer to the following.

☞ Page 786 PLC side settings

9.2.4 PLC side settings

Model		Reference
MELSEC MX Controller (MX-F Model)	MXF100-8-N32 MXF100-8-P32 MXF100-16-N32 MXF100-16-P32	☞ Page 786 Connection to the MELSEC MX Controller (MX-F Model)

Connection to the MELSEC MX Controller (MX-F Model)

This section describes the settings of the GOT and CC-Link IE TSN-equipped module in the system configuration shown below.

Point

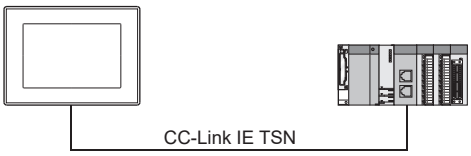
For details on the CC-Link IE TSN-equipped module, refer to the following manual.
📖MELSEC iQ-F FX5 User's Manual (CC-Link IE TSN)

■System configuration

The following shows a system configuration example for connection to the CC-Link IE TSN master/local module (FX5-CCLGN-MS).

Ex.

<GOT>
(Use the default value for settings other than the following.)
Network type : CC-Link IE TSN
Network No. : 1
PLC No. (GOT Station) : 1
IP address : 192.168.3.24
Mode Setting : Online



<CC-Link IE TSN Master/Local module>*1
(Use the default value for settings other than the following.)
Station type : Master Station
Network No. : 1
PLC No. (Station) : 0
IP address : 192.168.3.253

*1 The CC-Link IE TSN master/local module is mounted on slot 0 of the base unit.
The start I/O number of the CC-Link IE TSN master/local module is set to 0.

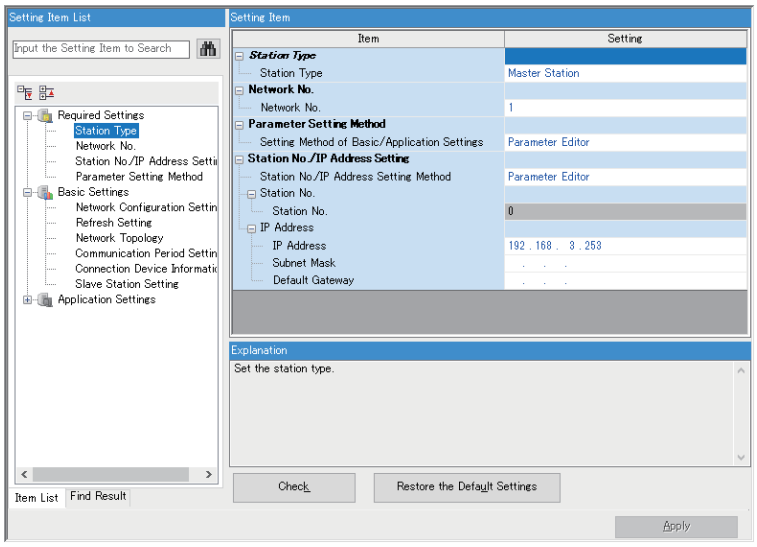
■[Parameter] in GX Works3

The following shows a parameter setting example for connection to the CC-Link IE TSN master/local module (FX5-CCLGN-MS).

Point

For connection to the CC-Link IE TSN master/local module (FX5-CCLGN-MS), use GX Works3 version 1.085P or later.

• Module parameter



○: Necessary, △: As necessary, —: Not necessary

Item		Setting value	Setting for GOT connection
[Station Type]		Master station	○
[Network No.][*1]		1	○
[Setting Method of Basic/Application Settings]		Set in parameter	○
[Station No./IP Address Setting Method]		Set in parameter	○
[Station No.]		0	○
[IP Address]		192.168.3.253	△
[Subnet Mask]		—	—
[Default Gateway]		—	—
[Network Configuration Settings]		☞ • Network configuration settings	○
[Refresh Setting]		Use default value.	△
[Network Topology]		Line, star, line and star mixed	○
[Basic Period Setting]	[Setting in Units of 1μs]	Not set	○
	[Communication Period Interval Setting (Do not Set it in Units of 1μs)]	1000.00 μs	○
	[Cyclic Transmission Time (CC IE TSN)]	500.00 μs	○
[Multiple Period Setting]	[Normal-Speed]	×4	○
	[Low-Speed]	×16	○
	[Authentication Class Setting]	• When the communication driver is [CC-Link IE TSN]: Authentication class B • When the communication driver is [CC-Link IE TSN (Built-in Ethernet)]: Authentication class A	○
	[Disconnection Detection Setting]	4 times	○

*1 Set the same network number as that of the GOT.

Point

• When changing the module parameter

After writing module parameters to the PLC CPU, turn off then on or reset the PLC CPU.

• When the GOT monitors a cyclic device of other stations

Set [Communication Mode] of the master station to [Multicast].

Precautions

When monitoring the master and local stations on the same network as the GOT using transient transmission, the stations that can be monitored differ depending on the setting of [Communication Mode] of the CC-Link IE TSN-equipped module.

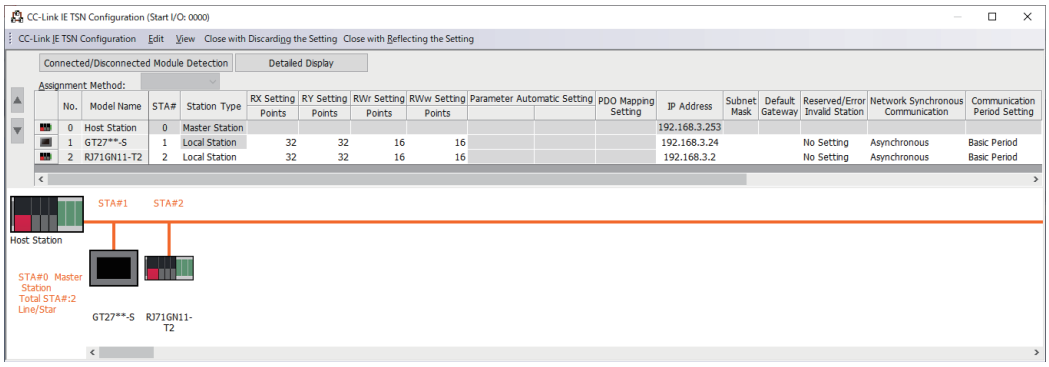
[Communication Mode]	Availability of monitoring
[Unicast]	Master station only
[Multicast]	Master station
	Local station that satisfies the following conditions • Being set as a local station in the network configuration setting • Not being a reserved or error invalid station

For the settings of the CC-Link IE TSN-equipped module, refer to the following.

📖MELSEC iQ-F FX5 User's Manual (CC-Link IE TSN)

To monitor the master and local stations on other networks using transient transmission, use a master station or local station that can be monitored on the same network as the GOT as a relay station.

- Network configuration settings



○: Necessary, △: As necessary, —: Not necessary

Item		Setting value	Setting for GOT connection
[Station No.]		1	△
[Station Type]		• When the communication driver is [CC-Link IE TSN]: Local station • When the communication driver is [CC-Link IE TSN (Built-in Ethernet)]: Remote station	△
[RX Setting]	[Points]	32	△
[RY Setting]	[Points]	32	△
[RWr Setting]	[Points]	• When the communication driver is [CC-Link IE TSN]: 16 • When the communication driver is [CC-Link IE TSN (Built-in Ethernet)]: 4	△
[RWw Setting]	[Points]	• When the communication driver is [CC-Link IE TSN]: 16 • When the communication driver is [CC-Link IE TSN (Built-in Ethernet)]: 4	△
[IP Address]		192.168.3.24	△
[Reserved/Error Invalid Station]		No setting	△
[Network Synchronous Communication]		Asynchronous	△
[Communication Period Setting]		Basic Period	△*1

*1 When communication is performed at 100 Mbps using [CC-Link IE TSN (built-in Ethernet)], connection may not be established if [Communication Period Setting] is not set to [Low] in the device station setting.

Precautions

When a local station with the CC-Link IE TSN-compatible switching hub connected (linked-up) is added, IP address duplication is not detected at the destination station.

If IP address duplication (error code 1802H) is detected, disconnect the relevant local station from the network.

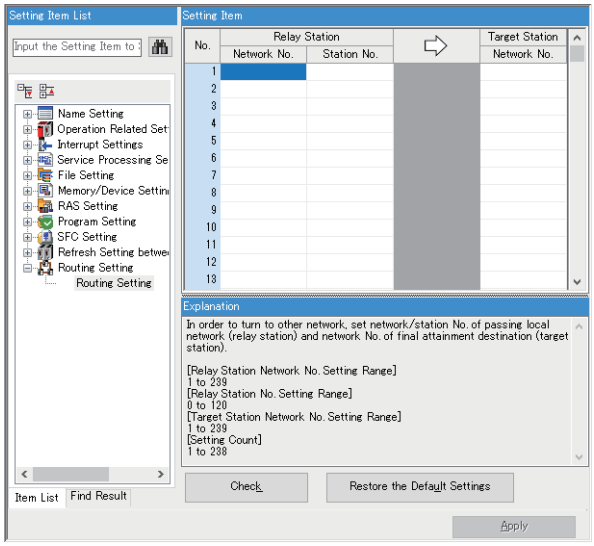
Otherwise, transient transmission may be performed to an unintended station because multiple stations with the same IP address exist on the network.

• Routing settings

Up to 238 target network numbers can be set.

However, the same number cannot be set twice or more (multiple times).

The GOT (host station) can access 238 different networks specified in the column of [Target Station Network No.].



Item		Range
[Relay Station]	[Network No.]	[1] to [239]
	[Station No.]	[0] to [120]
[Target Station]	[Network No.]	[1] to [239]

Point

Routing parameter settings for the request source

Routing parameter settings are also necessary for the request source GOT.

For the setting, refer to the following.

☞ Page 785 Routing parameter settings

■[Controller Setting] in GT Designer3

Item	Setting value
[Network Type]	CC-Link IE TSN
[Network No.]	1: Network No. 1
[Station No.]	1: Station No. 1
[IP Address]	192.168.3.24
[Subnet Mask]	255.255.255.0
[Default Gateway]	0.0.0.0
[Group No.]	0
[Mode Setting]	Online
[Communication Speed]	1 Gbps
[Refresh Interval]	25 ms
[Input for Err. Sta.]	Clear
[Retry]	3 times
[Timeout Time]	3 seconds
[Delay Time]	0 ms
[Monitor Speed]	High(Normal)

Point

• [Controller Setting] in GT Designer3

For the setting method of [Controller Setting] in GT Designer3, refer to the following.

☞ Page 777 [Controller Setting]

9.2.5 Connection to the PLC with the authentication function enabled

Logon to the PLC

When the GOT monitors the PLC with the authentication function enabled, logon to the PLC is required.

Touch a special function switch (Destination Authentication) set in the project to display the key window.

Enter the [User Name] and [Password] to log on.

For information on how to set a special function switch, refer to the following.

📖GT Designer3 (GOT3000) Screen Design Manual

Logoff from the PLC

Touch a special function switch (Destination Authentication) set in the project to log off.

Precautions

■Creating a project

At GOT startup, the PLC is in logoff state.

The GOT cannot monitor the PLC devices until logon to the PLC from the GOT is complete.

Therefore, create a project assuming that the GOT cannot communicate with the PLC for a certain period.

For information on how to set screens and functions, refer to the following.

📖GT Designer3 (GOT3000) Screen Design Manual

Take the following precautions when creating a project.

Item		Precautions for using the destination authentication function
[Environmental Setting]	[Screen Switching/Window]	Set the GOT internal device as the screen switching device. As well as logoff operation by GOT, reset on the PLC side or other operations can also make the PLC in logoff state. By setting the GOT internal device as the screen switching device, a screen can be switched even in logoff state due to reset on the PLC side or other operations.
	[Language Switching]	Set the GOT internal device as the language switching device. When a PLC device is set, comments cannot be displayed in logoff state.
	[System Information]	Set the GOT internal device as the system information device. When a PLC device is set, a system alarm occurs in logoff state.
	[Security]	It is recommended not to use screen security (level authentication and operator authentication) for connection with the PLC with the destination authentication function enabled.
		When using the level authentication, set the GOT internal device as the security level device.
Screen setting	Screen displayed immediately after GOT startup	Place a special function switch (Destination Authentication) to perform destination authentication for logging on to the PLC. Do not configure the setting to monitor the PLC devices.
	Screen number	Specify the screen number ranges separately for the screen displayed in logoff state and the screen displayed in logon state. Separating the screen number ranges makes screen transition in logoff state easy to consider. Example) Before authentication: 1 to 100, after authentication: 101 or later
	Screen switching control at logoff	Configure the setting using trigger actions or other methods so that the screen switches at logoff to the screen displayed before authentication.
Function that is not recommended for use when connecting with the PLC with the destination authentication function enabled		• Screen security (level authentication and operator authentication) • GOT Mobile function (Destination authentication cannot be performed on a mobile screen.)
Others	Function to specify the conditions other than the trigger device	Specify the trigger indirectly by using trigger actions or other methods. Example) When the PLC device controls the input range for a numerical input
	Function that cannot specify the trigger device	By scripts or device data transfer using the GOT internal device, read and write the PLC device only in logon state. Example) Alarm monitoring of the connected device

■Character code applicable for [User Name].

For logon to the PLC from the GOT, only ASCII code characters can be available for [User Name] in the key window and the [Destination Authentication] window.

When setting [User Name] for the PLC, set [User Name] of the user operating the PLC from the GOT in the ASCII code.

For the list of the ASCII code available in GOT, refer to the following.

📖GT Designer3 (GOT3000) Screen Design Manual

■Access level of the user who can log on

When logging on to the PLC from the GOT, only the users whose access level is [Users] can log on.

Users with the access level [Administrators] or [Developers] cannot log on.

When monitoring the PLC from the GOT, set the users whose access level is [Users] for the PLC.

■Changing the user authentication function settings

The user authentication settings (user name and password) cannot be changed from the GOT.

Use GX Works3 to change the settings registered in the PLC.

■Obtaining and updating CPU errors

The GOT cannot obtain CPU errors unless you log on to the PLC.

To update the CPU error of the system alarm displayed on the GOT, log on to the PLC from the GOT.

9.2.6 Access range for monitoring

Only the connected CPU can be accessed.

9.2.7 Firmware of the CC-Link IE TSN communication unit

Firmware versions and supported functions

Available functions differ depending on the firmware version of the CC-Link IE TSN communication unit.

Firmware version	Supported function
01	Cyclic transmission (line connection, star connection)
02	• Multicast mode • Communication speed 100Mbps • Time setting function • Firmware update function
03	Ring connection
05	CC-Link IE TSN protocol version 2.0

How to check the firmware version

Check the firmware version in the text display on the GOT.

Set the text display as follows.

- Device: SW003D
- Number of displayed digits: 2

For details on the text display object, refer to the following.

📖GT Designer3 (GOT3000) Screen Design Manual

Firmware update

Use the firmware update tool installed to a personal computer to update the firmware of the CC-Link IE TSN communication unit through a network.
The following shows how to execute firmware update.

Point

- CC-Link IE TSN firmware update tool

For details on the firmware update tool, such as the operating environment, installation procedure, and operating procedure, refer to the following.
CC-Link IE TSN Firmware Update Tool Reference Manual

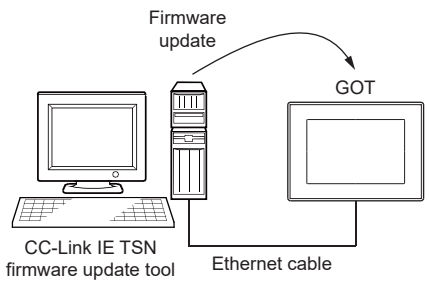
- CC-Link IE TSN communication unit

For details on the CC-Link IE TSN communication unit, refer to the following.
CC-Link IE TSN Communication Unit User's Manual

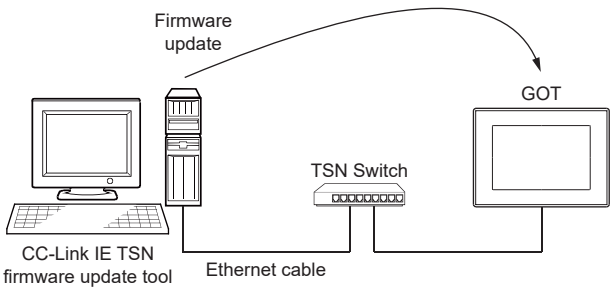
■Connection method

Use one of the following methods to connect the personal computer on which the firmware update tool is to run and the CC-Link IE TSN communication unit on the GOT.

- Direct connection



- Connection via a hub



Point

For the connection via a hub, use a TSN Switch.
For details on the TSN Switch, refer to the following.
MELSEC iQ-F FX5 User's Manual (CC-Link IE TSN)

■Firmware update procedure

Update the firmware as follows.

1. Stop communication of the CC-Link IE TSN communication unit in which the firmware is updated.

Perform one of the following operations to stop communication.

- Disconnect the master station from the network.
- Disconnect the host station from the network.

2. Configure the settings required for the firmware update tool.

- Network configuration settings

Item	Setting
Model	GT25-J71GN13-T2
IP Address	IP address of the CC-Link IE TSN communication unit
FTP Username	GT25-J71GN13
FTP Password	GT25-J71GN13

- Application settings

Item	Setting
FTP Mode	Active Mode
Firmware Update Timeout(s)	900sec

For the settings other than the above, refer to the following.

📖CC-Link IE TSN Firmware Update Tool Reference Manual

3. Update the firmware of the CC-Link IE TSN communication unit.

4. After the update, the GOT on which the unit is mounted is restarted.

After the restart, the CC-Link IE TSN communication unit operates with the updated firmware.

Point

Firmware file

For the firmware file used for update, contact your local sales office.

Precautions for firmware update

The following shows the precautions for executing firmware update.

■When firmware update is not performed

Make sure to stop communication of the CC-Link IE TSN communication unit, and then execute firmware update.

In the following cases, firmware update of the CC-Link IE TSN communication unit is not performed.

- While CC-Link IE TSN Control (GS620.b0) is on

Turn off this bit.

For details on the CC-Link IE TSN Control (GS620.b0), refer to the following.

📖GT Designer3 (GOT3000) Screen Design Manual

- While the CC-Link IE TSN communication unit is communicating

Disconnect the master station or host station from the network to stop communication of the CC-Link IE TSN communication unit.

- While the GOT is being operated with GT Designer3

Do not perform operations such as writing the package data and executing the GOT diagnostics with GT Designer3.

- Performing an operation that makes the GOT offline

Do not perform any operation that makes the GOT offline in the utility.

■Power-off during firmware update

Do not turn off the GOT during firmware update.

Doing so may cause the CC-Link IE TSN communication unit to become unusable.

■Hardware version of the CC-Link IE TSN communication unit

Firmware update may not be available depending on the combination of the hardware and firmware versions of the CC-Link IE TSN communication unit.

If firmware update cannot be performed, check the error code of the firmware update tool.

■Firmware downgrade

If the version of the firmware file used for the update tool is earlier than the firmware version of the target CC-Link IE TSN communication unit, a warning message prompting for downgrading is displayed.

Select a new firmware file to execute firmware update.

Otherwise, execute downgrading.

■GT Designer3 version and CC-Link IE TSN communication unit firmware version

The combination of the GT Designer3 version and CC-Link IE TSN communication unit (GT25-J71GN13-T2) firmware version is restricted.

The following shows the combinations of the GT Designer3 version and the CC-Link IE TSN communication unit firmware version.

○: Supported, —: Not supported

GT Designer3 version	CC-Link IE TSN communication unit (GT25-J71GN13-T2)	
	01	02 or later
Version1.217B to Version1.220E	○	—
Version1.225K or later	—	○

Update the firmware of the CC-Link IE TSN communication unit (GT25-J71GN13-T2) with firmware version 01 so that the GT Designer3 version 1.225K or later supports the unit.

For firmware update of the CC-Link IE TSN communication unit (GT25-J71GN13-T2), refer to the following.

☞ Page 792 Firmware of the CC-Link IE TSN communication unit

9.3 MELSEC iQ-R series (CC-Link IE TSN connection)

☞ Page 796 Connectable devices
☞ Page 798 System configuration
☞ Page 802 GOT side settings
☞ Page 811 PLC side settings
☞ Page 816 Access range for monitoring
☞ Page 817 Firmware of the CC-Link IE TSN communication unit

9.3.1 Connectable devices

The following table shows the connectable models.

○: Supported, —: Not supported

Controller	Model	Clock	CC-Link IE TSN-equipped module or Motion module	Connectable model
MELSEC iQ-R series	R00CPU*1 R01CPU*1 R02CPU*1 R04CPU*2 R08CPU*2 R16CPU*2 R32CPU*2 R120CPU*2	○	RJ71GN11-T2 RJ71GN11-EIP RD78G4 RD78G8 RD78G16 RD78G32 RD78G64 RD78GHV RD78GHW	GT37 SoftGOT3000
	R04ENCPU*2 R08ENCPU*2 R16ENCPU*2 R32ENCPU*2 R120ENCPU*2	○	RJ71GN11-T2 RJ71GN11-EIP RD78G4 RD78G8 RD78G16 RD78G32 RD78G64 RD78GHV RD78GHW	GT37 SoftGOT3000
	R08SFCPU*3 R16SFCPU*3 R32SFCPU*3 R120SFCPU*3	○	RJ71GN11-T2 RD78G4 RD78G8 RD78G16 RD78G32 RD78G64 RD78GHV RD78GHW	GT37 SoftGOT3000
C Controller module (MELSEC iQ-R series)	R12CCPU-V*4	○	RJ71GN11-T2	GT37 SoftGOT3000
MELSECWinCPU (MELSEC iQ-R series)	R102WCPU-W	○	RJ71GN11-T2	GT37 SoftGOT3000

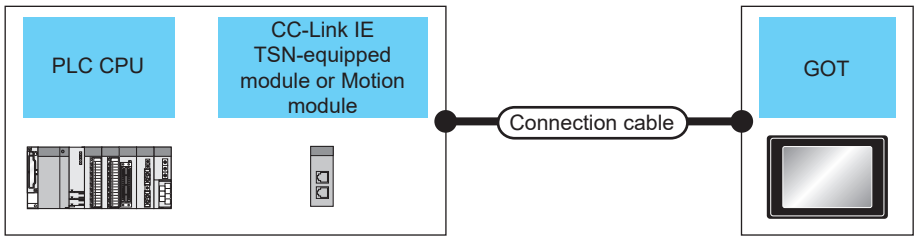
*1 Use the following firmware version.
When configuring a line topology or star topology using RJ71GN11-T2: 11 or later
When configuring a ring topology using RJ71GN11-T2: 18 or later
When using RJ71GN11-EIP: 29 or later

*2 Use the following firmware version.
When configuring a line topology or star topology using RJ71GN11-T2: 43 or later
When configuring a ring topology using RJ71GN11-T2: 50 or later
When using RJ71GN11-EIP: 62 or later

*3 Use firmware version 20 or later.

*4 Use firmware version 15 or later.

9.3.2 System configuration



For details on the connection cable and overall cable length, refer to the following.

☞ Page 799 Connection cable
☞ Page 799 Overall length

For details on the maximum number of connected devices, refer to the following.

☞ Page 800 Maximum number of connected devices

Controller	CC-Link IE TSN-equipped module or Motion module	Connection cable	GOT	
			Interface	Model
MELSEC iQ-R series C Controller module (MELSEC iQ-R series) MELSECWinCPU (MELSEC iQ-R series)	RJ71GN11-T2*1*3	Twisted pair cable	Built-in Ethernet interface of GOT	GT37 SoftGOT3000
			GT37-IF2000 + GT25-J71GN13-T2*1*2	
MELSEC iQ-R series (RnCPU, RnENCPU)	RJ71GN11-EIP*1*4*5	Twisted pair cable	Built-in Ethernet interface of GOT	GT37 SoftGOT3000
			GT37-IF2000 + GT25-J71GN13-T2*1*2	
MELSEC iQ-R series	RD78G4*1 RD78G8*1 RD78G16*1 RD78G32*1 RD78G64*1 RD78GHV*1 RD78GHW*1	Twisted pair cable	Built-in Ethernet interface of GOT	GT37 SoftGOT3000
			GT37-IF2000 + GT25-J71GN13-T2*1*2	

*1 Depending on the combination of the firmware version of the CC-Link IE TSN-equipped module or Motion module on the master station and the firmware version of the CC-Link IE TSN communication unit (GT25-J71GN13-T2), the GOT cannot access the network.
For the combinations of firmware versions, refer to the following.
☞ Page 821 Firmware versions of the CC-Link IE TSN-equipped module or Motion module on the master station and the CC-Link IE TSN communication unit

*2 The firmware version must be 05 or later when monitoring a network where a controller compatible with CC-Link IE TSN protocol version 2.0 exists.
For information on how to check or update the firmware version of the CC-Link IE TSN communication unit, refer to the following.
☞ Page 817 Firmware of the CC-Link IE TSN communication unit

*3 For the ring connection, use firmware version 10 or later.

*4 The ring connection is not supported.

*5 Connect the cable to the P1 port of the RJ71GN11-EIP.

Point

For the system configuration of the CC-Link IE TSN-equipped module, refer to the following manuals.

📖MELSEC iQ-R CC-Link IE TSN User's Manual (Startup)

📖MELSEC iQ-R CC-Link IE TSN Plus Master/Local Module User's Manual

For the system configuration of the Motion module, refer to the following manual.

📖MELSEC iQ-R Motion Module User's Manual (Startup)

Precautions

■Multiple CPU configuration

When accessing a CPU in a multiple CPU configuration via a CC-Link IE TSN network, ensure that the firmware version of the CPU is as shown below.

CPU	Firmware version
R00CPU, R01CPU, R02CPU	11 or later
R04CPU, R08CPU, R16CPU, R32CPU, R120CPU, R04ENCPU, R08ENCPU, R16ENCPU, R32ENCPU, R120ENCPU	43 or later

■Ethernet connection with a CC-Link IE TSN-equipped module or Motion module

The CC-Link IE TSN communication unit (GT25-J71GN13-T2) does not support the Ethernet connection.

For the Ethernet connection, use an Ethernet interface built in the GOT.

For details on the Ethernet connection, refer to the following.

☞ Page 248 Connection to CC-Link IE TSN-equipped module
☞ Page 196 Connection to Motion module through the built-in Ethernet port of PLC
☞ Page 250 Connection to built-in Ethernet port of Motion module

■Connection status check after the GOT startup

The connection with the network cannot be established until the connection check with the master station is completed after the GOT startup.

To check the status of connection with the master station, use the CC-Link IE TSN Connection Status (GS1297) of the GOT internal device.

For details on the CC-Link IE TSN Connection Status (GS1297), refer to the following.

📖GT Designer3 (GOT3000) Screen Design Manual

Connection cable

Use a connection cable that meets the following standards.

Standard	Category
100BASE-TX	Shielded twisted pair cable (double-shielded, STP) or shielded twisted pair cable (STP) of category 5 or higher
1000BASE-T	Shielded twisted pair cable (double-shielded, STP) or shielded twisted pair cable (STP) of category 5e or higher

For the twisted pair cable, use a straight cable.

Use cables that meet the IEEE802.3 100BASE-TX/1000BASE-T standards.

When using a hub, use a TSN Switch or General-purpose Switch according to the system configuration.

For usable TSN Switches and General-purpose Switches, refer to the following.

📖MELSEC iQ-R CC-Link IE TSN User's Manual (Startup)
📖MELSEC iQ-R CC-Link IE TSN Plus Master/Local Module User's Manual
📖MELSEC iQ-R Motion Module User's Manual (Startup)

Overall length

The overall cable length is 12100 m.

The overall cable length and cable length between stations vary depending on the connection method (line, star, or ring), the system configuration, etc.

For details, refer to the following manuals.

📖MELSEC iQ-R CC-Link IE TSN User's Manual (Startup)
📖MELSEC iQ-R CC-Link IE TSN Plus Master/Local Module User's Manual
📖MELSEC iQ-R Motion Module User's Manual (Startup)

Maximum number of connected devices

The following shows the number of GOTs connectable to one controller.

Controller	
Model	**Number of GOTs connectable to one PLC**
MELSEC iQ-R series C Controller module (MELSEC iQ-R series) MELSECWinCPU (MELSEC iQ-R series)	120

Connecting one PLC to multiple GOTs

When multiple GOT units are simultaneously accessing one PLC, the GOT writing process (transient/cyclic) and reading process (transient) may slow down.

This slow access can be remedied with the following countermeasures.

<Countermeasures>

■Improve response speed on PLC side

Insert a COM instruction on the PLC to increase the response speed.

Note that caution is required as the scan time will increase.

■Screen design using cyclic devices

Create the screen with cyclic devices instead of using transient devices.

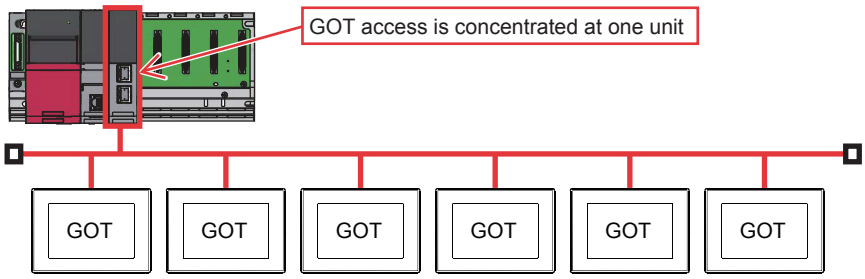
■Split GOT connection destinations into several systems

Add a master/local module to the PLC side, and split the GOT connection destinations into several systems.

Improve the current system configuration.

(Example of current system configuration)

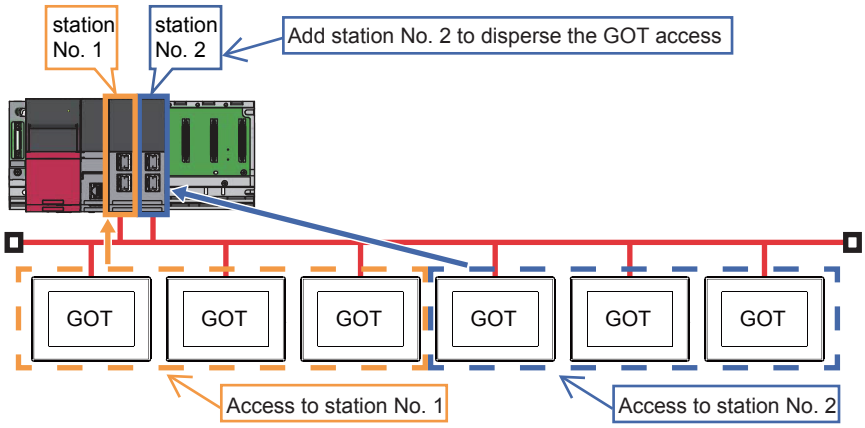
In the following system configuration, access from the GOT is concentrated on one module.



(Improvement measure)

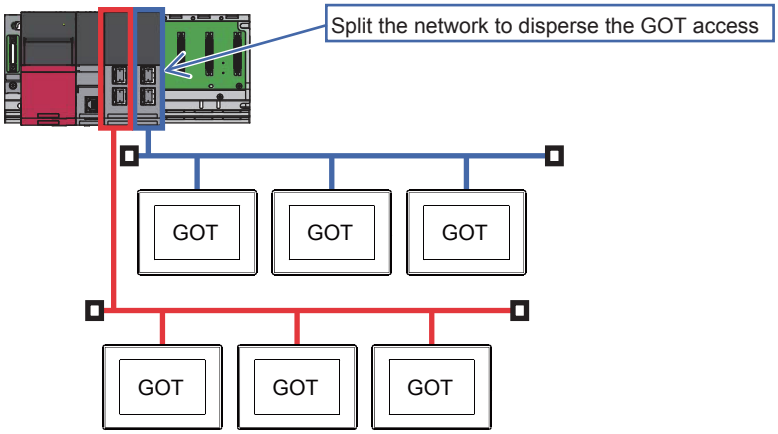
- Adding a module to the PLC side

Add a module to the PLC side to disperse the GOT access destinations.



• Split the network

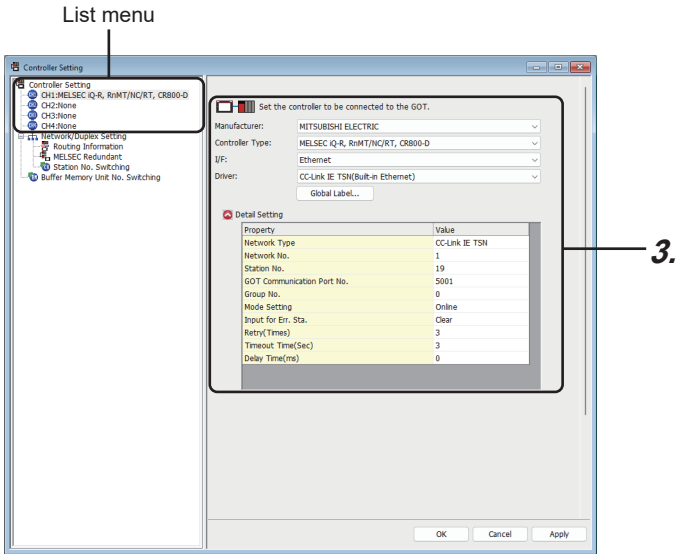
Split the network to disperse the GOT access.



9.3.3 GOT side settings

[Controller Setting]

Set the channel of the connected controller.



Operating procedure

1. Select [Common] → [Controller Setting] from the menu.
2. In the [Controller Setting] window, select the channel number to be used from the list menu.
3. Set the following items.

Item	Description
[Manufacturer]	[MITSUBISHI ELECTRIC]
[Controller Type]	[MELSEC iQ-R, RnMT/NC/RT, CR800-D]
[I/F]	• [Ethernet] • [Extend Unit]
[Driver]	• When [Ethernet] is selected for [I/F]: [CC-Link IE TSN (Built-in Ethernet)] • When [Extend Unit] is selected for [I/F]: [CC-Link IE TSN]
[Detail Setting]	Configure the settings according to the usage environment. ☞ Page 803 [Detail Setting]

4. When you have completed the settings, click the [OK] button.

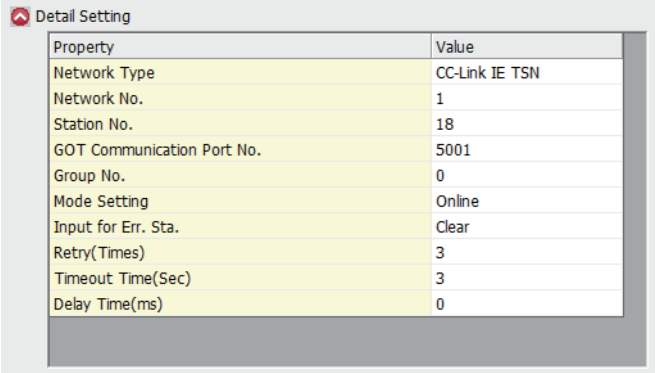
Point

The controller settings can be checked in [I/F Communication Setting].
For details, refer to the following.
📖GT Designer3 (GOT3000) Screen Design Manual

■[Detail Setting]

Configure the settings according to the usage environment.

- [CC-Link IE TSN (built-in Ethernet)]



Item	Description	Range
[Network Type]	Set the network type.	[CC-Link IE TSN]
[Network No.]	Set the network number.	[1] to [239]
[Station No.]	Set the station number of the GOT.	[1] to [120]
[GOT Communication Port No.]	Set the GOT port number for connection with the Ethernet module.	[1024] to [5010], [5014] to [49152], [49171] to [65534]
[Group No.]	—	[0]
[Mode Setting]	Set the operation mode of the GOT. For details on the unit communication test mode, refer to the following. ☞ Page 806 Unit communication test	[Online]
[Input for Err. Sta.]	Set whether to hold or clear the input from the station where the data link has failed due to power-off or other reasons.	[Clear], [Hold]
[Retry]	Set the number of retries to be performed when a communication timeout occurs. When receiving no response after retries, the communication times out.	[0] times to [5] times
[Timeout Time]	Set the time period for a communication to time out.	[1] second to [90] seconds
[Delay Time]	Set the delay time for reducing the load of the network and destination PLC.	[0] ms to [300] ms

Precautions

■Communication driver

To set CC-Link IE TSN (built-in Ethernet), use port 1 on the built-in Ethernet interface of the GOT.

Two or more CC-Link IE TSN (built-in Ethernet) cannot be set in one GOT at the same time.

■Authentication class for communication

When CC-Link IE TSN (built-in Ethernet) is used for connection, communication is available only for the master station of authentication class B.

• [CC-Link IE TSN]

Detail Setting

Property	Value
Network Type	CC-Link IE TSN
Network No.	1
Station No.	1
IP Address	192.168.3.24
Subnet Mask	255.255.255.0
Default Gateway	0.0.0.0
Group No.	0
Mode Setting	Online
Communication Speed	1Gbps
Refresh Interval(ms)	25
Input for Err. Sta.	Clear
Retry(Times)	3
Timeout Time(Sec)	3
Delay Time(ms)	0
Monitor Speed	High(Normal)
CPU No. switching GD device first No. (3 points)	500
Module No. switching GD device first No. (16 points)	550
Servo axis switching GD device first No. (16 points)	10

Item	Description	Range
[Network Type]	Set the network type.	[CC-Link IE TSN]
[Network No.]	Set the network number.	[1] to [239]
[Station No.]	Set the station number of the GOT.	[1] to [120]
[IP Address][*1]	Set the IP address of the GOT.	[0.0.0.1] to [223.255.255.254]
[Subnet Mask]	When a subnetwork is used, set the subnet mask. (Only for connection via router) If the sub network is not used, the default value is set.	[0.0.0.0] to [255.255.255.255][*2]
[Default Gateway]	Set the router address of the default gateway where the GOT is connected. (Only for connection via router)	[0.0.0.0] to [223.255.255.254]
[Group No.]	—	[0]
[Mode Setting]	Set the operation mode of the GOT. For details on the unit communication test mode, refer to the following. ☞ Page 806 Unit communication test	[Online], [Offline], [Module Communication Test]
[Communication Speed]	Set the communication speed of the GOT.	[1Gbps], [100Mbps][*3]
[Refresh Interval]	Set the number of refreshes to secure the send/receive data per station during communication.	[1] ms to [1000] ms
[Input for Err. Sta.]	Set whether to hold or clear the input from the station where the data link has failed due to power-off or other reasons.	[Clear], [Hold]
[Retry]	Set the number of retries to be performed when a communication timeout occurs. When receiving no response after retries, the communication times out.	[0] times to [5] times
[Timeout Time]	Set the time period for a communication to time out.	[1] second to [90] seconds
[Delay Time]	Set the delay time for reducing the load of the network and destination PLC.	[0] ms to [300] ms
[Monitor Speed]	Set the monitor speed of the CC-Link IE TSN network. This setting is not valid in all systems.	[High(Normal)], [Middle], [Low]
[CPU No. switching GD device first No. (3 points)]	Set the start device number of the GD devices for CPU number switching. For details, refer to the following. ☞ Page 807 Start device number of the GD devices for CPU number switching	[0] to [65520]
[Module No. switching GD device first No. (16 points)]	Set the start device number of the GD devices for module number switching. For details, refer to the following. ☞ Page 808 Start device number of the GD devices for module number switching	[0] to [65520]
[Servo axis switching GD device first No. (16 points)]	Set the start device number of the GD devices for servo axis switching. For details, refer to the following. ☞ Page 809 Start device number of the GD devices for servo axis switching	[0] to [65520]

*1 If any of the following settings is configured in the IP address, a communication timeout error occurs.
- The third octet and fourth octet are all 1 (*.*.255.255) or all 0 (*.*.0.0).
- The host part is all 1 (*.*.*.255) or all 0 (*.*.*.0).
- Some reserved addresses determined for special applications

For details, refer to the following manuals.
MELSEC iQ-R CC-Link IE TSN User's Manual (Application)
MELSEC iQ-R CC-Link IE TSN Plus Master/Local Module User's Manual
MELSEC iQ-R Motion Module User's Manual (Network)

*2 When the subnet mask field is filled with 0, the operation is the same as when the field is left blank.

*3 When setting to 100Mbps, the following conditions must be satisfied.
- CC-Link IE TSN communication unit (GT25-J71GN13-T2): Firmware version 02 or later
- CC-Link IE TSN master/local module (RJ71GN11-T2): Firmware version 04 or later

Point

- Controller settings using the GT37 utility

The controller settings can be changed in [Communication Settings] of the GT37 utility after writing [Communication Settings] of project data to GT37.
For details on the GT37 utility, refer to the following manual.
GOT3000 Series User's Manual (Utility & Maintenance Functions)

- Priority of the settings in [Controller Setting]

When the settings are configured in GT Designer3 or in the GT37 utility, the latest settings are effective.

- Setting the refresh interval

For [Refresh Interval(ms)] in [Controller Setting] in GT Designer3, set 5 ms or more per 1K words for the total size of the device set in [Network Configuration Settings] in GX Works3.
Setting less than 5 ms may affect the processing of the GOT such as a decrease of the monitoring speed.
The following shows setting examples of the total device size and refresh interval.

Total device size	Refresh Interval
1K words	5 ms or more
2K words	10 ms or more
3K words	15 ms or more
5K words	25 ms or more
36K words	180 ms or more

■Unit communication test

In the unit communication test, connect port 1 and port 2 of the CC-Link IE TSN communication unit mounted on the GOT with a network cable, and check if the unit operates properly with the GOT.

The following shows the test procedure and how to check the test result.

1. Perform either of the following operations to set the GOT to the unit communication test mode.

- Write the project data for which [Mode Setting] in [Detail Setting] is set to [Stand-alone test mode] to the GOT.
- Set [Mode setting] in [Detail setting] to [Module Communication Test] in the GOT utility.

2. A unit communication test will start at GOT startup.

3. After the test is complete, check the result with the ERR LED on the communication unit and GOT internal devices (CC-Link IE TSN Module Communication Test Status (GS1114) or CC-Link IE TSN Module Communication Test Error (GS1115)).

Check		Test result
ERR LED on the communication unit		OFF: Normal ON: Error
GOT internal device	CC-Link IE TSN Module Communication Test Status (GS1114)	Notifies the execution status of a communication test of the CC-Link IE TSN communication unit. • b0: Turns on when a communication test is executed. • b1: Turns on while a communication test is being executed. • b2: Turns on when a communication test is complete. • b3 to b15: Use prohibited
	CC-Link IE TSN Module Communication Test Error (GS1115)	Notifies that an error has occurred during a communication test of the CC-Link IE TSN communication unit. • b0: Turns on if there is a problem with the port 1 side of the CC-Link IE TSN communication unit. • b1: Turns on if there is a problem with the connection interface (port 1) of the CC-Link IE TSN communication unit or the Ethernet cable terminal. • b2: Turns on if there is a problem with the port 1 side Ethernet cable of the CC-Link IE TSN communication unit. • b3 to b7: Use prohibited • b8: Turns on if there is a problem with the port 2 side of the CC-Link IE TSN communication unit. • b9: Turns on if there is a problem with the connection interface (port 2) of the CC-Link IE TSN communication unit or the Ethernet cable terminal. • b10: Turns on if there is a problem with the port 2 side Ethernet cable of the CC-Link IE TSN communication unit. • b11 to b15: Use prohibited

For details on the GOT internal devices (CC-Link IE TSN Module Communication Test Status (GS1114) and CC-Link IE TSN Module Communication Test Error (GS1115)), refer to the following.

📖GT Designer3 (GOT3000) Screen Design Manual

4. If no error is detected, change the setting of [Mode Setting] from [Module Communication Test] in [Detail setting].

Since the communication with the controller is not performed when [Mode setting] is set to [Module Communication Test], the communication timeout error occurs when the device of controller is monitored.

5. If any error is detected, replace the communication unit.

■Start device number of the GD devices for CPU number switching

• Indirect specification of a CPU number

[CPU No.] can be indirectly specified with the GOT internal registers (GD devices) by specifying a value (100 to 102) to [CPU No.] in the device setting dialog in GT Designer3.

Set the start device number of the GD devices to be used in [CPU No. switching GD device first No. (3 points)].

[CPU No.] is specified with three consecutive GD devices, starting from the set device number.

When [500] is set to [CPU No. switching GD device first No. (3 points)], GD500 to GD502 are used to specify [CPU No.] as shown in the following table.

CPU No.	GD device	Setting range
100	GD500	1 to 4 Setting a value outside the range causes a communication timeout error. Specifying a nonexistent CPU number or a CPU number not supporting a multiple CPU system with a device causes a controller error.
101	GD501	
102	GD502	

• Indirect specification of a CPU number on the initially displayed screen

Set [CPU No. switching GD device first No. (3 points)] so that the values of the GD devices are retained and monitored upon the GOT startup.

• Indirect specification of a CPU number for multi-channel connection

If the setting range of [CPU No. switching GD device first No. (3 points)] set for each channel overlaps, the monitoring target CPU number set to each channel is switched simultaneously.

Set [CPU No. switching GD device first No. (3 points)] for each channel so that the setting range does not overlap.

• Indirect specification of a station number and a CPU number for multi-channel connection

When GD10 to GD25 are used to specify the station number of an inverter or non-Mitsubishi temperature controller connected, setting [10] to [CPU No. switching GD device first No. (3 points)] in a different channel switches the monitoring target CPU number and station number of an inverter or non-Mitsubishi temperature controller set to each channel simultaneously.

Set [CPU No. switching GD device first No. (3 points)] so that the setting range does not overlap the station number of an inverter or non-Mitsubishi temperature controller.

■Start device number of the GD devices for module number switching

• Indirect specification of a module number

For connection via a Simple Motion module, [Unit No.] can be specified with the GOT internal registers (GD devices) by specifying a value (100 to 10F) to [Unit No.] in the device setting dialog in GT Designer3.

Set the start device number of the GD devices to be used in [Module No. switching GD device first No. (16 points)].

[Unit No.] is specified with 16 consecutive GD devices, starting from the set device number.

When [550] is set to [Module No. switching GD device first No. (16 points)], GD550 to GD565 are used to specify [Unit No.] as shown in the following table.

Module No.	GD device	Setting range
100	GD550	00 to FF Setting a value outside the above range causes a device range error.
101	GD551	
102	GD552	
103	GD553	
104	GD554	
105	GD555	
106	GD556	
107	GD557	
108	GD558	
109	GD559	
10A	GD560	
10B	GD561	
10C	GD562	
10D	GD563	
10E	GD564	
10F	GD565	

• Indirect specification of a module number on the initially displayed screen

Set [Module No. switching GD device first No. (16 points)] so that the values of the GD devices are retained and monitored upon the GOT startup.

• Indirect specification of a module number for multi-channel connection

If the setting range of [Module No. switching GD device first No. (16 points)] set for each channel overlaps, the module number of the Simple Motion module via the servo amplifier device of each channel is switched simultaneously.

Set [Module No. switching GD device first No. (16 points)] for each channel so that the setting range does not overlap.

• Indirect specification of a station number and a module number for multi-channel connection

When GD10 to GD25 are used to specify the station number of an inverter or non-Mitsubishi temperature controller connected, setting [10] to [Module No. switching GD device first No. (16 points)] switches the module number of the Simple Motion module via the servo amplifier device and the station number of an inverter or non-Mitsubishi temperature controller set to each channel simultaneously.

Set [Module No. switching GD device first No. (16 points)] so that the setting range does not overlap the station number of an inverter or non-Mitsubishi temperature controller.

■Start device number of the GD devices for servo axis switching

• Indirect specification of a servo axis number

For connection via a Motion CPU or Simple Motion module, a servo axis number can be indirectly specified with GOT internal registers (GD devices) by specifying a value (100 to 115) to the axis number of the servo amplifier device.

Set the start device number of the GD devices to be used in [Servo axis switching GD device first No. (16 points)].

Specify a servo axis number with 16 consecutive GD devices, starting the set device number.

When [10] is set to [Servo axis switching GD device first No. (16 points)], GD10 to GD25 are used to specify a servo axis number as shown in the following table.

Servo axis No.	GD device	Setting range
100	GD10	1 to 64 Setting a value outside the above range causes a device range error.
101	GD11	
102	GD12	
103	GD13	
104	GD14	
105	GD15	
106	GD16	
107	GD17	
108	GD18	
109	GD19	
110	GD20	
111	GD21	
112	GD22	
113	GD23	
114	GD24	
115	GD25	

• Indirect specification of a servo axis number on the initially displayed screen

Set [Servo axis switching GD device first No. (16 points)] so that the values of the GD devices are retained and monitored upon the GOT startup.

• Indirect specification of a servo axis number for multi-channel connection

If the setting rage of [Servo axis switching GD device first No. (16 points)] set for each channel overlaps, the axis number of the servo amplifier of each channel is switched simultaneously.

Set [Servo axis switching GD device first No. (16 points)] for each channel so that the setting range does not overlap.

• Indirect specification of a station number and a servo axis number for multi-channel connection

When GD10 to GD25 are used to specify the station number of an inverter or non-Mitsubishi temperature controller connected, setting [10] to [Servo axis switching GD device first No. (16 points)] switches the axis number of the servo amplifier and the station number of an inverter or non-Mitsubishi temperature controller set to each channel simultaneously.

Set [Servo axis switching GD device first No. (16 points)] so that the setting range does not overlap the station number of an inverter or non-Mitsubishi temperature controller.

■Routing parameter settings

Up to 64 settings can be configured for [Transfer Net No.].

However, the same number cannot be set in [Transfer Net No.] twice or more (multiple times).

The GOT (host station) can access 64 different networks specified under [Transfer Net No.].

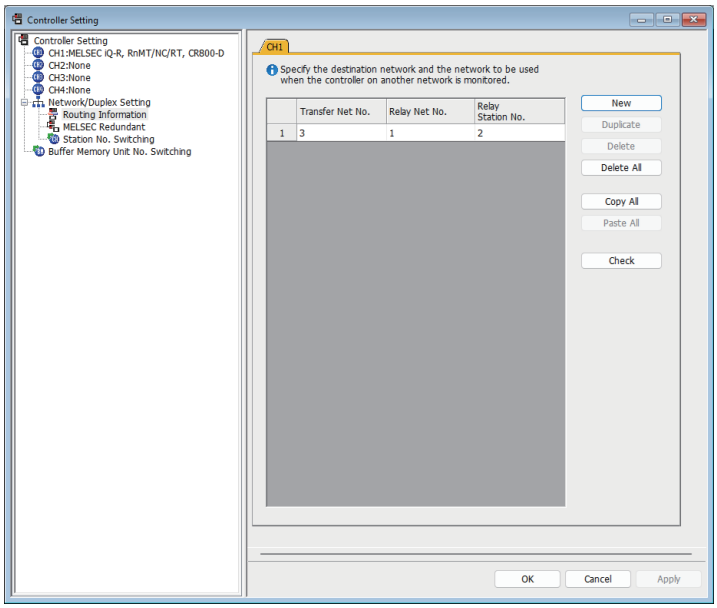
Point

Routing parameter settings

When communicating within the host network, routing parameter settings are not required.

For details on routing parameters, refer to the following manual.

📖MELSEC iQ-R CPU Module User's Manual (Application)



Item	Range
[Transfer Net No.]	[1] to [239]
[Relay Net No.]	[1] to [239]
[Relay Station No.]	[0] to [120]

Point

Routing parameter settings for the relay station

Routing parameter settings are also necessary for the relay station.

For the setting, refer to the following.

☞ Page 811 PLC side settings

9.3.4 PLC side settings

Model		Reference
MELSEC iQ-R series	R00CPU R01CPU R02CPU R04CPU R08CPU R16CPU R32CPU R120CPU R04ENCPU R08ENCPU R16ENCPU R32ENCPU R120ENCPU R08SFCPU R16SFCPU R32SFCPU R120SFCPU	☞ Page 811 Connection to MELSEC iQ-R series
C Controller module (MELSEC iQ-R series)	R12CCPU-V	☞ Page 811 Connection to MELSEC iQ-R series
MELSECWinCPU (MELSEC iQ-R series)	R102WCPU-W	☞ Page 811 Connection to MELSEC iQ-R series

Connection to MELSEC iQ-R series

This section describes the settings of the GOT, CC-Link IE TSN-equipped module, and Motion module in the system configuration shown below.

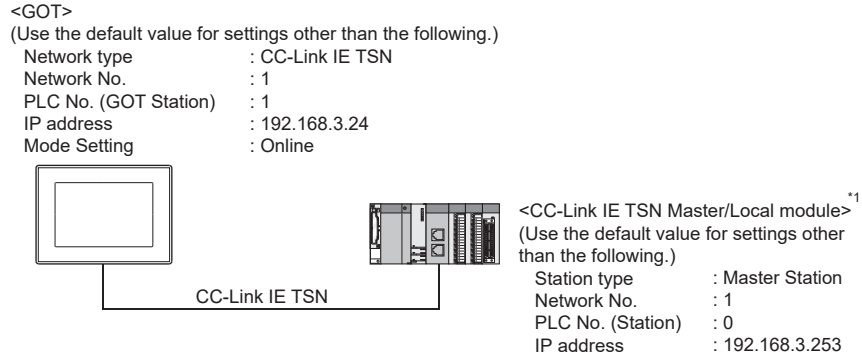
Point

For details on the CC-Link IE TSN-equipped module, refer to the following manuals.
📖MELSEC iQ-R CC-Link IE TSN User's Manual (Startup)
📖MELSEC iQ-R CC-Link IE TSN Plus Master/Local Module User's Manual
For details on the Motion module, refer to the following manual.
📖MELSEC iQ-R Motion Module User's Manual (Startup)

■System configuration

The following shows a system configuration example for connection to the CC-Link IE TSN master/local module (RJ71GN11-T2).

Ex.



*1 The CC-Link IE TSN master/local module is mounted on slot 0 of the base unit.
The start I/O number of the CC-Link IE TSN master/local module is set to 0.

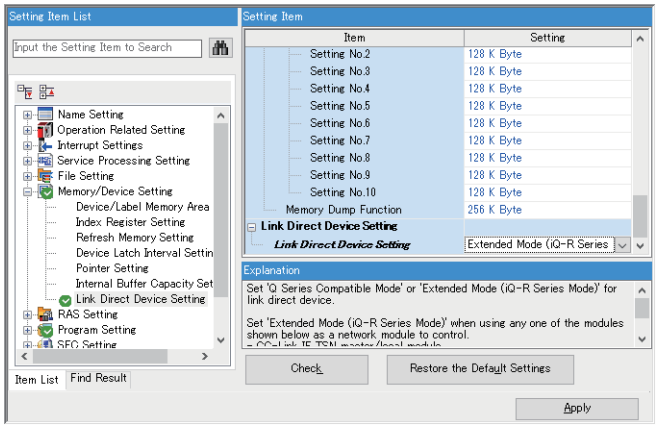
■[Parameter] in GX Works3

The following shows a parameter setting example for connecting to the CC-Link IE TSN master/local module (RJ71GN11-T2).

Point

- For the ring connection with the CC-Link IE TSN master/local module (RJ71GN11-T2), use GX Works3 version 1.065T or later.
- For connection with the CC-Link IE TSN Plus master/local module (RJ71GN11-EIP), use GX Works3 version 1.082L or later.

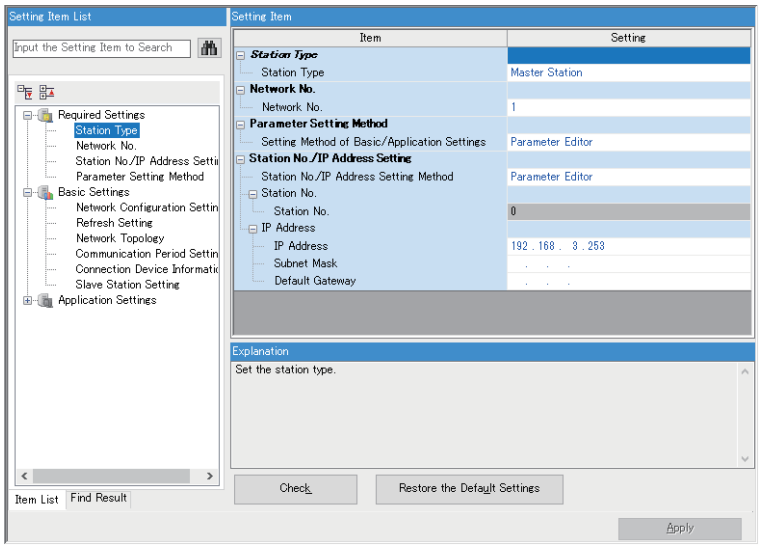
- CPU parameter



○: Necessary, △: As necessary, —: Not necessary

Item	Setting value	Setting for GOT connection
[Link Direct Device Setting]	Extended Mode (iQ-R Series Mode)	○

- Module parameter



○: Necessary, △: As necessary, —: Not necessary

Item		Setting value	Setting for GOT connection
[Station Type]		Master station	○
[Network No.][*1]		1	○
[Setting Method of Basic/Application Settings]		Set in parameter	○
[Station No./IP Address Setting Method]		Set in parameter	○
[Station No.]		0	○
[IP Address]		192.168.3.253	△
[Subnet Mask]		—	—
[Default Gateway]		—	—
[Channel No.][*2]		Set in parameter	○
[Network Configuration Settings]		☞ • Network configuration settings	○
[Refresh Setting]		Use default value.	△
[Network Topology]		Line, star, line and star mixed	○
[Basic Period Setting]	[Setting in Units of 1μs]	Not set	○
	[Communication Period Interval Setting (Do not Set it in Units of 1μs)]	1000.00 μs	○
	[System Reservation Time]	20.00 μs	○
	[Cyclic Transmission Time (CC IE TSN)]	500.00 μs	○
[Multiple Period Setting]	[Normal-Speed]	×4	○
	[Low-Speed]	×16	○
	[Authentication Class Setting]	• When the communication driver is [CC-Link IE TSN]: Authentication class B • When the communication driver is [CC-Link IE TSN (Built-in Ethernet)]: Authentication class A	○
	[Disconnection Detection Setting]	4 times	○

*1 Set the same network number as that of the GOT.
*2 Setting is required for connection to MELSECWinCPU (MELSEC iQ-R series).

Point

• When changing the module parameter
After writing module parameters to the PLC CPU, turn off then on or reset the PLC CPU.
• When the GOT monitors a cyclic device of other stations
Set [Communication Mode] of the master station to [Multicast].

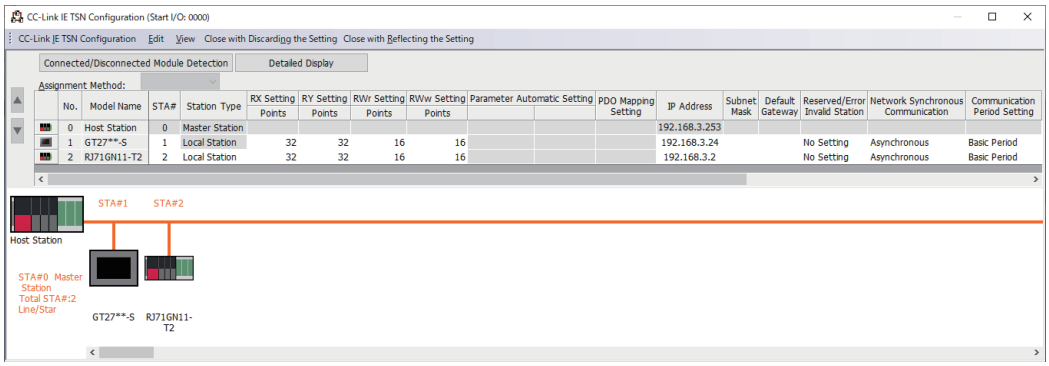
Precautions

When monitoring the master and local stations on the same network as the GOT using transient transmission, the stations that can be monitored differ depending on the setting of [Communication Mode] of the CC-Link IE TSN-equipped module or the Motion module.

[Communication Mode]	Availability of monitoring
[Unicast]	Master station only
[Multicast]	Master station
	Local station that satisfies the following conditions • Being set as a local station in the network configuration setting • Not being a reserved or error invalid station

For the settings of the CC-Link IE TSN-equipped module or Motion module, refer to the following.
📖MELSEC iQ-R CC-Link IE TSN User's Manual (Application)
📖MELSEC iQ-R CC-Link IE TSN Plus Master/Local Module User's Manual
📖MELSEC iQ-R Motion Module User's Manual (Network)
To monitor the master and local stations on other networks using transient transmission, use a master station or local station that can be monitored on the same network as the GOT as a relay station.

• Network configuration settings



○: Necessary, △: As necessary, —: Not necessary

Item		Setting value	Setting for GOT connection
[Station No.]		1	△
[Station Type]		• When the communication driver is [CC-Link IE TSN]: Local station • When the communication driver is [CC-Link IE TSN (Built-in Ethernet)]: Remote station	△
[RX Setting]	[Points]	32	△
[RY Setting]	[Points]	32	△
[RWr Setting]	[Points]	• When the communication driver is [CC-Link IE TSN]: 16 • When the communication driver is [CC-Link IE TSN (Built-in Ethernet)]: 4	△
[RWw Setting]	[Points]	• When the communication driver is [CC-Link IE TSN]: 16 • When the communication driver is [CC-Link IE TSN (Built-in Ethernet)]: 4	△
[IP Address]		192.168.3.24	△
[Reserved/Error Invalid Station]		No setting	△
[Network Synchronous Communication]		Asynchronous	△
[Communication Period Setting]		Basic Period	△*1

*1 When communication is performed at 100 Mbps using [CC-Link IE TSN (built-in Ethernet)], connection may not be established if [Communication Period Setting] is not set to [Low] in the device station setting.

Precautions

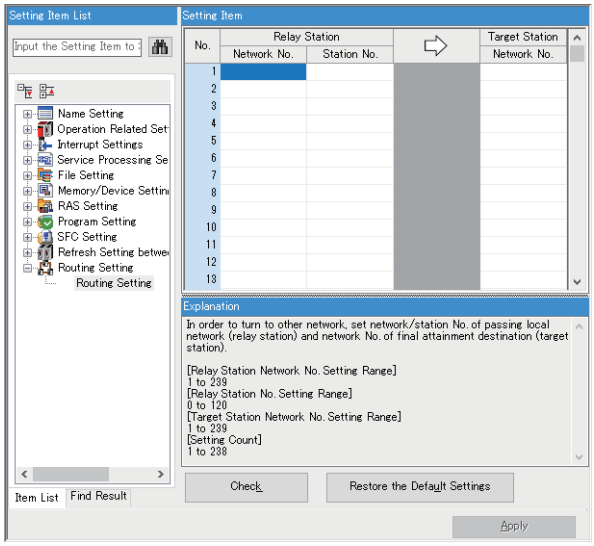
When a local station with the CC-Link IE TSN-compatible switching hub connected (linked-up) is added, IP address duplication is not detected at the destination station.
If IP address duplication (error code 1802H) is detected, disconnect the relevant local station from the network.
Otherwise, transient transmission may be performed to an unintended station because multiple stations with the same IP address exist on the network.

• Routing settings

Up to 238 target network numbers can be set.

However, the same number cannot be set twice or more (multiple times).

The GOT (host station) can access 238 different networks specified in the column of [Target Station Network No.].



Item		Range
[Relay Station]	[Network No.]	[1] to [239]
	[Station No.]	[0] to [120]
[Target Station]	[Network No.]	[1] to [239]

Point

Routing parameter settings for the request source

Routing parameter settings are also necessary for the request source GOT.

For the setting, refer to the following.

☞ Page 810 Routing parameter settings

■[Controller Setting] in GT Designer3

Item	Setting value
[Network Type]	CC-Link IE TSN
[Network No.]	1: Network No. 1
[Station No.]	1: Station No. 1
[IP Address]	192.168.3.24
[Subnet Mask]	255.255.255.0
[Default Gateway]	0.0.0.0
[Group No.]	0
[Mode Setting]	Online
[Communication Speed]	1 Gbps
[Refresh Interval]	25 ms
[Input for Err. Sta.]	Clear
[Retry]	3 times
[Timeout Time]	3 seconds
[Delay Time]	0 ms
[Monitor Speed]	High(Normal)

Point

• [Controller Setting] in GT Designer3

For the setting method of [Controller Setting] in GT Designer3, refer to the following.

☞ Page 802 [Controller Setting]

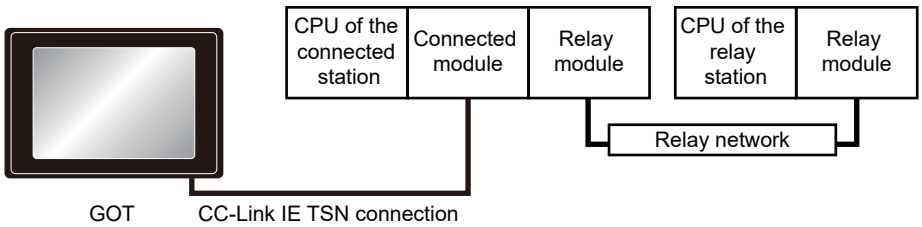
9.3.5 Access range for monitoring

When GOT is connected to the CPU of the station connected via CC-Link IE TSN, the range accessible via the CPU is as follows.

Point

- When monitoring other networks (Routing parameter settings)

To monitor other networks, routing parameter settings are necessary.
For the routing parameter settings, refer to the reference manual of the network connected.



○: Accessible, —: Inaccessible

CPU of the connected station	Connected module	Relay station									
		Relay network	CPU of the relay station								
			MXR	RCPU	LCPU	QCPU (Q mode)	QSCPU	QCPU (A mode)	QnACPU	ACPU	FX5CPU
RCPU	☞ Page 796 Connectable devices	Ethernet	○*7	○*5	○	○*6	○	—	○	—	○*3
		CC-Link IE TSN	○*7	○*1	—	—	—	—	—	—	○*3
		CC-Link IE Controller Network	○*7	○	—	○	○	—	—	—	—
		CC-Link IE Field Network	○*7	○	○	○*2	○	—	—	—	○*4
		MELSECNET/H, MELSECNET/10	—	—	—	○	○	○	○	○*8	—
C Controller module (MELSEC iQ-R series)	☞ Page 796 Connectable devices	CC-Link IE TSN	○*7	○*1	—	—	—	—	—	—	○*3
		CC-Link IE Controller Network	○*7	○	—	○	○	—	—	—	—
		CC-Link IE Field Network	○*7	○	○	○*2	○	—	—	—	○*4
		MELSECNET/H, MELSECNET/10	—	—	—	○	○	○	○	○*8	—

*1 RnCPU, RnENCPU, RnSFCPU, and MELSECWinCPU (MELSEC iQ-R series) are supported.
*2 QnUDVCPU, QnUDECPU, QnUDEHCPU, QnUCPU, QnUDCPU, and QnUDHCPU are supported.
*3 FX5U and FX5UC are supported.
*4 FX5U, FX5UC, and FX5UJ are supported.
*5 The C Controller module (MELSEC iQ-R series) is not supported.
*6 The C Controller module (MELSEC-Q series) is not supported.
*7 Regardless of whether encrypted communications are performed, the MELSEC MX Controller can be used as the relay station.
To perform encrypted communication, settings need to be configured.
For details, refer to the following.
☞ Page 90 Setting procedure of the encrypted communication
*8 AnUCPU and AnUSCPU are supported.

9.3.6 Firmware of the CC-Link IE TSN communication unit

Firmware versions and supported functions

Available functions differ depending on the firmware version of the CC-Link IE TSN communication unit.

Firmware version	Supported function
01	Cyclic transmission (line connection, star connection)
02	• Multicast mode • Communication speed 100Mbps • Time setting function • Firmware update function
03	Ring connection
05	CC-Link IE TSN protocol version 2.0

How to check the firmware version

Check the firmware version in the text display on the GOT.

Set the text display as follows.

- Device: SW003D
- Number of displayed digits: 2

For details on the text display object, refer to the following.

📖GT Designer3 (GOT3000) Screen Design Manual

Firmware update

Use the firmware update tool installed to a personal computer to update the firmware of the CC-Link IE TSN communication unit through a network.

The following shows how to execute firmware update.

Point

- CC-Link IE TSN firmware update tool

For details on the firmware update tool, such as the operating environment, installation procedure, and operating procedure, refer to the following.

📖CC-Link IE TSN Firmware Update Tool Reference Manual

- CC-Link IE TSN communication unit

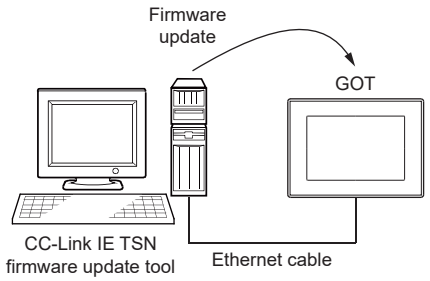
For details on the CC-Link IE TSN communication unit, refer to the following.

📖CC-Link IE TSN Communication Unit User's Manual

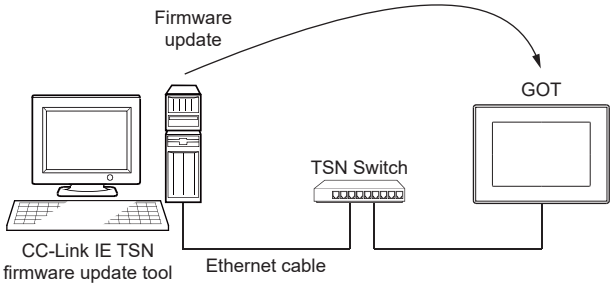
■Connection method

Use one of the following methods to connect the personal computer on which the firmware update tool is to run and the CC-Link IE TSN communication unit on the GOT.

- Direct connection



- Connection via a hub



Point

For the connection via a hub, use a TSN Switch.
For details on the TSN Switch, refer to the following.
📖MELSEC iQ-R CC-Link IE TSN User's Manual (Startup)
📖MELSEC iQ-R CC-Link IE TSN Plus Master/Local Module User's Manual
📖MELSEC iQ-R Motion Module User's Manual (Startup)

■Firmware update procedure

Update the firmware as follows.

1. Stop communication of the CC-Link IE TSN communication unit in which the firmware is updated.

Perform one of the following operations to stop communication.

- Disconnect the master station from the network.
- Disconnect the host station from the network.

2. Configure the settings required for the firmware update tool.

- Network configuration settings

Item	Setting
Module	GT25-J71GN13-T2
IP Address	IP address of the CC-Link IE TSN communication unit
FTP Username	GT25-J71GN13
FTP Password	GT25-J71GN13

- Application settings

Item	Setting
FTP Mode	Active Mode
Firmware Update Timeout(s)	900sec

For the settings other than the above, refer to the following.

📖CC-Link IE TSN Firmware Update Tool Reference Manual

3. Update the firmware of the CC-Link IE TSN communication unit.

4. After the update, the GOT on which the unit is mounted is restarted.

After the restart, the CC-Link IE TSN communication unit operates with the updated firmware.

Point

Firmware file

For the firmware file used for update, contact your local sales office.

Precautions for firmware update

The following shows the precautions for executing firmware update.

■When firmware update is not performed

Make sure to stop communication of the CC-Link IE TSN communication unit, and then execute firmware update.

In the following cases, firmware update of the CC-Link IE TSN communication unit is not performed.

- While CC-Link IE TSN Control (GS620.b0) is on

Turn off this bit.

For details on the CC-Link IE TSN Control (GS620.b0), refer to the following.

📖GT Designer3 (GOT3000) Screen Design Manual

- While the CC-Link IE TSN communication unit is communicating

Disconnect the master station or host station from the network to stop communication of the CC-Link IE TSN communication unit.

- While the GOT is being operated with GT Designer3

Do not perform operations such as writing the package data and executing the GOT diagnostics with GT Designer3.

- Performing an operation that makes the GOT offline

Do not perform any operation that makes the GOT offline in the utility.

■Power-off during firmware update

Do not turn off the GOT during firmware update.

Doing so may cause the CC-Link IE TSN communication unit to become unusable.

■Hardware version of the CC-Link IE TSN communication unit

Firmware update may not be available depending on the combination of the hardware and firmware versions of the CC-Link IE TSN communication unit.

If firmware update cannot be performed, check the error code of the firmware update tool.

■Firmware downgrade

If the version of the firmware file used for the update tool is earlier than the firmware version of the target CC-Link IE TSN communication unit, a warning message prompting for downgrading is displayed.

Select a new firmware file to execute firmware update.

Otherwise, execute downgrading.

■GT Designer3 version and CC-Link IE TSN communication unit firmware version

The combination of the GT Designer3 version and CC-Link IE TSN communication unit (GT25-J71GN13-T2) firmware version is restricted.

The following shows the combinations of the GT Designer3 version and the CC-Link IE TSN communication unit firmware version.

○: Supported, —: Not supported

GT Designer3 version	CC-Link IE TSN communication unit (GT25-J71GN13-T2)	
	01	02 or later
Version1.217B to Version1.220E	○	—
Version1.225K or later	—	○

Update the firmware of the CC-Link IE TSN communication unit (GT25-J71GN13-T2) with firmware version 01 so that the GT Designer3 version 1.225K or later supports the unit.

For firmware update of the CC-Link IE TSN communication unit (GT25-J71GN13-T2), refer to the following.

☞ Page 817 Firmware of the CC-Link IE TSN communication unit

■Firmware versions of the CC-Link IE TSN-equipped module or Motion module on the master station and the CC-Link IE TSN communication unit

Depending on the combination of firmware versions of the modules and units, the GOT cannot access the network.

The following shows the module and unit firmware version combinations.

○: Accessible, —: Inaccessible

CC-Link IE TSN-equipped module or Motion module on the master station		CC-Link IE TSN communication unit (GT25-J71GN13-T2)	
		01	02 or later
RJ71GN11-T2	03 or earlier	○	—
	04 or later	—	○
RJ71GN11-EIP	From the first product	—	○
RD78G(H)	19 or earlier	—	—
	20 or later	—	○

Update the firmware of the module or unit so that the GOT can access the network.

For firmware update of the CC-Link IE TSN-equipped module (RJ71GN11-T2, RJ71GN11-EIP) or Motion module (RD78G(H)), refer to the following.

📖MELSEC iQ-R Module Configuration Manual
📖MELSEC iQ-R CC-Link IE TSN Plus Master/Local Module User's Manual
📖MELSEC iQ-R Motion Module User's Manual (Application)

For firmware update of the CC-Link IE TSN communication unit (GT25-J71GN13-T2), refer to the following.

☞ Page 817 Firmware of the CC-Link IE TSN communication unit

9.4 MELSEC iQ-F series (CC-Link IE TSN connection)

☞ Page 822 Connectable devices
☞ Page 823 System configuration
☞ Page 826 GOT side settings
☞ Page 835 PLC side settings
☞ Page 840 Access range for monitoring
☞ Page 841 Firmware of the CC-Link IE TSN communication unit

9.4.1 Connectable devices

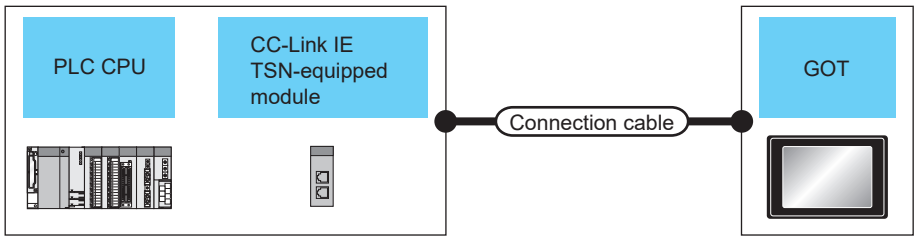
The following table shows the connectable models.

○: Supported, —: Not supported

Controller	Model	Clock	CC-Link IE TSN-equipped module	Connectable model
MELSEC iQ-F series	FX5U*1 FX5UC*1 FX5UJ*2	○	FX5-CCLGN-MS	GT37 SoftGOT3000

*1 Use firmware version 1.250 or later.
*2 Use firmware version 1.040 or later.

9.4.2 System configuration



For details on the connection cable and overall cable length, refer to the following.

☞ Page 824 Connection cable
☞ Page 824 Overall length

For details on the maximum number of connected devices, refer to the following.

☞ Page 824 Maximum number of connected devices

Controller	CC-Link IE TSN-equipped module	Connection cable	GOT	
			Interface	Model
MELSEC iQ-F series	FX5-CCLGN-MS	Twisted pair cable	Built-in Ethernet interface of GOT	GT37 SoftGOT3000
			GT37-IF2000 + GT25-J71GN13-T2	

Point

For the system configuration of the CC-Link IE TSN-equipped module, refer to the following manual.
📖MELSEC iQ-F FX5 User's Manual (CC-Link IE TSN)

Precautions

■Connection to a CC-Link IE TSN-equipped module by Ethernet

The CC-Link IE TSN communication unit (GT25-J71GN13-T2) does not support the Ethernet connection.
For the Ethernet connection, use an Ethernet interface built in the GOT.
For details on the Ethernet connection, refer to the following.

☞ Page 311 Connection to CC-Link IE TSN-equipped module

■Connection status check after the GOT startup

The connection with the network cannot be established until the connection check with the master station is completed after the GOT startup.
To check the status of connection with the master station, use the CC-Link IE TSN Connection Status (GS1297) of the GOT internal device.
For details on the CC-Link IE TSN Connection Status (GS1297), refer to the following.
📖GT Designer3 (GOT3000) Screen Design Manual

Connection cable

Use a connection cable that meets the following standards.

Standard	Category
100BASE-TX	Shielded twisted pair cable (double-shielded, STP) or shielded twisted pair cable (STP) of category 5 or higher
1000BASE-T	Shielded twisted pair cable (double-shielded, STP) or shielded twisted pair cable (STP) of category 5e or higher

For the twisted pair cable, use a straight cable.

Use cables that meet the IEEE802.3 100BASE-TX/1000BASE-T standards.

When using a hub, use a TSN Switch or General-purpose Switch according to the system configuration.

For usable TSN Switches and General-purpose Switches, refer to the following.

📖MELSEC iQ-F FX5 User's Manual (CC-Link IE TSN)

Overall length

The overall cable length is 12100 m.

The overall cable length and cable length between stations vary depending on the connection method (line, star, or ring), the system configuration, etc.

For details, refer to the following manual.

📖MELSEC iQ-F FX5 User's Manual (CC-Link IE TSN)

Maximum number of connected devices

The following shows the number of GOTs connectable to one controller.

Controller	
Model	**Number of GOTs connectable to one PLC**
MELSEC iQ-F series	60

Connecting one PLC to multiple GOTs

When multiple GOT units are simultaneously accessing one PLC, the GOT writing process (transient/cyclic) and reading process (transient) may slow down.

This slow access can be remedied with the following countermeasures.

<Countermeasures>

■Improve response speed on PLC side

Insert a COM instruction on the PLC to increase the response speed.

Note that caution is required as the scan time will increase.

■Screen design using cyclic devices

Create the screen with cyclic devices instead of using transient devices.

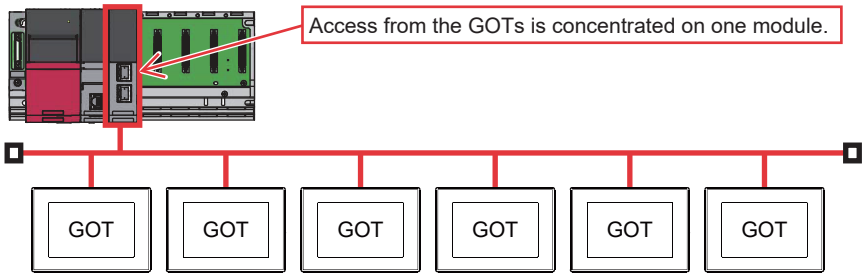
■Split GOT connection destinations into several systems

Add a master/local module to the PLC side, and split the GOT connection destinations into several systems.

Improve the current system configuration.

(Example of current system configuration)

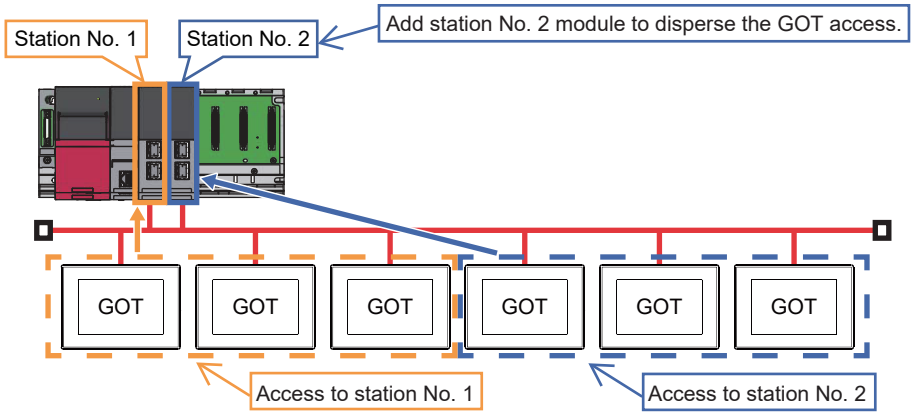
In the following system configuration, access from the GOT is concentrated on one module.



(Improvement measure)

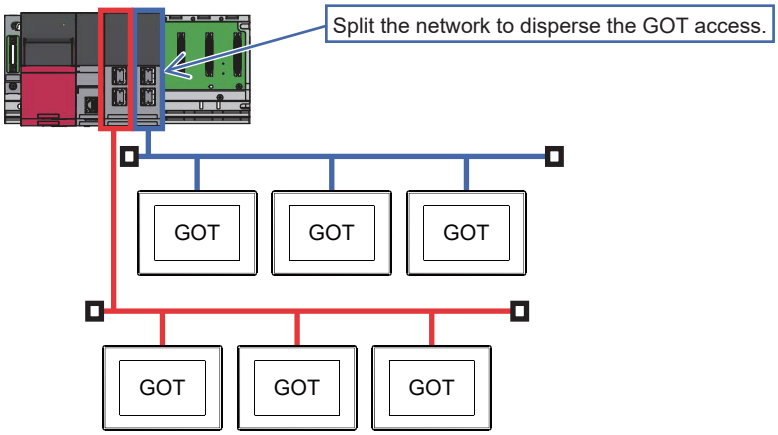
- Adding a module to the PLC side

Add a module to the PLC side to disperse the GOT access destinations.



- Split the network

Split the network to disperse the GOT access.

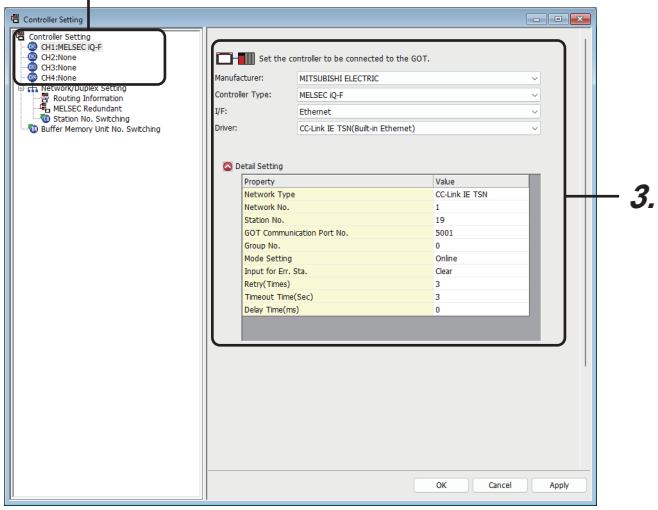


9.4.3 GOT side settings

[Controller Setting]

Set the channel of the connected controller.

List menu



Operating procedure

1. Select [Common] → [Controller Setting] from the menu.
2. In the [Controller Setting] window, select the channel number to be used from the list menu.
3. Set the following items.

Item	Description
[Manufacturer]	[MITSUBISHI ELECTRIC]
[Controller Type]	[MELSEC iQ-F]
[I/F]	• [Ethernet] • [Extend Unit]
[Driver]	• When [Ethernet] is selected for [I/F]: [CC-Link IE TSN (Built-in Ethernet)] • When [Extend Unit] is selected for [I/F]: [CC-Link IE TSN]
[Detail Setting]	Configure the settings according to the usage environment. ☞ Page 827 [Detail Setting]

4. When you have completed the settings, click the [OK] button.

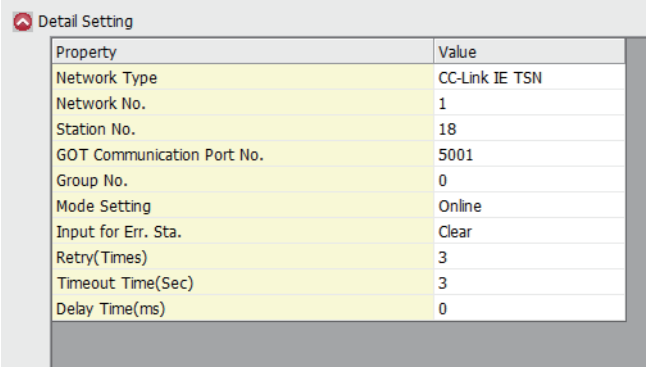
Point

The controller settings can be checked in [I/F Communication Setting].
For details, refer to the following.
📖GT Designer3 (GOT3000) Screen Design Manual

■[Detail Setting]

Configure the settings according to the usage environment.

- [CC-Link IE TSN (built-in Ethernet)]



Item	Description	Range
[Network Type]	Set the network type.	[CC-Link IE TSN]
[Network No.]	Set the network number.	[1] to [239]
[Station No.]	Set the station number of the GOT.	[1] to [120]
[GOT Communication Port No.]	Set the GOT port number for connection with the Ethernet module.	[1024 to 5010], [5014 to 49152], [49171 to 65534]
[Group No.]	—	[0]
[Mode Setting]	Set the operation mode of the GOT. For details on the unit communication test mode, refer to the following. ☞ Page 830 Unit communication test	[Online]
[Input for Err. Sta.]	Set whether to hold or clear the input from the station where the data link has failed due to power-off or other reasons.	[Clear], [Hold]
[Retry]	Set the number of retries to be performed when a communication timeout occurs. When receiving no response after retries, the communication times out.	[0] times to [5] times
[Timeout Time]	Set the time period for a communication to time out.	[1] second to [90] seconds
[Delay Time]	Set the delay time for reducing the load of the network and destination PLC.	[0] ms to [300] ms

Precautions

■Communication driver

To set CC-Link IE TSN (built-in Ethernet), use port 1 on the built-in Ethernet interface of the GOT.

Two or more CC-Link IE TSN (built-in Ethernet) cannot be set in one GOT at the same time.

■Authentication class for communication

When CC-Link IE TSN (built-in Ethernet) is used for connection, communication is available only for the master station of authentication class B.

• [CC-Link IE TSN]

Detail Setting

Property	Value
Network Type	CC-Link IE TSN
Network No.	1
Station No.	1
IP Address	192.168.3.24
Subnet Mask	255.255.255.0
Default Gateway	0.0.0.0
Group No.	0
Mode Setting	Online
Communication Speed	1Gbps
Refresh Interval(ms)	25
Input for Err. Sta.	Clear
Retry(Times)	3
Timeout Time(Sec)	3
Delay Time(ms)	0
Monitor Speed	High(Normal)
CPU No. switching GD device first No. (3 points)	500
Module No. switching GD device first No. (16 points)	550
Servo axis switching GD device first No. (16 points)	10

Item	Description	Range
[Network Type]	Set the network type.	[CC-Link IE TSN]
[Network No.]	Set the network number.	[1] to [239]
[Station No.]	Set the station number of the GOT.	[1] to [120]
[IP Address][*1]	Set the IP address of the GOT.	[0.0.0.1] to [223.255.255.254]
[Subnet Mask]	When a subnetwork is used, set the subnet mask. (Only for connection via router) If the sub network is not used, the default value is set.	[0.0.0.0] to [255.255.255.255][*2]
[Default Gateway]	Set the router address of the default gateway where the GOT is connected. (Only for connection via router)	[0.0.0.0] to [223.255.255.254]
[Group No.]	—	[0]
[Mode Setting]	Set the operation mode of the GOT. For details on the unit communication test mode, refer to the following. ☞ Page 830 Unit communication test	[Online], [Offline], [Module Communication Test]
[Communication Speed]	Set the communication speed of the GOT.	[1Gbps], [100Mbps]
[Refresh Interval]	Set the number of refreshes to secure the send/receive data per station during communication.	[1] ms to [1000] ms
[Input for Err. Sta.]	Set whether to hold or clear the input from the station where the data link has failed due to power-off or other reasons.	[Clear], [Hold]
[Retry]	Set the number of retries to be performed when a communication timeout occurs. When receiving no response after retries, the communication times out.	[0] times to [5] times
[Timeout Time]	Set the time period for a communication to time out.	[1] second to [90] seconds
[Delay Time]	Set the delay time for reducing the load of the network and destination PLC.	[0] ms to [300] ms
[Monitor Speed]	Set the monitor speed of the CC-Link IE TSN network. This setting is not valid in all systems.	[High(Normal)], [Middle], [Low]
[CPU No. switching GD device first No. (3 points)]	Set the start device number of the GD devices for CPU number switching. For details, refer to the following. ☞ Page 831 Start device number of the GD devices for CPU number switching	[0] to [65520]
[Module No. switching GD device first No. (16 points)]	Set the start device number of the GD devices for module number switching. For details, refer to the following. ☞ Page 832 Start device number of the GD devices for module number switching	[0] to [65520]
[Servo axis switching GD device first No. (16 points)]	Set the start device number of the GD devices for servo axis switching. For details, refer to the following. ☞ Page 833 Start device number of the GD devices for servo axis switching	[0] to [65520]

*1 If any of the following settings is configured in the IP address, a communication timeout error occurs.
- The third octet and fourth octet are all 1 (*.*.255.255) or all 0 (*.*.0.0).
- The host part is all 1 (*.*.*.255) or all 0 (*.*.*.0).
- Some reserved addresses determined for special applications

For details, refer to the following manuals.
MELSEC iQ-F FX5 User's Manual (CC-Link IE TSN)

*2 When the subnet mask field is filled with 0, the operation is the same as when the field is left blank.

Point

- Controller settings using the GT37 utility

The controller settings can be changed in [Communication Settings] of the GT37 utility after writing [Communication Settings] of project data to GT37.
For details on the GT37 utility, refer to the following manual.
GOT3000 Series User's Manual (Utility & Maintenance Functions)

- Priority of the settings in [Controller Setting]

When the settings are configured in GT Designer3 or in the GT37 utility, the latest settings are effective.

- Setting the refresh interval

For [Refresh Interval(ms)] in [Controller Setting] in GT Designer3, set 5 ms or more per 1K words for the total size of the device set in [Network Configuration Settings] in GX Works3.
Setting less than 5 ms may affect the processing of the GOT such as a decrease of the monitoring speed.
The following shows setting examples of the total device size and refresh interval.

Total device size	Refresh Interval
1K words	5 ms or more
2K words	10 ms or more
3K words	15 ms or more
5K words	25 ms or more
36K words	180 ms or more

■Unit communication test

In the unit communication test, connect port 1 and port 2 of the CC-Link IE TSN communication unit mounted on the GOT with a network cable, and check if the unit operates properly with the GOT.

The following shows the test procedure and how to check the test result.

1. Perform either of the following operations to set the GOT to the unit communication test mode.

- Write the project data for which [Mode Setting] in [Detail Setting] is set to [Stand-alone test mode] to the GOT.
- Set [Mode setting] in [Detail setting] to [Module Communication Test] in the GOT utility.

2. A unit communication test will start at GOT startup.

3. After the test is complete, check the result with the ERR LED on the communication unit and GOT internal devices (CC-Link IE TSN Module Communication Test Status (GS1114) or CC-Link IE TSN Module Communication Test Error (GS1115)).

Check		Test result
ERR LED on the communication unit		OFF: Normal ON: Error
GOT internal device	CC-Link IE TSN Module Communication Test Status (GS1114)	Notifies the execution status of a communication test of the CC-Link IE TSN communication unit. • b0: Turns on when a communication test is executed. • b1: Turns on while a communication test is being executed. • b2: Turns on when a communication test is complete. • b3 to b15: Use prohibited
	CC-Link IE TSN Module Communication Test Error (GS1115)	Notifies that an error has occurred during a communication test of the CC-Link IE TSN communication unit. • b0: Turns on if there is a problem with the port 1 side of the CC-Link IE TSN communication unit. • b1: Turns on if there is a problem with the connection interface (port 1) of the CC-Link IE TSN communication unit or the Ethernet cable terminal. • b2: Turns on if there is a problem with the port 1 side Ethernet cable of the CC-Link IE TSN communication unit. • b3 to b7: Use prohibited • b8: Turns on if there is a problem with the port 2 side of the CC-Link IE TSN communication unit. • b9: Turns on if there is a problem with the connection interface (port 2) of the CC-Link IE TSN communication unit or the Ethernet cable terminal. • b10: Turns on if there is a problem with the port 2 side Ethernet cable of the CC-Link IE TSN communication unit. • b11 to b15: Use prohibited

For details on the GOT internal devices (CC-Link IE TSN Module Communication Test Status (GS1114) and CC-Link IE TSN Module Communication Test Error (GS1115)), refer to the following.

📖GT Designer3 (GOT3000) Screen Design Manual

4. If no error is detected, change the setting of [Mode Setting] from [Module Communication Test] in [Detail setting].

Since the communication with the controller is not performed when [Mode setting] is set to [Module Communication Test], the communication timeout error occurs when the device of controller is monitored.

5. If any error is detected, replace the communication unit.

■Start device number of the GD devices for CPU number switching

• Indirect specification of a CPU number

[CPU No.] can be indirectly specified with the GOT internal registers (GD devices) by specifying a value (100 to 102) to [CPU No.] in the device setting dialog in GT Designer3.

Set the start device number of the GD devices to be used in [CPU No. switching GD device first No. (3 points)].

[CPU No.] is specified with three consecutive GD devices, starting from the set device number.

When [500] is set to [CPU No. switching GD device first No. (3 points)], GD500 to GD502 are used to specify [CPU No.] as shown in the following table.

CPU No.	GD device	Setting range
100	GD500	1 to 4 Setting a value outside the range causes a communication timeout error. Specifying a nonexistent CPU number or a CPU number not supporting a multiple CPU system with a device causes a controller error.
101	GD501	
102	GD502	

• Indirect specification of a CPU number on the initially displayed screen

Set [CPU No. switching GD device first No. (3 points)] so that the values of the GD devices are retained and monitored upon the GOT startup.

• Indirect specification of a CPU number for multi-channel connection

If the setting range of [CPU No. switching GD device first No. (3 points)] set for each channel overlaps, the monitoring target CPU number set to each channel is switched simultaneously.

Set [CPU No. switching GD device first No. (3 points)] for each channel so that the setting range does not overlap.

• Indirect specification of a station number and a CPU number for multi-channel connection

When GD10 to GD25 are used to specify the station number of an inverter or non-Mitsubishi temperature controller connected, setting [10] to [CPU No. switching GD device first No. (3 points)] in a different channel switches the monitoring target CPU number and station number of an inverter or non-Mitsubishi temperature controller set to each channel simultaneously.

Set [CPU No. switching GD device first No. (3 points)] so that the setting range does not overlap the station number of an inverter or non-Mitsubishi temperature controller.

■Start device number of the GD devices for module number switching

• Indirect specification of a module number

For connection via a Simple Motion module, [Unit No.] can be specified with the GOT internal registers (GD devices) by specifying a value (100 to 10F) to [Unit No.] in the device setting dialog in GT Designer3.

Set the start device number of the GD devices to be used in [Module No. switching GD device first No. (16 points)].

[Unit No.] is specified with 16 consecutive GD devices, starting from the set device number.

When [550] is set to [Module No. switching GD device first No. (16 points)], GD550 to GD565 are used to specify [Unit No.] as shown in the following table.

Module No.	GD device	Setting range
100	GD550	01 to 10 Setting a value outside the above range causes a device range error.
101	GD551	
102	GD552	
103	GD553	
104	GD554	
105	GD555	
106	GD556	
107	GD557	
108	GD558	
109	GD559	
10A	GD560	
10B	GD561	
10C	GD562	
10D	GD563	
10E	GD564	
10F	GD565	

• Indirect specification of a module number on the initially displayed screen

Set [Module No. switching GD device first No. (16 points)] so that the values of the GD devices are retained and monitored upon the GOT startup.

• Indirect specification of a module number for multi-channel connection

If the setting range of [Module No. switching GD device first No. (16 points)] set for each channel overlaps, the module number of the Simple Motion module via the servo amplifier device of each channel is switched simultaneously.

Set [Module No. switching GD device first No. (16 points)] for each channel so that the setting range does not overlap.

• Indirect specification of a station number and a module number for multi-channel connection

When GD10 to GD25 are used to specify the station number of an inverter or non-Mitsubishi temperature controller connected, setting [10] to [Module No. switching GD device first No. (16 points)] switches the module number of the Simple Motion module via the servo amplifier device and the station number of an inverter or non-Mitsubishi temperature controller set to each channel simultaneously.

Set [Module No. switching GD device first No. (16 points)] so that the setting range does not overlap the station number of an inverter or non-Mitsubishi temperature controller.

■Start device number of the GD devices for servo axis switching

• Indirect specification of a servo axis number

For connection via a Motion CPU or Simple Motion module, a servo axis number can be indirectly specified with GOT internal registers (GD devices) by specifying a value (100 to 115) to the axis number of the servo amplifier device.

Set the start device number of the GD devices to be used in [Servo axis switching GD device first No. (16 points)].

Specify a servo axis number with 16 consecutive GD devices, starting the set device number.

When [10] is set to [Servo axis switching GD device first No. (16 points)], GD10 to GD25 are used to specify a servo axis number as shown in the following table.

Servo axis No.	GD device	Setting range
100	GD10	1 to 64 Setting a value outside the above range causes a device range error.
101	GD11	
102	GD12	
103	GD13	
104	GD14	
105	GD15	
106	GD16	
107	GD17	
108	GD18	
109	GD19	
110	GD20	
111	GD21	
112	GD22	
113	GD23	
114	GD24	
115	GD25	

• Indirect specification of a servo axis number on the initially displayed screen

Set [Servo axis switching GD device first No. (16 points)] so that the values of the GD devices are retained and monitored upon the GOT startup.

• Indirect specification of a servo axis number for multi-channel connection

If the setting rage of [Servo axis switching GD device first No. (16 points)] set for each channel overlaps, the axis number of the servo amplifier of each channel is switched simultaneously.

Set [Servo axis switching GD device first No. (16 points)] for each channel so that the setting range does not overlap.

• Indirect specification of a station number and a servo axis number for multi-channel connection

When GD10 to GD25 are used to specify the station number of an inverter or non-Mitsubishi temperature controller connected, setting [10] to [Servo axis switching GD device first No. (16 points)] switches the axis number of the servo amplifier and the station number of an inverter or non-Mitsubishi temperature controller set to each channel simultaneously.

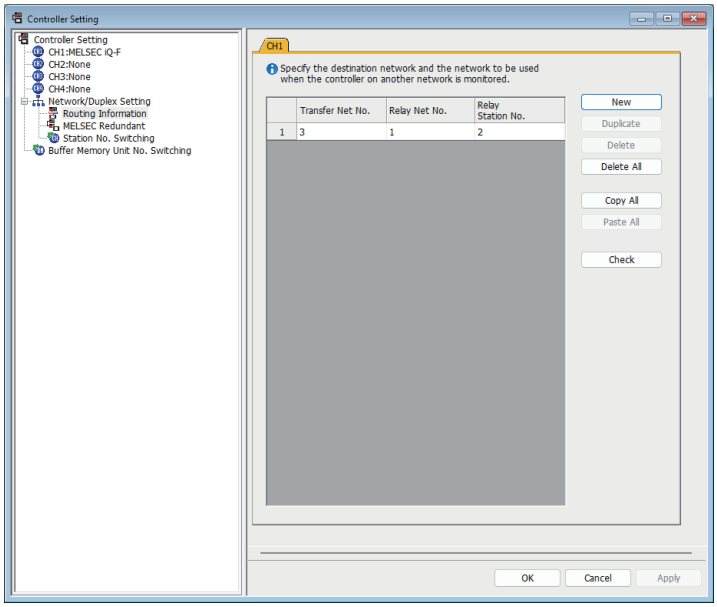
Set [Servo axis switching GD device first No. (16 points)] so that the setting range does not overlap the station number of an inverter or non-Mitsubishi temperature controller.

■Routing parameter settings

Up to 64 settings can be configured for [Transfer Net No.].

However, the same number cannot be set in [Transfer Net No.] twice or more (multiple times).

The GOT (host station) can access 64 different networks specified under [Transfer Net No.].



Item	Range
[Transfer Net No.]	[1] to [239]
[Relay Net No.]	[1] to [239]
[Relay Station No.]	[0] to [120]

Point

Routing parameter settings for the relay station

Routing parameter settings are also necessary for the relay station.

For the setting, refer to the following.

☞ Page 835 PLC side settings

9.4.4 PLC side settings

Model		Reference
MELSEC iQ-F series	FX5U FX5UC FX5UJ	☞ Page 835 Connection to MELSEC iQ-F series

Connection to MELSEC iQ-F series

This section describes the settings of the GOT and CC-Link IE TSN-equipped module in the system configuration shown below.

Point

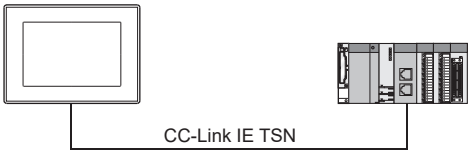
For details on the CC-Link IE TSN-equipped module, refer to the following manual.
📖MELSEC iQ-F FX5 User's Manual (CC-Link IE TSN)

■System configuration

The following shows a system configuration example for connection to the CC-Link IE TSN master/local module (FX5-CCLGN-MS).

Ex.

<GOT>
(Use the default value for settings other than the following.)
Network type : CC-Link IE TSN
Network No. : 1
PLC No. (GOT Station) : 1
IP address : 192.168.3.24
Mode Setting : Online



<CC-Link IE TSN Master/Local module>*1
(Use the default value for settings other than the following.)
Station type : Master Station
Network No. : 1
PLC No. (Station) : 0
IP address : 192.168.3.253

*1 The CC-Link IE TSN master/local module is mounted on slot 0 of the base unit.
The start I/O number of the CC-Link IE TSN master/local module is set to 0.

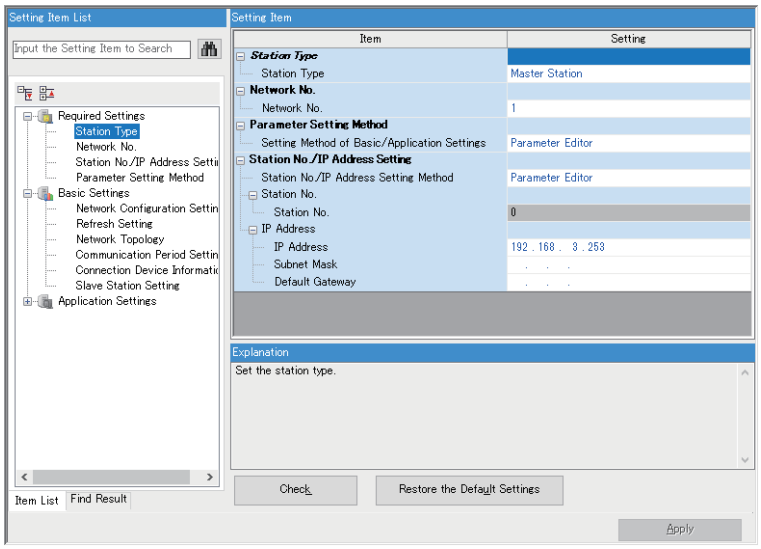
■[Parameter] in GX Works3

The following shows a parameter setting example for connection to the CC-Link IE TSN master/local module (FX5-CCLGN-MS).

Point

For connection to the CC-Link IE TSN master/local module (FX5-CCLGN-MS), use GX Works3 version 1.085P or later.

• Module parameter



○: Necessary, △: As necessary, —: Not necessary

Item		Setting value	Setting for GOT connection
[Station Type]		Master station	○
[Network No.][*1]		1	○
[Setting Method of Basic/Application Settings]		Set in parameter	○
[Station No./IP Address Setting Method]		Set in parameter	○
[Station No.]		0	○
[IP Address]		192.168.3.253	△
[Subnet Mask]		—	—
[Default Gateway]		—	—
[Network Configuration Settings]		☞ • Network configuration settings	○
[Refresh Setting]		Use default value.	△
[Network Topology]		Line, star, line and star mixed	○
[Basic Period Setting]	[Setting in Units of 1μs]	Not set	○
	[Communication Period Interval Setting (Do not Set it in Units of 1μs)]	1000.00 μs	○
	[Cyclic Transmission Time (CC IE TSN)]	500.00 μs	○
[Multiple Period Setting]	[Normal-Speed]	×4	○
	[Low-Speed]	×16	○
	[Authentication Class Setting]	• When the communication driver is [CC-Link IE TSN]: Authentication class B • When the communication driver is [CC-Link IE TSN (Built-in Ethernet)]: Authentication class A	○
	[Disconnection Detection Setting]	4 times	○

*1 Set the same network number as that of the GOT.

Point

- When changing the module parameter

After writing module parameters to the PLC CPU, turn off then on or reset the PLC CPU.

- When the GOT monitors a cyclic device of other stations

Set [Communication Mode] of the master station to [Multicast].

Precautions

When monitoring the master and local stations on the same network as the GOT using transient transmission, the stations that can be monitored differ depending on the setting of [Communication Mode] of the CC-Link IE TSN-equipped module.

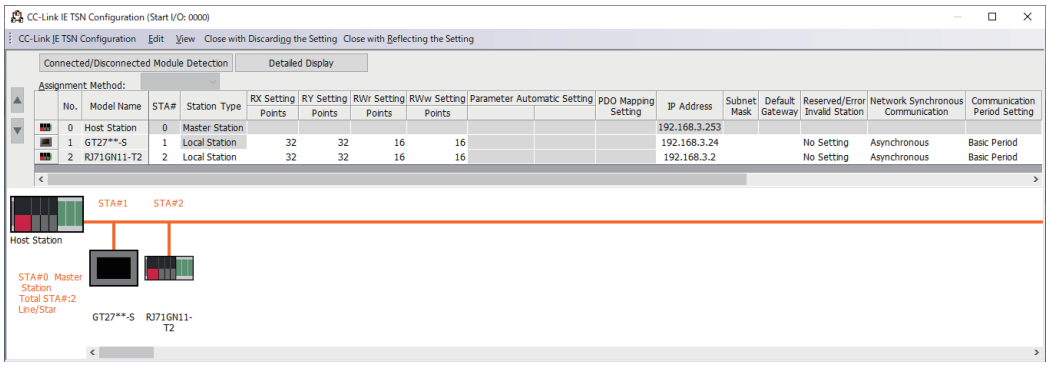
[Communication Mode]	Availability of monitoring
[Unicast]	Master station only
[Multicast]	Master station
	Local station that satisfies the following conditions • Being set as a local station in the network configuration setting • Not being a reserved or error invalid station

For the settings of the CC-Link IE TSN-equipped module, refer to the following.

📖MELSEC iQ-F FX5 User's Manual (CC-Link IE TSN)

To monitor the master and local stations on other networks using transient transmission, use a master station or local station that can be monitored on the same network as the GOT as a relay station.

• Network configuration settings



○: Necessary, △: As necessary, —: Not necessary

Item		Setting value	Setting for GOT connection
[Station No.]		1	△
[Station Type]		• When the communication driver is [CC-Link IE TSN]: Local station • When the communication driver is [CC-Link IE TSN (Built-in Ethernet)]: Remote station	△
[RX Setting]	[Points]	32	△
[RY Setting]	[Points]	32	△
[RWr Setting]	[Points]	• When the communication driver is [CC-Link IE TSN]: 16 • When the communication driver is [CC-Link IE TSN (Built-in Ethernet)]: 4	△
[RWw Setting]	[Points]	• When the communication driver is [CC-Link IE TSN]: 16 • When the communication driver is [CC-Link IE TSN (Built-in Ethernet)]: 4	△
[IP Address]		192.168.3.24	△
[Reserved/Error Invalid Station]		No setting	△
[Network Synchronous Communication]		Asynchronous	△
[Communication Period Setting]		Basic Period	△*1

*1 When communication is performed at 100 Mbps using [CC-Link IE TSN (built-in Ethernet)], connection may not be established if [Communication Period Setting] is not set to [Low] in the device station setting.

Precautions

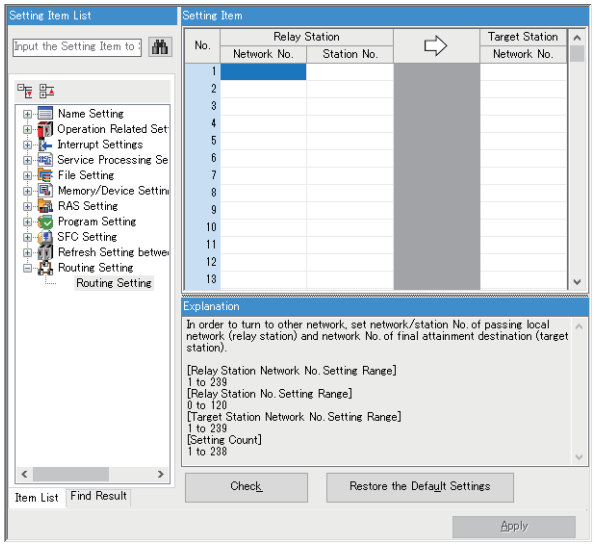
When a local station with the CC-Link IE TSN-compatible switching hub connected (linked-up) is added, IP address duplication is not detected at the destination station.
If IP address duplication (error code 1802H) is detected, disconnect the relevant local station from the network.
Otherwise, transient transmission may be performed to an unintended station because multiple stations with the same IP address exist on the network.

• Routing settings

Up to 238 target network numbers can be set.

However, the same number cannot be set twice or more (multiple times).

The GOT (host station) can access 238 different networks specified in the column of [Target Station Network No.].



Item		Range
[Relay Station]	[Network No.]	[1] to [239]
	[Station No.]	[0] to [120]
[Target Station]	[Network No.]	[1] to [239]

Point

Routing parameter settings for the request source

Routing parameter settings are also necessary for the request source GOT.

For the setting, refer to the following.

☞ Page 834 Routing parameter settings

■[Controller Setting] in GT Designer3

Item	Setting value
[Network Type]	CC-Link IE TSN
[Network No.]	1: Network No. 1
[Station No.]	1: Station No. 1
[IP Address]	192.168.3.24
[Subnet Mask]	255.255.255.0
[Default Gateway]	0.0.0.0
[Group No.]	0
[Mode Setting]	Online
[Communication Speed]	1 Gbps
[Refresh Interval]	25 ms
[Input for Err. Sta.]	Clear
[Retry]	3 times
[Timeout Time]	3 seconds
[Delay Time]	0 ms
[Monitor Speed]	High(Normal)

Point

• [Controller Setting] in GT Designer3

For the setting method of [Controller Setting] in GT Designer3, refer to the following.

☞ Page 826 [Controller Setting]

9.4.5 Access range for monitoring

Only the connected CPU can be accessed.

9.4.6 Firmware of the CC-Link IE TSN communication unit

Firmware versions and supported functions

Available functions differ depending on the firmware version of the CC-Link IE TSN communication unit.

Firmware version	Supported function
01	Cyclic transmission (line connection, star connection)
02	• Multicast mode • Communication speed 100Mbps • Time setting function • Firmware update function
03	Ring connection
05	CC-Link IE TSN protocol version 2.0

How to check the firmware version

Check the firmware version in the text display on the GOT.

Set the text display as follows.

- Device: SW003D
- Number of displayed digits: 2

For details on the text display object, refer to the following.

📖GT Designer3 (GOT3000) Screen Design Manual

Firmware update

Use the firmware update tool installed to a personal computer to update the firmware of the CC-Link IE TSN communication unit through a network.
The following shows how to execute firmware update.

Point

- CC-Link IE TSN firmware update tool

For details on the firmware update tool, such as the operating environment, installation procedure, and operating procedure, refer to the following.
CC-Link IE TSN Firmware Update Tool Reference Manual

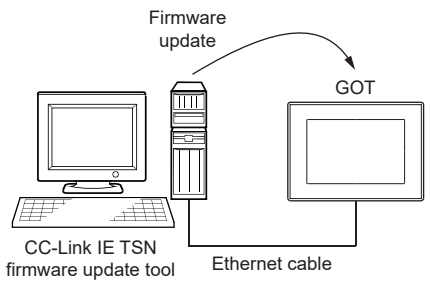
- CC-Link IE TSN communication unit

For details on the CC-Link IE TSN communication unit, refer to the following.
CC-Link IE TSN Communication Unit User's Manual

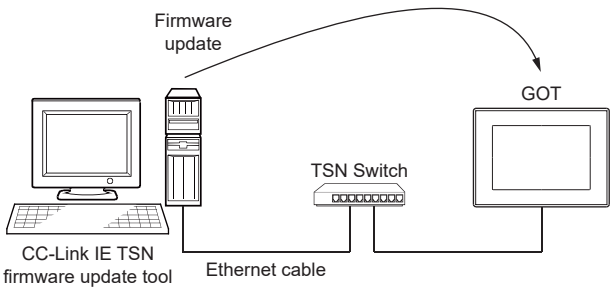
■Connection method

Use one of the following methods to connect the personal computer on which the firmware update tool is to run and the CC-Link IE TSN communication unit on the GOT.

- Direct connection



- Connection via a hub



Point

For the connection via a hub, use a TSN Switch.
For details on the TSN Switch, refer to the following.
MELSEC iQ-F FX5 User's Manual (CC-Link IE TSN)

■Firmware update procedure

Update the firmware as follows.

1. Stop communication of the CC-Link IE TSN communication unit in which the firmware is updated.

Perform one of the following operations to stop communication.

- Disconnect the master station from the network.
- Disconnect the host station from the network.

2. Configure the settings required for the firmware update tool.

- Network configuration settings

Item	Setting
Model	GT25-J71GN13-T2
IP Address	IP address of the CC-Link IE TSN communication unit
FTP Username	GT25-J71GN13
FTP Password	GT25-J71GN13

- Application settings

Item	Setting
FTP Mode	Active Mode
Firmware Update Timeout(s)	900sec

For the settings other than the above, refer to the following.

📖CC-Link IE TSN Firmware Update Tool Reference Manual

3. Update the firmware of the CC-Link IE TSN communication unit.

4. After the update, the GOT on which the unit is mounted is restarted.

After the restart, the CC-Link IE TSN communication unit operates with the updated firmware.

Point

Firmware file

For the firmware file used for update, contact your local sales office.

Precautions for firmware update

The following shows the precautions for executing firmware update.

■When firmware update is not performed

Make sure to stop communication of the CC-Link IE TSN communication unit, and then execute firmware update.

In the following cases, firmware update of the CC-Link IE TSN communication unit is not performed.

- While CC-Link IE TSN Control (GS620.b0) is on

Turn off this bit.

For details on the CC-Link IE TSN Control (GS620.b0), refer to the following.

📖GT Designer3 (GOT3000) Screen Design Manual

- While the CC-Link IE TSN communication unit is communicating

Disconnect the master station or host station from the network to stop communication of the CC-Link IE TSN communication unit.

- While the GOT is being operated with GT Designer3

Do not perform operations such as writing the package data and executing the GOT diagnostics with GT Designer3.

- Performing an operation that makes the GOT offline

Do not perform any operation that makes the GOT offline in the utility.

■Power-off during firmware update

Do not turn off the GOT during firmware update.

Doing so may cause the CC-Link IE TSN communication unit to become unusable.

■Hardware version of the CC-Link IE TSN communication unit

Firmware update may not be available depending on the combination of the hardware and firmware versions of the CC-Link IE TSN communication unit.

If firmware update cannot be performed, check the error code of the firmware update tool.

■Firmware downgrade

If the version of the firmware file used for the update tool is earlier than the firmware version of the target CC-Link IE TSN communication unit, a warning message prompting for downgrading is displayed.

Select a new firmware file to execute firmware update.

Otherwise, execute downgrading.

■GT Designer3 version and CC-Link IE TSN communication unit firmware version

The combination of the GT Designer3 version and CC-Link IE TSN communication unit (GT25-J71GN13-T2) firmware version is restricted.

The following shows the combinations of the GT Designer3 version and the CC-Link IE TSN communication unit firmware version.

○: Supported, —: Not supported

GT Designer3 version	CC-Link IE TSN communication unit (GT25-J71GN13-T2)	
	01	02 or later
Version1.217B to Version1.220E	○	—
Version1.225K or later	—	○

Update the firmware of the CC-Link IE TSN communication unit (GT25-J71GN13-T2) with firmware version 01 so that the GT Designer3 version 1.225K or later supports the unit.

For firmware update of the CC-Link IE TSN communication unit (GT25-J71GN13-T2), refer to the following.

☞ Page 841 Firmware of the CC-Link IE TSN communication unit

10 CC-Link IE Controller Network connection

☞ Page 845 MELSEC MX Controller (MX-R Model) (CC-Link IE Controller Network connection)
☞ Page 861 MELSEC iQ-R series (CC-Link IE Controller Network connection)
☞ Page 893 MELSEC-Q series (CC-Link IE Controller Network connection)

PART 3

10.1 MELSEC MX Controller (MX-R Model) (CC-Link IE Controller Network connection)

☞ Page 845 Connectable devices
☞ Page 846 System configuration
☞ Page 849 GOT side settings
☞ Page 855 PLC side settings
☞ Page 860 Access range for monitoring

10.1.1 Connectable devices

The following table shows the connectable models.

○: Supported, —: Not supported

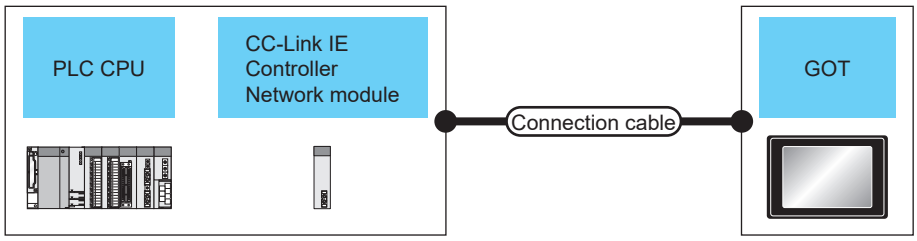
Controller	Model	Clock	PLC side interface CC-Link IE Controller Network communication unit	Connectable model
MELSEC MX Controller (MX-R Model)	MXR300-16 MXR300-32 MXR300-64	○	RJ71GP21-SX RJ71GP21S-SX	GT37 SoftGOT3000
	MXR500-128 MXR500-256	○	RJ71GP21-SX RJ71GP21S-SX	GT37 SoftGOT3000

Precautions

For information on the version restrictions of the CC-Link IE Controller Network module, refer to the following manual.

📖CC-Link IE Controller Network Reference Manual

10.1.2 System configuration



For details on the maximum length of the connection cable, refer to the following.

☞ Page 846 Maximum length

For details on the maximum number of connected devices, refer to the following.

☞ Page 846 Maximum number of connected devices

PLC		Communication type	Connection cable	GOT	
Controller	**CC-Link IE Controller Network communication unit*1**			**Interface**	**Model**
MELSEC MX Controller (MX-R Model)	RJ71GP21-SX RJ71GP21S-SX	CC-Link IE Controller Network	Optical fiber cable*2	GT37-IF2000 + GT15-J71GP23-SX (optical loop type)*3	GT37 SoftGOT3000

*1 For the CC-Link IE Controller Network extended mode, the serial number must start with 12052 or later.
For the system configuration on the CC-Link IE Controller Network module side, refer to the following manual.
📖CC-Link IE Controller Network Reference Manual

*2 For details on the optical fiber cable, refer to the following manual.
📖CC-Link IE Controller Network Reference Manual

*3 For the CC-Link IE Controller Network extended mode, the serial number must be 02910908******* or later.

Maximum length

The overall cable length and cable length between stations vary depending on the conditions such as the type of the cable used and the total number of stations.

For details, refer to the following manual.

📖CC-Link IE Controller Network Reference Manual

Maximum number of connected devices

The following shows the number of GOTs connectable to one controller.

Controller	
Model	**Number of GOTs connectable to one PLC**
MELSEC MX Controller (MX-R Model)	119

Connecting one PLC to multiple GOTs

When multiple GOT units are simultaneously accessing one PLC, the GOT writing process (transient/cyclic) and reading process (transient) may slow down.

This slow access can be remedied with the following countermeasures.

<Countermeasures>

■Improve response speed on PLC side

Insert a COM instruction on the PLC to increase the response speed. Note that caution is required as the scan time will increase.

■Screen design using cyclic devices

Create the screen with cyclic devices instead of using transient devices.

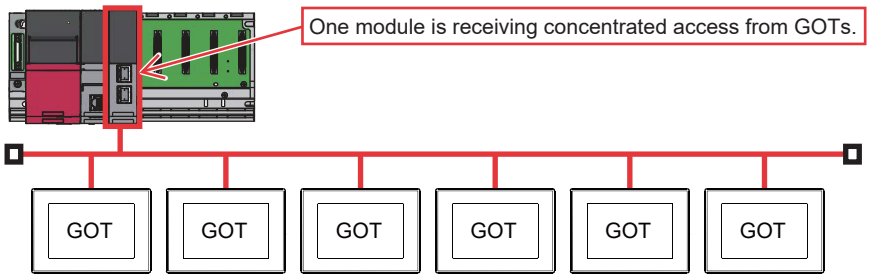
■Split GOT connection destinations into several systems

Add a master/local unit on the PLC side, and split the GOT connection destinations into several systems.

Improve the current system configuration.

(Example of current system configuration)

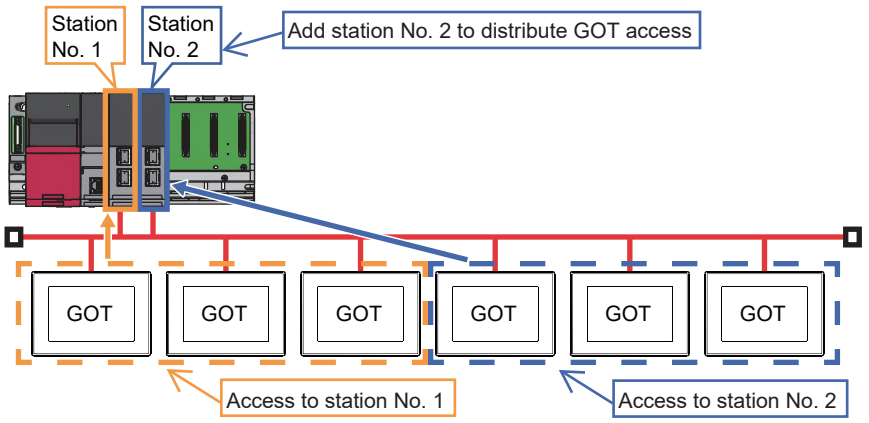
In the following system configuration, access from the GOT is concentrated on one module.



(Improvement measure)

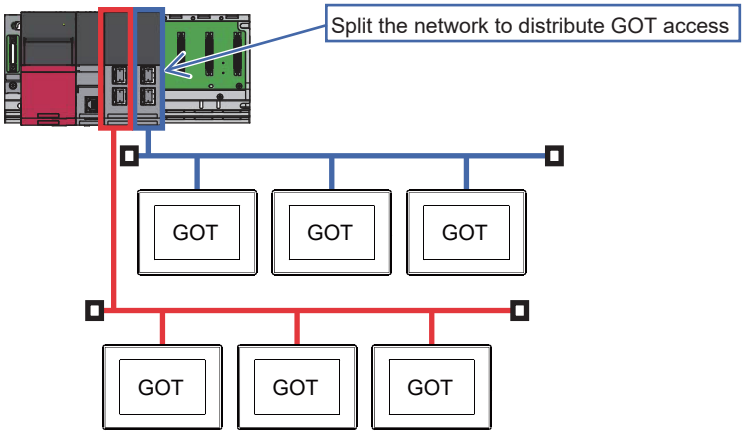
- Adding a module to the PLC side

Add a module to the PLC side to disperse the GOT access destinations.



• Split the network

Split the network to disperse the GOT access.



Precautions

■Starting the GOT connected to the CC-Link IE Controller Network

For the CC-Link IE Controller Network connection, the data link is started approximately 13 seconds after the GOT startup.

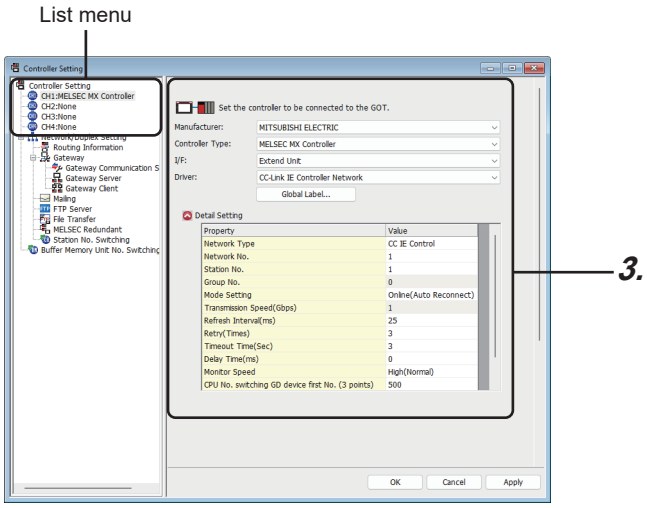
■When a network error occurs in the system alarm

In the CC-Link IE Controller Network connection, when a network error occurs in the system alarm, the system alarm display cannot be canceled even though the causes are removed.

To cancel the system alarm display, restart the GOT.

10.1.3 GOT side settings

[Controller Setting]



Operating procedure

1. Select [Common] → [Controller Setting] from the menu.

2. In the [Controller Setting] window, select the channel number to be used from the list menu.

3. Set the following items.

Item	Description
[Manufacturer]	[MITSUBISHI ELECTRIC]
[Controller Type]	[MELSEC MX Controller]
[I/F]	[Extend Unit]
[Driver]	[CC-Link IE Controller Network]
[Detail Setting]	Configure the settings according to the usage environment. ☞ Page 850 [Detail Setting]

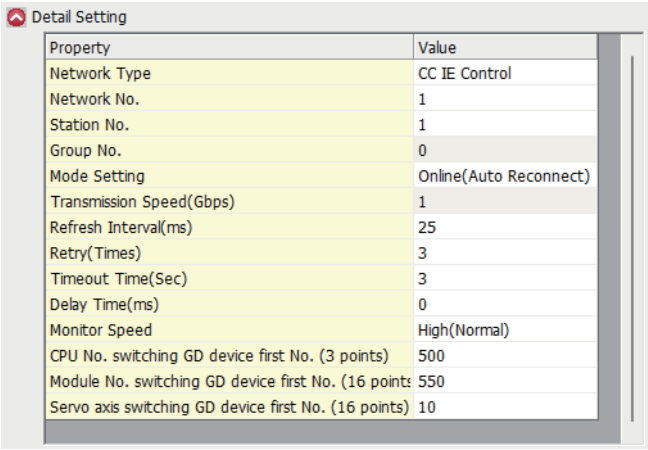
4. When you have completed the settings, click the [OK] button.

Point

The controller settings can be checked in [I/F Communication Setting].
For details, refer to the following.
📖GT Designer3 (GOT3000) Screen Design Manual

■[Detail Setting]

Configure the settings according to the usage environment.



Item	Description	Range
[Network Type][*3]	Set the network type.	[CC IE Control], [CC IE Control Extended Mode]
[Network No.]	Set the network number.	[1] to [239]
[Station No.]	Set the station number of the GOT.	[1] to [120]
[Group No.]	-	[0]
[Mode]	Set the operation mode of the GOT.	[Online(Auto Reconnect)], [Offline], [H/W test][*1], [Self-loopback test][*1], [Internal self-loopback test][*1], [Line test][*1], [Test stations][*1]
[Transmission Speed]	-	[1Gbps]
[Refresh Interval]	Set the number of refreshes to secure the send/receive data per station during communication. This setting is effective when [Block data assurance per station is available.] is selected for the network parameter on the control station side of CC-Link IE Controller Network.	[1] ms to [1000] ms
[Retry]	Set the number of retries to be performed when a communication timeout occurs. When receiving no response after retries, the communication times out.	[0] times to [5] times
[Timeout Time]	Set the time period for a communication to time out.	[1] second to [90] seconds
[Delay Time]	Set the delay time for reducing the load of the network and destination PLC.	[0] ms to [300] ms
[Monitor Speed][*4]	Set the monitor speed for the CC-Link IE Controller Network. This setting is not valid in all systems.	[High(Normal)][*2], [Middle], [Low]
[CPU No. switching GD device first No. (3 points)]	Set the start device number of the GD devices for CPU number switching. For details, refer to the following. ☞ Page 851 Start device number of the GD devices for CPU number switching	[0] to [65520]
[Module No. switching GD device first No. (16 points)]	Set the start device number of the GD devices for module number switching. For details, refer to the following. ☞ Page 852 Start device number of the GD devices for module number switching	[0] to [65520]
[Servo axis switching GD device first No. (16 points)]	Set the start device number of the GD devices for servo axis switching. For details, refer to the following. ☞ Page 853 Start device number of the GD devices for servo axis switching	[0] to [65520]

*1 For details, refer to the following manual.
📖CC-Link IE Controller Network Reference Manual
*2 This setting is effective for collecting large data with the logging, recipe, or such function on a screen other than the monitor screen.
*3 For the CC-Link IE Controller Network extended mode, select [CC IE Control Extended Mode].
The extended mode can be used in GT Designer3 version 1.22Y or later.
*4 When using a global label, to read or write more than 235 two-byte characters, set the [Monitor speed] to [High(Normal)] or [Middle].
If [Monitor speed] is set to [Low], a system error occurs when reading or writing.
For details, refer to the following manual.
📖GT Designer3 (GOT3000) Screen Design Manual

Point

• Example of communication detail settings
For the example of communication detail settings, refer to the following.
☞ Page 855 PLC side settings
• Communication interface settings in the utility
The communication interface setting can be changed on the utility's [Communication setting] after writing [Controller Setting] of project data.
For details on the utility, refer to the following manual.
📖GOT3000 Series User's Manual (Utility & Maintenance Functions)
• Priority of the controller settings
When the settings are configured in GT Designer3 or in the utility, the latest settings are effective.
• Network type
Be sure to set the same network types for the CPU side and the GOT side.
If the network types of the CPU side and the GOT side are different, an error is displayed in the system alarm of the GOT side.

■Start device number of the GD devices for CPU number switching

• Indirect specification of a CPU number
[CPU No.] can be indirectly specified with the GOT internal registers (GD devices) by specifying a value (100 to 102) to [CPU No.] in the device setting dialog in GT Designer3.
Set the start device number of the GD devices to be used in [CPU No. switching GD device first No. (3 points)].
[CPU No.] is specified with three consecutive GD devices, starting from the set device number.
When [500] is set to [CPU No. switching GD device first No. (3 points)], GD500 to GD502 are used to specify [CPU No.] as shown in the following table.

CPU No.	GD device	Setting range
100	GD500	1 to 4 Setting a value outside the range causes a communication timeout error. Specifying a nonexistent CPU number or a CPU number not supporting a multiple CPU system with a device causes a controller error.
101	GD501	
102	GD502	

• Indirect specification of a CPU number on the initially displayed screen
Set [CPU No. switching GD device first No. (3 points)] so that the values of the GD devices are retained and monitored upon the GOT startup.
• Indirect specification of a CPU number for multi-channel connection
If the setting range of [CPU No. switching GD device first No. (3 points)] set for each channel overlaps, the monitoring target CPU number set to each channel is switched simultaneously.
Set [CPU No. switching GD device first No. (3 points)] for each channel so that the setting range does not overlap.
• Indirect specification of a station number and a CPU number for multi-channel connection
When GD10 to GD25 are used to specify the station number of an inverter or non-Mitsubishi temperature controller connected, setting [10] to [CPU No. switching GD device first No. (3 points)] in a different channel switches the monitoring target CPU number and station number of an inverter or non-Mitsubishi temperature controller set to each channel simultaneously.
Set [CPU No. switching GD device first No. (3 points)] so that the setting range does not overlap the station number of an inverter or non-Mitsubishi temperature controller.

■Start device number of the GD devices for module number switching

• Indirect specification of a module number

For connection via a Simple Motion module, [Unit No.] can be specified with the GOT internal registers (GD devices) by specifying a value (100 to 10F) to [Unit No.] in the device setting dialog in GT Designer3.

Set the start device number of the GD devices to be used in [Module No. switching GD device first No. (16 points)].

[Unit No.] is specified with 16 consecutive GD devices, starting from the set device number.

When [550] is set to [Module No. switching GD device first No. (16 points)], GD550 to GD565 are used to specify [Unit No.] as shown in the following table.

Module No.	GD device	Setting range
100	GD550	00 to FF Setting a value outside the above range causes a device range error.
101	GD551	
102	GD552	
103	GD553	
104	GD554	
105	GD555	
106	GD556	
107	GD557	
108	GD558	
109	GD559	
10A	GD560	
10B	GD561	
10C	GD562	
10D	GD563	
10E	GD564	
10F	GD565	

• Indirect specification of a module number on the initially displayed screen

Set [Module No. switching GD device first No. (16 points)] so that the values of the GD devices are retained and monitored upon the GOT startup.

• Indirect specification of a module number for multi-channel connection

If the setting range of [Module No. switching GD device first No. (16 points)] set for each channel overlaps, the module number of the Simple Motion module via the servo amplifier device of each channel is switched simultaneously.

Set [Module No. switching GD device first No. (16 points)] for each channel so that the setting range does not overlap.

• Indirect specification of a station number and a module number for multi-channel connection

When GD10 to GD25 are used to specify the station number of an inverter or non-Mitsubishi temperature controller connected, setting [10] to [Module No. switching GD device first No. (16 points)] switches the module number of the Simple Motion module via the servo amplifier device and the station number of an inverter or non-Mitsubishi temperature controller set to each channel simultaneously.

Set [Module No. switching GD device first No. (16 points)] so that the setting range does not overlap the station number of an inverter or non-Mitsubishi temperature controller.

■Start device number of the GD devices for servo axis switching

• Indirect specification of a servo axis number

For connection via a Motion CPU or Simple Motion module, a servo axis number can be indirectly specified with GOT internal registers (GD devices) by specifying a value (100 to 115) to the axis number of the servo amplifier device.

Set the start device number of the GD devices to be used in [Servo axis switching GD device first No. (16 points)].

Specify a servo axis number with 16 consecutive GD devices, starting the set device number.

When [10] is set to [Servo axis switching GD device first No. (16 points)], GD10 to GD25 are used to specify a servo axis number as shown in the following table.

Servo axis No.	GD device	Setting range
100	GD10	1 to 64 Setting a value outside the above range causes a device range error.
101	GD11	
102	GD12	
103	GD13	
104	GD14	
105	GD15	
106	GD16	
107	GD17	
108	GD18	
109	GD19	
110	GD20	
111	GD21	
112	GD22	
113	GD23	
114	GD24	
115	GD25	

• Indirect specification of a servo axis number on the initially displayed screen

Set [Servo axis switching GD device first No. (16 points)] so that the values of the GD devices are retained and monitored upon the GOT startup.

• Indirect specification of a servo axis number for multi-channel connection

If the setting rage of [Servo axis switching GD device first No. (16 points)] set for each channel overlaps, the axis number of the servo amplifier of each channel is switched simultaneously.

Set [Servo axis switching GD device first No. (16 points)] for each channel so that the setting range does not overlap.

• Indirect specification of a station number and a servo axis number for multi-channel connection

When GD10 to GD25 are used to specify the station number of an inverter or non-Mitsubishi temperature controller connected, setting [10] to [Servo axis switching GD device first No. (16 points)] switches the axis number of the servo amplifier and the station number of an inverter or non-Mitsubishi temperature controller set to each channel simultaneously.

Set [Servo axis switching GD device first No. (16 points)] so that the setting range does not overlap the station number of an inverter or non-Mitsubishi temperature controller.

■Routing parameter settings

Up to 64 network numbers can be set for [Transfer Net No.].

However, the same destination network number cannot be set twice or more (multiple times).

The GOT (host station) can access 64 different networks specified under [Transfer Net No.].

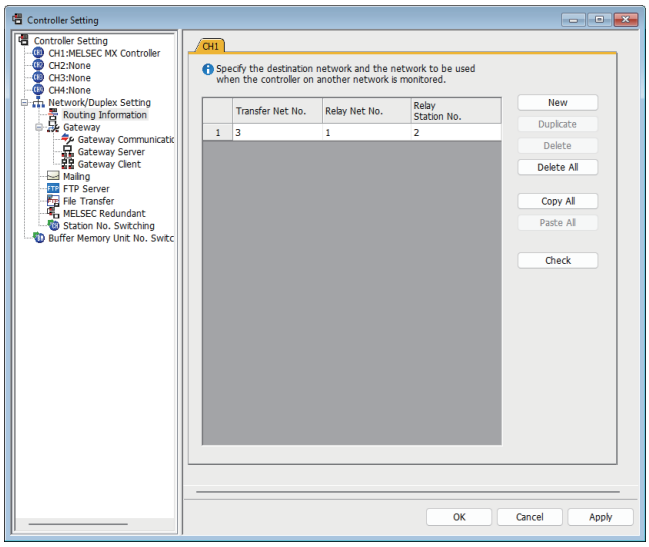
Point

Routing parameter settings

When communicating within the host network, routing parameter settings are not required.

For details on routing parameters, refer to the following manual.

📖MELSEC iQ-R CPU Module User's Manual (Application)



Item	Range
[Transfer Net No.]	[1] to [239]
[Relay Net No.]	[1] to [239]
[Relay Station No.]	[0] to [120]

Point

• Routing parameter settings for the relay station

Routing parameter settings are also necessary for the relay station.

For the setting, refer to the following.

☞ Page 855 PLC side settings

• Parameter reflection function of MELSOFT Navigator

The color of the cells for the items which are reflected to GT Designer3 from MELSOFT Navigator changes to green. Set items, which are displayed in green cells, from the MELSOFT Navigator.

When the settings of the transfer network number, relay network number, or relay station number are reflected to the parameter from MELSOFT Navigator, those settings are added. Items set in advance are not deleted.

However, if the target network number overlaps, the item set in advance is overwritten.

The routing information is used manually by the user when the data is created. Therefore, after changing the network configuration by MELSOFT Navigator, create a routing information again.

For details on creating the routing information, refer to the MELSOFT Navigator help.

10.1.4 PLC side settings

Model		Reference
MELSEC MX Controller (MX-R Model)	MXR300-16 MXR300-32 MXR300-64 MXR500-128 MXR500-256	☞ Page 855 Connection to MELSEC MX Controller (MX-R Model)

Point

• CC-Link IE Controller Network module

For details on the CC-Link IE Controller Network module, refer to the following manual.

📖CC-Link IE Controller Network Reference Manual

• Data link status check

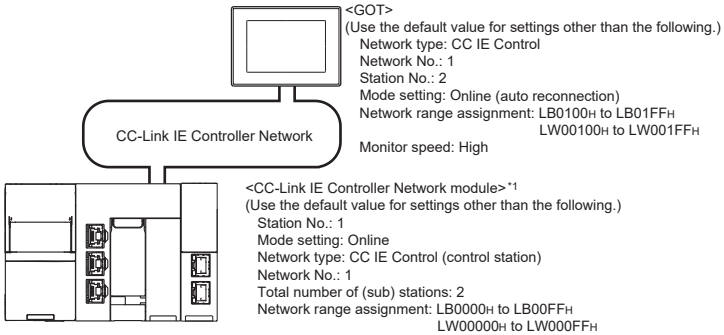
Refer to the following.

☞ Page 860 Access range for monitoring

Connection to MELSEC MX Controller (MX-R Model)

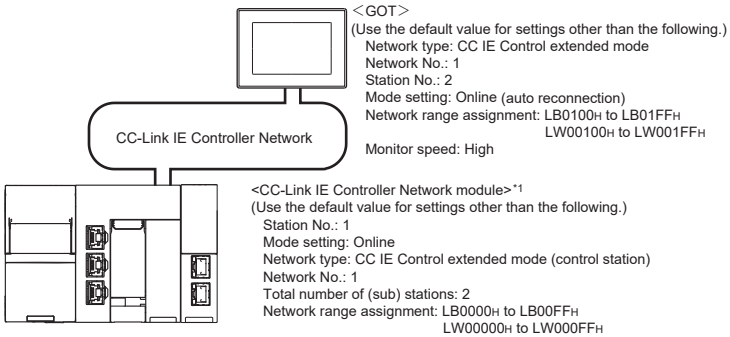
This section describes the settings of the GOT and CC-Link IE Controller Network module in the system configuration shown below.

■System configuration 1 (Network Type: CC IE Control)



*1 The CC-Link IE Controller Network module is mounted on slot 0 of the base unit.
The start I/O number of the CC-Link IE Controller Network module is set to 0.

■System configuration 2 (Network Type: CC IE Control extended mode)

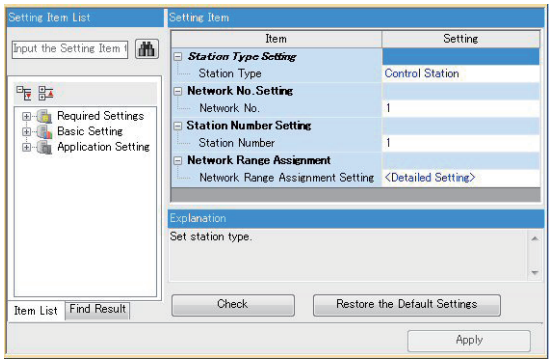


*1 The CC-Link IE Controller Network module is mounted on slot 0 of the base unit.
The start I/O number of the CC-Link IE Controller Network module is set to 0.

■Parameter settings for system configuration 1 (Network Type: CC IE Control) for connection to MELSEC MX Controller (MX-R Model)

- [Module Parameter] in GX Works3

Module parameter

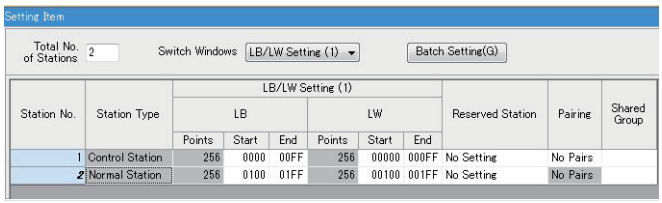


○: Necessary, △: As necessary, —: Not necessary

Item	Setting value	Setting for GOT connection
[Station Type]	Control station	○
[Network No.][*1]	1	○
[Station Number Setting]	1	○
[Network Range Assignment]	☞ Network range assignment	△

*1 Set the same network number as that of the GOT.

Network range assignment



○: Necessary, △: As necessary, —: Not necessary

Item				Setting value	Setting for GOT connection
[LB/LW Setting (1)][*1]	[LB]	Station No. 1	[Start]	0000H	△
			[End]	00FFH	△
		Station No. 2	[Start]	0100H	△
			[End]	01FFH	△
	[LW]	Station No. 1	[Start]	00000H	△
			[End]	000FFH	△
		Station No. 2	[Start]	00100H	△
			[End]	001FFH	△
[LB/LW Setting (2)][*1]				No setting	△
[LX/LY Setting (1)][*1]				No setting	△
[LX/LY Setting (2)][*1]				No setting	△
[Reserved Station]				(Use default value)	△
[Pairing]					△

*1 Be sure to set it to perform the cyclic transmission.

Point

When changing the module parameter

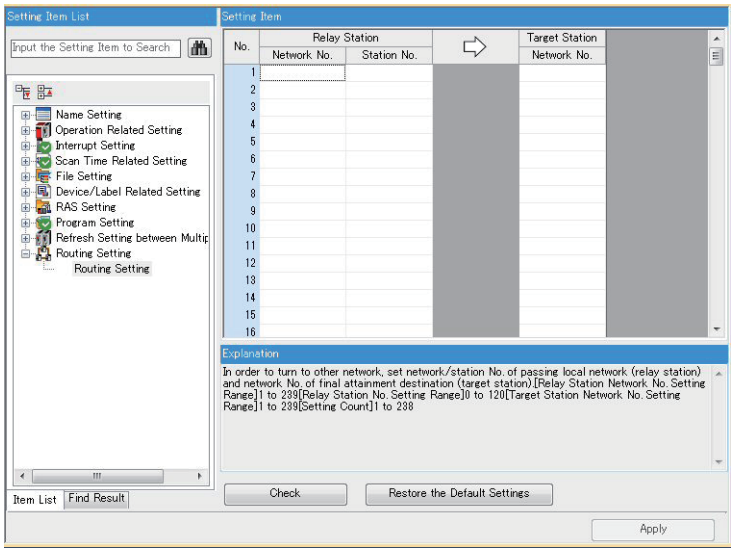
After writing module parameters to the PLC CPU, turn off then on or reset the PLC CPU.

Routing settings

Up to 238 target network numbers can be set.

However, the same number cannot be set twice or more (multiple times).

The GOT (host station) can access 238 different networks specified in the column of [Target Station Network No.].



Item		Range
[Relay Station]	[Network No.]	[1] to [239]
	[Station No.]	[0] to [120]
[Target Station]	[Network No.]	[1] to [239]

Point

Routing parameter settings for the request source

Routing parameter settings are also necessary for the request source GOT.

For the setting, refer to the following.

☞ Page 854 Routing parameter settings

■System configuration 1 (Network Type: CC IE Control): [Controller Setting] in GT Designer3

Item	Setting value
[Network Type]	CC IE Control
[Network No.]	1: Network No. 1
[Station No.]	2: Station No. 2
[Group No.]	0
[Mode Setting]	Online (auto reconnection)
[Transmission Speed]	1 Gbps
[Refresh Interval]	1 ms
[Retry]	3 times
[Timeout Time]	3 seconds
[Delay Time]	0 ms
[Monitor Speed]	High(Normal)

Point

[Controller Setting] in GT Designer3

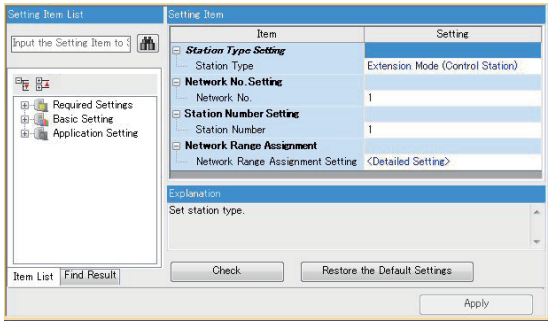
For the setting method of [Controller Setting] in GT Designer3, refer to the following.

☞ Page 849 [Controller Setting]

■Module parameter settings for system configuration 2 (Network Type: Extended mode)

- [Module Parameter] in GX Works3

Module parameter

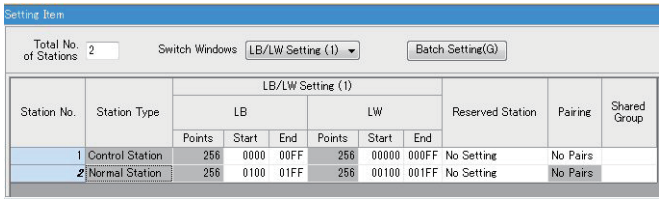


○: Necessary, △: As necessary, —: Not necessary

Item	Setting value	Setting for GOT connection
[Station Type]	Extension Mode (Control Station)	○
[Network No.]*1	1	○
[Station Number Setting]	1	○
[Network Range Assignment]	☞ Network range assignment	△

*1 Set the same network number as that of the GOT.

Network range assignment



○: Necessary, △: As necessary, —: Not necessary

Item				Setting value	Setting for GOT connection
[LB/LW Setting (1)]*1	[LB]	Station No. 1	[Start]	0000H	△
			[End]	00FFH	△
		Station No. 2	[Start]	0100H	△
			[End]	01FFH	△
	[LW]	Station No. 1	[Start]	00000H	△
			[End]	000FFH	△
		Station No. 2	[Start]	00100H	△
			[End]	001FFH	△
[LB/LW Setting (2)]*1				No setting	△
[LX/LY Setting (1)]*1				No setting	△
[LX/LY Setting (2)]*1				No setting	△
[Reserved Station]				(Use default value)	△
[Pairing]					△

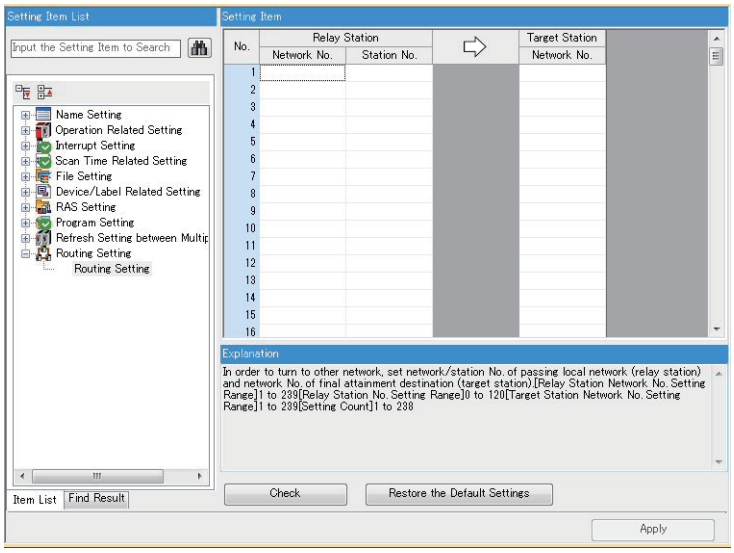
*1 Be sure to set it to perform the cyclic transmission.

Routing settings

Up to 238 target network numbers can be set.

However, the same number cannot be set twice or more (multiple times).

The GOT (host station) can access 238 different networks specified in the column of [Target Station Network No.].



Item		Range
[Relay Station]	[Network No.]	[1] to [239]
	[Station No.]	[0] to [120]
[Target Station]	[Network No.]	[1] to [239]

Point

Routing parameter settings for the request source

Routing parameter settings are also necessary for the request source GOT.

For the setting, refer to the following.

☞ Page 854 Routing parameter settings

- [Controller Setting] in GT Designer3

Item	Setting value
[Network Type]	CC IE Control extended mode
[Network No.]	1: Network No. 1
[Station No.]	2: Station No. 2
[Group No.]	0
[Mode Setting]	Online (auto reconnection)
[Refresh Interval]	1 ms
[Retry]	3 times
[Timeout Time]	3 seconds
[Delay Time]	0 ms
[Monitor Speed]	High(Normal)

Point

Network type of the GOT side

When the network is in the extended mode, be sure to set the network type of the GOT side to [CC IE Control Extended Mode].

For the setting method of [Controller Setting] in GT Designer3, refer to the following.

☞ Page 849 [Controller Setting]

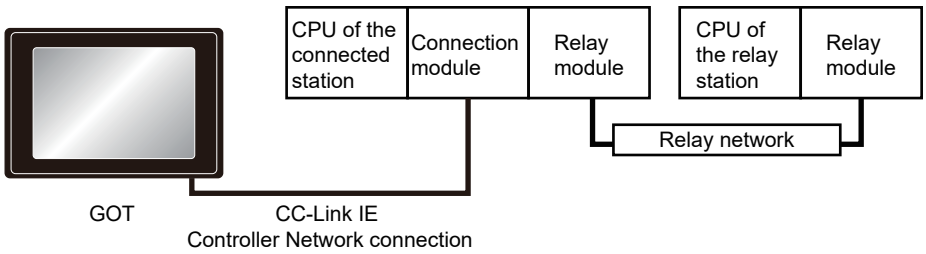
10.1.5 Access range for monitoring

When the GOT is connected to the CPU of the station connected via CC-Link IE Controller Network, the range accessible via the CPU is as follows.

Point

- When monitoring other networks (Routing parameter settings)

To monitor other networks, routing parameter settings are necessary.
For the routing parameter settings, refer to the reference manual of the network connected.



○: Accessible, —: Inaccessible

CPU of the connected station	Connected module	Relay station									
		Relay network	CPU of the relay station								
			MX R	RCPU	LCPU	QCPU (Q mode)	QSCPU	QCPU (A mode)	QnACPU	ACPU	FX5CPU
MX-R	☞ Page 845 Connectable devices	Ethernet	○*7	○*5	○	○*6	○	—	○	—	○*3
		CC-Link IE TSN	○*7	○*1	—	—	—	—	—	—	○*3
		CC-Link IE Controller Network	○*7	○	—	○	○	—	—	—	—
		CC-Link IE Field Network	○*7	○	○	○*2	○	—	—	—	○*4
		MELSECNET/H, MELSECNET/10	—	—	—	○	○	○	○	○*8	—

*1 RnCPU, RnENCPU, RnSFCPU, C Controller module (MELSEC iQ-R series), and MELSECWinCPU (MELSEC iQ-R series) are supported.
*2 QnUDVCPU, QnUDECPU, QnUDEHCPU, QnUCPU, QnUDCPU, QnUDHCPU, and C Controller module (MELSEC-Q series) are supported.
*3 FX5U and FX5UC are supported.
*4 FX5U, FX5UC, and FX5UJ are supported.
*5 The C Controller module (MELSEC iQ-R series) is not supported.
*6 The C Controller module (MELSEC-Q series) is not supported.
*7 Regardless of whether encrypted communications are performed, the MELSEC MX Controller can be used as the relay station.
To perform encrypted communication, settings need to be configured.
For details, refer to the following.
☞ Page 90 Setting procedure of the encrypted communication
*8 AnUCPU and AnUSCPU are supported.

10.2 MELSEC iQ-R series (CC-Link IE Controller Network connection)

☞ Page 861 Connectable devices
☞ Page 863 System configuration
☞ Page 866 GOT side settings
☞ Page 873 PLC side settings
☞ Page 884 Access range for monitoring
☞ Page 885 How to monitor a redundant system

10.2.1 Connectable devices

The following table shows the connectable models.

○: Supported, —: Not supported

Controller	Model	Clock	PLC side interface CC-Link IE Controller Network communication unit	Connectable model
MELSEC iQ-R series	R00CPU R01CPU R02CPU R04CPU R08CPU R16CPU R32CPU R120CPU	○	RJ71GP21-SX	GT37 SoftGOT3000
	R08PCPU[*1] R16PCPU[*1] R32PCPU[*1] R120PCPU[*1]	○	RJ71GP21-SX[*4]	GT37 SoftGOT3000
	R04ENCPU R08ENCPU R16ENCPU R32ENCPU R120ENCPU	○	RJ71GP21-SX	GT37 SoftGOT3000
	R08PSFCPU[*2] R16PSFCPU[*2] R32PSFCPU[*2] R120PSFCPU[*2]	○	RJ71GP21-SX[*4]	GT37 SoftGOT3000
	R08SFCPU[*3] R16SFCPU[*3] R32SFCPU[*3] R120SFCPU[*3]	○	RJ71GP21-SX	GT37 SoftGOT3000
Motion CPU (MELSEC iQ-R series)	R16MTCPU R32MTCPU R64MTCPU[*5]	○	RJ71GP21-SX[*6]	GT37 SoftGOT3000
C Controller module (MELSEC iQ-R series)	R12CCPU-V	○	RJ71GP21-SX	GT37 SoftGOT3000
MELSECWinCPU (MELSEC iQ-R series)	R102WCPU-W	—	RJ71GP21-SX	GT37 SoftGOT3000

Controller	Model	Clock	PLC side interface	Connectable model
			CC-Link IE Controller Network communication unit	
CNC C80	R16NCCPU-S1	○	RJ71GP21-SX	GT37 SoftGOT3000
Robot controller (MELSEC iQ-R series)	CR800-R(R16RTCPU)	○	RJ71GP21-SX	GT37 SoftGOT3000

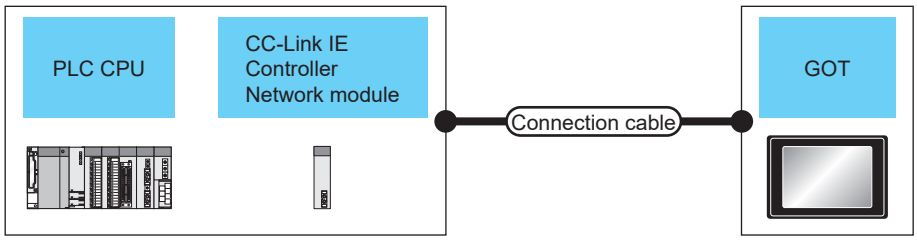
*1 Mount a redundant function module R6RFM next to the RnPCPU on the base unit when building a redundant system.
*2 Mount the SIL2 function module R6PSFM and redundant function module R6RFM next to the RnPSFCPU on the base unit.
*3 Mount a safety function module R6SFM next to the RnSFCPU on the base unit.
The RnSFCPU and the safety function module R6SFM must have the same pair version.
If their pair versions differ, the RnSFCPU does not operate.
*4 Use firmware version 12 or later when building a redundant system.
*5 Use a module with OS software version 06 or later.
*6 When monitoring a Motion CPU from a different network, use a Motion CPU with OS software version 3 or later.

Precautions

For information on the version restrictions of the CC-Link IE Controller Network module, refer to the following manual.

CC-Link IE Controller Network Reference Manual

10.2.2 System configuration



For details on the maximum length of the connection cable, refer to the following.

☞ Page 863 Maximum length

For details on the maximum number of connected devices, refer to the following.

☞ Page 863 Maximum number of connected devices

PLC		Communication type	Connection cable	GOT	
Controller	CC-Link IE Controller Network communication unit*1			Interface	Model
MELSEC iQ-R series C Controller module (MELSEC iQ-R series) MELSECWinCPU (MELSEC iQ-R series) Motion CPU (MELSEC iQ-R series) CNC C80 Robot controller (MELSEC iQ-R series)	RJ71GP21-SX	CC-Link IE Controller Network	Optical fiber cable*2	GT37-IF2000 + GT15-J71GP23-SX (optical loop type)*3	GT37 SoftGOT3000

*1 For the CC-Link IE Controller Network extended mode, the serial number must start with 12052 or later.
For the system configuration on the CC-Link IE Controller Network module side, refer to the following manual.
📖CC-Link IE Controller Network Reference Manual

*2 For details on the optical fiber cable, refer to the following manual.
📖CC-Link IE Controller Network Reference Manual

*3 For the CC-Link IE Controller Network extended mode, the serial number must be 02910908******* or later.

Maximum length

The overall cable length and cable length between stations vary depending on the conditions such as the type of the cable used and the total number of stations.

For details, refer to the following manual.

📖CC-Link IE Controller Network Reference Manual

Maximum number of connected devices

The following shows the number of GOTs connectable to one controller.

Controller	
Model	Number of GOTs connectable to one PLC
MELSEC iQ-R series Motion CPU (MELSEC iQ-R series) C Controller module (MELSEC iQ-R series) MELSECWinCPU (MELSEC iQ-R series) CNC C80 Robot controller (MELSEC iQ-R series)	119

Connecting one PLC to multiple GOTs

When multiple GOT units are simultaneously accessing one PLC, the GOT writing process (transient/cyclic) and reading process (transient) may slow down.

This slow access can be remedied with the following countermeasures.

<Countermeasures>

■Improve response speed on PLC side

Insert a COM instruction on the PLC to increase the response speed. Note that caution is required as the scan time will increase.

■Screen design using cyclic devices

Create the screen with cyclic devices instead of using transient devices.

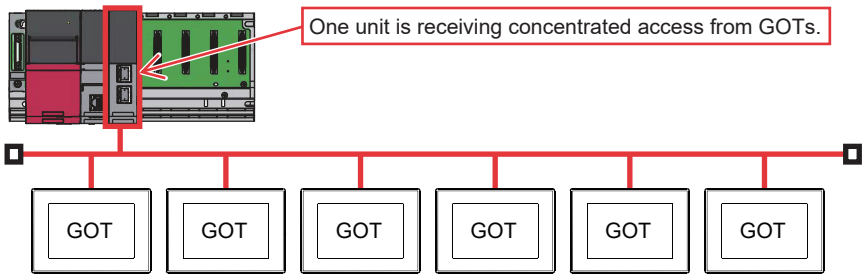
■Split GOT connection destinations into several systems

Add a master/local unit on the PLC side, and split the GOT connection destinations into several systems.

Improve the current system configuration.

(Example of current system configuration)

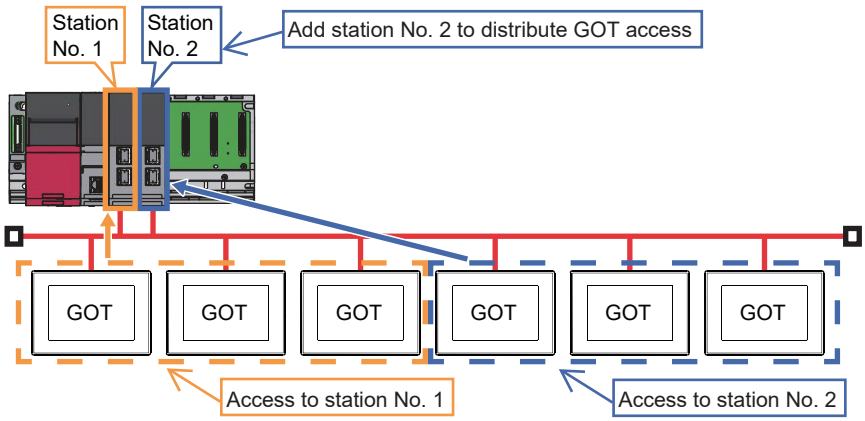
In the following system configuration, access from the GOT is concentrated on one module.



(Improvement measure)

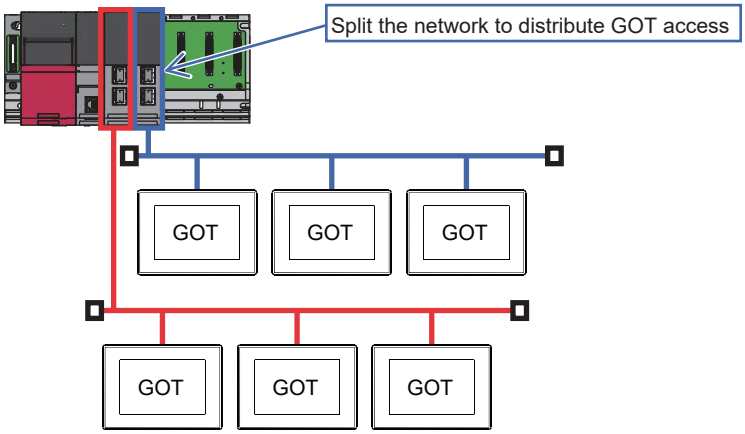
- Adding a module to the PLC side

Add a module to the PLC side to disperse the GOT access destinations.



• Split the network

Split the network to disperse the GOT access.



Precautions

■Starting the GOT connected to the CC-Link IE Controller Network

For the CC-Link IE Controller Network connection, the data link is started approximately 13 seconds after the GOT startup.

■When a network error occurs in the system alarm

In the CC-Link IE Controller Network connection, when a network error occurs in the system alarm, the system alarm display cannot be canceled even though the causes are removed.

To cancel the system alarm display, restart the GOT.

■Connection via the multiple CPU system

When the GOT is connected via the multiple CPU system, the PLC takes the following time to run.

MELSEC iQ-R series, Motion CPU (MELSEC iQ-R series): 10 seconds or more

If the GOT is started during the above time, a system alarm occurs.

Adjust the opening screen time in the GOT setup so that no system alarm occurs.

📖GT Designer3 (GOT3000) Screen Design Manual

■Connection to RnSFCPU

The RnSFCPU takes 10 seconds or more to run.

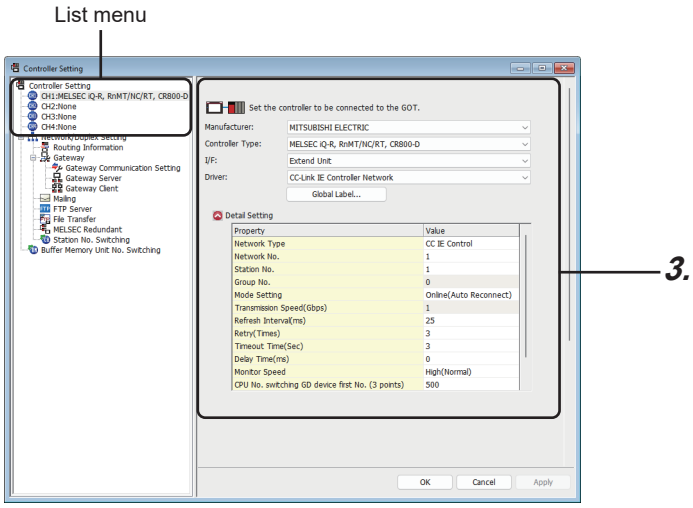
If the GOT is started before the RnSFCPU runs, a system alarm occurs.

Adjust the time to display the GOT startup screen to prevent a system alarm.

📖GT Designer3 (GOT3000) Screen Design Manual

10.2.3 GOT side settings

[Controller Setting]



Operating procedure

1. Select [Common] → [Controller Setting] from the menu.

2. In the [Controller Setting] window, select the channel number to be used from the list menu.

3. Set the following items.

Item	Description
[Manufacturer]	[MITSUBISHI ELECTRIC]
[Controller Type]	[MELSEC iQ-R, RnMT/NC/RT, CR800-D]
[I/F]	[Extend Unit]
[Driver]	[CC-Link IE Controller Network]
[Detail Setting]	Configure the settings according to the usage environment. ☞ Page 867 [Detail Setting]

4. When you have completed the settings, click the [OK] button.

Point

The controller settings can be checked in [I/F Communication Setting].
For details, refer to the following.
📖GT Designer3 (GOT3000) Screen Design Manual

■[Detail Setting]

Configure the settings according to the usage environment.

Detail Setting

Property	Value
Network Type	CC IE Control
Network No.	1
Station No.	1
Group No.	0
Mode Setting	Online(Auto Reconnect)
Transmission Speed(Gbps)	1
Refresh Interval(ms)	25
Retry(Times)	3
Timeout Time(Sec)	3
Delay Time(ms)	0
Monitor Speed	High(Normal)
CPU No. switching GD device first No. (3 points)	500
Module No. switching GD device first No. (16 points)	550
Servo axis switching GD device first No. (16 points)	10

Item	Description	Range
[Network Type]*3	Set the network type.	[CC IE Control], [CC IE Control Extended Mode]
[Network No.]	Set the network number.	[1] to [239]
[Station No.]	Set the station number of the GOT.	[1] to [120]
[Group No.]	-	[0]
[Mode]	Set the operation mode of the GOT.	[Online(Auto Reconnect)], [Offline], [H/W test]*1, [Self-loopback test]*1, [Internal self-loopback test]*1, [Line test]*1, [Test stations]*1
[Transmission Speed]	-	[1Gbps]
[Refresh Interval]	Set the number of refreshes to secure the send/receive data per station during communication. This setting is effective when [Block data assurance per station is available.] is selected for the network parameter on the control station side of CC-Link IE Controller Network.	[1] ms to [1000] ms
[Retry]	Set the number of retries to be performed when a communication timeout occurs. When receiving no response after retries, the communication times out.	[0] times to [5] times
[Timeout Time]	Set the time period for a communication to time out.	[1] second to [90] seconds
[Delay Time]	Set the delay time for reducing the load of the network and destination PLC.	[0] ms to [300] ms
[Monitor Speed]*4	Set the monitor speed for the CC-Link IE Controller Network. This setting is not valid in all systems.	[High(Normal)]*2, [Middle], [Low]
[CPU No. switching GD device first No. (3 points)]	Set the start device number of the GD devices for CPU number switching. For details, refer to the following. ☞ Page 869 Start device number of the GD devices for CPU number switching	[0] to [65520]
[Module No. switching GD device first No. (16 points)]	Set the start device number of the GD devices for module number switching. For details, refer to the following. ☞ Page 870 Start device number of the GD devices for module number switching	[0] to [65520]
[Servo axis switching GD device first No. (16 points)]	Set the start device number of the GD devices for servo axis switching. For details, refer to the following. ☞ Page 871 Start device number of the GD devices for servo axis switching	[0] to [65520]

*1 For details, refer to the following manual.
📖CC-Link IE Controller Network Reference Manual
*2 This setting is effective for collecting large data with the logging, recipe, or such function on a screen other than the monitor screen.
*3 For the CC-Link IE Controller Network extended mode, select [CC IE Control Extended Mode]. The extended mode can be used in GT Designer3 version 1.22Y or later.
*4 When using a global label, to read or write more than 235 two-byte characters, set the [Monitor speed] to [High(Normal)] or [Middle].
If [Monitor speed] is set to [Low], a system error occurs when reading or writing.
For details, refer to the following manual.
📖GT Designer3 (GOT3000) Screen Design Manual

Point

• Example of communication detail settings

For the example of communication detail settings, refer to the following.

☞ Page 873 PLC side settings

• Communication interface settings in the utility

The communication interface setting can be changed on the utility's [Communication setting] after writing [Controller Setting] of project data.

For details on the utility, refer to the following manual.

📖GOT3000 Series User's Manual (Utility & Maintenance Functions)

• Priority of the controller settings

When the settings are configured in GT Designer3 or in the utility, the latest settings are effective.

• Network type

Be sure to set the same network types for the CPU side and the GOT side.

If the network types of the CPU side and the GOT side are different, an error is displayed in the system alarm of the GOT side.

■Start device number of the GD devices for CPU number switching

• Indirect specification of a CPU number

[CPU No.] can be indirectly specified with the GOT internal registers (GD devices) by specifying a value (100 to 102) to [CPU No.] in the device setting dialog in GT Designer3.

Set the start device number of the GD devices to be used in [CPU No. switching GD device first No. (3 points)].

[CPU No.] is specified with three consecutive GD devices, starting from the set device number.

When [500] is set to [CPU No. switching GD device first No. (3 points)], GD500 to GD502 are used to specify [CPU No.] as shown in the following table.

CPU No.	GD device	Setting range
100	GD500	1 to 4 Setting a value outside the range causes a communication timeout error. Specifying a nonexistent CPU number or a CPU number not supporting a multiple CPU system with a device causes a controller error.
101	GD501	
102	GD502	

• Indirect specification of a CPU number on the initially displayed screen

Set [CPU No. switching GD device first No. (3 points)] so that the values of the GD devices are retained and monitored upon the GOT startup.

• Indirect specification of a CPU number for multi-channel connection

If the setting range of [CPU No. switching GD device first No. (3 points)] set for each channel overlaps, the monitoring target CPU number set to each channel is switched simultaneously.

Set [CPU No. switching GD device first No. (3 points)] for each channel so that the setting range does not overlap.

• Indirect specification of a station number and a CPU number for multi-channel connection

When GD10 to GD25 are used to specify the station number of an inverter or non-Mitsubishi temperature controller connected, setting [10] to [CPU No. switching GD device first No. (3 points)] in a different channel switches the monitoring target CPU number and station number of an inverter or non-Mitsubishi temperature controller set to each channel simultaneously.

Set [CPU No. switching GD device first No. (3 points)] so that the setting range does not overlap the station number of an inverter or non-Mitsubishi temperature controller.

■Start device number of the GD devices for module number switching

• Indirect specification of a module number

For connection via a Simple Motion module, [Unit No.] can be specified with the GOT internal registers (GD devices) by specifying a value (100 to 10F) to [Unit No.] in the device setting dialog in GT Designer3.

Set the start device number of the GD devices to be used in [Module No. switching GD device first No. (16 points)].

[Unit No.] is specified with 16 consecutive GD devices, starting from the set device number.

When [550] is set to [Module No. switching GD device first No. (16 points)], GD550 to GD565 are used to specify [Unit No.] as shown in the following table.

Module No.	GD device	Setting range
100	GD550	00 to FF Setting a value outside the above range causes a device range error.
101	GD551	
102	GD552	
103	GD553	
104	GD554	
105	GD555	
106	GD556	
107	GD557	
108	GD558	
109	GD559	
10A	GD560	
10B	GD561	
10C	GD562	
10D	GD563	
10E	GD564	
10F	GD565	

• Indirect specification of a module number on the initially displayed screen

Set [Module No. switching GD device first No. (16 points)] so that the values of the GD devices are retained and monitored upon the GOT startup.

• Indirect specification of a module number for multi-channel connection

If the setting range of [Module No. switching GD device first No. (16 points)] set for each channel overlaps, the module number of the Simple Motion module via the servo amplifier device of each channel is switched simultaneously.

Set [Module No. switching GD device first No. (16 points)] for each channel so that the setting range does not overlap.

• Indirect specification of a station number and a module number for multi-channel connection

When GD10 to GD25 are used to specify the station number of an inverter or non-Mitsubishi temperature controller connected, setting [10] to [Module No. switching GD device first No. (16 points)] switches the module number of the Simple Motion module via the servo amplifier device and the station number of an inverter or non-Mitsubishi temperature controller set to each channel simultaneously.

Set [Module No. switching GD device first No. (16 points)] so that the setting range does not overlap the station number of an inverter or non-Mitsubishi temperature controller.

■Start device number of the GD devices for servo axis switching

• Indirect specification of a servo axis number

For connection via a Motion CPU or Simple Motion module, a servo axis number can be indirectly specified with GOT internal registers (GD devices) by specifying a value (100 to 115) to the axis number of the servo amplifier device.

Set the start device number of the GD devices to be used in [Servo axis switching GD device first No. (16 points)].

Specify a servo axis number with 16 consecutive GD devices, starting the set device number.

When [10] is set to [Servo axis switching GD device first No. (16 points)], GD10 to GD25 are used to specify a servo axis number as shown in the following table.

Servo axis No.	GD device	Setting range
100	GD10	1 to 64 Setting a value outside the above range causes a device range error.
101	GD11	
102	GD12	
103	GD13	
104	GD14	
105	GD15	
106	GD16	
107	GD17	
108	GD18	
109	GD19	
110	GD20	
111	GD21	
112	GD22	
113	GD23	
114	GD24	
115	GD25	

• Indirect specification of a servo axis number on the initially displayed screen

Set [Servo axis switching GD device first No. (16 points)] so that the values of the GD devices are retained and monitored upon the GOT startup.

• Indirect specification of a servo axis number for multi-channel connection

If the setting rage of [Servo axis switching GD device first No. (16 points)] set for each channel overlaps, the axis number of the servo amplifier of each channel is switched simultaneously.

Set [Servo axis switching GD device first No. (16 points)] for each channel so that the setting range does not overlap.

• Indirect specification of a station number and a servo axis number for multi-channel connection

When GD10 to GD25 are used to specify the station number of an inverter or non-Mitsubishi temperature controller connected, setting [10] to [Servo axis switching GD device first No. (16 points)] switches the axis number of the servo amplifier and the station number of an inverter or non-Mitsubishi temperature controller set to each channel simultaneously.

Set [Servo axis switching GD device first No. (16 points)] so that the setting range does not overlap the station number of an inverter or non-Mitsubishi temperature controller.

■Routing parameter settings

Up to 64 network numbers can be set for [Transfer Net No.].

However, the same destination network number cannot be set twice or more (multiple times).

The GOT (host station) can access 64 different networks specified under [Transfer Net No.].

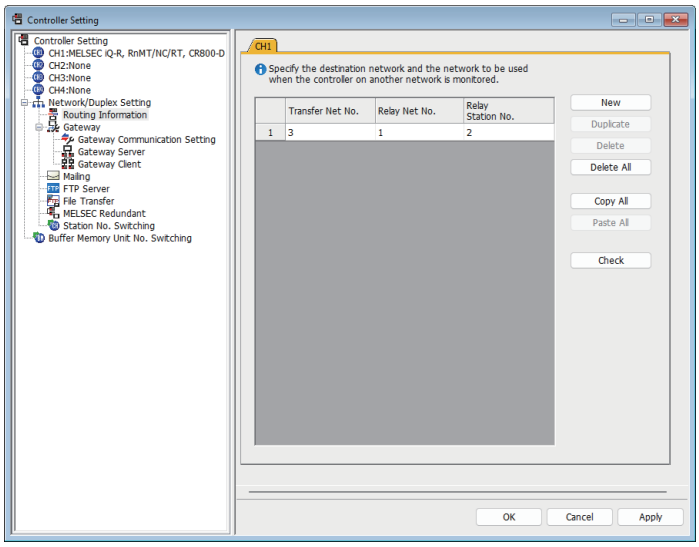
Point

Routing parameter settings

When communicating within the host network, routing parameter settings are not required.

For details on routing parameters, refer to the following manual.

MELSEC iQ-R CPU Module User's Manual (Application)



Item	Range
[Transfer Net No.]	[1] to [239]
[Relay Net No.]	[1] to [239]
[Relay Station No.]	[0] to [120]

Point

• Routing parameter settings for the relay station

Routing parameter settings are also necessary for the relay station.

For the setting, refer to the following.

☞ Page 873 PLC side settings

• Parameter reflection function of MELSOFT Navigator

The color of the cells for the items which are reflected to GT Designer3 from MELSOFT Navigator changes to green. Set items, which are displayed in green cells, from the MELSOFT Navigator.

When the settings of the transfer network number, relay network number, or relay station number are reflected to the parameter from MELSOFT Navigator, those settings are added. Items set in advance are not deleted.

However, if the target network number overlaps, the item set in advance is overwritten.

The routing information is used manually by the user when the data is created. Therefore, after changing the network configuration by MELSOFT Navigator, create a routing information again.

For details on creating the routing information, refer to the MELSOFT Navigator help.

10.2.4 PLC side settings

Model		Reference
MELSEC iQ-R series	R00CPU R01CPU R02CPU R04CPU R08CPU R16CPU R32CPU R120CPU R08PCPU R16PCPU R32PCPU R120PCPU R04ENCPU R08ENCPU R16ENCPU R32ENCPU R120ENCPU R08PSFCPU R16PSFCPU R32PSFCPU R120PSFCPU R08SFCPU R16SFCPU R32SFCPU R120SFCPU	☞ Page 874 Connection to MELSEC iQ-R series
Motion CPU (MELSEC iQ-R series)	R16MTCPU R32MTCPU R64MTCPU	☞ Page 874 Connection to MELSEC iQ-R series
C Controller module (MELSEC iQ-R series)	R12CCPU-V	☞ Page 879 Connection to C Controller (MELSEC iQ-R series) / MELSECWinCPU module (MELSEC iQ-R series)
MELSECWinCPU (MELSEC iQ-R series)	R102WCPU-W	☞ Page 879 Connection to C Controller (MELSEC iQ-R series) / MELSECWinCPU module (MELSEC iQ-R series)
CNC C80	R16NCCPU-S1	☞ Page 874 Connection to MELSEC iQ-R series
Robot controller (MELSEC iQ-R series)	CR800-R(R16RTCPU)	☞ Page 874 Connection to MELSEC iQ-R series

Point

- CC-Link IE Controller Network module

For details on the CC-Link IE Controller Network module, refer to the following manual.

📖CC-Link IE Controller Network Reference Manual

- Data link status check

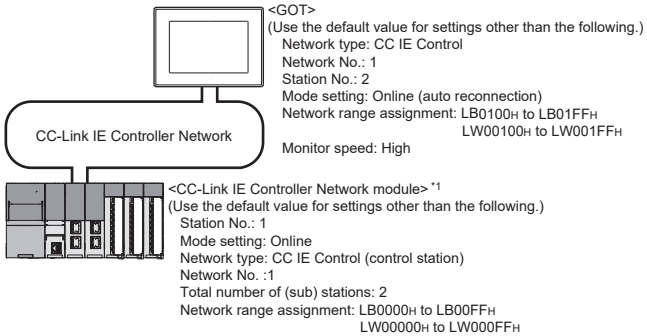
Refer to the following.

☞ Page 884 Access range for monitoring

Connection to MELSEC iQ-R series

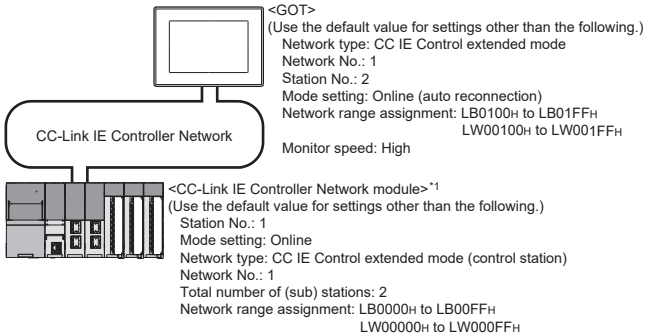
This section describes the settings of the GOT and CC-Link IE Controller Network module in the system configuration shown below.

■System configuration 1 (Network Type: CC IE Control)



*1 The CC-Link IE Controller Network module is mounted on slot 0 of the base unit.
The start I/O number of the CC-Link IE Controller Network module is set to 0.

■System configuration 2 (Network Type: CC IE Control extended mode)

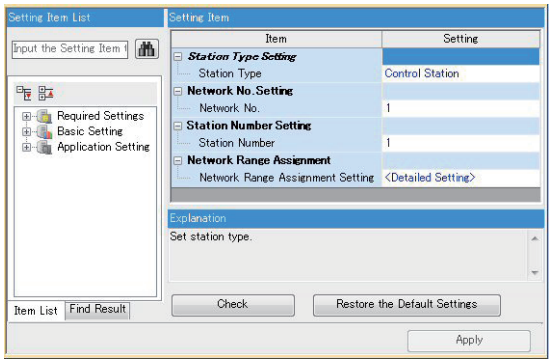


*1 The CC-Link IE Controller Network module is mounted on slot 0 of the base unit.
The start I/O number of the CC-Link IE Controller Network module is set to 0.

■Parameter settings for system configuration 1 (Network Type: CC IE Control) for connection to MELSEC iQ-R series

- [Module Parameter] in GX Works3

Module parameter

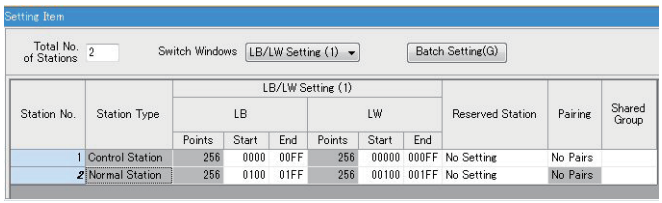


○: Necessary, △: As necessary, —: Not necessary

Item	Setting value	Setting for GOT connection
[Station Type]	Control station	○
[Network No.][*1]	1	○
[Station Number Setting]	1	○
[Network Range Assignment]	☞ Network range assignment	△

*1 Set the same network number as that of the GOT.

Network range assignment



○: Necessary, △: As necessary, —: Not necessary

Item				Setting value	Setting for GOT connection
[LB/LW Setting (1)][*1]	LB	Station No. 1	[Start]	0000H	△
			[End]	00FFH	△
		Station No. 2	[Start]	0100H	△
			[End]	01FFH	△
	LW	Station No. 1	[Start]	00000H	△
			[End]	000FFH	△
		Station No. 2	[Start]	00100H	△
			[End]	001FFH	△
[LB/LW Setting (2)][*1]				No setting	△
[LX/LY Setting (1)][*1]				No setting	△
[LX/LY Setting (2)][*1]				No setting	△
[Reserved Station]				(Use default value)	△
[Pairing]					△

*1 Be sure to set it to perform the cyclic transmission.

Point

When changing the module parameter

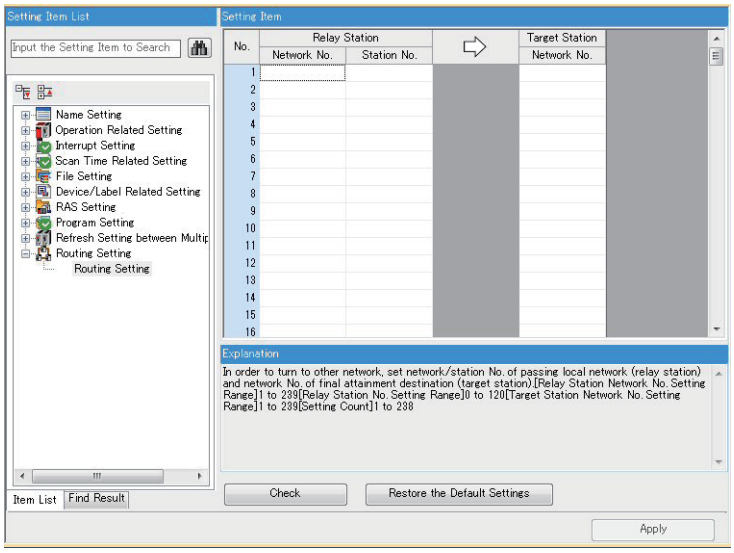
After writing module parameters to the PLC CPU, turn off then on or reset the PLC CPU.

Routing settings

Up to 238 target network numbers can be set.

However, the same number cannot be set twice or more (multiple times).

The GOT (host station) can access 238 different networks specified in the column of [Target Station Network No.].



Item		Range
[Relay Station]	[Network No.]	[1] to [239]
	[Station No.]	[0] to [120]
[Target Station]	[Network No.]	[1] to [239]

Point

Routing parameter settings for the request source

Routing parameter settings are also necessary for the request source GOT.

For the setting, refer to the following.

☞ Page 872 Routing parameter settings

■System configuration 1 (Network Type: CC IE Control): [Controller Setting] in GT Designer3

Item	Setting value
[Network Type]	CC IE Control
[Network No.]	1: Network No. 1
[Station No.]	2: Station No. 2
[Group No.]	0
[Mode Setting]	Online (auto reconnection)
[Transmission Speed]	1 Gbps
[Refresh Interval]	1 ms
[Retry]	3 times
[Timeout Time]	3 seconds
[Delay Time]	0 ms
[Monitor Speed]	High(Normal)

Point

[Controller Setting] in GT Designer3

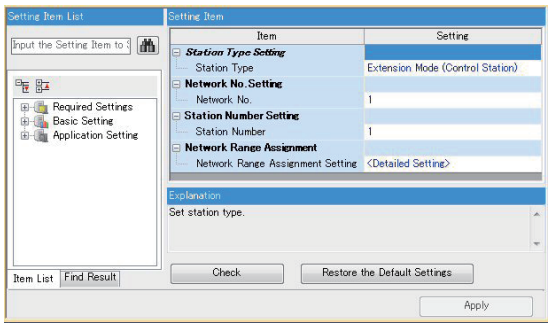
For the setting method of [Controller Setting] in GT Designer3, refer to the following.

☞ Page 866 [Controller Setting]

■Module parameter settings for system configuration 2 (Network Type: Extended mode)

- [Module Parameter] in GX Works3

Module parameter

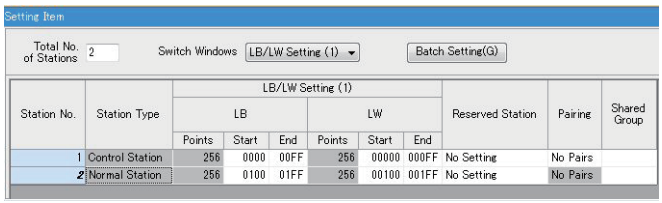


○: Necessary, △: As necessary, —: Not necessary

Item	Setting value	Setting for GOT connection
[Station Type]	Extension Mode (Control Station)	○
[Network No.]*1	1	○
[Station Number]	1	○
[Network Range Assignment]	☞ Network range assignment	△

*1 Set the same network number as that of the GOT.

Network range assignment



○: Necessary, △: As necessary, —: Not necessary

Item				Setting value	Setting for GOT connection
[LB/LW Setting (1)]*1	[LB]	Station No. 1	[Start]	0000H	△
			[End]	00FFH	△
		Station No. 2	[Start]	0100H	△
			[End]	01FFH	△
	[LW]	Station No. 1	[Start]	00000H	△
			[End]	000FFH	△
		Station No. 2	[Start]	00100H	△
			[End]	001FFH	△
[LB/LW Setting (2)]*1				No setting	△
[LX/LY Setting (1)]*1				No setting	△
[LX/LY Setting (2)]*1				No setting	△
[Reserved Station]				(Use default value)	△
[Pairing]					△

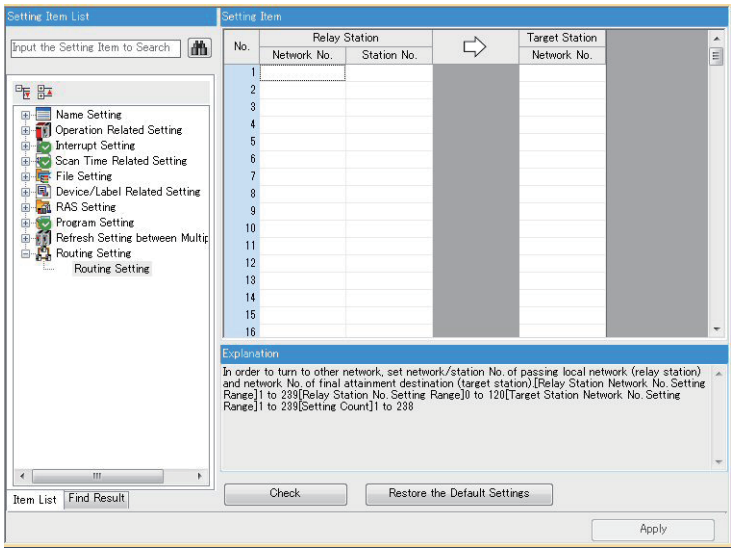
*1 Be sure to set it to perform the cyclic transmission.

Routing settings

Up to 238 target network numbers can be set.

However, the same number cannot be set twice or more (multiple times).

The GOT (host station) can access 238 different networks specified in the column of [Target Station Network No.].



Item		Range
[Relay Station]	[Network No.]	[1] to [239]
	[Station No.]	[0] to [120]
[Target Station]	[Network No.]	[1] to [239]

Point

Routing parameter settings for the request source

Routing parameter settings are also necessary for the request source GOT.

For the setting, refer to the following.

☞ Page 872 Routing parameter settings

- [Controller Setting] in GT Designer3

Item	Setting value
[Network Type]	CC IE Control extended mode
[Network No.]	1: Network No. 1
[Station No.]	2: Station No. 2
[Group No.]	0
[Mode Setting]	Online (auto reconnection)
[Refresh Interval]	1 ms
[Retry]	3 times
[Timeout Time]	3 seconds
[Delay Time]	0 ms
[Monitor Speed]	High(Normal)

Point

Network type of the GOT side

When the network is in the extended mode, be sure to set the network type of the GOT side to [CC IE Control Extended Mode].

For the setting method of [Controller Setting] in GT Designer3, refer to the following.

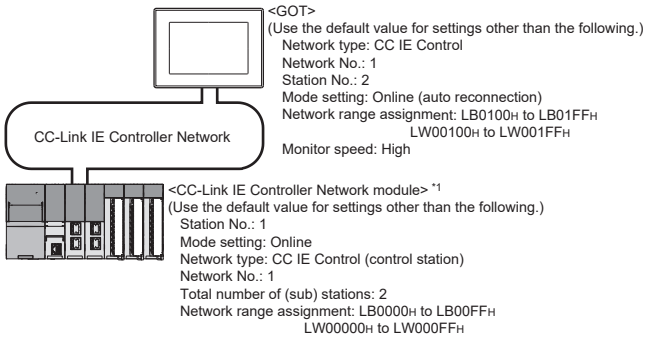
☞ Page 866 [Controller Setting]

Connection to C Controller (MELSEC iQ-R series) / MELSECWinCPU module (MELSEC iQ-R series)

This section describes the settings of the GOT and C Controller (MELSEC iQ-R series) / MELSECWinCPU module (MELSEC iQ-R series) in the following system configuration.

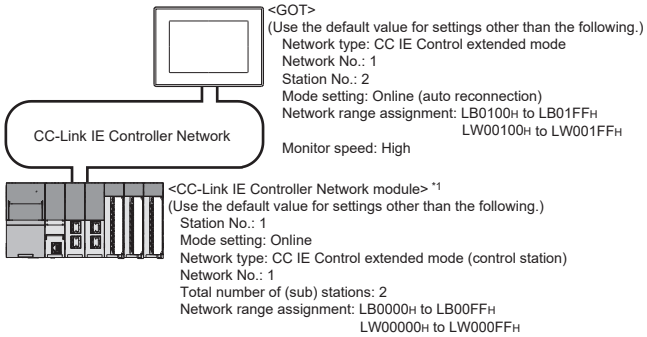
Use CW Configurator for the C Controller (MELSEC iQ-R series) / MELSECWinCPU module (MELSEC iQ-R series) communication settings.

■System configuration 1 (Network Type: CC IE Control)



*1 The CC-Link IE Controller Network module is mounted on slot 0 of the base unit.
The start I/O number of the CC-Link IE Controller Network module is set to 0.

■System configuration 2 (Network Type: CC IE Control extended mode)

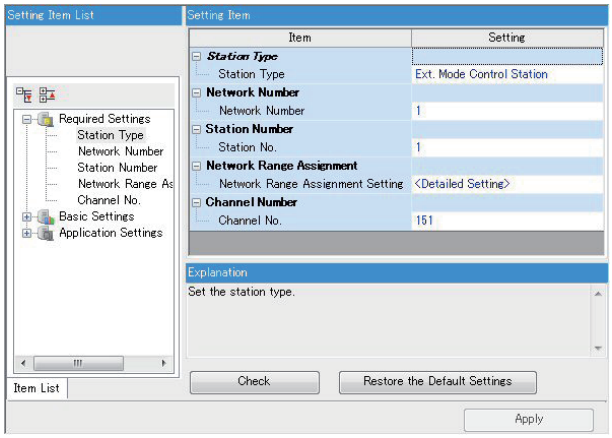


*1 The CC-Link IE Controller Network module is mounted on slot 0 of the base unit.
The start I/O number of the CC-Link IE Controller Network module is set to 0.

■Parameter settings for system configuration 1 (Network Type: CC IE Control) for connection to MELSEC iQ-R series

- [Module parameter] in CW Configurator

Module parameter

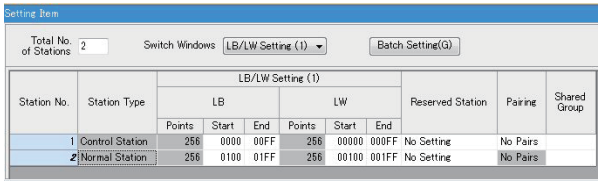


○: Necessary, △: As necessary, —: Not necessary

Item	Setting value	Setting for GOT connection
[Station Type]	Control station	○
[Network No.][*1]	1	○
[Station Number]	1	○
[Network Range Assignment]	☞ Network range assignment	△
[Channel No.]	(Use default value)	—

*1 Set the same network number as that of the GOT.

Network range assignment



○: Necessary, △: As necessary, —: Not necessary

Item				Setting value	Setting for GOT connection
[LB/LW Setting (1)][*1]	[LB]	Station No. 1	[Start]	0000H	△
			[End]	00FFH	△
		Station No. 2	[Start]	0100H	△
			[End]	01FFH	△
	[LW]	Station No. 1	[Start]	00000H	△
			[End]	000FFH	△
		Station No. 2	[Start]	00100H	△
			[End]	001FFH	△
[LB/LW Setting (2)][*1]				No setting	△
[LX/LY Setting (1)][*1]				No setting	△
[LX/LY Setting (2)][*1]				No setting	△
[Reserved Station]				(Use default value)	△
[Pairing]					△

*1 Be sure to set it to perform the cyclic transmission.

Point

When changing the module parameter

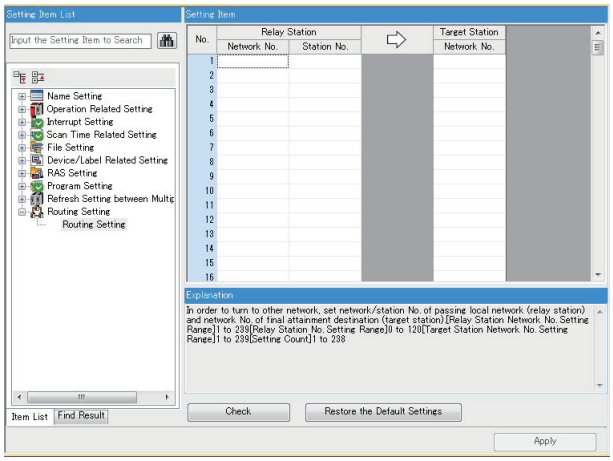
After writing module parameters to the PLC CPU, turn off then on or reset the PLC CPU.

Routing settings

Up to 238 target network numbers can be set.

However, the same number cannot be set twice or more (multiple times).

The GOT (host station) can access 238 different networks specified in the column of [Target Station Network No.].



Item		Range
[Relay Station]	[Network No.]	[1] to [239]
	[Station No.]	[0] to [120]
[Target Station]	[Network No.]	[1] to [239]

Point

Routing parameter settings for the request source

Routing parameter settings are also necessary for the request source GOT.

For the setting, refer to the following.

☞ Page 872 Routing parameter settings

■System configuration 1 (Network Type: CC IE Control): [Controller Setting] in GT Designer3

Item	Setting value
[Network Type]	CC IE Control
[Network No.]	1: Network No. 1
[Station No.]	2: Station No. 2
[Group No.]	0
[Mode Setting]	Online (auto reconnection)
[Transmission Speed]	1 Gbps
[Refresh Interval]	1 ms
[Retry]	3 times
[Timeout Time]	3 seconds
[Delay Time]	0 ms
[Monitor Speed]	High(Normal)

Point

[Controller Setting] in GT Designer3

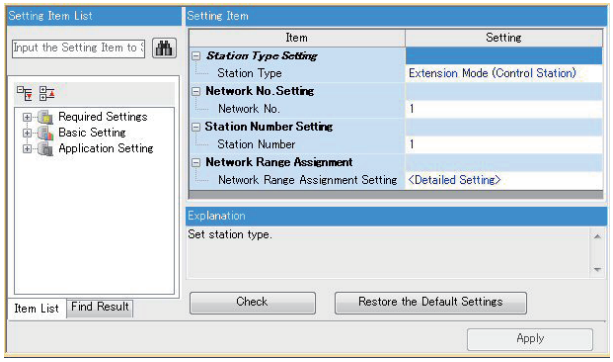
For the setting method of [Controller Setting] in GT Designer3, refer to the following.

☞ Page 866 [Controller Setting]

■Module parameter settings for system configuration 2 (Network Type: Extended mode)

- [Module parameter] in CW Configurator

Module parameter

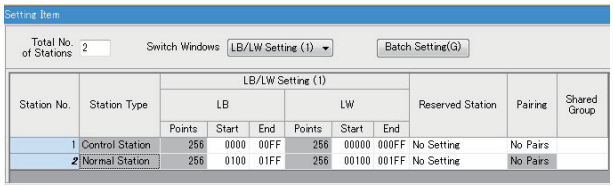


○: Necessary, △: As necessary, —: Not necessary

Item	Setting value	Setting for GOT connection
[Station Type]	Extension Mode (Control Station)	○
[Network No.][*1]	1	○
[Station Number Setting]	1	○
[Network Range Assignment]	☞ Network range assignment	△

*1 Set the same network number as that of the GOT.

Network range assignment



○: Necessary, △: As necessary, —: Not necessary

Item				Setting value	Setting for GOT connection
[LB/LW Setting (1)][*1]	[LB]	Station No. 1	[Start]	0000H	△
			[End]	00FFH	△
		Station No. 2	[Start]	0100H	△
			[End]	01FFH	△
	[LW]	Station No. 1	[Start]	00000H	△
			[End]	000FFH	△
		Station No. 2	[Start]	00100H	△
			[End]	001FFH	△
[LB/LW Setting (2)][*1]				No setting	△
[LX/LY Setting (1)][*1]				No setting	△
[LX/LY Setting (2)][*1]				No setting	△
[Reserved Station]				(Use default value)	△
[Pairing]					△

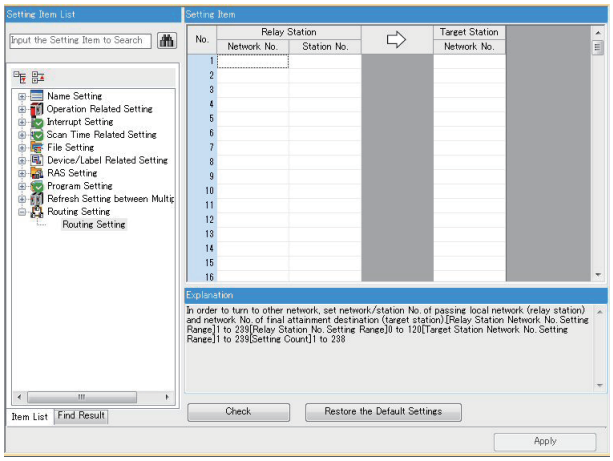
*1 Be sure to set it to perform the cyclic transmission.

Routing settings

Up to 238 target network numbers can be set.

However, the same number cannot be set twice or more (multiple times).

The GOT (host station) can access 238 different networks specified in the column of [Target Station Network No.].



Item		Range
[Relay Station]	[Network No.]	[1] to [239]
	[Station No.]	[0] to [120]
[Target Station]	[Network No.]	[1] to [239]

Point

Routing parameter settings for the request source

Routing parameter settings are also necessary for the request source GOT.

For the setting, refer to the following.

☞ Page 872 Routing parameter settings

- [Controller Setting] in GT Designer3

Item	Setting value
[Network Type]	CC IE Control extended mode
[Network No.]	1: Network No. 1
[Station No.]	2: Station No. 2
[Group No.]	0
[Mode Setting]	Online (auto reconnection)
[Refresh Interval]	1 ms
[Retry]	3 times
[Timeout Time]	3 seconds
[Delay Time]	0 ms
[Monitor Speed]	High(Normal)

Point

Network type of the GOT side

When the network is in the extended mode, be sure to set the network type of the GOT side to [CC IE Control Extended Mode].

For the setting method of [Controller Setting] in GT Designer3, refer to the following.

☞ Page 866 [Controller Setting]

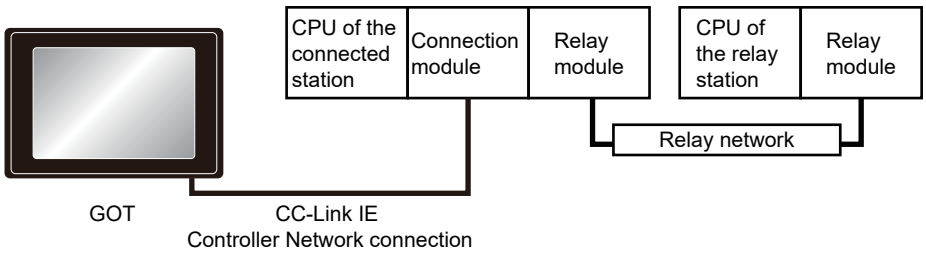
10.2.5 Access range for monitoring

When the GOT is connected to the CPU of the station connected via CC-Link IE Controller Network, the range accessible via the CPU is as follows.

Point

- When monitoring other networks (Routing parameter settings)

To monitor other networks, routing parameter settings are necessary.
For the routing parameter settings, refer to the reference manual of the network connected.



○: Accessible, —: Inaccessible

CPU of the connected station	Connected module	Relay station									
		Relay network	CPU of the relay station								
			MXR	RCPU	LCPU	QCPU (Q mode)	QSCPU	QCPU (A mode)	QnACPU	ACPU	FX5CPU
RCPU	☞ Page 861 Connectable devices	Ethernet	○*7	○*5	○	○*6	○	—	○	—	○*3
		CC-Link IE TSN	○*7	○*1	—	—	—	—	—	—	○*3
		CC-Link IE Controller Network	○*7	○	—	○	○	—	—	—	—
		CC-Link IE Field Network	○*7	○	○	○*2	○	—	—	—	○*4
		MELSECNET/H, MELSECNET/10	—	—	—	○	○	○	○	○*8	—
C Controller module (MELSEC iQ-R series)	☞ Page 861 Connectable devices	CC-Link IE TSN	○*7	○*1	—	—	—	—	—	—	○*3
		CC-Link IE Controller Network	○*7	○	—	○	○	—	—	—	—
		CC-Link IE Field Network	○*7	○	○	○*2	○	—	—	—	○*4
		MELSECNET/H, MELSECNET/10	—	—	—	○	○	○	○	○*8	—

*1 RnCPU, RnENCPU, RnSFCPU, C Controller module (MELSEC iQ-R series), and MELSECWinCPU (MELSEC iQ-R series) are supported.
*2 QnUDVCPU, QnUDECPU, QnUDEHCPU, QnUCPU, QnUDCPU, QnUDHCPU, and C Controller module (MELSEC-Q series) are supported.
*3 FX5U and FX5UC are supported.
*4 FX5U, FX5UC, and FX5UJ are supported.
*5 The C Controller module (MELSEC iQ-R series) is not supported.
*6 The C Controller module (MELSEC-Q series) is not supported.
*7 Regardless of whether encrypted communications are performed, the MELSEC MX Controller can be used as the relay station.
To perform encrypted communication, settings need to be configured.
For details, refer to the following.
☞ Page 90 Setting procedure of the encrypted communication
*8 AnUCPU and AnUSCPU are supported.

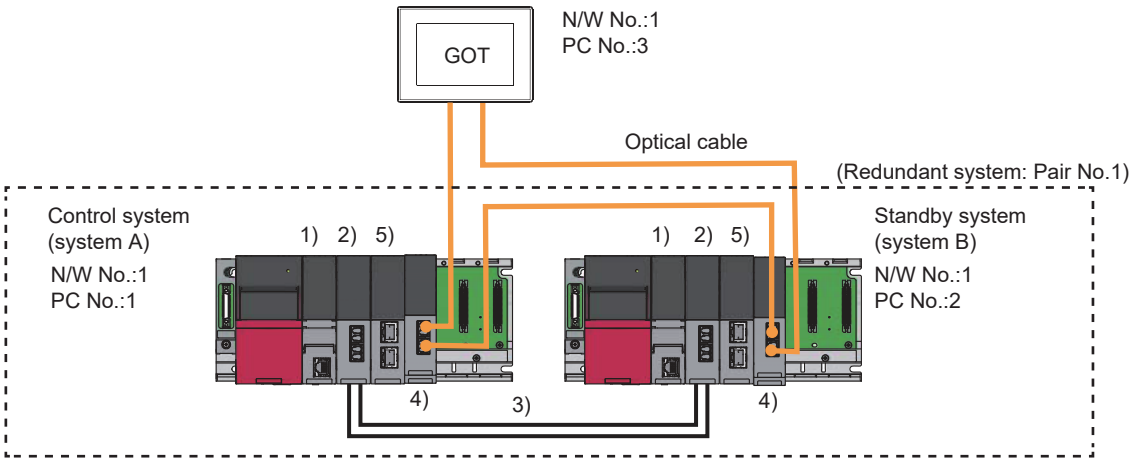
10.2.6 How to monitor a redundant system

☞ Page 885 One-to-one connection of the GOT and the redundant system
☞ Page 887 1:n connection of the GOT and the redundant system
☞ Page 889 Mixed connection of redundant and non-redundant systems
☞ Page 890 MELSEC redundant settings
☞ Page 892 Precautions

One-to-one connection of the GOT and the redundant system

■System configuration example

The following connection configuration examples are explained.



1) Process CPU
2) Redundant function module
3) Tracking cable
4) CC-Link IE Controller Network module
5) CC-Link IE Field Network master/local module

■Connection method

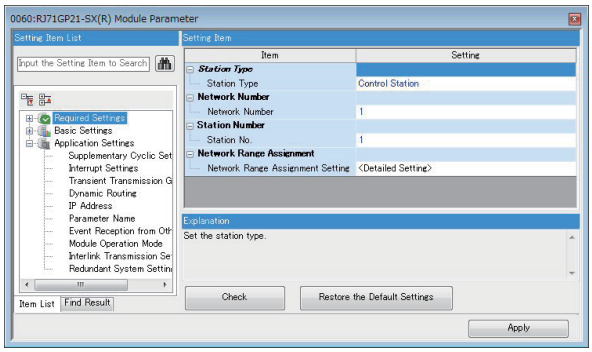
Connect the CC-Link IE Controller Network system and the GOT.

☞ Page 861 MELSEC iQ-R series (CC-Link IE Controller Network connection)

■PLC side settings (GX Works3)

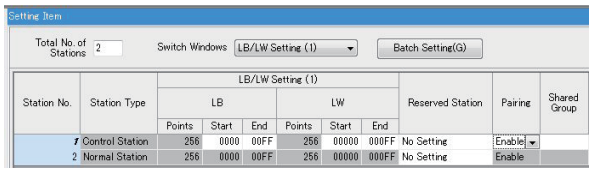
- Control system (system A) PLC settings

Module parameter



Item	Setting value
[Station Type]	Control station
[Network No.]	1
[Station Number]	1
[Network Range Assignment]	☞ Network range assignment

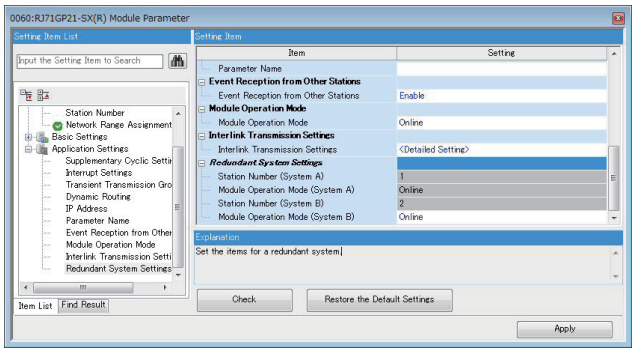
Network range assignment



Item	Setting value
Pairing	Enable

- Control system (system A) PLC settings

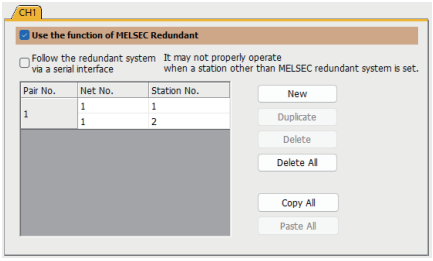
Redundant setting



Item	Setting value
B system module operation mode	Online mode

■GOT side settings

Set GT Designer3 as follows.

Setting item	Setting details		Model
[Controller Type]	MELSEC iQ-R, RnMT/NC/RT, CR800-D		GT37 SoftGOT3000
Device setting (Network setting)	[Host]	—	
	[Other]	[Network No.]: 1	
		[Station No.]: Station number of the control system	
	[Redundant System]	The system to be monitored ([Not Specified/Control System], [Standby System]) can be specified. This item can be set only when [Use the function of MELSEC Redundant] is selected in [MELSEC Redundant] shown below.	
MELSEC redundant setting	 ☞ Page 890 MELSEC redundant settings		

■Monitoring target change when system switching occurs in a redundant system

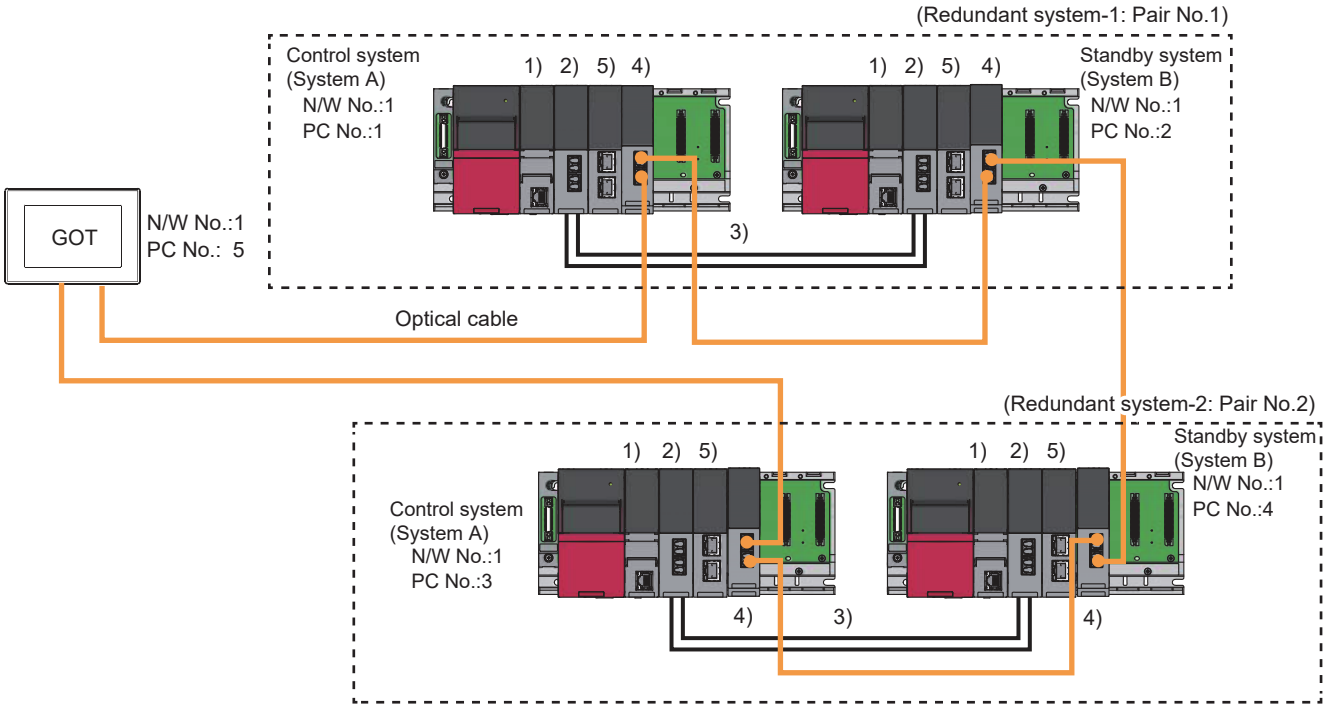
When system switching occurs, the CPU (PLC station No. 2) becomes the control system and continues the control.

The GOT automatically starts monitoring according to the specified system.

1:n connection of the GOT and the redundant system

■System configuration example

The following connection configuration examples are explained.



1) Process CPU
2) Redundant function module
3) Tracking cable
4) CC-Link IE Controller Network module
5) CC-Link IE Field Network master/local module

■Connection method

Connect the CC-Link IE Controller Network system and the GOT.

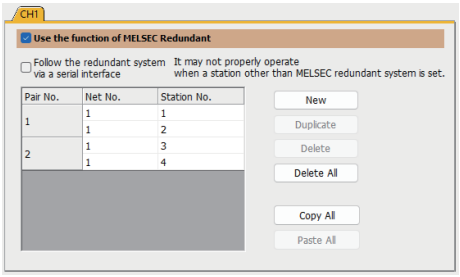
☞ Page 861 MELSEC iQ-R series (CC-Link IE Controller Network connection)

■PLC side settings (GX Works3)

☞ Page 886 PLC side settings (GX Works3)

■GOT side settings

Set GT Designer3 as follows.

Setting item	Setting details		Model
[Controller Type]	MELSEC iQ-R, RnMT/NC/RT, CR800-D		GT37 SoftGOT3000
Device setting (Network setting)	[Host]	—	
	[Other]	[Network No.]: 1	
		[Station No.]: Station number of the control system	
	[Redundant System]	The system to be monitored ([Not Specified/Control System], [Standby System]) can be specified. This item can be set only when [Use the function of MELSEC Redundant] is selected in [MELSEC Redundant] shown below.	
MELSEC redundant setting	 ☞ Page 890 MELSEC redundant settings		

■Monitoring target change when system switching occurs in a redundant system

- Redundant system-1

When system switching occurs, the CPU (PLC station No. 2) becomes the control system and continues the control.
The GOT automatically starts monitoring according to the specified system.

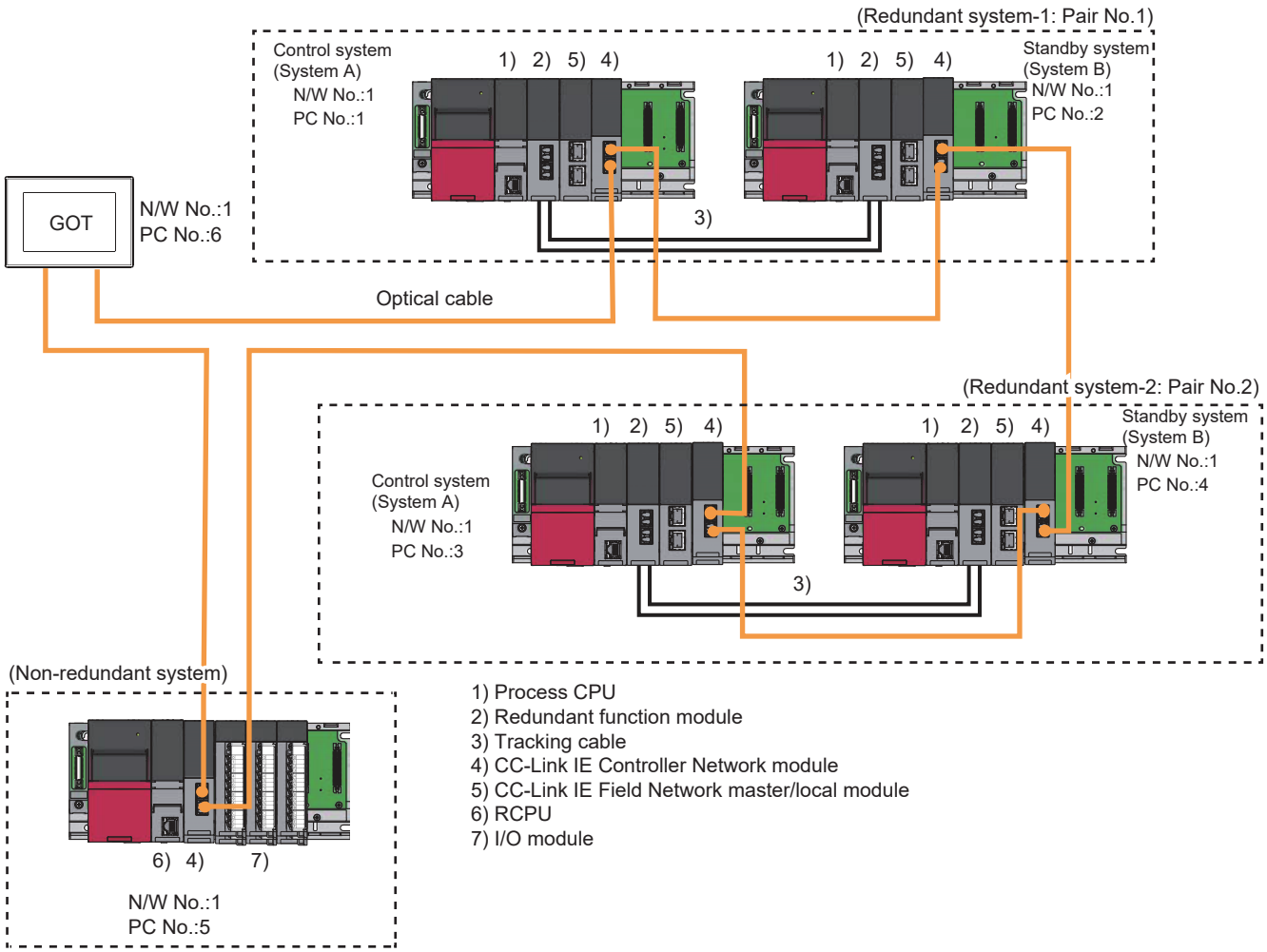
- Redundant system-2

When system switching occurs, the CPU (PLC station No. 4) becomes the control system and continues the control.
The GOT automatically starts monitoring according to the specified system.

Mixed connection of redundant and non-redundant systems

■System configuration example

The following connection configuration examples are explained.



■Connection method

Connect the CC-Link IE Controller Network system and the GOT.

☞ Page 861 MELSEC iQ-R series (CC-Link IE Controller Network connection)

■PLC side settings

☞ Page 886 PLC side settings (GX Works3)

■GOT side settings

☞ Page 887 GOT side settings

■Monitoring target change when system switching occurs in a redundant system

☞ Page 888 Monitoring target change when system switching occurs in a redundant system

MELSEC redundant settings

This section describes the settings for the GOT to automatically change the monitoring target of the RCPU redundant system.

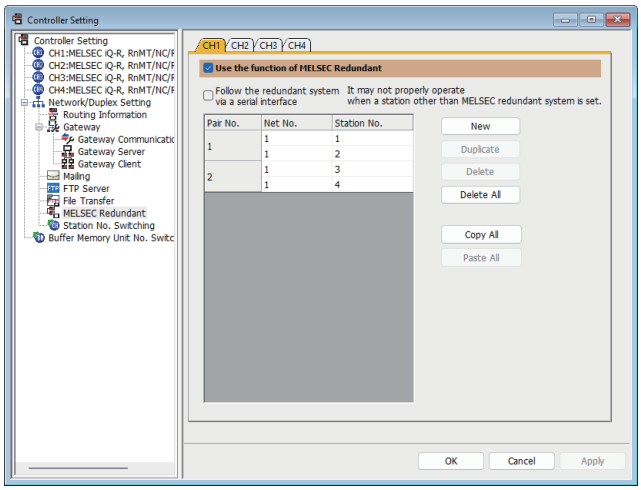
Point

Before configuring the MELSEC redundant settings

In the MELSEC redundant settings, do not set a station outside the redundant RCPU.

1. Select [Common] → [Controller Setting] → [MELSEC Redundant] from the menu.
2. The setting dialog box appears. Configure the settings by referencing the explanation that follows.
3. Configure the MELSEC redundant settings.

In the MELSEC Redundant dialog, settings can be made for each channel of the controller.



Item		Description	Model
CH1 to CH4		Select the tab of the channel number to configure the MELSEC redundant settings.	GT37 SoftGOT3000
[Follow the redundant system via a serial interface]		Select this item to monitor the control system as a host station at serial connection.	
[Pair No.]*1	[Net No.]	Set the network number (1 to 255) for each pair number (1 to 64). • Upper row: Setting for the first redundant CPU • Lower row: Setting for the second redundant CPU (The same value as the value set for the first redundant CPU is displayed.)	
	[Station No.]	Set the station number (0 to 120) of the redundant CPU for each pair number (1 to 64). • Upper row: Setting for the first redundant CPU • Lower row: Setting for the second redundant CPU (The setting value for the first redundant CPU + 1 is displayed.)	
[New]		Adds a new pair number.	
[Duplicate]		Adds a new pair number.	
[Delete]		Deletes one setting of the selected pair number. After deletion, the succeeding pair numbers are renumbered to fill the deleted pair number.	
[Delete All]		Deletes all the pair number settings.	
[Copy All]		Copies the MELSEC redundant setting on the selected CH No. tab.	
[Paste All]		Pastes the copied MELSEC redundant setting in the selected CH No. tab.	

*1 For details, refer to the following.
☞ Page 891 Pair number

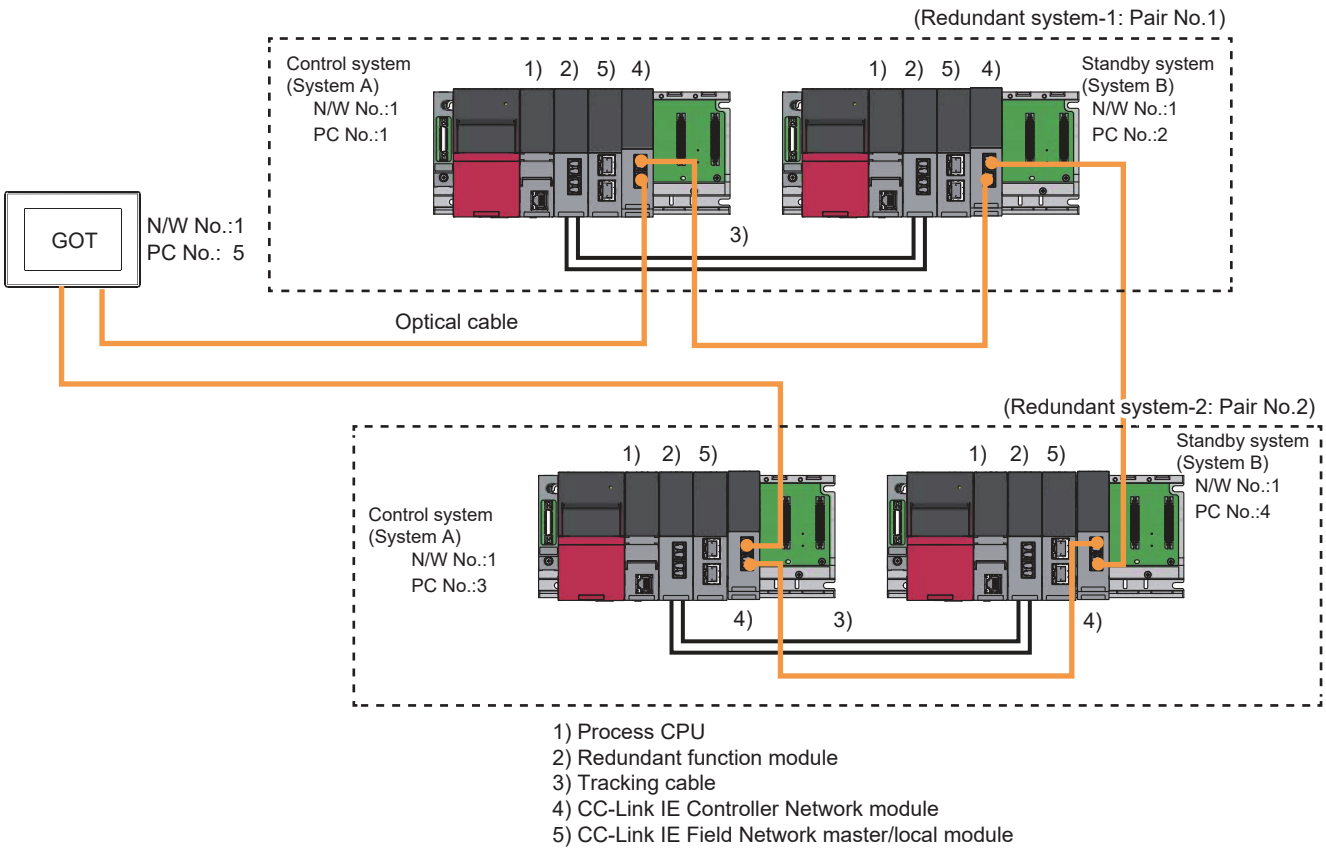
■Pair number

Redundant CPU pair means the redundant CPUs (System A / System B) in the redundant system configuration.

Pair number is the number assigned to each redundant CPU pair.

The following shows an example of the CC-Link IE Controller Network connection in the RCPU redundant system. (Pair No. 1 to No. 2)

Ex.



Point

Precautions for configuring the MELSEC redundant settings

Pay attention to the following items when configuring the MELSEC redundant settings.

- Pairing of the last station No. and station No. 1 (Example: Station No. 64 and station No. 1) is not allowed.
- Before configuring the settings, make sure to check the station numbers of the network modules. If the MELSEC redundant settings and the actual network module station numbers are inconsistent, the GOT fails to automatically change the monitoring target to the control system when the system is switched.
- GOT supports the backup mode, which is the redundant mode of the RCPU redundant system, and does not support the process mode and separate mode.

Precautions

■Start of the redundant system

The GOT starts monitoring the redundant system after the control system and standby system have been determined, regardless of the starting order of PLC systems A and B.
The GOT starts monitoring when both systems start.
(In a redundant system with a redundant extension base unit, the GOT monitors the control system that starts first.)
Power on the redundant system within the time set in the GOT (communication timeout time and number of retries) so that the GOT can start monitoring after the redundant system starts (after the control system is decided).
If the GOT does not start within the set time, the GOT stops monitoring for safety reasons, and the following system alarm occurs.

- 451: The MELSEC redundant setting and actual system configuration do not match.

If the system alarm occurs, restart the GOT (reapply or reset the power supply) to start monitoring again.

■System switching

When system switching occurs through the user program, the communication path remains unchanged, and the GOT will continue monitoring.
No system alarm occurs.
When system switching occurs due to disconnected cable or other causes, the GOT changes the communication path and continues monitoring.
"450: Path has changed or timeout occurred in redundant system." appears as the system alarm.

■Redundant system configuration and operation mode

- System alarm display

If the MELSEC redundant settings do not match the actual configuration of the redundant system, or if the operation mode of the redundant system is not set to backup mode, "451: The MELSEC redundant setting and actual system configuration do not match." appears as the system alarm, and the GOT will not be able to correctly monitor the redundant system's CPU.
If the system alarm occurs, restart the GOT (reapply or reset the power supply) to start monitoring again.

- Changing the MELSEC redundant settings

Always reset the GOT after changing the MELSEC redundant settings. If not reset, the changed MELSEC redundant settings will not be applied on the GOT.

■Monitoring a non-redundant system with the MELSEC redundant settings configured

If the MELSEC redundant settings were set for a non-redundant system, the GOT will operate normally.
In this case, if an abnormality (such as powering off or communication timeout error) occurs in the PLC CPU for which the MELSEC redundant settings are configured, the PLC CPU may not operate as intended.

■Monitoring a redundant system without configuring the MELSEC redundant settings

When the MELSEC redundant settings are not configured, the GOT does not automatically change the monitoring target even if system switching occurs in the redundant system.
When the GOT is connected to the standby system, data written to a device are overwritten by the data of the control system, failing to be reflected.
In this case, when data is written to a device in the standby system normally, the system alarm "315 Device writing error. Correct device." is not detected.

■Option functions including the ladder monitor

A message "Unable to communicate with CPU." is displayed when system switching occurs while an option function such as the ladder monitor is used.

10.3 MELSEC-Q series (CC-Link IE Controller Network connection)

☞ Page 893 Connectable devices
☞ Page 896 System configuration
☞ Page 900 GOT side settings
☞ Page 907 PLC side settings
☞ Page 916 Access range for monitoring
☞ Page 917 How to monitor a redundant system

10.3.1 Connectable devices

The following table shows the connectable models.

○: Supported, —: Not supported

Controller	Model	Clock	PLC side interface CC-Link IE Controller Network communication unit	Connectable model
MELSEC-Q (Q mode)	Q00JCPU Q00CPU*1 Q01CPU*1	○	QJ71GP21-SX*5 QJ71GP21S-SX*5	GT37 SoftGOT3000
	Q02CPU*1*6 Q02HCPU*1*6 Q06HCPU*1*6 Q12HCPU*1*6 Q25HCPU*1*6	○	QJ71GP21-SX*7*8 QJ71GP21S-SX*7*8	GT37 SoftGOT3000
	Q02PHCPU Q06PHCPU	○	QJ71GP21-SX*5 QJ71GP21S-SX*5	GT37 SoftGOT3000
	Q12PHCPU*9 Q25PHCPU*9	○	QJ71GP21-SX*5 QJ71GP21S-SX*5	GT37 SoftGOT3000
	Q12PRHCPU (main base)*9 Q25PRHCPU (main base)*9	○	QJ71GP21-SX*5 QJ71GP21S-SX*5	GT37 SoftGOT3000
	Q00UJCPU Q00UJCPU-S8 Q00UCPU Q01UCPU	—	QJ71GP21-SX*10 QJ71GP21S-SX*10	GT37 SoftGOT3000
	Q02UCPU*11 Q03UDCPU*11 Q04UDHCPU*11	—	QJ71GP21-SX*10 QJ71GP21S-SX*10	GT37 SoftGOT3000
	Q06UDHCPU*11 Q10UDHCPU*11 Q13UDHCPU*11 Q20UDHCPU*11 Q26UDHCPU*11	○	QJ71GP21-SX*10 QJ71GP21S-SX*10	GT37 SoftGOT3000

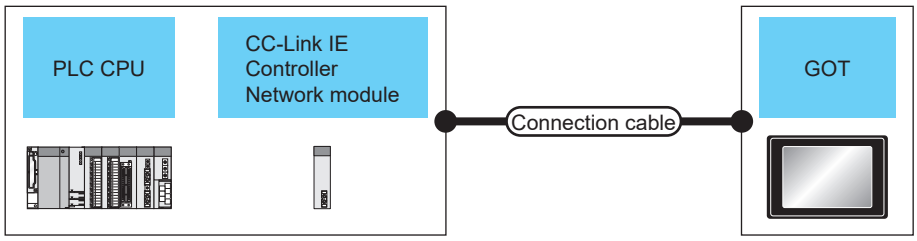
Controller	Model	Clock	PLC side interface CC-Link IE Controller Network communication unit	Connectable model
MELSEC-Q (Q mode)	Q03UDECPU Q04UDEHCPU Q06UDEHCPU Q10UDEHCPU Q13UDEHCPU Q20UDEHCPU Q26UDEHCPU Q50UDEHCPU Q100UDEHCPU	○	QJ71GP21-SX*10 QJ71GP21S-SX*10	GT37 SoftGOT3000
	Q03UDVCPU Q04UDVCPU Q06UDVCPU Q13UDVCPU Q26UDVCPU	○	QJ71GP21-SX*10 QJ71GP21S-SX*10	GT37 SoftGOT3000
C Controller module (Q series)	Q12DCCPU-V*2 Q24DHCCPU-V/VG Q24DHCCPU-LS Q26DHCCPU-LS	○	QJ71GP21-SX*10 QJ71GP21S-SX*10	GT37 SoftGOT3000
MELSEC-QS	QS001CPU*12	○	QJ71GP21-SX*5 QJ71GP21S-SX*5	GT37 SoftGOT3000
Motion CPU (Q series)	Q172DCPU Q173DCPU Q172DCPU-S1 Q173DCPU-S1 Q172DSCPU Q173DSCPU Q170MCPU*3*13*14 Q170MSCPU*4 Q170MSCPU-S1*4	○	QJ71GP21-SX QJ71GP21S-SX	GT37 SoftGOT3000
CNC C70	Q173NCCPU*15	○	QJ71GP21-SX QJ71GP21S-SX	GT37 SoftGOT3000
Robot controller (Q series)	CRnQ-700(Q172DRCPU)*15 CR750-Q(Q172DRCPU)*15 CR751-Q(Q172DRCPU)*15 CR800-Q(Q172DSRCPU)*15	○	QJ71GP21-SX QJ71GP21S-SX	GT37 SoftGOT3000

*1 To configure a multiple CPU system, use a CPU with function version B or later.
*2 Use a module having a serial number stating with 12042 or later in the first 5 digits.
*3 Only the first step can be used on the extension base unit (Q52B/Q55B).
*4 The extension base unit (Q5□B/Q6□B) can be used.
*5 Use a CC-Link IE Controller Network module with function version D or later.
*6 Use a CPU having a serial number stating with 09012 or later in the first 5 digits.
*7 If the number of stations on one network is 65 or more, use a CC-Link IE Controller Network module having a serial number starting with 09042 or later in the first 5 digits.
*8 Use a CC-Link IE Controller Network module having a serial number starting with 09011 or later in the first 5 digits.
*9 Use a CPU having a serial number stating with 10042 or later in the first 5 digits.
*10 Use a CC-Link IE Controller Network module having a serial number starting with 09042 or later in the first 5 digits.
*11 Use a CPU having a serial number stating with 09042 or later in the first 5 digits.
*12 Writing data to a QS001CPU always causes an error.
*13 Use a CPU having a serial number stating with 12012 or later in the first 5 digits.
*14 The following requirements must be satisfied.
Software: MT Works2 version 1.23Z
CPU model: Q170M SV43
*15 For GT SoftGOT3000, configure the multiple CPU system using a QCPU (Q mode).

Precautions

For information on the version restrictions of the CC-Link IE Controller Network module, refer to the following manual.
📖CC-Link IE Controller Network Reference Manual

10.3.2 System configuration



For details on the maximum length of the connection cable, refer to the following.

☞ Page 896 Maximum length

For details on the maximum number of connected devices, refer to the following.

☞ Page 896 Maximum number of connected devices

PLC		Communication type	Connection cable	GOT	
Controller	CC-Link IE Controller Network communication unit*1			Interface	Model
MELSEC-Q (Q mode)*4 C Controller module (Q series) MELSEC-QS Motion CPU (Q series) CNC C70 Robot controller (Q series)	QJ71GP21-SX QJ71GP21S-SX	CC-Link IE Controller Network	Optical fiber cable*2	GT37-IF2000 + GT15-J71GP23-SX (optical loop type)*3	GT37 SoftGOT3000

*1 For the CC-Link IE Controller Network extended mode, the serial number must start with 12052 or later.
For the system configuration on the CC-Link IE Controller Network module side, refer to the following manual.
📖CC-Link IE Controller Network Reference Manual

*2 For details on the optical fiber cable, refer to the following manual.
📖CC-Link IE Controller Network Reference Manual

*3 For the CC-Link IE Controller Network extended mode, the serial number must be 02910908******* or later.

*4 When the CC-Link IE Controller Network is in the extended mode, only MELSEC-Q series Universal model QCPU can be used.

Maximum length

The overall cable length and cable length between stations vary depending on the conditions such as the type of the cable used and the total number of stations.

For details, refer to the following manual.

📖CC-Link IE Controller Network Reference Manual

Maximum number of connected devices

The following shows the number of GOTs connectable to one controller.

Controller	
Model	Number of GOTs connectable to one PLC
MELSEC-Q (Q mode) Motion CPU (Q series) C Controller module (Q series) MELSEC-QS CNC C70 Robot controller (Q series)	119*1

*1 When the Universal model QCPU is the control station, up to 119 GOTs can be connected.
When a QCPU other than the Universal model is the control station, up to 63 GOTs can be connected.
The Basic model QCPU and the QSCPU cannot be used as the control station.

Connecting one PLC to multiple GOTs

When multiple GOT units are simultaneously accessing one PLC, the GOT writing process (transient/cyclic) and reading process (transient) may slow down.

This slow access can be remedied with the following countermeasures.

<Countermeasures>

■Improve response speed on PLC side

Insert a COM instruction on the PLC to increase the response speed. Note that caution is required as the scan time will increase.

■Screen design using cyclic devices

Create the screen with cyclic devices instead of using transient devices.

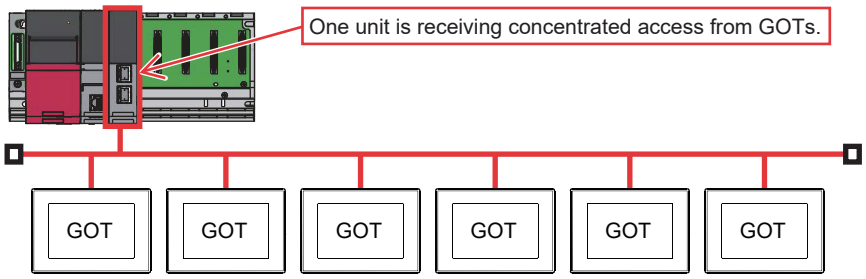
■Split GOT connection destinations into several systems

Add a master/local unit on the PLC side, and split the GOT connection destinations into several systems.

Improve the current system configuration.

(Example of current system configuration)

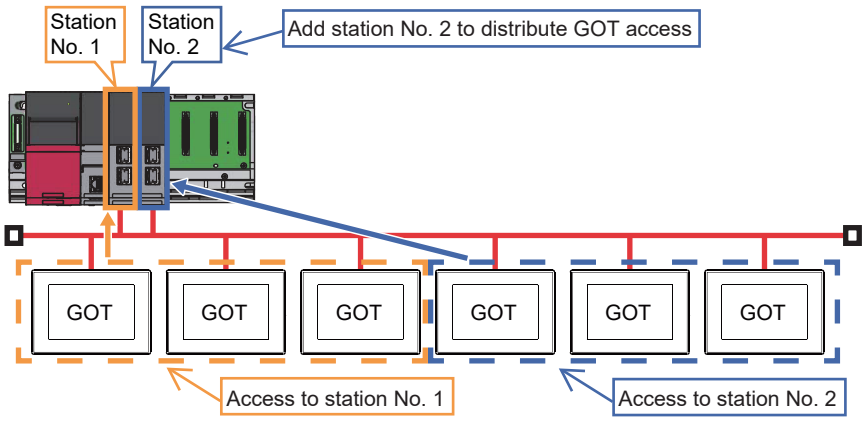
In the following system configuration, access from the GOT is concentrated on one module.



(Improvement measure)

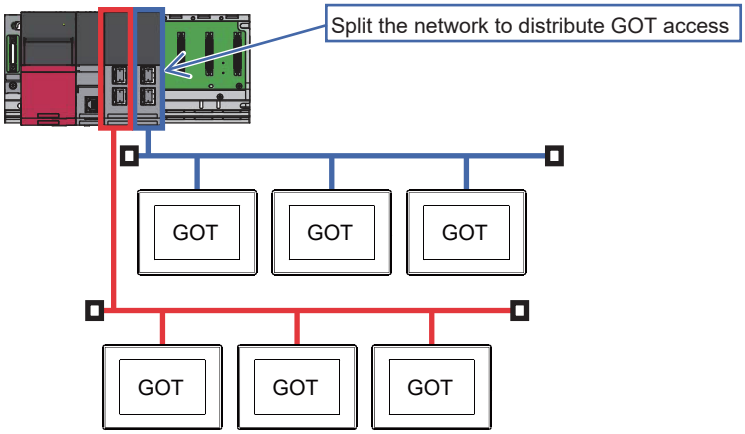
- Adding a module to the PLC side

Add a module to the PLC side to disperse the GOT access destinations.



• Split the network

Split the network to disperse the GOT access.



Precautions

■Starting the GOT connected to the CC-Link IE Controller Network

For the CC-Link IE Controller Network connection, the data link is started approximately 13 seconds after the GOT startup.

■When a network error occurs in the system alarm

In the CC-Link IE Controller Network connection, when a network error occurs in the system alarm, the system alarm display cannot be canceled even though the causes are removed.

To cancel the system alarm display, restart the GOT.

■Connection via the multiple CPU system

When the GOT is connected via the multiple CPU system, the PLC takes the following time to run.

QCPU (Q mode), Motion CPU (Q series): 10 seconds or more

If the GOT is started during the above time, a system alarm occurs. Adjust the opening screen time in the GOT setup so that no system alarm occurs.

📖GT Designer3 (GOT3000) Screen Design Manual

■Connection to QSCPU

The GOT can only read device data and sequence programs by the ladder monitor function in the QSCPU.

The GOT cannot write any data to the QSCPU.

■Connection to Q170MCPU or Q170MSCPU(-S1)

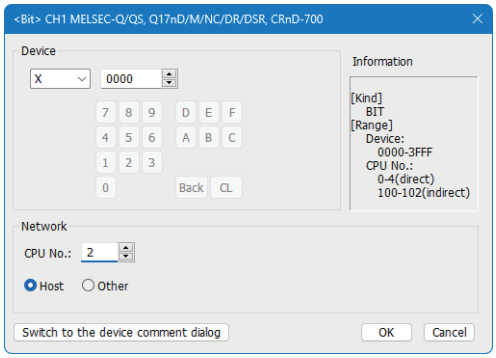
Set [CPU No.] to 2 in the device setting to monitor the device of the Motion CPU area (CPU No. 2).

When [CPU No.] is set to 0 or 1, the device on the PLC CPU area (CPU No. 1) is monitored.

When [CPU No.] is set to the number other than 0 to 2, a communication error occurs and the monitoring cannot be executed.

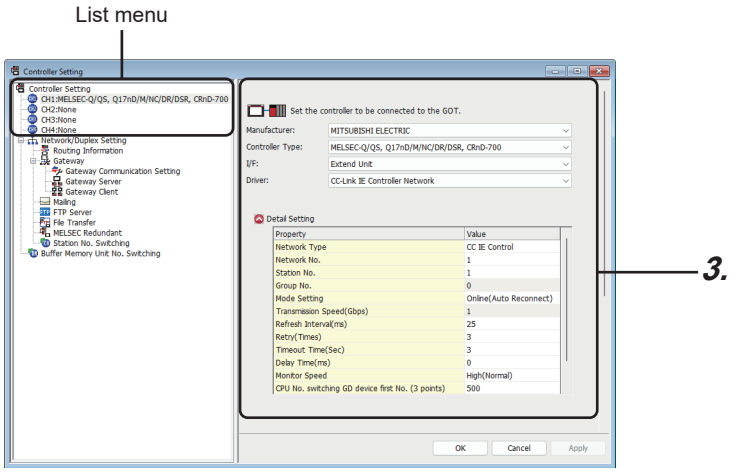
For the setting of [CPU No.], refer to the following.

📖GT Designer3 (GOT3000) Screen Design Manual



10.3.3 GOT side settings

[Controller Setting]



Operating procedure

1. Select [Common] → [Controller Setting] from the menu.
2. In the [Controller Setting] window, select the channel number to be used from the list menu.
3. Set the following items.

Item	Description
[Manufacturer]	[MITSUBISHI ELECTRIC]
[Controller Type]	[MELSEC-Q/QS, Q17nD/M/NC/DR/DSR, CRnD-700]
[I/F]	[Extend Unit]
[Driver]	[CC-Link IE Controller Network]
[Detail Setting]	Configure the settings according to the usage environment. ☞ Page 901 [Detail Setting]

4. When you have completed the settings, click the [OK] button.

Point

The controller settings can be checked in [I/F Communication Setting].
For details, refer to the following.
📖GT Designer3 (GOT3000) Screen Design Manual

■[Detail Setting]

Configure the settings according to the usage environment.

Detail Setting

Property	Value
Network Type	CC IE Control
Network No.	1
Station No.	1
Group No.	0
Mode Setting	Online(Auto Reconnect)
Transmission Speed(Gbps)	1
Refresh Interval(ms)	25
Retry(Times)	3
Timeout Time(Sec)	3
Delay Time(ms)	0
Monitor Speed	High(Normal)
CPU No. switching GD device first No. (3 points)	500
Module No. switching GD device first No. (16 points)	550
Servo axis switching GD device first No. (16 points)	10

Item	Description	Range
[Network Type]*4	Set the network type.	[CC IE Control], [CC IE Control Extended Mode]
[Network No.]	Set the network number.	[1] to [239]
[Station No.]	Set the station number of the GOT.	[1] to [120]
[Group No.]	-	[0]
[Mode]	Set the operation mode of the GOT.	[Online(Auto Reconnect)], [Offline], [H/W test]*1, [Self-loopback test]*1, [Internal self-loopback test]*1, [Line test]*1, [Test stations]*1
[Transmission Speed]	-	[1Gbps]
[Refresh Interval]	Set the number of refreshes to secure the send/receive data per station during communication. This setting is effective when [Block data assurance per station is available.] is selected for the network parameter on the control station side of CC-Link IE Controller Network.	[1] ms to [1000] ms
[Retry]	Set the number of retries to be performed when a communication timeout occurs. When receiving no response after retries, the communication times out.	[0] times to [5] times
[Timeout Time]	Set the time period for a communication to time out.	[1] second to [90] seconds
[Delay Time]	Set the delay time for reducing the load of the network and destination PLC.	[0] ms to [300] ms
[Monitor Speed]*5	Set the monitor speed for the CC-Link IE Controller Network. This setting is not valid in all systems.	[High(Normal)]*2, [Middle]*3, [Low]*3
[CPU No. switching GD device first No. (3 points)]	Set the start device number of the GD devices for CPU number switching. For details, refer to the following. ☞ Page 903 Start device number of the GD devices for CPU number switching	[0] to [65520]
[Module No. switching GD device first No. (16 points)]	Set the start device number of the GD devices for module number switching. For details, refer to the following. ☞ Page 904 Start device number of the GD devices for module number switching	[0] to [65520]
[Servo axis switching GD device first No. (16 points)]	Set the start device number of the GD devices for servo axis switching. For details, refer to the following. ☞ Page 905 Start device number of the GD devices for servo axis switching	[0] to [65520]

*1 For details, refer to the following manual.
📖CC-Link IE Controller Network Reference Manual

*2 This setting is effective for collecting large data with the logging, recipe, or such function on a screen other than the monitor screen.
However, the range may affect the sequence scan time when connecting to Q00UJ/Q00U/Q01U/Q02UCPU or Q00J/Q00/Q01CPU.
If you want to avoid the influence on the sequence scan time, do not set [High(Normal)].
(This setting hardly affects QCPUs other than the above.)

*3 Set this item if you want to avoid the influence on the sequence scan time further than the [Middle] setting when connecting to Q00UJ/Q00U/Q01U/Q02UCPU or Q00J/Q00/Q01CPU.
However, the monitor speed may be reduced.

*4 For the CC-Link IE Controller Network extended mode, select [CC IE Control Extended Mode]. The extended mode can be used in GT Designer3 version 1.22Y or later.

*5 When using a global label, to read or write more than 235 two-byte characters, set the [Monitor speed] to [High(Normal)] or [Middle].
If [Monitor speed] is set to [Low], a system error occurs when reading or writing.
For details, refer to the following manual.
📖GT Designer3 (GOT3000) Screen Design Manual

Point

• Example of communication detail settings

For the example of communication detail settings, refer to the following.

☞ Page 855 PLC side settings

• Communication interface settings in the utility

The communication interface setting can be changed on the utility's [Communication setting] after writing [Controller Setting] of project data.

For details on the utility, refer to the following manual.

📖GOT3000 Series User's Manual (Utility & Maintenance Functions)

• Priority of the controller settings

When the settings are configured in GT Designer3 or in the utility, the latest settings are effective.

• Network type

Be sure to set the same network types for the CPU side and the GOT side.

If the network types of the CPU side and the GOT side are different, an error is displayed in the system alarm of the GOT side.

■Start device number of the GD devices for CPU number switching

• Indirect specification of a CPU number

[CPU No.] can be indirectly specified with the GOT internal registers (GD devices) by specifying a value (100 to 102) to [CPU No.] in the device setting dialog in GT Designer3.

Set the start device number of the GD devices to be used in [CPU No. switching GD device first No. (3 points)].

[CPU No.] is specified with three consecutive GD devices, starting from the set device number.

When [500] is set to [CPU No. switching GD device first No. (3 points)], GD500 to GD502 are used to specify [CPU No.] as shown in the following table.

CPU No.	GD device	Setting range
100	GD500	1 to 4 Setting a value outside the range causes a communication timeout error. Specifying a nonexistent CPU number or a CPU number not supporting a multiple CPU system with a device causes a controller error.
101	GD501	
102	GD502	

• Indirect specification of a CPU number on the initially displayed screen

Set [CPU No. switching GD device first No. (3 points)] so that the values of the GD devices are retained and monitored upon the GOT startup.

• Indirect specification of a CPU number for multi-channel connection

If the setting range of [CPU No. switching GD device first No. (3 points)] set for each channel overlaps, the monitoring target CPU number set to each channel is switched simultaneously.

Set [CPU No. switching GD device first No. (3 points)] for each channel so that the setting range does not overlap.

• Indirect specification of a station number and a CPU number for multi-channel connection

When GD10 to GD25 are used to specify the station number of an inverter or non-Mitsubishi temperature controller connected, setting [10] to [CPU No. switching GD device first No. (3 points)] in a different channel switches the monitoring target CPU number and station number of an inverter or non-Mitsubishi temperature controller set to each channel simultaneously.

Set [CPU No. switching GD device first No. (3 points)] so that the setting range does not overlap the station number of an inverter or non-Mitsubishi temperature controller.

■Start device number of the GD devices for module number switching

• Indirect specification of a module number

For connection via a Simple Motion module, [Unit No.] can be specified with the GOT internal registers (GD devices) by specifying a value (100 to 10F) to [Unit No.] in the device setting dialog in GT Designer3.

Set the start device number of the GD devices to be used in [Module No. switching GD device first No. (16 points)].

[Unit No.] is specified with 16 consecutive GD devices, starting from the set device number.

When [550] is set to [Module No. switching GD device first No. (16 points)], GD550 to GD565 are used to specify [Unit No.] as shown in the following table.

Module No.	GD device	Setting range
100	GD550	00 to FF Setting a value outside the above range causes a device range error.
101	GD551	
102	GD552	
103	GD553	
104	GD554	
105	GD555	
106	GD556	
107	GD557	
108	GD558	
109	GD559	
10A	GD560	
10B	GD561	
10C	GD562	
10D	GD563	
10E	GD564	
10F	GD565	

• Indirect specification of a module number on the initially displayed screen

Set [Module No. switching GD device first No. (16 points)] so that the values of the GD devices are retained and monitored upon the GOT startup.

• Indirect specification of a module number for multi-channel connection

If the setting range of [Module No. switching GD device first No. (16 points)] set for each channel overlaps, the module number of the Simple Motion module via the servo amplifier device of each channel is switched simultaneously.

Set [Module No. switching GD device first No. (16 points)] for each channel so that the setting range does not overlap.

• Indirect specification of a station number and a module number for multi-channel connection

When GD10 to GD25 are used to specify the station number of an inverter or non-Mitsubishi temperature controller connected, setting [10] to [Module No. switching GD device first No. (16 points)] switches the module number of the Simple Motion module via the servo amplifier device and the station number of an inverter or non-Mitsubishi temperature controller set to each channel simultaneously.

Set [Module No. switching GD device first No. (16 points)] so that the setting range does not overlap the station number of an inverter or non-Mitsubishi temperature controller.

■Start device number of the GD devices for servo axis switching

• Indirect specification of a servo axis number

For connection via a Motion CPU or Simple Motion module, a servo axis number can be indirectly specified with GOT internal registers (GD devices) by specifying a value (100 to 115) to the axis number of the servo amplifier device.

Set the start device number of the GD devices to be used in [Servo axis switching GD device first No. (16 points)].

Specify a servo axis number with 16 consecutive GD devices, starting the set device number.

When [10] is set to [Servo axis switching GD device first No. (16 points)], GD10 to GD25 are used to specify a servo axis number as shown in the following table.

Servo axis No.	GD device	Setting range
100	GD10	1 to 64 Setting a value outside the above range causes a device range error.
101	GD11	
102	GD12	
103	GD13	
104	GD14	
105	GD15	
106	GD16	
107	GD17	
108	GD18	
109	GD19	
110	GD20	
111	GD21	
112	GD22	
113	GD23	
114	GD24	
115	GD25	

• Indirect specification of a servo axis number on the initially displayed screen

Set [Servo axis switching GD device first No. (16 points)] so that the values of the GD devices are retained and monitored upon the GOT startup.

• Indirect specification of a servo axis number for multi-channel connection

If the setting rage of [Servo axis switching GD device first No. (16 points)] set for each channel overlaps, the axis number of the servo amplifier of each channel is switched simultaneously.

Set [Servo axis switching GD device first No. (16 points)] for each channel so that the setting range does not overlap.

• Indirect specification of a station number and a servo axis number for multi-channel connection

When GD10 to GD25 are used to specify the station number of an inverter or non-Mitsubishi temperature controller connected, setting [10] to [Servo axis switching GD device first No. (16 points)] switches the axis number of the servo amplifier and the station number of an inverter or non-Mitsubishi temperature controller set to each channel simultaneously.

Set [Servo axis switching GD device first No. (16 points)] so that the setting range does not overlap the station number of an inverter or non-Mitsubishi temperature controller.

■Routing parameter settings

Up to 64 network numbers can be set for [Transfer Net No.].

However, the same destination network number cannot be set twice or more (multiple times).

The GOT (host station) can access 64 different networks specified under [Transfer Net No.].

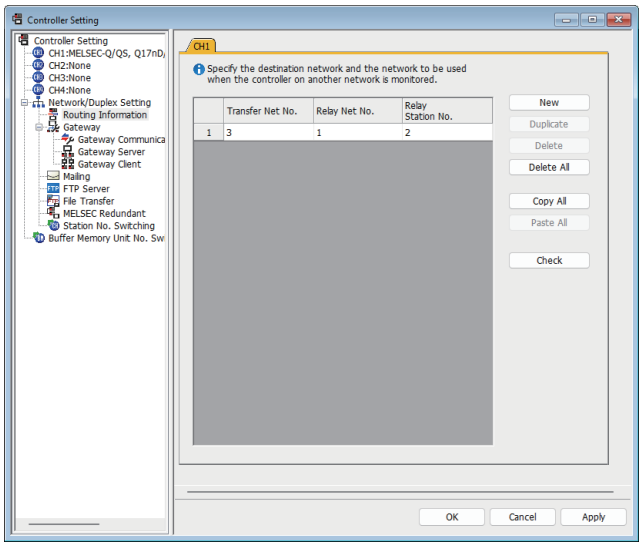
Point

Routing parameter settings

When communicating within the host network, routing parameter settings are not required.

For details on routing parameters, refer to the following manual.

📖MELSEC-Q CC-Link IE Controller Network Reference Manual



Item		Range
[Transfer Net No.]		[1] to [239]
[Relay Net No.]		[1] to [239]
[Relay Station No.]	Universal model QCPU	[0] to [120]
	QCPU other than the Universal model*1	[0] to [64]

*1 The Basic model QCPU and the QSCPU are not included.

Point

• Routing parameter settings for the relay station

Routing parameter settings are also necessary for the relay station.

For the setting, refer to the following.

☞ Page 907 PLC side settings

• Parameter reflection function of MELSOFT Navigator

The color of the cells for the items which are reflected to GT Designer3 from MELSOFT Navigator changes to green. Set items, which are displayed in green cells, from the MELSOFT Navigator.

When the settings of the transfer network number, relay network number, or relay station number are reflected to the parameter from MELSOFT Navigator, those settings are added. Items set in advance are not deleted.

However, if the target network number overlaps, the item set in advance is overwritten.

The routing information is used manually by the user when the data is created. Therefore, after changing the network configuration by MELSOFT Navigator, create a routing information again.

For details on creating the routing information, refer to the MELSOFT Navigator help.

10.3.4 PLC side settings

Model		Reference
MELSEC-Q (Q mode)	Q00JCPU Q00CPU Q01CPU Q02CPU Q02HCPU Q06HCPU Q12HCPU Q25HCPU Q02PHCPU Q06PHCPU Q12PHCPU Q25PHCPU Q12PRHCPU (main base) Q25PRHCPU (main base) Q00UJCPU Q00UJCPU-S8 Q00UCPU Q01UCPU Q02UCPU Q03UDCPU Q04UDHCPU Q06UDHCPU Q10UDHCPU Q13UDHCPU Q20UDHCPU Q26UDHCPU Q03UDECPU Q04UDEHCPU Q06UDEHCPU Q10UDEHCPU Q13UDEHCPU Q20UDEHCPU Q26UDEHCPU Q50UDEHCPU Q100UDEHCPU Q03UDVCPU Q04UDVCPU Q06UDVCPU Q13UDVCPU Q26UDVCPU	☞ Page 908 Connection to MELSEC-Q series
C Controller module (Q series)	Q12DCCPU-V Q24DHCCPU-V/VG Q24DHCCPU-LS Q26DHCCPU-LS	☞ Page 908 Connection to MELSEC-Q series
MELSEC-QS	QS001CPU	☞ Page 908 Connection to MELSEC-Q series
Motion CPU (Q series)	Q172DCPU Q173DCPU Q172DCPU-S1 Q173DCPU-S1 Q172DSCPU Q173DSCPU Q170MCPU Q170MSCPU Q170MSCPU-S1	☞ Page 908 Connection to MELSEC-Q series
CNC C70	Q173NCCPU	☞ Page 908 Connection to MELSEC-Q series
Robot controller (Q series)	CRnQ-700(Q172DRCPU) CR750-Q(Q172DRCPU) CR751-Q(Q172DRCPU) CR800-Q(Q172DSRCPU)	☞ Page 908 Connection to MELSEC-Q series

Point

• CC-Link IE Controller Network module

For details on the CC-Link IE Controller Network module, refer to the following manual.

📖CC-Link IE Controller Network Reference Manual

• Data link status check

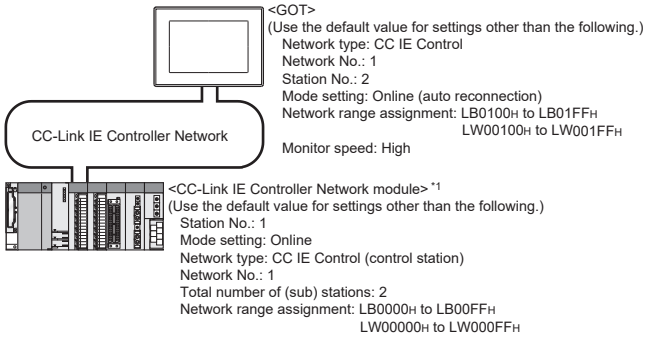
Refer to the following.

☞ Page 916 Access range for monitoring

Connection to MELSEC-Q series

This section describes the settings of the GOT and CC-Link IE Controller Network module in the system configuration shown below.

■System configuration 1 (Network Type: CC IE Control)



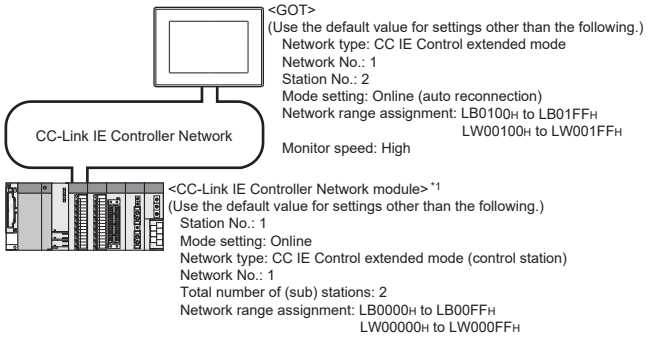
*1 The CC-Link IE Controller Network module is mounted on slot 0 of the base unit.
The start I/O number of the CC-Link IE Controller Network module is set to 0.

Point

Connection to Q170MCPU or Q170MSCPU(-S1)

For connection to Q170MCPU or Q170MSCPU(-S1), the start I/O number of the CC-Link IE Controller Network module is set to 70.

■System configuration 2 (Network Type: CC IE Control extended mode)

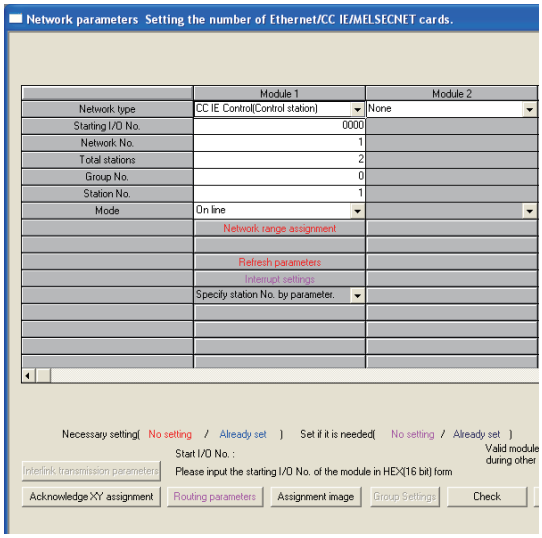


*1 The CC-Link IE Controller Network module is mounted on slot 0 of the base unit.
The start I/O number of the CC-Link IE Controller Network module is set to 0.

■Parameter settings for system configuration 1 (Network Type: CC IE Control) for connection to MELSEC-Q or QS series

- [Network parameter] in GX Developer

Network parameter

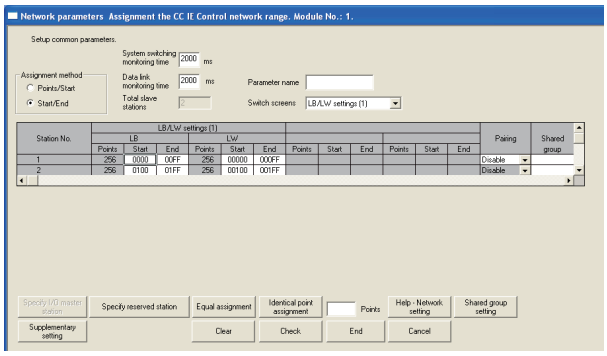


○: Necessary, △: As necessary, —: Not necessary

Item	Setting value	Setting for GOT connection
[Network type]	CC IE Control (control station)	○
[Starting I/O No.]*1	0000H	○
[Network No.]*2	1	○
[Total stations]	2	○
[Group No.]	0	○
[Station No.]	1	○
[Mode]*3	Online	○
[Network range assignment]	☞ Network range assignment	△
[Refresh parameters]	(Use default value)	△
[Interrupt settings]		—
[Interlink transmission parameters]		—
[Routing parameters]	☞ Routing parameters	△

*1 When using Q170MCPU or Q170MSCPU(-S1), set it according to the system configuration.
*2 Set the same network number as that of the GOT.
*3 Set the same mode setting as that of the GOT.

Network range assignment



○: Necessary, △: As necessary, —: Not necessary

Item				Setting value	Setting for GOT connection
[Monitoring time]				2000	△
[LB/LW settings (1)]*1	[LB]	Station No. 1	[Start]	0000H	△
			[End]	00FFH	△
		Station No. 2	[Start]	0100H	△
			[End]	01FFH	△
	[LW]	Station No. 1	[Start]	00000H	△
			[End]	000FFH	△
		Station No. 2	[Start]	00100H	△
			[End]	001FFH	△
[LX/LY settings]*1				No setting	△
[Specify I/O master station]*1				No setting	△
[Specify reserved station]				No setting	△
[Supplementary setting]				(Use default value)	△

*1 Be sure to set it to perform the cyclic transmission.

Point

When changing the network parameter

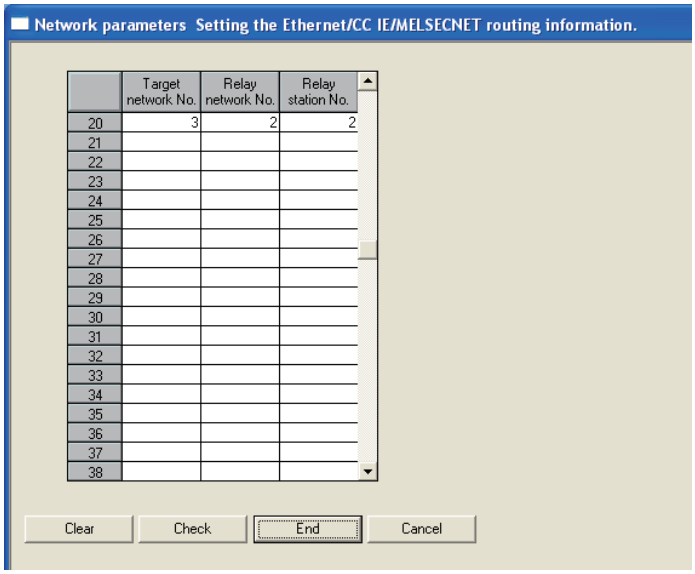
After writing network parameters to the PLC CPU, turn off then on or reset the PLC CPU.

Routing parameters

Up to 64 network numbers can be set for [Target network No.].

However, the same destination network number cannot be set twice or more (multiple times).

The GOT (host station) can access 64 different networks specified under [Target network No.].



Item	Range
[Target network No.]	[1] to [239]
[Relay network No.]	[1] to [239]
[Relay station No.]	[0] to [120]

Point

Routing parameter settings for the request source

Routing parameter settings are also necessary for the request source GOT.

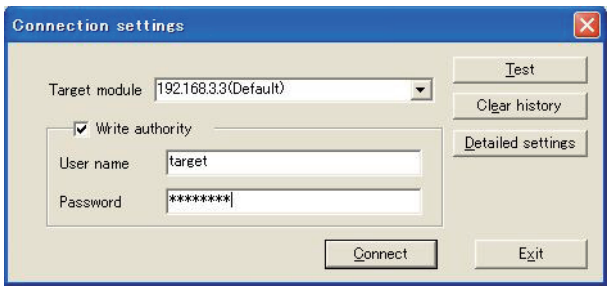
For the setting, refer to the following.

☞ Page 906 Routing parameter settings

■Parameter settings for system configuration 1 (Network Type: CC IE Control) for connection to C Controller module (Q series)

Use SW3PVC-CCPU-E Ver.3.05F or later for the CC IE Control utility.

- Connection settings between personal computer and C controller module (Q Series)



○: Necessary, △: As necessary, —: Not necessary

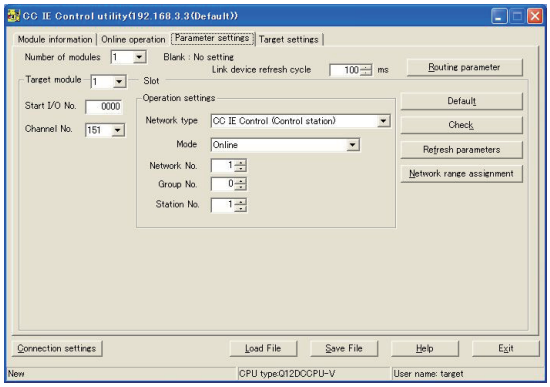
Item	Setting value	Setting for GOT connection
[Target module]*1	192.168.3.3 (Default)	○
[Write authority]	Mark the checkbox	○
[User name]*2	target	○
[Password]*2	password	○
[Detailed settings]	-	△

*1 If the IP address of the C Controller module (Q Series) has been changed, input the changed IP address or host name.

*2 If the account of the C Controller module (Q Series) has been changed, input the changed user name and password.

• CC IE Control utility's [Parameter settings]

Network parameter



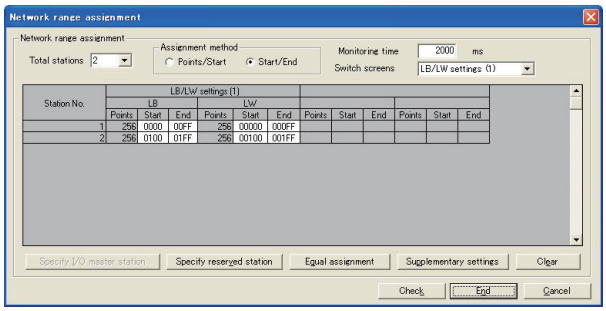
○: Necessary, △: As necessary, —: Not necessary

Item		Setting value	Setting for GOT connection
[Numbers of modules]		1	○
[Link device refresh cycle]		(Use default value)	△
[Routing parameter]		☞ Routing parameters	△
[Target module]		1	○
[Starting I/O No.]		0000H	○
[Channel No.]		151	○
[Operation settings]	[Network type]	CC IE Control (control station)	○
	[Mode]*1	Online	○
	[Network No.]*2	1	○
	[Group No.]	0	○
	[Station No.]	1	○
[Refresh parameters]		(Use default value)	△
[Network range assignment]		☞ Network range assignment	△

*1 Set the same mode setting as that of the GOT.

*2 Set the same network number as that of the GOT.

Network range assignment



○: Necessary, △: As necessary, —: Not necessary

Item				Setting value	Setting for GOT connection
[Total stations]				2	○
[LB/LW settings (1)][*1]	[LB]	Station No. 1	[Start]	0000H	△
			[End]	00FFH	△
		Station No. 2	[Start]	0100H	△
			[End]	01FFH	△
	[LW]	Station No. 1	[Start]	00000H	△
			[End]	000FFH	△
		Station No. 2	[Start]	00100H	△
			[End]	001FFH	△
[LX/LY settings][*1]				No setting	△
[Monitoring time]				(Use default value)	△
[Specify I/O master station][*1]				No setting	△
[Specify reserved station]				No setting	△
[Supplementary settings]				(Use default value)	△

*1 Be sure to set it to perform the cyclic transmission.

Point

When changing the network parameter

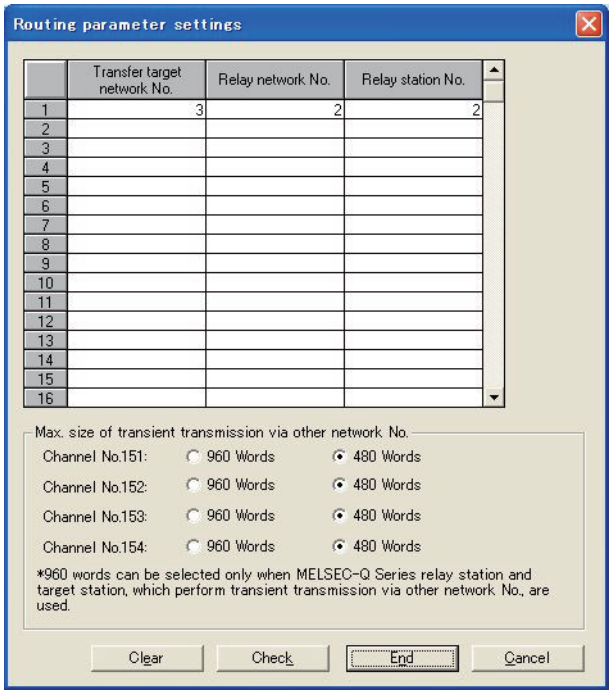
After writing network parameters to the C Controller module (Q series), turn off then on or reset the C Controller module (Q series).

Routing parameters

Up to 64 network numbers can be set for [Transfer target network No.].

However, the same destination network number cannot be set twice or more (multiple times).

The GOT (host station) can access 64 different networks specified under [Transfer target network No.].



Item	Range
[Transfer target network No.]	[1] to [239]
[Relay network No.]	[1] to [239]
[Relay station No.]	[0] to [120]

Point

Routing parameter settings for the request source

Routing parameter settings are also necessary for the request source GOT.

For the setting, refer to the following.

☞ Page 906 Routing parameter settings

■System configuration 1 (Network Type: CC IE Control): [Controller Setting] in GT Designer3

Item	Setting value
[Network Type]	CC IE Control
[Network No.]	1: Network No. 1
[Station No.]	2: Station No. 2
[Group No.]	0
[Mode Setting]	Online (auto reconnection)
[Transmission Speed]	1 Gbps
[Refresh Interval]	1 ms
[Retry]	3 times
[Timeout Time]	3 seconds
[Delay Time]	0 ms
[Monitor Speed]	High(Normal)

Point

[Controller Setting] in GT Designer3

For the setting method of [Controller Setting] in GT Designer3, refer to the following.

☞ Page 900 [Controller Setting]

■Parameter settings for system configuration 2 (Network Type: Extended mode) for connection to Universal model QCPU

• [Network parameter] in GX Works2

Network parameter

	Module 1	Module 2
Network Type	CC IE Control Ext. Mode(Control Station)	None
Start I/O No.	0000	
Network No.	1	
Total Stations	2	
Group No.	0	
Station No.	1	
Mode	Online	
	Network Range Assignment	
	Refresh Parameters	
	Interrupt Setting	
	Specify Station No. by Parameter	

○: Necessary, △: As necessary, —: Not necessary

Item	Setting value	Setting for GOT connection
[Network type]	CC IE Control extended mode (control station)	○
[Start I/O No.]	0000H	○
[Network No.]	1	○
[Total Stations]	2	○
[Group No.]	0	○
[Station No.]	1	○
[Mode]	Online	○
[Network Range Assignment]	Same as the following setting ☞ [Network parameter] in GX Developer	?
[Refresh Parameters]	(Use default value)	?
[Interrupt Setting]		×
[Interlink transmission parameters]		×
[Routing parameters]	Same as the following setting ☞ [Network parameter] in GX Developer	?

• [Controller Setting] in GT Designer3

Item	Setting value
[Network Type]	CC IE Control extended mode
[Network No.]	1: Network No. 1
[Station No.]	2: Station No. 2
[Group No.]	0
[Mode Setting]	Online (auto reconnection)
[Refresh Interval]	1 ms
[Retry]	3 times
[Timeout Time]	3 seconds
[Delay Time]	0 ms
[Monitor Speed]	High(Normal)

Point

• Network type of the GOT side

When the network is in the extended mode, be sure to set the network type of the GOT side to [CC IE Control Extended Mode].

For the setting method of [Controller Setting] in GT Designer3, refer to the following.

☞ Page 900 [Controller Setting]

• Network type of the PLC side

Only GX Works2 can set [CC IE Control Ext. Mode(Control Station)] or [CC IE Control Ext. Mode(Normal Station)].

The CPU which is compatible with the extended mode is the Universal model QCPU only.

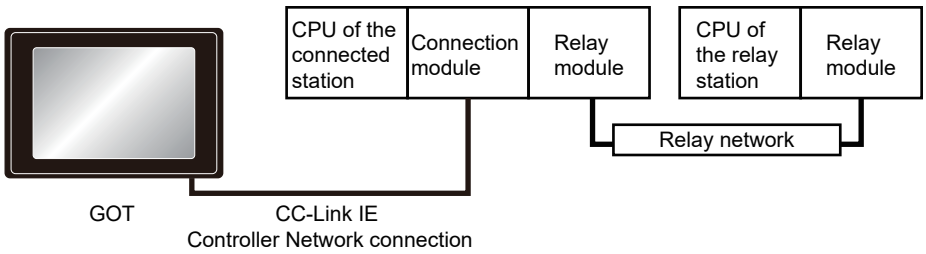
10.3.5 Access range for monitoring

When the GOT is connected to the CPU of the station connected via CC-Link IE Controller Network, the range accessible via the CPU is as follows.

Point

- When monitoring other networks (Routing parameter settings)

To monitor other networks, routing parameter settings are necessary.
For the routing parameter settings, refer to the reference manual of the network connected.



○: Accessible, —: Inaccessible

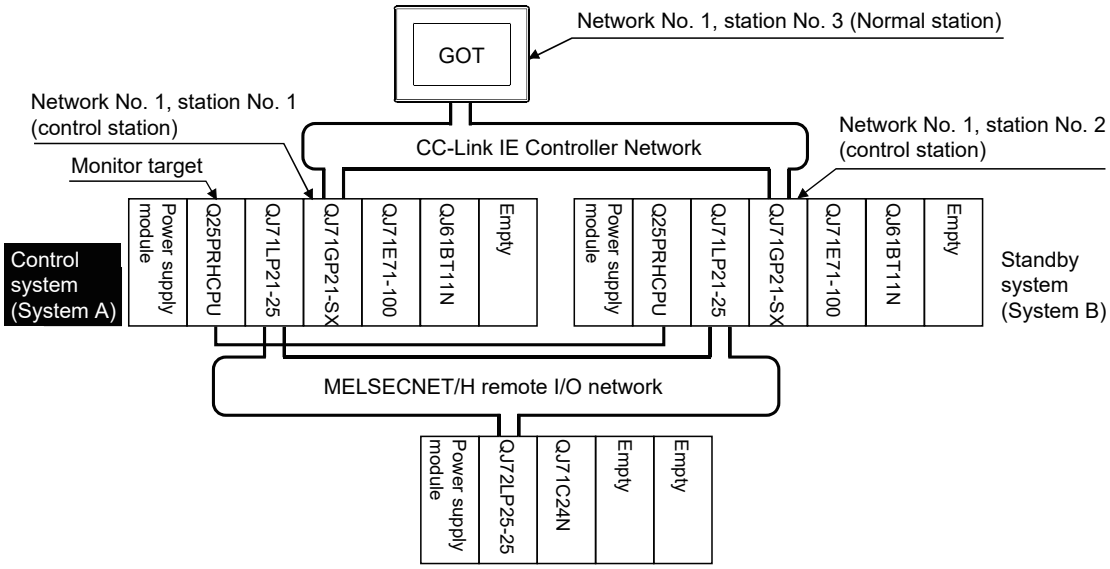
CPU of the connected station	Connected module	Relay station									
		Relay network	CPU of the relay station								
			MXR	RCPU	LCPU	QCPU (Q mode)	QSCPU	QCPU (A mode)	QnACPU	ACPU	FX5CPU
QnUDVCPU QnUDECPU QnUDEHCPU QnUCPU QnUDCPU QnUDHCPU	☞ Page 893 Connectable devices	Ethernet	—	—	○	○*2	○	—	○	—	—
		CC-Link IE Controller Network	—	—	—	○	○	—	—	—	—
		CC-Link IE Field Network	—	—	○	○*1	○	—	—	—	—
		MELSECNET/H, MELSECNET/10	—	—	—	○	○	○	○	○*3	—
QnPHRCPU QnPHCPU QnCPU QnHCPU QnJCPU	☞ Page 893 Connectable devices	Ethernet	—	—	○	○*2	○	—	○	—	—
		CC-Link IE Controller Network	—	—	—	○	○	—	—	—	—
		MELSECNET/H, MELSECNET/10	—	—	—	○	○	○	○	○*3	—
C Controller module (MELSEC-Q series)	☞ Page 893 Connectable devices	CC-Link IE Controller Network	—	—	—	○	○	—	—	—	—
		CC-Link IE Field Network	—	—	○	○*1	○	—	—	—	—
		MELSECNET/H, MELSECNET/10	—	—	—	○	○	○	○	○*3	—

*1 QnUDVCPU, QnUDECPU, QnUDEHCPU, QnUCPU, QnUDCPU, QnUDHCPU, and C Controller module (MELSEC-Q series) are supported.
*2 The C Controller module (MELSEC-Q series) is not supported.
*3 AnUCPU and AnUSCPU are supported.

10.3.6 How to monitor a redundant system

This section describes the CC-Link IE Controller Network connection for connecting the GOT to the CC-Link IE Controller Network.

The following shows an example of connecting the GOT set as the normal station to the CC-Link IE Controller Network.



Connection method

Connect the CC-Link IE Controller Network and the GOT.

For details, refer to the following.

☞ Page 893 MELSEC-Q series (CC-Link IE Controller Network connection)

Settings in GT Designer3

Set GT Designer3 as follows.

Setting item	Setting details		Model
Type	MELSEC-Q/QS, Q17nD/M/NC/DR/DSR, CRnD-700		GT37 SoftGOT3000
Device setting (Network setting)	Other	[Network No.]: Network number of CC-Link IE Controller Network	
		[Station No.]: Station number of the control system	
MELSEC redundant setting	☞ Page 918 MELSEC redundant settings		

Monitoring target change when system switching occurs in a redundant system

When system switching occurs, the network module station No. 2 switches from the normal station to the sub-control station, and continues to control the CC-Link IE Controller Network as the control system.

Since the GOT monitors the control system, the monitoring target is automatically changed to the network module station No. 2.

MELSEC redundant settings

This section describes the settings for the GOT to automatically change the monitoring target of the QCPU redundant system.

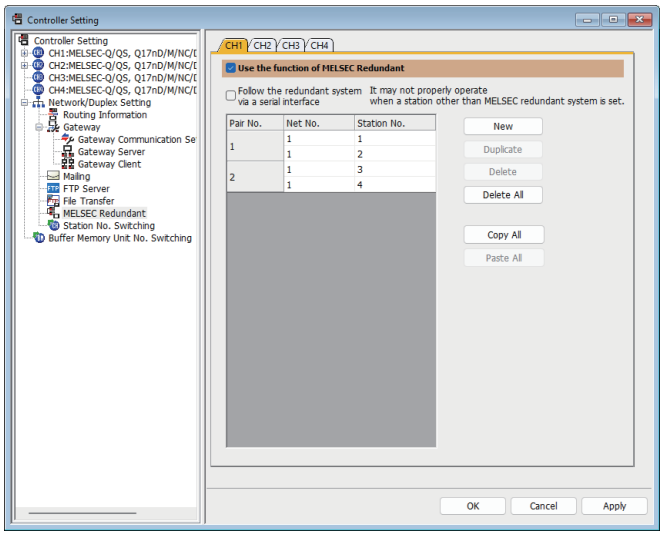
Point

Before configuring the MELSEC redundant settings

In the MELSEC redundant settings, do not set a station outside the redundant QCPU.

1. Select [Common] → [Controller Setting] → [MELSEC Redundant] from the menu.
2. The setting dialog box appears. Configure the settings by referencing the explanation that follows.
3. Configure the MELSEC redundant settings.

In the MELSEC Redundant dialog, settings can be made for each channel of the controller.



Item		Description	Model
CH1 to CH4		Select the tab of the channel number to configure the MELSEC redundant settings.	GT37 SoftGOT3000
[Follow the redundant system via a serial interface]		Select this item to monitor the control system as a host station at serial connection.	
[Pair No.]*1	[Net No.]	Set the network number (1 to 255) for each pair number (1 to 64). • Upper row: Setting for the first redundant CPU • Lower row: Setting for the second redundant CPU (The same value as the value set for the first redundant CPU is displayed.)	
	[Station No.]	Set the station number (0 to 120) of the redundant CPU for each pair number (1 to 64). • Upper row: Setting for the first redundant CPU • Lower row: Setting for the second redundant CPU (The setting value for the first redundant CPU + 1 is displayed.)	
[New]		Adds a new pair number.	
[Duplicate]		Adds a new pair number.	
[Delete]		Deletes one setting of the selected pair number. After deletion, the succeeding pair numbers are renumbered to fill the deleted pair number.	
[Delete All]		Deletes all the pair number settings.	
[Copy All]		Copies the MELSEC redundant setting on the selected CH No. tab.	
[Paste All]		Pastes the copied MELSEC redundant setting in the selected CH No. tab.	

*1 For details, refer to the following.
☞ Page 919 Pair number

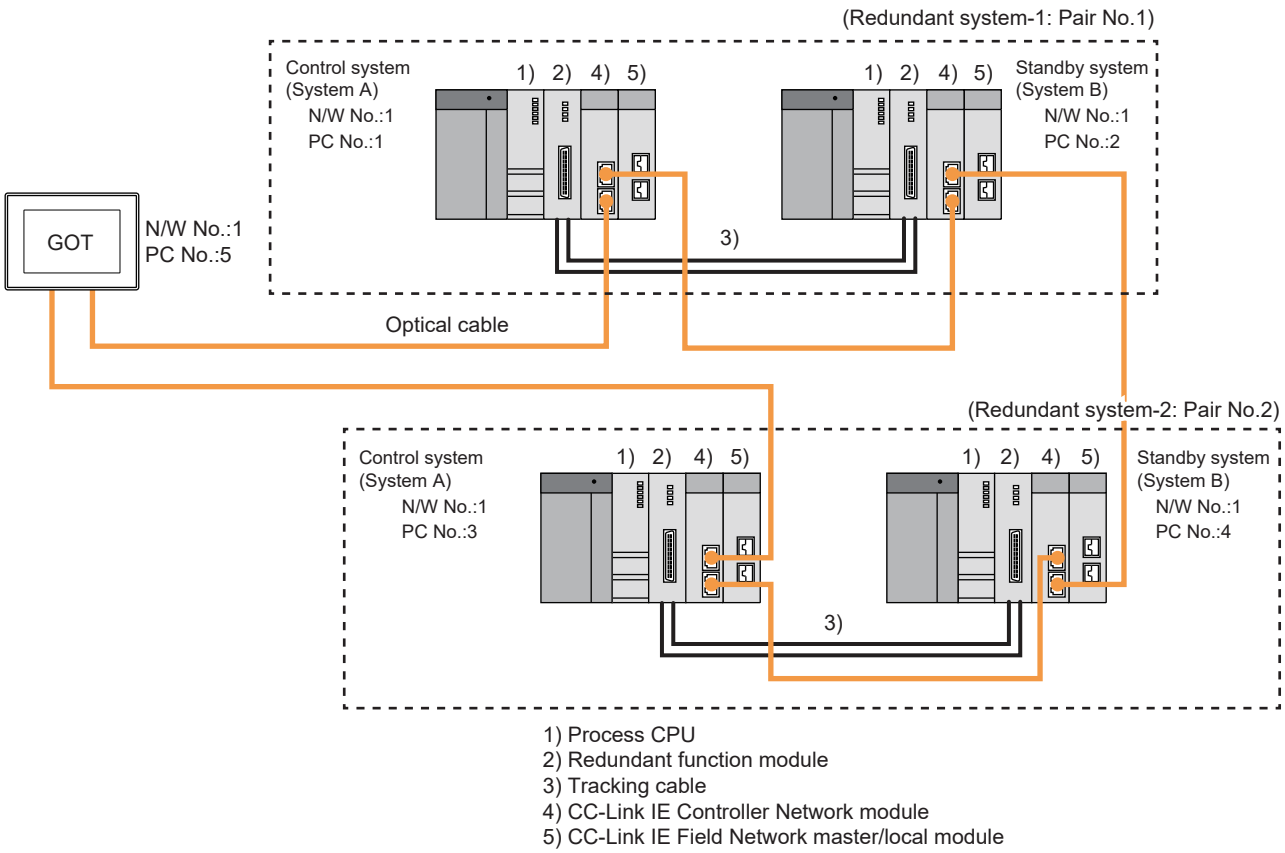
■Pair number

Redundant CPU pair means the redundant CPUs (System A / System B) in the redundant system configuration.

Pair number is the number assigned to each redundant CPU pair.

The following shows an example of the CC-Link IE Controller Network connection in the QCPU redundant system. (Pair No. 1 to No. 2)

Ex.



Point

Precautions for configuring the MELSEC redundant settings

Pay attention to the following items when configuring the MELSEC redundant settings.

- Pairing of the last station No. and station No. 1 (Example: Station No. 64 and station No. 1) is not allowed.
- Before configuring the settings, make sure to check the station numbers of the network modules. If the MELSEC redundant settings and the actual network module station numbers are inconsistent, the GOT fails to automatically change the monitoring target to the control system when the system is switched.
- GOT supports the backup mode, which is the redundant mode of the RCPU redundant system, and does not support the process mode and separate mode.

Precautions

■Start of the redundant system

The GOT starts monitoring the redundant system after the control system and standby system have been determined, regardless of the starting order of PLC systems A and B.
The GOT starts monitoring when both systems start.
(In a redundant system with a redundant extension base unit, the GOT monitors the control system that starts first.)
Power on the redundant system within the time set in the GOT (communication timeout time and number of retries) so that the GOT can start monitoring after the redundant system starts (after the control system is decided).
If the GOT does not start within the set time, the GOT stops monitoring for safety reasons, and the following system alarm occurs.

- 451: The MELSEC redundant setting and actual system configuration do not match.

If the system alarm occurs, restart the GOT (reapply or reset the power supply) to start monitoring again.

■System switching

When system switching occurs through the user program, the communication path remains unchanged, and the GOT will continue monitoring.
No system alarm occurs.
When system switching occurs due to disconnected cable or other causes, the GOT changes the communication path and continues monitoring.
"450: Path has changed or timeout occurred in redundant system." appears as the system alarm.

■Redundant system configuration and operation mode

- System alarm display

If the MELSEC redundant settings do not match the actual configuration of the redundant system, or if the operation mode of the redundant system is not set to backup mode, "451: The MELSEC redundant setting and actual system configuration do not match." appears as the system alarm, and the GOT will not be able to correctly monitor the redundant system's CPU.
If the system alarm occurs, restart the GOT (reapply or reset the power supply) to start monitoring again.

- Changing the MELSEC redundant settings

Always reset the GOT after changing the MELSEC redundant settings. If not reset, the changed MELSEC redundant settings will not be applied on the GOT.

■Monitoring a non-redundant system with the MELSEC redundant settings configured

If the MELSEC redundant settings were set for a non-redundant system, the GOT will operate normally.
In this case, if an abnormality (such as powering off or communication timeout error) occurs in the PLC CPU for which the MELSEC redundant settings are configured, the PLC CPU may not operate as intended.

■Monitoring a redundant system without configuring the MELSEC redundant settings

When the MELSEC redundant settings are not configured, the GOT does not automatically change the monitoring target even if system switching occurs in the redundant system.
When the GOT is connected to the standby system, data written to a device are overwritten by the data of the control system, failing to be reflected.
In this case, when data is written to a device in the standby system normally, the system alarm "315 Device writing error. Correct device." is not detected.

■Option functions including the ladder monitor

A message "Unable to communicate with CPU." is displayed when system switching occurs while an option function such as the ladder monitor is used.

■When the QCPU redundant system is in the debug mode

When the QCPU redundant system is in the debug mode, do not configure the MELSEC redundant system settings on the GOT side when connecting the GOT.

11 CC-Link IE Field Network connection

☞ Page 921 MELSEC MX Controller (MX-R Model) (CC-Link IE Field Network connection)
☞ Page 940 MELSEC iQ-R series (CC-Link IE Field Network connection)
☞ Page 968 MELSEC iQ-F series (CC-Link IE Field Network connection)
☞ Page 981 MELSEC-Q series (CC-Link IE Field Network connection)
☞ Page 1001 MELSEC-L series (CC-Link IE Field Network connection)

PART 3

11.1 MELSEC MX Controller (MX-R Model) (CC-Link IE Field Network connection)

☞ Page 921 Connectable devices
☞ Page 922 System configuration
☞ Page 926 GOT side settings
☞ Page 934 PLC side settings
☞ Page 937 Connection to the PLC with the authentication function enabled
☞ Page 939 Access range for monitoring

11.1.1 Connectable devices

The following table shows the connectable models.

○: Supported, —: Not supported

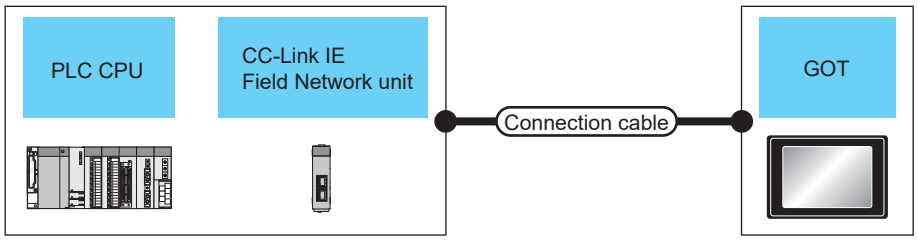
Controller	Model	Clock	PLC side interface	Connectable model
			CC-Link IE Field Network communication unit	
MELSEC MX Controller (MX-R Model)	MXR300-16 MXR300-32 MXR300-64	○	RJ71GF11-T2 RJ71EN71	GT37 SoftGOT3000
	MXR500-128 MXR500-256	○	RJ71GF11-T2 RJ71EN71	GT37 SoftGOT3000

Precautions

For information on the version restrictions of the CC-Link IE Field Network module, refer to the following manual.

📖CC-Link IE Field Network Master/Local Module User's Manual

11.1.2 System configuration



For details on the connection cable and overall cable length, refer to the following.

☞ Page 922 Connection cable
☞ Page 923 Overall length

For details on the maximum number of connected devices, refer to the following.

☞ Page 923 Maximum number of connected devices

Controller	CC-Link IE Field Network communication unit	Connection cable	GOT	
			Interface	Model
MELSEC MX Controller (MX-R Model)*2	RJ71GF11-T2 RJ71EN71*3	Twisted pair cable	GT37-IF2000 + GT15-J71GF13-T2*1	GT37 SoftGOT3000

*1 If there is a submaster station in the network configuration, use software version C or later.
The software version is the 10th digit of the serial number described on the rating plate of the unit.

*2 When the GOT monitors the PLC with the authentication function enabled, logon to the PLC is required.
For information on how to logon and logoff, refer to the following.
☞ Page 937 Logon to the PLC
☞ Page 937 Logoff from the PLC
The GOT cannot monitor the PLC devices until logon to the PLC from the GOT is complete.
Therefore, create a project assuming that the GOT cannot communicate with the PLC for a certain period.
☞ Page 937 Creating a project

*3 Connection to the PLC with the authentication function enabled is not supported.

Connection cable

Use a connection cable that meets the following standards.

Standard	Category
1000BASE-T	Shielded twisted pair cable (STP) of category 5e or higher

Use cables that meet the IEEE802.3 1000BASE-T standard.

When only one GOT is connected, the GOT can be directly connected to the controller without a hub.

Use hubs that satisfy the following conditions.

- Compliant with the IEEE802.3 (1000BASE-T) standard
- Include Auto MDI/MDI-X.
- Include an automatic negotiation function.
- Switching hub (Do not use repeater hubs.)

Recommended switching hub (Mitsubishi Electric products)

Type	Model
Industrial switching hub	NZ2EHG-T8

For details, refer to the following manual.

📖CC-Link IE Field Network Master/Local Module User's Manual

Overall length

The overall cable length is 12100 m.

The overall cable length and cable length between stations vary depending on the connection method (line, star, or ring), the system configuration, etc.

For details, refer to the following manual.

📖CC-Link IE Field Network Master/Local Module User's Manual

Maximum number of connected devices

The following shows the number of GOTs connectable to one controller.

Controller	
Model	**Number of GOTs connectable to one PLC**
MELSEC MX Controller (MX-R Model)	120

Connecting one PLC to multiple GOTs

When multiple GOT units are simultaneously accessing one PLC, the GOT writing process (transient/cyclic) and reading process (transient) may slow down.

This slow access can be remedied with the following countermeasures.

<Countermeasures>

■Improve response speed on PLC side

Insert a COM instruction on the PLC to increase the response speed.

Note that caution is required as the scan time will increase.

■Screen design using cyclic devices

Create the screen with cyclic devices instead of using transient devices.

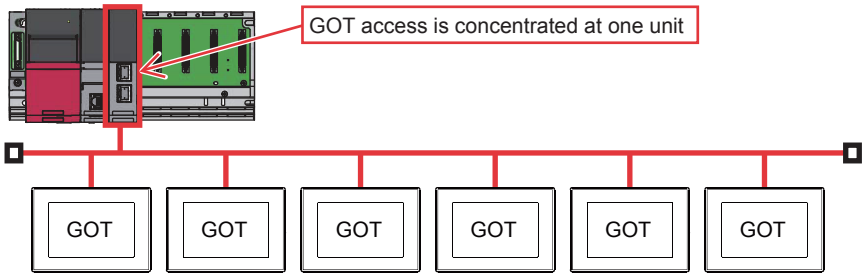
■Split GOT connection destinations into several systems

Add a master/local module to the PLC side, and split the GOT connection destinations into several systems.

Improve the current system configuration.

(Example of current system configuration)

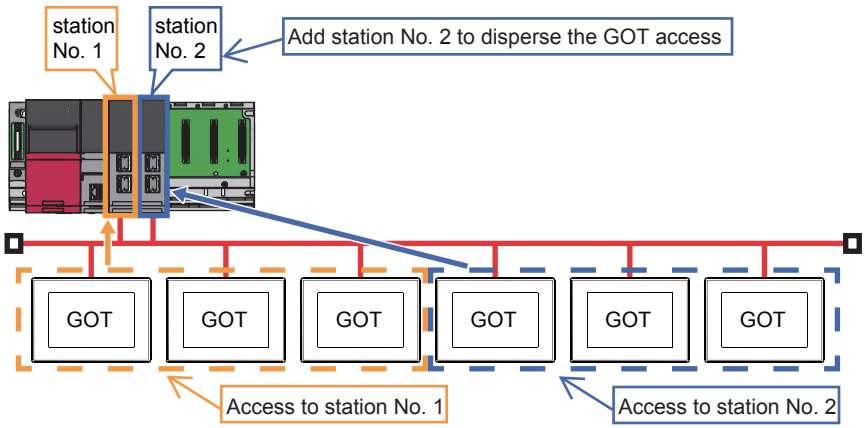
In the following system configuration, access from the GOT is concentrated on one module.



(Improvement measure)

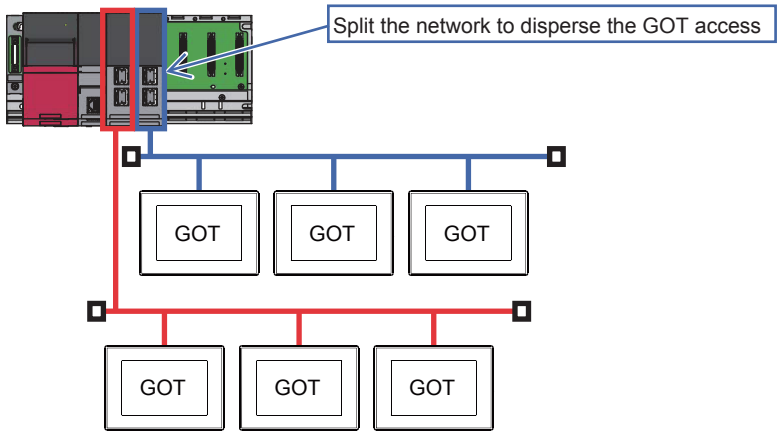
- Adding a module to the PLC side

Add a module to the PLC side to disperse the GOT access destinations.



- Split the network

Split the network to disperse the GOT access.



Precautions

■Starting the GOT connected to the CC-Link IE Field Network

For the CC-Link IE Field Network connection, the data link is started approximately 15 seconds after the GOT startup.

■When a network error occurs in the system alarm

In the CC-Link IE Field Network connection, when a network error occurs in the system alarm, the system alarm display cannot be canceled even though the causes are removed.
To cancel the system alarm display, restart the GOT.

■Data link failure in other stations at GOT startup

At GOT startup, the data link failure may occur in other stations.
However, after the failure occurrence, the GOT reconnects automatically and monitors the devices properly.
To avoid such data link failure, start up the GOT 10 seconds earlier than the master station.
However, if the master station does not complete startup when the GOT starts monitoring (10 seconds after the GOT startup), the communication timeout occurs in the GOT.
For details, refer to the following manual.
📖CC-Link IE Field Network Master/Local Module User's Manual

■Data link failure in all stations at GOT startup or cable connection/disconnection

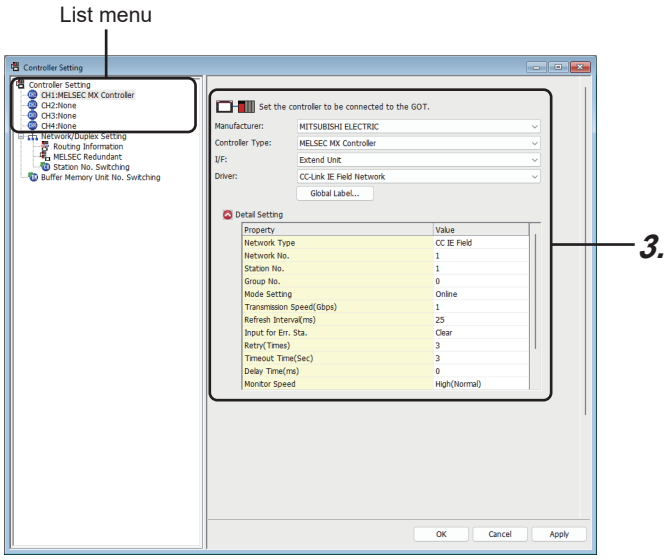
At GOT startup, the communication is broken temporarily between PORT1 and PORT2 in the CC-Link IE Field module which is installed on the GOT.
Thus, as the GOT or a station between the GOT and the master station is reconnected, the data link failure may occur on all stations.
GOT startup includes the following operations.

- Turning on the GOT
- Resetting the GOT main unit
- Operating the utility
- Downloading the project including the communication settings
- Downloading the OS

11.1.3 GOT side settings

[Controller Setting]

Set the channel of the connected controller.



Operating procedure

1. Select [Common] → [Controller Setting] from the menu.
2. In the [Controller Setting] window, select the channel number to be used from the list menu.
3. Set the following items.

Item	Description
[Manufacturer]	[MITSUBISHI ELECTRIC]
[Controller Type]	[MELSEC MX Controller]
[I/F]	[Extend Unit]
[Driver]	[CC-Link IE Field Network]
[Detail Setting]	Configure the settings according to the usage environment. ☞ Page 927 [Detail Setting]

4. When you have completed the settings, click the [OK] button.

Point

The controller settings can be checked in [I/F Communication Setting].
For details, refer to the following.
📖GT Designer3 (GOT3000) Screen Design Manual

■[Detail Setting]

Configure the settings according to the usage environment.

Detail Setting

Property	Value
Network Type	CC IE Field
Network No.	1
Station No.	1
Group No.	0
Mode Setting	Online
Transmission Speed(Gbps)	1
Refresh Interval(ms)	25
Input for Err. Sta.	Clear
Retry(Times)	3
Timeout Time(Sec)	3
Delay Time(ms)	0
Monitor Speed	High(Normal)
CPU No. switching GD device first No. (3 points)	500
Module No. switching GD device first No. (16 points)	550
Servo axis switching GD device first No. (16 points)	10

Item	Description	Range
[Network Type]	Set the network type.	[CC IE Field]
[Network No.]	Set the network number.	[1] to [239]
[Station No.]	Set the station number of the GOT.	[1] to [120]
[Group No.]	—	[0]
[Mode Setting]	Set the operation mode of the GOT. For details on the hardware test and self-loopback test, refer to the following. ☞ Page 929 Hardware test ☞ Page 929 Self-loopback test	[Online], [Offline], [H/W test], [Self-loopback test]
[Transmission Speed]	—	[1Gbps]
[Refresh Interval]	Set the number of refreshes to secure the send/receive data per station during communication.	[1] ms to [1000] ms
[Input for Err. Sta.]	Set whether to hold or clear the input from the station whose data link has become faulty due to powering off or other reasons.	[Clear], [Hold]
[Retry]	Set the number of retries to be performed when a communication timeout occurs. When receiving no response after retries, the communication times out.	[0] times to [5] times
[Timeout Time]	Set the time period for a communication to time out.	[1] second to [90] seconds
[Delay Time]	Set the delay time for reducing the load of the network and destination PLC.	[0] ms to [300] ms
[Monitor Speed]*2	Set the monitor speed for the CC-Link IE Field Network. This setting is not valid in all systems.	[High(Normal)]*1, [Middle], [Low]
[CPU No. switching GD device first No. (3 points)]	Set the start device number of the GD devices for CPU number switching. For details, refer to the following. ☞ Page 930 Start device number of the GD devices for CPU number switching	[0] to [65520]
[Module No. switching GD device first No. (16 points)]	Set the start device number of the GD devices for module number switching. For details, refer to the following. ☞ Page 931 Start device number of the GD devices for module number switching	[0] to [65520]
[Servo axis switching GD device first No. (16 points)]	Set the start device number of the GD devices for servo axis switching. For details, refer to the following. ☞ Page 932 Start device number of the GD devices for servo axis switching	[0] to [65520]

*1 This setting is effective for collecting large data with the logging, recipe, or such function on a screen other than the monitor screen.

*2 When using a global label to read or write more than 235 two-byte characters, set [Monitor speed] to [High(Normal)] or [Middle].
If [Monitor speed] is set to [Low], a system error occurs when reading or writing.
For details, refer to the following manual.
📖GT Designer3 (GOT3000) Screen Design Manual

Precautions

When the output is required to be held at the data link failure, set [Input for Err. Sta.] to [Hold] in the controller setting of the GOT.

Point

• Example of communication detail settings

For the example of communication detail settings, refer to the following.

☞ Page 934 PLC side settings

• Controller settings using the GT37 utility

The controller settings can be changed in [Communication Settings] of the GT37 utility after writing [Communication Settings] of project data to GT37.

For details on the GT37 utility, refer to the following manual.

📖GOT3000 Series User's Manual (Utility & Maintenance Functions)

• Priority of the settings in [Controller Setting]

When the settings are configured in GT Designer3 or in the GT37 utility, the latest settings are effective.

• Network type

Be sure to set the same network types for the CPU side and the GOT side.

If the network types of the CPU side and the GOT side are different, an error is displayed in the system alarm of the GOT side.

■Hardware test

For a hardware test, mount a CC-Link IE Field Network communication unit on the GOT, and check if the unit operates properly with the GOT.

The following shows the hardware test procedure.

1. Perform either of the following operations to set the GOT to the hardware test mode.

- Write the project data for which [Mode Setting] in [Detail Setting] is set to [H/W test] to the GOT.
- Set [Mode setting] of [Detail setting] to [H/W Test] in the GOT utility.

2. A hardware test will start at GOT startup.

3. After the test is complete, check the result with the ERR LED on the CC-Link IE Field Network communication unit.

- OFF: Normal
- ON: Error

4. If no error is detected, change the setting of [Mode Setting] from [H/W test] in [Detail Setting].

Since the communication with the controller is not performed when [Mode setting] is set to [H/W Test], the communication timeout error occurs when the device of controller is monitored.

5. If any error is detected, replace the CC-Link IE Field Network communication unit.

■Self-loopback test

In a self-loopback test, connect port 1 and port 2 of the CC-Link IE Field Network communication unit mounted on the GOT with a network cable, and check if the unit operates properly with the GOT.

The following shows the self-loopback test procedure.

1. Perform either of the following operations to set the GOT to the self-loopback test mode.

- Write the project data for which [Mode Setting] in [Detail Setting] is set to [Self-loopback test] to the GOT.
- Set [Mode setting] in [Detail setting] to [Self-loopback Test] in the GOT utility.

2. A self-loopback test will start at a GOT startup.

3. After the test is complete, check the result with the ERR LED on the CC-Link IE Field Network communication unit.

- OFF: Normal
- ON: Error

4. If no error is detected, change the setting of [Mode Setting] from [Self-loopback test] in [Detail Setting].

Since the communication with the controller is not performed when [Mode setting] is set to [Self-loopback Test], the communication timeout error occurs when the device of controller is monitored.

5. If any error is detected, replace the CC-Link IE Field Network communication unit.

■Start device number of the GD devices for CPU number switching

• Indirect specification of a CPU number

[CPU No.] can be indirectly specified with the GOT internal registers (GD devices) by specifying a value (100 to 102) to [CPU No.] in the device setting dialog in GT Designer3.

Set the start device number of the GD devices to be used in [CPU No. switching GD device first No. (3 points)].

[CPU No.] is specified with three consecutive GD devices, starting from the set device number.

When [500] is set to [CPU No. switching GD device first No. (3 points)], GD500 to GD502 are used to specify [CPU No.] as shown in the following table.

CPU No.	GD device	Setting range
100	GD500	1 to 4 Setting a value outside the range causes a communication timeout error. Specifying a nonexistent CPU number or a CPU number not supporting a multiple CPU system with a device causes a controller error.
101	GD501	
102	GD502	

• Indirect specification of a CPU number on the initially displayed screen

Set [CPU No. switching GD device first No. (3 points)] so that the values of the GD devices are retained and monitored upon the GOT startup.

• Indirect specification of a CPU number for multi-channel connection

If the setting range of [CPU No. switching GD device first No. (3 points)] set for each channel overlaps, the monitoring target CPU number set to each channel is switched simultaneously.

Set [CPU No. switching GD device first No. (3 points)] for each channel so that the setting range does not overlap.

• Indirect specification of a station number and a CPU number for multi-channel connection

When GD10 to GD25 are used to specify the station number of an inverter or non-Mitsubishi temperature controller connected, setting [10] to [CPU No. switching GD device first No. (3 points)] in a different channel switches the monitoring target CPU number and station number of an inverter or non-Mitsubishi temperature controller set to each channel simultaneously.

Set [CPU No. switching GD device first No. (3 points)] so that the setting range does not overlap the station number of an inverter or non-Mitsubishi temperature controller.

■Start device number of the GD devices for module number switching

• Indirect specification of a module number

For connection via a Simple Motion module, [Unit No.] can be specified with the GOT internal registers (GD devices) by specifying a value (100 to 10F) to [Unit No.] in the device setting dialog in GT Designer3.

Set the start device number of the GD devices to be used in [Module No. switching GD device first No. (16 points)].

[Unit No.] is specified with 16 consecutive GD devices, starting from the set device number.

When [550] is set to [Module No. switching GD device first No. (16 points)], GD550 to GD565 are used to specify [Unit No.] as shown in the following table.

Module No.	GD device	Setting range
100	GD550	00 to FF Setting a value outside the above range causes a device range error.
101	GD551	
102	GD552	
103	GD553	
104	GD554	
105	GD555	
106	GD556	
107	GD557	
108	GD558	
109	GD559	
10A	GD560	
10B	GD561	
10C	GD562	
10D	GD563	
10E	GD564	
10F	GD565	

• Indirect specification of a module number on the initially displayed screen

Set [Module No. switching GD device first No. (16 points)] so that the values of the GD devices are retained and monitored upon the GOT startup.

• Indirect specification of a module number for multi-channel connection

If the setting range of [Module No. switching GD device first No. (16 points)] set for each channel overlaps, the module number of the Simple Motion module via the servo amplifier device of each channel is switched simultaneously.

Set [Module No. switching GD device first No. (16 points)] for each channel so that the setting range does not overlap.

• Indirect specification of a station number and a module number for multi-channel connection

When GD10 to GD25 are used to specify the station number of an inverter or non-Mitsubishi temperature controller connected, setting [10] to [Module No. switching GD device first No. (16 points)] switches the module number of the Simple Motion module via the servo amplifier device and the station number of an inverter or non-Mitsubishi temperature controller set to each channel simultaneously.

Set [Module No. switching GD device first No. (16 points)] so that the setting range does not overlap the station number of an inverter or non-Mitsubishi temperature controller.

■Start device number of the GD devices for servo axis switching

• Indirect specification of a servo axis number

For connection via a Motion CPU or Simple Motion module, a servo axis number can be indirectly specified with GOT internal registers (GD devices) by specifying a value (100 to 115) to the axis number of the servo amplifier device.

Set the start device number of the GD devices to be used in [Servo axis switching GD device first No. (16 points)].

Specify a servo axis number with 16 consecutive GD devices, starting the set device number.

When [10] is set to [Servo axis switching GD device first No. (16 points)], GD10 to GD25 are used to specify a servo axis number as shown in the following table.

Servo axis No.	GD device	Setting range
100	GD10	1 to 64 Setting a value outside the above range causes a device range error.
101	GD11	
102	GD12	
103	GD13	
104	GD14	
105	GD15	
106	GD16	
107	GD17	
108	GD18	
109	GD19	
110	GD20	
111	GD21	
112	GD22	
113	GD23	
114	GD24	
115	GD25	

• Indirect specification of a servo axis number on the initially displayed screen

Set [Servo axis switching GD device first No. (16 points)] so that the values of the GD devices are retained and monitored upon the GOT startup.

• Indirect specification of a servo axis number for multi-channel connection

If the setting rage of [Servo axis switching GD device first No. (16 points)] set for each channel overlaps, the axis number of the servo amplifier of each channel is switched simultaneously.

Set [Servo axis switching GD device first No. (16 points)] for each channel so that the setting range does not overlap.

• Indirect specification of a station number and a servo axis number for multi-channel connection

When GD10 to GD25 are used to specify the station number of an inverter or non-Mitsubishi temperature controller connected, setting [10] to [Servo axis switching GD device first No. (16 points)] switches the axis number of the servo amplifier and the station number of an inverter or non-Mitsubishi temperature controller set to each channel simultaneously.

Set [Servo axis switching GD device first No. (16 points)] so that the setting range does not overlap the station number of an inverter or non-Mitsubishi temperature controller.

■Routing parameter settings

Up to 64 settings can be configured for [Transfer Net No.].

However, the same number cannot be set in [Transfer Net No.] twice or more (multiple times).

The GOT (host station) can access 64 different networks specified under [Transfer Net No.].

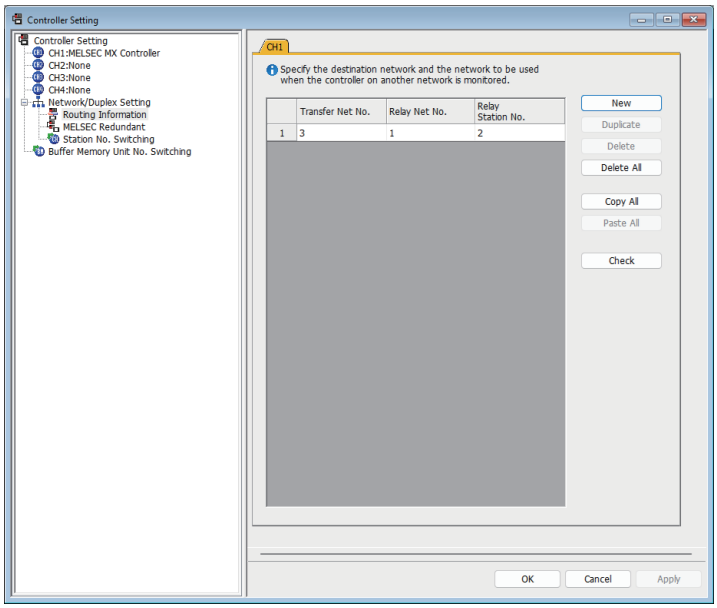
Point

Routing parameter settings

When communicating within the host network, routing parameter settings are not required.

For details on routing parameters, refer to the following manual.

📖MELSEC iQ-R CPU Module User's Manual (Application)



Item	Range
[Transfer Net No.]	[1] to [239]
[Relay Net No.]	[1] to [239]
[Relay Station No.]	[0] to [120]

Point

Routing parameter settings for the relay station

Routing parameter settings are also necessary for the relay station.

For the setting, refer to the following.

☞ Page 934 PLC side settings

11.1.4 PLC side settings

Model		Reference
MELSEC MX Controller (MX-R Model)	MXR300-16 MXR300-32 MXR300-64 MXR500-128 MXR500-256	☞ Page 934 Connection to the MELSEC MX Controller (MX-R Model)

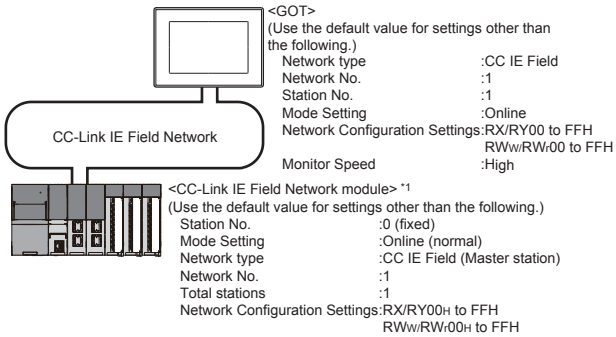
For details on the CC-Link IE Field Network module, refer to the following manual.

📖CC-Link IE Field Network Master/Local Module User's Manual

Connection to the MELSEC MX Controller (MX-R Model)

This section describes the settings of the GOT and CC-Link IE Field Network module in the system configuration shown below.

■System configuration (Network Type: CC IE Field)

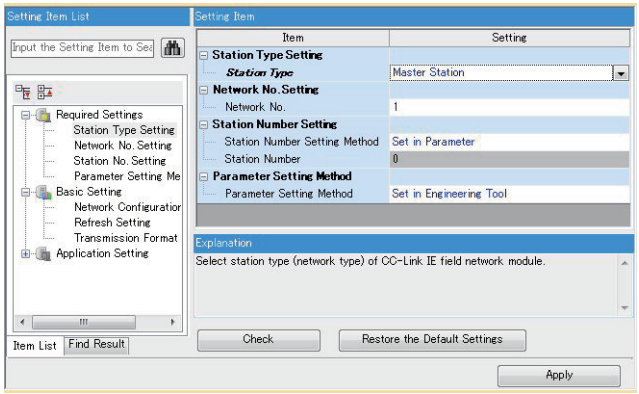


*1 The CC-Link IE Field Network module is mounted on slot 0 of the base unit.
The start I/O number of the CC-Link IE Field Network module is set to 0.

■Module parameter settings of the system configuration (Network Type: CC IE Field)

- [Module Parameter] of GX Works3

Module parameter

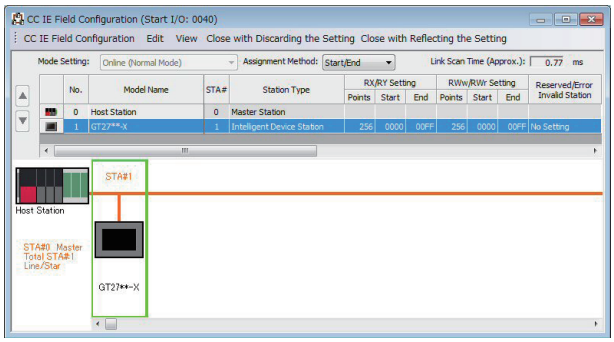


○: Necessary, △: As necessary, —: Not necessary

Item	Setting value	Setting for GOT connection
[Station Type]	Master station	○
[Network No.]*1	1	○
[Station Number Setting Method]	Set in parameter	○
[Station No.]	0	○
[Parameter Setting Method]	Set in Engineering Tool	○
[Network Configuration Settings]	☞ Network configuration settings	△

*1 Set the same network number as that of the GOT.

Network configuration settings



○: Necessary, △: As necessary, —: Not necessary

Item			Setting value	Setting for GOT connection
[RX/RY setting]*1	Station No. 1	[Start]	0000H	△
		[End]	00FFH	△
[RWw/RWr setting]*1	Station No. 1	[Start]	0000H	△
		[End]	00FFH	△
[Reserved/Error Invalid Station]			No setting	△

*1 Be sure to set it to perform the cyclic transmission.

Point

- When changing the module parameter

After writing module parameters to the PLC CPU, turn off then on or reset the PLC CPU.

- GOT station type

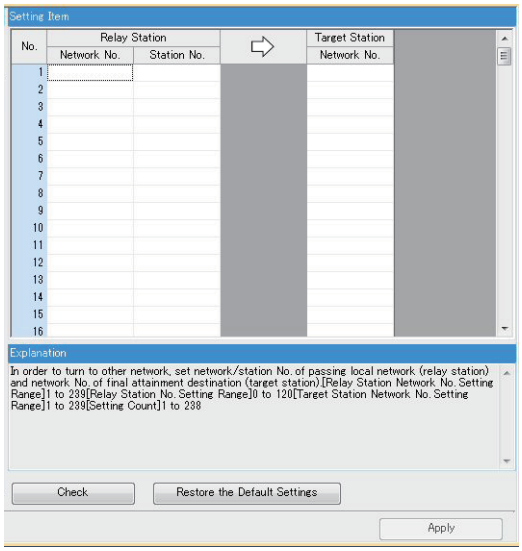
Set the GOT as an intelligent device station.

Routing settings

Up to 238 target network numbers can be set.

However, the same number cannot be set twice or more (multiple times).

The GOT (host station) can access networks specified with 238 different target station network numbers.



Item		Range
[Relay Station]	[Network No.]	[1] to [239]
	[Station No.]	[0] to [120]
[Target Station]	[Network No.]	[1] to [239]

Point

Routing parameter settings for the request source

Routing parameter settings are also necessary for the request source GOT.

For the setting, refer to the following.

☞ Page 933 Routing parameter settings

■System configuration (Network Type: CC IE Field): [Controller Setting] in GT Designer3

Item	Setting value
[Network Type]	CC IE Field
[Network No.]	1: Network No. 1
[Station No.]	1: Station No. 1
[Group No.]	0
[Mode Setting]	Online
[Refresh Interval]	25 ms
[Input for Err. Sta.]	Clear
[Retry]	3 times
[Timeout Time]	3 seconds
[Delay Time]	0 ms
[Monitor Speed]	High(Normal)

Point

[Controller Setting] in GT Designer3

For the setting method of [Controller Setting] in GT Designer3, refer to the following.

☞ Page 926 [Controller Setting]

11.1.5 Connection to the PLC with the authentication function enabled

Logon to the PLC

When the GOT monitors the PLC with the authentication function enabled, logon to the PLC is required.

Touch a special function switch (Destination Authentication) set in the project to display the key window.

Enter the [User Name] and [Password] to log on.

For information on how to set a special function switch, refer to the following.

📖GT Designer3 (GOT3000) Screen Design Manual

Logoff from the PLC

Touch a special function switch (Destination Authentication) set in the project to log off.

Precautions

■Creating a project

At GOT startup, the PLC is in logoff state.

The GOT cannot monitor the PLC devices until logon to the PLC from the GOT is complete.

Therefore, create a project assuming that the GOT cannot communicate with the PLC for a certain period.

For information on how to set screens and functions, refer to the following.

📖GT Designer3 (GOT3000) Screen Design Manual

Take the following precautions when creating a project.

Item		Precautions for using the destination authentication function
[Environmental Setting]	[Screen Switching/Window]	Set the GOT internal device as the screen switching device. As well as logoff operation by GOT, reset on the PLC side or other operations can also make the PLC in logoff state. By setting the GOT internal device as the screen switching device, a screen can be switched even in logoff state due to reset on the PLC side or other operations.
	[Language Switching]	Set the GOT internal device as the language switching device. When a PLC device is set, comments cannot be displayed in logoff state.
	[System Information]	Set the GOT internal device as the system information device. When a PLC device is set, a system alarm occurs in logoff state.
	[Security]	It is recommended not to use screen security (level authentication and operator authentication) for connection with the PLC with the destination authentication function enabled.
		When using the level authentication, set the GOT internal device as the security level device.
Screen setting	Screen displayed immediately after GOT startup	Place a special function switch (Destination Authentication) to perform destination authentication for logging on to the PLC. Do not configure the setting to monitor the PLC devices.
	Screen number	Specify the screen number ranges separately for the screen displayed in logoff state and the screen displayed in logon state. Separating the screen number ranges makes screen transition in logoff state easy to consider. Example) Before authentication: 1 to 100, after authentication: 101 or later
	Screen switching control at logoff	Configure the setting using trigger actions or other methods so that the screen switches at logoff to the screen displayed before authentication.
Function that is not recommended for use when connecting with the PLC with the destination authentication function enabled		• Screen security (level authentication and operator authentication) • GOT Mobile function (Destination authentication cannot be performed on a mobile screen.)
Others	Function to specify the conditions other than the trigger device	Specify the trigger indirectly by using trigger actions or other methods. Example) When the PLC device controls the input range for a numerical input
	Function that cannot specify the trigger device	By scripts or device data transfer using the GOT internal device, read and write the PLC device only in logon state. Example) Alarm monitoring of the connected device

■Character code applicable for [User Name].

For logon to the PLC from the GOT, only ASCII code characters can be available for [User Name] in the key window and the [Destination Authentication] window.

When setting [User Name] for the PLC, set [User Name] of the user operating the PLC from the GOT in the ASCII code.

For the list of the ASCII code available in GOT, refer to the following.

📖GT Designer3 (GOT3000) Screen Design Manual

■Access level of the user who can log on

When logging on to the PLC from the GOT, only the users whose access level is [Users] can log on.

Users with the access level [Administrators] or [Developers] cannot log on.

When monitoring the PLC from the GOT, set the users whose access level is [Users] for the PLC.

■Changing the user authentication function settings

The user authentication settings (user name and password) cannot be changed from the GOT.

Use GX Works3 to change the settings registered in the PLC.

■Obtaining and updating CPU errors

The GOT cannot obtain CPU errors unless you log on to the PLC.

To update the CPU error of the system alarm displayed on the GOT, log on to the PLC from the GOT.

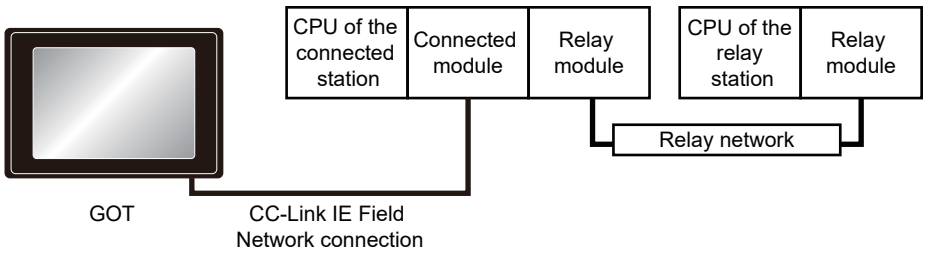
11.1.6 Access range for monitoring

When GOT is connected to the CPU of the station connected via CC-Link IE Field Network, the range accessible via the CPU is as follows.

Point

- When monitoring other networks (Routing parameter settings)

To monitor other networks, routing parameter settings are necessary.
For the routing parameter settings, refer to the reference manual of the network connected.



○: Accessible, —: Inaccessible

CPU of the connected station	Connected module	Relay station									
		Relay network	CPU of the relay station								
			MXR	RCPU	LCPU	QCPU (Q mode)	QSCPU	QCPU (A mode)	QnACPU	ACPU	FX5CPU
MX-R	☞ Page 921 Connectable devices	Ethernet	○*7	○*5	○	○*6	○	—	○	—	○*3
		CC-Link IE TSN	○*7	○*1	—	—	—	—	—	—	○*3
		CC-Link IE Field Network	○*7	○	○	○*2	○	—	—	—	○*4
RJ72GF15-T2	☞ Page 921 Connectable devices	CC-Link IE Field Network	—	○	○	○*2	○	—	—	—	○*4

*1 RnCPU, RnENCPU, RnSFCPU, and MELSECWinCPU (MELSEC iQ-R series) are supported.
*2 QnUDVCPU, QnUDECPU, QnUDEHCPU, QnUCPU, QnUDCPU, and QnUDHCPU are supported.
*3 FX5U and FX5UC are supported.
*4 FX5U, FX5UC, and FX5UJ are supported.
*5 The C Controller module (MELSEC iQ-R series) is not supported.
*6 The C Controller module (MELSEC-Q series) is not supported.
*7 Regardless of whether encrypted communications are performed, the MELSEC MX Controller can be used as the relay station.
To perform encrypted communication, settings need to be configured.
For details, refer to the following.
☞ Page 90 Setting procedure of the encrypted communication

11.2 MELSEC iQ-R series (CC-Link IE Field Network connection)

☞ Page 940 Connectable devices
☞ Page 942 System configuration
☞ Page 947 GOT side settings
☞ Page 954 PLC side settings
☞ Page 960 Access range for monitoring
☞ Page 961 How to monitor a redundant system

11.2.1 Connectable devices

The following table shows the connectable models.

○: Supported, —: Not supported

Controller	Model	Clock	PLC side interface		Connectable model
			CC-Link IE Field Network communication unit	Built-in port	
MELSEC iQ-R series	R00CPU R01CPU R02CPU R04CPU R08CPU R16CPU R32CPU R120CPU	○	RJ71GF11-T2 RJ71EN71 RD77GF4*8 RD77GF8*8 RD77GF16*8 RD77GF32*8	—	GT37 SoftGOT3000
	R08PCPU*1 R16PCPU*1 R32PCPU*1 R120PCPU*1	○	RJ71GF11-T2*4 RJ71EN71*4 RD77GF4*8 RD77GF8*8 RD77GF16*8 RD77GF32*8	—	GT37 SoftGOT3000
	R04ENCPU R08ENCPU R16ENCPU R32ENCPU R120ENCPU	○	RJ71GF11-T2 RJ71EN71 RD77GF4*8 RD77GF8*8 RD77GF16*8 RD77GF32*8	○*5	GT37 SoftGOT3000
	R08PSFCPU*2 R16PSFCPU*2 R32PSFCPU*2 R120PSFCPU*2	○	RJ71GF11-T2 RJ71EN71*4 RD77GF4*8 RD77GF8*8 RD77GF16*8 RD77GF32*8	—	GT37 SoftGOT3000
	R08SFCPU*3 R16SFCPU*3 R32SFCPU*3 R120SFCPU*3	○	RJ71GF11-T2 RJ71EN71 RD77GF4*8 RD77GF8*8 RD77GF16*8 RD77GF32*8	—	GT37 SoftGOT3000
Motion CPU (MELSEC iQ-R series)	R16MTCPU R32MTCPU R64MTCPU*6	○	RJ71GF11-T2*7 RJ71EN71*7	—	GT37 SoftGOT3000
C Controller module (MELSEC iQ-R series)	R12CCPU-V	○	RJ71GF11-T2 RJ71EN71 RD77GF4*8 RD77GF8*8 RD77GF16*8 RD77GF32*8	—	GT37 SoftGOT3000

Controller	Model	Clock	PLC side interface		Connectable model
			CC-Link IE Field Network communication unit	Built-in port	
CNC C80	R16NCCPU-S1	○	RJ71GF11-T2 RJ71EN71	—	GT37 SoftGOT3000
Robot controller (MELSEC iQ-R series)	CR800-R (R16RTCPU)	○	RJ71GF11-T2 RJ71EN71	—	GT37 SoftGOT3000
CC-Link IE Field Network head module	RJ72GF15-T2	—	—	○	GT37 SoftGOT3000

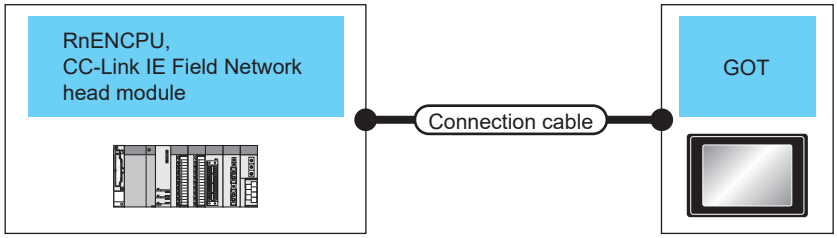
*1 Mount a redundant function module R6RFM next to the RnPCPU on the base unit when building a redundant system.
*2 Mount the SIL2 function module R6PSFM and redundant function module R6RFM next to the RnPSFCPU on the base unit.
*3 Mount a safety function module R6SFM next to the RnSFCPU on the base unit.
The RnSFCPU and the safety function module R6SFM must have the same pair version.
If their pair versions differ, the RnSFCPU does not operate.
*4 Use firmware version 12 or later when building a redundant system.
*5 The built-in ports (P1 and P2) are available.
*6 Use a module with OS software version 06 or later.
*7 When monitoring a Motion CPU from a different network, use a Motion CPU with OS software version 3 or later.
*8 For connection to the RD77GF4, RD77GF8, RD77GF16 and RD77GF32, refer to the following manual.
RD77GF Simple Motion Module User's Manual

Precautions

For information on the version restrictions of the CC-Link IE Field Network module, refer to the following manual.
CC-Link IE Field Network Master/Local Module User's Manual

11.2.2 System configuration

Connection to the built-in port of the PLC or CC-Link IE Field Network head module



For details on the connection cable and overall cable length, refer to the following.

☞ Page 942 Connection cable
☞ Page 942 Overall length

For details on the maximum number of connected devices, refer to the following.

☞ Page 943 Maximum number of connected devices

Controller	Connection cable	GOT	
		Interface	Model
MELSEC iQ-R series*2 CC-Link IE Field Network head module (RJ72GF15-T2)	Twisted pair cable	GT37-IF2000 + GT15-J71GF13-T2*1	GT37 SoftGOT3000

*1 If there is a submaster station in the network configuration, use software version C or later.
The software version is the 10th digit of the serial number described on the rating plate of the unit.

*2 For the connectable PLCs, refer to the following.
☞ Page 940 Connectable devices

■Connection cable

Use a connection cable that meets the following standards.

Standard	Category
1000BASE-T	Shielded twisted pair cable (STP) of category 5e or higher

Use cables that meet the IEEE802.3 1000BASE-T standard.

When only one GOT is connected, the GOT can be directly connected to the controller without a hub.

Use hubs that satisfy the following conditions.

- Compliant with the IEEE802.3 (1000BASE-T) standard
- Include Auto MDI/MDI-X.
- Include an automatic negotiation function.
- Switching hub (Do not use repeater hubs.)

Recommended switching hub (Mitsubishi Electric products)

Type	Model
Industrial switching hub	NZ2EHG-T8

For details, refer to the following manual.

📖CC-Link IE Field Network Master/Local Module User's Manual

■Overall length

The overall cable length is 12100 m.

The overall cable length and cable length between stations vary depending on the connection method (line, star, or ring), the system configuration, etc.

For details, refer to the following manual.

📖CC-Link IE Field Network Master/Local Module User's Manual

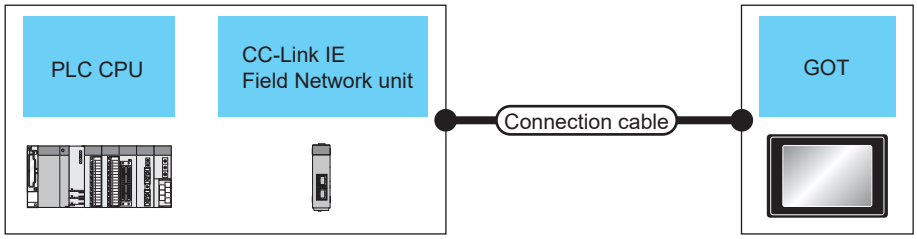
■Maximum number of connected devices

The following shows the number of GOTs connectable to one controller.

Controller	
Model	**Number of GOTs connectable to one PLC**
MELSEC iQ-R series	120
CC-Link IE Field Network head module	119*1

*1 The number of connectable device stations is 120 (1 CC-Link IE Field Network head module and 119 GOTs).

Connection to CC-Link IE Field Network communication unit



For details on the connection cable and overall cable length, refer to the following.

☞ Page 944 Connection cable
☞ Page 944 Overall length

For details on the maximum number of connected devices, refer to the following.

☞ Page 944 Maximum number of connected devices

Controller	CC-Link IE Field Network communication unit	Connection cable	GOT	
			Interface	**Model**
MELSEC iQ-R series C Controller module (MELSEC iQ-R series)	RJ71GF11-T2 RJ71EN71 RD77GF4 RD77GF8 RD77GF16 RD77GF32	Twisted pair cable	GT37-IF2000 + GT15-J71GF13-T2*1*2	GT37 SoftGOT3000
Motion CPU (MELSEC iQ-R series) CNC C80 Robot controller (MELSEC iQ-R series)	RJ71GF11-T2 RJ71EN71	Twisted pair cable	GT37-IF2000 + GT15-J71GF13-T2*1*2	GT37 SoftGOT3000

*1 For connection to the RCPU redundant system, use the product with hardware version C or later.
For information on how to check the hardware version, refer to the following.
📖GOT3000 Series User's Manual (Hardware)

*2 If there is a submaster station in the network configuration, use software version C or later.
The software version is the 10th digit of the serial number described on the rating plate of the unit.

■Connection cable

Use a connection cable that meets the following standards.

Standard	Category
1000BASE-T	Shielded twisted pair cable (STP) of category 5e or higher

Use cables that meet the IEEE802.3 1000BASE-T standard.

When only one GOT is connected, the GOT can be directly connected to the controller without a hub.

Use hubs that satisfy the following conditions.

- Compliant with the IEEE802.3 (1000BASE-T) standard
- Include Auto MDI/MDI-X.
- Include an automatic negotiation function.
- Switching hub (Do not use repeater hubs.)

Recommended switching hub (Mitsubishi Electric products)

Type	Model
Industrial switching hub	NZ2EHG-T8

For details, refer to the following manual.

📖CC-Link IE Field Network Master/Local Module User's Manual

■Overall length

The overall cable length is 12100 m.

The overall cable length and cable length between stations vary depending on the connection method (line, star, or ring), the system configuration, etc.

For details, refer to the following manual.

📖CC-Link IE Field Network Master/Local Module User's Manual

■Maximum number of connected devices

The following shows the number of GOTs connectable to one controller.

Controller	
Model	**Number of GOTs connectable to one PLC**
MELSEC iQ-R series Motion CPU (MELSEC iQ-R series) C Controller module (MELSEC iQ-R series) CNC C80 Robot controller (MELSEC iQ-R series)	120

■Connection to RnSFCPU

The RnSFCPU takes 10 seconds or more to run.

If the GOT is started during this time, a system alarm occurs.

Adjust the time to display the GOT startup screen to prevent a system alarm.

📖GT Designer3 (GOT3000) Screen Design Manual

Connecting one PLC to multiple GOTs

When multiple GOT units are simultaneously accessing one PLC, the GOT writing process (transient/cyclic) and reading process (transient) may slow down.

This slow access can be remedied with the following countermeasures.

<Countermeasures>

■Improve response speed on PLC side

Insert a COM instruction on the PLC to increase the response speed.

Note that caution is required as the scan time will increase.

■Screen design using cyclic devices

Create the screen with cyclic devices instead of using transient devices.

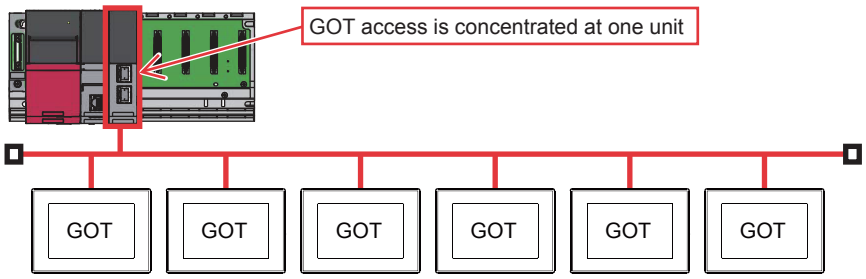
■Split GOT connection destinations into several systems

Add a master/local module to the PLC side, and split the GOT connection destinations into several systems.

Improve the current system configuration.

(Example of current system configuration)

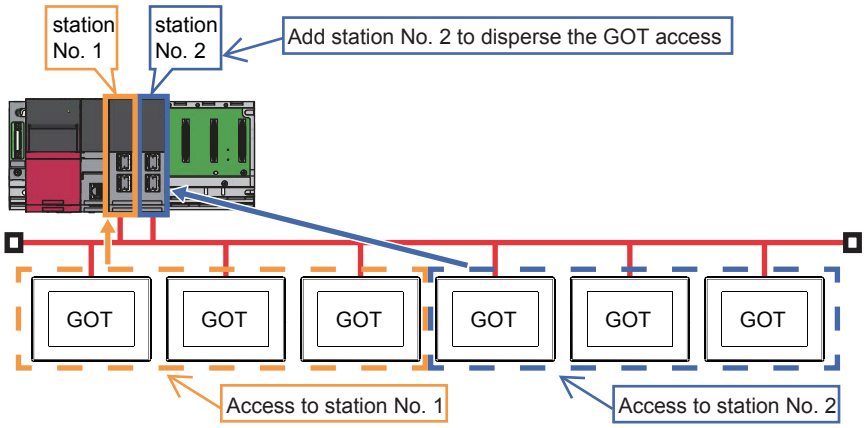
In the following system configuration, access from the GOT is concentrated on one module.



(Improvement measure)

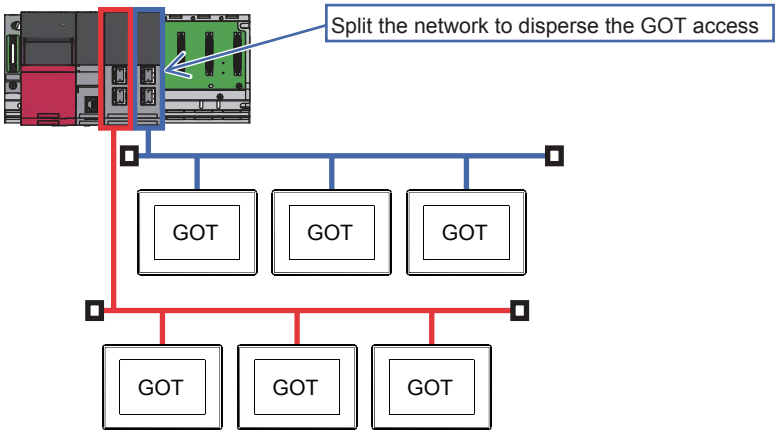
- Adding a module to the PLC side

Add a module to the PLC side to disperse the GOT access destinations.



• Split the network

Split the network to disperse the GOT access.



Precautions

■Starting the GOT connected to the CC-Link IE Field Network

For the CC-Link IE Field Network connection, the data link is started approximately 15 seconds after the GOT startup.

■When a network error occurs in the system alarm

In the CC-Link IE Field Network connection, when a network error occurs in the system alarm, the system alarm display cannot be canceled even though the causes are removed.

To cancel the system alarm display, restart the GOT.

■Data link failure in other stations at GOT startup

At GOT startup, the data link failure may occur in other stations.

However, after the failure occurrence, the GOT reconnects automatically and monitors the devices properly.

To avoid such data link failure, start up the GOT 10 seconds earlier than the master station.

However, if the master station does not complete startup when the GOT starts monitoring (10 seconds after the GOT startup), the communication timeout occurs in the GOT.

For details, refer to the following manual.

📖CC-Link IE Field Network Master/Local Module User's Manual

■Data link failure in all stations at GOT startup or cable connection/disconnection

At GOT startup, the communication is broken temporarily between PORT1 and PORT2 in the CC-Link IE Field module which is installed on the GOT.

Thus, as the GOT or a station between the GOT and the master station is reconnected, the data link failure may occur on all stations.

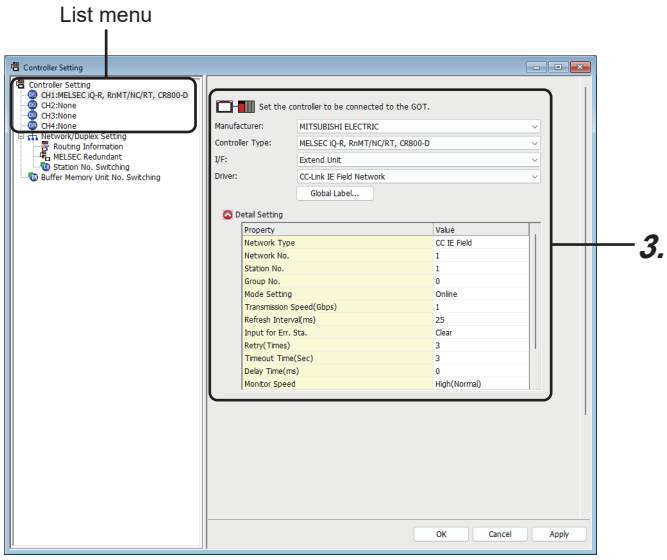
GOT startup includes the following operations.

- Turning on the GOT
- Resetting the GOT main unit
- Operating the utility
- Downloading the project including the communication settings
- Downloading the OS

11.2.3 GOT side settings

[Controller Setting]

Set the channel of the connected controller.



Operating procedure

1. Select [Common] → [Controller Setting] from the menu.

2. In the [Controller Setting] window, select the channel number to be used from the list menu.

3. Set the following items.

Item	Description
[Manufacturer]	[MITSUBISHI ELECTRIC]
[Controller Type]	[MELSEC iQ-R, RnMT/NC/RT, CR800-D]
[I/F]	[Extend Unit]
[Driver]	[CC-Link IE Field Network]
[Detail Setting]	Configure the settings according to the usage environment. ☞ Page 948 [Detail Setting]

4. When you have completed the settings, click the [OK] button.

Point

The controller settings can be checked in [I/F Communication Setting].

For details, refer to the following.

📖GT Designer3 (GOT3000) Screen Design Manual

■[Detail Setting]

Configure the settings according to the usage environment.

Detail Setting

Property	Value
Network Type	CC IE Field
Network No.	1
Station No.	1
Group No.	0
Mode Setting	Online
Transmission Speed(Gbps)	1
Refresh Interval(ms)	25
Input for Err. Sta.	Clear
Retry(Times)	3
Timeout Time(Sec)	3
Delay Time(ms)	0
Monitor Speed	High(Normal)
CPU No. switching GD device first No. (3 points)	500
Module No. switching GD device first No. (16 points)	550
Servo axis switching GD device first No. (16 points)	10

Item	Description	Range
[Network Type]	Set the network type.	[CC IE Field]
[Network No.]	Set the network number.	[1] to [239]
[Station No.]	Set the station number of the GOT.	[1] to [120]
[Group No.]	—	[0]
[Mode Setting]	Set the operation mode of the GOT. For details on the hardware test and self-loopback test, refer to the following. ☞ Page 949 Hardware test ☞ Page 950 Self-loopback test	[Online], [Offline], [H/W test], [Self-loopback test]
[Transmission Speed]	—	[1Gbps]
[Refresh Interval]	Set the number of refreshes to secure the send/receive data per station during communication.	[1] ms to [1000] ms
[Input for Err. Sta.]	Set whether to hold or clear the input from the station whose data link has become faulty due to powering off or other reasons.	[Clear], [Hold]
[Retry]	Set the number of retries to be performed when a communication timeout occurs. When receiving no response after retries, the communication times out.	[0] times to [5] times
[Timeout Time]	Set the time period for a communication to time out.	[1] second to [90] seconds
[Delay Time]	Set the delay time for reducing the load of the network and destination PLC.	[0] ms to [300] ms
[Monitor Speed][*2]	Set the monitor speed for the CC-Link IE Field Network. This setting is not valid in all systems.	[High(Normal)][*1], [Middle], [Low]
[CPU No. switching GD device first No. (3 points)]	Set the start device number of the GD devices for CPU number switching. For details, refer to the following. ☞ Page 950 Start device number of the GD devices for CPU number switching	[0] to [65520]
[Module No. switching GD device first No. (16 points)]	Set the start device number of the GD devices for module number switching. For details, refer to the following. ☞ Page 951 Start device number of the GD devices for module number switching	[0] to [65520]
[Servo axis switching GD device first No. (16 points)]	Set the start device number of the GD devices for servo axis switching. For details, refer to the following. ☞ Page 952 Start device number of the GD devices for servo axis switching	[0] to [65520]

*1 This setting is effective for collecting large data with the logging, recipe, or such function on a screen other than the monitor screen.
*2 When using a global label to read or write more than 235 two-byte characters, set [Monitor speed] to [High(Normal)] or [Middle].
If [Monitor speed] is set to [Low], a system error occurs when reading or writing.
For details, refer to the following manual.
📖GT Designer3 (GOT3000) Screen Design Manual

Precautions

When the output is required to be held at the data link failure, set [Input for Err. Sta.] to [Hold] in the controller setting of the GOT.

Point

• Example of communication detail settings
For the example of communication detail settings, refer to the following.
☞ Page 954 PLC side settings
• Controller settings using the GT37 utility
The controller settings can be changed in [Communication Settings] of the GT37 utility after writing [Communication Settings] of project data to GT37.
For details on the GT37 utility, refer to the following manual.
📖GOT3000 Series User's Manual (Utility & Maintenance Functions)
• Priority of the settings in [Controller Setting]
When the settings are configured in GT Designer3 or in the GT37 utility, the latest settings are effective.
• Network type
Be sure to set the same network types for the CPU side and the GOT side.
If the network types of the CPU side and the GOT side are different, an error is displayed in the system alarm of the GOT side.

■Hardware test

For a hardware test, mount a CC-Link IE Field Network communication unit on the GOT, and check if the unit operates properly with the GOT.
The following shows the hardware test procedure.

1. Perform either of the following operations to set the GOT to the hardware test mode.
• Write the project data for which [Mode Setting] in [Detail Setting] is set to [H/W test] to the GOT.
• Set [Mode setting] of [Detail setting] to [H/W Test] in the GOT utility.

2. A hardware test will start at GOT startup.

3. After the test is complete, check the result with the ERR LED on the CC-Link IE Field Network communication unit.
• OFF: Normal
• ON: Error

4. If no error is detected, change the setting of [Mode Setting] from [H/W test] in [Detail Setting].
Since the communication with the controller is not performed when [Mode setting] is set to [H/W Test], the communication timeout error occurs when the device of controller is monitored.

5. If any error is detected, replace the CC-Link IE Field Network communication unit.

■Self-loopback test

In a self-loopback test, connect port 1 and port 2 of the CC-Link IE Field Network communication unit mounted on the GOT with a network cable, and check if the unit operates properly with the GOT.
The following shows the self-loopback test procedure.

1. Perform either of the following operations to set the GOT to the self-loopback test mode.
- Write the project data for which [Mode Setting] in [Detail Setting] is set to [Self-loopback test] to the GOT.
- Set [Mode setting] in [Detail setting] to [Self-loopback Test] in the GOT utility.

2. A self-loopback test will start at a GOT startup.

3. After the test is complete, check the result with the ERR LED on the CC-Link IE Field Network communication unit.
- OFF: Normal
- ON: Error

4. If no error is detected, change the setting of [Mode Setting] from [Self-loopback test] in [Detail Setting].
Since the communication with the controller is not performed when [Mode setting] is set to [Self-loopback Test], the communication timeout error occurs when the device of controller is monitored.

5. If any error is detected, replace the CC-Link IE Field Network communication unit.

■Start device number of the GD devices for CPU number switching

- Indirect specification of a CPU number

[CPU No.] can be indirectly specified with the GOT internal registers (GD devices) by specifying a value (100 to 102) to [CPU No.] in the device setting dialog in GT Designer3.
Set the start device number of the GD devices to be used in [CPU No. switching GD device first No. (3 points)].
[CPU No.] is specified with three consecutive GD devices, starting from the set device number.
When [500] is set to [CPU No. switching GD device first No. (3 points)], GD500 to GD502 are used to specify [CPU No.] as shown in the following table.

CPU No.	GD device	Setting range
100	GD500	1 to 4 Setting a value outside the range causes a communication timeout error. Specifying a nonexistent CPU number or a CPU number not supporting a multiple CPU system with a device causes a controller error.
101	GD501	
102	GD502	

- Indirect specification of a CPU number on the initially displayed screen

Set [CPU No. switching GD device first No. (3 points)] so that the values of the GD devices are retained and monitored upon the GOT startup.

- Indirect specification of a CPU number for multi-channel connection

If the setting range of [CPU No. switching GD device first No. (3 points)] set for each channel overlaps, the monitoring target CPU number set to each channel is switched simultaneously.
Set [CPU No. switching GD device first No. (3 points)] for each channel so that the setting range does not overlap.

- Indirect specification of a station number and a CPU number for multi-channel connection

When GD10 to GD25 are used to specify the station number of an inverter or non-Mitsubishi temperature controller connected, setting [10] to [CPU No. switching GD device first No. (3 points)] in a different channel switches the monitoring target CPU number and station number of an inverter or non-Mitsubishi temperature controller set to each channel simultaneously.
Set [CPU No. switching GD device first No. (3 points)] so that the setting range does not overlap the station number of an inverter or non-Mitsubishi temperature controller.

■Start device number of the GD devices for module number switching

• Indirect specification of a module number

For connection via a Simple Motion module, [Unit No.] can be specified with the GOT internal registers (GD devices) by specifying a value (100 to 10F) to [Unit No.] in the device setting dialog in GT Designer3.

Set the start device number of the GD devices to be used in [Module No. switching GD device first No. (16 points)].

[Unit No.] is specified with 16 consecutive GD devices, starting from the set device number.

When [550] is set to [Module No. switching GD device first No. (16 points)], GD550 to GD565 are used to specify [Unit No.] as shown in the following table.

Module No.	GD device	Setting range
100	GD550	00 to FF Setting a value outside the above range causes a device range error.
101	GD551	
102	GD552	
103	GD553	
104	GD554	
105	GD555	
106	GD556	
107	GD557	
108	GD558	
109	GD559	
10A	GD560	
10B	GD561	
10C	GD562	
10D	GD563	
10E	GD564	
10F	GD565	

• Indirect specification of a module number on the initially displayed screen

Set [Module No. switching GD device first No. (16 points)] so that the values of the GD devices are retained and monitored upon the GOT startup.

• Indirect specification of a module number for multi-channel connection

If the setting range of [Module No. switching GD device first No. (16 points)] set for each channel overlaps, the module number of the Simple Motion module via the servo amplifier device of each channel is switched simultaneously.

Set [Module No. switching GD device first No. (16 points)] for each channel so that the setting range does not overlap.

• Indirect specification of a station number and a module number for multi-channel connection

When GD10 to GD25 are used to specify the station number of an inverter or non-Mitsubishi temperature controller connected, setting [10] to [Module No. switching GD device first No. (16 points)] switches the module number of the Simple Motion module via the servo amplifier device and the station number of an inverter or non-Mitsubishi temperature controller set to each channel simultaneously.

Set [Module No. switching GD device first No. (16 points)] so that the setting range does not overlap the station number of an inverter or non-Mitsubishi temperature controller.

■Start device number of the GD devices for servo axis switching

• Indirect specification of a servo axis number

For connection via a Motion CPU or Simple Motion module, a servo axis number can be indirectly specified with GOT internal registers (GD devices) by specifying a value (100 to 115) to the axis number of the servo amplifier device.

Set the start device number of the GD devices to be used in [Servo axis switching GD device first No. (16 points)].

Specify a servo axis number with 16 consecutive GD devices, starting the set device number.

When [10] is set to [Servo axis switching GD device first No. (16 points)], GD10 to GD25 are used to specify a servo axis number as shown in the following table.

Servo axis No.	GD device	Setting range
100	GD10	1 to 64 Setting a value outside the above range causes a device range error.
101	GD11	
102	GD12	
103	GD13	
104	GD14	
105	GD15	
106	GD16	
107	GD17	
108	GD18	
109	GD19	
110	GD20	
111	GD21	
112	GD22	
113	GD23	
114	GD24	
115	GD25	

• Indirect specification of a servo axis number on the initially displayed screen

Set [Servo axis switching GD device first No. (16 points)] so that the values of the GD devices are retained and monitored upon the GOT startup.

• Indirect specification of a servo axis number for multi-channel connection

If the setting rage of [Servo axis switching GD device first No. (16 points)] set for each channel overlaps, the axis number of the servo amplifier of each channel is switched simultaneously.

Set [Servo axis switching GD device first No. (16 points)] for each channel so that the setting range does not overlap.

• Indirect specification of a station number and a servo axis number for multi-channel connection

When GD10 to GD25 are used to specify the station number of an inverter or non-Mitsubishi temperature controller connected, setting [10] to [Servo axis switching GD device first No. (16 points)] switches the axis number of the servo amplifier and the station number of an inverter or non-Mitsubishi temperature controller set to each channel simultaneously.

Set [Servo axis switching GD device first No. (16 points)] so that the setting range does not overlap the station number of an inverter or non-Mitsubishi temperature controller.

■Routing parameter settings

Up to 64 settings can be configured for [Transfer Net No.].

However, the same number cannot be set in [Transfer Net No.] twice or more (multiple times).

The GOT (host station) can access 64 different networks specified under [Transfer Net No.].

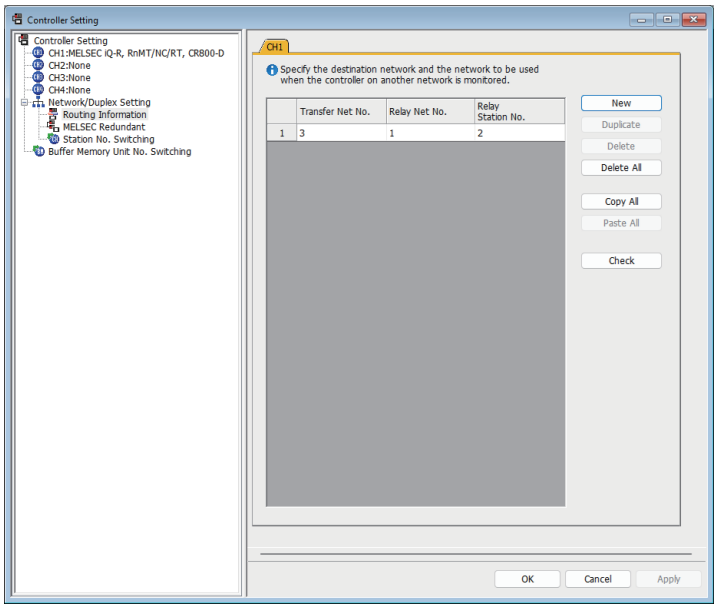
Point

Routing parameter settings

When communicating within the host network, routing parameter settings are not required.

For details on routing parameters, refer to the following manual.

MELSEC iQ-R CPU Module User's Manual (Application)



Item	Range
[Transfer Net No.]	[1] to [239]
[Relay Net No.]	[1] to [239]
[Relay Station No.]	[0] to [120]

Point

Routing parameter settings for the relay station

Routing parameter settings are also necessary for the relay station.

For the setting, refer to the following.

☞ Page 954 PLC side settings

11.2.4 PLC side settings

Model		Reference
MELSEC iQ-R series	R00CPU R01CPU R02CPU R04CPU R08CPU R16CPU R32CPU R120CPU R08PCPU R16PCPU R32PCPU R120PCPU R04ENCPU R08ENCPU R16ENCPU R32ENCPU R120ENCPU R08PSFCPU R16PSFCPU R32PSFCPU R120PSFCPU R08SFCPU R16SFCPU R32SFCPU R120SFCPU	☞ Page 955 Connection to MELSEC iQ-R series
Motion CPU (MELSEC iQ-R series)	R16MTCPU R32MTCPU R64MTCPU	☞ Page 955 Connection to MELSEC iQ-R series
C Controller module (MELSEC iQ-R series)	R12CCPU-V	☞ Page 957 Connection to C Controller module (MELSEC iQ-R series)
CNC C80	R16NCCPU-S1	☞ Page 955 Connection to MELSEC iQ-R series
Robot controller (MELSEC iQ-R series)	CR800-R (R16RTCPU)	☞ Page 955 Connection to MELSEC iQ-R series
CC-Link IE Field Network head module	RJ72GF15-T2	☞ Page 955 Connection to MELSEC iQ-R series

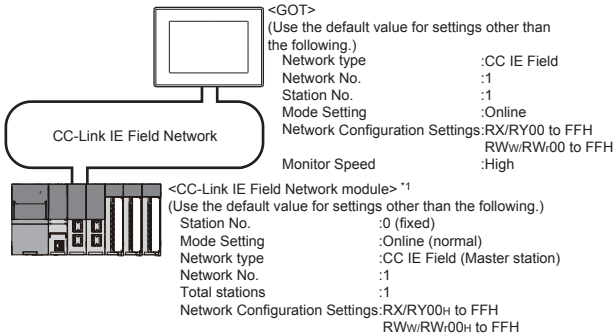
For details on the CC-Link IE Field Network module, refer to the following manual.

📖CC-Link IE Field Network Master/Local Module User's Manual

Connection to MELSEC iQ-R series

This section describes the settings of the GOT and CC-Link IE Field Network module in the system configuration shown below.

■System configuration (Network Type: CC IE Field)

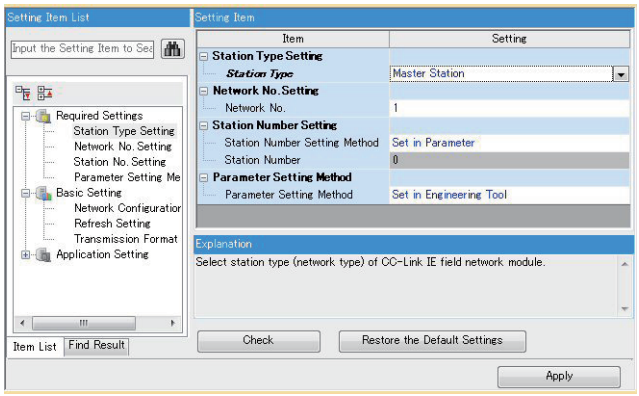


*1 The CC-Link IE Field Network module is mounted on slot 0 of the base unit.
The start I/O number of the CC-Link IE Field Network module is set to 0.

■Module parameter settings of the system configuration (Network Type: CC IE Field)

- [Module Parameter] of GX Works3

Module parameter

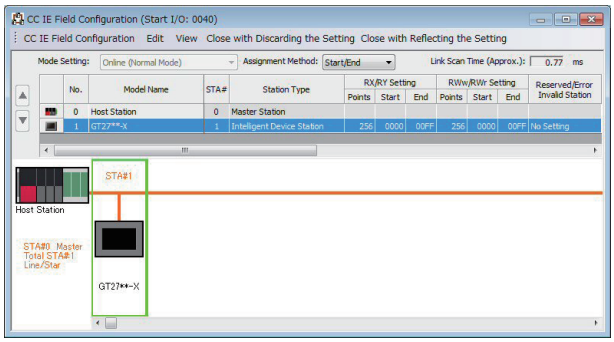


○: Necessary, △: As necessary, —: Not necessary

Item	Setting value	Setting for GOT connection
[Station Type]	Master station	○
[Network No.]*1	1	○
[Station Number Setting Method]	Set in parameter	○
[Station No.]	0	○
[Parameter Setting Method]	Set in Engineering Tool	○
[Network Configuration Settings]	☞ Network configuration settings	△

*1 Set the same network number as that of the GOT.

Network configuration settings



○: Necessary, △: As necessary, —: Not necessary

Item			Setting value	Setting for GOT connection
[RX/RY setting]*1	Station No. 1	[Start]	0000H	△
		[End]	00FFH	△
[RWw/RWr setting]*1	Station No. 1	[Start]	0000H	△
		[End]	00FFH	△
[Reserved/Error Invalid Station]			No setting	△

*1 Be sure to set it to perform the cyclic transmission.

Point

- When changing the module parameter

After writing module parameters to the PLC CPU, turn off then on or reset the PLC CPU.

- GOT station type

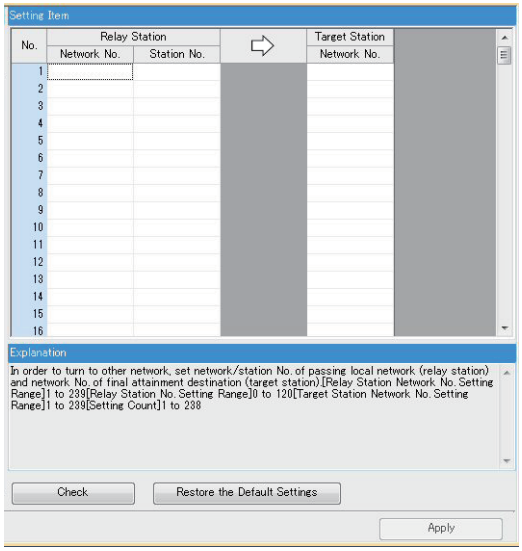
Set the GOT as an intelligent device station.

Routing settings

Up to 238 target network numbers can be set.

However, the same number cannot be set twice or more (multiple times).

The GOT (host station) can access networks specified with 238 different target station network numbers.



Item		Range
[Relay Station]	[Network No.]	[1] to [239]
	[Station No.]	[0] to [120]
[Target Station]	[Network No.]	[1] to [239]

Point

Routing parameter settings for the request source

Routing parameter settings are also necessary for the request source GOT.

For the setting, refer to the following.

☞ Page 953 Routing parameter settings

■System configuration (Network Type: CC IE Field): [Controller Setting] in GT Designer3

Item	Setting value
[Network Type]	CC IE Field
[Network No.]	1: Network No. 1
[Station No.]	1: Station No. 1
[Group No.]	0
[Mode Setting]	Online
[Refresh Interval]	25 ms
[Input for Err. Sta.]	Clear
[Retry]	3 times
[Timeout Time]	3 seconds
[Delay Time]	0 ms
[Monitor Speed]	High(Normal)

Point

[Controller Setting] in GT Designer3

For the setting method of [Controller Setting] in GT Designer3, refer to the following.

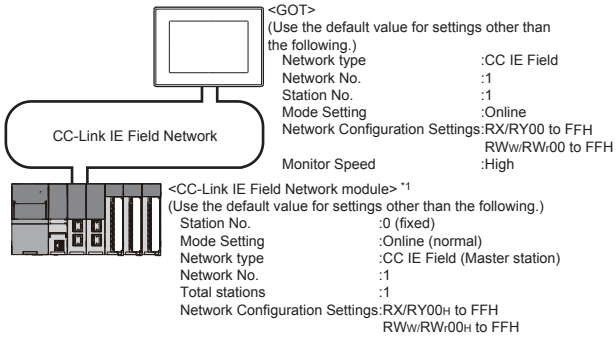
☞ Page 947 [Controller Setting]

Connection to C Controller module (MELSEC iQ-R series)

This section describes the settings of the GOT and C Controller module (MELSEC iQ-R series) in the system configuration shown below.

Use CW Configurator for the C Controller module (MELSEC iQ-R series) communication settings.

■System configuration (Network Type: CC IE Field)

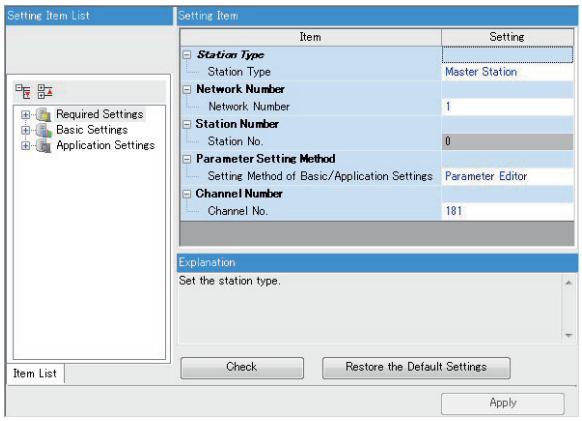


*1 The CC-Link IE Field Network module is mounted on slot 0 of the base unit.
The start I/O number of the CC-Link IE Field Network module is set to 0.

■Module parameter settings of the system configuration (Network Type: CC IE Field)

• [Module parameter] of CW Configurator

Module parameter

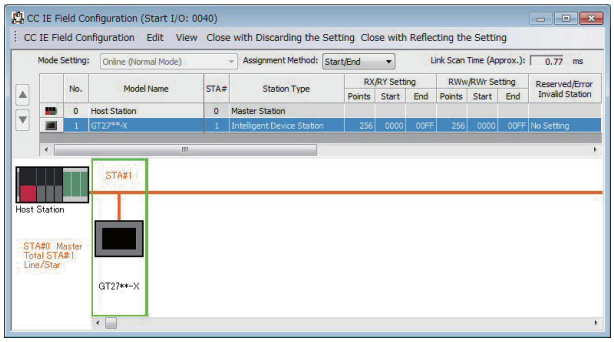


○: Necessary, △: As necessary, —: Not necessary

Item	Setting value	Setting for GOT connection
[Station Type]	Master station	○
[Network No.]*1	1	○
[Station No.]	0	○
[Parameter Setting Method]	Set in parameter	○
[Channel No.]	(Use default value)	—
[Network Configuration Settings]	☞ Network configuration settings	△

*1 Set the same network number as that of the GOT.

Network configuration settings



○: Necessary, △: As necessary, —: Not necessary

Item			Setting value	Setting for GOT connection
[RX/RY setting]*1	Station No. 1	[Start]	0000H	△
		[End]	00FFH	△
[RWw/RWr setting]*1	Station No. 1	[Start]	0000H	△
		[End]	00FFH	△
[Reserved/Error Invalid Station]			No setting	△

*1 Be sure to set it to perform the cyclic transmission.

Point

• When changing the module parameter

After writing module parameters to the PLC CPU, turn off then on or reset the PLC CPU.

• GOT station type

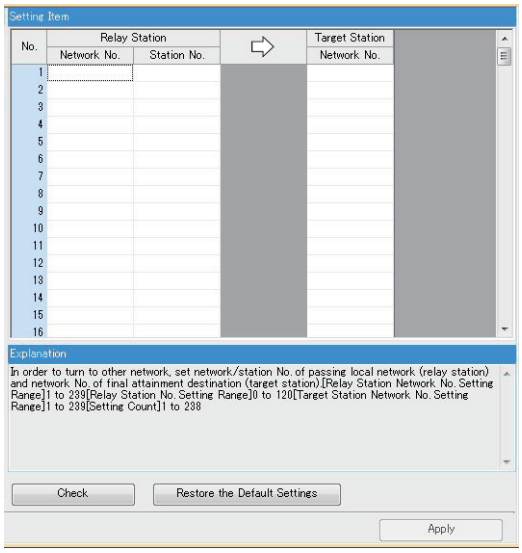
Set the GOT as an intelligent device station.

Routing settings

Up to 238 target network numbers can be set.

However, the same number cannot be set twice or more (multiple times).

The GOT (host station) can access networks specified with 238 different target station network numbers.



Item		Range
[Relay Station]	[Network No.]	[1] to [239]
	[Station No.]	[0] to [120]
[Target Station]	[Network No.]	[1] to [239]

Point

Routing parameter settings for the request source

Routing parameter settings are also necessary for the request source GOT.

For the setting, refer to the following.

☞ Page 953 Routing parameter settings

■System configuration (Network Type: CC IE Field): [Controller Setting] in GT Designer3

Item	Setting value
[Network Type]	CC IE Field
[Network No.]	1: Network No. 1
[Station No.]	1: Station No. 1
[Group No.]	0
[Mode Setting]	Online
[Refresh Interval]	25 ms
[Input for Err. Sta.]	Clear
[Retry]	3 times
[Timeout Time]	3 seconds
[Delay Time]	0 ms
[Monitor Speed]	High(Normal)

Point

[Controller Setting] in GT Designer3

For the setting method of [Controller Setting] in GT Designer3, refer to the following.

☞ Page 947 [Controller Setting]

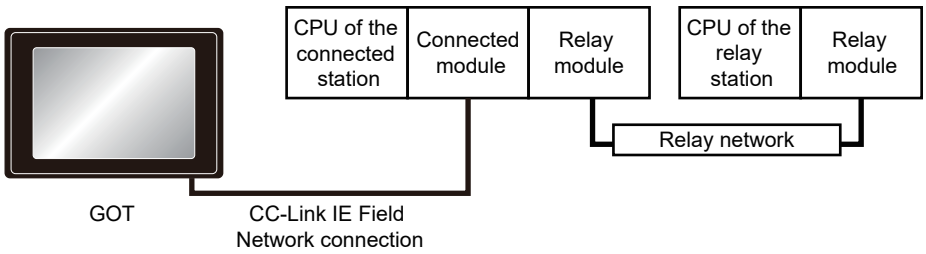
11.2.5 Access range for monitoring

When GOT is connected to the CPU of the station connected via CC-Link IE Field Network, the range accessible via the CPU is as follows.

Point

- When monitoring other networks (Routing parameter settings)

To monitor other networks, routing parameter settings are necessary.
For the routing parameter settings, refer to the reference manual of the network connected.



○: Accessible, —: Inaccessible

CPU of the connected station	Connected module	Relay station									
		Relay network	CPU of the relay station								
			MXR	RCPU	LCPU	QCPU (Q mode)	QSCPU	QCPU (A mode)	QnACPU	ACPU	FX5CPU
RCPU	☞ Page 940 Connectable devices	Ethernet	○*7	○*5	○	○*6	○	—	○	—	○*3
		CC-Link IE TSN	○*7	○*1	—	—	—	—	—	—	○*3
		CC-Link IE Controller Network	○*7	○	—	○	○	—	—	—	—
		CC-Link IE Field Network	○*7	○	○	○*2	○	—	—	—	○*4
		MELSECNET/H, MELSECNET/10	—	—	—	○	○	○	○	○*8	—
C Controller module (MELSEC iQ-R series)	☞ Page 940 Connectable devices	CC-Link IE TSN	○*7	○*1	—	—	—	—	—	—	○*3
		CC-Link IE Controller Network	○*7	○	—	○	○	—	—	—	—
		CC-Link IE Field Network	○*7	○	○	○*2	○	—	—	—	○*4
		MELSECNET/H, MELSECNET/10	—	—	—	○	○	○	○	○*8	—
RJ72GF15-T2	☞ Page 940 Connectable devices	CC-Link IE Field Network	—	○	○	○*2	○	—	—	—	○*4

*1 RnCPU, RnENCPU, RnSFCPU, and MELSECWinCPU (MELSEC iQ-R series) are supported.
*2 QnUDVCPU, QnUDECPU, QnUDEHCPU, QnUCPU, QnUDCPU, and QnUDHCPU are supported.
*3 FX5U and FX5UC are supported.
*4 FX5U, FX5UC, and FX5UJ are supported.
*5 The C Controller module (MELSEC iQ-R series) is not supported.
*6 The C Controller module (MELSEC-Q series) is not supported.
*7 Regardless of whether encrypted communications are performed, the MELSEC MX Controller can be used as the relay station.
To perform encrypted communication, settings need to be configured.
For details, refer to the following.
☞ Page 90 Setting procedure of the encrypted communication
*8 AnUCPU and AnUSCPU are supported.

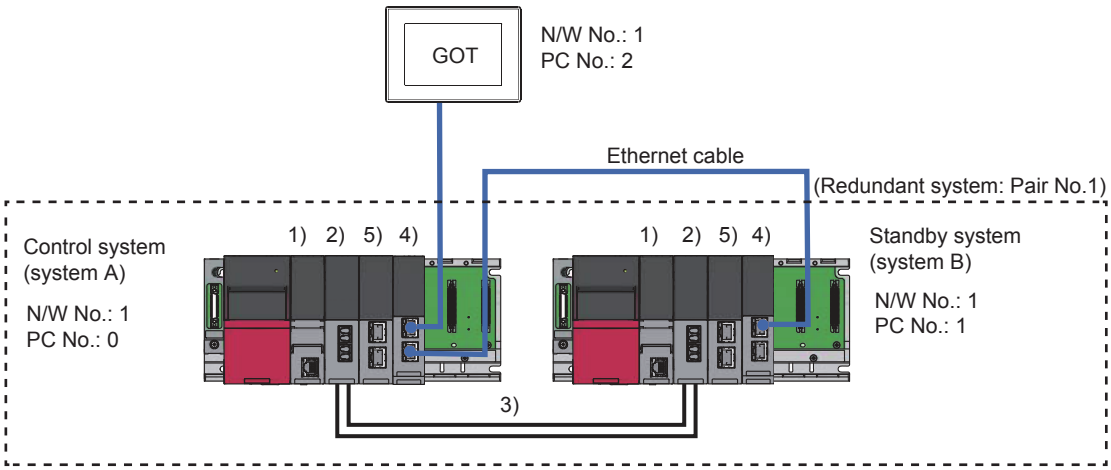
11.2.6 How to monitor a redundant system

☞ Page 961 One-to-one connection of the GOT and the redundant system
☞ Page 963 1:n connection of GOT and redundant system
☞ Page 964 Mixed connection of redundant system and non-redundant system
☞ Page 965 MELSEC redundant setting
☞ Page 967 Precautions

One-to-one connection of the GOT and the redundant system

■System configuration example

The following connection configuration examples are explained.



1) Process CPU
2) Redundant function module
3) Tracking cable
4) CC-Link IE Field Network Master/Local module (GOT connection)
5) CC-Link IE Field Network Master/Local module (Remote I/O station connection)

■Connection method

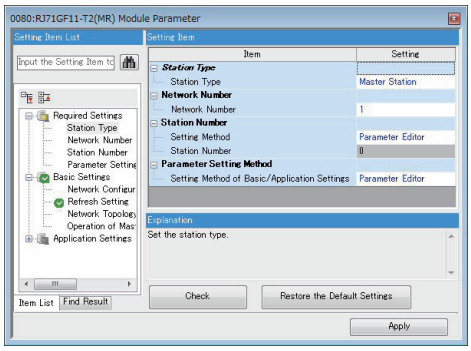
Connect the CC-Link IE Field Network system to the GOT.

☞ Page 940 MELSEC iQ-R series (CC-Link IE Field Network connection)

■PLC side settings (GX Works3)

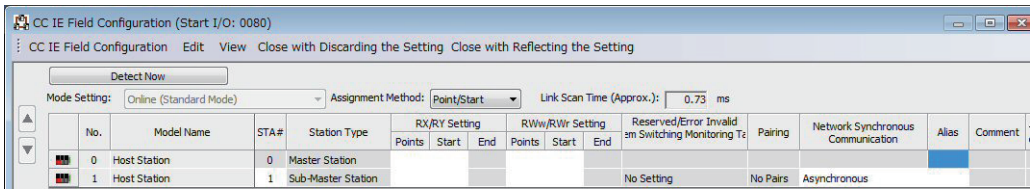
- Control system (system A) PLC settings

Module parameter



Item	Setting value
[Station Type]	Master station
[Network No.]	1
[Station Number Setting Method]	Set in parameter
[Station No.]	0
[Parameter Setting Method]	Set in Engineering Tool
[Network Configuration Settings]	Refer to next page

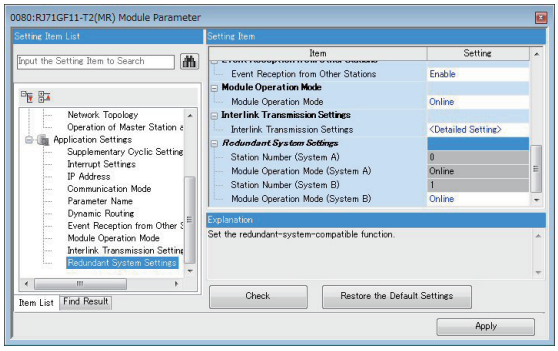
Network configuration settings



Item	Setting value
Submaster station number	1

- Control system (system A) PLC settings

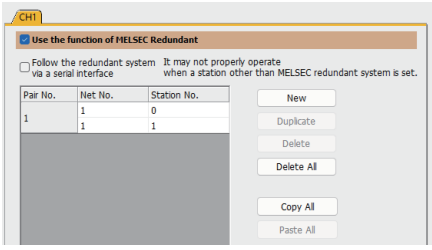
Redundant Setting



Item	Setting value
[B system module operation mode]	Online mode

■GOT side settings

Set GT Designer3 as follows.

Setting item	Contents of setting		Model
[Controller Type]	MELSEC iQ-R, RnMT/NC/RT, CR800-D		GT37 SoftGOT3000
Device setting (Network setting)	[Host]	—	
	[Other]	[Network No.]: 1	
		[Station No.]: Station number of the control system	
	[Redundant System]	The system to be monitored ([Not Specified/Control System], [Standby System]) can be specified. This item can be set only when [Use the function of MELSEC Redundant] is selected in [MELSEC Redundant] shown below.	
MELSEC redundant setting	 ☞ Page 965 MELSEC redundant setting		

■Monitoring target change when system switching occurs in a redundant system

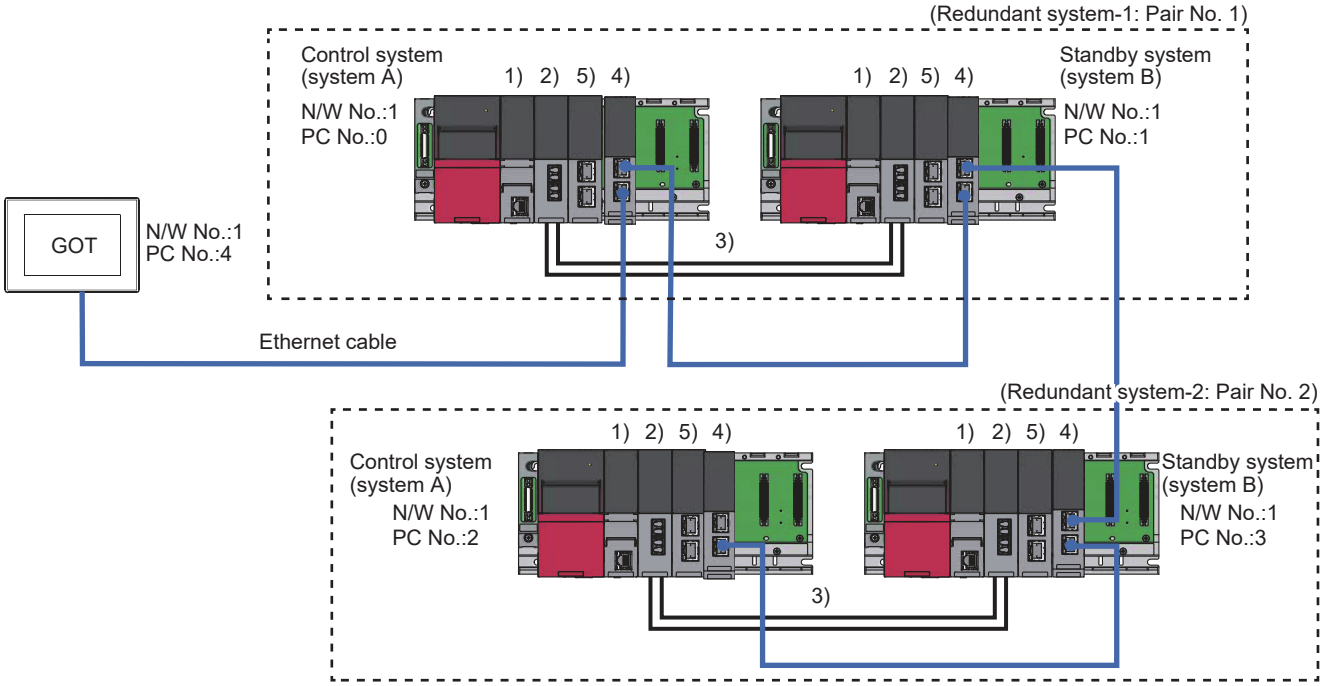
When system switching occurs, the CPU (PLC station No. 1) becomes the control system and continues the control.

The GOT automatically starts monitoring according to the specified system.

1:n connection of GOT and redundant system

■System configuration example

The following connection configuration examples are explained.



1) Process CPU
2) Redundant function module
3) Tracking cable
4) CC-Link IE Field Network master/local module (connected to GOT)
5) CC-Link IE Field Network master/local module (connected to remote I/O station)

■Connection method

Connect the CC-Link IE Field Network system to the GOT.

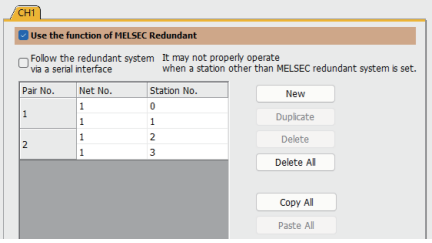
☞ Page 940 MELSEC iQ-R series (CC-Link IE Field Network connection)

■PLC side settings (GX Works3)

☞ Page 961 PLC side settings (GX Works3)

■GOT side settings

Set GT Designer3 as follows.

Setting item	Contents of setting		Model
[Controller Type]	MELSEC iQ-R, RnMT/NC/RT, CR800-D		GT37 SoftGOT3000
Device setting (Network setting)	[Host]	—	
	[Other]	[Network No.]: 1	
		[Station No.]: Station number of the control system	
	[Redundant System]	The system to be monitored ([Not Specified/Control System], [Standby System]) can be specified. This item can be set only when [Use the function of MELSEC Redundant] is selected in [MELSEC Redundant] shown below.	
MELSEC redundant setting	 ☞ Page 965 MELSEC redundant setting		

■Monitoring target change when system switching occurs in a redundant system

- Redundant system-1

When system switching occurs, the CPU (PLC station No. 1) becomes the control system and continues the control.
The GOT automatically starts monitoring according to the specified system.

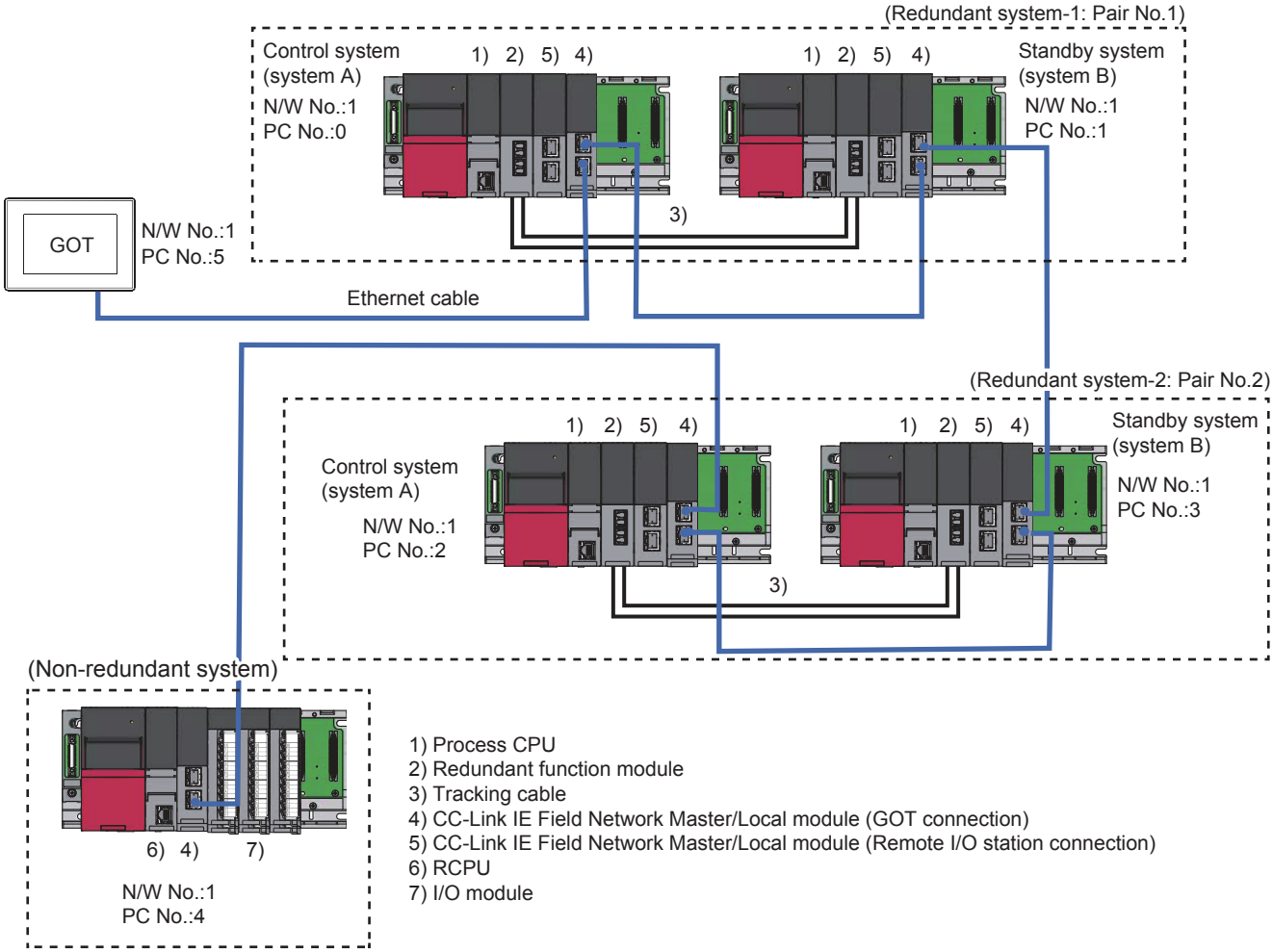
- Redundant system-2

When system switching occurs, the CPU (PLC station No. 3) becomes the control system and continues the control.
The GOT automatically starts monitoring according to the specified system.

Mixed connection of redundant system and non-redundant system

■System configuration example

The following connection configuration examples are explained.



■Connection method

Connect the CC-Link IE Field Network system to the GOT.

☞ Page 940 MELSEC iQ-R series (CC-Link IE Field Network connection)

■PLC side settings (GX Works3)

☞ Page 961 PLC side settings (GX Works3)

■GOT side settings

☞ Page 963 GOT side settings

■Monitoring target change when system switching occurs in a redundant system

☞ Page 964 Monitoring target change when system switching occurs in a redundant system

MELSEC redundant setting

This section describes the settings for the GOT to automatically change the monitoring target of the RCPU redundant system.

Point

Before configuring the MELSEC redundant settings

In the MELSEC redundant settings, do not set a station outside the redundant RCPU.

1. Select [Common] → [Controller Setting] → [MELSEC Redundant] from the menu.

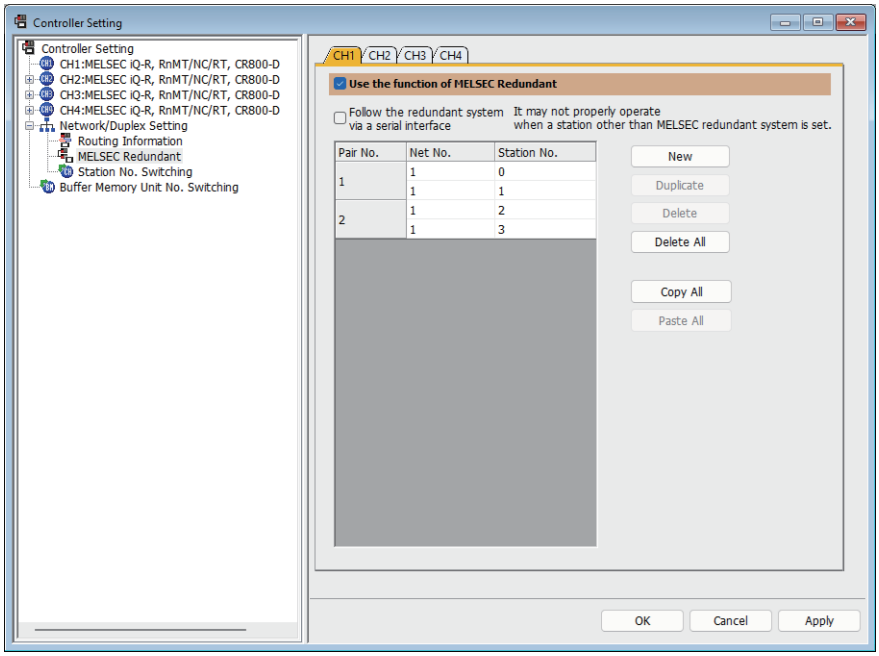
2. The setting dialog box appears. Configure the settings by referencing the explanation that follows.

3. Configure the MELSEC redundant settings.

In the MELSEC redundant setting dialog, settings can be made for each channel of the controller.

The following shows an example of the CC-Link IE Field Network connection (station No. 4) with redundant CPU pair No. 1 to No. 2, network No. 1, and redundant CPU station No. 0 to No. 3.

Ex.



Item		Description	Model
CH1 to CH4		Select the tab of the channel number to configure the MELSEC redundant settings.	GT37 SoftGOT3000
[Follow the redundant system via a serial interface]		Select this item to monitor the control system as a host station at serial connection.	
[Pair No.]*1	[Net No.]	Set the network number (1 to 255) for each pair number (1 to 64). • Upper row: Setting for the first redundant CPU • Lower row: Setting for the second redundant CPU (The same value as the value set for the first redundant CPU is displayed.)	
	[Station No.]	Set the station number (0 to 120) of the redundant CPU for each pair number (1 to 64). • Upper row: Setting for the first redundant CPU • Lower row: Setting for the second redundant CPU (The setting value for the first redundant CPU + 1 is displayed.)	
[New]		Adds a new pair number.	
[Duplicate]		Copies one setting of the selected pair number and adds it below the bottom row.	
[Delete]		Deletes one setting of the selected pair number. After deletion, the succeeding pair numbers are renumbered to fill the deleted pair number.	
[Delete All]		Deletes all the pair number settings.	
[Copy All]		Copies the MELSEC redundant setting on the selected CH No. tab.	
[Paste All]		Pastes the copied MELSEC redundant setting in the selected CH No. tab.	

*1 For details, refer to the following.

☞ Page 966 Pair number

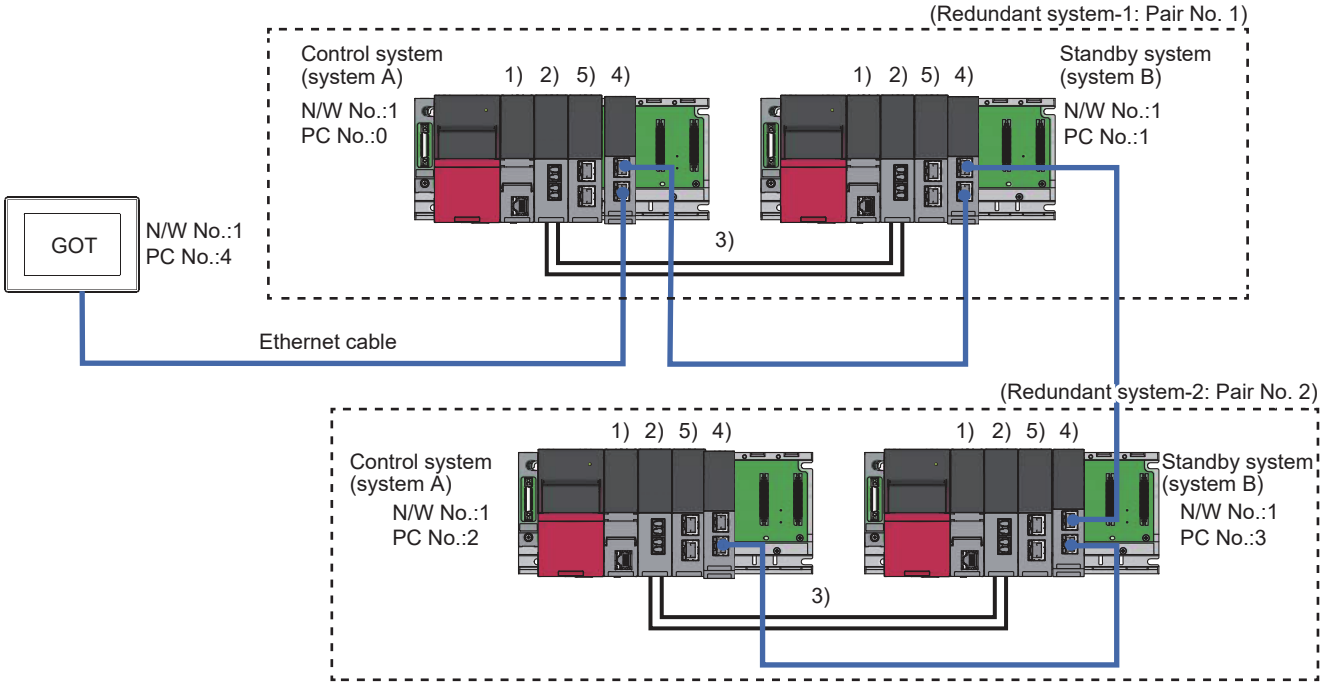
■Pair number

Redundant CPU pair means the redundant CPUs (System A / System B) in the redundant system configuration.

Pair number is the number assigned to each redundant CPU pair.

The following shows an example of the CC-Link IE Field Network connection in the RCPU redundant system. (Pair No. 1 to No. 2)

Ex.



1) Process CPU
2) Redundant function module
3) Tracking cable
4) CC-Link IE Field Network master/local module (connected to GOT)
5) CC-Link IE Field Network master/local module (connected to remote I/O station)

Point

Precautions for configuring the MELSEC redundant settings

Pay attention to the following items when configuring the MELSEC redundant settings.

- The last station number and station number 1 (example: station number 64 and station number 1) cannot be paired.
- Before configuring the settings, make sure to check the station numbers of the network modules. If the MELSEC redundant settings and the actual network module station numbers are inconsistent, the GOT fails to automatically change the monitoring target to the control system when the system is switched.
- GOT supports the backup mode, which is the redundant mode of the RCPU redundant system, and does not support the process mode and separate mode.

Precautions

■Start of the redundant system

The GOT starts monitoring the redundant system after the control system and standby system have been determined, regardless of the starting order of PLC systems A and B.
The GOT starts monitoring when both systems start.
(In a redundant system with a redundant extension base unit, the GOT monitors the control system that starts first.)
Power on the redundant system within the time set in the GOT (communication timeout time and number of retries) so that the GOT can start monitoring after the redundant system starts (after the control system is decided).
If the GOT does not start within the set time, the GOT stops monitoring for safety reasons, and the following system alarm occurs.

- 451: The MELSEC redundant setting and actual system configuration do not match.

If the system alarm occurs, restart the GOT (reapply or reset the power supply) to start monitoring again.

■System switching

When system switching occurs through the user program, the communication path remains unchanged, and the GOT will continue monitoring.
No system alarm occurs.
When system switching occurs due to disconnected cable or other causes, the GOT changes the communication path and continues monitoring.
[450: Path has changed or timeout occurred in redundant system.] appears as the system alarm.

■Redundant system configuration and operation mode

- System alarm display

If the MELSEC redundant settings do not match the actual configuration of the redundant system, or if the operation mode of the redundant system is not set to backup mode, [451: The MELSEC redundant setting and actual system configuration do not match.] appears as the system alarm, and the GOT will not be able to correctly monitor the redundant system's CPU.
If the system alarm occurs, restart the GOT (reapply or reset the power supply) to start monitoring again.

- Changing the MELSEC redundant settings

Always reset the GOT after changing the MELSEC redundant settings. If not reset, the changed MELSEC redundant settings will not be applied on the GOT.

■Monitoring a non-redundant system with the MELSEC redundant settings configured

If the MELSEC redundant settings were set for a non-redundant system, the GOT will operate normally.
In this case, if an abnormality (such as powering off or communication timeout error) occurs in the PLC CPU for which the MELSEC redundant settings are configured, the PLC CPU may not operate as intended.

■Monitoring a redundant system without configuring the MELSEC redundant settings

When the MELSEC redundant settings are not configured, the GOT does not automatically change the monitoring target even if system switching occurs in the redundant system.
When the GOT is connected to the standby system, data written to a device are overwritten by the data of the control system, failing to be reflected.
In this case, when data is written to a device in the standby system normally, the system alarm [315 Device writing error. Correct device.] is not detected.

11.3 MELSEC iQ-F series (CC-Link IE Field Network connection)

☞ Page 968 Connectable devices
☞ Page 969 System configuration
☞ Page 972 GOT side settings
☞ Page 979 PLC side settings
☞ Page 980 Access range for monitoring

11.3.1 Connectable devices

The following table shows the connectable models.

○: Supported, —: Not supported

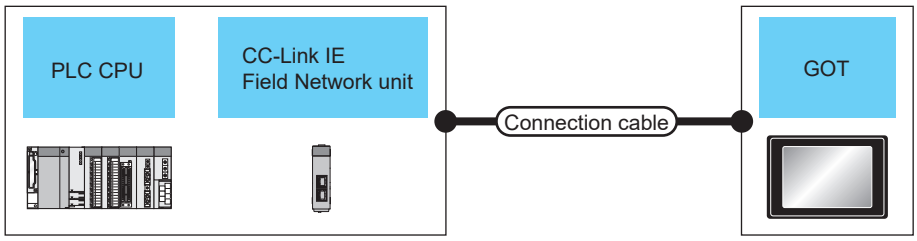
Controller	Model	Clock	CC-Link IE Field Network communication unit	Connectable model
MELSEC iQ-F series	FX5U FX5UC FX5UJ	○	FX5-CCLIEF	GT37 SoftGOT3000

Precautions

For information on the version restrictions of the CC-Link IE Field Network module, refer to the following manual.

📖CC-Link IE Field Network Master/Local Module User's Manual

11.3.2 System configuration



For details on the connection cable and overall cable length, refer to the following.

☞ Page 969 Connection cable
☞ Page 969 Overall length

For details on the maximum number of connected devices, refer to the following.

☞ Page 970 Maximum number of connected devices

Controller	CC-Link IE Field Network communication unit	Connection cable	GOT	
			Interface	Model
MELSEC iQ-F series	FX5-CCLIEF	Twisted pair cable	GT37-IF2000 + GT15-J71GF13-T2*1	GT37 SoftGOT3000

*1 If there is a submaster station in the network configuration, use software version C or later.
The software version is the 10th digit of the serial number described on the rating plate of the unit.

Connection cable

Use a connection cable that meets the following standards.

Standard	Category
1000BASE-T	Shielded twisted pair cable (STP) of category 5e or higher

Use cables that meet the IEEE802.3 1000BASE-T standard.

When only one GOT is connected, the GOT can be directly connected to the controller without a hub.

Use hubs that satisfy the following conditions.

- Compliant with the IEEE802.3 (1000BASE-T) standard
- Include Auto MDI/MDI-X.
- Include an automatic negotiation function.
- Switching hub (Do not use repeater hubs.)

Recommended switching hub (Mitsubishi Electric products)

Type	Model
Industrial switching hub	NZ2EHG-T8

For details, refer to the following manual.

📖CC-Link IE Field Network Master/Local Module User's Manual

Overall length

The overall cable length is 12100 m.

The overall cable length and cable length between stations vary depending on the connection method (line, star, or ring), the system configuration, etc.

For details, refer to the following manual.

📖CC-Link IE Field Network Master/Local Module User's Manual

Maximum number of connected devices

The number of connectable device stations is 120 (1 PLC and 119 GOTs).

The following shows the number of GOTs connectable to one controller.

Controller	
Model	**Number of GOTs connectable to one PLC**
MELSEC iQ-F series	119

Connecting one PLC to multiple GOTs

When multiple GOT units are simultaneously accessing one PLC, the GOT writing process (transient/cyclic) and reading process (transient) may slow down.

This slow access can be remedied with the following countermeasures.

<Countermeasures>

■Improve response speed on PLC side

Insert a COM instruction on the PLC to increase the response speed.

Note that caution is required as the scan time will increase.

■Screen design using cyclic devices

Create the screen with cyclic devices instead of using transient devices.

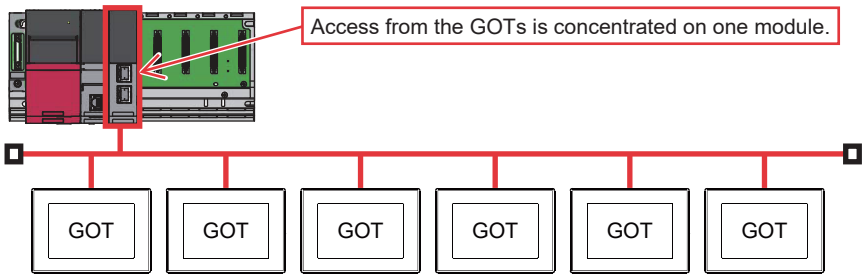
■Split GOT connection destinations into several systems

Add a master/local module to the PLC side, and split the GOT connection destinations into several systems.

Improve the current system configuration.

(Example of current system configuration)

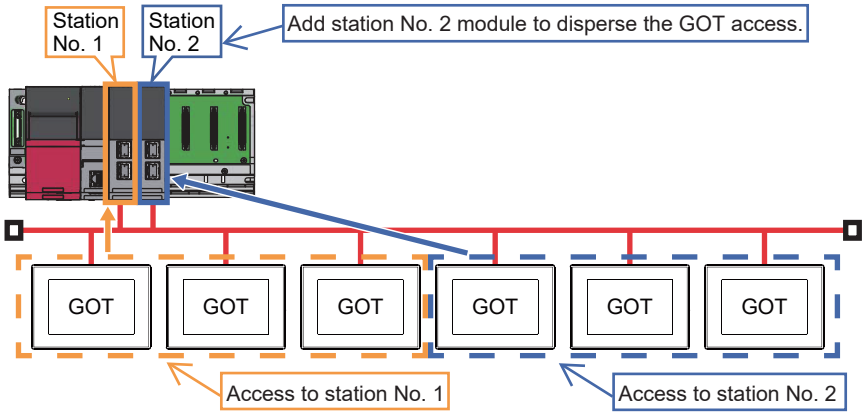
In the following system configuration, access from the GOT is concentrated on one module.



(Improvement measure)

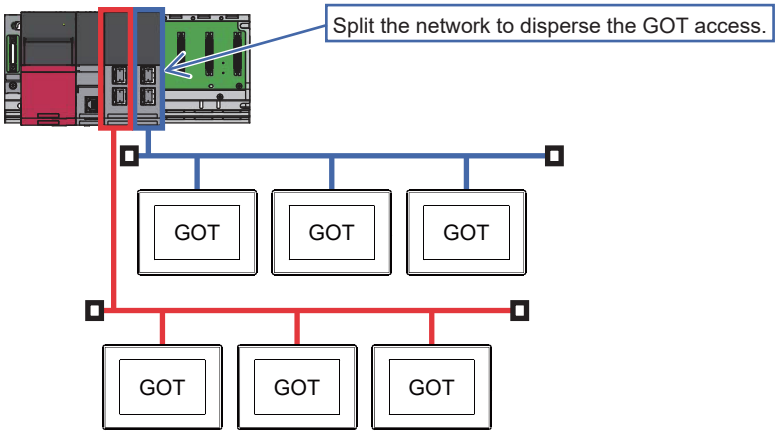
- Adding a module to the PLC side

Add a module to the PLC side to disperse the GOT access destinations.



• Split the network

Split the network to disperse the GOT access.



Precautions

■Starting the GOT connected to the CC-Link IE Field Network

For the CC-Link IE Field Network connection, the data link is started approximately 15 seconds after the GOT startup.

■When a network error occurs in the system alarm

In the CC-Link IE Field Network connection, when a network error occurs in the system alarm, the system alarm display cannot be canceled even though the causes are removed.

To cancel the system alarm display, restart the GOT.

■Data link failure in other stations at GOT startup

At GOT startup, the data link failure may occur in other stations.

However, after the failure occurrence, the GOT reconnects automatically and monitors the devices properly.

To avoid such data link failure, start up the GOT 10 seconds earlier than the master station.

However, if the master station does not complete startup when the GOT starts monitoring (10 seconds after the GOT startup), the communication timeout occurs in the GOT.

For details, refer to the following manual.

📖CC-Link IE Field Network Master/Local Module User's Manual

■Data link failure in all stations at GOT startup or cable connection/disconnection

At GOT startup, the communication is broken temporarily between PORT1 and PORT2 in the CC-Link IE Field module which is installed on the GOT.

Thus, as the GOT or a station between the GOT and the master station is reconnected, the data link failure may occur on all stations.

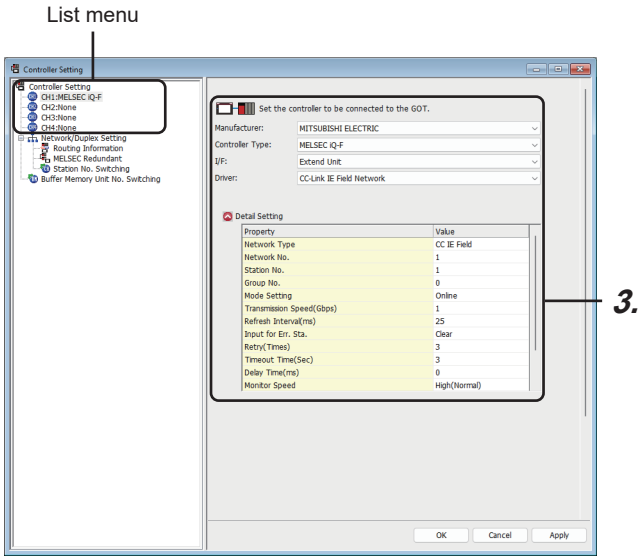
GOT startup includes the following operations.

- Turning on the GOT
- Resetting the GOT main unit
- Operating the utility
- Downloading the project including the communication settings
- Downloading the OS

11.3.3 GOT side settings

[Controller Setting]

Set the channel of the connected controller.



Operating procedure

1. Select [Common] → [Controller Setting] from the menu.

2. In the [Controller Setting] window, select the channel number to be used from the list menu.

3. Set the following items.

Item	Description
[Manufacturer]	[MITSUBISHI ELECTRIC]
[Controller Type]	[MELSEC iQ-F]
[I/F]	[Extend Unit]
[Driver]	[CC-Link IE Field Network]
[Detail Setting]	Configure the settings according to the usage environment. ☞ Page 973 [Detail Setting]

4. When you have completed the settings, click the [OK] button.

Point

The controller settings can be checked in [I/F Communication Setting].
For details, refer to the following.
📖GT Designer3 (GOT3000) Screen Design Manual

■[Detail Setting]

Configure the settings according to the usage environment.

Detail Setting

Property	Value
Network Type	CC IE Field
Network No.	1
Station No.	1
Group No.	0
Mode Setting	Online
Transmission Speed(Gbps)	1
Refresh Interval(ms)	25
Input for Err. Sta.	Clear
Retry(Times)	3
Timeout Time(Sec)	3
Delay Time(ms)	0
Monitor Speed	High(Normal)
CPU No. switching GD device first No. (3 points)	500
Module No. switching GD device first No. (16 points)	550
Servo axis switching GD device first No. (16 points)	10

Item	Description	Range
[Network Type]	Set the network type.	[CC IE Field]
[Network No.]	Set the network number.	[1] to [239]
[Station No.]	Set the station number of the GOT.	[1] to [120]
[Group No.]	—	[0]
[Mode Setting]	Set the operation mode of the GOT. For details on the hardware test and self-loopback test, refer to the following. ☞ Page 974 Hardware test ☞ Page 975 Self-loopback test	[Online], [Offline], [H/W test], [Self-loopback test]
[Transmission Speed]	—	[1Gbps]
[Refresh Interval]	Set the number of refreshes to secure the send/receive data per station during communication.	[1] ms to [1000] ms
[Input for Err. Sta.]	Set whether to hold or clear the input from the station whose data link has become faulty due to powering off or other reasons.	[Clear], [Hold]
[Retry]	Set the number of retries to be performed when a communication timeout occurs. When receiving no response after retries, the communication times out.	[0] times to [5] times
[Timeout Time]	Set the time period for a communication to time out.	[1] second to [90] seconds
[Delay Time]	Set the delay time for reducing the load of the network and destination PLC.	[0] ms to [300] ms
[Monitor Speed][*2]	Set the monitor speed for the CC-Link IE Field Network. This setting is not valid in all systems.	[High(Normal)][*1], [Middle], [Low]
[CPU No. switching GD device first No. (3 points)]	Set the start device number of the GD devices for CPU number switching. For details, refer to the following. ☞ Page 975 Start device number of the GD devices for CPU number switching	[0] to [65520]
[Module No. switching GD device first No. (16 points)]	Set the start device number of the GD devices for module number switching. For details, refer to the following. ☞ Page 976 Start device number of the GD devices for module number switching	[0] to [65520]
[Servo axis switching GD device first No. (16 points)]	Set the start device number of the GD devices for servo axis switching. For details, refer to the following. ☞ Page 977 Start device number of the GD devices for servo axis switching	[0] to [65520]

*1 This setting is effective for collecting large data with the logging, recipe, or such function on a screen other than the monitor screen.
*2 When using a global label to read or write more than 235 two-byte characters, set [Monitor speed] to [High(Normal)] or [Middle].
If [Monitor speed] is set to [Low], a system error occurs when reading or writing.
For details, refer to the following manual.
📖GT Designer3 (GOT3000) Screen Design Manual

Precautions

When the output is required to be held at the data link failure, set [Input for Err. Sta.] to [Hold] in the controller setting of the GOT.

Point

• Example of communication detail settings
For the example of communication detail settings, refer to the following.
☞ Page 979 PLC side settings
• Controller settings using the GT37 utility
The controller settings can be changed in [Communication Settings] of the GT37 utility after writing [Communication Settings] of project data to GT37.
For details on the GT37 utility, refer to the following manual.
📖GOT3000 Series User's Manual (Utility & Maintenance Functions)
• Priority of the settings in [Controller Setting]
When the settings are configured in GT Designer3 or in the GT37 utility, the latest settings are effective.
• Network type
Be sure to set the same network types for the CPU side and the GOT side.
If the network types of the CPU side and the GOT side are different, an error is displayed in the system alarm of the GOT side.

■Hardware test

For a hardware test, mount a CC-Link IE Field Network communication unit on the GOT, and check if the unit operates properly with the GOT.
The following shows the hardware test procedure.

1. Perform either of the following operations to set the GOT to the hardware test mode.
• Write the project data for which [Mode Setting] in [Detail Setting] is set to [H/W test] to the GOT.
• Set [Mode setting] of [Detail setting] to [H/W Test] in the GOT utility.

2. A hardware test will start at GOT startup.

3. After the test is complete, check the result with the ERR LED on the CC-Link IE Field Network communication unit.
• OFF: Normal
• ON: Error

4. If no error is detected, change the setting of [Mode Setting] from [H/W test] in [Detail Setting].
Since the communication with the controller is not performed when [Mode setting] is set to [H/W Test], the communication timeout error occurs when the device of controller is monitored.

5. If any error is detected, replace the CC-Link IE Field Network communication unit.

■Self-loopback test

In a self-loopback test, connect port 1 and port 2 of the CC-Link IE Field Network communication unit mounted on the GOT with a network cable, and check if the unit operates properly with the GOT.
The following shows the self-loopback test procedure.

1. Perform either of the following operations to set the GOT to the self-loopback test mode.
- Write the project data for which [Mode Setting] in [Detail Setting] is set to [Self-loopback test] to the GOT.
- Set [Mode setting] in [Detail setting] to [Self-loopback Test] in the GOT utility.

2. A self-loopback test will start at a GOT startup.

3. After the test is complete, check the result with the ERR LED on the CC-Link IE Field Network communication unit.
- OFF: Normal
- ON: Error

4. If no error is detected, change the setting of [Mode Setting] from [Self-loopback test] in [Detail Setting].
Since the communication with the controller is not performed when [Mode setting] is set to [Self-loopback Test], the communication timeout error occurs when the device of controller is monitored.

5. If any error is detected, replace the CC-Link IE Field Network communication unit.

■Start device number of the GD devices for CPU number switching

- Indirect specification of a CPU number

[CPU No.] can be indirectly specified with the GOT internal registers (GD devices) by specifying a value (100 to 102) to [CPU No.] in the device setting dialog in GT Designer3.
Set the start device number of the GD devices to be used in [CPU No. switching GD device first No. (3 points)].
[CPU No.] is specified with three consecutive GD devices, starting from the set device number.
When [500] is set to [CPU No. switching GD device first No. (3 points)], GD500 to GD502 are used to specify [CPU No.] as shown in the following table.

CPU No.	GD device	Setting range
100	GD500	1 to 4 Setting a value outside the range causes a communication timeout error. Specifying a nonexistent CPU number or a CPU number not supporting a multiple CPU system with a device causes a controller error.
101	GD501	
102	GD502	

- Indirect specification of a CPU number on the initially displayed screen

Set [CPU No. switching GD device first No. (3 points)] so that the values of the GD devices are retained and monitored upon the GOT startup.

- Indirect specification of a CPU number for multi-channel connection

If the setting range of [CPU No. switching GD device first No. (3 points)] set for each channel overlaps, the monitoring target CPU number set to each channel is switched simultaneously.
Set [CPU No. switching GD device first No. (3 points)] for each channel so that the setting range does not overlap.

- Indirect specification of a station number and a CPU number for multi-channel connection

When GD10 to GD25 are used to specify the station number of an inverter or non-Mitsubishi temperature controller connected, setting [10] to [CPU No. switching GD device first No. (3 points)] in a different channel switches the monitoring target CPU number and station number of an inverter or non-Mitsubishi temperature controller set to each channel simultaneously.
Set [CPU No. switching GD device first No. (3 points)] so that the setting range does not overlap the station number of an inverter or non-Mitsubishi temperature controller.

■Start device number of the GD devices for module number switching

• Indirect specification of a module number

For connection via a Simple Motion module, [Unit No.] can be specified with the GOT internal registers (GD devices) by specifying a value (100 to 10F) to [Unit No.] in the device setting dialog in GT Designer3.

Set the start device number of the GD devices to be used in [Module No. switching GD device first No. (16 points)].

[Unit No.] is specified with 16 consecutive GD devices, starting from the set device number.

When [550] is set to [Module No. switching GD device first No. (16 points)], GD550 to GD565 are used to specify [Unit No.] as shown in the following table.

Module No.	GD device	Setting range
100	GD550	01 to 10 Setting a value outside the above range causes a device range error.
101	GD551	
102	GD552	
103	GD553	
104	GD554	
105	GD555	
106	GD556	
107	GD557	
108	GD558	
109	GD559	
10A	GD560	
10B	GD561	
10C	GD562	
10D	GD563	
10E	GD564	
10F	GD565	

• Indirect specification of a module number on the initially displayed screen

Set [Module No. switching GD device first No. (16 points)] so that the values of the GD devices are retained and monitored upon the GOT startup.

• Indirect specification of a module number for multi-channel connection

If the setting range of [Module No. switching GD device first No. (16 points)] set for each channel overlaps, the module number of the Simple Motion module via the servo amplifier device of each channel is switched simultaneously.

Set [Module No. switching GD device first No. (16 points)] for each channel so that the setting range does not overlap.

• Indirect specification of a station number and a module number for multi-channel connection

When GD10 to GD25 are used to specify the station number of an inverter or non-Mitsubishi temperature controller connected, setting [10] to [Module No. switching GD device first No. (16 points)] switches the module number of the Simple Motion module via the servo amplifier device and the station number of an inverter or non-Mitsubishi temperature controller set to each channel simultaneously.

Set [Module No. switching GD device first No. (16 points)] so that the setting range does not overlap the station number of an inverter or non-Mitsubishi temperature controller.

■Start device number of the GD devices for servo axis switching

• Indirect specification of a servo axis number

For connection via a Motion CPU or Simple Motion module, a servo axis number can be indirectly specified with GOT internal registers (GD devices) by specifying a value (100 to 115) to the axis number of the servo amplifier device.

Set the start device number of the GD devices to be used in [Servo axis switching GD device first No. (16 points)].

Specify a servo axis number with 16 consecutive GD devices, starting the set device number.

When [10] is set to [Servo axis switching GD device first No. (16 points)], GD10 to GD25 are used to specify a servo axis number as shown in the following table.

Servo axis No.	GD device	Setting range
100	GD10	1 to 64 Setting a value outside the above range causes a device range error.
101	GD11	
102	GD12	
103	GD13	
104	GD14	
105	GD15	
106	GD16	
107	GD17	
108	GD18	
109	GD19	
110	GD20	
111	GD21	
112	GD22	
113	GD23	
114	GD24	
115	GD25	

• Indirect specification of a servo axis number on the initially displayed screen

Set [Servo axis switching GD device first No. (16 points)] so that the values of the GD devices are retained and monitored upon the GOT startup.

• Indirect specification of a servo axis number for multi-channel connection

If the setting rage of [Servo axis switching GD device first No. (16 points)] set for each channel overlaps, the axis number of the servo amplifier of each channel is switched simultaneously.

Set [Servo axis switching GD device first No. (16 points)] for each channel so that the setting range does not overlap.

• Indirect specification of a station number and a servo axis number for multi-channel connection

When GD10 to GD25 are used to specify the station number of an inverter or non-Mitsubishi temperature controller connected, setting [10] to [Servo axis switching GD device first No. (16 points)] switches the axis number of the servo amplifier and the station number of an inverter or non-Mitsubishi temperature controller set to each channel simultaneously.

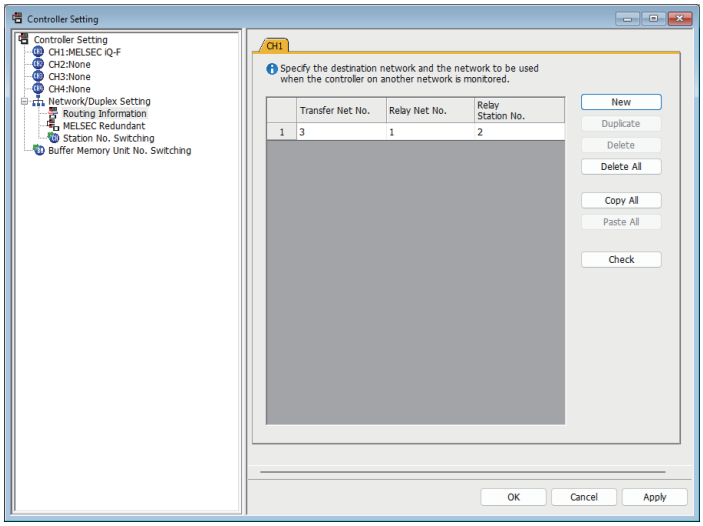
Set [Servo axis switching GD device first No. (16 points)] so that the setting range does not overlap the station number of an inverter or non-Mitsubishi temperature controller.

■Routing parameter settings

Up to 64 settings can be configured for [Transfer Net No.].

However, the same number cannot be set in [Transfer Net No.] twice or more (multiple times).

The GOT (host station) can access 64 different networks specified under [Transfer Net No.].



Item	Range
[Transfer Net No.]	[1] to [239]
[Relay Net No.]	[1] to [239]
[Relay Station No.]	[0] to [120]

Point

Routing parameter settings for the relay station

Routing parameter settings are also necessary for the relay station.

For the setting, refer to the following.

☞ Page 979 PLC side settings

11.3.4 PLC side settings

Model		Reference
MELSEC iQ-F series	FX5U FX5UC FX5UJ	☞ Page 979 Connection to MELSEC iQ-F series

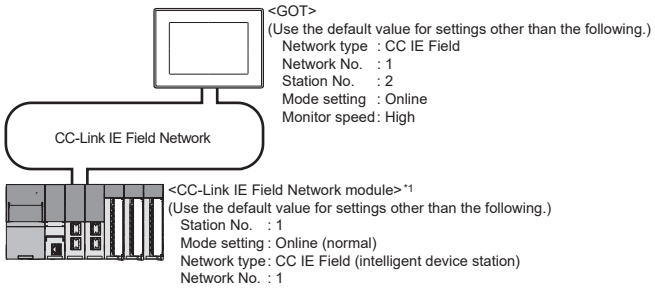
For details on the CC-Link IE Field Network module, refer to the following manual.

📖CC-Link IE Field Network Master/Local Module User's Manual

Connection to MELSEC iQ-F series

This section describes the settings of the GOT and CC-Link IE Field Network module in the system configuration shown below.

■System configuration (Network Type: CC IE Field)

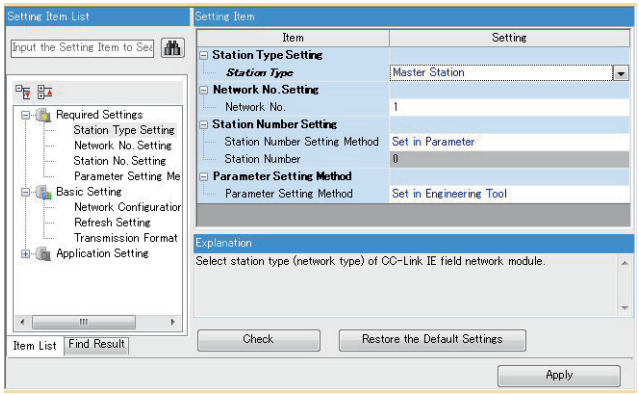


*1 The CC-Link IE Field Network module is mounted on slot 0 of the base unit.
The start I/O number of the CC-Link IE Field Network module is set to 0.

■Module parameter settings of the system configuration (Network Type: CC IE Field)

- [Module Parameter] of GX Works3

Module parameter



○: Necessary, △: As necessary, —: Not necessary

Item	Setting value	Setting for GOT connection
[Station Type]	Intelligent device station	○
[Network No.]*1	1	○
[Station Number Setting Method]	Set in parameter	○
[Station No.]	0	○
[Parameter Setting Method]	Set in Engineering Tool	○

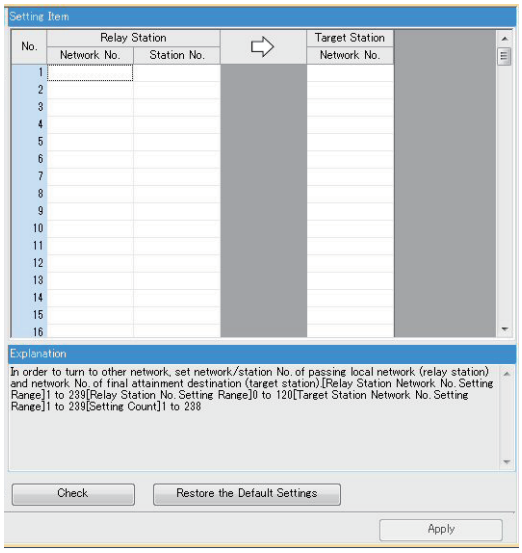
*1 Set the same network number as that of the GOT.

Routing settings

Up to 238 target network numbers can be set.

However, the same number cannot be set twice or more (multiple times).

The GOT (host station) can access networks specified with 238 different target station network numbers.



Item		Range
[Relay Station]	[Network No.]	[1] to [239]
	[Station No.]	[0] to [120]
[Target Station]	[Network No.]	[1] to [239]

Point

Routing parameter settings for the request source

Routing parameter settings are also necessary for the request source GOT.

For the setting, refer to the following.

☞ Page 978 Routing parameter settings

■System configuration (Network Type: CC IE Field): [Controller Setting] in GT Designer3

Item	Setting value
[Network Type]	CC IE Field
[Network No.]	1: Network No. 1
[Station No.]	2: Station No. 2
[Group No.]	0
[Mode Setting]	Online
[Refresh Interval]	25 ms
[Input for Err. Sta.]	Clear
[Retry]	3 times
[Timeout Time]	3 seconds
[Delay Time]	0 ms
[Monitor Speed]	High(Normal)

Point

[Controller Setting] in GT Designer3

For the setting method of [Controller Setting] in GT Designer3, refer to the following.

☞ Page 972 [Controller Setting]

11.3.5 Access range for monitoring

Only the connected CPU can be accessed.

11.4 MELSEC-Q series (CC-Link IE Field Network connection)

☞ Page 981 Connectable devices
☞ Page 983 System configuration
☞ Page 988 GOT side settings
☞ Page 995 PLC side settings
☞ Page 1000 Access range for monitoring

11.4.1 Connectable devices

The following table shows the connectable models.

○: Supported, —: Not supported

Controller	Model	Clock	PLC side interface		Connectable model
			CC-Link IE Field Network communication unit	Built-in port	
MELSEC-Q (Q mode)	Q00UJCPU Q00UJCPU-S8	○	QJ71GF11-T2 QD77GF4*6 QD77GF8*6 QD77GF16*6	—	GT37 SoftGOT3000
	Q00UCPU Q01UCPU Q02UCPU Q03UDCPU	○	QJ71GF11-T2 QD77GF4*6 QD77GF8*6 QD77GF16*6	—	GT37 SoftGOT3000
	Q04UDHCPU Q06UDHCPU Q10UDHCPU Q13UDHCPU Q20UDHCPU Q26UDHCPU	○	QJ71GF11-T2 QD77GF4*6 QD77GF8*6 QD77GF16*6	—	GT37 SoftGOT3000
	Q03UDECPU Q04UDEHCPU Q06UDEHCPU Q10UDEHCPU Q13UDEHCPU Q20UDEHCPU Q26UDEHCPU Q50UDEHCPU Q100UDEHCPU	○	QJ71GF11-T2 QD77GF4*6 QD77GF8*6 QD77GF16*6	—	GT37 SoftGOT3000
	Q03UDVCPU Q04UDVCPU Q06UDVCPU Q13UDVCPU Q26UDVCPU	○	QJ71GF11-T2 QD77GF4*6 QD77GF8*6 QD77GF16*6	—	GT37 SoftGOT3000
C Controller module (Q series)	Q12DCCPU-V*1 Q24DHCCPU-V/VG Q24DHCCPU-LS Q26DHCCPU-LS	○	QJ71GF11-T2 QD77GF4*6 QD77GF8*6 QD77GF16*6	—	GT37 SoftGOT3000
MELSEC-QS	QS001CPU*2	○	QS0J71GF11-T2	—	GT37 SoftGOT3000
Motion CPU (Q series)	Q170MCPU*3*5 Q170MSCPU*4 Q170MSCPU-S1*4	○	QJ71GF11-T2 QD77GF4*6 QD77GF8*6 QD77GF16*6	—	GT37 SoftGOT3000

Controller	Model	Clock	PLC side interface		Connectable model
			CC-Link IE Field Network communication unit	Built-in port	
CC-Link IE Field Network Ethernet adapter module	NZ2GF-ETB	—	—	○	GT37 SoftGOT3000
CNC C70	Q173NCCPU	○	QJ71GF11-T2 QD77GF4*6 QD77GF8*6 QD77GF16*6	—	GT37 SoftGOT3000
Robot controller (Q series)	CRnQ-700 (Q172DRCPU) CR750-Q (Q172DRCPU) CR751-Q (Q172DRCPU) CR800-Q (Q172DSRCPU)	○	QJ71GF11-T2 QD77GF4*6 QD77GF8*6 QD77GF16*6	—	GT37 SoftGOT3000

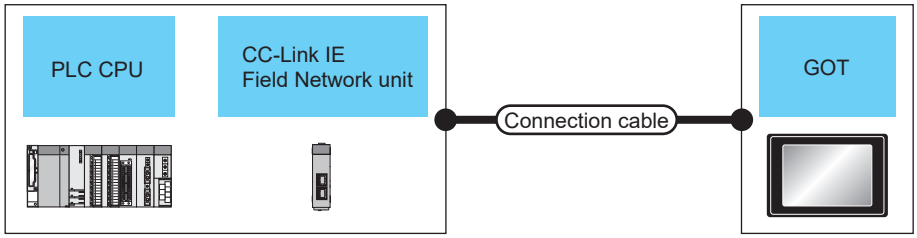
*1 Use a module having a serial number stating with 12042 or later in the first 5 digits.
*2 Use a CPU having a serial number stating with 13042 or later in the first 5 digits.
Use GX Developer Version 8.98C or later.
*3 Only the first step can be used on the extension base unit (Q52B/Q55B).
*4 The extension base unit (Q5□B/Q6□B) can be used.
*5 Use a module having a serial number starting with 12012.
*6 For connection to the QD77GF4, QD77GF8, QD77GF16, refer to the following manual.
📖QD77GF Simple Motion Module User's Manual

Precautions

For information on the version restrictions of the CC-Link IE Field Network module, refer to the following manual.
📖CC-Link IE Field Network Master/Local Module User's Manual

11.4.2 System configuration

Connection to CC-Link IE Field Network communication unit



For details on the connection cable and overall cable length, refer to the following.

☞ Page 983 Connection cable
☞ Page 983 Overall length

For details on the maximum number of connected devices, refer to the following.

☞ Page 984 Maximum number of connected devices

Controller	CC-Link IE Field Network communication unit	Connection cable	GOT	
			Interface	Model
MELSEC-Q (Q mode) C Controller module (Q series) Motion CPU (Q series) CNC C70 Robot controller (Q series)	QJ71GF11-T2 QD77GF4 QD77GF8 QD77GF16	Twisted pair cable	GT37-IF2000 + GT15-J71GF13-T2*1	GT37 SoftGOT3000
MELSEC-QS	QS0J71GF11-T2	Twisted pair cable	GT37-IF2000 + GT15-J71GF13-T2*1	GT37 SoftGOT3000

*1 If there is a submaster station in the network configuration, use software version C or later.
The software version is the 10th digit of the serial number described on the rating plate of the unit.

■Connection cable

Use a connection cable that meets the following standards.

Standard	Category
1000BASE-T	Shielded twisted pair cable (STP) of category 5e or higher

Use cables that meet the IEEE802.3 1000BASE-T standard.

When only one GOT is connected, the GOT can be directly connected to the controller without a hub.

Use hubs that satisfy the following conditions.

- Compliant with the IEEE802.3 (1000BASE-T) standard
- Include Auto MDI/MDI-X.
- Include an automatic negotiation function.
- Switching hub (Do not use repeater hubs.)

Recommended switching hub (Mitsubishi Electric products)

Type	Model
Industrial switching hub	NZ2EHG-T8

For details, refer to the following manual.

📖CC-Link IE Field Network Master/Local Module User's Manual

■Overall length

The overall cable length is 12100 m.

The overall cable length and cable length between stations vary depending on the connection method (line, star, or ring), the system configuration, etc.

For details, refer to the following manual.

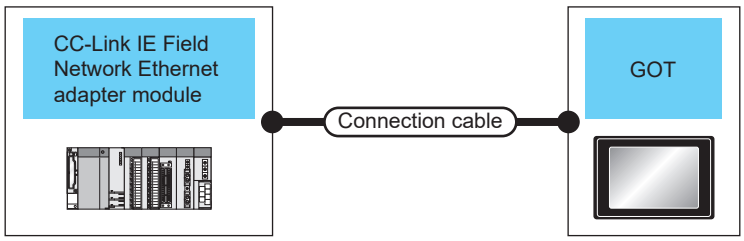
📖CC-Link IE Field Network Master/Local Module User's Manual

■Maximum number of connected devices

The following shows the number of GOTs connectable to one controller.

Controller	
Model	**Number of GOTs connectable to one PLC**
MELSEC-Q (Q mode) C Controller module (Q series) MELSEC-QS Motion CPU (Q series) CNC C70 Robot controller (Q series)	120

Connection to CC-Link IE Field Network Ethernet adapter module



For details on the connection cable and overall cable length, refer to the following.

☞ Page 984 Connection cable
☞ Page 985 Overall length

For details on the maximum number of connected devices, refer to the following.

☞ Page 985 Maximum number of connected devices

Controller	Connection cable	GOT	
		Interface	**Model**
CC-Link IE Field Network Ethernet adapter module (NZ2GF-ETB)	Twisted pair cable	GT37-IF2000 + GT15-J71GF13-T2*1	GT37 SoftGOT3000

*1 If there is a submaster station in the network configuration, use software version C or later.
The software version is the 10th digit of the serial number described on the rating plate of the unit.

■Connection cable

Use a connection cable that meets the following standards.

Standard	Category
1000BASE-T	Shielded twisted pair cable (STP) of category 5e or higher

Use cables that meet the IEEE802.3 1000BASE-T standard.

When only one GOT is connected, the GOT can be directly connected to the controller without a hub.

Use hubs that satisfy the following conditions.

- Compliant with the IEEE802.3 (1000BASE-T) standard
- Include Auto MDI/MDI-X.
- Include an automatic negotiation function.
- Switching hub (Do not use repeater hubs.)

Recommended switching hub (Mitsubishi Electric products)

Type	Model
Industrial switching hub	NZ2EHG-T8

For details, refer to the following manual.

📖CC-Link IE Field Network Master/Local Module User's Manual

■Overall length

The overall cable length is 12100 m.

The overall cable length and cable length between stations vary depending on the connection method (line, star, or ring), the system configuration, etc.

For details, refer to the following manual.

📖CC-Link IE Field Network Master/Local Module User's Manual

■Maximum number of connected devices

The number of connectable device stations is 120 (1 CC-Link IE Field Network Ethernet adapter module and 119 GOTs).

The following shows the number of GOTs connectable to one controller.

Controller	
Model	**Number of GOTs connectable to one PLC**
CC-Link IE Field Network Ethernet adapter module	119

Connecting one PLC to multiple GOTs

When multiple GOT units are simultaneously accessing one PLC, the GOT writing process (transient/cyclic) and reading process (transient) may slow down.

This slow access can be remedied with the following countermeasures.

<Countermeasures>

■Improve response speed on PLC side

Insert a COM instruction on the PLC to increase the response speed.

Note that caution is required as the scan time will increase.

■Screen design using cyclic devices

Create the screen with cyclic devices instead of using transient devices.

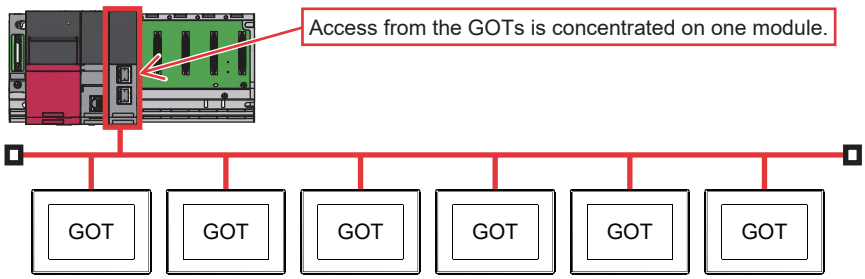
■Split GOT connection destinations into several systems

Add a master/local module to the PLC side, and split the GOT connection destinations into several systems.

Improve the current system configuration.

(Example of current system configuration)

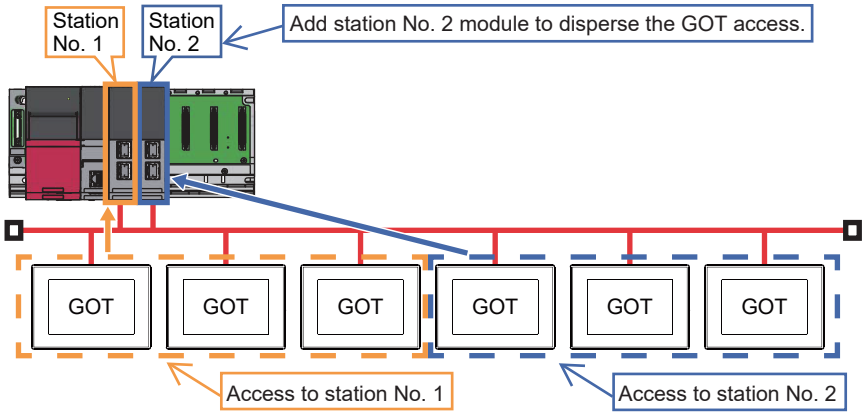
In the following system configuration, access from the GOT is concentrated on one module.



(Improvement measure)

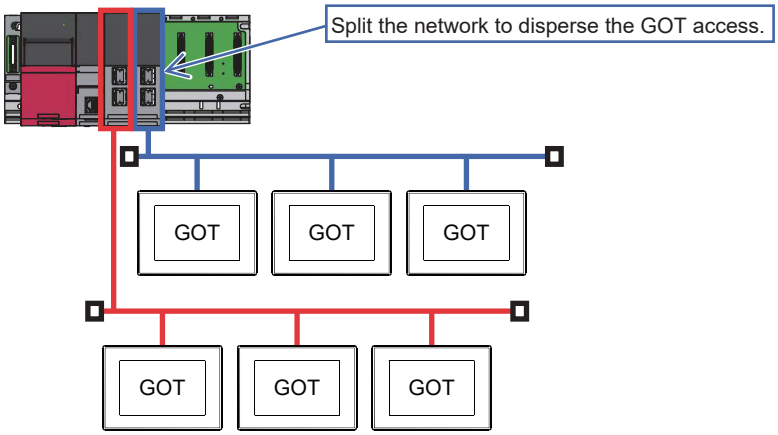
- Adding a module to the PLC side

Add a module to the PLC side to disperse the GOT access destinations.



- Split the network

Split the network to disperse the GOT access.



Precautions

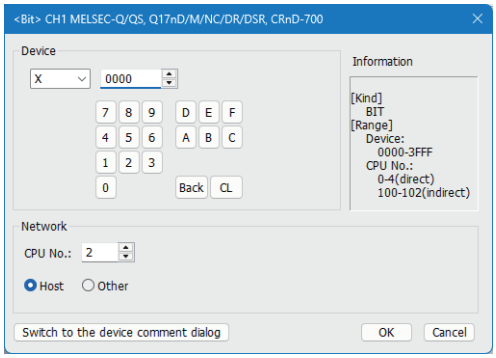
■Connection to Q170MCPU or Q170MSCPU(-S1)

The Motion CPU area (CPU No. 2) cannot be monitored.

Set [CPU No.] to 0 or 1. The device of the PLC CPU area (CPU number 1) is monitored.

For the setting of [CPU No.], refer to the following.

📖GT Designer3 (GOT3000) Screen Design Manual



■Starting the GOT connected to the CC-Link IE Field Network

For the CC-Link IE Field Network connection, the data link is started approximately 15 seconds after the GOT startup.

■When a network error occurs in the system alarm

In the CC-Link IE Field Network connection, when a network error occurs in the system alarm, the system alarm display cannot be canceled even though the causes are removed.

To cancel the system alarm display, restart the GOT.

■Data link failure in other stations at GOT startup

At GOT startup, the data link failure may occur in other stations.

However, after the failure occurrence, the GOT reconnects automatically and monitors the devices properly.

To avoid such data link failure, start up the GOT 10 seconds earlier than the master station.

However, if the master station does not complete startup when the GOT starts monitoring (10 seconds after the GOT startup), the communication timeout occurs in the GOT.

For details, refer to the following manual.

📖CC-Link IE Field Network Master/Local Module User's Manual

■Data link failure in all stations at GOT startup or cable connection/disconnection

At GOT startup, the communication is broken temporarily between PORT1 and PORT2 in the CC-Link IE Field module which is installed on the GOT.

Thus, as the GOT or a station between the GOT and the master station is reconnected, the data link failure may occur on all stations.

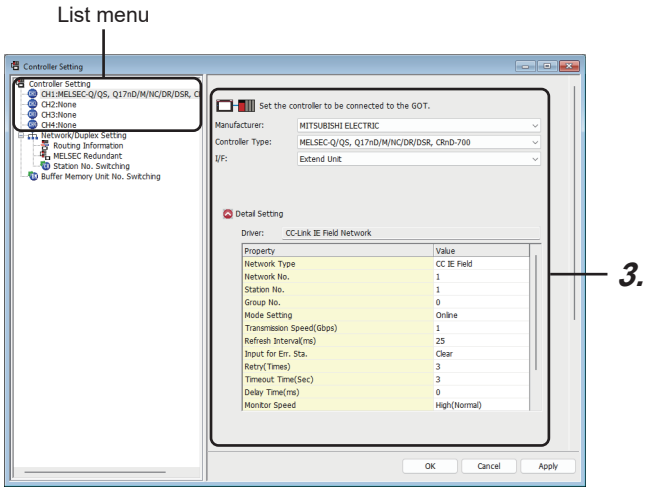
GOT startup includes the following operations.

- Turning on the GOT
- Resetting the GOT main unit
- Operating the utility
- Downloading the project including the communication settings
- Downloading the OS

11.4.3 GOT side settings

[Controller Setting]

Set the channel of the connected controller.



1. Select [Common] → [Controller Setting] from the menu.

2. In the [Controller Setting] window, select the channel number to be used from the list menu.

3. Set the following items.

Item	Description
[Manufacturer]	[MITSUBISHI ELECTRIC]
[Controller Type]	[MELSEC-Q/QS,Q17nD/M/NC/DR/DSR,CRnD-700]
[I/F]	[Extend Unit]
[Detail Setting]	Configure the settings according to the usage environment. ☞ Page 989 [Detail Setting]

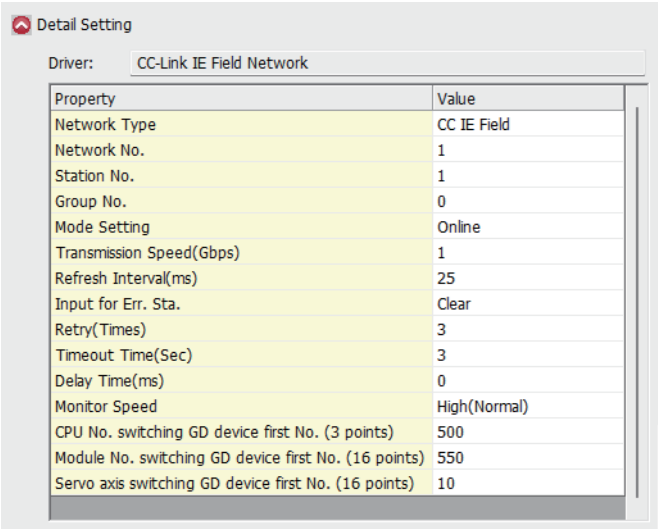
4. When you have completed the settings, click the [OK] button.

Point

The controller settings can be checked in [I/F Communication Setting].
For details, refer to the following.
📖GT Designer3 (GOT3000) Screen Design Manual

■[Detail Setting]

Configure the settings according to the usage environment.



Item	Description	Range
[Driver]	This item appears when communication drivers are selectable according to the settings of [Controller Type] and [I/F].	[CC-Link IE Field Network]
[Network Type]	Set the network type.	[CC IE Field]
[Network No.]	Set the network number.	[1] to [239]
[Station No.]	Set the station number of the GOT.	[1] to [120]
[Group No.]	—	[0]
[Mode Setting]	Set the operation mode of the GOT. For details on the hardware test and self-loopback test, refer to the following. ☞ Page 991 Hardware test ☞ Page 991 Self-loopback test	[Online], [Offline], [H/W test], [Self-loopback test]
[Transmission Speed]	—	[1Gbps]
[Refresh Interval]	Set the number of refreshes to secure the send/receive data per station during communication.	[1] ms to [1000] ms
[Input for Err. Sta.]	Set whether to hold or clear the input from the station whose data link has become faulty due to powering off or other reasons.	[Clear], [Hold]
[Retry]	Set the number of retries to be performed when a communication timeout occurs. When receiving no response after retries, the communication times out.	[0] times to [5] times
[Timeout Time]	Set the time period for a communication to time out.	[1] second to [90] seconds
[Delay Time]	Set the delay time for reducing the load of the network and destination PLC.	[0] ms to [300] ms
[Monitor Speed][*3]	Set the monitor speed for the CC-Link IE Field Network. This setting is not valid in all systems.	[High(Normal)][*1], [Middle], [Low][*2]
[CPU No. switching GD device first No. (3 points)]	Set the start device number of the GD devices for CPU number switching. For details, refer to the following. ☞ Page 991 Start device number of the GD devices for CPU number switching	[0] to [65520]
[Module No. switching GD device first No. (16 points)]	Set the start device number of the GD devices for module number switching. For details, refer to the following. ☞ Page 992 Start device number of the GD devices for module number switching	[0] to [65520]
[Servo axis switching GD device first No. (16 points)]	Set the start device number of the GD devices for servo axis switching. ☞ Page 993 Start device number of the GD devices for servo axis switching	[0] to [65520]

*1 This setting is effective for collecting large data with the logging, recipe, or such function on a screen other than the monitor screen.
However, the range may affect the sequence scan time for connection to Q00UJ/Q00U/Q01U/Q02UCPU.
If you want to avoid the influence on the sequence scan time, do not set [High(Normal)].

*2 Set this range if you want to avoid the influence on the sequence scan time further than the [Middle] setting for connection to Q00UJ/Q00U/Q01U/Q02UCPU.
However, the monitor speed may be reduced.

*3 When using a global label to read or write more than 235 two-byte characters, set [Monitor speed] to [High(Normal)] or [Middle].
If [Monitor speed] is set to [Low], a system error occurs when reading or writing.
For details, refer to the following manual.
📖GT Designer3 (GOT3000) Screen Design Manual

Precautions

When the output is required to be held at the data link failure, set [Input for Err. Sta.] to [Hold] in the controller setting of the GOT.

Point

• Example of communication detail settings

For the example of communication detail settings, refer to the following.

☞ Page 995 PLC side settings

• Controller settings using the GT37 utility

The controller settings can be changed in [Communication Settings] of the GT37 utility after writing [Communication Settings] of project data to GT37.

For details on the GT37 utility, refer to the following manual.

📖GOT3000 Series User's Manual (Utility & Maintenance Functions)

• Priority of the settings in [Controller Setting]

When the settings are configured in GT Designer3 or in the GT37 utility, the latest settings are effective.

• Network type

Be sure to set the same network types for the CPU side and the GOT side.

If the network types of the CPU side and the GOT side are different, an error is displayed in the system alarm of the GOT side.

■Hardware test

For a hardware test, mount a CC-Link IE Field Network communication unit on the GOT, and check if the unit operates properly with the GOT.

The following shows the hardware test procedure.

1. Perform either of the following operations to set the GOT to the hardware test mode.

- Write the project data for which [Mode Setting] in [Detail Setting] is set to [H/W test] to the GOT.
- Set [Mode setting] of [Detail setting] to [H/W Test] in the GOT utility.

2. A hardware test will start at GOT startup.

3. After the test is complete, check the result with the ERR LED on the CC-Link IE Field Network communication unit.

- OFF: Normal
- ON: Error

4. If no error is detected, change the setting of [Mode Setting] from [H/W test] in [Detail Setting].

Since the communication with the controller is not performed when [Mode setting] is set to [H/W Test], the communication timeout error occurs when the device of controller is monitored.

5. If any error is detected, replace the CC-Link IE Field Network communication unit.

■Self-loopback test

In a self-loopback test, connect port 1 and port 2 of the CC-Link IE Field Network communication unit mounted on the GOT with a network cable, and check if the unit operates properly with the GOT.

The following shows the self-loopback test procedure.

1. Perform either of the following operations to set the GOT to the self-loopback test mode.

- Write the project data for which [Mode Setting] in [Detail Setting] is set to [Self-loopback test] to the GOT.
- Set [Mode setting] in [Detail setting] to [Self-loopback Test] in the GOT utility.

2. A self-loopback test will start at a GOT startup.

3. After the test is complete, check the result with the ERR LED on the CC-Link IE Field Network communication unit.

- OFF: Normal
- ON: Error

4. If no error is detected, change the setting of [Mode Setting] from [Self-loopback test] in [Detail Setting].

Since the communication with the controller is not performed when [Mode setting] is set to [Self-loopback Test], the communication timeout error occurs when the device of controller is monitored.

5. If any error is detected, replace the CC-Link IE Field Network communication unit.

■Start device number of the GD devices for CPU number switching

- Indirect specification of a CPU number

[CPU No.] can be indirectly specified with the GOT internal registers (GD devices) by specifying a value (100 to 102) to [CPU No.] in the device setting dialog in GT Designer3.

Set the start device number of the GD devices to be used in [CPU No. switching GD device first No. (3 points)].

[CPU No.] is specified with three consecutive GD devices, starting from the set device number.

When [500] is set to [CPU No. switching GD device first No. (3 points)], GD500 to GD502 are used to specify [CPU No.] as shown in the following table.

CPU No.	GD device	Setting range
100	GD500	1 to 4 Setting a value outside the range causes a communication timeout error. Specifying a nonexistent CPU number or a CPU number not supporting a multiple CPU system with a device causes a controller error.
101	GD501	
102	GD502	

- Indirect specification of a CPU number on the initially displayed screen

Set [CPU No. switching GD device first No. (3 points)] so that the values of the GD devices are retained and monitored upon the GOT startup.

• Indirect specification of a CPU number for multi-channel connection

If the setting range of [CPU No. switching GD device first No. (3 points)] set for each channel overlaps, the monitoring target CPU number set to each channel is switched simultaneously.

Set [CPU No. switching GD device first No. (3 points)] for each channel so that the setting range does not overlap.

• Indirect specification of a station number and a CPU number for multi-channel connection

When GD10 to GD25 are used to specify the station number of an inverter or non-Mitsubishi temperature controller connected, setting [10] to [CPU No. switching GD device first No. (3 points)] in a different channel switches the monitoring target CPU number and station number of an inverter or non-Mitsubishi temperature controller set to each channel simultaneously.

Set [CPU No. switching GD device first No. (3 points)] so that the setting range does not overlap the station number of an inverter or non-Mitsubishi temperature controller.

■Start device number of the GD devices for module number switching

• Indirect specification of a module number

For connection via a Simple Motion module, [Unit No.] can be specified with the GOT internal registers (GD devices) by specifying a value (100 to 10F) to [Unit No.] in the device setting dialog in GT Designer3.

Set the start device number of the GD devices to be used in [Module No. switching GD device first No. (16 points)].

[Unit No.] is specified with 16 consecutive GD devices, starting from the set device number.

When [550] is set to [Module No. switching GD device first No. (16 points)], GD550 to GD565 are used to specify [Unit No.] as shown in the following table.

Module No.	GD device	Setting range
100	GD550	00 to FF Setting a value outside the above range causes a device range error.
101	GD551	
102	GD552	
103	GD553	
104	GD554	
105	GD555	
106	GD556	
107	GD557	
108	GD558	
109	GD559	
10A	GD560	
10B	GD561	
10C	GD562	
10D	GD563	
10E	GD564	
10F	GD565	

• Indirect specification of a module number on the initially displayed screen

Set [Module No. switching GD device first No. (16 points)] so that the values of the GD devices are retained and monitored upon the GOT startup.

• Indirect specification of a module number for multi-channel connection

If the setting range of [Module No. switching GD device first No. (16 points)] set for each channel overlaps, the module number of the Simple Motion module via the servo amplifier device of each channel is switched simultaneously.

Set [Module No. switching GD device first No. (16 points)] for each channel so that the setting range does not overlap.

• Indirect specification of a station number and a module number for multi-channel connection

When GD10 to GD25 are used to specify the station number of an inverter or non-Mitsubishi temperature controller connected, setting [10] to [Module No. switching GD device first No. (16 points)] switches the module number of the Simple Motion module via the servo amplifier device and the station number of an inverter or non-Mitsubishi temperature controller set to each channel simultaneously.

Set [Module No. switching GD device first No. (16 points)] so that the setting range does not overlap the station number of an inverter or non-Mitsubishi temperature controller.

■Start device number of the GD devices for servo axis switching

• Indirect specification of a servo axis number

For connection via a Motion CPU or Simple Motion module, a servo axis number can be indirectly specified with GOT internal registers (GD devices) by specifying a value (100 to 115) to the axis number of the servo amplifier device.

Set the start device number of the GD devices to be used in [Servo axis switching GD device first No. (16 points)].

Specify a servo axis number with 16 consecutive GD devices, starting the set device number.

When [10] is set to [Servo axis switching GD device first No. (16 points)], GD10 to GD25 are used to specify a servo axis number as shown in the following table.

Servo axis No.	GD device	Setting range
100	GD10	1 to 64 Setting a value outside the above range causes a device range error.
101	GD11	
102	GD12	
103	GD13	
104	GD14	
105	GD15	
106	GD16	
107	GD17	
108	GD18	
109	GD19	
110	GD20	
111	GD21	
112	GD22	
113	GD23	
114	GD24	
115	GD25	

• Indirect specification of a servo axis number on the initially displayed screen

Set [Servo axis switching GD device first No. (16 points)] so that the values of the GD devices are retained and monitored upon the GOT startup.

• Indirect specification of a servo axis number for multi-channel connection

If the setting rage of [Servo axis switching GD device first No. (16 points)] set for each channel overlaps, the axis number of the servo amplifier of each channel is switched simultaneously.

Set [Servo axis switching GD device first No. (16 points)] for each channel so that the setting range does not overlap.

• Indirect specification of a station number and a servo axis number for multi-channel connection

When GD10 to GD25 are used to specify the station number of an inverter or non-Mitsubishi temperature controller connected, setting [10] to [Servo axis switching GD device first No. (16 points)] switches the axis number of the servo amplifier and the station number of an inverter or non-Mitsubishi temperature controller set to each channel simultaneously.

Set [Servo axis switching GD device first No. (16 points)] so that the setting range does not overlap the station number of an inverter or non-Mitsubishi temperature controller.

■Routing parameter settings

Up to 64 settings can be configured for [Transfer Net No.].

However, the same number cannot be set in [Transfer Net No.] twice or more (multiple times).

The GOT (host station) can access 64 different networks specified under [Transfer Net No.].

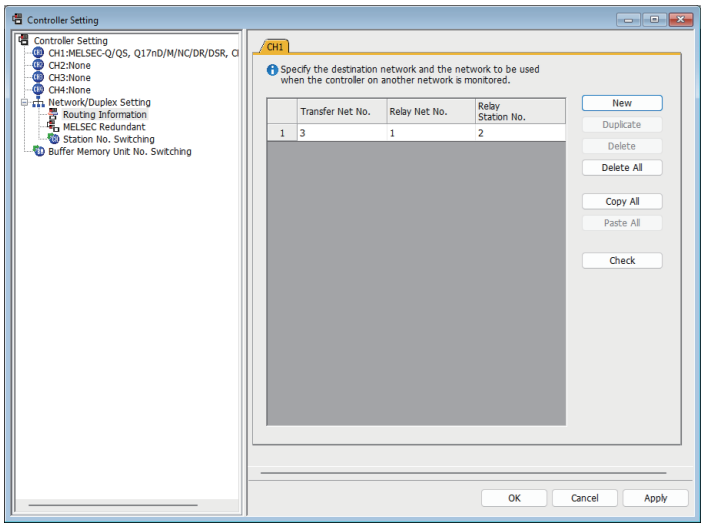
Point

Routing parameter settings

When communicating within the host network, routing parameter settings are not required.

For details on routing parameters, refer to the following manual.

📖MELSEC-Q CC-Link IE Field Network Master/Local Module User's Manual



Item	Range
[Transfer Net No.]	[1] to [239]
[Relay Net No.]	[1] to [239]
[Relay Station No.]	[0] to [120]

Point

Routing parameter settings for the relay station

Routing parameter settings are also necessary for the relay station.

For the setting, refer to the following.

☞ Page 995 PLC side settings

11.4.4 PLC side settings

Model		Reference
MELSEC-Q (Q mode)	Q00UJCPU Q00UJCPU-S8 Q00UCPU Q01UCPU Q02UCPU Q03UDCPU Q04UDHCPU Q06UDHCPU Q10UDHCPU Q13UDHCPU Q20UDHCPU Q26UDHCPU Q03UDECPU Q04UDEHCPU Q06UDEHCPU Q10UDEHCPU Q13UDEHCPU Q20UDEHCPU Q26UDEHCPU Q50UDEHCPU Q100UDEHCPU Q03UDVCPU Q04UDVCPU Q06UDVCPU Q13UDVCPU Q26UDVCPU	☞ Page 996 Connection to MELSEC-Q series
C Controller module (Q series)	Q12DCCPU-V Q24DHCCPU-V/VG Q24DHCCPU-LS Q26DHCCPU-LS	☞ Page 996 Connection to MELSEC-Q series
MELSEC-QS	QS001CPU	☞ Page 996 Connection to MELSEC-Q series
Motion CPU (Q series)	Q170MCPU Q170MSCPU Q170MSCPU-S1	☞ Page 996 Connection to MELSEC-Q series
CC-Link IE Field Network Ethernet adapter module	NZ2GF-ETB	☞ Page 996 Connection to MELSEC-Q series
CNC C70	Q173NCCPU	☞ Page 996 Connection to MELSEC-Q series
Robot controller (Q series)	CRnQ-700 (Q172DRCPU) CR750-Q (Q172DRCPU) CR751-Q (Q172DRCPU) CR800-Q (Q172DSRCPU)	☞ Page 996 Connection to MELSEC-Q series

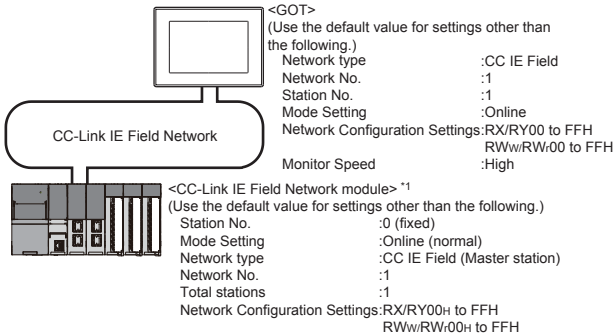
For details on the CC-Link IE Field Network module, refer to the following manual.

📖CC-Link IE Field Network Master/Local Module User's Manual

Connection to MELSEC-Q series

This section describes the settings of the GOT and CC-Link IE Field Network module in the system configuration shown below.

■System configuration (Network Type: CC IE Field)



*1 The CC-Link IE Field Network module is mounted on slot 0 of the base unit.
The start I/O number of the CC-Link IE Field Network module is set to 0.

Point

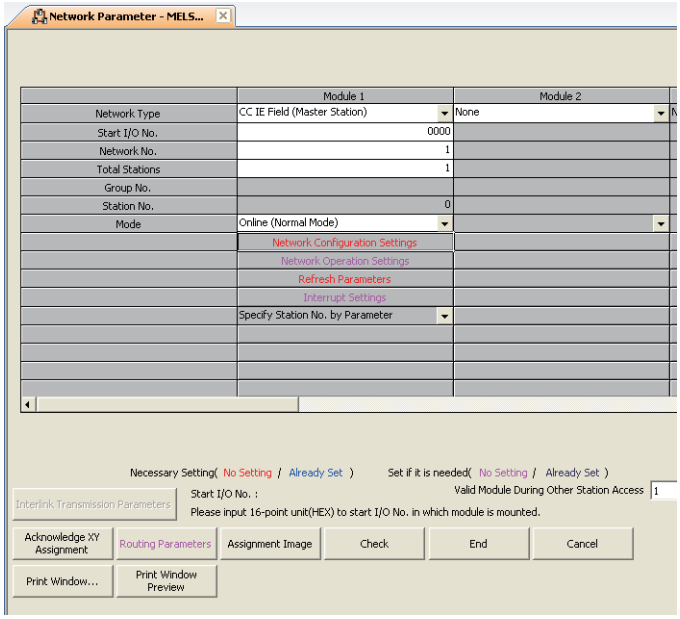
Connection to Q170MCPU or Q170MSCPU(-S1)
For connection to Q170MCPU or Q170MSCPU(-S1), the start I/O number of the CC-Link IE Field Network module is set to 70.

■Parameter settings of the system configuration (Network Type: CC IE Field)

- [Network parameter] of GX Works2

Use GX Works2 Version 1.31H or later.

Network parameter

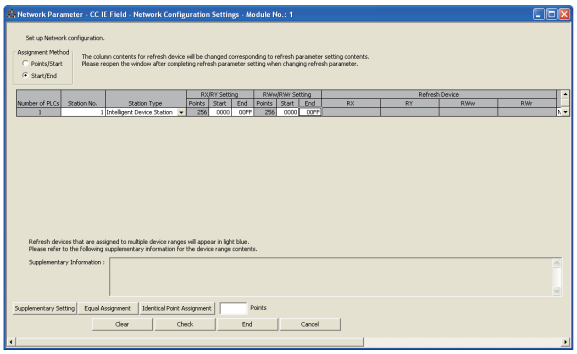


○: Necessary, △: As necessary, —: Not necessary

Item	Setting value	Setting for GOT connection
[Network Type]	CC IE Field (Master station)	○
[Starting I/O No.][*1]	0000H	○
[Network No.][*2]	1	○
[Total stations]	1	○
[Station No.]	0	○
[Mode][*3]	Online (Normal Mode)	○
[Network Configuration Settings]	☞ Network configuration settings	△
[Refresh parameters]	(Use default value)	△
[Interrupt settings]		—
[Interlink transmission parameters]		—
[Routing parameters]	☞ Routing parameters	△

*1 When using Q170MCPU or Q170MSCPU(-S1), set it according to the system configuration.
*2 Set the same network number as that of the GOT.
*3 Set the same mode setting as that of the GOT.

Network configuration settings



○: Necessary, △: As necessary, —: Not necessary

Item			Setting value	Setting for GOT connection
RX/RY setting*1	Station No. 1	[Start]	0000H	△
		[End]	00FFH	△
RWw/RWr setting*1	Station No. 1	[Start]	00000H	△
		[End]	000FFH	△
Reserved/Error Invalid Station			No setting	△

*1 Be sure to set it to perform the cyclic transmission.

Point

- When changing the network parameter

After writing module parameters to the PLC CPU, turn off then on or reset the PLC CPU.

- GOT station type

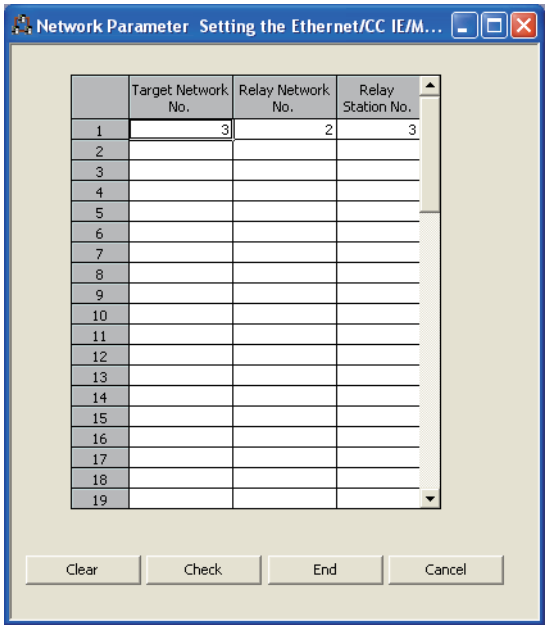
Set the GOT as an intelligent device station.

Routing parameters

Up to 64 settings can be configured for [Target Network No.].

However, the same number cannot be set in [Target Network No.] twice or more (multiple times).

The GOT (host station) can access 64 different networks specified under [Target Network No.].



Item	Range
[Target Network No.]	[1] to [239]
[Relay Net No.]	[1] to [239]
[Relay Station No.]	[0] to [120]

Point

Routing parameter settings for the request source

Routing parameter settings are also necessary for the request source GOT.

For the setting, refer to the following.

☞ Page 994 Routing parameter settings

■System configuration (Network Type: CC IE Field): [Controller Setting] in GT Designer3

Item	Setting value
[Network Type]	CC IE Field
[Network No.]	1: Network No. 1
[Station No.]	1: Station No. 1
[Group No.]	0
[Mode Setting]	Online
[Refresh Interval]	25 ms
[Input for Err. Sta.]	Clear
[Retry]	3 times
[Timeout Time]	3 seconds
[Delay Time]	0 ms
[Monitor Speed]	High(Normal)

Point

[Controller Setting] in GT Designer3

For the setting method of [Controller Setting] in GT Designer3, refer to the following.

☞ Page 988 [Controller Setting]

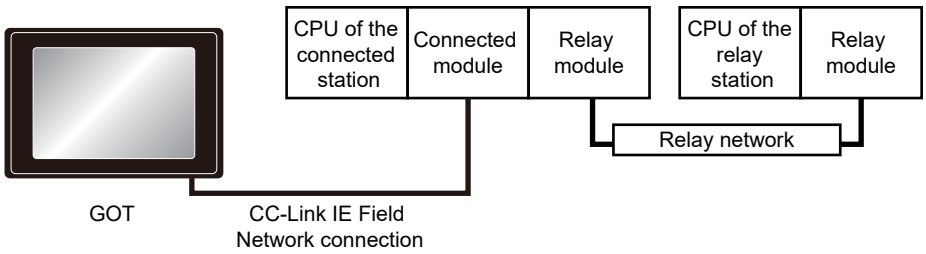
11.4.5 Access range for monitoring

When GOT is connected to the CPU of the station connected via CC-Link IE Field Network, the range accessible via the CPU is as follows.

Point

- When monitoring other networks (Routing parameter settings)

To monitor other networks, routing parameter settings are necessary.
For the routing parameter settings, refer to the reference manual of the network connected.



○: Accessible, —: Inaccessible

CPU of the connected station	Connected module	Relay station								
		Relay network	CPU of the relay station							
			RCPU	LCPU	QCPU (Q mode)	QSCPU	QCPU (A mode)	QnACPU	ACPU	FX5CPU
QCPU*1	☞ Page 981 Connectable devices	Ethernet	—	○	○*3	○	—	○	—	—
		CC-Link IE Controller Network	—	—	○	○	—	—	—	—
		CC-Link IE Field Network	—	○	○*1	○	—	—	—	—
		MELSECNET/H, MELSECNET/10	—	—	○	○	○	○	○*2	—
C Controller module (MELSEC-Q series)	☞ Page 981 Connectable devices	CC-Link IE Controller Network	—	—	○	○	—	—	—	—
		CC-Link IE Field Network	—	○	○*1	○	—	—	—	—
		MELSECNET/H, MELSECNET/10	—	—	○	○	○	○	○*2	—

*1 QnUDVCPU, QnUDECPU, QnUDEHCPU, QnUCPU, QnUDCPU, and QnUDHCPU are supported.
*2 AnUCPU and AnUSCPU are supported.
*3 The C Controller module (MELSEC-Q series) is not supported.

11.5 MELSEC-L series (CC-Link IE Field Network connection)

☞ Page 1001 Connectable devices
☞ Page 1002 System configuration
☞ Page 1006 GOT side settings
☞ Page 1013 PLC side settings
☞ Page 1017 Access range for monitoring

11.5.1 Connectable devices

The following table shows the connectable models.
○: Supported, —: Not supported

Controller	Model	Clock	PLC side interface		Connectable model
			CC-Link IE Field Network communication unit	Built-in port	
MELSEC-L series	L02CPU*1 L06CPU*1 L26CPU*1 L26CPU-BT*1 L02CPU-P*1 L06CPU-P*1 L26CPU-P*1 L26CPU-PBT*1 L02SCPU*1 L02SCPU-P*1	○	LJ71GF11-T2	—	GT37 SoftGOT3000
CC-Link IE Field Network head module	LJ72GF15-T2	—	—	○	GT37 SoftGOT3000

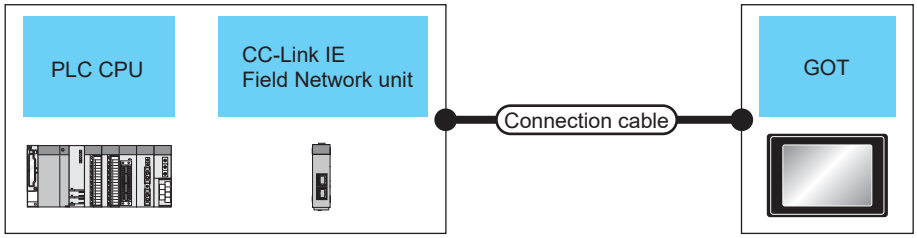
*1 Use a module having a serial number starting with 13012 or later in the first 5 digits.

Precautions

For information on the version restrictions of the CC-Link IE Field Network module, refer to the following manual.
📖CC-Link IE Field Network Master/Local Module User's Manual

11.5.2 System configuration

Connection to CC-Link IE Field Network communication unit



For details on the connection cable and overall cable length, refer to the following.

☞ Page 1002 Connection cable
☞ Page 1002 Overall length

For details on the maximum number of connected devices, refer to the following.

☞ Page 1003 Maximum number of connected devices

Controller	CC-Link IE Field Network communication unit	Connection cable	GOT	
			Interface	Model
MELSEC-L series	LJ71GF11-T2	Twisted pair cable	GT37-IF2000 + GT15-J71GF13-T2*1	GT37 SoftGOT3000

*1 If there is a submaster station in the network configuration, use software version C or later.
The software version is the 10th digit of the serial number described on the rating plate of the unit.

■Connection cable

Use a connection cable that meets the following standards.

Standard	Category
1000BASE-T	Shielded twisted pair cable (STP) of category 5e or higher

Use cables that meet the IEEE802.3 1000BASE-T standard.

When only one GOT is connected, the GOT can be directly connected to the controller without a hub.

Use hubs that satisfy the following conditions.

- Compliant with the IEEE802.3 (1000BASE-T) standard
- Include Auto MDI/MDI-X.
- Include an automatic negotiation function.
- Switching hub (Do not use repeater hubs.)

Recommended switching hub (Mitsubishi Electric products)

Type	Model
Industrial switching hub	NZ2EHG-T8

For details, refer to the following manual.

📖CC-Link IE Field Network Master/Local Module User's Manual

■Overall length

The overall cable length is 12100 m.

The overall cable length and cable length between stations vary depending on the connection method (line, star, or ring), the system configuration, etc.

For details, refer to the following manual.

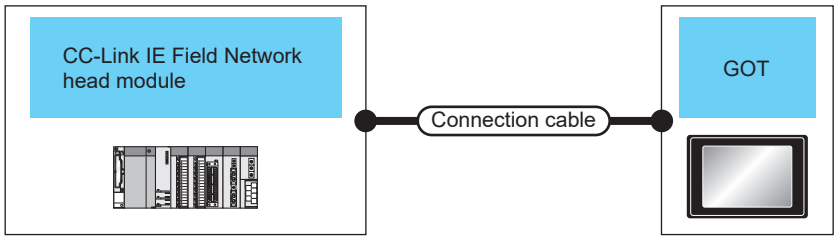
📖CC-Link IE Field Network Master/Local Module User's Manual

■Maximum number of connected devices

The following shows the number of GOTs connectable to one controller.

Controller	
Model	**Number of GOTs connectable to one PLC**
MELSEC-L series	120

Connection to CC-Link IE Field Network head module



For details on the connection cable and overall cable length, refer to the following.

☞ Page 1003 Connection cable
☞ Page 1003 Overall length

For details on the maximum number of connected devices, refer to the following.

☞ Page 1004 Maximum number of connected devices

Controller	Connection cable	GOT	
		Interface	**Model**
CC-Link IE Field Network head module	Twisted pair cable	GT37-IF2000 + GT15-J71GF13-T2*1	GT37 SoftGOT3000

*1 If there is a submaster station in the network configuration, use software version C or later.
The software version is the 10th digit of the serial number described on the rating plate of the unit.

■Connection cable

Use a connection cable that meets the following standards.

Standard	Category
1000BASE-T	Shielded twisted pair cable (STP) of category 5e or higher

Use cables that meet the IEEE802.3 1000BASE-T standard.

When only one GOT is connected, the GOT can be directly connected to the controller without a hub.

Use hubs that satisfy the following conditions.

- Compliant with the IEEE802.3 (1000BASE-T) standard
- Include Auto MDI/MDI-X.
- Include an automatic negotiation function.
- Switching hub (Do not use repeater hubs.)

Recommended switching hub (Mitsubishi Electric products)

Type	Model
Industrial switching hub	NZ2EHG-T8

For details, refer to the following manual.

📖CC-Link IE Field Network Master/Local Module User's Manual

■Overall length

The overall cable length is 12100 m.

The overall cable length and cable length between stations vary depending on the connection method (line, star, or ring), the system configuration, etc.

For details, refer to the following manual.

📖CC-Link IE Field Network Master/Local Module User's Manual

■Maximum number of connected devices

The number of connectable device stations is 120 (1 CC-Link IE Field Network Ethernet adapter module and 119 GOTs).
The following shows the number of GOTs connectable to one controller.

Controller	
Model	**Number of GOTs connectable to one PLC**
CC-Link IE Field Network head module	119

Connecting one PLC to multiple GOTs

When multiple GOT units are simultaneously accessing one PLC, the GOT writing process (transient/cyclic) and reading process (transient) may slow down.
This slow access can be remedied with the following countermeasures.
<Countermeasures>

■Improve response speed on PLC side

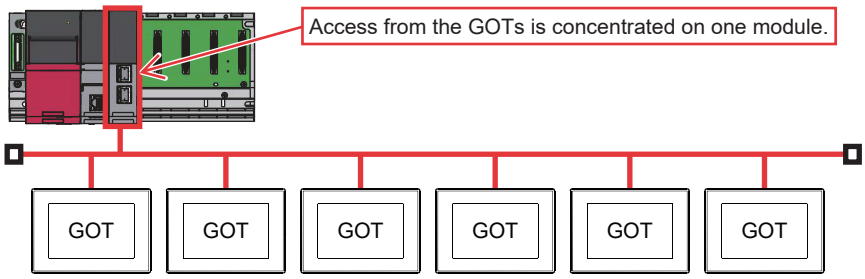
Insert a COM instruction on the PLC to increase the response speed.
Note that caution is required as the scan time will increase.

■Screen design using cyclic devices

Create the screen with cyclic devices instead of using transient devices.

■Split GOT connection destinations into several systems

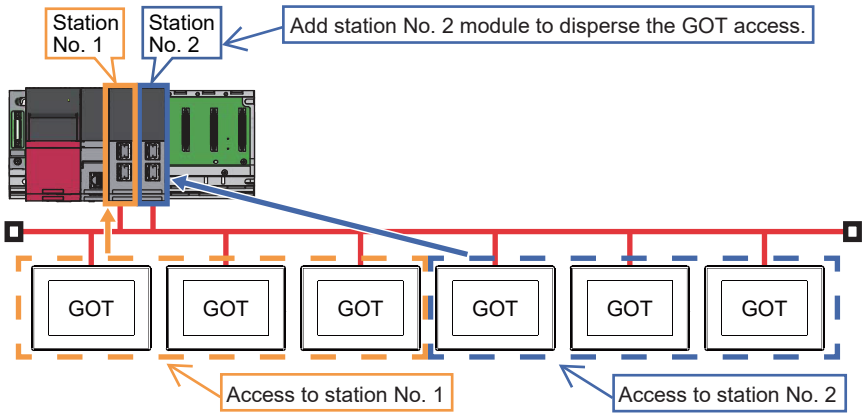
Add a master/local module to the PLC side, and split the GOT connection destinations into several systems.
Improve the current system configuration.
(Example of current system configuration)
In the following system configuration, access from the GOT is concentrated on one module.



(Improvement measure)

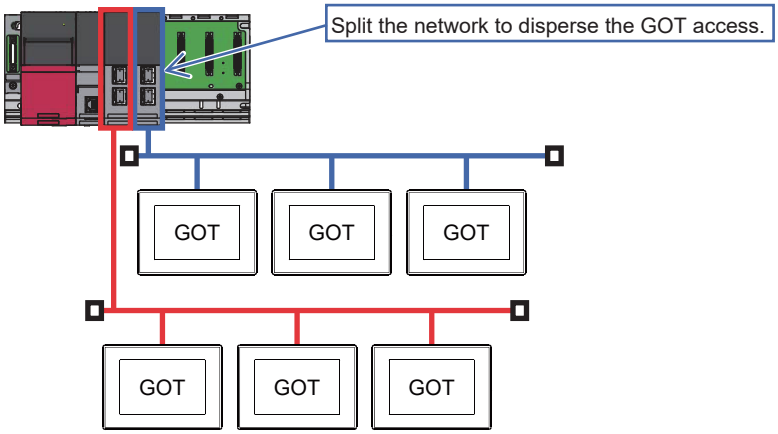
- Adding a module to the PLC side

Add a module to the PLC side to disperse the GOT access destinations.



• Split the network

Split the network to disperse the GOT access.



Precautions

■Starting the GOT connected to the CC-Link IE Field Network

For the CC-Link IE Field Network connection, the data link is started approximately 15 seconds after the GOT startup.

■When a network error occurs in the system alarm

In the CC-Link IE Field Network connection, when a network error occurs in the system alarm, the system alarm display cannot be canceled even though the causes are removed.

To cancel the system alarm display, restart the GOT.

■Data link failure in other stations at GOT startup

At GOT startup, the data link failure may occur in other stations.

However, after the failure occurrence, the GOT reconnects automatically and monitors the devices properly.

To avoid such data link failure, start up the GOT 10 seconds earlier than the master station.

However, if the master station does not complete startup when the GOT starts monitoring (10 seconds after the GOT startup), the communication timeout occurs in the GOT.

For details, refer to the following manual.

📖CC-Link IE Field Network Master/Local Module User's Manual

■Data link failure in all stations at GOT startup or cable connection/disconnection

At GOT startup, the communication is broken temporarily between PORT1 and PORT2 in the CC-Link IE Field module which is installed on the GOT.

Thus, as the GOT or a station between the GOT and the master station is reconnected, the data link failure may occur on all stations.

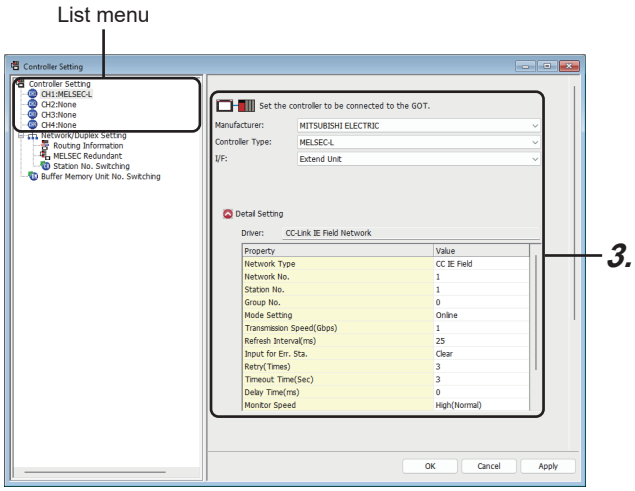
GOT startup includes the following operations.

- Turning on the GOT
- Resetting the GOT main unit
- Operating the utility
- Downloading the project including the communication settings
- Downloading the OS

11.5.3 GOT side settings

[Controller Setting]

Set the channel of the connected controller.



Operating procedure

1. Select [Common] → [Controller Setting] from the menu.
2. In the [Controller Setting] window, select the channel number to be used from the list menu.
3. Set the following items.

Item	Description
[Manufacturer]	[MITSUBISHI ELECTRIC]
[Controller Type]	[MELSEC-L]
[I/F]	[Extend Unit]
[Detail Setting]	Configure the settings according to the usage environment. ☞ Page 1007 [Detail Setting]

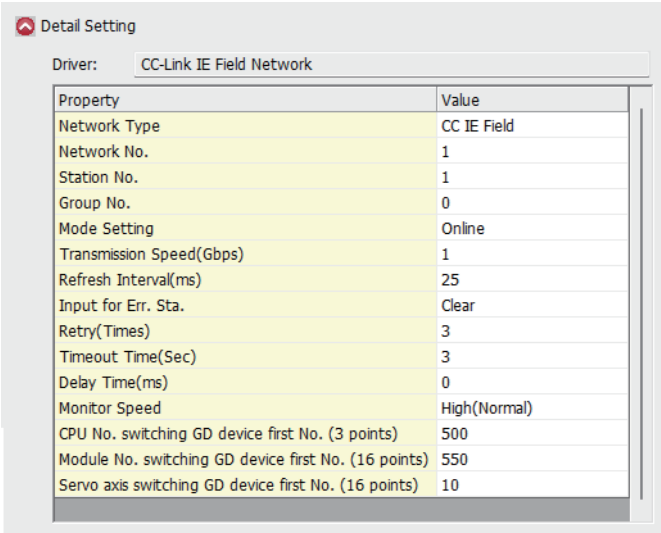
4. When you have completed the settings, click the [OK] button.

Point

The controller settings can be checked in [I/F Communication Setting].
For details, refer to the following.
📖GT Designer3 (GOT3000) Screen Design Manual

■[Detail Setting]

Configure the settings according to the usage environment.



Item	Description	Range
[Driver]	This item appears when communication drivers are selectable according to the settings of [Controller Type] and [I/F].	[CC-Link IE Field Network]
[Network Type]	Set the network type.	[CC IE Field]
[Network No.]	Set the network number.	[1] to [239]
[Station No.]	Set the station number of the GOT.	[1] to [120]
[Group No.]	—	[0]
[Mode Setting]	Set the operation mode of the GOT. For details on the hardware test and self-loopback test, refer to the following. ☞ Page 1008 Hardware test ☞ Page 1009 Self-loopback test	[Online], [Offline], [H/W test], [Self-loopback test]
[Transmission Speed]	—	[1Gbps]
[Refresh Interval]	Set the number of refreshes to secure the send/receive data per station during communication.	[1] ms to [1000] ms
[Input for Err. Sta.]	Set whether to hold or clear the input from the station whose data link has become faulty due to powering off or other reasons.	[Clear], [Hold]
[Retry]	Set the number of retries to be performed when a communication timeout occurs. When receiving no response after retries, the communication times out.	[0] times to [5] times
[Timeout Time]	Set the time period for a communication to time out.	[1] second to [90] seconds
[Delay Time]	Set the delay time for reducing the load of the network and destination PLC.	[0] ms to [300] ms
[Monitor Speed]*2	Set the monitor speed for the CC-Link IE Field Network. This setting is not valid in all systems.	[High(Normal)]*1, [Middle], [Low]
[CPU No. switching GD device first No. (3 points)]	Set the start device number of the GD devices for CPU number switching. For details, refer to the following. ☞ Page 1009 Start device number of the GD devices for CPU number switching	[0] to [65520]
[Module No. switching GD device first No. (16 points)]	Set the start device number of the GD devices for module number switching. For details, refer to the following. ☞ Page 1010 Start device number of the GD devices for module number switching	[0] to [65520]
[Servo axis switching GD device first No. (16 points)]	Set the start device number of the GD devices for servo axis switching. For details, refer to the following. ☞ Page 1011 Start device number of the GD devices for servo axis switching	[0] to [65520]

*1 This setting is effective for collecting large data with the logging, recipe, or such function on a screen other than the monitor screen.

*2 When using a global label to read or write more than 235 two-byte characters, set [Monitor speed] to [High(Normal)] or [Middle].
If [Monitor speed] is set to [Low], a system error occurs when reading or writing.
For details, refer to the following manual.
📖GT Designer3 (GOT3000) Screen Design Manual

Precautions

When the output is required to be held at the data link failure, set [Input for Err. Sta.] to [Hold] in the controller setting of the GOT.

Point

• Example of communication detail settings

For the example of communication detail settings, refer to the following.

☞ Page 1013 PLC side settings

• Controller settings using the GT37 utility

The controller settings can be changed in [Communication Settings] of the GT37 utility after writing [Communication Settings] of project data to GT37.

For details on the GT37 utility, refer to the following manual.

📖GOT3000 Series User's Manual (Utility & Maintenance Functions)

• Priority of the settings in [Controller Setting]

When the settings are configured in GT Designer3 or in the GT37 utility, the latest settings are effective.

• Network type

Be sure to set the same network types for the CPU side and the GOT side.

If the network types of the CPU side and the GOT side are different, an error is displayed in the system alarm of the GOT side.

■Hardware test

For a hardware test, mount a CC-Link IE Field Network communication unit on the GOT, and check if the unit operates properly with the GOT.

The following shows the hardware test procedure.

1. Perform either of the following operations to set the GOT to the hardware test mode.

• Write the project data for which [Mode Setting] in [Detail Setting] is set to [H/W test] to the GOT.

• Set [Mode setting] of [Detail setting] to [H/W Test] in the GOT utility.

2. A hardware test will start at GOT startup.

3. After the test is complete, check the result with the ERR LED on the CC-Link IE Field Network communication unit.

• OFF: Normal

• ON: Error

4. If no error is detected, change the setting of [Mode Setting] from [H/W test] in [Detail Setting].

Since the communication with the controller is not performed when [Mode setting] is set to [H/W Test], the communication timeout error occurs when the device of controller is monitored.

5. If any error is detected, replace the CC-Link IE Field Network communication unit.

■Self-loopback test

In a self-loopback test, connect port 1 and port 2 of the CC-Link IE Field Network communication unit mounted on the GOT with a network cable, and check if the unit operates properly with the GOT.
The following shows the self-loopback test procedure.

1. Perform either of the following operations to set the GOT to the self-loopback test mode.
- Write the project data for which [Mode Setting] in [Detail Setting] is set to [Self-loopback test] to the GOT.
- Set [Mode setting] in [Detail setting] to [Self-loopback Test] in the GOT utility.

2. A self-loopback test will start at a GOT startup.

3. After the test is complete, check the result with the ERR LED on the CC-Link IE Field Network communication unit.
- OFF: Normal
- ON: Error

4. If no error is detected, change the setting of [Mode Setting] from [Self-loopback test] in [Detail Setting].
Since the communication with the controller is not performed when [Mode setting] is set to [Self-loopback Test], the communication timeout error occurs when the device of controller is monitored.

5. If any error is detected, replace the CC-Link IE Field Network communication unit.

■Start device number of the GD devices for CPU number switching

- Indirect specification of a CPU number

[CPU No.] can be indirectly specified with the GOT internal registers (GD devices) by specifying a value (100 to 102) to [CPU No.] in the device setting dialog in GT Designer3.
Set the start device number of the GD devices to be used in [CPU No. switching GD device first No. (3 points)].
[CPU No.] is specified with three consecutive GD devices, starting from the set device number.
When [500] is set to [CPU No. switching GD device first No. (3 points)], GD500 to GD502 are used to specify [CPU No.] as shown in the following table.

CPU No.	GD device	Setting range
100	GD500	1 to 4 Setting a value outside the range causes a communication timeout error. Specifying a nonexistent CPU number or a CPU number not supporting a multiple CPU system with a device causes a controller error.
101	GD501	
102	GD502	

- Indirect specification of a CPU number on the initially displayed screen

Set [CPU No. switching GD device first No. (3 points)] so that the values of the GD devices are retained and monitored upon the GOT startup.

- Indirect specification of a CPU number for multi-channel connection

If the setting range of [CPU No. switching GD device first No. (3 points)] set for each channel overlaps, the monitoring target CPU number set to each channel is switched simultaneously.
Set [CPU No. switching GD device first No. (3 points)] for each channel so that the setting range does not overlap.

- Indirect specification of a station number and a CPU number for multi-channel connection

When GD10 to GD25 are used to specify the station number of an inverter or non-Mitsubishi temperature controller connected, setting [10] to [CPU No. switching GD device first No. (3 points)] in a different channel switches the monitoring target CPU number and station number of an inverter or non-Mitsubishi temperature controller set to each channel simultaneously.
Set [CPU No. switching GD device first No. (3 points)] so that the setting range does not overlap the station number of an inverter or non-Mitsubishi temperature controller.

■Start device number of the GD devices for module number switching

• Indirect specification of a module number

For connection via a Simple Motion module, [Unit No.] can be specified with the GOT internal registers (GD devices) by specifying a value (100 to 10F) to [Unit No.] in the device setting dialog in GT Designer3.

Set the start device number of the GD devices to be used in [Module No. switching GD device first No. (16 points)].

[Unit No.] is specified with 16 consecutive GD devices, starting from the set device number.

When [550] is set to [Module No. switching GD device first No. (16 points)], GD550 to GD565 are used to specify [Unit No.] as shown in the following table.

Module No.	GD device	Setting range
100	GD550	00 to FF Setting a value outside the above range causes a device range error.
101	GD551	
102	GD552	
103	GD553	
104	GD554	
105	GD555	
106	GD556	
107	GD557	
108	GD558	
109	GD559	
10A	GD560	
10B	GD561	
10C	GD562	
10D	GD563	
10E	GD564	
10F	GD565	

• Indirect specification of a module number on the initially displayed screen

Set [Module No. switching GD device first No. (16 points)] so that the values of the GD devices are retained and monitored upon the GOT startup.

• Indirect specification of a module number for multi-channel connection

If the setting range of [Module No. switching GD device first No. (16 points)] set for each channel overlaps, the module number of the Simple Motion module via the servo amplifier device of each channel is switched simultaneously.

Set [Module No. switching GD device first No. (16 points)] for each channel so that the setting range does not overlap.

• Indirect specification of a station number and a module number for multi-channel connection

When GD10 to GD25 are used to specify the station number of an inverter or non-Mitsubishi temperature controller connected, setting [10] to [Module No. switching GD device first No. (16 points)] switches the module number of the Simple Motion module via the servo amplifier device and the station number of an inverter or non-Mitsubishi temperature controller set to each channel simultaneously.

Set [Module No. switching GD device first No. (16 points)] so that the setting range does not overlap the station number of an inverter or non-Mitsubishi temperature controller.

■Start device number of the GD devices for servo axis switching

• Indirect specification of a servo axis number

For connection via a Motion CPU or Simple Motion module, a servo axis number can be indirectly specified with GOT internal registers (GD devices) by specifying a value (100 to 115) to the axis number of the servo amplifier device.

Set the start device number of the GD devices to be used in [Servo axis switching GD device first No. (16 points)].

Specify a servo axis number with 16 consecutive GD devices, starting the set device number.

When [10] is set to [Servo axis switching GD device first No. (16 points)], GD10 to GD25 are used to specify a servo axis number as shown in the following table.

Servo axis No.	GD device	Setting range
100	GD10	1 to 64 Setting a value outside the above range causes a device range error.
101	GD11	
102	GD12	
103	GD13	
104	GD14	
105	GD15	
106	GD16	
107	GD17	
108	GD18	
109	GD19	
110	GD20	
111	GD21	
112	GD22	
113	GD23	
114	GD24	
115	GD25	

• Indirect specification of a servo axis number on the initially displayed screen

Set [Servo axis switching GD device first No. (16 points)] so that the values of the GD devices are retained and monitored upon the GOT startup.

• Indirect specification of a servo axis number for multi-channel connection

If the setting rage of [Servo axis switching GD device first No. (16 points)] set for each channel overlaps, the axis number of the servo amplifier of each channel is switched simultaneously.

Set [Servo axis switching GD device first No. (16 points)] for each channel so that the setting range does not overlap.

• Indirect specification of a station number and a servo axis number for multi-channel connection

When GD10 to GD25 are used to specify the station number of an inverter or non-Mitsubishi temperature controller connected, setting [10] to [Servo axis switching GD device first No. (16 points)] switches the axis number of the servo amplifier and the station number of an inverter or non-Mitsubishi temperature controller set to each channel simultaneously.

Set [Servo axis switching GD device first No. (16 points)] so that the setting range does not overlap the station number of an inverter or non-Mitsubishi temperature controller.

■Routing parameter settings

Up to 64 settings can be configured for [Transfer Net No.].

However, the same number cannot be set in [Transfer Net No.] twice or more (multiple times).

The GOT (host station) can access 64 different networks specified under [Transfer Net No.].

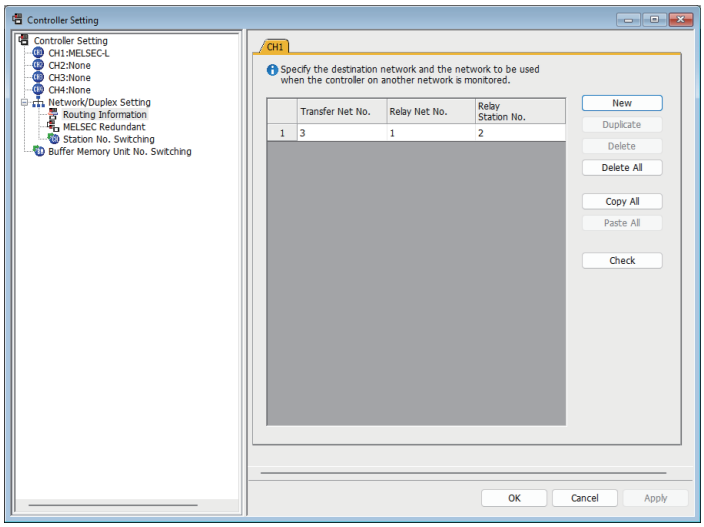
Point

Routing parameter settings

When communicating within the host network, routing parameter settings are not required.

For details on routing parameters, refer to the following manual.

📖MELSEC-Q/L Ethernet Interface Module User's Manual (Application)



Item	Range
[Transfer Net No.]	[1] to [239]
[Relay Net No.]	[1] to [239]
[Relay Station No.]	[0] to [120]

Point

Routing parameter settings for the relay station

Routing parameter settings are also necessary for the relay station.

For the setting, refer to the following.

☞ Page 1013 PLC side settings

11.5.4 PLC side settings

Model		Reference
MELSEC-L series	L02CPU L06CPU L26CPU L26CPU-BT L02CPU-P L06CPU-P L26CPU-P L26CPU-PBT L02SCPU L02SCPU-P	☞ Page 1013 Connection to MELSEC-L series
CC-Link IE Field Network head module	LJ72GF15-T2	☞ Page 1013 Connection to MELSEC-L series

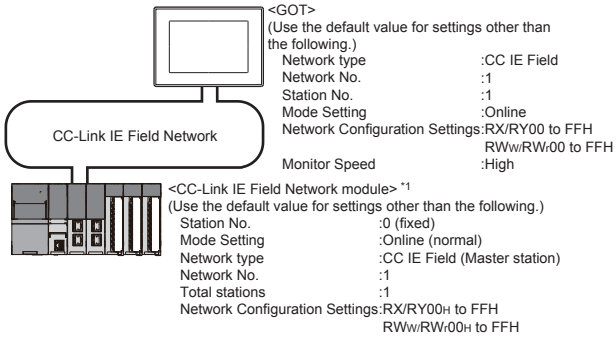
For details on the CC-Link IE Field Network module, refer to the following manual.

📖CC-Link IE Field Network Master/Local Module User's Manual

Connection to MELSEC-L series

This section describes the settings of the GOT and CC-Link IE Field Network module in the system configuration shown below.

■System configuration (Network Type: CC IE Field)



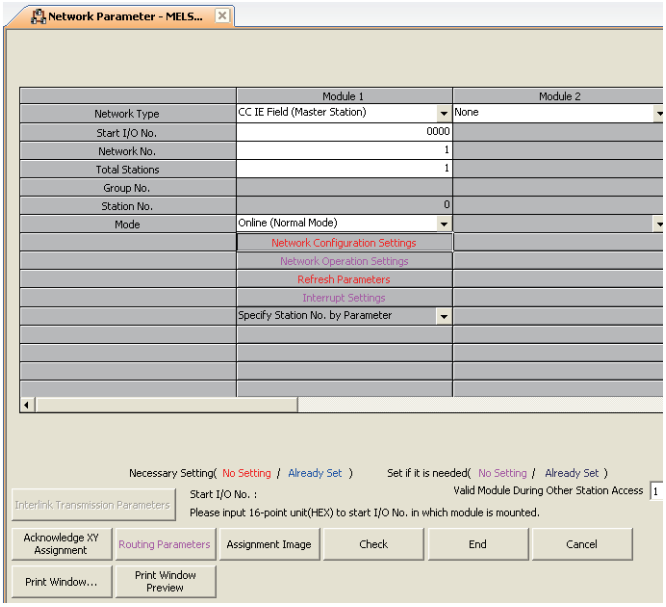
*1 The CC-Link IE Field Network module is mounted on slot 0 of the base unit.
The start I/O number of the CC-Link IE Field Network module is set to 0.

■Parameter settings of the system configuration (Network Type: CC IE Field)

- [Network parameter] of GX Works2

Use GX Works2 Version 1.31H or later.

Network parameter



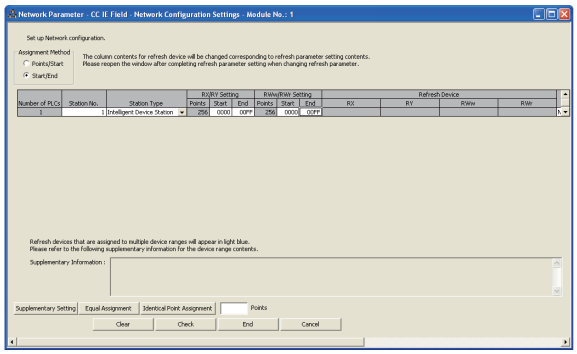
○: Necessary, △: As necessary, —: Not necessary

Item	Setting value	Setting for GOT connection
[Network Type]	CC IE Field (Master station)	○
[Starting I/O No.]	0000H	○
[Network No.][*1]	1	○
[Total stations]	1	○
[Station No.]	0	○
[Mode][*2]	Online (Normal Mode)	○
[Network Configuration Settings]	☞ Network configuration settings	△
[Refresh parameters]	(Use default value)	△
[Interrupt settings]		—
[Interlink transmission parameters]		—
[Routing parameters]	☞ Routing parameters	△

*1 Set the same network number as that of the GOT.

*2 Set the same mode setting as that of the GOT.

Network configuration settings



○: Necessary, △: As necessary, —: Not necessary

Item			Setting value	Setting for GOT connection
RX/RY setting*1	Station No. 1	[Start]	0000H	△
		[End]	00FFH	△
RWw/RWr setting*1	Station No. 1	[Start]	00000H	△
		[End]	000FFH	△
Reserved/Error Invalid Station			No setting	△

*1 Be sure to set it to perform the cyclic transmission.

Point

- When changing the network parameter

After writing module parameters to the PLC CPU, turn off then on or reset the PLC CPU.

- GOT station type

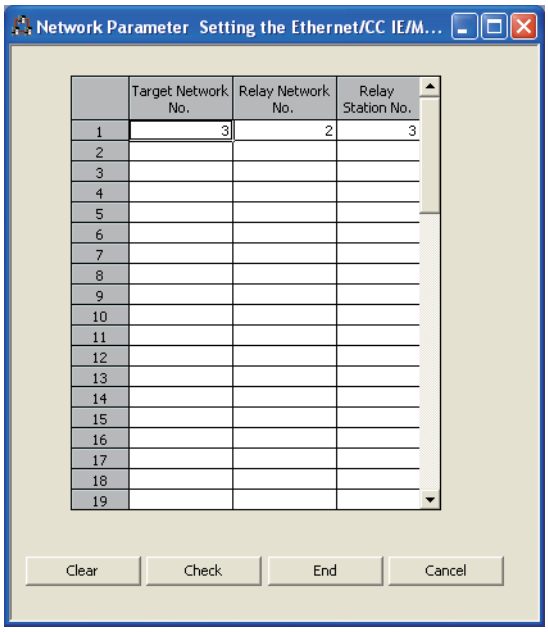
Set the GOT as an intelligent device station.

Routing parameters

Up to 64 settings can be configured for [Target Network No.].

However, the same destination network number cannot be set twice or more (multiple times).

The GOT (host station) can access 64 different networks specified under [Target Network No.].



Item	Range
[Target Network No.]	[1] to [239]
[Relay Network No.]	[1] to [239]
[Relay Station No.]	[0] to [120]

Point

Routing parameter settings for the request source

Routing parameter settings are also necessary for the request source GOT.

For the setting, refer to the following.

☞ Page 1012 Routing parameter settings

■System configuration (Network Type: CC IE Field): [Controller Setting] in GT Designer3

Item	Setting value
[Network Type]	CC IE Field
[Network No.]	1: Network No. 1
[Station No.]	1: Station No. 1
[Group No.]	0
[Mode Setting]	Online
[Refresh Interval]	25 ms
[Input for Err. Sta.]	Clear
[Retry]	3 times
[Timeout Time]	3 seconds
[Delay Time]	0 ms
[Monitor Speed]	High(Normal)

Point

[Controller Setting] in GT Designer3

For the setting method of [Controller Setting] in GT Designer3, refer to the following.

☞ Page 1006 [Controller Setting]

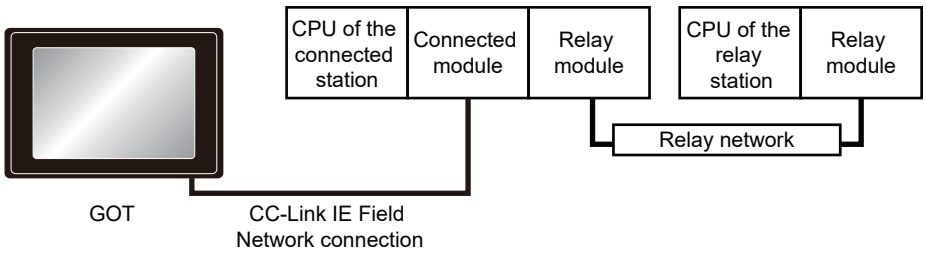
11.5.5 Access range for monitoring

When GOT is connected to the CPU of the station connected via CC-Link IE Field Network, the range accessible via the CPU is as follows.

Point

- When monitoring other networks (Routing parameter settings)

To monitor other networks, routing parameter settings are necessary.
For the routing parameter settings, refer to the reference manual of the network connected.



○: Accessible, —: Inaccessible

CPU of the connected station	Connected module	Relay station								
		Relay network	CPU of the relay station							
			RCPU	LCPU	QCPU (Q mode)	QSCPU	QCPU (A mode)	QnACPU	ACPU	FX5CPU
LCPU	☞ Page 1001 Connectable devices	Ethernet	—	○	○*2	○	—	○	—	—
		CC-Link IE Field Network	—	○	○*1	○	—	—	—	—
LJ72GF15-T2	☞ Page 1001 Connectable devices	CC-Link IE Field Network	—	○	○*1	○	—	—	—	—

*1 QnUDVCPU, QnUDECPU, QnUDEHCPU, QnUCPU, QnUDCPU, and QnUDHCPU are supported.
*2 The C Controller module (MELSEC-Q series) is not supported.

12 CC-Link connection (intelligent device station)

☞ Page 1018 MELSEC MX Controller (MX-R Model) (CC-Link connection (intelligent device station))
☞ Page 1038 MELSEC MX Controller (MX-F Model) (CC-Link connection (intelligent device station))
☞ Page 1052 MELSEC iQ-R series (CC-Link connection (intelligent device station))
☞ Page 1078 MELSEC iQ-F series (CC-Link connection (intelligent device station))
☞ Page 1099 MELSEC-Q series (CC-Link connection (intelligent device station))
☞ Page 1134 MELSEC-L series (CC-Link connection (intelligent device station))
☞ Page 1151 MELSEC-A series (CC-Link connection (intelligent device station))
☞ Page 1170 MELSEC-F series (CC-Link connection (intelligent device station))

12.1 MELSEC MX Controller (MX-R Model) (CC-Link connection (intelligent device station))

☞ Page 1018 Connectable devices
☞ Page 1019 System configuration
☞ Page 1023 GOT side settings
☞ Page 1029 PLC side settings
☞ Page 1037 Access range for monitoring

12.1.1 Connectable devices

The following table shows the connectable models.

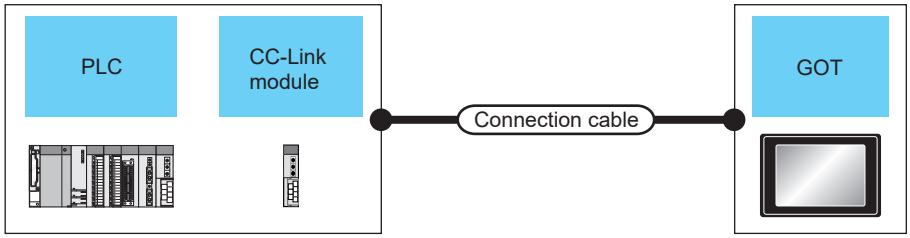
○: Supported, —: Not supported

Controller	Model	Clock	CC-Link module	Connectable model
MELSEC MX Controller (MX-R Model)	MXR300-16 MXR300-32 MXR300-64	○	RJ61BT11*1	GT37 SoftGOT3000
	MXR500-128 MXR500-256	○	RJ61BT11*1	GT37 SoftGOT3000

*1 Use firmware version 04 or later when building a redundant system.

12.1.2 System configuration

Connection with CC-Link Ver.1 compatible



For details on the overall length, refer to the following.

☞ Page 1019 Overall length

For details on the maximum number of connected devices, refer to the following.

☞ Page 1019 Maximum number of connected devices

Controller	CC-Link module*1	Communication type	Connection cable	GOT	
				Interface	Model
MELSEC MX Controller (MX-R Model)	RJ61BT11	CC-Link (Ver. 1)	CC-Link dedicated cable*2	GT37-IF2000 + GT15-J61BT13*3	GT37 SoftGOT3000

*1 For the system configuration of the CC-Link module, refer to the following manual.
MELSEC iQ-R CC-Link System Master/Local Module User's Manual (Startup)

*2 For the specifications of the CC-Link dedicated cable and the contact information, refer to the following.
CC-Link Partner Association website: http://www.cc-link.org/

*3 In the controller settings, set the mode to Ver.1.
For details on settings, refer to the following.
☞ Page 1023 [Controller Setting]

■Overall length

The maximum overall cable length and cable length between stations vary depending on the conditions such as the type of the cable used and the transmission speed.

For details, refer to the following manual.

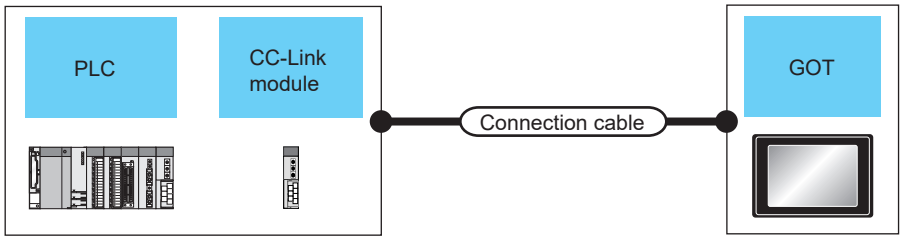
MELSEC iQ-R CC-Link System Master/Local Module User's Manual (Startup)

■Maximum number of connected devices

The following shows the number of connectable GOTs.

Controller	
Model	Number of connectable devices
MELSEC MX Controller (MX-R Model)	26 GOTs

Connection with CC-Link Ver.2 compatible



For details on the overall length, refer to the following.

☞ Page 1020 Overall length

For details on the maximum number of connected devices, refer to the following.

☞ Page 1020 Maximum number of connected devices

Controller	CC-Link module*1	Communication type	Connection cable	GOT	
				Interface	Model
MELSEC MX Controller (MX-R Model)	RJ61BT11	CC-Link (Ver.2)	CC-Link dedicated cable*2	GT37-IF2000 + GT15-J61BT13*3	GT37 SoftGOT3000

*1 For the system configuration of the CC-Link module, refer to the following manual.
📖MELSEC iQ-R CC-Link System Master/Local Module User's Manual (Startup)

*2 For the specifications of the CC-Link dedicated cable and the contact information, refer to the following.
CC-Link Partner Association website: http://www.cc-link.org/

*3 In the controller settings, set the mode to Ver.2.
For details on settings, refer to the following.
☞ Page 1023 [Controller Setting]

■Overall length

The maximum overall cable length and cable length between stations vary depending on the conditions such as the type of the cable used and the transmission speed.

For details, refer to the following manual.

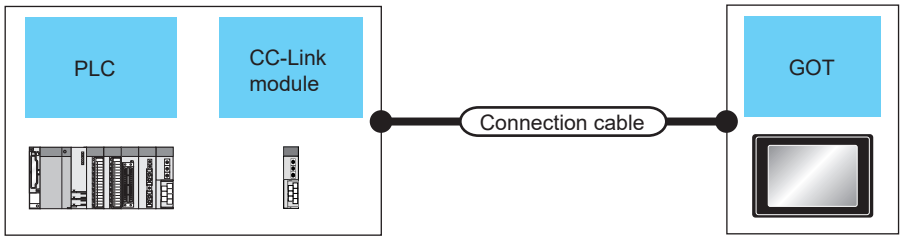
📖MELSEC iQ-R CC-Link System Master/Local Module User's Manual (Startup)

■Maximum number of connected devices

The following shows the number of connectable GOTs.

Controller	
Model	Number of connectable devices
MELSEC MX Controller (MX-R Model)	26 GOTs

Connection with CC-Link Ver.1/Ver.2 compatibles mixed



For details on the overall length, refer to the following.

☞ Page 1021 Overall length

For details on the maximum number of connected devices, refer to the following.

☞ Page 1021 Maximum number of connected devices

Controller	CC-Link module*1	Communication type	Connection cable	GOT	
				Interface	Model
MELSEC MX Controller (MX-R Model)	RJ61BT11	CC-Link (Ver.2)	CC-Link dedicated cable*2	GT37-IF2000 + GT15-J61BT13*3	GT37 SoftGOT3000
		CC-Link (Ver.1)	CC-Link dedicated cable*2	GT37-IF2000 + GT15-J61BT13*4	GT37 SoftGOT3000

*1 For the system configuration of the CC-Link module, refer to the following manual.
📖MELSEC iQ-R CC-Link System Master/Local Module User's Manual (Startup)

*2 For the specifications of the CC-Link dedicated cable and the contact information, refer to the following.
CC-Link Partner Association website: http://www.cc-link.org/

*3 In the controller settings, set the mode to Ver.2.
For details on settings, refer to the following.
☞ Page 1023 [Controller Setting]

*4 In the controller settings, set the mode to Ver.1.
For details on settings, refer to the following.
☞ Page 1023 [Controller Setting]

■Overall length

The maximum overall cable length and cable length between stations vary depending on the conditions such as the type of the cable used and the transmission speed.

For details, refer to the following manual.

📖MELSEC iQ-R CC-Link System Master/Local Module User's Manual (Startup)

■Maximum number of connected devices

The following shows the number of connectable GOTs.

Controller	
Model	Number of connectable devices
MELSEC MX Controller (MX-R Model)	26 GOTs

Connecting one PLC to multiple GOTs

When multiple GOT units are simultaneously accessing one PLC, the GOT writing process (transient/cyclic) and reading process (transient) may slow down.

This slow access can be remedied with the following countermeasures.

<Countermeasures>

■Improve response speed on PLC side

Insert a COM instruction on the PLC to increase the response speed.

Note that caution is required as the scan time will increase.

■Screen design using cyclic devices

Create the screen with cyclic devices instead of using transient devices.

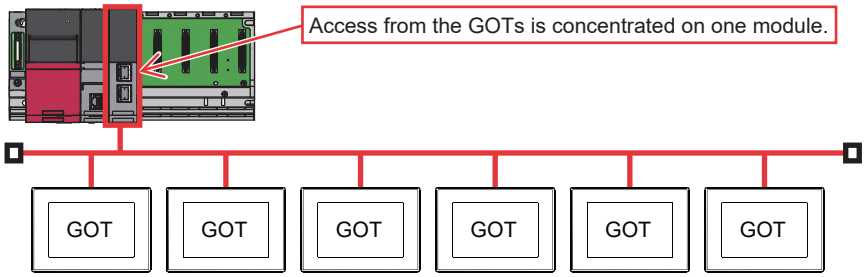
■Split GOT connection destinations into several systems

Add a master/local module to the PLC side, and split the GOT connection destinations into several systems.

Improve the current system configuration.

(Example of current system configuration)

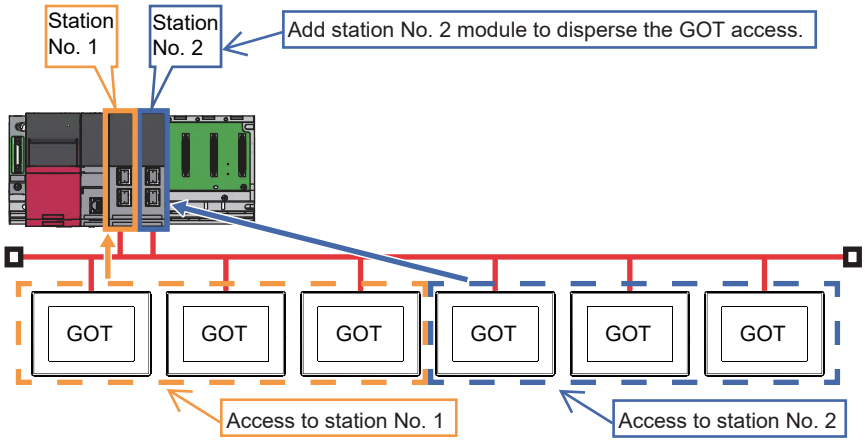
In the following system configuration, access from the GOT is concentrated on one module.



(Improvement measure)

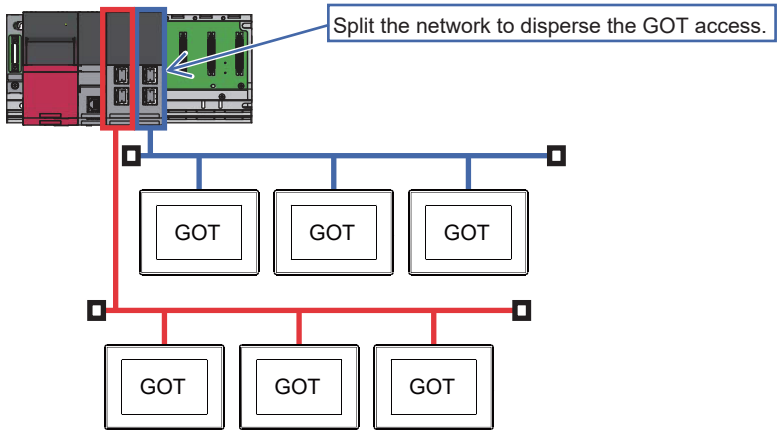
- Adding a module to the PLC side

Add a module to the PLC side to disperse the GOT access destinations.



- Split the network

Split the network to disperse the GOT access.



Precautions

■Starting the GOT in CC-Link connection (intelligent device station)

For the CC-Link connection (intelligent device station), the data link is started approximately 10 seconds after the GOT startup.

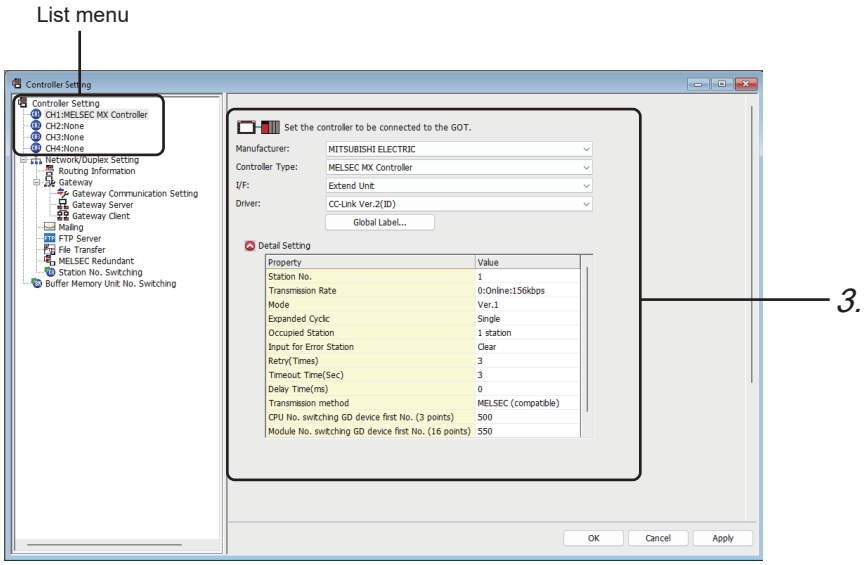
■When a network error occurs in the system alarm

In the CC-Link connection (intelligent device station), when a network error occurs in the system alarm, the system alarm display cannot be canceled even though the causes are removed.
To cancel the system alarm display, restart the GOT.

12.1.3 GOT side settings

[Controller Setting]

Set the channel of the connected controller.



Operating procedure

1. Select [Common] → [Controller Setting] from the menu.
2. In the [Controller Setting] window, select the channel number to be used from the list menu.
3. Set the following items.

Item	Description
[Manufacturer]	[MITSUBISHI ELECTRIC]
[Controller Type]	[MELSEC MX Controller]
[I/F]	[Extend Unit]
[Driver]	[CC-Link Ver.2 (ID)]
[Detail Setting]	Configure the settings according to the usage environment. ☞ Page 1024 [Detail Setting]

4. When you have completed the settings, click the [OK] button.

Point

The controller settings can be configured and checked in [I/F Communication Setting].
For details, refer to the following.
📖GT Designer3 (GOT3000) Screen Design Manual

■[Detail Setting]

Configure the settings according to the usage environment.

Detail Setting

Property	Value
Station No.	1
Transmission Rate	0:Online:156kbps
Mode	Ver.1
Expanded Cyclic	Single
Occupied Station	1 station
Input for Error Station	Clear
Retry(Times)	3
Timeout Time(Sec)	3
Delay Time(ms)	0
Transmission method	MELSEC (compatible)
CPU No. switching GD device first No. (3 points)	500
Module No. switching GD device first No. (16 points)	550

Item	Description	Range
[Station No.]	Set the station number of the GOT.	[1] to [64]
[Transmission Rate]*1	Set the transmission speed and a mode of the GOT.	[0] to [E]
[Mode]	Set the operation mode of the GOT.	[Ver.1], [Ver.2], [Additional], [Offline]
[Expanded Cyclic]	Set the cyclic point expansion.	[Single], [Double], [Quadruple], [Octuple]
[Occupied Station]	Set the number of stations occupied by the GOT.	[1 Station], [4 Stations]
[Input for Error Station]	Set whether to clear or hold the error at an error occurrence.	[Clear], [Hold]
[Retry]	Set the number of retries to be performed when a communication timeout occurs. When receiving no response after retries, the communication times out.	[0] times to [5] times
[Timeout Time]	Set the time period for a communication to time out.	[1] second to [90] seconds
[Delay Time]	Set this item to adjust the transmission timing of the communication request from the GOT.	[0] ms to [300] ms
[Transmission method]	Set the CC-Link transmission method.	[MELSEC (compatible)], [Cyclic]
[CPU No. switching GD device first No. (3 points)]	Set the start device number of the GD devices for CPU number switching. For details, refer to the following. ☞ Page 1025 Start device number of the GD devices for CPU number switching	[0] to [65520]
[Module No. switching GD device first No. (16 points)]	Set the start device number of the GD devices for module number switching. For details, refer to the following. ☞ Page 1026 Start device number of the GD devices for module number switching	[0] to [65520]
[Servo axis switching GD device first No. (16 points)]	Set the start device number of the GD devices for servo axis switching. For details, refer to the following. ☞ Page 1027 Start device number of the GD devices for servo axis switching	[0] to [65520]

*1 Transmission speed settings
The following lists the transmission speed settings of the CC-Link communication.

Setting value	Description
0	Online: 156 kbps
1	Online: 625 kbps
2	Online: 2.5 Mbps
3	Online: 5 Mbps
4	Online: 10 Mbps
5	Line test: 156 kbps
6	Line test: 625 kbps
7	Line test: 2.5 Mbps

Setting value	Description
8	Line test: 5 Mbps
9	Line test: 10 Mbps
A	Hardware test: 156 kbps
B	Hardware test: 625 kbps
C	Hardware test: 2.5 Mbps
D	Hardware test: 5 Mbps
E	Hardware test: 10 Mbps

For details on the hardware test, refer to the following manual.

📖MELSEC iQ-R CC-Link System Master/Local Module User's Manual (Startup)

Point

• Communication interface settings in the GT37 utility

The communication interface setting can be changed in [Communication setting] of the GT37 utility after writing [Controller Setting] in project data.

For details on the GT37 utility, refer to the following manual.

📖GOT3000 Series User's Manual (Utility & Maintenance Functions)

• Priority of the settings in [Controller Setting]

When settings are configured in GT Designer3 or the GT37 utility, the most recent settings are effective.

■Start device number of the GD devices for CPU number switching

• Indirect specification of a CPU number

[CPU No.] can be indirectly specified with the GOT internal registers (GD devices) by specifying a value (100 to 102) to [CPU No.] in the device setting dialog in GT Designer3.

Set the start device number of the GD devices to be used in [CPU No. switching GD device first No. (3 points)].

[CPU No.] is specified with three consecutive GD devices, starting from the set device number.

When [500] is set to [CPU No. switching GD device first No. (3 points)], GD500 to GD502 are used to specify [CPU No.] as shown in the following table.

CPU No.	GD device	Setting range
100	GD500	1 to 4 Setting a value outside the range causes a communication timeout error. Specifying a nonexistent CPU number or a CPU number not supporting a multiple CPU system with a device causes a controller error.
101	GD501	
102	GD502	

• Indirect specification of a CPU number on the initially displayed screen

Set [CPU No. switching GD device first No. (3 points)] so that the values of the GD devices are retained and monitored upon the GOT startup.

• Indirect specification of a CPU number for multi-channel connection

If the setting range of [CPU No. switching GD device first No. (3 points)] set for each channel overlaps, the monitoring target CPU number set to each channel is switched simultaneously.

Set [CPU No. switching GD device first No. (3 points)] for each channel so that the setting range does not overlap.

• Indirect specification of a station number and a CPU number for multi-channel connection

When GD10 to GD25 are used to specify the station number of an inverter or non-Mitsubishi temperature controller connected, setting [10] to [CPU No. switching GD device first No. (3 points)] in a different channel switches the monitoring target CPU number and station number of an inverter or non-Mitsubishi temperature controller set to each channel simultaneously.

Set [CPU No. switching GD device first No. (3 points)] so that the setting range does not overlap the station number of an inverter or non-Mitsubishi temperature controller.

■Start device number of the GD devices for module number switching

• Indirect specification of a module number

For connection via a Simple Motion module, [Unit No.] can be specified with the GOT internal registers (GD devices) by specifying a value (100 to 10F) to [Unit No.] in the device setting dialog in GT Designer3.

Set the start device number of the GD devices to be used in [Module No. switching GD device first No. (16 points)].

[Unit No.] is specified with 16 consecutive GD devices, starting from the set device number.

When [550] is set to [Module No. switching GD device first No. (16 points)], GD550 to GD565 are used to specify [Unit No.] as shown in the following table.

Module No.	GD device	Setting range
100	GD550	00 to FF Setting a value outside the above range causes a device range error.
101	GD551	
102	GD552	
103	GD553	
104	GD554	
105	GD555	
106	GD556	
107	GD557	
108	GD558	
109	GD559	
10A	GD560	
10B	GD561	
10C	GD562	
10D	GD563	
10E	GD564	
10F	GD565	

• Indirect specification of a module number on the initially displayed screen

Set [Module No. switching GD device first No. (16 points)] so that the values of the GD devices are retained and monitored upon the GOT startup.

• Indirect specification of a module number for multi-channel connection

If the setting range of [Module No. switching GD device first No. (16 points)] set for each channel overlaps, the module number of the Simple Motion module via the servo amplifier device of each channel is switched simultaneously.

Set [Module No. switching GD device first No. (16 points)] for each channel so that the setting range does not overlap.

• Indirect specification of a station number and a module number for multi-channel connection

When GD10 to GD25 are used to specify the station number of an inverter or non-Mitsubishi temperature controller connected, setting [10] to [Module No. switching GD device first No. (16 points)] switches the module number of the Simple Motion module via the servo amplifier device and the station number of an inverter or non-Mitsubishi temperature controller set to each channel simultaneously.

Set [Module No. switching GD device first No. (16 points)] so that the setting range does not overlap the station number of an inverter or non-Mitsubishi temperature controller.

■Start device number of the GD devices for servo axis switching

• Indirect specification of a servo axis number

For connection via a Motion CPU or Simple Motion module, a servo axis number can be indirectly specified with GOT internal registers (GD devices) by specifying a value (100 to 115) to the axis number of the servo amplifier device.

Set the start device number of the GD devices to be used in [Servo axis switching GD device first No. (16 points)].

Specify a servo axis number with 16 consecutive GD devices, starting the set device number.

When [10] is set to [Servo axis switching GD device first No. (16 points)], GD10 to GD25 are used to specify a servo axis number as shown in the following table.

Servo axis No.	GD device	Setting range
100	GD10	1 to 64 Setting a value outside the above range causes a device range error.
101	GD11	
102	GD12	
103	GD13	
104	GD14	
105	GD15	
106	GD16	
107	GD17	
108	GD18	
109	GD19	
110	GD20	
111	GD21	
112	GD22	
113	GD23	
114	GD24	
115	GD25	

• Indirect specification of a servo axis number on the initially displayed screen

Set [Servo axis switching GD device first No. (16 points)] so that the values of the GD devices are retained and monitored upon the GOT startup.

• Indirect specification of a servo axis number for multi-channel connection

If the setting rage of [Servo axis switching GD device first No. (16 points)] set for each channel overlaps, the axis number of the servo amplifier of each channel is switched simultaneously.

Set [Servo axis switching GD device first No. (16 points)] for each channel so that the setting range does not overlap.

• Indirect specification of a station number and a servo axis number for multi-channel connection

When GD10 to GD25 are used to specify the station number of an inverter or non-Mitsubishi temperature controller connected, setting [10] to [Servo axis switching GD device first No. (16 points)] switches the axis number of the servo amplifier and the station number of an inverter or non-Mitsubishi temperature controller set to each channel simultaneously.

Set [Servo axis switching GD device first No. (16 points)] so that the setting range does not overlap the station number of an inverter or non-Mitsubishi temperature controller.

Precautions

■Using cyclic transmission

• I/O signals for the master station

Do not turn on the reserved output signals in the output signals (remote output: RY) to the GOT from the master station.

When the reserved output signal is turned on, the PLC system may malfunction.

For the assignment of I/O signals in the GOT, refer to the following manuals.

📖MODEL GT15-J61BT13 CC-Link communication unit User's Manual

📖GT15 CC-Link communication unit User's Manual

• Access range for monitoring

The remote I/O (RX and RY) and remote register (RWr and RWw) monitoring ranges vary depending on the mode of the master station in the CC-Link system.

Mode of master station	Monitoring	
	Data for each station compatible with CC-Link Ver.1	Data for each station compatible with CC-Link Ver.2
Remote network mode	○	—
Remote network Ver.1 mode	○	—
Remote network Ver.2 mode	○	○*1
Remote network additional mode	○	○

○: Available, ×: Not available (All "0"), —: System configuration not available

*1 Monitoring is available only when the GT15-J61BT13 CC-Link communication unit is used.

• When the GOT malfunctions

The state of cyclic output before fault is held.

■Connection with CC-Link Ver.1 compatible

For connection with CC-Link Ver.1 compatible, the device setting must be configured within the range of the specifications of the controller.

When a device number out of the range is set, proper monitoring may not be possible.

12.1.4 PLC side settings

Model		Reference
MELSEC MX Controller (MX-R Model)	MXR300-16 MXR300-32 MXR300-64	☞ Page 1030 Connection to MELSEC MX Controller (MX-R Model) with Ver.1 compatible ☞ Page 1032 Connection to MELSEC MX Controller (MX-R Model) with Ver.2 compatible ☞ Page 1035 Connection to MELSEC MX Controller (MX-R Model) with Ver.1/Ver.2 compatibles mixed
	MXR500-128 MXR500-256	

The GOT operates as the stations with the following specifications in the CC-Link system.

Station information	Description
Station type	Intelligent device station, Ver.1 intelligent device station, or Ver.2 intelligent device station
Number of stations occupied	1 station or 4 stations

Point

Number of stations occupied

The number of stations occupied is the setting for determining the number of link device points (RX/RY/RWw/RWr) used by the GOT.

To use multiple numbers of link device points in cyclic transmission between the GOT and CC-Link module, set the number of stations occupied as 4 stations occupied.

The number of link device points when 1 station occupied or 4 stations occupied is shown below.

- CC-Link Ver.2

Link device	Extended cyclic setting							
	Single		Double		Quadruple		Octuple	
	1 station occupied	4 stations occupied	1 station occupied	4 stations occupied	1 station occupied	4 stations occupied	1 station occupied	4 stations occupied
Remote input (RX)	32 points	128 points	32 points	224 points	64 points	448 points	128 points	896 points
Remote output (RY)	32 points	128 points	32 points	224 points	64 points	448 points	128 points	896 points
Remote register (RWw)	4 points	16 points	8 points	32 points	16 points	64 points	32 points	128 points
Remote register (RWr)	4 points	16 points	8 points	32 points	16 points	64 points	32 points	128 points

- CC-Link Ver.1

Link device	Number of stations occupied	
	1 station occupied	4 stations occupied
Remote input (RX)	32 points	128 points
Remote output (RY)	32 points	128 points
Remote register (RWw)	4 points	16 points
Remote register (RWr)	4 points	16 points

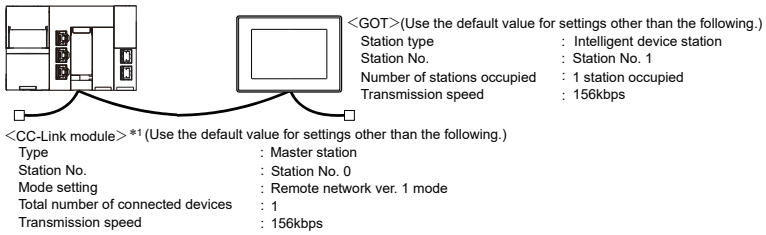
Connection to MELSEC MX Controller (MX-R Model) with Ver.1 compatible

This section describes the setting method of the GOT and the Ver.1 compatible CC-Link module (MELSEC MX Controller (MX-R Model)) in the system configuration shown below.

Point

CC-Link module (MELSEC MX Controller (MX-R Model))
For details on the CC-Link module (MELSEC MX Controller (MX-R Model)), refer to the following manual.
MELSEC iQ-R CC-Link System Master/Local Module User's Manual (Startup)

■System configuration



*1 The CC-Link module is mounted on slot 0 of the base unit.
The start I/O number of the CC-Link module is set to "0".

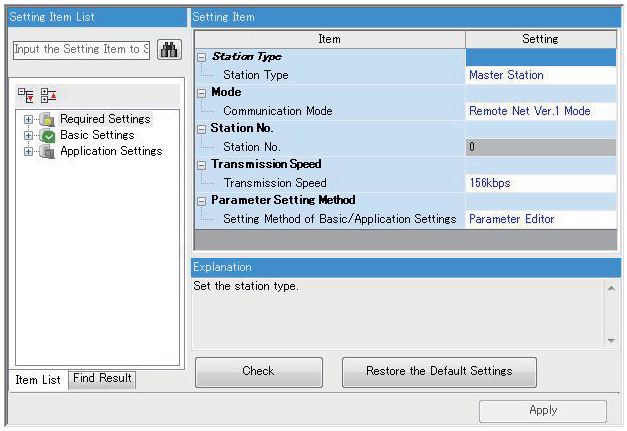
Point

When the switch setting has been changed
Turn off then on or reset the PLC CPU.

■Module parameter settings of GX Works3

- [Module Parameter] of GX Works3

Module parameter

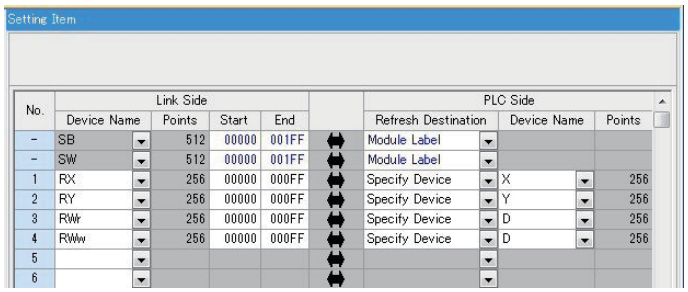


○: Necessary, △: As necessary, —: Not necessary

Item	Setting value	Setting for GOT connection
[Station Type]	Master station	○
[Mode]	Remote network Ver.1 mode	○
[Station No.]	0 (fixed)	△
[Transmission Speed]*1	156 kbps	○
[Parameter Setting Method]	Set in parameter	—

*1 Adjust the settings with the GOT settings.

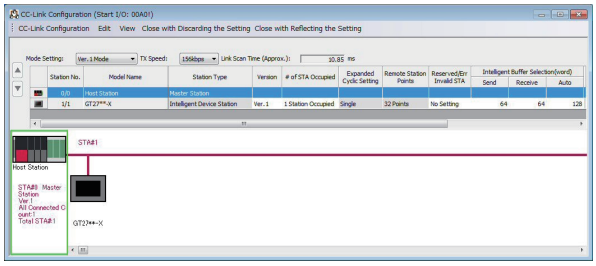
Link refresh setting



○: Necessary, △: As necessary, —: Not necessary

Item	Setting value	Setting for GOT connection
[Special relay (SB) refresh device]	—	△
[Special register (SW) refresh device]	—	△
[Remote input (RX) refresh device]	Set this item as necessary.	△
[Remote output (RY) refresh device]		△
[Remote register (RWr) refresh device]		△

CC-Link configuration setting



○: Necessary, △: As necessary, —: Not necessary

Item*1	Setting value	Setting for GOT connection
[Station Type]	Intelligent device station (fixed)	○
[# of STA Occupied]*2	1 station occupied	○
[Reserved/Err Invalid STA]	No setting	○
[Intelligent Buffer Selection(word)]	(Use default value)	—

*1 When the [Mode] of the CC-Link module is set to [Remote Net Ver.1 Mode], [Remote Station Points] cannot be set.
*2 Set the same setting as that of the GOT.

Point

When changing the module parameter
After writing module parameters to the PLC CPU, turn off then on or reset the PLC CPU.

■[Controller Setting] in GT Designer3

Item	Setting value
[Station No.]	1: Station No. 1
[Transmission Rate]	0: Online 156 kbps
[Mode]	Ver.1: Remote network Ver.1 mode
[Expanded Cyclic]	Single (Use default value)
[Occupied Station]	1 station
[Input for Error Station]	0: Clear
[Retry]	3 (Use default value)
[Timeout Time]	3 (Use default value)
[Delay Time]	0 (Use default value)
[Transmission method]	MELSEC (compatible)

Point

[Controller Setting] in GT Designer3

For the setting method of [Controller Setting] in GT Designer3, refer to the following.

☞ Page 1023 [Controller Setting]

Connection to MELSEC MX Controller (MX-R Model) with Ver.2 compatible

This section describes the setting method of the GOT and the Ver.2 compatible CC-Link module (MELSEC MX Controller (MX-R Model)) in the system configuration shown below.

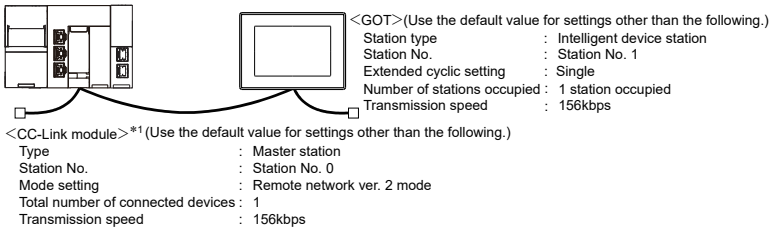
Point

CC-Link module (MELSEC MX Controller (MX-R Model))

For details on the CC-Link module (MELSEC MX Controller (MX-R Model)), refer to the following manual.

📖MELSEC iQ-R CC-Link System Master/Local Module User's Manual (Startup)

■System configuration



*1 The CC-Link module is mounted on slot 0 of the base unit.
The start I/O number of the CC-Link module is set to "0".

Point

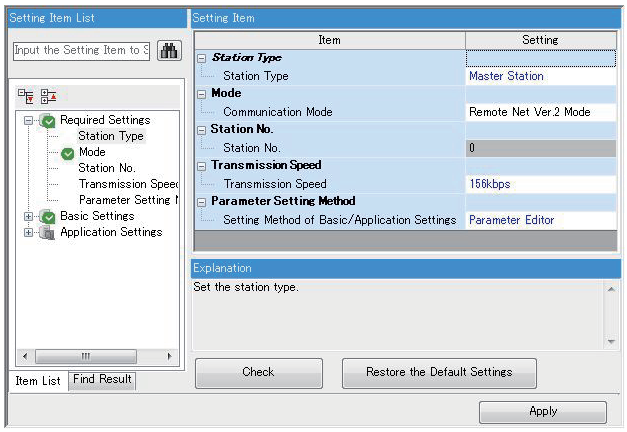
When the switch setting has been changed

Turn off then on or reset the PLC CPU.

■Module parameter settings of GX Works3

- [Module Parameter] of GX Works3

Module parameter

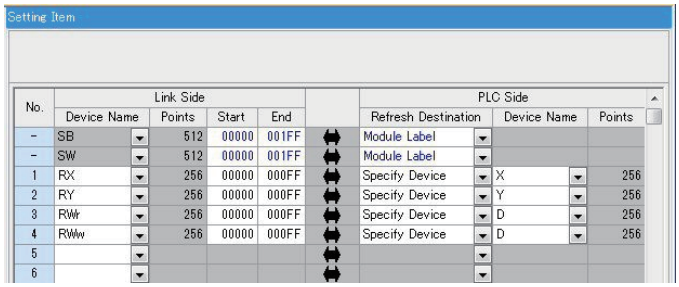


○: Necessary, △: As necessary, —: Not necessary

Item	Setting value	Setting for GOT connection
[Station Type]	Master station	○
[Mode]	Remote network Ver.1 mode	○
[Station No.]	0 (fixed)	△
[Transmission Speed]*1	156 kbps	○
[Parameter Setting Method]	Set in parameter	—

*1 Adjust the settings with the GOT settings.

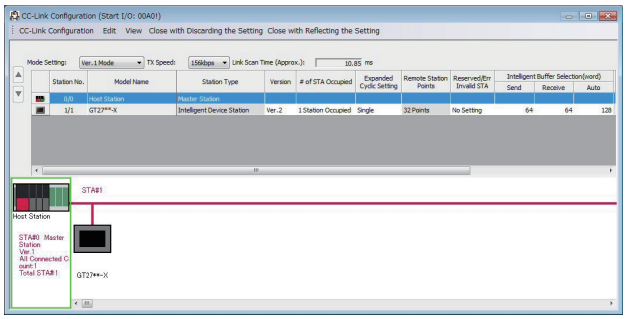
Link refresh setting



○: Necessary, △: As necessary, —: Not necessary

Item	Setting value	Setting for GOT connection
[Special relay (SB) refresh device]	—	△
[Special register (SW) refresh device]	—	△
[Remote input (RX) refresh device]	Set this item as necessary.	△
[Remote output (RY) refresh device]		△
[Remote register (RWr) refresh device]		△

CC-Link configuration setting



○: Necessary, △: As necessary, —: Not necessary

Item*1	Setting value	Setting for GOT connection
[Station Type]	Ver.2 intelligent device station (fixed)	○
[Expanded Cyclic Setting]*2	Single	○
[# of STA Occupied]*2	1 station occupied	○
[Remote Station Points]	32 points (fixed)	○
[Reserved/Err Invalid STA]	No setting	○
[Intelligent Buffer Selection(word)]	(Use default value)	—

*1 When the [Mode] of the CC-Link module is set to [Remote Net Ver.1 Mode], [Remote Station Points] cannot be set.
*2 Set the same setting as that of the GOT.

Point

When changing the module parameter
After writing module parameters to the PLC CPU, turn off then on or reset the PLC CPU.

■[Controller Setting] in GT Designer3

Item	Setting value
[Station No.]	1: Station No. 1
[Transmission Rate]	0: Online 156 kbps
[Mode]	Ver.1: Remote network Ver.1 mode
[Expanded Cyclic]	Single (Use default value)
[Occupied Station]	1 station
[Input for Error Station]	0: Clear
[Retry]	3 (Use default value)
[Timeout Time]	3 (Use default value)
[Delay Time]	0 (Use default value)
[Transmission method]	MELSEC (compatible)

Point

[Controller Setting] in GT Designer3
For the setting method of [Controller Setting] in GT Designer3, refer to the following.
☞ Page 1023 [Controller Setting]

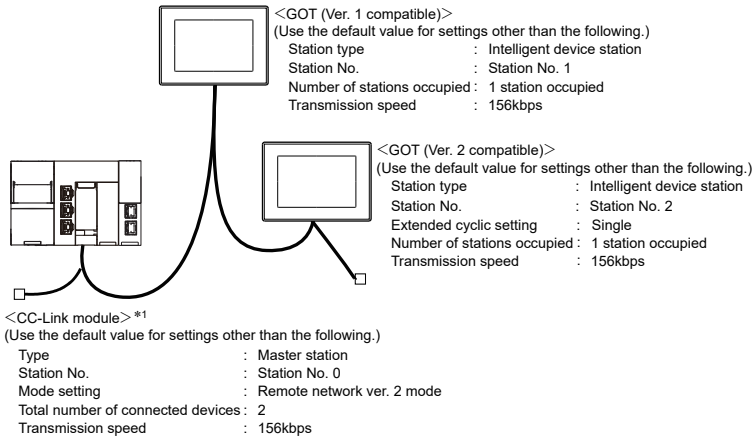
Connection to MELSEC MX Controller (MX-R Model) with Ver.1/Ver.2 compatibles mixed

This section describes the setting method of the GOT and the CC-Link module (MELSEC MX Controller (MX-R Model)) when Ver.1/Ver.2 compatible modules are mixed in the system configuration shown below.

Point

CC-Link module (MELSEC MX Controller (MX-R Model))
For details on the CC-Link module (MELSEC MX Controller (MX-R Model)), refer to the following manual.
MELSEC iQ-R CC-Link System Master/Local Module User's Manual (Startup)

■System configuration

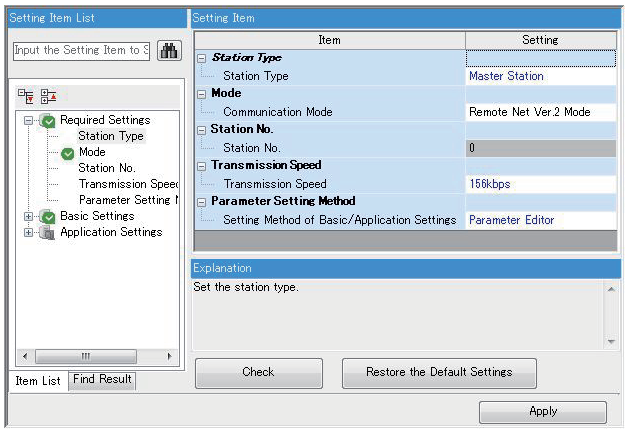


*1 The CC-Link module is mounted on slot 0 of the base unit.
The start I/O number of the CC-Link module is set to "0".

■Module parameter settings of GX Works3

- [Module Parameter] of GX Works3

Module parameter

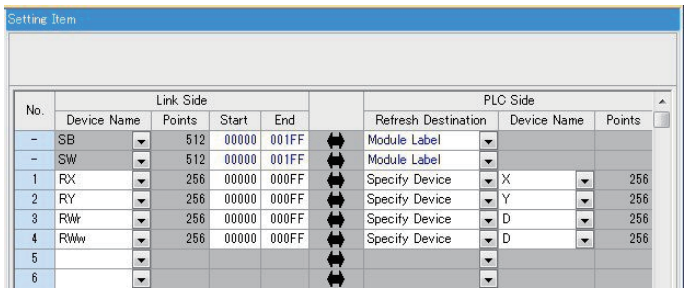


○: Necessary, △: As necessary, —: Not necessary

Item	Setting value	Setting for GOT connection
[Station Type]	Master station	○
[Mode]	Remote network Ver.1 mode	○
[Station No.]	0 (fixed)	△
[Transmission Speed]*1	156 kbps	○
[Parameter Setting Method]	Set in parameter	—

*1 Adjust the settings with the GOT settings.

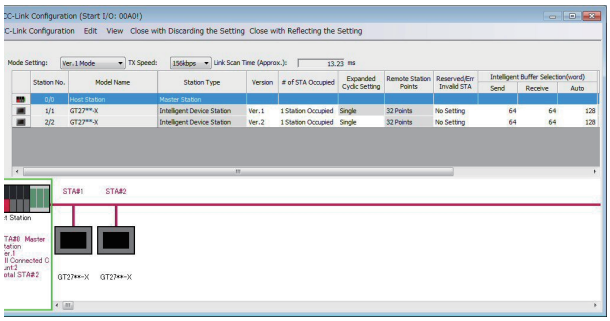
Link refresh setting



○: Necessary, △: As necessary, —: Not necessary

Item	Setting value	Setting for GOT connection
[Special relay (SB) refresh device]	—	△
[Special register (SW) refresh device]	—	△
[Remote input (RX) refresh device]	Set this item as necessary.	△
[Remote output (RY) refresh device]		△
[Remote register (RWr) refresh device]		△

CC-Link configuration setting



CC-Link configuration setting of station No. 1 (GOT)

○: Necessary, △: As necessary, —: Not necessary

Item*1	Setting value	Setting for GOT connection
[Station Type]	Ver.1 intelligent device station (fixed)	○
[# of STA Occupied]*2	1 station occupied	○
[Reserved/Err Invalid STA]	No setting	○
[Intelligent Buffer Selection(word)]	(Use default value)	—

CC-Link configuration setting of station No. 2 (GOT)

○: Necessary, △: As necessary, —: Not necessary

Item*1	Setting value	Setting for GOT connection
[Station Type]	Ver.2 intelligent device station (fixed)	○
[Expanded Cyclic Setting]*2	Single	○
[# of STA Occupied]*2	1 station occupied	○
[Reserved/Err Invalid STA]	No setting	○
[Intelligent Buffer Selection(word)]	(Use default value)	—

*1 When the [Mode] of the CC-Link module is set to [Remote Net Ver.2 Mode], [Remote Station Points] can be set.
[Remote Station Points] is a setting for the remote I/O station.
The default value (32 points) must be used on the GOT.

*2 Set the same setting as that of the GOT.

Point

When changing the module parameter

After writing module parameters to the PLC CPU, turn off then on or reset the PLC CPU.

■[Controller Setting] in GT Designer3

- Communication settings of station No. 1 (GOT)

Item	Setting value
[Station No.]	1: Station No. 1
[Transmission Rate]	0: Online 156 kbps
[Mode]	Ver.1: Remote network Ver.1 mode
[Expanded Cyclic]	Single (Use default value)
[Occupied Station]	1 station
[Input for Error Station]	0: Clear
[Retry]	3 (Use default value)
[Timeout Time]	3 (Use default value)
[Delay Time]	0 (Use default value)
[Transmission method]	MELSEC (compatible)

- Communication settings of station No. 2 (GOT)

Item	Setting value
[Station No.]	2: Station No. 2
[Transmission Rate]	0: Online 156 kbps
[Mode]	Ver.2: Remote network Ver.2 mode
[Expanded Cyclic]	Single
[Occupied Station]	1 station
[Input for Error Station]	0: Clear
[Retry]	3 (Use default value)
[Timeout Time]	3 (Use default value)
[Delay Time]	0 (Use default value)
[Transmission method]	MELSEC (compatible)

12.1.5 Access range for monitoring

Only the connected CPU can be accessed.

12.2 MELSEC MX Controller (MX-F Model) (CC-Link connection (intelligent device station))

☞ Page 1038 Connectable devices
☞ Page 1038 System configuration
☞ Page 1042 GOT side settings
☞ Page 1048 PLC side settings
☞ Page 1051 Access range for monitoring

12.2.1 Connectable devices

The following table shows the connectable models.

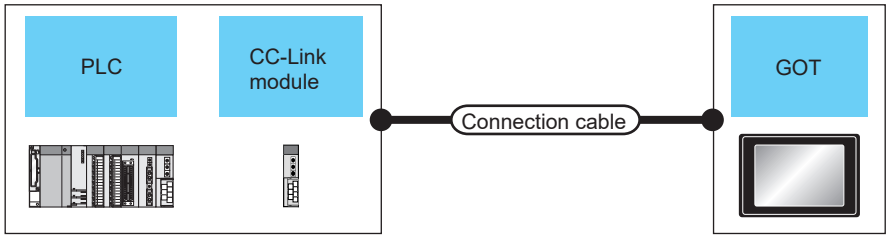
○: Supported, —: Not supported

Controller	Model	Clock	CC-Link module	Connectable model
MELSEC MX Controller (MX-F Model)	MXF100-8-N32 MXF100-8-P32 MXF100-16-N32 MXF100-16-P32	○	FX5-CCL-MS*1	GT37 SoftGOT3000

*1 When the FX5-CCL-MS is used, the bus conversion module (FX5-CNV-BUS) is required.

12.2.2 System configuration

Connection with CC-Link Ver.1 compatible



For details on the overall length, refer to the following.

☞ Page 1039 Overall length

For details on the maximum number of connected devices, refer to the following.

☞ Page 1039 Maximum number of connected devices

Controller	CC-Link module*1	Communication type	Connection cable	GOT	
				Interface	Model
MELSEC MX Controller (MX-F Model)	FX5-CCL-MS*4	CC-Link (Ver.1)	CC-Link dedicated cable*2	GT37-IF2000 + GT15-J61BT13*3	GT37 SoftGOT3000

*1 For the system configuration of the CC-Link module, refer to the following manual.
MELSEC iQ-F FX5 CC-Link System Master/Intelligent Device Module User's Manual
*2 For the specifications of the CC-Link dedicated cable and the contact information, refer to the following.
CC-Link Partner Association website: http://www.cc-link.org/
*3 In the controller settings, set the mode to Ver.1.
For details on settings, refer to the following.
☞ Page 1042 [Controller Setting]
*4 When the FX5-CCL-MS is used, the bus conversion module (FX5-CNV-BUS) is required.

■Overall length

The maximum overall cable length and cable length between stations vary depending on the conditions such as the type of the cable used and the transmission speed.

For details, refer to the following manual.

📖MELSEC iQ-F FX5 CC-Link System Master/Intelligent Device Module User's Manual

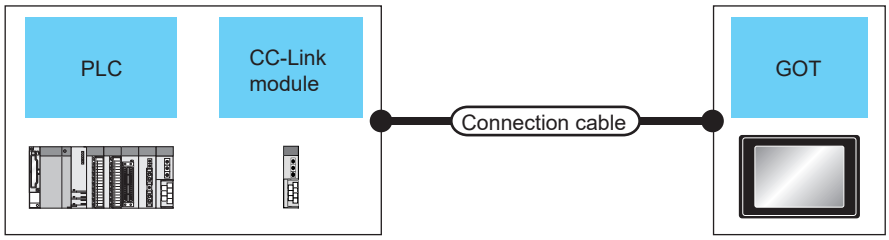
■Maximum number of connected devices

The following shows the number of connectable GOTs.

Controller	
Model	**Number of connectable devices**
MELSEC MX Controller (MX-F Model)	8 GOTs

PART 3

Connection with CC-Link Ver.2 compatible



For details on the overall length, refer to the following.

☞ Page 1039 Overall length

For details on the maximum number of connected devices, refer to the following.

☞ Page 1039 Maximum number of connected devices

Controller	CC-Link module*1	Communication type	Connection cable	GOT	
				Interface	Model
MELSEC MX Controller (MX-F Model)	FX5-CCL-MS*4	CC-Link (Ver.2)	CC-Link dedicated cable*2	GT37-IF2000 + GT15-J61BT13*3	GT37 SoftGOT3000

*1 For the system configuration of the CC-Link module, refer to the following manual.
📖MELSEC iQ-F FX5 CC-Link System Master/Intelligent Device Module User's Manual

*2 For the specifications of the CC-Link dedicated cable and the contact information, refer to the following.
CC-Link Partner Association website: http://www.cc-link.org/

*3 In the controller settings, set the mode to Ver.2.
For details on settings, refer to the following.
☞ Page 1042 [Controller Setting]

*4 When the FX5-CCL-MS is used, the bus conversion module (FX5-CNV-BUS) is required.

■Overall length

The maximum overall cable length and cable length between stations vary depending on the conditions such as the type of the cable used and the transmission speed.

For details, refer to the following manual.

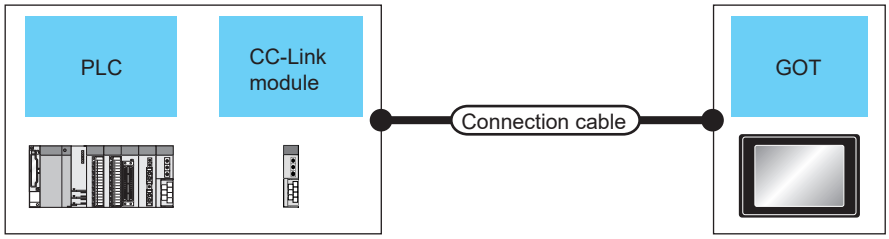
📖MELSEC iQ-F FX5 CC-Link System Master/Intelligent Device Module User's Manual

■Maximum number of connected devices

The following shows the number of connectable GOTs.

Controller	
Model	**Number of connectable devices**
MELSEC MX Controller (MX-F Model)	8 GOTs

Connection with CC-Link Ver.1/Ver.2 compatibles mixed



For details on the overall length, refer to the following.

☞ Page 1040 Overall length

For details on the maximum number of connected devices, refer to the following.

☞ Page 1040 Maximum number of connected devices

Controller	CC-Link module*1	Communication type	Connection cable	GOT	
				Interface	Model
MELSEC MX Controller (MX-F Model)	FX5-CCL-MS*4	CC-Link (Ver.2)	CC-Link dedicated cable*2	GT37-IF2000 + GT15-J61BT13*3	GT37 SoftGOT3000

*1 For the system configuration of the CC-Link module, refer to the following manual.
MELSEC iQ-F FX5 CC-Link System Master/Intelligent Device Module User's Manual

*2 For the specifications of the CC-Link dedicated cable and the contact information, refer to the following.
CC-Link Partner Association website: http://www.cc-link.org/

*3 In the controller settings, set the mode to Ver.1.
For details on settings, refer to the following.
☞ Page 1042 [Controller Setting]

*4 When the FX5-CCL-MS is used, the bus conversion module (FX5-CNV-BUS) is required.

■Overall length

The maximum overall cable length and cable length between stations vary depending on the conditions such as the type of the cable used and the transmission speed.

For details, refer to the following manual.

MELSEC iQ-F FX5 CC-Link System Master/Intelligent Device Module User's Manual

■Maximum number of connected devices

The following shows the number of connectable GOTs.

Controller	
Model	Number of connectable devices
MELSEC MX Controller (MX-F Model)	8 GOTs

Connecting one PLC to multiple GOTs

When multiple GOT units are simultaneously accessing one PLC, the GOT writing process (transient/cyclic) and reading process (transient) may slow down.

This slow access can be remedied with the following countermeasures.

<Countermeasures>

■Improve response speed on PLC side

Insert a COM instruction on the PLC to increase the response speed.

Note that caution is required as the scan time will increase.

■Screen design using cyclic devices

Create the screen with cyclic devices instead of using transient devices.

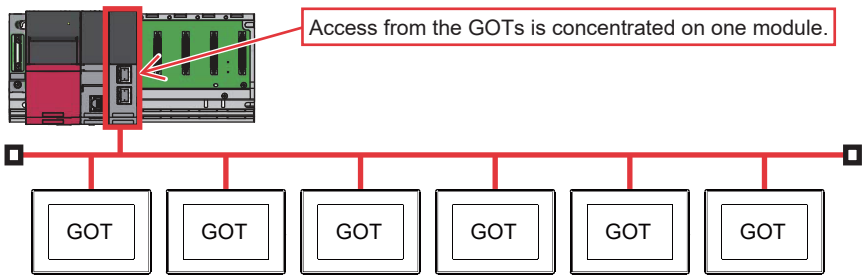
■Split GOT connection destinations into several systems

Add a master/local module to the PLC side, and split the GOT connection destinations into several systems.

Improve the current system configuration.

(Example of current system configuration)

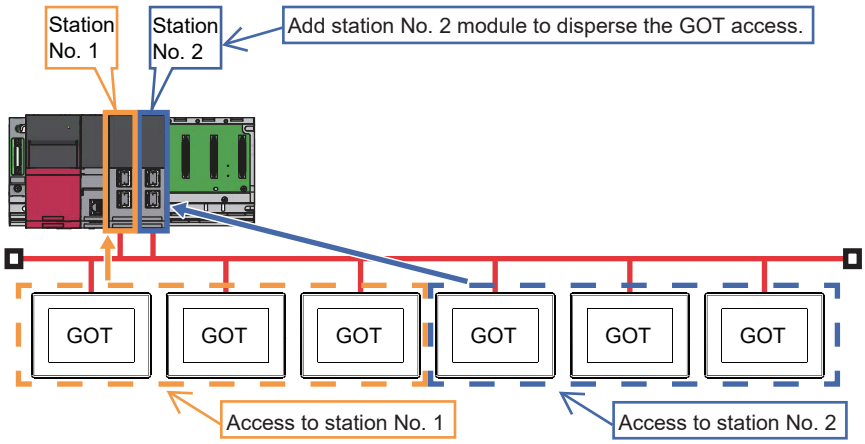
In the following system configuration, access from the GOT is concentrated on one module.



(Improvement measure)

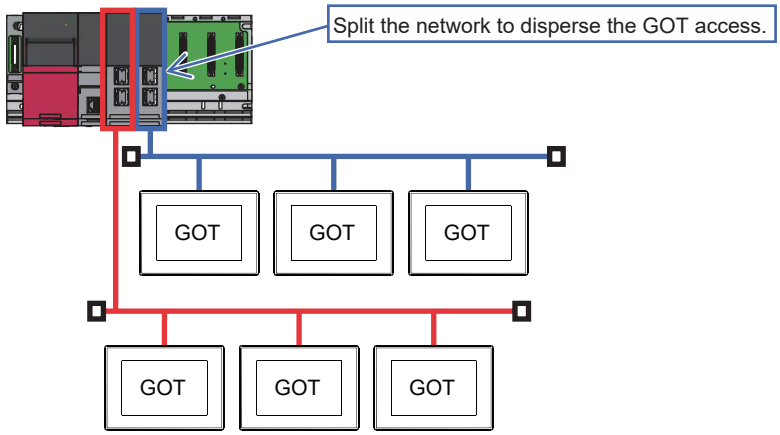
- Adding a module to the PLC side

Add a module to the PLC side to disperse the GOT access destinations.



- Split the network

Split the network to disperse the GOT access.



Precautions

■Starting the GOT in CC-Link connection (intelligent device station)

For the CC-Link connection (intelligent device station), the data link is started approximately 10 seconds after the GOT startup.

■When a network error occurs in the system alarm

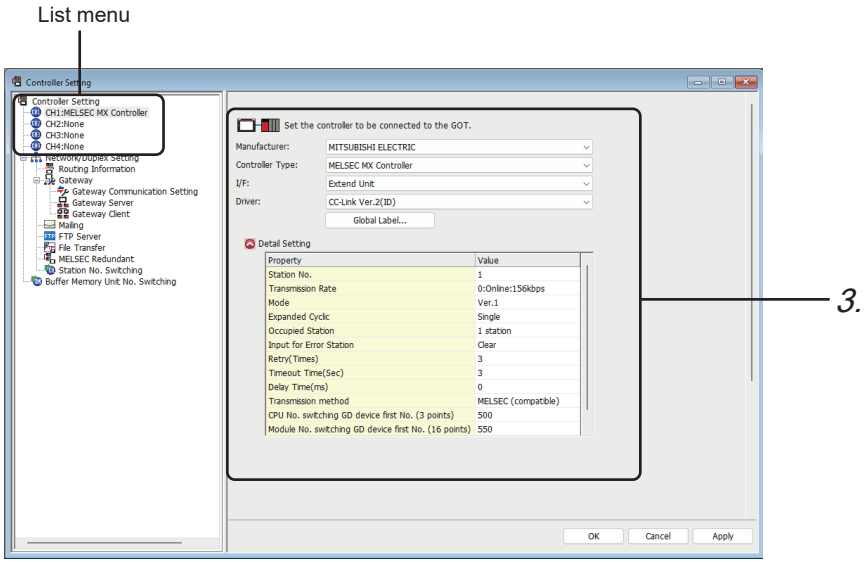
In the CC-Link connection (intelligent device station), when a network error occurs in the system alarm, the system alarm display cannot be canceled even though the causes are removed.

To cancel the system alarm display, restart the GOT.

12.2.3 GOT side settings

[Controller Setting]

Set the channel of the connected controller.



Operating procedure

1. Select [Common] → [Controller Setting] from the menu.

2. In the [Controller Setting] window, select the channel number to be used from the list menu.

3. Set the following items.

Item	Description
[Manufacturer]	[MITSUBISHI ELECTRIC]
[Controller Type]	[MELSEC MX Controller]
[I/F]	[Extend Unit]
[Driver]	[CC-Link Ver.2 (ID)]
[Detail Setting]	Configure the settings according to the usage environment. ☞ Page 1043 [Detail Setting]

4. When you have completed the settings, click the [OK] button.

Point

The controller settings can be configured and checked in [I/F Communication Setting].
For details, refer to the following.
📖GT Designer3 (GOT3000) Screen Design Manual

■[Detail Setting]

Configure the settings according to the usage environment.

Detail Setting

Property	Value
Station No.	1
Transmission Rate	0:Online:156kbps
Mode	Ver.1
Expanded Cyclic	Single
Occupied Station	1 station
Input for Error Station	Clear
Retry(Times)	3
Timeout Time(Sec)	3
Delay Time(ms)	0
Transmission method	MELSEC (compatible)
CPU No. switching GD device first No. (3 points)	500
Module No. switching GD device first No. (16 points)	550

Item	Description	Range
[Station No.]	Set the station number of the GOT.	[1] to [64]
[Transmission Rate]*1	Set the transmission speed and a mode of the GOT.	[0] to [E]
[Mode Setting]	Set the operation mode of the GOT.	[Ver.1], [Ver.2], [Additional], [Offline]
[Expanded Cyclic]	Set the cyclic point expansion.	[Single], [Double], [Quadruple], [Octuple]
[Occupied Station]	Set the number of stations occupied by the GOT.	[1 Station], [4 Stations]
[Input for Error Station]	Set whether to clear or hold the error at an error occurrence.	[Clear], [Hold]
[Retry]	Set the number of retries to be performed when a communication timeout occurs. When receiving no response after retries, the communication times out.	[0] times to [5] times
[Timeout Time]	Set the time period for a communication to time out.	[1] second to [90] seconds
[Delay Time]	Set this item to adjust the transmission timing of the communication request from the GOT.	[0] ms to [300] ms
[Transmission method]*2	Set the CC-Link transmission method.	[MELSEC (compatible)], [Cyclic]
[CPU No. switching GD device first No. (3 points)]	Set the start device number of the GD devices for CPU number switching. For details, refer to the following. ☞ Page 1044 Start device number of the GD devices for CPU number switching	[0] to [65520]
[Module No. switching GD device first No. (16 points)]	Set the start device number of the GD devices for module number switching. For details, refer to the following. ☞ Page 1045 Start device number of the GD devices for module number switching	[0] to [65520]
[Servo axis switching GD device first No. (16 points)]	Set the start device number of the GD devices for servo axis switching. For details, refer to the following. ☞ Page 1046 Start device number of the GD devices for servo axis switching	[0] to [65520]

*1 Transmission speed settings

The following lists the transmission speed settings of the CC-Link communication.

Setting value	Description
0	Online: 156 kbps
1	Online: 625 kbps
2	Online: 2.5 Mbps
3	Online: 5 Mbps
4	Online: 10 Mbps
5	Line test: 156 kbps
6	Line test: 625 kbps
7	Line test: 2.5 Mbps

Setting value	Description
8	Line test: 5 Mbps
9	Line test: 10 Mbps
A	Hardware test: 156 kbps
B	Hardware test: 625 kbps
C	Hardware test: 2.5 Mbps
D	Hardware test: 5 Mbps
E	Hardware test: 10 Mbps

For details on the hardware test, refer to the following manual.

📖MELSEC iQ-F FX5 CC-Link System Master/Intelligent Device Module User's Manual

*2 Set the transmission method to [Cyclic].

Point

• Communication interface settings in the GT37 utility

The communication interface setting can be changed in [Communication setting] of the GT37 utility after writing [Controller Setting] in project data.

For details on the GT37 utility, refer to the following manual.

📖GOT3000 Series User's Manual (Utility & Maintenance Functions)

• Priority of the settings in [Controller Setting]

When settings are configured in GT Designer3 or the GT37 utility, the most recent settings are effective.

■Start device number of the GD devices for CPU number switching

• Indirect specification of a CPU number

[CPU No.] can be indirectly specified with the GOT internal registers (GD devices) by specifying a value (100 to 102) to [CPU No.] in the device setting dialog in GT Designer3.

Set the start device number of the GD devices to be used in [CPU No. switching GD device first No. (3 points)].

[CPU No.] is specified with three consecutive GD devices, starting from the set device number.

When [500] is set to [CPU No. switching GD device first No. (3 points)], GD500 to GD502 are used to specify [CPU No.] as shown in the following table.

CPU No.	GD device	Setting range
100	GD500	1 to 4 Setting a value outside the range causes a communication timeout error. Specifying a nonexistent CPU number or a CPU number not supporting a multiple CPU system with a device causes a controller error.
101	GD501	
102	GD502	

• Indirect specification of a CPU number on the initially displayed screen

Set [CPU No. switching GD device first No. (3 points)] so that the values of the GD devices are retained and monitored upon the GOT startup.

• Indirect specification of a CPU number for multi-channel connection

If the setting range of [CPU No. switching GD device first No. (3 points)] set for each channel overlaps, the monitoring target CPU number set to each channel is switched simultaneously.

Set [CPU No. switching GD device first No. (3 points)] for each channel so that the setting range does not overlap.

• Indirect specification of a station number and a CPU number for multi-channel connection

When GD10 to GD25 are used to specify the station number of an inverter or non-Mitsubishi temperature controller connected, setting [10] to [CPU No. switching GD device first No. (3 points)] in a different channel switches the monitoring target CPU number and station number of an inverter or non-Mitsubishi temperature controller set to each channel simultaneously.

Set [CPU No. switching GD device first No. (3 points)] so that the setting range does not overlap the station number of an inverter or non-Mitsubishi temperature controller.

■Start device number of the GD devices for module number switching

• Indirect specification of a module number

For connection via a Simple Motion module, [Unit No.] can be specified with the GOT internal registers (GD devices) by specifying a value (100 to 10F) to [Unit No.] in the device setting dialog in GT Designer3.

Set the start device number of the GD devices to be used in [Module No. switching GD device first No. (16 points)].

[Unit No.] is specified with 16 consecutive GD devices, starting from the set device number.

When [550] is set to [Module No. switching GD device first No. (16 points)], GD550 to GD565 are used to specify [Unit No.] as shown in the following table.

Module No.	GD device	Setting range
100	GD550	00 to FF Setting a value outside the above range causes a device range error.
101	GD551	
102	GD552	
103	GD553	
104	GD554	
105	GD555	
106	GD556	
107	GD557	
108	GD558	
109	GD559	
10A	GD560	
10B	GD561	
10C	GD562	
10D	GD563	
10E	GD564	
10F	GD565	

• Indirect specification of a module number on the initially displayed screen

Set [Module No. switching GD device first No. (16 points)] so that the values of the GD devices are retained and monitored upon the GOT startup.

• Indirect specification of a module number for multi-channel connection

If the setting range of [Module No. switching GD device first No. (16 points)] set for each channel overlaps, the module number of the Simple Motion module via the servo amplifier device of each channel is switched simultaneously.

Set [Module No. switching GD device first No. (16 points)] for each channel so that the setting range does not overlap.

• Indirect specification of a station number and a module number for multi-channel connection

When GD10 to GD25 are used to specify the station number of an inverter or non-Mitsubishi temperature controller connected, setting [10] to [Module No. switching GD device first No. (16 points)] switches the module number of the Simple Motion module via the servo amplifier device and the station number of an inverter or non-Mitsubishi temperature controller set to each channel simultaneously.

Set [Module No. switching GD device first No. (16 points)] so that the setting range does not overlap the station number of an inverter or non-Mitsubishi temperature controller.

■Start device number of the GD devices for servo axis switching

• Indirect specification of a servo axis number

For connection via a Motion CPU or Simple Motion module, a servo axis number can be indirectly specified with GOT internal registers (GD devices) by specifying a value (100 to 115) to the axis number of the servo amplifier device.

Set the start device number of the GD devices to be used in [Servo axis switching GD device first No. (16 points)].

Specify a servo axis number with 16 consecutive GD devices, starting the set device number.

When [10] is set to [Servo axis switching GD device first No. (16 points)], GD10 to GD25 are used to specify a servo axis number as shown in the following table.

Servo axis No.	GD device	Setting range
100	GD10	1 to 64 Setting a value outside the above range causes a device range error.
101	GD11	
102	GD12	
103	GD13	
104	GD14	
105	GD15	
106	GD16	
107	GD17	
108	GD18	
109	GD19	
110	GD20	
111	GD21	
112	GD22	
113	GD23	
114	GD24	
115	GD25	

• Indirect specification of a servo axis number on the initially displayed screen

Set [Servo axis switching GD device first No. (16 points)] so that the values of the GD devices are retained and monitored upon the GOT startup.

• Indirect specification of a servo axis number for multi-channel connection

If the setting rage of [Servo axis switching GD device first No. (16 points)] set for each channel overlaps, the axis number of the servo amplifier of each channel is switched simultaneously.

Set [Servo axis switching GD device first No. (16 points)] for each channel so that the setting range does not overlap.

• Indirect specification of a station number and a servo axis number for multi-channel connection

When GD10 to GD25 are used to specify the station number of an inverter or non-Mitsubishi temperature controller connected, setting [10] to [Servo axis switching GD device first No. (16 points)] switches the axis number of the servo amplifier and the station number of an inverter or non-Mitsubishi temperature controller set to each channel simultaneously.

Set [Servo axis switching GD device first No. (16 points)] so that the setting range does not overlap the station number of an inverter or non-Mitsubishi temperature controller.

Precautions

■Using cyclic transmission

• I/O signals for the master station

Do not turn on the reserved output signals in the output signals (remote output: RY) to the GOT from the master station.

When the reserved output signal is turned on, the PLC system may malfunction.

For the assignment of I/O signals in the GOT, refer to the following manuals.

📖MODEL GT15-J61BT13 CC-Link communication unit User's Manual

📖GT15 CC-Link communication unit User's Manual

• Access range for monitoring

The remote I/O (RX and RY) and remote register (RWr and RWw) monitoring ranges vary depending on the mode of the master station in the CC-Link system.

Mode of master station	Monitoring	
	Data for each station compatible with CC-Link Ver.1	Data for each station compatible with CC-Link Ver.2
Remote network mode	○	—
Remote network Ver.1 mode	○	—
Remote network Ver.2 mode	○	○*1
Remote network additional mode	○	○

○: Available, ×: Not available (All "0"), —: System configuration not available

*1 Monitoring is available only when the GT15-J61BT13 CC-Link communication unit is used.

• When the GOT malfunctions

The state of cyclic output before fault is held.

■Connection with CC-Link Ver.1 compatible

For connection with CC-Link Ver.1 compatible, the device setting must be configured within the range of the specifications of the controller.

When a device number out of the range is set, proper monitoring may not be possible.

12.2.4 PLC side settings

Model		Reference
MELSEC MX Controller (MX-F Model)	MXF100-8-N32 MXF100-8-P32 MXF100-16-N32 MXF100-16-P32	☞ Page 1049 Connection to MELSEC MX Controller (MX-F Model) with Ver.1/Ver.2 compatibles mixed

The GOT operates as the stations with the following specifications in the CC-Link system.

Station information	Description
Station type	Intelligent device station, Ver.1 intelligent device station, or Ver.2 intelligent device station
Number of stations occupied	1 station or 4 stations

Point

Number of stations occupied

The number of stations occupied is the setting for determining the number of link device points (RX/RY/RWw/RWr) used by the GOT.

To use multiple numbers of link device points in cyclic transmission between the GOT and CC-Link module, set the number of stations occupied as 4 stations occupied.

The number of link device points when 1 station occupied or 4 stations occupied is shown below.

• CC-Link Ver.2

Link device	Extended cyclic setting							
	Single		Double		Quadruple		Octuple	
	1 station occupied	4 stations occupied	1 station occupied	4 stations occupied	1 station occupied	4 stations occupied	1 station occupied	4 stations occupied
Remote input (RX)	32 points	128 points	32 points	224 points	64 points	448 points	128 points	896 points
Remote output (RY)	32 points	128 points	32 points	224 points	64 points	448 points	128 points	896 points
Remote register (RWw)	4 points	16 points	8 points	32 points	16 points	64 points	32 points	128 points
Remote register (RWr)	4 points	16 points	8 points	32 points	16 points	64 points	32 points	128 points

• CC-Link Ver.1

Link device	Number of stations occupied	
	1 station occupied	4 stations occupied
Remote input (RX)	32 points	128 points
Remote output (RY)	32 points	128 points
Remote register (RWw)	4 points	16 points
Remote register (RWr)	4 points	16 points

Connection to MELSEC MX Controller (MX-F Model) with Ver.1/Ver.2 compatibles mixed

This section describes the setting method of the GOT and the CC-Link module (MELSEC MX Controller (MX-F Model)) when Ver.1/Ver.2 compatible modules are mixed in the system configuration shown below.

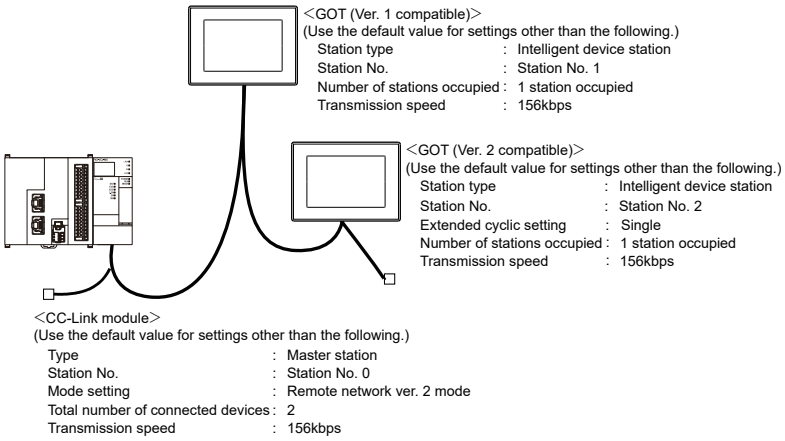
Point

CC-Link module (MELSEC MX Controller (MX-F Model))

For details on the CC-Link module (MELSEC MX Controller (MX-F Model)), refer to the following manual.

MELSEC iQ-F FX5 CC-Link System Master/Intelligent Device Module User's Manual

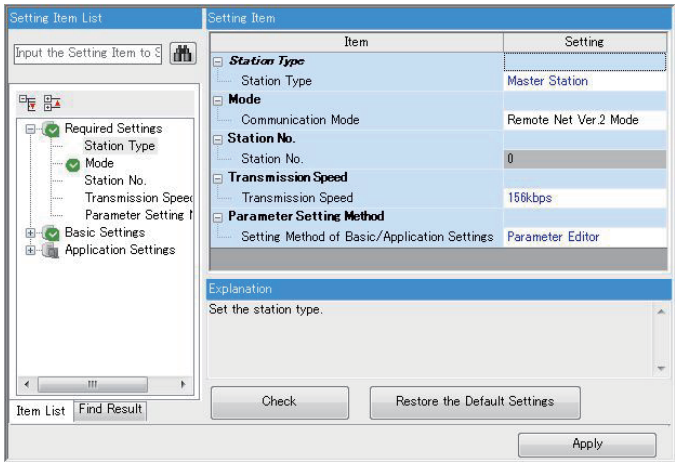
■System configuration



■Module parameter settings of GX Works3

- [Module Parameter] of GX Works3

Module parameter

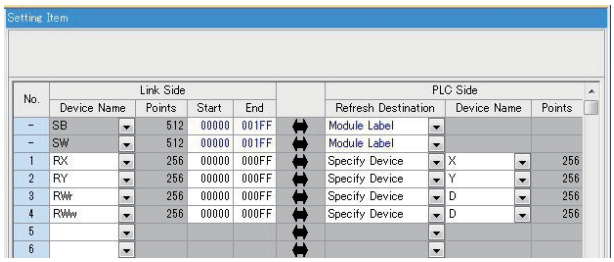


○: Necessary, △: As necessary, —: Not necessary

Item	Setting value	Setting for GOT connection
[Station Type]	Master station	○
[Mode]	Remote network Ver.1 mode	○
[Station No.]	0 (fixed)	△
[Transmission Speed]*1	156 kbps	○
[Parameter Setting Method]	Set in parameter	—

*1 Adjust the settings with the GOT settings.

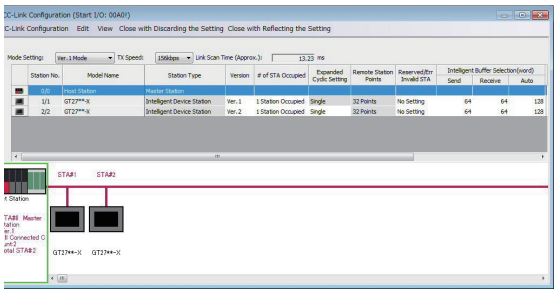
Link refresh setting



○: Necessary, △: As necessary, —: Not necessary

Item	Setting value	Setting for GOT connection
[Special relay (SB) refresh device]	Set this item as necessary.	△
[Special register (SW) refresh device]		△
[Remote input (RX) refresh device]		△
[Remote output (RY) refresh device]		△
[Remote register (RWr) refresh device]		△
[Remote register (RWw) refresh device]		△

CC-Link configuration setting



CC-Link configuration setting of station No. 1 (GOT)

○: Necessary, △: As necessary, —: Not necessary

Item*1	Setting value	Setting for GOT connection
[Station Type]	Ver.1 intelligent device station (fixed)	○
[# of STA Occupied]*2	1 station occupied	○
[Reserved/Err Invalid STA]	No setting	○
[Intelligent Buffer Selection(word)]	(Use default value)	—

CC-Link configuration setting of station No. 2 (GOT)

○: Necessary, △: As necessary, —: Not necessary

Item*1	Setting value	Setting for GOT connection
[Station Type]	Ver.2 intelligent device station (fixed)	○
[Expanded Cyclic Setting]*2	Single	○
[# of STA Occupied]*2	1 station occupied	○
[Reserved/Err Invalid STA]	No setting	○
[Intelligent Buffer Selection(word)]	(Use default value)	—

*1 When the [Mode] of the CC-Link module is set to [Remote Net Ver.2 Mode], [Remote Station Points] can be set.
[Remote Station Points] is a setting for the remote I/O station.
The default value (32 points) must be used on the GOT.

*2 Set the same setting as that of the GOT.

Point

When changing the module parameter

After writing module parameters to the PLC CPU, turn off then on or reset the PLC CPU.

■[Controller Setting] in GT Designer3

- Communication settings of station No. 1 (GOT)

Item	Setting value
[Station No.]	1: Station No. 1
[Transmission Rate]	0: Online 156 kbps
[Mode]	Ver.1: Remote network Ver.1 mode
[Expanded Cyclic]	Single (Use default value)
[Occupied Station]	1 station
[Input for Error Station]	0: Clear
[Retry]	3 (Use default value)
[Timeout Time]	3 (Use default value)
[Delay Time]	0 (Use default value)
[Transmission method]	Cyclic

- Communication settings of station No. 2 (GOT)

Item	Setting value
[Station No.]	2: Station No. 2
[Transmission Rate]	0: Online 156 kbps
[Mode]	Ver.2: Remote network Ver.2 mode
[Expanded Cyclic]	Single
[Occupied Station]	1 station
[Input for Error Station]	0: Clear
[Retry]	3 (Use default value)
[Timeout Time]	3 (Use default value)
[Delay Time]	0 (Use default value)
[Transmission method]	Cyclic

12.2.5 Access range for monitoring

Only the connected CPU can be accessed.

12.3 MELSEC iQ-R series (CC-Link connection (intelligent device station))

☞ Page 1052 Connectable devices
☞ Page 1053 System configuration
☞ Page 1058 GOT side settings
☞ Page 1064 PLC side settings
☞ Page 1072 Access range for monitoring
☞ Page 1073 How to monitor a redundant system

12.3.1 Connectable devices

The following table shows the connectable models.

○: Supported, —: Not supported

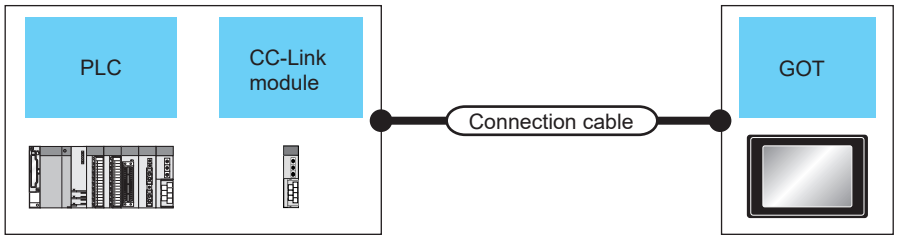
Controller	Model	Clock	CC-Link module	Connectable model
MELSEC iQ-R series	R00CPU R01CPU R02CPU R04CPU R08CPU R16CPU R32CPU R120CPU	○	RJ61BT11*4	GT37 SoftGOT3000
	R08PCPU*1 R16PCPU*1 R32PCPU*1 R120PCPU*1	○	RJ61BT11*4	GT37 SoftGOT3000
	R08PSFCPU*2 R16PSFCPU*2 R32PSFCPU*2 R120PSFCPU*2	○	RJ61BT11*4	GT37 SoftGOT3000
	R08SFCPU*3 R16SFCPU*3 R32SFCPU*3 R120SFCPU*3	○	RJ61BT11*4	GT37 SoftGOT3000
	R04ENCPU R08ENCPU R16ENCPU R32ENCPU R120ENCPU	○	RJ61BT11*4	GT37 SoftGOT3000
Motion CPU (MELSEC iQ-R series)	R16MTCPU R32MTCPU R64MTCPU	○	RJ61BT11*4	GT37 SoftGOT3000
C Controller module (MELSEC iQ-R series)	R12CCPU-V	○	RJ61BT11*4	GT37 SoftGOT3000
MELSECWinCPU (MELSEC iQ-R series)	R102WCPU-W	—	RJ61BT11*4	GT37 SoftGOT3000

Controller	Model	Clock	CC-Link module	Connectable model
CNC C80	R16NCCPU-S1	○	RJ61BT11*4	GT37 SoftGOT3000
Robot controller (MELSEC iQ-R series)	CR800-R (R16RTCPU)	○	RJ61BT11*4	GT37 SoftGOT3000

*1 Mount a redundant function module R6RFM next to the RnPCPU on the base unit when building a redundant system.
*2 Mount the SIL2 function module R6PSFM and the redundant function module R6RFM next to the RnPSFCPU on the base unit.
*3 Mount a safety function module R6SFM next to the RnSFCPU on the base unit.
The RnSFCPU and the safety function module R6SFM must have the same pair version.
If their pair versions differ, the RnSFCPU does not operate.
*4 Use firmware version 04 or later when building a redundant system.

12.3.2 System configuration

Connection with CC-Link Ver.1 compatible



For details on the overall length, refer to the following.
☞ Page 1053 Overall length
For details on the maximum number of connected devices, refer to the following.
☞ Page 1054 Maximum number of connected devices

Controller	CC-Link module*1	Communication type	Connection cable	GOT	
				Interface	Model
MELSEC iQ-R series Motion CPU (MELSEC iQ-R series) C Controller module (MELSEC iQ-R series) MELSECWinCPU (MELSEC iQ-R series) CNC C80 CR800-R (R16RTCPU)	RJ61BT11	CC-Link (Ver.1)	CC-Link dedicated cable*2	GT37-IF2000 + GT15-J61BT13*3	GT37 SoftGOT3000

*1 For the system configuration of the CC-Link module, refer to the following manual.
📖MELSEC iQ-R CC-Link System Master/Local Module User's Manual (Startup)
*2 For the specifications of the CC-Link dedicated cable and the contact information, refer to the following.
CC-Link Partner Association website: http://www.cc-link.org/
*3 In the controller settings, set the mode to Ver.1.
For details on settings, refer to the following.
☞ Page 1042 [Controller Setting]

■Overall length

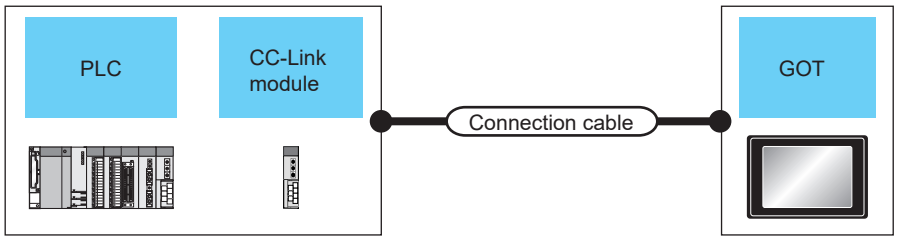
The maximum overall cable length and cable length between stations vary depending on the conditions such as the type of the cable used and the transmission speed.
For details, refer to the following manual.
📖MELSEC iQ-R CC-Link System Master/Local Module User's Manual (Startup)

■Maximum number of connected devices

The following shows the number of connectable GOTs.

Controller	
Model	**Number of connectable devices**
MELSEC iQ-R series Motion CPU (MELSEC iQ-R series) C Controller module (MELSEC iQ-R series) MELSECWinCPU (MELSEC iQ-R series) CNC C80 CR800-R (R16RTCPU)	26 GOTs

Connection with CC-Link Ver.2 compatible



For details on the overall length, refer to the following.

☞ Page 1054 Overall length

For details on the maximum number of connected devices, refer to the following.

☞ Page 1054 Maximum number of connected devices

Controller	CC-Link module*1	Communication type	Connection cable	GOT	
				Interface	Model
MELSEC iQ-R series Motion CPU (MELSEC iQ-R series) C Controller module (MELSEC iQ-R series) MELSECWinCPU (MELSEC iQ-R series) CNC C80 CR800-R (R16RTCPU)	RJ61BT11	CC-Link (Ver.2)	CC-Link dedicated cable*2	GT37-IF2000 + GT15-J61BT13*3	GT37 SoftGOT3000

*1 For the system configuration of the CC-Link module, refer to the following manual.
MELSEC iQ-R CC-Link System Master/Local Module User's Manual (Startup)

*2 For the specifications of the CC-Link dedicated cable and the contact information, refer to the following.
CC-Link Partner Association website: http://www.cc-link.org/

*3 In the controller settings, set the mode to Ver.2.
For details on settings, refer to the following.
☞ Page 1042 [Controller Setting]

■Overall length

The maximum overall cable length and cable length between stations vary depending on the conditions such as the type of the cable used and the transmission speed.

For details, refer to the following manual.

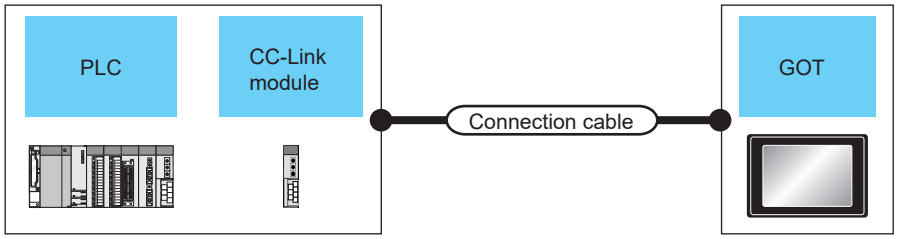
MELSEC iQ-R CC-Link System Master/Local Module User's Manual (Startup)

■Maximum number of connected devices

The following shows the number of connectable GOTs.

Controller	
Model	**Number of connectable devices**
MELSEC iQ-R series Motion CPU (MELSEC iQ-R series) C Controller module (MELSEC iQ-R series) MELSECWinCPU (MELSEC iQ-R series) CNC C80 CR800-R (R16RTCPU)	26 GOTs

Connection with CC-Link Ver.1/Ver.2 compatibles mixed



For details on the overall length, refer to the following.

☞ Page 1055 Overall length

For details on the maximum number of connected devices, refer to the following.

☞ Page 1055 Maximum number of connected devices

Controller	CC-Link module*1	Communication type	Connection cable	GOT	
				Interface	Model
MELSEC iQ-R series Motion CPU (MELSEC iQ-R series) C Controller module (MELSEC iQ-R series) MELSECWinCPU (MELSEC iQ-R series) CNC C80 CR800-R (R16RTCPU)	RJ61BT11	CC-Link (Ver.2)	CC-Link dedicated cable*2	GT37-IF2000 + GT15-J61BT13*3	GT37 SoftGOT3000
	RJ61BT11	CC-Link (Ver.1)	CC-Link dedicated cable*2	GT37-IF2000 + GT15-J61BT13*4	GT37 SoftGOT3000

*1 For the system configuration of the CC-Link module, refer to the following manual.
📖MELSEC iQ-R CC-Link System Master/Local Module User's Manual (Startup)

*2 For the specifications of the CC-Link dedicated cable and the contact information, refer to the following.
CC-Link Partner Association website: http://www.cc-link.org/

*3 In the controller settings, set the mode to Ver.2.
For details on settings, refer to the following.
☞ Page 1059 [Detail Setting]

*4 In the controller settings, set the mode to Ver.1.
For details on settings, refer to the following.
☞ Page 1059 [Detail Setting]

■Overall length

The maximum overall cable length and cable length between stations vary depending on the conditions such as the type of the cable used and the transmission speed.

For details, refer to the following manual.

📖MELSEC iQ-R CC-Link System Master/Local Module User's Manual (Startup)

■Maximum number of connected devices

The following shows the number of connectable GOTs.

Controller	
Model	**Number of connectable devices**
MELSEC iQ-R series Motion CPU (MELSEC iQ-R series) C Controller module (MELSEC iQ-R series) MELSECWinCPU (MELSEC iQ-R series) CNC C80 CR800-R (R16RTCPU)	26 GOTs

Connecting one PLC to multiple GOTs

When multiple GOT units are simultaneously accessing one PLC, the GOT writing process (transient/cyclic) and reading process (transient) may slow down.

This slow access can be remedied with the following countermeasures.

<Countermeasures>

■Improve response speed on PLC side

Insert a COM instruction on the PLC to increase the response speed.

Note that caution is required as the scan time will increase.

■Screen design using cyclic devices

Create the screen with cyclic devices instead of using transient devices.

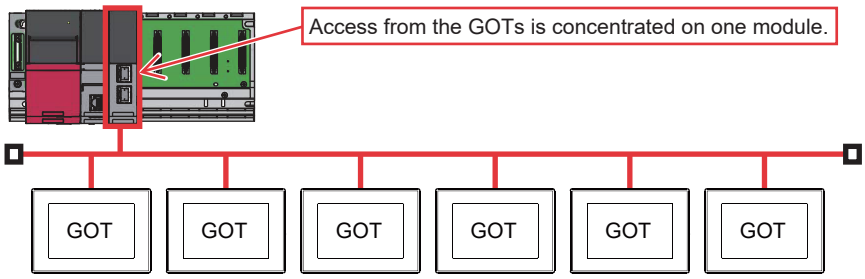
■Split GOT connection destinations into several systems

Add a master/local module to the PLC side, and split the GOT connection destinations into several systems.

Improve the current system configuration.

(Example of current system configuration)

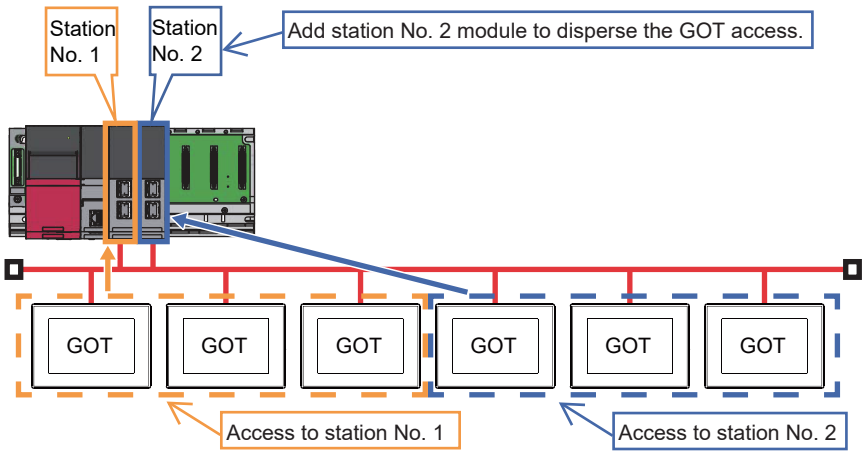
In the following system configuration, access from the GOT is concentrated on one module.



(Improvement measure)

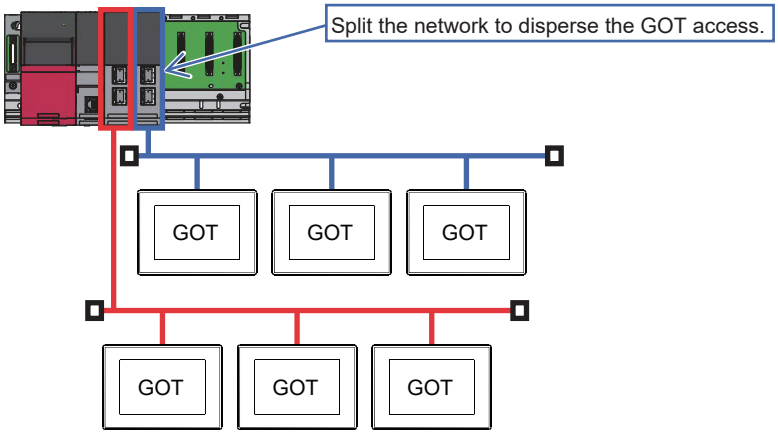
- Adding a module to the PLC side

Add a module to the PLC side to disperse the GOT access destinations.



• Split the network

Split the network to disperse the GOT access.



Connection via the multiple CPU system

When the GOT is connected via the multiple CPU system, the PLC takes 10 seconds or more to run.

If you start the GOT before the PLC runs, a system alarm occurs.

Adjust the time to display the GOT startup screen to prevent a system alarm.

📖GT Designer3 (GOT3000) Screen Design Manual

Connection to RnSFCPU

The RnSFCPU takes 10 seconds or more to run.

If the GOT is started during this time, a system alarm occurs.

To prevent a system alarm from occurring, adjust the title display time in the [GOT Setup] dialog.

📖GT Designer3 (GOT3000) Screen Design Manual

Precautions

■Starting the GOT in CC-Link connection (intelligent device station)

For the CC-Link connection (intelligent device station), the data link is started approximately 10 seconds after the GOT startup.

■When a network error occurs in the system alarm

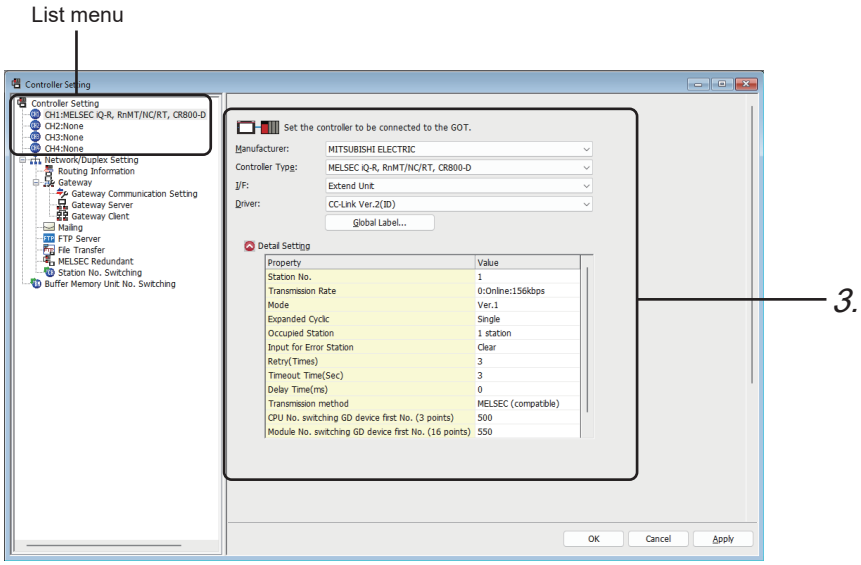
In the CC-Link connection (intelligent device station), when a network error occurs in the system alarm, the system alarm display cannot be canceled even though the causes are removed.

To cancel the system alarm display, restart the GOT.

12.3.3 GOT side settings

[Controller Setting]

Set the channel of the connected controller.



Operating procedure

1. Select [Common] → [Controller Setting] from the menu.

2. In the [Controller Setting] window, select the channel number to be used from the list menu.

3. Set the following items.

Item	Description
[Manufacturer]	[MITSUBISHI ELECTRIC]
[Controller Type]	[MELSEC iQ-R, RnMT/NC/RT, CR800-D]
[I/F]	[Extend Unit]
[Driver]	[CC-Link Ver.2 (ID)]
[Detail Setting]	Configure the settings according to the usage environment. ☞ Page 1059 [Detail Setting]

4. When you have completed the settings, click the [OK] button.

Point

The controller settings can be configured and checked in [I/F Communication Setting].
For details, refer to the following.
📖GT Designer3 (GOT3000) Screen Design Manual

■[Detail Setting]

Configure the settings according to the usage environment.

Detail Setting

Property	Value
Station No.	1
Transmission Rate	0:Online:156kbps
Mode	Ver.1
Expanded Cyclic	Single
Occupied Station	1 station
Input for Error Station	Clear
Retry(Times)	3
Timeout Time(Sec)	3
Delay Time(ms)	0
Transmission method	MELSEC (compatible)
CPU No. switching GD device first No. (3 points)	500
Module No. switching GD device first No. (16 points)	550

Item	Description	Range
[Station No.]	Set the station number of the GOT.	[1] to [64]
[Transmission Rate]*1	Set the transmission speed and a mode of the GOT.	[0] to [E]
[Mode Setting]	Set the operation mode of the GOT.	[Ver.1], [Ver.2], [Additional], [Offline]
[Expanded Cyclic]	Set the cyclic point expansion.	[Single], [Double], [Quadruple], [Octuple]
[Occupied Station]	Set the number of stations occupied by the GOT.	[1 Station], [4 Stations]
[Input for Error Station]	Set whether to clear or hold the error at an error occurrence.	[Clear], [Hold]
[Retry]	Set the number of retries to be performed when a communication timeout occurs. When receiving no response after retries, the communication times out.	[0] times to [5] times
[Timeout Time]	Set the time period for a communication to time out.	[1] second to [90] seconds
[Delay Time]	Set this item to adjust the transmission timing of the communication request from the GOT.	[0] ms to [300] ms
[Transmission method]	Set the CC-Link transmission method.	[MELSEC (compatible)], [Cyclic]
[CPU No. switching GD device first No. (3 points)]	Set the start device number of the GD devices for CPU number switching. For details, refer to the following. ☞ Page 1060 Start device number of the GD devices for CPU number switching	[0] to [65520]
[Module No. switching GD device first No. (16 points)]	Set the start device number of the GD devices for module number switching. For details, refer to the following. ☞ Page 1061 Start device number of the GD devices for module number switching	[0] to [65520]
[Servo axis switching GD device first No. (16 points)]	Set the start device number of the GD devices for servo axis switching. For details, refer to the following. ☞ Page 1062 Start device number of the GD devices for servo axis switching	[0] to [65520]

*1 Transmission speed settings
The following lists the transmission speed settings of the CC-Link communication.

Setting value	Description
0	Online: 156 kbps
1	Online: 625 kbps
2	Online: 2.5 Mbps
3	Online: 5 Mbps
4	Online: 10 Mbps
5	Line test: 156 kbps
6	Line test: 625 kbps
7	Line test: 2.5 Mbps

Setting value	Description
8	Line test: 5 Mbps
9	Line test: 10 Mbps
A	Hardware test: 156 kbps
B	Hardware test: 625 kbps
C	Hardware test: 2.5 Mbps
D	Hardware test: 5 Mbps
E	Hardware test: 10 Mbps

For details on the hardware test, refer to the following manual.

📖MELSEC iQ-R CC-Link System Master/Local Module User's Manual (Startup)

Point

• Communication interface settings in the GT37 utility

The communication interface setting can be changed in [Communication setting] of the GT37 utility after writing [Controller Setting] in project data.

For details on the GT37 utility, refer to the following manual.

📖GOT3000 Series User's Manual (Utility & Maintenance Functions)

• Priority of the settings in [Controller Setting]

When settings are configured in GT Designer3 or the GT37 utility, the most recent settings are effective.

■Start device number of the GD devices for CPU number switching

• Indirect specification of a CPU number

[CPU No.] can be indirectly specified with the GOT internal registers (GD devices) by specifying a value (100 to 102) to [CPU No.] in the device setting dialog in GT Designer3.

Set the start device number of the GD devices to be used in [CPU No. switching GD device first No. (3 points)].

[CPU No.] is specified with three consecutive GD devices, starting from the set device number.

When [500] is set to [CPU No. switching GD device first No. (3 points)], GD500 to GD502 are used to specify [CPU No.] as shown in the following table.

CPU No.	GD device	Setting range
100	GD500	1 to 4 Setting a value outside the range causes a communication timeout error. Specifying a nonexistent CPU number or a CPU number not supporting a multiple CPU system with a device causes a controller error.
101	GD501	
102	GD502	

• Indirect specification of a CPU number on the initially displayed screen

Set [CPU No. switching GD device first No. (3 points)] so that the values of the GD devices are retained and monitored upon the GOT startup.

• Indirect specification of a CPU number for multi-channel connection

If the setting range of [CPU No. switching GD device first No. (3 points)] set for each channel overlaps, the monitoring target CPU number set to each channel is switched simultaneously.

Set [CPU No. switching GD device first No. (3 points)] for each channel so that the setting range does not overlap.

• Indirect specification of a station number and a CPU number for multi-channel connection

When GD10 to GD25 are used to specify the station number of an inverter or non-Mitsubishi temperature controller connected, setting [10] to [CPU No. switching GD device first No. (3 points)] in a different channel switches the monitoring target CPU number and station number of an inverter or non-Mitsubishi temperature controller set to each channel simultaneously.

Set [CPU No. switching GD device first No. (3 points)] so that the setting range does not overlap the station number of an inverter or non-Mitsubishi temperature controller.

■Start device number of the GD devices for module number switching

• Indirect specification of a module number

For connection via a Simple Motion module, [Unit No.] can be specified with the GOT internal registers (GD devices) by specifying a value (100 to 10F) to [Unit No.] in the device setting dialog in GT Designer3.

Set the start device number of the GD devices to be used in [Module No. switching GD device first No. (16 points)].

[Unit No.] is specified with 16 consecutive GD devices, starting from the set device number.

When [550] is set to [Module No. switching GD device first No. (16 points)], GD550 to GD565 are used to specify [Unit No.] as shown in the following table.

Module No.	GD device	Setting range
100	GD550	00 to FF Setting a value outside the above range causes a device range error.
101	GD551	
102	GD552	
103	GD553	
104	GD554	
105	GD555	
106	GD556	
107	GD557	
108	GD558	
109	GD559	
10A	GD560	
10B	GD561	
10C	GD562	
10D	GD563	
10E	GD564	
10F	GD565	

• Indirect specification of a module number on the initially displayed screen

Set [Module No. switching GD device first No. (16 points)] so that the values of the GD devices are retained and monitored upon the GOT startup.

• Indirect specification of a module number for multi-channel connection

If the setting range of [Module No. switching GD device first No. (16 points)] set for each channel overlaps, the module number of the Simple Motion module via the servo amplifier device of each channel is switched simultaneously.

Set [Module No. switching GD device first No. (16 points)] for each channel so that the setting range does not overlap.

• Indirect specification of a station number and a module number for multi-channel connection

When GD10 to GD25 are used to specify the station number of an inverter or non-Mitsubishi temperature controller connected, setting [10] to [Module No. switching GD device first No. (16 points)] switches the module number of the Simple Motion module via the servo amplifier device and the station number of an inverter or non-Mitsubishi temperature controller set to each channel simultaneously.

Set [Module No. switching GD device first No. (16 points)] so that the setting range does not overlap the station number of an inverter or non-Mitsubishi temperature controller.

■Start device number of the GD devices for servo axis switching

• Indirect specification of a servo axis number

For connection via a Motion CPU or Simple Motion module, a servo axis number can be indirectly specified with GOT internal registers (GD devices) by specifying a value (100 to 115) to the axis number of the servo amplifier device.

Set the start device number of the GD devices to be used in [Servo axis switching GD device first No. (16 points)].

Specify a servo axis number with 16 consecutive GD devices, starting the set device number.

When [10] is set to [Servo axis switching GD device first No. (16 points)], GD10 to GD25 are used to specify a servo axis number as shown in the following table.

Servo axis No.	GD device	Setting range
100	GD10	1 to 64 Setting a value outside the above range causes a device range error.
101	GD11	
102	GD12	
103	GD13	
104	GD14	
105	GD15	
106	GD16	
107	GD17	
108	GD18	
109	GD19	
110	GD20	
111	GD21	
112	GD22	
113	GD23	
114	GD24	
115	GD25	

• Indirect specification of a servo axis number on the initially displayed screen

Set [Servo axis switching GD device first No. (16 points)] so that the values of the GD devices are retained and monitored upon the GOT startup.

• Indirect specification of a servo axis number for multi-channel connection

If the setting rage of [Servo axis switching GD device first No. (16 points)] set for each channel overlaps, the axis number of the servo amplifier of each channel is switched simultaneously.

Set [Servo axis switching GD device first No. (16 points)] for each channel so that the setting range does not overlap.

• Indirect specification of a station number and a servo axis number for multi-channel connection

When GD10 to GD25 are used to specify the station number of an inverter or non-Mitsubishi temperature controller connected, setting [10] to [Servo axis switching GD device first No. (16 points)] switches the axis number of the servo amplifier and the station number of an inverter or non-Mitsubishi temperature controller set to each channel simultaneously.

Set [Servo axis switching GD device first No. (16 points)] so that the setting range does not overlap the station number of an inverter or non-Mitsubishi temperature controller.

Precautions

■Using cyclic transmission

• I/O signals for the master station

Do not turn on the reserved output signals in the output signals (remote output: RY) to the GOT from the master station.

When the reserved output signal is turned on, the PLC system may malfunction.

For the assignment of I/O signals in the GOT, refer to the following manuals.

📖MODEL GT15-J61BT13 CC-Link communication unit User's Manual

📖GT15 CC-Link communication unit User's Manual

• Access range for monitoring

The remote I/O (RX and RY) and remote register (RWr and RWw) monitoring ranges vary depending on the mode of the master station in the CC-Link system.

Mode of master station	Monitoring	
	Data for each station compatible with CC-Link Ver.1	Data for each station compatible with CC-Link Ver.2
Remote network mode	○	—
Remote network Ver.1 mode	○	—
Remote network Ver.2 mode	○	○*1
Remote network additional mode	○	○

○: Available, ×: Not available (All "0"), —: System configuration not available

*1 Monitoring is available only when the GT15-J61BT13 CC-Link communication unit is used.

• When the GOT malfunctions

The state of cyclic output before fault is held.

■Connection with CC-Link Ver.1 compatible

For connection with CC-Link Ver.1 compatible, the device setting must be configured within the range of the specifications of the controller.

When a device number out of the range is set, proper monitoring may not be possible.

12.3.4 PLC side settings

Model		Reference
MELSEC iQ-R series	R00CPU R01CPU R02CPU R04CPU R08CPU R16CPU R32CPU R120CPU R08PCPU R16PCPU R32PCPU R120PCPU R08PSFCPU R16PSFCPU R32PSFCPU R120PSFCPU R08SFCPU R16SFCPU R32SFCPU R120SFCPU R04ENCPU R08ENCPU R16ENCPU R32ENCPU R120ENCPU	☞ Page 1065 Connection to MELSEC iQ-R series with Ver.1 compatible ☞ Page 1067 Connection to MELSEC iQ-R series with Ver.2 compatible ☞ Page 1070 Connection to MELSEC iQ-R series with Ver.1/Ver.2 compatibles mixed
Motion CPU (MELSEC iQ-R series)	R16MTCPU R32MTCPU R64MTCPU	☞ Page 1065 Connection to MELSEC iQ-R series with Ver.1 compatible ☞ Page 1067 Connection to MELSEC iQ-R series with Ver.2 compatible ☞ Page 1070 Connection to MELSEC iQ-R series with Ver.1/Ver.2 compatibles mixed
C Controller module (MELSEC iQ-R series)	R12CCPU-V	☞ Page 1065 Connection to MELSEC iQ-R series with Ver.1 compatible ☞ Page 1067 Connection to MELSEC iQ-R series with Ver.2 compatible ☞ Page 1070 Connection to MELSEC iQ-R series with Ver.1/Ver.2 compatibles mixed
MELSECWinCPU (MELSEC iQ-R series)	R102WCPU-W	☞ Page 1065 Connection to MELSEC iQ-R series with Ver.1 compatible ☞ Page 1067 Connection to MELSEC iQ-R series with Ver.2 compatible ☞ Page 1070 Connection to MELSEC iQ-R series with Ver.1/Ver.2 compatibles mixed
CNC C80	R16NCCPU-S1	☞ Page 1065 Connection to MELSEC iQ-R series with Ver.1 compatible ☞ Page 1067 Connection to MELSEC iQ-R series with Ver.2 compatible ☞ Page 1070 Connection to MELSEC iQ-R series with Ver.1/Ver.2 compatibles mixed
Robot controller (MELSEC iQ-R series)	CR800-R (R16RTCPU)	☞ Page 1065 Connection to MELSEC iQ-R series with Ver.1 compatible ☞ Page 1067 Connection to MELSEC iQ-R series with Ver.2 compatible ☞ Page 1070 Connection to MELSEC iQ-R series with Ver.1/Ver.2 compatibles mixed

The GOT operates as the stations with the following specifications in the CC-Link system.

Station information	Description
Station type	Intelligent device station, Ver.1 intelligent device station, or Ver.2 intelligent device station
Number of stations occupied	1 station or 4 stations

Point

Number of stations occupied

The number of stations occupied is the setting for determining the number of link device points (RX/RY/RWw/RWr) used by the GOT.

To use multiple numbers of link device points in cyclic transmission between the GOT and CC-Link module, set the number of stations occupied as 4 stations occupied.

The number of link device points when 1 station occupied or 4 stations occupied is shown below.

- CC-Link Ver.2

Link device	Extended cyclic setting							
	Single		Double		Quadruple		Octuple	
	1 station occupied	4 stations occupied	1 station occupied	4 stations occupied	1 station occupied	4 stations occupied	1 station occupied	4 stations occupied
Remote input (RX)	32 points	128 points	32 points	224 points	64 points	448 points	128 points	896 points
Remote output (RY)	32 points	128 points	32 points	224 points	64 points	448 points	128 points	896 points
Remote register (RWw)	4 points	16 points	8 points	32 points	16 points	64 points	32 points	128 points
Remote register (RWr)	4 points	16 points	8 points	32 points	16 points	64 points	32 points	128 points

- CC-Link Ver.1

Link device	Number of stations occupied	
	1 station occupied	4 stations occupied
Remote input (RX)	32 points	128 points
Remote output (RY)	32 points	128 points
Remote register (RWw)	4 points	16 points
Remote register (RWr)	4 points	16 points

Connection to MELSEC iQ-R series with Ver.1 compatible

This section describes the setting method of the GOT and the Ver. 1 compatible CC-Link module (MELSEC iQ-R series) in the system configuration shown below.

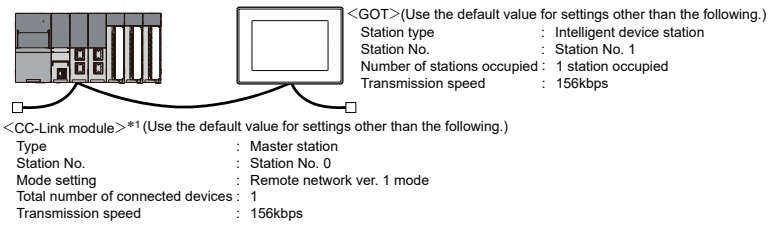
Point

CC-Link module (MELSEC iQ-R series)

For details on the CC-Link module (MELSEC iQ-R series), refer to the following manual.

MELSEC iQ-R CC-Link System Master/Local Module User's Manual (Startup)

■System configuration



*1 The CC-Link module is mounted on slot 0 of the base unit.
The start I/O number of the CC-Link module is set to "0".

Point

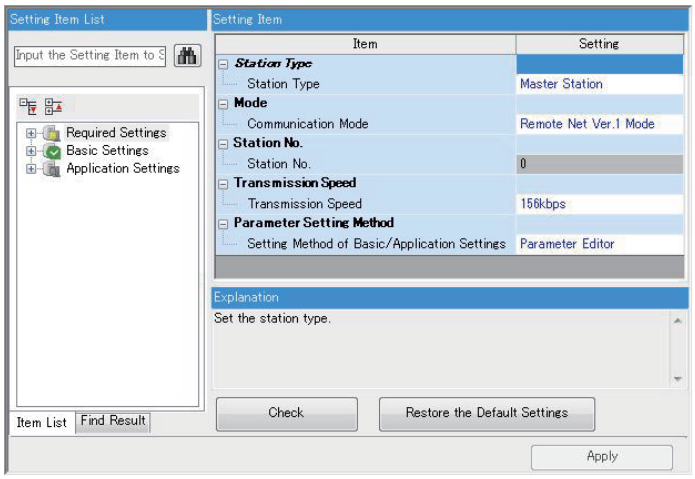
When the switch setting has been changed

Turn off then on or reset the PLC CPU.

■Module parameter settings of GX Works3

• [Module Parameter] of GX Works3

Module parameter

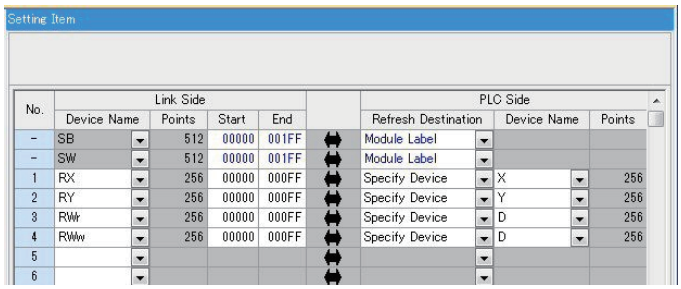


○: Necessary, △: As necessary, —: Not necessary

Item	Setting value	Setting for GOT connection
[Station Type]	Master station	○
[Mode]	Remote network Ver.1 mode	○
[Station No.]	0 (fixed)	△
[Transmission Speed]*1	156 kbps	○
[Parameter Setting Method]	Set in parameter	—

*1 Adjust the settings with the GOT settings.

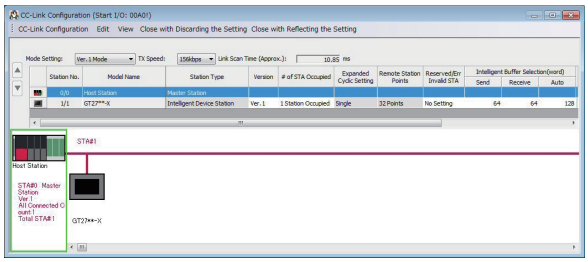
Link refresh setting



○: Necessary, △: As necessary, —: Not necessary

Item	Setting value	Setting for GOT connection
[Special relay (SB) refresh device]	—	△
[Special register (SW) refresh device]	—	△
[Remote input (RX) refresh device]	Set this item as necessary.	△
[Remote output (RY) refresh device]		△
[Remote register (RWr) refresh device]		△

CC-Link configuration setting



○: Necessary, △: As necessary, —: Not necessary

Item*1	Setting value	Setting for GOT connection
[Station Type]	Intelligent device station (fixed)	○
[# of STA Occupied]*2	1 station occupied	○
[Reserved/Err Invalid STA]	No setting	○
[Intelligent Buffer Selection(word)]	(Use default value)	—

*1 When the [Mode] of the CC-Link module is set to [Remote Net Ver.1 Mode], [Remote Station Points] cannot be set.
*2 Set the same setting as that of the GOT.

Point

When changing the module parameter
After writing module parameters to the PLC CPU, turn off then on or reset the PLC CPU.

■[Controller Setting] in GT Designer3

Item	Setting value
[Station No.]	1: Station No. 1
[Transmission Rate]	0: Online 156 kbps
[Mode]	Ver.1: Remote network Ver.1 mode
[Expanded Cyclic]	Single (Use default value)
[Occupied Station]	1 station
[Input for Error Station]	0: Clear
[Retry]	3 (Use default value)
[Timeout Time]	3 (Use default value)
[Delay Time]	0 (Use default value)
[Transmission method]	MELSEC (compatible)

Point

[Controller Setting] in GT Designer3
For the setting method of [Controller Setting] in GT Designer3, refer to the following.
☞ Page 1058 [Controller Setting]

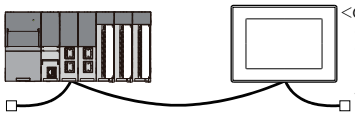
Connection to MELSEC iQ-R series with Ver.2 compatible

This section describes the setting method of the GOT and the Ver. 2 compatible CC-Link module (MELSEC iQ-R series) in the system configuration shown below.

Point

CC-Link module (MELSEC iQ-R series)
For details on the CC-Link module (MELSEC iQ-R series), refer to the following manual.
📖MELSEC iQ-R CC-Link System Master/Local Module User's Manual (Startup)

■System configuration



<GOT>(Use the default value for settings other than the following.)

Station type	:	Intelligent device station
Station No.	:	Station No. 1
Extended cyclic setting	:	Single
Number of stations occupied	:	1 station occupied
Transmission speed	:	156kbps

<CC-Link module>*1 (Use the default value for settings other than the following.)

Type	:	Master station
Station No.	:	Station No. 0
Mode setting	:	Remote network ver. 2 mode
Total number of connected devices	:	1
Transmission speed	:	156kbps

*1 The CC-Link module is mounted on slot 0 of the base unit.
The start I/O number of the CC-Link module is set to "0".

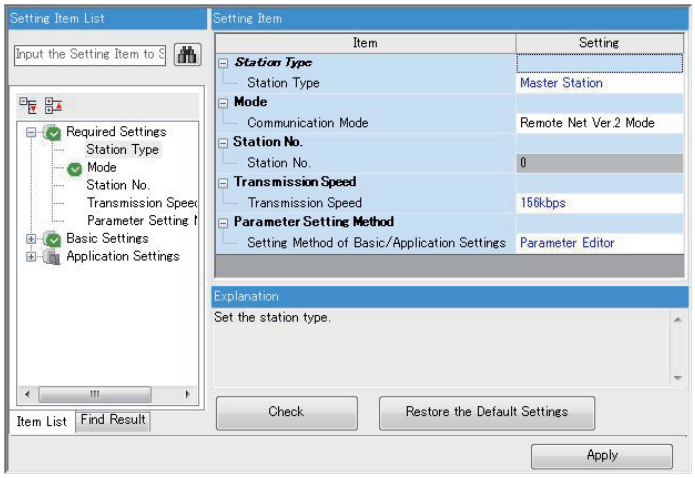
Point

When the switch setting has been changed
Turn off then on or reset the PLC CPU.

■Module parameter settings of GX Works3

- [Module Parameter] of GX Works3

Module parameter

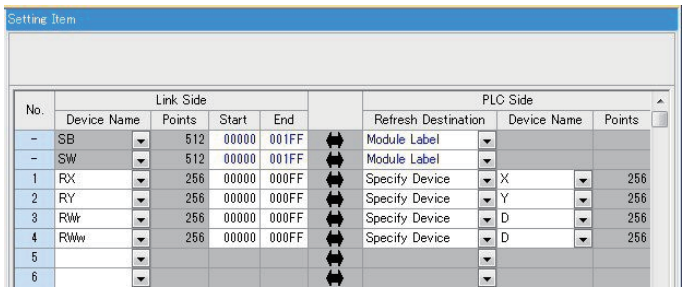


○: Necessary, △: As necessary, —: Not necessary

Item	Setting value	Setting for GOT connection
[Station Type]	Master station	○
[Mode]	Remote network Ver.1 mode	○
[Station No.]	0 (fixed)	△
[Transmission Speed]*1	156 kbps	○
[Parameter Setting Method]	Set in parameter	—

*1 Adjust the settings with the GOT settings.

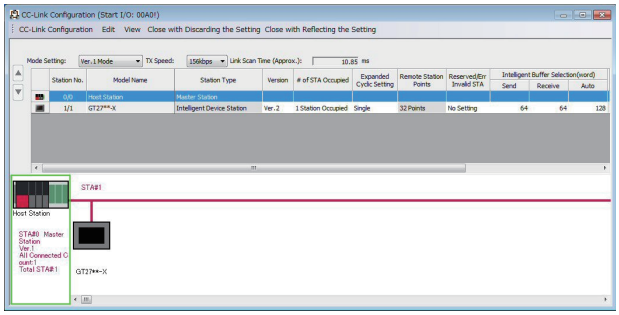
Link refresh setting



○: Necessary, △: As necessary, —: Not necessary

Item	Setting value	Setting for GOT connection
[Special relay (SB) refresh device]	—	△
[Special register (SW) refresh device]	—	△
[Remote input (RX) refresh device]	Set this item as necessary.	△
[Remote output (RY) refresh device]		△
[Remote register (RWr) refresh device]		△

CC-Link configuration setting



○: Necessary, △: As necessary, —: Not necessary

Item*1	Setting value	Setting for GOT connection
[Station Type]	Ver.2 intelligent device station (fixed)	○
[Expanded Cyclic Setting]*2	Single	○
[# of STA Occupied]*2	1 station occupied	○
[Remote Station Points]	32 points (fixed)	○
[Reserved/Err Invalid STA]	No setting	○
[Intelligent Buffer Selection(word)]	(Use default value)	—

*1 When the [Mode] of the CC-Link module is set to [Remote Net Ver.1 Mode], [Remote Station Points] cannot be set.
*2 Set the same setting as that of the GOT.

Point

When changing the module parameter
After writing module parameters to the PLC CPU, turn off then on or reset the PLC CPU.

■[Controller Setting] in GT Designer3

Item	Setting value
[Station No.]	1: Station No. 1
[Transmission Rate]	0: Online 156 kbps
[Mode]	Ver.1: Remote network Ver.1 mode
[Expanded Cyclic]	Single (Use default value)
[Occupied Station]	1 station
[Input for Error Station]	0: Clear
[Retry]	3 (Use default value)
[Timeout Time]	3 (Use default value)
[Delay Time]	0 (Use default value)
[Transmission method]	MELSEC (compatible)

Point

[Controller Setting] in GT Designer3

For the setting method of [Controller Setting] in GT Designer3, refer to the following.

☞ Page 1058 [Controller Setting]

Connection to MELSEC iQ-R series with Ver.1/Ver.2 compatibles mixed

This section describes the setting method of the GOT and the CC-Link module (MELSEC iQ-R series) when Ver. 1/Ver. 2 compatible modules are mixed in the system configuration shown below.

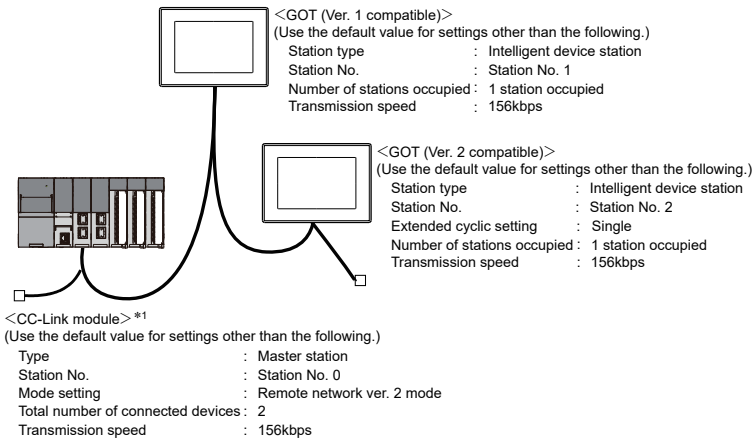
Point

CC-Link module (MELSEC iQ-R series)

For details on the CC-Link module (MELSEC iQ-R series), refer to the following manual.

📖MELSEC iQ-R CC-Link System Master/Local Module User's Manual (Startup)

■System configuration

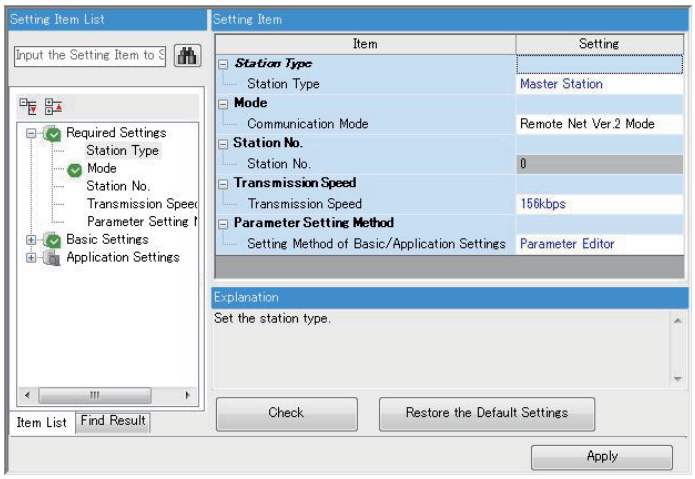


*1 The CC-Link module is mounted on slot 0 of the base unit.
The start I/O number of the CC-Link module is set to "0".

■Module parameter settings of GX Works3

- [Module Parameter] of GX Works3

Module parameter

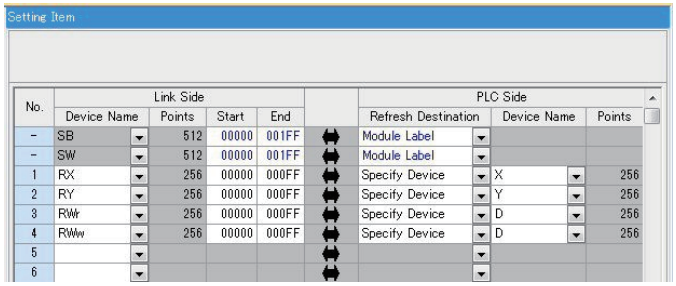


○: Necessary, △: As necessary, —: Not necessary

Item	Setting value	Setting for GOT connection
[Station Type]	Master station	○
[Mode]	Remote network Ver.1 mode	○
[Station No.]	0 (fixed)	△
[Transmission Speed]*1	156 kbps	○
[Parameter Setting Method]	Set in parameter	—

*1 Adjust the settings with the GOT settings.

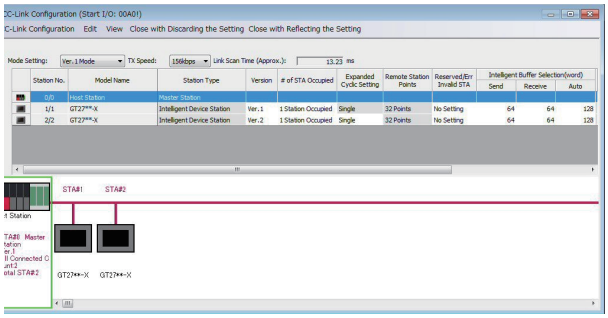
Link refresh setting



○: Necessary, △: As necessary, —: Not necessary

Item	Setting value	Setting for GOT connection
[Special relay (SB) refresh device]	—	△
[Special register (SW) refresh device]	—	△
[Remote input (RX) refresh device]	Set this item as necessary.	△
[Remote output (RY) refresh device]		△
[Remote register (RWr) refresh device]		△

CC-Link configuration setting



CC-Link configuration setting of station No. 1 (GOT)

○: Necessary, △: As necessary, —: Not necessary

Item*1	Setting value	Setting for GOT connection
[Station Type]	Ver.1 intelligent device station (fixed)	○
[# of STA Occupied]*2	1 station occupied	○
[Reserved/Err Invalid STA]	No setting	○
[Intelligent Buffer Selection(word)]	(Use default value)	—

CC-Link configuration setting of station No. 2 (GOT)

○: Necessary, △: As necessary, —: Not necessary

Item*1	Setting value	Setting for GOT connection
[Station Type]	Ver.2 intelligent device station (fixed)	○
[Expanded Cyclic Setting]*2	Single	○
[# of STA Occupied]*2	1 station occupied	○
[Reserved/Err Invalid STA]	No setting	○
[Intelligent Buffer Selection(word)]	(Use default value)	—

*1 When the [Mode] of the CC-Link module is set to [Remote Net Ver.2 Mode], [Remote Station Points] can be set.
[Remote Station Points] is a setting for the remote I/O station.
The default value (32 points) must be used on the GOT.

*2 Set the same setting as that of the GOT.

Point

When changing the module parameter

After writing module parameters to the PLC CPU, turn off then on or reset the PLC CPU.

■[Controller Setting] in GT Designer3

- Communication settings of station No. 1 (GOT)

Item	Setting value
[Station No.]	1: Station No. 1
[Transmission Rate]	0: Online 156 kbps
[Mode]	Ver.1: Remote network Ver.1 mode
[Expanded Cyclic]	Single (Use default value)
[Occupied Station]	1 station
[Input for Error Station]	0: Clear
[Retry]	3 (Use default value)
[Timeout Time]	3 (Use default value)
[Delay Time]	0 (Use default value)
[Transmission method]	MELSEC (compatible)

- Communication settings of station No. 2 (GOT)

Item	Setting value
[Station No.]	2: Station No. 2
[Transmission Rate]	0: Online 156 kbps
[Mode]	Ver.2: Remote network Ver.2 mode
[Expanded Cyclic]	Single
[Occupied Station]	1 station
[Input for Error Station]	0: Clear
[Retry]	3 (Use default value)
[Timeout Time]	3 (Use default value)
[Delay Time]	0 (Use default value)
[Transmission method]	MELSEC (compatible)

12.3.5 Access range for monitoring

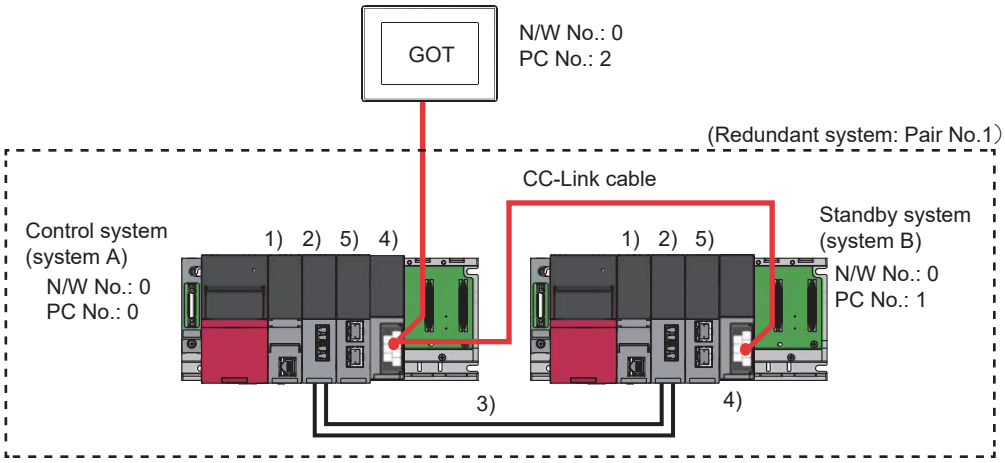
Only the connected CPU can be accessed.

12.3.6 How to monitor a redundant system

One-to-one connection of the GOT and the redundant system

■System configuration example

The following connection configuration examples are explained.



1) Process CPU
2) Redundant function module
3) Tracking cable
4) CC-Link(ID)
5) CC-Link IE Field Network master/local module

■Connection method

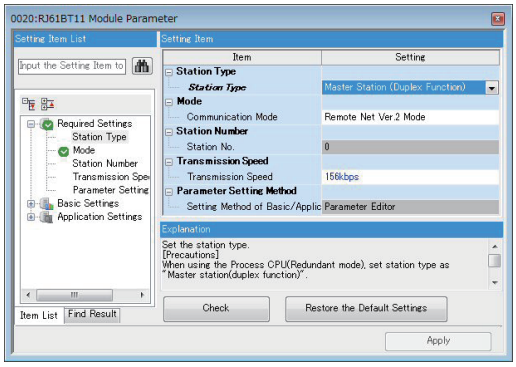
Connect the CC-Link module (intelligent device station) and the GOT.

☞ Page 1018 CC-Link connection (intelligent device station)

■PLC side settings (GX Works3)

- Control system (system A) PLC settings

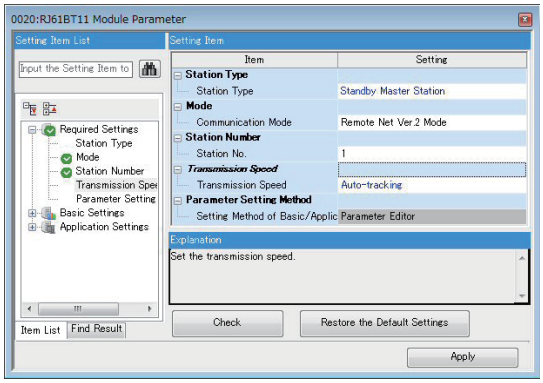
Module parameter



Item	Setting value
[Station Type]	Master station (duplex function)
[Mode]	Remote network Ver.2 mode
[Station No.]	0 (fixed)
[Transmission Speed]	156 kbps
[Parameter Setting Method]	Set in parameter (fixed)

• Control system (system B) PLC settings

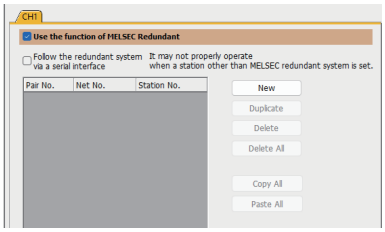
Module parameter



Item	Setting value
[Station Type]	Standby master station
[Mode]	Remote network Ver.2 mode
[Station No.]	1
[Transmission Speed]	Auto-tracking
[Parameter Setting Method]	Set in parameter (fixed)

■GOT side settings

Set GT Designer3 as follows.

Setting item	Setting details		Model
[Controller Type]	MELSEC iQ-R, RnMT/NC/RT, CR800-D		GT37 SoftGOT3000
Device setting (Network setting)	Host	—	
	Other	Network number: 0	
		PLC station No.: Station number of the control system	
	Control system/ standby system	The system (control system/standby system) to be monitored can be specified. This item can be set only when [Use the function of MELSEC Redundant] is selected in [MELSEC Redundant] shown below.	
MELSEC redundant setting	Select [Use the function of MELSEC Redundant]. A pairing setting is not required.  ☞ Page 1075 MELSEC redundant settings		

■Monitoring target change when system switching occurs in a redundant system

When system switching occurs, the CPU (Network No. 0, PLC station No. 1) becomes the control system and continues the control.

The GOT automatically starts monitoring according to the specified system.

MELSEC redundant settings

This section describes the settings for the GOT to automatically change the monitoring target of the RCPU redundant system.

Point

Before configuring the MELSEC redundant settings

In the MELSEC redundant settings, do not set a station outside the redundant RCPU.

1. Select [Common] → [Controller Setting] → [MELSEC Redundant] from the menu.

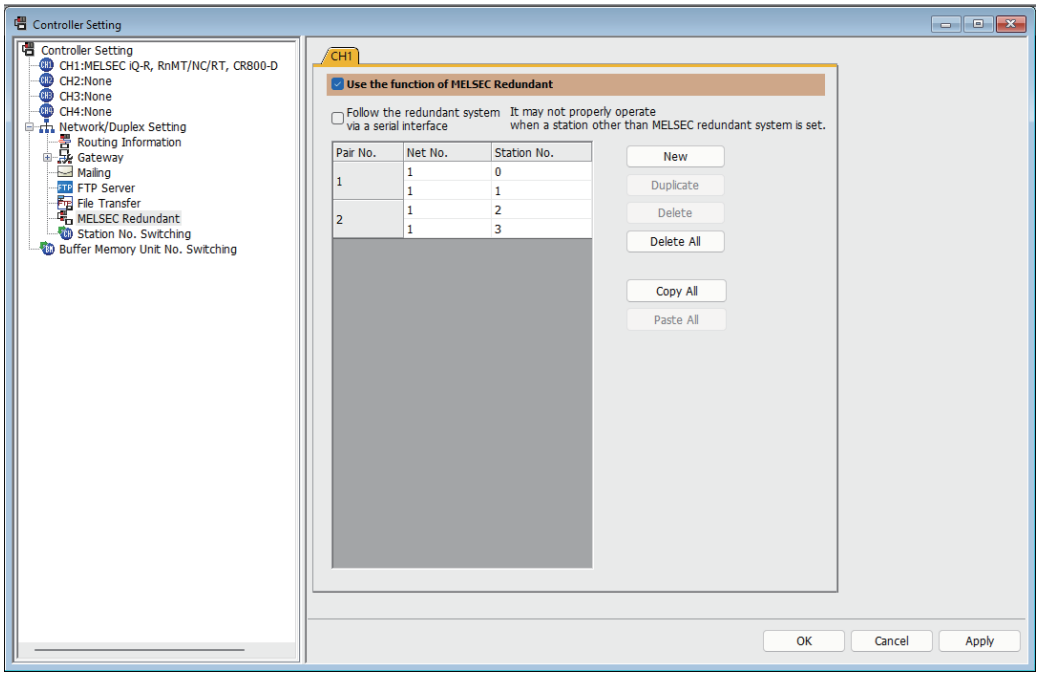
2. The setting dialog box appears. Configure the settings by referencing the explanation that follows.

3. Configure the MELSEC redundant settings.

In the MELSEC redundant setting dialog, settings can be made for each channel of the controller.

The following shows an example of the CC-Link connection (intelligent device station) (station No. 4) with redundant CPU pair No. 1 to No. 2, network No. 1, and redundant CPU station No. 0 to No. 3.

Ex.



Item		Description	Model
CH1 to CH4		Select the tab of the channel number to configure the MELSEC redundant settings.	GT37 SoftGOT3000
[Follow the redundant system via a serial interface]		Select this item to monitor the control system as a host station at serial connection.	
[Pair No.]*1	[Net No.]	Set the network number (1 to 255) for each pair number (1 to 64). • Upper row: Setting for the first redundant CPU • Lower row: Setting for the second redundant CPU (The same value as the value set for the first redundant CPU is displayed.)	
	[Station No.]	Set the station number (0 to 120) of the redundant CPU for each pair number (1 to 64). • Upper row: Setting for the first redundant CPU • Lower row: Setting for the second redundant CPU (The setting value for the first redundant CPU + 1 is displayed.)	
[New]		Adds a new pair number.	
[Duplicate]		Copies one setting of the selected pair number and adds it below the bottom row.	
[Delete]		Deletes one setting of the selected pair number. After deletion, the succeeding pair numbers are renumbered to fill the deleted pair number.	
[Delete All]		Deletes all the pair number settings.	
[Copy All]		Copies the MELSEC redundant setting on the selected CH No. tab.	
[Paste All]		Pastes the copied MELSEC redundant setting in the selected CH No. tab.	

*1 For details, refer to the following.

☞ Page 1076 Pair number

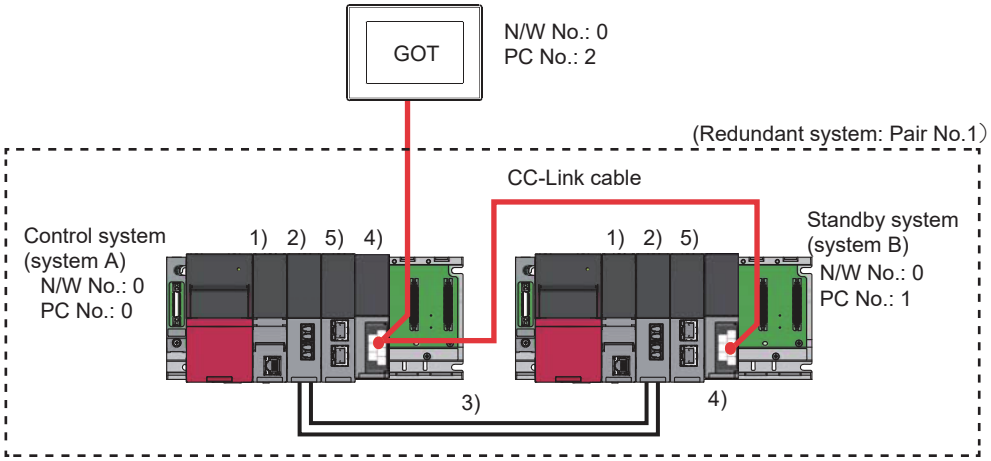
■Pair number

Redundant CPU pair means the redundant CPUs (System A / System B) in the redundant system configuration.

Pair number is the number assigned to each redundant CPU pair.

The following shows an example of the CC-Link connection (intelligent device station) in the RCPU redundant system. (Pair No. 1)

Ex.



1) Process CPU
2) Redundant function module
3) Tracking cable
4) CC-Link(ID)
5) CC-Link IE Field Network master/local module

Point

Precautions for configuring the MELSEC redundant settings

Pay attention to the following items when configuring the MELSEC redundant settings.

- The last station number and station number 1 (example: station number 64 and station number 1) cannot be paired.
- Before configuring the settings, make sure to check the station numbers of the network modules. If the MELSEC redundant settings and the actual network module station numbers are inconsistent, the GOT fails to automatically change the monitoring target to the control system when the system is switched.
- GOT supports the backup mode, which is the redundant mode of the RCPU redundant system, and does not support the process mode and separate mode.

Precautions

■Start of the redundant system

The GOT starts monitoring the redundant system after the control system and standby system have been determined, regardless of the starting order of PLC systems A and B.

The GOT starts monitoring when both systems start.

(In a redundant system with a redundant extension base unit, the GOT monitors the control system that starts first.)

Power on the redundant system within the time set in the GOT (communication timeout time and number of retries) so that the GOT can start monitoring after the redundant system starts (after the control system is decided).

If the GOT does not start within the set time, the GOT stops monitoring for safety reasons, and the following system alarm occurs.

- 451: The MELSEC redundant setting and actual system configuration do not match.

If the system alarm occurs, restart the GOT (reapply or reset the power supply) to start monitoring again.

■System switching

When system switching occurs through the user program, the communication path remains unchanged, and the GOT will continue monitoring.
No system alarm occurs.
When system switching occurs due to disconnected cable or other causes, the GOT changes the communication path and continues monitoring.
[450: Path has changed or timeout occurred in redundant system.] appears as the system alarm.

■Redundant system configuration and operation mode

- System alarm display

If the MELSEC redundant settings do not match the actual configuration of the redundant system, or if the operation mode of the redundant system is not set to backup mode, [451: The MELSEC redundant setting and actual system configuration do not match.] appears as the system alarm, and the GOT will not be able to correctly monitor the redundant system's CPU.
If the system alarm occurs, restart the GOT (reapply or reset the power supply) to start monitoring again.

- Changing the MELSEC redundant settings

Always reset the GOT after changing the MELSEC redundant settings. If not reset, the changed MELSEC redundant settings will not be applied on the GOT.

■Monitoring a non-redundant system with the MELSEC redundant settings configured

If the MELSEC redundant settings were set for a non-redundant system, the GOT will operate normally.
In this case, if an abnormality (such as powering off or communication timeout error) occurs in the PLC CPU for which the MELSEC redundant settings are configured, the PLC CPU may not operate as intended.

■Monitoring a redundant system without configuring the MELSEC redundant settings

When the MELSEC redundant settings are not configured, the GOT does not automatically change the monitoring target even if system switching occurs in the redundant system.
When the GOT is connected to the standby system, data written to a device are overwritten by the data of the control system, failing to be reflected.
In this case, when data is written to a device in the standby system normally, the system alarm [315 Device writing error. Correct device.] is not detected.

■CC-Link (ID) connection

When system switching occurs due to the following factors, data link control of CC-Link (ID) does not transfer from the master station of the new standby system to the standby master station of the new control system and the GOT cannot change the monitoring target.
Make the standby master station of the new control system take over data link control in the ladder program.
For details on the ladder program for data link control, refer to the following manual.

- MELSEC iQ-R series

📖MELSEC iQ-R CC-Link System Master/Local Module User's Manual (Application)

<Factors of system switching>

- Execution of the system switching instruction on the PLC side
- Execution of system switching operation using the engineering tool
- Execution of system switching request from other network modules

<Reason why the GOT cannot change the monitoring target>

When system switching occurs due to the above factors, the standby master station does not take over data link control because the master station of the new standby system can communicate with the GOT.
Consequently, the new control system master station remains the standby master station.
As a result, the GOT monitors the master station without considering the new control or standby system, which prevents it from monitoring the redundant system.

12.4 MELSEC iQ-F series (CC-Link connection (intelligent device station))

☞ Page 1078 Connectable devices
☞ Page 1078 System configuration
☞ Page 1083 GOT side settings
☞ Page 1089 PLC side settings
☞ Page 1098 Access range for monitoring

12.4.1 Connectable devices

The following table shows the connectable models.

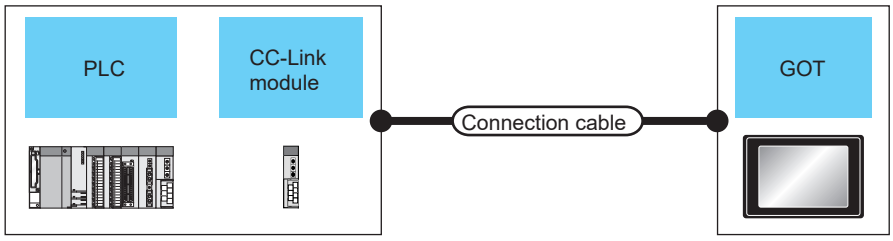
○: Supported, —: Not supported

Controller	Model	Clock	CC-Link module	Connectable model
MELSEC iQ-F series	FX5U FX5UC	○	FX3U-16CCL-M*1 FX5-CCL-MS	GT37 SoftGOT3000
	FX5UJ	○	FX5-CCL-MS	GT37 SoftGOT3000

*1 When the FX3U-16CCL-M is used, the bus conversion module (FX5-CNV-BUS) is required.

12.4.2 System configuration

Connection with CC-Link Ver.1 compatible



For details on the overall length, refer to the following.

☞ Page 1079 Overall length

For details on the maximum number of connected devices, refer to the following.

☞ Page 1079 Maximum number of connected devices

Controller	CC-Link module*1	Communication type	Connection cable	GOT	
				Interface	Model
MELSEC iQ-F series (FX5U, FX5UC)	FX3U-16CCL-M*4 FX5-CCL-MS	CC-Link (Ver.1)	CC-Link dedicated cable*2	GT37-IF2000 + GT15-J61BT13*3	GT37 SoftGOT3000
MELSEC iQ-F series (FX5UJ)	FX5-CCL-MS	CC-Link (Ver.1)	CC-Link dedicated cable*2	GT37-IF2000 + GT15-J61BT13*3	GT37 SoftGOT3000

*1 For the system configuration of the CC-Link module, refer to the following manual.
MELSEC iQ-F FX5 CC-Link System Master/Intelligent Device Module User's Manual
FX3U-16CCL-M User's Manual
*2 For the specifications of the CC-Link dedicated cable and the contact information, refer to the following.
CC-Link Partner Association website: http://www.cc-link.org/
*3 In the controller settings, set the mode to Ver.1.
For details on settings, refer to the following.
☞ Page 1083 [Controller Setting]
*4 When the FX3U-16CCL-M is used, the bus conversion module (FX5-CNV-BUS) is required.

■Overall length

The maximum overall cable length and cable length between stations vary depending on the conditions such as the type of the cable used and the transmission speed.

For details, refer to the following manual.

MELSEC iQ-F FX5 CC-Link System Master/Intelligent Device Module User's Manual

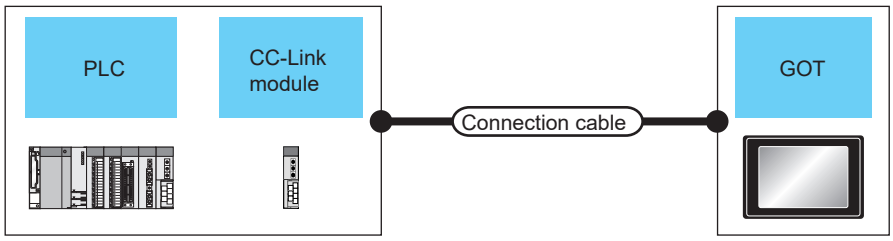
FX3U-16CCL-M User's Manual

■Maximum number of connected devices

The following shows the number of connectable GOTs.

Controller	
Model	**Number of connectable devices**
MELSEC iQ-F series	8 GOTs

Connection with CC-Link Ver.2 compatible



For details on the overall length, refer to the following.

☞ Page 1080 Overall length

For details on the maximum number of connected devices, refer to the following.

☞ Page 1080 Maximum number of connected devices

Controller	CC-Link module*1	Communication type	Connection cable	GOT	
				Interface	Model
MELSEC iQ-F series (FX5U, FX5UC)	FX3U-16CCL-M*4 FX5-CCL-MS	CC-Link (Ver.2)	CC-Link dedicated cable*2	GT37-IF2000 + GT15-J61BT13*3	GT37 SoftGOT3000
MELSEC iQ-F series (FX5UJ)	FX5-CCL-MS	CC-Link (Ver.2)	CC-Link dedicated cable*2	GT37-IF2000 + GT15-J61BT13*3	GT37 SoftGOT3000

*1 For the system configuration of the CC-Link module, refer to the following manual.
MELSEC iQ-F FX5 CC-Link System Master/Intelligent Device Module User's Manual
FX3U-16CCL-M User's Manual
*2 For the specifications of the CC-Link dedicated cable and the contact information, refer to the following.
CC-Link Partner Association website: http://www.cc-link.org/
*3 In the controller settings, set the mode to Ver.2.
For details on settings, refer to the following.
☞ Page 1083 [Controller Setting]
*4 When the FX3U-16CCL-M is used, the bus conversion module (FX5-CNV-BUS) is required.

■Overall length

The maximum overall cable length and cable length between stations vary depending on the conditions such as the type of the cable used and the transmission speed.

For details, refer to the following manual.

📖MELSEC iQ-F FX5 CC-Link System Master/Intelligent Device Module User's Manual

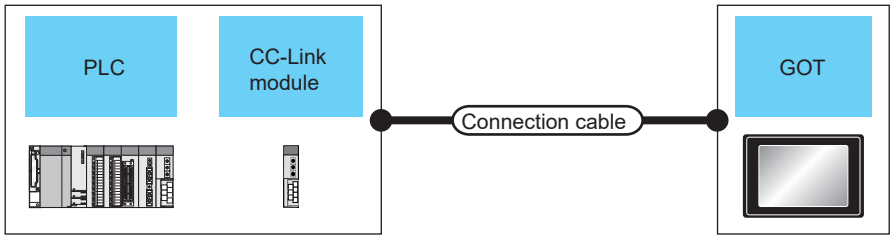
📖FX3U-16CCL-M User's Manual

■Maximum number of connected devices

The following shows the number of connectable GOTs.

Controller	
Model	**Number of connectable devices**
MELSEC iQ-F series	8 GOTs

Connection with CC-Link Ver.1/Ver.2 compatibles mixed



For details on the overall length, refer to the following.

☞ Page 1080 Overall length

For details on the maximum number of connected devices, refer to the following.

☞ Page 1081 Maximum number of connected devices

Controller	CC-Link module*1	Communication type	Connection cable	GOT	
				Interface	Model
MELSEC iQ-F series (FX5U, FX5UC)	FX3U-16CCL-M*4 FX5-CCL-MS	CC-Link (Ver.2)	CC-Link dedicated cable*2	GT37-IF2000 + GT15-J61BT13*3	GT37 SoftGOT3000
MELSEC iQ-F series (FX5UJ)	FX5-CCL-MS	CC-Link (Ver.2)	CC-Link dedicated cable*2	GT37-IF2000 + GT15-J61BT13*3	GT37 SoftGOT3000

*1 For the system configuration of the CC-Link module, refer to the following manual.
📖MELSEC iQ-F FX5 CC-Link System Master/Intelligent Device Module User's Manual
📖FX3U-16CCL-M User's Manual

*2 For the specifications of the CC-Link dedicated cable and the contact information, refer to the following.
CC-Link Partner Association website: http://www.cc-link.org/

*3 In the controller settings, set the mode to Ver.2.
For details on settings, refer to the following.
☞ Page 1083 [Controller Setting]

*4 When the FX3U-16CCL-M is used, the bus conversion module (FX5-CNV-BUS) is required.

■Overall length

The maximum overall cable length and cable length between stations vary depending on the conditions such as the type of the cable used and the transmission speed.

For details, refer to the following manual.

📖MELSEC iQ-F FX5 CC-Link System Master/Intelligent Device Module User's Manual

📖FX3U-16CCL-M User's Manual

■Maximum number of connected devices

The following shows the number of connectable GOTs.

Controller	
Model	**Number of connectable devices**
MELSEC iQ-F series	8 GOTs

Connecting one PLC to multiple GOTs

When multiple GOT units are simultaneously accessing one PLC, the GOT writing process (transient/cyclic) and reading process (transient) may slow down.

This slow access can be remedied with the following countermeasures.

<Countermeasures>

■Improve response speed on PLC side

Insert a COM instruction on the PLC to increase the response speed.

Note that caution is required as the scan time will increase.

■Screen design using cyclic devices

Create the screen with cyclic devices instead of using transient devices.

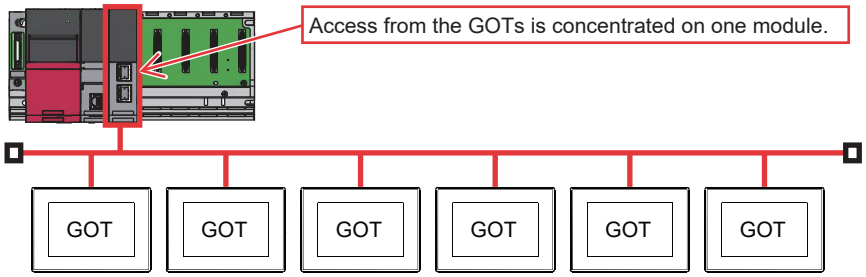
■Split GOT connection destinations into several systems

Add a master/local module to the PLC side, and split the GOT connection destinations into several systems.

Improve the current system configuration.

(Example of current system configuration)

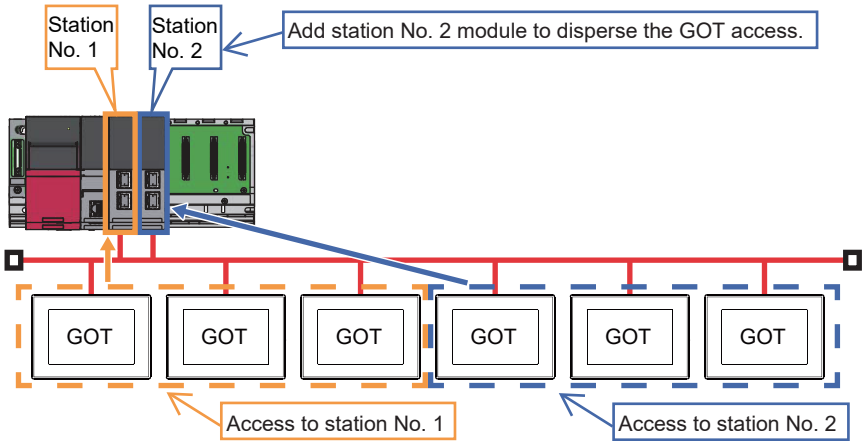
In the following system configuration, access from the GOT is concentrated on one module.



(Improvement measure)

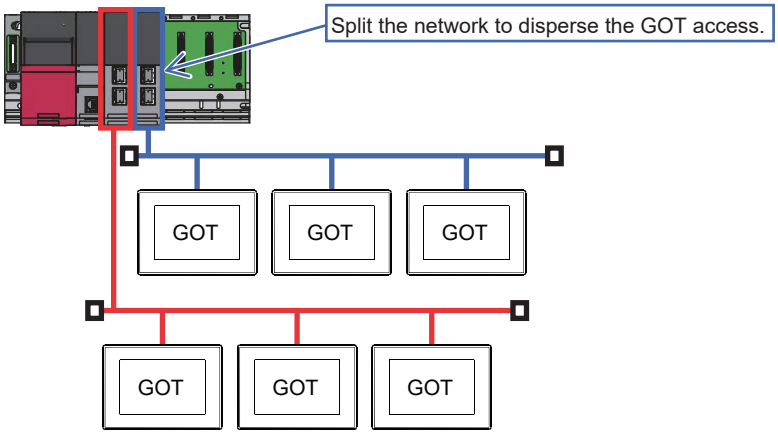
- Adding a module to the PLC side

Add a module to the PLC side to disperse the GOT access destinations.



• Split the network

Split the network to disperse the GOT access.



Precautions

■Starting the GOT in CC-Link connection (intelligent device station)

For the CC-Link connection (intelligent device station), the data link is started approximately 10 seconds after the GOT startup.

■When a network error occurs in the system alarm

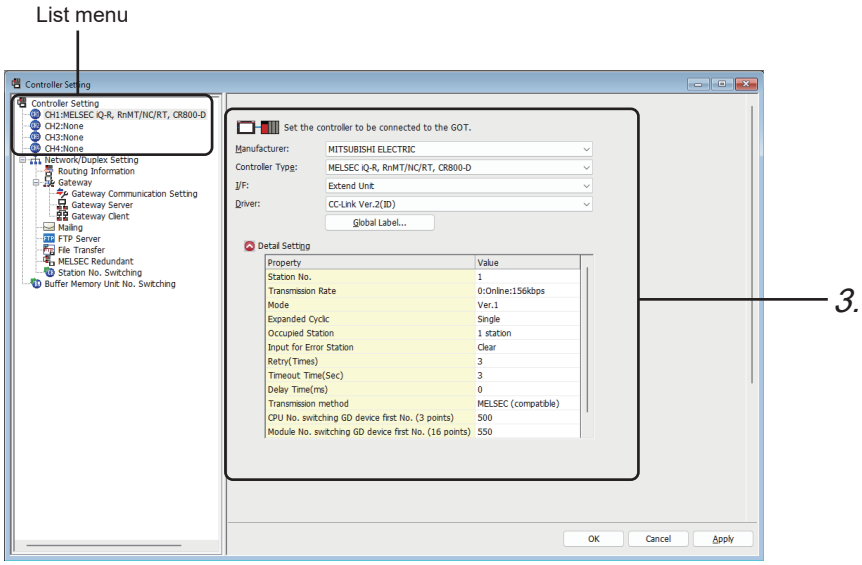
In the CC-Link connection (intelligent device station), when a network error occurs in the system alarm, the system alarm display cannot be canceled even though the causes are removed.

To cancel the system alarm display, restart the GOT.

12.4.3 GOT side settings

[Controller Setting]

Set the channel of the connected controller.



Operating procedure

1. Select [Common] → [Controller Setting] from the menu.

2. In the [Controller Setting] window, select the channel number to be used from the list menu.

3. Set the following items.

Item	Description
[Manufacturer]	[MITSUBISHI ELECTRIC]
[Controller Type]*1	[MELSEC iQ-R, RnMT/NC/RT, CR800-D]
[I/F]	[Extend Unit]
[Driver]	[CC-Link Ver.2 (ID)]
[Detail Setting]	Configure the settings according to the usage environment. ☞ Page 1084 [Detail Setting]

*1 For the MELSEC iQ-F series, set the controller type to one of the following options.
[MELSEC iQ-R, RnMT/NC/RT, CR800-D]
[MELSEC-Q/QS, Q17nD/M/NC/DR/DSR, CRnD-700]
[MELSEC-QnA, MELDAS C6*]
[MELSEC-L]
[MELSEC-A]

4. When you have completed the settings, click the [OK] button.

Point

The controller settings can be configured and checked in [I/F Communication Setting].
For details, refer to the following.
📖GT Designer3 (GOT3000) Screen Design Manual

■[Detail Setting]

Configure the settings according to the usage environment.

Detail Setting

Property	Value
Station No.	1
Transmission Rate	0:Online:156kbps
Mode	Ver.1
Expanded Cyclic	Single
Occupied Station	1 station
Input for Error Station	Clear
Retry(Times)	3
Timeout Time(Sec)	3
Delay Time(ms)	0
Transmission method	MELSEC (compatible)
CPU No. switching GD device first No. (3 points)	500
Module No. switching GD device first No. (16 points)	550

Item	Description	Range
[Station No.]	Set the station number of the GOT.	[1] to [64]
[Transmission Rate]*1	Set the transmission speed and a mode of the GOT.	[0] to [E]
[Mode]	Set the operation mode of the GOT.	[Ver.1], [Ver.2], [Additional], [Offline]
[Expanded Cyclic]	Set the cyclic point expansion.	[Single], [Double], [Quadruple], [Octuple]
[Occupied Station]	Set the number of stations occupied by the GOT.	[1 Station], [4 Stations]
[Input for Error Station]	Set whether to clear or hold the error at an error occurrence.	[Clear], [Hold]
[Retry]	Set the number of retries to be performed when a communication timeout occurs. When receiving no response after retries, the communication times out.	[0] times to [5] times
[Timeout Time]	Set the time period for a communication to time out.	[1] second to [90] seconds
[Delay Time]	Set this item to adjust the transmission timing of the communication request from the GOT.	[0] ms to [300] ms
[Transmission method]*2	Set the CC-Link transmission method.	[MELSEC (compatible)], [Cyclic]
[CPU No. switching GD device first No. (3 points)]	Set the start device number of the GD devices for CPU number switching. For details, refer to the following. ☞ Page 1085 Start device number of the GD devices for CPU number switching	[0] to [65520]
[Module No. switching GD device first No. (16 points)]	Set the start device number of the GD devices for module number switching. For details, refer to the following. ☞ Page 1086 Start device number of the GD devices for module number switching	[0] to [65520]
[Servo axis switching GD device first No. (16 points)]	Set the start device number of the GD devices for servo axis switching. For details, refer to the following. ☞ Page 1087 Start device number of the GD devices for servo axis switching	[0] to [65520]

*1 Transmission speed settings

The following lists the transmission speed settings of the CC-Link communication.

Setting value	Description
0	Online: 156 kbps
1	Online: 625 kbps
2	Online: 2.5 Mbps
3	Online: 5 Mbps
4	Online: 10 Mbps
5	Line test: 156 kbps
6	Line test: 625 kbps
7	Line test: 2.5 Mbps

Setting value	Description
8	Line test: 5 Mbps
9	Line test: 10 Mbps
A	Hardware test: 156 kbps
B	Hardware test: 625 kbps
C	Hardware test: 2.5 Mbps
D	Hardware test: 5 Mbps
E	Hardware test: 10 Mbps

For details on the hardware test, refer to the following manual.

MELSEC iQ-F FX5 CC-Link System Master/Intelligent Device Module User's Manual

FX3U-16CCL-M User's Manual

*2 Set the transmission method to [Cyclic].

Point

• Communication interface settings in the GT37 utility

The communication interface setting can be changed in [Communication setting] of the GT37 utility after writing [Controller Setting] in project data.

For details on the GT37 utility, refer to the following manual.

GOT3000 Series User's Manual (Utility & Maintenance Functions)

• Priority of the settings in [Controller Setting]

When settings are configured in GT Designer3 or the GT37 utility, the most recent settings are effective.

■Start device number of the GD devices for CPU number switching

• Indirect specification of a CPU number

[CPU No.] can be indirectly specified with the GOT internal registers (GD devices) by specifying a value (100 to 102) to [CPU No.] in the device setting dialog in GT Designer3.

Set the start device number of the GD devices to be used in [CPU No. switching GD device first No. (3 points)].

[CPU No.] is specified with three consecutive GD devices, starting from the set device number.

When [500] is set to [CPU No. switching GD device first No. (3 points)], GD500 to GD502 are used to specify [CPU No.] as shown in the following table.

CPU No.	GD device	Setting range
100	GD500	1 to 4 Setting a value outside the range causes a communication timeout error. Specifying a nonexistent CPU number or a CPU number not supporting a multiple CPU system with a device causes a controller error.
101	GD501	
102	GD502	

• Indirect specification of a CPU number on the initially displayed screen

Set [CPU No. switching GD device first No. (3 points)] so that the values of the GD devices are retained and monitored upon the GOT startup.

• Indirect specification of a CPU number for multi-channel connection

If the setting range of [CPU No. switching GD device first No. (3 points)] set for each channel overlaps, the monitoring target CPU number set to each channel is switched simultaneously.

Set [CPU No. switching GD device first No. (3 points)] for each channel so that the setting range does not overlap.

• Indirect specification of a station number and a CPU number for multi-channel connection

When GD10 to GD25 are used to specify the station number of an inverter or non-Mitsubishi temperature controller connected, setting [10] to [CPU No. switching GD device first No. (3 points)] in a different channel switches the monitoring target CPU number and station number of an inverter or non-Mitsubishi temperature controller set to each channel simultaneously.

Set [CPU No. switching GD device first No. (3 points)] so that the setting range does not overlap the station number of an inverter or non-Mitsubishi temperature controller.

■Start device number of the GD devices for module number switching

• Indirect specification of a module number

For connection via a Simple Motion module, [Unit No.] can be specified with the GOT internal registers (GD devices) by specifying a value (100 to 10F) to [Unit No.] in the device setting dialog in GT Designer3.

Set the start device number of the GD devices to be used in [Module No. switching GD device first No. (16 points)].

[Unit No.] is specified with 16 consecutive GD devices, starting from the set device number.

When [550] is set to [Module No. switching GD device first No. (16 points)], GD550 to GD565 are used to specify [Unit No.] as shown in the following table.

Module No.	GD device	Setting range
100	GD550	00 to FF Setting a value outside the above range causes a device range error.
101	GD551	
102	GD552	
103	GD553	
104	GD554	
105	GD555	
106	GD556	
107	GD557	
108	GD558	
109	GD559	
10A	GD560	
10B	GD561	
10C	GD562	
10D	GD563	
10E	GD564	
10F	GD565	

• Indirect specification of a module number on the initially displayed screen

Set [Module No. switching GD device first No. (16 points)] so that the values of the GD devices are retained and monitored upon the GOT startup.

• Indirect specification of a module number for multi-channel connection

If the setting range of [Module No. switching GD device first No. (16 points)] set for each channel overlaps, the module number of the Simple Motion module via the servo amplifier device of each channel is switched simultaneously.

Set [Module No. switching GD device first No. (16 points)] for each channel so that the setting range does not overlap.

• Indirect specification of a station number and a module number for multi-channel connection

When GD10 to GD25 are used to specify the station number of an inverter or non-Mitsubishi temperature controller connected, setting [10] to [Module No. switching GD device first No. (16 points)] switches the module number of the Simple Motion module via the servo amplifier device and the station number of an inverter or non-Mitsubishi temperature controller set to each channel simultaneously.

Set [Module No. switching GD device first No. (16 points)] so that the setting range does not overlap the station number of an inverter or non-Mitsubishi temperature controller.

■Start device number of the GD devices for servo axis switching

• Indirect specification of a servo axis number

For connection via a Motion CPU or Simple Motion module, a servo axis number can be indirectly specified with GOT internal registers (GD devices) by specifying a value (100 to 115) to the axis number of the servo amplifier device.

Set the start device number of the GD devices to be used in [Servo axis switching GD device first No. (16 points)].

Specify a servo axis number with 16 consecutive GD devices, starting the set device number.

When [10] is set to [Servo axis switching GD device first No. (16 points)], GD10 to GD25 are used to specify a servo axis number as shown in the following table.

Servo axis No.	GD device	Setting range
100	GD10	1 to 64 Setting a value outside the above range causes a device range error.
101	GD11	
102	GD12	
103	GD13	
104	GD14	
105	GD15	
106	GD16	
107	GD17	
108	GD18	
109	GD19	
110	GD20	
111	GD21	
112	GD22	
113	GD23	
114	GD24	
115	GD25	

• Indirect specification of a servo axis number on the initially displayed screen

Set [Servo axis switching GD device first No. (16 points)] so that the values of the GD devices are retained and monitored upon the GOT startup.

• Indirect specification of a servo axis number for multi-channel connection

If the setting rage of [Servo axis switching GD device first No. (16 points)] set for each channel overlaps, the axis number of the servo amplifier of each channel is switched simultaneously.

Set [Servo axis switching GD device first No. (16 points)] for each channel so that the setting range does not overlap.

• Indirect specification of a station number and a servo axis number for multi-channel connection

When GD10 to GD25 are used to specify the station number of an inverter or non-Mitsubishi temperature controller connected, setting [10] to [Servo axis switching GD device first No. (16 points)] switches the axis number of the servo amplifier and the station number of an inverter or non-Mitsubishi temperature controller set to each channel simultaneously.

Set [Servo axis switching GD device first No. (16 points)] so that the setting range does not overlap the station number of an inverter or non-Mitsubishi temperature controller.

Precautions

■Using cyclic transmission

• I/O signals for the master station

Do not turn on the reserved output signals in the output signals (remote output: RY) to the GOT from the master station.

When the reserved output signal is turned on, the PLC system may malfunction.

For the assignment of I/O signals in the GOT, refer to the following manuals.

📖MODEL GT15-J61BT13 CC-Link communication unit User's Manual

📖GT15 CC-Link communication unit User's Manual

• Access range for monitoring

The remote I/O (RX and RY) and remote register (RWr and RWw) monitoring ranges vary depending on the mode of the master station in the CC-Link system.

Mode of master station	Monitoring	
	Data for each station compatible with CC-Link Ver.1	Data for each station compatible with CC-Link Ver.2
Remote network mode	○	—
Remote network Ver.1 mode	○	—
Remote network Ver.2 mode	○	○*1
Remote network additional mode	○	○

○: Available, ×: Not available (All "0"), —: System configuration not available

*1 Monitoring is available only when the GT15-J61BT13 CC-Link communication unit is used.

• When the GOT malfunctions

The state of cyclic output before fault is held.

■Connection with CC-Link Ver.1 compatible

For connection with CC-Link Ver.1 compatible, the device setting must be configured within the range of the specifications of the controller.

When a device number out of the range is set, proper monitoring may not be possible.

12.4.4 PLC side settings

Model		Reference
MELSEC iQ-F series	FX5U FX5UC	☞ Page 1090 Connection to MELSEC iQ-F series and CC-Link module (FX3U-16CCL-M) with Ver.1/Ver.2 compatibles mixed ☞ Page 1096 Connection to MELSEC iQ-F series and CC-Link module (FX5-CCL-MS) with Ver.1/Ver.2 compatibles mixed
	FX5UJ	☞ Page 1096 Connection to MELSEC iQ-F series and CC-Link module (FX5-CCL-MS) with Ver.1/Ver.2 compatibles mixed

The GOT operates as the stations with the following specifications in the CC-Link system.

Station information	Description
Station type	Intelligent device station, Ver.1 intelligent device station, or Ver.2 intelligent device station
Number of stations occupied	1 station or 4 stations

Point

Number of stations occupied

The number of stations occupied is the setting for determining the number of link device points (RX/RY/RWw/RWr) used by the GOT.

To use multiple numbers of link device points in cyclic transmission between the GOT and CC-Link module, set the number of stations occupied as 4 stations occupied.

The number of link device points when 1 station occupied or 4 stations occupied is shown below.

• CC-Link Ver.2

Link device	Extended cyclic setting							
	Single		Double		Quadruple		Octuple	
	1 station occupied	4 stations occupied	1 station occupied	4 stations occupied	1 station occupied	4 stations occupied	1 station occupied	4 stations occupied
Remote input (RX)	32 points	128 points	32 points	224 points	64 points	448 points	128 points	896 points
Remote output (RY)	32 points	128 points	32 points	224 points	64 points	448 points	128 points	896 points
Remote register (RWw)	4 points	16 points	8 points	32 points	16 points	64 points	32 points	128 points
Remote register (RWr)	4 points	16 points	8 points	32 points	16 points	64 points	32 points	128 points

• CC-Link Ver.1

Link device	Number of stations occupied	
	1 station occupied	4 stations occupied
Remote input (RX)	32 points	128 points
Remote output (RY)	32 points	128 points
Remote register (RWw)	4 points	16 points
Remote register (RWr)	4 points	16 points

Connection to MELSEC iQ-F series and CC-Link module (FX3U-16CCL-M) with Ver.1/Ver.2 compatibles mixed

This section describes the setting method of the GOT and the CC-Link module (FX3U-16CCL-M) when Ver. 1/Ver. 2 compatible modules are mixed in the system configuration shown below.

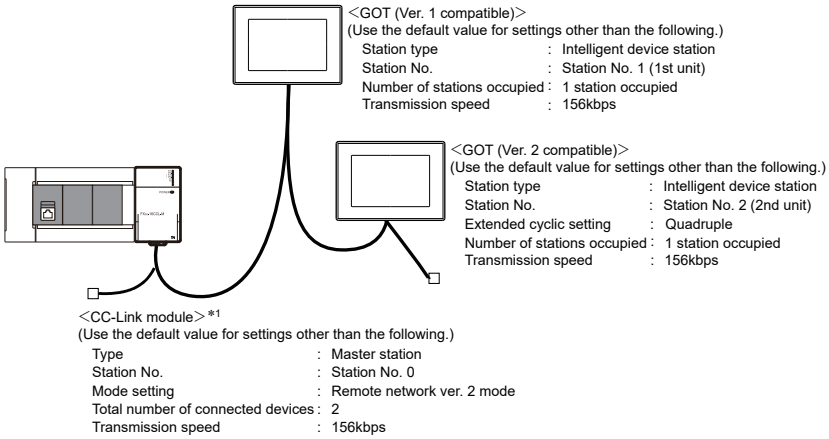
Point

CC-Link module (FX3U-16CCL-M)

For the details on the CC-Link module (FX3U-16CCL-M), refer to the following manual.

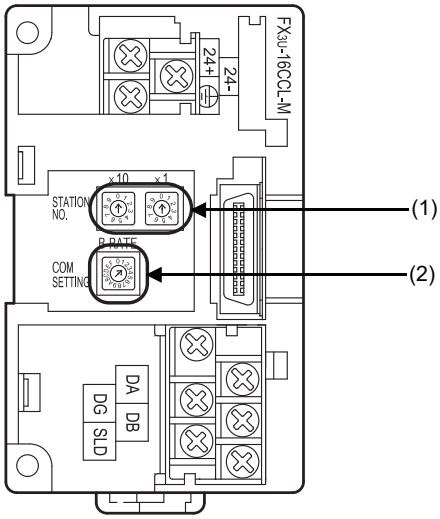
FX3U-16CCL-M User's Manual

■System configuration



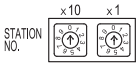
■Switch settings for the CC-Link module (FX3U-16CCL-M)

Set the station number setting switch, transmission speed/mode setting switch.



- Station number setting switch

○: Necessary, △: As necessary, —: Not necessary

Station number setting switch	Description	Setting value	Setting for GOT connection
	Station number setting (master station)	0 (fixed)	○

• Transmission speed/mode setting switch

○: Necessary, △: As necessary, —: Not necessary

Transmission speed/mode setting switch	Description	Setting value	Setting for GOT connection
	Transmission speed and mode setting (Online: 156 kbps)*1	0	○

*1 Set the same transmission speed as that of the GOT.

Point

When the switch setting has been changed
Turn off then on or reset the PLC CPU.

■Parameter settings

• [Network parameter] of GX Works2

Network parameter

	Setting Contents
Special Function Block No.	0
Operation Setting	Operation Setting
Type	Master Station
Master Station Data Link Type	PLC Parameter Auto Start
Mode	Remote Net(Ver.2 Mode)
Total Module Connected	2
Remote input(RX)	
Remote output(RY)	
Remote register(RWr)	
Remote register(RWw)	
Ver.2 Remote input(RX)	
Ver.2 Remote output(RY)	
Ver.2 Remote register(RWr)	
Ver.2 Remote register(RWw)	
Special relay(SB)	
Special register(SW)	
Retry Count	7
Automatic Reconnection Station Count	2
Standby Master Station No.	
PLC Down Select	Stop
Scan Mode Setting	
Delay Time Setting	
Station Information Setting	Station Information
Remote Device Station Initial Setting	Initial Setting
Interrupt Settings	

○: Necessary, △: As necessary, —: Not necessary

Item		Setting value	Setting for GOT connection
[Special Function Block No.]*1		0 to 7 (Default: 0)	—
[Operation Setting]*1	[Data Link Disorder Station Setting]	[Hold input data]: No check	—
	[Case of CPU STOP Setting]	[Clears compulsorily]: No check	—
[Type]		Master station (fixed)	○
[Mode]		Remote network Ver.2 mode	○
[Total Module Connected]		2	—
[Retry Count]*1		7	—
[Automatic Reconnection Station Count]*1		2	—
[PLC Down Select]*1		Stop	—
[Station Information Setting]		☞ Station information setting	○
[Remote Device Station Initial Setting]		(Use default value)	—

*1 Set this item as necessary.
📖FX3U-16CCL-M User's Manual

Station information setting

台数/局番	局種別	拡張サイクリック設定	占有局数	リモート局点数	予約/無効局指定
1/ 1	Ver.1インテリジェントデバイス局	1倍設定	1局占有	32点	設定なし
2/ 2	Ver.2インテリジェントデバイス局	4倍設定	1局占有	64点	設定なし

Station information setting of station No. 1 (GOT)

○: Necessary, △: As necessary, —: Not necessary

Item	Setting value	Setting for GOT connection
[Station Type]	Ver.1 intelligent device station (fixed)	○
[Number of Occupied Stations]*1	1 station occupied	○
[Reserved/Err Invalid STA]	No setting	○

Station information setting of station No. 2 (GOT)

○: Necessary, △: As necessary, —: Not necessary

Item	Setting value	Setting for GOT connection
[Station Type]	Ver.2 intelligent device station (fixed)	○
[Expanded Cyclic Setting]*1	Quadruple	○
[Number of Occupied Stations]*1	1 station occupied	○
[Reserved/Err Invalid STA]	No setting	○

*1 Set the same setting as that of the GOT.

Point

When changing the network parameter

After writing network parameters to the PLC CPU, turn off then on or reset the PLC CPU.

- Settings with sequence program

The program writes parameters to the buffer memory and starts the data link automatically when the PLC CPU status changes from STOP to RUN.

Point

Connection to MELSEC iQ-F series

When connecting with the MELSEC iQ-F series, the network parameters cannot be set with GX Works3.

Set the network parameters in the sequence program.

I/O signals of the CC-Link module

FX3U-16CCL-M User's Manual

Device used by user

Device	Application
D0	Mode
D1	Number of connected modules
D2	Retry count
D3	Automatic reconnection station count
D4	Operation specification when CPU is down
D5	Data link faulty station specification
D6	Case of CPU STOP setting
D20	Station information (1st unit)
D21	Station information (2nd unit)

Buffer memory settings used in the present example

Buffer memory address Dec (Hex)	Item	Setting value
0 (0H)	Mode	2 (Remote network Ver.2 mode)
1 (1H)	Number of connected modules	2 (2 modules)
2 (2H)	Retry count	7 (7 times)
3 (3H)	Automatic reconnection station count	2 (2 modules)
6 (6H)	Operation specification when CPU is down	0 (Stop)
12 (CH)	Data link faulty station specification	1 (Clear)
6 (DH)	Case of CPU STOP setting	0 (Refresh)
32 (20H)	Station information (1st unit)*1	2301H
33 (21H)	Station information (2nd unit)*1	C104H

*1 Details for the station data are shown below.
For 1), 2), and 3), make the settings the same as the settings of the station number, number of stations occupied, and expanded cyclic of the GOT.

b15 ～ b12	b11 ～ b8	b7 ～ b0
③	②	①

1) Station number (Make the setting the same as the station number setting of the GOT.)

01H to 10H: Station No. 1 to Station No. 16

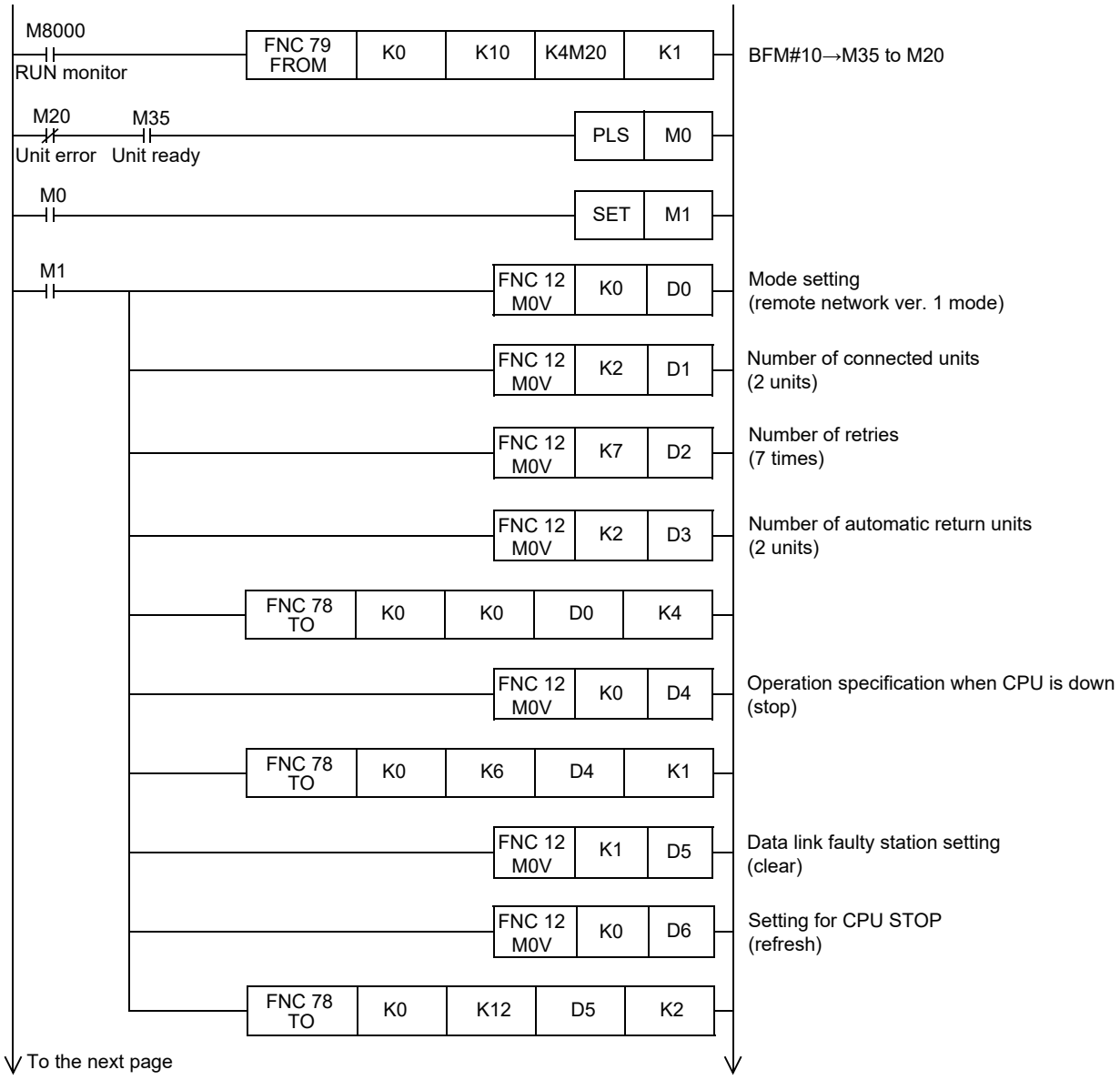
2) Number of stations occupied (Make the setting the same as the number of stations occupied setting of the GOT.)

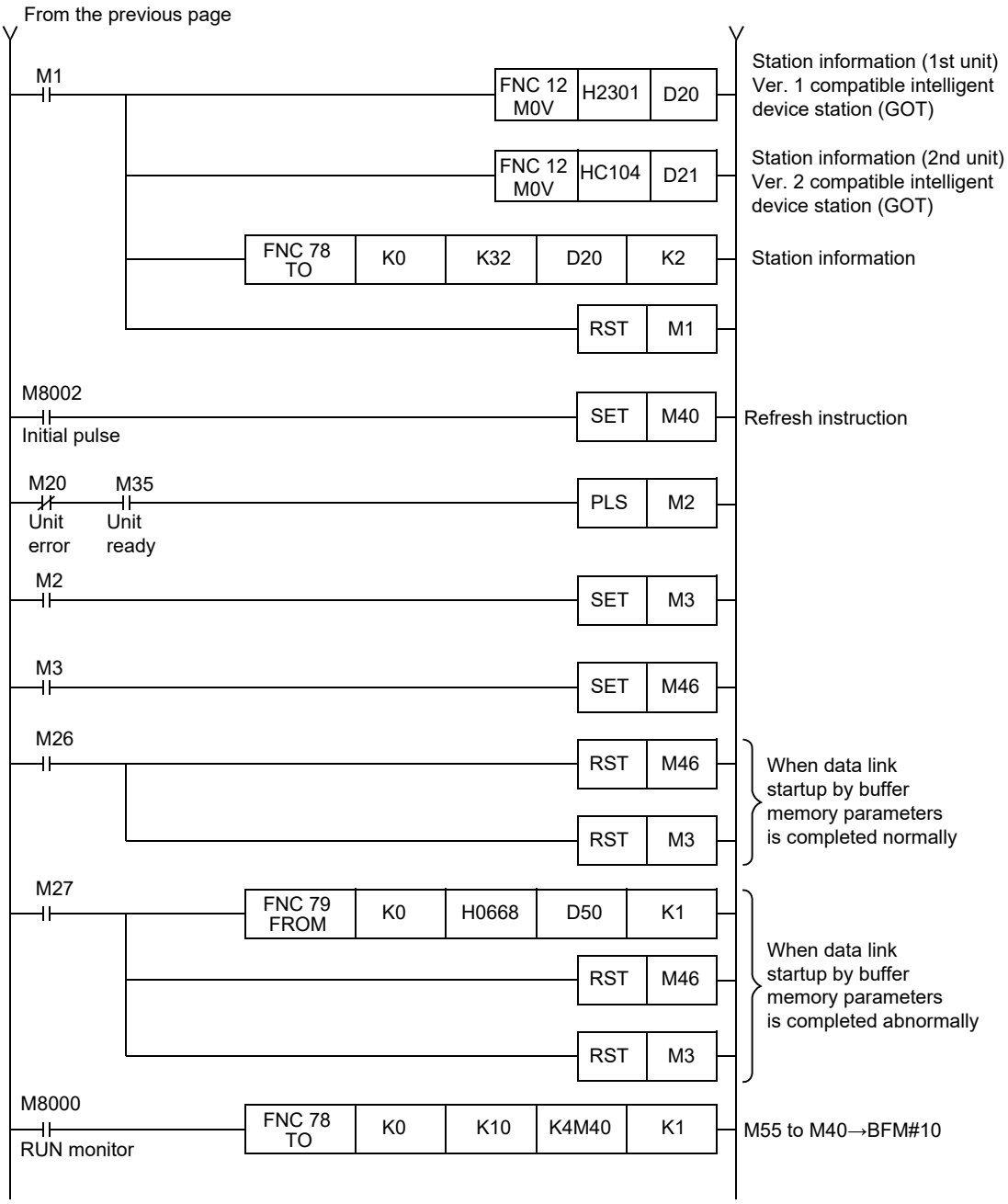
1H: 1 station occupied
2H: 2 stations occupied
3H: 3 stations occupied
4H: 4 stations occupied

3) Station type

2H: Ver. 1 compatible intelligent device station
6H: Ver. 2 compatible single intelligent device station
9H: Ver. 2 compatible double intelligent device station
CH: Ver. 2 compatible quadruple intelligent device station
FH: Ver. 2 compatible octuple intelligent device station

Example of sequence program





Point

When changing the sequence program

After writing the sequence program to the PLC CPU, turn off then on or reset the PLC CPU.

■[Controller Setting] in GT Designer3

- Communication settings of station No. 1 (GOT)

Item	Setting value
[Station No.]	1: Station No. 1
[Transmission Rate]	0: Online 156 kbps
[Mode]	Ver.1: Remote network Ver.1 mode
[Expanded Cyclic]	—
[Occupied Station]	1 station
[Input for Error Station]	0: Clear
[Retry]	3 (Use default value)
[Timeout Time]	3 (Use default value)
[Delay Time]	0 (Use default value)
[Transmission method]	Cyclic

- Communication settings of station No. 2 (GOT)

Item	Setting value
[Station No.]	2: Station No. 2
[Transmission Rate]	0: Online 156 kbps
[Mode]	Ver.2: Remote network Ver.2 mode
[Expanded Cyclic]	Quadruple
[Occupied Station]	1 station
[Input for Error Station]	0: Clear
[Retry]	3 (Use default value)
[Timeout Time]	3 (Use default value)
[Delay Time]	0 (Use default value)
[Transmission method]	Cyclic

Connection to MELSEC iQ-F series and CC-Link module (FX5-CCL-MS) with Ver.1/Ver.2 compatibles mixed

This section describes the setting method of the GOT and the CC-Link module (FX5-CCL-MS) when Ver. 1/Ver. 2 compatible modules are mixed in the system configuration shown below.

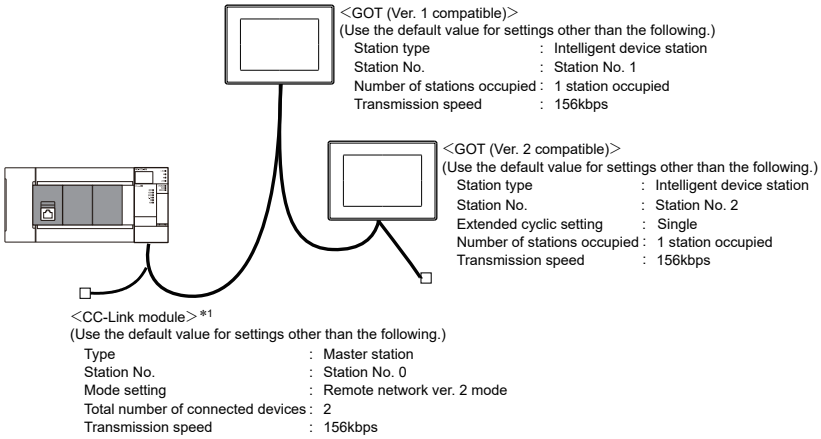
Point

CC-Link module (FX5-CCL-MS)

For the details on the CC-Link module (FX5-CCL-MS), refer to the following manual.

MELSEC iQ-F FX5 CC-Link System Master/Intelligent Device Module User's Manual

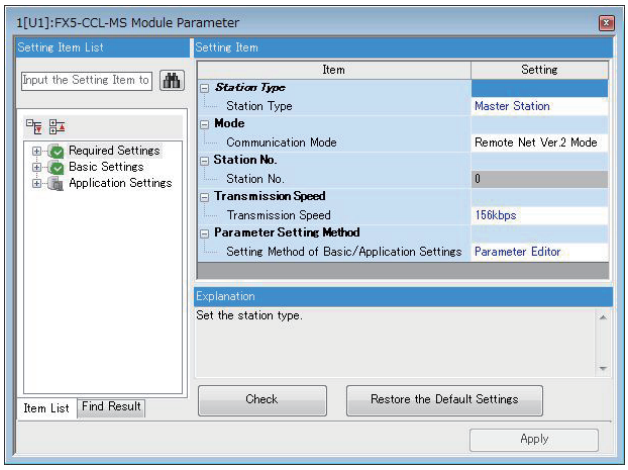
■System configuration



■Module parameter settings of GX Works3

- [Module Parameter] of GX Works3

Module parameter

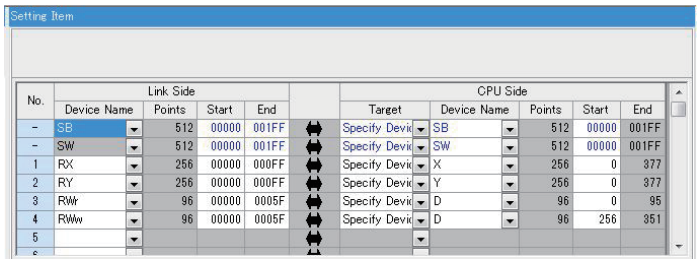


○: Necessary, △: As necessary, —: Not necessary

Item	Setting value	Setting for GOT connection
[Station Type]	Master station	○
[Mode]	Remote network Ver.1 mode	○
[Station No.]	0 (fixed)	△
[Transmission Speed]*1	156 kbps	○
[Parameter Setting Method]	Set in parameter	—

*1 Adjust the settings with the GOT settings.

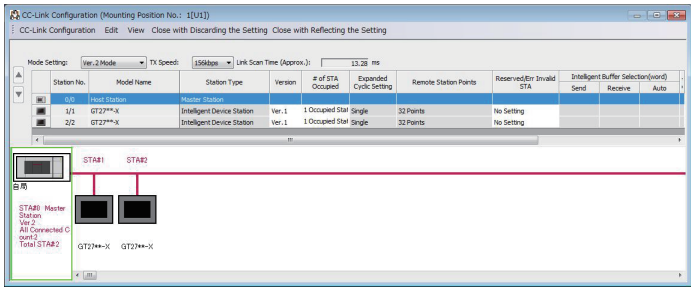
Link refresh setting



○: Necessary, △: As necessary, —: Not necessary

Item	Setting value	Setting for GOT connection
[Special relay (SB) refresh device]	Set this item as necessary.	△
[Special register (SW) refresh device]		△
[Remote input (RX) refresh device]		△
[Remote output (RY) refresh device]		△
[Remote register (RWr) refresh device]		△
[Remote register (RWw) refresh device]		△

CC-Link configuration setting



CC-Link configuration setting of station No. 1 (GOT)

○: Necessary, △: As necessary, —: Not necessary

Item*1	Setting value	Setting for GOT connection
[Station Type]	Ver.1 intelligent device station (fixed)	○
[# of STA Occupied]*2	1 station occupied	○
[Reserved/Err Invalid STA]	No setting	○
[Intelligent Buffer Selection(word)]	(Use default value)	—

CC-Link configuration setting of station No. 2 (GOT)

○: Necessary, △: As necessary, —: Not necessary

Item*1	Setting value	Setting for GOT connection
[Station Type]	Ver.2 intelligent device station (fixed)	○
[Expanded Cyclic Setting]*2	Single	○
[# of STA Occupied]*2	1 station occupied	○
[Reserved/Err Invalid STA]	No setting	○
[Intelligent Buffer Selection(word)]	(Use default value)	—

*1 When the [Mode] of the CC-Link module is set to [Remote Net Ver.2 Mode], [Remote Station Points] can be set.
[Remote Station Points] is a setting for the remote I/O station.
The default value (32 points) must be used on the GOT.

*2 Set the same setting as that of the GOT.

Point

When changing the module parameter

After writing module parameters to the PLC CPU, turn off then on or reset the PLC CPU.

■[Controller Setting] in GT Designer3

• Communication settings of station No. 1 (GOT)

Item	Setting value
[Station No.]	1: Station No. 1
[Transmission Rate]	0: Online 156 kbps
[Mode]	Ver.1: Remote network Ver.1 mode
[Expanded Cyclic]	Single (Use default value)
[Occupied Station]	1 station
[Input for Error Station]	0: Clear
[Retry]	3 (Use default value)
[Timeout Time]	3 (Use default value)
[Delay Time]	0 (Use default value)
[Transmission method]	Cyclic

• Communication settings of station No. 2 (GOT)

Item	Setting value
[Station No.]	2: Station No. 2
[Transmission Rate]	0: Online 156 kbps
[Mode]	Ver.2: Remote network Ver.2 mode
[Expanded Cyclic]	Single
[Occupied Station]	1 station
[Input for Error Station]	0: Clear
[Retry]	3 (Use default value)
[Timeout Time]	3 (Use default value)
[Delay Time]	0 (Use default value)
[Transmission method]	Cyclic

12.4.5 Access range for monitoring

Only the connected CPU can be accessed.

12.5 MELSEC-Q series (CC-Link connection (intelligent device station))

☞ Page 1099 Connectable devices
☞ Page 1101 System configuration
☞ Page 1106 GOT side settings
☞ Page 1112 PLC side settings
☞ Page 1128 Access range for monitoring
☞ Page 1129 How to monitor a redundant system

12.5.1 Connectable devices

The following table shows the connectable models.

○: Supported, —: Not supported

Controller	Model	Clock	CC-Link module	Connectable model
MELSEC-Q (Q mode)	Q00JCPU Q00CPU*1 Q01CPU*1 Q02CPU*1	○	QJ61BT11 QJ61BT11N	GT37 SoftGOT3000
	Q02HCPU*1 Q06HCPU*1 Q12HCPU*1 Q25HCPU*1	○	QJ61BT11 QJ61BT11N	GT37 SoftGOT3000
	Q02PHCPU Q06PHCPU Q12PHCPU Q25PHCPU	○	QJ61BT11 QJ61BT11N	GT37 SoftGOT3000
	Q12PRHCPU (main base) Q25PRHCPU (main base) Q12PRHCPU (remote extension base) Q25PRHCPU (remote extension base) Q12PRHCPU (extension base) Q25PRHCPU (extension base)	○	QJ61BT11 QJ61BT11N	GT37 SoftGOT3000
	Q00UJCPU Q00UJCPU-S8	○	QJ61BT11 QJ61BT11N	GT37 SoftGOT3000
	Q00UCPU Q01UCPU Q02UCPU Q03UDCPU	○	QJ61BT11 QJ61BT11N	GT37 SoftGOT3000

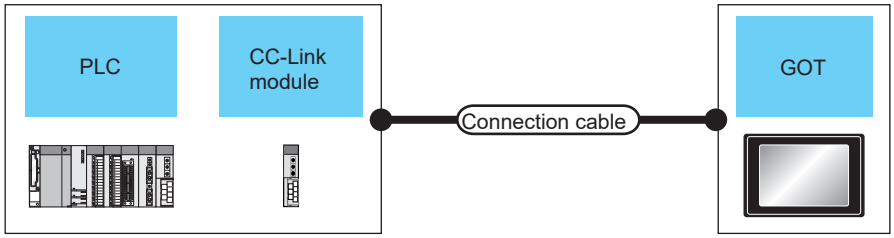
Controller	Model	Clock	CC-Link module	Connectable model
MELSEC-Q (Q mode)	Q04UDHCPU Q06UDHCPU Q10UDHCPU Q13UDHCPU Q20UDHCPU Q26UDHCPU	○	QJ61BT11 QJ61BT11N	GT37 SoftGOT3000
	Q03UDECPU Q04UDEHCPU Q06UDEHCPU Q10UDEHCPU Q13UDEHCPU Q20UDEHCPU Q26UDEHCPU Q50UDEHCPU Q100UDEHCPU	○	QJ61BT11 QJ61BT11N	GT37 SoftGOT3000
	Q03UDVCPU Q04UDVCPU Q06UDVCPU Q13UDVCPU Q26UDVCPU	○	QJ61BT11 QJ61BT11N	GT37 SoftGOT3000
C Controller module (Q series)	Q12DCCPU-V*2 Q24DHCCPU-V Q24DHCCPU-LS Q24DHCCPU-VG Q26DHCCPU-LS	○	QJ61BT11 QJ61BT11N	GT37 SoftGOT3000
Motion CPU (Q series)	Q172CPUN*3 Q173CPUN*3 Q172HCPU Q173HCPU Q172DCPU Q173DCPU Q172DCPU-S1 Q173DCPU-S1 Q172DSCPU Q173DSCPU Q170MCPU*4 Q170MSCPU*5 Q170MSCPU-S1*5	○	QJ61BT11 QJ61BT11N	GT37 SoftGOT3000
CNC C70	Q173NCCPU	○	QJ61BT11 QJ61BT11N	GT37 SoftGOT3000
Robot controller (Q series)	CRnQ-700 (Q172DRCPU) CR750-Q (Q172DRCPU) CR751-Q (Q172DRCPU) CR800-Q (Q172DSRCPU)	○	QJ61BT11 QJ61BT11N	GT37 SoftGOT3000

*1 To configure a multiple CPU system, use a CPU with function version B or later.
*2 Use a module having a serial number stating with 12042 or later in the first 5 digits.
*3 When using SV13, SV22, or SV43, use a Motion CPU with the following version of OS installed.
- SW6RN-SV13Q□: 00H or later
- SW6RN-SV22Q□: 00H or later
- SW6RN-SV43Q□: 00B or later

*4 Only the first step can be used on the extension base unit (Q52B/Q55B).
*5 The extension base unit (Q5□B/Q6□B) can be used.

12.5.2 System configuration

Connection with CC-Link Ver.1 compatible



For details on the overall length, refer to the following.

☞ Page 1101 Overall length

For details on the maximum number of connected devices, refer to the following.

☞ Page 1101 Maximum number of connected devices

Controller	CC-Link module*1	Communication type	Connection cable	GOT	
				Interface	Model
MELSEC-Q (Q mode) C Controller module (Q series) Motion CPU (Q series) CNC C70 Robot controller (Q series)	QJ61BT11 QJ61BT11N	CC-Link (Ver.1)	CC-Link dedicated cable*2	GT37-IF2000 + GT15-J61BT13*3	GT37 SoftGOT3000

*1 For the system configuration of the CC-Link module, refer to the following manual.
MELSEC-Q CC-Link System Master/Local Module User's Manual

*2 For the specifications of the CC-Link dedicated cable and the contact information, refer to the following.
CC-Link Partner Association website: http://www.cc-link.org/

*3 In the controller settings, set the mode to Ver.1.
For details on settings, refer to the following.
☞ Page 1106 [Controller Setting]

■Overall length

The maximum overall cable length and cable length between stations vary depending on the conditions such as the type of the cable used and the transmission speed.

For details, refer to the following manual.

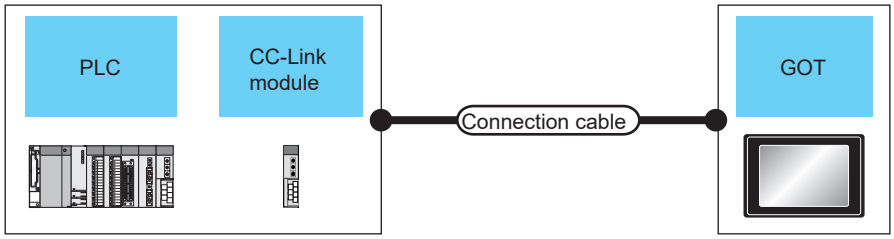
MELSEC-Q CC-Link System Master/Local Module User's Manual

■Maximum number of connected devices

The following shows the number of connectable GOTs.

Controller	
Model	Number of connectable devices
MELSEC-Q (Q mode) C Controller module (Q series) Motion CPU (Q series) CNC C70 Robot controller (Q series)	26 GOTs

Connection with CC-Link Ver.2 compatible



For details on the overall length, refer to the following.

☞ Page 1102 Overall length

For details on the maximum number of connected devices, refer to the following.

☞ Page 1102 Maximum number of connected devices

Controller	CC-Link module*1	Communication type	Connection cable	GOT	
				Interface	Model
MELSEC-Q (Q mode) C Controller module (Q series) Motion CPU (Q series) CNC C70 Robot controller (Q series)	QJ61BT11N	CC-Link (Ver.2)	CC-Link dedicated cable*2	GT37-IF2000 + GT15-J61BT13*3	GT37 SoftGOT3000

*1 For the system configuration of the CC-Link module, refer to the following manual.
MELSEC-Q CC-Link System Master/Local Module User's Manual

*2 For the specifications of the CC-Link dedicated cable and the contact information, refer to the following.
CC-Link Partner Association website: http://www.cc-link.org/

*3 In the controller settings, set the mode to Ver.2.
For details on settings, refer to the following.
☞ Page 1106 [Controller Setting]

■Overall length

The maximum overall cable length and cable length between stations vary depending on the conditions such as the type of the cable used and the transmission speed.

For details, refer to the following manual.

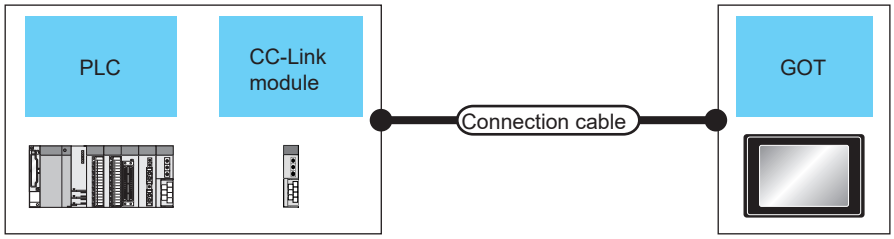
MELSEC-Q CC-Link System Master/Local Module User's Manual

■Maximum number of connected devices

The following shows the number of connectable GOTs.

Controller	
Model	Number of connectable devices
MELSEC-Q (Q mode) C Controller module (Q series) Motion CPU (Q series) CNC C70 Robot controller (Q series)	26 GOTs

Connection with CC-Link Ver.1/Ver.2 compatibles mixed



For details on the overall length, refer to the following.

☞ Page 1103 Overall length

For details on the maximum number of connected devices, refer to the following.

☞ Page 1103 Maximum number of connected devices

Controller	CC-Link module*1	Communication type	Connection cable	GOT	
				Interface	Model
MELSEC-Q (Q mode) C Controller module (Q series) Motion CPU (Q series) CNC C70 Robot controller (Q series)	QJ61BT11N	CC-Link (Ver.2)	CC-Link dedicated cable*2	GT37-IF2000 + GT15-J61BT13*3	GT37 SoftGOT3000
		CC-Link (Ver.1)	CC-Link dedicated cable*2	GT37-IF2000 + GT15-J61BT13*4	GT37 SoftGOT3000

*1 For the system configuration of the CC-Link module, refer to the following manual.
📖MELSEC-Q CC-Link System Master/Local Module User's Manual

*2 For the specifications of the CC-Link dedicated cable and the contact information, refer to the following.
CC-Link Partner Association website: http://www.cc-link.org/

*3 In the controller settings, set the mode to Ver.2.
For details on settings, refer to the following.
☞ Page 1106 [Controller Setting]

*4 In the controller settings, set the mode to Ver.1.
For details on settings, refer to the following.
☞ Page 1106 [Controller Setting]

■Overall length

The maximum overall cable length and cable length between stations vary depending on the conditions such as the type of the cable used and the transmission speed.

For details, refer to the following manual.

📖MELSEC-Q CC-Link System Master/Local Module User's Manual

■Maximum number of connected devices

The following shows the number of connectable GOTs.

Controller	
Model	Number of connectable devices
MELSEC-Q (Q mode) C Controller module (Q series) Motion CPU (Q series) CNC C70 Robot controller (Q series)	26 GOTs

Connecting one PLC to multiple GOTs

When multiple GOT units are simultaneously accessing one PLC, the GOT writing process (transient/cyclic) and reading process (transient) may slow down.

This slow access can be remedied with the following countermeasures.

<Countermeasures>

■Improve response speed on PLC side

Insert a COM instruction on the PLC to increase the response speed.

Note that caution is required as the scan time will increase.

■Screen design using cyclic devices

Create the screen with cyclic devices instead of using transient devices.

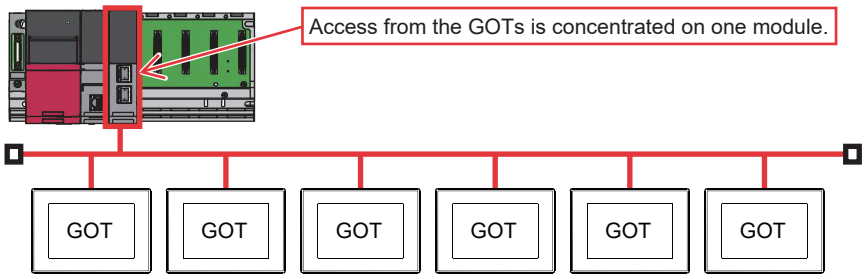
■Split GOT connection destinations into several systems

Add a master/local module to the PLC side, and split the GOT connection destinations into several systems.

Improve the current system configuration.

(Example of current system configuration)

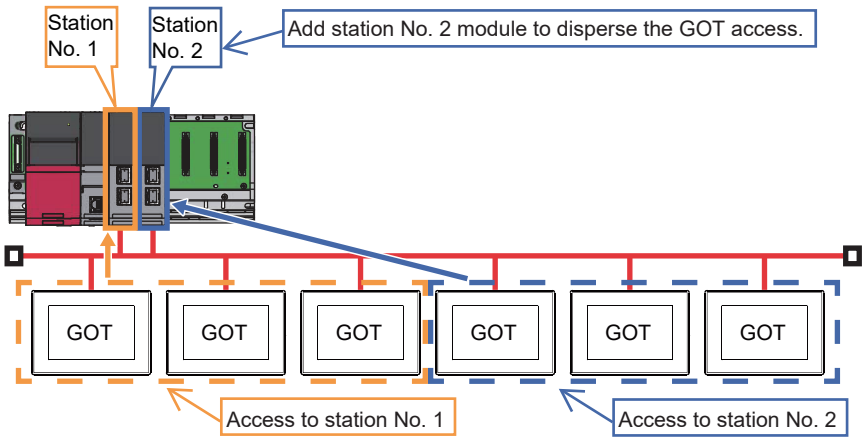
In the following system configuration, access from the GOT is concentrated on one module.



(Improvement measure)

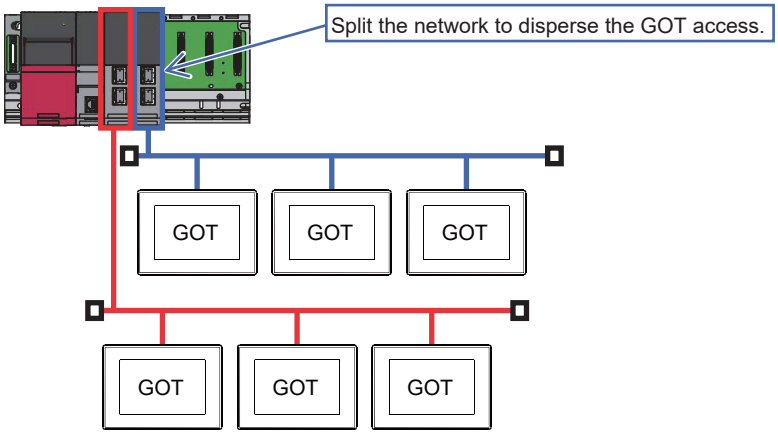
- Adding a module to the PLC side

Add a module to the PLC side to disperse the GOT access destinations.



• Split the network

Split the network to disperse the GOT access.



Connection via the multiple CPU system

When the GOT is connected via the multiple CPU system, the PLC takes 10 seconds or more to run.

If you start the GOT before the PLC runs, a system alarm occurs.

Adjust the time to display the GOT startup screen to prevent a system alarm.

📖GT Designer3 (GOT3000) Screen Design Manual

Connection to Q17nDCPU, Q170MCPU, Q170MSCPU(-S1), CNC C70, CRnQ-700, or CR800-Q (Q172DSRCPU)

The Q17nDCPU, Q170MCPU, Q170MSCPU(-S1), CNC C70, CRnQ-700, and CR800-Q (Q172DSRCPU) are applicable to CC-Link Ver. 2 only.

For connecting to the CC-Link (ID) network system, set to the CC-Link Ver. 2.

Connection to Q170MCPU or Q170MSCPU(-S1)

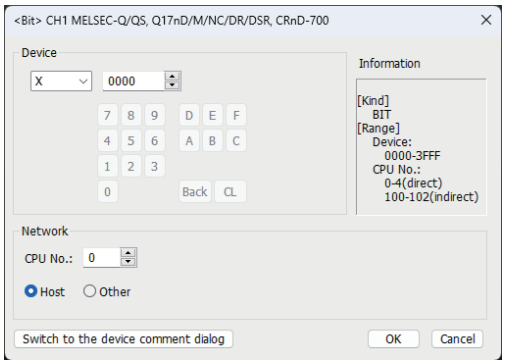
Set [CPU No.] to 2 in the device setting to monitor the device of the Motion CPU area (CPU No. 2).

When [CPU No.] is set to 0 or 1, the device on the PLC CPU area (CPU No. 1) is monitored.

When [CPU No.] is set to the number other than 0 to 2, a communication error occurs and the monitoring cannot be executed.

For the setting of [CPU No.], refer to the following manual.

📖GT Designer3 (GOT3000) Screen Design Manual



Precautions

■Starting the GOT in CC-Link connection (intelligent device station)

For the CC-Link connection (intelligent device station), the data link is started approximately 10 seconds after the GOT startup.

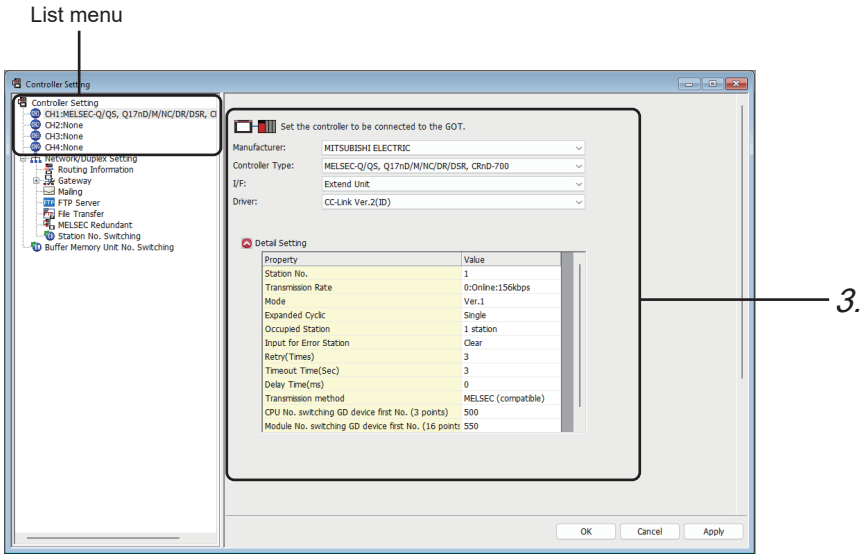
■When a network error occurs in the system alarm

In the CC-Link connection (intelligent device station), when a network error occurs in the system alarm, the system alarm display cannot be canceled even though the causes are removed.
To cancel the system alarm display, restart the GOT.

12.5.3 GOT side settings

[Controller Setting]

Set the channel of the connected controller.



Operating procedure

1. Select [Common] → [Controller Setting] from the menu.
2. In the [Controller Setting] window, select the channel number to be used from the list menu.
3. Set the following items.

Item	Description
[Manufacturer]	[MITSUBISHI ELECTRIC]
[Controller Type]	[MELSEC-Q/QS, Q17nD/M/NC/DR/DSR, CRnD-700]
[I/F]	[Extend Unit]
[Driver]	[CC-Link Ver.2 (ID)]
[Detail Setting]	Configure the settings according to the usage environment. ☞ Page 1107 [Detail Setting]

4. When you have completed the settings, click the [OK] button.

Point

The controller settings can be configured and checked in [I/F Communication Setting].
For details, refer to the following.
📖GT Designer3 (GOT3000) Screen Design Manual

■[Detail Setting]

Configure the settings according to the usage environment.

Detail Setting

Property	Value
Station No.	1
Transmission Rate	0:Online:156kbps
Mode	Ver.1
Expanded Cyclic	Single
Occupied Station	1 station
Input for Error Station	Clear
Retry(Times)	3
Timeout Time(Sec)	3
Delay Time(ms)	0
Transmission method	MELSEC (compatible)
CPU No. switching GD device first No. (3 points)	500
Module No. switching GD device first No. (16 points)	550

Item	Description	Range
[Station No.]	Set the station number of the GOT.	[1] to [64]
[Transmission Rate]*1	Set the transmission speed and a mode of the GOT.	[0] to [E]
[Mode Setting]	Set the operation mode of the GOT.	[Ver.1], [Ver.2], [Additional], [Offline]
[Expanded Cyclic]	Set the cyclic point expansion.	[Single], [Double], [Quadruple], [Octuple]
[Occupied Station]	Set the number of stations occupied by the GOT.	[1 Station], [4 Stations]
[Input for Error Station]	Set whether to clear or hold the error at an error occurrence.	[Clear], [Hold]
[Retry]	Set the number of retries to be performed when a communication timeout occurs. When receiving no response after retries, the communication times out.	[0] times to [5] times
[Timeout Time]	Set the time period for a communication to time out.	[1] second to [90] seconds
[Delay Time]	Set this item to adjust the transmission timing of the communication request from the GOT.	[0] ms to [300] ms
[Transmission method]	Set the CC-Link transmission method.	[MELSEC (compatible)], [Cyclic]
[CPU No. switching GD device first No. (3 points)]	Set the start device number of the GD devices for CPU number switching. For details, refer to the following. ☞ Page 1108 Start device number of the GD devices for CPU number switching	[0] to [65520]
[Module No. switching GD device first No. (16 points)]	Set the start device number of the GD devices for module number switching. For details, refer to the following. ☞ Page 1109 Start device number of the GD devices for module number switching	[0] to [65520]
[Servo axis switching GD device first No. (16 points)]	Set the start device number of the GD devices for servo axis switching. For details, refer to the following. ☞ Page 1110 Start device number of the GD devices for servo axis switching	[0] to [65520]

*1 Transmission speed settings
The following lists the transmission speed settings of the CC-Link communication.

Setting value	Description
0	Online: 156 kbps
1	Online: 625 kbps
2	Online: 2.5 Mbps
3	Online: 5 Mbps
4	Online: 10 Mbps
5	Line test: 156 kbps
6	Line test: 625 kbps
7	Line test: 2.5 Mbps

Setting value	Description
8	Line test: 5 Mbps
9	Line test: 10 Mbps
A	Hardware test: 156 kbps
B	Hardware test: 625 kbps
C	Hardware test: 2.5 Mbps
D	Hardware test: 5 Mbps
E	Hardware test: 10 Mbps

For details on the hardware test, refer to the following manual.

📖MELSEC-Q CC-Link System Master/Local Module User's Manual

Point

• Communication interface settings in the GT37 utility

The communication interface setting can be changed in [Communication setting] of the GT37 utility after writing [Controller Setting] in project data.

For details on the GT37 utility, refer to the following manual.

📖GOT3000 Series User's Manual (Utility & Maintenance Functions)

• Priority of the settings in [Controller Setting]

When settings are configured in GT Designer3 or the GT37 utility, the most recent settings are effective.

■Start device number of the GD devices for CPU number switching

• Indirect specification of a CPU number

[CPU No.] can be indirectly specified with the GOT internal registers (GD devices) by specifying a value (100 to 102) to [CPU No.] in the device setting dialog in GT Designer3.

Set the start device number of the GD devices to be used in [CPU No. switching GD device first No. (3 points)].

[CPU No.] is specified with three consecutive GD devices, starting from the set device number.

When [500] is set to [CPU No. switching GD device first No. (3 points)], GD500 to GD502 are used to specify [CPU No.] as shown in the following table.

CPU No.	GD device	Setting range
100	GD500	1 to 4 Setting a value outside the range causes a communication timeout error. Specifying a nonexistent CPU number or a CPU number not supporting a multiple CPU system with a device causes a controller error.
101	GD501	
102	GD502	

• Indirect specification of a CPU number on the initially displayed screen

Set [CPU No. switching GD device first No. (3 points)] so that the values of the GD devices are retained and monitored upon the GOT startup.

• Indirect specification of a CPU number for multi-channel connection

If the setting range of [CPU No. switching GD device first No. (3 points)] set for each channel overlaps, the monitoring target CPU number set to each channel is switched simultaneously.

Set [CPU No. switching GD device first No. (3 points)] for each channel so that the setting range does not overlap.

• Indirect specification of a station number and a CPU number for multi-channel connection

When GD10 to GD25 are used to specify the station number of an inverter or non-Mitsubishi temperature controller connected, setting [10] to [CPU No. switching GD device first No. (3 points)] in a different channel switches the monitoring target CPU number and station number of an inverter or non-Mitsubishi temperature controller set to each channel simultaneously.

Set [CPU No. switching GD device first No. (3 points)] so that the setting range does not overlap the station number of an inverter or non-Mitsubishi temperature controller.

■Start device number of the GD devices for module number switching

• Indirect specification of a module number

For connection via a Simple Motion module, [Unit No.] can be specified with the GOT internal registers (GD devices) by specifying a value (100 to 10F) to [Unit No.] in the device setting dialog in GT Designer3.

Set the start device number of the GD devices to be used in [Module No. switching GD device first No. (16 points)].

[Unit No.] is specified with 16 consecutive GD devices, starting from the set device number.

When [550] is set to [Module No. switching GD device first No. (16 points)], GD550 to GD565 are used to specify [Unit No.] as shown in the following table.

Module No.	GD device	Setting range
100	GD550	00 to FF Setting a value outside the above range causes a device range error.
101	GD551	
102	GD552	
103	GD553	
104	GD554	
105	GD555	
106	GD556	
107	GD557	
108	GD558	
109	GD559	
10A	GD560	
10B	GD561	
10C	GD562	
10D	GD563	
10E	GD564	
10F	GD565	

• Indirect specification of a module number on the initially displayed screen

Set [Module No. switching GD device first No. (16 points)] so that the values of the GD devices are retained and monitored upon the GOT startup.

• Indirect specification of a module number for multi-channel connection

If the setting range of [Module No. switching GD device first No. (16 points)] set for each channel overlaps, the module number of the Simple Motion module via the servo amplifier device of each channel is switched simultaneously.

Set [Module No. switching GD device first No. (16 points)] for each channel so that the setting range does not overlap.

• Indirect specification of a station number and a module number for multi-channel connection

When GD10 to GD25 are used to specify the station number of an inverter or non-Mitsubishi temperature controller connected, setting [10] to [Module No. switching GD device first No. (16 points)] switches the module number of the Simple Motion module via the servo amplifier device and the station number of an inverter or non-Mitsubishi temperature controller set to each channel simultaneously.

Set [Module No. switching GD device first No. (16 points)] so that the setting range does not overlap the station number of an inverter or non-Mitsubishi temperature controller.

■Start device number of the GD devices for servo axis switching

• Indirect specification of a servo axis number

For connection via a Motion CPU or Simple Motion module, a servo axis number can be indirectly specified with GOT internal registers (GD devices) by specifying a value (100 to 115) to the axis number of the servo amplifier device.

Set the start device number of the GD devices to be used in [Servo axis switching GD device first No. (16 points)].

Specify a servo axis number with 16 consecutive GD devices, starting the set device number.

When [10] is set to [Servo axis switching GD device first No. (16 points)], GD10 to GD25 are used to specify a servo axis number as shown in the following table.

Servo axis No.	GD device	Setting range
100	GD10	1 to 64 Setting a value outside the above range causes a device range error.
101	GD11	
102	GD12	
103	GD13	
104	GD14	
105	GD15	
106	GD16	
107	GD17	
108	GD18	
109	GD19	
110	GD20	
111	GD21	
112	GD22	
113	GD23	
114	GD24	
115	GD25	

• Indirect specification of a servo axis number on the initially displayed screen

Set [Servo axis switching GD device first No. (16 points)] so that the values of the GD devices are retained and monitored upon the GOT startup.

• Indirect specification of a servo axis number for multi-channel connection

If the setting rage of [Servo axis switching GD device first No. (16 points)] set for each channel overlaps, the axis number of the servo amplifier of each channel is switched simultaneously.

Set [Servo axis switching GD device first No. (16 points)] for each channel so that the setting range does not overlap.

• Indirect specification of a station number and a servo axis number for multi-channel connection

When GD10 to GD25 are used to specify the station number of an inverter or non-Mitsubishi temperature controller connected, setting [10] to [Servo axis switching GD device first No. (16 points)] switches the axis number of the servo amplifier and the station number of an inverter or non-Mitsubishi temperature controller set to each channel simultaneously.

Set [Servo axis switching GD device first No. (16 points)] so that the setting range does not overlap the station number of an inverter or non-Mitsubishi temperature controller.

Precautions

■Using cyclic transmission

• I/O signals for the master station

Do not turn on the reserved output signals in the output signals (remote output: RY) to the GOT from the master station.

When the reserved output signal is turned on, the PLC system may malfunction.

For the assignment of I/O signals in the GOT, refer to the following manuals.

📖MODEL GT15-J61BT13 CC-Link communication unit User's Manual

📖GT15 CC-Link communication unit User's Manual

• Access range for monitoring

The remote I/O (RX and RY) and remote register (RWr and RWw) monitoring ranges vary depending on the mode of the master station in the CC-Link system.

Mode of master station	Monitoring	
	Data for each station compatible with CC-Link Ver.1	Data for each station compatible with CC-Link Ver.2
Remote network mode	○	—
Remote network Ver.1 mode	○	—
Remote network Ver.2 mode	○	○*1
Remote network additional mode	○	○

○: Available, ×: Not available (All "0"), —: System configuration not available

*1 Monitoring is available only when the GT15-J61BT13 CC-Link communication unit is used.

• When the GOT malfunctions

The state of cyclic output before fault is held.

■Connection with CC-Link Ver.1 compatible

For connection with CC-Link Ver.1 compatible, the device setting must be configured within the range of the specifications of the controller.

When a device number out of the range is set, proper monitoring may not be possible.

12.5.4 PLC side settings

Model		Reference
MELSEC-Q (Q mode)	Q00JCPU Q00CPU Q01CPU Q02CPU Q02HCPU Q06HCPU Q12HCPU Q25HCPU Q02PHCPU Q06PHCPU Q12PHCPU Q25PHCPU Q12PRHCPU (main base) Q25PRHCPU (main base) Q12PRHCPU (remote extension base) Q25PRHCPU (remote extension base) Q12PRHCPU (extension base) Q25PRHCPU (extension base) Q00UJCPU Q00UJCPU-S8 Q00UCPU Q01UCPU Q02UCPU Q03UDCPU Q04UDHCPU Q06UDHCPU Q10UDHCPU Q13UDHCPU Q20UDHCPU Q26UDHCPU Q03UDECPU Q04UDEHCPU Q06UDEHCPU Q10UDEHCPU Q13UDEHCPU Q20UDEHCPU Q26UDEHCPU Q50UDEHCPU Q100UDEHCPU Q03UDVCPU Q04UDVCPU Q06UDVCPU Q13UDVCPU Q26UDVCPU	☞ Page 1114 Connection to MELSEC-Q series with Ver.1 compatible ☞ Page 1118 Connection to MELSEC-Q series with Ver.2 compatible ☞ Page 1123 Connection to MELSEC-Q series with Ver.1/Ver.2 compatibles mixed
C Controller module (Q series)	Q12DCCPU-V Q24DHCCPU-V Q24DHCCPU-LS Q24DHCCPU-VG Q26DHCCPU-LS	☞ Page 1114 Connection to MELSEC-Q series with Ver.1 compatible ☞ Page 1118 Connection to MELSEC-Q series with Ver.2 compatible ☞ Page 1123 Connection to MELSEC-Q series with Ver.1/Ver.2 compatibles mixed
Motion CPU (Q series)	Q172CPUN Q173CPUN Q172HCPU Q173HCPU Q172DCPU Q173DCPU Q172DCPU-S1 Q173DCPU-S1 Q172DSCPU Q173DSCPU Q170MCPU Q170MSCPU Q170MSCPU-S1	☞ Page 1114 Connection to MELSEC-Q series with Ver.1 compatible ☞ Page 1118 Connection to MELSEC-Q series with Ver.2 compatible ☞ Page 1123 Connection to MELSEC-Q series with Ver.1/Ver.2 compatibles mixed

Model		Reference
CNC C70	Q173NCCPU	☞ Page 1114 Connection to MELSEC-Q series with Ver.1 compatible ☞ Page 1118 Connection to MELSEC-Q series with Ver.2 compatible ☞ Page 1123 Connection to MELSEC-Q series with Ver.1/Ver.2 compatibles mixed
Robot controller (Q series)	CRnQ-700 (Q172DRCPU) CR750-Q (Q172DRCPU) CR751-Q (Q172DRCPU) CR800-Q (Q172DSRCPU)	☞ Page 1114 Connection to MELSEC-Q series with Ver.1 compatible ☞ Page 1118 Connection to MELSEC-Q series with Ver.2 compatible ☞ Page 1123 Connection to MELSEC-Q series with Ver.1/Ver.2 compatibles mixed

The GOT operates as the stations with the following specifications in the CC-Link system.

Station information	Description
Station type	Intelligent device station, Ver.1 intelligent device station, or Ver.2 intelligent device station
Number of stations occupied	1 station or 4 stations

Point

Number of stations occupied

The number of stations occupied is the setting for determining the number of link device points (RX/RY/RWw/RWr) used by the GOT.

To use multiple numbers of link device points in cyclic transmission between the GOT and CC-Link module, set the number of stations occupied as 4 stations occupied.

The number of link device points when 1 station occupied or 4 stations occupied is shown below.

• CC-Link Ver.2

Link device	Extended cyclic setting							
	Single		Double		Quadruple		Octuple	
	1 station occupied	4 stations occupied	1 station occupied	4 stations occupied	1 station occupied	4 stations occupied	1 station occupied	4 stations occupied
Remote input (RX)	32 points	128 points	32 points	224 points	64 points	448 points	128 points	896 points
Remote output (RY)	32 points	128 points	32 points	224 points	64 points	448 points	128 points	896 points
Remote register (RWw)	4 points	16 points	8 points	32 points	16 points	64 points	32 points	128 points
Remote register (RWr)	4 points	16 points	8 points	32 points	16 points	64 points	32 points	128 points

• CC-Link Ver.1

Link device	Number of stations occupied	
	1 station occupied	4 stations occupied
Remote input (RX)	32 points	128 points
Remote output (RY)	32 points	128 points
Remote register (RWw)	4 points	16 points
Remote register (RWr)	4 points	16 points

Connection to MELSEC-Q series with Ver.1 compatible

This section describes the setting method of the GOT and the Ver. 1 compatible CC-Link module (MELSEC-Q series) in the system configuration shown below.

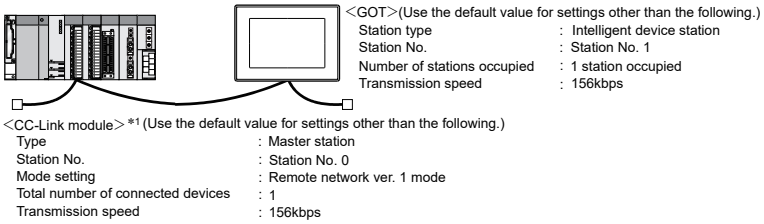
Point

CC-Link module (MELSEC-Q series)

For the details on the CC-Link module (MELSEC-Q series), refer to the following manual.

MELSEC-Q CC-Link System Master/Local Module User's Manual

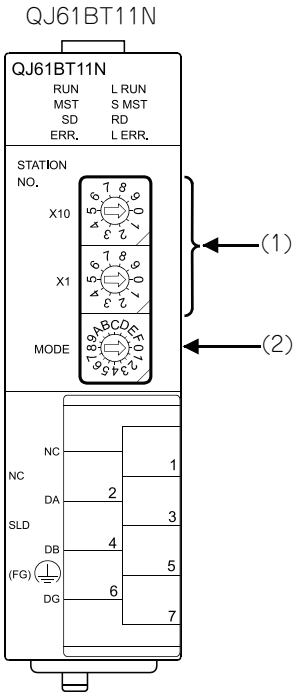
■System configuration



*1 The CC-Link module is mounted on slot 0 of the base unit.
The start I/O number of the CC-Link module is set to "0".

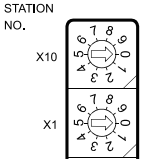
■Switch settings for the CC-Link module (Q series)

Set the station number setting switch, transmission speed/mode setting switch.



- Station number setting switch

○: Necessary, △: As necessary, —: Not necessary

Station number setting switch	Description	Setting value	Setting for GOT connection
	Station number setting (master station)	0 (fixed)	○

• Transmission speed/mode setting switch

○: Necessary, △: As necessary, —: Not necessary

Transmission speed/mode setting switch	Description	Setting value	Setting for GOT connection
MODE	Transmission speed and mode setting (Online: 156 kbps)*1	0	○

*1 Set the same transmission speed as that of the GOT.

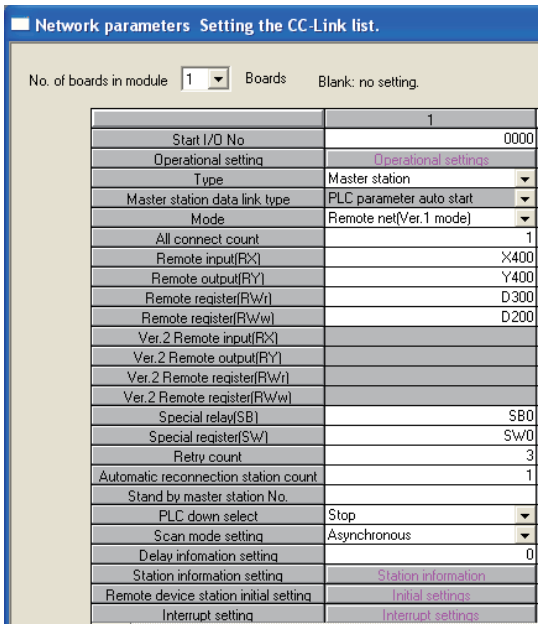
Point

When the switch setting has been changed
Turn off then on or reset the PLC CPU.

■Parameter settings (when connecting to MELSEC-Q or QS series)

• [Network parameter] of GX Developer

Network parameter



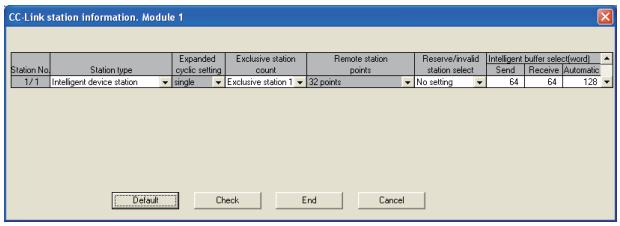
○: Necessary, △: As necessary, —: Not necessary

Item	Setting value	Setting for GOT connection
[Numbers of modules]	1	○
[Starting I/O No.]*1	0000H	○
[Operation setting]	(Use default value)	△
[Type]	Master station (fixed)	○
[Mode]	Remote network Ver.1 mode	○
[All connect count]	1	○
[Remote input (RX) refresh device]	X400	△
[Remote output (RY) refresh device]	Y400	△
[Remote register (RWr) refresh device]	D300	△
[Remote register (RWw) refresh device]	D200	△
[Special relay (SB) refresh device]	SB0	△
[Special register (SW) refresh device]	SW0	△
[Retry count]	(Use default value)	△
[Automatic reconnection station count]		△
[Stand by master station No.]		—
[PLC down select]		△
[Scan mode setting]		△
[Delay information setting]		△

Item	Setting value	Setting for GOT connection
[Station information setting]	☞ Station information setting	○
[Remote device station initial setting]	(Use default value)	—
[Interrupt settings]		—

*1 When using Q170MCPU or Q170MSCPU(-S1), set it according to the system configuration.

Station information setting



○: Necessary, △: As necessary, —: Not necessary

Item*1	Setting value	Setting for GOT connection
[Station type]	Intelligent device station (fixed)	○
[Exclusive station count]*2	1 station occupied	○
[Reserve/invalid station select]	No setting	○
[Intelligent buffer select(word)]	(Use default value)	—

*1 When the [Mode] of the CC-Link module is set to [Remote Net Ver.1 Mode], [Remote Station Points] cannot be set.
*2 Set the same setting as that of the GOT.

Point

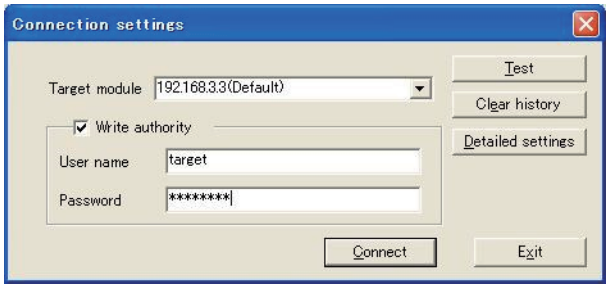
When changing the network parameter

After writing network parameters to the PLC CPU, turn off then on or reset the PLC CPU.

■Parameter settings (when connecting to C Controller module (Q series))

Use SW3PVC-CCPU-E Ver.3.05F or later for the CC-Link utility.

- Connection settings



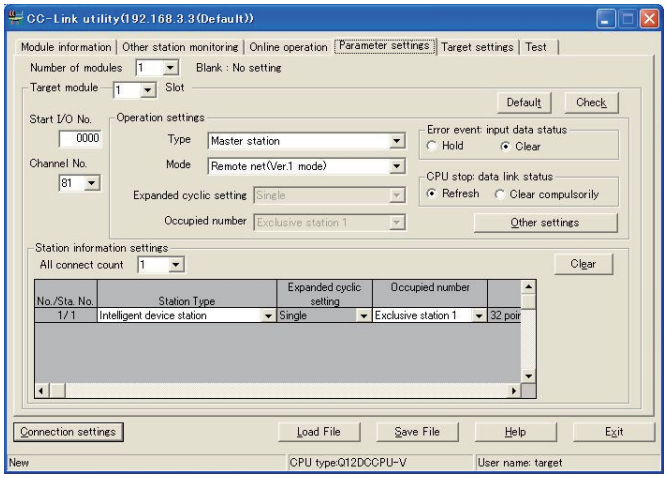
○: Necessary, △: As necessary, —: Not necessary

Item	Setting value	Setting for GOT connection
[Target module]*1	192.168.3.3 (Default)	○
[Write authority]	Selected	○
[User name]*2	target	○
[Password]*2	password	○
[Detail Setting]	—	△

*1 If the IP address of the C Controller module (Q series) has been changed, input the changed IP address or host name.
*2 If the account of the C Controller module (Q series) has been changed, input the changed user name and password.

• CC-Link Utility's [Parameter settings]

Network parameter



○: Necessary, △: As necessary, —: Not necessary

Item*1			Setting value	Setting for GOT connection
[Numbers of modules]			1	○
[Target module]			1	○
[Start I/O No.]			0000H	○
[Channel No.]			(Use default value)	○
[Operation settings]	[Type]		Master station	○
	[Mode]		Remote network Ver.1 mode	○
	[Expanded cyclic setting]		Single	△
	[Occupied number]		1 station occupied	△
	[Error event: input data status]		Clear	△
	[CPU stop: data link status]		Refresh	△
	[Other settings]		(Use default value)	△
[Station information settings]	[All connect count]		1	○
	[Station Type]	[Sta. No. 1]	Intelligent device station	○
	[Occupied number]*2	[Sta. No. 1]	1 station occupied	○
	[Reserve/invalid station select]	[Sta. No. 1]	No setting	○
	[Intelligent buffer select(word)]		(Use default value)	—

*1 When the [Mode] of the CC-Link module is set to [Remote net(Ver.1 mode)], [Remote station points] cannot be set.

*2 Set the same setting as that of the GOT.

Point

When changing the network parameter

After writing network parameters to the C Controller module (Q series), turn off then on the C Controller module (Q series).

■[Controller Setting] in GT Designer3

Item	Setting value
[Station No.]	1: Station No. 1
[Transmission Rate]	0: Online 156 kbps
[Mode]	Ver.1: Remote network Ver.1 mode
[Expanded Cyclic]	Single (Use default value)
[Occupied Station]	1 station
[Input for Error Station]	0: Clear
[Retry]	3 (Use default value)
[Timeout Time]	3 (Use default value)
[Delay Time]	0 (Use default value)
[Transmission method]	MELSEC (compatible)

Point

[Controller Setting] in GT Designer3

For the setting method of [Controller Setting] in GT Designer3, refer to the following.

☞ Page 1106 [Controller Setting]

Connection to MELSEC-Q series with Ver.2 compatible

This section describes the setting method of the GOT and the Ver. 2 compatible CC-Link module (MELSEC-Q series) in the system configuration shown below.

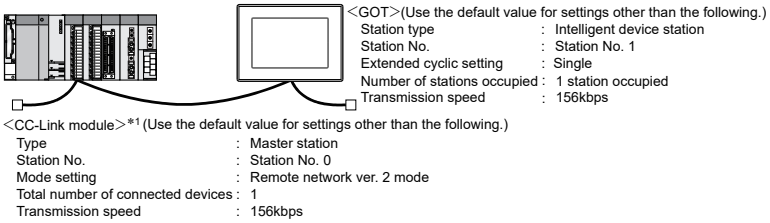
Point

CC-Link module (MELSEC-Q series)

For the details on the CC-Link module (MELSEC-Q series), refer to the following manual.

📖MELSEC-Q CC-Link System Master/Local Module User's Manual

■System configuration



*1 The CC-Link module is mounted on slot 0 of the base unit.
The start I/O number of the CC-Link module is set to "0".

Point

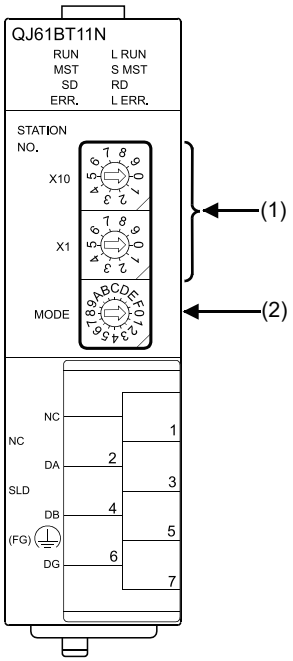
Connection to Q170MCPU or Q170MSCPU(-S1)

For connection to Q170MCPU or Q170MSCPU(-S1), the start I/O number of the CC-Link module is set to "70".

■Switch settings for the CC-Link module (Q series)

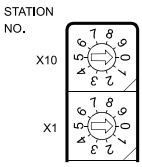
Set the station number setting switch, transmission speed/mode setting switch.

QJ61BT11,QJ61BT11N



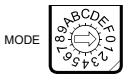
- Station number setting switch

○: Necessary, △: As necessary, —: Not necessary

Station number setting switch	Description	Setting value	Setting for GOT connection
	Station number setting (master station)	0 (fixed)	○

- Transmission speed/mode setting switch

○: Necessary, △: As necessary, —: Not necessary

Transmission speed/mode setting switch	Description	Setting value	Setting for GOT connection
	Transmission speed and mode setting (Online: 156 kbps)*1	0	○

*1 Set the same transmission speed as that of the GOT.

Point

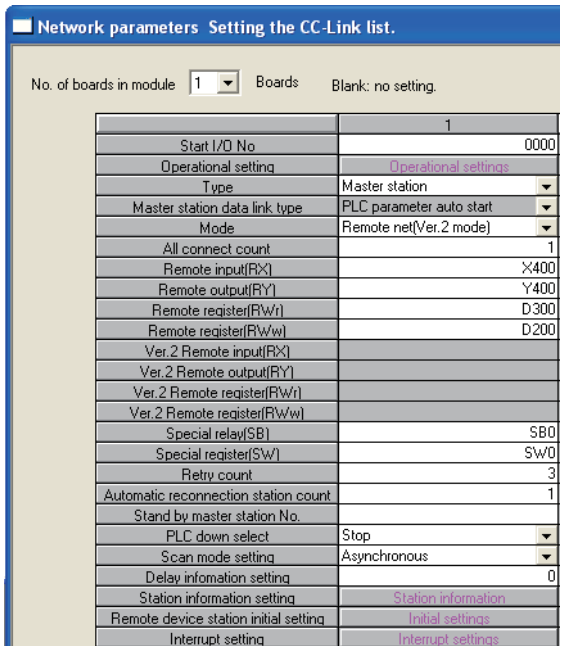
When the switch setting has been changed

Turn off then on or reset the PLC CPU.

■Parameter settings (when connecting to MELSEC-Q or QS series)

• [Network parameter] of GX Developer

Network parameter

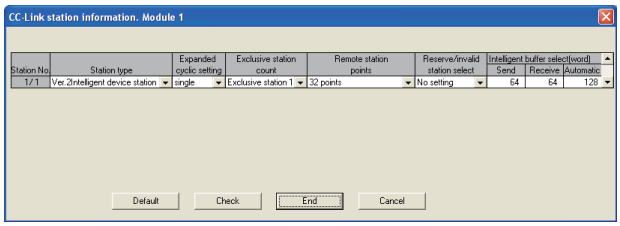


○: Necessary, △: As necessary, —: Not necessary

Item	Setting value	Setting for GOT connection
[Numbers of modules]	1	○
[Starting I/O No.]*1	0000H	○
[Operation setting]	(Use default value)	△
[Type]	Master station (fixed)	○
[Mode]	Remote network Ver.2 mode	○
[All connect count]	1	○
[Remote input (RX) refresh device]	X400	△
[Remote output (RY) refresh device]	Y400	△
[Remote register (RWr) refresh device]	D300	△
[Remote register (RWw) refresh device]	D200	△
[Special relay (SB) refresh device]	SB0	△
[Special register (SW) refresh device]	SW0	△
[Retry count]	(Use default value)	△
[Automatic reconnection station count]		△
[Stand by master station No.]		—
[PLC down select]		△
[Scan mode setting]		△
[Delay information setting]		△
[Station information setting]	☞ Station information setting	○
[Remote device station initial setting]	(Use default value)	—
[Interrupt settings]		—

*1 When using Q170MCPU or Q170MSCPU(-S1), set it according to the system configuration.

Station information setting



○: Necessary, △: As necessary, —: Not necessary

Item*1	Setting value	Setting for GOT connection
[Station type]	Intelligent device station (fixed)	○
[Expanded cyclic setting]*2	Single	○
[Exclusive station count]*2	1 station occupied	○
[Remote station points]	32 points (fixed)	○
[Reserve/invalid station select]	No setting	○
[Intelligent buffer select(word)]	(Use default value)	—

*1 When the [Mode] of the CC-Link module is set to [Remote net(Ver.2 mode)], [Remote station points] can be set.
[Remote station points] is a setting for the remote I/O station.
The default value (32 points) must be used on the GOT.

*2 Set the same setting as that of the GOT.

Point

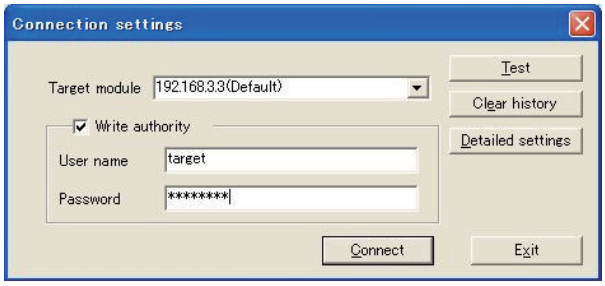
When changing the network parameter

After writing network parameters to the PLC CPU, turn off then on or reset the PLC CPU.

■Parameter settings (when connecting to C Controller module (Q series))

Use SW3PVC-CCPU-E Ver.3.05F or later for the CC-Link utility.

- Connection settings



○: Necessary, △: As necessary, —: Not necessary

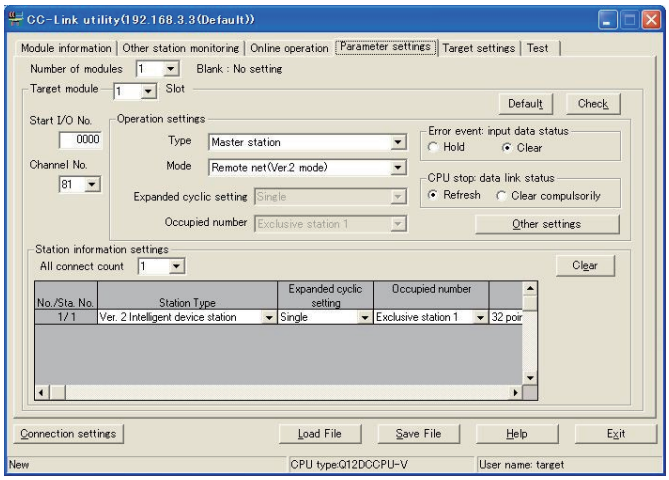
Item	Setting value	Setting for GOT connection
[Target module]*1	192.168.3.3 (Default)	○
[Write authority]	Selected	○
[User name]*2	target	○
[Password]*2	password	○
[Detail Setting]	—	△

*1 If the IP address of the C Controller module (Q series) has been changed, input the changed IP address or host name.

*2 If the account of the C Controller module (Q series) has been changed, input the changed user name and password.

- CC-Link Utility's [Parameter settings]

Network parameter



○: Necessary, △: As necessary, —: Not necessary

Item*1			Setting value	Setting for GOT connection
[Numbers of modules]			1	○
[Target module]			1	○
[Start I/O No.]			0000H	○
[Channel No.]			(Use default value)	○
[Operation settings]	[Type]		Master station	○
	[Mode]		Remote network Ver.1 mode	○
	[Extended cyclic setting]		Single	△
	[Occupied number]		1 station occupied	△
	[Error event: input data status]		Clear	△
	[CPU stop: data link status]		Refresh	△
	[Other settings]		(Use default value)	△
[Station information settings]	[All connect count]		1	○
	[Station Type]	[Sta. No. 1]	Intelligent device station	○
	[Expanded cyclic setting]*2	[Sta. No. 1]	Single	○
	[Occupied number]*2	[Sta. No. 1]	1 station occupied	○
	[Remote station points]	[Sta. No. 1]	32 points	○
	[Reserve/invalid station select]	[Sta. No. 1]	No setting	○
	[Intelligent buffer select(word)]		(Use default value)	—

*1 When the [Mode] of the CC-Link module is set to [Remote net(Ver.1 mode)], [Remote station points] cannot be set.
*2 Set the same setting as that of the GOT.

Point

When changing the network parameter
After writing network parameters to the C Controller module (Q series), turn off then on the C Controller module (Q series).

■[Controller Setting] in GT Designer3

Item	Setting value
[Station No.]	1: Station No. 1
[Transmission Rate]	0: Online 156 kbps
[Mode]	Ver.2: Remote network Ver.2 mode
[Expanded Cyclic]	Single
[Occupied Station]	1 station
[Input for Error Station]	0: Clear
[Retry]	3 (Use default value)
[Timeout Time]	3 (Use default value)
[Delay Time]	0 (Use default value)
[Transmission method]	MELSEC (compatible)

Point

[Controller Setting] in GT Designer3

For the setting method of [Controller Setting] in GT Designer3, refer to the following.

☞ Page 1106 [Controller Setting]

Connection to MELSEC-Q series with Ver.1/Ver.2 compatibles mixed

This section describes the setting method of the GOT and the CC-Link module (MELSEC-Q series) when Ver. 1/Ver. 2 compatible modules are mixed in the system configuration shown below.

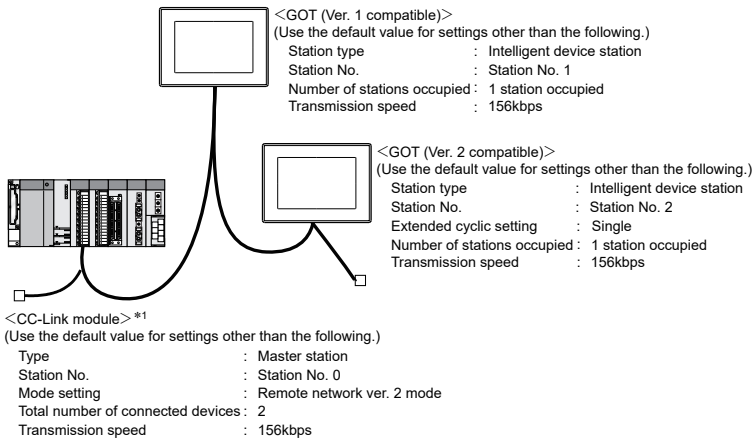
Point

CC-Link module (MELSEC-Q series)

For the details on the CC-Link module (MELSEC-Q series), refer to the following manual.

📖MELSEC-Q CC-Link System Master/Local Module User's Manual

■System configuration



*1 The CC-Link module is mounted on slot 0 of the base unit.
The start I/O number of the CC-Link module is set to "0".

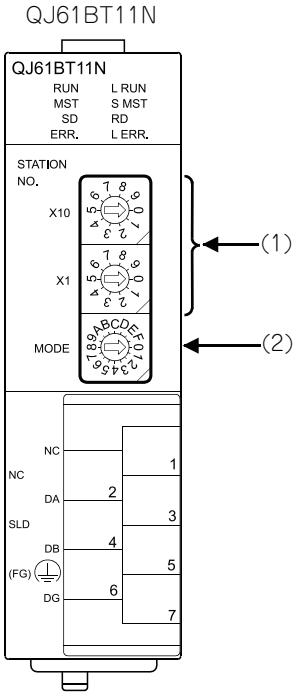
Point

Connection to Q170MCPU or Q170MSCPU(-S1)

For connection to Q170MCPU or Q170MSCPU(-S1), the start I/O number of the CC-Link module is set to "70".

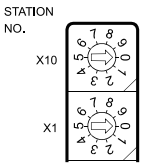
■Switch settings for the CC-Link module (Q series)

Set the station number setting switch, transmission speed/mode setting switch.



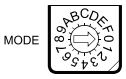
- Station number setting switch

○: Necessary, △: As necessary, —: Not necessary

Station number setting switch	Description	Setting value	Setting for GOT connection
	Station number setting (master station)	0 (fixed)	○

- Transmission speed/mode setting switch

○: Necessary, △: As necessary, —: Not necessary

Transmission speed/mode setting switch	Description	Setting value	Setting for GOT connection
	Transmission speed and mode setting (Online: 156 kbps)*1	0	○

*1 Set the same transmission speed as that of the GOT.

Point

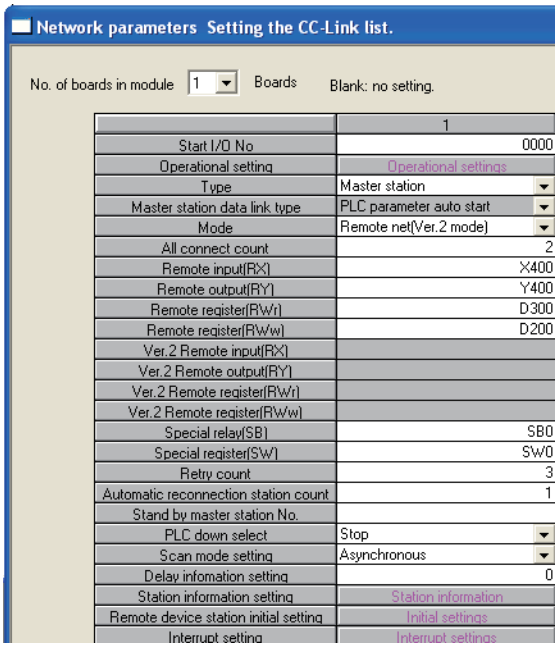
When the switch setting has been changed

Turn off then on or reset the PLC CPU.

■Parameter settings (when connecting to MELSEC-Q or QS series)

- [Network parameter] of GX Developer

Network parameter

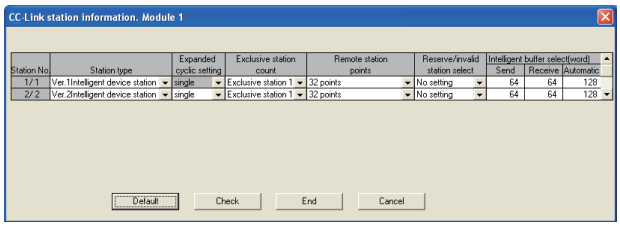


○: Necessary, △: As necessary, —: Not necessary

Item	Setting value	Setting for GOT connection
[Numbers of modules]	1	○
[Starting I/O No.][*1]	0000H	○
[Operation setting]	(Use default value)	△
[Type]	Master station (fixed)	○
[Mode]	Remote network Ver.2 mode	○
[All connect count]	2	○
[Remote input (RX) refresh device]	X400	△
[Remote output (RY) refresh device]	Y400	△
[Remote register (RWr) refresh device]	D300	△
[Remote register (RWw) refresh device]	D200	△
[Special relay (SB) refresh device]	SB0	△
[Special register (SW) refresh device]	SW0	△
[Retry count]	(Use default value)	△
[Automatic reconnection station count]		△
[Stand by master station No.]		—
[PLC down select]		△
[Scan mode setting]		△
[Delay information setting]		△
[Station information setting]	☞ Station information setting	○
[Remote device station initial setting]	(Use default value)	—
[Interrupt settings]		—

*1 When using Q170MCPU or Q170MSCPU(-S1), set it according to the system configuration.

Station information setting



Station information setting of station No. 1 (GOT)

○: Necessary, △: As necessary, —: Not necessary

Item*1	Setting value	Setting for GOT connection
[Station type]	Ver.1 intelligent device station (fixed)	○
[Exclusive station count]*2	1 station occupied	○
[Reserve/invalid station select]	No setting	○
[Intelligent buffer select(word)]	(Use default value)	×

Station information setting of station No. 2 (GOT)

○: Necessary, △: As necessary, —: Not necessary

Item*1	Setting value	Setting for GOT connection
[Station type]	Intelligent device station (fixed)	○
[Expanded cyclic setting]*2	Single	○
[Exclusive station count]*2	1 station occupied	○
[Remote station points]	32 points (fixed)	○
[Reserve/invalid station select]	No setting	○
[Intelligent buffer select(word)]	(Use default value)	—

*1 When the [Mode] of the CC-Link module is set to [Remote net(Ver.2 mode)], [Remote station points] can be set.
[Remote station points] is a setting for the remote I/O station.
The default value (32 points) must be used on the GOT.

*2 Set the same setting as that of the GOT.

Point

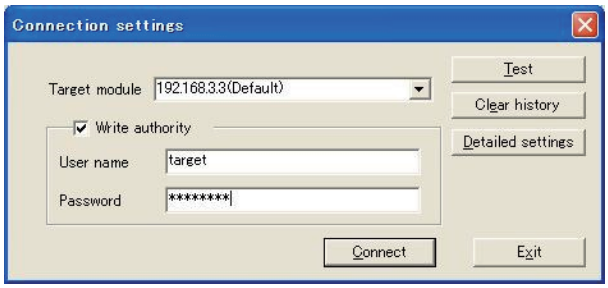
When changing the network parameter

After writing network parameters to the PLC CPU, turn off then on or reset the PLC CPU.

■Parameter settings (when connecting to C Controller module (Q series))

Use SW3PVC-CCPU-E Ver.3.05F or later for the CC-Link utility.

- Connection settings



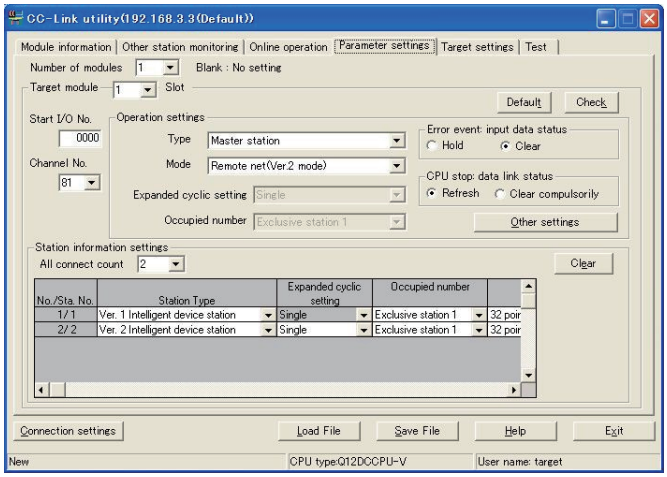
○: Necessary, △: As necessary, —: Not necessary

Item	Setting value	Setting for GOT connection
[Target module]*1	192.168.3.3 (Default)	○
[Write authority]	Selected	○
[User name]*2	target	○
[Password]*2	password	○
[Detail Setting]	—	△

*1 If the IP address of the C Controller module (Q series) has been changed, input the changed IP address or host name.
*2 If the account of the C Controller module (Q series) has been changed, input the changed user name and password.

- CC-Link Utility's [Parameter settings]

Parameter settings



○: Necessary, △: As necessary, —: Not necessary

Item*1		Setting value	Setting for GOT connection
[Numbers of modules]		1	○
[Target module]		1	○
[Start I/O No.]		0000H	○
[Channel No.]		(Use default value)	○
[Operation settings]	[Type]	Master station	○
	[Mode]	Remote network Ver.2 mode	○
	[Expanded cyclic setting]	Single	△
	[Occupied number]	1 station occupied	△
	[Error event: input data status]	Clear	△
	[CPU stop: data link status]	Refresh	△
	[Other settings]	(Use default value)	△

Item*1			Setting value	Setting for GOT connection
[Station information settings]	[All connect count]		2	○
	[Station Type]	[Sta. No. 1]	Ver.1 intelligent device station	○
		[Sta. No. 2]	Ver.2 intelligent device station	○
	[Expanded cyclic setting] *2	[Sta. No. 1]	Single	△
		[Sta. No. 2]	Single	○
	[Occupied number]*2	[Sta. No. 1]	1 station occupied	○
		[Sta. No. 2]	1 station occupied	○
	[Remote station points]	[Sta. No. 1]	32 points	○
		[Sta. No. 2]	32 points	○
	[Reserve/invalid station select]	[Sta. No. 1]	No setting	○
		[Sta. No. 2]	No setting	○
	[Intelligent buffer select(word)]		(Use default value)	—

*1 When the [Mode] of the CC-Link module is set to [Remote net(Ver.2 mode)], [Remote station points] can be set.
[Remote station points] is a setting for the remote I/O station.
The default value (32 points) must be used on the GOT.

*2 Set the same setting as that of the GOT.

Point

When changing the network parameter
After writing network parameters to the C Controller module (Q series), turn off then on the C Controller module (Q series).

■[Controller Setting] in GT Designer3

- Communication settings of station No. 1 (GOT)

Item	Setting value
[Station No.]	1: Station No. 1
[Transmission Rate]	0: Online 156 kbps
[Mode]	Ver.1: Remote network Ver.1 mode
[Expanded Cyclic]	Single (Use default value)
[Occupied Station]	1 station
[Input for Error Station]	0: Clear
[Retry]	3 (Use default value)
[Timeout Time]	3 (Use default value)
[Delay Time]	0 (Use default value)
[Transmission method]	MELSEC (compatible)

- Communication settings of station No. 2 (GOT)

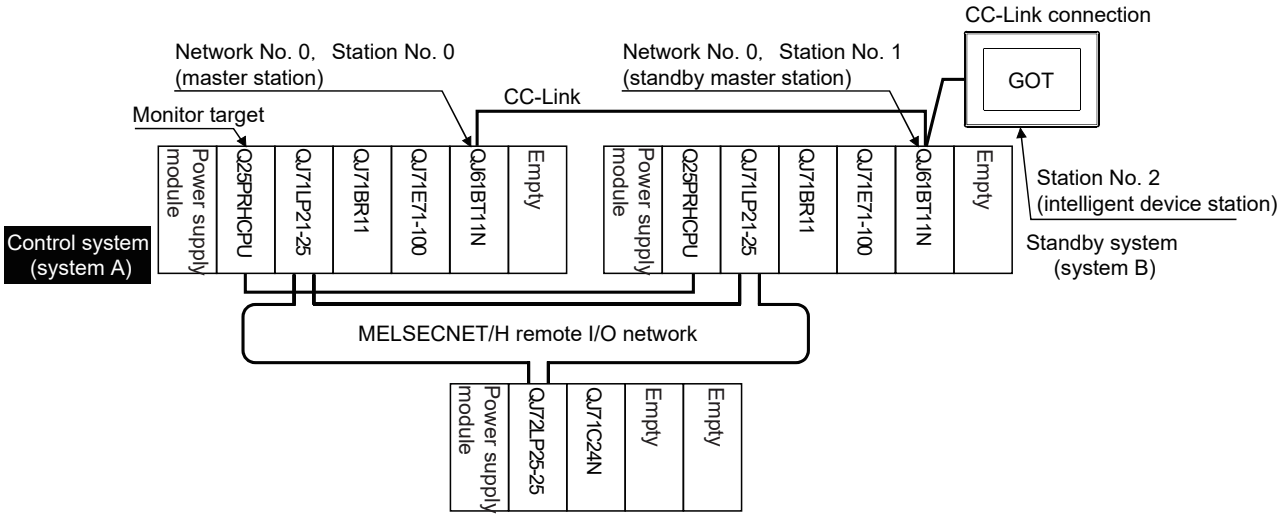
Item	Setting value
[Station No.]	2: Station No. 2
[Transmission Rate]	0: Online 156 kbps
[Mode]	Ver.2: Remote network Ver.2 mode
[Expanded Cyclic]	Single
[Occupied Station]	1 station
[Input for Error Station]	0: Clear
[Retry]	3 (Use default value)
[Timeout Time]	3 (Use default value)
[Delay Time]	0 (Use default value)
[Transmission method]	MELSEC (compatible)

12.5.5 Access range for monitoring

Only the connected CPU can be accessed.

12.5.6 How to monitor a redundant system

The following describes the CC-Link connection (intelligent device station), in which the GOT set as the intelligent device station is connected to the CC-Link network.
The following shows an example of connecting the GOT set as the intelligent device station to the CC-Link network.



Connection method

Connect the CC-Link network system to the GOT.
For details, refer to the following.
☞ Page 1018 CC-Link connection (intelligent device station)

Settings in GT Designer3

Set GT Designer3 as follows.

Setting item	Setting details		Model
Model	MELSEC-Q/QS, Q17nD/M/NC/DR/DSR, CRnD-700		GT37 SoftGOT3000
Device setting (Network setting)	Other	NW No.: 0 (fixed)	
		PLC Station No.: 0 (master station)	
MELSEC redundant settings	Do not set this item.		

In this case, the GOT monitoring is performed by transient transmission of the CC-Link network system. Therefore, a longer time-lag occurs for displaying objects compared with direct monitoring of the PLC CPU.
To display objects with a shorter time-lag, set the devices for RX, RY, RWw, and RWr of the host station set in the CC-Link network and execute the cyclic transmission.
For details, refer to the following.
☞ Page 1111 Using cyclic transmission

Monitoring target change when system switching occurs in a redundant system

■System switching due to an alarm occurred in the control system

When system switching occurs, the CC-Link switches the station No. 0 of the master station and the station No. 1 of the standby master station on the network.
The CC-Link module of the new control system after system switching takes over the control as the master station.
Since the GOT monitors the master station, the monitoring target is automatically changed to the new control system after system switching.

■System switching due to a network communication error occurred in other than the CC-Link of the control system, or due to switching by the user

When system switching occurs, the CC-Link does not switch the station No. 0 of the master station and the station No. 1 of the standby master station on the network.

The CC-Link module of the new control system after system switching takes over the control as the standby master station. Since the GOT monitors the master station, the monitoring target is not automatically changed to the new control system after system switching.
To automatically change the monitoring target of the GOT to the new control system after system switching, switch the data link control from the standby master station to the master station by the sequence program of the new control system.
For details on the sequence program, refer to the following manual.
📖QnPRHCPU User's Manual (Redundant System) (Appendix 4 Sample Programs When CC-Link is Used)

Point

CC-Link network settings
To automatically change the monitoring target in the QCPU redundant system when using the CC-Link connection, set the CC-Link master station as System A and the standby master station as System B.
For details on using the CC-Link network in the redundant system, refer to the following manual.
📖MELSEC-Q CC-Link System Master/Local Module User's Manual
📖QnPRHCPU User's Manual (Redundant System)

MELSEC redundant settings

This section describes the settings for the GOT to automatically change the monitoring target of the QCPU redundant system.

Point

Before configuring the MELSEC redundant settings

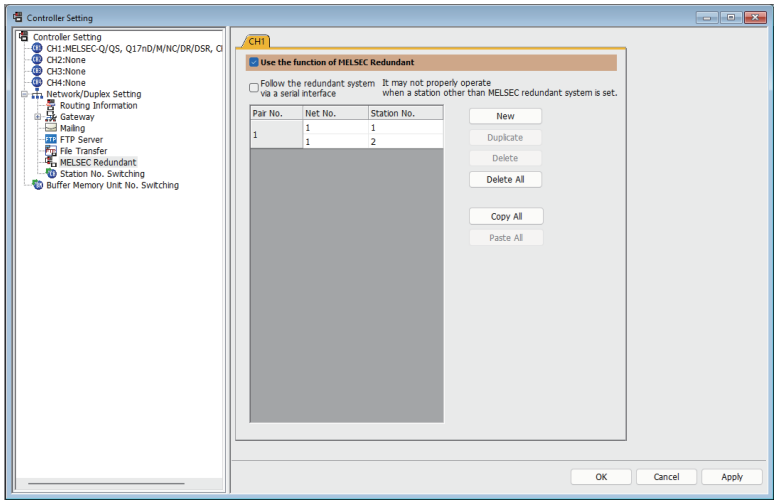
In the MELSEC redundant settings, do not set a station outside the redundant QCPU.

1. Select [Common] → [Controller Setting] → [MELSEC Redundant] from the menu.
2. The setting dialog box appears. Configure the settings by referencing the explanation that follows.
3. Configure the MELSEC redundant settings.

In the MELSEC redundant setting dialog, settings can be made for each channel of the controller.

The following shows an example of the CC-Link connection (intelligent device station) (station No. 5) with redundant CPU pair No. 1, network No. 1, and redundant CPU station No. 1 to No. 4.

Ex.



Item		Description	Model
CH1 to CH4		Select the tab of the channel number to configure the MELSEC redundant settings.	GT37 SoftGOT3000
[Follow the redundant system via a serial interface]		Select this item to monitor the control system as a host station at serial connection.	
[Pair No.]*1	[Net No.]	Set the network number (1 to 255) for each pair number (1 to 64). • Upper row: Setting for the first redundant CPU • Lower row: Setting for the second redundant CPU (The same value as the value set for the first redundant CPU is displayed.)	
	[Station No.]	Set the station number (0 to 120) of the redundant CPU for each pair number (1 to 64). • Upper row: Setting for the first redundant CPU • Lower row: Setting for the second redundant CPU (The setting value for the first redundant CPU + 1 is displayed.)	
[New]		Adds a new pair number.	
[Duplicate]		Copies one setting of the selected pair number and adds it below the bottom row.	
[Delete]		Deletes one setting of the selected pair number. After deletion, the succeeding pair numbers are renumbered to fill the deleted pair number.	
[Delete All]		Deletes all the pair number settings.	
[Copy All]		Copies the MELSEC redundant setting on the selected CH No. tab.	
[Paste All]		Pastes the copied MELSEC redundant setting in the selected CH No. tab.	

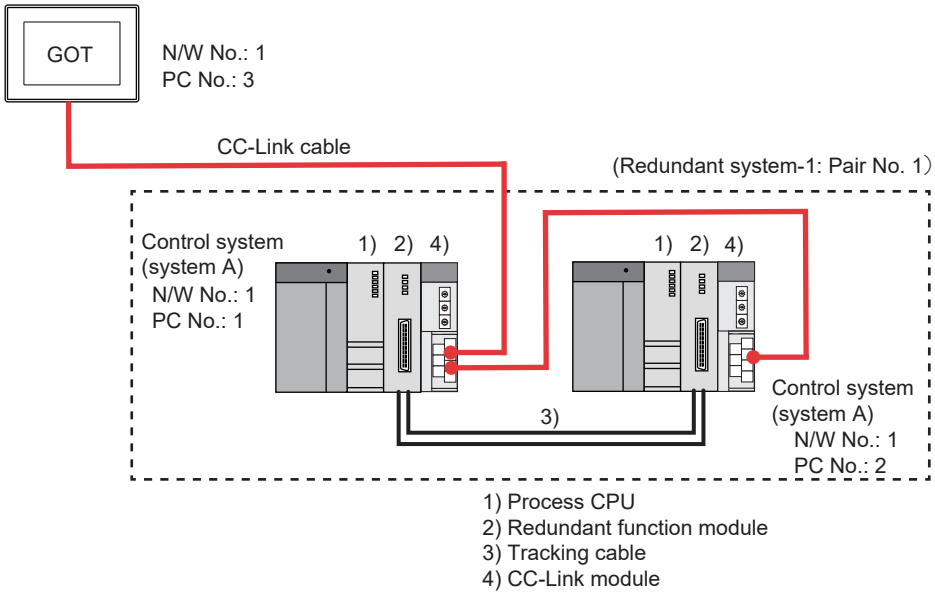
*1 For details, refer to the following.

☞ Page 1132 Pair number

■Pair number

Redundant CPU pair means the redundant CPUs (System A / System B) in the redundant system configuration.
Pair number is the number assigned to each redundant CPU pair.
The following shows an example of the CC-Link connection (intelligent device station) in the RCPU redundant system. (Pair No. 1)

Ex.



Point

Precautions for configuring the MELSEC redundant settings
Pay attention to the following items when configuring the MELSEC redundant settings.

- The last station number and station number 1 (example: station number 64 and station number 1) cannot be paired.
- Make sure that the QCPU in the station for which MELSEC redundant settings are configured is a redundant CPU. If any of the QCPUs to which the MELSEC redundant settings are configured is not a redundant CPU, the GOT fails to automatically change the monitoring target to the control system when the system is switched.
- Before configuring the settings, make sure to check the station numbers of the network modules. If the MELSEC redundant settings and the actual network module station numbers are inconsistent, the GOT fails to automatically change the monitoring target to the control system when the system is switched.
- GOT supports the backup mode, which is the operation mode of the QCPU redundant system, and does not support the debug mode and separate mode.

Precautions

■Start of the redundant system

The GOT starts monitoring the redundant system after the control system and standby system have been determined, regardless of the starting order of PLC systems A and B.
The GOT starts monitoring when both systems start.
(In a redundant system with a redundant extension base unit, the GOT monitors the control system that starts first.)
Power on the redundant system within the time set in the GOT (communication timeout time and number of retries) so that the GOT can start monitoring after the redundant system starts (after the control system is decided).
If the GOT does not start within the set time, the GOT stops monitoring for safety reasons, and the following system alarm occurs.

- 451: The MELSEC redundant setting and actual system configuration do not match.

If the system alarm occurs, restart the GOT (reapply or reset the power supply) to start monitoring again.

■System switching

When system switching occurs through the user program, the communication path remains unchanged, and the GOT will continue monitoring.
No system alarm occurs.
When system switching occurs due to disconnected cable or other causes, the GOT changes the communication path and continues monitoring.
[450: Path has changed or timeout occurred in redundant system.] appears as the system alarm.

■Redundant system configuration and operation mode

- System alarm display

If the MELSEC redundant settings do not match the actual configuration of the redundant system, or if the operation mode of the redundant system is not set to backup mode, [451: The MELSEC redundant setting and actual system configuration do not match.] appears as the system alarm, and the GOT will not be able to correctly monitor the redundant system's CPU.
If the system alarm occurs, restart the GOT (reapply or reset the power supply) to start monitoring again.

- Changing the MELSEC redundant settings

Always reset the GOT after changing the MELSEC redundant settings. If not reset, the changed MELSEC redundant settings will not be applied on the GOT.

■Monitoring a non-redundant system with the MELSEC redundant settings configured

If the MELSEC redundant settings were set for a non-redundant system, the GOT will operate normally.
In this case, if an abnormality (such as powering off or communication timeout error) occurs in the PLC CPU for which the MELSEC redundant settings are configured, the PLC CPU may not operate as intended.

■Monitoring a redundant system without configuring the MELSEC redundant settings

When the MELSEC redundant settings are not configured, the GOT does not automatically change the monitoring target even if system switching occurs in the redundant system.
When the GOT is connected to the standby system, data written to a device are overwritten by the data of the control system, failing to be reflected.
In this case, when data is written to a device in the standby system normally, the system alarm [315 Device writing error. Correct device.] is not detected.

■CC-Link (ID) connection

When system switching occurs due to the following factors, data link control of CC-Link (ID) does not transfer from the master station of the new standby system to the standby master station of the new control system and the GOT cannot change the monitoring target.
Make the standby master station of the new control system take over data link control in the ladder program.
For details on the ladder program for data link control, refer to the following manual.

- MELSEC iQ-R series

📖MELSEC iQ-R CC-Link System Master/Local Module User's Manual (Application)

<Factors of system switching>

- Execution of the system switching instruction on the PLC side
- Execution of system switching operation using the engineering tool
- Execution of system switching request from other network modules

<Reason why the GOT cannot change the monitoring target>

When system switching occurs due to the above factors, the standby master station does not take over data link control because the master station of the new standby system can communicate with the GOT.
Consequently, the new control system master station remains the standby master station.
As a result, the GOT monitors the master station without considering the new control or standby system, which prevents it from monitoring the redundant system.

12.6 MELSEC-L series (CC-Link connection (intelligent device station))

☞ Page 1134 Connectable devices
☞ Page 1134 System configuration
☞ Page 1139 GOT side settings
☞ Page 1145 PLC side settings
☞ Page 1150 Access range for monitoring

12.6.1 Connectable devices

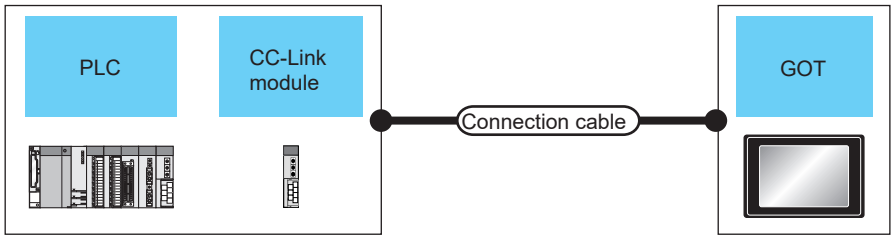
The following table shows the connectable models.

○: Supported, —: Not supported

Controller	Model	Clock	CC-Link module	Connectable model
MELSEC-L series	L02CPU L06CPU L26CPU L26CPU-BT L02CPU-P L06CPU-P L26CPU-P L26CPU-PBT	○	LJ61BT11	GT37 SoftGOT3000
	L02SCPU L02SCPU-P	○	LJ61BT11	GT37 SoftGOT3000

12.6.2 System configuration

Connection with CC-Link Ver.1 compatible



For details on the overall length, refer to the following.

☞ Page 1135 Overall length

For details on the maximum number of connected devices, refer to the following.

☞ Page 1135 Maximum number of connected devices

Controller	CC-Link module*1	Communication type	Connection cable	GOT	
				Interface	Model
MELSEC-L series	LJ61BT11	CC-Link (Ver.1)	CC-Link dedicated cable*2	GT37-IF2000 + GT15-J61BT13*3	GT37 SoftGOT3000
MELSEC-L series (L26CPU-BT)	—	CC-Link (Ver.1)	CC-Link dedicated cable*2	GT37-IF2000 + GT15-J61BT13*3	GT37 SoftGOT3000

*1 For the system configuration of the CC-Link module, refer to the following manual.
MELSEC-L CC-Link System Master/Local Module User's Manual
*2 For the specifications of the CC-Link dedicated cable and the contact information, refer to the following.
CC-Link Partner Association website: http://www.cc-link.org/
*3 In the controller settings, set the mode to Ver.1.
For details on settings, refer to the following.
Page 1139 [Controller Setting]

■Overall length

The maximum overall cable length and cable length between stations vary depending on the conditions such as the type of the cable used and the transmission speed.

For details, refer to the following manual.

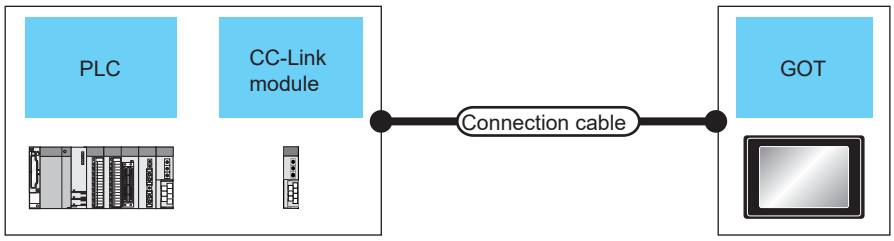
MELSEC-L CC-Link System Master/Local Module User's Manual

■Maximum number of connected devices

The following shows the number of connectable GOTs.

Controller	
Model	**Number of connectable devices**
MELSEC-L series	26 GOTs

Connection with CC-Link Ver.2 compatible



For details on the overall length, refer to the following.

Page 1135 Overall length

For details on the maximum number of connected devices, refer to the following.

Page 1136 Maximum number of connected devices

Controller	CC-Link module*1	Communication type	Connection cable	GOT	
				Interface	Model
MELSEC-L series	LJ61BT11	CC-Link (Ver.2)	CC-Link dedicated cable*2	GT37-IF2000 + GT15-J61BT13*3	GT37 SoftGOT3000
MELSEC-L series (L26CPU-BT, L26CPU-PBT)	—	CC-Link (Ver.2)	CC-Link dedicated cable*2	GT37-IF2000 + GT15-J61BT13*3	GT37 SoftGOT3000

*1 For the system configuration of the CC-Link module, refer to the following manual.
MELSEC-L CC-Link System Master/Local Module User's Manual
*2 For the specifications of the CC-Link dedicated cable and the contact information, refer to the following.
CC-Link Partner Association website: http://www.cc-link.org/
*3 In the controller settings, set the mode to Ver.2.
For details on settings, refer to the following.
Page 1139 [Controller Setting]

■Overall length

The maximum overall cable length and cable length between stations vary depending on the conditions such as the type of the cable used and the transmission speed.

For details, refer to the following manual.

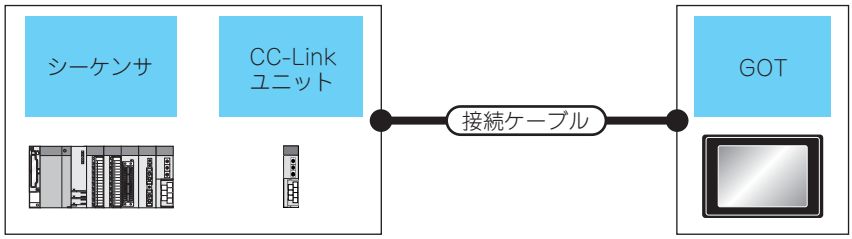
MELSEC-L CC-Link System Master/Local Module User's Manual

■Maximum number of connected devices

The following shows the number of connectable GOTs.

Controller	
Model	**Number of connectable devices**
MELSEC-L series	26 GOTs

Connection with CC-Link Ver.1/Ver.2 compatibles mixed



For details on the overall length, refer to the following.

☞ Page 1136 Overall length

For details on the maximum number of connected devices, refer to the following.

☞ Page 1136 Maximum number of connected devices

Controller	CC-Link module*1	Communication type	Connection cable	GOT	
				Interface	Model
MELSEC-L series	LJ61BT11	CC-Link (Ver.2)	CC-Link dedicated cable*2	GT37-IF2000 + GT15-J61BT13*3	GT37 SoftGOT3000
MELSEC-L series (L26CPU-BT, L26CPU-PBT)	—	CC-Link (Ver.2)	CC-Link dedicated cable*2	GT37-IF2000 + GT15-J61BT13*3	GT37 SoftGOT3000

*1 For the system configuration of the CC-Link module, refer to the following manual.
📖MELSEC-Q CC-Link System Master/Local Module User's Manual

*2 For the specifications of the CC-Link dedicated cable and the contact information, refer to the following.
CC-Link Partner Association website: http://www.cc-link.org/

*3 In the controller settings, set the mode to Ver.2.
For details on settings, refer to the following.
☞ Page 1139 [Controller Setting]

■Overall length

The maximum overall cable length and cable length between stations vary depending on the conditions such as the type of the cable used and the transmission speed.

For details, refer to the following manual.

📖MELSEC-L CC-Link System Master/Local Module User's Manual

■Maximum number of connected devices

The following shows the number of connectable GOTs.

Controller	
Model	**Number of connectable devices**
MELSEC-L series	26 GOTs

Connecting one PLC to multiple GOTs

When multiple GOT units are simultaneously accessing one PLC, the GOT writing process (transient/cyclic) and reading process (transient) may slow down.

This slow access can be remedied with the following countermeasures.

<Countermeasures>

■Improve response speed on PLC side

Insert a COM instruction on the PLC to increase the response speed.

Note that caution is required as the scan time will increase.

■Screen design using cyclic devices

Create the screen with cyclic devices instead of using transient devices.

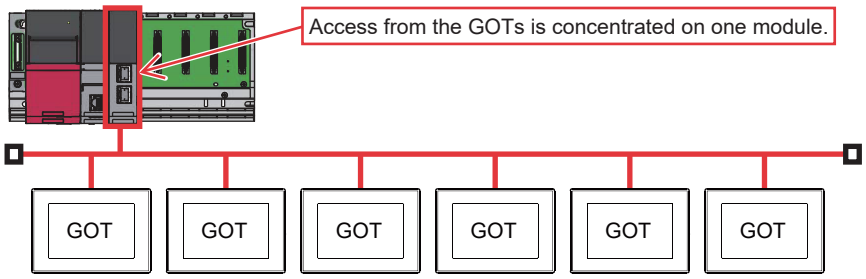
■Split GOT connection destinations into several systems

Add a master/local module to the PLC side, and split the GOT connection destinations into several systems.

Improve the current system configuration.

(Example of current system configuration)

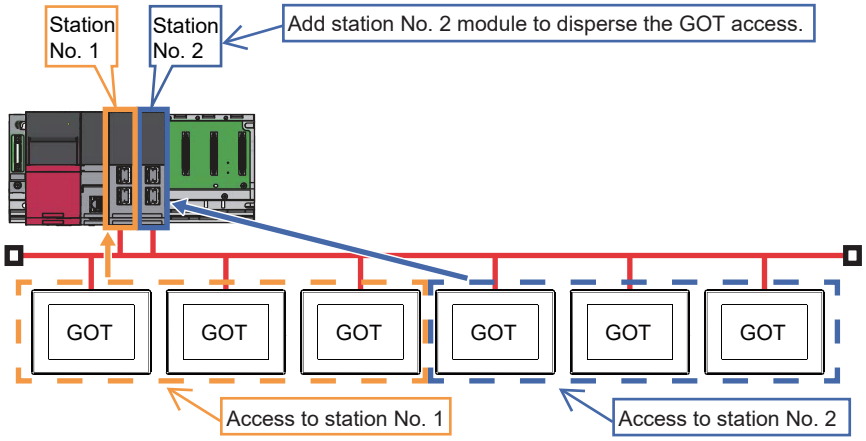
In the following system configuration, access from the GOT is concentrated on one module.



(Improvement measure)

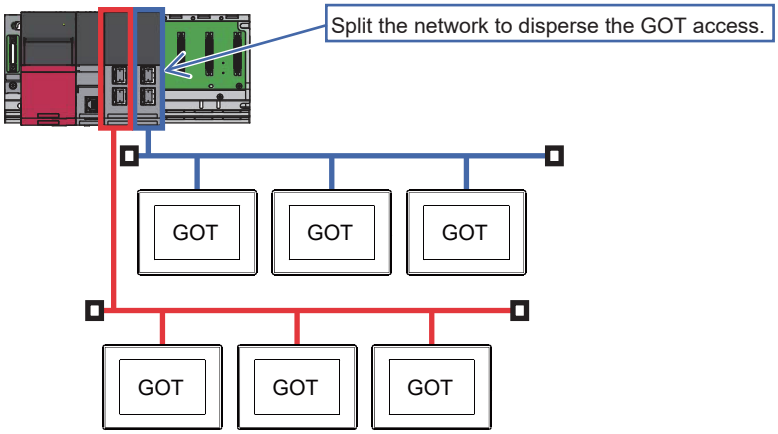
- Adding a module to the PLC side

Add a module to the PLC side to disperse the GOT access destinations.



• Split the network

Split the network to disperse the GOT access.



Connection to LCPU

LCPU may diagnose the SD memory card (file system check, recovery processing, etc.) when the LCPU is turned off then on or reset.

Therefore, it takes time until the SD memory card becomes available.

If the GOT is started during this time, a system alarm occurs.

Adjust the time to display the GOT startup screen to prevent a system alarm.

📖GT Designer3 (GOT3000) Screen Design Manual

Precautions

■Starting the GOT in CC-Link connection (intelligent device station)

For the CC-Link connection (intelligent device station), the data link is started approximately 10 seconds after the GOT startup.

■When a network error occurs in the system alarm

In the CC-Link connection (intelligent device station), when a network error occurs in the system alarm, the system alarm display cannot be canceled even though the causes are removed.

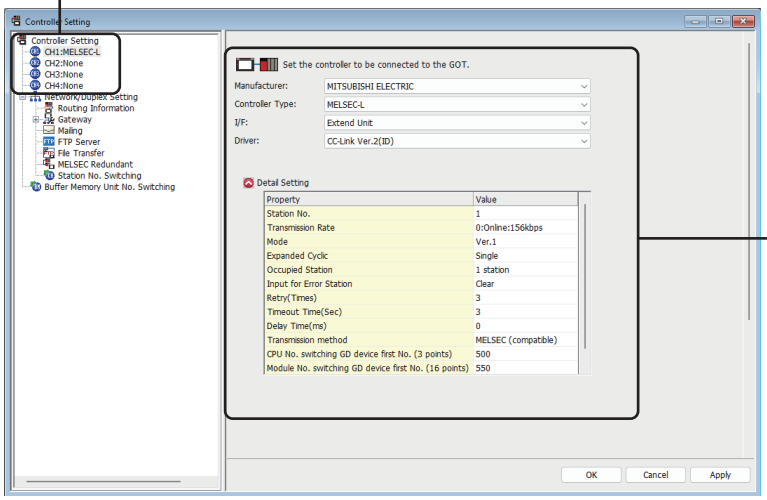
To cancel the system alarm display, restart the GOT.

12.6.3 GOT side settings

[Controller Setting]

Set the channel of the connected controller.

List menu



Operating procedure

1. Select [Common] → [Controller Setting] from the menu.

2. In the [Controller Setting] window, select the channel number to be used from the list menu.

3. Set the following items.

Item	Description
[Manufacturer]	[MITSUBISHI ELECTRIC]
[Controller Type]	[MELSEC-L]
[I/F]	[Extend Unit]
[Driver]	[CC-Link Ver.2 (ID)]
[Detail Setting]	Configure the settings according to the usage environment. ☞ Page 1140 [Detail Setting]

4. When you have completed the settings, click the [OK] button.

Point

The controller settings can be configured and checked in [I/F Communication Setting].
For details, refer to the following.
📖GT Designer3 (GOT3000) Screen Design Manual

■[Detail Setting]

Configure the settings according to the usage environment.

Detail Setting

Property	Value
Station No.	1
Transmission Rate	0:Online:156kbps
Mode	Ver.1
Expanded Cyclic	Single
Occupied Station	1 station
Input for Error Station	Clear
Retry(Times)	3
Timeout Time(Sec)	3
Delay Time(ms)	0
Transmission method	MELSEC (compatible)
CPU No. switching GD device first No. (3 points)	500
Module No. switching GD device first No. (16 points)	550

Item	Description	Range
[Station No.]	Set the station number of the GOT.	[1] to [64]
[Transmission Rate]*1	Set the transmission speed and a mode of the GOT.	[0] to [E]
[Mode Setting]	Set the operation mode of the GOT.	[Ver.1], [Ver.2], [Additional], [Offline]
[Expanded Cyclic]	Set the cyclic point expansion.	[Single], [Double], [Quadruple], [Octuple]
[Occupied Station]	Set the number of stations occupied by the GOT.	[1 Station], [4 Stations]
[Input for Error Station]	Set whether to clear or hold the error at an error occurrence.	[Clear], [Hold]
[Retry]	Set the number of retries to be performed when a communication timeout occurs. When receiving no response after retries, the communication times out.	[0] times to [5] times
[Timeout Time]	Set the time period for a communication to time out.	[1] second to [90] seconds
[Delay Time]	Set this item to adjust the transmission timing of the communication request from the GOT.	[0] ms to [300] ms
[Transmission method]	Set the CC-Link transmission method.	[MELSEC (compatible)], [Cyclic]
[CPU No. switching GD device first No. (3 points)]	Set the start device number of the GD devices for CPU number switching. For details, refer to the following. ☞ Page 1060 Start device number of the GD devices for CPU number switching	[0] to [65520]
[Module No. switching GD device first No. (16 points)]	Set the start device number of the GD devices for module number switching. For details, refer to the following. ☞ Page 1061 Start device number of the GD devices for module number switching	[0] to [65520]
[Servo axis switching GD device first No. (16 points)]	Set the start device number of the GD devices for servo axis switching. For details, refer to the following. ☞ Page 1062 Start device number of the GD devices for servo axis switching	[0] to [65520]

*1 Transmission speed settings
The following lists the transmission speed settings of the CC-Link communication.

Setting value	Description
0	Online: 156 kbps
1	Online: 625 kbps
2	Online: 2.5 Mbps
3	Online: 5 Mbps
4	Online: 10 Mbps
5	Line test: 156 kbps
6	Line test: 625 kbps
7	Line test: 2.5 Mbps

Setting value	Description
8	Line test: 5 Mbps
9	Line test: 10 Mbps
A	Hardware test: 156 kbps
B	Hardware test: 625 kbps
C	Hardware test: 2.5 Mbps
D	Hardware test: 5 Mbps
E	Hardware test: 10 Mbps

For details on the hardware test, refer to the following manual.

MELSEC-L CC-Link System Master/Local Module User's Manual

Point

• Communication interface settings in the GT37 utility

The communication interface setting can be changed in [Communication setting] of the GT37 utility after writing [Controller Setting] in project data.

For details on the GT37 utility, refer to the following manual.

GOT3000 Series User's Manual (Utility & Maintenance Functions)

• Priority of the settings in [Controller Setting]

When settings are configured in GT Designer3 or the GT37 utility, the most recent settings are effective.

■Start device number of the GD devices for CPU number switching

• Indirect specification of a CPU number

[CPU No.] can be indirectly specified with the GOT internal registers (GD devices) by specifying a value (100 to 102) to [CPU No.] in the device setting dialog in GT Designer3.

Set the start device number of the GD devices to be used in [CPU No. switching GD device first No. (3 points)].

[CPU No.] is specified with three consecutive GD devices, starting from the set device number.

When [500] is set to [CPU No. switching GD device first No. (3 points)], GD500 to GD502 are used to specify [CPU No.] as shown in the following table.

CPU No.	GD device	Setting range
100	GD500	1 to 4 Setting a value outside the range causes a communication timeout error. Specifying a nonexistent CPU number or a CPU number not supporting a multiple CPU system with a device causes a controller error.
101	GD501	
102	GD502	

• Indirect specification of a CPU number on the initially displayed screen

Set [CPU No. switching GD device first No. (3 points)] so that the values of the GD devices are retained and monitored upon the GOT startup.

• Indirect specification of a CPU number for multi-channel connection

If the setting range of [CPU No. switching GD device first No. (3 points)] set for each channel overlaps, the monitoring target CPU number set to each channel is switched simultaneously.

Set [CPU No. switching GD device first No. (3 points)] for each channel so that the setting range does not overlap.

• Indirect specification of a station number and a CPU number for multi-channel connection

When GD10 to GD25 are used to specify the station number of an inverter or non-Mitsubishi temperature controller connected, setting [10] to [CPU No. switching GD device first No. (3 points)] in a different channel switches the monitoring target CPU number and station number of an inverter or non-Mitsubishi temperature controller set to each channel simultaneously.

Set [CPU No. switching GD device first No. (3 points)] so that the setting range does not overlap the station number of an inverter or non-Mitsubishi temperature controller.

■Start device number of the GD devices for module number switching

• Indirect specification of a module number

For connection via a Simple Motion module, [Unit No.] can be specified with the GOT internal registers (GD devices) by specifying a value (100 to 10F) to [Unit No.] in the device setting dialog in GT Designer3.

Set the start device number of the GD devices to be used in [Module No. switching GD device first No. (16 points)].

[Unit No.] is specified with 16 consecutive GD devices, starting from the set device number.

When [550] is set to [Module No. switching GD device first No. (16 points)], GD550 to GD565 are used to specify [Unit No.] as shown in the following table.

Module No.	GD device	Setting range
100	GD550	00 to FF Setting a value outside the above range causes a device range error.
101	GD551	
102	GD552	
103	GD553	
104	GD554	
105	GD555	
106	GD556	
107	GD557	
108	GD558	
109	GD559	
10A	GD560	
10B	GD561	
10C	GD562	
10D	GD563	
10E	GD564	
10F	GD565	

• Indirect specification of a module number on the initially displayed screen

Set [Module No. switching GD device first No. (16 points)] so that the values of the GD devices are retained and monitored upon the GOT startup.

• Indirect specification of a module number for multi-channel connection

If the setting range of [Module No. switching GD device first No. (16 points)] set for each channel overlaps, the module number of the Simple Motion module via the servo amplifier device of each channel is switched simultaneously.

Set [Module No. switching GD device first No. (16 points)] for each channel so that the setting range does not overlap.

• Indirect specification of a station number and a module number for multi-channel connection

When GD10 to GD25 are used to specify the station number of an inverter or non-Mitsubishi temperature controller connected, setting [10] to [Module No. switching GD device first No. (16 points)] switches the module number of the Simple Motion module via the servo amplifier device and the station number of an inverter or non-Mitsubishi temperature controller set to each channel simultaneously.

Set [Module No. switching GD device first No. (16 points)] so that the setting range does not overlap the station number of an inverter or non-Mitsubishi temperature controller.

■Start device number of the GD devices for servo axis switching

• Indirect specification of a servo axis number

For connection via a Motion CPU or Simple Motion module, a servo axis number can be indirectly specified with GOT internal registers (GD devices) by specifying a value (100 to 115) to the axis number of the servo amplifier device.

Set the start device number of the GD devices to be used in [Servo axis switching GD device first No. (16 points)].

Specify a servo axis number with 16 consecutive GD devices, starting the set device number.

When [10] is set to [Servo axis switching GD device first No. (16 points)], GD10 to GD25 are used to specify a servo axis number as shown in the following table.

Servo axis No.	GD device	Setting range
100	GD10	1 to 64 Setting a value outside the above range causes a device range error.
101	GD11	
102	GD12	
103	GD13	
104	GD14	
105	GD15	
106	GD16	
107	GD17	
108	GD18	
109	GD19	
110	GD20	
111	GD21	
112	GD22	
113	GD23	
114	GD24	
115	GD25	

• Indirect specification of a servo axis number on the initially displayed screen

Set [Servo axis switching GD device first No. (16 points)] so that the values of the GD devices are retained and monitored upon the GOT startup.

• Indirect specification of a servo axis number for multi-channel connection

If the setting rage of [Servo axis switching GD device first No. (16 points)] set for each channel overlaps, the axis number of the servo amplifier of each channel is switched simultaneously.

Set [Servo axis switching GD device first No. (16 points)] for each channel so that the setting range does not overlap.

• Indirect specification of a station number and a servo axis number for multi-channel connection

When GD10 to GD25 are used to specify the station number of an inverter or non-Mitsubishi temperature controller connected, setting [10] to [Servo axis switching GD device first No. (16 points)] switches the axis number of the servo amplifier and the station number of an inverter or non-Mitsubishi temperature controller set to each channel simultaneously.

Set [Servo axis switching GD device first No. (16 points)] so that the setting range does not overlap the station number of an inverter or non-Mitsubishi temperature controller.

Precautions

■Using cyclic transmission

• I/O signals for the master station

Do not turn on the reserved output signals in the output signals (remote output: RY) to the GOT from the master station.

When the reserved output signal is turned on, the PLC system may malfunction.

For the assignment of I/O signals in the GOT, refer to the following manuals.

📖MODEL GT15-J61BT13 CC-Link communication unit User's Manual

📖GT15 CC-Link communication unit User's Manual

• Access range for monitoring

The remote I/O (RX and RY) and remote register (RWr and RWw) monitoring ranges vary depending on the mode of the master station in the CC-Link system.

Mode of master station	Monitoring	
	Data for each station compatible with CC-Link Ver.1	Data for each station compatible with CC-Link Ver.2
Remote network mode	○	—
Remote network Ver.1 mode	○	—
Remote network Ver.2 mode	○	○*1
Remote network additional mode	○	○

○: Available, ×: Not available (All "0"), —: System configuration not available

*1 Monitoring is available only when the GT15-J61BT13 CC-Link communication unit is used.

• When the GOT malfunctions

The state of cyclic output before fault is held.

■Connection with CC-Link Ver.1 compatible

For connection with CC-Link Ver.1 compatible, the device setting must be configured within the range of the specifications of the controller.

When a device number out of the range is set, proper monitoring may not be possible.

12.6.4 PLC side settings

Model		Reference
MELSEC-L series	L02CPU L06CPU L26CPU L26CPU-BT L02CPU-P L06CPU-P L26CPU-P L26CPU-PBT L02SCPU L02SCPU-P	☞ Page 1146 Connection to MELSEC-L series with Ver.1 compatible ☞ Page 1148 Connection to MELSEC-L series with Ver.2 compatible

The GOT operates as the stations with the following specifications in the CC-Link system.

Station information	Description
Station type	Intelligent device station, Ver.1 intelligent device station, or Ver.2 intelligent device station
Number of stations occupied	1 station or 4 stations

Point

Number of stations occupied

The number of stations occupied is the setting for determining the number of link device points (RX/RY/RWw/RWr) used by the GOT.

To use multiple numbers of link device points in cyclic transmission between the GOT and CC-Link module, set the number of stations occupied as 4 stations occupied.

The number of link device points when 1 station occupied or 4 stations occupied is shown below.

- CC-Link Ver.2

Link device	Extended cyclic setting							
	Single		Double		Quadruple		Octuple	
	1 station occupied	4 stations occupied	1 station occupied	4 stations occupied	1 station occupied	4 stations occupied	1 station occupied	4 stations occupied
Remote input (RX)	32 points	128 points	32 points	224 points	64 points	448 points	128 points	896 points
Remote output (RY)	32 points	128 points	32 points	224 points	64 points	448 points	128 points	896 points
Remote register (RWw)	4 points	16 points	8 points	32 points	16 points	64 points	32 points	128 points
Remote register (RWr)	4 points	16 points	8 points	32 points	16 points	64 points	32 points	128 points

- CC-Link Ver.1

Link device	Number of stations occupied	
	1 station occupied	4 stations occupied
Remote input (RX)	32 points	128 points
Remote output (RY)	32 points	128 points
Remote register (RWw)	4 points	16 points
Remote register (RWr)	4 points	16 points

Connection to MELSEC-L series with Ver.1 compatible

This section describes the setting method of the GOT and the Ver. 1 compatible CC-Link module (MELSEC-L series) in the system configuration shown below.

Point

- CC-Link module (MELSEC-L series)

For the details on the CC-Link module (MELSEC-L series), refer to the following manual.

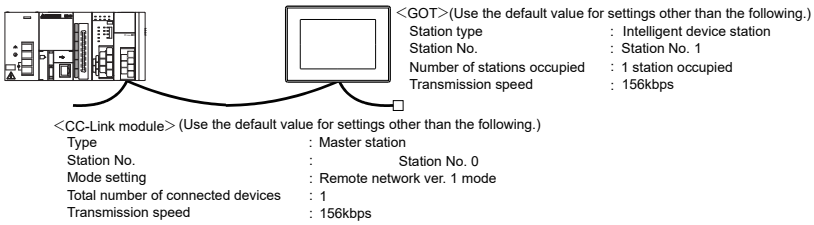
MELSEC-L CC-Link System Master/Local Module User's Manual

- CC-Link function built-in CPU

For details on the CC-Link function built-in CPU, refer to the following manual.

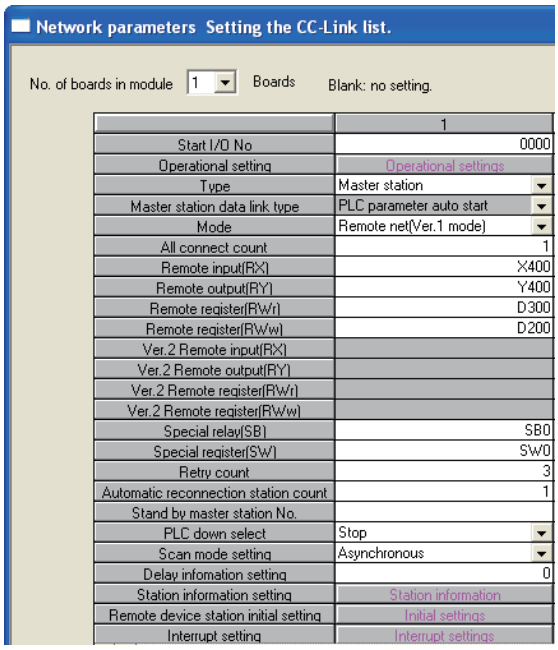
MELSEC-L CC-Link System Master/Local Module User's Manual

■System configuration



■[Network parameter] of GX Developer

- Network parameter



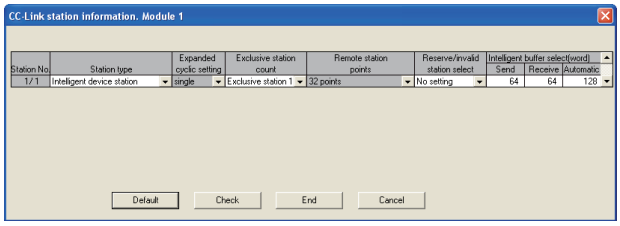
○: Necessary, △: As necessary, —: Not necessary

Item	Setting value	Setting for GOT connection
[Numbers of modules]	1	○
[Starting I/O No.][*1]	0000H	○
[Operation setting]	(Use default value)	?
[Type]	Master station (fixed)	○
[Mode]	Remote network Ver.1 mode	○
[All connect count]	1	○
[Remote input (RX) refresh device]	X400	?
[Remote output (RY) refresh device]	Y400	?
[Remote register (RWr) refresh device]	D300	?
[Remote register (RWw) refresh device]	D200	?

Item	Setting value	Setting for GOT connection
[Special relay (SB) refresh device]	SB0	?
[Special register (SW) refresh device]	SW0	?
[Retry count]	(Use default value)	△
[Automatic reconnection station count]		△
[Stand by master station No.]		—
[PLC down select]		△
[Scan mode setting]		△
[Delay information setting]		△
[Station information setting]	☞ ? Station information setting	○
[Remote device station initial setting]	(Use default value)	—
[Interrupt settings]		—

*1 Set the start I/O number of the CC-Link module according to the user's system configuration.

- Station information setting



○: Necessary, △: As necessary, —: Not necessary

Item*1	Setting value	Setting for GOT connection
[Station type]	Intelligent device station (fixed)	○
[Exclusive station count]*2	1 station occupied	○
[Reserve/invalid station select]	No setting	○
[Intelligent buffer select(word)]	(Use default value)	—

*1 When the [Mode] of the CC-Link module is set to [Remote net(Ver.1 mode)], [Remote station points] cannot be set.
*2 Set the same setting as that of the GOT.

Point

When changing the network parameter

After writing network parameters to the PLC CPU, turn off then on or reset the PLC CPU.

■[Controller Setting] in GT Designer3

Item	Setting value
[Station No.]	1: Station No. 1
[Transmission Rate]	0: Online 156 kbps
[Mode]	Ver.1: Remote network Ver.1 mode
[Expanded Cyclic]	Single (Use default value)
[Occupied Station]	1 station
[Input for Error Station]	0: Clear
[Retry]	3 (Use default value)
[Timeout Time]	3 (Use default value)
[Delay Time]	0 (Use default value)
[Transmission method]	MELSEC (compatible)

Point

[Controller Setting] in GT Designer3

For the setting method of [Controller Setting] in GT Designer3, refer to the following.

☞ Page 1139 [Controller Setting]

Connection to MELSEC-L series with Ver.2 compatible

This section describes the setting method of the GOT and the Ver. 2 compatible CC-Link module (MELSEC-L series) in the system configuration shown below.

Point

- CC-Link module (MELSEC-L series)

For the details on the CC-Link module (MELSEC-L series), refer to the following manual.

MELSEC-L CC-Link System Master/Local Module User's Manual

- CC-Link function built-in CPU

For details on the CC-Link function built-in CPU, refer to the following manual.

MELSEC-L CC-Link System Master/Local Module User's Manual

■System configuration

<GOT>(Use the default value for settings other than the following.)

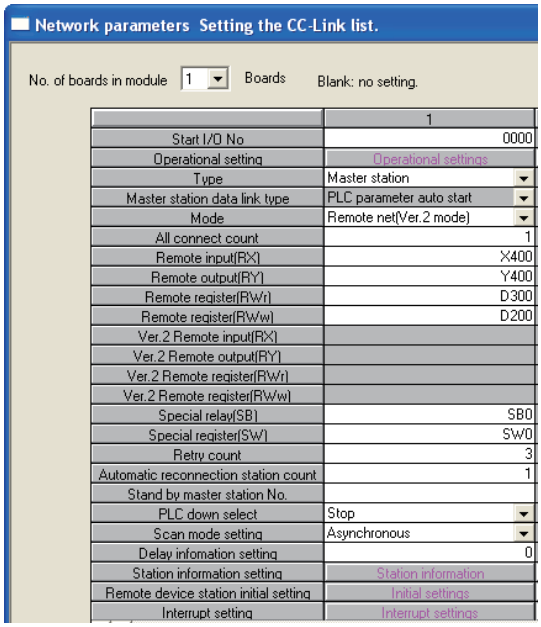
Station type	:	Intelligent device station
Station No.	:	Station No. 1
Extended cyclic setting	:	Single
Number of stations occupied	:	1 station occupied
Transmission speed	:	156kbps

<CC-Link module>(Use the default value for settings other than the following.)

Type	:	Master station
Station No.	:	Station No. 0
Mode setting	:	Remote network ver. 2 mode
Total number of connected devices	:	1
Transmission speed	:	156kbps

■[Network parameter] of GX Developer

- Network parameter



Network parameters Setting the CC-Link list.

No. of boards in module 1 Boards Blank: no setting.

	1
Start I/O No	0000
Operational setting	Operational settings
Type	Master station
Master station data link type	PLC parameter auto start
Mode	Remote net(Ver.2 mode)
All connect count	1
Remote input(RX)	X400
Remote output(RY)	Y400
Remote register(RWr)	D300
Remote register(RWw)	D200
Ver.2 Remote input(RX)	
Ver.2 Remote output(RY)	
Ver.2 Remote register(RWr)	
Ver.2 Remote register(RWw)	
Special relay(SB)	SB0
Special register(SW)	SW0
Retry count	3
Automatic reconnection station count	1
Stand by master station No.	
PLC down select	Stop
Scan mode setting	Asynchronous
Delay infomation setting	0
Station information setting	Station information
Remote device station initial setting	Initial settings
Interrupt setting	Interrupt settings

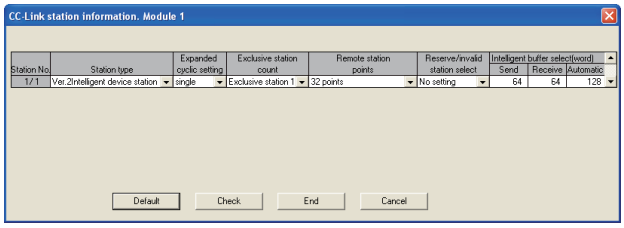
○: Necessary, △: As necessary, —: Not necessary

Item	Setting value	Setting for GOT connection
[Numbers of modules]	1	○
[Starting I/O No.][*1]	0000H	○
[Operation setting]	(Use default value)	?
[Type]	Master station (fixed)	○
[Mode]	Remote network Ver.2 mode	○
[All connect count]	1	○
[Remote input (RX) refresh device]	X400	?
[Remote output (RY) refresh device]	Y400	?
[Remote register (RWr) refresh device]	D300	?
[Remote register (RWw) refresh device]	D200	?
[Special relay (SB) refresh device]	SB0	?

Item	Setting value	Setting for GOT connection
[Special register (SW) refresh device]	SW0	?
[Retry]	(Use default value)	△
[Automatic reconnection station count]		△
[Stand by master station No.]		—
[PLC down select]		△
[Scan mode setting]		△
[Delay information setting]		△
[Station information setting]	☞ ? Station information setting	○
[Remote device station initial setting]	(Use default value)	—
[Interrupt setting]		—

*1 Set the start I/O number of the CC-Link module according to the user's system configuration.

- Station information setting



○: Necessary, △: As necessary, —: Not necessary

Item*1	Setting value	Setting for GOT connection
[Station type]	Intelligent device station (fixed)	○
[Expanded cyclic setting]*2	Single	○
[Exclusive station count]*2	1 station occupied	○
[Remote station points]	32 points (fixed)	○
[Reserve/invalid station select]	No setting	○
[Intelligent buffer select(word)]	(Use default value)	—

*1 When the [Mode] of the CC-Link module is set to [Remote net(Ver.1 mode)], [Remote station points] cannot be set.
*2 Set the same setting as that of the GOT.

Point

When changing the network parameter

After writing network parameters to the PLC CPU, turn off then on or reset the PLC CPU.

■[Controller Setting] in GT Designer3

Item	Setting value
[Station No.]	1: Station No. 1
[Transmission Rate]	0: Online 156 kbps
[Mode]	Ver.2: Remote network Ver.2 mode
[Expanded Cyclic]	Single (Use default value)
[Occupied Station]	1 station
[Input for Error Station]	0: Clear
[Retry]	3 (Use default value)
[Timeout Time]	3 (Use default value)
[Delay Time]	0 (Use default value)
[Transmission method]	MELSEC (compatible)

Point

[Controller Setting] in GT Designer3

For the setting method of [Controller Setting] in GT Designer3, refer to the following.

☞ Page 1139 [Controller Setting]

12.6.5 Access range for monitoring

Only the connected CPU can be accessed.

12.7 MELSEC-A series (CC-Link connection (intelligent device station))

☞ Page 1151 Connectable devices
☞ Page 1152 System configuration
☞ Page 1155 GOT side settings
☞ Page 1161 PLC side settings
☞ Page 1169 Access range for monitoring

12.7.1 Connectable devices

The following table shows the connectable models.

○: Supported, —: Not supported

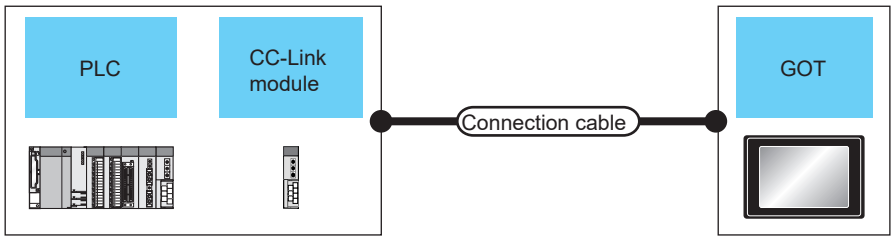
Controller	Model	Clock	CC-Link module	Connectable model
MELSEC-A (AnCPU)	A2UCPU A2UCPU-S1 A3UCPU A4UCPU A2ACPU A2ACPUP21 A2ACPUR21 A2ACPU-S1 A2ACPUP21-S1 A2ACPUR21-S1 A3ACPU A3ACPUP21 A3ACPUR21 A1NCPU A1NCPUP21 A1NCPUR21 A2NCPU A2NCPUP21 A2NCPUR21 A2NCPU-S1 A2NCPUP21-S1 A2NCPUR21-S1 A3NCPU A3NCPUP21 A3NCPUR21	○	AJ61BT11*1	GT37 SoftGOT3000
MELSEC-A(AnSCPU)	A2USCPU A2USCPU-S1 A2USHCPU-S1 A1SCPU A1SCPUC24-R2 A1SHCPU A2SCPU A2SCPU-S1 A2SHCPU A2SHCPU-S1 A1SJCPU A1SJCPU-S3 A1SJHCPU	○	AJ61BT11*1 A1SJ61BT11*1	GT37 SoftGOT3000
MELSEC-A	A0J2HCPU A0J2HCPUP21 A0J2HCPUR21 A0J2HCPU-DC24	—	AJ61BT11*1	GT37 SoftGOT3000

Controller	Model	Clock	CC-Link module	Connectable model
Motion CPU (A series)	A273UCPU A273UHCPU A273UHCPU-S3 A373UCPU A373UCPU-S3	○	AJ61BT11*1	GT37 SoftGOT3000
	A171SCPU A171SCPU-S3 A171SCPU-S3N A171SHCPU A171SHCPUN A172SHCPU A172SHCPUN A173UHCPU A173UHCPU-S1	○	AJ61BT11*1 A1SJ61BT11*1	GT37 SoftGOT3000

*1 Transient transmission is available only to the CC-Link module with function version D or later and software version J or later.

12.7.2 System configuration

Connection with CC-Link Ver.1 compatible



For details on the overall length, refer to the following.

☞ Page 1152 Overall length

For details on the maximum number of connected devices, refer to the following.

☞ Page 1153 Maximum number of connected devices

Controller	CC-Link module*1	Communication type	Connection cable	GOT	
				Interface	Model
MELSEC-A (AnCPU) MELSEC-A Motion CPU (A series) large type	AJ61BT11*4	CC-Link (Ver.1)	CC-Link dedicated cable*2	GT37-IF2000 + GT15-J61BT13*3	GT37 SoftGOT3000
MELSEC-A(AnSCPU) Motion CPU (A series) small type	AJ61BT11*4 A1SJ61BT11*4	CC-Link (Ver.1)	CC-Link dedicated cable*2	GT37-IF2000 + GT15-J61BT13*3	GT37 SoftGOT3000

*1 For the system configuration of the CC-Link module, refer to the following manual.
📖CC-Link System Master/Local Module Type AJ61BT11/A1SJ61BT11 User's Manual

*2 For the specifications of the CC-Link dedicated cable and the contact information, refer to the following.
CC-Link Partner Association website: http://www.cc-link.org/

*3 In the controller settings, set the mode to Ver.1.
For details on settings, refer to the following.
☞ Page 1155 [Controller Setting]

*4 Transient transmission is available only to the CC-Link module with function version D or later and software version J or later.

■Overall length

The maximum overall cable length and cable length between stations vary depending on the conditions such as the type of the cable used and the transmission speed.

For details, refer to the following manual.

📖CC-Link System Master/Local Module Type AJ61BT11/A1SJ61BT11 User's Manual

■Maximum number of connected devices

The following shows the number of connectable GOTs.

Controller	
Model	**Number of connectable devices**
MELSEC-A series Motion CPU (A series)	26 GOTs

Connecting one PLC to multiple GOTs

When multiple GOT units are simultaneously accessing one PLC, the GOT writing process (transient/cyclic) and reading process (transient) may slow down.

This slow access can be remedied with the following countermeasures.

<Countermeasures>

■Improve response speed on PLC side

Insert a COM instruction on the PLC to increase the response speed.

Note that caution is required as the scan time will increase.

■Screen design using cyclic devices

Create the screen with cyclic devices instead of using transient devices.

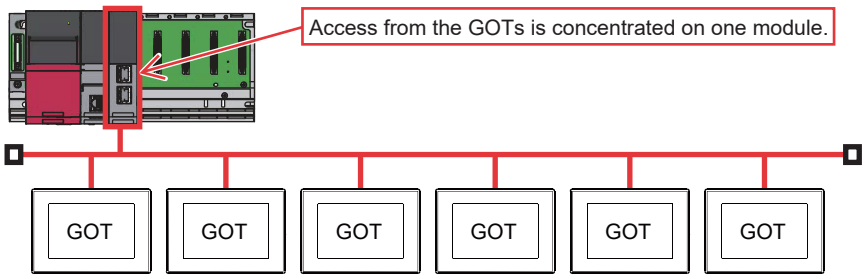
■Split GOT connection destinations into several systems

Add a master/local module to the PLC side, and split the GOT connection destinations into several systems.

Improve the current system configuration.

(Example of current system configuration)

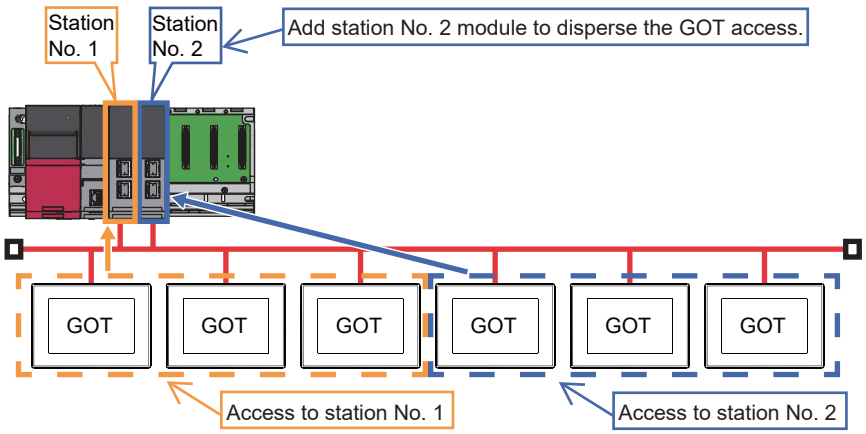
In the following system configuration, access from the GOT is concentrated on one module.



(Improvement measure)

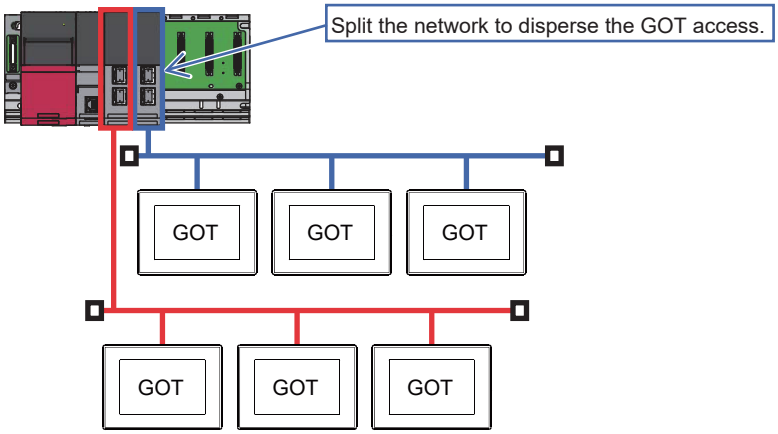
- Adding a module to the PLC side

Add a module to the PLC side to disperse the GOT access destinations.



• Split the network

Split the network to disperse the GOT access.



Precautions

■For transient transmission

Mount the CC-Link module with function version B or later and software version J or later to the PLC CPU when performing the transient transmission with the following CC-Link modules.

Only cyclic transmission is available for the CC-Link module with function version A or earlier and software version I or earlier.

- AJ61BT11
- A1SJ61BT11
- AJ61QBT11
- A1SJ61QBT11

■Starting the GOT in CC-Link connection (intelligent device station)

For the CC-Link connection (intelligent device station), the data link is started approximately 10 seconds after the GOT startup.

■When a network error occurs in the system alarm

In the CC-Link connection (intelligent device station), when a network error occurs in the system alarm, the system alarm display cannot be canceled even though the causes are removed.

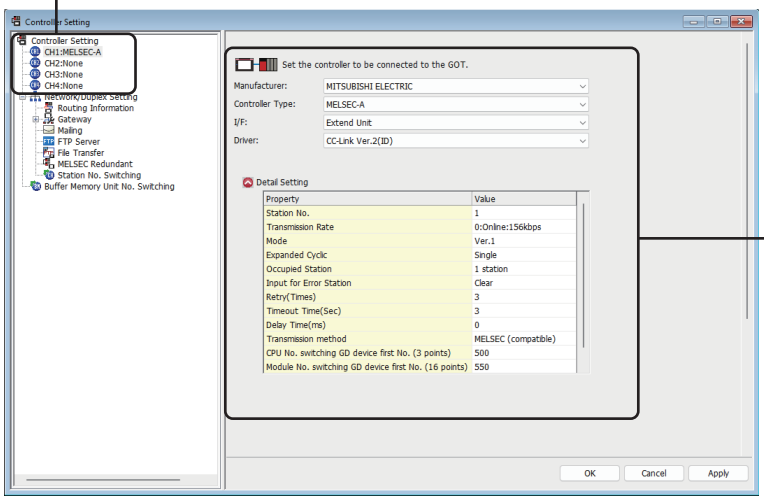
To cancel the system alarm display, restart the GOT.

12.7.3 GOT side settings

[Controller Setting]

Set the channel of the connected controller.

List menu



Operating procedure

1. Select [Common] → [Controller Setting] from the menu.

2. In the [Controller Setting] window, select the channel number to be used from the list menu.

3. Set the following items.

Item	Description
[Manufacturer]	[MITSUBISHI ELECTRIC]
[Controller Type]	[MELSEC-A]
[I/F]	[Extend Unit]
[Driver]	[CC-Link Ver.2 (ID)]
[Detail Setting]	Configure the settings according to the usage environment. ☞ Page 1156 [Detail Setting]

4. When you have completed the settings, click the [OK] button.

Point

The controller settings can be configured and checked in [I/F Communication Setting].
For details, refer to the following.
📖GT Designer3 (GOT3000) Screen Design Manual

■[Detail Setting]

Configure the settings according to the usage environment.

Detail Setting

Property	Value
Station No.	1
Transmission Rate	0:Online:156kbps
Mode	Ver.1
Expanded Cyclic	Single
Occupied Station	1 station
Input for Error Station	Clear
Retry(Times)	3
Timeout Time(Sec)	3
Delay Time(ms)	0
Transmission method	MELSEC (compatible)
CPU No. switching GD device first No. (3 points)	500
Module No. switching GD device first No. (16 points)	550

Item	Description	Range
[Station No.]	Set the station number of the GOT.	[1] to [64]
[Transmission Rate]*1	Set the transmission speed and a mode of the GOT.	[0] to [E]
[Mode Setting]	Set the operation mode of the GOT.	[Ver.1], [Ver.2], [Additional], [Offline]
[Expanded Cyclic]	Set the cyclic point expansion.	[Single], [Double], [Quadruple], [Octuple]
[Occupied Station]	Set the number of stations occupied by the GOT.	[1 Station], [4 Stations]
[Input for Error Station]	Set whether to clear or hold the error at an error occurrence.	[Clear], [Hold]
[Retry]	Set the number of retries to be performed when a communication timeout occurs. When receiving no response after retries, the communication times out.	[0] times to [5] times
[Timeout Time]	Set the time period for a communication to time out.	[1] second to [90] seconds
[Delay Time]	Set this item to adjust the transmission timing of the communication request from the GOT.	[0] ms to [300] ms
[Transmission method]	Set the CC-Link transmission method.	[MELSEC (compatible)], [Cyclic]
[CPU No. switching GD device first No. (3 points)]	Set the start device number of the GD devices for CPU number switching. For details, refer to the following. ☞ Page 1157 Start device number of the GD devices for CPU number switching	[0] to [65520]
[Module No. switching GD device first No. (16 points)]	Set the start device number of the GD devices for module number switching. For details, refer to the following. ☞ Page 1158 Start device number of the GD devices for module number switching	[0] to [65520]
[Servo axis switching GD device first No. (16 points)]	Set the start device number of the GD devices for servo axis switching. For details, refer to the following. ☞ Page 1159 Start device number of the GD devices for servo axis switching	[0] to [65520]

*1 Transmission speed settings
The following lists the transmission speed settings of the CC-Link communication.

Setting value	Description
0	Online: 156 kbps
1	Online: 625 kbps
2	Online: 2.5 Mbps
3	Online: 5 Mbps
4	Online: 10 Mbps
5	Line test: 156 kbps
6	Line test: 625 kbps
7	Line test: 2.5 Mbps

Setting value	Description
8	Line test: 5 Mbps
9	Line test: 10 Mbps
A	Hardware test: 156 kbps
B	Hardware test: 625 kbps
C	Hardware test: 2.5 Mbps
D	Hardware test: 5 Mbps
E	Hardware test: 10 Mbps

For details on the hardware test, refer to the following manual.

📖CC-Link System Master/Local Module Type AJ61BT11/A1SJ61BT11 User's Manual

Point

• Communication interface settings in the GT37 utility

The communication interface setting can be changed in [Communication setting] of the GT37 utility after writing [Controller Setting] in project data.

For details on the GT37 utility, refer to the following manual.

📖GOT3000 Series User's Manual (Utility & Maintenance Functions)

• Priority of the settings in [Controller Setting]

When settings are configured in GT Designer3 or the GT37 utility, the most recent settings are effective.

■Start device number of the GD devices for CPU number switching

• Indirect specification of a CPU number

[CPU No.] can be indirectly specified with the GOT internal registers (GD devices) by specifying a value (100 to 102) to [CPU No.] in the device setting dialog in GT Designer3.

Set the start device number of the GD devices to be used in [CPU No. switching GD device first No. (3 points)].

Specify [CPU No.] with the three consecutive GD devices, starting the set device number.

When [500] is set to [CPU No. switching GD device first No. (3 points)], GD500 to GD502 are used to specify [CPU No.] as shown in the following table.

CPU No.	GD device	Setting range
100	GD500	1 to 4 Setting a value outside the range causes a communication timeout error. Specifying a nonexistent CPU number or a CPU number not supporting a multiple CPU system with a device causes a controller error.
101	GD501	
102	GD502	

• Indirect specification of a CPU number on the initially displayed screen

Set [CPU No. switching GD device first No. (3 points)] so that the values of the GD devices are retained and monitored upon the GOT startup.

• Indirect specification of a CPU number for multi-channel connection

If the setting range of [CPU No. switching GD device first No. (3 points)] set for each channel overlaps, the monitoring target CPU number set to each channel is switched simultaneously.

Set [CPU No. switching GD device first No. (3 points)] for each channel so that the setting range does not overlap.

• Indirect specification of a station number and a CPU number for multi-channel connection

When GD10 to GD25 are used to specify the station number of an inverter or non-Mitsubishi temperature controller connected, setting [10] to [CPU No. switching GD device first No. (3 points)] in a different channel switches the monitoring target CPU number and station number of an inverter or non-Mitsubishi temperature controller set to each channel simultaneously.

Set [CPU No. switching GD device first No. (3 points)] so that the setting range does not overlap the station number of an inverter or non-Mitsubishi temperature controller.

■Start device number of the GD devices for module number switching

• Indirect specification of a module number

For connection via a Simple Motion module, [Unit No.] can be specified with the GOT internal registers (GD devices) by specifying a value (100 to 10F) to [Unit No.] in the device setting dialog in GT Designer3.

Set the start device number of the GD devices to be used in [Module No. switching GD device first No. (16 points)].

[Unit No.] is specified with 16 consecutive GD devices, starting from the set device number.

When [550] is set to [Module No. switching GD device first No. (16 points)], GD550 to GD565 are used to specify [Unit No.] as shown in the following table.

Module No.	GD device	Setting range
100	GD550	00 to FF Setting a value outside the above range causes a device range error.
101	GD551	
102	GD552	
103	GD553	
104	GD554	
105	GD555	
106	GD556	
107	GD557	
108	GD558	
109	GD559	
10A	GD560	
10B	GD561	
10C	GD562	
10D	GD563	
10E	GD564	
10F	GD565	

• Indirect specification of a module number on the initially displayed screen

Set [Module No. switching GD device first No. (16 points)] so that the values of the GD devices are retained and monitored upon the GOT startup.

• Indirect specification of a module number for multi-channel connection

If the setting range of [Module No. switching GD device first No. (16 points)] set for each channel overlaps, the module number of the Simple Motion module via the servo amplifier device of each channel is switched simultaneously.

Set [Module No. switching GD device first No. (16 points)] for each channel so that the setting range does not overlap.

• Indirect specification of a station number and a module number for multi-channel connection

When GD10 to GD25 are used to specify the station number of an inverter or non-Mitsubishi temperature controller connected, setting [10] to [Module No. switching GD device first No. (16 points)] switches the module number of the Simple Motion module via the servo amplifier device and the station number of an inverter or non-Mitsubishi temperature controller set to each channel simultaneously.

Set [Module No. switching GD device first No. (16 points)] so that the setting range does not overlap the station No. of an inverter or non-Mitsubishi temperature controller.

■Start device number of the GD devices for servo axis switching

• Indirect specification of a servo axis number

For connection via a Motion CPU or Simple Motion module, a servo axis number can be indirectly specified with GOT internal registers (GD devices) by specifying a value (100 to 115) to the axis number of the servo amplifier device.

Set the start device number of the GD devices to be used in [Servo axis switching GD device first No. (16 points)].

Specify a servo axis number with 16 consecutive GD devices, starting the set device number.

When [10] is set to [Servo axis switching GD device first No. (16 points)], GD10 to GD25 are used to specify a servo axis number as shown in the following table.

Servo axis No.	GD device	Setting range
100	GD10	1 to 64 Setting a value outside the above range causes a device range error.
101	GD11	
102	GD12	
103	GD13	
104	GD14	
105	GD15	
106	GD16	
107	GD17	
108	GD18	
109	GD19	
110	GD20	
111	GD21	
112	GD22	
113	GD23	
114	GD24	
115	GD25	

• Indirect specification of a servo axis number on the initially displayed screen

Set [Servo axis switching GD device first No. (16 points)] so that the values of the GD devices are retained and monitored upon the GOT startup.

• Indirect specification of a servo axis number for multi-channel connection

If the setting rage of [Servo axis switching GD device first No. (16 points)] set for each channel overlaps, the axis number of the servo amplifier of each channel is switched simultaneously.

Set [Servo axis switching GD device first No. (16 points)] for each channel so that the setting range does not overlap.

• Indirect specification of a station number and a servo axis number for multi-channel connection

When GD10 to GD25 are used to specify the station number of an inverter or non-Mitsubishi temperature controller connected, setting [10] to [Servo axis switching GD device first No. (16 points)] switches the axis number of the servo amplifier and the station number of an inverter or non-Mitsubishi temperature controller set to each channel simultaneously.

Set [Servo axis switching GD device first No. (16 points)] so that the setting range does not overlap the station number of an inverter or non-Mitsubishi temperature controller.

Precautions

■Using cyclic transmission

• I/O signals for the master station

Do not turn on the reserved output signals in the output signals (remote output: RY) to the GOT from the master station.

When the reserved output signal is turned on, the PLC system may malfunction.

For the assignment of I/O signals in the GOT, refer to the following manuals.

📖MODEL GT15-J61BT13 CC-Link communication unit User's Manual

📖GT15 CC-Link communication unit User's Manual

• Access range for monitoring

The remote I/O (RX and RY) and remote register (RWr and RWw) monitoring ranges vary depending on the mode of the master station in the CC-Link system.

Mode of master station	Monitoring	
	Data for each station compatible with CC-Link Ver.1	Data for each station compatible with CC-Link Ver.2
Remote network mode	○	—
Remote network Ver.1 mode	○	—
Remote network Ver.2 mode	○	○*1
Remote network additional mode	○	○

○: Available, ×: Not available (All "0"), —: System configuration not available

*1 Monitoring is available only when the GT15-J61BT13 CC-Link communication unit is used.

• When the GOT malfunctions

The state of cyclic output before fault is held.

■Connection with CC-Link Ver.1 compatible

For connection with CC-Link Ver.1 compatible, the device setting must be configured within the range of the specifications of the controller.

When a device number out of the range is set, proper monitoring may not be possible.

12.7.4 PLC side settings

Model		Reference
MELSEC-A (AnCPU)	A2UCPU A2UCPU-S1 A3UCPU A4UCPU A2ACPU A2ACPUP21 A2ACPUR21 A2ACPU-S1 A2ACPUP21-S1 A2ACPUR21-S1 A3ACPU A3ACPUP21 A3ACPUR21 A1NCPU A1NCPUP21 A1NCPUR21 A2NCPU A2NCPUP21 A2NCPUR21 A2NCPU-S1 A2NCPUP21-S1 A2NCPUR21-S1 A3NCPU A3NCPUP21 A3NCPUR21	☞ Page 1162 Connection to MELSEC-A series
MELSEC-A (AnSCPU)	A2USCPU A2USCPU-S1 A2USHCPU-S1 A1SCPU A1SCPUC24-R2 A1SHCPU A2SCPU A2SCPU-S1 A2SHCPU A2SHCPU-S1 A1SJCPU A1SJCPU-S3 A1SJHCPU	☞ Page 1162 Connection to MELSEC-A series
MELSEC-A	A0J2HCPU A0J2HCPUP21 A0J2HCPUR21 A0J2HCPU-DC24	☞ Page 1162 Connection to MELSEC-A series
Motion CPU (A series)	A273UCPU A273UHCPU A273UHCPU-S3 A373UCPU A373UCPU-S3	☞ Page 1162 Connection to MELSEC-A series
	A171SCPU A171SCPU-S3 A171SCPU-S3N A171SHCPU A171SHCPUN A172SHCPU A172SHCPUN A173UHCPU A173UHCPU-S1	☞ Page 1162 Connection to MELSEC-A series

The GOT operates as the stations with the following specifications in the CC-Link system.

Station information	Description
Station type	Intelligent device station, Ver.1 intelligent device station, or Ver.2 intelligent device station
Number of stations occupied	1 station or 4 stations

Point

Number of stations occupied

The number of stations occupied is the setting for determining the number of link device points (RX/RY/RWw/RWr) used by the GOT.

To use multiple numbers of link device points in cyclic transmission between the GOT and CC-Link module, set the number of stations occupied as 4 stations occupied.

The number of link device points when 1 station occupied or 4 stations occupied is shown below.

• CC-Link Ver.2

Link device	Extended cyclic setting							
	Single		Double		Quadruple		Octuple	
	1 station occupied	4 stations occupied	1 station occupied	4 stations occupied	1 station occupied	4 stations occupied	1 station occupied	4 stations occupied
Remote input (RX)	32 points	128 points	32 points	224 points	64 points	448 points	128 points	896 points
Remote output (RY)	32 points	128 points	32 points	224 points	64 points	448 points	128 points	896 points
Remote register (RWw)	4 points	16 points	8 points	32 points	16 points	64 points	32 points	128 points
Remote register (RWr)	4 points	16 points	8 points	32 points	16 points	64 points	32 points	128 points

• CC-Link Ver.1

Link device	Number of stations occupied	
	1 station occupied	4 stations occupied
Remote input (RX)	32 points	128 points
Remote output (RY)	32 points	128 points
Remote register (RWw)	4 points	16 points
Remote register (RWr)	4 points	16 points

Connection to MELSEC-A series

This section describes the settings of the GOT and CC-Link module (MELSEC-A series) in the system configuration shown below.

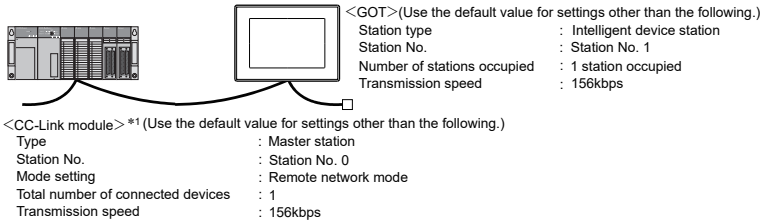
Point

CC-Link module (MELSEC-A series)

For the details on the CC-Link module (MELSEC-A series), refer to the following manual.

CC-Link System Master/Local Module Type AJ61BT11/A1SJ61BT11 User's Manual

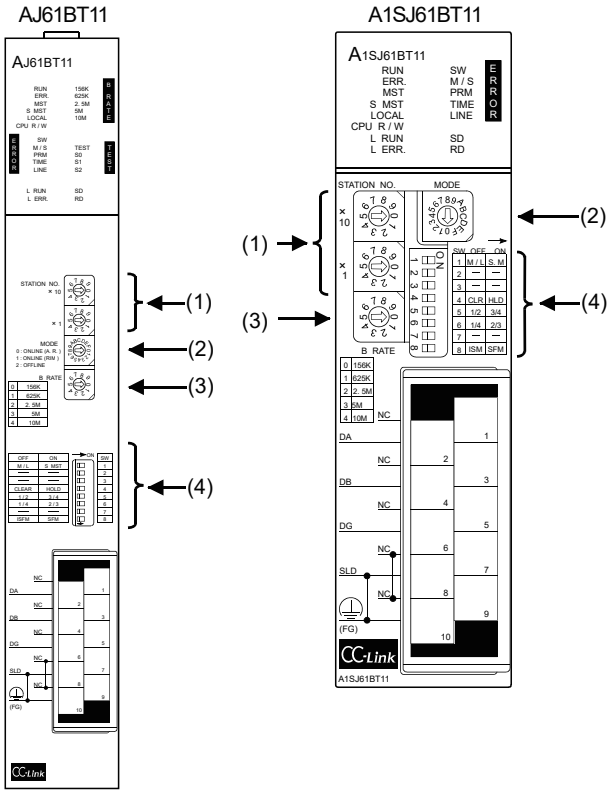
■System configuration



*1 The CC-Link module is mounted on slot 0 of the base unit.
The start I/O number of the CC-Link module is set to "0".

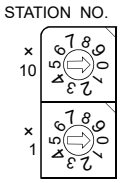
■CC-Link module (A series) settings

Set each setting switch.



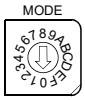
- Station number setting switch

○: Necessary, △: As necessary, —: Not necessary

Station number setting switch	Description	Setting value	Setting for GOT connection
STATION NO. 	Station number setting (master station)	0 (fixed)	○

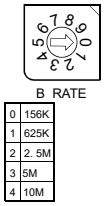
- Mode setting switch

○: Necessary, △: As necessary, —: Not necessary

Mode setting switch	Description	Setting value	Setting for GOT connection
MODE 	Mode setting (Online: remote network mode)	0 (fixed)	○

• Transmission speed setting switch

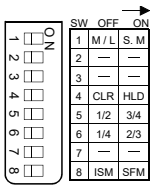
○: Necessary, △: As necessary, —: Not necessary

Transmission speed setting switch	Description	Setting value	Setting for GOT connection
	Transmission speed setting (156 kbps)*1	0	○

*1 Set the same transmission speed as that of the GOT.

• Condition setting switches

○: Necessary, △: As necessary, —: Not necessary

Condition setting switches	Setting switch	Description	Setting value	Setting for GOT connection
	SW1	Station type (master station/local station)	Off (fixed)	○
	SW2	Not used	Off (fixed)	—
	SW3			
	SW4	Input data status of the data link faulty station (clear)	OFF	△
	SW5	Number of occupied stations*1	Off (fixed)	—
	SW6			
	SW7	Not used	Off (fixed)	—
	SW8	Module mode (intelligent mode)	Off (fixed)	○

*1 Valid when the CC-Link module is a local station.
In the case of the master station, turn off it.

Point

When the switch setting has been changed
Turn off then on or reset the PLC CPU.

■Sequence program

The sequence program for parameter setting and data link startup request is required.

• Programming condition (for CC-Link dedicated instructions)

The program sets the network parameter and automatic refresh parameter and starts the data link automatically when the PLC CPU status changes from STOP to RUN with CC-Link dedicated instructions.

I/O signals of the CC-Link module

📖CC-Link System Master/Local Module Type AJ61BT11/A1SJ61BT11 User's Manual

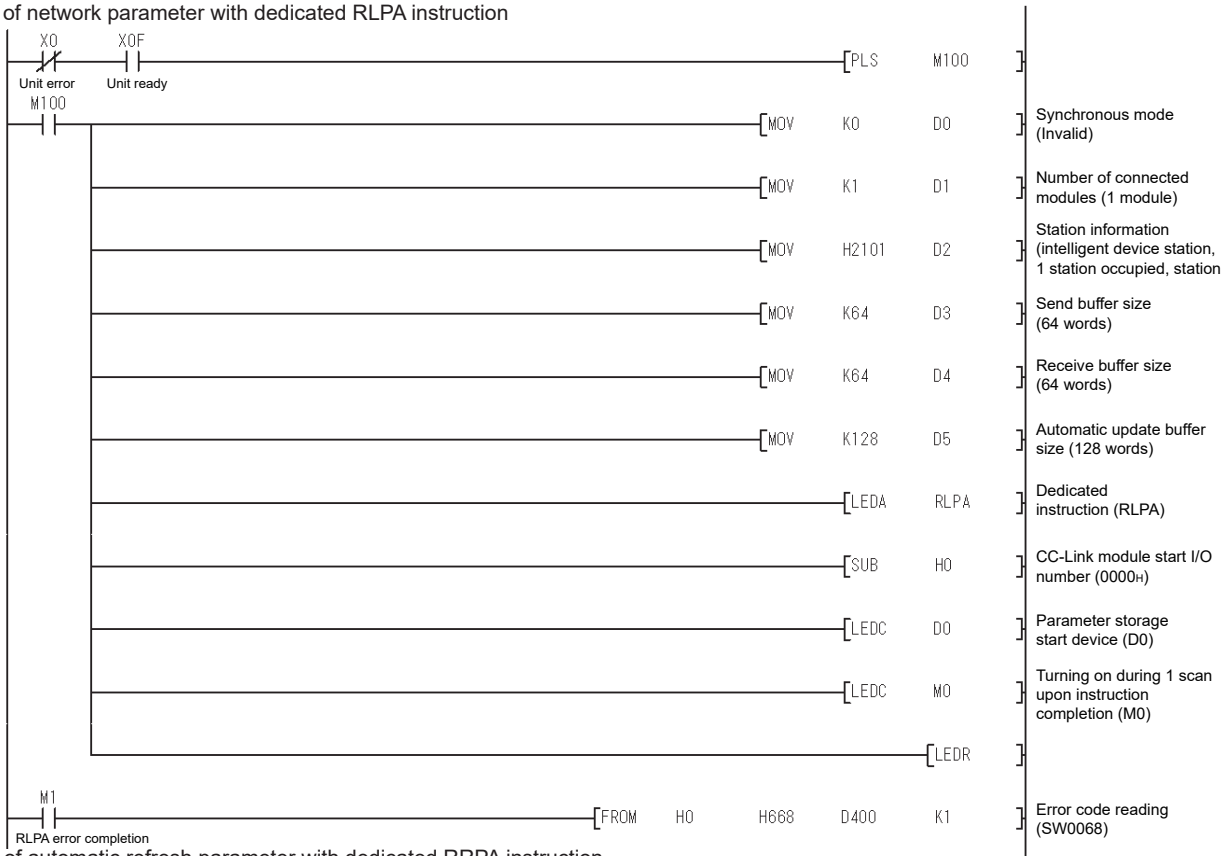
Device used by user

Device	Application
M0	RLPA instruction normal completion flag
M1	RLPA instruction error completion flag
M100	Network parameter setting flag
M101	Automatic refresh parameter setting flag
D0	Synchronous mode valid/invalid
D1	Number of connected modules
D2	Station information
D3	Send buffer size
D4	Receive buffer size
D5	Automatic update buffer size
D400	Error code in the case of error completion of RLPA instruction
D100 to D103	Automatic refresh setting (RX)
D104 to D107	Automatic refresh setting (RY)

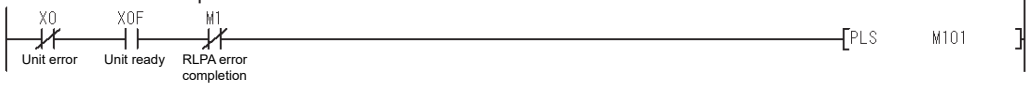
Device	Application
D108 to D111	Automatic refresh setting (RW)
D112 to D115	Automatic refresh setting (SB)
D116 to D119	Automatic refresh setting (SW)

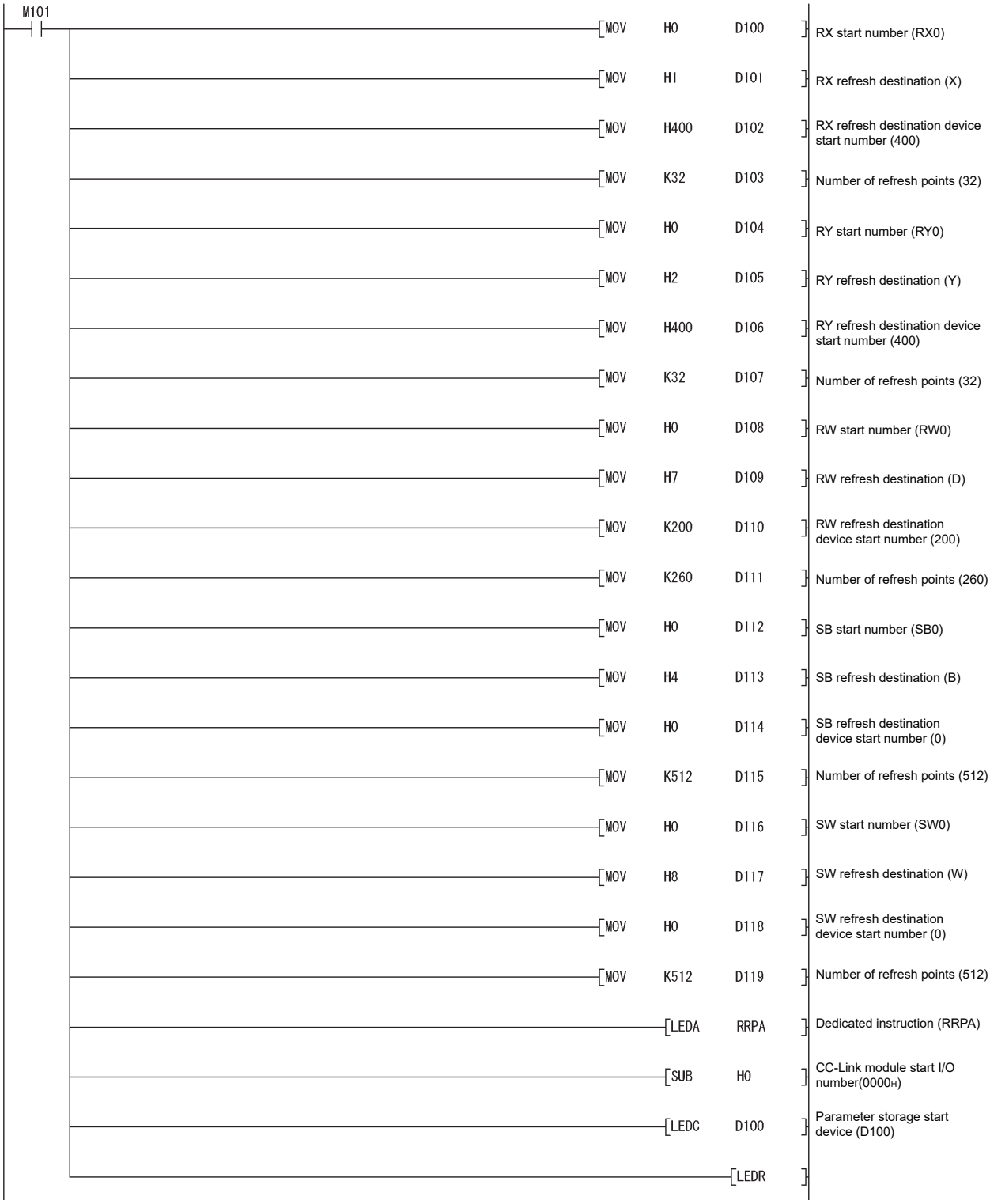
Example of sequence program (CC-Link dedicated instruction)

* Setting of network parameter with dedicated RLPA instruction



* Setting of automatic refresh parameter with dedicated RRPA instruction





Point

When changing the sequence program

After writing the sequence program to the PLC CPU, turn off then on or reset the PLC CPU.

• Program condition (for FROM/TO instruction)

This program writes parameters to the buffer memory and starts the data link automatically when the PLC CPU status changes from STOP to RUN with FROM/TO instruction.

I/O signals of the CC-Link module

📖CC-Link System Master/Local Module Type AJ61BT11/A1SJ61BT11 User's Manual

Device used by user

Device	Application
M100, M101	Flag for parameter setting
M102, M103	Flag for data link startup
D0	Number of connected modules
D1	Number of retry
D2	Automatic reconnection station count
D3	Operation specification when CPU is down
D4	Reserved station specification (Station No. 1 to Station No. 16)
D5	Error invalid station specification (Station No. 1 to Station No. 16)
D6	Station information (1st unit)
D400	Error code in the case of data link startup failure

Buffer memory settings used in the present example

Buffer memory address Dec (Hex)	Item	Setting value
1 (1H)	Number of connected modules	1 (1 module)
2 (2H)	Number of retry	3 (3 times)
3 (3H)	Automatic reconnection station count	1 (1 module)
6 (6H)	Operation specification when CPU is down	0 (Stop)
16 (10H)	Reserved station specification (Station No. 1 to Station No. 16)	0 (No specification)
20 (14H)	Error invalid station specification (Station No. 1 to Station No. 16)	0 (No specification)
32 (20H)	Station information (1st unit)*1	2101H

*1 Details for the station data are shown below.
For 1) and 2), make the settings the same as the settings of the station number and number of stations occupied of the GOT.
For 3), the setting is fixed.

b15 ～ b12	b11 ～ b8	b7 ～ b0
③	②	①

1) Station number (Make the setting the same as the station number setting of the GOT.)

01H to 40H: Station No. 1 to Station No. 64

2) Number of stations occupied (Make the setting the same as the number of stations occupied setting of the GOT.)

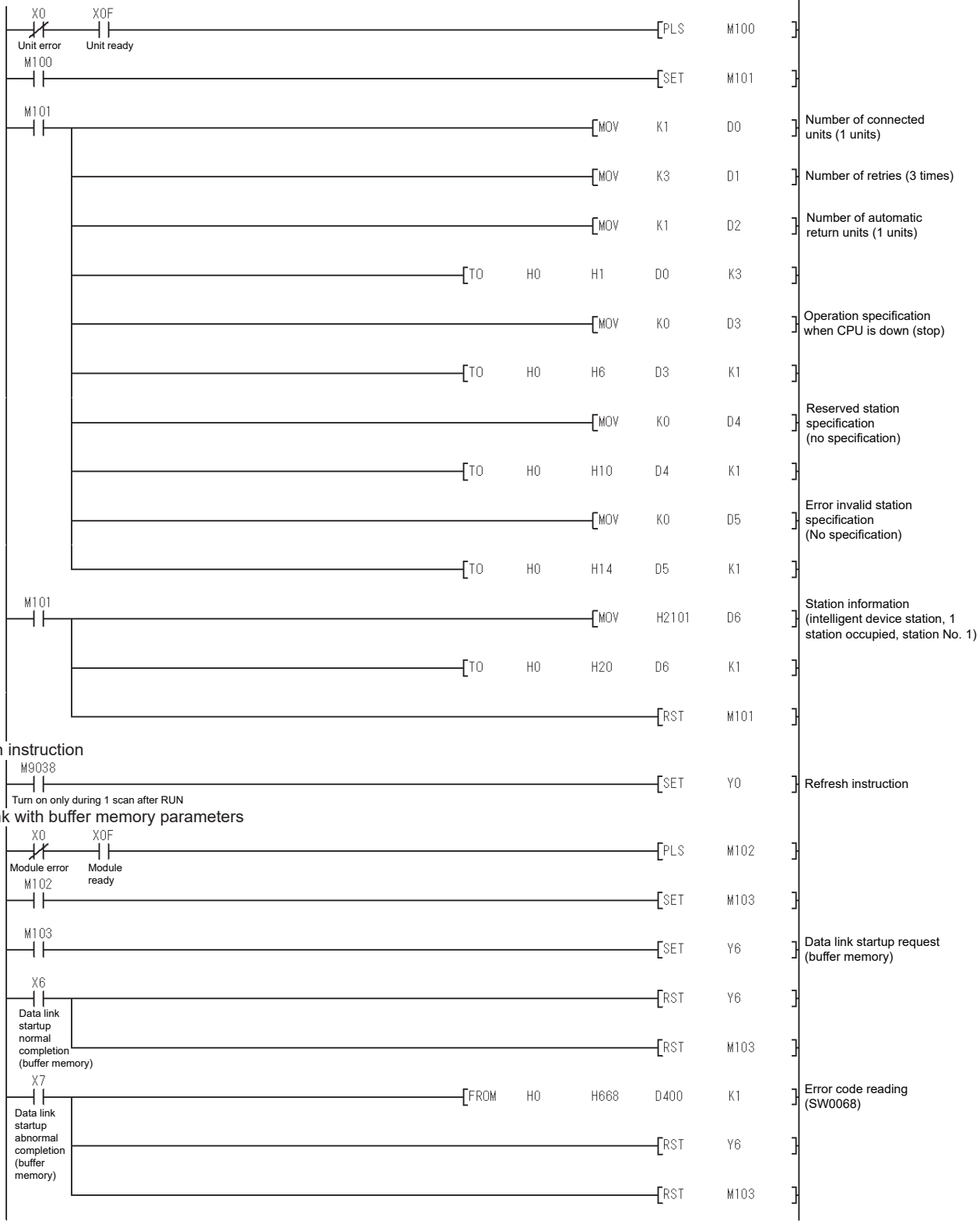
1H: 1 station occupied
2H: 2 stations occupied
3H: 3 stations occupied
4H: 4 stations occupied

3) Station type (Set to 2H: Intelligent device station.)

0H: Remote I/O station
1H: Remote device station
2H: Intelligent device station (including a local station)

Example of sequence program (FROM/TO instruction)

* Parameter setting



Point

When changing the sequence program

After writing the sequence program to the PLC CPU, turn off then on or reset the PLC CPU.

■[Controller Setting] in GT Designer3

Item	Setting value
[Station No.]	1: Station No. 1
[Transmission Rate]	0: Online 156 kbps
[Mode]	Ver.1: Remote network Ver.1 mode
[Expanded Cyclic]	Single (Use default value)
[Occupied Station]	1 station
[Input for Error Station]	0: Clear
[Retry]	3 (Use default value)
[Timeout Time]	3 (Use default value)
[Delay Time]	0 (Use default value)
[Transmission method]	MELSEC (compatible)

Point

[Controller Setting] in GT Designer3

For the setting method of [Controller Setting] in GT Designer3, refer to the following.

☞ Page 1155 [Controller Setting]

12.7.5 Access range for monitoring

Only the connected CPU can be accessed.

12.8 MELSEC-F series (CC-Link connection (intelligent device station))

☞ Page 1170 Connectable devices
☞ Page 1170 System configuration
☞ Page 1174 GOT side settings
☞ Page 1180 PLC side settings
☞ Page 1187 Access range for monitoring

12.8.1 Connectable devices

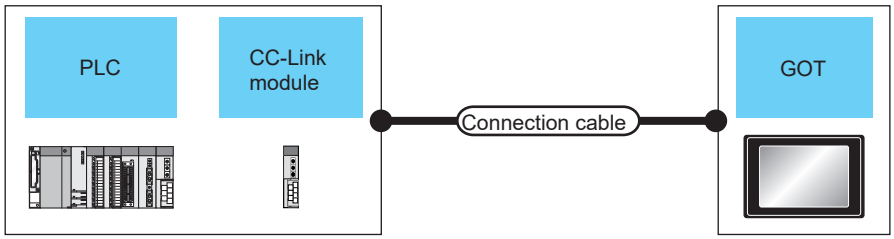
The following table shows the connectable models.

○: Supported, —: Not supported

Controller	Model	Clock	CC-Link module	Connectable model
MELSEC-F series	FX3G FX3GC FX3U FX3UC	○	FX3U-16CCL-M	GT37 SoftGOT3000

12.8.2 System configuration

Connection with CC-Link Ver.1 compatible



For details on the overall length, refer to the following.

☞ Page 1170 Overall length

For details on the maximum number of connected devices, refer to the following.

☞ Page 1171 Maximum number of connected devices

Controller	CC-Link module*1	Communication type	Connection cable	GOT	
				Interface	Model
MELSEC-F series	FX3U-16CCL-M	CC-Link (Ver.1)	CC-Link dedicated cable*2	GT37-IF2000 + GT15-J61BT13*3	GT37 SoftGOT3000

*1 For the system configuration of the CC-Link module, refer to the following manual.
📖FX3U-16CCL-M User's Manual

*2 For the specifications of the CC-Link dedicated cable and the contact information, refer to the following.
CC-Link Partner Association website: http://www.cc-link.org/

*3 In the controller settings, set the mode to Ver.1.
For details on settings, refer to the following.
☞ Page 1174 [Controller Setting]

■Overall length

The maximum overall cable length and cable length between stations vary depending on the conditions such as the type of the cable used and the transmission speed.

For details, refer to the following manual.

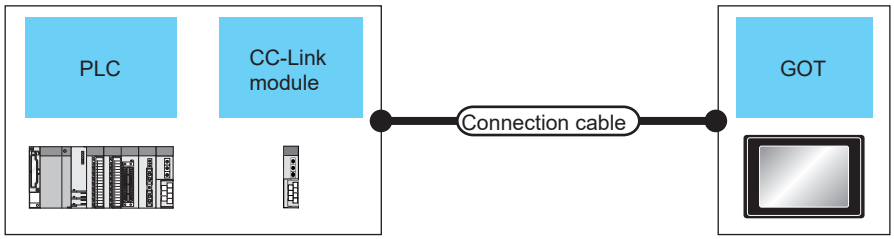
📖FX3U-16CCL-M User's Manual

■Maximum number of connected devices

The following shows the number of connectable GOTs.

Controller	
Model	**Number of connectable devices**
MELSEC-F series	8 GOTs

Connection with CC-Link Ver.2 compatible



For details on the overall length, refer to the following.

☞ Page 1171 Overall length

For details on the maximum number of connected devices, refer to the following.

☞ Page 1171 Maximum number of connected devices

Controller	CC-Link module*1	Communication type	Connection cable	GOT	
				Interface	Model
MELSEC-F series	FX3U-16CCL-M	CC-Link (Ver.2)	CC-Link dedicated cable*2	GT37-IF2000 + GT15-J61BT13*3	GT37 SoftGOT3000

*1 For the system configuration of the CC-Link module, refer to the following manual.
📖FX3U-16CCL-M User's Manual

*2 For the specifications of the CC-Link dedicated cable and the contact information, refer to the following.
CC-Link Partner Association website: http://www.cc-link.org/

*3 In the controller settings, set the mode to Ver.2.
For details on settings, refer to the following.
☞ Page 1174 [Controller Setting]

■Overall length

The maximum overall cable length and cable length between stations vary depending on the conditions such as the type of the cable used and the transmission speed.

For details, refer to the following manual.

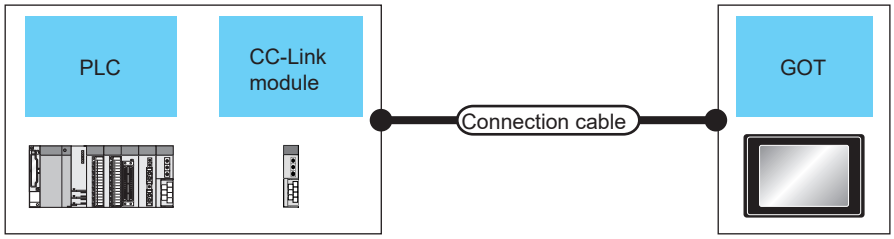
📖FX3U-16CCL-M User's Manual

■Maximum number of connected devices

The following shows the number of connectable GOTs.

Controller	
Model	**Number of connectable devices**
MELSEC-F series	8 GOTs

Connection with CC-Link Ver.1/Ver.2 compatibles mixed



For details on the overall length, refer to the following.

☞ Page 1172 Overall length

For details on the maximum number of connected devices, refer to the following.

☞ Page 1172 Maximum number of connected devices

Controller	CC-Link module*1	Communication type	Connection cable	GOT	
				Interface	Model
MELSEC-F series	FX3U-16CCL-M	CC-Link (Ver.1)	CC-Link dedicated cable*2	GT37-IF2000 + GT15-J61BT13*3	GT37 SoftGOT3000

*1 For the system configuration of the CC-Link module, refer to the following manual.
FX3U-16CCL-M User's Manual

*2 For the specifications of the CC-Link dedicated cable and the contact information, refer to the following.
CC-Link Partner Association website: http://www.cc-link.org/

*3 In the controller settings, set the mode to Ver.1.
For details on settings, refer to the following.
☞ Page 1174 [Controller Setting]

■Overall length

The maximum overall cable length and cable length between stations vary depending on the conditions such as the type of the cable used and the transmission speed.

For details, refer to the following manual.

FX3U-16CCL-M User's Manual

■Maximum number of connected devices

The following shows the number of connectable GOTs.

Controller	
Model	Number of connectable devices
MELSEC-F series	8 GOTs

Connecting one PLC to multiple GOTs

When multiple GOT units are simultaneously accessing one PLC, the GOT writing process (transient/cyclic) and reading process (transient) may slow down.

This slow access can be remedied with the following countermeasures.

<Countermeasures>

■Improve response speed on PLC side

Insert a COM instruction on the PLC to increase the response speed.

Note that caution is required as the scan time will increase.

■Screen design using cyclic devices

Create the screen with cyclic devices instead of using transient devices.

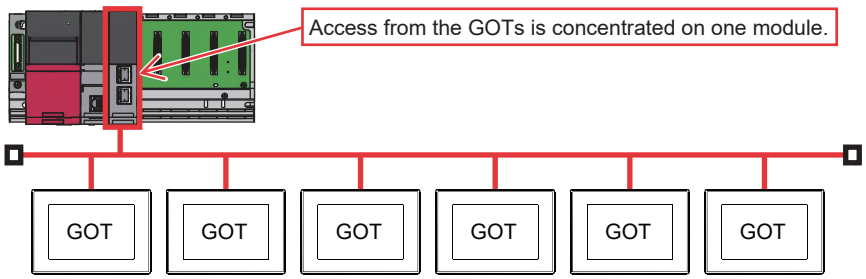
■Split GOT connection destinations into several systems

Add a master/local module to the PLC side, and split the GOT connection destinations into several systems.

Improve the current system configuration.

(Example of current system configuration)

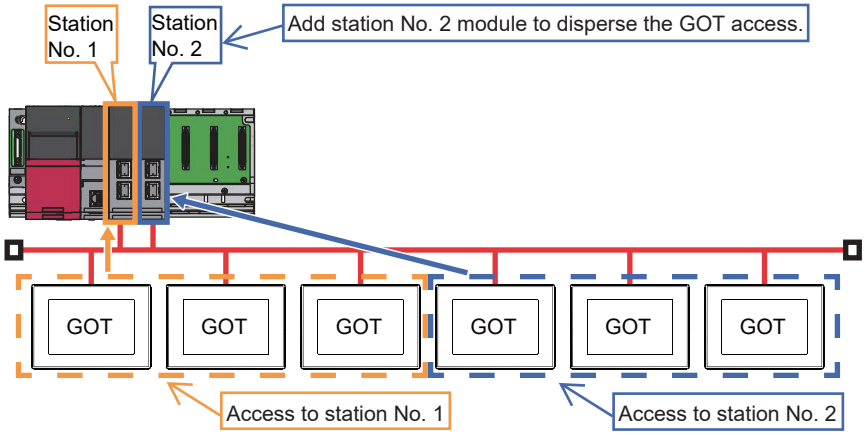
In the following system configuration, access from the GOT is concentrated on one module.



(Improvement measure)

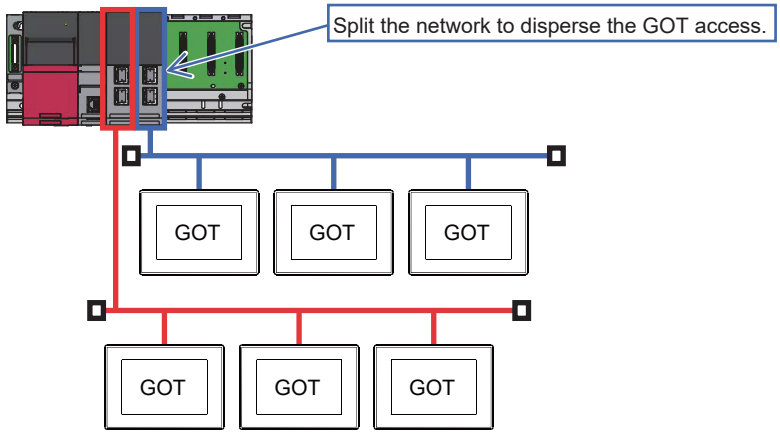
- Adding a module to the PLC side

Add a module to the PLC side to disperse the GOT access destinations.



- Split the network

Split the network to disperse the GOT access.



Precautions

■Starting the GOT in CC-Link connection (intelligent device station)

For the CC-Link connection (intelligent device station), the data link is started approximately 10 seconds after the GOT startup.

■When a network error occurs in the system alarm

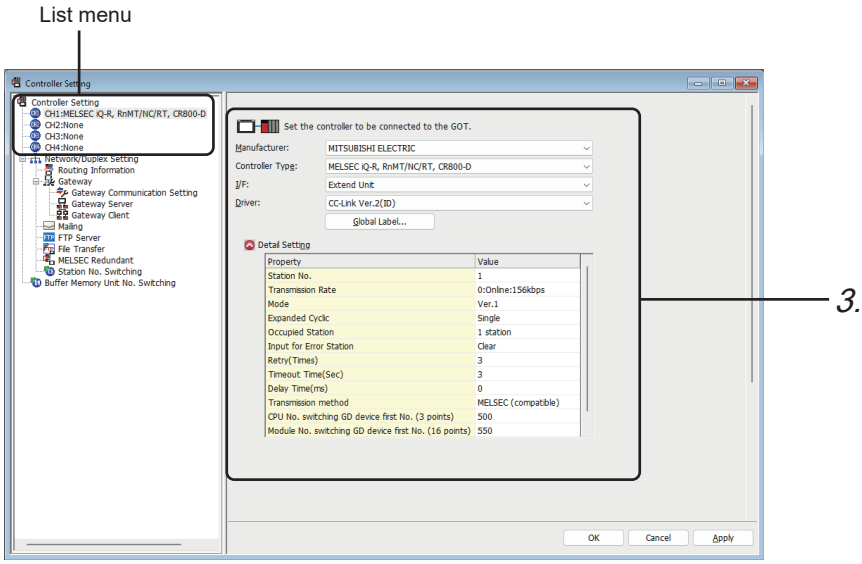
In the CC-Link connection (intelligent device station), when a network error occurs in the system alarm, the system alarm display cannot be canceled even though the causes are removed.

To cancel the system alarm display, restart the GOT.

12.8.3 GOT side settings

[Controller Setting]

Set the channel of the connected controller.



Operating procedure

1. Select [Common] → [Controller Setting] from the menu.

2. In the [Controller Setting] window, select the channel number to be used from the list menu.

3. Set the following items.

Item	Description
[Manufacturer]	[MITSUBISHI ELECTRIC]
[Controller Type]*1	[MELSEC iQ-R, RnMT/NC/RT, CR800-D]
[I/F]	[Extend Unit]
[Driver]	[CC-Link Ver.2 (ID)]
[Detail Setting]	Configure the settings according to the usage environment. ☞ Page 1175 [Detail Setting]

*1 For the MELSEC-F series, set the controller type to one of the following options.
[MELSEC iQ-R, RnMT/NC/RT, CR800-D]
[MELSEC-Q/QS, Q17nD/M/NC/DR/DSR, CRnD-700]
[MELSEC-QnA, MELDAS C6*]
[MELSEC-L]
[MELSEC-A]

4. When you have completed the settings, click the [OK] button.

Point

The controller settings can be configured and checked in [I/F Communication Setting].
For details, refer to the following.
📖GT Designer3 (GOT3000) Screen Design Manual

■[Detail Setting]

Configure the settings according to the usage environment.

Detail Setting

Property	Value
Station No.	1
Transmission Rate	0:Online:156kbps
Mode	Ver.1
Expanded Cyclic	Single
Occupied Station	1 station
Input for Error Station	Clear
Retry(Times)	3
Timeout Time(Sec)	3
Delay Time(ms)	0
Transmission method	MELSEC (compatible)
CPU No. switching GD device first No. (3 points)	500
Module No. switching GD device first No. (16 points)	550

Item	Description	Range
[Station No.]	Set the station number of the GOT.	[1] to [64]
[Transmission Rate]*1	Set the transmission speed and a mode of the GOT.	[0] to [E]
[Mode Setting]	Set the operation mode of the GOT.	[Ver.1], [Ver.2], [Additional], [Offline]
[Expanded Cyclic]	Set the cyclic point expansion.	[Single], [Double], [Quadruple], [Octuple]
[Occupied Station]	Set the number of stations occupied by the GOT.	[1 Station], [4 Stations]
[Input for Error Station]	Set whether to clear or hold the error at an error occurrence.	[Clear], [Hold]
[Retry]	Set the number of retries to be performed when a communication timeout occurs. When receiving no response after retries, the communication times out.	[0] times to [5] times
[Timeout Time]	Set the time period for a communication to time out.	[1] second to [90] seconds
[Delay Time]	Set this item to adjust the transmission timing of the communication request from the GOT.	[0] ms to [300] ms
[Transmission method]*2	Set the CC-Link transmission method.	[MELSEC (compatible)], [Cyclic]
[CPU No. switching GD device first No. (3 points)]	Set the start device number of the GD devices for CPU number switching. For details, refer to the following. ☞ Page 1176 Start device number of the GD devices for CPU number switching	[0] to [65520]
[Module No. switching GD device first No. (16 points)]	Set the start device number of the GD devices for module number switching. For details, refer to the following. ☞ Page 1177 Start device number of the GD devices for module number switching	[0] to [65520]
[Servo axis switching GD device first No. (16 points)]	Set the start device number of the GD devices for servo axis switching. For details, refer to the following. ☞ Page 1178 Start device number of the GD devices for servo axis switching	[0] to [65520]

*1 Transmission speed settings

The following lists the transmission speed settings of the CC-Link communication.

Setting value	Description
0	Online: 156 kbps
1	Online: 625 kbps
2	Online: 2.5 Mbps
3	Online: 5 Mbps
4	Online: 10 Mbps
5	Line test: 156 kbps
6	Line test: 625 kbps
7	Line test: 2.5 Mbps

Setting value	Description
8	Line test: 5 Mbps
9	Line test: 10 Mbps
A	Hardware test: 156 kbps
B	Hardware test: 625 kbps
C	Hardware test: 2.5 Mbps
D	Hardware test: 5 Mbps
E	Hardware test: 10 Mbps

For details on the hardware test, refer to the following manual.

📖FX3U-16CCL-M User's Manual

*2 Set the transmission method to [Cyclic].

Point

• Communication interface settings in the GT37 utility

The communication interface setting can be changed in [Communication setting] of the GT37 utility after writing [Controller Setting] in project data.

For details on the GT37 utility, refer to the following manual.

📖GOT3000 Series User's Manual (Utility & Maintenance Functions)

• Priority of the settings in [Controller Setting]

When settings are configured in GT Designer3 or the GT37 utility, the most recent settings are effective.

■Start device number of the GD devices for CPU number switching

• Indirect specification of a CPU number

[CPU No.] can be indirectly specified with the GOT internal registers (GD devices) by specifying a value (100 to 102) to [CPU No.] in the device setting dialog in GT Designer3.

Set the start device number of the GD devices to be used in [CPU No. switching GD device first No. (3 points)].

[CPU No.] is specified with three consecutive GD devices, starting from the set device number.

When [500] is set to [CPU No. switching GD device first No. (3 points)], GD500 to GD502 are used to specify [CPU No.] as shown in the following table.

CPU No.	GD device	Setting range
100	GD500	1 to 4 Setting a value outside the range causes a communication timeout error. Specifying a nonexistent CPU number or a CPU number not supporting a multiple CPU system with a device causes a controller error.
101	GD501	
102	GD502	

• Indirect specification of a CPU number on the initially displayed screen

Set [CPU No. switching GD device first No. (3 points)] so that the values of the GD devices are retained and monitored upon the GOT startup.

• Indirect specification of a CPU number for multi-channel connection

If the setting range of [CPU No. switching GD device first No. (3 points)] set for each channel overlaps, the monitoring target CPU number set to each channel is switched simultaneously.

Set [CPU No. switching GD device first No. (3 points)] for each channel so that the setting range does not overlap.

• Indirect specification of a station number and a CPU number for multi-channel connection

When GD10 to GD25 are used to specify the station number of an inverter or non-Mitsubishi temperature controller connected, setting [10] to [CPU No. switching GD device first No. (3 points)] in a different channel switches the monitoring target CPU number and station number of an inverter or non-Mitsubishi temperature controller set to each channel simultaneously.

Set [CPU No. switching GD device first No. (3 points)] so that the setting range does not overlap the station number of an inverter or non-Mitsubishi temperature controller.

■Start device number of the GD devices for module number switching

• Indirect specification of a module number

For connection via a Simple Motion module, [Unit No.] can be specified with the GOT internal registers (GD devices) by specifying a value (100 to 10F) to [Unit No.] in the device setting dialog in GT Designer3.

Set the start device number of the GD devices to be used in [Module No. switching GD device first No. (16 points)].

[Unit No.] is specified with 16 consecutive GD devices, starting from the set device number.

When [550] is set to [Module No. switching GD device first No. (16 points)], GD550 to GD565 are used to specify [Unit No.] as shown in the following table.

Module No.	GD device	Setting range
100	GD550	00 to FF Setting a value outside the above range causes a device range error.
101	GD551	
102	GD552	
103	GD553	
104	GD554	
105	GD555	
106	GD556	
107	GD557	
108	GD558	
109	GD559	
10A	GD560	
10B	GD561	
10C	GD562	
10D	GD563	
10E	GD564	
10F	GD565	

• Indirect specification of a module number on the initially displayed screen

Set [Module No. switching GD device first No. (16 points)] so that the values of the GD devices are retained and monitored upon the GOT startup.

• Indirect specification of a module number for multi-channel connection

If the setting range of [Module No. switching GD device first No. (16 points)] set for each channel overlaps, the module number of the Simple Motion module via the servo amplifier device of each channel is switched simultaneously.

Set [Module No. switching GD device first No. (16 points)] for each channel so that the setting range does not overlap.

• Indirect specification of a station number and a module number for multi-channel connection

When GD10 to GD25 are used to specify the station number of an inverter or non-Mitsubishi temperature controller connected, setting [10] to [Module No. switching GD device first No. (16 points)] switches the module number of the Simple Motion module via the servo amplifier device and the station number of an inverter or non-Mitsubishi temperature controller set to each channel simultaneously.

Set [Module No. switching GD device first No. (16 points)] so that the setting range does not overlap the station number of an inverter or non-Mitsubishi temperature controller.

■Start device number of the GD devices for servo axis switching

• Indirect specification of a servo axis number

For connection via a Motion CPU or Simple Motion module, a servo axis number can be indirectly specified with GOT internal registers (GD devices) by specifying a value (100 to 115) to the axis number of the servo amplifier device.

Set the start device number of the GD devices to be used in [Servo axis switching GD device first No. (16 points)].

Specify a servo axis number with 16 consecutive GD devices, starting the set device number.

When [10] is set to [Servo axis switching GD device first No. (16 points)], GD10 to GD25 are used to specify a servo axis number as shown in the following table.

Servo axis No.	GD device	Setting range
100	GD10	1 to 64 Setting a value outside the above range causes a device range error.
101	GD11	
102	GD12	
103	GD13	
104	GD14	
105	GD15	
106	GD16	
107	GD17	
108	GD18	
109	GD19	
110	GD20	
111	GD21	
112	GD22	
113	GD23	
114	GD24	
115	GD25	

• Indirect specification of a servo axis number on the initially displayed screen

Set [Servo axis switching GD device first No. (16 points)] so that the values of the GD devices are retained and monitored upon the GOT startup.

• Indirect specification of a servo axis number for multi-channel connection

If the setting rage of [Servo axis switching GD device first No. (16 points)] set for each channel overlaps, the axis number of the servo amplifier of each channel is switched simultaneously.

Set [Servo axis switching GD device first No. (16 points)] for each channel so that the setting range does not overlap.

• Indirect specification of a station number and a servo axis number for multi-channel connection

When GD10 to GD25 are used to specify the station number of an inverter or non-Mitsubishi temperature controller connected, setting [10] to [Servo axis switching GD device first No. (16 points)] switches the axis number of the servo amplifier and the station number of an inverter or non-Mitsubishi temperature controller set to each channel simultaneously.

Set [Servo axis switching GD device first No. (16 points)] so that the setting range does not overlap the station number of an inverter or non-Mitsubishi temperature controller.

Precautions

■Using cyclic transmission

• I/O signals for the master station

Do not turn on the reserved output signals in the output signals (remote output: RY) to the GOT from the master station.

When the reserved output signal is turned on, the PLC system may malfunction.

For the assignment of I/O signals in the GOT, refer to the following manuals.

📖MODEL GT15-J61BT13 CC-Link communication unit User's Manual

📖GT15 CC-Link communication unit User's Manual

• Access range for monitoring

The remote I/O (RX and RY) and remote register (RWr and RWw) monitoring ranges vary depending on the mode of the master station in the CC-Link system.

Mode of master station	Monitoring	
	Data for each station compatible with CC-Link Ver.1	Data for each station compatible with CC-Link Ver.2
Remote network mode	○	—
Remote network Ver.1 mode	○	—
Remote network Ver.2 mode	○	○*1
Remote network additional mode	○	○

○: Available, ×: Not available (All "0"), —: System configuration not available

*1 Monitoring is available only when the GT15-J61BT13 CC-Link communication unit is used.

• When the GOT malfunctions

The state of cyclic output before fault is held.

■Connection with CC-Link Ver.1 compatible

For connection with CC-Link Ver.1 compatible, the device setting must be configured within the range of the specifications of the controller.

When a device number out of the range is set, proper monitoring may not be possible.

12.8.4 PLC side settings

Model		Reference
MELSEC-F series	FX3G FX3GC FX3U FX3UC	☞ Page 1180 Connection to MELSEC-F series with Ver.1/Ver.2 compatibles mixed

The GOT operates as the stations with the following specifications in the CC-Link system.

Station information	Description
Station type	Intelligent device station, Ver.1 intelligent device station, or Ver.2 intelligent device station
Number of stations occupied	1 station or 4 stations

Point

Number of stations occupied

The number of stations occupied is the setting for determining the number of link device points (RX/RY/RWw/RWr) used by the GOT.

To use multiple numbers of link device points in cyclic transmission between the GOT and CC-Link module, set the number of stations occupied as 4 stations occupied.

The number of link device points when 1 station occupied or 4 stations occupied is shown below.

• CC-Link Ver.2

Link device	Extended cyclic setting							
	Single		Double		Quadruple		Octuple	
	1 station occupied	4 stations occupied	1 station occupied	4 stations occupied	1 station occupied	4 stations occupied	1 station occupied	4 stations occupied
Remote input (RX)	32 points	128 points	32 points	224 points	64 points	448 points	128 points	896 points
Remote output (RY)	32 points	128 points	32 points	224 points	64 points	448 points	128 points	896 points
Remote register (RWw)	4 points	16 points	8 points	32 points	16 points	64 points	32 points	128 points
Remote register (RWr)	4 points	16 points	8 points	32 points	16 points	64 points	32 points	128 points

• CC-Link Ver.1

Link device	Number of stations occupied	
	1 station occupied	4 stations occupied
Remote input (RX)	32 points	128 points
Remote output (RY)	32 points	128 points
Remote register (RWw)	4 points	16 points
Remote register (RWr)	4 points	16 points

Connection to MELSEC-F series with Ver.1/Ver.2 compatibles mixed

This section describes the setting method of the GOT and the CC-Link module (FX3U-16CCL-M) when Ver. 1/Ver. 2 compatible modules are mixed in the system configuration shown below.

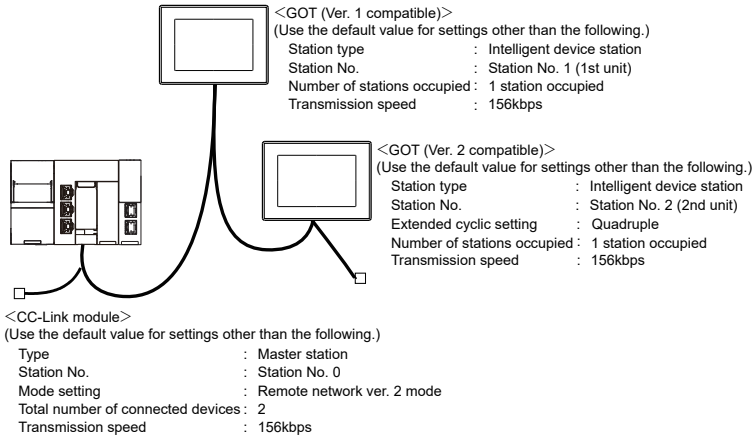
Point

CC-Link module (FX3U-16CCL-M)

For the details on the CC-Link module (FX3U-16CCL-M), refer to the following manual.

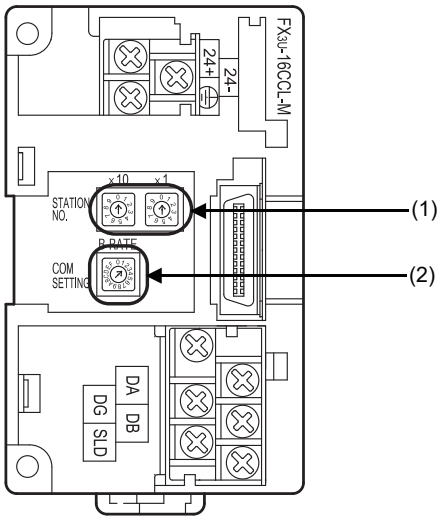
📖FX3U-16CCL-M User's Manual

■System configuration



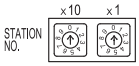
■Switch settings for the CC-Link module (FX3U-16CCL-M)

Set the station number setting switch, transmission speed/mode setting switch.



- Station number setting switch

○: Necessary, △: As necessary, —: Not necessary

Station number setting switch	Description	Setting value	Setting for GOT connection
	Station number setting (master station)	0 (fixed)	○

- Transmission speed/mode setting switch

○: Necessary, △: As necessary, —: Not necessary

Transmission speed/mode setting switch	Description	Setting value	Setting for GOT connection
	Transmission speed and mode setting (Online: 156 kbps)*1	0	○

*1 Set the same transmission speed as that of the GOT.

Point

When the switch setting has been changed

Turn off then on or reset the PLC CPU.

■Parameter settings

• [Network parameter] of GX Works2

Network parameter

	Setting Contents
Special Function Block No.	0
Operation Setting	Operation Setting
Type	Master Station
Master Station Data Link Type	PLC Parameter Auto Start
Mode	Remote Net(Ver.2 Mode)
Total Module Connected	2
Remote input(RX)	
Remote output(RY)	
Remote register(RWr)	
Remote register(RWw)	
Ver.2 Remote input(RX)	
Ver.2 Remote output(RY)	
Ver.2 Remote register(RWr)	
Ver.2 Remote register(RWw)	
Special relay(SB)	
Special register(SW)	
Retry Count	7
Automatic Reconnection Station Count	2
Standby Master Station No.	
PLC Down Select	Stop
Scan Mode Setting	
Delay Time Setting	
Station Information Setting	Station Information
Remote Device Station Initial Setting	Initial Setting
Interrupt Settings	

○: Necessary, △: As necessary, —: Not necessary

Item		Setting value	Setting for GOT connection
[Special Function Block No.]*1		0 to 7 (Default: 0)	—
[Operation Setting]*1	[Data Link Disorder Station Setting]	[Hold input data]: No check	—
	[Case of CPU STOP Setting]	[Clears compulsorily]: No check	—
[Type]		Master station (fixed)	○
[Mode]		Remote network Ver.2 mode	○
[Total Module Connected]		2	—
[Retry Count]*1		7	—
[Automatic Reconnection Station Count]*1		2	—
[PLC Down Select]*1		Stop	—
[Station Information Setting]		☞ Station information setting	○
[Remote Device Station Initial Setting]		(Use default value)	—

*1 Set this item as necessary.
📖FX3U-16CCL-M User's Manual

Station information setting

Station No.	Station Type	Expanded Cyclic Setting	Number of Occupied Stations	Remote Station Points	Reserve/Invalid Station Select
1/ 1	Ver.1 Intelligent Device Station	Single	Occupied Station 1	32Points	No Setting
2/ 2	Ver.2 Intelligent Device Station	Quadruple	Occupied Station 1	64Points	No Setting

Station information setting of station No. 1 (GOT)

○: Necessary, △: As necessary, —: Not necessary

Item	Setting value	Setting for GOT connection
Station type	Ver.1 intelligent device station (fixed)	○
Number of occupied stations*1	1 station occupied	○
Reserve/invalid station select	No setting	○

Station information setting of station No. 2 (GOT)

○: Necessary, △: As necessary, —: Not necessary

Item	Setting value	Setting for GOT connection
Station type	Ver.2 intelligent device station (fixed)	○
Expanded cyclic setting*1	Quadruple	○
Number of occupied stations*1	1 station occupied	○
Reserve/invalid station select	No setting	○

*1 Set the same setting as that of the GOT.

Point

When changing the network parameter

After writing network parameters to the PLC CPU, turn off then on or reset the PLC CPU.

- Settings with sequence program

The program writes parameters to the buffer memory and starts the data link automatically when the PLC CPU status changes from STOP to RUN.

Point

Connection to MELSEC iQ-F series

When connecting with the MELSEC iQ-F series, the network parameters cannot be set with GX Works3.

Set the network parameters in the sequence program.

I/O signals of the CC-Link module

📖FX3U-16CCL-M User's Manual

Device used by user

Device	Application
D0	Mode
D1	Number of connected modules
D2	Retry count
D3	Automatic reconnection station count
D4	Operation specification when CPU is down
D5	Data link faulty station specification
D6	Case of CPU STOP setting
D20	Station information (1st unit)
D21	Station information (2nd unit)

Buffer memory settings used in the present example

Buffer memory address Dec (Hex)	Item	Setting value
0 (0H)	Mode	2 (Remote network Ver.2 mode)
1 (1H)	Number of connected modules	2 (2 modules)
2 (2H)	Retry count	7 (7 times)
3 (3H)	Automatic reconnection station count	2 (2 modules)
6 (6H)	Operation specification when CPU is down	0 (Stop)
12 (CH)	Data link faulty station specification	1 (Clear)
6 (DH)	Case of CPU STOP setting	0 (Refresh)
32 (20H)	Station information (1st unit)*1	2301H
33 (21H)	Station information (2nd unit)*1	C104H

*1 Details for the station data are shown below.
For 1), 2), and 3), make the settings the same as the settings of the station number, number of stations occupied, and expanded cyclic of the GOT.

b15 ～ b12	b11 ～ b8	b7 ～ b0
③	②	①

1) Station number (Make the setting the same as the station number setting of the GOT.)

01H to 10H: Station No. 1 to Station No. 16

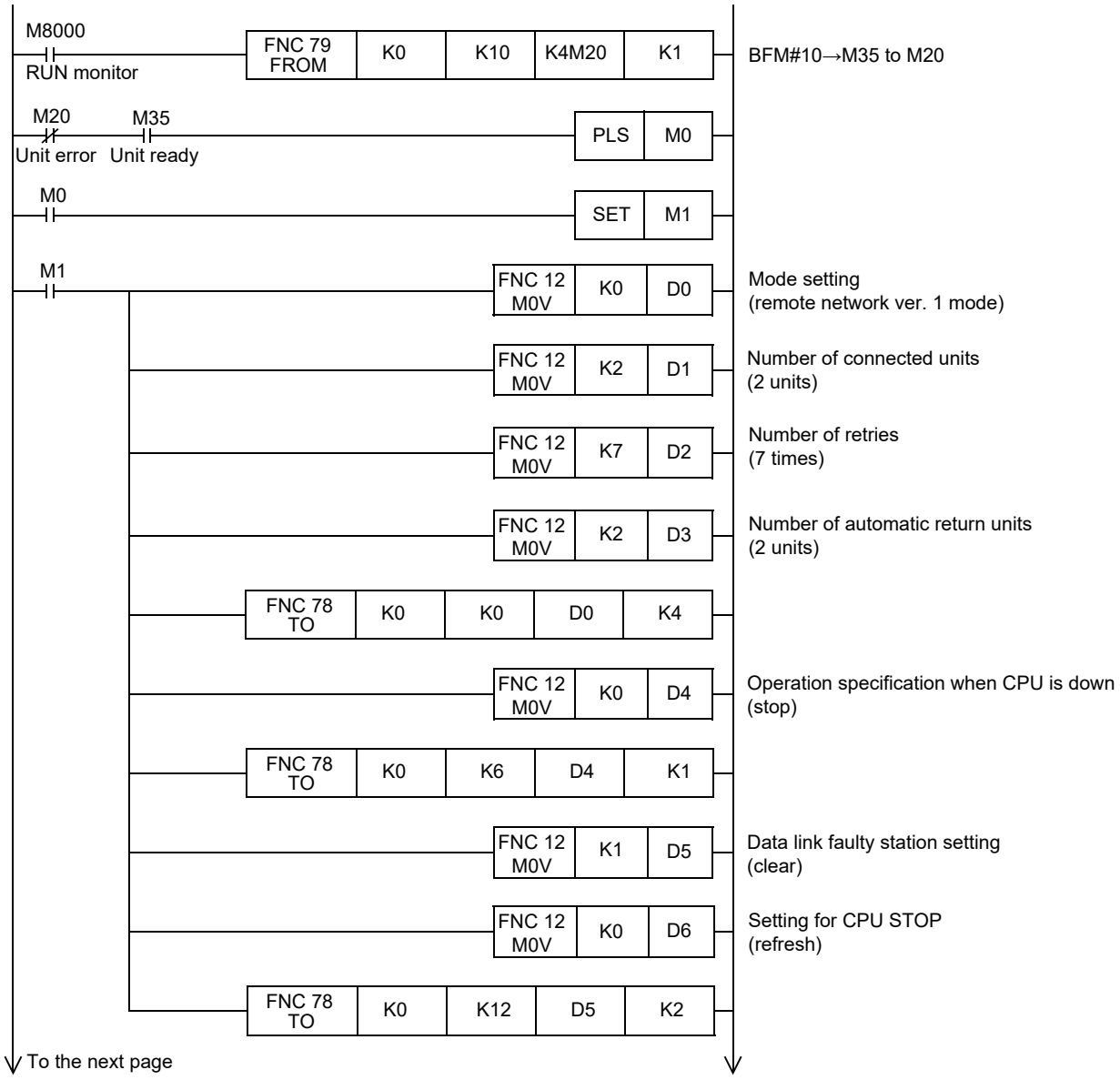
2) Number of stations occupied (Make the setting the same as the number of stations occupied setting of the GOT.)

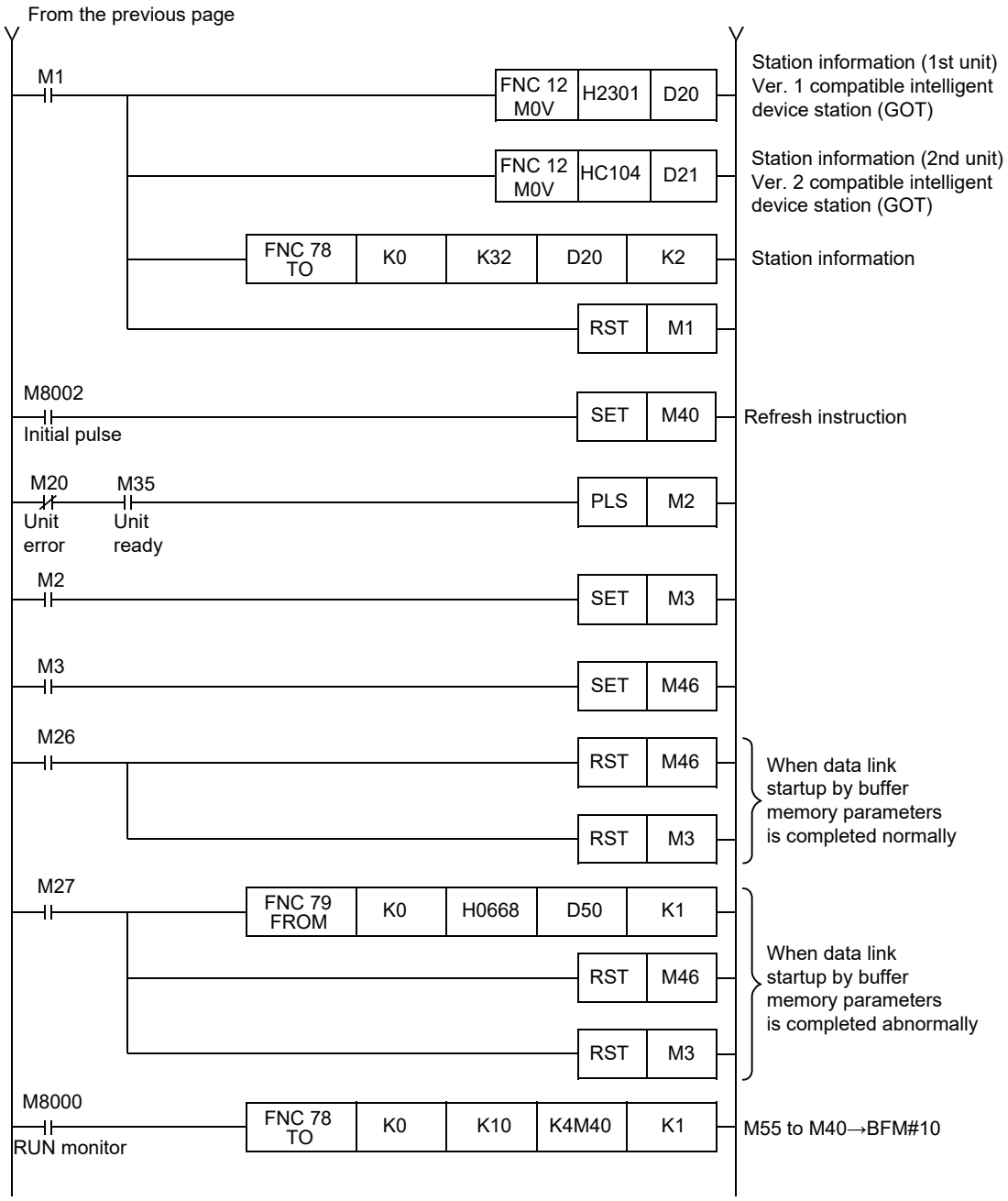
1H: 1 station occupied
2H: 2 stations occupied
3H: 3 stations occupied
4H: 4 stations occupied

3) Station type

2H: Ver. 1 compatible intelligent device station
6H: Ver. 2 compatible single intelligent device station
9H: Ver. 2 compatible double intelligent device station
CH: Ver. 2 compatible quadruple intelligent device station
FH: Ver. 2 compatible octuple intelligent device station

Example of sequence program





Point

When changing the sequence program

After writing the sequence program to the PLC CPU, turn off then on or reset the PLC CPU.

■[Controller Setting] in GT Designer3

- Communication settings of station No. 1 (GOT)

Item	Setting value
[Station No.]	1: Station No. 1
[Transmission Rate]	0: Online 156 kbps
[Mode]	Ver.1: Remote network Ver.1 mode
[Expanded Cyclic]	—
[Occupied Station]	1 station
[Input for Error Station]	0: Clear
[Retry]	3 (Use default value)
[Timeout Time]	3 (Use default value)
[Delay Time]	0 (Use default value)
[Transmission method]	Cyclic

- Communication settings of station No. 2 (GOT)

Item	Setting value
[Station No.]	2: Station No. 2
[Transmission Rate]	0: Online 156 kbps
[Mode]	Ver.2: Remote network Ver.2 mode
[Expanded Cyclic]	Quadruple
[Occupied Station]	1 station
[Input for Error Station]	0: Clear
[Retry]	3 (Use default value)
[Timeout Time]	3 (Use default value)
[Delay Time]	0 (Use default value)
[Transmission method]	Cyclic

12.8.5 Access range for monitoring

Only the connected CPU can be accessed.

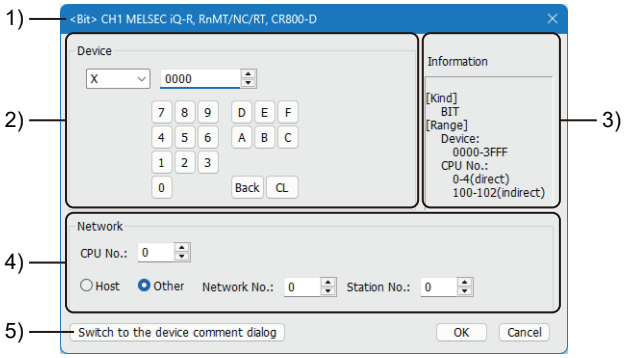
13 Settable device range

This chapter describes the range of devices settable in GT Designer3.
The settable range varies with the selection for [Controller Type] in the [Controller Setting] window.
Configure the device setting according to the specifications of the controller to be used.
Device specifications differ depending on the controller model even among the controllers of the same series.
If a nonexistent device or a device number out of the range is set for an object, other objects for which correct devices are set may not be monitored.

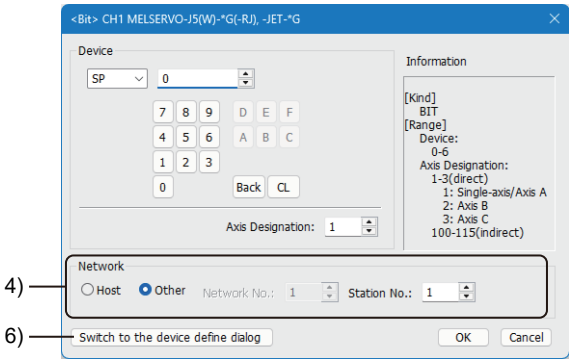
☞ Page 1189 Device setting dialog (Mitsubishi Electric equipment)
☞ Page 1196 [MELSEC MX Controller]
☞ Page 1223 [MELSEC iQ-R, RnMT/NC/RT, CR800-D]
☞ Page 1314 [MELSEC iQ-F]
☞ Page 1329 [MELSEC-Q/QS, Q17nD/M/NC/DR/DSR, CRnD-700]
☞ Page 1347 [MELSEC-L]
☞ Page 1362 [MELSEC-A]
☞ Page 1366 [MELSEC-FX]

13.1 Device setting dialog (Mitsubishi Electric equipment)

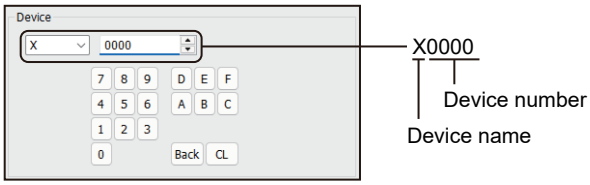
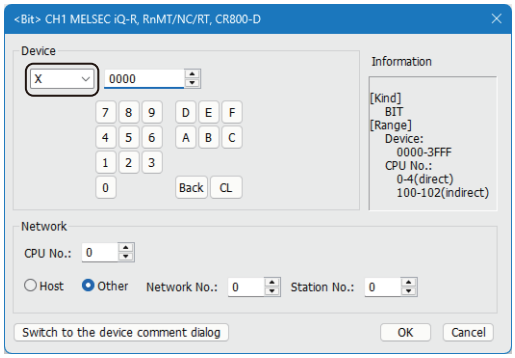
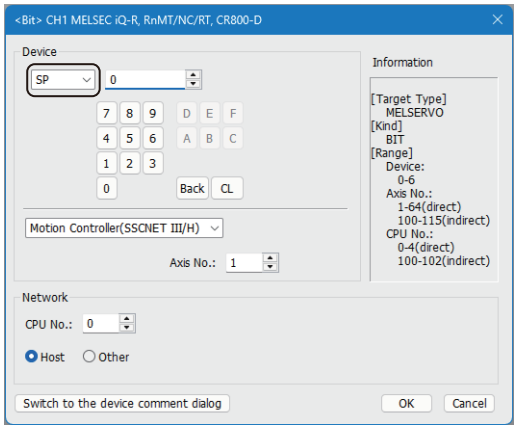
Set a device to be monitored.



[MELSEC iQ-R, RnMT/NC/RT, CR800-D]



[MELSERVO-J5(W)-*G(-RJ), -JET-*G]

Item		Description
1)	Title	Data type and channel number of the device to be set
2)	[Device]	Set the device name and device number. If a bit number needs to be specified, the setting item is displayed. Example) Setting of X0000  The setting items vary with the selected device name.  When [X] is selected for the device name  When [SP] is selected for the device name

Item		Description
3)	[Information]	Displays the setting range of each setting item according to the selected device.
4)	[Network]	Set the station number of the controller to be monitored. The setting items depend on the controller setting. ☞ Page 1191 Network setting for connection to the Mitsubishi Electric PLC ☞ Page 1193 Network setting for connection to the Mitsubishi Electric servo amplifier ☞ Page 1194 Network setting for connection to the Mitsubishi Electric inverter
5)	[Switch to the device comment dialog] button	You can open the device comment setting dialog to check the device comments imported to GT Designer3. For details, refer to the following. 📖GT Designer3 (GOT3000) Screen Design Manual
6)	[Switch to the device define dialog] button	You can open the device definition setting dialog to check the definitions of the virtual servo amplifier or inverter devices. For details, refer to the following. 📖GT Designer3 (GOT3000) Screen Design Manual

For the formats of devices, refer to the following.

For details, refer to the following.

📖GT Designer3 (GOT3000) Screen Design Manual

For the specifications of each device, refer to the following.

☞ Page 1196 [MELSEC MX Controller]

☞ Page 1223 [MELSEC iQ-R, RnMT/NC/RT, CR800-D]

☞ Page 1314 [MELSEC iQ-F]

☞ Page 1329 [MELSEC-Q/QS, Q17nD/M/NC/DR/DSR, CRnD-700]

☞ Page 1347 [MELSEC-L]

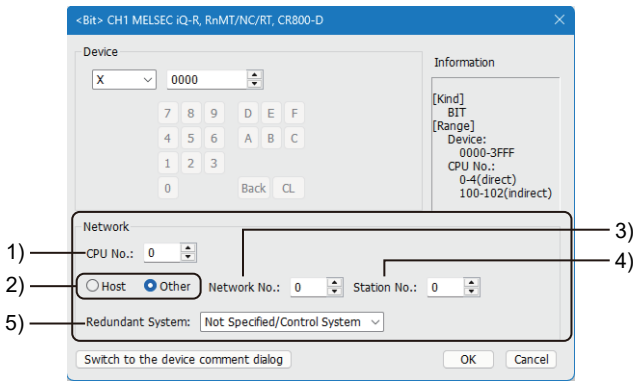
☞ Page 1362 [MELSEC-A]

☞ Page 1366 [MELSEC-FX]

13.1.1 Network setting for connection to the Mitsubishi Electric PLC

Configure the following settings for connecting to a Mitsubishi Electric PLC.

Ex.
Device setting dialog of [MELSEC iQ-R, RnMT/NC/RT, CR800-D]



Item		Description
1)	[CPU No.]	Set the CPU number of the controller. ☞ Page 1192 Setting the CPU number
2)	Station type specification	Select the station type (host or other) for the controller to be monitored. • [Host]: The controller to be monitored is the host station. • [Other]: The controller to be monitored is not the host station. When monitoring link relay (B) and link register (W) assigned in link parameter and network parameter, select [Host]. If [Other] is selected, the cyclic transmission will be changed to the transient transmission irrespective of the network type, resulting in delay of the object display. Set RX, RY, RWw, RWr, LB, or LW as [Host] when monitoring a cyclic device.
3)	[Network No.]	This item appears when [Other] is selected for the station type. Set the network number.
4)	[Station No.]	This item appears when [Other] is selected for the station type. Specify a station number.
5)	[Redundant System]	This item can be set only when [Use the function of MELSEC Redundant] is selected in [MELSEC Redundant] of the [Controller Setting] window. The following shows the items to be selected. • [Not Specified/Control System] • [Standby System] Example) Display terminology of the control system 1-1/1-S W0.b0 [-S] is displayed for a device of the standby system. For details, refer to the following. 📖GT Designer3 (GOT3000) Screen Design Manual

Setting the CPU number

The setting range depends on the system configuration of the monitoring target.

Item	Description
When monitoring a single CPU system	Set the CPU number to [0].
When monitoring a multiple CPU system	Set the CPU number to any of [1] to [4].
When monitoring an inverter	Set the CPU number to [0].

To specify a CPU number with the value of a GOT data register (GD), refer to the following.

☞ Page 1192 Indirect specification of a CPU number

Indirect specification of a CPU number

To set a GOT data register (GD) to specify a CPU number, set [CPU No. switching GD device first No. (3 points)] in the [Controller Setting] window.

For details, refer to the following.

📖GT Designer3 (GOT3000) Screen Design Manual

When using GT SoftGOT3000, [CPU No. switching GD device first No. (3 points)] can also be set in GT SoftGOT3000.

📖GT SoftGOT3000 User's Manual

The following shows the correspondence between CPU numbers and GOT data registers (GD).

Ex.

When 500 is set to [CPU No. switching GD device first No. (3 points)]

Three consecutive devices, starting from GD500, are set to specify CPU numbers.

CPU No.	GOT data registers (GD)	Setting range
100	GD500	[1] to [4] (Setting an invalid value causes a communication timeout error.)
101	GD501	
102	GD502	

Upon the GOT startup, 0 is stored in the specified GD devices until values are set.

If you set the GD devices on the screen that appears upon the GOT startup, a communication timeout error occurs.

To avoid such situation, set the GD devices so that their values are retained at a power failure.

For details, refer to the following.

📖GT Designer3 (GOT3000) Screen Design Manual

Precautions

■When the multi-channel connection is used

When specifying GD devices for multiple channels, set different GD devices to [CPU No. switching GD device first No. (3 points)].

GD10 to GD25 are used to specify the monitoring targets, such as the station number of an inverter.

When setting GD devices for a different channel, set different GD devices to [CPU No. switching GD device first No. (3 points)].

■When the indirect specification function is used

Do not change the value of the specified device while a touch switch with the bit momentary is being pressed.

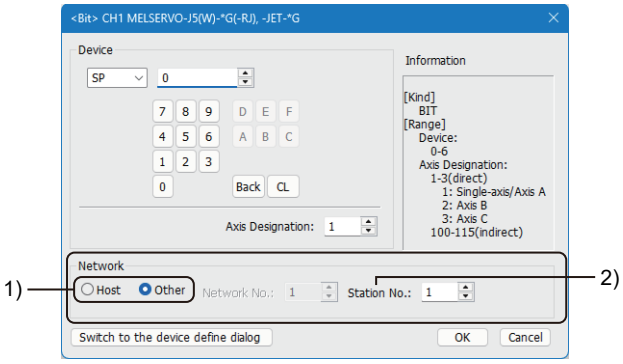
Doing so may cause the touch switch to exhibit unintended behavior.

13.1.2 Network setting for connection to the Mitsubishi Electric servo amplifier

☞ Page 1193 Network setting for Ethernet connection
☞ Page 1193 Network setting for non-network connection type (serial connection)

Network setting for Ethernet connection

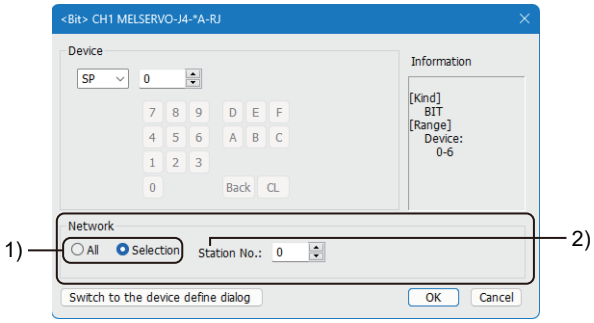
Ex.
Device setting dialog for [MELSERVO-J5(W)-*G(-RJ), -JET-*G]



Item		Description
1)	Station type specification	Select the station type (host or other) for the controller to be monitored. • [Host]: The controller to be monitored is the host station. • [Other]: The controller to be monitored is not the host station.
2)	[Station No.]	This item appears when [Other] is selected for the station type. Specify a station number.

Network setting for non-network connection type (serial connection)

Ex.
Device setting dialog for [MELSERVO-J4-*A-RJ]



Item		Description	
1)	Monitor target specification	Set the monitoring target of the set device.	
		[All]	Select this item when writing data to all the connected servo amplifiers. During monitoring, the servo amplifier of station number 0 is monitored. When data is input from a numerical input object, the data is written to all the connected servo amplifiers. When no data is input, the servo amplifier of station number 0 is monitored. When [All] is selected for a device, network number 0 and station number FF will be displayed in the device list or the printed report.
		[Selection]	Select this item when monitoring the servo amplifier that has the specified station number.
2)	[Station No.]	This item appears when [Selection] is selected for the monitor target specification. The setting range is [0] to [31] (direct) or [100] to [115] (indirect). For indirect specification of a station number, refer to the following. ☞ Page 1194 Indirect specification of a station number (for connection to a servo amplifier)	

■Indirect specification of a station number (for connection to a servo amplifier)

When you specify any of 100 to 115 for the station number, the value of the corresponding GOT data register (GD10 to GD25) is used as the station number.

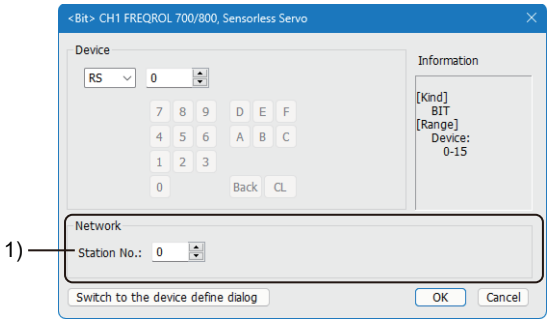
The following shows the correspondence between station number setting values and GOT data registers (GD).

Station No.	GOT data registers (GD)	Setting range
100	GD10	[0] to [31] Setting a value outside the range causes a timeout error.
101	GD11	
:	:	
114	GD24	
115	GD25	

13.1.3 Network setting for connection to the Mitsubishi Electric inverter

☞ Page 1194 Network setting for [FREQROL 700/800, Sensorless Servo]
☞ Page 1195 Network setting for [FREQROL 800/E700NE(Batch monitor)]

Network setting for [FREQROL 700/800, Sensorless Servo]



Item		Description
1)	[Station No.]	Set the station number of the inverter to be monitored. The setting range is [0] to [31] (direct) or [100] to [115] (indirect). For indirect specification of a station number, refer to the following. ☞ Page 1194 Indirect specification of a station number (for connecting an inverter)

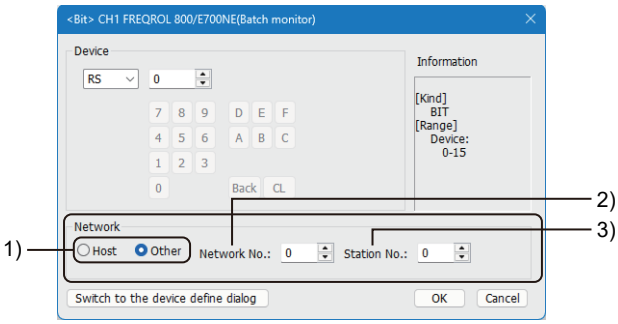
■Indirect specification of a station number (for connecting an inverter)

When you specify any of 100 to 115 for the station number, the value of the corresponding GOT data register (GD10 to GD25) is used as the station number.

The following shows the correspondence between station number setting values and GOT data registers (GD).

Station No.	GOT data registers (GD)	Setting range
100	GD10	[0] to [31] Setting a value outside the above range causes a device range error.
101	GD11	
:	:	
114	GD24	
115	GD25	

Network setting for [FREQROL 800/E700NE(Batch monitor)]



Item		Description
1)	Station type specification	Select the station type (host or other) for the controller to be monitored. • [Host]: The controller to be monitored is the host station. • [Other]: The controller to be monitored is not the host station.
2)	[Network No.]	This item appears when [Other] is selected for the station type. Set the network number. The setting range is [1] to [239].
3)	[Station No.]	This item appears when [Other] is selected for the station type. Set the station number of the inverter to be monitored. The setting range is [1] to [120]. Valid station numbers vary depending on the connection type. For indirect specification of a station number for non-network connection type, refer to the following. ☞ Page 1194 Indirect specification of a station number (for connecting an inverter)

13.2 [MELSEC MX Controller]

GT37 SoftGOT3000

Item	Reference
Specifications of bit devices	☞ Page 1197 Monitoring-supported bit devices ([MELSEC MX Controller])
	☞ Page 1200 Setting virtual bit devices for servo amplifiers ([MELSEC MX Controller])
	☞ Page 1204 Availability of writing/reading data to/from bit devices ([MELSEC MX Controller])
Specifications of word devices	☞ Page 1206 Monitoring-supported word devices ([MELSEC MX Controller])
	☞ Page 1209 Setting virtual word devices for servo amplifiers ([MELSEC MX Controller])
	☞ Page 1215 Availability of writing/reading data to/from word devices ([MELSEC MX Controller])
Specifications of double-word devices	☞ Page 1217 Monitoring-supported double-word devices ([MELSEC MX Controller])
	☞ Page 1218 Setting virtual double-word devices for servo amplifiers ([MELSEC MX Controller])
	☞ Page 1220 Availability of writing/reading data to/from double-word devices ([MELSEC MX Controller])
Specifications of virtual servo amplifier devices	☞ Page 1221 Virtual servo amplifier devices ([MELSEC MX Controller])
	☞ Page 1222 Precautions for virtual servo amplifier devices ([MELSEC MX Controller])
Specifications of virtual inverter devices	☞ Page 1222 Virtual inverter devices ([MELSEC MX Controller])

13.2.1 Monitoring-supported bit devices ([MELSEC MX Controller])

The following table shows monitoring-supported bit devices.

To check whether writing/reading data to/from each device is available, refer to the following.

☞ Page 1204 Availability of writing/reading data to/from bit devices ([MELSEC MX Controller])

○: Available

×: Not available

Device name		Device No. representation	Setting range	Specifications of EG devices*1	
				Assignment to EG devices	Access using a client
X	Input relay	Hexadecimal	0000 to 3FFF	○	○
Y	Output relay	Hexadecimal	0000 to 3FFF	○	○
B	Link relay	Hexadecimal	0000000 to 9FF9FFF	○	○
M	Internal relay	Decimal	0 to 167747583	○	○
L	Latch relay	Decimal	0 to 32767	○	○
S*4	Step relay	Decimal	0 to 16383	×	×
F	Annunciator	Decimal	0 to 131071	○	○
TC	Timer coil	Decimal	0 to 9319295	○	○ Not usable as word data
TT	Timer contact	Decimal	0 to 9319295	○	○ Not usable as word data
CC	Counter coil	Decimal	0 to 9319295	○	○ Not usable as word data
CT	Counter contact	Decimal	0 to 9319295	○	○ Not usable as word data
SC	Retentive timer coil	Decimal	0 to 9319295	○	○ Not usable as word data
SS	Retentive timer contact	Decimal	0 to 9319295	○	○ Not usable as word data
SB	Link special relay	Hexadecimal	0000000 to 9FF9FFF	○	○
SM	Special relay	Decimal	0 to 9999	○	○
RX	Remote input	Hexadecimal	0000 to 3FFF	○	○
RY	Remote output	Hexadecimal	0000 to 3FFF	○	○
LB	Link relay	Hexadecimal	0000 to 7FFF	○	○
LTC	Long timer coil	Decimal	0 to 2621055	○	○ Not usable as word data
LTT	Long timer contact	Decimal	0 to 2621055	○	○ Not usable as word data
LCC	Long counter coil	Decimal	0 to 4933727	○	○ Not usable as word data

Device name		Device No. representation	Setting range	Specifications of EG devices[*1]	
				Assignment to EG devices	Access using a client
LCT	Long counter contact	Decimal	0 to 4933727	○	○ Not usable as word data
LSC	Long retentive timer coil	Decimal	0 to 2621055	○	○ Not usable as word data
LSS	Long retentive timer contact	Decimal	0 to 2621055	○	○ Not usable as word data
SAX	Safety input relay	Hexadecimal	0000 to 2FFF	×	×
SAY	Safety output relay	Hexadecimal	0000 to 2FFF	×	×
SAB	Safety link relay	Hexadecimal	00000 to 9BFFF	×	×
SAM	Safety internal relay	Decimal	0 to 638975	×	×
SATC	Safety timer coil	Decimal	0 to 35487	×	×
SATT	Safety timer contact	Decimal	0 to 35487	×	×
SACC	Safety counter coil	Decimal	0 to 35487	×	×
SACT	Safety counter contact	Decimal	0 to 35487	×	×
SASC	Safety retentive timer coil	Decimal	0 to 35487	×	×
SASS	Safety retentive timer contact	Decimal	0 to 35487	×	×
SASM	Safety special relay	Decimal	0 to 4095	×	×
BL	SFC block	Decimal	0 to 319	×	×
BLS	Step relay (block)	Decimal	BL(SFC Block No.)-S(Device) Notation example: BL1-S3 • SFC Block No. (decimal): 0 to 319 • Device (decimal): 0 to 511	×	×
SP[*2]	Servo amplifier request	Decimal	☞ Page 1200 Setting virtual bit devices for servo amplifiers ([MELSEC MX Controller])	×	×
OM[*2]	Operation mode selection	Decimal	☞ Page 1200 Setting virtual bit devices for servo amplifiers ([MELSEC MX Controller])	×	×
TMB[*2]	Instruction demand (for test operation)	Decimal	☞ Page 1200 Setting virtual bit devices for servo amplifiers ([MELSEC MX Controller])	×	×
OTI[*2]	One-touch tuning instruction	Decimal	☞ Page 1200 Setting virtual bit devices for servo amplifiers ([MELSEC MX Controller])	×	×
GFDI[*2]	Gear failure diagnosis instruction	Decimal	☞ Page 1200 Setting virtual bit devices for servo amplifiers ([MELSEC MX Controller])	×	×
ECCDI[*2]	Encoder communication circuit diagnosis instruction	Decimal	☞ Page 1200 Setting virtual bit devices for servo amplifiers ([MELSEC MX Controller])	×	×
JnX	Link input (link direct)	Hexadecimal	J(Network No.n)-X(Device) Notation example: J1-X0000 • Network No.n (decimal): 1 to 239 • Device (hexadecimal): 0000 to 3FFF	○	○
JnY	Link output (link direct)	Hexadecimal	J(Network No.n)-Y(Device) Notation example: J1-Y0000 • Network No.n (decimal): 1 to 239 • Device (hexadecimal): 0000 to 3FFF	○	○
JnB	Link relay (link direct)	Hexadecimal	J(Network No.n)-B(Device) Notation example: J1-B0000 • Network No.n (decimal): 1 to 239 • Device (hexadecimal): 0000 to 1FFFF	○	○
JnSB	Link special relay (link direct)	Hexadecimal	J(Network No.n)-SB(Device) Notation example: J1-SB000 • Network No.n (decimal): 1 to 239 • Device (hexadecimal): 000 to FFF	○	○
IOST[*3]	I/O terminal monitor	Decimal	0 to 127	×	×

Device name		Device No. representation	Setting range	Specifications of EG devices*1	
				Assignment to EG devices	Access using a client
CMD*3	Operation command	Decimal	0 to 63	×	×

*1 For the devices assigned to EG devices (gateway devices) and the compatible clients, refer to the following.
GT Designer3 (GOT3000) Screen Design Manual

*2 Virtual servo amplifier device
For details, refer to the following.
☞ Page 1221 Virtual servo amplifier devices ([MELSEC MX Controller])

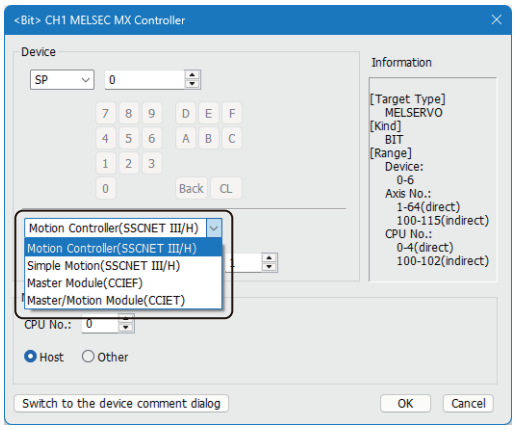
*3 Virtual inverter device
For details, refer to the following.
☞ Page 1222 Virtual inverter devices ([MELSEC MX Controller])

*4 If a bit-specified word device is used in the random read processing, GT Simulator3 uses the value of the bit device in block No. 0 only. The bit device status depends on the SFC program status (active or inactive). When the SFC program is inactive, the bit device is off (stores 0).
If a step relay (S) is used in the random read processing, specify the relevant step relay (block) (BLS).

13.2.2 Setting virtual bit devices for servo amplifiers ([MELSEC MX Controller])

For virtual servo amplifier devices, the notation differs according to the connection type between the GOT and the servo amplifier.

Select one of the following according to the control type in the device setting dialog.



Item	Description
[Motion Controller(SSCNET III/H)]	Select this item to connect the GOT through a Motion controller. The following item is displayed. • [Axis No.]: Set the axis number to be monitored.
[Simple Motion(SSCNET III/H)]	Select this item to connect the GOT through a Simple Motion module (RD77MS). The following items are displayed. • [Unit No.]: Set the first 2 digits of the 3-digit number that represents the start I/O number of the Simple Motion module. • [Axis No.]: Set the axis number to be monitored.
[Master Module(CCIEF)]	Select this item to connect the GOT through the master station on the CC-Link IE Field Network or a Simple Motion module (RD77GF).
[Master/Motion Module(CCIET)]	Select this item to connect the GOT through the master station on the CC-Link IE TSN and a Motion module (RD78G(H)). After the selection, set a device that enables axis designation to display the following item. • [Axis Designation]: Set the axis to be monitored.

The following shows the notation and setting range of virtual devices.

Device name	Device notation and setting range		Notation example
SP	[Motion Controller(SSCNET III/H)]	A(Axis No.)-SP(Device) • Axis No. (decimal): 1 to 64 (direct), 100 to 115 (indirect) • Device (decimal): 0 to 6	A64-SP0
	[Simple Motion(SSCNET III/H)]	U(Unit No.)-A(Axis No.)-SP(Device) • Unit No. (hexadecimal): 00 to FF (direct), 100 to 10F (indirect) • Axis No. (decimal): 1 to 64 (direct), 100 to 115 (indirect) • Device (decimal): 0 to 6	UFF-A64-SP0
	[Master Module(CCIEF)]	SP(Device) • Device (decimal): 0 to 6	SP0
	[Master/Motion Module(CCIET)]	AA(Axis designation)-SP(Device) • Axis designation (decimal): 1 to 3 (direct), 100 to 115 (indirect) • Device (decimal): 0 to 6	AA3-SP0

Device name	Device notation and setting range		Notation example
OM	[Motion Controller(SSCNET III/H)]	A(Axis No.)-OM(Device) • Axis No. (decimal): 1 to 64 (direct), 100 to 115 (indirect) • Device (decimal): 0 to 2, 4 to 5	A64-OM0
	[Simple Motion(SSCNET III/H)]	U(Unit No.)-A(Axis No.)-OM(Device) • Unit No. (hexadecimal): 00 to FF (direct), 100 to 10F (indirect) • Axis No. (decimal): 1 to 64 (direct), 100 to 115 (indirect) • Device (decimal): 0 to 2, 4 to 5	UFF-A64-OM0
	[Master Module(CCIEF)]	OM(Device) • Device (decimal): 0 to 2, 4 to 5	OM0
	[Master/Motion Module(CCIET)]	AA(Axis designation)-OM(Device) • Axis designation (decimal): 1 to 3 (direct), 100 to 115 (indirect) • Device (decimal): 0 to 2, 4 to 5	AA3-OM0
TMB	[Motion Controller(SSCNET III/H)]	A(Axis No.)-TMB(Device) • Axis No. (decimal): 1 to 64 (direct), 100 to 115 (indirect) • Device (decimal): 1 to 6	A64-TMB1
	[Simple Motion(SSCNET III/H)]	U(Unit No.)-A(Axis No.)-TMB(Device) • Unit No. (hexadecimal): 00 to FF (direct), 100 to 10F (indirect) • Axis No. (decimal): 1 to 64 (direct), 100 to 115 (indirect) • Device (decimal): 1 to 6	UFF-A64-TMB1
	[Master Module(CCIEF)]	TMB(Device) • Device (decimal): 1 to 6	TMB1
	[Master/Motion Module(CCIET)]	AA(Axis designation)-TMB(Device) • Axis designation (decimal): 1 to 3 (direct), 100 to 115 (indirect) • Device (decimal): 1 to 6	AA3-TMB1
OTI	[Motion Controller(SSCNET III/H)]	A(Axis No.)-OTI(Device) • Axis No. (decimal): 1 to 64 (direct), 100 to 115 (indirect) • Device (decimal): 0 to 5	A64-OTI0
	[Simple Motion(SSCNET III/H)]	U(Unit No.)-A(Axis No.)-OTI(Device) • Unit No. (hexadecimal): 00 to FF (direct), 100 to 10F (indirect) • Axis No. (decimal): 1 to 64 (direct), 100 to 115 (indirect) • Device (decimal): 0 to 5	UFF-A64-OTI0
	[Master Module(CCIEF)]	OTI(Device) • Device (decimal): 0 to 5	OTI0
	[Master/Motion Module(CCIET)]	AA(Axis designation)-OTI(Device) • Axis designation (decimal): 1 to 3 (direct), 100 to 115 (indirect) • Device (decimal): 0 to 5	AA3-OTI0
GFDI	[Motion Controller(SSCNET III/H)]	A(Axis No.)-GFDI(Device) • Axis No. (decimal): 1 to 64 (direct), 100 to 115 (indirect) • Device (decimal): 0 to 1	A64-GFDI1
	[Simple Motion(SSCNET III/H)]	U(Unit No.)-A(Axis No.)-GFDI(Device) • Unit No. (hexadecimal): 00 to FF (direct), 100 to 10F (indirect) • Axis No. (decimal): 1 to 64 (direct), 100 to 115 (indirect) • Device (decimal): 0 to 1	UFF-A64-GFDI1
	[Master/Motion Module(CCIET)]	AA(Axis designation)-GFDI(Device) • Axis designation (decimal): 1 to 3 (direct), 100 to 115 (indirect) • Device (decimal): 0 to 1	AA3-GFDI0
ECCDI	[Motion Controller(SSCNET III/H)]	A(Axis No.)-ECCDI(Device) • Axis No. (decimal): 1 to 64 (direct), 100 to 115 (indirect) • Device (decimal): 0 to 1	A64-ECCDI1
	[Simple Motion(SSCNET III/H)]	U(Unit No.)-A(Axis No.)-ECCDI(Device) • Unit No. (hexadecimal): 00 to FF (direct), 100 to 10F (indirect) • Axis No. (decimal): 1 to 64 (direct), 100 to 115 (indirect) • Device (decimal): 0 to 1	UFF-A64-ECCDI1
	[Master/Motion Module(CCIET)]	AA(Axis designation)-ECCDI(Device) • Axis designation (decimal): 1 to 3 (direct), 100 to 115 (indirect) • Device (decimal): 0 to 1	AA3-ECCDI0

For indirect specification of a module number, axis number, or axis designation, refer to the following.

☞ Page 1202 Indirect specification of a module number ([MELSEC MX Controller])
☞ Page 1203 Indirect specification of an axis number or axis designation ([MELSEC MX Controller])

Indirect specification of a module number ([MELSEC MX Controller])

To set a GOT data register (GD) to specify a module number, set [Module No. switching GD device first No. (16 points)] in the [Controller Setting] window.

For details, refer to the following.

📖GT Designer3 (GOT3000) Screen Design Manual

In GT SoftGOT3000, set [Module No. switching GD device first No. (16 points)] in the [Communication Setup] dialog.

📖GT SoftGOT3000 User's Manual

The following shows the correspondence between module numbers and GOT data registers (GD).

Ex.

When 550 is set to [Module No. switching GD device first No. (16 points)]

Sixteen consecutive devices, starting from GD550, are set to specify module numbers.

Module No.	GOT data registers (GD)	Setting range
100	GD550	[000] to [0FF] Setting a value outside the above range causes a device range error.
101	GD551	
:	:	
10E	GD564	
10F	GD565	

Upon the GOT startup, 0 is stored in the specified GD devices until values are set.

If you set the GD devices on the screen that appears upon the GOT startup, module No. 0 is monitored unintentionally, or a device range error occurs.

To avoid such situation, set the GD devices so that their values are retained at a power failure.

For details, refer to the following.

📖GT Designer3 (GOT3000) Screen Design Manual

Precautions

■When the multi-channel connection is used

When setting GD devices for multiple channels, set different GD devices to [Module No. switching GD device first No. (16 points)].

GD10 to GD25 are used to specify the monitoring targets, such as the station number of an inverter.

When setting GD devices for a different channel, set different GD devices to [Module No. switching GD device first No. (16 points)].

■When the indirect specification function is used

Do not change the value of the specified device while a touch switch with the bit momentary is being pressed.

Doing so may cause the touch switch to exhibit unintended behavior.

Indirect specification of an axis number or axis designation ([MELSEC MX Controller])

To use GOT data registers (GD) to specify an axis number or axis designation, set [Servo axis switching GD device first No. (16 points)] in the [Controller Setting] window.

For details, refer to the following.

GT Designer3 (GOT3000) Screen Design Manual

In GT SoftGOT3000, set [Servo axis switching GD device first No. (16 points)] in the [Communication Setup] dialog.

GT SoftGOT3000 User's Manual

The following shows the relationship between the axis number or axis designation and the GOT data register (GD).

Ex.

When 10 is set to [Servo axis switching GD device first No. (16 points)]

Sixteen consecutive devices, starting from GD10, are set to specify an axis number.

Axis No. or axis designation	GOT data registers (GD)	Setting range
100	GD10	• Axis number [1] to [64] • Axis designation [1]: Single-axis/Axis A [2]: Axis B [3]: Axis C Setting a value outside the above range causes a device range error.
101	GD11	
:	:	
114	GD24	
115	GD25	

Upon the GOT startup, 0 is stored in the specified GD devices until values are set.

If you set the GD devices on the screen that appears upon the GOT startup, a device range error occurs.

To avoid such situation, set the GD devices so that their values are retained at a power failure.

For details, refer to the following.

GT Designer3 (GOT3000) Screen Design Manual

Precautions

■When the multi-channel connection is used

When specifying GD devices for multiple channels, set different GD devices to [Servo axis switching GD device first No. (16 points)].

GD10 to GD25 are used to specify the monitoring targets, such as the station number of an inverter.

When setting GD devices for a different channel, set different GD devices to [Servo axis switching GD device first No. (16 points)].

■When the indirect specification function is used

Do not change the value of the specified device while a touch switch with the bit momentary is being pressed.

Doing so may cause the touch switch to exhibit unintended behavior.

13.2.3 Availability of writing/reading data to/from bit devices ([MELSEC MX Controller])

The following shows the availability of writing/reading data to/from bit devices by device type.

When the device type is other than the bit type, set the device No. in multiples of 16.

R/W: Both read and write

R/-: Read only

-/W: Write only

-/-: No read/write access

Device name	Device type				
	Bit	Byte (8 bits)	Word (16 bits)	Double-word (32 bits)	Quad-word (64 bits)
X	R/W	-/-	R/W	R/W	-/-
Y	R/W	-/-	R/W	R/W	-/-
B	R/W	-/-	R/W	R/W	-/-
M	R/W	-/-	R/W	R/W	-/-
L	R/W	-/-	R/W	R/W	-/-
S	R/-	-/-	R/-	R/-	-/-
F	R/W	-/-	R/W	R/W	-/-
TC	R/W	-/-	-/-	-/-	-/-
TT	R/W	-/-	-/-	-/-	-/-
CC	R/W	-/-	-/-	-/-	-/-
CT	R/W	-/-	-/-	-/-	-/-
SC	R/W	-/-	-/-	-/-	-/-
SS	R/W	-/-	-/-	-/-	-/-
SB	R/W	-/-	R/W	R/W	-/-
SM	R/W	-/-	R/W	R/W	-/-
RX	R/W	-/-	R/W	R/W	-/-
RY	R/W	-/-	R/W	R/W	-/-
LB	R/W	-/-	R/W	R/W	-/-
LTC	R/W	-/-	-/-	-/-	-/-
LTT	R/W	-/-	-/-	-/-	-/-
LCC	R/W	-/-	-/-	-/-	-/-
LCT	R/W	-/-	-/-	-/-	-/-
LSC	R/W	-/-	-/-	-/-	-/-
LSS	R/W	-/-	-/-	-/-	-/-
SAX	R/-	-/-	R/-	R/-	-/-
SAY	R/-	-/-	R/-	R/-	-/-
SAB	R/-	-/-	R/-	R/-	-/-
SAM	R/-	-/-	R/-	R/-	-/-
SATC	R/-	-/-	-/-	-/-	-/-
SATT	R/-	-/-	-/-	-/-	-/-
SACC	R/-	-/-	-/-	-/-	-/-
SACT	R/-	-/-	-/-	-/-	-/-
SASC	R/-	-/-	-/-	-/-	-/-
SASS	R/-	-/-	-/-	-/-	-/-
SASM	R/-	-/-	R/-	R/-	-/-
BL	R/W	-/-	-/-	-/-	-/-
BLS	R/W	-/-	-/-	-/-	-/-
SP	-/W	-/-	-/-	-/-	-/-
OM	-/W	-/-	-/-	-/-	-/-
TMB	-/W	-/-	-/-	-/-	-/-
OTI	-/W	-/-	-/-	-/-	-/-

Device name	Device type				
	Bit	Byte (8 bits)	Word (16 bits)	Double-word (32 bits)	Quad-word (64 bits)
GFDI	-/W	-/-	-/-	-/-	-/-
ECCDI	-/W	-/-	-/-	-/-	-/-
JnX	R/W	-/-	R/W	R/W	-/-
JnY	R/W	-/-	R/W	R/W	-/-
JnB	R/W	-/-	R/W	R/W	-/-
JnSB	R/W	-/-	R/W	R/W	-/-
IOST	R/-	-/-	-/-	-/-	-/-
CMD	-/W	-/-	-/-	-/-	-/-

13.2.4 Monitoring-supported word devices ([MELSEC MX Controller])

The following table shows monitoring-supported word devices.

To check whether writing/reading data to/from each device is available, refer to the following.

☞ Page 1215 Availability of writing/reading data to/from word devices ([MELSEC MX Controller])

○: Available

×: Not available

Device name		Device No. representation	Setting range	Specifications of EG devices*1	
				Assignment to EG devices	Access using a client
TN	Timer current value	Decimal	0 to 9319295	○	○
CN	Counter current value	Decimal	0 to 9319295	○	○
SN	Retentive timer current value	Decimal	0 to 9319295	○	○
D	Data register	Decimal	0 to 10484223	○	○
SD	Special register	Decimal	0 to 9999	○	○
W	Link register	Hexadecimal	000000 to 9FF9FF	○	○
SW	Link special register	Hexadecimal	000000 to 9FF9FF	○	○
R	File register	Decimal	0 to 32767	○	○
ER	Extension file register(Block)	Decimal	ER (R block)-(Device) Notation example: ER255-100 • R block (decimal): 1 to 318 • Device (decimal): 0 to 32767	○	○
ZR	Extension file register	Decimal	0 to 10452991	○	○
Z	Index register	Decimal	0 to 23	○	○ Not usable as bit data
G	Buffer memory (Intelligent function module)	Decimal	U(Unit No.)-G(Device) Notation example: UFF-G100 • Unit No.(hexadecimal): 00 to FF • Device (decimal): 0 to 268435455 For the module No., set the first 2 digits of the 3-digit number that represents the start I/O number of the buffer memory for the intelligent function module.	○	○
Ww	Remote register	Hexadecimal	0000 to 1FFF	○	○
Wr	Remote register	Hexadecimal	0000 to 1FFF	○	○
LW	Link register	Hexadecimal	00000 to 1FFFF	○	○
#	Motion device	Decimal	0 to 108287	○	○
U3E0	Multiple CPU high speed transmission memory	Decimal	0 to 12287	○	○
U3E1	Multiple CPU high speed transmission memory	Decimal	0 to 12287	○	○
U3E2	Multiple CPU high speed transmission memory	Decimal	0 to 12287	○	○
U3E3	Multiple CPU high speed transmission memory	Decimal	0 to 12287	○	○
SATN	Safety timer (current value)	Decimal	0 to 35487	×	×
SACN	Safety counter (current value)	Decimal	0 to 35487	×	×
SASN	Safety retentive timer (current value)	Decimal	0 to 35487	×	×
SAD	Safety data register	Decimal	0 to 39935	×	×
SASD	Safety special register	Decimal	0 to 4095	×	×

Device name		Device No. representation	Setting range	Specifications of EG devices[*1]	
				Assignment to EG devices	Access using a client
SAW	Safety link register	Hexadecimal	0000 to 9BFF	×	×
PA[*2]	Basic parameter	Decimal	☞ Page 1209 Setting virtual word devices for servo amplifiers ([MELSEC MX Controller])	×	×
PB[*2]	Gain filter parameter	Decimal	☞ Page 1209 Setting virtual word devices for servo amplifiers ([MELSEC MX Controller])	×	×
PC[*2]	Extension setting parameter	Decimal	☞ Page 1209 Setting virtual word devices for servo amplifiers ([MELSEC MX Controller])	×	×
PD[*2]	I/O setting parameter	Decimal	☞ Page 1209 Setting virtual word devices for servo amplifiers ([MELSEC MX Controller])	×	×
PO[*2]	Option unit parameter	Decimal	☞ Page 1209 Setting virtual word devices for servo amplifiers ([MELSEC MX Controller])	×	×
PS[*2]	Special parameter	Decimal	☞ Page 1209 Setting virtual word devices for servo amplifiers ([MELSEC MX Controller])	×	×
PU[*2]	Multi encoder parameter	Decimal	☞ Page 1209 Setting virtual word devices for servo amplifiers ([MELSEC MX Controller])	×	×
PT[*2]	Positioning control parameter	Decimal	☞ Page 1209 Setting virtual word devices for servo amplifiers ([MELSEC MX Controller])	×	×
PL[*2*3]	Motor extension parameter	Decimal	☞ Page 1209 Setting virtual word devices for servo amplifiers ([MELSEC MX Controller])	×	×
	Linear servo motor/DD motor setting parameter			×	×
PN[*2]	Network setting parameter	Decimal	☞ Page 1209 Setting virtual word devices for servo amplifiers ([MELSEC MX Controller])	×	×
PVS[*2*4]	Positioning extension parameter	Decimal	☞ Page 1209 Setting virtual word devices for servo amplifiers ([MELSEC MX Controller])	×	×
ST[*2]	Status display	Decimal	☞ Page 1209 Setting virtual word devices for servo amplifiers ([MELSEC MX Controller])	×	×
PE[*2]	Extension setting No.2 parameter	Decimal	☞ Page 1209 Setting virtual word devices for servo amplifiers ([MELSEC MX Controller])	×	×
PF[*2]	Extension setting No.3 parameter	Decimal	☞ Page 1209 Setting virtual word devices for servo amplifiers ([MELSEC MX Controller])	×	×
NPA[*2]	Network basic parameter	Decimal	☞ Page 1209 Setting virtual word devices for servo amplifiers ([MELSEC MX Controller])	×	×
PW	Extension setting No.4 parameter	Decimal	☞ Page 1209 Setting virtual word devices for servo amplifiers ([MELSEC MX Controller])	×	×
ALM[*2]	Alarm (current alarm J4A extend)	Decimal	☞ Page 1209 Setting virtual word devices for servo amplifiers ([MELSEC MX Controller])	×	×
	Alarm (alarm history J4A extend)	Decimal	☞ Page 1209 Setting virtual word devices for servo amplifiers ([MELSEC MX Controller])	×	×
	Alarm (alarm history J5G extend)	Decimal	☞ Page 1209 Setting virtual word devices for servo amplifiers ([MELSEC MX Controller])	×	×
POS[*2]	Point table (position)	Decimal	☞ Page 1209 Setting virtual word devices for servo amplifiers ([MELSEC MX Controller])	×	×
SPD[*2]	Point table (speed)	Decimal	☞ Page 1209 Setting virtual word devices for servo amplifiers ([MELSEC MX Controller])	×	×
ACT[*2]	Point table (acceleration time constant)	Decimal	☞ Page 1209 Setting virtual word devices for servo amplifiers ([MELSEC MX Controller])	×	×
DCT[*2]	Point table (deceleration time constant)	Decimal	☞ Page 1209 Setting virtual word devices for servo amplifiers ([MELSEC MX Controller])	×	×
DWL[*2]	Point table (dwell)	Decimal	☞ Page 1209 Setting virtual word devices for servo amplifiers ([MELSEC MX Controller])	×	×
AUX[*2]	Point table (auxiliary function)	Decimal	☞ Page 1209 Setting virtual word devices for servo amplifiers ([MELSEC MX Controller])	×	×
MCD[*2]	Point table (M code)	Decimal	☞ Page 1209 Setting virtual word devices for servo amplifiers ([MELSEC MX Controller])	×	×
MD[*2]	Machine diagnosis data	Decimal	☞ Page 1209 Setting virtual word devices for servo amplifiers ([MELSEC MX Controller])	×	×

Device name		Device No. representation	Setting range	Specifications of EG devices*1	
				Assignment to EG devices	Access using a client
GFDS*2	Gear failure diagnosis data	Decimal	☞ Page 1209 Setting virtual word devices for servo amplifiers ([MELSEC MX Controller])	×	×
ECCDS*2	Encoder communication circuit diagnosis data	Decimal	☞ Page 1209 Setting virtual word devices for servo amplifiers ([MELSEC MX Controller])	×	×
OTS*2	One-touch tuning data	Decimal	☞ Page 1209 Setting virtual word devices for servo amplifiers ([MELSEC MX Controller])	×	×
DI*2	External input signal	Decimal	☞ Page 1209 Setting virtual word devices for servo amplifiers ([MELSEC MX Controller])	×	×
DO*2	External output signal	Decimal	☞ Page 1209 Setting virtual word devices for servo amplifiers ([MELSEC MX Controller])	×	×
JnW	Link register (link direct)	Hexadecimal	J(Network No.n)-W(Device) Notation example: J1-W00000 • Network No.n (decimal): 1 to 239 • Device (hexadecimal): 00000 to 83FFF	○	○
JnSW	Link special register (link direct)	Hexadecimal	J(Network No.n)-SW(Device) Notation example: J1-SW000 • Network No.n (decimal): 1 to 239 • Device (hexadecimal): 000 to FFF	○	○
U3E0G	CPU buffer memory access device	Decimal	U3E0-G(Device) Notation example: U3E0-G100 • Device (decimal): 0 to 268435455	○	○
RD	Refresh data register	Decimal	0 to 4194303	○	○

*1 For the devices assigned to EG devices (gateway devices) and the compatible clients, refer to the following.
📖GT Designer3 (GOT3000) Screen Design Manual

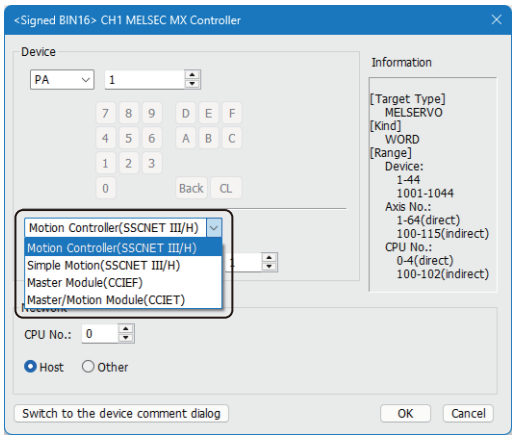
*2 Virtual servo amplifier device
For details, refer to the following.
☞ Page 1221 Virtual servo amplifier devices ([MELSEC MX Controller])

*3 The device name depends on the servo amplifier.
MR-J5-G(-RJ) or MR-J5W□-G: Motor extension setting parameter
Other than MR-J5-G(-RJ) or MR-J5W□-G: Linear servo motor/DD motor setting parameter

*4 PVS is a virtual device corresponding to the servo parameter (PV) of MR-J5-G(-RJ), MR-J5W□-G, and MR-JET-G.
Use the virtual device (PVS) to read/write data from/to the servo parameter (PV).

13.2.5 Setting virtual word devices for servo amplifiers ([MELSEC MX Controller])

For virtual servo amplifier devices, the notation differs according to the connection type between the GOT and the servo amplifier.
Select one of the following according to the control type in the device setting dialog.



Item	Description
[Motion Controller(SSCNET III/H)]	Select this item to connect the GOT through a Motion controller. The following item is displayed. • [Axis No.]: Set the axis number to be monitored.
[Simple Motion(SSCNET III/H)]	Select this item to connect the GOT through a Simple Motion module (RD77MS). The following items are displayed. • [Unit No.]: Set the first 2 digits of the 3-digit number that represents the start I/O number of the Simple Motion module. • [Axis No.]: Set the axis number to be monitored.
[Master Module(CCIEF)]	Select this item to connect the GOT through the master station on the CC-Link IE Field Network or a Simple Motion module (RD77GF).
[Master/Motion Module(CCIET)]	Select this item to connect the GOT through the master station on the CC-Link IE TSN and a Motion module (RD78G(H)). After the selection, set a device that enables axis designation to display the following item. • [Axis Designation]: Set the axis to be monitored.

The following shows the notation and setting range of virtual devices.

Device name	Device notation and setting range		Notation example
PA	[Motion Controller(SSCNET III/H)]	A(Axis No.)-PA(Device) • Axis No. (decimal): 1 to 64 (direct), 100 to 115 (indirect) • Device (decimal): 1 to 44, 1001 to 1044	A64-PA1
	[Simple Motion(SSCNET III/H)]	U(Unit No.)-A(Axis No.)-PA(Device) • Unit No. (hexadecimal): 00 to FF (direct), 100 to 10F (indirect) • Axis No. (decimal): 1 to 64 (direct), 100 to 115 (indirect) • Device (decimal): 1 to 44, 1001 to 1044	UFF-A64-PA1
	[Master Module(CCIEF)]	PA (Device) • Device (decimal): 1 to 44, 1001 to 1044	PA1
	[Master/Motion Module(CCIET)]	AA(Axis designation)-PA(Device) • Axis designation (decimal): 1 to 3 (direct), 100 to 115 (indirect) • Device (decimal): 1 to 44, 1001 to 1044	AA3-PA1

Device name	Device notation and setting range		Notation example
PB	[Motion Controller(SSCNET III/H)]	A(Axis No.)-PB(Device) • Axis No. (decimal): 1 to 64 (direct), 100 to 115 (indirect) • Device (decimal): 1 to 92, 1001 to 1092	A64-PB1
	[Simple Motion(SSCNET III/H)]	U(Unit No.)-A(Axis No.)-PB(Device) • Unit No. (hexadecimal): 00 to FF (direct), 100 to 10F (indirect) • Axis No. (decimal): 1 to 64 (direct), 100 to 115 (indirect) • Device (decimal): 1 to 92, 1001 to 1092	UFF-A64-PB1
	[Master Module(CCIEF)]	PB(Device) • Device (decimal): 1 to 92, 1001 to 1092	PB1
	[Master/Motion Module(CCIET)]	AA(Axis designation)-PB(Device) • Axis designation (decimal): 1 to 3 (direct), 100 to 115 (indirect) • Device (decimal): 1 to 92, 1001 to 1092	AA3-PB1
PC	[Motion Controller(SSCNET III/H)]	A(Axis No.)-PC(Device) • Axis No. (decimal): 1 to 64 (direct), 100 to 115 (indirect) • Device (decimal): 1 to 90, 1001 to 1090	A64-PC1
	[Simple Motion(SSCNET III/H)]	U(Unit No.)-A(Axis No.)-PC(Device) • Unit No. (hexadecimal): 00 to FF (direct), 100 to 10F (indirect) • Axis No. (decimal): 1 to 64 (direct), 100 to 115 (indirect) • Device (decimal): 1 to 90, 1001 to 1090	UFF-A64-PC1
	[Master Module(CCIEF)]	PC(Device) • Device (decimal): 1 to 90, 1001 to 1090	PC1
	[Master/Motion Module(CCIET)]	AA(Axis designation)-PC(Device) • Axis designation (decimal): 1 to 3 (direct), 100 to 115 (indirect) • Device (decimal): 1 to 90, 1001 to 1090	AA3-PC1
PD	[Motion Controller(SSCNET III/H)]	A(Axis No.)-PD(Device) • Axis No. (decimal): 1 to 64 (direct), 100 to 115 (indirect) • Device (decimal): 1 to 72, 1001 to 1072	A64-PD1
	[Simple Motion(SSCNET III/H)]	U(Unit No.)-A(Axis No.)-PD(Device) • Unit No. (hexadecimal): 00 to FF (direct), 100 to 10F (indirect) • Axis No. (decimal): 1 to 64 (direct), 100 to 115 (indirect) • Device (decimal): 1 to 72, 1001 to 1072	UFF-A64-PD1
	[Master Module(CCIEF)]	PD(Device) • Device (decimal): 1 to 72, 1001 to 1072	PD1
	[Master/Motion Module(CCIET)]	AA(Axis designation)-PD(Device) • Axis designation (decimal): 1 to 3 (direct), 100 to 115 (indirect) • Device (decimal): 1 to 72, 1001 to 1072	AA3-PD1
PO	[Motion Controller(SSCNET III/H)]	A(Axis No.)-PO(Device) • Axis No. (decimal): 1 to 64 (direct), 100 to 115 (indirect) • Device (decimal): 1 to 2, 1001 to 1002	A64-PO1
	[Simple Motion(SSCNET III/H)]	U(Unit No.)-A(Axis No.)-PO(Device) • Unit No. (hexadecimal): 00 to FF (direct), 100 to 10F (indirect) • Axis No. (decimal): 1 to 64 (direct), 100 to 115 (indirect) • Device (decimal): 1 to 2, 1001 to 1002	UFF-A64-PO1
	[Master/Motion Module(CCIET)]	AA(Axis designation)-PO(Device) • Axis designation (decimal): 1 to 3 (direct), 100 to 115 (indirect) • Device (decimal): 1 to 2, 1001 to 1002	AA3-PO1
PS	[Motion Controller(SSCNET III/H)]	A(Axis No.)-PS(Device) • Axis No. (decimal): 1 to 64 (direct), 100 to 115 (indirect) • Device (decimal): 1 to 99, 1001 to 1099	A64-PS1
	[Simple Motion(SSCNET III/H)]	U(Unit No.)-A(Axis No.)-PS(Device) • Unit No. (hexadecimal): 00 to FF (direct), 100 to 10F (indirect) • Axis No. (decimal): 1 to 64 (direct), 100 to 115 (indirect) • Device (decimal): 1 to 99, 1001 to 1099	UFF-A64-PS1
	[Master/Motion Module(CCIET)]	AA(Axis designation)-PS(Device) • Axis designation (decimal): 1 to 3 (direct), 100 to 115 (indirect) • Device (decimal): 1 to 99, 1001 to 1099	AA3-PS1

Device name	Device notation and setting range		Notation example
PU	[Motion Controller(SSCNET III/H)]	A(Axis No.)-PU(Device) • Axis No. (decimal): 1 to 64 (direct), 100 to 115 (indirect) • Device (decimal): 1 to 44, 1001 to 1044	A64-PU1
	[Simple Motion(SSCNET III/H)]	U(Unit No.)-A(Axis No.)-PU(Device) • Unit No. (hexadecimal): 00 to FF (direct), 100 to 10F (indirect) • Axis No. (decimal): 1 to 64 (direct), 100 to 115 (indirect) • Device (decimal): 1 to 44, 1001 to 1044	UFF-A64-PU1
	[Master/Motion Module(CCIET)]	AA(Axis designation)-PU(Device) • Axis designation (decimal): 1 to 3 (direct), 100 to 115 (indirect) • Device (decimal): 1 to 44, 1001 to 1044	AA3-PU1
PT	[Master Module(CCIEF)]	PT(Device) • Device (decimal): 1 to 90, 1001 to 1090	PT1
	[Master/Motion Module(CCIET)]	AA(Axis designation)-PT(Device) • Axis designation (decimal): 1 to 3 (direct), 100 to 115 (indirect) • Device (decimal): 1 to 90, 1001 to 1090	AA3-PT1
PL	[Motion Controller(SSCNET III/H)]	A(Axis No.)-PL(Device) • Axis No. (decimal): 1 to 64 (direct), 100 to 115 (indirect) • Device (decimal): 1 to 72, 1001 to 1072	A64-PL1
	[Simple Motion(SSCNET III/H)]	U(Unit No.)-A(Axis No.)-PL(Device) • Unit No. (hexadecimal): 00 to FF (direct), 100 to 10F (indirect) • Axis No. (decimal): 1 to 64 (direct), 100 to 115 (indirect) • Device (decimal): 1 to 72, 1001 to 1072	UFF-A64-PL1
	[Master Module(CCIEF)]	PL(Device) • Device (decimal): 1 to 72, 1001 to 1072	PL1
	[Master/Motion Module(CCIET)]	AA(Axis designation)-PL(Device) • Axis designation (decimal): 1 to 3 (direct), 100 to 115 (indirect) • Device (decimal): 1 to 72, 1001 to 1072	AA3-PL1
PN	[Master Module(CCIEF)]	PN(Device) • Device (decimal): 1 to 32, 1001 to 1032	PN1
	[Master/Motion Module(CCIET)]	AA(Axis designation)-PN(Device) • Axis designation (decimal): 1 to 3 (direct), 100 to 115 (indirect) • Device (decimal): 1 to 32, 1001 to 1032	AA3-PN1
PVS	[Master/Motion Module(CCIET)]	AA(Axis designation)-PVS(Device) • Axis designation (decimal): 1 to 3 (direct), 100 to 115 (indirect) • Device (decimal): 1 to 32, 1001 to 1032	AA3-PVS1
ST	[Motion Controller(SSCNET III/H)]	A(Axis No.)-ST(Device) • Axis No. (decimal): 1 to 64 (direct), 100 to 115 (indirect) • Device (decimal): 0 to 48	A64-ST0
	[Simple Motion(SSCNET III/H)]	U(Unit No.)-A(Axis No.)-ST(Device) • Unit No. (hexadecimal): 00 to FF (direct), 100 to 10F (indirect) • Axis No. (decimal): 1 to 64 (direct), 100 to 115 (indirect) • Device (decimal): 0 to 48	UFF-A64-ST0
	[Master Module(CCIEF)]	ST(Device) • Device (decimal): 0 to 48	ST0
	[Master/Motion Module(CCIET)]	AA(Axis designation)-ST(Device) • Axis designation (decimal): 1 to 3 (direct), 100 to 115 (indirect) • Device (decimal): 0 to 48	AA3-ST0
PE	[Motion Controller(SSCNET III/H)]	A(Axis No.)-PE(Device) • Axis No. (decimal): 1 to 64 (direct), 100 to 115 (indirect) • Device (decimal): 1 to 88, 1001 to 1088	A64-PE1
	[Simple Motion(SSCNET III/H)]	U(Unit No.)-A(Axis No.)-PE(Device) • Unit No. (hexadecimal): 00 to FF (direct), 100 to 10F (indirect) • Axis No. (decimal): 1 to 64 (direct), 100 to 115 (indirect) • Device (decimal): 1 to 88, 1001 to 1088	UFF-A64-PE1
	[Master Module(CCIEF)]	PE(Device) • Device (decimal): 1 to 88, 1001 to 1088	PE1
	[Master/Motion Module(CCIET)]	AA(Axis designation)-PE(Device) • Axis designation (decimal): 1 to 3 (direct), 100 to 115 (indirect) • Device (decimal): 1 to 88, 1001 to 1088	AA3-PE1

Device name	Device notation and setting range		Notation example
PF	[Motion Controller(SSCNET III/H)]	A(Axis No.)-PF(Device) • Axis No. (decimal): 1 to 64 (direct), 100 to 115 (indirect) • Device (decimal): 1 to 99, 1001 to 1099	A64-PF1
	[Simple Motion(SSCNET III/H)]	U(Unit No.)-A(Axis No.)-PF(Device) • Unit No. (hexadecimal): 00 to FF (direct), 100 to 10F (indirect) • Axis No. (decimal): 1 to 64 (direct), 100 to 115 (indirect) • Device (decimal): 1 to 99, 1001 to 1099	UFF-A64-PF1
	[Master Module(CCIEF)]	PF(Device) • Device (decimal): 1 to 99, 1001 to 1099	PF1
	[Master/Motion Module(CCIET)]	AA(Axis designation)-PF(Device) • Axis designation (decimal): 1 to 3 (direct), 100 to 115 (indirect) • Device (decimal): 1 to 99, 1001 to 1099	AA3-PF1
NPA	[Master/Motion Module(CCIET)]	NPA(Device) • Device (decimal): 1 to 12, 2001 to 2032	NPA1
PW	[Motion Controller(SSCNET III/H)]	A(Axis No.)-PW(Device) • Axis No. (decimal): 1 to 64 (direct), 100 to 115 (indirect) • Device (decimal): 1 to 40, 1001 to 1040	A3-PW1
ALM	[Motion Controller(SSCNET III/H)]	A(Axis No.)-ALM(Device) • Axis No. (decimal): 1 to 64 (direct), 100 to 115 (indirect) • Device (decimal): 0 to 2, 11 to 59, 200 to 215, 220 to 235, 240 to 255, 260 to 275, 280 to 295, 300 to 315	A64-ALM0
	[Simple Motion(SSCNET III/H)]	U(Unit No.)-A(Axis No.)-ALM(Device) • Unit No. (hexadecimal): 00 to FF (direct), 100 to 10F (indirect) • Axis No. (decimal): 1 to 64 (direct), 100 to 115 (indirect) • Device (decimal): 0 to 2, 11 to 59, 200 to 215, 220 to 235, 240 to 255, 260 to 275, 280 to 295, 300 to 315	UFF-A64-ALM0
	[Master Module(CCIEF)]	ALM(Device) • Device (decimal): 0 to 2, 11 to 59, 200 to 215, 220 to 235, 240 to 255, 260 to 275, 280 to 295, 300 to 315	ALM0
	[Master/Motion Module(CCIET)]	AA(Axis designation)-ALM(Device) • Axis designation (decimal): 1 to 3 (direct), 100 to 115 (indirect) • Device (decimal): 0 to 2, 11 to 59, 200 to 215, 220 to 235, 240 to 255, 260 to 275, 280 to 295, 300 to 315	AA3-ALM0
POS	[Master Module(CCIEF)]	POS(Device) • Device (decimal): 1 to 255, 1001 to 1255	POS1
	[Master/Motion Module(CCIET)]	AA(Axis designation)-POS(Device) • Axis designation (decimal): 1 to 3 (direct), 100 to 115 (indirect) • Device (decimal): 1 to 255, 1001 to 1255	AA3-POS1
SPD	[Master Module(CCIEF)]	SPD(Device) • Device (decimal): 1 to 255, 1001 to 1255	SPD1
	[Master/Motion Module(CCIET)]	AA(Axis designation)-SPD(Device) • Axis designation (decimal): 1 to 3 (direct), 100 to 115 (indirect) • Device (decimal): 1 to 255, 1001 to 1255	AA3-SPD1
ACT	[Master Module(CCIEF)]	ACT(Device) • Device (decimal): 1 to 255, 1001 to 1255	ACT1
	[Master/Motion Module(CCIET)]	AA(Axis designation)-ACT(Device) • Axis designation (decimal): 1 to 3 (direct), 100 to 115 (indirect) • Device (decimal): 1 to 255, 1001 to 1255	AA3-ACT1
DCT	[Master Module(CCIEF)]	DCT(Device) • Device (decimal): 1 to 255, 1001 to 1255	DCT1
	[Master/Motion Module(CCIET)]	AA(Axis designation)-DCT(Device) • Axis designation (decimal): 1 to 3 (direct), 100 to 115 (indirect) • Device (decimal): 1 to 255, 1001 to 1255	AA3-DCT1
DWL	[Master Module(CCIEF)]	DWL(Device) • Device (decimal): 1 to 255, 1001 to 1255	DWL1
	[Master/Motion Module(CCIET)]	AA(Axis designation)-DWL(Device) • Axis designation (decimal): 1 to 3 (direct), 100 to 115 (indirect) • Device (decimal): 1 to 255, 1001 to 1255	AA3-DWL1
AUX	[Master Module(CCIEF)]	AUX(Device) • Device (decimal): 1 to 255, 1001 to 1255	AUX1
	[Master/Motion Module(CCIET)]	AA(Axis designation)-AUX(Device) • Axis designation (decimal): 1 to 3 (direct), 100 to 115 (indirect) • Device (decimal): 1 to 255, 1001 to 1255	AA3-AUX1

Device name	Device notation and setting range		Notation example
MCD	[Master/Motion Module(CCIET)]	AA(Axis designation)-MCD(Device) • Axis designation (decimal): 1 to 3 (direct), 100 to 115 (indirect) • Device (decimal): 1 to 255, 1001 to 1255	AA3-MCD1
MD	[Motion Controller(SSCNET III/H)]	A(Axis No.)-MD(Device) • Axis No. (decimal): 1 to 64 (direct), 100 to 115 (indirect) • Device (decimal): 0 to 21	A64-MD0
	[Simple Motion(SSCNET III/H)]	U(Unit No.)-A(Axis No.)-MD(Device) • Unit No. (hexadecimal): 00 to FF (direct), 100 to 10F (indirect) • Axis No. (decimal): 1 to 64 (direct), 100 to 115 (indirect) • Device (decimal): 0 to 21	UFF-A64-MD0
	[Master Module(CCIEF)]	MD(Device) • Device (decimal): 0 to 21	MD0
	[Master/Motion Module(CCIET)]	AA(Axis designation)-MD(Device) • Axis designation (decimal): 1 to 3 (direct), 100 to 115 (indirect) • Device (decimal): 0 to 21	AA3-MD0
GFDS	[Motion Controller(SSCNET III/H)]	A(Axis No.)-GFDS(Device) • Axis No. (decimal): 1 to 64 (direct), 100 to 115 (indirect) • Device (decimal): 0 to 5	A64-GFDS0
	[Simple Motion(SSCNET III/H)]	U(Unit No.)-A(Axis No.)-GFDS(Device) • Unit No. (hexadecimal): 00 to FF (direct), 100 to 10F (indirect) • Axis No. (decimal): 1 to 64 (direct), 100 to 115 (indirect) • Device (decimal): 0 to 5	UFF-A64-GFDS0
	[Master/Motion Module(CCIET)]	AA(Axis designation)-GFDS(Device) • Axis designation (decimal): 1 to 3 (direct), 100 to 115 (indirect) • Device (decimal): 0 to 5	AA3-GFDS0
ECCDS	[Motion Controller(SSCNET III/H)]	A(Axis No.)-ECCDS(Device) • Axis No. (decimal): 1 to 64 (direct), 100 to 115 (indirect) • Device (decimal): 0 to 5	A64-ECCDS0
	[Simple Motion(SSCNET III/H)]	U(Unit No.)-A(Axis No.)-ECCDS(Device) • Unit No. (hexadecimal): 00 to FF (direct), 100 to 10F (indirect) • Axis No. (decimal): 1 to 64 (direct), 100 to 115 (indirect) • Device (decimal): 0 to 5	UFF-A64-ECCDS0
	[Master/Motion Module(CCIET)]	AA(Axis designation)-ECCDS(Device) • Axis designation (decimal): 1 to 3 (direct), 100 to 115 (indirect) • Device (decimal): 0 to 5	AA3-ECCDS0
OTS	[Motion Controller(SSCNET III/H)]	A(Axis No.)-OTS(Device) • Axis No. (decimal): 1 to 64 (direct), 100 to 115 (indirect) • Device (decimal): 0 to 5, 3000	A64-OTS0
	[Simple Motion(SSCNET III/H)]	U(Unit No.)-A(Axis No.)-OTS(Device) • Unit No. (hexadecimal): 00 to FF (direct), 100 to 10F (indirect) • Axis No. (decimal): 1 to 64 (direct), 100 to 115 (indirect) • Device (decimal): 0 to 5, 3000	UFF-A64-OTS0
	[Master Module(CCIEF)]	OTS(Device) • Device (decimal): 0 to 5, 3000	OTS0
	[Master/Motion Module(CCIET)]	AA(Axis designation)-OTS(Device) • Axis designation (decimal): 1 to 3 (direct), 100 to 115 (indirect) • Device (decimal): 0 to 5, 3000	AA3-OTS0
DI	[Motion Controller(SSCNET III/H)]	A(Axis No.)-DI(Device) • Axis No. (decimal): 1 to 64 (direct), 100 to 115 (indirect) • Device (decimal): 0 to 6	A64-DI0
	[Simple Motion(SSCNET III/H)]	U(Unit No.)-A(Axis No.)-DI(Device) • Unit No. (hexadecimal): 00 to FF (direct), 100 to 10F (indirect) • Axis No. (decimal): 1 to 64 (direct), 100 to 115 (indirect) • Device (decimal): 0 to 6	UFF-A64-DI0
	[Master Module(CCIEF)]	DI(Device) • Device (decimal): 0 to 6	DI0
	[Master/Motion Module(CCIET)]	AA(Axis designation)-DI(Device) • Axis designation (decimal): 1 to 3 (direct), 100 to 115 (indirect) • Device (decimal): 0 to 6	AA3-DI0

Device name	Device notation and setting range		Notation example
DO	[Motion Controller(SSCNET III/H)]	A(Axis No.)-DO(Device) • Axis No. (decimal): 1 to 64 (direct), 100 to 115 (indirect) • Device (decimal): 0 to 4	A64-DO0
	[Simple Motion(SSCNET III/H)]	U(Unit No.)-A(Axis No.)-DO(Device) • Unit No. (hexadecimal): 00 to FF (direct), 100 to 10F (indirect) • Axis No. (decimal): 1 to 64 (direct), 100 to 115 (indirect) • Device (decimal): 0 to 4	UFF-A64-DO0
	[Master Module(CCIEF)]	DO(Device) • Device (decimal): 0 to 4	DO0
	[Master/Motion Module(CCIET)]	AA(Axis designation)-DO(Device) • Axis designation (decimal): 1 to 3 (direct), 100 to 115 (indirect) • Device (decimal): 0 to 4	AA3-DO0

For indirect specification of a module number, axis number, or axis designation, refer to the following.

☞ Page 1202 Indirect specification of a module number ([MELSEC MX Controller])
☞ Page 1203 Indirect specification of an axis number or axis designation ([MELSEC MX Controller])

13.2.6 Availability of writing/reading data to/from word devices ([MELSEC MX Controller])

The following shows the availability of writing/reading data to/from word devices by device type.

R/W: Both read and write

R/-: Read only

-/W: Write only

-/-: No read/write access

Device name	Device type			
	Word (16 bits)	Double-word (32 bits)	Quad-word (64 bits)	Bit of word data
TN	R/W	R/W	-/-	-/-
CN	R/W	R/W	-/-	-/-
SN	R/W	R/W	-/-	-/-
D	R/W	R/W	R/W	R/W
SD	R/W	R/W	R/W	R/W
W	R/W	R/W	R/W	R/W
SW	R/W	R/W	-/-	R/W
R	R/W	R/W	R/W	R/W
ER	R/W	R/W	R/W	R/W
ZR	R/W	R/W	R/W	R/W
Z	R/W	R/W	-/-	-/-
G	R/W	R/W	R/W	R/W
Ww	R/W	R/W	R/W	R/W
Wr	R/W	R/W	R/W	R/W
LW	R/W	R/W	R/W	R/W
#	R/W	R/W	-/-	R/W
U3E0	R/W	R/W	R/W	R/W
U3E1	R/W	R/W	R/W	R/W
U3E2	R/W	R/W	R/W	R/W
U3E3	R/W	R/W	R/W	R/W
SATN	R/-	R/-	-/-	-/-
SACN	R/-	R/-	-/-	-/-
SASN	R/-	R/-	-/-	-/-
SAD	R/-	R/-	-/-	R/-
SASD	R/-	R/-	-/-	R/-
SAW	R/-	R/-	-/-	R/-
PA	R/W	R/W	-/-	-/-
PB	R/W	R/W	-/-	-/-
PC	R/W	R/W	-/-	-/-
PD	R/W	R/W	-/-	-/-
PO	R/W	R/W	-/-	-/-
PS	R/W	R/W	-/-	-/-
PU	R/W	R/W	-/-	-/-
PT	R/W	R/W	-/-	-/-
PL	R/W	R/W	-/-	-/-
PN	R/W	R/W	-/-	-/-
PVS	R/W	R/W	-/-	-/-
ST	R/-	R/-	-/-	-/-
PE	R/W	R/W	-/-	-/-
PF	R/W	R/W	-/-	-/-
NPA	R/W	R/W	-/-	-/-
PW	R/W	R/W	-/-	-/-
ALM	R/-	R/-	-/-	-/-

Device name	Device type			
	Word (16 bits)	Double-word (32 bits)	Quad-word (64 bits)	Bit of word data
POS	R/W	R/W	-/-	-/-
SPD	R/W	R/W	-/-	-/-
ACT	R/W	R/W	-/-	-/-
DCT	R/W	R/W	-/-	-/-
DWL	R/W	R/W	-/-	-/-
AUX	R/W	R/W	-/-	-/-
MCD	R/W	R/W	-/-	-/-
MD	R/-	R/-	-/-	-/-
GFDS	R/-	R/-	-/-	-/-
ECCDS	R/-	R/-	-/-	-/-
OTS	R/W*1	R/W*1	-/-	-/-
DI	R/-	R/W	-/-	-/-
DO	R/-	R/-	-/-	-/-
JnW	R/W	R/W	R/W	R/W
JnSW	R/W	R/W	-/-	R/W
U3E0G	R/W	R/W	R/W	R/W
RD	R/W	R/W	R/W	R/W

*1 Only reading is available for OTS0 to OTS5.

13.2.7 Monitoring-supported double-word devices ([MELSEC MX Controller])

The following table shows monitoring-supported double-word devices.

To check whether writing/reading data to/from each device is available, refer to the following.

☞ Page 1220 Availability of writing/reading data to/from double-word devices ([MELSEC MX Controller])

○: Available

×: Not available

Device name		Device No. representation	Setting range	Specifications of EG devices*1	
				Assignment to EG devices	Access using a client
LTN	Long timer current value	Decimal	0 to 2621055	×	×
LCN	Long counter current value	Decimal	0 to 4933727	×	×
LSN	Long retentive timer current value	Decimal	0 to 2621055	×	×
ZZ	Index register (32 bits)	Decimal	0 to 22	×	×
LZ	Index register (32 bits)	Decimal	0 to 11	×	×
ALD*2	Life diagnosis	Decimal	☞ Page 1218 Setting virtual double-word devices for servo amplifiers ([MELSEC MX Controller])	×	×
TMI*2	Input signal for test operation (for test operation)	Decimal	☞ Page 1218 Setting virtual double-word devices for servo amplifiers ([MELSEC MX Controller])	×	×
TMO*2	Forced output of signal pin (for test operation)	Decimal	☞ Page 1218 Setting virtual double-word devices for servo amplifiers ([MELSEC MX Controller])	×	×
TMD*2	Set data (for test operation)	Decimal	☞ Page 1218 Setting virtual double-word devices for servo amplifiers ([MELSEC MX Controller])	×	×
AL*3	Faults history	Decimal	0 to 899	×	×
LPr*3*4	Parameter (32-bit)	Decimal	0 to 1500	×	×
OP*3	Operation parameter	Decimal	0 to 5	×	×
PV*3	Current value monitor	Decimal	1 to 143	×	×

*1 For the devices assigned to EG devices (gateway devices) and the compatible clients, refer to the following.
📖GT Designer3 (GOT3000) Screen Design Manual

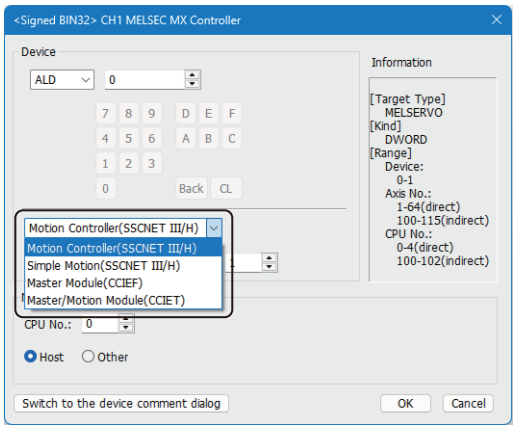
*2 Virtual servo amplifier device
For details, refer to the following.
☞ Page 1221 Virtual servo amplifier devices ([MELSEC MX Controller])

*3 Virtual inverter device
For details, refer to the following.
☞ Page 1222 Virtual inverter devices ([MELSEC MX Controller])

*4 If you specify LPr900 to LPr935, the following item is displayed in the device setting dialog.
[Setting items (for calibration parameters)]: [Bias/gain value], [Analog input value]
Enclose the device number in parentheses when selecting [Analog input value].
Example 1) Notation when [Bias/gain value] is selected: LPr900
Example 2) Notation when [Analog input value] is selected: LPr(900)
When LPr900 or LPr901 (Calibration parameter) is specified, selecting [Bias/gain value] or [Analog input value] does not affect the monitoring target.

13.2.8 Setting virtual double-word devices for servo amplifiers ([MELSEC MX Controller])

For virtual servo amplifier devices, the notation differs according to the connection type between the GOT and the servo amplifier.
Select one of the following according to the control type in the device setting dialog.



Item	Description
[Motion Controller(SSCNET III/H)]	Select this item to connect the GOT through a Motion controller. The following item is displayed. • [Axis No.]: Set the axis number to be monitored.
[Simple Motion(SSCNET III/H)]	Select this item to connect the GOT through a Simple Motion module (RD77MS). The following items are displayed. • [Unit No.]: Set the first 2 digits of the 3-digit number that represents the start I/O number of the Simple Motion module. • [Axis No.]: Set the axis number to be monitored.
[Master Module(CCIEF)]	Select this item to connect the GOT through the master station on the CC-Link IE Field Network or a Simple Motion module (RD77GF).
[Master/Motion Module(CCIET)]	Select this item to connect the GOT through the master station on the CC-Link IE TSN and a Motion module (RD78G(H)). After the selection, set a device that enables axis designation to display the following item. • [Axis Designation]: Set the axis to be monitored.

The following shows the notation and setting range of virtual devices.

Device name	Device notation and setting range		Notation example
ALD	[Motion Controller(SSCNET III/H)]	A(Axis No.)-ALD(Device) • Axis No. (decimal): 1 to 64 (direct), 100 to 115 (indirect) • Device (decimal): 0 to 1	A64-ALD0
	[Simple Motion(SSCNET III/H)]	U(Unit No.)-A(Axis No.)-ALD(Device) • Unit No. (hexadecimal): 00 to FF (direct), 100 to 10F (indirect) • Axis No. (decimal): 1 to 64 (direct), 100 to 115 (indirect) • Device (decimal): 0 to 1	UFF-A64-ALD0
	[Master Module(CCIEF)]	ALD(Device) • Device (decimal): 0 to 1	ALD0
	[Master/Motion Module(CCIET)]	AA(Axis designation)-ALD(Device) • Axis designation (decimal): 1 to 3 (direct), 100 to 115 (indirect) • Device (decimal): 0 to 1	AA3-ALD0

Device name	Device notation and setting range		Notation example
TMI	[Motion Controller(SSCNET III/H)]	A(Axis No.)-TMI(Device) • Axis No. (decimal): 1 to 64 (direct), 100 to 115 (indirect) • Device (decimal): 0 to 2	A64-TMI0
	[Simple Motion(SSCNET III/H)]	U(Unit No.)-A(Axis No.)-TMI(Device) • Unit No. (hexadecimal): 00 to FF (direct), 100 to 10F (indirect) • Axis No. (decimal): 1 to 64 (direct), 100 to 115 (indirect) • Device (decimal): 0 to 2	UFF-A64-TMI0
	[Master Module(CCIEF)]	TMI(Device) • Device (decimal): 0 to 2	TMI0
	[Master/Motion Module(CCIET)]	AA(Axis designation)-TMI(Device) • Axis designation (decimal): 1 to 3 (direct), 100 to 115 (indirect) • Device (decimal): 0 to 2	AA3-TMI0
TMO	[Motion Controller(SSCNET III/H)]	A(Axis No.)-TMO(Device) • Axis No. (decimal): 1 to 64 (direct), 100 to 115 (indirect) • Device (decimal): 0	A64-TMO0
	[Simple Motion(SSCNET III/H)]	U(Unit No.)-A(Axis No.)-TMO(Device) • Unit No. (hexadecimal): 00 to FF (direct), 100 to 10F (indirect) • Axis No. (decimal): 1 to 64 (direct), 100 to 115 (indirect) • Device (decimal): 0	UFF-A64-TMO0
	[Master Module(CCIEF)]	TMO(Device) • Device (decimal): 0	TMO0
	[Master/Motion Module(CCIET)]	AA(Axis designation)-TMO(Device) • Axis designation (decimal): 1 to 3 (direct), 100 to 115 (indirect) • Device (decimal): 0	AA3-TMO0
TMD	[Motion Controller(SSCNET III/H)]	A(Axis No.)-TMD(Device) • Axis No. (decimal): 1 to 64 (direct), 100 to 115 (indirect) • Device (decimal): 0 to 1, 3	A64-TMD0
	[Simple Motion(SSCNET III/H)]	U(Unit No.)-A(Axis No.)-TMD(Device) • Unit No. (hexadecimal): 00 to FF (direct), 100 to 10F (indirect) • Axis No. (decimal): 1 to 64 (direct), 100 to 115 (indirect) • Device (decimal): 0 to 1, 3	UFF-A64-TMD0
	[Master Module(CCIEF)]	TMD(Device) • Device (decimal): 0 to 1, 3	TMD0
	[Master/Motion Module(CCIET)]	AA(Axis designation)-TMD(Device) • Axis designation (decimal): 1 to 3 (direct), 100 to 115 (indirect) • Device (decimal): 0 to 1, 3	AA3-TMD0

For indirect specification of a module number, axis number, or axis designation, refer to the following.

☞ Page 1202 Indirect specification of a module number ([MELSEC MX Controller])
☞ Page 1203 Indirect specification of an axis number or axis designation ([MELSEC MX Controller])

13.2.9 Availability of writing/reading data to/from double-word devices ([MELSEC MX Controller])

The following shows the availability of writing/reading data to/from double-word devices by device type.

R/W: Both read and write

R/-: Read only

-/W: Write only

-/-: No read/write access

Device name	Device type			
	Word (16 bits)	Double-word (32 bits)	Quad-word (64 bits)	Bit of double-word data
LTN	-/-	R/W	-/-	-/-
LCN	-/-	R/W	-/-	-/-
LSN	-/-	R/W	-/-	-/-
ZZ	-/-	R/W	-/-	-/-
LZ	-/-	R/W	-/-	-/-
ALD	-/-	R/-	-/-	-/-
TMI	-/-	-/W	-/-	-/-
TMO	-/-	-/W	-/-	-/-
TMD	-/-	-/W	-/-	-/-
AL	-/-	R/-	-/-	-/-
LPr	-/-	R/W	-/-	-/-
OP	-/-	R/W	-/-	-/-
PV	-/-	R/-	-/-	-/-

13.2.10 Virtual servo amplifier devices ([MELSEC MX Controller])

The following shows the correspondence between the virtual devices used in the GOT and the servo amplifier data.

Virtual device name	Reference
SP	☞ Page 1250 Servo amplifier request (MELSEC iQ-R, RnMT/NC/RT, CR800-D])
OM	☞ Page 1251 Operation mode selection ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])
TMB	☞ Page 1251 Instruction demand (for test operation) ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])
OTI	☞ Page 1252 One-touch tuning instruction ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])
GFDI	☞ Page 1252 Gear failure diagnosis instruction ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])
ECCDI	☞ Page 1253 Encoder communication circuit diagnosis instruction ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])
PA	☞ Page 1253 Basic parameter ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])
PB	☞ Page 1255 Gain filter parameter ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])
PC	☞ Page 1258 Extension setting parameter ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])
PD	☞ Page 1261 I/O setting parameter ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])
PO	☞ Page 1262 Option unit parameter ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])
PS	☞ Page 1263 Special parameter ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])
PU	☞ Page 1263 Multi encoder parameter ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])
PT	☞ Page 1264 Positioning control parameter, pressure control parameter ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])
PL	☞ Page 1267 Motor extension parameter, linear servo motor/DD motor setting parameter ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])
PN	☞ Page 1268 Network setting parameter ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])
PVS	☞ Page 1269 Positioning extension parameter ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])
ST	☞ Page 1271 Status display ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])
PE	☞ Page 1273 Extension setting No.2 parameter ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])
PF	☞ Page 1275 Extension setting No.3 parameter ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])
NPA	☞ Page 1278 Network basic parameter ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])
PW	☞ Page 1279 Extension setting No.4 parameter ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])
ALM	☞ Page 1281 Alarm [MELSEC iQ-R, RnMT/NC/RT, CR800-D])
	☞ Page 1288 Specifications of ALM260 to ALM275, ALM280 to ALM295, and ALM300 to ALM315 ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])
POS	☞ Page 1289 Point table (position) ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])
SPD	☞ Page 1289 Point table (speed) ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])
ACT	☞ Page 1289 Point table (acceleration time constant) ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])
DCT	☞ Page 1290 Point table (deceleration time constant) ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])
DWL	☞ Page 1290 Point table (dwell) ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])
AUX	☞ Page 1291 Point table (auxiliary function) ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])
MCD	☞ Page 1291 Point table (M code) ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])
MD	☞ Page 1292 Machine diagnosis data ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])
GFDS	☞ Page 1293 Gear failure diagnosis data ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])
ECCDS	☞ Page 1294 Encoder communication circuit diagnosis data ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])
OTS	☞ Page 1294 One-touch tuning data ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])
DI	☞ Page 1295 External input signal in MR-J5-G(-RJ) and MR-J5W□-G ([MELSEC iQ-R, RnMT/NC/RT, CR800-D]) ☞ Page 1296 External input signal in MR-J5D□-G ([MELSEC iQ-R, RnMT/NC/RT, CR800-D]) ☞ Page 1296 External input signal in MR-J5(W)-□B(-RJ) ([MELSEC iQ-R, RnMT/NC/RT, CR800-D]) ☞ Page 1297 External input signal in MR-JET-G ([MELSEC iQ-R, RnMT/NC/RT, CR800-D]) ☞ Page 1297 External input signal in MR-JE-B and MR-JE-BF ([MELSEC iQ-R, RnMT/NC/RT, CR800-D]) ☞ Page 1297 External input signal in MR-J4-GF(-RJ) ([MELSEC iQ-R, RnMT/NC/RT, CR800-D]) ☞ Page 1298 External input signal in MR-J4(W)-□B-RJ ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])
DO	☞ Page 1298 External output signal in MR-J5-G(-RJ) and MR-J5W□-G ([MELSEC iQ-R, RnMT/NC/RT, CR800-D]) ☞ Page 1299 External output signal in MR-J5D□-G ([MELSEC iQ-R, RnMT/NC/RT, CR800-D]) ☞ Page 1299 External output signal in MR-J5(W)-□B(-RJ) ([MELSEC iQ-R, RnMT/NC/RT, CR800-D]) ☞ Page 1299 External output signal in MR-JET-G ([MELSEC iQ-R, RnMT/NC/RT, CR800-D]) ☞ Page 1299 External output signal in MR-JE-B and MR-JE-BF ([MELSEC iQ-R, RnMT/NC/RT, CR800-D]) ☞ Page 1300 External output signal in MR-J4-GF(-RJ) ([MELSEC iQ-R, RnMT/NC/RT, CR800-D]) ☞ Page 1300 External output signal in MR-J4(W)-□B-RJ ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])

Virtual device name	Reference
ALD	☞ Page 1300 Life Diagnosis ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])
TMI	☞ Page 1300 Input signal for test operation (for test operation) ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])
TMO	☞ Page 1301 Forced output of signal pin (for test operation) ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])
TMD	☞ Page 1301 Set data (for test operation) ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])

13.2.11 Precautions for virtual servo amplifier devices ([MELSEC MX Controller])

For the precautions for virtual servo amplifier devices, refer to the following.

☞ Page 1302 Precautions for virtual servo amplifier devices ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])

13.2.12 Virtual inverter devices ([MELSEC MX Controller])

The following shows the correspondence between the virtual devices used in the GOT and the inverter data.

Virtual device name	Reference
IOST	☞ Page 1304 I/O terminal monitor ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])
CMD	☞ Page 1306 Operation command ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])
	☞ Page 1307 Operation when turning on/off one of the CMD3 to CMD12 devices ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])
	☞ Page 1307 Operation when turning on/off one of the CMD48 to CMD52 devices (MELSEC iQ-R, RnMT/NC/RT, CR800-D])
AL	☞ Page 1308 Alarm history ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])
LPr	☞ Page 1310 Parameter (32-bit) ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])
OP	☞ Page 1310 Operation parameter ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])
PV	☞ Page 1311 Current value monitor ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])

13.3 [MELSEC iQ-R, RnMT/NC/RT, CR800-D]

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Item	Reference
Specifications of bit devices	☞ Page 1224 Monitoring-supported bit devices ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])
	☞ Page 1227 Setting virtual bit devices for servo amplifiers ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])
	☞ Page 1231 Availability of writing/reading data to/from bit devices ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])
Specifications of word devices	☞ Page 1233 Monitoring-supported word devices ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])
	☞ Page 1237 Setting virtual word devices for servo amplifiers ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])
	☞ Page 1243 Availability of writing/reading data to/from word devices ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])
Specifications of double-word devices	☞ Page 1245 Monitoring-supported double-word devices ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])
	☞ Page 1246 Setting virtual double-word devices for servo amplifiers ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])
	☞ Page 1248 Availability of writing/reading data to/from double-word devices ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])
Specifications of virtual servo amplifier devices	☞ Page 1249 Virtual servo amplifier devices ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])
	☞ Page 1302 Precautions for virtual servo amplifier devices ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])
Specifications of virtual inverter devices	☞ Page 1303 Virtual inverter devices ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])

13.3.1 Monitoring-supported bit devices ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])

The following table shows monitoring-supported bit devices.

To check whether writing/reading data to/from each device is available, refer to the following.

☞ Page 1231 Availability of writing/reading data to/from bit devices ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])

○: Available

×: Not available

Device name		Device No. representation	Setting range	Specifications of EG devices*1	
				Assignment to EG devices	Access using a client
X	Input relay	Hexadecimal	0000 to 3FFF	○	○
Y	Output relay	Hexadecimal	0000 to 3FFF	○	○
B*4	Link relay	Hexadecimal	0000000 to 9A61FFF	○	○
M*4	Internal relay	Decimal	0 to 161882111	○	○
L	Latch relay	Decimal	0 to 32767	○	○
S*5	Step relay	Decimal	0 to 16383	×	×
F	Annunciator	Decimal	0 to 131071	○	○
TC*4	Timer coil	Decimal	0 to 8993439	○	○ Not usable as word data
TT*4	Timer contact	Decimal	0 to 8993439	○	○ Not usable as word data
CC*4	Counter coil	Decimal	0 to 8993439	○	○ Not usable as word data
CT*4	Counter contact	Decimal	0 to 8993439	○	○ Not usable as word data
SC*4	Retentive timer coil	Decimal	0 to 8993439	○	○ Not usable as word data
SS*4	Retentive timer contact	Decimal	0 to 8993439	○	○ Not usable as word data
SB*4	Link special relay	Hexadecimal	0000000 to 9A61FFF	○	○
SM	Special relay	Decimal	0 to 4095	○	○
RX	Remote input	Hexadecimal	0000 to 3FFF	○	○
RY	Remote output	Hexadecimal	0000 to 3FFF	○	○
LB	Link relay	Hexadecimal	0000 to 7FFF	○	○
LTC*4	Long timer coil	Decimal	0 to 2529407	○	○ Not usable as word data
LTT*4	Long timer contact	Decimal	0 to 2529407	○	○ Not usable as word data
LCC*4	Long counter coil	Decimal	0 to 4761215	○	○ Not usable as word data

Device name		Device No. representation	Setting range	Specifications of EG devices*1	
				Assignment to EG devices	Access using a client
LCT*4	Long counter contact	Decimal	0 to 4761215	○	○ Not usable as word data
LSC*4	Long retentive timer coil	Decimal	0 to 2529407	○	○ Not usable as word data
LSS*4	Long retentive timer contact	Decimal	0 to 2529407	○	○ Not usable as word data
SAX	Safety input relay	Hexadecimal	0000 to 2FFF	×	×
SAY	Safety output relay	Hexadecimal	0000 to 2FFF	×	×
SAB	Safety link relay	Hexadecimal	00000 to 9BFFF	×	×
SAM	Safety internal relay	Decimal	0 to 638975	×	×
SATC	Safety timer coil	Decimal	0 to 35487	×	×
SATT	Safety timer contact	Decimal	0 to 35487	×	×
SACC	Safety counter coil	Decimal	0 to 35487	×	×
SACT	Safety counter contact	Decimal	0 to 35487	×	×
SASC	Safety retentive timer coil	Decimal	0 to 35487	×	×
SASS	Safety retentive timer contact	Decimal	0 to 35487	×	×
SASM	Safety special relay	Decimal	0 to 4095	×	×
BL	SFC block	Decimal	0 to 319	×	×
BLS	Step relay (block)	Decimal	BL(SFC Block No.)-S(Device) Notation example: BL1-S3 • SFC Block No. (decimal): 0 to 319 • Device (decimal): 0 to 511	×	×
SP*2	Servo amplifier request	Decimal	☞ Page 1227 Setting virtual bit devices for servo amplifiers ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])	×	×
OM*2	Operation mode selection	Decimal	☞ Page 1227 Setting virtual bit devices for servo amplifiers ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])	×	×
TMB*2	Instruction demand (for test operation)	Decimal	☞ Page 1227 Setting virtual bit devices for servo amplifiers ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])	×	×
OTI*2	One-touch tuning instruction	Decimal	☞ Page 1227 Setting virtual bit devices for servo amplifiers ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])	×	×
GFDI*2	Gear failure diagnosis instruction	Decimal	☞ Page 1227 Setting virtual bit devices for servo amplifiers ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])	×	×
ECCDI*2	Encoder communication circuit diagnosis instruction	Decimal	☞ Page 1227 Setting virtual bit devices for servo amplifiers ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])	×	×
JnX	Link input (link direct)	Hexadecimal	J(Network No.n)-X(Device) Notation example: J1-X0000 • Network No.n (decimal): 1 to 239 • Device (hexadecimal): 0000 to 3FFF	○	○
JnY	Link output (link direct)	Hexadecimal	J(Network No.n)-Y(Device) Notation example: J1-Y0000 • Network No.n (decimal): 1 to 239 • Device (hexadecimal): 0000 to 3FFF	○	○
JnB	Link relay (link direct)	Hexadecimal	J(Network No.n)-B(Device) Notation example: J1-B0000 • Network No.n (decimal): 1 to 239 • Device (hexadecimal): 0000 to 1FFFF	○	○

Device name		Device No. representation	Setting range	Specifications of EG devices*1	
				Assignment to EG devices	Access using a client
JnSB	Link special relay (link direct)	Hexadecimal	J(Network No.n)-SB(Device) Notation example: J1-SB000 • Network No.n (decimal): 1 to 239 • Device (hexadecimal): 000 to FFF	○	○
IOST*3	I/O terminal monitor	Decimal	0 to 127	×	×
CMD*3	Operation command	Decimal	0 to 63	×	×

*1 For the devices assigned to EG devices (gateway devices) and the compatible clients, refer to the following.
📖GT Designer3 (GOT3000) Screen Design Manual

*2 Virtual servo amplifier device
For details, refer to the following.
☞ Page 1249 Virtual servo amplifier devices ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])

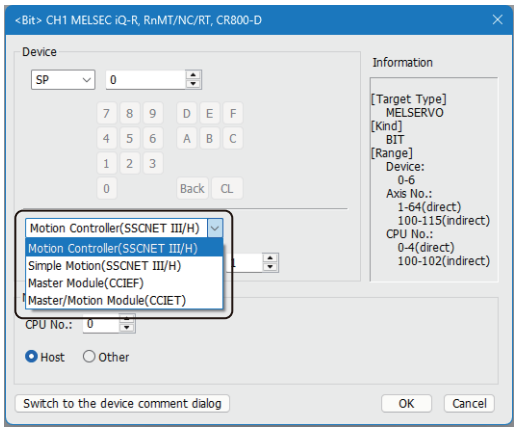
*3 Virtual inverter device
For details, refer to the following.
☞ Page 1303 Virtual inverter devices ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])

*4 For the maximum number of devices when an extended SRAM cassette is installed, refer to the following.
📖MELSEC iQ-R CPU Module User's Manual (Application)

*5 If a bit-specified word device is used in the random read processing, GT Simulator3 uses the value of the bit device in block No. 0 only. The bit device status depends on the SFC program status (active or inactive). When the SFC program is inactive, the bit device is off (stores 0).
If a step relay (S) is used in the random read processing, specify the relevant step relay (block) (BLS).

13.3.2 Setting virtual bit devices for servo amplifiers ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])

For virtual servo amplifier devices, the notation differs according to the connection type between the GOT and the servo amplifier.
Select one of the following according to the control type in the device setting dialog.



Item	Description
[Motion Controller(SSCNET III/H)]	Select this item to connect the GOT through a Motion controller. The following item is displayed. • [Axis No.]: Set the axis number to be monitored.
[Simple Motion(SSCNET III/H)]	Select this item to connect the GOT through a Simple Motion module (RD77MS). The following items are displayed. • [Unit No.]: Set the first 2 digits of the 3-digit number that represents the start I/O number of the Simple Motion module. • [Axis No.]: Set the axis number to be monitored.
[Master Module(CCIEF)]	Select this item to connect the GOT through the master station on the CC-Link IE Field Network or a Simple Motion module (RD77GF).
[Master/Motion Module(CCIET)]	Select this item to connect the GOT through the master station on the CC-Link IE TSN and a Motion module (RD78G(H)). After the selection, set a device that enables axis designation to display the following item. • [Axis Designation]: Set the axis to be monitored.

The following shows the notation and setting range of virtual devices.

Device name	Device notation and setting range		Notation example
SP	[Motion Controller(SSCNET III/H)]	A(Axis No.)-SP(Device) • Axis No. (decimal): 1 to 64 (direct), 100 to 115 (indirect) • Device (decimal): 0 to 6	A64-SP0
	[Simple Motion(SSCNET III/H)]	U(Unit No.)-A(Axis No.)-SP(Device) • Unit No. (hexadecimal): 00 to FF (direct), 100 to 10F (indirect) • Axis No. (decimal): 1 to 64 (direct), 100 to 115 (indirect) • Device (decimal): 0 to 6	UFF-A64-SP0
	[Master Module(CCIEF)]	SP(Device) • Device (decimal): 0 to 6	SP0
	[Master/Motion Module(CCIET)]	AA(Axis designation)-SP(Device) • Axis designation (decimal): 1 to 3 (direct), 100 to 115 (indirect) • Device (decimal): 0 to 6	AA3-SP0

Device name	Device notation and setting range		Notation example
OM	[Motion Controller(SSCNET III/H)]	A(Axis No.)-OM(Device) • Axis No. (decimal): 1 to 64 (direct), 100 to 115 (indirect) • Device (decimal): 0 to 2, 4 to 5	A64-OM0
	[Simple Motion(SSCNET III/H)]	U(Unit No.)-A(Axis No.)-OM(Device) • Unit No. (hexadecimal): 00 to FF (direct), 100 to 10F (indirect) • Axis No. (decimal): 1 to 64 (direct), 100 to 115 (indirect) • Device (decimal): 0 to 2, 4 to 5	UFF-A64-OM0
	[Master Module(CCIEF)]	OM(Device) • Device (decimal): 0 to 2, 4 to 5	OM0
	[Master/Motion Module(CCIET)]	AA(Axis designation)-OM(Device) • Axis designation (decimal): 1 to 3 (direct), 100 to 115 (indirect) • Device (decimal): 0 to 2, 4 to 5	AA3-OM0
TMB	[Motion Controller(SSCNET III/H)]	A(Axis No.)-TMB(Device) • Axis No. (decimal): 1 to 64 (direct), 100 to 115 (indirect) • Device (decimal): 1 to 6	A64-TMB1
	[Simple Motion(SSCNET III/H)]	U(Unit No.)-A(Axis No.)-TMB(Device) • Unit No. (hexadecimal): 00 to FF (direct), 100 to 10F (indirect) • Axis No. (decimal): 1 to 64 (direct), 100 to 115 (indirect) • Device (decimal): 1 to 6	UFF-A64-TMB1
	[Master Module(CCIEF)]	TMB(Device) • Device (decimal): 1 to 6	TMB1
	[Master/Motion Module(CCIET)]	AA(Axis designation)-TMB(Device) • Axis designation (decimal): 1 to 3 (direct), 100 to 115 (indirect) • Device (decimal): 1 to 6	AA3-TMB1
OTI	[Motion Controller(SSCNET III/H)]	A(Axis No.)-OTI(Device) • Axis No. (decimal): 1 to 64 (direct), 100 to 115 (indirect) • Device (decimal): 0 to 5	A64-OTI0
	[Simple Motion(SSCNET III/H)]	U(Unit No.)-A(Axis No.)-OTI(Device) • Unit No. (hexadecimal): 00 to FF (direct), 100 to 10F (indirect) • Axis No. (decimal): 1 to 64 (direct), 100 to 115 (indirect) • Device (decimal): 0 to 5	UFF-A64-OTI0
	[Master Module(CCIEF)]	OTI(Device) • Device (decimal): 0 to 5	OTI0
	[Master/Motion Module(CCIET)]	AA(Axis designation)-OTI(Device) • Axis designation (decimal): 1 to 3 (direct), 100 to 115 (indirect) • Device (decimal): 0 to 5	AA3-OTI0
GFDI	[Motion Controller(SSCNET III/H)]	A(Axis No.)-GFDI(Device) • Axis No. (decimal): 1 to 64 (direct), 100 to 115 (indirect) • Device (decimal): 0 to 1	A64-GFDI1
	[Simple Motion(SSCNET III/H)]	U(Unit No.)-A(Axis No.)-GFDI(Device) • Unit No. (hexadecimal): 00 to FF (direct), 100 to 10F (indirect) • Axis No. (decimal): 1 to 64 (direct), 100 to 115 (indirect) • Device (decimal): 0 to 1	UFF-A64-GFDI1
	[Master/Motion Module(CCIET)]	AA(Axis designation)-GFDI(Device) • Axis designation (decimal): 1 to 3 (direct), 100 to 115 (indirect) • Device (decimal): 0 to 1	AA3-GFDI0
ECCDI	[Motion Controller(SSCNET III/H)]	A(Axis No.)-ECCDI(Device) • Axis No. (decimal): 1 to 64 (direct), 100 to 115 (indirect) • Device (decimal): 0 to 1	A64-ECCDI1
	[Simple Motion(SSCNET III/H)]	U(Unit No.)-A(Axis No.)-ECCDI(Device) • Unit No. (hexadecimal): 00 to FF (direct), 100 to 10F (indirect) • Axis No. (decimal): 1 to 64 (direct), 100 to 115 (indirect) • Device (decimal): 0 to 1	UFF-A64-ECCDI1
	[Master/Motion Module(CCIET)]	AA(Axis designation)-ECCDI(Device) • Axis designation (decimal): 1 to 3 (direct), 100 to 115 (indirect) • Device (decimal): 0 to 1	AA3-ECCDI0

For indirect specification of a module number, axis number, or axis designation, refer to the following.

☞ Page 1229 Indirect specification of a module number ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])

☞ Page 1230 Indirect specification of an axis number or axis designation ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])

Indirect specification of a module number ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])

To set a GOT data register (GD) to specify a module number, set [Module No. switching GD device first No. (16 points)] in the [Controller Setting] window.

For details, refer to the following.

📖GT Designer3 (GOT3000) Screen Design Manual

In GT SoftGOT3000, set [Module No. switching GD device first No. (16 points)] in the [Communication Setup] dialog.

📖GT SoftGOT3000 User's Manual

The following shows the correspondence between module numbers and GOT data registers (GD).

Ex.

When 550 is set to [Module No. switching GD device first No. (16 points)]

Sixteen consecutive devices, starting from GD550, are set to specify module numbers.

Module No.	GOT data registers (GD)	Setting range
100	GD550	[000] to [0FF] ([001] to [010] when [MELSEC iQ-F] is selected for [Controller Type] in the [Controller Setting] window) Setting a value outside the above range causes a device range error.
101	GD551	
:	:	
10E	GD564	
10F	GD565	

Upon the GOT startup, 0 is stored in the specified GD devices until values are set.

If you set the GD devices on the screen that appears upon the GOT startup, module No. 0 is monitored unintentionally, or a device range error occurs.

To avoid such situation, set the GD devices so that their values are retained at a power failure.

For details, refer to the following.

📖GT Designer3 (GOT3000) Screen Design Manual

Precautions

■When the multi-channel connection is used

When setting GD devices for multiple channels, set different GD devices to [Module No. switching GD device first No. (16 points)].

GD10 to GD25 are used to specify the monitoring targets, such as the station number of an inverter.

When setting GD devices for a different channel, set different GD devices to [Module No. switching GD device first No. (16 points)].

■When the indirect specification function is used

Do not change the value of the specified device while a touch switch with the bit momentary is being pressed.

Doing so may cause the touch switch to exhibit unintended behavior.

Indirect specification of an axis number or axis designation ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])

To use GOT data registers (GD) to specify an axis number or axis designation, set [Servo axis switching GD device first No. (16 points)] in the [Controller Setting] window.

For details, refer to the following.

📖GT Designer3 (GOT3000) Screen Design Manual

In GT SoftGOT3000, set [Servo axis switching GD device first No. (16 points)] in the [Communication Setup] dialog.

📖GT SoftGOT3000 User's Manual

The following shows the relationship between the axis number or axis designation and the GOT data register (GD).

Ex.

When 10 is set to [Servo axis switching GD device first No. (16 points)]

Sixteen consecutive devices, starting from GD10, are set to specify an axis number.

Axis No. or axis designation	GOT data registers (GD)	Setting range
100	GD10	• Axis number [1] to [64] • Axis designation [1]: Single-axis/Axis A [2]: Axis B [3]: Axis C Setting a value outside the above range causes a device range error.
101	GD11	
:	:	
114	GD24	
115	GD25	

Upon the GOT startup, 0 is stored in the specified GD devices until values are set.

If you set the GD devices on the screen that appears upon the GOT startup, a device range error occurs.

To avoid such situation, set the GD devices so that their values are retained at a power failure.

For details, refer to the following.

📖GT Designer3 (GOT3000) Screen Design Manual

Precautions

■When the multi-channel connection is used

When specifying GD devices for multiple channels, set different GD devices to [Servo axis switching GD device first No. (16 points)].

GD10 to GD25 are used to specify the monitoring targets, such as the station number of an inverter.

When setting GD devices for a different channel, set different GD devices to [Servo axis switching GD device first No. (16 points)].

■When the indirect specification function is used

Do not change the value of the specified device while a touch switch with the bit momentary is being pressed.

Doing so may cause the touch switch to exhibit unintended behavior.

13.3.3 Availability of writing/reading data to/from bit devices ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])

The following shows the availability of writing/reading data to/from bit devices by device type.

When the device type is other than the bit type, set the device No. in multiples of 16.

R/W: Both read and write

R/-: Read only

-/W: Write only

-/-: No read/write access

Device name	Device type				
	Bit	Byte (8 bits)	Word (16 bits)	Double-word (32 bits)	Quad-word (64 bits)
X	R/W	-/-	R/W	R/W	-/-
Y	R/W	-/-	R/W	R/W	-/-
B	R/W	-/-	R/W	R/W	-/-
M	R/W	-/-	R/W	R/W	-/-
L	R/W	-/-	R/W	R/W	-/-
S	R/-	-/-	R/-	R/-	-/-
F	R/W	-/-	R/W	R/W	-/-
TC	R/W	-/-	-/-	-/-	-/-
TT	R/W	-/-	-/-	-/-	-/-
CC	R/W	-/-	-/-	-/-	-/-
CT	R/W	-/-	-/-	-/-	-/-
SC	R/W	-/-	-/-	-/-	-/-
SS	R/W	-/-	-/-	-/-	-/-
SB	R/W	-/-	R/W	R/W	-/-
SM	R/W	-/-	R/W	R/W	-/-
RX	R/W	-/-	R/W	R/W	-/-
RY	R/W	-/-	R/W	R/W	-/-
LB	R/W	-/-	R/W	R/W	-/-
LTC	R/W	-/-	-/-	-/-	-/-
LTT	R/W	-/-	-/-	-/-	-/-
LCC	R/W	-/-	-/-	-/-	-/-
LCT	R/W	-/-	-/-	-/-	-/-
LSC	R/W	-/-	-/-	-/-	-/-
LSS	R/W	-/-	-/-	-/-	-/-
SAX	R/-	-/-	R/-	R/-	-/-
SAY	R/-	-/-	R/-	R/-	-/-
SAB	R/-	-/-	R/-	R/-	-/-
SAM	R/-	-/-	R/-	R/-	-/-
SATC	R/-	-/-	-/-	-/-	-/-
SATT	R/-	-/-	-/-	-/-	-/-
SACC	R/-	-/-	-/-	-/-	-/-
SACT	R/-	-/-	-/-	-/-	-/-
SASC	R/-	-/-	-/-	-/-	-/-
SASS	R/-	-/-	-/-	-/-	-/-
SASM	R/-	-/-	R/-	R/-	-/-
BL	R/W	-/-	-/-	-/-	-/-
BLS	R/W	-/-	-/-	-/-	-/-
SP	-/W	-/-	-/-	-/-	-/-
OM	-/W	-/-	-/-	-/-	-/-
TMB	-/W	-/-	-/-	-/-	-/-
OTI	-/W	-/-	-/-	-/-	-/-

Device name	Device type				
	Bit	Byte (8 bits)	Word (16 bits)	Double-word (32 bits)	Quad-word (64 bits)
GFDI	-/W	-/-	-/-	-/-	-/-
ECCDI	-/W	-/-	-/-	-/-	-/-
JnX	R/W	-/-	R/W	R/W	-/-
JnY	R/W	-/-	R/W	R/W	-/-
JnB	R/W	-/-	R/W	R/W	-/-
JnSB	R/W	-/-	R/W	R/W	-/-
IOST	R/-	-/-	-/-	-/-	-/-
CMD	-/W	-/-	-/-	-/-	-/-

13.3.4 Monitoring-supported word devices ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])

The following table shows monitoring-supported word devices.

To check whether writing/reading data to/from each device is available, refer to the following.

☞ Page 1243 Availability of writing/reading data to/from word devices ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])

○: Available

×: Not available

Device name		Device No. representation	Setting range	Specifications of EG devices*1	
				Assignment to EG devices	Access using a client
TN*3	Timer current value	Decimal	0 to 8993439	○	○
CN*3	Counter current value	Decimal	0 to 8993439	○	○
SN*3	Retentive timer current value	Decimal	0 to 8993439	○	○
D*3	Data register	Decimal	0 to 10117631	○	○
SD	Special register	Decimal	0 to 4095	○	○
W*3	Link register	Hexadecimal	000000 to 9A61FF	○	○
SW*3	Link special register	Hexadecimal	000000 to 9A61FF	○	○
R	File register	Decimal	0 to 32767	○	○
ER	Extension file register(Block)	Decimal	ER (R block)-(Device) Notation example: ER255-100 • R block (decimal): 1 to 255 • Device (decimal): 0 to 32767	○	○
ZR*3	Extension file register	Decimal	0 to 10027007	○	○
Z	Index register	Decimal	0 to 23	○	○ Not usable as bit data
G	Buffer memory (Intelligent function module)	Decimal	U(Unit No.)-G(Device) Notation example: UFF-G100 • Unit No.(hexadecimal): 00 to FF • Device (decimal): 0 to 268435455 For the module No., set the first 2 digits of the 3-digit number that represents the start I/O number of the buffer memory for the intelligent function module.	○	○
Ww	Remote register	Hexadecimal	0000 to 1FFF	○	○
Wr	Remote register	Hexadecimal	0000 to 1FFF	○	○
LW	Link register	Hexadecimal	00000 to 1FFFF	○	○
#	Motion device	Decimal	0 to 108287	○	○
U3E0*4	Multiple CPU high speed transmission memory	Decimal	0 to 12287	○	○
U3E1*4	Multiple CPU high speed transmission memory	Decimal	0 to 12287	○	○
U3E2*4	Multiple CPU high speed transmission memory	Decimal	0 to 12287	○	○
U3E3*4	Multiple CPU high speed transmission memory	Decimal	0 to 12287	○	○
SATN	Safety timer (current value)	Decimal	0 to 35487	×	×
SACN	Safety counter (current value)	Decimal	0 to 35487	×	×
SASN	Safety retentive timer (current value)	Decimal	0 to 35487	×	×
SAD	Safety data register	Decimal	0 to 39935	×	×
SASD	Safety special register	Decimal	0 to 4095	×	×

Device name		Device No. representation	Setting range	Specifications of EG devices*1	
				Assignment to EG devices	Access using a client
SAW	Safety link register	Hexadecimal	0000 to 9BFF	×	×
PA*2	Basic parameter	Decimal	☞ Page 1237 Setting virtual word devices for servo amplifiers ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])	×	×
PB*2	Gain filter parameter	Decimal	☞ Page 1237 Setting virtual word devices for servo amplifiers ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])	×	×
PC*2	Extension setting parameter	Decimal	☞ Page 1237 Setting virtual word devices for servo amplifiers ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])	×	×
PD*2	I/O setting parameter	Decimal	☞ Page 1237 Setting virtual word devices for servo amplifiers ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])	×	×
PO*2	Option unit parameter	Decimal	☞ Page 1237 Setting virtual word devices for servo amplifiers ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])	×	×
PS*2	Special parameter	Decimal	☞ Page 1237 Setting virtual word devices for servo amplifiers ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])	×	×
PU*2	Multi encoder parameter	Decimal	☞ Page 1237 Setting virtual word devices for servo amplifiers ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])	×	×
PT*2	Positioning control parameter	Decimal	☞ Page 1237 Setting virtual word devices for servo amplifiers ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])	×	×
PL*2*5	Motor extension parameter	Decimal	☞ Page 1237 Setting virtual word devices for servo amplifiers ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])	×	×
	Linear servo motor/DD motor setting parameter			×	×
PN*2	Network setting parameter	Decimal	☞ Page 1237 Setting virtual word devices for servo amplifiers ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])	×	×
PVS*2*6	Positioning extension parameter	Decimal	☞ Page 1237 Setting virtual word devices for servo amplifiers ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])	×	×
ST*2	Status display	Decimal	☞ Page 1237 Setting virtual word devices for servo amplifiers ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])	×	×
PE*2	Extension setting No.2 parameter	Decimal	☞ Page 1237 Setting virtual word devices for servo amplifiers ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])	×	×
PF*2	Extension setting No.3 parameter	Decimal	☞ Page 1237 Setting virtual word devices for servo amplifiers ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])	×	×
NPA*2	Network basic parameter	Decimal	☞ Page 1237 Setting virtual word devices for servo amplifiers ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])	×	×
PW*2	Extension setting No.4 parameter	Decimal	☞ Page 1237 Setting virtual word devices for servo amplifiers ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])	×	×
ALM*2	Alarm (current alarm J4A extend)	Decimal	☞ Page 1237 Setting virtual word devices for servo amplifiers ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])	×	×
	Alarm (alarm history J4A extend)	Decimal	☞ Page 1237 Setting virtual word devices for servo amplifiers ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])	×	×
	Alarm (alarm history J5G extend)	Decimal	☞ Page 1237 Setting virtual word devices for servo amplifiers ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])	×	×

Device name		Device No. representation	Setting range	Specifications of EG devices*1	
				Assignment to EG devices	Access using a client
POS*2	Point table (position)	Decimal	☞ Page 1237 Setting virtual word devices for servo amplifiers ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])	×	×
SPD*2	Point table (speed)	Decimal	☞ Page 1237 Setting virtual word devices for servo amplifiers ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])	×	×
ACT*2	Point table (acceleration time constant)	Decimal	☞ Page 1237 Setting virtual word devices for servo amplifiers ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])	×	×
DCT*2	Point table (deceleration time constant)	Decimal	☞ Page 1237 Setting virtual word devices for servo amplifiers ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])	×	×
DWL*2	Point table (dwell)	Decimal	☞ Page 1237 Setting virtual word devices for servo amplifiers ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])	×	×
AUX*2	Point table (auxiliary function)	Decimal	☞ Page 1237 Setting virtual word devices for servo amplifiers ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])	×	×
MCD*2	Point table (M code)	Decimal	☞ Page 1237 Setting virtual word devices for servo amplifiers ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])	×	×
MD*2	Machine diagnosis data	Decimal	☞ Page 1237 Setting virtual word devices for servo amplifiers ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])	×	×
GFDS*2	Gear failure diagnosis data	Decimal	☞ Page 1237 Setting virtual word devices for servo amplifiers ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])	×	×
ECCDS*2	Encoder communication circuit diagnosis data	Decimal	☞ Page 1237 Setting virtual word devices for servo amplifiers ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])	×	×
OTS*2	One-touch tuning data	Decimal	☞ Page 1237 Setting virtual word devices for servo amplifiers ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])	×	×
DI*2	External input signal	Decimal	☞ Page 1237 Setting virtual word devices for servo amplifiers ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])	×	×
DO*2	External output signal	Decimal	☞ Page 1237 Setting virtual word devices for servo amplifiers ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])	×	×
JnW	Link register (link direct)	Hexadecimal	J(Network No.n)-W(Device) Notation example: J1-W00000 • Network No.n (decimal): 1 to 239 • Device (hexadecimal): 00000 to 83FFF	○	○
JnSW	Link special register (link direct)	Hexadecimal	J(Network No.n)-SW(Device) Notation example: J1-SW000 • Network No.n (decimal): 1 to 239 • Device (hexadecimal): 000 to FFF	○	○
U3E0G	CPU buffer memory access device	Decimal	U3E0-G(Device) Notation example: U3E0-G100 • Device (decimal): 0 to 268435455	○	○
U3E1G	CPU buffer memory access device	Decimal	U3E1-G(Device) Notation example: U3E1-G100 • Device (decimal): 0 to 268435455	○	○
U3E2G	CPU buffer memory access device	Decimal	U3E2-G(Device) Notation example: U3E2-G100 • Device (decimal): 0 to 268435455	○	○
U3E3G	CPU buffer memory access device	Decimal	U3E3-G(Device) Notation example: U3E3-G100 • Device (decimal): 0 to 268435455	○	○
RD	Refresh data register	Decimal	0 to 1048575	○	○

*1 For the devices assigned to EG devices (gateway devices) and the compatible clients, refer to the following.
📖GT Designer3 (GOT3000) Screen Design Manual

*2 Virtual servo amplifier device
For details, refer to the following.
☞ Page 1249 Virtual servo amplifier devices ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])

*3 For the maximum number of devices when an extended SRAM cassette is installed, refer to the following.
📖MELSEC iQ-R CPU Module User's Manual (Application)

*4 For monitoring the multiple CPU high speed transmission memory, the CPU buffer memory access device (HG) for RCPU is monitored.
The CPU buffer memory access device (G) is not monitored.

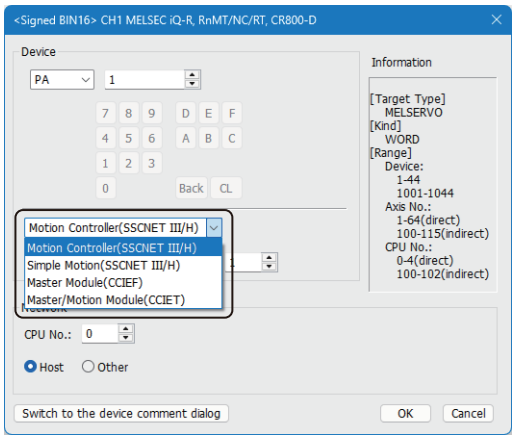
*5 The device name depends on the servo amplifier.
MR-J5-G(-RJ) or MR-J5W□-G: Motor extension setting parameter
Other than MR-J5-G(-RJ) or MR-J5W□-G: Linear servo motor/DD motor setting parameter

*6 PVS is a virtual device corresponding to the servo parameter (PV) of MR-J5-G(-RJ), MR-J5W□-G, and MR-JET-G.
Use the virtual device (PVS) to read/write data from/to the servo parameter (PV).

13.3.5 Setting virtual word devices for servo amplifiers ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])

For virtual servo amplifier devices, the notation differs according to the connection type between the GOT and the servo amplifier.

Select one of the following according to the control type in the device setting dialog.



Item	Description
[Motion Controller(SSCNET III/H)]	Select this item to connect the GOT through a Motion controller. The following item is displayed. • [Axis No.]: Set the axis number to be monitored.
[Simple Motion(SSCNET III/H)]	Select this item to connect the GOT through a Simple Motion module (RD77MS). The following items are displayed. • [Unit No.]: Set the first 2 digits of the 3-digit number that represents the start I/O number of the Simple Motion module. • [Axis No.]: Set the axis number to be monitored.
[Master Module(CCIEF)]	Select this item to connect the GOT through the master station on the CC-Link IE Field Network or a Simple Motion module (RD77GF).
[Master/Motion Module(CCIET)]	Select this item to connect the GOT through the master station on the CC-Link IE TSN and a Motion module (RD78G(H)). After the selection, set a device that enables axis designation to display the following item. • [Axis Designation]: Set the axis to be monitored.

The following shows the notation and setting range of virtual devices.

Device name	Device notation and setting range		Notation example
PA	[Motion Controller(SSCNET III/H)]	A(Axis No.)-PA(Device) • Axis No. (decimal): 1 to 64 (direct), 100 to 115 (indirect) • Device (decimal): 1 to 44, 1001 to 1044	A64-PA1
	[Simple Motion(SSCNET III/H)]	U(Unit No.)-A(Axis No.)-PA(Device) • Unit No. (hexadecimal): 00 to FF (direct), 100 to 10F (indirect) • Axis No. (decimal): 1 to 64 (direct), 100 to 115 (indirect) • Device (decimal): 1 to 44, 1001 to 1044	UFF-A64-PA1
	[Master Module(CCIEF)]	PA (Device) • Device (decimal): 1 to 44, 1001 to 1044	PA1
	[Master/Motion Module(CCIET)]	AA(Axis designation)-PA(Device) • Axis designation (decimal): 1 to 3 (direct), 100 to 115 (indirect) • Device (decimal): 1 to 44, 1001 to 1044	AA3-PA1

Device name	Device notation and setting range		Notation example
PB	[Motion Controller(SSCNET III/H)]	A(Axis No.)-PB(Device) • Axis No. (decimal): 1 to 64 (direct), 100 to 115 (indirect) • Device (decimal): 1 to 92, 1001 to 1092	A64-PB1
	[Simple Motion(SSCNET III/H)]	U(Unit No.)-A(Axis No.)-PB(Device) • Unit No. (hexadecimal): 00 to FF (direct), 100 to 10F (indirect) • Axis No. (decimal): 1 to 64 (direct), 100 to 115 (indirect) • Device (decimal): 1 to 92, 1001 to 1092	UFF-A64-PB1
	[Master Module(CCIEF)]	PB(Device) • Device (decimal): 1 to 92, 1001 to 1092	PB1
	[Master/Motion Module(CCIET)]	AA(Axis designation)-PB(Device) • Axis designation (decimal): 1 to 3 (direct), 100 to 115 (indirect) • Device (decimal): 1 to 92, 1001 to 1092	AA3-PB1
PC	[Motion Controller(SSCNET III/H)]	A(Axis No.)-PC(Device) • Axis No. (decimal): 1 to 64 (direct), 100 to 115 (indirect) • Device (decimal): 1 to 90, 1001 to 1090	A64-PC1
	[Simple Motion(SSCNET III/H)]	U(Unit No.)-A(Axis No.)-PC(Device) • Unit No. (hexadecimal): 00 to FF (direct), 100 to 10F (indirect) • Axis No. (decimal): 1 to 64 (direct), 100 to 115 (indirect) • Device (decimal): 1 to 90, 1001 to 1090	UFF-A64-PC1
	[Master Module(CCIEF)]	PC(Device) • Device (decimal): 1 to 90, 1001 to 1090	PC1
	[Master/Motion Module(CCIET)]	AA(Axis designation)-PC(Device) • Axis designation (decimal): 1 to 3 (direct), 100 to 115 (indirect) • Device (decimal): 1 to 90, 1001 to 1090	AA3-PC1
PD	[Motion Controller(SSCNET III/H)]	A(Axis No.)-PD(Device) • Axis No. (decimal): 1 to 64 (direct), 100 to 115 (indirect) • Device (decimal): 1 to 72, 1001 to 1072	A64-PD1
	[Simple Motion(SSCNET III/H)]	U(Unit No.)-A(Axis No.)-PD(Device) • Unit No. (hexadecimal): 00 to FF (direct), 100 to 10F (indirect) • Axis No. (decimal): 1 to 64 (direct), 100 to 115 (indirect) • Device (decimal): 1 to 72, 1001 to 1072	UFF-A64-PD1
	[Master Module(CCIEF)]	PD(Device) • Device (decimal): 1 to 72, 1001 to 1072	PD1
	[Master/Motion Module(CCIET)]	AA(Axis designation)-PD(Device) • Axis designation (decimal): 1 to 3 (direct), 100 to 115 (indirect) • Device (decimal): 1 to 72, 1001 to 1072	AA3-PD1
PO	[Motion Controller(SSCNET III/H)]	A(Axis No.)-PO(Device) • Axis No. (decimal): 1 to 64 (direct), 100 to 115 (indirect) • Device (decimal): 1 to 2, 1001 to 1002	A64-PO1
	[Simple Motion(SSCNET III/H)]	U(Unit No.)-A(Axis No.)-PO(Device) • Unit No. (hexadecimal): 00 to FF (direct), 100 to 10F (indirect) • Axis No. (decimal): 1 to 64 (direct), 100 to 115 (indirect) • Device (decimal): 1 to 2, 1001 to 1002	UFF-A64-PO1
	[Master/Motion Module(CCIET)]	AA(Axis designation)-PO(Device) • Axis designation (decimal): 1 to 3 (direct), 100 to 115 (indirect) • Device (decimal): 1 to 2, 1001 to 1002	AA3-PO1
PS	[Motion Controller(SSCNET III/H)]	A(Axis No.)-PS(Device) • Axis No. (decimal): 1 to 64 (direct), 100 to 115 (indirect) • Device (decimal): 1 to 99, 1001 to 1099	A64-PS1
	[Simple Motion(SSCNET III/H)]	U(Unit No.)-A(Axis No.)-PS(Device) • Unit No. (hexadecimal): 00 to FF (direct), 100 to 10F (indirect) • Axis No. (decimal): 1 to 64 (direct), 100 to 115 (indirect) • Device (decimal): 1 to 99, 1001 to 1099	UFF-A64-PS1
	[Master/Motion Module(CCIET)]	AA(Axis designation)-PS(Device) • Axis designation (decimal): 1 to 3 (direct), 100 to 115 (indirect) • Device (decimal): 1 to 99, 1001 to 1099	AA3-PS1

Device name	Device notation and setting range		Notation example
PU	[Motion Controller(SSCNET III/H)]	A(Axis No.)-PU(Device) • Axis No. (decimal): 1 to 64 (direct), 100 to 115 (indirect) • Device (decimal): 1 to 44, 1001 to 1044	A64-PU1
	[Simple Motion(SSCNET III/H)]	U(Unit No.)-A(Axis No.)-PU(Device) • Unit No. (hexadecimal): 00 to FF (direct), 100 to 10F (indirect) • Axis No. (decimal): 1 to 64 (direct), 100 to 115 (indirect) • Device (decimal): 1 to 44, 1001 to 1044	UFF-A64-PU1
	[Master/Motion Module(CCIET)]	AA(Axis designation)-PU(Device) • Axis designation (decimal): 1 to 3 (direct), 100 to 115 (indirect) • Device (decimal): 1 to 44, 1001 to 1044	AA3-PU1
PT	[Motion Controller(SSCNET III/H)]	A(Axis No.)-PT(Device) • Axis No. (decimal): 1 to 64 (direct), 100 to 115 (indirect) • Device (decimal): 1 to 90, 1001 to 1090	A64-PT1
	[Master Module(CCIEF)]	PT(Device) • Device (decimal): 1 to 90, 1001 to 1090	PT1
	[Master/Motion Module(CCIET)]	AA(Axis designation)-PT(Device) • Axis designation (decimal): 1 to 3 (direct), 100 to 115 (indirect) • Device (decimal): 1 to 90, 1001 to 1090	AA3-PT1
PL	[Motion Controller(SSCNET III/H)]	A(Axis No.)-PL(Device) • Axis No. (decimal): 1 to 64 (direct), 100 to 115 (indirect) • Device (decimal): 1 to 72, 1001 to 1072	A64-PL1
	[Simple Motion(SSCNET III/H)]	U(Unit No.)-A(Axis No.)-PL(Device) • Unit No. (hexadecimal): 00 to FF (direct), 100 to 10F (indirect) • Axis No. (decimal): 1 to 64 (direct), 100 to 115 (indirect) • Device (decimal): 1 to 72, 1001 to 1072	UFF-A64-PL1
	[Master Module(CCIEF)]	PL(Device) • Device (decimal): 1 to 72, 1001 to 1072	PL1
	[Master/Motion Module(CCIET)]	AA(Axis designation)-PL(Device) • Axis designation (decimal): 1 to 3 (direct), 100 to 115 (indirect) • Device (decimal): 1 to 72, 1001 to 1072	AA3-PL1
PN	[Master Module(CCIEF)]	PN(Device) • Device (decimal): 1 to 32, 1001 to 1032	PN1
	[Master/Motion Module(CCIET)]	AA(Axis designation)-PN(Device) • Axis designation (decimal): 1 to 3 (direct), 100 to 115 (indirect) • Device (decimal): 1 to 32, 1001 to 1032	AA3-PN1
PVS	[Master/Motion Module(CCIET)]	AA(Axis designation)-PVS(Device) • Axis designation (decimal): 1 to 3 (direct), 100 to 115 (indirect) • Device (decimal): 1 to 32, 1001 to 1032	AA3-PVS1
ST	[Motion Controller(SSCNET III/H)]	A(Axis No.)-ST(Device) • Axis No. (decimal): 1 to 64 (direct), 100 to 115 (indirect) • Device (decimal): 0 to 48	A64-ST0
	[Simple Motion(SSCNET III/H)]	U(Unit No.)-A(Axis No.)-ST(Device) • Unit No. (hexadecimal): 00 to FF (direct), 100 to 10F (indirect) • Axis No. (decimal): 1 to 64 (direct), 100 to 115 (indirect) • Device (decimal): 0 to 48	UFF-A64-ST0
	[Master Module(CCIEF)]	ST(Device) • Device (decimal): 0 to 48	ST0
	[Master/Motion Module(CCIET)]	AA(Axis designation)-ST(Device) • Axis designation (decimal): 1 to 3 (direct), 100 to 115 (indirect) • Device (decimal): 0 to 48	AA3-ST0
PE	[Motion Controller(SSCNET III/H)]	A(Axis No.)-PE(Device) • Axis No. (decimal): 1 to 64 (direct), 100 to 115 (indirect) • Device (decimal): 1 to 88, 1001 to 1088	A64-PE1
	[Simple Motion(SSCNET III/H)]	U(Unit No.)-A(Axis No.)-PE(Device) • Unit No. (hexadecimal): 00 to FF (direct), 100 to 10F (indirect) • Axis No. (decimal): 1 to 64 (direct), 100 to 115 (indirect) • Device (decimal): 1 to 88, 1001 to 1088	UFF-A64-PE1
	[Master Module(CCIEF)]	PE(Device) • Device (decimal): 1 to 88, 1001 to 1088	PE1
	[Master/Motion Module(CCIET)]	AA(Axis designation)-PE(Device) • Axis designation (decimal): 1 to 3 (direct), 100 to 115 (indirect) • Device (decimal): 1 to 88, 1001 to 1088	AA3-PE1

Device name	Device notation and setting range		Notation example
PF	[Motion Controller(SSCNET III/H)]	A(Axis No.)-PF(Device) • Axis No. (decimal): 1 to 64 (direct), 100 to 115 (indirect) • Device (decimal): 1 to 99, 1001 to 1099	A64-PF1
	[Simple Motion(SSCNET III/H)]	U(Unit No.)-A(Axis No.)-PF(Device) • Unit No. (hexadecimal): 00 to FF (direct), 100 to 10F (indirect) • Axis No. (decimal): 1 to 64 (direct), 100 to 115 (indirect) • Device (decimal): 1 to 99, 1001 to 1099	UFF-A64-PF1
	[Master Module(CCIEF)]	PF(Device) • Device (decimal): 1 to 99, 1001 to 1099	PF1
	[Master/Motion Module(CCIET)]	AA(Axis designation)-PF(Device) • Axis designation (decimal): 1 to 3 (direct), 100 to 115 (indirect) • Device (decimal): 1 to 99, 1001 to 1099	AA3-PF1
NPA	[Master/Motion Module(CCIET)]	NPA(Device) • Device (decimal): 1 to 12, 2001 to 2032	NPA1
PW	[Motion Controller(SSCNET III/H)]	A(Axis No.)-PT(Device) • Axis No. (decimal): 1 to 64 (direct), 100 to 115 (indirect) • Device (decimal): 1 to 90, 1001 to 1090	A3-PW1
ALM	[Motion Controller(SSCNET III/H)]	A(Axis No.)-ALM(Device) • Axis No. (decimal): 1 to 64 (direct), 100 to 115 (indirect) • Device (decimal): 0 to 2, 11 to 59, 200 to 215, 220 to 235, 240 to 255, 260 to 275, 280 to 295, 300 to 315	A64-ALM0
	[Simple Motion(SSCNET III/H)]	U(Unit No.)-A(Axis No.)-ALM(Device) • Unit No. (hexadecimal): 00 to FF (direct), 100 to 10F (indirect) • Axis No. (decimal): 1 to 64 (direct), 100 to 115 (indirect) • Device (decimal): 0 to 2, 11 to 59, 200 to 215, 220 to 235, 240 to 255, 260 to 275, 280 to 295, 300 to 315	UFF-A64-ALM0
	[Master Module(CCIEF)]	ALM(Device) • Device (decimal): 0 to 2, 11 to 59, 200 to 215, 220 to 235, 240 to 255, 260 to 275, 280 to 295, 300 to 315	ALM0
	[Master/Motion Module(CCIET)]	AA(Axis designation)-ALM(Device) • Axis designation (decimal): 1 to 3 (direct), 100 to 115 (indirect) • Device (decimal): 0 to 2, 11 to 59, 200 to 215, 220 to 235, 240 to 255, 260 to 275, 280 to 295, 300 to 315	AA3-ALM0
POS	[Master Module(CCIEF)]	POS(Device) • Device (decimal): 1 to 255, 1001 to 1255	POS1
	[Master/Motion Module(CCIET)]	AA(Axis designation)-POS(Device) • Axis designation (decimal): 1 to 3 (direct), 100 to 115 (indirect) • Device (decimal): 1 to 255, 1001 to 1255	AA3-POS1
SPD	[Master Module(CCIEF)]	SPD(Device) • Device (decimal): 1 to 255, 1001 to 1255	SPD1
	[Master/Motion Module(CCIET)]	AA(Axis designation)-SPD(Device) • Axis designation (decimal): 1 to 3 (direct), 100 to 115 (indirect) • Device (decimal): 1 to 255, 1001 to 1255	AA3-SPD1
ACT	[Master Module(CCIEF)]	ACT(Device) • Device (decimal): 1 to 255, 1001 to 1255	ACT1
	[Master/Motion Module(CCIET)]	AA(Axis designation)-ACT(Device) • Axis designation (decimal): 1 to 3 (direct), 100 to 115 (indirect) • Device (decimal): 1 to 255, 1001 to 1255	AA3-ACT1
DCT	[Master Module(CCIEF)]	DCT(Device) • Device (decimal): 1 to 255, 1001 to 1255	DCT1
	[Master/Motion Module(CCIET)]	AA(Axis designation)-DCT(Device) • Axis designation (decimal): 1 to 3 (direct), 100 to 115 (indirect) • Device (decimal): 1 to 255, 1001 to 1255	AA3-DCT1
DWL	[Master Module(CCIEF)]	DWL(Device) • Device (decimal): 1 to 255, 1001 to 1255	DWL1
	[Master/Motion Module(CCIET)]	AA(Axis designation)-DWL(Device) • Axis designation (decimal): 1 to 3 (direct), 100 to 115 (indirect) • Device (decimal): 1 to 255, 1001 to 1255	AA3-DWL1
AUX	[Master Module(CCIEF)]	AUX(Device) • Device (decimal): 1 to 255, 1001 to 1255	AUX1
	[Master/Motion Module(CCIET)]	AA(Axis designation)-AUX(Device) • Axis designation (decimal): 1 to 3 (direct), 100 to 115 (indirect) • Device (decimal): 1 to 255, 1001 to 1255	AA3-AUX1

Device name	Device notation and setting range		Notation example
MCD	[Master/Motion Module(CCIET)]	AA(Axis designation)-MCD(Device) • Axis designation (decimal): 1 to 3 (direct), 100 to 115 (indirect) • Device (decimal): 1 to 255, 1001 to 1255	AA3-MCD1
MD	[Motion Controller(SSCNET III/H)]	A(Axis No.)-MD(Device) • Axis No. (decimal): 1 to 64 (direct), 100 to 115 (indirect) • Device (decimal): 0 to 21	A64-MD0
	[Simple Motion(SSCNET III/H)]	U(Unit No.)-A(Axis No.)-MD(Device) • Unit No. (hexadecimal): 00 to FF (direct), 100 to 10F (indirect) • Axis No. (decimal): 1 to 64 (direct), 100 to 115 (indirect) • Device (decimal): 0 to 21	UFF-A64-MD0
	[Master Module(CCIEF)]	MD(Device) • Device (decimal): 0 to 21	MD0
	[Master/Motion Module(CCIET)]	AA(Axis designation)-MD(Device) • Axis designation (decimal): 1 to 3 (direct), 100 to 115 (indirect) • Device (decimal): 0 to 21	AA3-MD0
GFDS	[Motion Controller(SSCNET III/H)]	A(Axis No.)-GFDS(Device) • Axis No. (decimal): 1 to 64 (direct), 100 to 115 (indirect) • Device (decimal): 0 to 5	A64-GFDS0
	[Simple Motion(SSCNET III/H)]	U(Unit No.)-A(Axis No.)-GFDS(Device) • Unit No. (hexadecimal): 00 to FF (direct), 100 to 10F (indirect) • Axis No. (decimal): 1 to 64 (direct), 100 to 115 (indirect) • Device (decimal): 0 to 5	UFF-A64-GFDS0
	[Master/Motion Module(CCIET)]	AA(Axis designation)-GFDS(Device) • Axis designation (decimal): 1 to 3 (direct), 100 to 115 (indirect) • Device (decimal): 0 to 5	AA3-GFDS0
ECCDS	[Motion Controller(SSCNET III/H)]	A(Axis No.)-ECCDS(Device) • Axis No. (decimal): 1 to 64 (direct), 100 to 115 (indirect) • Device (decimal): 0 to 5	A64-ECCDS0
	[Simple Motion(SSCNET III/H)]	U(Unit No.)-A(Axis No.)-ECCDS(Device) • Unit No. (hexadecimal): 00 to FF (direct), 100 to 10F (indirect) • Axis No. (decimal): 1 to 64 (direct), 100 to 115 (indirect) • Device (decimal): 0 to 5	UFF-A64-ECCDS0
	[Master/Motion Module(CCIET)]	AA(Axis designation)-ECCDS(Device) • Axis designation (decimal): 1 to 3 (direct), 100 to 115 (indirect) • Device (decimal): 0 to 5	AA3-ECCDS0
OTS	[Motion Controller(SSCNET III/H)]	A(Axis No.)-OTS(Device) • Axis No. (decimal): 1 to 64 (direct), 100 to 115 (indirect) • Device (decimal): 0 to 5, 3000	A64-OTS0
	[Simple Motion(SSCNET III/H)]	U(Unit No.)-A(Axis No.)-OTS(Device) • Unit No. (hexadecimal): 00 to FF (direct), 100 to 10F (indirect) • Axis No. (decimal): 1 to 64 (direct), 100 to 115 (indirect) • Device (decimal): 0 to 5, 3000	UFF-A64-OTS0
	[Master Module(CCIEF)]	OTS(Device) • Device (decimal): 0 to 5, 3000	OTS0
	[Master/Motion Module(CCIET)]	AA(Axis designation)-OTS(Device) • Axis designation (decimal): 1 to 3 (direct), 100 to 115 (indirect) • Device (decimal): 0 to 5, 3000	AA3-OTS0
DI	[Motion Controller(SSCNET III/H)]	A(Axis No.)-DI(Device) • Axis No. (decimal): 1 to 64 (direct), 100 to 115 (indirect) • Device (decimal): 0 to 6	A64-DI0
	[Simple Motion(SSCNET III/H)]	U(Unit No.)-A(Axis No.)-DI(Device) • Unit No. (hexadecimal): 00 to FF (direct), 100 to 10F (indirect) • Axis No. (decimal): 1 to 64 (direct), 100 to 115 (indirect) • Device (decimal): 0 to 6	UFF-A64-DI0
	[Master Module(CCIEF)]	DI(Device) • Device (decimal): 0 to 6	DI0
	[Master/Motion Module(CCIET)]	AA(Axis designation)-DI(Device) • Axis designation (decimal): 1 to 3 (direct), 100 to 115 (indirect) • Device (decimal): 0 to 6	AA3-DI0

Device name	Device notation and setting range		Notation example
DO	[Motion Controller(SSCNET III/H)]	A(Axis No.)-DO(Device) • Axis No. (decimal): 1 to 64 (direct), 100 to 115 (indirect) • Device (decimal): 0 to 4	A64-DO0
	[Simple Motion(SSCNET III/H)]	U(Unit No.)-A(Axis No.)-DO(Device) • Unit No. (hexadecimal): 00 to FF (direct), 100 to 10F (indirect) • Axis No. (decimal): 1 to 64 (direct), 100 to 115 (indirect) • Device (decimal): 0 to 4	UFF-A64-DO0
	[Master Module(CCIEF)]	DO(Device) • Device (decimal): 0 to 4	DO0
	[Master/Motion Module(CCIET)]	AA(Axis designation)-DO(Device) • Axis designation (decimal): 1 to 3 (direct), 100 to 115 (indirect) • Device (decimal): 0 to 4	AA3-DO0

For indirect specification of a module number, axis number, or axis designation, refer to the following.

☞ Page 1229 Indirect specification of a module number ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])

☞ Page 1230 Indirect specification of an axis number or axis designation ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])

13.3.6 Availability of writing/reading data to/from word devices ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])

The following shows the availability of writing/reading data to/from word devices by device type.

R/W: Both read and write

R/-: Read only

-/W: Write only

-/-: No read/write access

Device name	Device type			
	Word (16 bits)	Double-word (32 bits)	Quad-word (64 bits)	Bit of word data
TN	R/W	R/W	-/-	-/-
CN	R/W	R/W	-/-	-/-
SN	R/W	R/W	-/-	-/-
D	R/W	R/W	R/W	R/W
SD	R/W	R/W	R/W	R/W
W	R/W	R/W	R/W	R/W
SW	R/W	R/W	-/-	R/W
R	R/W	R/W	R/W	R/W
ER	R/W	R/W	R/W	R/W
ZR	R/W	R/W	R/W	R/W
Z	R/W	R/W	-/-	-/-
G	R/W	R/W	R/W	R/W
Ww	R/W	R/W	R/W	R/W
Wr	R/W	R/W	R/W	R/W
LW	R/W	R/W	R/W	R/W
#	R/W	R/W	-/-	R/W
U3E0	R/W	R/W	R/W	R/W
U3E1	R/W	R/W	R/W	R/W
U3E2	R/W	R/W	R/W	R/W
U3E3	R/W	R/W	R/W	R/W
SATN	R/-	R/-	-/-	-/-
SACN	R/-	R/-	-/-	-/-
SASN	R/-	R/-	-/-	-/-
SAD	R/-	R/-	-/-	R/-
SASD	R/-	R/-	-/-	R/-
SAW	R/-	R/-	-/-	R/-
PA	R/W	R/W	-/-	-/-
PB	R/W	R/W	-/-	-/-
PC	R/W	R/W	-/-	-/-
PD	R/W	R/W	-/-	-/-
PO	R/W	R/W	-/-	-/-
PS	R/W	R/W	-/-	-/-
PU	R/W	R/W	-/-	-/-
PT	R/W	R/W	-/-	-/-
PL	R/W	R/W	-/-	-/-
PN	R/W	R/W	-/-	-/-
PVS	R/W	R/W	-/-	-/-
ST	R/-	R/-	-/-	-/-
PE	R/W	R/W	-/-	-/-
PF	R/W	R/W	-/-	-/-
NPA	R/W[*1]	R/W[*1]	-/-	-/-
PW	R/W	R/W	-/-	-/-
ALM	R/-	R/-	-/-	-/-

Device name	Device type			
	Word (16 bits)	Double-word (32 bits)	Quad-word (64 bits)	Bit of word data
POS	R/W	R/W	-/-	-/-
SPD	R/W	R/W	-/-	-/-
ACT	R/W	R/W	-/-	-/-
DCT	R/W	R/W	-/-	-/-
DWL	R/W	R/W	-/-	-/-
AUX	R/W	R/W	-/-	-/-
MCD	R/W	R/W	-/-	-/-
MD	R/-	R/-	-/-	-/-
GFDS	R/-	R/-	-/-	-/-
ECCDS	R/-	R/-	-/-	-/-
OTS	R/W*2	R/W*2	-/-	-/-
DI	R/-	R/W	-/-	-/-
DO	R/-	R/-	-/-	-/-
JnW	R/W	R/W	R/W	R/W
JnSW	R/W	R/W	-/-	R/W
U3E0G	R/W	R/W	R/W	R/W
U3E1G	R/W	R/W	R/W	R/W
U3E2G	R/W	R/W	R/W	R/W
U3E3G	R/W	R/W	R/W	R/W
RD	R/W	R/W	R/W	R/W

*1 Only reading is available for NPA1 and NPA2001 to NPA2032.
*2 Only reading is available for OTS0 to OTS5.

13.3.7 Monitoring-supported double-word devices ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])

The following table shows monitoring-supported double-word devices.

To check whether writing/reading data to/from each device is available, refer to the following.

☞ Page 1248 Availability of writing/reading data to/from double-word devices ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])

○: Available

×: Not available

Device name		Device No. representation	Setting range	Specifications of EG devices*1	
				Assignment to EG devices	Access using a client
LTN*4	Long timer current value	Decimal	0 to 2529407	×	×
LCN*4	Long counter current value	Decimal	0 to 4761215	×	×
LSN*4	Long retentive timer current value	Decimal	0 to 2529407	×	×
ZZ	Index register (32 bits)	Decimal	0 to 22	×	×
LZ	Index register (32 bits)	Decimal	0 to 11	×	×
ALD*2	Life diagnosis	Decimal	☞ Page 1246 Setting virtual double-word devices for servo amplifiers ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])	×	×
TMI*2	Input signal for test operation (for test operation)	Decimal	☞ Page 1246 Setting virtual double-word devices for servo amplifiers ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])	×	×
TMO*2	Forced output of signal pin (for test operation)	Decimal	☞ Page 1246 Setting virtual double-word devices for servo amplifiers ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])	×	×
TMD*2	Set data (for test operation)	Decimal	☞ Page 1246 Setting virtual double-word devices for servo amplifiers ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])	×	×
AL*3	Faults history	Decimal	0 to 899	×	×
LPr*3*5	Parameter (32-bit)	Decimal	0 to 1500	×	×
OP*3	Operation parameter	Decimal	0 to 5	×	×
PV*3	Current value monitor	Decimal	1 to 143	×	×

*1 For the devices assigned to EG devices (gateway devices) and the compatible clients, refer to the following.
📖GT Designer3 (GOT3000) Screen Design Manual

*2 Virtual servo amplifier device
For details, refer to the following.
☞ Page 1249 Virtual servo amplifier devices ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])

*3 Virtual inverter device
For details, refer to the following.
☞ Page 1303 Virtual inverter devices ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])

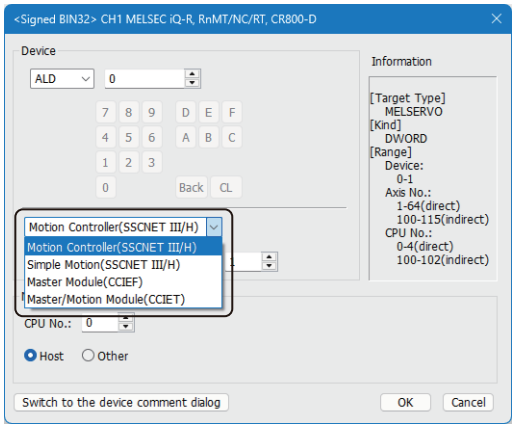
*4 For the maximum number of devices when an extended SRAM cassette is installed, refer to the following.
📖MELSEC iQ-R CPU Module User's Manual (Application)

*5 If you specify LPr900 to LPr935, the following item is displayed in the device setting dialog.
[Setting items (for calibration parameters)]: [Bias/gain value], [Analog input value]
Enclose the device number in parentheses when selecting [Analog input value].
Example 1) Notation when [Bias/gain value] is selected: LPr900
Example 2) Notation when [Analog input value] is selected: LPr(900)
When LPr900 or LPr901 (Calibration parameter) is specified, selecting [Bias/gain value] or [Analog input value] does not affect the monitoring target.

13.3.8 Setting virtual double-word devices for servo amplifiers ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])

For virtual servo amplifier devices, the notation differs according to the connection type between the GOT and the servo amplifier.

Select one of the following according to the control type in the device setting dialog.



Item	Description
[Motion Controller(SSCNET III/H)]	Select this item to connect the GOT through a Motion controller. The following item is displayed. • [Axis No.]: Set the axis number to be monitored.
[Simple Motion(SSCNET III/H)]	Select this item to connect the GOT through a Simple Motion module (RD77MS). The following items are displayed. • [Unit No.]: Set the first 2 digits of the 3-digit number that represents the start I/O number of the Simple Motion module. • [Axis No.]: Set the axis number to be monitored.
[Master Module(CCIEF)]	Select this item to connect the GOT through the master station on the CC-Link IE Field Network or a Simple Motion module (RD77GF).
[Master/Motion Module(CCIET)]	Select this item to connect the GOT through the master station on the CC-Link IE TSN and a Motion module (RD78G(H)). After the selection, set a device that enables axis designation to display the following item. • [Axis Designation]: Set the axis to be monitored.

The following shows the notation and setting range of virtual devices.

Device name	Device notation and setting range		Notation example
ALD	[Motion Controller(SSCNET III/H)]	A(Axis No.)-ALD(Device) • Axis No. (decimal): 1 to 64 (direct), 100 to 115 (indirect) • Device (decimal): 0 to 1	A64-ALD0
	[Simple Motion(SSCNET III/H)]	U(Unit No.)-A(Axis No.)-ALD(Device) • Unit No. (hexadecimal): 00 to FF (direct), 100 to 10F (indirect) • Axis No. (decimal): 1 to 64 (direct), 100 to 115 (indirect) • Device (decimal): 0 to 1	UFF-A64-ALD0
	[Master Module(CCIEF)]	ALD(Device) • Device (decimal): 0 to 1	ALD0
	[Master/Motion Module(CCIET)]	AA(Axis designation)-ALD(Device) • Axis designation (decimal): 1 to 3 (direct), 100 to 115 (indirect) • Device (decimal): 0 to 1	AA3-ALD0

Device name	Device notation and setting range		Notation example
TMI	[Motion Controller(SSCNET III/H)]	A(Axis No.)-TMI(Device) • Axis No. (decimal): 1 to 64 (direct), 100 to 115 (indirect) • Device (decimal): 0 to 2	A64-TMI0
	[Simple Motion(SSCNET III/H)]	U(Unit No.)-A(Axis No.)-TMI(Device) • Unit No. (hexadecimal): 00 to FF (direct), 100 to 10F (indirect) • Axis No. (decimal): 1 to 64 (direct), 100 to 115 (indirect) • Device (decimal): 0 to 2	UFF-A64-TMI0
	[Master Module(CCIEF)]	TMI(Device) • Device (decimal): 0 to 2	TMI0
	[Master/Motion Module(CCIET)]	AA(Axis designation)-TMI(Device) • Axis designation (decimal): 1 to 3 (direct), 100 to 115 (indirect) • Device (decimal): 0 to 2	AA3-TMI0
TMO	[Motion Controller(SSCNET III/H)]	A(Axis No.)-TMO(Device) • Axis No. (decimal): 1 to 64 (direct), 100 to 115 (indirect) • Device (decimal): 0	A64-TMO0
	[Simple Motion(SSCNET III/H)]	U(Unit No.)-A(Axis No.)-TMO(Device) • Unit No. (hexadecimal): 00 to FF (direct), 100 to 10F (indirect) • Axis No. (decimal): 1 to 64 (direct), 100 to 115 (indirect) • Device (decimal): 0	UFF-A64-TMO0
	[Master Module(CCIEF)]	TMO(Device) • Device (decimal): 0	TMO0
	[Master/Motion Module(CCIET)]	AA(Axis designation)-TMO(Device) • Axis designation (decimal): 1 to 3 (direct), 100 to 115 (indirect) • Device (decimal): 0	AA3-TMO0
TMD	[Motion Controller(SSCNET III/H)]	A(Axis No.)-TMD(Device) • Axis No. (decimal): 1 to 64 (direct), 100 to 115 (indirect) • Device (decimal): 0 to 1, 3	A64-TMD0
	[Simple Motion(SSCNET III/H)]	U(Unit No.)-A(Axis No.)-TMD(Device) • Unit No. (hexadecimal): 00 to FF (direct), 100 to 10F (indirect) • Axis No. (decimal): 1 to 64 (direct), 100 to 115 (indirect) • Device (decimal): 0 to 1, 3	UFF-A64-TMD0
	[Master Module(CCIEF)]	TMD(Device) • Device (decimal): 0 to 1, 3	TMD0
	[Master/Motion Module(CCIET)]	AA(Axis designation)-TMD(Device) • Axis designation (decimal): 1 to 3 (direct), 100 to 115 (indirect) • Device (decimal): 0 to 1, 3	AA3-TMD0

For indirect specification of a module number, axis number, or axis designation, refer to the following.

☞ Page 1229 Indirect specification of a module number ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])

☞ Page 1230 Indirect specification of an axis number or axis designation ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])

13.3.9 Availability of writing/reading data to/from double-word devices ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])

The following shows the availability of writing/reading data to/from double-word devices by device type.

R/W: Both read and write

R/-: Read only

-/W: Write only

-/-: No read/write access

Device name	Device type			
	Word (16 bits)	Double-word (32 bits)	Quad-word (64 bits)	Bit of double-word data
LTN	-/-	R/W	-/-	-/-
LCN	-/-	R/W	-/-	-/-
LSN	-/-	R/W	-/-	-/-
ZZ	-/-	R/W	-/-	-/-
LZ	-/-	R/W	-/-	-/-
ALD	-/-	R/-	-/-	-/-
TMI	-/-	-/W	-/-	-/-
TMO	-/-	-/W	-/-	-/-
TMD	-/-	-/W	-/-	-/-
AL	-/-	R/-	-/-	-/-
LPr	-/-	R/W	-/-	-/-
OP	-/-	R/W	-/-	-/-
PV	-/-	R/-	-/-	-/-

13.3.10 Virtual servo amplifier devices ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])

The following shows the correspondence between the virtual devices used in the GOT and the servo amplifier data.

Virtual device name	Reference
SP	☞ Page 1250 Servo amplifier request (MELSEC iQ-R, RnMT/NC/RT, CR800-D])
OM	☞ Page 1251 Operation mode selection ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])
TMB	☞ Page 1251 Instruction demand (for test operation) ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])
OTI	☞ Page 1252 One-touch tuning instruction ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])
GFDI	☞ Page 1252 Gear failure diagnosis instruction ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])
ECCDI	☞ Page 1253 Encoder communication circuit diagnosis instruction ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])
PA	☞ Page 1253 Basic parameter ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])
PB	☞ Page 1255 Gain filter parameter ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])
PC	☞ Page 1258 Extension setting parameter ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])
PD	☞ Page 1261 I/O setting parameter ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])
PO	☞ Page 1262 Option unit parameter ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])
PS	☞ Page 1263 Special parameter ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])
PU	☞ Page 1263 Multi encoder parameter ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])
PT	☞ Page 1264 Positioning control parameter, pressure control parameter ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])
PL	☞ Page 1267 Motor extension parameter, linear servo motor/DD motor setting parameter ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])
PN	☞ Page 1268 Network setting parameter ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])
PVS	☞ Page 1269 Positioning extension parameter ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])
ST	☞ Page 1271 Status display ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])
PE	☞ Page 1273 Extension setting No.2 parameter ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])
PF	☞ Page 1275 Extension setting No.3 parameter ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])
NPA	☞ Page 1278 Network basic parameter ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])
PW	☞ Page 1279 Extension setting No.4 parameter ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])
ALM	☞ Page 1281 Alarm [MELSEC iQ-R, RnMT/NC/RT, CR800-D])
	☞ Page 1288 Specifications of ALM260 to ALM275, ALM280 to ALM295, and ALM300 to ALM315 ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])
POS	☞ Page 1289 Point table (position) ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])
SPD	☞ Page 1289 Point table (speed) ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])
ACT	☞ Page 1289 Point table (acceleration time constant) ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])
DCT	☞ Page 1290 Point table (deceleration time constant) ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])
DWL	☞ Page 1290 Point table (dwell) ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])
AUX	☞ Page 1291 Point table (auxiliary function) ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])
MCD	☞ Page 1291 Point table (M code) ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])
MD	☞ Page 1292 Machine diagnosis data ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])
GFDS	☞ Page 1293 Gear failure diagnosis data ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])
ECCDS	☞ Page 1294 Encoder communication circuit diagnosis data ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])
OTS	☞ Page 1294 One-touch tuning data ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])
DI	☞ Page 1295 External input signal in MR-J5-G(-RJ) and MR-J5W□-G ([MELSEC iQ-R, RnMT/NC/RT, CR800-D]) ☞ Page 1296 External input signal in MR-J5D□-G ([MELSEC iQ-R, RnMT/NC/RT, CR800-D]) ☞ Page 1296 External input signal in MR-J5(W)-□B(-RJ) ([MELSEC iQ-R, RnMT/NC/RT, CR800-D]) ☞ Page 1297 External input signal in MR-JET-G ([MELSEC iQ-R, RnMT/NC/RT, CR800-D]) ☞ Page 1297 External input signal in MR-JE-B and MR-JE-BF ([MELSEC iQ-R, RnMT/NC/RT, CR800-D]) ☞ Page 1297 External input signal in MR-J4-GF(-RJ) ([MELSEC iQ-R, RnMT/NC/RT, CR800-D]) ☞ Page 1298 External input signal in MR-J4(W)-□B-RJ ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])
DO	☞ Page 1298 External output signal in MR-J5-G(-RJ) and MR-J5W□-G ([MELSEC iQ-R, RnMT/NC/RT, CR800-D]) ☞ Page 1299 External output signal in MR-J5D□-G ([MELSEC iQ-R, RnMT/NC/RT, CR800-D]) ☞ Page 1299 External output signal in MR-J5(W)-□B(-RJ) ([MELSEC iQ-R, RnMT/NC/RT, CR800-D]) ☞ Page 1299 External output signal in MR-JET-G ([MELSEC iQ-R, RnMT/NC/RT, CR800-D]) ☞ Page 1299 External output signal in MR-JE-B and MR-JE-BF ([MELSEC iQ-R, RnMT/NC/RT, CR800-D]) ☞ Page 1300 External output signal in MR-J4-GF(-RJ) ([MELSEC iQ-R, RnMT/NC/RT, CR800-D]) ☞ Page 1300 External output signal in MR-J4(W)-□B-RJ ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])

Virtual device name	Reference
ALD	☞ Page 1300 Life Diagnosis ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])
TMI	☞ Page 1300 Input signal for test operation (for test operation) ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])
TMO	☞ Page 1301 Forced output of signal pin (for test operation) ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])
TMD	☞ Page 1301 Set data (for test operation) ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])

The lists of virtual devices shown in this section explain some servo amplifier models using the following abbreviations.

Series	Abbreviation	Model
MELSERVO-J4 series	J4(W)-□B(-RJ)	MR-J4(W)-□B(-RJ)
	J4-GF(-RJ)	MR-J4-GF(-RJ)
	J4-□B-LL	MR-J4-□B-LL
MELSERVO-JE series	JE-□B	MR-JE-□B
	JE-□BF	MR-JE-□BF
MELSERVO-J5 series	J5-G(-RJ)	MR-J5-G(-RJ)
	J5W□-G	MR-J5W□-G
	J5D□-G	MR-J5D□-G
	J5-□B(-RJ)	MR-J5-□B(-RJ)
	J5-□B-LL	MR-J5-□B-LL

Servo amplifier request (MELSEC iQ-R, RnMT/NC/RT, CR800-D])

○: Available

—: Not available

Virtual device name	Name	Symbol	MR-J4			MR-JE		MR-J5				MR-JET-G
			J4(W)-□B(-RJ)	J4-GF(-RJ)	J4-□B-LL	JE-□B	JE-□BF	J5-G(-RJ) J5W□-G	J5D□-G	J5-□B(-RJ)	J5-□B-LL	
SP0	Status display data clear	—	○	○	○	○	○	○	○	○	○	○
SP1	Current alarm clear	—	○	○	○	○	○	○	○	○	○	○
SP2	Alarm history clear	—	○	○	○	○	○	○	○	○	○	○
SP3	External input signal prohibited	—	○	○	○	○	○	○	○	○	○	○
SP4	External output signal prohibited	—	○	○	○	○	○	○	○	○	○	○
SP5	External input signal resumed	—	○	○	○	○	○	○	○	○	○	○
SP6	External output signal resumed	—	○	○	○	○	○	○	○	○	○	○

When using the servo amplifier request, note the following.

Precautions	Description
When setting a device for a bit switch	Do not select [Alternate] for [Switch Action] of the bit switch.

Operation mode selection ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])

○: Available

—: Not available

Virtual device name	Name	Symbol	MR-J4			MR-JE		MR-J5				MR-JET-G
			J4(W)-□B(-RJ)	J4-GF(-RJ)	J4-□B-LL	JE-□B	JE-□BF	J5-G(-RJ) J5W□-G	J5D□-G	J5-□B(-RJ)	J5-□B-LL	
OM0	Normal mode (not test operation mode)	—	○	○	○	○	○	—	—	—	—	—
	Cancel test operation mode		—	—	—	—	—	○	○	○	○	○
OM1	JOG operation	—	○	○	○	○	○	○	○	○	○	○
OM2	Positioning operation	—	○	○	○	○	○	○	○	○	○	○
OM3	For manufacturer setting	—	—	—	—	—	—	—	—	—	—	—
OM4	Output signal (DO) forced output	—	○	○	○	○	○	○	○	○	○	○
OM5	Single-step feed operation	—	—	○	—	—	—	○	○	○	○	○
OM6	For manufacturer setting	—	—	—	—	—	—	—	—	—	—	—

When using the operation mode selection, note the following.

Precautions	Description
When setting a device for a bit switch	Do not select [Alternate] for [Switch Action] of the bit switch.

Instruction demand (for test operation) ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])

○: Available

—: Not available

Virtual device name	Name	Symbol	MR-J4			MR-JE		MR-J5				MR-JET-G
			J4(W)-□B(-RJ)	J4-GF(-RJ)	J4-□B-LL	JE-□B	JE-□BF	J5-G(-RJ) J5W□-G	J5D□-G	J5-□B(-RJ)	J5-□B-LL	
TMB1	Temporary stop command	—	○	○	○	○	○	—	—	—	—	—
	Pause		—	—	—	—	—	○	○	○	○	○
TMB2	Test operation (positioning operation) start command	—	○	○	○	○	○	○	○	○	○	○
TMB3	Forward rotation direction	—	○	○	○	○	○	○	○	○	○	○
TMB4	Reverse rotation direction	—	○	○	○	○	○	○	○	○	○	○
TMB5	Restart for remaining distance	—	○	○	○	○	○	○	○	○	○	○
TMB6	Remaining distance clear	—	○	○	○	○	○	○	○	○	○	○

When using the instruction demand (for test operation), note the following.

Precautions	Description
When setting a device for a bit switch	Do not select [Alternate] for [Switch Action] of the bit switch.

One-touch tuning instruction ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])

○: Available

—: Not available

Virtual device name	Name	Symbol	MR-J4			MR-JE		MR-J5				MR-JET-G
			J4(W)-□B(-RJ)	J4-GF(-RJ)	J4-□B-LL	JE-□B	JE-□BF	J5-G(-RJ) J5W□-G	J5D□-G	J5-□B(-RJ)	J5-□B-LL	
OTI0	One-touch tuning start command (Basic mode)	—	○	○	○	○	○	○	○	○	○	○
OTI1	One-touch tuning start command (High mode)	—	○	○	○	○	○	○	○	○	○	○
OTI2	One-touch tuning start command (Low mode)	—	○	○	○	○	○	○	○	○	○	○
OTI3	One-touch tuning stop command	—	○	○	○	○	○	○	○	○	○	○
OTI4	Return to initial value	—	○	○	○	○	○	○	○	○	○	○
OTI5	Return to value before adjustment	—	○	○	○	○	○	○	○	○	○	○

When using the one-touch tuning instruction, note the following.

Precautions	Description
When setting a device for a bit switch	Do not select [Alternate] for [Switch Action] of the bit switch.

Gear failure diagnosis instruction ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])

○: Available

—: Not available

Virtual device name	Name	Symbol	MR-J4			MR-JE		MR-J5				MR-JET-G
			J4(W)-□B(-RJ)	J4-GF(-RJ)	J4-□B-LL	JE-□B	JE-□BF	J5-G(-RJ) J5W□-G	J5D□-G	J5-□B(-RJ)	J5-□B-LL	
GFDI0	Backlash estimation start command	—	—	—	—	—	—	○	○	○	○	—
GFDI1	Backlash estimation stop command	—	—	—	—	—	—	○	○	○	○	—

When using the gear failure diagnosis instruction, note the following.

Precautions	Description
When setting a device for a bit switch	Do not select [Alternate] for [Switch Action] of the bit switch.

Encoder communication circuit diagnosis instruction ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])

○: Available

—: Not available

Virtual device name	Name	Symbol	MR-J4			MR-JE		MR-J5				MR-JET-G
			J4(W)-□B(-RJ)	J4-GF(-RJ)	J4-□B-LL	JE-□B	JE-□BF	J5-G(-RJ) J5W□-G	J5D□-G	J5-□B(-RJ)	J5-□B-LL	
ECCDI0	CN2 encoder communication circuit diagnosis start command	—	—	—	—	—	—	○	○	○	○	○
ECCDI1	CN2L encoder communication circuit diagnosis start command	—	—	—	—	—	—	○	○	○	○	○

When using the encoder communication circuit diagnosis instruction, note the following.

Precautions	Description
When setting a device for a bit switch	Do not select [Alternate] for [Switch Action] of the bit switch.

Basic parameter ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])

Use an appropriate device according to the write destination of the servo amplifier.

- PA1 to PA44: Writing data to the RAM of a servo amplifier
- PA1001 to PA1044: Writing data to the FlashROM or EEPROM of a servo amplifier

For the parameters prefixed by an asterisk (*), setting becomes effective when the power is turned off once and back on after setting the parameter data.

○: Available

—: Not available

Virtual device name	Name	Symbol	MR-J4			MR-JE		MR-J5				MR-JET-G
			J4(W)-□B(-RJ)	J4-GF(-RJ)	J4-□B-LL	JE-□B	JE-□BF	J5-G(-RJ) J5W□-G	J5D□-G	J5-□B(-RJ)	J5-□B-LL	
PA1, PA1001	Operation mode	**STY	○	○	—	—	—	○	○	○	○	—
PA2, PA1002	Regenerative brake option	**REG	○	○	○	○	○	○	○	○	○	○
PA3, PA1003	Absolute position detection system	*ABS	○	○	○	○	○	○	○	○	○	○
PA4, PA1004	Function selection A-1	*AOP1	○	○	○	○	○	○	○	○	○	○
PA5, PA1005	For manufacturer setting	—	—	—	—	—	—	—	—	—	—	—
PA6, PA1006	Electronic gear numerator	*CMX	—	○	—	—	—	○	○	○	○	○
PA7, PA1007	Electronic gear denominator	*CDV	—	○	—	—	—	○	○	○	○	○
PA8, PA1008	Auto tuning mode	ATU	○	○	○	○	○	○	○	○	○	○
PA9, PA1009	Auto tuning response	RSP	○	○	○	○	○	○	○	○	○	○
PA10, PA1010	In-position range	INP	○	○	○	○	○	○	○	○	○	○
PA11, PA1011	Forward rotation torque limit/ positive direction thrust limit	TLP	—	○	—	—	—	○	○	—	—	—
	Forward rotation torque limit		—	—	—	—	—	—	—	—	—	○
PA12, PA1012	Reverse rotation torque limit/ negative direction thrust limit	TLN	—	○	—	—	—	○	○	—	—	—
	Reverse rotation torque limit		—	—	—	—	—	—	—	—	—	○

Virtual device name	Name	Symbol	MR-J4			MR-JE		MR-J5				MR-JET-G
			J4(W)-□B(-RJ)	J4-GF(-RJ)	J4-□B-LL	JE-□B	JE-□BF	J5-G(-RJ) J5W□-G	J5D□-G	J5-□B(-RJ)	J5-□B-LL	
PA13, PA1013	For manufacturer setting	—	—	—	—	—	—	—	—	—	—	—
PA14, PA1014	Rotation direction selection/travel direction selection	*POL	○	○	○	○	○	○	○	○	○	—
	Moving direction selection		—	—	—	—	—	—	—	—	—	○
PA15, PA1015	Encoder output pulse	*ENR	○	○	—	—	—	○	○	○	○	—
PA16, PA1016	Encoder output pulse 2	*ENR2	○	○	—	—	—	○	○	○	○	—
PA17, PA1017	Servo motor series setting	**MSR	○	○	—	—	—	○	○	○	○	—
PA18, PA1018	Servo motor type setting	**MTY	○	○	—	—	—	○	○	○	○	—
PA19, PA1019	Parameter block	*BLK	○	○	○	○	○	○	○	—	—	○
PA20, PA1020	Tough drive setting	*TDS	○	○	○	○	○	○	○	○	○	○
PA21, PA1021	Function selection A-3	*AOP3	○	○	○	○	○	○	○	○	○	○
PA22, PA1022	Position control composition selection	**PCS	○	○	—	—	—	○	○	○	○	○
PA23, PA1023	Drive recorder arbitrary alarm trigger setting	DRAT	○	○	○	○	○	○	○	○	○	○
PA24, PA1024	Function selection A-4	AOP4	○	○	○	○	○	○	○	○	○	○
PA25, PA1025	One-touch tuning - Overshoot permissible level	OTHOV	○	○	○	○	○	○	○	○	○	○
PA26, PA1026	Function selection A-5	*AOP5	○	○	○	○	○	○	○	○	○	○
PA27, PA1027	Hot-line forced stop function	*HTL	—	—	—	○	○	—	—	—	—	—
PA28, PA1028	Function selection A-6	**AOP6	—	—	—	—	—	○	○	○	○	○
PA29 to PA33, PA1029 to PA1033	For manufacturer setting	—	—	—	—	—	—	—	—	—	—	—
PA34, PA1034	Quick tuning permissible travel distance	QDIS	—	—	—	—	—	○	○	○	○	○
PA35 to PA44, PA1035 to PA1044	For manufacturer setting	—	—	—	—	—	—	—	—	—	—	—

Gain filter parameter ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])

Use an appropriate device according to the write destination of the servo amplifier.

- PB1 to PB92: Writing data to the RAM of a servo amplifier
- PB1001 to PB1092: Writing data to the FlashROM or EEPROM of a servo amplifier

For the parameters prefixed by an asterisk (*), setting becomes effective when the power is turned off once and back on after setting the parameter data.

○: Available

—: Not available

Virtual device name	Name	Symbol	MR-J4			MR-JE		MR-J5				MR-JET-G
			J4(W)-□B(-RJ)	J4-GF(-RJ)	J4-□B-LL	JE-□B	JE-□BF	J5-G(-RJ) J5W□-G	J5D□-G	J5-□B(-RJ)	J5-□B-LL	
PB1, PB1001	Adaptive tuning mode (Adaptive filter II)	FILT	○	○	○	○	○	○	○	○	○	○
PB2, PB1002	Vib. supp. ctrl tuning mode (Adv. vib. supp. ctrl II)	VRFT	○	○	○	○	○	○	○	○	○	○
PB3, PB1003	Torque feedback loop gain	TFBGN	○	—	—	○	○	○	○	○	○	—
PB4, PB1004	Feed forward gain	FFC	○	○	○	○	○	○	○	○	○	○
PB5, PB1005	For manufacturer setting	—	—	—	—	—	—	—	—	—	—	—
PB6, PB1006	Load inertia moment ratio/Load mass ratio	GD2	○	○	○	○	○	○	○	○	○	○
PB7, PB1007	Model loop gain	PG1	○	○	○	○	○	○	○	○	○	○
PB8, PB1008	Position loop gain	PG2	○	○	○	○	○	○	○	○	○	○
PB9, PB1009	Speed loop gain	VG2	○	○	○	○	○	○	○	○	○	○
PB10, PB1010	Speed integral compensation	VIC	○	○	○	○	○	○	○	○	○	○
PB11, PB1011	Speed differential compensation	VDC	○	○	○	○	○	○	○	○	○	○
PB12, PB1012	Overshoot amount compensation	OVA	○	○	○	○	○	○	○	○	○	○
PB13, PB1013	Machine resonance suppression filter 1	NH1	○	○	○	○	○	○	○	○	○	○
PB14, PB1014	Notch shape selection 1	NHQ1	○	○	○	○	○	○	○	○	○	○
PB15, PB1015	Machine resonance suppression filter 2	NH2	○	○	○	○	○	○	○	○	○	○
PB16, PB1016	Notch shape selection 2	NHQ2	○	○	○	○	○	○	○	○	○	○
PB17, PB1017	Shaft resonance suppression filter	NHF	○	○	○	○	○	○	○	○	○	○
PB18, PB1018	Low-pass filter setting	LPF	○	○	○	○	○	○	○	○	○	○
PB19, PB1019	Vibration suppression control 1 - Vibration frequency	VRF11	○	○	○	○	○	○	○	○	○	○
PB20, PB1020	Vibration suppression control 1 - Resonance freq.	VRF12	○	○	○	○	○	○	○	○	○	○
PB21, PB1021	Vib. supp. ctrl. 1 - Vibration frequency damping	VRF13	○	○	○	○	○	○	○	○	○	○
PB22, PB1022	Vib. supp. ctrl. 1 - Resonance frequency damping	VRF14	○	○	○	○	○	○	○	○	○	○
PB23, PB1023	Low-pass filter selection	VFBF	○	○	○	○	○	○	○	○	○	○

Virtual device name	Name	Symbol	MR-J4			MR-JE		MR-J5				MR-JET-G
			J4(W)-□B(-RJ)	J4-GF(-RJ)	J4-□B-LL	JE-□B	JE-□BF	J5-G(-RJ) J5W□-G	J5D□-G	J5-□B(-RJ)	J5-□B-LL	
PB24, PB1024	Slight vibration suppression control	*MVS	○	○	○	○	○	○	○	○	○	○
PB25, PB1025	Function selection B-1	*BOP1	○	○	○	○	○	○	○	○	○	○
PB26, PB1026	Gain changing function	*CDP	○	○	○	○	○	○	○	○	○	○
PB27, PB1027	Gain changing condition	CDL	○	○	○	○	○	○	○	○	○	○
PB28, PB1028	Gain changing time constant	CDT	○	○	○	○	○	○	○	○	○	○
PB29, PB1029	Gain changing - Load in. mom. rat./Load mass rat.	GD2B	○	○	○	○	○	○	○	○	○	○
PB30, PB1030	Gain changing position loop gain	PG2B	○	○	○	○	○	○	○	○	○	○
PB31, PB1031	Gain changing speed loop gain	VG2B	○	○	○	○	○	○	○	○	○	○
PB32, PB1032	Gain changing speed integral compensation	VICB	○	○	○	○	○	○	○	○	○	○
PB33, PB1033	Vib. supp. ctrl. 1 - Vib. frq. after gain changing	VRF11B	○	○	○	○	○	○	○	○	○	○
PB34, PB1034	Vib. supp. ctrl. 1 - Res. frq. after gain changing	VRF12B	○	○	○	○	○	○	○	○	○	○
PB35, PB1035	Vib. supp. ctrl. 1 - Vib. frq. damping after gain chng	VRF13B	○	○	○	○	○	○	○	○	○	○
PB36, PB1036	Vib. supp. ctrl. 1 - Res. frq. damping after gain chng	VRF14B	○	○	○	○	○	○	○	○	○	○
PB37 to PB44, PB1037 to PB1044	For manufacturer setting	—	—	—	—	—	—	—	—	—	—	—
PB45, PB1045	Command notch filter	CNHF	○	○	○	○	○	○	○	○	○	○
PB46, PB1046	Machine resonance suppression filter 3	NH3	○	○	○	○	○	○	○	○	○	○
PB47, PB1047	Notch shape selection 3	NHQ3	○	○	○	○	○	○	○	○	○	○
PB48, PB1048	Machine resonance suppression filter 4	NH4	○	○	○	○	○	○	○	○	○	○
PB49, PB1049	Notch shape selection 4	NHQ4	○	○	○	○	○	○	○	○	○	○
PB50, PB1050	Machine resonance suppression filter 5	NH5	○	○	○	○	○	○	○	○	○	○
PB51, PB1051	Notch shape selection 5	NHQ5	○	○	○	○	○	○	○	○	○	○
PB52, PB1052	Vibration suppression control 2 - Vibration frequency	VRF21	○	○	○	○	○	○	○	○	○	○
PB53, PB1053	Vibration suppression control 2 - Resonance freq.	VRF22	○	○	○	○	○	○	○	○	○	○
PB54, PB1054	Vib. supp. ctrl. 2 - Vibration frequency damping	VRF23	○	○	○	○	○	○	○	○	○	○
PB55, PB1055	Vib. supp. ctrl. 2 - Resonance frequency damping	VRF24	○	○	○	○	○	○	○	○	○	○
PB56, PB1056	Vib. supp. ctrl. 2 - Vib. frq. after gain changing	VRF21B	○	○	○	○	○	○	○	○	○	○
PB57, PB1057	Vib. supp. ctrl. 2 - Res. frq. after gain changing	VRF22B	○	○	○	○	○	○	○	○	○	○
PB58, PB1058	Vib. supp. ctrl. 2 - Vib. frq. damping after gain chng	VRF23B	○	○	○	○	○	○	○	○	○	○

Virtual device name	Name	Symbol	MR-J4			MR-JE		MR-J5				MR-JET-G
			J4(W)-□B(-RJ)	J4-GF(-RJ)	J4-□B-LL	JE-□B	JE-□BF	J5-G(-RJ) J5W□-G	J5D□-G	J5-□B(-RJ)	J5-□B-LL	
PB59, PB1059	Vib. supp. ctrl. 2 - Res. frq. damping after gain chng	VRF24B	○	○	○	○	○	○	○	○	○	○
PB60, PB1060	Gain changing model loop gain	PG1B	○	○	○	○	○	○	○	○	○	○
PB61 to PB64, PB1061 to PB1064	For manufacturer setting	—	—	—	—	—	—	—	—	—	—	—
PB65, PB1065	Gain changing 2 condition	CDL2	—	—	—	—	—	○	○	○	○	○
PB66, PB1066	Gain changing 2 time constant	CDT2	—	—	—	—	—	○	○	○	○	○
PB67, PB1067	Gain changing 2 - Load in. mom. rat./Load mass rat.	GD2C	—	—	—	—	—	○	○	○	○	○
PB68, PB1068	Gain changing 2 position loop gain	PG2C	—	—	—	—	—	○	○	○	○	○
PB69, PB1069	Gain changing 2 speed loop gain	VG2C	—	—	—	—	—	○	○	○	○	○
PB70, PB1070	Gain changing 2 speed integral compensation	VICC	—	—	—	—	—	○	○	○	○	○
PB71, PB1071	Vib. supp. ctrl. 1 - Vib. frq. after gain changing 2	VRF11C	—	—	—	—	—	○	○	○	○	○
PB72, PB1072	Vib. supp. ctrl. 1 - Res. frq. after gain changing 2	VRF12C	—	—	—	—	—	○	○	○	○	○
PB73, PB1073	Vib. supp. ctrl. 1 - Vib. frq. damping aft. gain chng2	VRF13C	—	—	—	—	—	○	○	○	○	○
PB74, PB1074	Vib. supp. ctrl. 1 - Res. frq. damping aft. gain chng2	VRF14C	—	—	—	—	—	○	○	○	○	○
PB75, PB1075	Vib. supp. ctrl. 2 - Vib. frq. after gain changing 2	VRF21C	—	—	—	—	—	○	○	○	○	○
PB76, PB1076	Vib. supp. ctrl. 2 - Res. frq. after gain changing 2	VRF22C	—	—	—	—	—	○	○	○	○	○
PB77, PB1077	Vib. supp. ctrl. 2 - Vib. frq. damping aft. gain chng2	VRF23C	—	—	—	—	—	○	○	○	○	○
PB78, PB1078	Vib. supp. ctrl. 2 - Res. frq. damping aft. gain chng2	VRF24C	—	—	—	—	—	○	○	○	○	○
PB79, PB1079	Gain changing 2 model loop gain	PG1C	—	—	—	—	—	○	○	○	○	○
PB80, PB1080	For manufacturer setting	—	—	—	—	—	—	—	—	—	—	—
PB81, PB1081	Command filter	*CFIL	—	—	—	—	—	○	○	○	○	○
PB82, PB1082	Position command smoothing filter time constant	PFT	—	—	—	—	—	○	○	○	○	○
PB83 to PB92, PB1083 to PB1092	For manufacturer setting	—	—	—	—	—	—	—	—	—	—	—

Extension setting parameter ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])

Use an appropriate device according to the write destination of the servo amplifier.

- PC1 to PC90: Writing data to the RAM of a servo amplifier
- PC1001 to PC1090: Writing data to the FlashROM or EEPROM of a servo amplifier

For the parameters prefixed by an asterisk (*), setting becomes effective when the power is turned off once and back on after setting the parameter data.

○: Available

—: Not available

Virtual device name	Name	Symbol	MR-J4			MR-JE		MR-J5				MR-JET-G
			J4(W)-□B(-RJ)	J4-GF(-RJ)	J4-□B-LL	JE-□B	JE-□BF	J5-G(-RJ) J5W□-G	J5D□-G	J5-□B(-RJ)	J5-□B-LL	
PC1, PC1001	Error excessive alarm level	ERZ	○	○	○	○	○	○	○	○	○	○
PC2, PC1002	Electromagnetic brake sequence output	MBR	○	○	○	○	○	○	○	○	○	○
PC3, PC1003	Encoder output pulse selection	*ENRS	○	○	—	—	—	○	○	○	○	—
PC4, PC1004	Function selection C-1	**COP1	○	○	○	○	○	○	○	○	○	○
PC5, PC1005	Function selection C-2	**COP2	○	○	○	○	○	○	○	○	○	○
PC6, PC1006	Function selection C-3	*COP3	○	○	○	○	○	○	○	○	○	○
PC7, PC1007	Zero speed	ZSP	○	○	○	○	○	○	○	○	○	○
PC8, PC1008	Overspeed alarm detection level	OSL	○	○	○	○	○	○	○	○	○	○
PC9, PC1009	Analog monitor 1 output	MOD1	○	○	○	—	—	○	○	○	○	—
PC10, PC1010	Analog monitor 2 output	MOD2	○	○	○	—	—	○	○	○	○	—
PC11, PC1011	Analog monitor 1 offset	MO1	○	○	○	—	—	○	○	○	○	—
PC12, PC1012	Analog monitor 2 offset	MO2	○	○	○	—	—	○	○	○	○	—
PC13, PC1013	Analog monitor - Feedback position output standard data - Low	MOSDL	○	—	—	—	—	—	—	—	—	—
PC14, PC1014	Analog monitor - Feedback position output standard data - High	MOSDH	○	—	—	—	—	—	—	—	—	—
PC15, PC1015	For manufacturer setting	—	—	—	—	—	—	—	—	—	—	—
PC16, PC1016	Function selection C-3A	*COP3A	—	—	—	—	—	○	○	—	—	—
PC17, PC1017	Function selection C-4	**COP4	○	○	○	○	○	○	○	○	○	—
PC18, PC1018	Function selection C-5	*COP5	○	○	○	○	○	○	—	○	○	—
PC19, PC1019	Function selection C-6	*COP6	—	○	—	—	—	○	○	○	○	○
PC20, PC1020	Function selection C-7	*COP7	○	○	○	○	○	○	○	○	○	○
PC21, PC1021	Alarm history clear	*BPS	○	○	○	○	○	○	○	○	○	○

Virtual device name	Name	Symbol	MR-J4			MR-JE		MR-J5				MR-JET-G
			J4(W)-□B(-RJ)	J4-GF(-RJ)	J4-□B-LL	JE-□B	JE-□BF	J5-G(-RJ) J5W□-G	J5D□-G	J5-□B(-RJ)	J5-□B-LL	
PC22 to PC23, PC1022 to PC1023	For manufacturer setting	—	—	—	—	—	—	—	—	—	—	—
PC24, PC1024	Forced stop deceleration time constant	RSBR	○	○	○	○	○	○	○	○	○	○
PC25, PC1025	For manufacturer setting	—	—	—	—	—	—	—	—	—	—	—
PC26, PC1026	Function selection C-8	**COP8	○	○	—	—	—	○	○	○	○	—
PC27, PC1027	Function selection C-9	**COP9	○	○	—	—	—	○	○	○	○	○
PC28, PC1028	For manufacturer setting	—	—	—	—	—	—	—	—	—	—	—
PC29, PC1029	Function selection C-B	*COPB	○	○	—	○	○	○	○	○	○	○
PC30, PC1030	For manufacturer setting	—	—	—	—	—	—	—	—	—	—	—
PC31, PC1031	Vertical ax.freefall prevention compensation amount	RSUP1	○	○	○	○	○	○	○	○	○	○
PC32 to PC36, PC1032 to PC1036	For manufacturer setting	—	—	—	—	—	—	—	—	—	—	—
PC37, PC1037	Function selection C-D	**COPD	—	—	—	—	—	—	—	—	—	—
PC38, PC1038	Error excessive warning level	ERW	○	○	○	○	○	○	○	○	○	○
PC39, PC1039	Collision detection level 1	TLW1	—	—	—	—	—	—	—	—	—	—
PC40, PC1040	Collision detection level 2	TLW2	—	—	—	—	—	—	—	—	—	—
PC41, PC1041	Function selection C-J	*COPJ	—	—	—	—	—	—	○	—	—	—
PC42 to PC44, PC1042 to PC1044	For manufacturer setting	—	—	—	—	—	—	—	—	—	—	—
PC45, PC1045	Drive unit function selection 1	*DUOP1	—	—	—	—	—	—	—	—	—	—
PC46, PC1046	Drive unit function selection 2	*DUOP2	—	—	—	—	—	—	○	—	—	—
PC47 to PC64, PC1047 to PC1064	For manufacturer setting	—	—	—	—	—	—	—	—	—	—	—
PC65, PC1065	Zero speed 2 level	ZSP2L	—	—	—	—	—	○	○	—	—	—
PC66, PC1066	Zero speed 2 filter time	ZSP2F	—	—	—	—	—	○	○	—	—	—
PC67, PC1067	Following error output level	FEWL	—	○	—	—	—	—	—	—	—	—
		FEW	—	—	—	—	—	○	○	—	—	○
PC68, PC1068	Following error output level	FEWH	—	○	—	—	—	○	—	—	—	—
PC69, PC1069	Following error output filter time	FEWF	—	○	—	—	—	○	○	—	—	○
PC70, PC1070	In-position 2 output range	INP2R	—	—	—	—	—	○	○	—	—	—

Virtual device name	Name	Symbol	MR-J4			MR-JE		MR-J5				MR-JET-G
			J4(W)-□B(-RJ)	J4-GF(-RJ)	J4-□B-LL	JE-□B	JE-□BF	J5-G(-RJ) J5W□-G	J5D□-G	J5-□B(-RJ)	J5-□B-LL	
PC71, PC1071	In-position 2 output filter time	INP2F	—	—	—	—	—	○	○	—	—	—
PC72, PC1072	Speed reached 2 output range	SA2R	—	—	—	—	—	○	○	—	—	—
PC73, PC1073	Speed reached 2 output filter time	SA2F	—	—	—	—	—	○	○	—	—	—
PC74 to PC75, PC1074 to PC1075	For manufacturer setting	—	—	—	—	—	—	—	—	—	—	—
PC76, PC1076	Function selection C-E	*COPE	—	○	—	—	—	○	○	—	—	○
PC77, PC1077	Internal torque limit 2	TL2	—	—	—	—	—	—	—	—	—	—
PC78, PC1078	Function selection C-F	*COPF	—	—	—	—	—	○	○	—	—	○
PC79, PC1079	Function selection C-G	*COPG	—	—	—	—	—	○	○	—	—	○
PC80, PC1080	For manufacturer setting	—	—	—	—	—	—	—	—	—	—	—
PC81, PC1081	Function selection C-H	**COPH	—	—	—	—	—	○	—	—	—	—
PC82 to PC90, PC1082 to PC1090	For manufacturer setting	—	—	—	—	—	—	—	—	—	—	—

I/O setting parameter ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])

Use an appropriate device according to the write destination of the servo amplifier.

- PD1 to PD72: Writing data to the RAM of a servo amplifier
- PD1001 to PD1072: Writing data to the FlashROM or EEPROM of a servo amplifier

For the parameters prefixed by an asterisk (*), setting becomes effective when the power is turned off once and back on after setting the parameter data.

○: Available

—: Not available

Virtual device name	Name	Symbol	MR-J4			MR-JE		MR-J5				MR-JET-G
			J4(W)-□B(-RJ)	J4-GF(-RJ)	J4-□B-LL	JE-□B	JE-□BF	J5-G(-RJ) J5W□-G	J5D□-G	J5-□B(-RJ)	J5-□B-LL	
PD1, PD1001	Input signal automatic on selection 1	*DIA1	—	○	—	—	—	○	○	—	—	○
PD2, PD1002	Input signal automatic on selection 2	*DIA2	○	—	○	—	○	—	—	○	○	—
PD3, PD1003	Input device selection 1	*DI1	—	○	—	—	○	○	○	—	—	○
PD4, PD1004	Input device selection 2	*DI2	—	○	—	—	○	○	○	—	—	○
PD5, PD1005	Input device selection 3	*DI3	—	○	—	—	○	○	○	—	—	○
PD6, PD1006	For manufacturer setting	—	—	—	—	—	—	—	—	—	—	—
PD7, PD1007	Output device selection 1	*DO1	○	○	○	○	○	○	○	○	○	○
PD8, PD1008	Output device selection 2	*DO2	○	○	○	—	○	○	○	○	○	○
PD9, PD1009	Output device selection 3	*DO3	○	○	—	—	○	○	○	○	○	○
PD10, PD1010	For manufacturer setting	—	—	—	—	—	—	—	—	—	—	—
PD11, PD1011	Input filter setting	*DIF	○	○	—	○	○	○	○	○	○	○
PD12, PD1012	Function selection D-1	*DOP1	○	○	—	○	○	○	○	○	○	○
PD13, PD1013	Function selection D-2	*DOP2	○	○	—	○	○	○	○	○	○	○
PD14, PD1014	Function selection D-3	*DOP3	○	○	○	○	○	○	○	○	○	○
PD15, PD1015	Driver communication setting	*IDCS	○	—	—	—	—	—	—	○	○	—
PD16, PD1016	Driver communication setting - Master - Transmit data selection 1	*MD1	○	—	—	—	—	—	—	○	○	—
PD17, PD1017	Driver communication setting - Master - Transmit data selection 2	*MD2	○	—	—	—	—	—	—	○	○	—
PD18 and PD19, PD1018 and PD1019	For manufacturer setting	—	—	—	—	—	—	—	—	—	—	—
PD20, PD1020	Driver communication setting - Slave - Master axis No. selection 1	*SLA1	○	—	—	—	—	—	—	○	○	—
PD21 to PD29, PD1021 to PD1029	For manufacturer setting	—	—	—	—	—	—	—	—	—	—	—

Virtual device name	Name	Symbol	MR-J4			MR-JE		MR-J5				MR-JET-G
			J4(W)-□B(-RJ)	J4-GF(-RJ)	J4-□B-LL	JE-□B	JE-□BF	J5-G(-RJ) J5W□-G	J5D□-G	J5-□B(-RJ)	J5-□B-LL	
PD30, PD1030	Master-slave operation - Torque command coefficient on slave	TLC	○	—	—	—	—	—	—	—	—	—
		TLS	—	—	—	—	—	—	—	○	○	—
PD31, PD1031	Master-slave operation - Speed limit coefficient on slave	VLC	○	—	—	—	—	—	—	○	○	—
PD32, PD1032	Master-slave operation - Speed limit adjusted value on slave	VLL	○	—	—	—	—	—	—	○	○	—
PD33 to PD36, PD1033 to PD1036	For manufacturer setting	—	—	—	—	—	—	—	—	—	—	—
PD37, PD1037	Touch probe function selection	*TPOP	—	○	—	—	—	○	—	—	—	—
PD38, PD1038	Input device selection 4	*DI4	—	—	—	—	—	○	○	—	—	—
PD39, PD1039	Input device selection 5	*DI5	—	—	—	—	—	○	○	—	—	—
PD40, PD1040	For manufacturer setting	—	—	—	—	—	—	—	—	—	—	—
PD41, PD1041	Function selection D-4	*DOP4	—	○	—	—	—	○	○	—	—	○
PD42 to PD50, PD1042 to PD1050	For manufacturer setting	—	—	—	—	—	—	—	—	—	—	—
PD51, PD1051	Input device selection 3-2	*DI3W2	—	—	—	—	—	○	○	—	—	—
PD52 to PD59, PD1052 to PD1059	For manufacturer setting	—	—	—	—	—	—	—	—	—	—	—
PD60, PD1060	DI pin polarity selection	*DIP	—	—	—	—	—	○	○	—	—	○
PD61 to PD72, PD1061 to PD1072	For manufacturer setting	—	—	—	—	—	—	—	—	—	—	—

Option unit parameter ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])

Use an appropriate device according to the write destination of the servo amplifier.

- PO1 to PO2: Writing data to the RAM of a servo amplifier
- PO1001 to PO1002: Writing data to the FlashROM or EEPROM of a servo amplifier

○: Available

—: Not available

Virtual device name	Name	Symbol	MR-J4			MR-JE		MR-J5				MR-JET-G
			J4(W)-□B(-RJ)	J4-GF(-RJ)	J4-□B-LL	JE-□B	JE-□BF	J5-G(-RJ) J5W□-G	J5D□-G	J5-□B(-RJ)	J5-□B-LL	
PO1 to PO2, PO1001 to PO1002	For manufacturer setting	—	—	—	—	—	—	—	—	—	—	—

Special parameter ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])

Use an appropriate device according to the write destination of the servo amplifier.

- PS1 to PS99: Writing data to the RAM of a servo amplifier
- PS1001 to PS1099: Writing data to the FlashROM or EEPROM of a servo amplifier

○: Available

—: Not available

Virtual device name	Name	Symbol	MR-J4			MR-JE		MR-J5				MR-JET-G
			J4(W)-□B(-RJ)	J4-GF(-RJ)	J4-□B-LL	JE-□B	JE-□BF	J5-G(-RJ) J5W□-G	J5D□-G	J5-□B(-RJ)	J5-□B-LL	
PS1 to PS99, PS1001 to PS1099	For manufacturer setting	—	—	—	—	—	—	—	—	—	—	—

Multi encoder parameter ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])

Use an appropriate device according to the write destination of the servo amplifier.

- PU1 to PU44: Writing data to the RAM of a servo amplifier
- PU1001 to PU1044: Writing data to the FlashROM or EEPROM of a servo amplifier

○: Available

—: Not available

Virtual device name	Name	Symbol	MR-J4			MR-JE		MR-J5				MR-JET-G
			J4(W)-□B(-RJ)	J4-GF(-RJ)	J4-□B-LL	JE-□B	JE-□BF	J5-G(-RJ) J5W□-G	J5D□-G	J5-□B(-RJ)	J5-□B-LL	
PU1 to PU44, PU1001 to PU1044	For manufacturer setting	—	—	—	—	—	—	—	—	—	—	—

Positioning control parameter, pressure control parameter ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])

Use an appropriate device according to the write destination of the servo amplifier.

- PT1 to PT90: Writing data to the RAM of a servo amplifier
- PT1001 to PT1090: Writing data to the FlashROM or EEPROM of a servo amplifier

For the parameters prefixed by an asterisk (*), setting becomes effective when the power is turned off once and back on after setting the parameter data.

○: Available

—: Not available

Virtual device name	Name	Symbol	MR-J4			MR-JE		MR-J5				MR-JET-G
			J4(W)-□B(-RJ)	J4-GF(-RJ)	J4-□B-LL	JE-□B	JE-□BF	J5-G(-RJ) J5W□-G	J5D□-G	J5-□B(-RJ)	J5-□B-LL	
PT1, PT1001	Command mode selection	**CTY	—	○	—	—	—	○	○	—	—	○
	Pressure control gain	APA	—	—	○	—	—	—	—	—	—	—
PT2, PT1002	Function selection T-1	*TOP1	—	—	—	—	—	—	○	—	—	—
	Pressure integral compensation	AIA	—	—	○	—	—	—	—	—	—	—
PT3, PT1003	Feeding function selection	*FTY	—	○	—	—	—	○	—	—	—	—
	Pressure incomplete integral coefficient	ADA	—	—	○	—	—	—	—	—	—	—
PT4, PT1004	For manufacturer setting	—	—	—	—	—	—	—	—	—	—	—
PT5, PT1005	Home position return speed	ZRF	—	○	—	—	—	○	○	—	—	○
PT6, PT1006	Creep speed	CRF	—	○	—	—	—	○	○	—	—	○
PT7, PT1007	Home position shift distance	ZST	—	○	—	—	—	○	○	—	—	○
PT8, PT1008	Home position return position data	ZPS	—	—	—	—	—	○	○	—	—	○
PT9, PT1009	Moving distance after proximity dog	DCT	—	○	—	—	—	○	○	—	—	○
PT10, PT1010	Stopper type home position return stopper time	ZTM	—	○	—	—	—	○	○	—	—	○
PT11, PT1011	Stopper type home position return torque limit value	ZTT	—	○	—	—	—	○	○	—	—	○
PT12, PT1012	Rough match output range	CRP	—	○	—	—	—	○	○	—	—	—
	Function selection T-1	*TOP1	—	—	○	—	—	—	—	—	—	—
PT13, PT1013	Function selection T-2	*TOP2	—	—	○	—	—	—	—	—	—	—
PT14, PT1014	Function selection T-3	*TOP3	—	—	○	—	—	—	—	—	—	—
PT15, PT1015	Software limit +	LMPL	—	○	—	—	—	—	—	—	—	—
	Software position limit+	LMP	—	—	—	—	—	○	○	—	—	○
PT16, PT1016	Software limit +	LMPH	—	○	—	—	—	—	—	—	—	—
PT17, PT1017	Software limit -	LMNL	—	○	—	—	—	—	—	—	—	—
	Software position limit-	LMN	—	—	—	—	—	○	○	—	—	○
PT18, PT1018	Software limit -	LMNH	—	○	—	—	—	—	—	—	—	—
PT19, PT1019	Position range output address +	*LPPL	—	○	—	—	—	—	—	—	—	—
	Position range output 1 address+	*LPP1	—	—	—	—	—	○	○	—	—	—
PT20, PT1020	Position range output address +	*LPPH	—	○	—	—	—	—	—	—	—	—

Virtual device name	Name	Symbol	MR-J4			MR-JE		MR-J5				MR-JET-G
			J4(W)-□B(-RJ)	J4-GF(-RJ)	J4-□B-LL	JE-□B	JE-□BF	J5-G(-RJ) J5W□-G	J5D□-G	J5-□B(-RJ)	J5-□B-LL	
PT21, PT1021	Position range output address -	*LNPL	—	○	—	—	—	—	—	—	—	—
	Position range output 1 address-	*LNP1	—	—	—	—	—	○	○	—	—	—
	Pressure control feedback offset	AFBO	—	—	○	—	—	—	—	—	—	—
PT22, PT1022	Position range output address -	*LNPH	—	○	—	—	—	—	—	—	—	—
	Pressure control feedback unit constant	AFBD	—	—	○	—	—	—	—	—	—	—
PT23, PT1023	Analog monitor input 1 offset	AO1	—	—	○	—	—	—	—	—	—	—
PT24, PT1024	Analog monitor input 1 unit constant	AD1	—	—	○	—	—	—	—	—	—	—
PT25, PT1025	Analog monitor input 2 offset	AO2	—	—	○	—	—	—	—	—	—	—
PT26, PT1026	Analog monitor input 2 unit constant	AD2	—	—	○	—	—	—	—	—	—	—
PT27, PT1027	Analog monitor input filter setting	ADF	—	—	○	—	—	—	—	—	—	—
PT28, PT1028	For manufacturer setting	—	—	—	—	—	—	—	—	—	—	—
PT29, PT1029	Function selection T-3	*TOP3	—	○	—	—	—	○	○	—	—	○
PT30 to PT33, PT1030 to PT1033	For manufacturer setting	—	—	—	—	—	—	—	—	—	—	—
PT34, PT1034	Point table default	*PDEF	—	○	—	—	—	○	—	—	—	—
	Positioning operation data default	*PDEF	—	—	—	—	—	—	○	—	—	—
PT35 to PT37, PT1035 to PT1037	For manufacturer setting	—	—	—	—	—	—	—	—	—	—	—
PT38, PT1038	Function selection T-7	*TOP7	—	—	—	—	—	—	○	—	—	—
PT39 to PT40, PT1039 to PT1040	For manufacturer setting	—	—	—	—	—	—	—	—	—	—	—
PT41, PT1041	Home position return inhibit selection	ORP	—	○	—	—	—	○	—	—	—	—
	Function selection T-8	TOP8	—	—	—	—	—	—	○	—	—	○
PT42 to PT44, PT1042 to PT1044	For manufacturer setting	—	—	—	—	—	—	—	—	—	—	—
PT45, PT1045	Home position return method	HMM	—	○	—	—	—	○	○	—	—	○
PT46 to PT48, PT1046 to PT1048	For manufacturer setting	—	—	—	—	—	—	—	—	—	—	—
PT49, PT1049	Acceleration time constant	STA	—	○	—	—	—	○	○	—	—	—
PT50, PT1050	Deceleration time constant	STB	—	○	—	—	—	○	○	—	—	—
PT51, PT1051	S-pattern acceleration/ deceleration time constant	STC	—	○	—	—	—	○	○	—	—	—
PT52, PT1052	For manufacturer setting	—	—	—	—	—	—	—	—	—	—	—

Virtual device name	Name	Symbol	MR-J4			MR-JE		MR-J5				MR-JET-G
			J4(W)-□B(-RJ)	J4-GF(-RJ)	J4-□B-LL	JE-□B	JE-□BF	J5-G(-RJ) J5W□-G	J5D□-G	J5-□B(-RJ)	J5-□B-LL	
PT53, PT1053	Torque slope	TQS	—	—	—	—	—	○	○	—	—	—
PT54, PT1054	For manufacturer setting	—	—	—	—	—	—	—	—	—	—	—
PT55, PT1055	Function selection T-8	*TOP8	—	○	—	—	—	○	—	—	—	—
	Function selection T-10	*TOP10	—	—	—	—	—	—	○	—	—	○
PT56, PT1056	Home position return acceleration time constant	HMA	—	○	—	—	—	○	○	—	—	○
PT57, PT1057	Home position return deceleration time constant	HMB	—	○	—	—	—	○	○	—	—	○
PT58 to PT61, PT1058 to PT1061	For manufacturer setting	—	—	—	—	—	—	—	—	—	—	—
PT62, PT1062	Remote register-based position/speed specifying method selection	*DSS	—	○	—	—	—	○	—	—	—	—
PT63 to PT64, PT1063 to PT1064	For manufacturer setting	—	—	—	—	—	—	—	—	—	—	—
PT65, PT1065	Jog speed command	PVC	—	○	—	—	—	○	—	—	—	—
	Profile speed command		—	—	—	—	—	—	○	—	—	—
PT66, PT1066	Maximum profile speed	MPVC	—	—	—	—	—	○	○	—	—	—
PT67, PT1067	Speed limit	VLMT	—	○	—	—	—	○	○	—	—	○
PT68, PT1068	Function selection T-11	TOP11	—	—	—	—	—	—	○	—	—	○
PT69, PT1069	Home position shift distance (extension parameter)	ZSTH	—	○	—	—	—	○	—	—	—	—
PT70, PT1070	For manufacturer setting	—	—	—	—	—	—	—	—	—	—	—
PT71, PT1071	Travel distance after proximity dog (extension parameter)	DCTH	—	○	—	—	—	○	—	—	—	—
PT72 to PT90, PT1072 to PT1090	For manufacturer setting	—	—	—	—	—	—	—	—	—	—	—

Motor extension parameter, linear servo motor/DD motor setting parameter ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])

Use an appropriate device according to the write destination of the servo amplifier.

- PL1 to PL72: Writing data to the RAM of a servo amplifier
- PL1001 to PL1072: Writing data to the FlashROM or EEPROM of a servo amplifier

For the parameters prefixed by an asterisk (*), setting becomes effective when the power is turned off once and back on after setting the parameter data.

○: Available

—: Not available

Virtual device name	Name	Symbol	MR-J4			MR-JE		MR-J5				MR-JET-G
			J4(W)-□B(-RJ)	J4-GF(-RJ)	J4-□B-LL	JE-□B	JE-□BF	J5-G(-RJ) J5W□-G	J5D□-G	J5-□B(-RJ)	J5-□B-LL	
PL1, PL1001	Linear servo motor/DD motor function selection 1	**LIT1	○	○	—	—	—	○	—	—	—	—
	Function selection L-1		—	—	—	—	—	—	○	○	—	—
PL2, PL1002	Linear encoder resolution - Numerator	**LIM	○	○	—	—	—	○	○	○	—	—
PL3, PL1003	Linear encoder resolution setting Denominator	**LID	○	○	—	—	—	○	○	○	—	—
PL4, PL1004	Linear servo motor/DD motor function selection 2	*LIT2	○	○	—	—	—	○	—	—	—	—
	Function selection L-2		—	—	—	—	—	—	○	○	—	—
PL5, PL1005	Position deviation error detection level	LB1	○	○	—	—	—	○	○	○	—	—
PL6, PL1006	Speed deviation error detection level	LB2	○	○	—	—	—	○	○	○	—	—
PL7, PL1007	Torque/thrust deviation error detection level	LB3	○	○	—	—	—	—	—	○	—	—
	Torque deviation error detection level		—	—	—	—	—	○	○	—	—	—
PL8, PL1008	Linear servo motor/DD motor function selection 3	*LIT3	○	○	—	—	—	○	—	—	—	—
	Function selection L-3		—	—	—	—	—	—	○	○	—	—
PL9, PL1009	Magnetic pole detection voltage level	LPWM	○	○	—	—	—	○	○	○	—	—
PL10 to PL16, PL1010 to PL1016	For manufacturer setting	—	—	—	—	—	—	—	—	—	—	—
PL17, PL1017	Magnetic pole detection - Minute position detection method - Function selection	LTSTS	○	○	—	—	—	○	○	○	—	—
PL18, PL1018	Magnetic pole detection - Minute position detection method - Identification signal amplitude	IDLV	○	○	—	—	—	○	○	○	—	—
PL19 to PL72, PL1019 to PL1072	For manufacturer setting	—	—	—	—	—	—	—	—	—	—	—

Network setting parameter ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])

Use an appropriate device according to the write destination of the servo amplifier.

- PN1 to PN32: Writing data to the RAM of a servo amplifier
- PN1001 to PN1032: Writing data to the FlashROM or EEPROM of a servo amplifier

For the parameters prefixed by an asterisk (*), setting becomes effective when the power is turned off once and back on after setting the parameter data.

○: Available

—: Not available

Virtual device name	Name	Symbol	MR-J4			MR-JE		MR-J5				MR-JET-G
			J4(W)-□B(-RJ)	J4-GF(-RJ)	J4-□B-LL	JE-□B	JE-□BF	J5-G(-RJ) J5W□-G	J5D□-G	J5-□B(-RJ)	J5-□B-LL	
PN1, PN1001	For manufacturer setting	—	—	—	—	—	—	—	—	—	—	—
PN2, PN1002	Communication error detection time	CERT	—	○	—	—	—	○	○	—	—	○
PN3, PN1003	Communication mode setting for CC-Link IE communication	**NEMD	—	○	—	—	—	○	—	—	—	—
PN4, PN1004	CC-Link IE communication network number	**NENO	—	○	—	—	—	○	—	—	—	—
PN5, PN1005	Communication error detection frequency setting	CERI	—	○	—	—	—	○	○	—	—	○
PN6, PN1006	Function selection N-1	NOP1	—	○	—	—	—	○	—	—	—	—
PN7 to PN12, PN1007 to PN1012	For manufacturer setting	—	—	—	—	—	—	—	—	—	—	—
PN13, PN1013	Network protocol setup	NPS	—	—	—	—	—	—	○	—	—	—
PN14 to PN19, PN1014 to PN1019	For manufacturer setting	—	—	—	—	—	—	—	—	—	—	—
PN20, PN1020	Automatic parameter backup update interval	**PABI	—	—	—	—	—	—	○	—	—	○
PN21, PN1021	For manufacturer setting	—	—	—	—	—	—	—	—	—	—	—
PN22, PN1022	Function selection N-5	NOP5	—	—	—	—	—	—	○	—	—	—
PN23 to PN32, PN1023 to PN1032	For manufacturer setting	—	—	—	—	—	—	—	—	—	—	—

Positioning extension parameter ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])

Use an appropriate device according to the write destination of the servo amplifier.

- PVS1 to PVS32: Writing data to the RAM of a servo amplifier
- PVS1001 to PVS1032: Writing data to the FlashROM or EEPROM of a servo amplifier

For the parameters prefixed by an asterisk (*), setting becomes effective when the power is turned off once and back on after setting the parameter data.

○: Available

—: Not available

Virtual device name	Name	Symbol	MR-J4			MR-JE		MR-J5				MR-JET-G
			J4(W)-□B(-RJ)	J4-GF(-RJ)	J4-□B-LL	JE-□B	JE-□BF	J5-G(-RJ) J5W□-G	J5D□-G	J5-□B(-RJ)	J5-□B-LL	
PVS1, PVS1001	Profile speed command extension setting	PVC2	—	—	—	—	—	○	○	—	—	—
PVS2, PVS1002	For manufacturer setting	—	—	—	—	—	—	—	—	—	—	—
PVS3, PVS1003	Maximum profile speed extension setting	MPVCE	—	—	—	—	—	○	○	—	—	—
PVS4, PVS1004	For manufacturer setting	—	—	—	—	—	—	—	—	—	—	—
PVS5, PVS1005	Profile acceleration	PACC	—	—	—	—	—	○	○	—	—	—
PVS6, PVS1006	For manufacturer setting	—	—	—	—	—	—	—	—	—	—	—
PVS7, PVS1007	Profile deceleration	PDEC	—	—	—	—	—	○	○	—	—	—
PVS8, PVS1008	For manufacturer setting	—	—	—	—	—	—	—	—	—	—	—
PVS9, PVS1009	Forced stop deceleration	RSBDEC	—	—	—	—	—	○	○	—	—	○
PVS10, PVS1010	For manufacturer setting	—	—	—	—	—	—	—	—	—	—	—
PVS11, PVS1011	Home position return speed extension setting	ZRFE	—	—	—	—	—	○	○	—	—	○
PVS12, PVS1012	For manufacturer setting	—	—	—	—	—	—	—	—	—	—	—
PVS13, PVS1013	Creep speed extension setting	CRFE	—	—	—	—	—	○	○	—	—	○
PVS14, PVS1014	For manufacturer setting	—	—	—	—	—	—	—	—	—	—	—
PVS15, PVS1015	Home position return acceleration	HMACC	—	—	—	—	—	○	○	—	—	○
PVS16, PVS1016	For manufacturer setting	—	—	—	—	—	—	—	—	—	—	—
PVS17, PVS1017	Home position return deceleration	HMDEC	—	—	—	—	—	○	○	—	—	○
PVS18, PVS1018	For manufacturer setting	—	—	—	—	—	—	—	—	—	—	—
PVS19, PVS1019	Speed reached 2 output range extension setting	SA2RE	—	—	—	—	—	○	○	—	—	—
PVS20, PVS1020	Zero speed 2 level extension setting	ZSP2LE	—	—	—	—	—	○	○	—	—	—
PVS21, PVS1021	Speed limit extension setting	VLMTE	—	—	—	—	—	○	○	—	—	○
PVS22, PVS1022	For manufacturer setting	—	—	—	—	—	—	—	—	—	—	—
PVS23, PVS1023	Speed unit conversion electronic gear numerator	*VCMX	—	—	—	—	—	○	○	—	—	○

Virtual device name	Name	Symbol	MR-J4			MR-JE		MR-J5				MR-JET-G
			J4(W)-□B(-RJ)	J4-GF(-RJ)	J4-□B-LL	JE-□B	JE-□BF	J5-G(-RJ) J5W□-G	J5D□-G	J5-□B(-RJ)	J5-□B-LL	
PVS24, PVS1024	Speed unit conversion electronic gear denominator	*VCDV	—	—	—	—	—	○	○	—	—	○
PVS25, PVS1025	Acceleration unit conversion electronic gear nmrtr.	*ACMX	—	—	—	—	—	○	○	—	—	○
PVS26, PVS1026	Acceleration unit conversion electronic gear dnmntr.	*ACDV	—	—	—	—	—	○	○	—	—	○
PVS27 to PVS28, PVS1027 to PVS1028	For manufacturer setting	—	—	—	—	—	—	—	—	—	—	—
PVS29, PVS1029	Acceleration limit	ACCLMT	—	—	—	—	—	—	○	—	—	—
PVS30, PVS1030	For manufacturer setting	—	—	—	—	—	—	—	—	—	—	—
PVS31, PVS1031	Deceleration limit	DECLMT	—	—	—	—	—	—	○	—	—	—
PVS32, PVS1032	For manufacturer setting	—	—	—	—	—	—	—	—	—	—	—

Status display ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])

○: Available

—: Not available

Virtual device name	Name	Symbol	MR-J4			MR-JE		MR-J5				MR-JET-G
			J4(W)-□B(-RJ)	J4-GF(-RJ)	J4-□B-LL	JE-□B	JE-□BF	J5-G(-RJ) J5W□-G	J5D□-G	J5-□B(-RJ)	J5-□B-LL	
ST0	Cumulative feedback pulses	—	○	○	○	○	—	○	○	○	○	○
ST1	Servo motor speed	—	○	○	○	○	—	○	○	○	○	○
ST2	Droop pulses	—	○	○	○	○	—	○	○	○	○	○
ST3	Cumulative command pulses	—	○	○	○	○	—	○	○	○	○	○
ST4	Command pulse frequency	—	○	○	○	○	—	○	○	○	○	○
ST5 to ST6	For manufacturer setting	—	—	—	—	—	—	—	—	—	—	—
ST7	Regenerative load ratio	—	○	○	○	○	—	○	○	○	○	○
ST8	Effective load ratio	—	○	○	○	○	—	○	○	○	○	○
ST9	Peak load ratio	—	○	○	○	○	—	○	○	○	○	○
ST10	Instantaneous torque	—	○	○	○	○	—	—	—	—	○	—
	Torque/Instantaneous torque		—	—	—	—	—	○	○	○	—	○
ST11	Position within one-revolution	—	○	○	○	○	—	○	○	○	○	○
ST12	ABS counter	—	○	○	○	○	—	○	○	○	○	○
ST13	Load to motor inertia ratio	—	○	○	○	○	—	○	○	○	○	○
ST14	Bus voltage	—	○	○	○	○	—	○	○	○	○	○
ST15	Load-side cumulative feedback pulses	—	○	○	—	○	—	○	○	○	○	—
ST16	Load-side encoder droop pulses	—	—	○	—	—	—	○	○	○	○	—
ST17	Load-side encoder information 1	—	○	○	—	○	—	○	○	○	○	—
ST18	Load-side encoder information 2	—	○	○	—	○	—	○	○	○	○	—
ST19	Analog monitor output voltage 1	—	○	○	—	○	—	—	—	—	—	—
ST20	Analog monitor output voltage 2	—	○	○	—	○	—	—	—	—	—	—
ST21	AB phase output pulse F/B integrated value	—	○	○	—	○	—	—	—	—	—	—
ST22	Temperature of servo motor thermistor	—	○	○	—	○	—	○	○	○	○	○
ST23	Servo motor-side cumulative feedback pulses (before gear)	—	○	○	—	○	—	—	—	—	—	—
	Cumulative feedback pulses (Motor unit)	—	—	—	—	—	—	○	○	○	○	○
ST24	Electrical angle	—	○	○	—	○	—	○	○	○	○	—
ST25 to ST29	For manufacturer setting	—	—	—	—	—	—	—	—	—	—	—
ST30	Motor/load side position difference	—	—	○	—	—	—	○	○	○	○	—
ST31	Motor/load side speed difference	—	—	○	—	—	—	○	○	○	○	—
ST32	Encoder inside temperature	—	○	○	○	○	—	○	○	○	○	○
ST33	Settling time	—	○	○	○	○	—	○	○	○	○	○
ST34	Oscillation detection frequency	—	○	○	○	○	—	○	○	○	○	○
ST35	Number of tough drive operations	—	○	○	○	○	—	○	○	○	○	○
ST36 to ST39	For manufacturer setting	—	—	—	—	—	—	—	—	—	—	—
ST40	Unit power consumption	—	○	○	○	○	—	○	○	○	○	○
ST41	Unit total power consumption	—	○	○	○	○	—	○	○	○	○	○
ST42	Position actual value	—	—	○	—	—	—	—	—	—	—	—
ST43	Command position	—	—	○	—	—	—	—	—	—	—	—
ST44	Command remaining distance	—	—	○	—	—	—	—	—	—	—	—
ST45	Point table No.	—	—	○	—	—	—	—	—	—	—	—

Virtual device name	Name	Symbol	MR-J4			MR-JE		MR-J5				MR-JET-G
			J4(W)-□B(-RJ)	J4-GF(-RJ)	J4-□B-LL	JE-□B	JE-□BF	J5-G(-RJ) J5W□-G	J5D□-G	J5-□B(-RJ)	J5-□B-LL	
ST46 to ST48	For manufacturer setting	—	—	—	—	—	—	—	—	—	—	—

Extension setting No.2 parameter ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])

Use an appropriate device according to the write destination of the servo amplifier.

- PE1 to PE88: Writing data to the RAM of a servo amplifier
- PE1001 to PE1088: Writing data to the FlashROM or EEPROM of a servo amplifier

For the parameters prefixed by an asterisk (*), setting becomes effective when the power is turned off once and back on after setting the parameter data.

○: Available

—: Not available

Virtual device name	Name	Symbol	MR-J4			MR-JE		MR-J5				MR-JET-G
			J4(W)-□B(-RJ)	J4-GF(-RJ)	J4-□B-LL	JE-□B	JE-□BF	J5-G(-RJ) J5W□-G	J5D□-G	J5-□B(-RJ)	J5-□B-LL	
PE1, PE1001	Fully closed loop function selection 1	**FCT1	○	○	—	—	—	○	○	○	○	—
PE2, PE1002	For manufacturer setting	—	—	—	—	—	—	—	—	—	—	—
PE3, PE1003	Fully closed loop function selection 2	*FCT2	○	○	—	—	—	○	○	○	○	—
PE4, PE1004	Fully closed loop ctrl. - F/B pls. elec. gear 1 nmrtr.	**FBN	○	○	—	—	—	○	○	○	○	—
PE5, PE1005	Fully closed loop ctrl. - F/B pls. elec. gear 1 dnmntr.	**FBD	○	○	—	—	—	○	○	○	○	—
PE6, PE1006	Fully closed loop ctrl. - Spd. dev. err. detection level	BC1	○	○	—	—	—	○	○	○	○	—
PE7, PE1007	Fully closed loop ctrl. - Pos. dev. err. detection level	BC2	○	○	—	—	—	○	○	○	○	—
PE8, PE1008	Fully closed dual feedback filter	DUF	○	○	—	—	—	○	○	○	○	—
PE9, PE1009	For manufacturer setting	—	—	—	—	—	—	—	—	—	—	—
PE10, PE1010	Fully closed loop function selection 3	FCT3	○	○	—	—	—	○	○	○	○	—
PE11 to PE33, PE1011 to PE1033	For manufacturer setting	—	—	—	—	—	—	—	—	—	—	—
PE34, PE1034	Fully closed loop control - Feedback pulse electronic gear 2 - Numerator	**FBN2	○	○	—	—	—	○	—	—	—	—
PE35, PE1035	Fully closed loop control - Feedback pulse electronic gear 2 - Denominator	**FBD2	○	○	—	—	—	○	—	—	—	—
PE36 to PE40, PE1036 to PE1040	For manufacturer setting	—	—	—	—	—	—	—	—	—	—	—
PE41, PE1041	Function selection E-3	EOP3	○	○	○	○	○	○	○	○	○	○
PE42 to PE43, PE1042 to PE1043	For manufacturer setting	—	—	—	—	—	—	—	—	—	—	—
PE44, PE1044	Lost motion positive side compensation value sel.	LMCP	○	○	○	○	○	○	○	○	○	○
PE45, PE1045	Lost motion negative side compensation value sel.	LMCN	○	○	○	○	○	○	○	○	○	○
PE46, PE1046	Lost motion filter setting	LMFLT	○	○	○	○	○	○	○	○	○	○
PE47, PE1047	Torque offset	TOF	○	○	○	○	○	○	○	○	○	○

Virtual device name	Name	Symbol	MR-J4			MR-JE		MR-J5				MR-JET-G
			J4(W)-□B(-RJ)	J4-GF(-RJ)	J4-□B-LL	JE-□B	JE-□BF	J5-G(-RJ) J5W□-G	J5D□-G	J5-□B(-RJ)	J5-□B-LL	
PE48, PE1048	Lost motion compensation function selection	*LMOP	○	○	○	○	○	○	○	○	○	○
PE49, PE1049	Lost motion compensation timing	LMCD	○	○	○	○	○	○	○	○	○	○
PE50, PE1050	Lost motion compensation dead zone	LMCT	○	○	○	○	○	○	○	○	○	○
PE51, PE1051	Load-side encoder resolution setting	**EDV2	—	—	—	—	—	—	○	○	○	—
PE52, PE1052	For manufacturer setting	—	—	—	—	—	—	—	—	—	—	—
PE53, PE1053	Maximum torque limit 1	TLMX1	—	—	—	—	—	○	○	○	—	○
PE54 to PE64, PE1054 to PE1064	For manufacturer setting	—	—	—	—	—	—	—	—	—	—	—
PE65, PE1065	Collision detection friction torque	TRUB	—	—	—	—	—	—	—	○	—	—
PE66, PE1066	Collision detection viscosity friction torque	VFTQ	—	—	—	—	—	—	—	○	—	—
PE67, PE1067	Collision detection restoration torque	CLTQ	—	—	—	—	—	—	—	○	—	—
PE68, PE1068	Tandem control function selection	**TANC	—	—	—	—	—	—	—	○	—	—
PE69, PE1069	Tandem control function setting	*TCOP	—	—	—	—	—	—	—	○	—	—
PE70, PE1070	Interaxial torque deviation permissible level	TTRQ	—	—	—	—	—	—	—	○	—	—
PE71, PE1071	Interaxial speed deviation permissible level	TPOSI	—	—	—	—	—	—	—	○	—	—
PE72 to PE88, PE1072 to PE1088	For manufacturer setting	—	—	—	—	—	—	—	—	—	—	—

Extension setting No.3 parameter ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])

Use an appropriate device according to the write destination of the servo amplifier.

- PF1 to PF99: Writing data to the RAM of a servo amplifier
- PF1001 to PF1099: Writing data to the FlashROM or EEPROM of a servo amplifier

For the parameters prefixed by an asterisk (*), setting becomes effective when the power is turned off once and back on after setting the parameter data.

○: Available

—: Not available

Virtual device name	Name	Symbol	MR-J4			MR-JE		MR-J5				MR-JET-G
			J4(W)-□B(-RJ)	J4-GF(-RJ)	J4-□B-LL	JE-□B	JE-□BF	J5-G(-RJ) J5W□-G	J5D□-G	J5-□B(-RJ)	J5-□B-LL	
PF1, PF1001	For manufacturer setting	—	—	—	—	—	—	—	—	—	—	—
PF2, PF1002	Function selection F-2	*FOP2	○	—	—	—	—	○	○	○	○	○
PF3 to PF5, PF1003 to PF1005	For manufacturer setting	—	—	—	—	—	—	—	—	—	—	—
PF6, PF1006	Function selection F-5	*FOP5	○	○	○	○	○	○	○	○	○	○
PF7 to PF11, PF1007 to PF1011	For manufacturer setting	—	—	—	—	—	—	—	—	—	—	—
PF12, PF1012	Electronic dynamic brake operating time	DBT	○	○	○	○	○	○	○	○	○	○
PF13 to PF17, PF1013 to PF1017	For manufacturer setting	—	—	—	—	—	—	—	—	—	—	—
PF18, PF1018	STO diagnostic error detection time	**STOD	—	○	—	—	○	○	○	○	○	—
PF19, PF1019	Friction failure prediction compen. coefficient 1	TSL	—	○	—	—	—	○	○	○	○	—
PF20, PF1020	Friction failure prediction compen. coefficient 2	TIC	—	○	—	—	—	○	○	○	○	—
PF21, PF1021	Drive recorder switching time setting	DRT	○	○	○	○	○	○	○	○	○	○
PF22, PF1022	For manufacturer setting	—	—	—	—	—	—	—	—	—	—	—
PF23, PF1023	Vibration tough drive - Oscillation detection level	OSCL1	○	○	○	○	○	○	○	○	○	○
PF24, PF1024	Vibration tough drive function selection	*OSCL2	○	○	○	○	○	○	○	○	○	—
	Function selection F-9	*FOP9	—	—	—	—	—	—	—	—	—	○
PF25, PF1025	SEMI-F47 function - Instantaneous power failure detection time	CVAT	○	○	○	○	○	—	—	—	—	—
	SEMI-F47 Inst pwr.fail.det.t. (Inst pwr.fail.tuf.drv.)		—	—	—	—	—	○	○	○	○	○
PF26 to PF28, PF1026 to PF1028	For manufacturer setting	—	—	—	—	—	—	—	—	—	—	—
PF29, PF1029	Function selection F-10	*FOP10	—	—	—	—	—	—	○	○	—	—
PF30, PF1030	For manufacturer setting	—	—	—	—	—	—	—	—	—	—	—

Virtual device name	Name	Symbol	MR-J4			MR-JE		MR-J5				MR-JET-G
			J4(W)-□B(-RJ)	J4-GF(-RJ)	J4-□B-LL	JE-□B	JE-□BF	J5-G(-RJ) J5W□-G	J5D□-G	J5-□B(-RJ)	J5-□B-LL	
PF31, PF1031	Machine diagnosis func. - Friction judgment speed(	FRIC	○	○	○	○	○	○	○	○	○	○
PF32, PF1032	Oscillation detection alarm time	*VIBT	—	—	—	—	—	○	○	○	—	○
PF33, PF1033	For manufacturer setting	—	—	—	—	—	—	—	—	—	—	—
PF34, PF1034	Machine diagnosis function selection	*MFP	—	○	—	—	—	○	○	○	○	○
PF35 to PF39, PF1035 to PF1039	For manufacturer setting	—	—	—	—	—	—	—	—	—	—	—
PF40, PF1040	Machine failure prediction parameter	MFPP	—	○	—	—	—	○	○	○	○	—
PF41, PF1041	Trouble prediction motor total move distance	FPMT	—	○	—	—	—	—	—	—	—	—
	Failure prediction - Servo motor total move distance		—	—	—	—	—	○	○	○	○	—
PF42, PF1042	Friction failure prediction average characteristic	PAV	—	○	—	—	—	○	○	○	○	—
PF43, PF1043	Friction failure prediction standard deviation	PSD	—	○	—	—	—	○	○	○	○	—
PF44, PF1044	For manufacturer setting	—	—	—	—	—	—	—	—	—	—	—
PF45, PF1045	Vibration failure prediction average characteristic	VAV	—	○	—	—	—	○	○	○	○	—
PF46, PF1046	Vibration failure prediction standard deviation	VSC	—	○	—	—	—	—	—	—	—	—
		VSD	—	—	—	—	—	○	○	○	○	—
PF47, PF1047	Servo motor total move distance offset	TMO	—	—	—	—	—	○	○	○	○	—
PF48 to PF65, PF1048 to PF1065	For manufacturer setting	—	—	—	—	—	—	—	—	—	—	—
PF66, PF1066	Gear ratio setting for backlash estimation	BLG	—	—	—	—	—	○	○	○	○	—
PF67, PF1067	Backlash nominal value	BLN	—	—	—	—	—	○	○	○	○	—
PF68, PF1068	Backlash threshold magnification	BLTT	—	—	—	—	—	○	○	○	○	—
PF69, PF1069	Static friction failure prediction avg. characteristic	SPAV2	—	—	—	—	—	○	○	○	○	—
PF70, PF1070	Static friction failure prediction standard deviation	SPSD2	—	—	—	—	—	○	○	○	○	—
PF71, PF1071	Belt failure prediction function selection	BFP	—	—	—	—	—	○	○	○	○	—
PF72, PF1072	Belt tension at installation	SBT	—	—	—	—	—	○	○	○	○	—
PF73, PF1073	Belt tension at extension	ABT	—	—	—	—	—	○	○	○	○	—
PF74, PF1074	Static friction at installation	SSF	—	—	—	—	—	○	○	○	○	—
PF75, PF1075	Static friction at extension	ASF	—	—	—	—	—	○	○	○	○	—
PF76, PF1076	Belt tension error threshold	BTS	—	—	—	—	—	○	○	○	○	—

Virtual device name	Name	Symbol	MR-J4			MR-JE		MR-J5				MR-JET-G
			J4(W)-□B(-RJ)	J4-GF(-RJ)	J4-□B-LL	JE-□B	JE-□BF	J5-G(-RJ) J5W□-G	J5D□-G	J5-□B(-RJ)	J5-□B-LL	
PF77 to PF78, PF1077 to PF1078	For manufacturer setting	—	—	—	—	—	—	—	—	—	—	—
PF79, PF1079	Event history setting	EVS	—	—	—	—	—	—	—	○	○	—
PF80, PF1080	Drive recorder Operation condition selection	DRMC	—	—	—	—	—	○	○	○	○	○
PF81, PF1081	Drive recorder Sampling operation selection	DRMS	—	—	—	—	—	○	○	○	○	○
PF82, PF1082	Drive recorder Trigger operation selection	DRTM	—	—	—	—	—	○	○	○	○	○
PF83, PF1083	Drive recorder Trigger operation axis common sel.	**DRTAX	—	—	—	—	—	○	○	○	○	—
PF84, PF1084	Drive recorder Trigger channel selection	DRTC	—	—	—	—	—	○	○	○	○	○
PF85, PF1085	Drive recorder Trigger level setting 1	DRTL1	—	—	—	—	—	○	○	○	○	○
PF86, PF1086	Drive recorder Trigger level setting 2	DRTL2	—	—	—	—	—	○	○	○	○	○
PF87, PF1087	Drive recorder Analog channel setting 1	DRAC1	—	—	—	—	—	○	○	○	○	○
PF88, PF1088	Drive recorder Analog channel setting 2	DRAC2	—	—	—	—	—	○	○	○	○	○
PF89, PF1089	Drive recorder Analog channel setting 3	DRAC3	—	—	—	—	—	○	○	○	○	○
PF90, PF1090	Drive recorder Analog channel setting 4	DRAC4	—	—	—	—	—	○	○	○	○	○
PF91, PF1091	Drive recorder Digital channel setting 1	DRDC1	—	—	—	—	—	○	○	○	○	○
PF92, PF1092	Drive recorder Digital channel setting 2	DRDC2	—	—	—	—	—	○	○	○	○	○
PF93, PF1093	Drive recorder Digital channel setting 3	DRDC3	—	—	—	—	—	○	○	○	○	○
PF94, PF1094	Drive recorder Digital channel setting 4	DRDC4	—	—	—	—	—	○	○	○	○	○
PF95, PF1095	Drive recorder History clear	**DRCLR	—	—	—	—	—	○	○	○	○	○
PF96 to PF99, PF1096 to PF1099	For manufacturer setting	—	—	—	—	—	—	—	—	—	—	—

Network basic parameter ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])

Set [Data Type] and [Format] as shown below for the objects for which this device is set.

- [Data Type]: [Unsigned BIN32]
- [Format]: [Hexadecimal]

○: Available

—: Not available

Virtual device name	Name	Symbol	MR-J4			MR-JE		MR-J5				MR-JET-G
			J4(W)-□B(-RJ)	J4-GF(-RJ)	J4-□B-LL	JE-□B	JE-□BF	J5-G(-RJ) J5W□-G	J5D□-G	J5-□B(-RJ)	J5-□B-LL	
NPA1	IP address setting	—	—	—	—	—	—	○	○	—	—	○
NPA2	IP address	—	—	—	—	—	—	○	○	—	—	○
NPA3	Use prohibited	—	—	—	—	—	—	—	—	—	—	—
NPA4	Subnet mask	—	—	—	—	—	—	○	○	—	—	○
NPA5	Use prohibited	—	—	—	—	—	—	—	—	—	—	—
NPA6	For manufacturer setting	—	—	—	—	—	—	—	—	—	—	—
NPA7	Use prohibited	—	—	—	—	—	—	—	—	—	—	—
NPA8	Host name	—	—	—	—	—	—	○	○	—	—	○
NPA9 to NPA11	For manufacturer setting	—	—	—	—	—	—	—	—	—	—	—
NPA12	Communication speed	—	—	—	—	—	—	—	○	—	—	—
NPA2001 to NPA2032	Host name expansion area	—	—	—	—	—	—	○	○	—	—	○

Extension setting No.4 parameter ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])

Use an appropriate device according to the write destination of the servo amplifier.

- PW1 to PW99: Writing data to the RAM of a servo amplifier
- PW1001 to PW1099: Writing data to the FlashROM or EEPROM of a servo amplifier

For the parameters prefixed by an asterisk (*), setting becomes effective when the power is turned off once and back on after setting the parameter data.

○: Available

—: Not available

Virtual device name	Name	Symbol	MR-J4			MR-JE		MR-J5				MR-JET-G
			J4(W)-□B(-RJ)	J4-GF(-RJ)	J4-□B-LL	JE-□B	JE-□BF	J5-G(-RJ) J5W□-G	J5D□-G	J5-□B(-RJ)	J5-□B-LL	
PW1, PW1001	Pressure control gain	APA	—	—	—	—	—	—	—	—	○	—
PW2, PW1002	Pressure integral compensation	AIA	—	—	—	—	—	—	—	—	○	—
PW3, PW1003	Pressure incomplete integral coefficient	ADA	—	—	—	—	—	—	—	—	○	—
PW4 to PW11, PW1004 to PW1011	For manufacturer setting	—	—	—	—	—	—	—	—	—	—	—
PW12, PW1012	Function selection W-1	*WOP1	—	—	—	—	—	—	—	—	○	—
PW13, PW1013	Function selection W-2	*WOP2	—	—	—	—	—	—	—	—	○	—
PW14 to PW19, PW1014 to PW1019	For manufacturer setting	—	—	—	—	—	—	—	—	—	—	—
PW20, PW1020	Pressure control feedback selection	**LDS	—	—	—	—	—	—	—	—	○	—
PW21, PW1021	Pressure control feedback offset	AFBO	—	—	—	—	—	—	—	—	○	—
PW22, PW1022	Pressure control feedback unit constant	AFBD	—	—	—	—	—	—	—	—	○	—
PW23, PW1023	Analog monitor input 1 offset	AO1	—	—	—	—	—	—	—	—	○	—
PW24, PW1024	Analog monitor input 1 unit constant	AD1	—	—	—	—	—	—	—	—	○	—
PW25, PW1025	Analog monitor input 2 offset	AO2	—	—	—	—	—	—	—	—	○	—
PW26, PW1026	Analog monitor input 2 unit constant	AD2	—	—	—	—	—	—	—	—	○	—
PW27, PW1027	Analog monitor input filter setting	ADF	—	—	—	—	—	—	—	—	○	—
PW28 to PW32, PW1028 to PW1032	For manufacturer setting	—	—	—	—	—	—	—	—	—	—	—
PW33, PW1033	Pressure control moving average filter setting	*MAF	—	—	—	—	—	—	—	—	○	—
PW34, PW1034	Function selection W-5	*WOP5	—	—	—	—	—	—	—	—	○	—
PW35, PW1035	Pressure model control gain	AMPA	—	—	—	—	—	—	—	—	○	—
PW36, PW1036	Pressure model control coefficient	AMCEF	—	—	—	—	—	—	—	—	○	—

Virtual device name	Name	Symbol	MR-J4			MR-JE		MR-J5				MR-JET-G
			J4(W)-□B(-RJ)	J4-GF(-RJ)	J4-□B-LL	JE-□B	JE-□BF	J5-G(-RJ) J5W□-G	J5D□-G	J5-□B(-RJ)	J5-□B-LL	
PW37 to PW40, PW1037 to PW1040	For manufacturer setting	—	—	—	—	—	—	—	—	—	—	—

Alarm [MELSEC iQ-R, RnMT/NC/RT, CR800-D])

○: Available

—: Not available

Virtual device name	Name	Symbol	MR-J4			MR-JE		MR-J5				MR-JET-G
			J4(W)-□B(-RJ)	J4-GF(-RJ)	J4-□B-LL	JE-□B	JE-□BF	J5-G(-RJ) J5W□-G	J5D□-G	J5-□B(-RJ)	J5-□B-LL	
ALM0	Current alarm number	—	○	○	○	○	○	○	○	○	○	○
ALM1	Detailed data of current alarms	—	○	○	○	○	○	○	○	○	○	○
ALM2[*1]	Currently occurring alarm number and detail number	—	—	—	—	—	—	○	○	○	○	○
ALM11	Servo status(alarm) Cumulative feedback pulses	—	○	○	○	○	○	○	○	○	○	○
ALM12	Servo status(alarm) Servo motor speed	—	○	○	○	○	○	○	○	○	○	○
ALM13	Servo status(alarm) Droop pulses	—	○	○	○	○	○	○	○	○	○	○
ALM14	Servo status(alarm) Cumulative command pulses	—	○	○	○	○	○	○	○	○	○	○
ALM15	Servo status(alarm) Command pulse frequency	—	○	○	○	○	○	○	○	○	○	○
ALM16 to ALM17	For manufacturer setting	—	—	—	—	—	—	—	—	—	—	—
ALM18	Servo status(alarm) Regenerative load ratio	—	○	○	○	○	○	○	○	○	○	○
ALM19	Servo status(alarm) Effective load ratio	—	○	○	○	○	○	○	○	○	○	○
ALM20	Servo status(alarm) Peak load ratio	—	○	○	○	○	○	○	○	○	○	○
ALM21	Servo status(alarm) Instantaneous torque	—	○	○	○	○	○	—	—	—	—	—
	Servo status(alarm) Torque/ Instantaneous torque		—	—	—	—	—	○	○	○	○	○
ALM22	Servo status(alarm) Position within one-revolution	—	○	○	○	○	○	○	○	○	○	○
ALM23	Servo status(alarm) ABS counter	—	○	○	○	○	○	○	○	○	○	○
ALM24	Servo status(alarm) Load to motor inertia ratio	—	○	○	○	○	○	○	○	○	○	○
ALM25	Servo status(alarm) Bus voltage	—	○	○	○	○	○	○	○	○	○	○
ALM26	Servo status(alarm) Load-side cumulative feedback pulses	—	○	○	○	○	○	○	○	○	○	—
ALM27	Servo status(alarm) Load-side droop pulses	—	—	○	—	—	—	○	○	○	○	—
ALM28	Servo status(alarm) Load-side encoder information 1	—	○	○	○	○	○	○	○	○	○	—
ALM29	Servo status(alarm) Load-side encoder information 2	—	○	○	○	○	○	○	○	○	○	—
ALM30	Servo status(alarm) Analog monitor output voltage 1	—	○	○	○	○	○	—	—	—	—	—
ALM31	Servo status(alarm) Analog monitor output voltage 2	—	○	○	○	○	○	—	—	—	—	—
ALM32	Servo status(alarm) AB phase output pulse F/B integrated value	—	○	○	○	○	○	—	—	—	—	—
ALM33	Servo status(alarm) Temperature of servo motor thermistor	—	○	○	○	○	○	○	○	○	○	○

Virtual device name	Name	Symbol	MR-J4			MR-JE		MR-J5				MR-JET-G
			J4(W)-□B(-RJ)	J4-GF(-RJ)	J4-□B-LL	JE-□B	JE-□BF	J5-G(-RJ) J5W□-G	J5D□-G	J5-□B(-RJ)	J5-□B-LL	
ALM34	Servo status(alarm) Servo motor-side cumulative feedback pulses (before gear)	—	○	○	○	○	○	—	—	—	—	—
	Servo status(alarm) Cumulative feedback pulses (Motor unit)		—	—	—	—	—	○	○	○	○	○
ALM35	Servo status(alarm) Electrical angle	—	○	○	○	○	○	○	○	○	○	—
ALM36 to ALM40	For manufacturer setting	—	—	—	—	—	—	—	—	—	—	—
ALM41	Servo status(alarm) Motor/load side position difference	—	—	○	—	—	—	○	○	○	○	—
ALM42	Servo status(alarm) Motor/load side speed difference	—	—	○	—	—	—	○	○	○	○	—
ALM43	Servo status(alarm) Encoder inside temperature	—	○	—	○	○	○	—	—	—	—	—
	Servo status(alarm) Encoder inside temperature	—	—	○	—	—	—	○	○	○	○	○
ALM44	Servo status(alarm) Settling time	—	○	—	○	○	○	—	—	—	—	—
	Servo status(alarm) Settling time	—	—	○	—	—	—	○	○	○	○	○
ALM45	Servo status(alarm) Oscillation detection frequency	—	○	—	○	○	○	—	—	—	—	—
	Servo status(alarm) Oscillation detection frequency	—	—	○	—	—	—	○	○	○	○	○
ALM46	Servo status(alarm) Number of tough drive operations	—	○	—	○	○	○	—	—	—	—	—
	Servo status(alarm) Number of tough drive operations	—	—	○	—	—	—	○	○	○	○	○
ALM47 to ALM50	For manufacturer setting	—	—	—	—	—	—	—	—	—	—	—
ALM51	Servo status(alarm) Unit power consumption	—	○	○	○	○	○	○	○	○	○	○
ALM52	Servo status(alarm) Unit total power consumption	—	○	○	○	○	○	○	○	○	○	○
ALM53	Servo status(alarm) Position actual value	—	—	○	—	—	—	—	—	—	—	—
ALM54	Servo status(alarm) Command position	—	—	○	—	—	—	—	—	—	—	—
ALM55	Servo status(alarm) Command remaining distance	—	—	○	—	—	—	—	—	—	—	—
ALM56	Servo status(alarm) Point table No.	—	—	○	—	—	—	—	—	—	—	—
ALM57 to AL59	For manufacturer setting	—	—	—	—	—	—	—	—	—	—	—
ALM200	Alarm number from Alarm History most recent alarm	—	○	○	○	○	○	○	○	○	○	○
ALM201	Alarm number from Alarm History 1st alarm in past	—	○	○	○	○	○	○	○	○	○	○
ALM202	Alarm number from Alarm History 2nd alarm in past	—	○	○	○	○	○	○	○	○	○	○
ALM203	Alarm number from Alarm History 3rd alarm in past	—	○	○	○	○	○	○	○	○	○	○
ALM204	Alarm number from Alarm History 4th alarm in past	—	○	○	○	○	○	○	○	○	○	○
ALM205	Alarm number from Alarm History 5th alarm in past	—	○	○	○	○	○	○	○	○	○	○
ALM206	Alarm number from Alarm History 6th alarm in past	—	○	○	○	○	○	○	○	○	○	○

Virtual device name	Name	Symbol	MR-J4			MR-JE		MR-J5				MR-JET-G
			J4(W)-□B(-RJ)	J4-GF(-RJ)	J4-□B-LL	JE-□B	JE-□BF	J5-G(-RJ) J5W□-G	J5D□-G	J5-□B(-RJ)	J5-□B-LL	
ALM207	Alarm number from Alarm History 7th alarm in past	—	○	○	○	○	○	○	○	○	○	○
ALM208	Alarm number from Alarm History 8th alarm in past	—	○	○	○	○	○	○	○	○	○	○
ALM209	Alarm number from Alarm History 9th alarm in past	—	○	○	○	○	○	○	○	○	○	○
ALM210	Alarm number from Alarm History 10th alarm in past	—	○	○	○	○	○	○	○	○	○	○
ALM211	Alarm number from Alarm History 11th alarm in past	—	○	○	○	○	○	○	○	○	○	○
ALM212	Alarm number from Alarm History 12th alarm in past	—	○	○	○	○	○	○	○	○	○	○
ALM213	Alarm number from Alarm History 13th alarm in past	—	○	○	○	○	○	○	○	○	○	○
ALM214	Alarm number from Alarm History 14th alarm in past	—	○	○	○	○	○	○	○	○	○	○
ALM215	Alarm number from Alarm History 15th alarm in past	—	○	○	○	○	○	○	○	○	○	○
ALM220	Alarm occurrence time in alarm history most recent alarm	—	○	○	○	○	○	—	—	—	—	—
	Alarm occurrence time (cumulative power-on time) in alarm history: most recent alarm	—	—	—	—	—	—	○	○	○	○	○
ALM221	Alarm occurrence time in alarm history 1st alarm in past	—	○	○	○	○	○	—	—	—	—	—
	Alarm occurrence time (cumulative power-on time) in alarm history: 1st alarm in past	—	—	—	—	—	—	○	○	○	○	○
ALM222	Alarm occurrence time in alarm history 2nd alarm in past	—	○	○	○	○	○	—	—	—	—	—
	Alarm occurrence time (cumulative power-on time) in alarm history: 2nd alarm in past	—	—	—	—	—	—	○	○	○	○	○
ALM223	Alarm occurrence time in alarm history 3rd alarm in past	—	○	○	○	○	○	—	—	—	—	—
	Alarm occurrence time (cumulative power-on time) in alarm history: 3rd alarm in past	—	—	—	—	—	—	○	○	○	○	○
ALM224	Alarm occurrence time in alarm history 4th alarm in past	—	○	○	○	○	○	—	—	—	—	—
	Alarm occurrence time (cumulative power-on time) in alarm history: 4th alarm in past	—	—	—	—	—	—	○	○	○	○	○
ALM225	Alarm occurrence time in alarm history 5th alarm in past	—	○	○	○	○	○	—	—	—	—	—
	Alarm occurrence time (cumulative power-on time) in alarm history: 5th alarm in past	—	—	—	—	—	—	○	○	○	○	○
ALM226	Alarm occurrence time in alarm history 6th alarm in past	—	○	○	○	○	○	—	—	—	—	—
	Alarm occurrence time (cumulative power-on time) in alarm history: 6th alarm in past	—	—	—	—	—	—	○	○	○	○	○
ALM227	Alarm occurrence time in alarm history 7th alarm in past	—	○	○	○	○	○	—	—	—	—	—
	Alarm occurrence time (cumulative power-on time) in alarm history: 7th alarm in past	—	—	—	—	—	—	○	○	○	○	○

Virtual device name	Name	Symbol	MR-J4			MR-JE		MR-J5				MR-JET-G
			J4(W)-□B(-RJ)	J4-GF(-RJ)	J4-□B-LL	JE-□B	JE-□BF	J5-G(-RJ) J5W□-G	J5D□-G	J5-□B(-RJ)	J5-□B-LL	
ALM228	Alarm occurrence time in alarm history 8th alarm in past	—	○	○	○	○	○	—	—	—	—	—
	Alarm occurrence time (cumulative power-on time) in alarm history: 8th alarm in past	—	—	—	—	—	—	○	○	○	○	○
ALM229	Alarm occurrence time in alarm history 9th alarm in past	—	○	○	○	○	○	—	—	—	—	—
	Alarm occurrence time (cumulative power-on time) in alarm history: 9th alarm in past	—	—	—	—	—	—	○	○	○	○	○
ALM230	Alarm occurrence time in alarm history 10th alarm in past	—	○	○	○	○	○	—	—	—	—	—
	Alarm occurrence time (cumulative power-on time) in alarm history: 10th alarm in past	—	—	—	—	—	—	○	○	○	○	○
ALM231	Alarm occurrence time in alarm history 11th alarm in past	—	○	○	○	○	○	—	—	—	—	—
	Alarm occurrence time (cumulative power-on time) in alarm history: 11th alarm in past	—	—	—	—	—	—	○	○	○	○	○
ALM232	Alarm occurrence time in alarm history 12th alarm in past	—	○	○	○	○	○	—	—	—	—	—
	Alarm occurrence time (cumulative power-on time) in alarm history: 12th alarm in past	—	—	—	—	—	—	○	○	○	○	○
ALM233	Alarm occurrence time in alarm history 13th alarm in past	—	○	○	○	○	○	—	—	—	—	—
	Alarm occurrence time (cumulative power-on time) in alarm history: 13th alarm in past	—	—	—	—	—	—	○	○	○	○	○
ALM234	Alarm occurrence time in alarm history 14th alarm in past	—	○	○	○	○	○	—	—	—	—	—
	Alarm occurrence time (cumulative power-on time) in alarm history: 14th alarm in past	—	—	—	—	—	—	○	○	○	○	○
ALM235	Alarm occurrence time in alarm history 15th alarm in past	—	○	○	○	○	○	—	—	—	—	—
	Alarm occurrence time (cumulative power-on time) in alarm history: 15th alarm in past	—	—	—	—	—	—	○	○	○	○	○
ALM240	Detailed alarm from Alarm History most recent alarm	—	○	○	○	○	○	—	—	—	—	—
	Alarm detail number in alarm history: most recent alarm	—	—	—	—	—	—	○	○	○	○	○
ALM241	Detailed alarm from Alarm History 1st alarm in past	—	○	○	○	○	○	—	—	—	—	—
	Alarm detail number in alarm history: 1st alarm in past	—	—	—	—	—	—	○	○	○	○	○
ALM242	Detailed alarm from Alarm History 2nd alarm in past	—	○	○	○	○	○	—	—	—	—	—
	Alarm detail number in alarm history: 2nd alarm in past	—	—	—	—	—	—	○	○	○	○	○
ALM243	Detailed alarm from Alarm History 3rd alarm in past	—	○	○	○	○	○	—	—	—	—	—
	Alarm detail number in alarm history: 3rd alarm in past	—	—	—	—	—	—	○	○	○	○	○

Virtual device name	Name	Symbol	MR-J4			MR-JE		MR-J5				MR-JET-G
			J4(W)-□B(-RJ)	J4-GF(-RJ)	J4-□B-LL	JE-□B	JE-□BF	J5-G(-RJ) J5W□-G	J5D□-G	J5-□B(-RJ)	J5-□B-LL	
ALM244	Detailed alarm from Alarm History 4th alarm in past	—	○	○	○	○	○	—	—	—	—	—
	Alarm detail number in alarm history: 4th alarm in past	—	—	—	—	—	—	○	○	○	○	○
ALM245	Detailed alarm from Alarm History 5th alarm in past	—	○	○	○	○	○	—	—	—	—	—
	Alarm detail number in alarm history: 5th alarm in past	—	—	—	—	—	—	○	○	○	○	○
ALM246	Detailed alarm from Alarm History 6th alarm in past	—	○	○	○	○	○	—	—	—	—	—
	Alarm detail number in alarm history: 6th alarm in past	—	—	—	—	—	—	○	○	○	○	○
ALM247	Detailed alarm from Alarm History 7th alarm in past	—	○	○	○	○	○	—	—	—	—	—
	Alarm detail number in alarm history: 7th alarm in past	—	—	—	—	—	—	○	○	○	○	○
ALM248	Detailed alarm from Alarm History 8th alarm in past	—	○	○	○	○	○	—	—	—	—	—
	Alarm detail number in alarm history: 8th alarm in past	—	—	—	—	—	—	○	○	○	○	○
ALM249	Detailed alarm from Alarm History 9th alarm in past	—	○	○	○	○	○	—	—	—	—	—
	Alarm detail number in alarm history: 9th alarm in past	—	—	—	—	—	—	○	○	○	○	○
ALM250	Detailed alarm from Alarm History 10th alarm in past	—	○	○	○	○	○	—	—	—	—	—
	Alarm detail number in alarm history: 10th alarm in past	—	—	—	—	—	—	○	○	○	○	○
ALM251	Detailed alarm from Alarm History 11th alarm in past	—	○	○	○	○	○	—	—	—	—	—
	Alarm detail number in alarm history: 11th alarm in past	—	—	—	—	—	—	○	○	○	○	○
ALM252	Detailed alarm from Alarm History 12th alarm in past	—	○	○	○	○	○	—	—	—	—	—
	Alarm detail number in alarm history: 12th alarm in past	—	—	—	—	—	—	○	○	○	○	○
ALM253	Detailed alarm from Alarm History 13th alarm in past	—	○	○	○	○	○	—	—	—	—	—
	Alarm detail number in alarm history: 13th alarm in past	—	—	—	—	—	—	○	○	○	○	○
ALM254	Detailed alarm from Alarm History 14th alarm in past	—	○	○	○	○	○	—	—	—	—	—
	Alarm detail number in alarm history: 14th alarm in past	—	—	—	—	—	—	○	○	○	○	○
ALM255	Detailed alarm from Alarm History 15th alarm in past	—	○	○	○	○	○	—	—	—	—	—
	Alarm detail number in alarm history: 15th alarm in past	—	—	—	—	—	—	○	○	○	○	○
ALM260	Alarm occurrence time (year, month) in alarm history: most recent alarm	—	—	—	—	—	—	○	○	○	○	○
ALM261	Alarm occurrence time (year, month) in alarm history: 1st alarm in past	—	—	—	—	—	—	○	○	○	○	○
ALM262	Alarm occurrence time (year, month) in alarm history: 2nd alarm in past	—	—	—	—	—	—	○	○	○	○	○

Virtual device name	Name	Symbol	MR-J4			MR-JE		MR-J5				MR-JET-G
			J4(W)-□B(-RJ)	J4-GF(-RJ)	J4-□B-LL	JE-□B	JE-□BF	J5-G(-RJ) J5W□-G	J5D□-G	J5-□B(-RJ)	J5-□B-LL	
ALM263	Alarm occurrence time (year, month) in alarm history: 3rd alarm in past	—	—	—	—	—	—	○	○	○	○	○
ALM264	Alarm occurrence time (year, month) in alarm history: 4th alarm in past	—	—	—	—	—	—	○	○	○	○	○
ALM265	Alarm occurrence time (year, month) in alarm history: 5th alarm in past	—	—	—	—	—	—	○	○	○	○	○
ALM266	Alarm occurrence time (year, month) in alarm history: 6th alarm in past	—	—	—	—	—	—	○	○	○	○	○
ALM267	Alarm occurrence time (year, month) in alarm history: 7th alarm in past	—	—	—	—	—	—	○	○	○	○	○
ALM268	Alarm occurrence time (year, month) in alarm history: 8th alarm in past	—	—	—	—	—	—	○	○	○	○	○
ALM269	Alarm occurrence time (year, month) in alarm history: 9th alarm in past	—	—	—	—	—	—	○	○	○	○	○
ALM270	Alarm occurrence time (year, month) in alarm history: 10th alarm in past	—	—	—	—	—	—	○	○	○	○	○
ALM271	Alarm occurrence time (year, month) in alarm history: 11th alarm in past	—	—	—	—	—	—	○	○	○	○	○
ALM272	Alarm occurrence time (year, month) in alarm history: 12th alarm in past	—	—	—	—	—	—	○	○	○	○	○
ALM273	Alarm occurrence time (year, month) in alarm history: 13th alarm in past	—	—	—	—	—	—	○	○	○	○	○
ALM274	Alarm occurrence time (year, month) in alarm history: 14th alarm in past	—	—	—	—	—	—	○	○	○	○	○
ALM275	Alarm occurrence time (year, month) in alarm history: 15th alarm in past	—	—	—	—	—	—	○	○	○	○	○
ALM280	Alarm occurrence time (date, hour) in alarm history: most recent alarm	—	—	—	—	—	—	○	○	○	○	○
ALM281	Alarm occurrence time (date, hour) in alarm history: 1st alarm in past	—	—	—	—	—	—	○	○	○	○	○
ALM282	Alarm occurrence time (date, hour) in alarm history: 2nd alarm in past	—	—	—	—	—	—	○	○	○	○	○
ALM283	Alarm occurrence time (date, hour) in alarm history: 3rd alarm in past	—	—	—	—	—	—	○	○	○	○	○
ALM284	Alarm occurrence time (date, hour) in alarm history: 4th alarm in past	—	—	—	—	—	—	○	○	○	○	○
ALM285	Alarm occurrence time (date, hour) in alarm history: 5th alarm in past	—	—	—	—	—	—	○	○	○	○	○
ALM286	Alarm occurrence time (date, hour) in alarm history: 6th alarm in past	—	—	—	—	—	—	○	○	○	○	○

Virtual device name	Name	Symbol	MR-J4			MR-JE		MR-J5				MR-JET-G
			J4(W)-□B(-RJ)	J4-GF(-RJ)	J4-□B-LL	JE-□B	JE-□BF	J5-G(-RJ) J5W□-G	J5D□-G	J5-□B(-RJ)	J5-□B-LL	
ALM287	Alarm occurrence time (date, hour) in alarm history: 7th alarm in past	—	—	—	—	—	—	○	○	○	○	○
ALM288	Alarm occurrence time (date, hour) in alarm history: 8th alarm in past	—	—	—	—	—	—	○	○	○	○	○
ALM289	Alarm occurrence time (date, hour) in alarm history: 9th alarm in past	—	—	—	—	—	—	○	○	○	○	○
ALM290	Alarm occurrence time (date, hour) in alarm history: 10th alarm in past	—	—	—	—	—	—	○	○	○	○	○
ALM291	Alarm occurrence time (date, hour) in alarm history: 11th alarm in past	—	—	—	—	—	—	○	○	○	○	○
ALM292	Alarm occurrence time (date, hour) in alarm history: 12th alarm in past	—	—	—	—	—	—	○	○	○	○	○
ALM293	Alarm occurrence time (date, hour) in alarm history: 13th alarm in past	—	—	—	—	—	—	○	○	○	○	○
ALM294	Alarm occurrence time (date, hour) in alarm history: 14th alarm in past	—	—	—	—	—	—	○	○	○	○	○
ALM295	Alarm occurrence time (date, hour) in alarm history: 15th alarm in past	—	—	—	—	—	—	○	○	○	○	○
ALM300	Alarm occurrence time (minute, second) in alarm history: most recent alarm	—	—	—	—	—	—	○	○	○	○	○
ALM301	Alarm occurrence time (minute, second) in alarm history: 1st alarm in past	—	—	—	—	—	—	○	○	○	○	○
ALM302	Alarm occurrence time (minute, second) in alarm history: 2nd alarm in past	—	—	—	—	—	—	○	○	○	○	○
ALM303	Alarm occurrence time (minute, second) in alarm history: 3rd alarm in past	—	—	—	—	—	—	○	○	○	○	○
ALM304	Alarm occurrence time (minute, second) in alarm history: 4th alarm in past	—	—	—	—	—	—	○	○	○	○	○
ALM305	Alarm occurrence time (minute, second) in alarm history: 5th alarm in past	—	—	—	—	—	—	○	○	○	○	○
ALM306	Alarm occurrence time (minute, second) in alarm history: 6th alarm in past	—	—	—	—	—	—	○	○	○	○	○
ALM307	Alarm occurrence time (minute, second) in alarm history: 7th alarm in past	—	—	—	—	—	—	○	○	○	○	○
ALM308	Alarm occurrence time (minute, second) in alarm history: 8th alarm in past	—	—	—	—	—	—	○	○	○	○	○
ALM309	Alarm occurrence time (minute, second) in alarm history: 9th alarm in past	—	—	—	—	—	—	○	○	○	○	○
ALM310	Alarm occurrence time (minute, second) in alarm history: 10th alarm in past	—	—	—	—	—	—	○	○	○	○	○

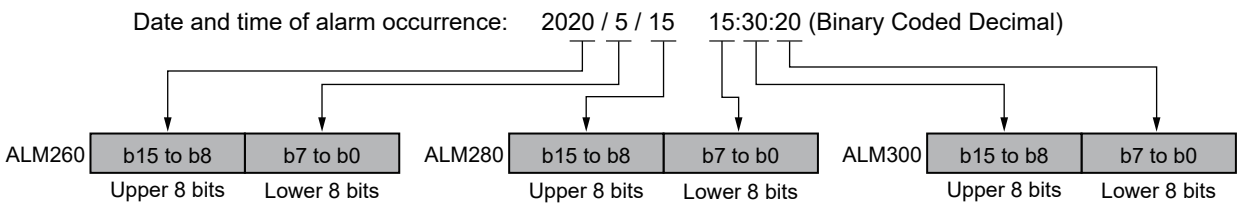
Virtual device name	Name	Symbol	MR-J4			MR-JE		MR-J5				MR-JET-G
			J4(W)-□B(-RJ)	J4-GF(-RJ)	J4-□B-LL	JE-□B	JE-□BF	J5-G(-RJ) J5W□-G	J5D□-G	J5-□B(-RJ)	J5-□B-LL	
ALM311	Alarm occurrence time (minute, second) in alarm history: 11th alarm in past	—	—	—	—	—	—	○	○	○	○	○
ALM312	Alarm occurrence time (minute, second) in alarm history: 12th alarm in past	—	—	—	—	—	—	○	○	○	○	○
ALM313	Alarm occurrence time (minute, second) in alarm history: 13th alarm in past	—	—	—	—	—	—	○	○	○	○	○
ALM314	Alarm occurrence time (minute, second) in alarm history: 14th alarm in past	—	—	—	—	—	—	○	○	○	○	○
ALM315	Alarm occurrence time (minute, second) in alarm history: 15th alarm in past	—	—	—	—	—	—	○	○	○	○	○

*1 Set [Data Type] and [Format] as shown below for the objects for which this device is set.
[Data Type]: [Unsigned BIN32]
[Format]: [Hexadecimal]

Specifications of ALM260 to ALM275, ALM280 to ALM295, and ALM300 to ALM315 ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])

The date and time of alarm occurrence are stored in BCD code in the upper eight bits and lower eight bits of each device.
The time zone setting of the controller is applied to the date and time to be acquired.

Ex.
When the date and time of the most recent alarm occurrence is 15:30:20 May 15, 2020



In either of the following cases, 0 is stored.

- When the date and time of alarm occurrence are those of 1999 or earlier
- When the controller is MR-J5(W)-B(-RJ) or MR-J5-B-LL

Point table (position) ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])

Use an appropriate device according to the write destination of the servo amplifier.

- POS1 to POS255: Writing data to the RAM of a servo amplifier
- POS1001 to POS1255: Writing data to the FlashROM or EEPROM of a servo amplifier

○: Available

—: Not available

Virtual device name	Name	Symbol	MR-J4			MR-JE		MR-J5				MR-JET-G
			J4(W)-□B(-RJ)	J4-GF(-RJ)	J4-□B-LL	JE-□B	JE-□BF	J5-G(-RJ) J5W□-G	J5D□-G	J5-□B(-RJ)	J5-□B-LL	
POS1 to POS255, POS1001 to POS1255	Point table/position data No. 1 to No. 255	—	—	○	—	—	—	○	○	—	—	○

Point table (speed) ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])

Use an appropriate device according to the write destination of the servo amplifier.

- SPD1 to SPD255: Writing data to the RAM of a servo amplifier
- SPD1001 to SPD1255: Writing data to the FlashROM or EEPROM of a servo amplifier

○: Available

—: Not available

Virtual device name	Name	Symbol	MR-J4			MR-JE		MR-J5				MR-JET-G
			J4(W)-□B(-RJ)	J4-GF(-RJ)	J4-□B-LL	JE-□B	JE-□BF	J5-G(-RJ) J5W□-G	J5D□-G	J5-□B(-RJ)	J5-□B-LL	
SPD1 to SPD255, SPD1001 to SPD1255	Point table/speed data No. 1 to No. 255	—	—	○	—	—	—	○	○	—	—	○

Point table (acceleration time constant) ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])

Use an appropriate device according to the write destination of the servo amplifier.

- ACT1 to ACT255: Writing data to the RAM of a servo amplifier
- ACT1001 to ACT1255: Writing data to the FlashROM or EEPROM of a servo amplifier

○: Available

—: Not available

Virtual device name	Name	Symbol	MR-J4			MR-JE		MR-J5				MR-JET-G
			J4(W)-□B(-RJ)	J4-GF(-RJ)	J4-□B-LL	JE-□B	JE-□BF	J5-G(-RJ) J5W□-G	J5D□-G	J5-□B(-RJ)	J5-□B-LL	
ACT1 to ACT255, ACT1001 to ACT1255	Point table/acceleration time constant No. 1 to No. 255	—	—	○	—	—	—	○	○	—	—	○

Point table (deceleration time constant) ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])

Use an appropriate device according to the write destination of the servo amplifier.

- DCT1 to DCT255: Writing data to the RAM of a servo amplifier
- DCT1001 to DCT1255: Writing data to the FlashROM or EEPROM of a servo amplifier

○: Available

—: Not available

Virtual device name	Name	Symbol	MR-J4			MR-JE		MR-J5				MR-JET-G
			J4(W)-□B(-RJ)	J4-GF(-RJ)	J4-□B-LL	JE-□B	JE-□BF	J5-G(-RJ) J5W□-G	J5D□-G	J5-□B(-RJ)	J5-□B-LL	
DCT1 to DCT255, DCT1001 to DCT1255	Point table/deceleration time constant No. 1 to No. 255	—	—	○	—	—	—	○	○	—	—	○

Point table (dwell) ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])

Use an appropriate device according to the write destination of the servo amplifier.

- DWL1 to DWL255: Writing data to the RAM of a servo amplifier
- DWL1001 to DWL1255: Writing data to the FlashROM or EEPROM of a servo amplifier

○: Available

—: Not available

Virtual device name	Name	Symbol	MR-J4			MR-JE		MR-J5				MR-JET-G
			J4(W)-□B(-RJ)	J4-GF(-RJ)	J4-□B-LL	JE-□B	JE-□BF	J5-G(-RJ) J5W□-G	J5D□-G	J5-□B(-RJ)	J5-□B-LL	
DWL1 to DWL255, DWL1001 to DWL1255	Point table/dwell No. 1 to No. 255	—	—	○	—	—	—	○	○	—	—	○

Point table (auxiliary function) ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])

Use an appropriate device according to the write destination of the servo amplifier.

- AUX1 to AUX255: Writing data to the RAM of a servo amplifier
- AUX1001 to AUX1255: Writing data to the FlashROM or EEPROM of a servo amplifier

○: Available

—: Not available

Virtual device name	Name	Symbol	MR-J4			MR-JE		MR-J5				MR-JET-G
			J4(W)-□B(-RJ)	J4-GF(-RJ)	J4-□B-LL	JE-□B	JE-□BF	J5-G(-RJ) J5W□-G	J5D□-G	J5-□B(-RJ)	J5-□B-LL	
AUX1 to AUX255, AUX1001 to AUX1255	Point table/auxiliary function No. 1 to No. 255	—	—	○	—	—	—	○	○	—	—	○

Point table (M code) ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])

Use an appropriate device according to the write destination of the servo amplifier.

- MCD1 to MCD255: Writing data to the RAM of a servo amplifier
- MCD1001 to MCD1255: Writing data to the FlashROM or EEPROM of a servo amplifier

○: Available

—: Not available

Virtual device name	Name	Symbol	MR-J4			MR-JE		MR-J5				MR-JET-G
			J4(W)-□B(-RJ)	J4-GF(-RJ)	J4-□B-LL	JE-□B	JE-□BF	J5-G(-RJ) J5W□-G	J5D□-G	J5-□B(-RJ)	J5-□B-LL	
MCD1 to MCD255, MCD1001 to MCD1255	Point table/M code No. 1 to No. 255	—	—	—	—	—	—	○	○	—	—	○

Machine diagnosis data ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])

○: Available

—: Not available

Virtual device name	Name	Symbol	MR-J4			MR-JE		MR-J5				MR-JET-G
			J4(W)-□B(-RJ)	J4-GF(-RJ)	J4-□B-LL	JE-□B	JE-□BF	J5-G(-RJ) J5W□-G	J5D□-G	J5-□B(-RJ)	J5-□B-LL	
MD0	Machine diagnosis data, station number	—	○	○	○	○	○	○	○	○	○	○
MD1	Machine diagnosis data shift judgment (test mode)	—	○	○	○	○	○	○	○	○	○	○
MD2[*1]	Machine diagnosis data status	—	○	○	○	○	○	○	○	○	○	○
MD3[*2]	Machine diagnosis data coulomb friction torque in positive direction	—	○	○	○	○	○	○	○	○	○	○
MD4[*2]	Machine diagnosis data friction torque at rated speed in positive direction	—	○	○	○	○	○	○	○	○	○	○
MD5[*2]	Machine diagnosis data coulomb friction torque in negative direction	—	○	○	○	○	○	○	○	○	○	○
MD6[*2]	Machine diagnosis data friction torque at rated speed in negative direction	—	○	○	○	○	○	○	○	○	○	○
MD7[*2]	Machine diagnosis data oscillation frequency (motor is stopped)	—	○	○	○	○	○	○	○	○	○	○
MD8[*2]	Machine diagnosis data vibration level (motor is stopped)	—	○	○	○	○	○	○	○	○	○	○
MD9[*2]	Machine diagnosis data oscillation frequency (motor is operating)	—	○	○	○	○	○	○	○	○	○	○
MD10[*2]	Machine diagnosis data vibration level (motor is operating)	—	○	○	○	○	○	○	○	○	○	○
MD11	Machine diagnosis data, rated speed at forward or reverse rotation torque	—	—	○	—	—	—	○	○	○	○	○
MD12	Machine diagnosis data friction based fault prediction prepare status	—	—	○	—	—	—	—	—	—	—	—
	Machine diagnosis data: friction failure prediction - threshold creation progress		—	—	—	—	—	○	○	○	○	○[*3]
MD13	Machine diagnosis data vibration based fault prediction prepare status	—	—	○	—	—	—	—	—	—	—	—
	Machine diagnosis data: vibration failure prediction - threshold creation progress		—	—	—	—	—	○	○	○	○	○[*3]
MD14	Machine diagnosis data motor total move distance	—	—	○	—	—	—	○	○	○	○	○[*3]
MD15	Machine diagnosis data, friction failure prediction, upper threshold at forward rotation torque, lower threshold at reverse rotation torque	—	—	○	—	—	—	○	○	○	○	○[*3]
MD16	Machine diagnosis data, friction failure prediction, lower threshold at forward rotation torque, upper threshold at reverse rotation torque	—	—	○	—	—	—	○	○	○	○	○[*3]

Virtual device name	Name	Symbol	MR-J4			MR-JE		MR-J5				MR-JET-G
			J4(W)-□B(-RJ)	J4-GF(-RJ)	J4-□B-LL	JE-□B	JE-□BF	J5-G(-RJ) J5W□-G	J5D□-G	J5-□B(-RJ)	J5-□B-LL	
MD17	Machine diagnosis data vibration level threshold	—	—	○	—	—	—	—	—	—	—	—
	Machine diagnosis data: vibration failure prediction - threshold acquisition		—	—	—	—	—	○	○	○	○	○*3
MD18	Machine diagnosis data trouble prediction status	—	—	○	—	—	—	○	○	○	○	○*3
MD19	Machine diagnosis data: Belt tension estimation value	—	—	—	—	—	—	○	○	○	○	○*3
MD20	Machine diagnosis data: static friction used in failure prediction	—	—	—	—	—	—	○	○	○	○	○*3
MD21	Machine diagnosis data: Belt tension threshold estimation	—	—	—	—	—	—	○	○	○	○	○*3

*1 While the servo amplifier is estimating the corresponding machine status in the machine diagnosis, do not write data to the parameters of the servo amplifier from another GOT.
Doing so may cause the servo amplifier to malfunction.

*2 When MD2 indicates that the servo amplifier does not complete the machine diagnosis (is estimating or warning of the machine status), do not monitor MD3 to MD6 (friction states) and MD7 to MD10 (vibration/oscillation states).
To start monitoring those devices upon the estimation completion, set [Trigger] in the applicable object settings.

*3 The commands assigned to MD12 to MD21 are not supported by MR-JET-G.
When the commands are used, the read values will be indefinite.

Gear failure diagnosis data ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])

○: Available

—: Not available

Virtual device name	Name	Symbol	MR-J4			MR-JE		MR-J5				MR-JET-G
			J4(W)-□B(-RJ)	J4-GF(-RJ)	J4-□B-LL	JE-□B	JE-□BF	J5-G(-RJ) J5W□-G	J5D□-G	J5-□B(-RJ)	J5-□B-LL	
GFDS0	Backlash estimation (threshold)	—	—	—	—	—	—	○	○	○	○	—
GFDS1	Backlash estimation (estimation value)	—	—	—	—	—	—	○	○	○	○	—
GFDS2	Backlash estimation (estimation progress)	—	—	—	—	—	—	○	○	○	○	—
GFDS3	Backlash estimation (status)	—	—	—	—	—	—	○	○	○	○	—
GFDS4	Backlash error number	—	—	—	—	—	—	○	○	○	○	—
GFDS5	Backlash estimation move distance	—	—	—	—	—	—	○	○	○	○	—

Encoder communication circuit diagnosis data ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])

○: Available

—: Not available

Virtual device name	Name	Symbol	MR-J4			MR-JE		MR-J5				MR-JET-G
			J4(W)-□B(-RJ)	J4-GF(-RJ)	J4-□B-LL	JE-□B	JE-□BF	J5-G(-RJ) J5W□-G	J5D□-G	J5-□B(-RJ)	J5-□B-LL	
ECCDS0	CN2 encoder communication circuit diagnosis possibility	—	—	—	—	—	—	○	○	○	○	○
ECCDS1	CN2L encoder communication circuit diagnosis possibility	—	—	—	—	—	—	○	○	○	○	○
ECCDS2	CN2 encoder communication circuit diagnosis status	—	—	—	—	—	—	○	○	○	○	○
ECCDS3	CN2L encoder communication circuit diagnosis status	—	—	—	—	—	—	○	○	○	○	○
ECCDS4	CN2 encoder communication circuit diagnosis result	—	—	—	—	—	—	○	○	○	○	○
ECCDS5	CN2L encoder communication circuit diagnosis result	—	—	—	—	—	—	○	○	○	○	○

One-touch tuning data ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])

○: Available

—: Not available

Virtual device name	Name	Symbol	MR-J4			MR-JE		MR-J5				MR-JET-G
			J4(W)-□B(-RJ)	J4-GF(-RJ)	J4-□B-LL	JE-□B	JE-□BF	J5-G(-RJ) J5W□-G	J5D□-G	J5-□B(-RJ)	J5-□B-LL	
OTS0	One-touch tuning status confirmation	—	○	○	○	○	○	○	○	○	○	○
OTS1	Error code list	—	○	○	○	○	○	○	○	○	○	○
OTS2	Setting time	—	○	○	○	○	○	○	○	○	○	○
OTS3	Overshoot amount	—	○	○	○	○	○	○	○	○	○	○
OTS4	One-touch tuning command mode	—	—	—	—	—	—	○	○	○	○	○
OTS5	Load inertia moment ratio	—	—	—	—	—	—	○	○	○	○	○
OTS3000*1	Read/write permissible move distance	—	—	—	—	—	—	○	○	○	○	○

*1 Writing is not available when a negative value is set for the device value.

External input signal in MR-J5-G(-RJ) and MR-J5W□-G ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])

Virtual device name	Name	Symbol	Data to be read from the servo amplifier
DI0	Input device statuses	—	The input device statuses corresponding to the setting values 0000 to 001F of the following are read. Pr. PF91_Drive recorder - Digital channel setting 1 (DRDC1)
DI1	Input device statuses	—	The input device statuses corresponding to the setting values 0020 to 003F of the following are read. Pr. PF91_Drive recorder - Digital channel setting 1 (DRDC1)
DI2	Input device statuses	—	The input device statuses corresponding to the setting values 0040 to 005F of the following are read. Pr. PF91_Drive recorder - Digital channel setting 1 (DRDC1)
DI3	External input pin statuses	—	The statuses of the listed input devices are assigned to the bits in order from bit 0 and read. For details on the input devices, refer to the following. MR-J5 User's Manual (Hardware)
DI4	Statuses of input devices switched on through communication	—	The statuses of the input devices switched on through communication (input device statuses corresponding to the setting values 0000 to 001F of the following) are read. Pr. PF91_Drive recorder - Digital channel setting 1 (DRDC1)
DI5	Statuses of input devices switched on through communication	—	The statuses of input devices switched on through communication (input device statuses corresponding to the setting values 0020 to 003F of the following) are read. Pr. PF91_Drive recorder - Digital channel setting 1 (DRDC1)
DI6	Statuses of input devices switched on through communication	—	The statuses of the input devices switched on through communication (input device statuses corresponding to the setting values 0040 to 005F of the following) are read. Pr. PF91_Drive recorder - Digital channel setting 1 (DRDC1)

External input signal in MR-J5D□-G ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])

Virtual device name	Name	Symbol	Data to be read from the servo amplifier
DI0	Input device statuses	—	The input device statuses corresponding to the setting values 0000 to 001F of the following are read. Pr. PF91_Drive recorder - Digital channel setting 1 (DRDC1)
DI1	Input device statuses	—	The input device statuses corresponding to the setting values 0020 to 003F of the following are read. Pr. PF91_Drive recorder - Digital channel setting 1 (DRDC1)
DI2	Input device statuses	—	The input device statuses corresponding to the setting values 0040 to 005F of the following are read. Pr. PF91_Drive recorder - Digital channel setting 1 (DRDC1)
DI3	External input pin statuses	—	The statuses of the listed input devices are assigned to the bits in order from bit 0 and read. For details on the input devices, refer to the following. MR-J5 User's Manual (Hardware)
DI4	Statuses of input devices switched on through communication	—	The statuses of the input devices switched on through communication (input device statuses corresponding to the setting values 0000 to 001F of the following) are read. Pr. PF91_Drive recorder - Digital channel setting 1 (DRDC1)
DI5	Statuses of input devices switched on through communication	—	The statuses of input devices switched on through communication (input device statuses corresponding to the setting values 0020 to 003F of the following) are read. Pr. PF91_Drive recorder - Digital channel setting 1 (DRDC1)
DI6	Statuses of input devices switched on through communication	—	The statuses of the input devices switched on through communication (input device statuses corresponding to the setting values 0040 to 005F of the following) are read. Pr. PF91_Drive recorder - Digital channel setting 1 (DRDC1)

External input signal in MR-J5(W)-□B(-RJ) ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])

Virtual device name	Name	Symbol	Data to be read from the servo amplifier
DI0	Input device statuses	—	The input device statuses corresponding to the setting values 0000 to 001F of the following are read. Pr. PF91_Drive recorder - Digital channel setting 1 (DRDC1)
DI1	Input device statuses	—	The input device statuses corresponding to the setting values 0020 to 003F of the following are read. Pr. PF91_Drive recorder - Digital channel setting 1 (DRDC1)
DI2	Input device statuses	—	The input device statuses corresponding to the setting values 0040 to 005F of the following are read. Pr. PF91_Drive recorder - Digital channel setting 1 (DRDC1)
DI3	External input pin statuses	—	The statuses of the listed input devices are assigned to the bits in order from bit 0 and read. For details on the input devices, refer to the following. MR-J5 User's Manual (Hardware)
DI4	Statuses of input devices switched on through communication	—	The statuses of the input devices switched on through communication (input device statuses corresponding to the setting values 0000 to 001F of the following) are read. Pr. PF91_Drive recorder - Digital channel setting 1 (DRDC1)
DI5	Statuses of input devices switched on through communication	—	The statuses of input devices switched on through communication (input device statuses corresponding to the setting values 0020 to 003F of the following) are read. Pr. PF91_Drive recorder - Digital channel setting 1 (DRDC1)
DI6	Statuses of input devices switched on through communication	—	The statuses of the input devices switched on through communication (input device statuses corresponding to the setting values 0040 to 005F of the following) are read. Pr. PF91_Drive recorder - Digital channel setting 1 (DRDC1)

External input signal in MR-JET-G ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])

Virtual device name	Name	Symbol
DI0	Input device statuses	—
DI1	Input device statuses	—
DI2	Input device statuses	—
DI3	External input pin statuses	—
DI4	Statuses of input devices switched on through communication	—
DI5	Statuses of input devices switched on through communication	—
DI6	Statuses of input devices switched on through communication	—

External input signal in MR-JE-B and MR-JE-BF ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])

Virtual device name	Name	Symbol	Data to be read from the servo amplifier
DI0	Input device statuses	—	System information
DI1	Input device statuses	—	System information
DI2	Input device statuses	—	System information
DI3	External input pin statuses	—	The statuses of the listed input devices are assigned to the bits in order from bit 0 and read. For details on the input devices, refer to the following. MR-JE-_B Servo Amplifier Instruction Manual
DI4	Statuses of input devices switched on through communication	—	System information
DI5	Statuses of input devices switched on through communication	—	System information
DI6	Statuses of input devices switched on through communication	—	System information

External input signal in MR-J4-GF(-RJ) ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])

Virtual device name	Name	Symbol	Data to be read from the servo amplifier
DI0	Input device statuses	—	System information
DI1	Input device statuses	—	System information
DI2	Input device statuses	—	System information
DI3	External input pin statuses	—	The statuses of the listed input devices are assigned to the bits in order from bit 0 and read. For details on the input devices, refer to the following. MR-J4-_GF_(-RJ) Servo Amplifier Instruction Manual (Motion Mode)
DI4	Statuses of input devices switched on through communication	—	System information
DI5	Statuses of input devices switched on through communication	—	System information
DI6	Statuses of input devices switched on through communication	—	System information

External input signal in MR-J4(W)-□B-RJ ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])

Virtual device name	Name	Symbol	Data to be read from the servo amplifier
DI0	Input device statuses	—	System information
DI1	Input device statuses	—	System information
DI3	External input pin statuses	—	The statuses of the listed input devices are assigned to the bits in order from bit 0 and read. For details on the input devices, refer to the following. 📖MR-J4-_B_(-RJ) Servo Amplifier Instruction Manual
DI4	Statuses of input devices switched on through communication	—	System information
DI5	Statuses of input devices switched on through communication	—	System information

External output signal in MR-J5-G(-RJ) and MR-J5W□-G ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])

Virtual device name	Name	Symbol	Data to be read from the servo amplifier
DO0	Output device statuses	—	The output device statuses corresponding to the setting values 8000 to 801F of the following are read. Pr. PF91_Drive recorder - Digital channel setting 1 (DRDC1)
DO1	Output device statuses	—	The output device statuses corresponding to the setting values 8020 to 803F of the following are read. Pr. PF91_Drive recorder - Digital channel setting 1 (DRDC1)
DO2	Output device statuses	—	The output device statuses corresponding to the setting values 8040 to 805F of the following are read. Pr. PF91_Drive recorder - Digital channel setting 1 (DRDC1)
DO4	External output pin statuses	—	The statuses of the listed output devices are assigned to the bits in order from bit 0 and read. For details on the output devices, refer to the following. 📖MR-J5 User's Manual (Hardware)

External output signal in MR-J5D□-G ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])

Virtual device name	Name	Symbol	Data to be read from the servo amplifier
DO0	Output device statuses	—	The output device statuses corresponding to the setting values 8000 to 801F of the following are read. Pr. PF91_Drive recorder - Digital channel setting 1 (DRDC1)
DO1	Output device statuses	—	The output device statuses corresponding to the setting values 8020 to 803F of the following are read. Pr. PF91_Drive recorder - Digital channel setting 1 (DRDC1)
DO2	Output device statuses	—	The output device statuses corresponding to the setting values 8040 to 805F of the following are read. Pr. PF91_Drive recorder - Digital channel setting 1 (DRDC1)
DO4	External output pin statuses	—	The statuses of the listed output devices are assigned to the bits in order from bit 0 and read. For details on the output devices, refer to the following. 📖MR-J5 User's Manual (Hardware)

External output signal in MR-J5(W)-□B(-RJ) ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])

Virtual device name	Name	Symbol	Data to be read from the servo amplifier
DO0	Output device statuses	—	The output device statuses corresponding to the setting values 8000 to 801F of the following are read. Pr. PF91_Drive recorder - Digital channel setting 1 (DRDC1)
DO1	Output device statuses	—	The output device statuses corresponding to the setting values 8020 to 803F of the following are read. Pr. PF91_Drive recorder - Digital channel setting 1 (DRDC1)
DO2	Output device statuses	—	The output device statuses corresponding to the setting values 8040 to 805F of the following are read. Pr. PF91_Drive recorder - Digital channel setting 1 (DRDC1)
DO4	External output pin statuses	—	The statuses of the listed output devices are assigned to the bits in order from bit 0 and read. For details on the output devices, refer to the following. 📖MR-J5 User's Manual (Hardware)

External output signal in MR-JET-G ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])

Virtual device name	Name	Symbol
DO0	Output device statuses	—
DO1	Output device statuses	—
DO2	Output device statuses	—
DO4	External output pin statuses	—

External output signal in MR-JE-B and MR-JE-BF ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])

Virtual device name	Name	Symbol	Data to be read from the servo amplifier
DO0	Output device statuses	—	System information
DO1	Output device statuses	—	System information
DO2	Output device statuses	—	System information
DO4	External output pin statuses	—	The statuses of the listed output devices are assigned to the bits in order from bit 0 and read. For details on the output devices, refer to the following. 📖MR-JE-_B Servo Amplifier Instruction Manual

External output signal in MR-J4-GF(-RJ) ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])

Virtual device name	Name	Symbol	Data to be read from the servo amplifier
DO0	Output device statuses	—	System information
DO1	Output device statuses	—	System information
DO2	Output device statuses	—	System information
DO4	External output pin statuses	—	The statuses of the listed output devices are assigned to the bits in order from bit 0 and read. For details on the output devices, refer to the following. MR-J4-_GF_(-RJ) Servo Amplifier Instruction Manual (Motion Mode)

External output signal in MR-J4(W)-□B-RJ ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])

Virtual device name	Name	Symbol	Data to be read from the servo amplifier
DO0	Output device statuses	—	System information
DO1	Output device statuses	—	System information
DO4	External output pin statuses	—	The statuses of the listed output devices are assigned to the bits in order from bit 0 and read. For details on the output devices, refer to the following. MR-J4-_B_(-RJ) Servo Amplifier Instruction Manual

Life Diagnosis ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])

○: Available

—: Not available

Virtual device name	Name	Symbol	MR-J4			MR-JE		MR-J5				MR-JET-G
			J4(W)-□B(-RJ)	J4-GF(-RJ)	J4-□B-LL	JE-□B	JE-□BF	J5-G(-RJ) J5W□-G	J5D□-G	J5-□B(-RJ)	J5-□B-LL	
ALD0	Cumulative power-on time	—	○	○	○	○	○	○	○	○	○	○
ALD1	Number of inrush current switching times	—	○	○	○	○	○	○	○	○	○	○

Input signal for test operation (for test operation) ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])

○: Available

—: Not available

Virtual device name	Name	Symbol	MR-J4			MR-JE		MR-J5				MR-JET-G
			J4(W)-□B(-RJ)	J4-GF(-RJ)	J4-□B-LL	JE-□B	JE-□BF	J5-G(-RJ) J5W□-G	J5D□-G	J5-□B(-RJ)	J5-□B-LL	
TMI0	Input signal for test operation 1	—	○	○	○	○	○	○	○	○	○	○
TMI1	Input signal for test operation 2	—	○	○	○	○	○	○	○	○	○	○
TMI2	Input signal for test operation 3	—	—	—	—	—	—	—	—	—	—	—

When using the input signal for test operation (for test operation), note the following.

Precautions	Description
Writing a value to a virtual device using an object	Numerical input cannot be used. Use a word switch for writing.

Forced output of signal pin (for test operation) ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])

○: Available

—: Not available

Virtual device name	Name	Symbol	MR-J4			MR-JE		MR-J5				MR-JET-G
			J4(W)-□B(-RJ)	J4-GF(-RJ)	J4-□B-LL	JE-□B	JE-□BF	J5-G(-RJ) J5W□-G	J5D□-G	J5-□B(-RJ)	J5-□B-LL	
TMO0	Forced output of signal pin	—	○	○	○	○	○	○	○	○	○	○

When using the forced output of signal pin (for test operation), note the following.

Precautions	Description
Writing a value to a virtual device using an object	Numerical input cannot be used. Use a word switch for writing.

Set data (for test operation) ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])

○: Available

—: Not available

Virtual device name	Name	Symbol	MR-J4			MR-JE		MR-J5				MR-JET-G
			J4(W)-□B(-RJ)	J4-GF(-RJ)	J4-□B-LL	JE-□B	JE-□BF	J5-G(-RJ) J5W□-G	J5D□-G	J5-□B(-RJ)	J5-□B-LL	
TMD0	Writes the speed (test mode)	—	○	○	○	○	○	—	—	—	—	—
	Motor speed		—	—	—	—	—	○	○	○	○	○
TMD1	Writes the acceleration/deceleration time constant (test mode)	—	○	○	○	○	○	—	—	—	—	—
	Write acceleration/deceleration time constant		—	—	—	—	—	○	○	○	○	○
TMD3	Writes the moving distance (test mode)	—	○	○	○	○	○	—	—	—	—	—
	Move distance		—	—	—	—	—	○	○	○	○	○

When using the set data (for test operation), note the following.

Precautions	Description
Writing a value to a virtual device using an object	Numerical input cannot be used. Use a word switch for writing.

13.3.11 Precautions for virtual servo amplifier devices ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])

When handling real numbers for virtual servo amplifier devices

For the servo amplifier, if a real number is written to a virtual device, only the integer portion of the number is stored into the device.

Ex.

When 12.34 is entered with the numerical input on the GOT, the value is written as 1234 to the device of the servo amplifier.
If the data type of the virtual servo amplifier device is set to [Real], the value after the writing may differ from the one before the writing.
Additionally, the monitoring process may take a longer time.
Therefore, select one of the following items as the data type of the virtual device.

- Signed 16-bit binary data
- Unsigned 16-bit binary data
- Signed 32-bit binary data
- Unsigned 32-bit binary data

When you use the value of the virtual servo amplifier device, remember that only the integer portion of the value is stored in the device.
To display a real number on the numerical display or numerical input object, set [Format] to [Real] and select [Adjust Decimal Point Range] in the object setting.

Data type and format settings for using virtual servo amplifier devices

To specify virtual servo amplifier devices in the object setting or other settings, the data type and format must be set according to the notation of the values handled by the virtual devices.
For notation of the virtual device values, refer to the following.
📖Instruction manual for the servo amplifier used
📖MR Configurator2 Help
When real numbers are stored in virtual devices, set the data type as shown below instead of setting [Real].
The following shows a setting example for using virtual servo amplifier devices for an object.

Ex.

When using a numerical display

Notation of the virtual device values	Setting
Decimal number (positive values only)	• [Data Type]: [Unsigned BIN16] ([Unsigned BIN32] for 65536 or more) • [Format]: [Unsigned Decimal]
Decimal number (positive and negative values)	• [Data Type]: [Signed BIN16] ([Signed BIN32] for -32769 or less, and 32768 or more) • [Format]: [Signed Decimal]
Hexadecimal number	• [Data Type]: [Unsigned BIN16] ([Unsigned BIN32] for 0x10000 or more) • [Format]: [Hexadecimal]
Decimal point notation (positive values only)	• [Data Type]: [Unsigned BIN16] ([Unsigned BIN32] as necessary) • [Format]: [Real] • [Digits (Integral)]: Set the number of digits in the integral portion. • [Digits (Fractional)]: Set the number of digits in the fractional portion. • [Adjust Decimal Point Range]: Selected
Decimal point notation (positive and negative values)	• [Data Type]: [Signed BIN16] ([Signed BIN32] as necessary) • [Format]: [Real] • [Digits (Integral)]: Set the number of digits in the integral portion. • [Digits (Fractional)]: Set the number of digits in the fractional portion. • [Adjust Decimal Point Range]: Selected
When the notation varies by digit	• [Data Type]: [Unsigned BIN16] ([Unsigned BIN32] for 0x10000 or more) • [Format]: [Hexadecimal] • On the [Operation/Script] tab, select [Data Operation] for [Operation Type], and set [Bit Mask] or [Bit Shift].

Specifying consecutive virtual servo amplifier devices

The GOT does not support writing/reading data to/from consecutive virtual servo amplifier devices.

13.3.12 Virtual inverter devices ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])

The following shows the correspondence between the virtual devices used in the GOT and the inverter data.

Virtual device name	Reference
IOST	☞ Page 1304 I/O terminal monitor ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])
CMD	☞ Page 1306 Operation command ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])
	☞ Page 1307 Operation when turning on/off one of the CMD3 to CMD12 devices ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])
	☞ Page 1307 Operation when turning on/off one of the CMD48 to CMD52 devices (MELSEC iQ-R, RnMT/NC/RT, CR800-D])
AL	☞ Page 1308 Alarm history ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])
LPr	☞ Page 1310 Parameter (32-bit) ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])
OP	☞ Page 1310 Operation parameter ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])
PV	☞ Page 1311 Current value monitor ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])

The lists of virtual devices shown in this section explain the FR-A800 Plus series and FR-E800 series models using the following abbreviations.

Series	Abbreviation	Model
FR-A800 Plus series	CRN	FR-A8□0-CRN FR-A8□2-CRN FR-A8□0-E-CRN FR-A8□2-E-CRN
	R2R	FR-A8□0-R2R FR-A8□2-R2R FR-A8□0-E-R2R FR-A8□2-E-R2R
	AWH	FR-A8□0-AWH FR-A8□0-E-AWH
	LC	FR-A8□0-LC FR-A8□0-E-LC
FR-E800 series	E800	FR-E8□0
	E	FR-E8□0-E
FR-D800 series	D800	FR-D8□0
	E	FR-D8□0-E

I/O terminal monitor ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])

○: Available

—: Not available

Virtual device name	Name	FR-A800 series FR-A800 Plus series FR-F800 series	FR-E800 series		FR-D800 series		FR-E700 series
			E800	E	D800	E	FR-E7□0-NE
IOST1	Input terminal STF	○*1	○*1	○*1	○*1	○*1	○*1
IOST2	Input terminal STR	○*1	○*1	○*1	○*1	○*1	○*1
IOST3	Input terminal RL	○*1	○*1	—	○*1	○*1	○*1
IOST4	Input terminal RM	○*1	○*1	—	○*1	○*1	○*1
IOST5	Input terminal RH	○*1	○*1	—	○*1	○*1	○*1
IOST6	Input terminal RT	○*1	—	—	—	—	—
IOST7	Input terminal AU	○*1	—	—	—	—	—
IOST8	Input terminal JOG	○*1	—	—	—	—	—
IOST9	Input terminal CS	○*1	—	—	—	—	—
IOST10	Input terminal MRS	○*1	○*1	—	—	—	○*1
IOST11	Input terminal STOP	○*1	—	—	—	—	—
IOST12	Input terminal RES	○*1	○*1	—	—	—	○*1
IOST32	Output terminal RUN	○*1	○*1	—	○*1	○*1	○*1
IOST33	Output terminal SU	○*1	—	—	—	—	—
IOST34	Output terminal IPF	○*1	—	—	—	—	—
IOST35	Output terminal OL	○*1	—	—	—	—	—
IOST36	Output terminal FU	○*1	○*1	—	○*1	—	○*1
IOST37	Output terminal ABC1	○*1	○*1	○*1	○*1	○*1	○*1
IOST38	Output terminal ABC2	○*1	—	—	—	—	—
IOST39	Output terminal SO	○	—	—	—	—	—
IOST48	NET Y1 output	—	○*1*2	○*1*2	○*1	○*1	—
IOST49	NET Y2 output	—	○*1*2	○*1*2	○*1	○*1	—
IOST50	NET Y3 output	—	○*1*2	○*1*2	○*1	○*1	—
IOST51	NET Y4 output	—	○*1*2	○*1*2	○*1	○*1	—
IOST64	Option input terminal X0	○	○	○	—	—	—
IOST65	Option input terminal X1	○	○	○	—	—	—
IOST66	Option input terminal X2	○	○	○	—	—	—
IOST67	Option input terminal X3	○	○	○	—	—	—
IOST68	Option input terminal X4	○	○	○	—	—	—
IOST69	Option input terminal X5	○	○	○	—	—	—
IOST70	Option input terminal X6	○	○	○	—	—	—
IOST71	Option input terminal X7	○	○	○	—	—	—
IOST72	Option input terminal X8	○	○	○	—	—	—
IOST73	Option input terminal X9	○	○	○	—	—	—
IOST74	Option input terminal X10	○	○	○	—	—	—
IOST75	Option input terminal X11	○	○	○	—	—	—
IOST76	Option input terminal X12	○	○	○	—	—	—
IOST77	Option input terminal X13	○	○	○	—	—	—
IOST78	Option input terminal X14	○	○	○	—	—	—
IOST79	Option input terminal X15	○	○	○	—	—	—
IOST80	Option input terminal DY	○	○	○	—	—	—
IOST96	Option output terminal Y0/DO0	○*1	○*1	○*1	—	—	—
IOST97	Option output terminal Y1/DO1	○*1	○*1	○*1	—	—	—
IOST98	Option output terminal Y2/DO2	○*1	○*1	○*1	—	—	—
IOST99	Option output terminal Y3/DO3	○*1	○*1	○*1	—	—	—
IOST100	Option output terminal Y4/DO4	○*1	○*1	○*1	—	—	—
IOST101	Option output terminal Y5/DO5	○*1	○*1	○*1	—	—	—

Virtual device name	Name	FR-A800 series FR-A800 Plus series FR-F800 series	FR-E800 series		FR-D800 series		FR-E700 series
			E800	E	D800	E	FR-E7□0-NE
IOST102	Option output terminal Y6/DO6	○*1	○*1	○*1	—	—	—
IOST103	Option output terminal RA1	○*1	○*1	○*1	—	—	—
IOST104	Option output terminal RA2	○*1	○*1	○*1	—	—	—
IOST105	Option output terminal RA3	○*1	○*1	○*1	—	—	—

*1 The monitor data can be changed by the settings of Pr.180 to Pr.189 (input terminal function selection) or Pr.190 to Pr.196 or Pr.313 to Pr.322 (output terminal function selection).
For the relationship between the parameters and terminals, refer to the following.
📖Manual of the inverter used

*2 Use an inverter having SERIAL (serial number) "□□211○○○○○○" or later.
SERIAL (serial number) is provided on the rating plate of the inverter.

Operation command ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])

○: Available

—: Not available

Virtual device name	Name	FR-A800 series FR-A800 Plus series FR-F800 series	FR-E800 series	FR-D800 series	FR-E700 series FR-E7□0-NE
CMD0	Stop command	○	○	○	○
CMD1	Forward rotation command	○	○	○	○
CMD2	Reverse rotation command	○	○	○	○
CMD3*1	RL terminal	○*2	○*2	○*2	○*2
CMD4*1	RM terminal	○*2	○*2	○*2	○*2
CMD5*1	RH terminal	○*2	○*2	○*2	○*2
CMD6*1	RT terminal	○*2	—	—	○
CMD7*1	AU terminal	○*2	—	—	○
CMD8*1	JOG terminal	○*2*3	—	—	—
CMD9*1	CS terminal	○*2*3	—	—	—
CMD10*1	MRS terminal	○*2	○*2	—	○*2
CMD11*1	STOP terminal	○*2*3	—	—	—
CMD12*1	RES terminal	○*2*3	○*2*3	—	○*2
CMD16	Alarm history clear	○	○	○	○
CMD24	Inverter reset	○	○	○	○
CMD32	Parameter clear	○	○	○	○
CMD33	Parameter clear (communication parameters are not cleared)	○	○	○	○
CMD34	All parameter clear	○	○	○	○
CMD35	All parameter clear (communication parameters are not cleared)	○	○	○	○
CMD48	NET X1 input	—	○*2*3*4	○*2*3	—
CMD49	NET X2 input	—	○*2*3*4	○*2*3	—
CMD50	NET X3 input	—	○*2*3*4	○*2*3	—
CMD51	NET X4 input	—	○*2*3*4	○*2*3	—
CMD52	NET X5 input	—	○*2*3*4	○*2*3	—

*1 When the GOT is connected to the PU connector and the operation mode is set to the PU operation mode, the device cannot be used.

*2 The monitor data can be changed by the settings of Pr.178 to Pr.189 (input terminal function selection).
For the relationship between the parameters and terminals, refer to the following.
📖Manual of the inverter used

*3 The device is invalid for the initial state of the inverter in which a function that cannot be controlled by the GOT is set or no function is set.
Change the relevant setting in Pr.178 to Pr.189 (input terminal function selection).

*4 Use an inverter having SERIAL (serial number) "□□211○○○○○○" or later.
SERIAL (serial number) is provided on the rating plate of the inverter.

When using the operation command, note the following.

Precautions	Description
When setting a device for a bit switch	Do not select [Alternate] for [Switch Action] of the bit switch.
Operation when a CMD device is turned on	☞ Page 1307 Operation when turning on/off one of the CMD3 to CMD12 devices ([MELSEC iQ-R, RnMT/NC/RT, CR800-D]) ☞ Page 1307 Operation when turning on/off one of the CMD48 to CMD52 devices (MELSEC iQ-R, RnMT/NC/RT, CR800-D])

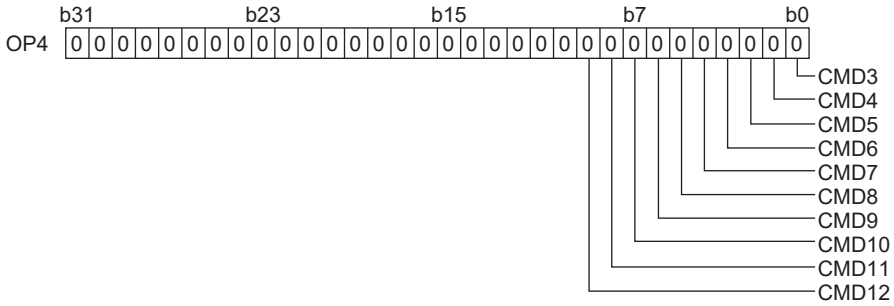
Operation when turning on/off one of the CMD3 to CMD12 devices ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])

The CMD3 to CMD12 devices cannot be controlled simultaneously.

When you turn on/off one of the CMD3 to CMD12 devices, the rest of these devices are turned off.

Use OP4 to control multiple devices from CMD3 to CMD12 simultaneously.

The following shows the relationship between CMD3 to CMD12 and OP4.



Ex.

Turning on the CMD3 (RL terminal) and CMD12 (RES terminal) devices

For a hexadecimal value, write 0201.

For a decimal value, write 513.

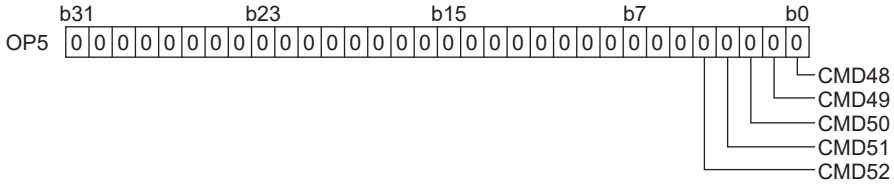
Operation when turning on/off one of the CMD48 to CMD52 devices (MELSEC iQ-R, RnMT/NC/RT, CR800-D])

The CMD48 to CMD52 devices cannot be controlled simultaneously.

When you turn on/off one of the CMD48 to CMD52 devices, the rest of these devices are turned off.

Use OP5 to control multiple devices from CMD48 to CMD52 simultaneously.

The following shows the relationship between CMD48 to CMD52 and OP5.



Ex.

Turning on the CMD48 (NET X1 input) and CMD52 (NET X5 input) devices

For a hexadecimal value, write 0011.

For a decimal value, write 17.

Alarm history ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])

○: Available

—: Not available

Virtual device name	Name	FR-A800 series FR-A800 Plus series FR-F800 series	FR-E800 series	FR-D800 series	FR-E700 series FR-E7□0-NE
AL0	Current fault	○	○	○	○
AL1	Current warning 1	—	○	○	—
AL2	Current warning 2	—	○	○	—
AL100	Faults history 1 (symbol)	○	○	○	○
AL101	Faults history 1 (output frequency)	○	○	○	○
AL102	Faults history 1 (output current)	○	○	○	○
AL103	Faults history 1 (output voltage)	○	○	○	○
AL104	Faults history 1 (energization time)	○	○	○	○
AL105	Faults history 1 (year)	○	○	○	—
AL106	Faults history 1 (month)	○	○	○	—
AL107	Faults history 1 (day)	○	○	○	—
AL108	Faults history 1 (hour)	○	○	○	—
AL109	Faults history 1 (minute)	○	○	○	—
AL200	Faults history 2 (symbol)	○	○	○	○
AL201	Faults history 2 (output frequency)	○	○	○	○
AL202	Faults history 2 (output current)	○	○	○	○
AL203	Faults history 2 (output voltage)	○	○	○	○
AL204	Faults history 2 (energization time)	○	○	○	○
AL205	Faults history 2 (year)	○	○	○	—
AL206	Faults history 2 (month)	○	○	○	—
AL207	Faults history 2 (day)	○	○	○	—
AL208	Faults history 2 (hour)	○	○	○	—
AL209	Faults history 2 (minute)	○	○	○	—
AL300	Faults history 3 (symbol)	○	○	○	○
AL301	Faults history 3 (output frequency)	○	○	○	○
AL302	Faults history 3 (output current)	○	○	○	○
AL303	Faults history 3 (output voltage)	○	○	○	○
AL304	Faults history 3 (energization time)	○	○	○	○
AL305	Faults history 3 (year)	○	○	○	—
AL306	Faults history 3 (month)	○	○	○	—
AL307	Faults history 3 (day)	○	○	○	—
AL308	Faults history 3 (hour)	○	○	○	—
AL309	Faults history 3 (minute)	○	○	○	—
AL400	Faults history 4 (symbol)	○	○	○	○
AL401	Faults history 4 (output frequency)	○	○	○	○
AL402	Faults history 4 (output current)	○	○	○	○
AL403	Faults history 4 (output voltage)	○	○	○	○
AL404	Faults history 4 (energization time)	○	○	○	○
AL405	Faults history 4 (year)	○	○	○	—
AL406	Faults history 4 (month)	○	○	○	—
AL407	Faults history 4 (day)	○	○	○	—
AL408	Faults history 4 (hour)	○	○	○	—
AL409	Faults history 4 (minute)	○	○	○	—
AL500	Faults history 5 (symbol)	○	○	○	○
AL501	Faults history 5 (output frequency)	○	○	○	○
AL502	Faults history 5 (output current)	○	○	○	○
AL503	Faults history 5 (output voltage)	○	○	○	○

Virtual device name	Name	FR-A800 series FR-A800 Plus series FR-F800 series	FR-E800 series	FR-D800 series	FR-E700 series FR-E7□0-NE
AL504	Faults history 5 (energization time)	○	○	○	○
AL505	Faults history 5 (year)	○	○	○	—
AL506	Faults history 5 (month)	○	○	○	—
AL507	Faults history 5 (day)	○	○	○	—
AL508	Faults history 5 (hour)	○	○	○	—
AL509	Faults history 5 (minute)	○	○	○	—
AL600	Faults history 6 (symbol)	○	○	○	○
AL601	Faults history 6 (output frequency)	○	○	○	○
AL602	Faults history 6 (output current)	○	○	○	○
AL603	Faults history 6 (output voltage)	○	○	○	○
AL604	Faults history 6 (energization time)	○	○	○	○
AL605	Faults history 6 (year)	○	○	○	—
AL606	Faults history 6 (month)	○	○	○	—
AL607	Faults history 6 (day)	○	○	○	—
AL608	Faults history 6 (hour)	○	○	○	—
AL609	Faults history 6 (minute)	○	○	○	—
AL700	Faults history 7 (symbol)	○	○	○	○
AL701	Faults history 7 (output frequency)	○	○	○	○
AL702	Faults history 7 (output current)	○	○	○	○
AL703	Faults history 7 (output voltage)	○	○	○	○
AL704	Faults history 7 (energization time)	○	○	○	○
AL705	Faults history 7 (year)	○	○	○	—
AL706	Faults history 7 (month)	○	○	○	—
AL707	Faults history 7 (day)	○	○	○	—
AL708	Faults history 7 (hour)	○	○	○	—
AL709	Faults history 7 (minute)	○	○	○	—
AL800	Faults history 8 (symbol)	○	○	○	○
AL801	Faults history 8 (output frequency)	○	○	○	○
AL802	Faults history 8 (output current)	○	○	○	○
AL803	Faults history 8 (output voltage)	○	○	○	○
AL804	Faults history 8 (energization time)	○	○	○	○
AL805	Faults history 8 (year)	○	○	○	—
AL806	Faults history 8 (month)	○	○	○	—
AL807	Faults history 8 (day)	○	○	○	—
AL808	Faults history 8 (hour)	○	○	○	—
AL809	Faults history 8 (minute)	○	○	○	—

Parameter (32-bit) ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])

The virtual device numbers (LPr) used in the GOT correspond to the inverter parameter numbers.

For the inverter parameters, refer to the following.

📖Manual of the inverter used

When using a parameter (32-bit), note the following.

Precautions	Description
When setting 8888 or 9999 to a 32-bit parameter (Lpr) of an inverter	Values 8888 and 9999 are used for particular purposes. From the GOT, if you set these numbers to a parameter that can accept a value with a fractional part, you are recommended to set the data type to [Real].

Operation parameter ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])

○: Available

—: Not available

Virtual device name		Name	FR-A800 series FR-A800 Plus series FR-F800 series	FR-E800 series	FR-D800 series	FR-E700 series FR-E7□0-NE
OP0		Operation frequency(RAM)	○	○	○	○
OP1		Operation frequency (EEPROM)	○	○	○	○
OP2		Operation mode	○	○	○	○
OP3		Operating status	○	○	○	○
OP4*1*2*3	—	Input terminal command	○	○	○	○
	b0	CMD3: RL terminal				
	b1	CMD4: RM terminal				
	b2	CMD5: RH terminal				
	b3	CMD6: RT terminal				
	b4	CMD7: AU terminal				
	b5	CMD8: JOG terminal				
	b6	CMD9: CS terminal				
	b7	CMD10: MRS terminal				
	b8	CMD11: STOP terminal				
	b9	CMD12: RES terminal				
OP5*2	—	Input terminal command (extend)	—	○*4	○*2*3	—
	b0	CMD48: NET X1 input				
	b1	CMD49: NET X2 input				
	b2	CMD50: NET X3 input				
	b3	CMD51: NET X4 input				
	b4	CMD52: NET X5 input				

*1 When the GOT is connected to the PU connector and the operation mode is set to the PU operation mode, the device cannot be used.

*2 The monitor data can be changed by the settings of Pr.178 to Pr.189 (input terminal function selection).
For the relationship between the parameters and terminals, refer to the following.
📖Manual of the inverter used

*3 The device is invalid for the initial state of the inverter in which a function that cannot be controlled by the GOT is set or no function is set.
Change the relevant setting in Pr.178 to Pr.189 (input terminal function selection).

*4 Use an inverter having SERIAL (serial number) "□□211○○○○○○" or later.
SERIAL (serial number) is provided on the rating plate of the inverter.

Current value monitor ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])

○: Available

—: Not available

Virtual device name	Name	FR-A800 series	FR-A800 Plus series				FR-F800 series	FR-E800 series	FR-D800 series	FR-E700 series
			CRN	R2R	AWH	LC				FR-E7□0-NE
PV1	Output frequency/speed	—	—	—	○	—	—	—	—	○
	Output frequency	○	○	○	—	○	○	○	○	—
PV2	Output current	○	○	○	○	○	○	○	○	○
PV3	Output voltage	○	○	○	○	○	○	○	○	○
PV5	Frequency setting value/speed setting	—	—	—	○	—	—	—	—	○
	Frequency setting value	○	○	○	—	○	○	○	○	—
PV6	Speed/machine speed	○	○	○	—	○	○	○	○	—
	Operation speed	—	—	—	○	—	—	—	—	—
PV7	Motor torque	○	○	○	○	○	○	○	○	○
PV8	Converter output voltage	○	○	○	○	○	○	○	○	○
PV9	Regenerative brake duty	○	○	○	○	○	—	○	○	○
PV10	Electronic thermal O/L relay load factor	○	○	○	○	○	○	○	○	○
PV11	Output current peak value	○	○	○	○	○	○	○	○	○
PV12	Converter output voltage peak value	○	○	○	○	○	○	○	○	○
PV13	Input power	○	○	○	○	○	○	—	○	—
PV14	Output power	○	○	○	○	○	○	○	○	○
PV17	Load meter	○	○	○	○	○	○	○	○	—
PV18	Motor excitation current	○	○	○	○	○	○	○	○	—
PV19	Position pulse	○	○	—	—	○	—	—	—	—
	Analog output signal for dancer tension control	—	—	○	○	—	—	—	—	—
PV20	Cumulative energization time	○	○	○	○	○	○	○	○	○
PV22	Orientation status	○	○	—	—	○	—	—	—	—
	Winding diameter	—	—	○	○	—	—	—	—	—
PV23	Actual operation time	○	○	○	○	○	○	○	○	○
PV24	Motor load factor	○	○	○	○	○	○	○	○	○
PV25	Cumulative power	○	○	○	○	○	○	○	○	○
PV26	Line speed command	—	—	○	○	—	—	—	—	—
PV27	Actual line speed	—	—	○	○	—	—	—	—	—
PV28	Dancer compensation speed	—	—	○	○	—	—	—	—	—
PV29	Winding length (upper + lower)	—	—	—	○	—	—	—	—	—
PV30	Analog output signal 2 for dancer tension control	—	—	○	○	—	—	—	—	—
PV31	Line speed pulse monitor	—	—	○	○	—	—	—	—	—
PV32	Torque command	○	○	○	○	○	—	○	○	—
PV33	Torque current command	○	○	○	○	○	—	○	○	—
PV34	Motor output	○	○	○	○	○	○	—	—	—
PV35	Feedback pulse	○	○	○	○	○	—	—	—	—
PV36	Torque (positive polarity for driving torque/negative polarity for regenerative braking torque)	○	○	○	○	○	—	—	—	—
PV37	Heat sink temperature	—	—	—	—	—	—	—	○	—
PV38	Trace status	—	—	—	○	—	—	—	—	—
PV39	SSCNET III(/H) communication status	○	○	—	—	○	—	—	—	—
PV40	PLC function user monitor 1	○	○	○	○	○	○	○	—	—

Virtual device name	Name	FR-A800 series	FR-A800 Plus series				FR-F800 series	FR-E800 series	FR-D800 series	FR-E700 series
			CRN	R2R	AWH	LC				FR-E7□0-NE
PV41	PLC function user monitor 2	○	○	○	○	○	○	○	—	—
PV42	PLC function user monitor 3	○	○	○	○	○	○	○	—	—
PV43	Station number (RS-485 terminals)	—	—	—	○	—	—	—	—	—
PV44	Station number (PU)	—	—	—	○	—	—	—	—	—
PV45	Station number (CC-Link)	—	—	—	○	—	—	—	—	—
PV46	Motor temperature	○	○	○	○	○	—	—	—	—
PV50	Energy saving effect	○	○	○	○	○	○	○	—	—
	Power saving effect / Energy saving effect	—	—	—	—	—	—	—	○	—
PV51	Cumulative energy saving	○	○	○	○	○	○	○	—	—
	Cumulative saved energy / Cumulative energy saving	—	—	—	—	—	—	—	○	—
PV52	PID set point	○	○	○	○	○	○	○	○	○
PV53	PID measured value	○	○	○	○	○	○	○	○	○
PV54	PID deviation	○	○	○	○	○	○	○	○	○
PV61	Motor thermal load factor	○	○	○	○	○	○	○	○	○
PV62	Inverter thermal load factor	○	○	○	○	○	○	○	○	○
PV63	Cumulative power 2	—	—	—	—	—	—	—	—	○
	Winding length (upper)	—	—	—	○	—	—	—	—	—
PV64	PTC thermistor resistance	○	○	○	○	○	○	—	○	—
PV67	PID measured value 2	○	○	○	○	○	○	○	○	—
PV68	Emergency drive status	—	—	—	—	—	—	—	○	—
PV69	PID input pressure value	—	—	—	—	—	○	—	—	—
PV71	Cumulative pulse	○	○	○	○	○	—	—	—	—
PV72	Cumulative pulse overflow times	○	○	○	○	○	—	—	—	—
PV73	Cumulative pulse (control terminal option)	○	○	○	○	○	—	—	—	—
PV74	Cumulative pulse overflow times (control terminal option)	○	○	○	○	○	—	—	—	—
PV75	Multi-revolution counter	○	○	—	—	○	—	—	—	—
PV77	32-bit cumulative energy (lower 16 bits)	—	—	—	○	—	—	—	—	—
PV78	32-bit cumulative energy (upper 16 bits)	—	—	—	○	—	—	—	—	—
PV79	32-bit cumulative energy (lower 16 bits)	—	—	—	○	—	—	—	—	—
PV80	32-bit cumulative energy (upper 16 bits)	—	—	—	○	—	—	—	—	—
PV81	BACnet reception status	—	—	—	—	—	○	—	—	—
	Tension command after taper compensation	—	—	○	○	—	—	—	—	—
PV82	BACnet token pass counter	—	—	—	—	—	○	—	—	—
	Winding diameter compensation torque command	—	—	○	○	—	—	—	—	—
PV83	BACnet valid APDU counter	—	—	—	—	—	○	—	—	—
	Inertia compensation	—	—	○	○	—	—	—	—	—
PV84	BACnet communication error counter	—	—	—	—	—	○	—	—	—
	Mechanical loss compensation	—	—	○	○	—	—	—	—	—
PV85	BACnet terminal FM/CA output level	—	—	—	—	—	○	—	—	—
	Terminal 1 input voltage	—	—	○	○	—	—	—	—	—

Virtual device name	Name	FR-A800 series	FR-A800 Plus series				FR-F800 series	FR-E800 series	FR-D800 series	FR-E700 series
			CRN	R2R	AWH	LC				FR-E7□0-NE
PV86	BACnet terminal AM output level	—	—	—	—	—	○	—	—	—
	Terminal 1 input after calibration (%)	—	—	○	○	—	—	—	—	—
PV87	Remote output value 1	○	○	○	○	○	○	—	—	—
PV88	Remote output value 2	○	○	○	○	○	○	—	—	—
PV89	Remote output value 3	○	○	○	○	○	○	—	—	—
PV90	Remote output value 4	○	○	○	○	○	○	—	—	—
PV91	PID manipulated variable	○	○	○	○	○	○	○	○	—
PV92	Second PID set point	○	○	—	—	○	○	—	—	—
	PID torque control actual tension	—	—	○	—	—	—	—	—	—
PV93	Second PID measured value	○	○	—	—	○	○	—	—	—
	PID torque control manipulated tension	—	—	○	—	—	—	—	—	—
PV94	Second PID deviation	○	○	—	—	○	○	—	—	—
PV95	Second PID measured value 2	○	○	—	—	○	○	—	—	—
PV96	Second PID manipulated variable	○	○	—	—	○	○	—	—	—
PV97	Dancer main set speed (For FR-E800 and FR-D800, dancer main speed setting)	○	○	—	—	○	—	○	○	—
	Winding diameter compensation speed	—	—	○	○	—	—	—	—	—
PV98	Control circuit temperature	○	○	○	○	○	○	—	○	—

13.4 [MELSEC iQ-F]

GT37 SoftGOT3000

Item	Reference
Specifications of bit devices	☞ Page 1315 Monitoring-supported bit devices ([MELSEC iQ-F])
	☞ Page 1317 Setting virtual bit devices for servo amplifiers ([MELSEC iQ-F])
	☞ Page 1318 Availability of writing/reading data to/from bit devices ([MELSEC iQ-F])
Specifications of word devices	☞ Page 1319 Monitoring-supported word devices ([MELSEC iQ-F])
	☞ Page 1321 Setting virtual word devices for servo amplifiers ([MELSEC iQ-F])
	☞ Page 1324 Availability of writing/reading data to/from word devices ([MELSEC iQ-F])
Specifications of double-word devices	☞ Page 1325 Monitoring-supported double-word devices ([MELSEC iQ-F])
	☞ Page 1326 Setting virtual double-word devices for servo amplifiers ([MELSEC iQ-F])
	☞ Page 1327 Availability of writing/reading data to/from double-word devices ([MELSEC iQ-F])
Specifications of virtual servo amplifier devices	☞ Page 1328 Virtual servo amplifier devices ([MELSEC iQ-F])
	☞ Page 1328 Precautions for virtual servo amplifier devices ([MELSEC iQ-F])

13.4.1 Monitoring-supported bit devices ([MELSEC iQ-F])

The following table shows monitoring-supported bit devices.

To check whether writing/reading data to/from each device is available, refer to the following.

☞ Page 1318 Availability of writing/reading data to/from bit devices ([MELSEC iQ-F])

○: Available

×: Not available

Device name		Device No. representation	Setting range	Specifications of EG devices*1	
				Assignment to EG devices	Access using a client
X	Input relay	Octal	0000 to 1777	○	○
Y	Output relay	Octal	0000 to 1777	○	○
B	Link relay	Hexadecimal	0000 to 7FFF	○	○
M	Internal relay	Decimal	0 to 32767	○	○
L	Latch relay	Decimal	0 to 32767	○	○
S	Step relay	Decimal	0 to 4095	○	○
F	Annunciator	Decimal	0 to 32767	○	○
TC	Timer coil	Decimal	0 to 1023	○	○ Not usable as word data
TT	Timer contact	Decimal	0 to 1023	○	○ Not usable as word data
CC	Counter coil	Decimal	0 to 1023	○	○ Not usable as word data
CT	Counter contact	Decimal	0 to 1023	○	○ Not usable as word data
SC	Retentive timer coil	Decimal	0 to 1023	○	○ Not usable as word data
SS	Retentive timer contact	Decimal	0 to 1023	○	○ Not usable as word data
SB	Link special relay	Hexadecimal	0000 to 7FFF	○	○
SM	Special relay	Decimal	0 to 9999	○	○
RX*3	Remote input	Hexadecimal	0000 to 3FFF	○	○
RY*3	Remote output	Hexadecimal	0000 to 3FFF	○	○
LCC	Long counter coil	Decimal	0 to 1023	○	○ Not usable as word data
LCT	Long counter contact	Decimal	0 to 1023	○	○ Not usable as word data
BL	SFC block	Decimal	0 to 31	×	×
BLS	Step relay (block)	Decimal	0 to 511	×	×
SP*2	Servo amplifier request	Decimal	☞ Page 1317 Setting virtual bit devices for servo amplifiers ([MELSEC iQ-F])	×	×
OM*2	Operation mode selection	Decimal	☞ Page 1317 Setting virtual bit devices for servo amplifiers ([MELSEC iQ-F])	×	×
TMB*2	Instruction demand (for test operation)	Decimal	☞ Page 1317 Setting virtual bit devices for servo amplifiers ([MELSEC iQ-F])	×	×

Device name		Device No. representation	Setting range	Specifications of EG devices*1	
				Assignment to EG devices	Access using a client
OTI*2	One-touch tuning instruction	Decimal	☞ Page 1317 Setting virtual bit devices for servo amplifiers ([MELSEC iQ-F])	×	×
GFDI*2	Gear failure diagnosis instruction	Decimal	☞ Page 1317 Setting virtual bit devices for servo amplifiers ([MELSEC iQ-F])	×	×
ECCDI*2	Encoder communication circuit diagnosis instruction	Decimal	☞ Page 1317 Setting virtual bit devices for servo amplifiers ([MELSEC iQ-F])	×	×

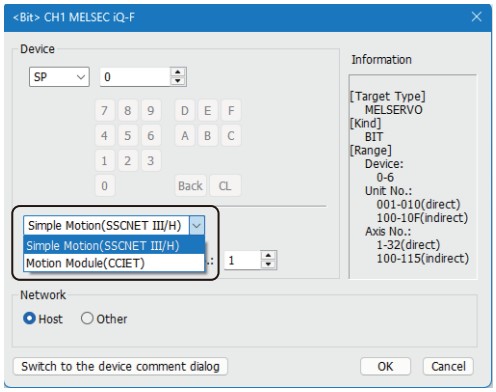
*1 For the devices assigned to EG devices (gateway devices) and the compatible clients, refer to the following.
📖GT Designer3 (GOT3000) Screen Design Manual

*2 Virtual servo amplifier device
For details, refer to the following.
☞ Page 1328 Virtual servo amplifier devices ([MELSEC iQ-F])

*3 The target device of the host station can be monitored only.
Monitoring the target device of any other station causes a system error.

13.4.2 Setting virtual bit devices for servo amplifiers ([MELSEC iQ-F])

For virtual servo amplifier devices, the notation differs according to the connection type between the GOT and the servo amplifier.
Select one of the following according to the control type in the device setting dialog.



Item	Description
[Simple Motion(SSCNET III/H)]	Connection through a Simple Motion module • [Unit No.]: Set the first 2 digits of the 3-digit number that represents the start I/O number of the Simple Motion module. • [Axis No.]: Set the axis number to be monitored.
[Motion Module(CCIET)]	Select this item to connect the GOT through a Motion module (FX5-nSSC-G). After the selection, set a device that enables axis designation to display the following item. • [Axis Designation]: Set the axis to be monitored.

The following shows the notation and setting range of virtual devices.

Device name	Device notation and setting range		Notation example
SP	[Simple Motion(SSCNET III/H)]	U(Unit No.)-A(Axis No.)-SP(Device) • Unit No. (hexadecimal): 01 to 10 (direct), 100 to 10F (indirect) • Axis No. (decimal): 1 to 32 (direct), 100 to 115 (indirect) • Device (decimal): 0 to 6	U10-A32-SP0
	[Motion Module(CCIET)]	AA(Axis designation)-SP(Device) • Axis designation (decimal): 1 to 3 (direct), 100 to 115 (indirect) • Device (decimal): 0 to 6	AA3-SP0
OM	[Simple Motion(SSCNET III/H)]	U(Unit No.)-A(Axis No.)-OM(Device) • Unit No. (hexadecimal): 01 to 10 (direct), 100 to 10F (indirect) • Axis No. (decimal): 1 to 32 (direct), 100 to 115 (indirect) • Device (decimal): 0 to 2, 4 to 5	U10-A32-OM0
	[Motion Module(CCIET)]	AA(Axis designation)-OM(Device) • Axis designation (decimal): 1 to 3 (direct), 100 to 115 (indirect) • Device (decimal): 0 to 2, 4 to 5	AA3-OM0
TMB	[Simple Motion(SSCNET III/H)]	U(Unit No.)-A(Axis No.)-TMB(Device) • Unit No. (hexadecimal): 01 to 10 (direct), 100 to 10F (indirect) • Axis No. (decimal): 1 to 32 (direct), 100 to 115 (indirect) • Device (decimal): 1 to 6	U10-A32-TMB1
	[Motion Module(CCIET)]	AA(Axis designation)-TMB(Device) • Axis designation (decimal): 1 to 3 (direct), 100 to 115 (indirect) • Device (decimal): 1 to 6	AA3-TMB1
OTI	[Simple Motion(SSCNET III/H)]	U(Unit No.)-A(Axis No.)-OTI(Device) • Unit No. (hexadecimal): 01 to 10 (direct), 100 to 10F (indirect) • Axis No. (decimal): 1 to 32 (direct), 100 to 115 (indirect) • Device (decimal): 0 to 5	U10-A32-OTI0
	[Motion Module(CCIET)]	AA(Axis designation)-OTI(Device) • Axis designation (decimal): 1 to 3 (direct), 100 to 115 (indirect) • Device (decimal): 0 to 5	AA3-OTI0
GFDI	[Motion Module(CCIET)]	AA(Axis designation)-GFDI(Device) • Axis designation (decimal): 1 to 3 (direct), 100 to 115 (indirect) • Device (decimal): 0 to 1	AA3-GFDI0

Device name	Device notation and setting range		Notation example
ECCDI	[Motion Module(CCIET)]	AA(Axis designation)-ECCDI(Device) • Axis designation (decimal): 1 to 3 (direct), 100 to 115 (indirect) • Device (decimal): 0 to 1	AA3-ECCDI0

For indirect specification of a module or axis number, refer to the following.

☞ Page 1229 Indirect specification of a module number ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])

☞ Page 1230 Indirect specification of an axis number or axis designation ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])

13.4.3 Availability of writing/reading data to/from bit devices ([MELSEC iQ-F])

The following shows the availability of writing/reading data to/from bit devices by device type.

When the device type is other than the bit type, set the device No. in multiples of 16.

R/W: Both read and write

R/-: Read only

-/W: Write only

-/-: No read/write access

Device name	Device type				
	Bit	Byte (8 bits)	Word (16 bits)	Double-word (32 bits)	Quad-word (64 bits)
X	R/W	-/-	R/W	R/W	-/-
Y	R/W	-/-	R/W	R/W	-/-
B	R/W	-/-	R/W	R/W	-/-
M	R/W	-/-	R/W	R/W	-/-
L	R/W	-/-	R/W	R/W	-/-
S	R/W	-/-	R/W	R/W	-/-
F	R/W	-/-	R/W	R/W	-/-
TC	R/W	-/-	-/-	-/-	-/-
TT	R/W	-/-	-/-	-/-	-/-
CC	R/W	-/-	-/-	-/-	-/-
CT	R/W	-/-	-/-	-/-	-/-
SC	R/W	-/-	-/-	-/-	-/-
SS	R/W	-/-	-/-	-/-	-/-
SB	R/W	-/-	R/W	R/W	-/-
SM	R/W	-/-	R/W	R/W	-/-
RX	R/W	-/-	R/W	R/W	-/-
RY	R/W	-/-	R/W	R/W	-/-
LCC	R/W	-/-	-/-	-/-	-/-
LCT	R/W	-/-	-/-	-/-	-/-
BL	R/W	-/-	-/-	-/-	-/-
BLS	R/W	-/-	-/-	-/-	-/-
SP	-/W	-/-	-/-	-/-	-/-
OM	-/W	-/-	-/-	-/-	-/-
TMB	-/W	-/-	-/-	-/-	-/-
OTI	-/W	-/-	-/-	-/-	-/-
GFDI	-/W	-/-	-/-	-/-	-/-
ECCDI	-/W	-/-	-/-	-/-	-/-

13.4.4 Monitoring-supported word devices ([MELSEC iQ-F])

The following table shows monitoring-supported word devices.

To check whether writing/reading data to/from each device is available, refer to the following.

☞ Page 1324 Availability of writing/reading data to/from word devices ([MELSEC iQ-F])

○: Available

×: Not available

Device name		Device No. representation	Setting range	Specifications of EG devices*1	
				Assignment to EG devices	Access using a client
TN	Timer current value	Decimal	0 to 1023	○	○
CN	Counter current value	Decimal	0 to 1023	○	○
SN	Retentive timer current value	Decimal	0 to 1023	○	○
D	Data register	Decimal	0 to 7999	○	○
SD	Special register	Decimal	0 to 11999	○	○
W	Link register	Hexadecimal	0000 to 7FFF	○	○
SW	Link special register	Hexadecimal	0000 to 7FFF	○	○
R*4	File register	Decimal	0 to 32767	○	○
Z	Index register	Decimal	0 to 23	○	○ Not usable as bit data
G*5	Buffer memory (Intelligent function module)	Decimal	U(Unit No.)-G(Device) Notation example: U10-G100 • Unit No. (hexadecimal): 01 to 10 • Device (decimal): 0 to 262143 For the unit No., set the module number of the intelligent function module.	○	○
Ww*3	Remote register	Hexadecimal	0000 to 1FFF	○	○
Wr*3	Remote register	Hexadecimal	0000 to 1FFF	○	○
PA*2	Basic parameter	Decimal	☞ Page 1321 Setting virtual word devices for servo amplifiers ([MELSEC iQ-F])	×	×
PB*2	Gain filter parameter	Decimal	☞ Page 1321 Setting virtual word devices for servo amplifiers ([MELSEC iQ-F])	×	×
PC*2	Extension setting parameter	Decimal	☞ Page 1321 Setting virtual word devices for servo amplifiers ([MELSEC iQ-F])	×	×
PD*2	I/O setting parameter	Decimal	☞ Page 1321 Setting virtual word devices for servo amplifiers ([MELSEC iQ-F])	×	×
PO*2	Option unit parameter	Decimal	☞ Page 1321 Setting virtual word devices for servo amplifiers ([MELSEC iQ-F])	×	×
PS*2	Special parameter	Decimal	☞ Page 1321 Setting virtual word devices for servo amplifiers ([MELSEC iQ-F])	×	×
PU*2	Multi encoder parameter	Decimal	☞ Page 1321 Setting virtual word devices for servo amplifiers ([MELSEC iQ-F])	×	×
PT*2	Positioning control parameter	Decimal	☞ Page 1321 Setting virtual word devices for servo amplifiers ([MELSEC iQ-F])	×	×
PL*2*6	Motor extension parameter	Decimal	☞ Page 1321 Setting virtual word devices for servo amplifiers ([MELSEC iQ-F])	×	×
	Linear servo motor/DD motor setting parameter			×	×
PN*2	Network setting parameter	Decimal	☞ Page 1321 Setting virtual word devices for servo amplifiers ([MELSEC iQ-F])	×	×
PVS*2*7	Positioning extension parameter	Decimal	☞ Page 1321 Setting virtual word devices for servo amplifiers ([MELSEC iQ-F])	×	×

Device name		Device No. representation	Setting range	Specifications of EG devices*1	
				Assignment to EG devices	Access using a client
ST*2	Status display	Decimal	☞ Page 1321 Setting virtual word devices for servo amplifiers ([MELSEC iQ-F])	×	×
PE*2	Extension setting No.2 parameter	Decimal	☞ Page 1321 Setting virtual word devices for servo amplifiers ([MELSEC iQ-F])	×	×
PF*2	Extension setting No.3 parameter	Decimal	☞ Page 1321 Setting virtual word devices for servo amplifiers ([MELSEC iQ-F])	×	×
NPA*2	Network basic parameter	Decimal	☞ Page 1321 Setting virtual word devices for servo amplifiers ([MELSEC iQ-F])	×	×
ALM*2	Alarm (current alarm J4A extend)	Decimal	☞ Page 1321 Setting virtual word devices for servo amplifiers ([MELSEC iQ-F])	×	×
ALM*2	Alarm (alarm history J4A extend)	Decimal	☞ Page 1321 Setting virtual word devices for servo amplifiers ([MELSEC iQ-F])	×	×
ALM*2	Alarm (alarm history J5A extend)	Decimal	☞ Page 1321 Setting virtual word devices for servo amplifiers ([MELSEC iQ-F])	×	×
POS*2	Point table (position)	Decimal	☞ Page 1321 Setting virtual word devices for servo amplifiers ([MELSEC iQ-F])	×	×
SPD*2	Point table (speed)	Decimal	☞ Page 1321 Setting virtual word devices for servo amplifiers ([MELSEC iQ-F])	×	×
ACT*2	Point table (acceleration time constant)	Decimal	☞ Page 1321 Setting virtual word devices for servo amplifiers ([MELSEC iQ-F])	×	×
DCT*2	Point table (deceleration time constant)	Decimal	☞ Page 1321 Setting virtual word devices for servo amplifiers ([MELSEC iQ-F])	×	×
DWL*2	Point table (dwell)	Decimal	☞ Page 1321 Setting virtual word devices for servo amplifiers ([MELSEC iQ-F])	×	×
AUX*2	Point table (auxiliary function)	Decimal	☞ Page 1321 Setting virtual word devices for servo amplifiers ([MELSEC iQ-F])	×	×
MCD*2	Point table (M code)	Decimal	☞ Page 1321 Setting virtual word devices for servo amplifiers ([MELSEC iQ-F])	×	×
MD*2	Machine diagnosis data	Decimal	☞ Page 1321 Setting virtual word devices for servo amplifiers ([MELSEC iQ-F])	×	×
GFDS*2	Gear failure diagnosis data	Decimal	☞ Page 1321 Setting virtual word devices for servo amplifiers ([MELSEC iQ-F])	×	×
ECCDS*2	Encoder communication circuit diagnosis data	Decimal	☞ Page 1321 Setting virtual word devices for servo amplifiers ([MELSEC iQ-F])	×	×
OTS*2	One-touch tuning data	Decimal	☞ Page 1321 Setting virtual word devices for servo amplifiers ([MELSEC iQ-F])	×	×
DI*2	External input signal	Decimal	☞ Page 1321 Setting virtual word devices for servo amplifiers ([MELSEC iQ-F])	×	×
DO*2	External output signal	Decimal	☞ Page 1321 Setting virtual word devices for servo amplifiers ([MELSEC iQ-F])	×	×

*1 For the devices assigned to EG devices (gateway devices) and the compatible clients, refer to the following.
📖GT Designer3 (GOT3000) Screen Design Manual

*2 Virtual servo amplifier device
For details, refer to the following.
☞ Page 1328 Virtual servo amplifier devices ([MELSEC iQ-F])

*3 The target device of the host station can be monitored only.
Monitoring the target device of any other station causes a system error.

*4 Available for the file register of block No. switched with the RSET instruction.

*5 Only the intelligent function module on the station connected to GOT can be specified.
Set the buffer memory within the address range of the buffer memory existing in the intelligent function module.

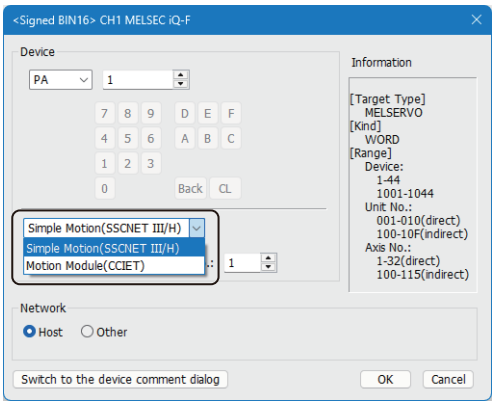
*6 The device name depends on the servo amplifier.
MR-J5-G(-RJ) or MR-J5W□-G: Motor extension setting parameter
Other than MR-J5-G(-RJ) or MR-J5W□-G: Linear servo motor/DD motor setting parameter

*7 PVS is a virtual device corresponding to the servo parameter (PV) of MR-J5-G(-RJ), MR-J5W□-G, and MR-JET-G.
Use the virtual device (PVS) to read/write data from/to the servo parameter (PV).

13.4.5 Setting virtual word devices for servo amplifiers ([MELSEC iQ-F])

For virtual servo amplifier devices, the notation differs according to the connection type between the GOT and the servo amplifier.

Select one of the following according to the control type in the device setting dialog.



Item	Description
[Simple Motion(SSCNET III/H)]	Connection through a Simple Motion module • [Unit No.]: Set the first 2 digits of the 3-digit number that represents the start I/O number of the Simple Motion module. • [Axis No.]: Set the axis number to be monitored.
[Motion Module(CCIET)]	Select this item to connect the GOT through a Motion module (FX5-nSSC-G). After the selection, set a device that enables axis designation to display the following item. • [Axis Designation]: Set the axis to be monitored.

The following shows the notation and setting range of virtual devices.

Device name	Device notation and setting range		Notation example
PA	[Simple Motion(SSCNET III/H)]	U(Unit No.)-A(Axis No.)-PA(Device) • Unit No. (hexadecimal): 01 to 10 (direct), 100 to 10F (indirect) • Axis No. (decimal): 1 to 32 (direct), 100 to 115 (indirect) • Device (decimal): 1 to 44, 1001 to 1044	U10-A32-PA1
	[Motion Module(CCIET)]	AA(Axis designation)-PA(Device) • Axis designation (decimal): 1 to 3 (direct), 100 to 115 (indirect) • Device (decimal): 1 to 44, 1001 to 1044	AA3-PA1
PB	[Simple Motion(SSCNET III/H)]	U(Unit No.)-A(Axis No.)-PB(Device) • Unit No. (hexadecimal): 01 to 10 (direct), 100 to 10F (indirect) • Axis No. (decimal): 1 to 32 (direct), 100 to 115 (indirect) • Device (decimal): 1 to 92, 1001 to 1092	U10-A32-PB1
	[Motion Module(CCIET)]	AA(Axis designation)-PB(Device) • Axis designation (decimal): 1 to 3 (direct), 100 to 115 (indirect) • Device (decimal): 1 to 92, 1001 to 1092	AA3-PB1
PC	[Simple Motion(SSCNET III/H)]	U(Unit No.)-A(Axis No.)-PC(Device) • Unit No. (hexadecimal): 01 to 10 (direct), 100 to 10F (indirect) • Axis No. (decimal): 1 to 32 (direct), 100 to 115 (indirect) • Device (decimal): 1 to 90, 1001 to 1090	U10-A32-PC1
	[Motion Module(CCIET)]	AA(Axis designation)-PC(Device) • Axis designation (decimal): 1 to 3 (direct), 100 to 115 (indirect) • Device (decimal): 1 to 90, 1001 to 1090	AA3-PC1
PD	[Simple Motion(SSCNET III/H)]	U(Unit No.)-A(Axis No.)-PD(Device) • Unit No. (hexadecimal): 01 to 10 (direct), 100 to 10F (indirect) • Axis No. (decimal): 1 to 32 (direct), 100 to 115 (indirect) • Device (decimal): 1 to 72, 1001 to 1072	U10-A32-PD1
	[Motion Module(CCIET)]	AA(Axis designation)-PD(Device) • Axis designation (decimal): 1 to 3 (direct), 100 to 115 (indirect) • Device (decimal): 1 to 72, 1001 to 1072	AA3-PD1
PO	[Motion Module(CCIET)]	AA(Axis designation)-PO(Device) • Axis designation (decimal): 1 to 3 (direct), 100 to 115 (indirect) • Device (decimal): 1 to 2, 1001 to 1002	AA3-PO1

Device name	Device notation and setting range		Notation example
PS	[Motion Module(CCIET)]	AA(Axis designation)-PS(Device) • Axis designation (decimal): 1 to 3 (direct), 100 to 115 (indirect) • Device (decimal): 1 to 99, 1001 to 1099	AA3-PS1
PU	[Motion Module(CCIET)]	AA(Axis designation)-PU(Device) • Axis designation (decimal): 1 to 3 (direct), 100 to 115 (indirect) • Device (decimal): 1 to 44, 1001 to 1044	AA3-PU1
PT	[Motion Module(CCIET)]	AA(Axis designation)-PT(Device) • Axis designation (decimal): 1 to 3 (direct), 100 to 115 (indirect) • Device (decimal): 1 to 90, 1001 to 1090	AA3-PT1
PL	[Simple Motion(SSCNET III/H)]	U(Unit No.)-A(Axis No.)-PL(Device) • Unit No. (hexadecimal): 01 to 10 (direct), 100 to 10F (indirect) • Axis No. (decimal): 1 to 32 (direct), 100 to 115 (indirect) • Device (decimal): 1 to 72, 1001 to 1072	U10-A32-PL1
	[Motion Module(CCIET)]	AA(Axis designation)-PL(Device) • Axis designation (decimal): 1 to 3 (direct), 100 to 115 (indirect) • Device (decimal): 1 to 72, 1001 to 1072	AA3-PL1
PN	[Motion Module(CCIET)]	AA(Axis designation)-PN(Device) • Axis designation (decimal): 1 to 3 (direct), 100 to 115 (indirect) • Device (decimal): 1 to 32, 1001 to 1032	AA3-PN1
PVS	[Motion Module(CCIET)]	AA(Axis designation)-PVS(Device) • Axis designation (decimal): 1 to 3 (direct), 100 to 115 (indirect) • Device (decimal): 1 to 32, 1001 to 1032	AA3-PVS1
ST	[Simple Motion(SSCNET III/H)]	U(Unit No.)-A(Axis No.)-ST(Device) • Unit No. (hexadecimal): 01 to 10 (direct), 100 to 10F (indirect) • Axis No. (decimal): 1 to 32 (direct), 100 to 115 (indirect) • Device (decimal): 0 to 48	U10-A32-ST0
	[Motion Module(CCIET)]	AA(Axis designation)-ST(Device) • Axis designation (decimal): 1 to 3 (direct), 100 to 115 (indirect) • Device (decimal): 0 to 48	AA3-ST0
PE	[Simple Motion(SSCNET III/H)]	U(Unit No.)-A(Axis No.)-PE(Device) • Unit No. (hexadecimal): 01 to 10 (direct), 100 to 10F (indirect) • Axis No. (decimal): 1 to 32 (direct), 100 to 115 (indirect) • Device (decimal): 1 to 88, 1001 to 1088	U10-A32-PE1
	[Motion Module(CCIET)]	AA(Axis designation)-PE(Device) • Axis designation (decimal): 1 to 3 (direct), 100 to 115 (indirect) • Device (decimal): 1 to 88, 1001 to 1088	AA3-PE1
PF	[Simple Motion(SSCNET III/H)]	U(Unit No.)-A(Axis No.)-PF(Device) • Unit No. (hexadecimal): 01 to 10 (direct), 100 to 10F (indirect) • Axis No. (decimal): 1 to 32 (direct), 100 to 115 (indirect) • Device (decimal): 1 to 99, 1001 to 1099	U10-A32-PF1
	[Motion Module(CCIET)]	AA(Axis designation)-PF(Device) • Axis designation (decimal): 1 to 3 (direct), 100 to 115 (indirect) • Device (decimal): 1 to 99, 1001 to 1099	AA3-PF1
NPA	[Motion Module(CCIET)]	NPA(Device) • Device (decimal): 1 to 12, 2001 to 2032	NPA1
ALM	[Simple Motion(SSCNET III/H)]	U(Unit No.)-A(Axis No.)-ALM(Device) • Unit No. (hexadecimal): 01 to 10 (direct), 100 to 10F (indirect) • Axis No. (decimal): 1 to 32 (direct), 100 to 115 (indirect) • Device (decimal): 0 to 2, 11 to 59, 200 to 215, 220 to 235, 240 to 255, 260 to 275, 280 to 295, 300 to 315	U10-A32-ALM0
	[Motion Module(CCIET)]	AA(Axis designation)-ALM(Device) • Axis designation (decimal): 1 to 3 (direct), 100 to 115 (indirect) • Device (decimal): 0 to 2, 11 to 59, 200 to 215, 220 to 235, 240 to 255, 260 to 275, 280 to 295, 300 to 315	AA3-ALM0
POS	[Motion Module(CCIET)]	AA(Axis designation)-POS(Device) • Axis designation (decimal): 1 to 3 (direct), 100 to 115 (indirect) • Device (decimal): 1 to 255, 1001 to 1255	AA3-POS1
SPD	[Motion Module(CCIET)]	AA(Axis designation)-SPD(Device) • Axis designation (decimal): 1 to 3 (direct), 100 to 115 (indirect) • Device (decimal): 1 to 255, 1001 to 1255	AA3-SPD1
ACT	[Motion Module(CCIET)]	AA(Axis designation)-ACT(Device) • Axis designation (decimal): 1 to 3 (direct), 100 to 115 (indirect) • Device (decimal): 1 to 255, 1001 to 1255	AA3-ACT1

Device name	Device notation and setting range		Notation example
DCT	[Motion Module(CCIET)]	AA(Axis designation)-DCT(Device) • Axis designation (decimal): 1 to 3 (direct), 100 to 115 (indirect) • Device (decimal): 1 to 255, 1001 to 1255	AA3-DCT1
DWL	[Motion Module(CCIET)]	AA(Axis designation)-DWL(Device) • Axis designation (decimal): 1 to 3 (direct), 100 to 115 (indirect) • Device (decimal): 1 to 255, 1001 to 1255	AA3-DWL1
AUX	[Motion Module(CCIET)]	AA(Axis designation)-AUX(Device) • Axis designation (decimal): 1 to 3 (direct), 100 to 115 (indirect) • Device (decimal): 1 to 255, 1001 to 1255	AA3-AUX1
MCD	[Motion Module(CCIET)]	AA(Axis designation)-MCD(Device) • Axis designation (decimal): 1 to 3 (direct), 100 to 115 (indirect) • Device (decimal): 1 to 255, 1001 to 1255	AA3-MCD1
MD	[Simple Motion(SSCNET III/H)]	U(Unit No.)-A(Axis No.)-MD(Device) • Unit No. (hexadecimal): 01 to 10 (direct), 100 to 10F (indirect) • Axis No. (decimal): 1 to 32 (direct), 100 to 115 (indirect) • Device (decimal): 0 to 21	U10-A32-MD0
	[Motion Module(CCIET)]	AA(Axis designation)-MD(Device) • Axis designation (decimal): 1 to 3 (direct), 100 to 115 (indirect) • Device (decimal): 0 to 21	AA3-MD0
GFDS	[Motion Module(CCIET)]	AA(Axis designation)-GFDS(Device) • Axis designation (decimal): 1 to 3 (direct), 100 to 115 (indirect) • Device (decimal): 0 to 5	AA3-GFDS0
ECCDS	[Motion Module(CCIET)]	AA(Axis designation)-ECCDS(Device) • Axis designation (decimal): 1 to 3 (direct), 100 to 115 (indirect) • Device (decimal): 0 to 5	AA3-ECCDS0
OTS	[Simple Motion(SSCNET III/H)]	U(Unit No.)-A(Axis No.)-OTS(Device) • Unit No. (hexadecimal): 01 to 10 (direct), 100 to 10F (indirect) • Axis No. (decimal): 1 to 32 (direct), 100 to 115 (indirect) • Device (decimal): 0 to 5, 3000	U10-A32-OTS0
	[Motion Module(CCIET)]	AA(Axis designation)-OTS(Device) • Axis designation (decimal): 1 to 3 (direct), 100 to 115 (indirect) • Device (decimal): 0 to 5, 3000	AA3-OTS0
DI	[Simple Motion(SSCNET III/H)]	U(Unit No.)-A(Axis No.)-DI(Device) • Unit No. (hexadecimal): 01 to 10 (direct), 100 to 10F (indirect) • Axis No. (decimal): 1 to 32 (direct), 100 to 115 (indirect) • Device (decimal): 0 to 6	U10-A32-DI0
	[Motion Module(CCIET)]	AA(Axis designation)-DI(Device) • Axis designation (decimal): 1 to 3 (direct), 100 to 115 (indirect) • Device (decimal): 0 to 6	AA3-DI0
DO	[Simple Motion(SSCNET III/H)]	U(Unit No.)-A(Axis No.)-DO(Device) • Unit No. (hexadecimal): 01 to 10 (direct), 100 to 10F (indirect) • Axis No. (decimal): 1 to 32 (direct), 100 to 115 (indirect) • Device (decimal): 0 to 4	U10-A32-DO0
	[Motion Module(CCIET)]	AA(Axis designation)-DO(Device) • Axis designation (decimal): 1 to 3 (direct), 100 to 115 (indirect) • Device (decimal): 0 to 4	AA3-DO0

For indirect specification of a module or axis number, refer to the following.

☞ Page 1229 Indirect specification of a module number ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])

☞ Page 1230 Indirect specification of an axis number or axis designation ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])

13.4.6 Availability of writing/reading data to/from word devices ([MELSEC iQ-F])

The following shows the availability of writing/reading data to/from word devices by device type.

R/W: Both read and write

R/-: Read only

-/W: Write only

-/-: No read/write access

Device name	Device type			
	Word (16 bits)	Double-word (32 bits)	Quad-word (64 bits)	Bit of word data
TN	R/W	R/W	-/-	-/-
CN	R/W	R/W	-/-	-/-
SN	R/W	R/W	-/-	-/-
D	R/W	R/W	R/W	R/W
SD	R/W	R/W	R/W	R/W
W	R/W	R/W	R/W	R/W
SW	R/W	R/W	-/-	R/W
R	R/W	R/W	R/W	R/W
Z	R/W	R/W	-/-	-/-
G	R/W	R/W	R/W	R/W
Ww	R/W	R/W	R/W	R/W
Wr	R/W	R/W	R/W	R/W
PA	R/W	R/W	-/-	-/-
PB	R/W	R/W	-/-	-/-
PC	R/W	R/W	-/-	-/-
PD	R/W	R/W	-/-	-/-
PO	R/W	R/W	-/-	-/-
PS	R/W	R/W	-/-	-/-
PU	R/W	R/W	-/-	-/-
PT	R/W	R/W	-/-	-/-
PL	R/W	R/W	-/-	-/-
PN	R/W	R/W	-/-	-/-
PVS	R/W	R/W	-/-	-/-
ST	R/-	R/-	-/-	-/-
PE	R/W	R/W	-/-	-/-
PF	R/W	R/W	-/-	-/-
NPA	R/W	R/W	-/-	-/-
ALM	R/-	R/-	-/-	-/-
POS	R/W	R/W	-/-	-/-
SPD	R/W	R/W	-/-	-/-
ACT	R/W	R/W	-/-	-/-
DCT	R/W	R/W	-/-	-/-
DWL	R/W	R/W	-/-	-/-
AUX	R/W	R/W	-/-	-/-
MCD	R/W	R/W	-/-	-/-
MD	R/-	R/-	-/-	-/-
GFDS	R/-	R/-	-/-	-/-
ECCDS	R/-	R/-	-/-	-/-
OTS	R/-	R/-	-/-	-/-
DI	R/-	R/W	-/-	-/-
DO	R/-	R/-	-/-	-/-

13.4.7 Monitoring-supported double-word devices ([MELSEC iQ-F])

The following table shows monitoring-supported double-word devices.

To check whether writing/reading data to/from each device is available, refer to the following.

☞ Page 1327 Availability of writing/reading data to/from double-word devices ([MELSEC iQ-F])

○: Available

×: Not available

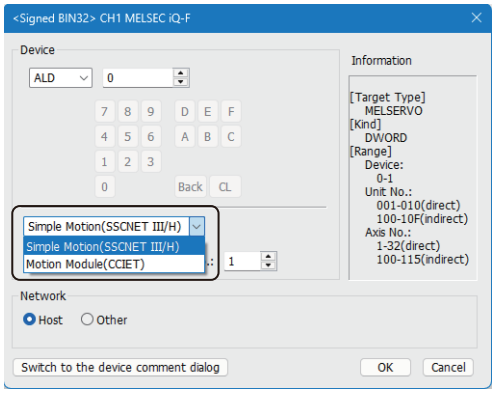
Device name		Device No. representation	Setting range	Specifications of EG devices*1	
				Assignment to EG devices	Access using a client
LCN	Long counter current value	Decimal	0 to 1023	×	×
LZ	Index register (32 bits)	Decimal	0 to 11	×	×
ALD*2	Life diagnosis	Decimal	☞ Page 1326 Setting virtual double-word devices for servo amplifiers ([MELSEC iQ-F])	×	×
TMI*2	Input signal for test operation (for test operation)	Decimal	☞ Page 1326 Setting virtual double-word devices for servo amplifiers ([MELSEC iQ-F])	×	×
TMO*2	Forced output of signal pin (for test operation)	Decimal	☞ Page 1326 Setting virtual double-word devices for servo amplifiers ([MELSEC iQ-F])	×	×
TMD*2	Set data (for test operation)	Decimal	☞ Page 1326 Setting virtual double-word devices for servo amplifiers ([MELSEC iQ-F])	×	×

*1 For the devices assigned to EG devices (gateway devices) and the compatible clients, refer to the following.
📖GT Designer3 (GOT3000) Screen Design Manual

*2 Virtual servo amplifier device
For details, refer to the following.
☞ Page 1328 Virtual servo amplifier devices ([MELSEC iQ-F])

13.4.8 Setting virtual double-word devices for servo amplifiers ([MELSEC iQ-F])

For virtual servo amplifier devices, the notation differs according to the connection type between the GOT and the servo amplifier.
Select one of the following according to the control type in the device setting dialog.



Item	Description
[Simple Motion(SSCNET III/H)]	Connection through a Simple Motion module • [Unit No.]: Set the first 2 digits of the 3-digit number that represents the start I/O number of the Simple Motion module. • [Axis No.]: Set the axis number to be monitored.
[Motion Module(CCIET)]	Select this item to connect the GOT through a Motion module (FX5-nSSC-G). After the selection, set a device that enables axis designation to display the following item. • [Axis Designation]: Set the axis to be monitored.

The following shows the notation and setting range of virtual devices.

Device name	Device notation and setting range		Notation example
ALD	[Simple Motion(SSCNET III/H)]	U(Unit No.)-A(Axis No.)-ALD(Device) • Unit No. (hexadecimal): 01 to 10 (direct), 100 to 10F (indirect) • Axis No. (decimal): 1 to 32 (direct), 100 to 115 (indirect) • Device (decimal): 0 to 1	U10-A32-ALD0
	[Motion Module(CCIET)]	AA(Axis designation)-ALD(Device) • Axis designation (decimal): 1 to 3 (direct), 100 to 115 (indirect) • Device (decimal): 0 to 1	AA3-ALD0
TMI	[Simple Motion(SSCNET III/H)]	U(Unit No.)-A(Axis No.)-TMI(Device) • Unit No. (hexadecimal): 01 to 10 (direct), 100 to 10F (indirect) • Axis No. (decimal): 1 to 32 (direct), 100 to 115 (indirect) • Device (decimal): 0 to 2	U10-A32-TMI0
	[Motion Module(CCIET)]	AA(Axis designation)-TMI(Device) • Axis designation (decimal): 1 to 3 (direct), 100 to 115 (indirect) • Device (decimal): 0 to 2	AA3-TMI0
TMO	[Simple Motion(SSCNET III/H)]	U(Unit No.)-A(Axis No.)-TMO(Device) • Unit No. (hexadecimal): 01 to 10 (direct), 100 to 10F (indirect) • Axis No. (decimal): 1 to 32 (direct), 100 to 115 (indirect) • Device (decimal): 0	U10-A32-TMO0
	[Motion Module(CCIET)]	AA(Axis designation)-TMO(Device) • Axis designation (decimal): 1 to 3 (direct), 100 to 115 (indirect) • Device (decimal): 0	AA3-TMO0
TMD	[Simple Motion(SSCNET III/H)]	U(Unit No.)-A(Axis No.)-TMD(Device) • Unit No. (hexadecimal): 01 to 10 (direct), 100 to 10F (indirect) • Axis No. (decimal): 1 to 32 (direct), 100 to 115 (indirect) • Device (decimal): 0 to 1, 3	U10-A32-TMD0
	[Motion Module(CCIET)]	AA(Axis designation)-TMD(Device) • Axis designation (decimal): 1 to 3 (direct), 100 to 115 (indirect) • Device (decimal): 0 to 1, 3	AA3-TMD0

For indirect specification of a module or axis number, refer to the following.

☞ Page 1229 Indirect specification of a module number ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])

☞ Page 1230 Indirect specification of an axis number or axis designation ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])

13.4.9 Availability of writing/reading data to/from double-word devices ([MELSEC iQ-F])

The following shows the availability of writing/reading data to/from double-word devices by device type.

R/W: Both read and write

R/-: Read only

-/W: Write only

-/-: No read/write access

Device name	Device type			
	Word (16 bits)	Double-word (32 bits)	Quad-word (64 bits)	Bit of double-word data
LCN	-/-	R/W	-/-	-/-
LZ	-/-	R/W	-/-	-/-
ALD	-/-	R/-	-/-	-/-
TMI	-/-	-/W	-/-	-/-
TMO	-/-	-/W	-/-	-/-
TMD	-/-	-/W	-/-	-/-

13.4.10 Virtual servo amplifier devices ([MELSEC iQ-F])

The following shows the correspondence between the virtual devices used in the GOT and the servo amplifier data.

Virtual device name	Reference
SP	☞ Page 1250 Servo amplifier request (MELSEC iQ-R, RnMT/NC/RT, CR800-D])
OM	☞ Page 1251 Operation mode selection ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])
TMB	☞ Page 1251 Instruction demand (for test operation) ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])
OTI	☞ Page 1252 One-touch tuning instruction ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])
GFDI	☞ Page 1252 Gear failure diagnosis instruction ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])
ECCDI	☞ Page 1253 Encoder communication circuit diagnosis instruction ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])
PA	☞ Page 1253 Basic parameter ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])
PB	☞ Page 1255 Gain filter parameter ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])
PC	☞ Page 1258 Extension setting parameter ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])
PD	☞ Page 1261 I/O setting parameter ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])
PO	☞ Page 1262 Option unit parameter ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])
PS	☞ Page 1263 Special parameter ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])
PU	☞ Page 1263 Multi encoder parameter ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])
PT	☞ Page 1264 Positioning control parameter, pressure control parameter ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])
PL	☞ Page 1267 Motor extension parameter, linear servo motor/DD motor setting parameter ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])
PN	☞ Page 1268 Network setting parameter ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])
PVS	☞ Page 1269 Positioning extension parameter ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])
ST	☞ Page 1271 Status display ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])
PE	☞ Page 1273 Extension setting No.2 parameter ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])
PF	☞ Page 1275 Extension setting No.3 parameter ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])
NPA	☞ Page 1278 Network basic parameter ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])
ALM	☞ Page 1281 Alarm [MELSEC iQ-R, RnMT/NC/RT, CR800-D])
POS	☞ Page 1289 Point table (position) ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])
SPD	☞ Page 1289 Point table (speed) ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])
ACT	☞ Page 1289 Point table (acceleration time constant) ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])
DCT	☞ Page 1290 Point table (deceleration time constant) ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])
DWL	☞ Page 1290 Point table (dwell) ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])
AUX	☞ Page 1291 Point table (auxiliary function) ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])
MCD	☞ Page 1291 Point table (M code) ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])
MD	☞ Page 1292 Machine diagnosis data ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])
GFDS	☞ Page 1293 Gear failure diagnosis data ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])
ECCDS	☞ Page 1294 Encoder communication circuit diagnosis data ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])
OTS	☞ Page 1294 One-touch tuning data ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])
DI	☞ Page 1295 External input signal in MR-J5-G(-RJ) and MR-J5W□-G ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])
DO	☞ Page 1298 External output signal in MR-J5-G(-RJ) and MR-J5W□-G ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])
ALD	☞ Page 1300 Life Diagnosis ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])
TMI	☞ Page 1300 Input signal for test operation (for test operation) ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])
TMO	☞ Page 1301 Forced output of signal pin (for test operation) ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])
TMD	☞ Page 1301 Set data (for test operation) ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])

13.4.11 Precautions for virtual servo amplifier devices ([MELSEC iQ-F])

For the precautions for virtual servo amplifier devices, refer to the following.

☞ Page 1302 Precautions for virtual servo amplifier devices ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])

13.5 [MELSEC-Q/QS, Q17nD/M/NC/DR/DSR, CRnD-700]

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Item	Reference
Specifications of bit devices	☞ Page 1329 Monitoring-supported bit devices ([MELSEC-Q/QS, Q17nD/M/NC/DR/DSR, CRnD-700])
	☞ Page 1331 Setting virtual bit devices for servo amplifiers ([MELSEC-Q/QS, Q17nD/M/NC/DR/DSR, CRnD-700])
	☞ Page 1333 Availability of writing/reading data to/from bit devices ([MELSEC-Q/QS, Q17nD/M/NC/DR/DSR, CRnD-700])
Specifications of word devices	☞ Page 1334 Monitoring-supported word devices ([MELSEC-Q/QS, Q17nD/M/NC/DR/DSR, CRnD-700])
	☞ Page 1337 Setting virtual word devices for servo amplifiers ([MELSEC-Q/QS, Q17nD/M/NC/DR/DSR, CRnD-700])
	☞ Page 1341 Availability of writing/reading data to/from word devices ([MELSEC-Q/QS, Q17nD/M/NC/DR/DSR, CRnD-700])
Specifications of double-word devices	☞ Page 1342 Monitoring-supported double-word devices ([MELSEC-Q/QS, Q17nD/M/NC/DR/DSR, CRnD-700])
	☞ Page 1343 Setting virtual double-word devices for servo amplifiers ([MELSEC-Q/QS, Q17nD/M/NC/DR/DSR, CRnD-700])
	☞ Page 1344 Availability of writing/reading data to/from double-word devices ([MELSEC-Q/QS, Q17nD/M/NC/DR/DSR, CRnD-700])
Specifications of virtual servo amplifier devices	☞ Page 1345 Virtual servo amplifier devices ([MELSEC-Q/QS, Q17nD/M/NC/DR/DSR, CRnD-700])
	☞ Page 1346 Precautions for virtual servo amplifier devices ([MELSEC-Q/QS, Q17nD/M/NC/DR/DSR, CRnD-700])
Specifications of virtual inverter devices	☞ Page 1346 Virtual inverter devices ([MELSEC-Q/QS, Q17nD/M/NC/DR/DSR, CRnD-700])

13.5.1 Monitoring-supported bit devices ([MELSEC-Q/QS, Q17nD/M/NC/DR/DSR, CRnD-700])

The following table shows monitoring-supported bit devices.

To check whether writing/reading data to/from each device is available, refer to the following.

☞ Page 1333 Availability of writing/reading data to/from bit devices ([MELSEC-Q/QS, Q17nD/M/NC/DR/DSR, CRnD-700])

○: Available

×: Not available

Device name		Device No. representation	Setting range	Specifications of EG devices*1	
				Assignment to EG devices	Access using a client
X	Input relay	Hexadecimal	0000 to 3FFF	○	○
Y	Output relay	Hexadecimal	0000 to 3FFF	○	○
B	Link relay	Hexadecimal	00000 to 9FFFF	○	○
M*4	Internal relay	Decimal	0 to 61439	○	○
L	Latch relay	Decimal	0 to 32767	○	○
S	Step relay	Decimal	0 to 32767	○	○
F	Annunciator	Decimal	0 to 32767	○	○
TC*4	Timer coil	Decimal	0 to 32767	○	○ Not usable as word data
TT*4	Timer contact	Decimal	0 to 32767	○	○ Not usable as word data
CC*4	Counter coil	Decimal	0 to 32767	○	○ Not usable as word data

Device name		Device No. representation	Setting range	Specifications of EG devices*1	
				Assignment to EG devices	Access using a client
CT*4	Counter contact	Decimal	0 to 32767	○	○ Not usable as word data
SC*4	Retentive timer coil	Decimal	0 to 32767	○	○ Not usable as word data
SS*4	Retentive timer contact	Decimal	0 to 32767	○	○ Not usable as word data
SB	Link special relay	Hexadecimal	0000 to 7FFF	○	○
SM	Special relay	Decimal	0 to 2255	○	○
RX	Remote input	Hexadecimal	0000 to 3FFF	○	○
RY	Remote output	Hexadecimal	0000 to 3FFF	○	○
LB	Link relay	Hexadecimal	0000 to 7FFF	○	○
SP*2	Servo amplifier request	Decimal	☞ Page 1331 Setting virtual bit devices for servo amplifiers ([MELSEC-Q/QS, Q17nD/M/NC/DR/DSR, CRnD-700])	×	×
OM*2	Operation mode selection	Decimal	☞ Page 1331 Setting virtual bit devices for servo amplifiers ([MELSEC-Q/QS, Q17nD/M/NC/DR/DSR, CRnD-700])	×	×
TMB*2	Instruction demand (for test operation)	Decimal	☞ Page 1331 Setting virtual bit devices for servo amplifiers ([MELSEC-Q/QS, Q17nD/M/NC/DR/DSR, CRnD-700])	×	×
OTI*2	One-touch tuning instruction	Decimal	☞ Page 1331 Setting virtual bit devices for servo amplifiers ([MELSEC-Q/QS, Q17nD/M/NC/DR/DSR, CRnD-700])	×	×
GFDI*2	Gear failure diagnosis instruction	Decimal	☞ Page 1331 Setting virtual bit devices for servo amplifiers ([MELSEC-Q/QS, Q17nD/M/NC/DR/DSR, CRnD-700])	×	×
ECCDI*2	Encoder communication circuit diagnosis instruction	Decimal	☞ Page 1331 Setting virtual bit devices for servo amplifiers ([MELSEC-Q/QS, Q17nD/M/NC/DR/DSR, CRnD-700])	×	×
IOST*3	I/O terminal monitor	Decimal	0 to 127	×	×
CMD*3	Operation command	Decimal	0 to 63	×	×

*1 For the devices assigned to EG devices (gateway devices) and the compatible clients, refer to the following.
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*2 Virtual servo amplifier device
For details, refer to the following.
☞ Page 1345 Virtual servo amplifier devices ([MELSEC-Q/QS, Q17nD/M/NC/DR/DSR, CRnD-700])

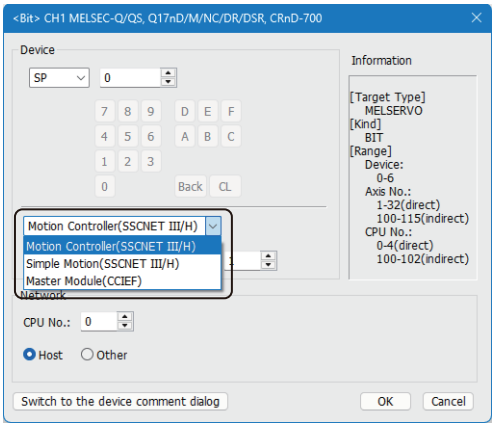
*3 Virtual inverter device
For details, refer to the following.
☞ Page 1346 Virtual inverter devices ([MELSEC-Q/QS, Q17nD/M/NC/DR/DSR, CRnD-700])

*4 Do not use the local device set in a MELSEC-Q system.
If used, the correct monitoring is disabled.

13.5.2 Setting virtual bit devices for servo amplifiers ([MELSEC-Q/QS, Q17nD/M/NC/DR/DSR, CRnD-700])

For virtual servo amplifier devices, the notation differs according to the connection type between the GOT and the servo amplifier.

Select one of the following according to the control type in the device setting dialog.



Item	Description
[Motion Controller(SSCNET III/H)]	Select this item to connect the GOT through a Motion controller. The following item is displayed. • [Axis No.]: Set the axis number to be monitored.
[Simple Motion(SSCNET III/H)]	Select this item to connect the GOT through a Simple Motion module (QD77MS). The following item is displayed. • [Unit No.]: Set the first 2 digits of the 3-digit number that represents the start I/O number of the Simple Motion module. • [Axis No.]: Set the axis number to be monitored.
[Master Module(CCIEF)]	Select this item to connect the GOT through the master station on the CC-Link IE Field Network or a Simple Motion module (QD77GF).

The following shows the notation and setting range of virtual devices.

Device name	Device notation and setting range		Notation example
SP	[Motion Controller(SSCNET III/H)]	A(Axis No.)-SP(Device) • Axis No. (decimal): 1 to 32 (direct), 100 to 115 (indirect) • Device (decimal): 0 to 6	A32-SP0
	[Simple Motion(SSCNET III/H)]	U(Unit No.)-A(Axis No.)-SP(Device) • Unit No. (hexadecimal): 00 to FF (direct), 100 to 10F (indirect) • Axis No. (decimal): 1 to 32 (direct), 100 to 115 (indirect) • Device (decimal): 0 to 6	UFF-A32-SP0
	[Master Module(CCIEF)]	SP(Device) • Device (decimal): 0 to 6	SP0
OM	[Motion Controller(SSCNET III/H)]	A(Axis No.)-OM(Device) • Axis No. (decimal): 1 to 32 (direct), 100 to 115 (indirect) • Device (decimal): 0 to 2, 4 to 5	A32-OM0
	[Simple Motion(SSCNET III/H)]	U(Unit No.)-A(Axis No.)-OM(Device) • Unit No. (hexadecimal): 00 to FF (direct), 100 to 10F (indirect) • Axis No. (decimal): 1 to 32 (direct), 100 to 115 (indirect) • Device (decimal): 0 to 2, 4 to 5	UFF-A32-OM0
	[Master Module(CCIEF)]	OM(Device) • Device (decimal): 0 to 2, 4 to 5	OM0

Device name	Device notation and setting range		Notation example
TMB	[Motion Controller(SSCNET III/H)]	A(Axis No.)-TMB(Device) • Axis No. (decimal): 1 to 32 (direct), 100 to 115 (indirect) • Device (decimal): 1 to 6	A32-TMB1
	[Simple Motion(SSCNET III/H)]	U(Unit No.)-A(Axis No.)-TMB(Device) • Unit No. (hexadecimal): 00 to FF (direct), 100 to 10F (indirect) • Axis No. (decimal): 1 to 32 (direct), 100 to 115 (indirect) • Device (decimal): 1 to 6	UFF-A32-TMB1
	[Master Module(CCIEF)]	TMB(Device) • Device (decimal): 1 to 6	TMB1
OTI	[Motion Controller(SSCNET III/H)]	A(Axis No.)-OTI(Device) • Axis No. (decimal): 1 to 32 (direct), 100 to 115 (indirect) • Device (decimal): 0 to 5	A32-OTI0
	[Simple Motion(SSCNET III/H)]	U(Unit No.)-A(Axis No.)-OTI(Device) • Unit No. (hexadecimal): 00 to FF (direct), 100 to 10F (indirect) • Axis No. (decimal): 1 to 32 (direct), 100 to 115 (indirect) • Device (decimal): 0 to 5	UFF-A32-OTI0
	[Master Module(CCIEF)]	OTI(Device) • Device (decimal): 0 to 5	OTI0
GFDI	[Motion Controller(SSCNET III/H)]	A(Axis No.)-GFDI(Device) • Axis No. (decimal): 1 to 32 (direct), 100 to 115 (indirect) • Device (decimal): 0 to 1	A32-GFDI0
	[Simple Motion(SSCNET III/H)]	U(Unit No.)-A(Axis No.)-GFDI(Device) • Unit No. (hexadecimal): 00 to FF (direct), 100 to 10F (indirect) • Axis No. (decimal): 1 to 32 (direct), 100 to 115 (indirect) • Device (decimal): 0 to 1	UFF-A32-GFDI0
ECCDI	[Motion Controller(SSCNET III/H)]	A(Axis No.)-ECCDI(Device) • Axis No. (decimal): 1 to 32 (direct), 100 to 115 (indirect) • Device (decimal): 0 to 1	A32-ECCDI0
	[Simple Motion(SSCNET III/H)]	U(Unit No.)-A(Axis No.)-ECCDI(Device) • Unit No. (hexadecimal): 00 to FF (direct), 100 to 10F (indirect) • Axis No. (decimal): 1 to 32 (direct), 100 to 115 (indirect) • Device (decimal): 0 to 1	UFF-A32-ECCDI0

For indirect specification of a module or axis number, refer to the following.

☞ Page 1229 Indirect specification of a module number ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])
☞ Page 1230 Indirect specification of an axis number or axis designation ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])

13.5.3 Availability of writing/reading data to/from bit devices ([MELSEC-Q/QS, Q17nD/M/NC/DR/DSR, CRnD-700])

The following shows the availability of writing/reading data to/from bit devices by device type.

When the device type is other than the bit type, set the device No. in multiples of 16.

The GOT can only read data from the device when the QS001CPU is used.

To write data to the consecutive devices of Q172DR (CR750-Q), use Q172DR (CR750-Q) with firmware Ver.R6b or later.

R/W: Both read and write

R/-: Read only

-/W: Write only

-/-: No read/write access

Device name	Device type				
	Bit	Byte (8 bits)	Word (16 bits)	Double-word (32 bits)	Quad-word (64 bits)
X	R/W	-/-	R/W	R/W	-/-
Y	R/W	-/-	R/W	R/W	-/-
B	R/W	-/-	R/W	R/W	-/-
M	R/W	-/-	R/W	R/W	-/-
L	R/W	-/-	R/W	R/W	-/-
S	R/W	-/-	R/W	R/W	-/-
F	R/W	-/-	R/W	R/W	-/-
TC	R/W	-/-	-/-	-/-	-/-
TT	R/W	-/-	-/-	-/-	-/-
CC	R/W	-/-	-/-	-/-	-/-
CT	R/W	-/-	-/-	-/-	-/-
SC	R/W	-/-	-/-	-/-	-/-
SS	R/W	-/-	-/-	-/-	-/-
SB	R/W	-/-	R/W	R/W	-/-
SM	R/W	-/-	R/W	R/W	-/-
RX	R/W	-/-	R/W	R/W	-/-
RY	R/W	-/-	R/W	R/W	-/-
LB	R/W	-/-	R/W	R/W	-/-
SP	-/W	-/-	-/-	-/-	-/-
OM	-/W	-/-	-/-	-/-	-/-
TMB	-/W	-/-	-/-	-/-	-/-
OTI	-/W	-/-	-/-	-/-	-/-
GFDI	-/W	-/-	-/-	-/-	-/-
ECCDI	-/W	-/-	-/-	-/-	-/-
IOST	R/-	-/-	-/-	-/-	-/-
CMD	-/W	-/-	-/-	-/-	-/-

13.5.4 Monitoring-supported word devices ([MELSEC-Q/QS, Q17nD/M/NC/DR/DSR, CRnD-700])

The following table shows monitoring-supported word devices.

To check whether writing/reading data to/from each device is available, refer to the following.

☞ Page 1341 Availability of writing/reading data to/from word devices ([MELSEC-Q/QS, Q17nD/M/NC/DR/DSR, CRnD-700])

○: Available

×: Not available

Device name		Device No. representation	Setting range	Specifications of EG devices*1	
				Assignment to EG devices	Access using a client
TN*6	Timer current value	Decimal	0 to 32767	○	○
CN*6	Counter current value	Decimal	0 to 32767	○	○
SN*6	Retentive timer current value	Decimal	0 to 32767	○	○
D*3*5*6	Data register	Decimal	0 to 4910079	○	○
SD	Special register	Decimal	0 to 2255	○	○
W*3*5	Link register	Hexadecimal	000000 to 4AEBFF	○	○
SW	Link special register	Hexadecimal	0000 to 7FFF	○	○
R*3*4	File register	Decimal	0 to 32767	○	○
ER*3	Extension file register(Block)	Decimal	ER (R block)-(Device) Notation example: ER255-100 • R block (decimal): 0 to 255 • Device (decimal): 0 to 32767	○	○
ZR*3*5	Extension file register	Decimal	0 to 4849663	○	○
Z	Index register	Decimal	0 to 19	○	○ Not usable as bit data
G	Buffer memory (Intelligent function module)	Decimal	U(Unit No.)-G(Device) Notation example: UFF-G100 • Unit No.(hexadecimal): 00 to FF • Device (decimal): 0 to 65535 For the module No., set the first 2 digits of the 3-digit number that represents the start I/O number of the buffer memory for the intelligent function module.	○	○
Ww	Remote register	Hexadecimal	0000 to 1FFF	○	○
Wr	Remote register	Hexadecimal	0000 to 1FFF	○	○
LW	Link register	Hexadecimal	00000 to 1FFFF	○	○
#	Motion device	Decimal	0 to 12287	○	○
U3E0	Multiple CPU high speed transmission memory	Decimal	U3E0-G(Device) Notation example: U3E0-10000 • Device (decimal): 10000 to 24335	○	○
U3E1	Multiple CPU high speed transmission memory	Decimal	U3E1-G(Device) Notation example: U3E1-10000 • Device (decimal): 10000 to 24335	○	○
U3E2	Multiple CPU high speed transmission memory	Decimal	U3E2-(Device) Notation example: U3E2-10000 • Device (decimal): 10000 to 24335	○	○
U3E3	Multiple CPU high speed transmission memory	Decimal	U3E3-(Device) Notation example: U3E3-10000 • Device (decimal): 10000 to 24335	○	○
PA*2	Basic parameter	Decimal	☞ Page 1337 Setting virtual word devices for servo amplifiers ([MELSEC-Q/QS, Q17nD/M/NC/DR/DSR, CRnD-700])	×	×

Device name		Device No. representation	Setting range	Specifications of EG devices*1	
				Assignment to EG devices	Access using a client
PB*2	Gain filter parameter	Decimal	☞ Page 1337 Setting virtual word devices for servo amplifiers ([MELSEC-Q/QS, Q17nD/M/NC/DR/DSR, CRnD-700])	×	×
PC*2	Extension setting parameter	Decimal	☞ Page 1337 Setting virtual word devices for servo amplifiers ([MELSEC-Q/QS, Q17nD/M/NC/DR/DSR, CRnD-700])	×	×
PD*2	I/O setting parameter	Decimal	☞ Page 1337 Setting virtual word devices for servo amplifiers ([MELSEC-Q/QS, Q17nD/M/NC/DR/DSR, CRnD-700])	×	×
PO*2	Option unit parameter	Decimal	☞ Page 1337 Setting virtual word devices for servo amplifiers ([MELSEC-Q/QS, Q17nD/M/NC/DR/DSR, CRnD-700])	×	×
PS*2	Special parameter	Decimal	☞ Page 1337 Setting virtual word devices for servo amplifiers ([MELSEC-Q/QS, Q17nD/M/NC/DR/DSR, CRnD-700])	×	×
PU*2	Multi encoder parameter	Decimal	☞ Page 1337 Setting virtual word devices for servo amplifiers ([MELSEC-Q/QS, Q17nD/M/NC/DR/DSR, CRnD-700])	×	×
PT*2	Positioning control parameter	Decimal	☞ Page 1337 Setting virtual word devices for servo amplifiers ([MELSEC-Q/QS, Q17nD/M/NC/DR/DSR, CRnD-700])	×	×
PL*2	Linear servo motor/DD motor setting parameter	Decimal	☞ Page 1337 Setting virtual word devices for servo amplifiers ([MELSEC-Q/QS, Q17nD/M/NC/DR/DSR, CRnD-700])	×	×
PN*2	Network setting parameter	Decimal	☞ Page 1337 Setting virtual word devices for servo amplifiers ([MELSEC-Q/QS, Q17nD/M/NC/DR/DSR, CRnD-700])	×	×
ST*2	Status display	Decimal	☞ Page 1337 Setting virtual word devices for servo amplifiers ([MELSEC-Q/QS, Q17nD/M/NC/DR/DSR, CRnD-700])	×	×
PE*2	Extension setting No.2 parameter	Decimal	☞ Page 1337 Setting virtual word devices for servo amplifiers ([MELSEC-Q/QS, Q17nD/M/NC/DR/DSR, CRnD-700])	×	×
PW*2	Extension setting No.4 parameter	Decimal	☞ Page 1337 Setting virtual word devices for servo amplifiers ([MELSEC-Q/QS, Q17nD/M/NC/DR/DSR, CRnD-700])	×	×
PF*2	Extension setting No.3 parameter	Decimal	☞ Page 1337 Setting virtual word devices for servo amplifiers ([MELSEC-Q/QS, Q17nD/M/NC/DR/DSR, CRnD-700])	×	×
ALM*2	Alarm (current alarm J4A extend)	Decimal	☞ Page 1337 Setting virtual word devices for servo amplifiers ([MELSEC-Q/QS, Q17nD/M/NC/DR/DSR, CRnD-700])	×	×
	Alarm (alarm history J4A extend)	Decimal	☞ Page 1337 Setting virtual word devices for servo amplifiers ([MELSEC-Q/QS, Q17nD/M/NC/DR/DSR, CRnD-700])	×	×
	Alarm (alarm history J5G extend)	Decimal	☞ Page 1337 Setting virtual word devices for servo amplifiers ([MELSEC-Q/QS, Q17nD/M/NC/DR/DSR, CRnD-700])	×	×
POS*2	Point table (position)	Decimal	☞ Page 1337 Setting virtual word devices for servo amplifiers ([MELSEC-Q/QS, Q17nD/M/NC/DR/DSR, CRnD-700])	×	×
SPD*2	Point table (speed)	Decimal	☞ Page 1337 Setting virtual word devices for servo amplifiers ([MELSEC-Q/QS, Q17nD/M/NC/DR/DSR, CRnD-700])	×	×
ACT*2	Point table (acceleration time constant)	Decimal	☞ Page 1337 Setting virtual word devices for servo amplifiers ([MELSEC-Q/QS, Q17nD/M/NC/DR/DSR, CRnD-700])	×	×
DCT*2	Point table (deceleration time constant)	Decimal	☞ Page 1337 Setting virtual word devices for servo amplifiers ([MELSEC-Q/QS, Q17nD/M/NC/DR/DSR, CRnD-700])	×	×

Device name		Device No. representation	Setting range	Specifications of EG devices*1	
				Assignment to EG devices	Access using a client
DWL*2	Point table (dwell)	Decimal	☞ Page 1337 Setting virtual word devices for servo amplifiers ([MELSEC-Q/QS, Q17nD/M/NC/DR/DSR, CRnD-700])	×	×
AUX*2	Point table (auxiliary function)	Decimal	☞ Page 1337 Setting virtual word devices for servo amplifiers ([MELSEC-Q/QS, Q17nD/M/NC/DR/DSR, CRnD-700])	×	×
MD*2	Machine diagnosis data	Decimal	☞ Page 1337 Setting virtual word devices for servo amplifiers ([MELSEC-Q/QS, Q17nD/M/NC/DR/DSR, CRnD-700])	×	×
GFDS*2	Gear failure diagnosis data	Decimal	☞ Page 1337 Setting virtual word devices for servo amplifiers ([MELSEC-Q/QS, Q17nD/M/NC/DR/DSR, CRnD-700])	×	×
ECCDS*2	Encoder communication circuit diagnosis data	Decimal	☞ Page 1337 Setting virtual word devices for servo amplifiers ([MELSEC-Q/QS, Q17nD/M/NC/DR/DSR, CRnD-700])	×	×
OTS*2	One-touch tuning data	Decimal	☞ Page 1337 Setting virtual word devices for servo amplifiers ([MELSEC-Q/QS, Q17nD/M/NC/DR/DSR, CRnD-700])	×	×
DI*2	External input signal	Decimal	☞ Page 1337 Setting virtual word devices for servo amplifiers ([MELSEC-Q/QS, Q17nD/M/NC/DR/DSR, CRnD-700])	×	×
DO*2	External output signal	Decimal	☞ Page 1337 Setting virtual word devices for servo amplifiers ([MELSEC-Q/QS, Q17nD/M/NC/DR/DSR, CRnD-700])	×	×

*1 For the devices assigned to EG devices (gateway devices) and the compatible clients, refer to the following.
📖GT Designer3 (GOT3000) Screen Design Manual

*2 Virtual servo amplifier device
For details, refer to the following.
☞ Page 1345 Virtual servo amplifier devices ([MELSEC-Q/QS, Q17nD/M/NC/DR/DSR, CRnD-700])

*3 Do not set a file register by GT Designer3 when executing multiple programs with the file of the file register set at [Use the same file name as the program.] by the PLC parameter of GX Developer.
Otherwise, read or write at GOT will be erroneous.

*4 Available for the file register of block No. switched with the RSET instruction.

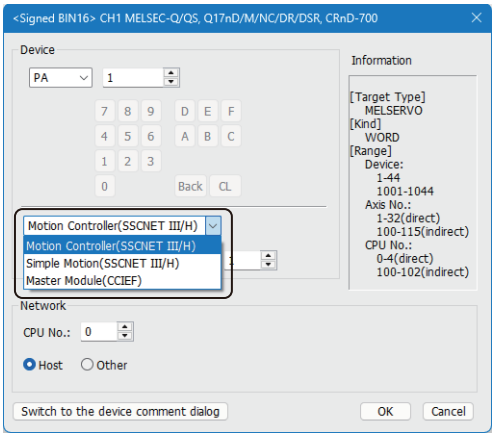
*5 Available for the file register of block number of file name switched with the QDRSET instruction.

*6 Do not use the local device set in a MELSEC-Q system.
If used, the correct monitoring is disabled.

13.5.5 Setting virtual word devices for servo amplifiers ([MELSEC-Q/QS, Q17nD/M/NC/DR/DSR, CRnD-700])

For virtual servo amplifier devices, the notation differs according to the connection type between the GOT and the servo amplifier.

Select one of the following according to the control type in the device setting dialog.



Item	Description
[Motion Controller(SSCNET III/H)]	Select this item to connect the GOT through a Motion controller. The following item is displayed. • [Axis No.]: Set the axis number to be monitored.
[Simple Motion(SSCNET III/H)]	Select this item to connect the GOT through a Simple Motion module (QD77MS). The following item is displayed. • [Unit No.]: Set the first 2 digits of the 3-digit number that represents the start I/O number of the Simple Motion module. • [Axis No.]: Set the axis number to be monitored.
[Master Module(CCIEF)]	Select this item to connect the GOT through the master station on the CC-Link IE Field Network or a Simple Motion module (QD77GF).

The following shows the notation and setting range of virtual devices.

Device name	Device notation and setting range		Notation example
PA	[Motion Controller(SSCNET III/H)]	A(Axis No.)-PA(Device) • Axis No. (decimal): 1 to 32 (direct), 100 to 115 (indirect) • Device (decimal): 1 to 44, 1001 to 1044	A32-PA1
	[Simple Motion(SSCNET III/H)]	U(Unit No.)-A(Axis No.)-PA(Device) • Unit No. (hexadecimal): 00 to FF (direct), 100 to 10F (indirect) • Axis No. (decimal): 1 to 32 (direct), 100 to 115 (indirect) • Device (decimal): 1 to 44, 1001 to 1044	UFF-A32-PA1
	[Master Module(CCIEF)]	PA (Device) • Device (decimal): 1 to 44, 1001 to 1044	PA1
PB	[Motion Controller(SSCNET III/H)]	A(Axis No.)-PB(Device) • Axis No. (decimal): 1 to 32 (direct), 100 to 115 (indirect) • Device (decimal): 1 to 92, 1001 to 1092	A32-PB1
	[Simple Motion(SSCNET III/H)]	U(Unit No.)-A(Axis No.)-PB(Device) • Unit No. (hexadecimal): 00 to FF (direct), 100 to 10F (indirect) • Axis No. (decimal): 1 to 32 (direct), 100 to 115 (indirect) • Device (decimal): 1 to 92, 1001 to 1092	UFF-A32-PB1
	[Master Module(CCIEF)]	PB(Device) • Device (decimal): 1 to 92, 1001 to 1092	PB1

Device name	Device notation and setting range		Notation example
PC	[Motion Controller(SSCNET III/H)]	A(Axis No.)-PC(Device) • Axis No. (decimal): 1 to 32 (direct), 100 to 115 (indirect) • Device (decimal): 1 to 90, 1001 to 1090	A32-PC1
	[Simple Motion(SSCNET III/H)]	U(Unit No.)-A(Axis No.)-PC(Device) • Unit No. (hexadecimal): 00 to FF (direct), 100 to 10F (indirect) • Axis No. (decimal): 1 to 32 (direct), 100 to 115 (indirect) • Device (decimal): 1 to 90, 1001 to 1090	UFF-A32-PC1
	[Master Module(CCIEF)]	PC(Device) • Device (decimal): 1 to 90, 1001 to 1090	PC1
PD	[Motion Controller(SSCNET III/H)]	A(Axis No.)-PD(Device) • Axis No. (decimal): 1 to 32 (direct), 100 to 115 (indirect) • Device (decimal): 1 to 72, 1001 to 1072	A32-PD1
	[Simple Motion(SSCNET III/H)]	U(Unit No.)-A(Axis No.)-PD(Device) • Unit No. (hexadecimal): 00 to FF (direct), 100 to 10F (indirect) • Axis No. (decimal): 1 to 32 (direct), 100 to 115 (indirect) • Device (decimal): 1 to 72, 1001 to 1072	UFF-A32-PD1
	[Master Module(CCIEF)]	PD(Device) • Device (decimal): 1 to 72, 1001 to 1072	PD1
PO	[Motion Controller(SSCNET III/H)]	A(Axis No.)-PO(Device) • Axis No. (decimal): 1 to 32 (direct), 100 to 115 (indirect) • Device (decimal): 1 to 2, 1001 to 1002	A32-PO1
	[Simple Motion(SSCNET III/H)]	U(Unit No.)-A(Axis No.)-PO(Device) • Unit No. (hexadecimal): 00 to FF (direct), 100 to 10F (indirect) • Axis No. (decimal): 1 to 32 (direct), 100 to 115 (indirect) • Device (decimal): 1 to 2, 1001 to 1002	UFF-A32-PO1
PS	[Motion Controller(SSCNET III/H)]	A(Axis No.)-PS(Device) • Axis No. (decimal): 1 to 32 (direct), 100 to 115 (indirect) • Device (decimal): 1 to 99, 1001 to 1099	A32-PS1
	[Simple Motion(SSCNET III/H)]	U(Unit No.)-A(Axis No.)-PS(Device) • Unit No. (hexadecimal): 00 to FF (direct), 100 to 10F (indirect) • Axis No. (decimal): 1 to 32 (direct), 100 to 115 (indirect) • Device (decimal): 1 to 99, 1001 to 1099	UFF-A32-PS1
PU	[Motion Controller(SSCNET III/H)]	A(Axis No.)-PU(Device) • Axis No. (decimal): 1 to 32 (direct), 100 to 115 (indirect) • Device (decimal): 1 to 44, 1001 to 1044	A32-PU1
	[Simple Motion(SSCNET III/H)]	U(Unit No.)-A(Axis No.)-PU(Device) • Unit No. (hexadecimal): 00 to FF (direct), 100 to 10F (indirect) • Axis No. (decimal): 1 to 32 (direct), 100 to 115 (indirect) • Device (decimal): 1 to 44, 1001 to 1044	UFF-A32-PU1
PT	[Motion Controller(SSCNET III/H)]	A(Axis No.)-PT(Device) • Axis No. (decimal): 1 to 32 (direct), 100 to 115 (indirect) • Device (decimal): 1 to 90, 1001 to 1090	A32-PT1
	[Master Module(CCIEF)]	PT(Device) • Device (decimal): 1 to 90, 1001 to 1090	PT1
PL	[Motion Controller(SSCNET III/H)]	A(Axis No.)-PL(Device) • Axis No. (decimal): 1 to 32 (direct), 100 to 115 (indirect) • Device (decimal): 1 to 72, 1001 to 1072	A32-PL1
	[Simple Motion(SSCNET III/H)]	U(Unit No.)-A(Axis No.)-PL(Device) • Unit No. (hexadecimal): 00 to FF (direct), 100 to 10F (indirect) • Axis No. (decimal): 1 to 32 (direct), 100 to 115 (indirect) • Device (decimal): 1 to 72, 1001 to 1072	UFF-A32-PL1
	[Master Module(CCIEF)]	PL(Device) • Device (decimal): 1 to 72, 1001 to 1072	PL1
PN	[Master Module(CCIEF)]	PN(Device) • Device (decimal): 1 to 32, 1001 to 1032	PN1
ST	[Motion Controller(SSCNET III/H)]	A(Axis No.)-ST(Device) • Axis No. (decimal): 1 to 32 (direct), 100 to 115 (indirect) • Device (decimal): 0 to 48	A32-ST0
	[Simple Motion(SSCNET III/H)]	U(Unit No.)-A(Axis No.)-ST(Device) • Unit No. (hexadecimal): 00 to FF (direct), 100 to 10F (indirect) • Axis No. (decimal): 1 to 32 (direct), 100 to 115 (indirect) • Device (decimal): 0 to 48	UFF-A32-ST0
	[Master Module(CCIEF)]	ST(Device) • Device (decimal): 0 to 48	ST0

Device name	Device notation and setting range		Notation example
PE	[Motion Controller(SSCNET III/H)]	A(Axis No.)-PE(Device) • Axis No. (decimal): 1 to 32 (direct), 100 to 115 (indirect) • Device (decimal): 1 to 88, 1001 to 1088	A32-PE1
	[Simple Motion(SSCNET III/H)]	U(Unit No.)-A(Axis No.)-PE(Device) • Unit No. (hexadecimal): 00 to FF (direct), 100 to 10F (indirect) • Axis No. (decimal): 1 to 32 (direct), 100 to 115 (indirect) • Device (decimal): 1 to 88, 1001 to 1088	UFF-A32-PE1
	[Master Module(CCIEF)]	PE(Device) • Device (decimal): 1 to 88, 1001 to 1088	PE1
PF	[Motion Controller(SSCNET III/H)]	A(Axis No.)-PF(Device) • Axis No. (decimal): 1 to 32 (direct), 100 to 115 (indirect) • Device (decimal): 1 to 99, 1001 to 1099	A32-PF1
	[Simple Motion(SSCNET III/H)]	U(Unit No.)-A(Axis No.)-PF(Device) • Unit No. (hexadecimal): 00 to FF (direct), 100 to 10F (indirect) • Axis No. (decimal): 1 to 32 (direct), 100 to 115 (indirect) • Device (decimal): 1 to 99, 1001 to 1099	UFF-A32-PF1
	[Master Module(CCIEF)]	PF(Device) • Device (decimal): 1 to 99, 1001 to 1099	PF1
PW	[Motion Controller(SSCNET III/H)]	A(Axis No.)-PW(Device) • Axis No. (decimal): 1 to 32 (direct), 100 to 115 (indirect) • Device (decimal): 1 to 40, 1001 to 1040	A3-PW1
ALM	[Motion Controller(SSCNET III/H)]	A(Axis No.)-ALM(Device) • Axis No. (decimal): 1 to 32 (direct), 100 to 115 (indirect) • Device (decimal): 0 to 2, 11 to 59, 200 to 215, 220 to 235, 240 to 255, 260 to 275, 280 to 295, 300 to 315	A32-ALM0
	[Simple Motion(SSCNET III/H)]	U(Unit No.)-A(Axis No.)-ALM(Device) • Unit No. (hexadecimal): 00 to FF (direct), 100 to 10F (indirect) • Axis No. (decimal): 1 to 32 (direct), 100 to 115 (indirect) • Device (decimal): 0 to 2, 11 to 59, 200 to 215, 220 to 235, 240 to 255, 260 to 275, 280 to 295, 300 to 315	UFF-A32-ALM0
	[Master Module(CCIEF)]	ALM(Device) • Device (decimal): 0 to 2, 11 to 59, 200 to 215, 220 to 235, 240 to 255	ALM0
POS	[Master Module(CCIEF)]	POS(Device) • Device (decimal): 1 to 255, 1001 to 1255	POS1
SPD	[Master Module(CCIEF)]	SPD(Device) • Device (decimal): 1 to 255, 1001 to 1255	SPD1
ACT	[Master Module(CCIEF)]	ACT(Device) • Device (decimal): 1 to 255, 1001 to 1255	ACT1
DCT	[Master Module(CCIEF)]	DCT(Device) • Device (decimal): 1 to 255, 1001 to 1255	DCT1
DWL	[Master Module(CCIEF)]	DWL(Device) • Device (decimal): 1 to 255, 1001 to 1255	DWL1
AUX	[Master Module(CCIEF)]	AUX(Device) • Device (decimal): 1 to 255, 1001 to 1255	AUX1
MD	[Motion Controller(SSCNET III/H)]	A(Axis No.)-MD(Device) • Axis No. (decimal): 1 to 32 (direct), 100 to 115 (indirect) • Device (decimal): 0 to 21	A32-MD0
	[Simple Motion(SSCNET III/H)]	U(Unit No.)-A(Axis No.)-MD(Device) • Unit No. (hexadecimal): 00 to FF (direct), 100 to 10F (indirect) • Axis No. (decimal): 1 to 32 (direct), 100 to 115 (indirect) • Device (decimal): 0 to 21	UFF-A32-MD0
	[Master Module(CCIEF)]	MD(Device) • Device (decimal): 0 to 21	MD0
GFDS	[Motion Controller(SSCNET III/H)]	A(Axis No.)-GFDS(Device) • Axis No. (decimal): 1 to 32 (direct), 100 to 115 (indirect) • Device (decimal): 0 to 5	A32-GFDS0
	[Simple Motion(SSCNET III/H)]	U(Unit No.)-A(Axis No.)-GFDS(Device) • Unit No. (hexadecimal): 00 to FF (direct), 100 to 10F (indirect) • Axis No. (decimal): 1 to 32 (direct), 100 to 115 (indirect) • Device (decimal): 0 to 5	UFF-A32-GFDS0

Device name	Device notation and setting range		Notation example
ECCDS	[Motion Controller(SSCNET III/H)]	A(Axis No.)-ECCDS(Device) • Axis No. (decimal): 1 to 32 (direct), 100 to 115 (indirect) • Device (decimal): 0 to 5	A32-ECCDS0
	[Simple Motion(SSCNET III/H)]	U(Unit No.)-A(Axis No.)-ECCDS(Device) • Unit No. (hexadecimal): 00 to FF (direct), 100 to 10F (indirect) • Axis No. (decimal): 1 to 32 (direct), 100 to 115 (indirect) • Device (decimal): 0 to 5	UFF-A32-ECCDS0
OTS	[Motion Controller(SSCNET III/H)]	A(Axis No.)-OTS(Device) • Axis No. (decimal): 1 to 32 (direct), 100 to 115 (indirect) • Device (decimal): 0 to 5, 3000	A32-OTS0
	[Simple Motion(SSCNET III/H)]	U(Unit No.)-A(Axis No.)-OTS(Device) • Unit No. (hexadecimal): 00 to FF (direct), 100 to 10F (indirect) • Axis No. (decimal): 1 to 32 (direct), 100 to 115 (indirect) • Device (decimal): 0 to 5, 3000	UFF-A32-OTS0
	[Master Module(CCIEF)]	OTS(Device) • Device (decimal): 0 to 5	OTS0
DI	[Motion Controller(SSCNET III/H)]	A(Axis No.)-DI(Device) • Axis No. (decimal): 1 to 32 (direct), 100 to 115 (indirect) • Device (decimal): 0 to 6	A32-DI0
	[Simple Motion(SSCNET III/H)]	U(Unit No.)-A(Axis No.)-DI(Device) • Unit No. (hexadecimal): 00 to FF (direct), 100 to 10F (indirect) • Axis No. (decimal): 1 to 32 (direct), 100 to 115 (indirect) • Device (decimal): 0 to 6	UFF-A32-DI0
	[Master Module(CCIEF)]	DI(Device) • Device (decimal): 0 to 6	DI0
DO	[Motion Controller(SSCNET III/H)]	A(Axis No.)-DO(Device) • Axis No. (decimal): 1 to 32 (direct), 100 to 115 (indirect) • Device (decimal): 0 to 4	A32-DO0
	[Simple Motion(SSCNET III/H)]	U(Unit No.)-A(Axis No.)-DO(Device) • Unit No. (hexadecimal): 00 to FF (direct), 100 to 10F (indirect) • Axis No. (decimal): 1 to 32 (direct), 100 to 115 (indirect) • Device (decimal): 0 to 4	UFF-A32-DO0
	[Master Module(CCIEF)]	DO(Device) • Device (decimal): 0 to 4	DO0

For indirect specification of a module or axis number, refer to the following.

☞ Page 1229 Indirect specification of a module number ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])

☞ Page 1230 Indirect specification of an axis number or axis designation ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])

13.5.6 Availability of writing/reading data to/from word devices ([MELSEC-Q/QS, Q17nD/M/NC/DR/DSR, CRnD-700])

The following shows the availability of writing/reading data to/from word devices by device type.

The GOT can only read data from the device when the QS001CPU is used.

To write data to the consecutive devices of Q172DR (CR750-Q), use Q172DR (CR750-Q) with firmware Ver.R6b or later.

R/W: Both read and write

R/-: Read only

-/W: Write only

-/-: No read/write access

Device name	Device type			
	Word (16 bits)	Double-word (32 bits)	Quad-word (64 bits)	Bit of word data
TN	R/W	R/W	-/-	-/-
CN	R/W	R/W	-/-	-/-
SN	R/W	R/W	-/-	-/-
D	R/W	R/W	R/W	R/W
SD	R/W	R/W	R/W	R/W
W	R/W	R/W	R/W	R/W
SW	R/W	R/W	-/-	R/W
R	R/W	R/W	R/W	R/W
ER	R/W	R/W	R/W	R/W
ZR	R/W	R/W	R/W	R/W
Z	R/W	R/W	-/-	-/-
G	R/W	R/W	R/W	R/W
Ww	R/W	R/W	R/W	R/W
Wr	R/W	R/W	R/W	R/W
LW	R/W	R/W	R/W	R/W
#	R/W	R/W	-/-	R/W
U3E0	R/W	R/W	R/W	R/W
U3E1	R/W	R/W	R/W	R/W
U3E2	R/W	R/W	R/W	R/W
U3E3	R/W	R/W	R/W	R/W
PA	R/W	R/W	-/-	-/-
PB	R/W	R/W	-/-	-/-
PC	R/W	R/W	-/-	-/-
PD	R/W	R/W	-/-	-/-
PO	R/W	R/W	-/-	-/-
PS	R/W	R/W	-/-	-/-
PU	R/W	R/W	-/-	-/-
PT	R/W	R/W	-/-	-/-
PL	R/W	R/W	-/-	-/-
PN	R/W	R/W	-/-	-/-
ST	R/-	R/-	-/-	-/-
PE	R/W	R/W	-/-	-/-
PF	R/W	R/W	-/-	-/-
PW	R/W	R/W	-/-	-/-
ALM	R/-	R/-	-/-	-/-
POS	R/W	R/W	-/-	-/-
SPD	R/W	R/W	-/-	-/-
ACT	R/W	R/W	-/-	-/-
DCT	R/W	R/W	-/-	-/-

Device name	Device type			
	Word (16 bits)	Double-word (32 bits)	Quad-word (64 bits)	Bit of word data
DWL	R/W	R/W	-/-	-/-
AUX	R/W	R/W	-/-	-/-
MD	R/-	R/-	-/-	-/-
GFDS	R/-	R/-	-/-	-/-
ECCDS	R/-	R/-	-/-	-/-
OTS*1	R/W	R/W	-/-	-/-
DI	R/-	R/W	-/-	-/-
DO	R/-	R/-	-/-	-/-

*1 Only reading is available for OTS0 to OTS5.

13.5.7 Monitoring-supported double-word devices ([MELSEC-Q/QS, Q17nD/M/NC/DR/DSR, CRnD-700])

The following table shows monitoring-supported double-word devices.

To check whether writing/reading data to/from each device is available, refer to the following.

☞ Page 1344 Availability of writing/reading data to/from double-word devices ([MELSEC-Q/QS, Q17nD/M/NC/DR/DSR, CRnD-700])

○: Available

×: Not available

Device name		Device No. representation	Setting range	Specifications of EG devices*1	
				Assignment to EG devices	Access using a client
ALD*2	Life diagnosis	Decimal	☞ Page 1343 Setting virtual double-word devices for servo amplifiers ([MELSEC-Q/QS, Q17nD/M/NC/DR/DSR, CRnD-700])	×	×
TMI*2	Input signal for test operation (for test operation)	Decimal	☞ Page 1343 Setting virtual double-word devices for servo amplifiers ([MELSEC-Q/QS, Q17nD/M/NC/DR/DSR, CRnD-700])	×	×
TMO*2	Forced output of signal pin (for test operation)	Decimal	☞ Page 1343 Setting virtual double-word devices for servo amplifiers ([MELSEC-Q/QS, Q17nD/M/NC/DR/DSR, CRnD-700])	×	×
TMD*2	Set data (for test operation)	Decimal	☞ Page 1343 Setting virtual double-word devices for servo amplifiers ([MELSEC-Q/QS, Q17nD/M/NC/DR/DSR, CRnD-700])	×	×
AL*3	Faults history	Decimal	0 to 899	×	×
LPr*3*4	Parameter (32-bit)	Decimal	0 to 1500	×	×
OP*3	Operation parameter	Decimal	0 to 5	×	×
PV*3	Current value monitor	Decimal	1 to 143	×	×

*1 For the devices assigned to EG devices (gateway devices) and the compatible clients, refer to the following.
📖GT Designer3 (GOT3000) Screen Design Manual

*2 Virtual servo amplifier device
For details, refer to the following.
☞ Page 1345 Virtual servo amplifier devices ([MELSEC-Q/QS, Q17nD/M/NC/DR/DSR, CRnD-700])

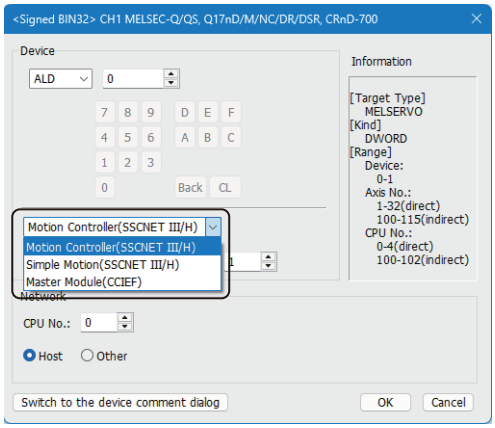
*3 Virtual inverter device
For details, refer to the following.
☞ Page 1346 Virtual inverter devices ([MELSEC-Q/QS, Q17nD/M/NC/DR/DSR, CRnD-700])

*4 If you specify LPr900 to LPr935, the following item is displayed in the device setting dialog.
[Setting items (for calibration parameters)]: [Bias/gain value], [Analog input value]
Enclose the device number in parentheses when selecting [Analog input value].
Example 1) Notation when [Bias/gain value] is selected: LPr900
Example 2) Notation when [Analog input value] is selected: LPr(900)
When LPr900 or LPr901 (Calibration parameter) is specified, selecting [Bias/gain value] or [Analog input value] does not affect the monitoring target.

13.5.8 Setting virtual double-word devices for servo amplifiers ([MELSEC-Q/QS, Q17nD/M/NC/DR/DSR, CRnD-700])

For virtual servo amplifier devices, the notation differs according to the connection type between the GOT and the servo amplifier.

Select one of the following according to the control type in the device setting dialog.



Item	Description
[Motion Controller(SSCNET III/H)]	Select this item to connect the GOT through a Motion controller. The following item is displayed. • [Axis No.]: Set the axis number to be monitored.
[Simple Motion(SSCNET III/H)]	Select this item to connect the GOT through a Simple Motion module (QD77MS). The following item is displayed. • [Unit No.]: Set the first 2 digits of the 3-digit number that represents the start I/O number of the Simple Motion module. • [Axis No.]: Set the axis number to be monitored.
[Master Module(CCIEF)]	Select this item to connect the GOT through the master station on the CC-Link IE Field Network or a Simple Motion module (QD77GF).

The following shows the notation and setting range of virtual devices.

Device name	Device notation and setting range		Notation example
ALD	[Motion Controller(SSCNET III/H)]	A(Axis No.)-ALD(Device) • Axis No. (decimal): 1 to 32 (direct), 100 to 115 (indirect) • Device (decimal): 0 to 1	A32-ALD0
	[Simple Motion(SSCNET III/H)]	U(Unit No.)-A(Axis No.)-ALD(Device) • Unit No. (hexadecimal): 00 to FF (direct), 100 to 10F (indirect) • Axis No. (decimal): 1 to 32 (direct), 100 to 115 (indirect) • Device (decimal): 0 to 1	UFF-A32-ALD0
	[Master Module(CCIEF)]	ALD(Device) • Device (decimal): 0 to 1	ALD0
TMI	[Motion Controller(SSCNET III/H)]	A(Axis No.)-TMI(Device) • Axis No. (decimal): 1 to 32 (direct), 100 to 115 (indirect) • Device (decimal): 0 to 2	A32-TMI0
	[Simple Motion(SSCNET III/H)]	U(Unit No.)-A(Axis No.)-TMI(Device) • Unit No. (hexadecimal): 00 to FF (direct), 100 to 10F (indirect) • Axis No. (decimal): 1 to 32 (direct), 100 to 115 (indirect) • Device (decimal): 0 to 2	UFF-A32-TMI0
	[Master Module(CCIEF)]	TMI(Device) • Device (decimal): 0 to 2	TMI0

Device name	Device notation and setting range		Notation example
TMO	[Motion Controller(SSCNET III/H)]	A(Axis No.)-TMO(Device) • Axis No. (decimal): 1 to 32 (direct), 100 to 115 (indirect) • Device (decimal): 0	A32-TMO0
	[Simple Motion(SSCNET III/H)]	U(Unit No.)-A(Axis No.)-TMO(Device) • Unit No. (hexadecimal): 00 to FF (direct), 100 to 10F (indirect) • Axis No. (decimal): 1 to 32 (direct), 100 to 115 (indirect) • Device (decimal): 0	UFF-A32-TMO0
	[Master Module(CCIEF)]	TMO(Device) • Device (decimal): 0	TMO0
TMD	[Motion Controller(SSCNET III/H)]	A(Axis No.)-TMD(Device) • Axis No. (decimal): 1 to 32 (direct), 100 to 115 (indirect) • Device (decimal): 0 to 1, 3	A32-TMD0
	[Simple Motion(SSCNET III/H)]	U(Unit No.)-A(Axis No.)-TMD(Device) • Unit No. (hexadecimal): 00 to FF (direct), 100 to 10F (indirect) • Axis No. (decimal): 1 to 32 (direct), 100 to 115 (indirect) • Device (decimal): 0 to 1, 3	UFF-A32-TMD0
	[Master Module(CCIEF)]	TMD(Device) • Device (decimal): 0 to 1, 3	TMD0

For indirect specification of a module or axis number, refer to the following.

☞ Page 1229 Indirect specification of a module number ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])

☞ Page 1230 Indirect specification of an axis number or axis designation ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])

13.5.9 Availability of writing/reading data to/from double-word devices ([MELSEC-Q/QS, Q17nD/M/NC/DR/DSR, CRnD-700])

The following shows the availability of writing/reading data to/from double-word devices by device type.

The GOT can only read data from the device when the QS001CPU is used.

To write data to the consecutive devices of Q172DR (CR750-Q), use Q172DR (CR750-Q) with firmware Ver.R6b or later.

R/W: Both read and write

R/-: Read only

-/W: Write only

-/-: No read/write access

Device name	Device type			
	Word (16 bits)	Double-word (32 bits)	Quad-word (64 bits)	Bit of double-word data
ALD	-/-	R/-	-/-	-/-
TMI	-/-	-/W	-/-	-/-
TMO	-/-	-/W	-/-	-/-
TMD	-/-	-/W	-/-	-/-
AL	-/-	R/-	-/-	-/-
LPr	-/-	R/W	-/-	-/-
OP	-/-	R/W	-/-	-/-
PV	-/-	R/-	-/-	-/-

13.5.10 Virtual servo amplifier devices ([MELSEC-Q/QS, Q17nD/M/NC/DR/DSR, CRnD-700])

The following shows the correspondence between the virtual devices used in the GOT and the servo amplifier data.

Virtual device name	Reference
SP	☞ Page 1250 Servo amplifier request (MELSEC iQ-R, RnMT/NC/RT, CR800-D])
OM	☞ Page 1251 Operation mode selection ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])
TMB	☞ Page 1251 Instruction demand (for test operation) ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])
OTI	☞ Page 1252 One-touch tuning instruction ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])
GFDI	☞ Page 1252 Gear failure diagnosis instruction ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])
ECCDI	☞ Page 1253 Encoder communication circuit diagnosis instruction ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])
PA	☞ Page 1253 Basic parameter ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])
PB	☞ Page 1255 Gain filter parameter ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])
PC	☞ Page 1258 Extension setting parameter ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])
PD	☞ Page 1261 I/O setting parameter ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])
PO	☞ Page 1262 Option unit parameter ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])
PS	☞ Page 1263 Special parameter ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])
PU	☞ Page 1263 Multi encoder parameter ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])
PT	☞ Page 1264 Positioning control parameter, pressure control parameter ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])
PL	☞ Page 1267 Virtual servo amplifier devices ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])
PN	☞ Page 1268 Network setting parameter ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])
ST	☞ Page 1271 Status display ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])
PE	☞ Page 1273 Extension setting No.2 parameter ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])
PF	☞ Page 1275 Extension setting No.3 parameter ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])
PW	☞ Page 1279 Extension setting No.4 parameter ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])
ALM	☞ Page 1281 Alarm [MELSEC iQ-R, RnMT/NC/RT, CR800-D])
POS	☞ Page 1289 Point table (position) ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])
SPD	☞ Page 1289 Point table (speed) ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])
ACT	☞ Page 1289 Point table (acceleration time constant) ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])
DCT	☞ Page 1290 Point table (deceleration time constant) ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])
DWL	☞ Page 1290 Point table (dwell) ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])
AUX	☞ Page 1291 Point table (auxiliary function) ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])
MD	☞ Page 1292 Machine diagnosis data ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])
GFDS	☞ Page 1293 Gear failure diagnosis data ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])
ECCDS	☞ Page 1294 Encoder communication circuit diagnosis data ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])
OTS	☞ Page 1294 One-touch tuning data ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])
DI	☞ Page 1295 External input signal in MR-J5-G(-RJ) and MR-J5W□-G ([MELSEC iQ-R, RnMT/NC/RT, CR800-D]) ☞ Page 1296 External input signal in MR-J5(W)-□B(-RJ) ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])
DO	☞ Page 1298 External output signal in MR-J5-G(-RJ) and MR-J5W□-G ([MELSEC iQ-R, RnMT/NC/RT, CR800-D]) ☞ Page 1299 External output signal in MR-J5(W)-□B(-RJ) ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])
ALD	☞ Page 1300 Life Diagnosis ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])
TMI	☞ Page 1300 Input signal for test operation (for test operation) ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])
TMO	☞ Page 1301 Forced output of signal pin (for test operation) ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])
TMD	☞ Page 1301 Set data (for test operation) ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])

13.5.11 Precautions for virtual servo amplifier devices ([MELSEC-Q/QS, Q17nD/M/NC/DR/DSR, CRnD-700])

For the precautions for virtual servo amplifier devices, refer to the following.

☞ Page 1302 Precautions for virtual servo amplifier devices ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])

13.5.12 Virtual inverter devices ([MELSEC-Q/QS, Q17nD/M/NC/DR/DSR, CRnD-700])

The following shows the correspondence between the virtual devices used in the GOT and the inverter data.

Virtual device name	Reference
IOST	☞ Page 1304 I/O terminal monitor ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])
CMD	☞ Page 1306 Operation command ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])
AL	☞ Page 1308 Alarm history ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])
LPr	☞ Page 1310 Parameter (32-bit) ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])
OP	☞ Page 1310 Operation parameter ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])
PV	☞ Page 1311 Current value monitor ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])

13.6 [MELSEC-L]

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Item	Reference
Specifications of bit devices	☞ Page 1348 Monitoring-supported bit devices ([MELSEC-L])
	☞ Page 1350 Setting virtual bit devices for servo amplifiers ([MELSEC-L])
	☞ Page 1351 Availability of writing/reading data to/from bit devices ([MELSEC-L])
Specifications of word devices	☞ Page 1352 Monitoring-supported word devices ([MELSEC-L])
	☞ Page 1354 Setting virtual word devices for servo amplifiers ([MELSEC-L])
	☞ Page 1357 Availability of writing/reading data to/from word devices ([MELSEC-L])
Specifications of double-word devices	☞ Page 1358 Monitoring-supported double-word devices ([MELSEC-L])
	☞ Page 1359 Setting virtual double-word devices for servo amplifiers ([MELSEC-L])
	☞ Page 1360 Availability of writing/reading data to/from double-word devices ([MELSEC-L])
Specifications of virtual servo amplifier devices	☞ Page 1361 Virtual servo amplifier devices ([MELSEC-L])
	☞ Page 1361 Precautions for virtual servo amplifier devices ([MELSEC-L])
Specifications of virtual inverter devices	☞ Page 1361 Virtual inverter devices ([MELSEC-L])

13.6.1 Monitoring-supported bit devices ([MELSEC-L])

The following table shows monitoring-supported bit devices.

To check whether writing/reading data to/from each device is available, refer to the following.

☞ Page 1351 Availability of writing/reading data to/from bit devices ([MELSEC-L])

○: Available

×: Not available

Device name		Device No. representation	Setting range	Specifications of EG devices*1	
				Assignment to EG devices	Access using a client
X	Input relay	Hexadecimal	0000 to 3FFF	○	○
Y	Output relay	Hexadecimal	0000 to 3FFF	○	○
B	Link relay	Hexadecimal	0000 to EFFF	○	○
M*4	Internal relay	Decimal	0 to 61439	○	○
L	Latch relay	Decimal	0 to 32767	○	○
S	Step relay	Decimal	0 to 8191	○	○
F	Annunciator	Decimal	0 to 32767	○	○
TC*4	Timer coil	Decimal	0 to 32767	○	○ Not usable as word data
TT*4	Timer contact	Decimal	0 to 32767	○	○ Not usable as word data
CC*4	Counter coil	Decimal	0 to 32767	○	○ Not usable as word data
CT*4	Counter contact	Decimal	0 to 32767	○	○ Not usable as word data
SC*4	Retentive timer coil	Decimal	0 to 32767	○	○ Not usable as word data
SS*4	Retentive timer contact	Decimal	0 to 32767	○	○ Not usable as word data
SB	Link special relay	Hexadecimal	0000 to 7FFF	○	○
SM	Special relay	Decimal	0 to 2047	○s	○
RX	Remote input	Hexadecimal	0000 to 3FFF	○	○
RY	Remote output	Hexadecimal	0000 to 3FFF	○	○
SP*2	Servo amplifier request	Decimal	☞ Page 1350 Setting virtual bit devices for servo amplifiers ([MELSEC-L])	×	×
OM*2	Operation mode selection	Decimal	☞ Page 1350 Setting virtual bit devices for servo amplifiers ([MELSEC-L])	×	×
TMB*2	Instruction demand (for test operation)	Decimal	☞ Page 1350 Setting virtual bit devices for servo amplifiers ([MELSEC-L])	×	×
OTI*2	One-touch tuning instruction	Decimal	☞ Page 1350 Setting virtual bit devices for servo amplifiers ([MELSEC-L])	×	×
IOST*3	I/O terminal monitor	Decimal	0 to 127	×	×
CMD*3	Operation command	Decimal	0 to 63	×	×

*1 For the devices assigned to EG devices (gateway devices) and the compatible clients, refer to the following.
📖GT Designer3 (GOT3000) Screen Design Manual

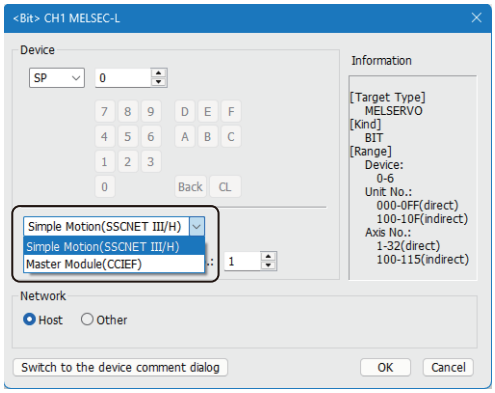
*2 Virtual servo amplifier device
For details, refer to the following.
☞ Page 1361 Virtual servo amplifier devices ([MELSEC-L])

*3 Virtual inverter device
For details, refer to the following.
☞ Page 1361 Virtual inverter devices ([MELSEC-L])

*4 Do not use the local device set in a MELSEC-L system.
If used, the correct monitoring is disabled.
D32768 or later can be used for data register (D).

13.6.2 Setting virtual bit devices for servo amplifiers ([MELSEC-L])

For virtual servo amplifier devices, the notation differs according to the connection type between the GOT and the servo amplifier.
Select one of the following according to the control type in the device setting dialog.



Item	Description
[Simple Motion(SSCNET III/H)]	Select this item to connect the GOT through a Simple Motion module (LD77MS). The following item is displayed. • [Unit No.]: Set the first 2 digits of the 3-digit number that represents the start I/O number of the Simple Motion module. • [Axis No.]: Set the axis number to be monitored.
[Master Module(CCIEF)]	Select this item to connect the GOT through the master station on the CC-Link IE Field Network.

The following shows the notation and setting range of virtual devices.

Device name	Device notation and setting range		Notation example
SP	[Simple Motion(SSCNET III/H)]	U(Unit No.)-A(Axis No.)-SP(Device) • Unit No. (hexadecimal): 00 to FF (direct), 100 to 10F (indirect) • Axis No. (decimal): 1 to 32 (direct), 100 to 115 (indirect) • Device (decimal): 0 to 6	UFF-A32-SP0
	[Master Module(CCIEF)]	SP(Device) • Device (decimal): 0 to 6	SP0
OM	[Simple Motion(SSCNET III/H)]	U(Unit No.)-A(Axis No.)-OM(Device) • Unit No. (hexadecimal): 00 to FF (direct), 100 to 10F (indirect) • Axis No. (decimal): 1 to 32 (direct), 100 to 115 (indirect) • Device (decimal): 0 to 2, 4 to 5	UFF-A32-OM0
	[Master Module(CCIEF)]	OM(Device) • Device (decimal): 0 to 2, 4 to 5	OM0
TMB	[Simple Motion(SSCNET III/H)]	U(Unit No.)-A(Axis No.)-TMB(Device) • Unit No. (hexadecimal): 00 to FF (direct), 100 to 10F (indirect) • Axis No. (decimal): 1 to 32 (direct), 100 to 115 (indirect) • Device (decimal): 1 to 6	UFF-A32-TMB1
	[Master Module(CCIEF)]	TMB(Device) • Device (decimal): 1 to 6	TMB1
OTI	[Simple Motion(SSCNET III/H)]	U(Unit No.)-A(Axis No.)-OTI(Device) • Unit No. (hexadecimal): 00 to FF (direct), 100 to 10F (indirect) • Axis No. (decimal): 1 to 32 (direct), 100 to 115 (indirect) • Device (decimal): 0 to 5	UFF-A32-OTI0
	[Master Module(CCIEF)]	OTI(Device) • Device (decimal): 0 to 5	OTI0

For indirect specification of a module or axis number, refer to the following.

☞ Page 1229 Indirect specification of a module number ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])
☞ Page 1230 Indirect specification of an axis number or axis designation ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])

13.6.3 Availability of writing/reading data to/from bit devices ([MELSEC-L])

The following shows the availability of writing/reading data to/from bit devices by device type.

When the device type is other than the bit type, set the device No. in multiples of 16.

R/W: Both read and write

R/-: Read only

-/W: Write only

-/-: No read/write access

Device name	Device type				
	Bit	Byte (8 bits)	Word (16 bits)	Double-word (32 bits)	Quad-word (64 bits)
X	R/W	-/-	R/W	R/W	-/-
Y	R/W	-/-	R/W	R/W	-/-
B	R/W	-/-	R/W	R/W	-/-
M	R/W	-/-	R/W	R/W	-/-
L	R/W	-/-	R/W	R/W	-/-
S	R/W	-/-	R/W	R/W	-/-
F	R/W	-/-	R/W	R/W	-/-
TC	R/W	-/-	-/-	-/-	-/-
TT	R/W	-/-	-/-	-/-	-/-
CC	R/W	-/-	-/-	-/-	-/-
CT	R/W	-/-	-/-	-/-	-/-
SC	R/W	-/-	-/-	-/-	-/-
SS	R/W	-/-	-/-	-/-	-/-
SB	R/W	-/-	R/W	R/W	-/-
SM	R/W	-/-	R/W	R/W	-/-
RX	R/W	-/-	R/W	R/W	-/-
RY	R/W	-/-	R/W	R/W	-/-
SP	-/W	-/-	-/-	-/-	-/-
OM	-/W	-/-	-/-	-/-	-/-
TMB	-/W	-/-	-/-	-/-	-/-
OTI	-/W	-/-	-/-	-/-	-/-
IOST	R/-	-/-	-/-	-/-	-/-
CMD	-/W	-/-	-/-	-/-	-/-

13.6.4 Monitoring-supported word devices ([MELSEC-L])

The following table shows monitoring-supported word devices.

To check whether writing/reading data to/from each device is available, refer to the following.

☞ Page 1357 Availability of writing/reading data to/from word devices ([MELSEC-L])

○: Available

×: Not available

Device name		Device No. representation	Setting range	Specifications of EG devices[*1]	
				Assignment to EG devices	Access using a client
TN[*6]	Timer current value	Decimal	0 to 32767	○	○
CN[*6]	Counter current value	Decimal	0 to 32767	○	○
SN[*6]	Retentive timer current value	Decimal	0 to 32767	○	○
D[*6]	Data register	Decimal	0 to 421887	○	○
SD	Special register	Decimal	0 to 2047	○	○
W	Link register	Hexadecimal	00000 to 66FFF	○	○
SW	Link special register	Hexadecimal	0000 to 7FFF	○	○
R[*3*4]	File register	Decimal	0 to 32767	○	○
ZR[*3*5]	Extension file register	Decimal	0 to 393215	○	○
Z	Index register	Decimal	0 to 19	○	○ Not usable as bit data
G	Buffer memory (Intelligent function module)	Decimal	U(Unit No.)-G(Device) Notation example: UFF-G100 • Unit No.(hexadecimal): 00 to FF • Device (decimal): 0 to 65535 For the module No., set the first 2 digits of the 3-digit number that represents the start I/O number of the buffer memory for the intelligent function module.	○	○
Ww	Remote register	Hexadecimal	0000 to 1FFF	○	○
Wr	Remote register	Hexadecimal	0000 to 1FFF	○	○
PA[*2]	Basic parameter	Decimal	☞ Page 1354 Setting virtual word devices for servo amplifiers ([MELSEC-L])	×	×
PB[*2]	Gain filter parameter	Decimal	☞ Page 1354 Setting virtual word devices for servo amplifiers ([MELSEC-L])	×	×
PC[*2]	Extension setting parameter	Decimal	☞ Page 1354 Setting virtual word devices for servo amplifiers ([MELSEC-L])	×	×
PD[*2]	I/O setting parameter	Decimal	☞ Page 1354 Setting virtual word devices for servo amplifiers ([MELSEC-L])	×	×
PT[*2]	Positioning control parameter	Decimal	☞ Page 1354 Setting virtual word devices for servo amplifiers ([MELSEC-L])	×	×
PL[*2]	Linear servo motor/DD motor setting parameter	Decimal	☞ Page 1354 Setting virtual word devices for servo amplifiers ([MELSEC-L])	×	×
PN[*2]	Network setting parameter	Decimal	☞ Page 1354 Setting virtual word devices for servo amplifiers ([MELSEC-L])	×	×
ST[*2]	Status display	Decimal	☞ Page 1354 Setting virtual word devices for servo amplifiers ([MELSEC-L])	×	×
PE[*2]	Extension setting No.2 parameter	Decimal	☞ Page 1354 Setting virtual word devices for servo amplifiers ([MELSEC-L])	×	×
PF[*2]	Extension setting No.3 parameter	Decimal	☞ Page 1354 Setting virtual word devices for servo amplifiers ([MELSEC-L])	×	×
ALM[*2]	Alarm (current alarm J4A extend)	Decimal	☞ Page 1354 Setting virtual word devices for servo amplifiers ([MELSEC-L])	×	×
ALM[*2]	Alarm (alarm history J4A extend)	Decimal	☞ Page 1354 Setting virtual word devices for servo amplifiers ([MELSEC-L])	×	×

Device name		Device No. representation	Setting range	Specifications of EG devices*1	
				Assignment to EG devices	Access using a client
POS*2	Point table (position)	Decimal	☞ Page 1354 Setting virtual word devices for servo amplifiers ([MELSEC-L])	×	×
SPD*2	Point table (speed)	Decimal	☞ Page 1354 Setting virtual word devices for servo amplifiers ([MELSEC-L])	×	×
ACT*2	Point table (acceleration time constant)	Decimal	☞ Page 1354 Setting virtual word devices for servo amplifiers ([MELSEC-L])	×	×
DCT*2	Point table (deceleration time constant)	Decimal	☞ Page 1354 Setting virtual word devices for servo amplifiers ([MELSEC-L])	×	×
DWL*2	Point table (dwell)	Decimal	☞ Page 1354 Setting virtual word devices for servo amplifiers ([MELSEC-L])	×	×
AUX*2	Point table (auxiliary function)	Decimal	☞ Page 1354 Setting virtual word devices for servo amplifiers ([MELSEC-L])	×	×
MD*2	Machine diagnosis data	Decimal	☞ Page 1354 Setting virtual word devices for servo amplifiers ([MELSEC-L])	×	×
OTS*2	One-touch tuning data	Decimal	☞ Page 1354 Setting virtual word devices for servo amplifiers ([MELSEC-L])	×	×
DI*2	External input signal	Decimal	☞ Page 1354 Setting virtual word devices for servo amplifiers ([MELSEC-L])	×	×
DO*2	External output signal	Decimal	☞ Page 1354 Setting virtual word devices for servo amplifiers ([MELSEC-L])	×	×

*1 For the devices assigned to EG devices (gateway devices) and the compatible clients, refer to the following.
📖GT Designer3 (GOT3000) Screen Design Manual

*2 Virtual servo amplifier device
For details, refer to the following.
☞ Page 1361 Virtual servo amplifier devices ([MELSEC-L])

*3 Do not set a file register by GT Designer3 when executing multiple programs with the file of the file register set at [Use the same file name as the program.] by the PLC parameter of GX Developer.
Otherwise, read or write at GOT will be erroneous.

*4 Available for the file register of block No. switched with the RSET instruction.

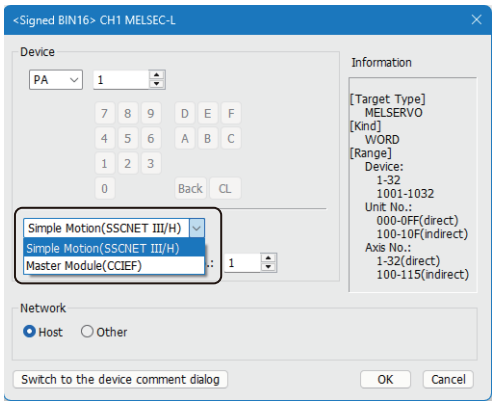
*5 Available for the file register of block number of file name switched with the QDRSET instruction.

*6 Do not use the local device set in a MELSEC-L system.
If used, the correct monitoring is disabled.
D32768 or later can be used for data register (D).

13.6.5 Setting virtual word devices for servo amplifiers ([MELSEC-L])

For virtual servo amplifier devices, the notation differs according to the connection type between the GOT and the servo amplifier.

Select one of the following according to the control type in the device setting dialog.



Item	Description
[Simple Motion(SSCNET III/H)]	Select this item to connect the GOT through a Simple Motion module (LD77MS). The following item is displayed. • [Unit No.]: Set the first 2 digits of the 3-digit number that represents the start I/O number of the Simple Motion module. • [Axis No.]: Set the axis number to be monitored.
[Master Module(CCIEF)]	Select this item to connect the GOT through the master station on the CC-Link IE Field Network.

The following shows the notation and setting range of virtual devices.

Device name	Device notation and setting range		Notation example
PA	[Simple Motion(SSCNET III/H)]	U(Unit No.)-A(Axis No.)-PA(Device) • Unit No. (hexadecimal): 00 to FF (direct), 100 to 10F (indirect) • Axis No. (decimal): 1 to 32 (direct), 100 to 115 (indirect) • Device (decimal): 1 to 32, 1001 to 1032	UFF-A32-PA1
	[Master Module(CCIEF)]	PA (Device) • Device (decimal): 1 to 32, 1001 to 1032	PA1
PB	[Simple Motion(SSCNET III/H)]	U(Unit No.)-A(Axis No.)-PB(Device) • Unit No. (hexadecimal): 00 to FF (direct), 100 to 10F (indirect) • Axis No. (decimal): 1 to 32 (direct), 100 to 115 (indirect) • Device (decimal): 1 to 64, 1001 to 1064	UFF-A32-PB1
	[Master Module(CCIEF)]	PB(Device) • Device (decimal): 1 to 64, 1001 to 1064	PB1
PC	[Simple Motion(SSCNET III/H)]	U(Unit No.)-A(Axis No.)-PC(Device) • Unit No. (hexadecimal): 00 to FF (direct), 100 to 10F (indirect) • Axis No. (decimal): 1 to 32 (direct), 100 to 115 (indirect) • Device (decimal): 1 to 80, 1001 to 1080	UFF-A32-PC1
	[Master Module(CCIEF)]	PC(Device) • Device (decimal): 1 to 80, 1001 to 1080	PC1
PD	[Simple Motion(SSCNET III/H)]	U(Unit No.)-A(Axis No.)-PD(Device) • Unit No. (hexadecimal): 00 to FF (direct), 100 to 10F (indirect) • Axis No. (decimal): 1 to 32 (direct), 100 to 115 (indirect) • Device (decimal): 1 to 48, 1001 to 1048	UFF-A32-PD1
	[Master Module(CCIEF)]	PD(Device) • Device (decimal): 1 to 48, 1001 to 1048	PD1
PT	[Master Module(CCIEF)]	PT(Device) • Device (decimal): 1 to 80, 1001 to 1080	PT1

Device name	Device notation and setting range		Notation example
PL	[Simple Motion(SSCNET III/H)]	U(Unit No.)-A(Axis No.)-PL(Device) • Unit No. (hexadecimal): 00 to FF (direct), 100 to 10F (indirect) • Axis No. (decimal): 1 to 32 (direct), 100 to 115 (indirect) • Device (decimal): 1 to 48, 1001 to 1048	UFF-A32-PL1
	[Master Module(CCIEF)]	PL(Device) • Device (decimal): 1 to 48, 1001 to 1048	PL1
PN	[Master Module(CCIEF)]	PN(Device) • Device (decimal): 1 to 32, 1001 to 1032	PN1
ST	[Simple Motion(SSCNET III/H)]	U(Unit No.)-A(Axis No.)-ST(Device) • Unit No. (hexadecimal): 00 to FF (direct), 100 to 10F (indirect) • Axis No. (decimal): 1 to 32 (direct), 100 to 115 (indirect) • Device (decimal): 0 to 48	UFF-A32-ST0
	[Master Module(CCIEF)]	ST(Device) • Device (decimal): 0 to 48	ST0
PE	[Simple Motion(SSCNET III/H)]	U(Unit No.)-A(Axis No.)-PE(Device) • Unit No. (hexadecimal): 00 to FF (direct), 100 to 10F (indirect) • Axis No. (decimal): 1 to 32 (direct), 100 to 115 (indirect) • Device (decimal): 1 to 64, 1001 to 1064	UFF-A32-PE1
	[Master Module(CCIEF)]	PE(Device) • Device (decimal): 1 to 64, 1001 to 1064	PE1
PF	[Simple Motion(SSCNET III/H)]	U(Unit No.)-A(Axis No.)-PF(Device) • Unit No. (hexadecimal): 00 to FF (direct), 100 to 10F (indirect) • Axis No. (decimal): 1 to 32 (direct), 100 to 115 (indirect) • Device (decimal): 1 to 64, 1001 to 1064	UFF-A32-PF1
	[Master Module(CCIEF)]	PF(Device) • Device (decimal): 1 to 64, 1001 to 1064	PF1
ALM	[Simple Motion(SSCNET III/H)]	U(Unit No.)-A(Axis No.)-ALM(Device) • Unit No. (hexadecimal): 00 to FF (direct), 100 to 10F (indirect) • Axis No. (decimal): 1 to 32 (direct), 100 to 115 (indirect) • Device (decimal): 0 to 1, 11 to 59, 200 to 215, 220 to 235, 240 to 255	UFF-A32-ALM0
	[Master Module(CCIEF)]	ALM(Device) • Device (decimal): 0 to 1, 11 to 59, 200 to 215, 220 to 235, 240 to 255	ALM0
POS	[Master Module(CCIEF)]	POS(Device) • Device (decimal): 1 to 255, 1001 to 1255	POS1
SPD	[Master Module(CCIEF)]	SPD(Device) • Device (decimal): 1 to 255, 1001 to 1255	SPD1
ACT	[Master Module(CCIEF)]	ACT(Device) • Device (decimal): 1 to 255, 1001 to 1255	ACT1
DCT	[Master Module(CCIEF)]	DCT(Device) • Device (decimal): 1 to 255, 1001 to 1255	DCT1
DWL	[Master Module(CCIEF)]	DWL(Device) • Device (decimal): 1 to 255, 1001 to 1255	DWL1
AUX	[Master Module(CCIEF)]	AUX(Device) • Device (decimal): 1 to 255, 1001 to 1255	AUX1
MD	[Simple Motion(SSCNET III/H)]	U(Unit No.)-A(Axis No.)-MD(Device) • Unit No. (hexadecimal): 00 to FF (direct), 100 to 10F (indirect) • Axis No. (decimal): 1 to 32 (direct), 100 to 115 (indirect) • Device (decimal): 0 to 18	UFF-A32-MD0
	[Master Module(CCIEF)]	MD(Device) • Device (decimal): 0 to 18	MD0
OTS	[Simple Motion(SSCNET III/H)]	U(Unit No.)-A(Axis No.)-OTS(Device) • Unit No. (hexadecimal): 00 to FF (direct), 100 to 10F (indirect) • Axis No. (decimal): 1 to 32 (direct), 100 to 115 (indirect) • Device (decimal): 0 to 3	UFF-A32-OTS0
	[Master Module(CCIEF)]	OTS(Device) • Device (decimal): 0 to 3	OTS0

Device name	Device notation and setting range		Notation example
DI	[Simple Motion(SSCNET III/H)]	U(Unit No.)-A(Axis No.)-DI(Device) • Unit No. (hexadecimal): 00 to FF (direct), 100 to 10F (indirect) • Axis No. (decimal): 1 to 32 (direct), 100 to 115 (indirect) • Device (decimal): 0 to 6	UFF-A32-DI0
	[Master Module(CCIEF)]	DI(Device) • Device (decimal): 0 to 6	DI0
DO	[Simple Motion(SSCNET III/H)]	U(Unit No.)-A(Axis No.)-DO(Device) • Unit No. (hexadecimal): 00 to FF (direct), 100 to 10F (indirect) • Axis No. (decimal): 1 to 32 (direct), 100 to 115 (indirect) • Device (decimal): 0 to 4	UFF-A32-DO0
	[Master Module(CCIEF)]	DO(Device) • Device (decimal): 0 to 4	DO0

For indirect specification of a module or axis number, refer to the following.

☞ Page 1229 Indirect specification of a module number ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])

☞ Page 1230 Indirect specification of an axis number or axis designation ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])

13.6.6 Availability of writing/reading data to/from word devices ([MELSEC-L])

The following shows the availability of writing/reading data to/from word devices by device type.

R/W: Both read and write

R/-: Read only

-/W: Write only

-/-: No read/write access

Device name	Device type			
	Word (16 bits)	Double-word (32 bits)	Quad-word (64 bits)	Bit of word data
TN	R/W	R/W	-/-	-/-
CN	R/W	R/W	-/-	-/-
SN	R/W	R/W	-/-	-/-
D	R/W	R/W	R/W	R/W
SD	R/W	R/W	R/W	R/W
W	R/W	R/W	R/W	R/W
SW	R/W	R/W	-/-	R/W
R	R/W	R/W	R/W	R/W
ZR	R/W	R/W	R/W	R/W
Z	R/W	R/W	-/-	-/-
G	R/W	R/W	R/W	R/W
Ww	R/W	R/W	R/W	R/W
Wr	R/W	R/W	R/W	R/W
PA	R/W	R/W	-/-	-/-
PB	R/W	R/W	-/-	-/-
PC	R/W	R/W	-/-	-/-
PD	R/W	R/W	-/-	-/-
PT	R/W	R/W	-/-	-/-
PL	R/W	R/W	-/-	-/-
PN	R/W	R/W	-/-	-/-
ST	R/-	R/-	-/-	-/-
PE	R/W	R/W	-/-	-/-
PF	R/W	R/W	-/-	-/-
ALM	R/-	R/-	-/-	-/-
POS	R/W	R/W	-/-	-/-
SPD	R/W	R/W	-/-	-/-
ACT	R/W	R/W	-/-	-/-
DCT	R/W	R/W	-/-	-/-
DWL	R/W	R/W	-/-	-/-
AUX	R/W	R/W	-/-	-/-
MD	R/-	R/-	-/-	-/-
OTS	R/-	R/-	-/-	-/-
DI	R/-	R/W	-/-	-/-
DO	R/-	R/-	-/-	-/-

13.6.7 Monitoring-supported double-word devices ([MELSEC-L])

The following table shows monitoring-supported double-word devices.

To check whether writing/reading data to/from each device is available, refer to the following.

☞ Page 1360 Availability of writing/reading data to/from double-word devices ([MELSEC-L])

○: Available

×: Not available

Device name		Device No. representation	Setting range	Specifications of EG devices*1	
				Assignment to EG devices	Access using a client
ALD*2	Life diagnosis	Decimal	☞ Page 1359 Setting virtual double-word devices for servo amplifiers ([MELSEC-L])	×	×
TMI*2	Input signal for test operation (for test operation)	Decimal	☞ Page 1359 Setting virtual double-word devices for servo amplifiers ([MELSEC-L])	×	×
TMO*2	Forced output of signal pin (for test operation)	Decimal	☞ Page 1359 Setting virtual double-word devices for servo amplifiers ([MELSEC-L])	×	×
TMD*2	Set data (for test operation)	Decimal	☞ Page 1359 Setting virtual double-word devices for servo amplifiers ([MELSEC-L])	×	×
AL*3	Faults history	Decimal	0 to 899	×	×
LPr*3	Parameter (32-bit)	Decimal	0 to 1500	×	×
OP*3	Operation parameter	Decimal	0 to 5	×	×
PV*3	Current value monitor	Decimal	1 to 143	×	×

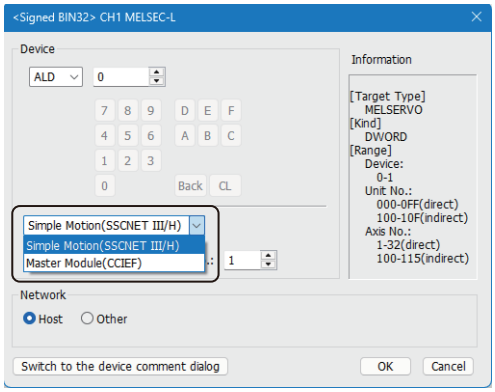
*1 For the devices assigned to EG devices (gateway devices) and the compatible clients, refer to the following.
📖GT Designer3 (GOT3000) Screen Design Manual

*2 Virtual servo amplifier device
For details, refer to the following.
☞ Page 1361 Virtual servo amplifier devices ([MELSEC-L])

*3 Virtual inverter device
For details, refer to the following.
☞ Page 1361 Virtual inverter devices ([MELSEC-L])

13.6.8 Setting virtual double-word devices for servo amplifiers ([MELSEC-L])

For virtual servo amplifier devices, the notation differs according to the connection type between the GOT and the servo amplifier.
Select one of the following according to the control type in the device setting dialog.



Item	Description
[Simple Motion(SSCNET III/H)]	Select this item to connect the GOT through a Simple Motion module (LD77MS). The following item is displayed. • [Unit No.]: Set the first 2 digits of the 3-digit number that represents the start I/O number of the Simple Motion module. • [Axis No.]: Set the axis number to be monitored.
[Master Module(CCIEF)]	Select this item to connect the GOT through the master station on the CC-Link IE Field Network.

The following shows the notation and setting range of virtual devices.

Device name	Device notation and setting range		Notation example
ALD	[Simple Motion(SSCNET III/H)]	U(Unit No.)-A(Axis No.)-ALD(Device) • Unit No. (hexadecimal): 00 to FF (direct), 100 to 10F (indirect) • Axis No. (decimal): 1 to 32 (direct), 100 to 115 (indirect) • Device (decimal): 0 to 1	UFF-A32-ALD0
	[Master Module(CCIEF)]	ALD(Device) • Device (decimal): 0 to 1	ALD0
TMI	[Simple Motion(SSCNET III/H)]	U(Unit No.)-A(Axis No.)-TMI(Device) • Unit No. (hexadecimal): 00 to FF (direct), 100 to 10F (indirect) • Axis No. (decimal): 1 to 32 (direct), 100 to 115 (indirect) • Device (decimal): 0 to 2	UFF-A32-TMI0
	[Master Module(CCIEF)]	TMI(Device) • Device (decimal): 0 to 2	TMI0
TMO	[Simple Motion(SSCNET III/H)]	U(Unit No.)-A(Axis No.)-TMO(Device) • Unit No. (hexadecimal): 00 to FF (direct), 100 to 10F (indirect) • Axis No. (decimal): 1 to 32 (direct), 100 to 115 (indirect) • Device (decimal): 0	UFF-A32-TMO0
	[Master Module(CCIEF)]	TMO(Device) • Device (decimal): 0	TMO0
TMD	[Simple Motion(SSCNET III/H)]	U(Unit No.)-A(Axis No.)-TMD(Device) • Unit No. (hexadecimal): 00 to FF (direct), 100 to 10F (indirect) • Axis No. (decimal): 1 to 32 (direct), 100 to 115 (indirect) • Device (decimal): 0 to 1, 3	UFF-A32-TMD0
	[Master Module(CCIEF)]	TMD(Device) • Device (decimal): 0 to 1, 3	TMD0

For indirect specification of a module or axis number, refer to the following.

☞ Page 1229 Indirect specification of a module number ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])
☞ Page 1230 Indirect specification of an axis number or axis designation ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])

13.6.9 Availability of writing/reading data to/from double-word devices ([MELSEC-L])

The following shows the availability of writing/reading data to/from double-word devices by device type.

R/W: Both read and write

R/-: Read only

-/W: Write only

-/-: No read/write access

Device name	Device type			
	Word (16 bits)	Double-word (32 bits)	Quad-word (64 bits)	Bit of double-word data
ALD	-/-	R/-	-/-	-/-
TMI	-/-	-/W	-/-	-/-
TMO	-/-	-/W	-/-	-/-
TMD	-/-	-/W	-/-	-/-
AL	-/-	R/-	-/-	-/-
LPr	-/-	R/W	-/-	-/-
OP	-/-	R/W	-/-	-/-
PV	-/-	R/-	-/-	-/-

13.6.10 Virtual servo amplifier devices ([MELSEC-L])

The following shows the correspondence between the virtual devices used in the GOT and the servo amplifier data.

Virtual device name	Reference
SP	☞ Page 1250 Servo amplifier request (MELSEC iQ-R, RnMT/NC/RT, CR800-D])
OM	☞ Page 1251 Operation mode selection ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])
TMB	☞ Page 1251 Instruction demand (for test operation) ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])
OTI	☞ Page 1252 One-touch tuning instruction ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])
PA	☞ Page 1253 Basic parameter ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])
PB	☞ Page 1255 Gain filter parameter ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])
PC	☞ Page 1258 Extension setting parameter ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])
PD	☞ Page 1261 I/O setting parameter ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])
PT	☞ Page 1264 Positioning control parameter, pressure control parameter ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])
PL	☞ Page 1267 Motor extension parameter, linear servo motor/DD motor setting parameter ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])
PN	☞ Page 1268 Network setting parameter ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])
ST	☞ Page 1271 Status display ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])
PE	☞ Page 1273 Extension setting No.2 parameter ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])
PF	☞ Page 1275 Extension setting No.3 parameter ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])
ALM	☞ Page 1281 Alarm [MELSEC iQ-R, RnMT/NC/RT, CR800-D])
POS	☞ Page 1289 Point table (position) ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])
SPD	☞ Page 1289 Point table (speed) ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])
ACT	☞ Page 1289 Point table (acceleration time constant) ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])
DCT	☞ Page 1290 Point table (deceleration time constant) ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])
DWL	☞ Page 1290 Point table (dwell) ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])
AUX	☞ Page 1291 Point table (auxiliary function) ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])
MD	☞ Page 1292 Machine diagnosis data ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])
OTS	☞ Page 1294 One-touch tuning data ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])
DI	☞ Page 1295 External input signal in MR-J5-G(-RJ) and MR-J5W□-G ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])
DO	☞ Page 1298 External output signal in MR-J5-G(-RJ) and MR-J5W□-G ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])
ALD	☞ Page 1300 Life Diagnosis ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])
TMI	☞ Page 1300 Input signal for test operation (for test operation) ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])
TMO	☞ Page 1301 Forced output of signal pin (for test operation) ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])
TMD	☞ Page 1301 Set data (for test operation) ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])

13.6.11 Precautions for virtual servo amplifier devices ([MELSEC-L])

For the precautions for virtual servo amplifier devices, refer to the following.

☞ Page 1302 Precautions for virtual servo amplifier devices ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])

13.6.12 Virtual inverter devices ([MELSEC-L])

The following shows the correspondence between the virtual devices used in the GOT and the inverter data.

Virtual device name	Reference
IOST	☞ Page 1304 I/O terminal monitor ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])
CMD	☞ Page 1306 Operation command ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])
AL	☞ Page 1308 Alarm history ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])
LPr	☞ Page 1310 Parameter (32-bit) ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])
OP	☞ Page 1310 Operation parameter ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])
PV	☞ Page 1311 Current value monitor ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])

13.7 [MELSEC-A]

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Item	Reference
Specifications of bit devices	☞ Page 1362 Monitoring-supported bit devices ([MELSEC-A])
	☞ Page 1363 Availability of writing/reading data to/from bit devices ([MELSEC-A])
Specifications of word devices	☞ Page 1364 Monitoring-supported word devices ([MELSEC-A])
	☞ Page 1365 Availability of writing/reading data to/from word devices ([MELSEC-A])

13.7.1 Monitoring-supported bit devices ([MELSEC-A])

The following table shows monitoring-supported bit devices.

To check whether writing/reading data to/from each device is available, refer to the following.

☞ Page 1363 Availability of writing/reading data to/from bit devices ([MELSEC-A])

○: Available

×: Not available

Device name		Device No. representation	Setting range	Specifications of EG devices*1	
				Assignment to EG devices	Access using a client
X*3	Input relay	Hexadecimal	0000 to 1FFF	○	○
Y*3	Output relay	Hexadecimal	0000 to 1FFF	○	○
B*3	Link relay	Hexadecimal	0000 to 7FFF	○	○
M*3	Internal relay	Decimal	0 to 8999 9256 to 32767	○	○
M*2	Special internal relay	Decimal	9000 to 9255	○	○
L*3	Latch relay	Decimal	0 to 32767	○	○
F*3	Annunciator	Decimal	0 to 32767	○	○
TC	Timer coil	Decimal	0 to 32767	○	○ Not usable as word data
TT	Timer contact	Decimal	0 to 32767	○	○ Not usable as word data
CC	Counter coil	Decimal	0 to 32767	○	○ Not usable as word data
CT	Counter contact	Decimal	0 to 32767	○	○ Not usable as word data
SB	Link special relay	Hexadecimal	0000 to 07FF	○	○
RX*4	Remote input	Hexadecimal	000 to 7FF	○	○
RY*4	Remote output	Hexadecimal	000 to 7FF	○	○
LB*4	Link relay	Hexadecimal	0000 to 1FFF	○	○

*1 For the devices assigned to EG devices (gateway devices) and the compatible clients, refer to the following.
GT Designer3 (GOT3000) Screen Design Manual
*2 If the special internal relay (M) is converted to the word device, treat 9000 of the device No. as 0 and set in multiples of 16.
Example) M9000, M9016, M9240
*3 The device number must be set in multiples of 16.
*4 The target device of the host station can be monitored only.
Monitoring the target device of any other station causes a system error.

13.7.2 Availability of writing/reading data to/from bit devices ([MELSEC-A])

The following shows the availability of writing/reading data to/from bit devices by device type.

When the device type is other than the bit type, set the device No. in multiples of 16.

R/W: Both read and write

R/-: Read only

-/W: Write only

-/-: No read/write access

Device name	Device type				
	Bit	Byte (8 bits)	Word (16 bits)	Double-word (32 bits)	Quad-word (64 bits)
X	R/W	-/-	R/W	R/W	-/-
Y	R/W	-/-	R/W	R/W	-/-
B	R/W	-/-	R/W	R/W	-/-
M	R/W	-/-	R/W	R/W	-/-
L	R/W	-/-	R/W	R/W	-/-
F	R/W	-/-	R/W	R/W	-/-
TC	R/W	-/-	-/-	-/-	-/-
TT	R/W	-/-	-/-	-/-	-/-
CC	R/W	-/-	-/-	-/-	-/-
CT	R/W	-/-	-/-	-/-	-/-
SB	R/W	-/-	R/W	R/W	-/-
RX	R/W	-/-	R/W	R/W	-/-
RY	R/W	-/-	R/W	R/W	-/-
LB	R/W	-/-	R/W	R/W	-/-

13.7.3 Monitoring-supported word devices ([MELSEC-A])

The following table shows monitoring-supported word devices.

To check whether writing/reading data to/from each device is available, refer to the following.

☞ Page 1365 Availability of writing/reading data to/from word devices ([MELSEC-A])

○: Available

×: Not available

Device name		Device No. representation	Setting range	Specifications of EG devices*1	
				Assignment to EG devices	Access using a client
TN	Timer current value	Decimal	0 to 32767	○	○
CN	Counter current value	Decimal	0 to 32767	○	○
D	Data register	Decimal	0 to 8999 9256 to 32767	○	○
D	Special data register	Decimal	9000 to 9255	○	○
W	Link register	Hexadecimal	0000 to 7FFF	○	○
SW	Link special register	Hexadecimal	0000 to 07FF	○	○
R	File register	Decimal	0 to 32767	○	○
ER	Extension file register(Block)	Decimal	ER (R block)-(Device) Notation example: ER255-100 • R block (decimal): 1 to 255 • Device (decimal): 0 to 8191	○	○
ZR	Extension file register	Decimal	0 to 1042431	○	○
Z	Index register	Decimal	0 to 6	○	○ Not usable as bit data
V	Index register	Decimal	0 to 6	○	○ Not usable as bit data
BM*2	Buffer memory (Intelligent function module)	Decimal	GM(R block)-(Device) Notation example: BMFF-100 • BM start No. (hexadecimal): 00 to FF • Device (decimal): 0 to 32767 For the BM start No., set the first 2 digits of the 3-digit number that represents the start I/O number of the buffer memory for the intelligent function module.	○	○ Not usable as bit data
Ww	Remote register	Hexadecimal	000 to 7FF	○	○
Wr	Remote register	Hexadecimal	000 to 7FF	○	○
LW	Link register	Hexadecimal	0000 to 1FFF	○	○
A	Accumulator	Decimal	0 to 1	○	○

*1 For the devices assigned to EG devices (gateway devices) and the compatible clients, refer to the following.
📖GT Designer3 (GOT3000) Screen Design Manual

*2 Only the intelligent function module on the station connected to GOT can be specified.
Set the buffer memory within the address range of the buffer memory existing in the intelligent function module.

13.7.4 Availability of writing/reading data to/from word devices ([MELSEC-A])

The following shows the availability of writing/reading data to/from word devices by device type.

R/W: Both read and write

R/-: Read only

-/W: Write only

-/-: No read/write access

Device name	Device type			
	Word (16 bits)	Double-word (32 bits)	Quad-word (64 bits)	Bit of word data
TN	R/W	R/W	-/-	R/W
CN	R/W	R/W	-/-	R/W
D	R/W	R/W	-/-	R/W
W	R/W	R/W	-/-	R/W
SW	R/W	R/W	-/-	R/W
R	R/W	R/W	-/-	R/W
ER	R/W	R/W	-/-	R/W
ZR	R/W	R/W	-/-	R/W
Z	R/W	R/W	-/-	-/-
V	R/W	R/W	-/-	R/W
BM	R/W	R/W	-/-	-/-
Ww	R/W	R/W	-/-	R/W
Wr	R/W	R/W	-/-	R/W
LW	R/W	R/W	-/-	R/W
A	R/W	R/W	-/-	R/W

13.8 [MELSEC-FX]

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Item	Reference
Specifications of bit devices	☞ Page 1366 Monitoring-supported bit devices ([MELSEC-FX])
	☞ Page 1366 Availability of writing/reading data to/from bit devices ([MELSEC-FX])
Specifications of word devices	☞ Page 1367 Monitoring-supported word devices ([MELSEC-FX])
	☞ Page 1368 Setting the buffer memory device ([MELSEC-FX])
	☞ Page 1372 Availability of writing/reading data to/from word devices ([MELSEC-FX])
Protection with a keyword	☞ Page 1373 Protection using a keyword ([MELSEC-FX])

13.8.1 Monitoring-supported bit devices ([MELSEC-FX])

The following table shows monitoring-supported bit devices.

To check whether writing/reading data to/from each device is available, refer to the following.

☞ Page 1366 Availability of writing/reading data to/from bit devices ([MELSEC-FX])

○: Available

×: Not available

Device name		Device No. representation	Setting range	Specifications of EG devices*1	
				Assignment to EG devices	Access using a client
X	Input relay	Octal	0000 to 0377	○	○
Y	Output relay	Octal	0000 to 0377	○	○
M	Auxiliary relay	Decimal	0 to 7679	○	○
M	Special aux relay	Decimal	8000 to 8511	○	○
S	State	Decimal	0 to 4095	○	○
T	Timer contact	Decimal	0 to 511	○	○ Not usable as word data
C	Counter contact	Decimal	0 to 255	○	○ Not usable as word data

*1 For the devices assigned to EG devices (gateway devices) and the compatible clients, refer to the following.
📖GT Designer3 (GOT3000) Screen Design Manual

13.8.2 Availability of writing/reading data to/from bit devices ([MELSEC-FX])

The following shows the availability of writing/reading data to/from bit devices by device type.

When the device type is other than the bit type, set the device No. in multiples of 16.

R/W: Both read and write

R/-: Read only

-/W: Write only

-/-: No read/write access

Device name	Device type				
	Bit	Byte (8 bits)	Word (16 bits)	Double-word (32 bits)	Quad-word (64 bits)
X	R/W	-/-	R/W	R/W	-/-
Y	R/W	-/-	R/W	R/W	-/-
M	R/W	-/-	R/W	R/W	-/-
S	R/W	-/-	R/W	R/W	-/-
T	R/W	-/-	-/-	-/-	-/-
C	R/W	-/-	-/-	-/-	-/-

13.8.3 Monitoring-supported word devices ([MELSEC-FX])

The following table shows monitoring-supported word devices.

To check whether writing/reading data to/from each device is available, refer to the following.

☞ Page 1372 Availability of writing/reading data to/from word devices ([MELSEC-FX])

○: Available

×: Not available

Device name		Device No. representation	Setting range	Specifications of EG devices*1	
				Assignment to EG devices	Access using a client
T	Timer current value	Decimal	0 to 511	○	○
C*3	Counter current value	Decimal	0 to 255	○	○
D	Data register	Decimal	0 to 7999	○	○
D	Special data register	Decimal	8000 to 8511	○	○
R	Extension register	Decimal	0 to 32767	○	○
Z	Index register	Decimal	0 to 7	○	○ Not usable as bit data
V	Index register	Decimal	0 to 7	○	○ Not usable as bit data
BM*5	Buffer memory	Decimal	☞ Page 1368 Setting the buffer memory device ([MELSEC-FX])	○	○
TS*2*4*6	Timer set value	Decimal	0 to 511	○	○
CS*3*4*6	Counter set value	Decimal	0 to 255	○	○

*1 For the devices assigned to EG devices (gateway devices) and the compatible clients, refer to the following.
📖GT Designer3 (GOT3000) Screen Design Manual

*2 Only 16-bit (1-word) specification is possible.

*3 For CS0 to CS199 and C0 to C199, only 16-bit (1-word) specification is allowed.
For CS200 to CS255 and C200 to C255, only 32-bit (2-word) specification is allowed.

*4 The setting values of the timer and counter, which are not used for the program, cannot be monitored.
If monitoring is executed, a reading error occurs.

*5 Usable only for special blocks or special units compatible with FX1N, FX1NC, FX2N, FX2NC, FX3G, FX3GC, FX3U, or FX3UC.
(Except FX0N-3A, FX2N-2AD, and FX2N-2DA)

*6 GT SoftGOT3000 and GT Simulator3 cannot monitor the set values.

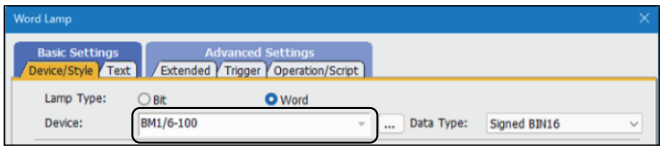
13.8.4 Setting the buffer memory device ([MELSEC-FX])

Buffer memory format ([MELSEC-FX])

The following shows the format in the setting dialog of objects or others.

Ex.

Unit No.: 1, MASK: 6, Device: 100



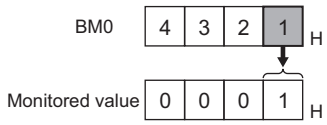
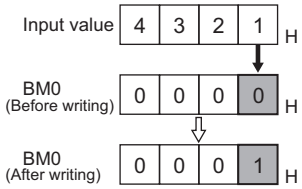
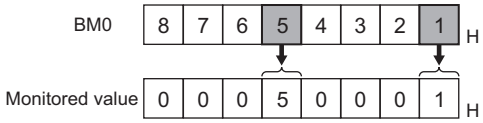
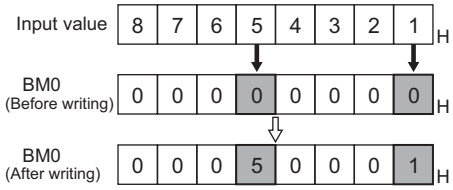
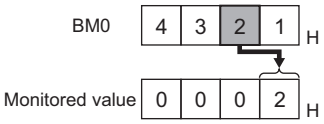
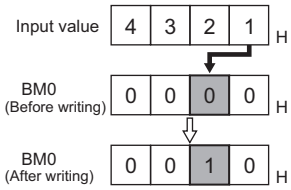
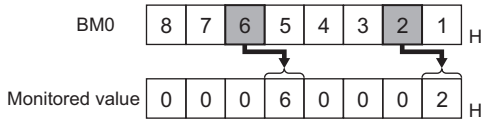
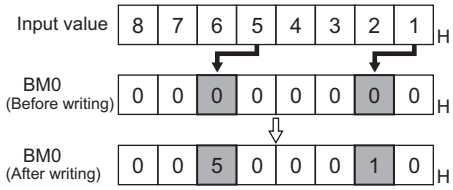
Device name	Format
Buffer memory	BM(Unit No.)/(MASK)-(Device)

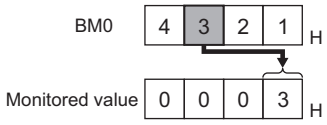
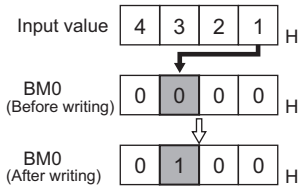
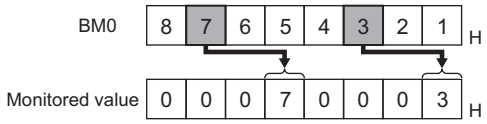
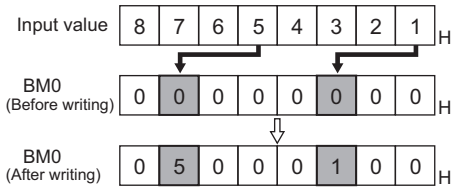
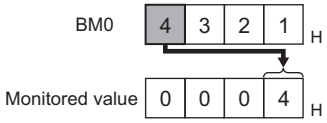
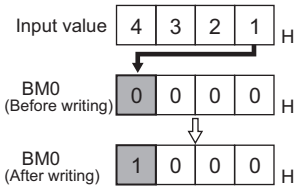
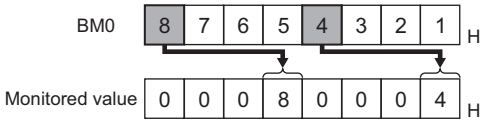
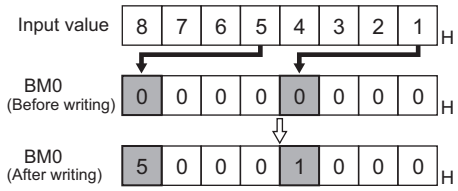
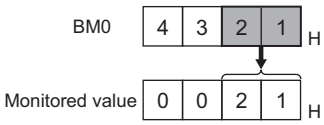
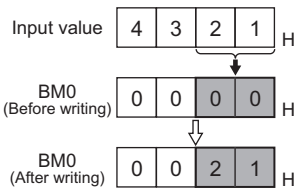
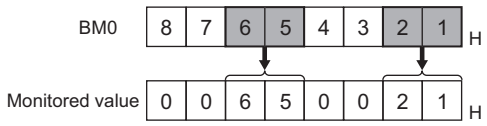
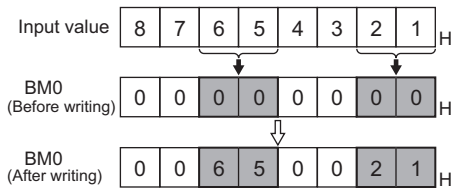
The buffer memory format includes the following elements.

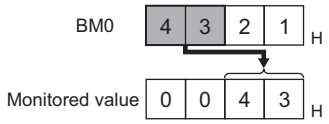
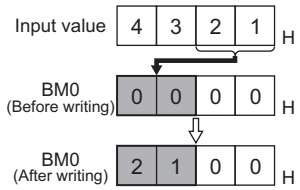
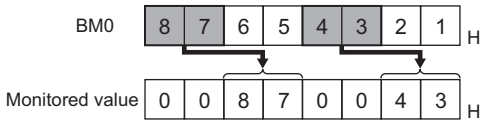
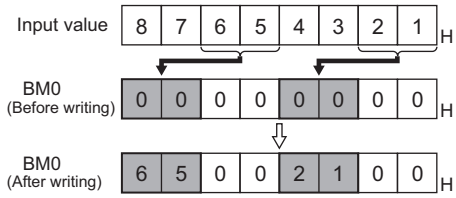
Item	Description	
MASK	Setting range	0 to 6
	Device No. representation	Decimal
	Explanation	Set this item when only specific bit of the buffer memory is monitored or written. When this item is 0, /(MASK) is unnecessary. For the processing corresponding to each setting value, refer to the following. ☞ Page 1369 MASK setting ([MELSEC-FX])
Module No.	Setting range	0 to 7 (direct), 100 to 115 (indirect)
	Device No. representation	Decimal
	Explanation	Set the module number of the special block or special module to be monitored or written. The module number (No. 0 to No. 7) is assigned to the module or block in order of distance from the main unit. For details on the module number, refer to the following. 📖User's Manual (Hardware) of the MELSEC-FX used For indirect specification of a unit number, refer to the following. ☞ Page 1371 Indirect specification of a module number ([MELSEC-FX])
Device	Setting range	0 to 32767
	Device No. representation	Decimal
	Explanation	Buffer memory

MASK setting ([MELSEC-FX])

The following shows the processing corresponding to each setting value for MASK.

MASK	Processing	
	Data type: 16-bit	**Data type: 32-bit**
0	The buffer memory value is monitored or written.	
1	Only b0 to b3 of the buffer memory is monitored or written. Example) Monitoring BM0 = 4321H with MASK 1: Monitored value = 0001H  Example) Writing the input value (4321H) to BM0 = 0000H with MASK 1: BM0 = 0001H  	Only b0 to b3 and b16 to b19 of the buffer memory is monitored or written. Example) Monitoring BM0 = 87654321H with MASK 1: Monitored value = 00050001H  Example) Writing the input value (87654321H) to BM0 = 00000000H with MASK 1: BM0 = 00050001H 
2	Only b4 to b7 of the buffer memory is monitored or written. Example) Monitoring BM0 = 4321H with MASK 2: Monitored value = 0002H  Example) Writing the input value (4321H) to BM0 = 0000H with MASK 2: BM0 = 0010H  	Only b4 to b7 and b20 to b23 of the buffer memory is monitored or written. Example) Monitoring BM0 = 87654321H with MASK 2: Monitored value = 00060002H  Example) Writing the input value (87654321H) to BM0 = 00000000H with MASK 2: BM0 = 00500010H 

MASK	Processing	
	Data type: 16-bit	**Data type: 32-bit**
3	Only b8 to b11 of the buffer memory is monitored or written. Example) Monitoring BM0 = 4321H with MASK 3: Monitored value = 0003H  Example) Writing the input value (4321H) to BM0 = 0000H with MASK 3: BM0 = 0100H  	Only b8 to b11 and b28 to b31 of the buffer memory is monitored or written. Example) Monitoring BM0 = 87654321H with MASK 3: Monitored value = 00070003H  Example) Writing the input value (87654321H) to BM0 = 00000000H with MASK 3: BM0 = 00050001H 
4	Only b12 to b15 of the buffer memory is monitored or written. Example) Monitoring BM0 = 4321H with MASK 4: Monitored value = 0004H  Example) Writing the input value (4321H) to BM0 = 0000H with MASK 4: BM0 = 1000H  	Only b12 to b15 and b28 to b31 of the buffer memory is monitored or written. Example) Monitoring BM0 = 87654321H with MASK 4: Monitored value = 00080004H  Example) Writing the input value (87654321H) to BM0=00000000H with MASK 4: BM0=50001000H 
5	Only b0 to b7 of the buffer memory is monitored or written. Example) Monitoring BM0 = 4321H with MASK 5: Monitored value = 0021H  Example) Writing the input value (4321H) to BM0 = 0000H with MASK 5: BM0 = 0021H  	Only b0 to b7 and b16 to b13 of the buffer memory is monitored or written. Example) Monitoring BM0 = 87654321H with MASK 5: Monitored value = 00650021H  Example) Writing the input value (87654321H) to BM0=00000000H with MASK 5: BM0=00650021H 

MASK	Processing	
	Data type: 16-bit	**Data type: 32-bit**
6	Only b8 to b15 of the buffer memory is monitored or written. Example) Monitoring BM0 = 4321H with MASK 6: Monitored value = 0043H  Example) Writing the input value (4321H) to BM0 = 0000H with MASK 6: BM0 = 2100H  	Only b8 to b15 and b24 to b31 of the buffer memory is monitored or written. Example) Monitoring BM0 = 87654321H with MASK 6: Monitored value = 00870043H  Example) Writing the input value (87654321H) to BM0=00000000H with MASK 6: BM0=65002100H 

Indirect specification of a module number ([MELSEC-FX])

When you specify any of 100 to 115 for the module number, the value of the corresponding GOT internal register (GD10 to GD25) is used as the module number of a special block or special module.

The following shows the correspondence between module numbers and GOT data registers (GD).

Module No.	GOT data registers (GD)	Setting range
100	GD10	[0] to [7] Setting a value outside the above range causes a device range error. If a nonexistent module number is set, a communication timeout error occurs.
101	GD11	
:	:	
114	GD24	
115	GD25	

Precautions for using the buffer memory

When the special block or special unit is turned off, the data in the buffer memory, except the data in some keep areas, are initialized.

When the GOT monitors the buffer memory, the scan time of the PLC may momentarily increase.

Specify 16-bit data for a 16-bit buffer memory, and specify 32-bit data for a 32-bit buffer memory.

If 16-bit data is specified for a 32-bit buffer memory, monitoring/writing may not be performed properly.

For the data size of each buffer memory, refer to the following.

📖User's Manual of the special block or special unit used

When reading/writing data from/to the special block or special unit is performed by interrupting the sequence program, monitoring the buffer memory from the GOT or writing data from the GOT to the buffer memory may not be performed properly.

13.8.5 Availability of writing/reading data to/from word devices ([MELSEC-FX])

The following shows the availability of writing/reading data to/from word devices by device type.

R/W: Both read and write

R/-: Read only

-/W: Write only

-/-: No read/write access

Device name	Device type			
	Word (16 bits)	Double-word (32 bits)	Quad-word (64 bits)	Bit of word data*1
T	R/W	R/W	-/-	R/W
C	R/W	R/W	-/-	R/W
D	R/W	R/W	-/-	R/W
R	R/W	R/W	-/-	R/W
Z	R/W	R/W	-/-	R/W
V	R/W	-/-	-/-	R/W
BM	R/W	R/W	-/-	R/W
TS	R/W	-/-	-/-	-/-
CS	R/W	R/W	-/-	-/-

*1 When executing the touch switch function that has been set during the bit specification of the word device, do not write any data to the word device through the sequence program.

13.8.6 Protection using a keyword ([MELSEC-FX])

How to select a protection level by using a keyword

You can set a protection level for equipment that is allowed to access the FX PLC online, and three protection levels are selectable.

When performing monitoring or changing settings with any on-line equipment is required, specify a keyword with referring to the following.

Registered keyword	Description
When registering a keyword only	Select a protection level by specifying an applicable letter for the initial letter in a keyword. All operations prohibited: Specify a keyword beginning with A, D to F, or 0 to 9. Incorrect write/read prohibited: Specify a keyword beginning with B. Incorrect write prohibited: Specify a keyword beginning with C.
When registering a keyword and the second keyword	Select a protection level in [Registration condition].

Monitoring availability at each keyword protection level

The following shows the device monitoring availability at each keyword protection level.

Item		When registering a keyword only			When registering a keyword and the second keyword			Keyword not registered or protection canceled
		All operations prohibited	Incorrect write/read prohibited	Write prohibited	All online operations prohibited	Read/write prohibited	Write prohibited	
Monitoring devices		○	○	○	—	○	○	○
Changing devices	Value of T or C, and file registers (D1000 and the following)	—*1	—*1	—*1	—	○	○	○
	Other than the above	○	○	○	—	○	○	○

*1 When the value of the T or C device is set indirectly, changing the device is available.

Difference between all online operations prohibition and all operations prohibition

When all online operations are prohibited, the programming tool and GOT cannot display devices and input data.

When all operations are prohibited, you cannot perform all operations with the programming tool, but the GOT can display devices and input data.

PART 4 Mitsubishi Electric MELIPC

14 Ethernet connection

15 CC-Link IE Field Network connection

16 Settable device range

14 Ethernet connection

14.1 MELIPC MI5000 series (built-in Ethernet port connection)

☞ Page 1375 Connectable devices
☞ Page 1376 System configuration
☞ Page 1380 GOT side settings
☞ Page 1386 MELIPC side settings

14.1.1 Connectable devices

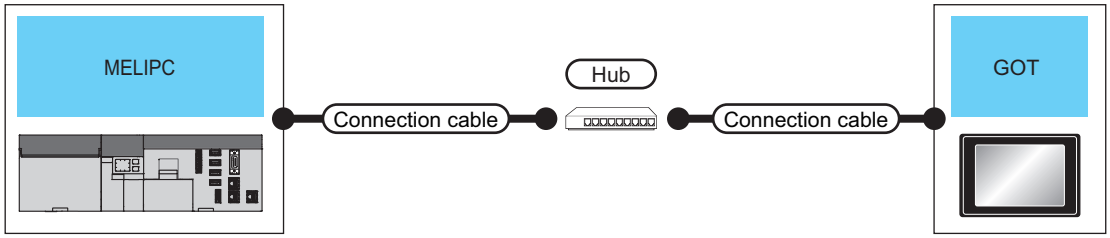
The following table shows the connectable models.

○: Supported, —: Not supported

Controller	Model	Clock	Connectable model
MELIPC	MI5122-VW	○	GT37 SoftGOT3000

14.1.2 System configuration

Direct connection



For details on the connection cables and the maximum segment length, refer to the following.

☞ Page 1376 Connection cable
☞ Page 1377 Maximum segment length

For details on the maximum number of connected devices, refer to the following.

☞ Page 1377 Maximum number of connected devices

Controller	Connection cable	GOT	
		Interface	Model
MI5122-VW*1*2 Built-in Ethernet port (CH1)	Twisted pair cable	Built-in Ethernet interface of GOT	GT37 SoftGOT3000
		Ethernet interface of personal computer	GT37 SoftGOT3000

*1 For the system configuration of the MELIPC, refer to the following manuals.
Manuals of MELIPC

*2 Select [MELIPC] for [Unit Type] in [Connected Ethernet Controller Setting] of GT Designer3.
For [Connected Ethernet Controller Setting] in GT Designer3, refer to the following.
☞ Page 1385 [Controller Setting]

■Connection cable

Use a connection cable that meets the following standards.

Standard	Category
10BASE-T	Shielded twisted pair cable (STP) or unshielded twisted pair cable (UTP) of category 3 or higher
100BASE-TX	Shielded twisted pair cable (STP) or unshielded twisted pair cable (UTP) of category 5 or higher
1000BASE-T	Shielded twisted pair cable (STP) or unshielded twisted pair cable (UTP) of category 5e or higher

The destination device connected with the twisted pair cable varies with the configuration of the Ethernet network system used.

Connect the cable to the Ethernet module, hub, or other system equipment corresponding to the applicable Ethernet network system.

Use cables, connectors, and hubs that meet the IEEE802.3 10BASE-T/100BASE-TX/1000BASE-T standards.

When only one GOT is connected, the GOT can be directly connected to the controller without a hub.

■Maximum segment length

The maximum segment length (length between a hub and a node) is 100 m.
The maximum length depends on the Ethernet equipment used.
The following shows the number of connectable hubs when a repeater hub is used.

- 10BASE-T: Up to 4 for a cascade connection (within 500 m)
- 100BASE-TX: Up to 2 for a cascade connection (within 205 m)
- 1000BASE-T: The number differs depending on the hub to be used.

When switching hubs are used, there is no theoretical limit to the number of cascade connections between switching hubs.
For the limit, contact the switching hub manufacturer.

Precautions

When multiple network devices (including GOTs) are connected in the same segment, the network load increases and the transmission speed between the GOT and PLC may be reduced.
The following actions may improve the communication performance.

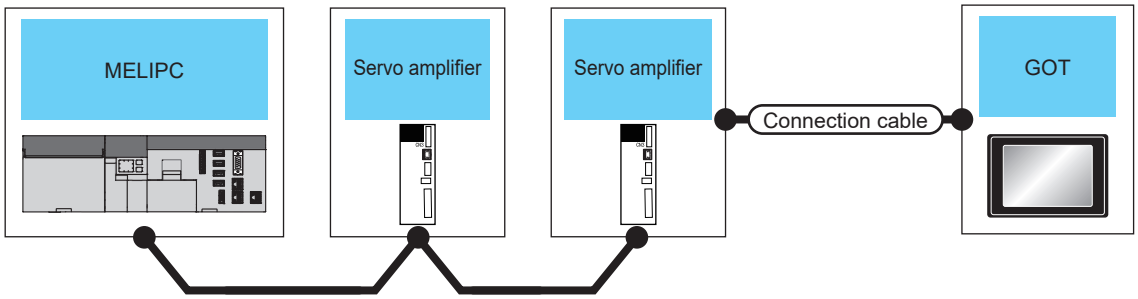
- Use a switching hub compatible with 1000BASE-T (1 Gbps) or more.
- Reduce the number of devices monitored by the GOT.

■Maximum number of connected devices

Up to 128 CPU modules can be connected to channels No. 1 to No. 4 of one GOT. (16 or less recommended)
The following shows the number of connectable controllers per GOT channel and the number of GOTs connectable to one controller.

Controller			GOT	
Model	Number of GOTs connectable to one MELIPC		Model	Number of connectable controllers per GOT channel
	UDP	TCP		
MI5122-VW	16 (UDP and TCP in total)		GT37 SoftGOT3000	119

Connection through a servo amplifier



For details on the connection cables and the maximum segment length, refer to the following.

☞ Page 1379 Connection cable
☞ Page 1379 Maximum segment length

For details on the maximum number of connected devices, refer to the following.

☞ Page 1379 Maximum number of connected devices

MELIPC*1		Servo amplifier		Connection cable	GOT*2	
Controller	Communication type	Model	Communication type		Interface	Model
MI5122-VW	CC-Link IE Field Network Basic	MR-J5-□G MR-J5-□G-RJ MR-J5D1-□G4 MR-JET-G	Ethernet	Twisted pair cable	Built-in Ethernet interface of GOT	GT37 SoftGOT3000
					Ethernet interface of personal computer	GT37 SoftGOT3000

*1 For the system configuration of the MELIPC, refer to the following manuals.
Manuals of MELIPC

*2 For the GOT side settings, refer to the following.
☞ Page 1380 GOT side settings

■Connection cable

Use a connection cable that meets the following standards.

Standard	Category
100BASE-TX	Shielded twisted pair cable (STP) or unshielded twisted pair cable (UTP) of category 5 or higher
1000BASE-T	Shielded twisted pair cable (STP) or unshielded twisted pair cable (UTP) of category 5e or higher

The destination device connected with the twisted pair cable varies with the configuration of the Ethernet network system used.

Connect the cable to the Ethernet module, hub, or other system equipment corresponding to the applicable Ethernet network system.

Use cables, connectors, and hubs that meet the IEEE802.3 100BASE-TX/1000BASE-T standards.

■Maximum segment length

The maximum segment length (length between a hub and a node) is 100 m.

The maximum length depends on the Ethernet equipment used.

The following shows the number of connectable hubs when a repeater hub is used.

- 100BASE-TX: Up to 2 for a cascade connection (within 205 m)
- 1000BASE-T: The number differs depending on the hub to be used.

When switching hubs are used, there is no theoretical limit to the number of cascade connections between switching hubs. For the limit, contact the switching hub manufacturer.

Precautions

When multiple network devices (including GOTs) are connected in the same segment, the network load increases and the transmission speed between the GOT and PLC may be reduced.

The following actions may improve the communication performance.

- Use a switching hub compatible with 1000BASE-T (1 Gbps) or more.
- Reduce the number of devices monitored by the GOT.

■Maximum number of connected devices

Up to 128 CPU modules can be connected to channels No. 1 to No. 4 of one GOT. (16 or less recommended)

The following shows the number of connectable controllers per GOT channel and the number of GOTs connectable to one controller.

Controller		GOT	
Model	Number of GOTs connectable to one servo amplifier	Model	Number of connectable controllers per GOT channel
MI5122-VW	1	GT37 SoftGOT3000	1

14.1.3 GOT side settings

[GOT Ethernet Setting]

Set the GOT Ethernet interface in GT Designer3.

Item	Description
[GOT IP Address Setting]	Set the IP address of the GOT.
[GOT Ethernet Common Setting]	Set the default gateway and other common items for GOT Ethernet interfaces.
[IP filter Setting]	The GOT allows or blocks access from IP addresses specified in the filtering list.

For details on the setting, refer to the following.

📖GT Designer3 (GOT3000) Screen Design Manual

Set the GT SoftGOT3000 Ethernet interface on the personal computer.

Precautions

Do not use 0 and 255 at the end of an IP address.

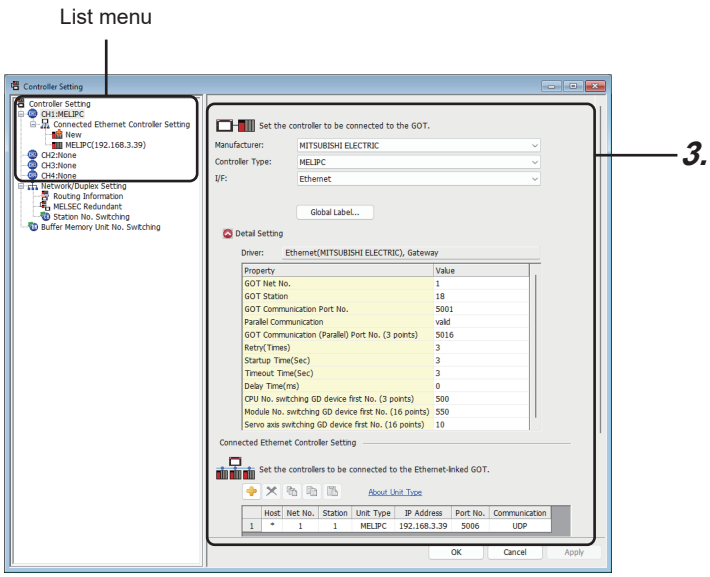
(Numbers of *.*.*.0 and *.*.*.255 are used by the system.)

The GOT may not monitor the controller correctly with the above numbers.

Consult with the administrator of the network before setting an IP address to the GOT.

[Controller Setting]

Set the channel of the connected controller.



Operating procedure

1. Select [Common] → [Controller Setting] from the menu.
2. In the [Controller Setting] window, select the channel number to be used from the list menu.
3. Set the following items.

Item	Description
[Manufacturer]	[MITSUBISHI ELECTRIC]
[Controller Type]	[MELIPC]
[I/F]	[Ethernet]
[Detail Setting]	Configure the settings according to the usage environment. ☞ Page 1381 [Detail Setting]
[Connected Ethernet Controller Setting]	Configure the settings according to the controller to be connected. ☞ Page 1385 [Connected Ethernet Controller Setting]

4. When you have completed the settings, click the [OK] button.

Point

The controller settings can be checked in [I/F Communication Setting].
For details, refer to the following.
GT Designer3 (GOT3000) Screen Design Manual

■[Detail Setting]

Configure the settings according to the usage environment.

Detail Setting

Driver: Ethernet(MITSUBISHI ELECTRIC), Gateway

Property	Value
GOT Net No.	1
GOT Station	18
GOT Communication Port No.	5001
Parallel Communication	valid
GOT Communication (Parallel) Port No. (3 points)	5016
Retry(Times)	3
Startup Time(Sec)	3
Timeout Time(Sec)	3
Delay Time(ms)	0
CPU No. switching GD device first No. (3 points)	500
Module No. switching GD device first No. (16 points)	550
Servo axis switching GD device first No. (16 points)	10

Item	Description	Range
[Driver]	This item appears when communication drivers are selectable according to the settings of [Controller Type] and [I/F].	[Ethernet(MITSUBISHI ELECTRIC), Gateway]
[GOT Net No.]	Set the network number of the GOT.	[1] to [239]
[GOT Station]*1*2	Set the station number of the GOT.	[1] to [120]
[GOT Communication Port No.]	Set the GOT port number for connection with the Ethernet module.	[1024] to [5010], [5014] to [49152], [49171] to [65534]
[Parallel Communication]	Enables or disables the parallel communication. When this setting is enabled, [GOT Communication (Parallel) Port No. (3 points)] can be set. When communicating with multiple devices on a single channel, distributing the communication ports can reduce the communication load.	[Valid], [Invalid]
[GOT Communication (Parallel) Port No. (3 points)]	Set the GOT port number used for the parallel communication.	• [Parallel Communication] is [invalid]: [0] • [Parallel Communication] is [valid]: [1024] to [5008], [5014] to [49150], [49171] to [65532]
[Retry(Times)]	Set the number of retries to be performed when a communication timeout occurs. When receiving no response after retries, the communication times out.	[0] times to [5] times
[Startup Time]	Specify the time period from the GOT startup until GOT starts the communication with the MELIPC.	[3] seconds to [255] seconds
[Timeout Time]	Set the time period for a communication to time out.	[1] second to [90] seconds
[Delay Time]	Set the delay time for reducing the load of the network/destination MELIPC.	[0] ms to [10000] ms
[CPU No. switching GD device first No. (3 points)]	Set the start device number of the GD devices for CPU number switching. For details, refer to the following. Page 1382 Start device number of the GD devices for CPU number switching	[0] to [65520]
[Module No. switching GD device first No. (16 points)]	Set the start device number of the GD devices for module number switching. For details, refer to the following. Page 1383 Start device number of the GD devices for module number switching	[0] to [65520]
[Servo axis switching GD device first No. (16 points)]	Set the start device number of the GD devices for servo axis switching. For details, refer to the following. Page 1384 Start device number of the GD devices for servo axis switching	[0] to [65520]

*1 Set values not set for [Station] in [Connected Ethernet Controller Setting].
Page 1385 [Connected Ethernet Controller Setting]

*2 When connecting multiple GOTs in the Ethernet network, set a different value for [GOT Station] for each GOT.

Point

Setting example in [Controller Setting]

For examples of [Controller Setting], refer to the following.

☞ Page 1386 MELIPC side settings

■Start device number of the GD devices for CPU number switching

• Indirect specification of a CPU number

[CPU No.] can be indirectly specified with the GOT internal registers (GD devices) by specifying a value (100 to 102) to [CPU No.] in the device setting dialog in GT Designer3.

Set the start device number of the GD devices to be used in [CPU No. switching GD device first No. (3 points)].

[CPU No.] is specified with three consecutive GD devices, starting from the set device number.

When [500] is set to [CPU No. switching GD device first No. (3 points)], GD500 to GD502 are used to specify [CPU No.] as shown in the following table.

CPU No.	GD device	Setting range
100	GD500	1 to 4 Setting a value outside the range causes a communication timeout error. Specifying a nonexistent CPU number or a CPU number not supporting a multiple CPU system with a device causes a controller error.
101	GD501	
102	GD502	

• Indirect specification of a CPU number on the initially displayed screen

Set [CPU No. switching GD device first No. (3 points)] so that the values of the GD devices are retained and monitored upon the GOT startup.

• Indirect specification of a CPU number for multi-channel connection

If the setting range of [CPU No. switching GD device first No. (3 points)] set for each channel overlaps, the monitoring target CPU number set to each channel is switched simultaneously.

Set [CPU No. switching GD device first No. (3 points)] for each channel so that the setting range does not overlap.

• Indirect specification of a station number and a CPU number for multi-channel connection

When GD10 to GD25 are used to specify the station number of an inverter or non-Mitsubishi temperature controller connected, setting [10] to [CPU No. switching GD device first No. (3 points)] in a different channel switches the monitoring target CPU number and station number of an inverter or non-Mitsubishi temperature controller set to each channel simultaneously.

Set [CPU No. switching GD device first No. (3 points)] so that the setting range does not overlap the station number of an inverter or non-Mitsubishi temperature controller.

■Start device number of the GD devices for module number switching

• Indirect specification of a module number

For connection via a Simple Motion module, [Unit No.] can be specified with the GOT internal registers (GD devices) by specifying a value (100 to 10F) to [Unit No.] in the device setting dialog in GT Designer3.

Set the start device number of the GD devices to be used in [Module No. switching GD device first No. (16 points)].

[Unit No.] is specified with 16 consecutive GD devices, starting from the set device number.

When [550] is set to [Module No. switching GD device first No. (16 points)], GD550 to GD565 are used to specify [Unit No.] as shown in the following table.

Module No.	GD device	Setting range
100	GD550	00 to FF Setting a value outside the above range causes a device range error.
101	GD551	
102	GD552	
103	GD553	
104	GD554	
105	GD555	
106	GD556	
107	GD557	
108	GD558	
109	GD559	
10A	GD560	
10B	GD561	
10C	GD562	
10D	GD563	
10E	GD564	
10F	GD565	

• Indirect specification of a module number on the initially displayed screen

Set [Module No. switching GD device first No. (16 points)] so that the values of the GD devices are retained and monitored upon the GOT startup.

• Indirect specification of a module number for multi-channel connection

If the setting range of [Module No. switching GD device first No. (16 points)] set for each channel overlaps, the module number of the Simple Motion module via the servo amplifier device of each channel is switched simultaneously.

Set [Module No. switching GD device first No. (16 points)] for each channel so that the setting range does not overlap.

• Indirect specification of a station number and a module number for multi-channel connection

When GD10 to GD25 are used to specify the station number of an inverter or non-Mitsubishi temperature controller connected, setting [10] to [Module No. switching GD device first No. (16 points)] switches the module number of the Simple Motion module via the servo amplifier device and the station number of an inverter or non-Mitsubishi temperature controller set to each channel simultaneously.

Set [Module No. switching GD device first No. (16 points)] so that the setting range does not overlap the station number of an inverter or non-Mitsubishi temperature controller.

■Start device number of the GD devices for servo axis switching

• Indirect specification of a servo axis number

For connection via a Motion CPU or Simple Motion module, a servo axis number can be indirectly specified with GOT internal registers (GD devices) by specifying a value (100 to 115) to the axis number of the servo amplifier device.

Set the start device number of the GD devices to be used in [Servo axis switching GD device first No. (16 points)].

Specify a servo axis number with 16 consecutive GD devices, starting the set device number.

When [10] is set to [Servo axis switching GD device first No. (16 points)], GD10 to GD25 are used to specify a servo axis number as shown in the following table.

Servo axis No.	GD device	Setting range
100	GD10	1 to 64 Setting a value outside the above range causes a device range error.
101	GD11	
102	GD12	
103	GD13	
104	GD14	
105	GD15	
106	GD16	
107	GD17	
108	GD18	
109	GD19	
110	GD20	
111	GD21	
112	GD22	
113	GD23	
114	GD24	
115	GD25	

• Indirect specification of a servo axis number on the initially displayed screen

Set [Servo axis switching GD device first No. (16 points)] so that the values of the GD devices are retained and monitored upon the GOT startup.

• Indirect specification of a servo axis number for multi-channel connection

If the setting rage of [Servo axis switching GD device first No. (16 points)] set for each channel overlaps, the axis number of the servo amplifier of each channel is switched simultaneously.

Set [Servo axis switching GD device first No. (16 points)] for each channel so that the setting range does not overlap.

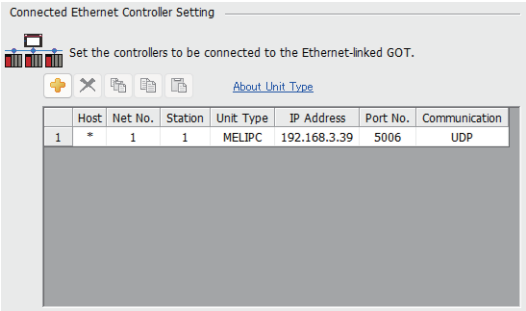
• Indirect specification of a station number and a servo axis number for multi-channel connection

When GD10 to GD25 are used to specify the station number of an inverter or non-Mitsubishi temperature controller connected, setting [10] to [Servo axis switching GD device first No. (16 points)] switches the axis number of the servo amplifier and the station number of an inverter or non-Mitsubishi temperature controller set to each channel simultaneously.

Set [Servo axis switching GD device first No. (16 points)] so that the setting range does not overlap the station number of an inverter or non-Mitsubishi temperature controller.

■[Connected Ethernet Controller Setting]

Set the controller to be connected to the GOT by Ethernet.



Item	Description	Range
[Host]	The host is displayed. It refers to a station that can be connected without setting a station number. The host is indicated with an asterisk (*).	—
[Net No.]	Set the network umber of the connected MELIPC built-in Ethernet port (CH1).	[1] to [239]
[Station No.][*1]	Set the station number of the connected MELIPC built-in Ethernet port (CH1).	[1] to [120]
[Unit Type]	Set the type of the connected MELIPC built-in Ethernet port (CH1).	• [MELIPC] • [MELIPC(Virtual Ethernet)][*2]
[IP Address]	Set the IP address of the connected MELIPC built-in Ethernet port (CH1).	[0.0.0.0] to [255.255.255.255]
[Port No.]	Set the port number of the connected MELIPC built-in Ethernet port (CH1).	[5006], [5007]
[Communication]	The connection method differs depending on the port number.	[UDP], [TCP]

*1 Set values not set for [GOT Station] in [Detail Setting].
☞ Page 1381 [Detail Setting]

*2 The setting is available only for GT SoftGOT3000.

Point

• Examples of [Connected Ethernet Controller Setting]

For examples of [Connected Ethernet Controller Setting], refer to the following.

☞ Page 1386 MELIPC side settings

• Controller settings using the GT37 utility

The controller settings can be changed in [Communication Settings] of the GT37 utility after writing [Communication Settings] of project data to GT37.

For details on the GT37 utility, refer to the following manual.

📖GOT3000 Series User's Manual (Utility & Maintenance Functions)

• Priority of the settings in [Controller Setting]

When the settings are configured in GT Designer3 or in the GT37 utility, the latest settings are effective.

14.1.4 MELIPC side settings

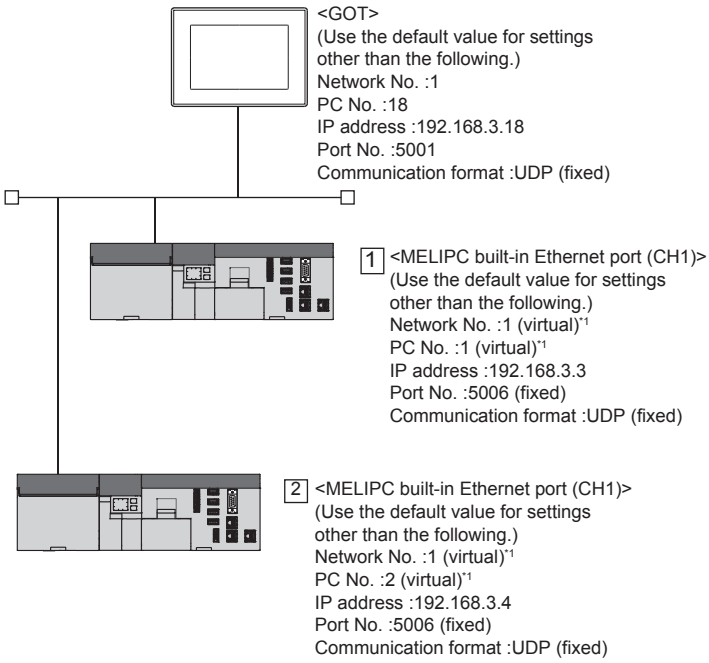
Model		Reference
MELIPC	MI5122-VW	☞ Page 1386 Connection to MELIPC(MI5122-VW) (multiple connection)

Connection to MELIPC(MI5122-VW) (multiple connection)

This section describes the settings of the GOT and the MELIPC (MI5122-VW) in the system configuration shown below.
To configure the MELIPC side settings, use MI Configurator (peripheral tool for edge computers).
For details on MI Configurator (peripheral tool for edge computers), refer to the following manuals.
📖Manuals of MELIPC

■When the GOT's communication format is UDP

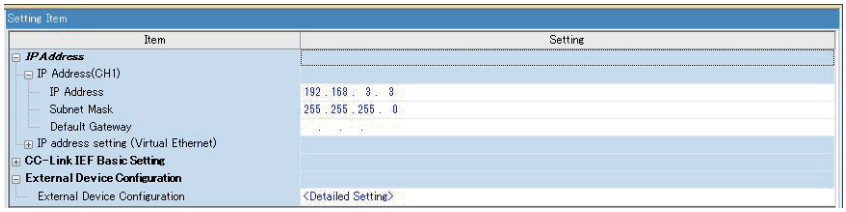
- System configuration



*1 These setting items do not exist at the MELIPC side. However, the virtual values must be set on the GOT side.
☞ • [Controller Setting] and [Connected Ethernet Controller Setting] of GT Designer3

- [Basic Parameter] of MI Configurator

External device interaction settings



○: Necessary, △: As necessary, —: Not necessary

Item	Setting value	Setting for GOT connection
[IP Address]	192.168.3.3	—
[Subnet Mask]	—	—
[Default Gateway]	—	—
[CC-Link IEF Basic Setting]	(Use default value)	—
[External Device Configuration]	—	—

• [Controller Setting] and [Connected Ethernet Controller Setting] of GT Designer3

For the setting method of [Controller Setting] and [Connected Ethernet Controller Setting] in GT Designer3, refer to the following.

☞ Page 1380 GOT side settings

Point

[Connected Ethernet Controller Setting] for connection to the MELIPC built-in Ethernet port (CH1)
The setting items for the network number and station number do not exist in the MELIPC.
Set the network number and station number on the GOT side.
When doing so, set a network number not used in the system.

Controller settings

Item	Setting value
[GOT Net No.]	1
[GOT Station]	18
[GOT Ethernet Setting]	192.168.3.18
[GOT Communication Port No.]	5001
[Retry]	3 times
[Startup Time]	3 seconds
[Timeout Time]	3 seconds
[Delay Time]	0 ms

GOT Ethernet settings

Item	Setting value
[GOT IP Address]	192.168.3.18
[Subnet Mask]	255.255.255.0
[Default Gateway]	0.0.0.0
[Peripheral S/W Communication Port No.]	5015
[Transparent Port No.]	5014

Connected Ethernet controller settings

Item		Setting value	
		1	2
Ethernet setting No. 1	[Host]	*	—
	[Net No.]	1*1	1*1
	[Station No.]	1*2	2*2
	[Unit Type]	MELIPC	MELIPC
	[IP Address]	192.168.3.3	192.168.3.4
	[Port No.]	5006	5006
	[Communication]	UDP	UDP

*1 Set the same value as the GOT net number.
*2 Set a value different from the GOT station number and PLC numbers of other MELIPCs on the same network.

• Checking the communication state of the MELIPC built-in Ethernet port (CH1)

1) When using Windows Command Prompt

Execute a ping command in Windows Command Prompt.

• At normal end

C:\>Ping 192.168.3.3

Reply from 192.168.3.3:bytes=32 time<1ms TTL=32

• At abnormal end

C:\>Ping 192.168.3.3

Request timed out.

2) In the case of abnormal end

In the case of abnormal end, check the following and execute the ping command again.

• Cable connecting condition
• Switch settings and network parameter settings
• Operation state of MELIPC (faulty or not)
• IP address of the MELIPC built-in Ethernet port (CH1) specified by the ping command

Point

Ethernet diagnostics of MI Configurator

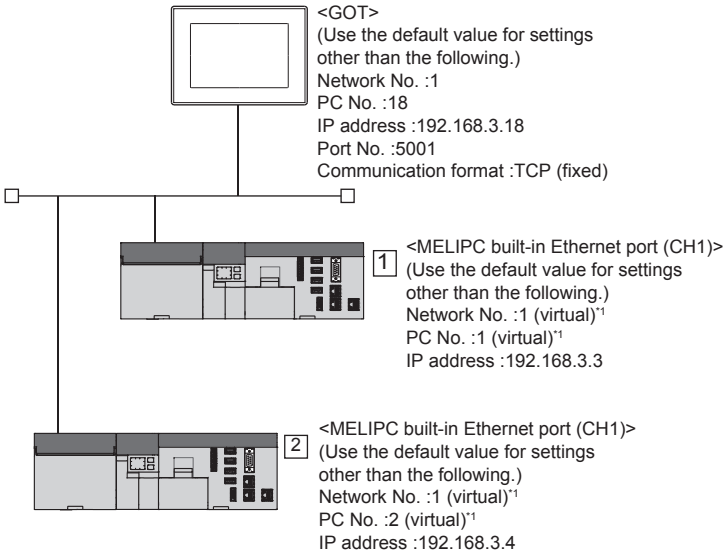
The Ethernet diagnostics of MI Configurator enables ping tests from the MELIPC.

For details on Ethernet diagnostics of MI Configurator, refer to the following manuals.

Manuals of MELIPC

■When the GOT's communication format is TCP

• System configuration

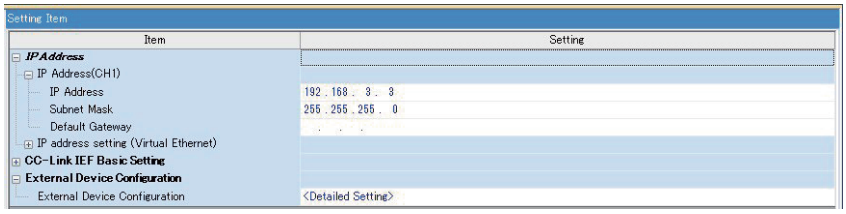


*1 These setting items do not exist at the MELIPC side. However, the virtual values must be set on the GOT side.

☞ • [Controller Setting] and [Connected Ethernet Controller Setting] of GT Designer3

• [Basic Parameter] of MI Configurator

External device interaction settings

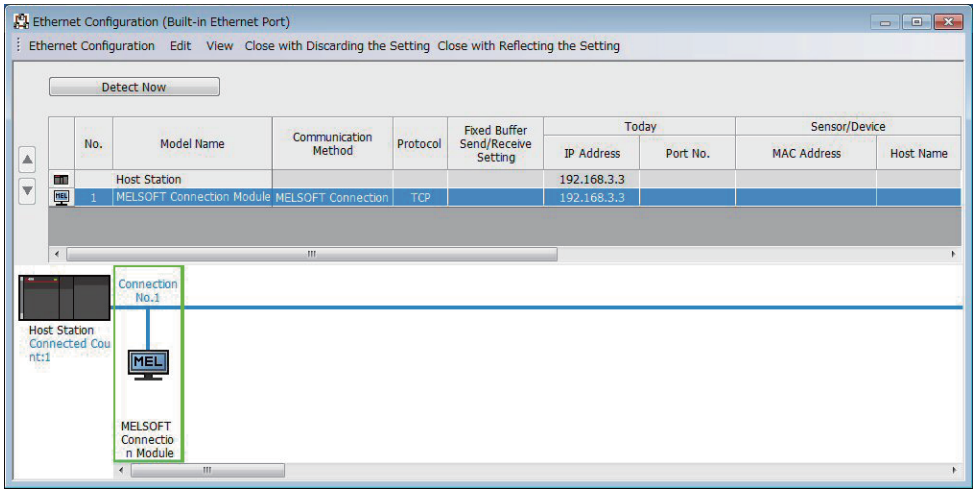


○: Necessary, △: As necessary, —: Not necessary

Item	Setting value	Setting for GOT connection
[IP Address]	192.168.3.3	—
[Subnet Mask]	—	—
[Default Gateway]	—	—
[CC-Link IEF Basic Setting]	(Use default value)	—
[External Device Configuration]	☞ Target device connection configuration settings	○

Target device connection configuration settings

Configure the settings for all the connected GOTs.



Item	Setting value
[Protocol]	(Use default value)
[Open System]	MELSOFT connection

• [Controller Setting] and [Connected Ethernet Controller Setting] of GT Designer3

For the setting method of [Controller Setting] and [Connected Ethernet Controller Setting] in GT Designer3, refer to the following.

☞ Page 1380 GOT side settings

Point

[Connected Ethernet Controller Setting] for connection to the MELIPC built-in Ethernet port (CH1)
The setting items for the network number and station number do not exist in the MELIPC.
Set the network number and station number on the GOT side.
When doing so, set a network number not used in the system.

Controller settings

Item	Setting value
[GOT Net No.]	1
[GOT Station]	18
[GOT Ethernet Setting]	192.168.3.18
[GOT Communication Port No.]	5001
[Retry]	3 times
[Startup Time]	3 seconds
[Timeout Time]	3 seconds
[Delay Time]	0 ms

GOT Ethernet settings

Item	Setting value
[GOT IP Address]	192.168.3.18
[Subnet Mask]	255.255.255.0
[Default Gateway]	0.0.0.0
[Peripheral S/W Communication Port No.]	5015
[Transparent Port No.]	5014

Connected Ethernet controller settings

Item		Setting value	
		1	2
Ethernet setting No. 1	[Host]	*	—
	[Net No.]	1*1	1*1
	[Station No.]	1*2	2*2
	[Unit Type]	MELIPC	MELIPC
	[IP Address]	192.168.3.3	192.168.3.4
	[Port No.]	5007	5007
	[Communication]	TCP	TCP

*1 Set the same value as the GOT net number.
*2 Set a value different from the GOT station number.

- Checking the communication state of the MELIPC built-in Ethernet port (CH1)

1) When using Windows Command Prompt

Execute a ping command in Windows Command Prompt.

- At normal end

C:\>Ping 192.168.3.3

Reply from 192.168.3.3:bytes=32 time<1ms TTL=32

- At abnormal end

C:\>Ping 192.168.3.3

Request timed out.

2) In the case of abnormal end

In the case of abnormal end, check the following and execute the ping command again.

- Cable connecting condition
- Switch settings and network parameter settings
- Operation state of MELIPC (faulty or not)
- IP address of the MELIPC built-in Ethernet port (CH1) specified by the ping command

Point

Ethernet diagnostics of MELIPC

The Ethernet diagnostics of MELIPC enables ping tests from the MELIPC.

For details on Ethernet diagnostics of MELIPC, refer to the following manuals.

Manuals of MELIPC

15 CC-Link IE Field Network connection

15.1 MELIPC MI5000 series (CC-Link IE Field Network connection)

☞ Page 1392 Connectable devices
☞ Page 1392 System configuration
☞ Page 1394 GOT side settings
☞ Page 1399 MELIPC side settings

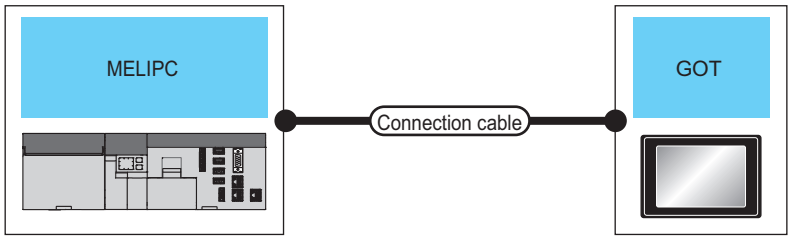
15.1.1 Connectable devices

The following table shows the connectable models.

○: Supported, —: Not supported

Controller	Model	Clock	Connectable model
MELIPC	MI5122-VW	○	GT37 SoftGOT3000

15.1.2 System configuration



For details on the connection cable and overall cable length, refer to the following.

☞ Page 1393 Connection cable
☞ Page 1393 Overall length

For details on the maximum number of connected devices, refer to the following.

☞ Page 1393 Maximum number of connected devices

Controller	Connection cable	GOT	
		Interface	Model
MI5122-VW (CC-Link IE Field Network connector)	Twisted pair cable	GT37-IF2000 + GT15-J71GF13-T2*1	GT37 SoftGOT3000

*1 If there is a submaster station in the network configuration, use software version C or later.
The software version is the 10th digit of the serial number described on the rating plate of the unit.

Connection cable

Use a connection cable that meets the following standards.

Standard	Category
1000BASE-T	Shielded twisted pair cable (double-shielded STP or STP) of category 5e or higher

For the twisted pair cable, use a straight cable.

Use cables that meet the IEEE802.3 1000BASE-T standard.

Use hubs that satisfy the following conditions.

- Compliant with the IEEE802.3 (1000BASE-T) standard
- Include Auto MDI/MDI-X.
- Include an automatic negotiation function.
- Switching hub (Do not use repeater hubs.)

Recommended switching hub (Mitsubishi Electric products)

Type	Model
Industrial switching hub	NZ2EHG-T8

For details, refer to the following manual.

📖MELIPC manuals

When only one GOT is connected, the GOT can be directly connected to the controller without a hub.

Overall length

The overall cable length is 12100 m.

The overall cable length and the cable length between stations vary depending on the connection method (line, star, or ring), the system configuration, etc.

For details, refer to the following manual.

📖MELIPC manuals

Maximum number of connected devices

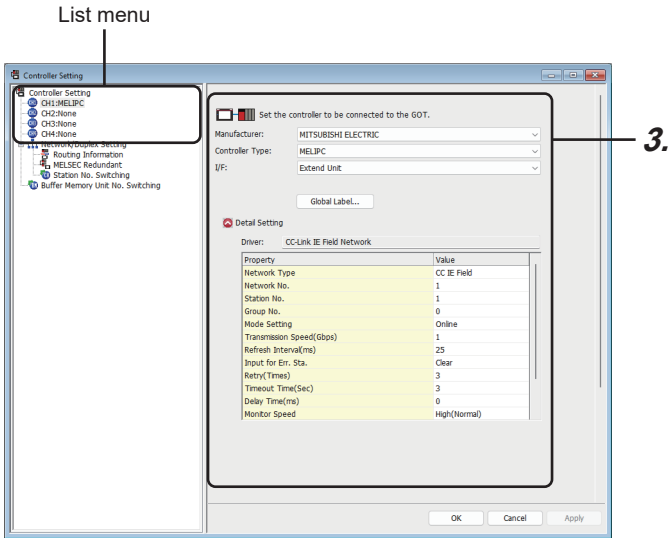
The following shows the number of GOTs connectable to one controller.

Controller	
Model	**Number of GOTs connectable to one PLC**
MI5122-VW (CC-Link IE Field Network connector)	120

15.1.3 GOT side settings

[Controller Setting]

Set the channel of the connected controller.



Operating procedure

1. Select [Common] → [Controller Setting] from the menu.

2. In the [Controller Setting] window, select the channel number to be used from the list menu.

3. Set the following items.

Item	Description
[Manufacturer]	[MITSUBISHI ELECTRIC]
[Controller Type]	[MELIPC]
[I/F]	[Extend Unit]
[Detail Setting]	Configure the settings according to the usage environment. ☞ Page 1395 [Detail Setting]

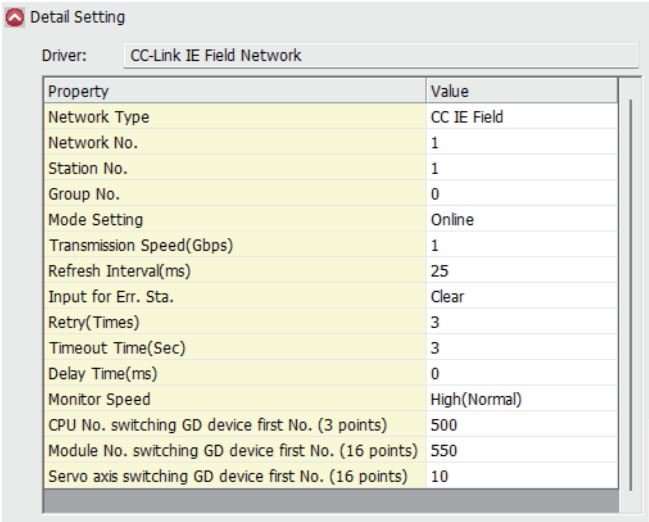
4. When you have completed the settings, click the [OK] button.

Point

The controller settings can be checked in [I/F Communication Setting].
For details, refer to the following.
📖GT Designer3 (GOT3000) Screen Design Manual

■[Detail Setting]

Configure the settings according to the usage environment.



Item	Description	Range
[Driver]	This item appears when communication drivers are selectable according to the settings of [Controller Type] and [I/F].	[CC-Link IE Field Network]
[Network Type]	Set the network type.	[CC IE Field]
[Network No.]	Set the network number.	[1] to [239]
[Station No.]	Set the station number of the GOT.	[1] to [120]
[Group No.]	—	[0]
[Mode Setting]	Set the operation mode of the GOT. For details on the hardware test and self-loopback test, refer to the following. ☞ Page 1396 Hardware test ☞ Page 1396 Self-loopback test	[Online], [Offline], [H/W test], [Self-loopback test]
[Transmission Speed]	—	[1Gbps]
[Refresh Interval]	Set the number of refreshes to secure the send/receive data per station during communication.	[1] ms to [1000] ms
[Input for Err. Sta.]	Set whether to hold or clear the input from the station whose data link has become faulty due to powering off or other reasons.	[Clear], [Hold]
[Retry]	Set the number of retries to be performed when a communication timeout occurs. When receiving no response after retries, the communication times out.	[0] times to [5] times
[Timeout Time]	Set the time period for a communication to time out.	[1] second to [90] seconds
[Delay Time]	Set the delay time for reducing the load of the network and destination PLC.	[0] ms to [300] ms
[Monitor Speed]*1	Set the monitor speed for the CC-Link IE Field Network. This setting is not valid in all systems.	[High(Normal)], [Middle], [Low]
[CPU No. switching GD device first No. (3 points)]	Set the start device number of the GD devices for CPU number switching. For details, refer to the following. ☞ Page 1397 Start device number of the GD devices for CPU number switching	[0] to [65520]
[Module No. switching GD device first No. (16 points)]	Set the start device number of the GD devices for module number switching. For details, refer to the following. ☞ Page 1397 Start device number of the GD devices for module number switching	[0] to [65520]
[Servo axis switching GD device first No. (16 points)]	Set the start device number of the GD devices for servo axis switching. For details, refer to the following. ☞ Page 1398 Start device number of the GD devices for servo axis switching	[0] to [65520]

*1 When using a global label, to read or write more than 235 two-byte characters, set the [Monitor speed] to [High (Standard)] or [Middle].
If [Monitor speed] is set to [Low], a system error occurs when reading or writing.
For details, refer to the following manual.
📖GT Designer3 (GOT3000) Screen Design Manual

Point

• Example of communication detail settings

For the example of communication detail settings, refer to the following.

☞ Page 1399 MELIPC side settings

• Controller settings using the GT37 utility

The controller settings can be changed in [Communication Settings] of the GT37 utility after writing [Communication Settings] of project data to GT37.

For details on the GT37 utility, refer to the following manual.

📖GOT3000 Series User's Manual (Utility & Maintenance Functions)

• Priority of the settings in [Controller Setting]

When the settings are configured in GT Designer3 or in the GT37 utility, the latest settings are effective.

• Network type

Be sure to set the same network types for the CPU side and the GOT side.

If the network types of the CPU side and the GOT side are different, an error is displayed in the system alarm of the GOT side.

■Hardware test

For a hardware test, mount a CC-Link IE Field Network communication unit on the GOT, and check if the unit operates properly with the GOT.

The following shows the hardware test procedure.

1. Perform either of the following operations to set the GOT to the hardware test mode.

• Write the project data for which [Mode Setting] in [Detail Setting] is set to [H/W test] to the GOT.

• Set [Mode setting] of [Detail setting] to [H/W Test] in the GOT utility.

2. A hardware test will start at GOT startup.

3. After the test is complete, check the result with the ERR LED on the CC-Link IE Field Network communication unit.

• OFF: Normal

• ON: Error

4. If no error is detected, change the setting of [Mode Setting] from [H/W test] in [Detail Setting].

Since the communication with the controller is not performed when [Mode setting] is set to [H/W Test], the communication timeout error occurs when the device of controller is monitored.

5. If any error is detected, replace the CC-Link IE Field Network communication unit.

■Self-loopback test

In a self-loopback test, connect port 1 and port 2 of the CC-Link IE Field Network communication unit mounted on the GOT with a network cable, and check if the unit operates properly with the GOT.

The following shows the self-loopback test procedure.

1. Perform either of the following operations to set the GOT to the self-loopback test mode.

• Write the project data for which [Mode Setting] in [Detail Setting] is set to [Self-loopback test] to the GOT.

• Set [Mode setting] in [Detail setting] to [Self-loopback Test] in the GOT utility.

2. A self-loopback test will start at a GOT startup.

3. After the test is complete, check the result with the ERR LED on the CC-Link IE Field Network communication unit.

• OFF: Normal

• ON: Error

4. If no error is detected, change the setting of [Mode Setting] from [Self-loopback test] in [Detail Setting].

Since the communication with the controller is not performed when [Mode setting] is set to [Self-loopback Test], the communication timeout error occurs when the device of controller is monitored.

5. If any error is detected, replace the CC-Link IE Field Network communication unit.

■Start device number of the GD devices for CPU number switching

• Indirect specification of a CPU number

[CPU No.] can be indirectly specified with the GOT internal registers (GD devices) by specifying a value (100 to 102) to [CPU No.] in the device setting dialog in GT Designer3.

Set the start device number of the GD devices to be used in [CPU No. switching GD device first No. (3 points)].

[CPU No.] is specified with three consecutive GD devices, starting from the set device number.

When [500] is set to [CPU No. switching GD device first No. (3 points)], GD500 to GD502 are used to specify [CPU No.] as shown in the following table.

CPU No.	GD device	Setting range
100	GD500	1 to 4 Setting a value outside the range causes a communication timeout error. Specifying a nonexistent CPU number or a CPU number not supporting a multiple CPU system with a device causes a controller error.
101	GD501	
102	GD502	

• Indirect specification of a CPU number on the initially displayed screen

Set [CPU No. switching GD device first No. (3 points)] so that the values of the GD devices are retained and monitored upon the GOT startup.

• Indirect specification of a CPU number for multi-channel connection

If the setting range of [CPU No. switching GD device first No. (3 points)] set for each channel overlaps, the monitoring target CPU number set to each channel is switched simultaneously.

Set [CPU No. switching GD device first No. (3 points)] for each channel so that the setting range does not overlap.

• Indirect specification of a station number and a CPU number for multi-channel connection

When GD10 to GD25 are used to specify the station number of an inverter or non-Mitsubishi temperature controller connected, setting [10] to [CPU No. switching GD device first No. (3 points)] in a different channel switches the monitoring target CPU number and station number of an inverter or non-Mitsubishi temperature controller set to each channel simultaneously.

Set [CPU No. switching GD device first No. (3 points)] so that the setting range does not overlap the station number of an inverter or non-Mitsubishi temperature controller.

■Start device number of the GD devices for module number switching

• Indirect specification of a module number

For connection via a Simple Motion module, [Unit No.] can be specified with the GOT internal registers (GD devices) by specifying a value (100 to 10F) to [Unit No.] in the device setting dialog in GT Designer3.

Set the start device number of the GD devices to be used in [Module No. switching GD device first No. (16 points)].

[Unit No.] is specified with 16 consecutive GD devices, starting from the set device number.

When [550] is set to [Module No. switching GD device first No. (16 points)], GD550 to GD565 are used to specify [Unit No.] as shown in the following table.

Module No.	GD device	Setting range
100	GD550	00 to FF Setting a value outside the above range causes a device range error.
101	GD551	
102	GD552	
103	GD553	
104	GD554	
105	GD555	
106	GD556	
107	GD557	
108	GD558	
109	GD559	
10A	GD560	
10B	GD561	
10C	GD562	
10D	GD563	
10E	GD564	
10F	GD565	

• Indirect specification of a module number on the initially displayed screen

Set [Module No. switching GD device first No. (16 points)] so that the values of the GD devices are retained and monitored upon the GOT startup.

• Indirect specification of a module number for multi-channel connection

If the setting range of [Module No. switching GD device first No. (16 points)] set for each channel overlaps, the module number of the Simple Motion module via the servo amplifier device of each channel is switched simultaneously.

Set [Module No. switching GD device first No. (16 points)] for each channel so that the setting range does not overlap.

• Indirect specification of a station number and a module number for multi-channel connection

When GD10 to GD25 are used to specify the station number of an inverter or non-Mitsubishi temperature controller connected, setting [10] to [Module No. switching GD device first No. (16 points)] switches the module number of the Simple Motion module via the servo amplifier device and the station number of an inverter or non-Mitsubishi temperature controller set to each channel simultaneously.

Set [Module No. switching GD device first No. (16 points)] so that the setting range does not overlap the station number of an inverter or non-Mitsubishi temperature controller.

■Start device number of the GD devices for servo axis switching

• Indirect specification of a servo axis number

For connection via a Motion CPU or Simple Motion module, a servo axis number can be indirectly specified with GOT internal registers (GD devices) by specifying a value (100 to 115) to the axis number of the servo amplifier device.

Set the start device number of the GD devices to be used in [Servo axis switching GD device first No. (16 points)].

Specify a servo axis number with 16 consecutive GD devices, starting the set device number.

When [10] is set to [Servo axis switching GD device first No. (16 points)], GD10 to GD25 are used to specify a servo axis number as shown in the following table.

Servo axis No.	GD device	Setting range
100	GD10	1 to 64 Setting a value outside the above range causes a device range error.
101	GD11	
102	GD12	
103	GD13	
104	GD14	
105	GD15	
106	GD16	
107	GD17	
108	GD18	
109	GD19	
110	GD20	
111	GD21	
112	GD22	
113	GD23	
114	GD24	
115	GD25	

• Indirect specification of a servo axis number on the initially displayed screen

Set [Servo axis switching GD device first No. (16 points)] so that the values of the GD devices are retained and monitored upon the GOT startup.

• Indirect specification of a servo axis number for multi-channel connection

If the setting rage of [Servo axis switching GD device first No. (16 points)] set for each channel overlaps, the axis number of the servo amplifier of each channel is switched simultaneously.

Set [Servo axis switching GD device first No. (16 points)] for each channel so that the setting range does not overlap.

• Indirect specification of a station number and a servo axis number for multi-channel connection

When GD10 to GD25 are used to specify the station number of an inverter or non-Mitsubishi temperature controller connected, setting [10] to [Servo axis switching GD device first No. (16 points)] switches the axis number of the servo amplifier and the station number of an inverter or non-Mitsubishi temperature controller set to each channel simultaneously.

Set [Servo axis switching GD device first No. (16 points)] so that the setting range does not overlap the station number of an inverter or non-Mitsubishi temperature controller.

15.1.4 MELIPC side settings

Model		Reference
MELIPC	MI5122-VW	☞ Page 1399 Connection to MELIPC (MI5122-VW)

Connection to MELIPC (MI5122-VW)

This section describes the settings of the GOT and the MELIPC (MI5122-VW) in the system configuration shown below.

To configure the MELIPC side settings, use MI Configurator (peripheral tool for edge computers).

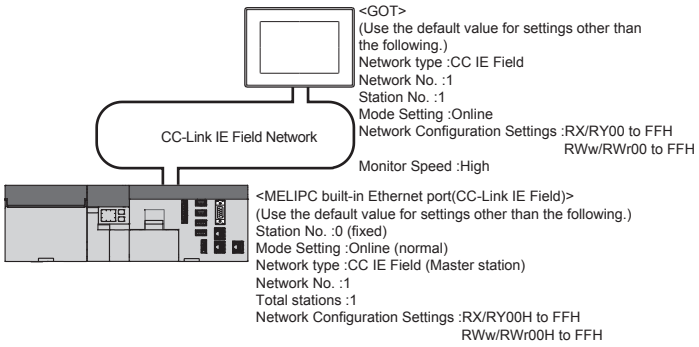
For details on MI Configurator (peripheral tool for edge computers), refer to the following manuals.

📖Manuals of MELIPC

For details on the CC-Link IE Field Network module, refer to the following manual.

📖CC-Link IE Field Network Master/Local Module User's Manual

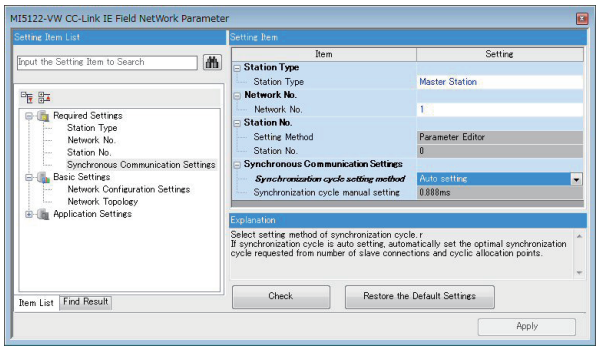
■System configuration



■Module parameter settings of System configuration

- [Application Parameter] of MI Configurator

CC-Link IE Field Network parameters

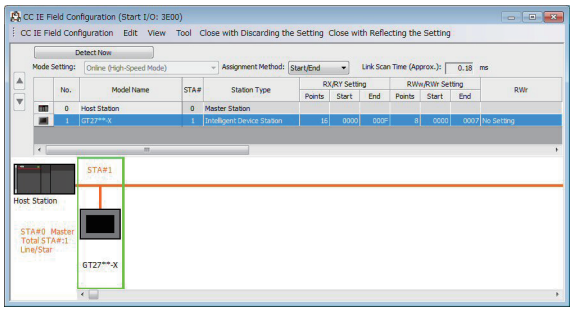


○: Necessary, △: As necessary, —: Not necessary

Item		Setting value range	Setting value	Setting for GOT connection
[Station Type]		[Master Station], [Local Station]	Master station	○
[Network No.]		[1] to [239]	*1	○
[Station Number Setting Method]		[Parameter Editor]	Set in parameter	○
[Station Number]	[Master Station]	[0]	0	○
	[Local Station]	[1] to [120]	—	—
[Synchronous Communication Settings]	[0.05ms Unit Setting]	[Set], [Not set]	(Use default value)	—
	[Fixed Scan Interval Setting (Not set in 0.05ms unit)]	[0.222ms], [0.444ms], [0.888ms], [1.777ms], [3.555ms], [7.111ms]		—
	[Fixed Scan Interval Setting (Set in 0.05ms unit)]	[0.10] to [0.50] to [10.00]		—
[Network Configuration Settings]		☞ Network configuration settings		—

*1 Set the same network number as that of the GOT.

Network configuration settings



○: Necessary, △: As necessary, —: Not necessary

Item			Setting value	Setting for GOT connection
[RX/RY setting]*1	Station No. 1	[Start]	0000H	△
		[End]	00FFH	△
[RWw/RWr setting]*1	Station No. 1	[Start]	0000H	△
		[End]	00FFH	△
[Reserved/Error Invalid Station]			No setting	△

*1 Be sure to set it to perform the cyclic transmission.

Point

- When changing the module parameter

After writing module parameters to the PLC CPU, turn off then on or reset the PLC CPU.

- GOT station type

Set the GOT as an intelligent device station.

■System configuration (Network Type: CC IE Field): [Controller Setting] in GT Designer3

Item	Setting value
[Network Type]	CC IE Field
[Network No.]	1: Network No.1
[Station No.]	1: Station No.1
[Group No.]	0
[Mode Setting]	Online
[Refresh Interval]	25 ms
[Input for Err. Sta.]	Clear
[Retry]	3 times
[Timeout Time]	3 seconds
[Delay Time]	0 ms
[Monitor Speed]	High(Normal)

Point

[Controller Setting] in GT Designer3

For the setting method of [Controller Setting] in GT Designer3, refer to the following.

☞ Page 1394 [Controller Setting]

16 Settable device range

This chapter describes the range of devices settable in GT Designer3.
The settable range varies with the selection for [Controller Type] in the [Controller Setting] window.
Configure the device setting according to the specifications of the controller to be used.
Device specifications differ depending on the controller model even among the controllers of the same series.
If a non-existent device or a device number out of the range is set for an object, other objects for which correct devices are set may not be monitored.
☞ Page 1401 [MELIPC]

16.1 Device setting dialog (Mitsubishi Electric equipment)

For the device setting dialog, refer to the following.
☞ Page 1189 Device setting dialog (Mitsubishi Electric equipment)

16.2 [MELIPC]

GT37 SoftGOT3000

This section shows the device range of MELIPC (MI5122-VW).
The settable device range is the same when [MELIPC] is selected and when [MELSEC iQ-R, RnMT/NC/RT, CR800-D] is selected.
For the device range when the GOT is connected to the MELSEC iQ-R series, refer to the following.
☞ Page 1223 [MELSEC iQ-R, RnMT/NC/RT, CR800-D]

PART 5 Mitsubishi Electric inverter

17 Ethernet connection

18 Serial connection

19 CC-Link IE TSN connection

20 Connection through a PLC

21 Settable device range

17 Ethernet connection

☞ Page 1403 FR-E700 (Ethernet connection)
☞ Page 1411 FR-A800 (Ethernet connection)
☞ Page 1419 FR-A800 Plus (Ethernet connection)
☞ Page 1429 FR-F800 (Ethernet connection)
☞ Page 1437 FR-E800 (Ethernet connection)
☞ Page 1444 FR-D800 (Ethernet connection)

17.1 FR-E700 (Ethernet connection)

☞ Page 1403 Connectable devices
☞ Page 1404 System configuration
☞ Page 1406 GOT side settings
☞ Page 1409 Inverter side settings

17.1.1 Connectable devices

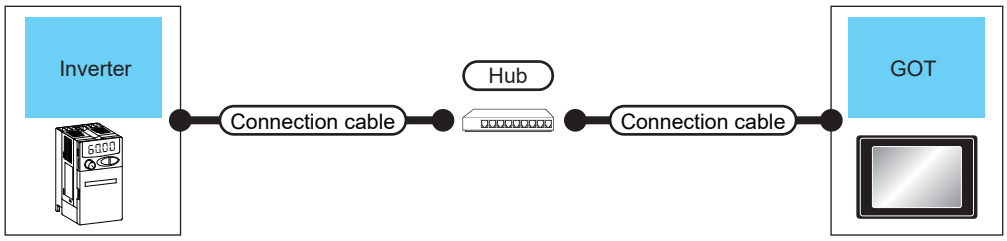
The following table shows the connectable models.

○: Supported, —: Not supported

Controller	Model	Clock	Connectable model
FR-E700 series	FR-E7□0-NE[*1]	—	GT37 SoftGOT3000

*1 Use an inverter with SERIAL (serial No.) "□88******" or later.
For FR-E700-SC-NNE and FR-E700-SC-ENE, use an inverter with SERIAL (serial number) "□89******" or later.
SERIAL (serial number) is provided on the rating plate of the inverter.

17.1.2 System configuration



For details on the connection cables and the maximum segment length, refer to the following.

☞ Page 1404 Connection cable
☞ Page 1405 Maximum segment length

For details on the maximum number of connected devices, refer to the following.

☞ Page 1405 Maximum number of connected devices

Controller	Connection cable	GOT	
		Interface	Model
FR-E7□0-NE*1	Twisted pair cable	Built-in Ethernet interface of GOT	GT37 SoftGOT3000
		Ethernet interface of personal computer	GT37 SoftGOT3000

*1 Select [FREQROL 800/E700NE(Batch monitor)] for [Controller Type] in [Controller Setting] in GT Designer3.

Connection cable

Use a connection cable that meets the following standards.

Standard	Category
10BASE-T	Shielded twisted pair cable (STP) or unshielded twisted pair cable (UTP) of category 3 or higher
100BASE-TX	Shielded twisted pair cable (STP) or unshielded twisted pair cable (UTP) of category 5 or higher
1000BASE-T	Shielded twisted pair cable (STP) or unshielded twisted pair cable (UTP) of category 5e or higher

The destination device connected with the twisted pair cable varies with the configuration of the Ethernet network system used.

Connect the cable to the Ethernet module, hub, or other system equipment corresponding to the applicable Ethernet network system.

Use cables, connectors, and hubs that meet the IEEE802.3 10BASE-T/100BASE-TX/1000BASE-T standards.

When only one GOT is connected, the GOT can be directly connected to the controller without a hub.

Precautions

Make sure to connect an Ethernet cable to the Ethernet port of the inverter.

When connecting an Ethernet cable by mistake to a PU port, there is a fear that equipment is damaged.

Maximum segment length

The maximum segment length (length between a hub and a node) is 100 m.

The maximum length depends on the Ethernet equipment used.

The following shows the number of connectable hubs when a repeater hub is used.

- 10BASE-T: Up to 4 for a cascade connection (within 500 m)
- 100BASE-TX: Up to 2 for a cascade connection (within 205 m)
- 1000BASE-T: The number differs depending on the hub to be used.

When switching hubs are used, there is no theoretical limit to the number of cascade connections between switching hubs. For the limit, contact the switching hub manufacturer.

Maximum number of connected devices

Up to 128 inverters can be connected to channels No. 1 to No. 4 of one GOT. (16 or less recommended)

The following shows the number of connectable controllers per GOT channel and the number of GOTs connectable to one controller.

Controller			GOT		
Model	Number of GOTs connectable to one inverter		Model	Number of connectable controllers per GOT channel	
	UDP	TCP		UDP	TCP
FR-E7□0-NE	Unlimited (1 recommended)	1	GT37 SoftGOT3000	128 (16 or less recommended)	128 (16 or less recommended)

PART 5

17.1.3 GOT side settings

[GOT Ethernet Setting]

Set the GOT Ethernet interface in GT Designer3.

Item	Description
[GOT IP Address Setting]	Set the IP address of the GOT.
[GOT Ethernet Common Setting]	Set the default gateway and other common items for GOT Ethernet interfaces.
[IP filter Setting]	The GOT allows or blocks access from IP addresses specified in the filtering list.

For details on the setting, refer to the following.

📖GT Designer3 (GOT3000) Screen Design Manual

Set the GT SoftGOT3000 Ethernet interface on the personal computer.

Precautions

Do not use 0 and 255 at the end of an IP address.

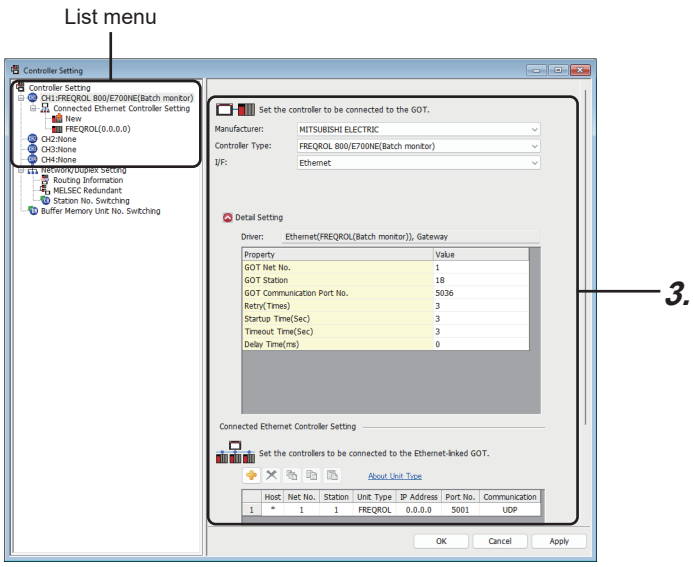
(Numbers of *.*.*.0 and *.*.*.255 are used by the system)

The GOT may not monitor the controller correctly with the above numbers.

Consult with the administrator of the network before setting an IP address to the GOT.

[Controller Setting]

Set the channel of the connected controller.



Operating procedure

1. Select [Common] → [Controller Setting] from the menu.
2. In the [Controller Setting] window, select the channel number to be used from the list menu.
3. Set the following items.

Item	Description
[Manufacturer]	[MITSUBISHI ELECTRIC]
[Controller Type]	[FREQROL 800/E700NE(Batch monitor)]
[I/F]	[Ethernet]
[Detail Setting]	Configure the settings according to the usage environment. ☞ Page 1407 [Detail Setting]
[Connected Ethernet Controller Setting]	Configure the settings according to the controller to be connected. ☞ Page 1408 [Connected Ethernet Controller Setting]

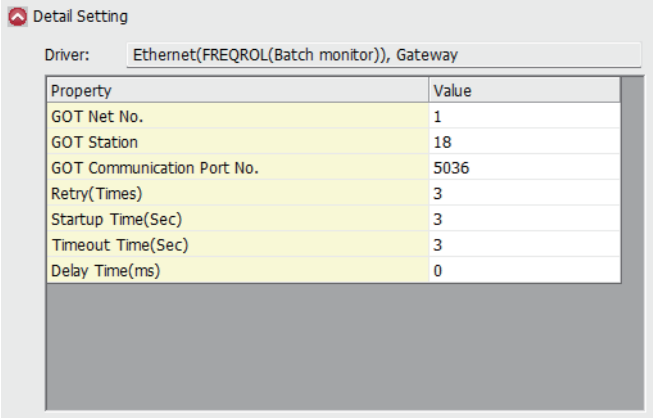
4. When you have completed the settings, click the [OK] button.

Point

The controller settings can be checked in [I/F Communication Setting].
For details, refer to the following.
GT Designer3 (GOT3000) Screen Design Manual

■[Detail Setting]

Configure the settings according to the usage environment.



Item	Description	Range
[Driver]	This item appears when communication drivers are selectable according to the settings of [Controller Type] and [I/F].	[Ethernet(FREQROL(Batch monitor)), Gateway]
[GOT Net No.]	Set the network number of the GOT.	[1] to [239]
[GOT Station]*1	Set the station number of the GOT.	[1] to [120]
[GOT Communication Port No.]	Set the GOT port number for connection with the Ethernet module.	[1024] to [5010], [5014] to [49152], [49171] to [65534]
[Retry]	Set the number of retries to be performed when a communication timeout occurs. When receiving no response after retries, the communication times out.	• GOT: [0] times to [5] times • GT SoftGOT3000: [0] times to [10] times
[Startup Time]	Set the time period from the GOT startup until the start of communication with the PLC CPU.	[3] seconds to [255] seconds
[Timeout Time]	Set the time period for a communication to time out.	[1] second to [90] seconds
[Delay Time]	Set the delay time for reducing the load of the network and destination PLC.	[0] ms to [10000] ms

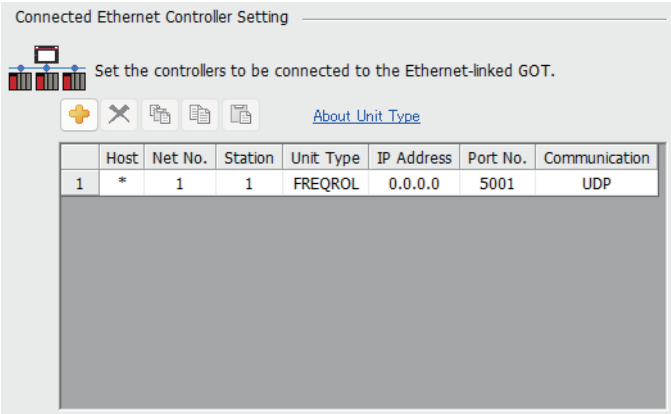
*1 Set values not set for [Station] in [Connected Ethernet Controller Setting].
☞ Page 1408 [Connected Ethernet Controller Setting]

Precautions

When connecting or disconnecting a cable or turning off or on the device, restore the GOT after waiting longer than the setting of [Timeout Time] in the communication detail settings.
If restoration is performed at an interval shorter than the communication timeout time, the GOT may momentarily monitor a different device or perform writing to a different device.

■[Connected Ethernet Controller Setting]

Set the controller to be connected to the GOT by Ethernet.



Item	Description	Range
[Host]	The host is displayed. It refers to a station that can be connected without setting a station number. The host is indicated with an asterisk (*).	—
[Net No.]	Set the network number of the connected Ethernet equipment.	[1] to [239]
[Station]*1	Set the station number of the connected Ethernet equipment.	[1] to [120]
[Unit Type]	Select the model of the connected Ethernet equipment.	[FREQROL]
[IP Address]	Set the IP address of the connected Ethernet equipment.	[0.0.0.0] to [255.255.255.255]
[Port No.]	Set the port number of the connected Ethernet equipment.	[5000] to [5002], [5006] to [5008]
[Communication]	Set the communication format of the connected Ethernet equipment.	[UDP], [TCP]

*1 Set values not set for [GOT Station] in [Detail Setting].
☞ Page 1407 [Detail Setting]

Point

• Controller settings using the GT37 utility

The controller settings can be changed in [Communication Settings] of the GT37 utility after writing [Communication Settings] of project data to GT37.

For details on the GT37 utility, refer to the following manual.

📖GOT3000 Series User's Manual (Utility & Maintenance Functions)

• Priority of the settings in [Controller Setting]

When the settings are configured in GT Designer3 or in the GT37 utility, the latest settings are effective.

17.1.4 Inverter side settings

Model		Reference
FR-E700 series	FR-E7□0-NE	☞ Page 1409 Connection to FR-E700 series (FR-E7□0-NE)

Connection to FR-E700 series (FR-E7□0-NE)

For the inverter side settings, refer to the following.

📖FR-E700 series manuals

■Communication port and the supported parameters

Inverter side interface	Inverter side parameter
Ethernet connector	Pr.79, Pr.340, Pr.342, Pr.442 to Pr.445, Pr.502, Pr.549 to Pr.551, Pr.805 to Pr.812, Pr.830 to Pr.835, Pr.837 to Pr.852

■Inverter communication settings

Set the following parameters using the PU (parameter unit).

Do not change these parameters, even though they can be monitored from the GOT.

If they are changed, communication with the GOT is disabled.

○: Necessary, △: As necessary, —: Not necessary

Setting item*1	Parameter number	Setting value	Setting for GOT connection
Operation mode selection	Pr.79	0*3	△
Communication startup mode	Pr.340	10*3	△
Communication EEPROM write selection	Pr.342	0*3	△
Stop mode selection at communication error	Pr.502	0*3	△
Protocol selection	Pr.549	0	○
NET mode operation command source selection	Pr.550	0*3	△
PU mode operation command source selection	Pr.551	2*3	△
Ethernet communication network number*2	Pr.830	1 to 239	○
Ethernet communication station number*2	Pr.831	1 to 120	○
Link speed and duplex mode selection	Pr.832	0	△
Ethernet function selection 1*2	Pr.833	30, 31, 36, 38	○
Ethernet function selection 2	Pr.834	20*3	△
Ethernet function selection 3	Pr.835	9999*3	△
Ethernet signal loss detection function selection	Pr.851	3*3	△
Ethernet communication check time interval	Pr.852	1.5s*3	△
Ethernet IP address 1 (Built-in Ethernet)*2	Pr.805	0 to 255	○
Ethernet IP address 2 (Built-in Ethernet)*2	Pr.806	0 to 255	○
Ethernet IP address 3 (Built-in Ethernet)*2	Pr.807	0 to 255	○
Ethernet IP address 4 (Built-in Ethernet)*2	Pr.808	0 to 255	○
Subnet mask 1*2	Pr.809	255*3	△
Subnet mask 2*2	Pr.810	255*3	△
Subnet mask 3*2	Pr.811	255*3	△
Subnet mask 4*2	Pr.812	0*3	△
Gateway address 1*2	Pr.442	0*3	△
Gateway address 2*2	Pr.443	0*3	△
Gateway address 3*2	Pr.444	0*3	△
Gateway address 4*2	Pr.445	0*3	△
Ethernet IP filter address 1	Pr.837	0*3	△
Ethernet IP filter address 2	Pr.838	0*3	△
Ethernet IP filter address 3	Pr.839	0*3	△
Ethernet IP filter address 4	Pr.840	0*3	△
Ethernet IP filter address 2 range specification	Pr.841	9999*3	△
Ethernet IP filter address 3 range specification	Pr.842	9999*3	△
Ethernet IP filter address 4 range specification	Pr.843	9999*3	△

Setting item*1	Parameter number	Setting value	Setting for GOT connection
Ethernet command source specification IP address 1	Pr.844	0*3	△
Ethernet command source specification IP address 2	Pr.845	0*3	△
Ethernet command source specification IP address 3	Pr.846	0*3	△
Ethernet command source specification IP address 4	Pr.847	0*3	△
Ethernet command source selection IP address 3 range specification	Pr.848	9999*3	△
Ethernet command source selection IP address 4 range specification	Pr.849	9999*3	△
Ethernet TCP disconnection time coefficient	Pr.850	3600*3	△

*1 The parameter names described in the FR-E700 series manuals.
*2 The setting can be changed on the GOT side.
When changing the setting on the GOT side, be sure to change the parameter of the inverter accordingly.
*3 Change the setting depending on the usage environment.

17.2 FR-A800 (Ethernet connection)

☞ Page 1411 Connectable devices
☞ Page 1412 System configuration
☞ Page 1414 GOT side settings
☞ Page 1417 Inverter side settings

17.2.1 Connectable devices

The following table shows the connectable models.

○: Supported, —: Not supported

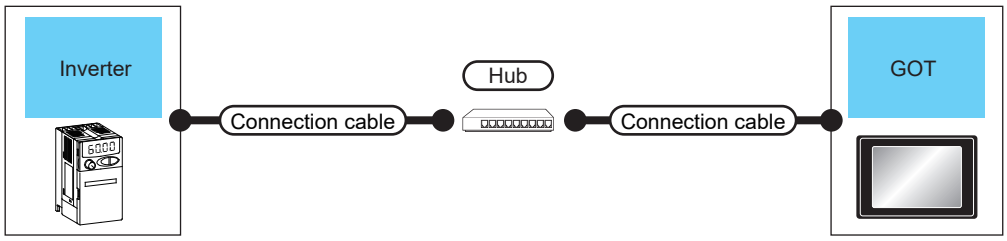
Controller	Model	Clock	Connectable model
FR-A800 series*1	FR-A8□0*2 FR-A8□2*2 FR-A8□6*2	—	GT37 SoftGOT3000
	FR-A8□0-E*3 FR-A8□2-E*3 FR-A8□6-E*3	—	GT37 SoftGOT3000
	FR-A8□0-GN FR-A8□2-GN	—	GT37 SoftGOT3000

*1 GT37 supports the FR-B, B3 series (explosion-proof type of FR-A800 series).
*2 A built-in option (FR-A8NCG) is required.
Use an inverter with the following SERIAL (serial number).
SERIAL (serial number) is provided on the rating plate of the inverter.

Country of origin indication	SERIAL (serial number)
MADE in Japan	□96****** and later
MADE in China	□97****** and later

*3 When the communication type is the Ethernet connection and the communication format is TCP, use an inverter with SERIAL (serial number) "□7Z******" or later.
SERIAL (serial number) is provided on the rating plate of the inverter.

17.2.2 System configuration



For details on the connection cables and the maximum segment length, refer to the following.

☞ Page 1412 Connection cable
☞ Page 1413 Maximum segment length

For details on the maximum number of connected devices, refer to the following.

☞ Page 1413 Maximum number of connected devices

Controller	Connection cable	GOT	
		Interface	Model
FR-A8□0 FR-A8□2 FR-A8□6 FR-A8□0-E FR-A8□2-E FR-A8□6-E FR-A8□0-GN FR-A8□2-GN	Twisted pair cable	Built-in Ethernet interface of GOT	GT37 SoftGOT3000
		Ethernet interface of personal computer	GT37 SoftGOT3000

Connection cable

Use a connection cable that meets the following standards.

Standard	Category
10BASE-T	Shielded twisted pair cable (STP) or unshielded twisted pair cable (UTP) of category 3 or higher
100BASE-TX	Shielded twisted pair cable (STP) or unshielded twisted pair cable (UTP) of category 5 or higher
1000BASE-T	Shielded twisted pair cable (STP) or unshielded twisted pair cable (UTP) of category 5e or higher

The destination device connected with the twisted pair cable varies with the configuration of the Ethernet network system used.

Connect the cable to the Ethernet module, hub, or other system equipment corresponding to the applicable Ethernet network system.

Use cables, connectors, and hubs that meet the IEEE802.3 10BASE-T/100BASE-TX/1000BASE-T standards.

When only one GOT is connected, the GOT can be directly connected to the controller without a hub.

Precautions

Make sure to connect an Ethernet cable to the Ethernet port of the inverter.

When connecting an Ethernet cable by mistake to a PU port, there is a fear that equipment is damaged.

Maximum segment length

The maximum segment length (length between a hub and a node) is 100 m.

The maximum length depends on the Ethernet equipment used.

The following shows the number of connectable hubs when a repeater hub is used.

- 10BASE-T: Up to 4 for a cascade connection (within 500 m)
- 100BASE-TX: Up to 2 for a cascade connection (within 205 m)
- 1000BASE-T: The number differs depending on the hub to be used.

When switching hubs are used, there is no theoretical limit to the number of cascade connections between switching hubs. For the limit, contact the switching hub manufacturer.

Maximum number of connected devices

Up to 128 inverters can be connected to channels No. 1 to No. 4 of one GOT. (16 or less recommended)

The following shows the number of connectable controllers per GOT channel and the number of GOTs connectable to one controller.

Controller			GOT		
Model	Number of GOTs connectable to one inverter		Model	Number of connectable controllers per GOT channel	
	UDP	TCP		UDP	TCP
FR-A8□0 FR-A8□2 FR-A8□6 FR-A8□0-GN FR-A8□2-GN	Unlimited (1 recommended)	1	GT37 SoftGOT3000	128 (16 or less recommended)	128 (16 or less recommended)
FR-A8□0-E FR-A8□2-E FR-A8□6-E	1	1	GT37 SoftGOT3000	128 (16 or less recommended)	128 (16 or less recommended)

17.2.3 GOT side settings

[GOT Ethernet Setting]

Set the GOT Ethernet interface in GT Designer3.

Item	Description
[GOT IP Address Setting]	Set the IP address of the GOT.
[GOT Ethernet Common Setting]	Set the default gateway and other common items for GOT Ethernet interfaces.
[IP filter Setting]	The GOT allows or blocks access from IP addresses specified in the filtering list.

For details on the setting, refer to the following.

📖GT Designer3 (GOT3000) Screen Design Manual

Set the GT SoftGOT3000 Ethernet interface on the personal computer.

Precautions

Do not use 0 and 255 at the end of an IP address.

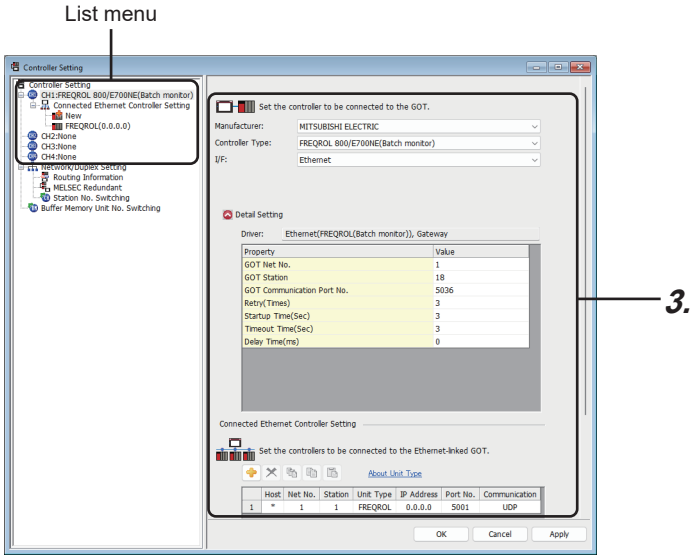
(Numbers of *.*.*.0 and *.*.*.255 are used by the system)

The GOT may not monitor the controller correctly with the above numbers.

Consult with the administrator of the network before setting an IP address to the GOT.

[Controller Setting]

Set the channel of the connected controller.



Operating procedure

1. Select [Common] → [Controller Setting] from the menu.
2. In the [Controller Setting] window, select the channel number to be used from the list menu.
3. Set the following items.

Item	Description
[Manufacturer]	[MITSUBISHI ELECTRIC]
[Controller Type]	[FREQROL 800/E700NE(Batch monitor)]
[I/F]	[Ethernet]
[Detail Setting]	Configure the settings according to the usage environment. ☞ Page 1415 [Detail Setting]
[Connected Ethernet Controller Setting]	Configure the settings according to the controller to be connected. ☞ Page 1416 Connected Ethernet controller settings

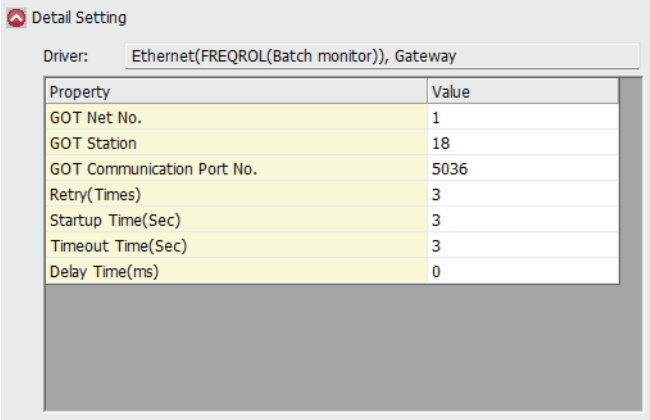
4. When you have completed the settings, click the [OK] button.

Point

The controller settings can be checked in [I/F Communication Setting].
For details, refer to the following.
GT Designer3 (GOT3000) Screen Design Manual

■[Detail Setting]

Configure the settings according to the usage environment.



Item	Description	Range
[Driver]	This item appears when communication drivers are selectable according to the settings of [Controller Type] and [I/F].	[Ethernet(FREQROL(Batch monitor)), Gateway]
[GOT Net No.]	Set the network number of the GOT.	[1] to [239]
[GOT Station]*1	Set the station number of the GOT.	[1] to [120]
[GOT Communication Port No.]	Set the GOT port number for connection with the Ethernet module.	[1024] to [5010], [5014] to [49152], [49171] to [65534]
[Retry]	Set the number of retries to be performed when a communication timeout occurs. When receiving no response after retries, the communication times out.	• GOT: [0] times to [5] times • GT SoftGOT3000: [0] times to [10] times
[Startup Time]	Set the time period from the GOT startup until the start of communication with the PLC CPU.	[3] seconds to [255] seconds
[Timeout Time]	Set the time period for a communication to time out.	[1] second to [90] seconds
[Delay Time]	Set the delay time for reducing the load of the network and destination PLC.	[0] ms to [10000] ms

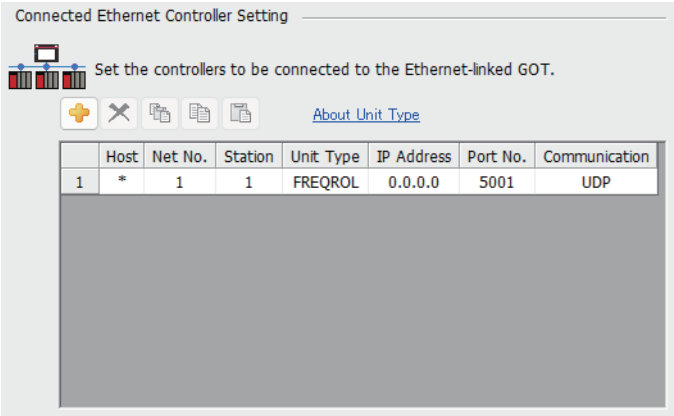
*1 Set values not set for [Station] in [Connected Ethernet Controller Setting].
☞ Page 1416 Connected Ethernet controller settings

Precautions

When connecting or disconnecting a cable or turning off or on the device, restore the GOT after waiting longer than the setting of [Timeout Time] in the communication detail settings.
If restoration is performed at an interval shorter than the communication timeout time, the GOT may momentarily monitor a different device or perform writing to a different device.

■Connected Ethernet controller settings

Set the controller to be connected to the GOT by Ethernet.



Item	Description	Range
[Host]	The host is displayed. It refers to a station that can be connected without setting a station number. The host is indicated with an asterisk (*).	—
[Net No.]	Set the network number of the connected Ethernet equipment.	[1] to [239]
[Station]*1	Set the station number of the connected Ethernet equipment.	[1] to [120]
[Unit Type]	Select the model of the connected Ethernet equipment.	[FREQROL]
[IP Address]	Set the IP address of the connected Ethernet equipment.	[0.0.0.0] to [255.255.255.255]
[Port No.]	Set the port number of the connected Ethernet equipment.	[5000] to [5002], [5006] to [5008]
[Communication]	Set the communication format of the connected Ethernet equipment.	[UDP], [TCP]

*1 Set values not set for [GOT Station] in [Detail Setting].
☞ Page 1415 [Detail Setting]

Point

• Connection using communication format [TCP]

When connecting to an inverter via [TCP] communication, use an inverter with SERIAL (serial number) "□7Z******" or later.

SERIAL (serial number) is provided on the rating plate of the inverter.

• Controller settings using the GT37 utility

The controller settings can be changed in [Communication Settings] of the GT37 utility after writing [Communication Settings] of project data to GT37.

For details on the GT37 utility, refer to the following manual.

📖GOT3000 Series User's Manual (Utility & Maintenance Functions)

• Priority of the settings in [Controller Setting]

When the settings are configured in GT Designer3 or in the GT37 utility, the latest settings are effective.

17.2.4 Inverter side settings

Model		Reference
FR-A800 series	FR-A8□0 FR-A8□2 FR-A8□6 FR-A8□0-E FR-A8□2-E FR-A8□6-E FR-A8□0-GN FR-A8□2-GN	☞ Page 1417 Connection to FR-A800 series

Connection to FR-A800 series

For the inverter side settings, refer to the following.

📖FR-A800 series manuals

■Communication port and the supported parameters

Inverter side interface	Inverter side parameter
Ethernet connector	Pr.79, Pr.340, Pr.342, Pr.414, Pr.502, Pr.549 to Pr.551, Pr.779, Pr.1424 to Pr.1429, Pr.1431 to Pr.1432, Pr.1434 to Pr.1455

■Inverter communication settings

Set the following parameters using the PU (parameter unit).

Do not change these parameters, even though they can be monitored from the GOT.

If they are changed, communication with the GOT is disabled.

For parameter setting values, refer to the following.

📖FR-A800 series manuals

○: Necessary, △: As necessary, —: Not necessary

Setting item*1	Parameter number	Setting value	Setting for GOT connection
Operation mode selection	Pr.79	0*3	△
Communication startup mode	Pr.340	10*3	△
Communication EEPROM write selection	Pr.342	0*3	△
PLC function operation selection	Pr.414	0*3*4	△
Stop mode selection at communication error	Pr.502	0*3	△
Protocol selection	Pr.549	0	○
NET mode operation command source selection	Pr.550	5*3	△
PU mode operation command source selection	Pr.551	2*3	△
Operation frequency during communication error	Pr.779	9999*3	△
Ethernet communication network number*2	Pr.1424	1 to 239	○
Ethernet communication station number*2	Pr.1425	1 to 120	○
Link speed and duplex mode selection	Pr.1426	0*3	△
Ethernet function selection 1*2	Pr.1427	5000 to 5002, 5006 to 5008	○
Ethernet function selection 2	Pr.1428	9999*3	△
Ethernet function selection 3	Pr.1429	9999*3	△
Ethernet signal loss detection function selection	Pr.1431	0*3	△
Ethernet communication check time interval	Pr.1432	9999*3	△
Ethernet IP address 1 (Built-in Ethernet)*2	Pr.1434	0 to 255	○
Ethernet IP address 2 (Built-in Ethernet)*2	Pr.1435	0 to 255	○
Ethernet IP address 3 (Built-in Ethernet)*2	Pr.1436	0 to 255	○
Ethernet IP address 4 (Built-in Ethernet)*2	Pr.1437	0 to 255	○
Subnet mask 1*2	Pr.1438	255*3	△
Subnet mask 2*2	Pr.1439	255*3	△
Subnet mask 3*2	Pr.1440	255*3	△
Subnet mask 4*2	Pr.1441	0*3	△
Ethernet IP filter address 1	Pr.1442	0*3	△

Setting item*1	Parameter number	Setting value	Setting for GOT connection
Ethernet IP filter address 2	Pr.1443	0*3	△
Ethernet IP filter address 3	Pr.1444	0*3	△
Ethernet IP filter address 4	Pr.1445	0*3	△
Ethernet IP filter address 2 range specification	Pr.1446	9999*3	△
Ethernet IP filter address 3 range specification	Pr.1447	9999*3	△
Ethernet IP filter address 4 range specification	Pr.1448	9999*3	△
Ethernet command source specification IP address 1	Pr.1449	0*3	△
Ethernet command source specification IP address 2	Pr.1450	0*3	△
Ethernet command source specification IP address 3	Pr.1451	0*3	△
Ethernet command source specification IP address 4	Pr.1452	0*3	△
Ethernet command source selection IP address 3 range specification	Pr.1453	9999*3	△
Ethernet command source selection IP address 4 range specification	Pr.1454	9999*3	△
Keepalive time	Pr.1455	3600s*3	△

*1 The parameter names described in the FR-A800 series manuals
*2 The setting can be changed on the GOT side.
When changing the setting on the GOT side, be sure to change the parameter of the inverter accordingly.
*3 Change the setting depending on the usage environment.
*4 The inverter side setting defaults to 0: Invalid. To use the PLC function, set 1 or 2.

Precautions

■Connecting the GOT and an inverter using TCP/IP

When the GOT and an inverter are connected using TCP/IP, reconnection may not be possible after they are disconnected.
In such a case, reset the inverter, or shorten the keepalive time and Ethernet TCP disconnection time coefficient.
For setting the keepalive time and Ethernet TCP disconnection time coefficient, refer to the following.
📖FR-A800 series manuals

17.3 FR-A800 Plus (Ethernet connection)

☞ Page 1419 Connectable devices
☞ Page 1419 System configuration
☞ Page 1421 GOT side settings
☞ Page 1424 Inverter side settings

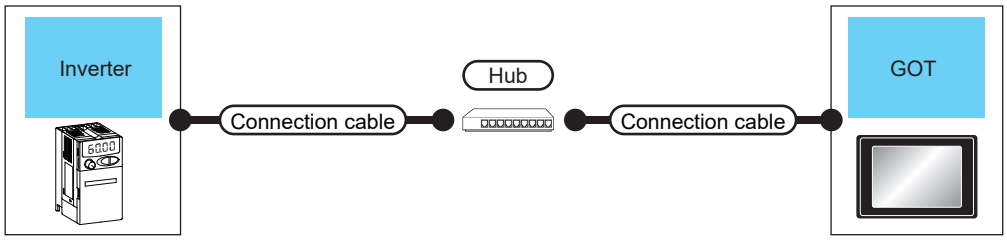
17.3.1 Connectable devices

The following table shows the connectable models.

○: Supported, —: Not supported

Controller	Model	Clock	Connectable model
FR-A800 Plus series	FR-A8□0-E-CRN FR-A8□2-E-CRN FR-A8□0-E-R2R FR-A8□2-E-R2R FR-A8□0-E-AWH FR-A8□0-E-LC	—	GT37 SoftGOT3000

17.3.2 System configuration



For details on the connection cables and the maximum segment length, refer to the following.

☞ Page 1420 Connection cable
☞ Page 1420 Maximum segment length

For details on the maximum number of connected devices, refer to the following.

☞ Page 1420 Maximum number of connected devices

Controller	Connection cable	GOT	
		Interface	Model
FR-A8□0-E-CRN FR-A8□2-E-CRN FR-A8□0-E-R2R FR-A8□2-E-R2R FR-A8□0-E-AWH FR-A8□0-E-LC	Twisted pair cable	Built-in Ethernet interface of GOT	GT37 SoftGOT3000
		Ethernet interface of personal computer	GT37 SoftGOT3000

PART 5

Connection cable

Use a connection cable that meets the following standards.

Standard	Category
10BASE-T	Shielded twisted pair cable (STP) or unshielded twisted pair cable (UTP) of category 3 or higher
100BASE-TX	Shielded twisted pair cable (STP) or unshielded twisted pair cable (UTP) of category 5 or higher
1000BASE-T	Shielded twisted pair cable (STP) or unshielded twisted pair cable (UTP) of category 5e or higher

The destination device connected with the twisted pair cable varies with the configuration of the Ethernet network system used.

Connect the cable to the Ethernet module, hub, or other system equipment corresponding to the applicable Ethernet network system.

Use cables, connectors, and hubs that meet the IEEE802.3 10BASE-T/100BASE-TX/1000BASE-T standards.

When only one GOT is connected, the GOT can be directly connected to the controller without a hub.

Precautions

Make sure to connect an Ethernet cable to the Ethernet port of the inverter.

When connecting an Ethernet cable by mistake to a PU port, there is a fear that equipment is damaged.

Maximum segment length

The maximum segment length (length between a hub and a node) is 100 m.

The maximum length depends on the Ethernet equipment used.

The following shows the number of connectable hubs when a repeater hub is used.

- 10BASE-T: Up to 4 for a cascade connection (within 500 m)
- 100BASE-TX: Up to 2 for a cascade connection (within 205 m)
- 1000BASE-T: The number differs depending on the hub to be used.

When switching hubs are used, there is no theoretical limit to the number of cascade connections between switching hubs.

For the limit, contact the switching hub manufacturer.

Maximum number of connected devices

Up to 128 inverters can be connected to channels No. 1 to No. 4 of one GOT. (16 or less recommended)

The following shows the number of connectable controllers per GOT channel and the number of GOTs connectable to one controller.

Controller			GOT		
Model	Number of GOTs connectable to one inverter		Model	Number of connectable controllers per GOT channel	
	UDP	TCP		UDP	TCP
FR-A8□0-E-CRN FR-A8□2-E-CRN FR-A8□0-E-R2R FR-A8□2-E-R2R FR-A8□0-E-AWH FR-A8□0-E-LC	1	1	GT37 SoftGOT3000	128 (16 or less recommended)	128 (16 or less recommended)

17.3.3 GOT side settings

[GOT Ethernet Setting]

Set the GOT Ethernet interface in GT Designer3.

Item	Description
[GOT IP Address Setting]	Set the IP address of the GOT.
[GOT Ethernet Common Setting]	Set the default gateway and other common items for GOT Ethernet interfaces.
[IP filter Setting]	The GOT allows or blocks access from IP addresses specified in the filtering list.

For details on the setting, refer to the following.

GT Designer3 (GOT3000) Screen Design Manual

Set the GT SoftGOT3000 Ethernet interface on the personal computer.

Precautions

Do not use 0 and 255 at the end of an IP address.

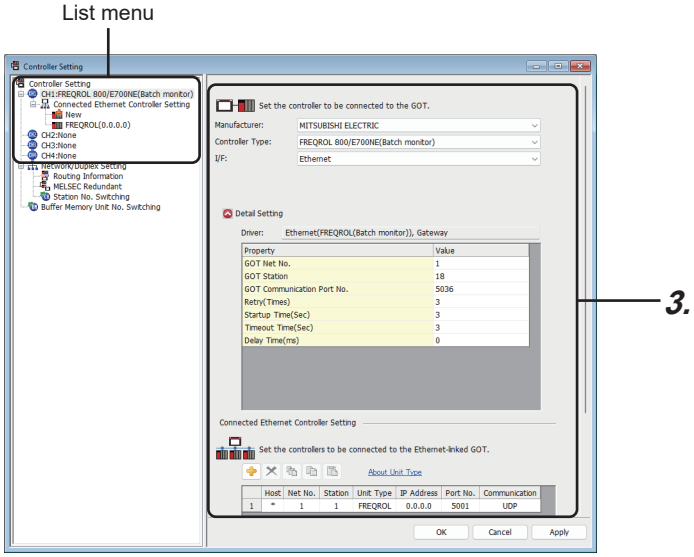
(Numbers of *.*.*.0 and *.*.*.255 are used by the system)

The GOT may not monitor the controller correctly with the above numbers.

Consult with the administrator of the network before setting an IP address to the GOT.

[Controller Setting]

Set the channel of the connected controller.



Operating procedure

1. Select [Common] → [Controller Setting] from the menu.
2. In the [Controller Setting] window, select the channel number to be used from the list menu.
3. Set the following items.

Item	Description
[Manufacturer]	[MITSUBISHI ELECTRIC]
[Controller Type]	[FREQROL 800/E700NE(Batch monitor)]
[I/F]	[Ethernet]
[Detail Setting]	Configure the settings according to the usage environment. ☞ Page 1422 [Detail Setting]
[Connected Ethernet Controller Setting]	Configure the settings according to the controller to be connected. ☞ Page 1423 [Connected Ethernet Controller Setting]

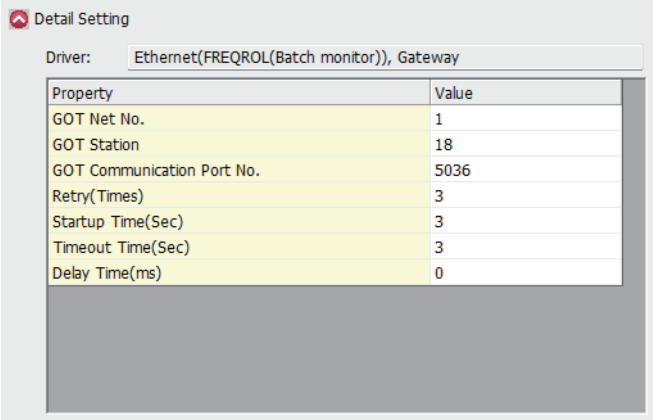
4. When you have completed the settings, click the [OK] button.

Point

The controller settings can be checked in [I/F Communication Setting].
For details, refer to the following.
GT Designer3 (GOT3000) Screen Design Manual

■[Detail Setting]

Configure the settings according to the usage environment.



Item	Description	Range
[Driver]	This item appears when communication drivers are selectable according to the settings of [Controller Type] and [I/F].	[Ethernet(FREQROL(Batch monitor)), Gateway]
[GOT Net No.]	Set the network number of the GOT.	[1] to [239]
[GOT Station]*1	Set the station number of the GOT.	[1] to [120]
[GOT Communication Port No.]	Set the GOT port number for connection with the Ethernet module.	[1024] to [5010], [5014] to [49152], [49171] to [65534]
[Retry]	Set the number of retries to be performed when a communication timeout occurs. When receiving no response after retries, the communication times out.	• GOT: [0] times to [5] times • GT SoftGOT3000: [0] times to [10] times
[Startup Time]	Set the time period from the GOT startup until the start of communication with the PLC CPU.	[3] seconds to [255] seconds
[Timeout Time]	Set the time period for a communication to time out.	[1] second to [90] seconds
[Delay Time]	Set the delay time for reducing the load of the network and destination PLC.	[0] ms to [10000] ms

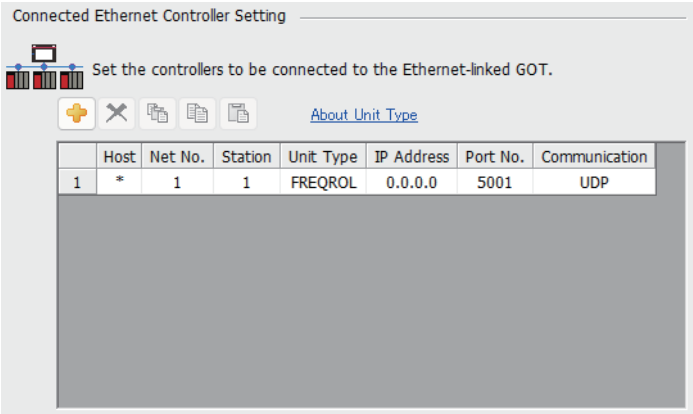
*1 Set values not set for [Station] in [Connected Ethernet Controller Setting].
☞ Page 1423 [Connected Ethernet Controller Setting]

Precautions

When connecting or disconnecting a cable or turning off or on the device, restore the GOT after waiting longer than the setting of [Timeout Time] in the communication detail settings.
If restoration is performed at an interval shorter than the communication timeout time, the GOT may momentarily monitor a different device or perform writing to a different device.

■[Connected Ethernet Controller Setting]

Set the controller to be connected to the GOT by Ethernet.



Item	Description	Range
[Host]	The host is displayed. It refers to a station that can be connected without setting a station number. The host is indicated with an asterisk (*).	—
[Net No.]	Set the network number of the connected Ethernet equipment.	[1] to [239]
[Station]*1	Set the station number of the connected Ethernet equipment.	[1] to [120]
[Unit Type]	Select the model of the connected Ethernet equipment.	[FREQROL]
[IP Address]	Set the IP address of the connected Ethernet equipment.	[0.0.0.0] to [255.255.255.255]
[Port No.]	Set the port number of the connected Ethernet equipment.	[5000] to [5002], [5006] to [5008]
[Communication]	Set the communication format of the connected Ethernet equipment.	[UDP], [TCP]

*1 Set values not set for [GOT Station] in [Detail Setting].
☞ Page 1422 [Detail Setting]

Point

• Connection using communication format [TCP]

When connecting to an inverter via [TCP] communication, use an inverter with SERIAL (serial number) "□7Z******" or later.

SERIAL (serial number) is provided on the rating plate of the inverter.

• Controller settings using the GT37 utility

The controller settings can be changed in [Communication Settings] of the GT37 utility after writing [Communication Settings] of project data to GT37.

For details on the GT37 utility, refer to the following manual.

📖GOT3000 Series User's Manual (Utility & Maintenance Functions)

• Priority of the settings in [Controller Setting]

When the settings are configured in GT Designer3 or in the GT37 utility, the latest settings are effective.

17.3.4 Inverter side settings

Model		Reference
FR-A800 Plus series	FR-A8□0-E-CRN FR-A8□2-E-CRN FR-A8□0-E-R2R FR-A8□2-E-R2R FR-A8□0-E-AWH FR-A8□0-E-LC	☞ Page 1424 Connection to FR-A800 Plus series

Connection to FR-A800 Plus series

For the inverter side settings, refer to the following.

📖FR-A800 Plus series manuals

■Communication port and the supported parameters

Inverter side interface	Inverter side parameter (R2R)	Inverter side parameter (CRN, AWH, LC)
Ethernet connector	Pr.79, Pr.340, Pr.342, Pr.442 to Pr.445, Pr.502, Pr.549 to Pr.551, Pr.1073 to Pr.1078, Pr.1431 to Pr.1432, Pr.1434 to Pr.1455	Pr.79, Pr.340, Pr.342, Pr.442 to Pr.445, Pr.502, Pr.549 to Pr.551, Pr.1424 to Pr.1429, Pr.1431 to Pr.1432, Pr.1434 to Pr.1455

■Inverter communication settings

Set the following parameters using the PU (parameter unit).

Do not change these parameters, even though they can be monitored from the GOT.

If they are changed, communication with the GOT is disabled.

○: Necessary, △: As necessary, —: Not necessary

Setting item[*1]	Parameter number	Setting value	Setting for GOT connection
Operation mode selection	Pr.79	0[*3]	△
Communication startup mode	Pr.340	10[*3]	△
Communication EEPROM write selection	Pr.342	0[*3]	△
Stop mode selection at communication error	Pr.502	0[*3]	△
Protocol selection	Pr.549	0	○
NET mode operation command source selection	Pr.550	9999[*3]	△
PU mode operation command source selection	Pr.551	2[*3]	△
Ethernet communication network number[*2]	Pr.1073(R2R) or Pr.1424 (CRN, AWH, LC)	1 to 239	○
Ethernet communication station number[*2]	Pr.1074(R2R) or Pr.1425 (CRN, AWH, LC)	1 to 120	○
Link speed and duplex mode selection	Pr.1075(R2R) or Pr.1426 (CRN, AWH, LC)	0	△
Ethernet function selection 1[*2]	Pr.1076(R2R) or Pr.1427 (CRN, AWH, LC)	5000 to 5002, 5006 to 5008	○
Ethernet function selection 2	Pr.1077(R2R) or Pr.1428 (CRN, AWH, LC)	45237[*3]	△
Ethernet function selection 3	Pr.1078(R2R) or Pr.1429 (CRN, AWH, LC)	9999[*3]	△
Ethernet signal loss detection function selection	Pr.1431	0[*3]	△
Ethernet communication check time interval	Pr.1432	9999[*3]	△
Ethernet IP address 1 (Built-in Ethernet)[*2]	Pr.1434	0 to 255	○
Ethernet IP address 2 (Built-in Ethernet)[*2]	Pr.1435	0 to 255	○
Ethernet IP address 3 (Built-in Ethernet)[*2]	Pr.1436	0 to 255	○
Ethernet IP address 4 (Built-in Ethernet)[*2]	Pr.1437	0 to 255	○
Subnet mask 1[*2]	Pr.1438	255[*3]	△

Setting item*1	Parameter number	Setting value	Setting for GOT connection
Subnet mask 2*2	Pr.1439	255*3	△
Subnet mask 3*2	Pr.1440	255*3	△
Subnet mask 4*2	Pr.1441	0*3	△
Ethernet IP filter address 1	Pr.1442	0*3	△
Ethernet IP filter address 2	Pr.1443	0*3	△
Ethernet IP filter address 3	Pr.1444	0*3	△
Ethernet IP filter address 4	Pr.1445	0*3	△
Ethernet IP filter address 2 range specification	Pr.1446	9999*3	△
Ethernet IP filter address 3 range specification	Pr.1447	9999*3	△
Ethernet IP filter address 4 range specification	Pr.1448	9999*3	△
Ethernet command source specification IP address 1	Pr.1449	0*3	△
Ethernet command source specification IP address 2	Pr.1450	0*3	△
Ethernet command source specification IP address 3	Pr.1451	0*3	△
Ethernet command source specification IP address 4	Pr.1452	0*3	△
Ethernet command source selection IP address 3 range specification	Pr.1453	9999*3	△
Ethernet command source selection IP address 4 range specification	Pr.1454	9999*3	△
Keepalive time	Pr.1455	3600s*3	△

*1 The parameter names described in the FR-A800 Plus series manuals.
*2 The setting can be changed on the GOT side.
When changing the setting on the GOT side, be sure to change the parameter of the inverter accordingly.
*3 Change the setting depending on the usage environment.

Precautions

■Connecting the GOT and an inverter using TCP/IP

When the GOT and an inverter are connected using TCP/IP, reconnection may not be possible after they are disconnected.
In such a case, reset the inverter, or shorten the keepalive time and Ethernet TCP disconnection time coefficient.
For setting the keepalive time and Ethernet TCP disconnection time coefficient, refer to the following.
📖FR-A800 Plus series manuals

■Parameters for monitoring data specific to FR-A800 Plus series

• How to monitor the winding length (upper + lower) (PV29)

Set Pr.645 (Winding diameter storage selection) to [1], and set Pr.1263 (Stored winding length (lower 4 digits)) and Pr.1298 (Stored winding length (upper 4 digits)) on the inverter side.

Communication drivers of FREQROL (Batch monitor) that supports monitoring PV are the setting target.

Setting item*1	Parameter number	Setting range	Setting details
Winding diameter storage selection	Pr.645	0, 1	Select whether to store the winding diameter and winding length. 0: Do not store. 1: Stores the current winding diameter.
Stored winding diameter	Pr.646	1 to 6553 mm	The stored winding diameter can be read/written.
Operation time with stored winding diameter	Pr.647	0 to 100 s	Set the time to hold the stored winding diameter after the start signal turns on.
Target winding diameter	Pr.648	1 to 6563 mm	Set the winding diameter to output the Target winding diameter achieved signal (Y233).
Winding length increment	Pr.1262	0	1 km
		1	100 m
		2	10 m
		3	1 m
		4	1 cm
		5	1 mm
Stored winding length (lower 4 digits)	Pr.1263	0 to 9999 m*2	The stored winding length (lower 4 digits) can be read/written.
Winding length detection (lower 4 digits)	Pr.1264	0 to 9999 m*2	Set the winding length (lower 4 digits) to output the Winding/Unwinding Completion signal (Y234).
Stored winding length (upper 4 digits)	Pr.1298	0 to 9999 m*2	The stored winding length (upper 4 digits) can be read/written.
Stored winding length increment	Pr.1299	0	1 m
		1	1 cm
		2	1 mm
Winding length detection (upper 4 digits)	Pr.1346	0 to 9999 m*2	Set the winding length (upper 4 digits) to output the Winding/Unwinding Completion signal (Y234).

*1 The parameter names described in the FR-A800 Plus series manuals.

*2 The unit differs depending on the setting of Pr.1262.

• How to monitor the actual line speed (PV27)

The actual line speed can be set with the input value of the line speed command by setting Pr.362 (Actual line speed input selection) to [0].

For the line speed command, a value can be set in Pr.360 by setting Pr.361 (Line speed command input selection) to [8].

Communication drivers of FREQROL (Batch monitor) that supports monitoring PV are the setting target.

Setting item[*1]	Parameter number	Setting range	Setting details
Line speed command voltage/current bias	Pr.350	0 to 100%	Set the converted value (%) of the bias voltage (current) for analog input.
Line speed command bias	Pr.351	0 to 6553.4 m/min[*2]	Set the bias line speed command value for analog input.
Line speed command voltage/current gain	Pr.352	0 to 100%	Set the converted value (%) of the gain voltage (current) for analog input.
Line speed command gain	Pr.353	0 to 6553.4 m/min[*2] 9999	Set the gain line speed command value for analog input.
Line speed command pulse input bias	Pr.354	0 to 500 kpps	Set the number of bias input pulses for pulse train input.
Line speed command pulse input gain	Pr.355	0 to 500 kpps	Set the number of gain input pulses for pulse train input.
Line speed command digital input bias	Pr.356	0 to 65535	Set the bias line speed command value for pulse train input.
Line speed command digital input gain	Pr.357	0 to 65535	Set the gain line speed command value for pulse train input.
Line speed unit	Pr.358	0	m/min
		1	m/sec
		2	mm/min
		3	mm/sec
Line speed command value	Pr.360	0 to 6553.4 m/min[*2]	Set the line speed command value.
Line speed command input selection	Pr.361	0	According to the priority of the speed command rights
		1	Terminal JOG single-phase pulse train input
		2	FR-A8AP/FR-A8AL/FR-A8TP encoder pulse train input
		3	Terminal 2 (0 to 100%)
		4	Terminal 4 (20 to 100%)
		5	Terminal 1 (-100 to 100%)
		6	Terminal 6 (FR-A8AZ) (-100 to 100%)
		7	FR-A8AL single-phase pulse train input
		8	Line speed command according to the setting of Pr.360 (Line speed command value)
		9999	No function
Actual line speed input selection	Pr.362	0	V* (line speed command)
		1	Terminal JOG single-phase pulse train input
		2	FR-A8AP/FR-A8AL/FR-A8TP encoder pulse train input (complementary 12 V / differential 5 V (A-, B-phases)[*3]
		3	Terminal 2 (analog value: 0 to 100%) (0 to 5 V DC)[*4]
		4	Terminal 4 (analog value: 20 to 100%) (4 to 20 mA DC)[*4]
		5	Terminal 1 (analog value: -100 to 100%) (0 to ±10 V DC)[*4]
		6	Terminal 6 (FR-A8AZ) (analog value: -100 to 100%) (0 to ±10 V DC)[*4]
		7	FR-A8AL single-phase pulse train input (PP, NP)
		9999	No function[*5]
Command pulse selection	Pr.428	0	Forward/Reverse pulse train (negative logic)
		1	Pulse train + rotation direction sign (negative logic)
		2	A/B-phase pulse train (negative logic)
		3	Forward/Reverse pulse train (positive logic)
		4	Pulse train + rotation direction sign (positive logic)
		5	A/B-phase pulse train (positive logic)
Start line speed command	Pr.622	0 to 6553.4 m/min[*2]	Set the line speed command to start operation.
Line multi-speed setting (high-speed)	Pr.1265	0 to 6553.4 m/min[*2]	Set the line speed command value when the RH signal is ON.
Line multi-speed setting (middle-speed)	Pr.1266	0 to 6553.4 m/min[*2]	Set the line speed command value when the RM signal is ON.
Line multi-speed setting (low-speed)	Pr.1267	0 to 6553.4 m/min[*2]	Set the line speed command value when the RL signal is ON.

Setting item*1	Parameter number	Setting range	Setting details
Line multi-speed setting (speed 4)	Pr.1268	0 to 6553.4 m/min*2	The line speed from 4th speed to 15th speed can be set according to the combination of the RH, RM, RL and REX signals.
Line multi-speed setting (speed 5)	Pr.1269	0 to 6553.4 m/min*2	
Line multi-speed setting (speed 6)	Pr.1270	0 to 6553.4 m/min*2	
Line multi-speed setting (speed 7)	Pr.1271	0 to 6553.4 m/min*2	
Line multi-speed setting (speed 8)	Pr.1272	0 to 6553.4 m/min*2	
Line multi-speed setting (speed 9)	Pr.1273	0 to 6553.4 m/min*2	
Line multi-speed setting (speed 10)	Pr.1274	0 to 6553.4 m/min*2	
Line multi-speed setting (speed 11)	Pr.1275	0 to 6553.4 m/min*2	
Line multi-speed setting (speed 12)	Pr.1276	0 to 6553.4 m/min*2	
Line multi-speed setting (speed 13)	Pr.1277	0 to 6553.4 m/min*2	
Line multi-speed setting (speed 14)	Pr.1278	0 to 6553.4 m/min*2	
Line multi-speed setting (speed 15)	Pr.1279	0 to 6553.4 m/min*2	

*1 The parameter names described in the FR-A800 Plus series manuals.
*2 The unit differs depending on the setting of Pr.358.
*3 When Pr.362 is set to [2], select the option to input the actual line speed with Pr.862.
*4 The input specification in the initial setting is indicated.
*5 When Pr.362 is set to [9999] (No function), the actual line speed is regarded as 0.

17.4 FR-F800 (Ethernet connection)

☞ Page 1429 Connectable devices
☞ Page 1430 System configuration
☞ Page 1432 GOT side settings
☞ Page 1435 Inverter side settings

17.4.1 Connectable devices

The following table shows the connectable models.

○: Supported, —: Not supported

Controller	Model	Clock	Connectable model
FR-F800 series	FR-F8□0*2 FR-F8□2*2 FR-F8□6*2	—	GT37 SoftGOT3000
	FR-F8□0-E*1 FR-F8□2-E*1	—	GT37 SoftGOT3000

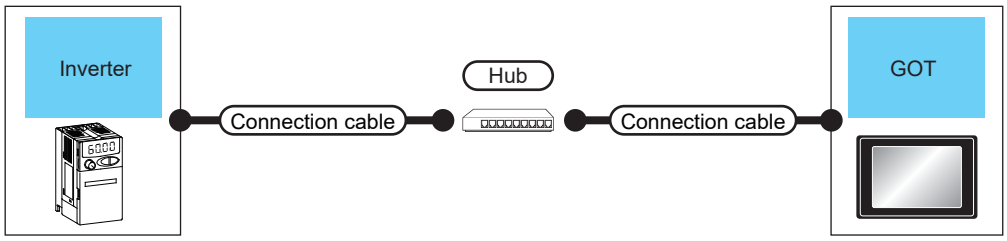
*1 When the communication type is the Ethernet connection and the communication format is TCP, use an inverter with SERIAL (serial number) "□7Z******" or later.
SERIAL (serial number) is provided on the rating plate of the inverter.

*2 A built-in option (FR-A8NCG) is required.
Use an inverter with the following SERIAL (serial number).
SERIAL (serial number) is provided on the rating plate of the inverter.

Country of origin indication	SERIAL (serial number)
MADE in Japan	□96****** and later
MADE in China	□97****** and later

PART 5

17.4.2 System configuration



For details on the connection cables and the maximum segment length, refer to the following.

☞ Page 1430 Connection cable
☞ Page 1431 Maximum segment length

For details on the maximum number of connected devices, refer to the following.

☞ Page 1431 Maximum number of connected devices

Controller	Connection cable	GOT	
		Interface	Model
FR-F8□0 FR-F8□2 FR-F8□6 FR-F8□0-E FR-F8□2-E	Twisted pair cable	Built-in Ethernet interface of GOT	GT37 SoftGOT3000
		Ethernet interface of personal computer	GT37 SoftGOT3000

Connection cable

Use a connection cable that meets the following standards.

Standard	Category
10BASE-T	Shielded twisted pair cable (STP) or unshielded twisted pair cable (UTP) of category 3 or higher
100BASE-TX	Shielded twisted pair cable (STP) or unshielded twisted pair cable (UTP) of category 5 or higher
1000BASE-T	Shielded twisted pair cable (STP) or unshielded twisted pair cable (UTP) of category 5e or higher

The destination device connected with the twisted pair cable varies with the configuration of the Ethernet network system used.

Connect the cable to the Ethernet module, hub, or other system equipment corresponding to the applicable Ethernet network system.

Use cables, connectors, and hubs that meet the IEEE802.3 10BASE-T/100BASE-TX/1000BASE-T standards.

When only one GOT is connected, the GOT can be directly connected to the controller without a hub.

Precautions

Make sure to connect an Ethernet cable to the Ethernet port of the inverter.

When connecting an Ethernet cable by mistake to a PU port, there is a fear that equipment is damaged.

Maximum segment length

The maximum segment length (length between a hub and a node) is 100 m.

The maximum length depends on the Ethernet equipment used.

The following shows the number of connectable hubs when a repeater hub is used.

- 10BASE-T: Up to 4 for a cascade connection (within 500 m)
- 100BASE-TX: Up to 2 for a cascade connection (within 205 m)
- 1000BASE-T: The number differs depending on the hub to be used.

When switching hubs are used, there is no theoretical limit to the number of cascade connections between switching hubs. For the limit, contact the switching hub manufacturer.

Maximum number of connected devices

Up to 128 inverters can be connected to channels No. 1 to No. 4 of one GOT. (16 or less recommended)

The following shows the number of connectable controllers per GOT channel and the number of GOTs connectable to one controller.

Controller			GOT		
Model	Number of GOTs connectable to one inverter		Model	Number of connectable controllers per GOT channel	
	UDP	TCP		UDP	TCP
FR-F8□0 FR-F8□2 FR-F8□6 FR-F8□0-E FR-F8□2-E	Unlimited (1 recommended)	1	GT37 SoftGOT3000	128 (16 or less recommended)	128 (16 or less recommended)

PART 5

17.4.3 GOT side settings

[GOT Ethernet Setting]

Set the GOT Ethernet interface in GT Designer3.

Item	Description
[GOT IP Address Setting]	Set the IP address of the GOT.
[GOT Ethernet Common Setting]	Set the default gateway and other common items for GOT Ethernet interfaces.
[IP filter Setting]	The GOT allows or blocks access from IP addresses specified in the filtering list.

For details on the setting, refer to the following.

📖GT Designer3 (GOT3000) Screen Design Manual

Set the GT SoftGOT3000 Ethernet interface on the personal computer.

Precautions

Do not use 0 and 255 at the end of an IP address.

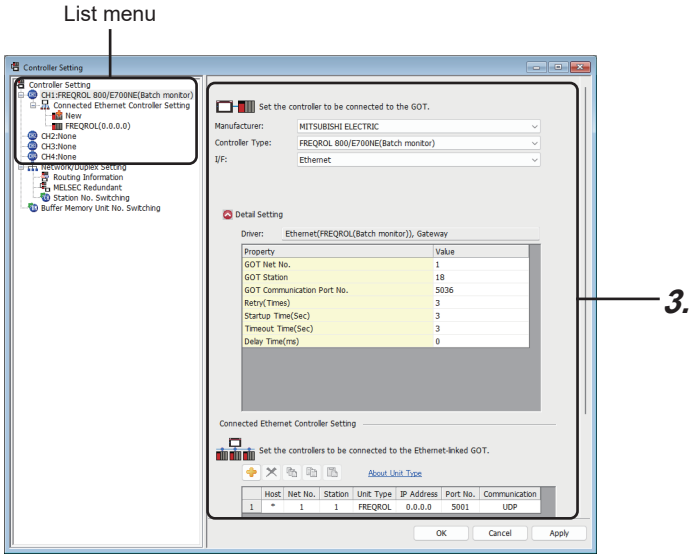
(Numbers of *.*.*.0 and *.*.*.255 are used by the system)

The GOT may not monitor the controller correctly with the above numbers.

Consult with the administrator of the network before setting an IP address to the GOT.

[Controller Setting]

Set the channel of the connected controller.



Operating procedure

1. Select [Common] → [Controller Setting] from the menu.
2. In the [Controller Setting] window, select the channel number to be used from the list menu.
3. Set the following items.

Item	Description
[Manufacturer]	[MITSUBISHI ELECTRIC]
[Controller Type]	[FREQROL 800/E700NE(Batch monitor)]
[I/F]	[Ethernet]
[Detail Setting]	Configure the settings according to the usage environment. ☞ Page 1433 [Detail Setting]
[Connected Ethernet Controller Setting]	Configure the settings according to the controller to be connected. ☞ Page 1434 [Connected Ethernet Controller Setting]

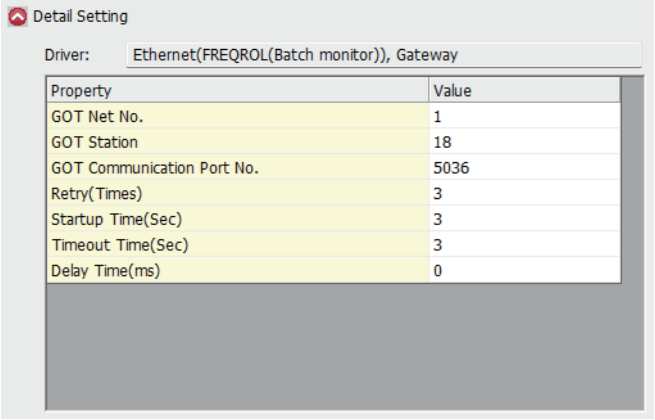
4. When you have completed the settings, click the [OK] button.

Point

The controller settings can be checked in [I/F Communication Setting].
For details, refer to the following.
GT Designer3 (GOT3000) Screen Design Manual

■[Detail Setting]

Configure the settings according to the usage environment.



Item	Description	Range
[Driver]	This item appears when communication drivers are selectable according to the settings of [Controller Type] and [I/F].	[Ethernet(FREQROL(Batch monitor)), Gateway]
[GOT Net No.]	Set the network number of the GOT.	[1] to [239]
[GOT Station]*1	Set the station number of the GOT.	[1] to [120]
[GOT Communication Port No.]	Set the GOT port number for connection with the Ethernet module. The default value varies depending on the [Controller Type].	[1024] to [5010], [5014] to [49152], [49171] to [65534]
[Retry]	Set the number of retries to be performed when a communication timeout occurs. When receiving no response after retries, the communication times out.	• GOT: [0] times to [5] times • GT SoftGOT3000: [0] times to [10] times
[Startup Time]	Set the time period from the GOT startup until the start of communication with the PLC CPU.	[3] seconds to [255] seconds
[Timeout Time]	Set the time period for a communication to time out.	[1] second to [90] seconds
[Delay Time]	Set the delay time for reducing the load of the network and destination PLC.	[0] ms to [10000] ms

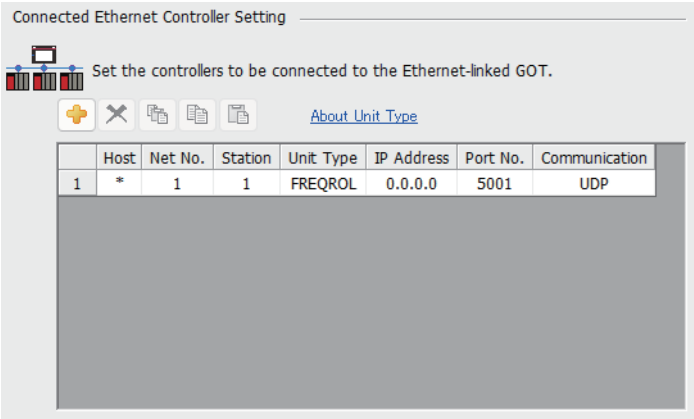
*1 Set values not set for [Station] in [Connected Ethernet Controller Setting].
☞ Page 1434 [Controller Setting]

Precautions

When connecting or disconnecting a cable or turning off or on the device, restore the GOT after waiting longer than the setting of [Timeout Time] in the communication detail settings.
If restoration is performed at an interval shorter than the communication timeout time, the GOT may momentarily monitor a different device or perform writing to a different device.

■[Connected Ethernet Controller Setting]

Set the controller to be connected to the GOT by Ethernet.



Item	Description	Range
[Host]	The host is displayed. It refers to a station that can be connected without setting a station number. The host is indicated with an asterisk (*).	—
[Net No.]	Set the network number of the connected Ethernet equipment.	[1] to [239]
[Station]*1	Set the station number of the connected Ethernet equipment.	[1] to [120]
[Unit Type]	Select the model of the connected Ethernet equipment.	[FREQROL]
[IP Address]	Set the IP address of the connected Ethernet equipment.	[0.0.0.0] to [255.255.255.255]
[Port No.]	Set the port number of the connected Ethernet equipment.	[5000] to [5002], [5006] to [5008]
[Communication]	Set the communication format of the connected Ethernet equipment.	[UDP], [TCP]

*1 Set values not set for [GOT Station] in [Detail Setting].
☞ Page 1433 [Detail Setting]

Point

• Connection using communication format [TCP]

When connecting to an inverter via [TCP] communication, use an inverter with SERIAL (serial number) "□7Z******" or later.

SERIAL (serial number) is provided on the rating plate of the inverter.

• Controller settings using the GT37 utility

The controller settings can be changed in [Communication Settings] of the GT37 utility after writing [Communication Settings] of project data to GT37.

For details on the GT37 utility, refer to the following manual.

📖GOT3000 Series User's Manual (Utility & Maintenance Functions)

• Priority of the settings in [Controller Setting]

When the settings are configured in GT Designer3 or in the GT37 utility, the latest settings are effective.

17.4.4 Inverter side settings

Model		Reference
FR-F800 series	FR-F8□0 FR-F8□2 FR-F8□6 FR-F8□0-E FR-F8□2-E	☞ Page 1435 Connection to FR-F800 series

Connection to FR-F800 series

For the inverter side settings, refer to the following.

📖FR-F800 series manuals

■Communication port and the supported parameters

Inverter side interface	Inverter side parameter
Ethernet connector	Pr.79, Pr.340, Pr.342, Pr.414, Pr.502, Pr.549 to Pr.551, Pr.779, Pr.1424 to Pr.1429, Pr.1431 to Pr.1432, Pr.1434 to Pr.1455

■Inverter communication settings

Set the following parameters using the PU (parameter unit).

Do not change these parameters, even though they can be monitored from the GOT.

If they are changed, communication with the GOT is disabled.

For parameter setting values, refer to the following.

📖FR-F800 series manuals

○: Necessary, △: As necessary, —: Not necessary

Setting item*1	Parameter number	Setting value	Setting for GOT connection
Operation mode selection	Pr.79	0*3	△
Communication startup mode	Pr.340	10*3	△
Communication EEPROM write selection	Pr.342	0*3	△
PLC function operation selection	Pr.414	0*3*4	△
Stop mode selection at communication error	Pr.502	0*3	△
Protocol selection	Pr.549	0	○
NET mode operation command source selection	Pr.550	5*3	△
PU mode operation command source selection	Pr.551	2*3	△
Operation frequency during communication error	Pr.779	9999*3	△
Ethernet communication network number*2	Pr.1424	1 to 239	○
Ethernet communication station number*2	Pr.1425	1 to 120	○
Link speed and duplex mode selection	Pr.1426	0*3	△
Ethernet function selection 1*2	Pr.1427	5000 to 5002, 5006 to 5008	○
Ethernet function selection 2	Pr.1428	9999*3	△
Ethernet function selection 3	Pr.1429	9999*3	△
Ethernet signal loss detection function selection	Pr.1431	0*3	△
Ethernet communication check time interval	Pr.1432	9999*3	△
Ethernet IP address 1 (Built-in Ethernet)*2	Pr.1434	0 to 255	○
Ethernet IP address 2 (Built-in Ethernet)*2	Pr.1435	0 to 255	○
Ethernet IP address 3 (Built-in Ethernet)*2	Pr.1436	0 to 255	○
Ethernet IP address 4 (Built-in Ethernet)*2	Pr.1437	0 to 255	○
Subnet mask 1*2	Pr.1438	255*3	△
Subnet mask 2*2	Pr.1439	255*3	△
Subnet mask 3*2	Pr.1440	255*3	△
Subnet mask 4*2	Pr.1441	0*3	△
Ethernet IP filter address 1	Pr.1442	0*3	△
Ethernet IP filter address 2	Pr.1443	0*3	△
Ethernet IP filter address 3	Pr.1444	0*3	△
Ethernet IP filter address 4	Pr.1445	0*3	△

Setting item*1	Parameter number	Setting value	Setting for GOT connection
Ethernet IP filter address 2 range specification	Pr.1446	9999*3	△
Ethernet IP filter address 3 range specification	Pr.1447	9999*3	△
Ethernet IP filter address 4 range specification	Pr.1448	9999*3	△
Ethernet command source specification IP address 1	Pr.1449	0*3	△
Ethernet command source specification IP address 2	Pr.1450	0*3	△
Ethernet command source specification IP address 3	Pr.1451	0*3	△
Ethernet command source specification IP address 4	Pr.1452	0*3	△
Ethernet command source selection IP address 3 range specification	Pr.1453	9999*3	△
Ethernet command source selection IP address 4 range specification	Pr.1454	9999*3	△
Keepalive time	Pr.1455	3600s*3	△

*1 The parameter names described in the FR-F800 series manuals.
*2 The setting can be changed on the GOT side.
When changing the setting on the GOT side, be sure to change the parameter of the inverter accordingly.
*3 Change the setting depending on the usage environment.
*4 The inverter side setting defaults to 0: Invalid. To use the PLC function, set 1 or 2.

Precautions

■Connecting the GOT and an inverter using TCP/IP

When the GOT and an inverter are connected using TCP/IP, reconnection may not be possible after they are disconnected.
In such a case, reset the inverter, or shorten the keepalive time and Ethernet TCP disconnection time coefficient.
For setting the keepalive time and Ethernet TCP disconnection time coefficient, refer to the following.
📖FR-F800 series manuals

17.5 FR-E800 (Ethernet connection)

☞ Page 1437 Connectable devices
☞ Page 1437 System configuration
☞ Page 1439 GOT side settings
☞ Page 1442 Inverter side settings

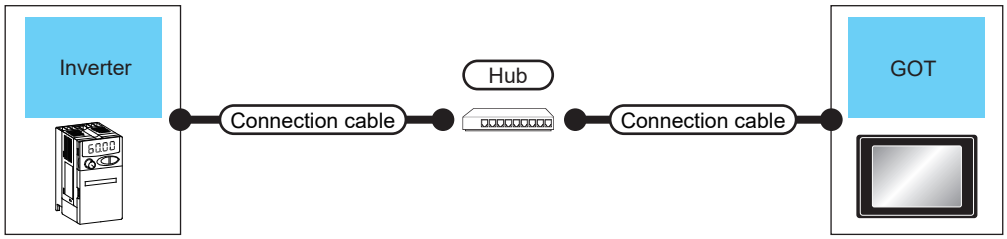
17.5.1 Connectable devices

The following table shows the connectable models.

○: Supported, —: Not supported

Controller	Model	Clock	Connectable model
FR-E800 series	FR-E8□0-E	—	GT37 SoftGOT3000

17.5.2 System configuration



For details on the connection cables and the maximum segment length, refer to the following.

☞ Page 1438 Connection cable
☞ Page 1438 Maximum segment length

For details on the maximum number of connected devices, refer to the following.

☞ Page 1438 Maximum number of connected devices

Controller	Connection cable	GOT	
		Interface	Model
FR-E8□0-E	Twisted pair cable	Built-in Ethernet interface of GOT	GT37 SoftGOT3000
		Ethernet interface of personal computer	GT37 SoftGOT3000

Connection cable

Use a connection cable that meets the following standards.

Standard	Category
10BASE-T	Shielded twisted pair cable (STP) or unshielded twisted pair cable (UTP) of category 3 or higher
100BASE-TX	Shielded twisted pair cable (STP) or unshielded twisted pair cable (UTP) of category 5 or higher
1000BASE-T	Shielded twisted pair cable (STP) or unshielded twisted pair cable (UTP) of category 5e or higher

The destination device connected with the twisted pair cable varies with the configuration of the Ethernet network system used.

Connect the cable to the Ethernet module, hub, or other system equipment corresponding to the applicable Ethernet network system.

Use cables, connectors, and hubs that meet the IEEE802.3 10BASE-T/100BASE-TX/1000BASE-T standards.

When only one GOT is connected, the GOT can be directly connected to the controller without a hub.

Precautions

Make sure to connect an Ethernet cable to the Ethernet port of the inverter.

When connecting an Ethernet cable by mistake to a PU port, there is a fear that equipment is damaged.

Maximum segment length

The maximum segment length (length between a hub and a node) is 100 m.

The maximum length depends on the Ethernet equipment used.

The following shows the number of connectable hubs when a repeater hub is used.

- 10BASE-T: Up to 4 for a cascade connection (within 500 m)
- 100BASE-TX: Up to 2 for a cascade connection (within 205 m)
- 1000BASE-T: The number differs depending on the hub to be used.

When switching hubs are used, there is no theoretical limit to the number of cascade connections between switching hubs.

For the limit, contact the switching hub manufacturer.

Maximum number of connected devices

Up to 128 inverters can be connected to channels No. 1 to No. 4 of one GOT. (16 or less recommended)

The following shows the number of connectable controllers per GOT channel and the number of GOTs connectable to one controller.

Controller			GOT		
Model	Number of GOTs connectable to one inverter		Model	Number of connectable controllers per GOT channel	
	UDP	TCP		UDP	TCP
FR-E8□0-E	Unlimited (1 recommended)	1	GT37 SoftGOT3000	128 (16 or less recommended)	128 (16 or less recommended)

17.5.3 GOT side settings

[GOT Ethernet Setting]

Set the GOT Ethernet interface in GT Designer3.

Item	Description
[GOT IP Address Setting]	Set the IP address of the GOT.
[GOT Ethernet Common Setting]	Set the default gateway and other common items for GOT Ethernet interfaces.
[IP filter Setting]	The GOT allows or blocks access from IP addresses specified in the filtering list.

For details on the setting, refer to the following.

📖GT Designer3 (GOT3000) Screen Design Manual

Set the GT SoftGOT3000 Ethernet interface on the personal computer.

Precautions

Do not use 0 and 255 at the end of an IP address.

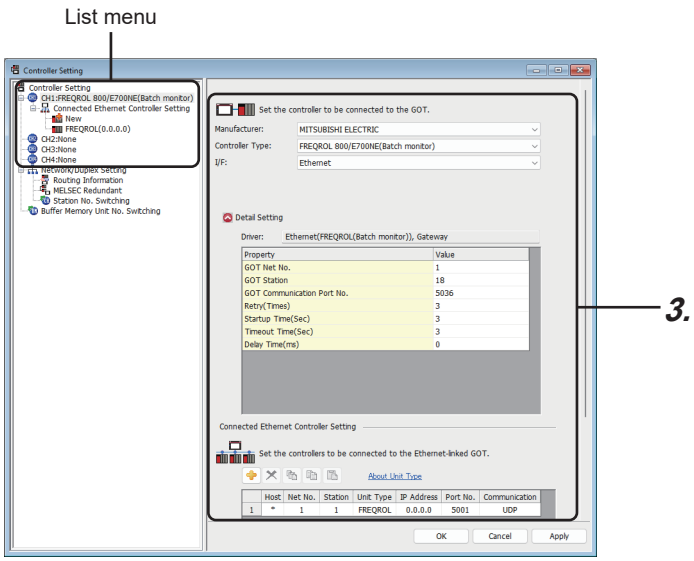
(Numbers of *.*.*.0 and *.*.*.255 are used by the system)

The GOT may not monitor the controller correctly with the above numbers.

Consult with the administrator of the network before setting an IP address to the GOT.

[Controller Setting]

Set the channel of the connected controller.



Operating procedure

1. Select [Common] → [Controller Setting] from the menu.
2. In the [Controller Setting] window, select the channel number to be used from the list menu.
3. Set the following items.

Item	Description
[Manufacturer]	[MITSUBISHI ELECTRIC]
[Controller Type]	[FREQROL 800/E700NE(Batch monitor)]
[I/F]	[Ethernet]
[Detail Setting]	Configure the settings according to the usage environment. ☞ Page 1440 [Detail Setting]
[Connected Ethernet Controller Setting]	Configure the settings according to the controller to be connected. ☞ Page 1441 [Connected Ethernet Controller Setting]

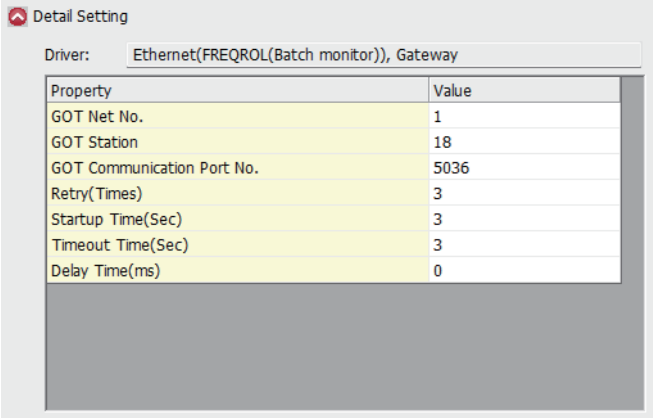
4. When you have completed the settings, click the [OK] button.

Point

The controller settings can be checked in [I/F Communication Setting].
For details, refer to the following.
GT Designer3 (GOT3000) Screen Design Manual

■[Detail Setting]

Configure the settings according to the usage environment.



Item	Description	Range
[Driver]	This item appears when communication drivers are selectable according to the settings of [Controller Type] and [I/F].	[Ethernet(FREQROL(Batch monitor)), Gateway]
[GOT Net No.]	Set the network number of the GOT.	[1] to [239]
[GOT Station]*1	Set the station number of the GOT.	[1] to [120]
[GOT Communication Port No.]	Set the GOT port number for connection with the Ethernet module.	[1024] to [5010], [5014] to [49152], [49171] to [65534]
[Retry]	Set the number of retries to be performed when a communication timeout occurs. When receiving no response after retries, the communication times out.	• GOT: [0] times to [5] times • GT SoftGOT3000: [0] times to [10] times
[Startup Time]	Set the time period from the GOT startup until the start of communication with the PLC CPU.	[3] seconds to [255] seconds
[Timeout Time]	Set the time period for a communication to time out.	[1] second to [90] seconds
[Delay Time]	Set the delay time for reducing the load of the network and destination PLC.	[0] ms to [10000] ms

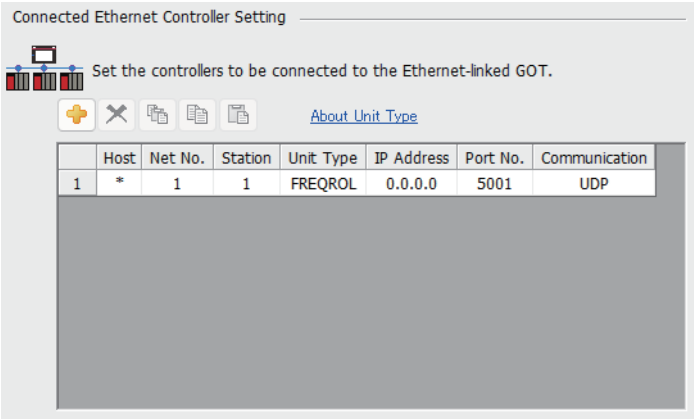
*1 Set values not set for [Station] in [Connected Ethernet Controller Setting].
☞ Page 1441 [Connected Ethernet Controller Setting]

Precautions

When connecting or disconnecting a cable or turning off or on the device, restore the GOT after waiting longer than the setting of [Timeout Time] in the communication detail settings.
If restoration is performed at an interval shorter than the communication timeout time, the GOT may momentarily monitor a different device or perform writing to a different device.

■[Connected Ethernet Controller Setting]

Set the controller to be connected to the GOT by Ethernet.



Item	Description	Range
[Host]	The host is displayed. It refers to a station that can be connected without setting a station number. The host is indicated with an asterisk (*).	—
[Net No.]	Set the network number of the connected Ethernet equipment.	[1] to [239]
[Station]*1	Set the station number of the connected Ethernet equipment.	[1] to [120]
[Unit Type]	Select the model of the connected Ethernet equipment.	[FREQROL]
[IP Address]	Set the IP address of the connected Ethernet equipment.	[0.0.0.0] to [255.255.255.255]
[Port No.]	Set the port number of the connected Ethernet equipment.	[5000] to [5002], [5006] to [5008]
[Communication]	Set the communication format of the connected Ethernet equipment.	[UDP], [TCP]

*1 Set values not set for [GOT Station] in [Detail Setting].
☞ Page 1440 [Detail Setting]

Point

• Controller settings using the GT37 utility

The controller settings can be changed in [Communication Settings] of the GT37 utility after writing [Communication Settings] of project data to GT37.

For details on the GT37 utility, refer to the following manual.

📖GOT3000 Series User's Manual (Utility & Maintenance Functions)

• Priority of the settings in [Controller Setting]

When the settings are configured in GT Designer3 or in the GT37 utility, the latest settings are effective.

17.5.4 Inverter side settings

Model		Reference
FR-E800 series	FR-E8□0-E	☞ Page 1442 Connection to FR-E800 series

Connection to FR-E800 series

For the inverter side settings, refer to the following.

📖FR-E800 series manuals

■Communication port and the supported parameters

Inverter side interface	Inverter side parameter
Ethernet connector	Pr.79, Pr.340, Pr.342, Pr.414, Pr.502, Pr.549 to Pr.551, Pr.779, Pr.1424 to Pr.1429, Pr.1431 to Pr.1432, Pr.1434 to Pr.1455

■Inverter communication settings

Set the following parameters using the PU (parameter unit).

Do not change these parameters, even though they can be monitored from the GOT.

If they are changed, communication with the GOT is disabled.

For parameter setting values, refer to the following.

📖FR-E800 series manuals

○: Necessary, △: As necessary, —: Not necessary

Setting item*1	Parameter number	Setting value	Setting for GOT connection
Operation mode selection	Pr.79	0*3	△
Communication startup mode	Pr.340	10*3	△
Communication EEPROM write selection	Pr.342	0*3	△
PLC function operation selection	Pr.414	0*3*4	△
Stop mode selection at communication error	Pr.502	0*3	△
Protocol selection	Pr.549	0	○
NET mode operation command source selection	Pr.550	5*3	△
PU mode operation command source selection	Pr.551	2*3	△
Operation frequency during communication error	Pr.779	9999*3	△
Ethernet communication network number*2	Pr.1424	1 to 239	○
Ethernet communication station number*2	Pr.1425	1 to 120	○
Link speed and duplex mode selection	Pr.1426	0*3	△
Ethernet function selection 1*2	Pr.1427	5000 to 5002, 5006 to 5008	○
Ethernet function selection 2	Pr.1428	9999*3	△
Ethernet function selection 3	Pr.1429	9999*3	△
Ethernet signal loss detection function selection	Pr.1431	0*3	△
Ethernet communication check time interval	Pr.1432	9999*3	△
Ethernet IP address 1 (Built-in Ethernet)*2	Pr.1434	0 to 255	○
Ethernet IP address 2 (Built-in Ethernet)*2	Pr.1435	0 to 255	○
Ethernet IP address 3 (Built-in Ethernet)*2	Pr.1436	0 to 255	○
Ethernet IP address 4 (Built-in Ethernet)*2	Pr.1437	0 to 255	○
Subnet mask 1*2	Pr.1438	255*3	△
Subnet mask 2*2	Pr.1439	255*3	△
Subnet mask 3*2	Pr.1440	255*3	△
Subnet mask 4*2	Pr.1441	0*3	△
Ethernet IP filter address 1	Pr.1442	0*3	△
Ethernet IP filter address 2	Pr.1443	0*3	△
Ethernet IP filter address 3	Pr.1444	0*3	△
Ethernet IP filter address 4	Pr.1445	0*3	△
Ethernet IP filter address 2 range specification	Pr.1446	9999*3	△
Ethernet IP filter address 3 range specification	Pr.1447	9999*3	△
Ethernet IP filter address 4 range specification	Pr.1448	9999*3	△

Setting item*1	Parameter number	Setting value	Setting for GOT connection
Ethernet command source specification IP address 1	Pr.1449	0*3	△
Ethernet command source specification IP address 2	Pr.1450	0*3	△
Ethernet command source specification IP address 3	Pr.1451	0*3	△
Ethernet command source specification IP address 4	Pr.1452	0*3	△
Ethernet command source selection IP address 3 range specification	Pr.1453	9999*3	△
Ethernet command source selection IP address 4 range specification	Pr.1454	9999*3	△
Keepalive time	Pr.1455	3600s*3	△

*1 The parameter names described in the FR-E800 series manuals.
*2 The setting can be changed on the GOT side.
When changing the setting on the GOT side, be sure to change the parameter of the inverter accordingly.
*3 Change the setting depending on the usage environment.
*4 The inverter side setting defaults to 0: Invalid. To use the PLC function, set 1 or 2.

Precautions

■Connecting the GOT and an inverter using TCP/IP

When the GOT and an inverter are connected using TCP/IP, reconnection may not be possible after they are disconnected.
In such a case, reset the inverter, or shorten the keepalive time and Ethernet TCP disconnection time coefficient.
For setting the keepalive time and Ethernet TCP disconnection time coefficient, refer to the following.
📖FR-E800 series manuals

17.6 FR-D800 (Ethernet connection)

☞ Page 1444 Connectable devices
☞ Page 1444 System configuration
☞ Page 1446 GOT side settings
☞ Page 1449 Inverter side settings

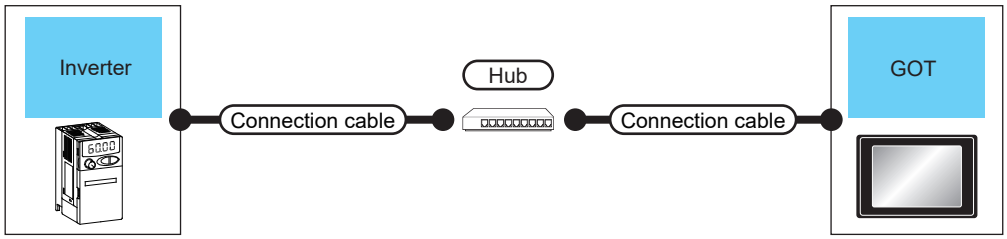
17.6.1 Connectable devices

The following table shows the connectable models.

○: Supported, —: Not supported

Controller	Model	Clock	Connectable model
FR-D800 series	FR-D8□0-E	—	GT37 SoftGOT3000

17.6.2 System configuration



For details on the connection cables and the maximum segment length, refer to the following.

☞ Page 1445 Connection cable
☞ Page 1445 Maximum segment length

For details on the maximum number of connected devices, refer to the following.

☞ Page 1445 Maximum number of connected devices

Controller	Connection cable	GOT	
		Interface	Model
FR-D8□0-E	Twisted pair cable	Built-in Ethernet interface of GOT	GT37 SoftGOT3000
		Ethernet interface of personal computer	GT37 SoftGOT3000

Connection cable

Use a connection cable that meets the following standards.

Standard	Category
10BASE-T	Shielded twisted pair cable (STP) or unshielded twisted pair cable (UTP) of category 3 or higher
100BASE-TX	Shielded twisted pair cable (STP) or unshielded twisted pair cable (UTP) of category 5 or higher
1000BASE-T	Shielded twisted pair cable (STP) or unshielded twisted pair cable (UTP) of category 5e or higher

The destination device connected with the twisted pair cable varies with the configuration of the Ethernet network system used.

Connect the cable to the Ethernet module, hub, or other system equipment corresponding to the applicable Ethernet network system.

Use cables, connectors, and hubs that meet the IEEE802.3 10BASE-T/100BASE-TX/1000BASE-T standards.

When only one GOT is connected, the GOT can be directly connected to the controller without a hub.

Precautions

Make sure to connect an Ethernet cable to the Ethernet port of the inverter.

When connecting an Ethernet cable by mistake to a PU port, there is a fear that equipment is damaged.

Maximum segment length

The maximum segment length (length between a hub and a node) is 100 m.

The maximum length depends on the Ethernet equipment used.

The following shows the number of connectable hubs when a repeater hub is used.

- 10BASE-T: Up to 4 for a cascade connection (within 500 m)
- 100BASE-TX: Up to 2 for a cascade connection (within 205 m)
- 1000BASE-T: The number differs depending on the hub to be used.

When switching hubs are used, there is no theoretical limit to the number of cascade connections between switching hubs.

For the limit, contact the switching hub manufacturer.

Maximum number of connected devices

Up to 128 inverters can be connected to channels No. 1 to No. 4 of one GOT. (16 or less recommended)

The following shows the number of connectable controllers per GOT channel and the number of GOTs connectable to one controller.

Controller			GOT		
Model	Number of GOTs connectable to one inverter		Model	Number of connectable controllers per GOT channel	
	UDP	TCP		UDP	TCP
FR-D8□0-E	Unlimited (1 recommended)	1	GT37 SoftGOT3000	128 (16 or less recommended)	128 (16 or less recommended)

17.6.3 GOT side settings

[GOT Ethernet Setting]

Set the GOT Ethernet interface in GT Designer3.

Item	Description
[GOT IP Address Setting]	Set the IP address of the GOT.
[GOT Ethernet Common Setting]	Set the default gateway and other common items for GOT Ethernet interfaces.
[IP filter Setting]	The GOT allows or blocks access from IP addresses specified in the filtering list.

For details on the setting, refer to the following.

GT Designer3 (GOT3000) Screen Design Manual

Set the GT SoftGOT3000 Ethernet interface on the personal computer.

Precautions

Do not use 0 and 255 at the end of an IP address.

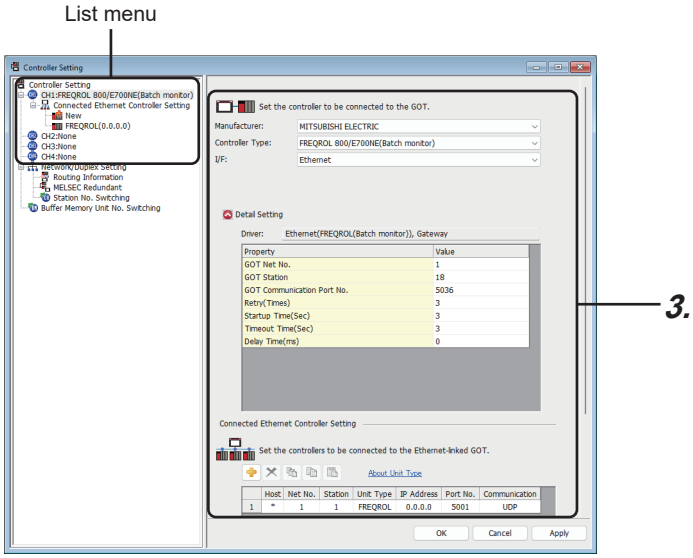
(Numbers of *.*.*.0 and *.*.*.255 are used by the system)

The GOT may not monitor the controller correctly with the above numbers.

Consult with the administrator of the network before setting an IP address to the GOT.

[Controller Setting]

Set the channel of the connected controller.



Operating procedure

1. Select [Common] → [Controller Setting] from the menu.
2. In the [Controller Setting] window, select the channel number to be used from the list menu.
3. Set the following items.

Item	Description
[Manufacturer]	[MITSUBISHI ELECTRIC]
[Controller Type]	[FREQROL 800/E700NE(Batch monitor)]
[I/F]	[Ethernet]
[Detail Setting]	Configure the settings according to the usage environment. ☞ Page 1447 [Detail Setting]
[Connected Ethernet Controller Setting]	Configure the settings according to the controller to be connected. ☞ Page 1448 [Connected Ethernet Controller Setting]

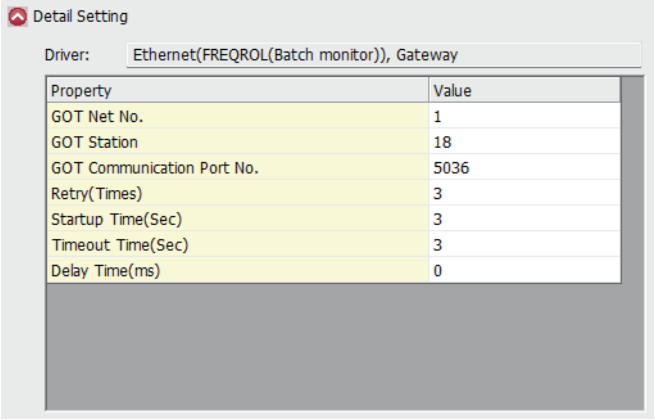
4. When you have completed the settings, click the [OK] button.

Point

The controller settings can be checked in [I/F Communication Setting].
For details, refer to the following.
GT Designer3 (GOT3000) Screen Design Manual

■[Detail Setting]

Configure the settings according to the usage environment.



Item	Description	Range
[Driver]	This item appears when communication drivers are selectable according to the settings of [Controller Type] and [I/F].	[Ethernet(FREQROL(Batch monitor)), Gateway]
[GOT Net No.]	Set the network number of the GOT.	[1] to [239]
[GOT Station]*1	Set the station number of the GOT.	[1] to [120]
[GOT Communication Port No.]	Set the GOT port number for connection with the Ethernet module.	[1024] to [5010], [5014] to [49152], [49171] to [65534]
[Retry]	Set the number of retries to be performed when a communication timeout occurs. When receiving no response after retries, the communication times out.	• GOT: [0] times to [5] times • GT SoftGOT3000: [0] times to [10] times
[Startup Time]	Set the time period from the GOT startup until the start of communication with the PLC CPU.	[3] seconds to [255] seconds
[Timeout Time]	Set the time period for a communication to time out.	[1] second to [90] seconds
[Delay Time]	Set the delay time for reducing the load of the network and destination PLC.	[0] ms to [10000] ms

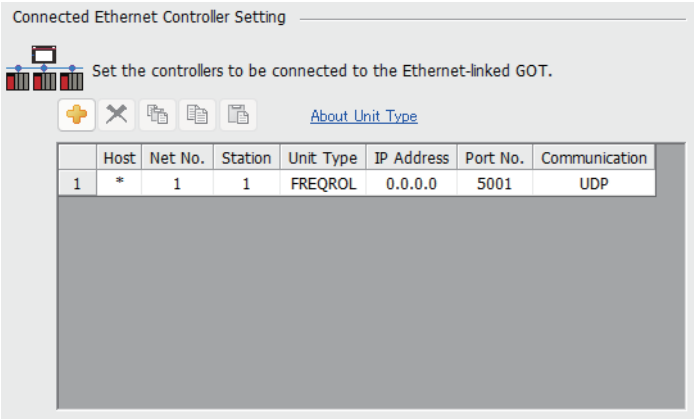
*1 Set values not set for [Station] in [Connected Ethernet Controller Setting].
☞ Page 1448 [Connected Ethernet Controller Setting]

Precautions

When connecting or disconnecting a cable or turning off or on the device, restore the GOT after waiting longer than the setting of [Timeout Time] in the communication detail settings.
If restoration is performed at an interval shorter than the communication timeout time, the GOT may momentarily monitor a different device or perform writing to a different device.

■[Connected Ethernet Controller Setting]

Set the controller to be connected to the GOT by Ethernet.



Item	Description	Range
[Host]	The host is displayed. It refers to a station that can be connected without setting a station number. The host is indicated with an asterisk (*).	—
[Net No.]	Set the network number of the connected Ethernet equipment.	[1] to [239]
[Station]*1	Set the station number of the connected Ethernet equipment.	[1] to [120]
[Unit Type]	Select the model of the connected Ethernet equipment.	[FREQROL]
[IP Address]	Set the IP address of the connected Ethernet equipment.	[0.0.0.0] to [255.255.255.255]
[Port No.]	Set the port number of the connected Ethernet equipment.	[5000] to [5002], [5006] to [5008]
[Communication]	Set the communication format of the connected Ethernet equipment.	[UDP], [TCP]

*1 Set values not set for [GOT Station] in [Detail Setting].
☞ Page 1447 [Detail Setting]

Point

• Controller settings using the GT37 utility

The controller settings can be changed in [Communication Settings] of the GT37 utility after writing [Communication Settings] of project data to GT37.

For details on the GT37 utility, refer to the following manual.

📖GOT3000 Series User's Manual (Utility & Maintenance Functions)

• Priority of the settings in [Controller Setting]

When the settings are configured in GT Designer3 or in the GT37 utility, the latest settings are effective.

17.6.4 Inverter side settings

Model		Reference
FR-D800 series	FR-D8□0-E	☞ Page 1449 Connection to FR-D800 series

Connection to FR-D800 series

For the inverter side settings, refer to the following.

📖FR-D800 series manuals

■Communication port and the supported parameters

Inverter side interface	Inverter side parameter
Ethernet connector	Pr.79, Pr.340, Pr.342, Pr.502, Pr.549 to Pr.551, Pr.779, Pr.1424 to Pr.1432, Pr.1434 to Pr.1455

■Inverter communication settings

Set the following parameters using the PU (parameter unit).

Do not change these parameters, even though they can be monitored from the GOT.

If they are changed, communication with the GOT is disabled.

For parameter setting values, refer to the following.

📖FR-D800 series manuals

○: Necessary, △: As necessary, —: Not necessary

Setting item[*1]	Parameter number	Setting value	Setting for GOT connection
Operation mode selection	Pr.79	0[*3]	△
Communication startup mode	Pr.340	10[*3]	△
Communication EEPROM write selection	Pr.342	0[*3]	△
Stop mode selection at communication error	Pr.502	0[*3]	△
Protocol selection	Pr.549	0	○
NET mode operation command source selection	Pr.550	5[*3]	△
PU mode operation command source selection	Pr.551	2[*3]	△
Operation frequency during communication error	Pr.779	9999[*3]	△
Ethernet communication network number[*2]	Pr.1424	1 to 239	○
Ethernet communication station number[*2]	Pr.1425	1 to 120	○
Link speed and duplex mode selection	Pr.1426	0[*3]	△
Ethernet function selection 1[*2]	Pr.1427	5000 to 5002, 5006 to 5008	○
Ethernet function selection 2	Pr.1428	15237[*3]	△
Ethernet function selection 3	Pr.1429	15238[*3]	△
Ethernet function selection 4	Pr.1430	9999[*3]	△
Ethernet signal loss detection function selection	Pr.1431	0[*3]	△
Ethernet communication check time interval	Pr.1432	9999[*3]	△
Ethernet IP address 1 (Built-in Ethernet)[*2]	Pr.1434	0 to 255	○
Ethernet IP address 2 (Built-in Ethernet)[*2]	Pr.1435	0 to 255	○
Ethernet IP address 3 (Built-in Ethernet)[*2]	Pr.1436	0 to 255	○
Ethernet IP address 4 (Built-in Ethernet)[*2]	Pr.1437	0 to 255	○
Subnet mask 1[*2]	Pr.1438	255[*3]	△
Subnet mask 2[*2]	Pr.1439	255[*3]	△
Subnet mask 3[*2]	Pr.1440	255[*3]	△
Subnet mask 4[*2]	Pr.1441	0[*3]	△
Ethernet IP filter address 1	Pr.1442	0[*3]	△
Ethernet IP filter address 2	Pr.1443	0[*3]	△
Ethernet IP filter address 3	Pr.1444	0[*3]	△
Ethernet IP filter address 4	Pr.1445	0[*3]	△
Ethernet IP filter address 2 range specification	Pr.1446	9999[*3]	△
Ethernet IP filter address 3 range specification	Pr.1447	9999[*3]	△
Ethernet IP filter address 4 range specification	Pr.1448	9999[*3]	△

Setting item*1	Parameter number	Setting value	Setting for GOT connection
Ethernet command source specification IP address 1	Pr.1449	0*3	△
Ethernet command source specification IP address 2	Pr.1450	0*3	△
Ethernet command source specification IP address 3	Pr.1451	0*3	△
Ethernet command source specification IP address 4	Pr.1452	0*3	△
Ethernet command source selection IP address 3 range specification	Pr.1453	9999*3	△
Ethernet command source selection IP address 4 range specification	Pr.1454	9999*3	△
Keepalive time	Pr.1455	3600 s*3	△

*1 The parameter names described in the FR-D800 series manuals.
*2 The setting can be changed on the GOT side.
When changing the setting on the GOT side, be sure to change the parameter of the inverter accordingly.
*3 Change the setting depending on the usage environment.

Precautions

■Connecting the GOT and an inverter using TCP/IP

When the GOT and an inverter are connected using TCP/IP, reconnection may not be possible after they are disconnected.
In such a case, reset the inverter, or shorten the keepalive time and Ethernet TCP disconnection time coefficient.
For setting the keepalive time and Ethernet TCP disconnection time coefficient, refer to the following.
📖FR-D800 series manuals

18 Serial connection

☞ Page 1451 FR-D700 (serial connection)
☞ Page 1461 FR-F700PJ (serial connection)
☞ Page 1471 FR-E700 (serial connection)
☞ Page 1484 Sensorless servo (FR-E7□0EX) (serial connection)
☞ Page 1497 FR-A700 (serial connection)
☞ Page 1509 FR-F700P (serial connection)
☞ Page 1521 FR-A800 (serial connection)
☞ Page 1536 FR-A800 Plus (serial connection)
☞ Page 1554 FR-F800 (serial connection)
☞ Page 1569 FR-E800 (serial connection)
☞ Page 1582 FR-D800 (serial connection)
☞ Page 1597 MELIPM (serial connection)

PART 5

18.1 FR-D700 (serial connection)

☞ Page 1451 Connectable devices
☞ Page 1452 System configuration
☞ Page 1454 Connection diagram
☞ Page 1456 GOT side settings
☞ Page 1458 Inverter side settings

18.1.1 Connectable devices

The following table shows the connectable models.

○: Supported, —: Not supported

Controller	Model name	Clock	Inverter side interface	Connectable model
			PU port	
FR-D700 series	FR-D7□0 FR-D7□0S FR-D7□0W	—	○	GT37 SoftGOT3000

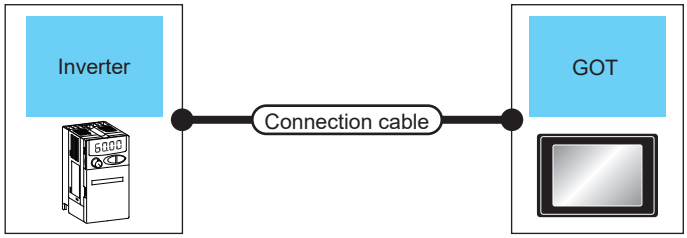
Precautions

- When the communication driver is [FREQROL 700/800, Sensorless Servo]

The settings of [Adjust] or [Broadcast] by GOT clock control will be disabled.

18.1.2 System configuration

When connecting to one inverter



For details on the maximum length of the connection cable, refer to the following.

☞ Page 1452 Maximum length

For details on the maximum number of connected devices, refer to the following.

☞ Page 1452 Maximum number of connected devices

Inverter		Communication type	Connection cable	GOT	
Controller	Interface			Interface	Model
FR-D7□0 FR-D7□0S FR-D7□0W	PU port	RS-485	☞ Page 1454 RS-485 connection diagram (1)	Built-in RS-232/422/485 interface	GT37 SoftGOT3000
				GT37-IF2000 + GT15-RS4-9S	GT37 SoftGOT3000

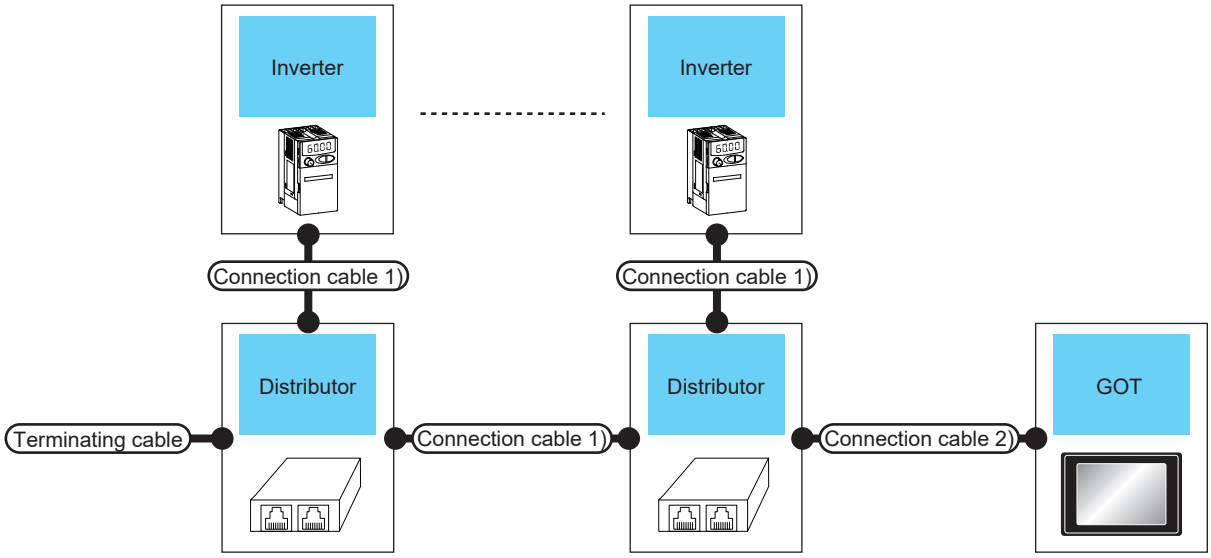
■Maximum length

The maximum length of the connection cable is 500 m.

■Maximum number of connected devices

Only one inverter can access one GOT at a time.

When connecting to multiple inverters (max. 31) (using distributors)



For details on the maximum length of the connection cable, refer to the following.

☞ Page 1453 Maximum length

For details on the maximum number of connected devices, refer to the following.

☞ Page 1453 Maximum number of connected devices

Inverter		Communication type	Terminal cable	Connection cable 1)	Distributor*1	Connection cable 2)	GOT	
Controller	Interface						Interface	Model
FR-D7□0 FR-D7□0S FR-D7□0W	PU port	RS-485	☞ Page 1454 RS-485 connection diagram (3)	☞ Page 1454 RS-485 connection diagram (2)	BMJ-8 (recommended)	☞ Page 1454 RS-485 connection diagram (1)	Built-in RS-232/422/485 interface	GT37 SoftGOT3000
							GT37-IF2000 + GT15-RS4-9S	GT37 SoftGOT3000

*1 The distributor is a product manufactured by HAKKO ELECTRIC CO., LTD.
For details, contact HAKKO ELECTRIC CO., LTD.

■Maximum length

The maximum length of the connection cable is 500 m.

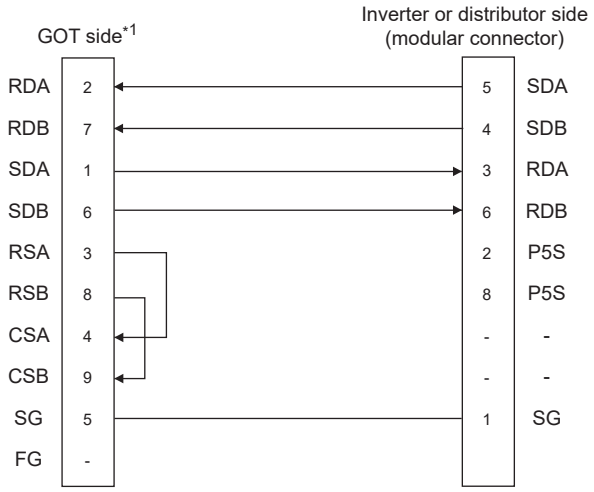
■Maximum number of connected devices

31 inverters can access one GOT at a time.

18.1.3 Connection diagram

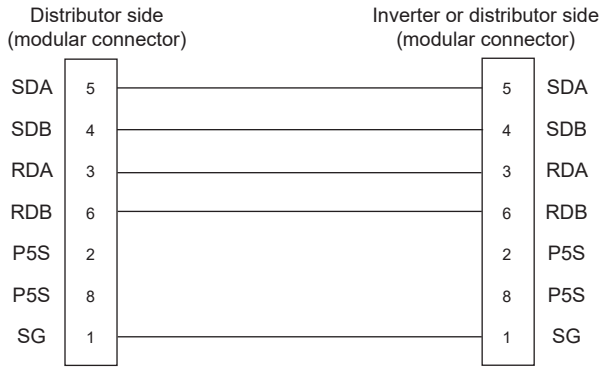
The following diagram shows the connection between the GOT and the inverter.

RS-485 connection diagram (1)

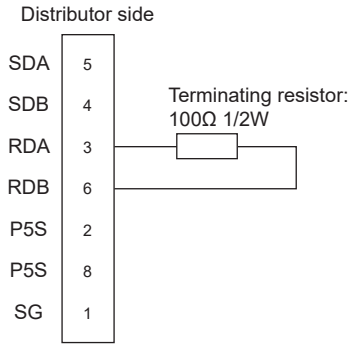


*1 For GT37 in the end position of the system configuration, set the terminating resistor to 330 Ω.
☞ Page 2956 Terminating resistors of GOT

RS-485 connection diagram (2)



RS-485 connection diagram (3)



Preparation of the RS-485 cable

■Cable length

The length of the RS-485 cable must be 500 m or less.

■GOT side connector

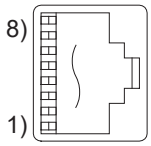
For the GOT side connector, refer to the following.

☞ Page 2954 GOT connector specifications

■Inverter connector specifications

- Pin layout in the PU port

When seen from the front of the inverter
(receptacle side)



Modular jack

Pin No.	Signal name	Remark
1	GND (SG)	
2	(P5S)	Not used
3	RXD+ (RDA)	
4	TXD- (SDB)	
5	TXD+ (SDA)	
6	RXD- (RDB)	
7	GND (SG)	
8	(P5S)	Not used

The contents in the parentheses indicate symbols described in the inverter manual.

The pins number 2 and 8 (P5S) are connected to the power supply for an operation panel or a parameter unit.

Do not use them in RS-485 communication.

- Connector of cable between FREQROL Series inverters

Use the commercial connectors and cables shown in the table below or the comparable products. (Refer to the manual for the inverter.)

Name	Model name	Specifications	Manufacturer
Connector	5-554720-3	RJ45 connector	Tyco International, Ltd
Modular ceiling rosette (Distributor)	BMJ-8	-	HAKKO ELECTRIC CO.,LTD.
Cable	SGLPEV 0.5mm × 4P	Cable conforming to EIA568 (such as cable 10BASE-T)	MITSUBISHI CABLE INDUSTRIES, LTD.

Connecting terminating resistors

■GOT side

When connecting a PLC to the GOT, a terminating resistor must be connected to the GOT.

Set the terminating resistor setting switch.

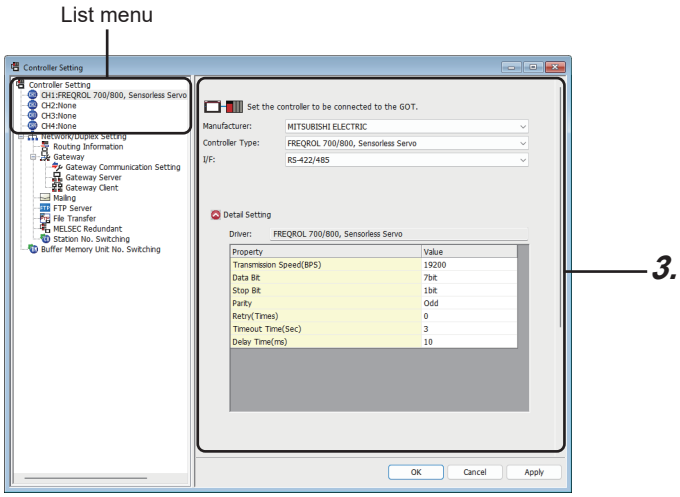
For the procedure to set the terminating resistor, refer to the following.

☞ Page 2956 Terminating resistors of GOT

18.1.4 GOT side settings

[Controller Setting]

Set the channel of the connected controller.



Operating procedure

1. Select [Common] → [Controller Setting] from the menu.
2. In the [Controller Setting] window, select the channel number to be used from the list menu.
3. Set the following items.

Item	Description
[Manufacturer]	[MITSUBISHI ELECTRIC]
[Controller Type]	[FREQROL 700/800, Sensorless Servo]
[I/F]	Configure the settings according to the communication format used.
[Detail Setting]	Configure the settings according to the usage environment. ☞ Page 1457 [Detail Setting]

4. When you have completed the settings, click the [OK] button.

Point

• Checking the controller settings

The settings of connecting equipment can be confirmed in [I/F Communication Setting].

For details, refer to the following.

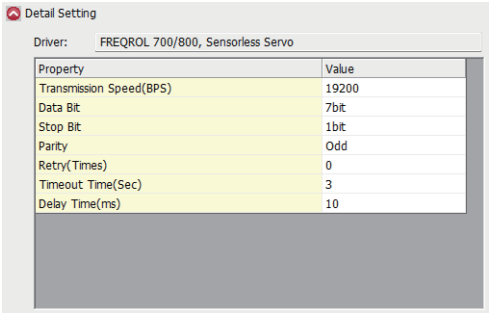
📖GT Designer3 (GOT3000) Screen Design Manual

Precautions

Make sure to use GD for screen switching devices and system information devices when the GOT is connected to only the inverter.

■[Detail Setting]

Configure the settings according to the usage environment.



Item	Description	Range
[Driver]	This item appears when communication drivers are selectable according to the settings of [Controller Type] and [I/F].	[FREQROL 700/800, Sensorless Servo]
[Transmission Speed]	Set this item to change the transmission speed used for communication with the connected equipment.	[9600] bps, [19200] bps, [38400] bps, [57600] bps, [115200] bps
[Data Bit]	Set this item to change the data length used for communication with the connected equipment.	[7 bit], [8 bit]
[Stop Bit]	Specify the stop bit length for communications.	[1 bit], [2 bit]
[Parity]	Specify whether or not to perform a parity check, and how it is performed during communication.	[None], [Even], [Odd]
[Retry]	Specify the number of retries to be performed during communication.	[0] times to [5] times
[Timeout Time]	Specify the time period for a communication to time out.	[1] second to [30] seconds
[Delay Time]	Specify the send delay time for a communication.	[0] ms to [300] ms

Precautions

The following shows the settable drivers.

- When connecting the GOT to one or more inverters

[FREQROL 700/800, Sensorless Servo]

18.1.5 Inverter side settings

Model name		Reference
FR-D700 series	FR-D7□0 FR-D7□0S FR-D7□0W	☞ Page 1458 Connecting to FR-D700 series

Connecting to FR-D700 series

For details on the inverters, refer to the manual for the corresponding series.

Point

When operating the inverter from the GOT
When operating the inverter from the GOT, set the parameter of the inverter side so that the GOT connection destination of the inverter side is set to the mode with the command right.
For details, refer to the following manual.
📖Manual of the inverter to be connected to the GOT

Configure communication settings for the inverter.
Be sure to perform the inverter reset after updating each parameter.

Precautions

- Changing communication parameters

Do not make any change for each communication parameter of the inverter side from GOT.
If changed, the communication to the inverter cannot be made.

- When setting "8888" or "9999" to inverter parameter (Pr)

"8888" and "9999" designate special function.
When specifying from the GOT, it will be as follows.

Set value of inverter side	Value specified by GOT
8888	65520
9999	65535

■Communication port and the supported parameters

Inverter side interface	Inverter side parameter
PU connector	Pr.79, Pr.117 to Pr.124, Pr.340, Pr.342, Pr.549

■Communication settings of inverter

Set the following parameters using the PU (parameter unit).

Before setting the parameters, set Pr.160 (User group read selection) to 0 so that simple mode + extended mode parameters are displayed.

Do not change these parameters, even though they can be monitored from the GOT.

If they are changed, communication with the GOT is disabled.

Setting item*1	Parameter number	Set value	Contents of setting
PU communication station number	Pr.117	0 to 31	☞ Page 1460 Station number setting
PU communication speed*2	Pr.118	192*3	19200 bps
PU communication stop bit length*2	Pr.119	10	Data length: 7 bits, stop bit: 1 bit
PU communication parity check*2	Pr.120	1	Odd
Number of PU communication retries	Pr.121	9999	The inverter will not come to an alarm stop.
PU communication check time interval	Pr.122	9999	Communication check suspension
PU communication wait time setting	Pr.123	0	0ms
PU communication CR/LF selection	Pr.124	1*3	With CR, without LF
Protocol selection	Pr.549	0*3	Mitsubishi Electric inverter protocol
Operation mode selection	Pr.79	0*3	External operation mode at power on
Communication startup mode selection	Pr.340	1	Network operation mode
Communication EEPROM write selection	Pr.342	0*3	Written to RAM and EEPROM

*1 Setting items are the parameter names described in the FR-D700 series manuals.

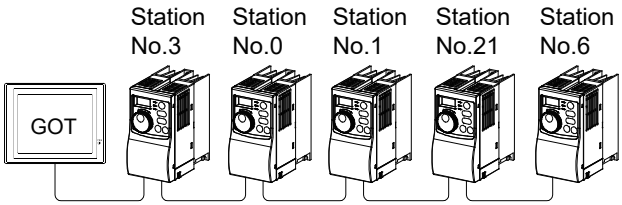
*2 Settings on the GOT can be changed.
When changing the settings on the GOT, be sure to change the parameters on the inverter to correspond with the GOT settings.

*3 Inverter default values (No need to change)

■Station number setting

Set each station number so that no station number overlaps.

The station number can be set regardless of the cable connection order. There is no problem if station numbers are not consecutive.



Station number setting example

• Direct specification

When setting the device, specify the station number of the inverter of which data is to be changed.

Specification range
0 to 31

• Indirect specification

When setting the device, indirectly specify the station number for the inverter to be changed using the 16-bit GOT internal register (GD10 to GD25).

When specifying the station number from 100 to 115 in GT Designer3, the corresponding value from GD10 to GD25 will be the station number of the inverter.

Specified station No.	Corresponding device	Setting range
100	GD10	0 to 31 For the setting other than the above, error (dedicated device is out of range) will occur.
101	GD11	
102	GD12	
103	GD13	
104	GD14	
105	GD15	
106	GD16	
107	GD17	
108	GD18	
109	GD19	
110	GD20	
111	GD21	
112	GD22	
113	GD23	
114	GD24	
115	GD25	

Precautions

The station number required for the inverter system will differ according to the selected driver.

• When selecting [FREQROL 700/800, Sensorless Servo]

Make sure to establish the inverter system with station No. 0.

18.2 FR-F700PJ (serial connection)

☞ Page 1461 Connectable devices
☞ Page 1462 System configuration
☞ Page 1464 Connection diagram
☞ Page 1466 GOT side settings
☞ Page 1468 Inverter side settings

18.2.1 Connectable devices

The following table shows the connectable models.

○: Supported, —: Not supported

Controller	Model name	Clock	Inverter side interface	Connectable model
			PU port	
FR-F700PJ series	FR-F7□0PJ(F)	—	○	GT37 SoftGOT3000

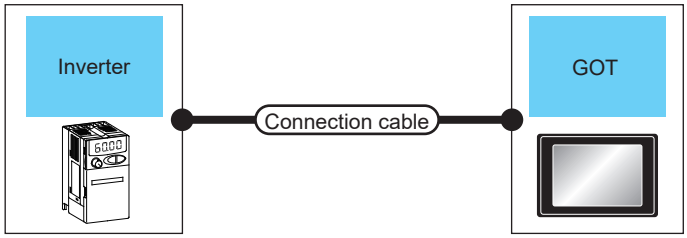
Precautions

- When the communication driver is [FREQROL 700/800, Sensorless Servo]

The settings of [Adjust] or [Broadcast] by GOT clock control will be disabled.

18.2.2 System configuration

When connecting to one inverter



For details on the maximum length of the connection cable, refer to the following.

☞ Page 1462 Maximum length

For details on the maximum number of connected devices, refer to the following.

☞ Page 1462 Maximum number of connected devices

Inverter		Communication type	Connection cable	GOT	
Controller	Interface			Interface	Model
FR-F7□0PJ(F)	PU port	RS-485	☞ Page 1464 RS-485 connection diagram (1)	Built-in RS-232/422/485 interface	GT37 SoftGOT3000
				GT37-IF2000 + GT15-RS4-9S	GT37 SoftGOT3000

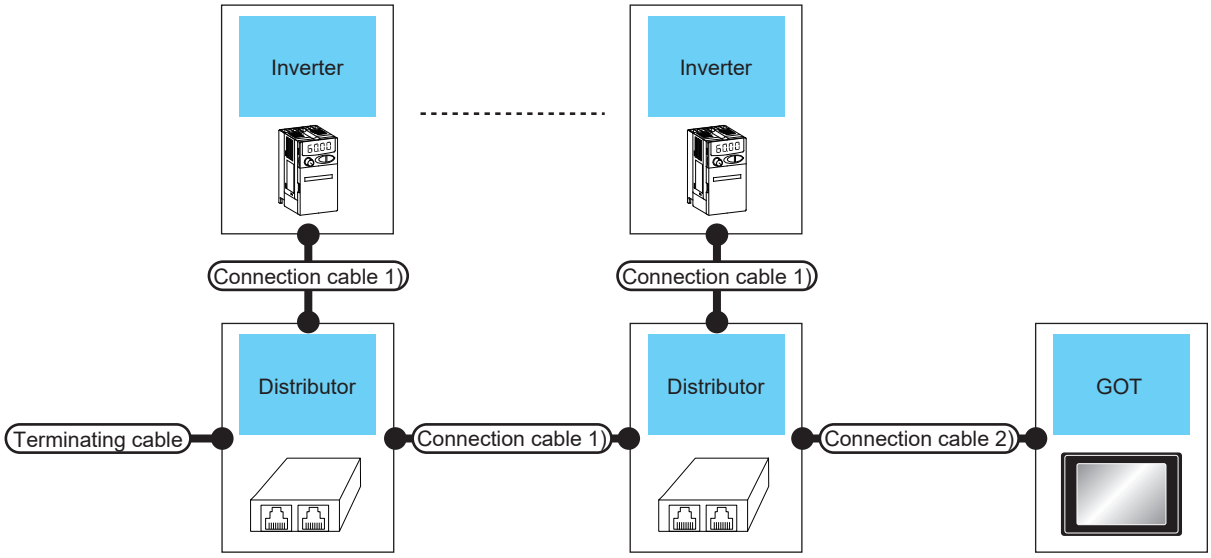
■Maximum length

The maximum length of the connection cable is 500 m.

■Maximum number of connected devices

Only one inverter can access one GOT at a time.

When connecting to multiple inverters (max. 31) (using distributors)



For details on the maximum length of the connection cable, refer to the following.

☞ Page 1463 Maximum length

For details on the maximum number of connected devices, refer to the following.

☞ Page 1463 Maximum number of connected devices

Inverter		Communication type	Terminal cable	Connection cable 1)	Distributor*1	Connection cable 2)	GOT	
Controller	Interface						Interface	Model
FR-F7□0PJ(F)	PU port	RS-485	☞ Page 1464 RS-485 connection diagram (3)	☞ Page 1464 RS-485 connection diagram (2)	BMJ-8 (recommended)	☞ Page 1464 RS-485 connection diagram (1)	Built-in RS-232/422/485 interface	GT37 SoftGOT3000
							GT37-IF2000 + GT15-RS4-9S	GT37 SoftGOT3000

*1 The distributor is a product manufactured by HAKKO ELECTRIC CO., LTD.
For details, contact HAKKO ELECTRIC CO., LTD.

■Maximum length

The maximum length of the connection cable is 500 m.

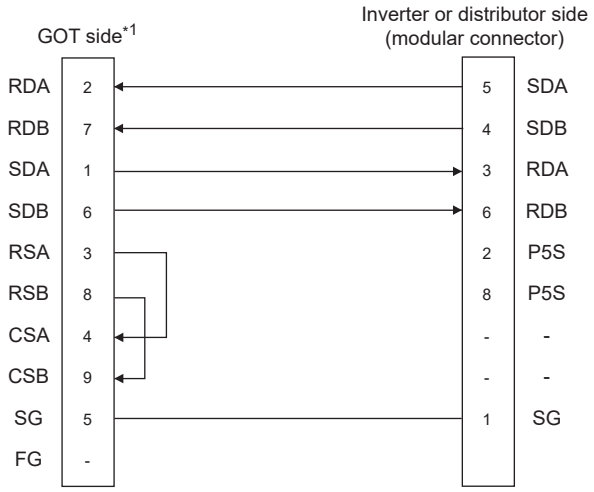
■Maximum number of connected devices

31 inverters can access one GOT at a time.

18.2.3 Connection diagram

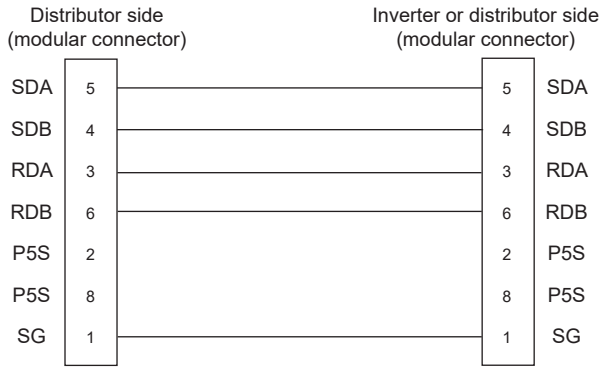
The following diagram shows the connection between the GOT and the inverter.

RS-485 connection diagram (1)

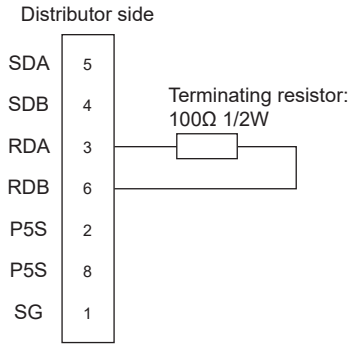


*1 For GT37 in the end position of the system configuration, set the terminating resistor to 330 Ω.
☞ Page 2956 Terminating resistors of GOT

RS-485 connection diagram (2)



RS-485 connection diagram (3)



Preparation of the RS-485 cable

■Cable length

The length of the RS-485 cable must be 500 m or less.

■GOT side connector

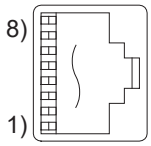
For the GOT side connector, refer to the following.

☞ Page 2954 GOT connector specifications

■Inverter connector specifications

- Pin layout in the PU port

When seen from the front of the inverter
(receptacle side)



Modular jack

Pin No.	Signal name	Remark
1	GND (SG)	
2	(P5S)	Not used
3	RXD+ (RDA)	
4	TXD- (SDB)	
5	TXD+ (SDA)	
6	RXD- (RDB)	
7	GND (SG)	
8	(P5S)	Not used

The contents in the parentheses indicate symbols described in the inverter manual.

The pins number 2 and 8 (P5S) are connected to the power supply for an operation panel or a parameter unit.

Do not use them in RS-485 communication.

- Connector of cable between FREQROL Series inverters

Use the commercial connectors and cables shown in the table below or the comparable products. (Refer to the manual for the inverter.)

Name	Model name	Specifications	Manufacturer
Connector	5-554720-3	RJ45 connector	Tyco International, Ltd
Modular ceiling rosette (Distributor)	BMJ-8	-	HAKKO ELECTRIC CO.,LTD.
Cable	SGLPEV 0.5mm × 4P	Cable conforming to EIA568 (such as cable 10BASE-T)	MITSUBISHI CABLE INDUSTRIES, LTD.

Connecting terminating resistors

■GOT side

When connecting a PLC to the GOT, a terminating resistor must be connected to the GOT.

Set the terminating resistor setting switch.

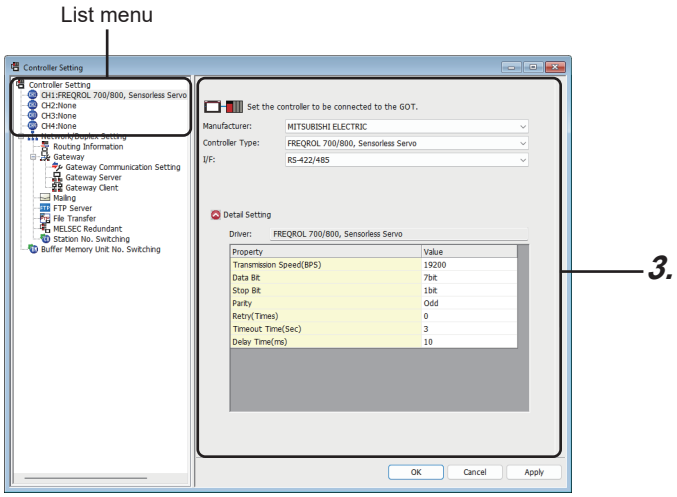
For the procedure to set the terminating resistor, refer to the following.

☞ Page 2956 Terminating resistors of GOT

18.2.4 GOT side settings

[Controller Setting]

Set the channel of the connected controller.



Operating procedure

1. Select [Common] → [Controller Setting] from the menu.
2. In the [Controller Setting] window, select the channel number to be used from the list menu.
3. Set the following items.

Item	Description
[Manufacturer]	[MITSUBISHI ELECTRIC]
[Controller Type]	[FREQROL 700/800, Sensorless Servo]
[I/F]	Configure the settings according to the communication format used.
[Detail Setting]	Configure the settings according to the usage environment. ☞ Page 1467 [Detail Setting]

4. When you have completed the settings, click the [OK] button.

Point

• Checking the controller settings

The settings of connecting equipment can be confirmed in [I/F Communication Setting].

For details, refer to the following.

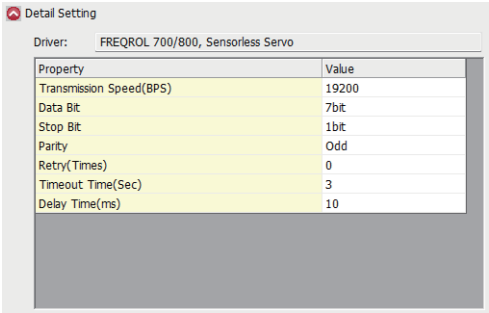
📖GT Designer3 (GOT3000) Screen Design Manual

Precautions

Make sure to use GD for screen switching devices and system information devices when the GOT is connected to only the inverter.

■[Detail Setting]

Configure the settings according to the usage environment.



Item	Description	Range
[Driver]	This item appears when communication drivers are selectable according to the settings of [Controller Type] and [I/F].	[FREQROL 700/800, Sensorless Servo]
[Transmission Speed]	Set this item to change the transmission speed used for communication with the connected equipment.	[9600] bps, [19200] bps, [38400] bps, [57600] bps, [115200] bps
[Data Bit]	Set this item to change the data length used for communication with the connected equipment.	[7 bit], [8 bit]
[Stop Bit]	Specify the stop bit length for communications.	[1 bit], [2 bit]
[Parity]	Specify whether or not to perform a parity check, and how it is performed during communication.	[None], [Even], [Odd]
[Retry]	Specify the number of retries to be performed during communication.	[0] times to [5] times
[Timeout Time]	Specify the time period for a communication to time out.	[1] second to [30] seconds
[Delay Time]	Specify the send delay time for a communication.	[0] ms to [300] ms

Precautions

The following shows the settable drivers.

- When connecting the GOT to one or more inverters

[FREQROL 700/800, Sensorless Servo]

18.2.5 Inverter side settings

Model name		Reference
FR-F700PJ series	FR-F7□0PJ(F)	☞ Page 1468 Connecting to FR-F700PJ series

Connecting to FR-F700PJ series

For details on the inverters, refer to the manual for the corresponding series.

Point

When operating the inverter from the GOT
When operating the inverter from the GOT, set the parameter of the inverter side so that the GOT connection destination of the inverter side is set to the mode with the command right.
For details, refer to the following manual.
📖Manual of the inverter to be connected to the GOT

Configure communication settings for the inverter.
Be sure to perform the inverter reset after updating each parameter.

Precautions

- Changing communication parameters

Do not make any change for each communication parameter of the inverter side from GOT.
If changed, the communication to the inverter cannot be made.

- When setting "8888" or "9999" to inverter parameter (Pr)

"8888" and "9999" designate special function.
When specifying from the GOT, it will be as follows.

Set value of inverter side	Value specified by GOT
8888	65520
9999	65535

■Communication port and the supported parameters

Inverter side interface	Inverter side parameter
PU connector	Pr.79, Pr.117 to Pr.124, Pr.340, Pr.342, Pr.549

■Communication settings of inverter

Set the following parameters using the PU (parameter unit).

Before setting the parameters, set Pr.160 (Extended function display selection) to 0 so that simple mode + extended mode parameters are displayed.

Do not change these parameters, even though they can be monitored from the GOT.

If they are changed, communication with the GOT is disabled.

Setting item*1	Parameter number	Set value	Contents of setting
PU communication station number	Pr.117	0 to 31	☞ Page 1470 Station number setting
PU communication speed*2	Pr.118	192*4	19200 bps
PU communication stop bit length*2	Pr.119	10	Data length: 7 bits, stop bit: 1 bit
PU communication parity check*2	Pr.120	1	Odd
Number of PU communication retries	Pr.121	9999	The inverter will not come to an alarm stop.
PU communication check time interval	Pr.122	9999*4	Communication check suspension
PU communication wait time setting	Pr.123	0	0ms
PU communication CR/LF selection	Pr.124	1*3	With CR, without LF
Protocol selection	Pr.549	0*3	Mitsubishi Electric inverter protocol
Operation mode selection	Pr.79	0*3	External operation mode at power on
Communication startup mode selection	Pr.340	1	Network operation mode
Communication EEPROM write selection	Pr.342	0*3	Written to RAM and EEPROM

*1 Setting items are the parameter names described in the FR-F700PJ series manuals.

*2 Settings on the GOT can be changed.
When changing the settings on the GOT, be sure to change the parameters on the inverter to correspond with the GOT settings.

*3 Inverter default values (No need to change)

*4 Since the value has been set as a default, no setting is required when connecting to the PU connector on the inverter side.

Point

Automatic setting with Pr.999

Setting Pr.999 as shown below automatically configures the communication settings other than [PU communication station number] and [Communication EEPROM write selection] to the default communication settings of the GOT side collectively.

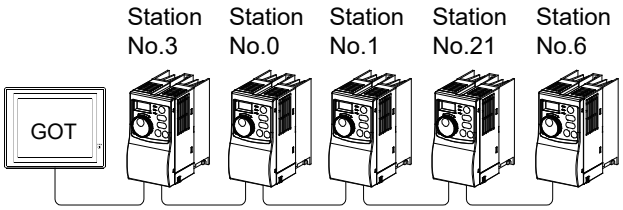
Parameter No.	Set value	Description	Operation in parameter setting mode
Pr.999 *1	10	GOT initial settings (PU connector)	[AUTO]→[GOT]→[1]Write

*1 When monitoring the value of Pr.999, 9999 is always monitored.

■Station number setting

Set each station number so that no station number overlaps.

The station number can be set regardless of the cable connection order. There is no problem if station numbers are not consecutive.



Station number setting example

• Direct specification

When setting the device, specify the station number of the inverter of which data is to be changed.

Specification range
0 to 31

• Indirect specification

When setting the device, indirectly specify the station number for the inverter to be changed using the 16-bit GOT internal register (GD10 to GD25).

When specifying the station number from 100 to 115 in GT Designer3, the corresponding value from GD10 to GD25 will be the station number of the inverter.

Specified station No.	Corresponding device	Setting range
100	GD10	0 to 31 For the setting other than the above, error (dedicated device is out of range) will occur.
101	GD11	
102	GD12	
103	GD13	
104	GD14	
105	GD15	
106	GD16	
107	GD17	
108	GD18	
109	GD19	
110	GD20	
111	GD21	
112	GD22	
113	GD23	
114	GD24	
115	GD25	

Precautions

The station number required for the inverter system will differ according to the selected driver.

• When selecting [FREQROL 700/800, Sensorless Servo]

Make sure to establish the inverter system with station No. 0.

18.3 FR-E700 (serial connection)

☞ Page 1471 Connectable devices
☞ Page 1472 System configuration
☞ Page 1475 Connection diagram
☞ Page 1479 GOT side settings
☞ Page 1481 Inverter side settings

18.3.1 Connectable devices

The following table shows the connectable models.

○: Supported, —: Not supported

Controller	Model name	Clock	Inverter side interface		Connectable model
			PU port	Control terminal option	
FR-E700 series	FR-E7□0 FR-E7□0S FR-E7□0W	—	○	FR-E7TR	GT37 SoftGOT3000

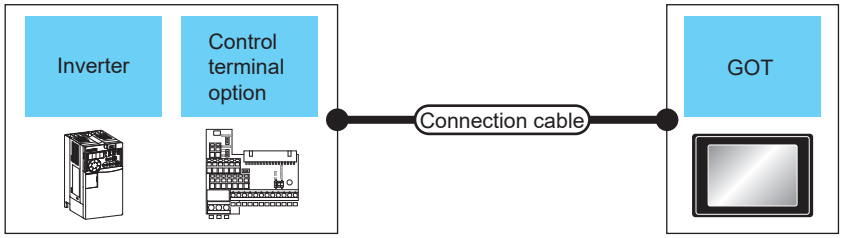
Precautions

- When the communication driver is [FREQROL 700/800, Sensorless Servo]

The settings of [Adjust] or [Broadcast] by GOT clock control will be disabled.

18.3.2 System configuration

When connecting to one inverter



For details on the maximum length of the connection cable, refer to the following.

☞ Page 1472 Maximum length

For details on the maximum number of connected devices, refer to the following.

☞ Page 1472 Maximum number of connected devices

Inverter		Communication type	Connection cable	GOT	
Controller	Interface			Interface	Model
FR-E7□0 FR-E7□0S FR-E7□0W	PU port	RS-485	☞ Page 1475 RS-485 connection diagram (1)	Built-in RS-232/422/485 interface	GT37 SoftGOT3000
				GT37-IF2000 + GT15-RS4-9S	GT37 SoftGOT3000
	Control terminal option (FR-E7TR)*1	RS-485	☞ Page 1475 RS-485 connection diagram (2)	Built-in RS-232/422/485 interface	GT37 SoftGOT3000
				GT37-IF2000 + GT15-RS4-9S	GT37 SoftGOT3000

*1 The control terminal option and the PU port cannot be used at the same time.

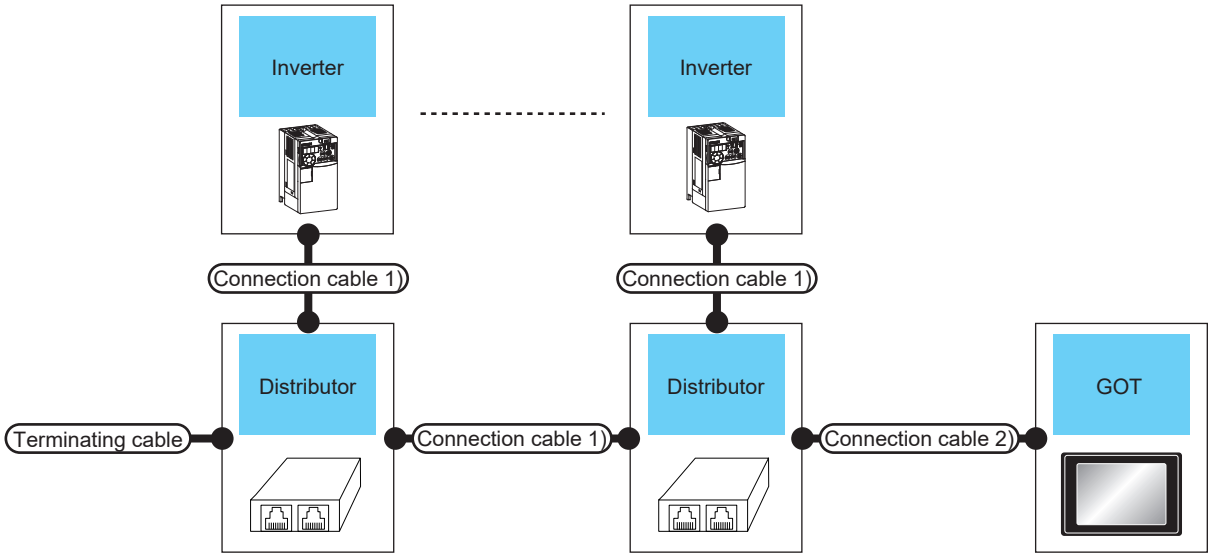
■Maximum length

The maximum length of the connection cable is 500 m.

■Maximum number of connected devices

Only one inverter can access one GOT at a time.

When connecting to multiple inverters (max. 31) (using distributors)



For details on the maximum length of the connection cable, refer to the following.

☞ Page 1473 Maximum length

For details on the maximum number of connected devices, refer to the following.

☞ Page 1473 Maximum number of connected devices

Inverter		Communication type	Terminal cable	Connection cable 1)	Distributor*1	Connection cable 2)	GOT	
Controller	Interface						Interface	Model
FR-E7□0 FR-E7□0S FR-E7□0W	PU port	RS-485	☞ Page 1476 RS-485 connection diagram (4)	☞ Page 1476 RS-485 connection diagram (3)	BMJ-8 (recommended)	☞ Page 1475 RS-485 connection diagram (1)	Built-in RS-232/422/485 interface	GT37 SoftGOT3000
							GT37-IF2000 + GT15-RS4-9S	GT37 SoftGOT3000

*1 The distributor is a product manufactured by HAKKO ELECTRIC CO., LTD.
For details, contact HAKKO ELECTRIC CO., LTD.

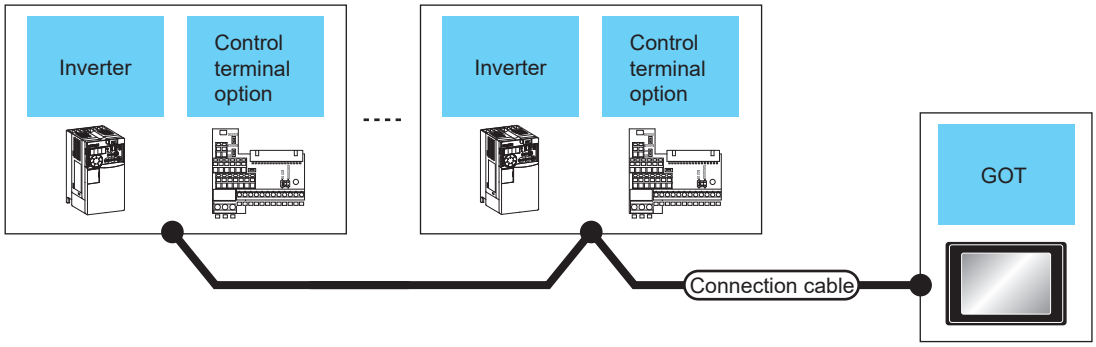
■Maximum length

The maximum length of the connection cable is 500 m.

■Maximum number of connected devices

31 inverters can access one GOT at a time.

When connecting to multiple inverters (max. 31) (using the control terminal option)



For details on the maximum length of the connection cable, refer to the following.

☞ Page 1474 Maximum length

For details on the maximum number of connected devices, refer to the following.

☞ Page 1474 Maximum number of connected devices

Inverter		Communication type	Connection cable	GOT	
Controller	Interface			Interface	Model
FR-E7□0 FR-E7□0S FR-E7□0W	Control terminal option (FR-E7TR)*1	RS-485	☞ Page 1476 RS-485 connection diagram (5)	Built-in RS-232/422/485 interface	GT37 SoftGOT3000
				GT37-IF2000 + GT15-RS4-9S	GT37 SoftGOT3000

*1 The control terminal option and the PU port cannot be used at the same time.

■Maximum length

The maximum length of the connection cable is 500 m.

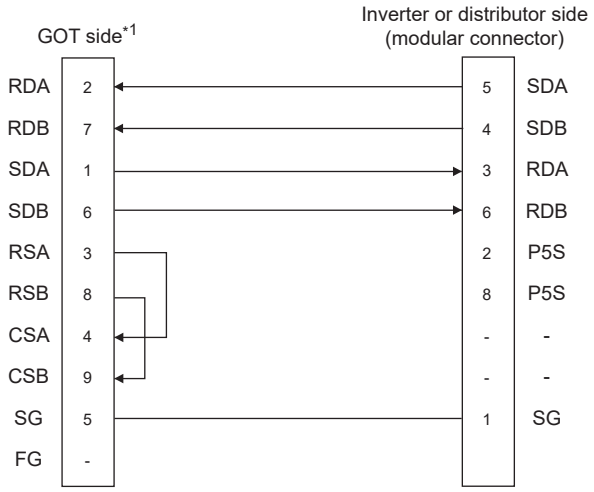
■Maximum number of connected devices

31 inverters can access one GOT at a time.

18.3.3 Connection diagram

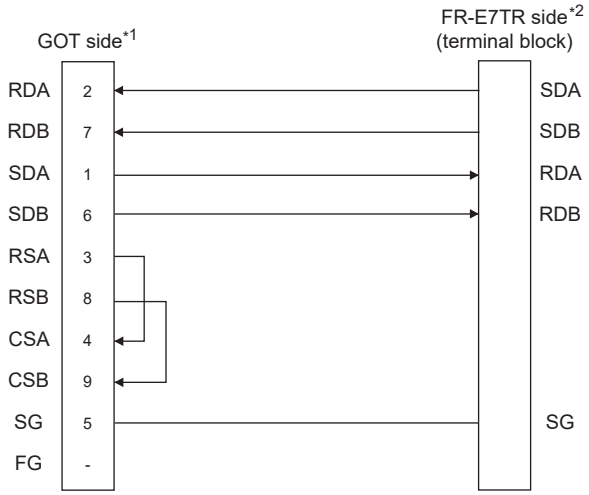
The following diagram shows the connection between the GOT and the inverter.

RS-485 connection diagram (1)



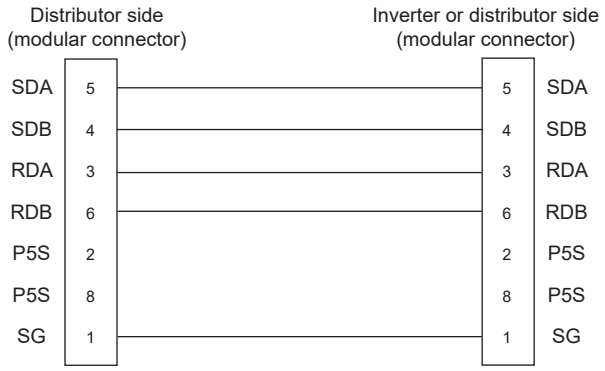
*1 For GT37 in the end position of the system configuration, set the terminating resistor to 330 Ω.
☞ Page 2956 Terminating resistors of GOT

RS-485 connection diagram (2)

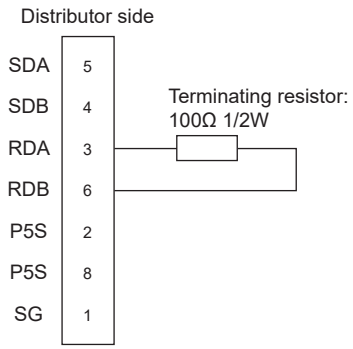


*1 For GT37 in the end position of the system configuration, set the terminating resistor to 330 Ω.
☞ Page 2956 Terminating resistors of GOT
*2 Set the terminating resistor switch of the FR-E7TR to ON (100 Ω).

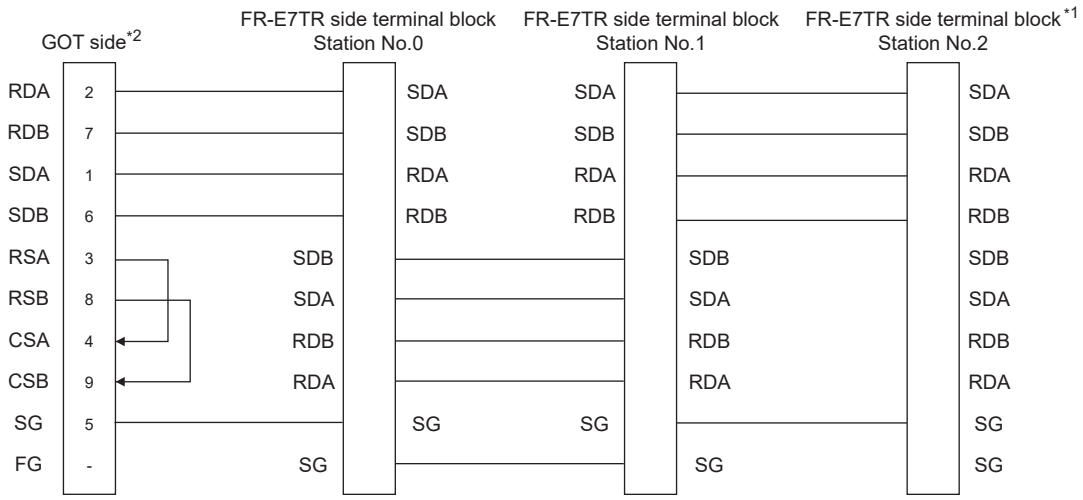
RS-485 connection diagram (3)



RS-485 connection diagram (4)



RS-485 connection diagram (5)



*1 Set the terminating resistor switch of the FR-E7TR located farthest from the GOT to ON (100 Ω).

*2 For GT37 in the end position of the system configuration, set the terminating resistor to 330 Ω.

☞ Page 2956 Terminating resistors of GOT

Preparation of the RS-485 cable

■Cable length

The length of the RS-485 cable must be 500 m or less.

■GOT side connector

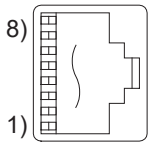
For the GOT side connector, refer to the following.

☞ Page 2954 GOT connector specifications

■Inverter connector specifications

- Pin layout in the PU port

When seen from the front of the inverter
(receptacle side)



Modular jack

Pin No.	Signal name	Remark
1	GND (SG)	
2	(P5S)	Not used
3	RXD+ (RDA)	
4	TXD- (SDB)	
5	TXD+ (SDA)	
6	RXD- (RDB)	
7	GND (SG)	
8	(P5S)	Not used

The contents in the parentheses indicate symbols described in the inverter manual.

The pins number 2 and 8 (P5S) are connected to the power supply for an operation panel or a parameter unit.

Do not use them in RS-485 communication.

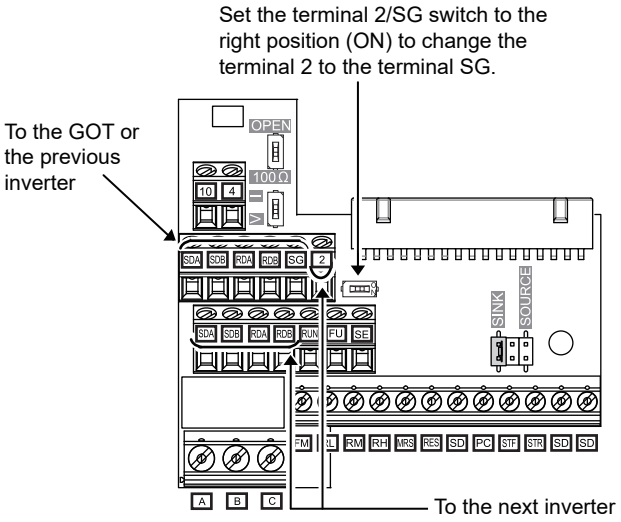
- Connector of cable between FREQROL Series inverters

Use the commercial connectors and cables shown in the table below or the comparable products. (Refer to the manual for the inverter.)

Name	Model name	Specifications	Manufacturer
Connector	5-554720-3	RJ45 connector	Tyco International, Ltd
Modular ceiling rosette (Distributor)	BMJ-8	-	HAKKO ELECTRIC CO.,LTD.
Cable	SGLPEV 0.5mm × 4P	Cable conforming to EIA568 (such as cable 10BASE-T)	MITSUBISHI CABLE INDUSTRIES, LTD.

■Terminal block layout in the FR-E7TR control terminal option

Mount this option to the FR-E700 series.



Connecting terminating resistors

■GOT side

When connecting a PLC to the GOT, a terminating resistor must be connected to the GOT.

Set the terminating resistor setting switch.

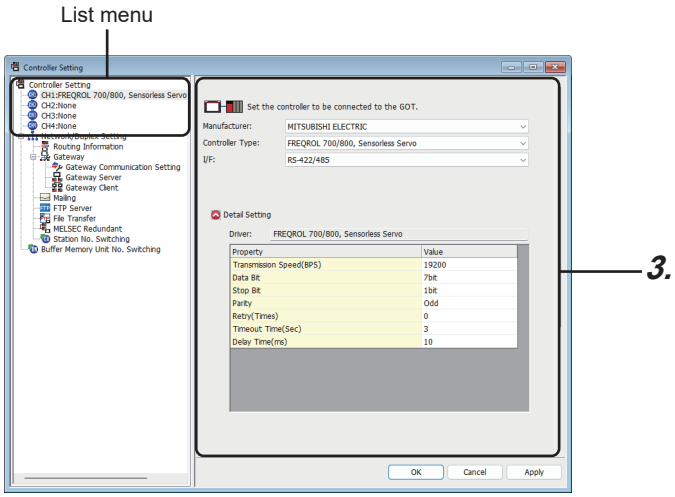
For the procedure to set the terminating resistor, refer to the following.

☞ Page 2956 Terminating resistors of GOT

18.3.4 GOT side settings

[Controller Setting]

Set the channel of the connected controller.



Operating procedure

1. Select [Common] → [Controller Setting] from the menu.
2. In the [Controller Setting] window, select the channel number to be used from the list menu.
3. Set the following items.

Item	Description
[Manufacturer]	[MITSUBISHI ELECTRIC]
[Controller Type]	[FREQROL 700/800, Sensorless Servo]
[I/F]	Configure the settings according to the communication format used.
[Detail Setting]	Configure the settings according to the usage environment. ☞ Page 1480 [Detail Setting]

4. When you have completed the settings, click the [OK] button.

Point

• Checking the controller settings

The settings of connecting equipment can be confirmed in [I/F Communication Setting].

For details, refer to the following.

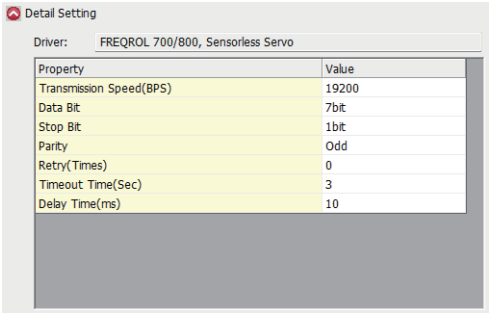
📖GT Designer3 (GOT3000) Screen Design Manual

Precautions

Make sure to use GD for screen switching devices and system information devices when the GOT is connected to only the inverter.

■[Detail Setting]

Configure the settings according to the usage environment.



Item	Description	Range
[Driver]	This item appears when communication drivers are selectable according to the settings of [Controller Type] and [I/F].	[FREQROL 700/800, Sensorless Servo]
[Transmission Speed]	Set this item to change the transmission speed used for communication with the connected equipment.	[9600] bps, [19200] bps, [38400] bps, [57600] bps, [115200] bps
[Data Bit]	Set this item to change the data length used for communication with the connected equipment.	[7 bit], [8 bit]
[Stop Bit]	Specify the stop bit length for communications.	[1 bit], [2 bit]
[Parity]	Specify whether or not to perform a parity check, and how it is performed during communication.	[None], [Even], [Odd]
[Retry]	Specify the number of retries to be performed during communication.	[0] times to [5] times
[Timeout Time]	Specify the time period for a communication to time out.	[1] second to [30] seconds
[Delay Time]	Specify the send delay time for a communication.	[0] ms to [300] ms

Precautions

The following shows the settable drivers.

- When connecting the GOT to one or more inverters

[FREQROL 700/800, Sensorless Servo]

18.3.5 Inverter side settings

Model name		Reference
FR-E700 series	FR-E7□0 FR-E7□0S FR-E7□0W	☞ Page 1481 Connecting to FR-E700 series

Connecting to FR-E700 series

For details on the inverters, refer to the manual for the corresponding series.

Point

When operating the inverter from the GOT
When operating the inverter from the GOT, set the parameter of the inverter side so that the GOT connection destination of the inverter side is set to the mode with the command right.
For details, refer to the following manual.
📖Manual of the inverter to be connected to the GOT

Configure communication settings for the inverter.
Be sure to perform the inverter reset after updating each parameter.

Precautions

- Changing communication parameters

Do not make any change for each communication parameter of the inverter side from GOT.
If changed, the communication to the inverter cannot be made.

- When setting "8888" or "9999" to inverter parameter (Pr)

"8888" and "9999" designate special function.
When specifying from the GOT, it will be as follows.

Set value of inverter side	Value specified by GOT
8888	65520
9999	65535

■Communication port and the supported parameters

Inverter side interface	Inverter side parameter
PU connector	Pr.79, Pr.117 to Pr.124, Pr.340, Pr.342, Pr.549
FR-E7TR (RS-485 terminal block)	

PART 5

■Communication settings of inverter

Set the following parameters using the PU (parameter unit).

Do not change these parameters, even though they can be monitored from the GOT.

If they are changed, communication with the GOT is disabled.

Setting item*1	Parameter number	Set value	Contents of setting
PU communication station number	Pr.117	0 to 31	☞ Page 1483 Station number setting
PU communication speed*2	Pr.118	192*3	19200 bps
PU communication stop bit length*2	Pr.119	10	Data length: 7 bits, stop bit: 1 bit
PU communication parity check*2	Pr.120	1	Odd
Number of PU communication retries	Pr.121	9999	The inverter will not come to an alarm stop.
PU communication check time interval	Pr.122	9999	Communication check suspension
PU communication wait time setting	Pr.123	0	0ms
PU communication CR/LF selection	Pr.124	1*3	With CR, without LF
Protocol selection	Pr.549	0*3	Mitsubishi Electric inverter protocol
Operation mode selection	Pr.79	0*3	External operation mode at power on
Communication startup mode selection	Pr.340	1	Network operation mode
Communication EEPROM write selection	Pr.342	0*3	Written to RAM and EEPROM

*1 Setting items are the parameter names described in the FR-E700 series manuals.

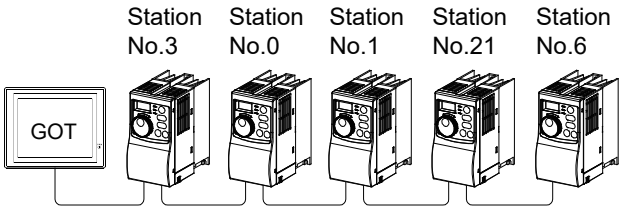
*2 Settings on the GOT can be changed.
When changing the settings on the GOT, be sure to change the parameters on the inverter to correspond with the GOT settings.

*3 Inverter default values (No need to change)

■Station number setting

Set each station number so that no station number overlaps.

The station number can be set regardless of the cable connection order. There is no problem if station numbers are not consecutive.



Station number setting example

- Direct specification

When setting the device, specify the station number of the inverter of which data is to be changed.

Specification range
0 to 31

- Indirect specification

When setting the device, indirectly specify the station number for the inverter to be changed using the 16-bit GOT internal register (GD10 to GD25).

When specifying the station number from 100 to 115 in GT Designer3, the corresponding value from GD10 to GD25 will be the station number of the inverter.

Specified station No.	Corresponding device	Setting range
100	GD10	0 to 31 For the setting other than the above, error (dedicated device is out of range) will occur.
101	GD11	
102	GD12	
103	GD13	
104	GD14	
105	GD15	
106	GD16	
107	GD17	
108	GD18	
109	GD19	
110	GD20	
111	GD21	
112	GD22	
113	GD23	
114	GD24	
115	GD25	

Precautions

The station number required for the inverter system will differ according to the selected driver.

- When selecting [FREQROL 700/800, Sensorless Servo]

Make sure to establish the inverter system with station No. 0.

18.4 Sensorless servo (FR-E7□0EX) (serial connection)

☞ Page 1484 Connectable devices
☞ Page 1485 System configuration
☞ Page 1488 Connection diagram
☞ Page 1492 GOT side settings
☞ Page 1494 Inverter side settings

18.4.1 Connectable devices

The following table shows the connectable models.

○: Supported, —: Not supported

Controller	Model name	Clock	Inverter side interface		Connectable model
			PU port	Control terminal option	
Sensorless servo	FR-E7□0EX	—	○	FR-E7TR	GT37 SoftGOT3000

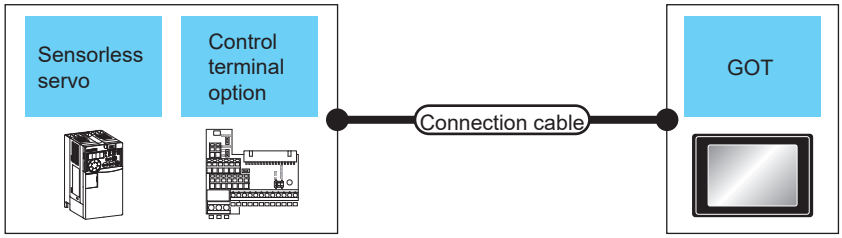
Precautions

- When the communication driver is [FREQROL 700/800, Sensorless Servo]

The settings of [Adjust] or [Broadcast] by GOT clock control will be disabled.

18.4.2 System configuration

When connecting to one inverter



For details on the maximum length of the connection cable, refer to the following.

☞ Page 1485 Maximum length

For details on the maximum number of connected devices, refer to the following.

☞ Page 1485 Maximum number of connected devices

Inverter		Communication type	Connection cable	GOT	
Controller	Interface			Interface	Model
FR-E7□0EX	PU port	RS-485	☞ Page 1488 RS-485 connection diagram (1)	Built-in RS-232/422/485 interface	GT37 SoftGOT3000
				GT37-IF2000 + GT15-RS4-9S	GT37 SoftGOT3000
	Control terminal option (FR-E7TR)*1	RS-485	☞ Page 1488 RS-485 connection diagram (2)	Built-in RS-232/422/485 interface	GT37 SoftGOT3000
				GT37-IF2000 + GT15-RS4-9S	GT37 SoftGOT3000

*1 The control terminal option and the PU port cannot be used at the same time.

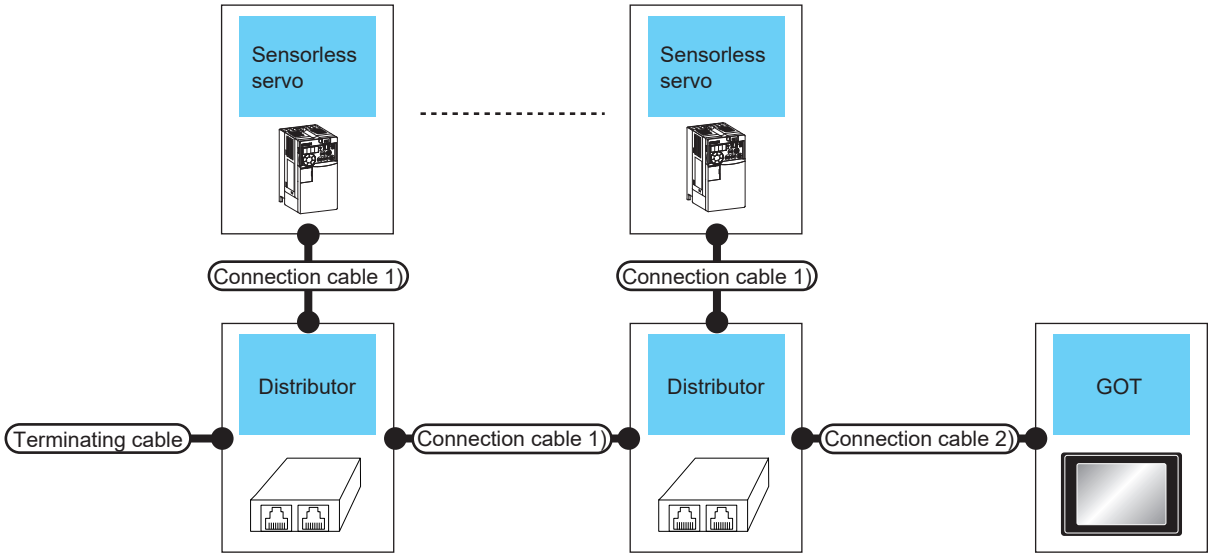
■Maximum length

The maximum length of the connection cable is 500 m.

■Maximum number of connected devices

Only one inverter can access one GOT at a time.

When connecting to multiple inverters (max. 31) (using distributors)



For details on the maximum length of the connection cable, refer to the following.

☞ Page 1486 Maximum length

For details on the maximum number of connected devices, refer to the following.

☞ Page 1486 Maximum number of connected devices

Inverter		Communication type	Terminal cable	Connection cable 1)	Distributor*1	Connection cable 2)	GOT	
Controller	Interface						Interface	Model
FR-E7□0EX	PU port	RS-485	☞ Page 1489 RS-485 connection diagram (4)	☞ Page 1489 RS-485 connection diagram (3)	BMJ-8 (recommended)	☞ Page 1488 RS-485 connection diagram (1)	Built-in RS-232/422/485 interface	GT37 SoftGOT3000
							GT37-IF2000 + GT15-RS4-9S	GT37 SoftGOT3000

*1 The distributor is a product manufactured by HAKKO ELECTRIC CO., LTD.
For details, contact HAKKO ELECTRIC CO., LTD.

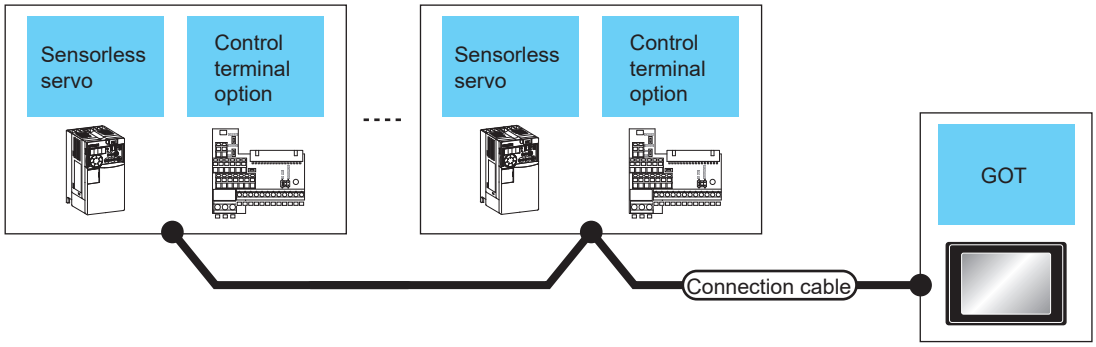
■Maximum length

The maximum length of the connection cable is 500 m.

■Maximum number of connected devices

31 inverters can access one GOT at a time.

When connecting to multiple inverters (max. 31) (using the control terminal option)



For details on the maximum length of the connection cable, refer to the following.

☞ Page 1487 Maximum length

For details on the maximum number of connected devices, refer to the following.

☞ Page 1487 Maximum number of connected devices

Inverter		Communication type	Connection cable	GOT	
Controller	Interface			Interface	Model
FR-E7□0EX	Control terminal option (FR-E7TR)*1	RS-485	☞ Page 1489 RS-485 connection diagram (5)	Built-in RS-232/422/485 interface	GT37 SoftGOT3000
				GT37-IF2000 + GT15-RS4-9S	GT37 SoftGOT3000

*1 The control terminal option and the PU port cannot be used at the same time.

■Maximum length

The maximum length of the connection cable is 500 m.

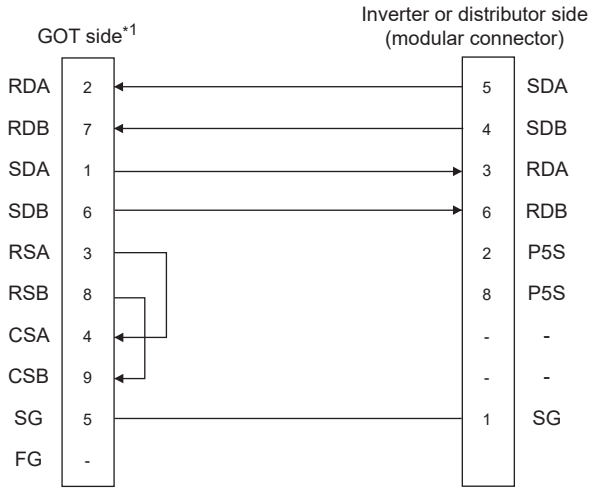
■Maximum number of connected devices

31 inverters can access one GOT at a time.

18.4.3 Connection diagram

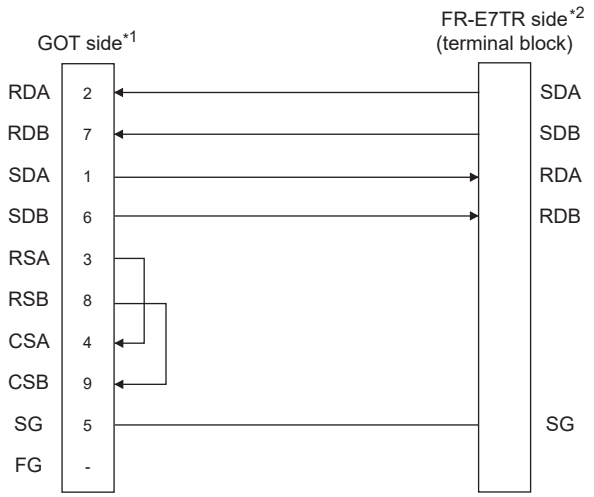
The following diagram shows the connection between the GOT and the inverter.

RS-485 connection diagram (1)



*1 For GT37 in the end position of the system configuration, set the terminating resistor to 330 Ω.
☞ Page 2956 Terminating resistors of GOT

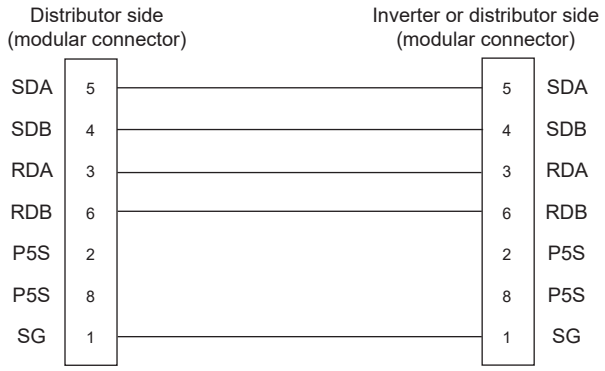
RS-485 connection diagram (2)



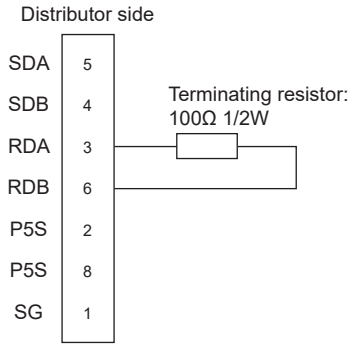
*1 For GT37 in the end position of the system configuration, set the terminating resistor to 330 Ω.
☞ Page 2956 Terminating resistors of GOT

*2 Set the terminating resistor switch of the FR-E7TR to ON (100 Ω).

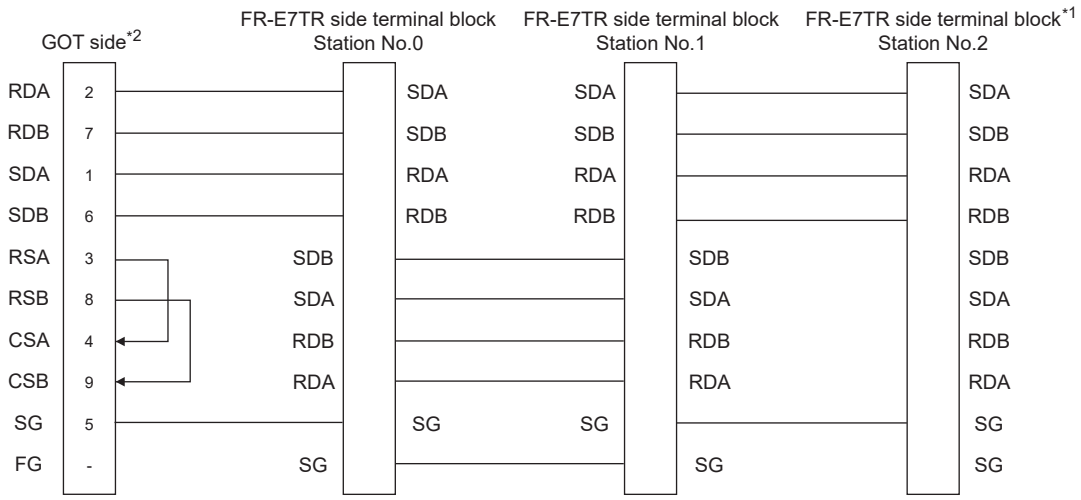
RS-485 connection diagram (3)



RS-485 connection diagram (4)



RS-485 connection diagram (5)



*1 Set the terminating resistor switch of the FR-E7TR located farthest from the GOT to ON (100 Ω).

*2 For GT37 in the end position of the system configuration, set the terminating resistor to 330 Ω.

☞ Page 2956 Terminating resistors of GOT

Preparation of the RS-485 cable

■Cable length

The length of the RS-485 cable must be 500 m or less.

■GOT side connector

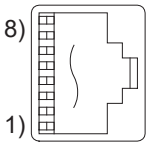
For the GOT side connector, refer to the following.

☞ Page 2954 GOT connector specifications

■Inverter connector specifications

- Pin layout in the PU port

When seen from the front of the inverter
(receptacle side)



Modular jack

Pin No.	Signal name	Remark
1	GND (SG)	
2	(P5S)	Not used
3	RXD+ (RDA)	
4	TXD- (SDB)	
5	TXD+ (SDA)	
6	RXD- (RDB)	
7	GND (SG)	
8	(P5S)	Not used

The contents in the parentheses indicate symbols described in the inverter manual.

The pins number 2 and 8 (P5S) are connected to the power supply for an operation panel or a parameter unit.

Do not use them in RS-485 communication.

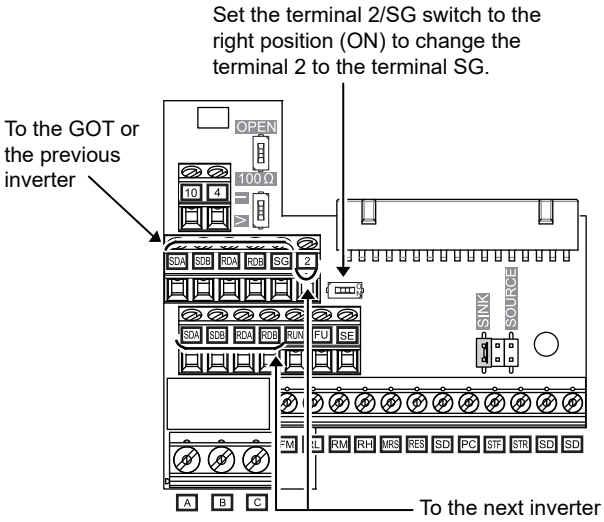
- Connector of cable between FREQROL Series inverters

Use the commercial connectors and cables shown in the table below or the comparable products. (Refer to the manual for the inverter.)

Name	Model name	Specifications	Manufacturer
Connector	5-554720-3	RJ45 connector	Tyco International, Ltd
Modular ceiling rosette (Distributor)	BMJ-8	-	HAKKO ELECTRIC CO.,LTD.
Cable	SGLPEV 0.5mm × 4P	Cable conforming to EIA568 (such as cable 10BASE-T)	MITSUBISHI CABLE INDUSTRIES, LTD.

■Terminal block layout in the FR-E7TR control terminal option

Mount this option to the sensorless servo (FR-E7□0EX).



Connecting terminating resistors

■GOT side

When connecting a PLC to the GOT, a terminating resistor must be connected to the GOT.

Set the terminating resistor setting switch.

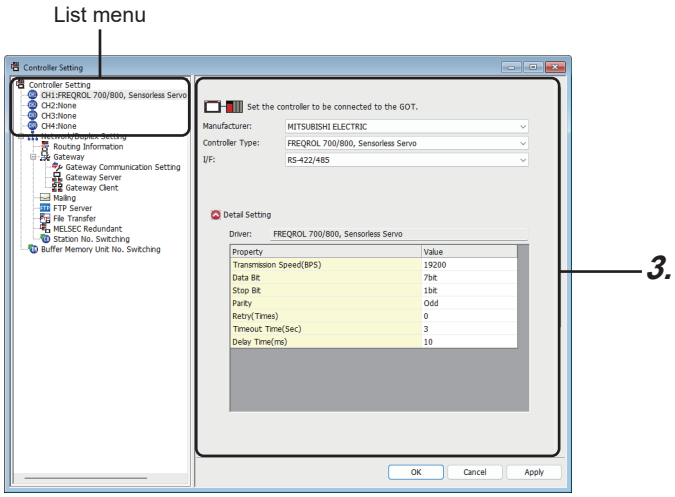
For the procedure to set the terminating resistor, refer to the following.

☞ Page 2956 Terminating resistors of GOT

18.4.4 GOT side settings

[Controller Setting]

Set the channel of the connected controller.



Operating procedure

1. Select [Common] → [Controller Setting] from the menu.
2. In the [Controller Setting] window, select the channel number to be used from the list menu.
3. Set the following items.

Item	Description
[Manufacturer]	[MITSUBISHI ELECTRIC]
[Controller Type]	[FREQROL 700/800, Sensorless Servo]
[I/F]	Configure the settings according to the communication format used.
[Detail Setting]	Configure the settings according to the usage environment. ☞ Page 1493 [Detail Setting]

4. When you have completed the settings, click the [OK] button.

Point

• Checking the controller settings

The settings of connecting equipment can be confirmed in [I/F Communication Setting].

For details, refer to the following.

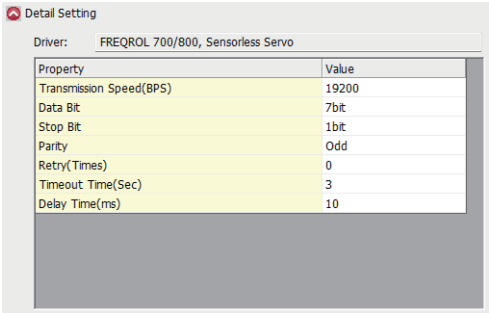
📖GT Designer3 (GOT3000) Screen Design Manual

Precautions

Make sure to use GD for screen switching devices and system information devices when the GOT is connected to only the inverter.

■[Detail Setting]

Configure the settings according to the usage environment.



Item	Description	Range
[Driver]	This item appears when communication drivers are selectable according to the settings of [Controller Type] and [I/F].	[FREQROL 700/800, Sensorless Servo]
[Transmission Speed]	Set this item to change the transmission speed used for communication with the connected equipment.	[9600] bps, [19200] bps, [38400] bps, [57600] bps, [115200] bps
[Data Bit]	Set this item to change the data length used for communication with the connected equipment.	[7 bit], [8 bit]
[Stop Bit]	Specify the stop bit length for communications.	[1 bit], [2 bit]
[Parity]	Specify whether or not to perform a parity check, and how it is performed during communication.	[None], [Even], [Odd]
[Retry]	Specify the number of retries to be performed during communication.	[0] times to [5] times
[Timeout Time]	Specify the time period for a communication to time out.	[1] second to [30] seconds
[Delay Time]	Specify the send delay time for a communication.	[0] ms to [300] ms

Precautions

The following shows the settable drivers.

- When connecting the GOT to one or more sensorless servo drive units

[FREQROL 700/800, Sensorless Servo]

18.4.5 Inverter side settings

Model name		Reference
Sensorless servo	FR-E7□0EX	☞ Page 1494 Connecting to sensor less servo (FR-E7□0EX)

Connecting to sensor less servo (FR-E7□0EX)

For details on the inverters, refer to the manual for the corresponding series.

Point

When operating the inverter from the GOT

When operating the inverter from the GOT, set the parameter of the inverter side so that the GOT connection destination of the inverter side is set to the mode with the command right.

For details, refer to the following manual.

📖Manual of the inverter to be connected to the GOT

Configure communication settings for the sensorless servo (FR-E7□0EX).

Be sure to perform the inverter reset after updating each parameter.

Precautions

- Changing communication parameters

Do not make any change for each communication parameter of the inverter side from GOT.

If changed, the communication to the inverter cannot be made.

- When setting "8888" or "9999" to inverter parameter (Pr)

"8888" and "9999" designate special function.

When specifying from the GOT, it will be as follows.

Set value of inverter side	Value specified by GOT
8888	65520
9999	65535

■Communication port and the supported parameters

Inverter side interface	Inverter side parameter
PU connector	Pr.79, Pr.117 to Pr.124, Pr.340, Pr.342, Pr.549
FR-E7TR (RS-485 terminal block)	

■Communication settings of inverter

Set the following parameters using the PU (operation panel or parameter unit).

Do not change these parameters, even though they can be monitored from the GOT.

If they are changed, communication with the GOT is disabled.

Setting item*1	Parameter number	Set value	Contents of setting
PU communication station number	Pr.117	0 to 31	☞ Page 1496 Station number setting
PU communication speed*2	Pr.118	192*3	19200 bps
PU communication stop bit length*2	Pr.119	10	Data length: 7 bits, stop bit: 1 bit
PU communication parity check*2	Pr.120	1	Odd
Number of PU communication retries	Pr.121	9999	The inverter will not come to an alarm stop.
PU communication check time interval	Pr.122	9999	Communication check suspension
PU communication wait time setting	Pr.123	0	0ms
PU communication CR/LF selection	Pr.124	1*3	With CR, without LF
Protocol selection	Pr.549	0*3	Mitsubishi Electric inverter protocol
Operation mode selection	Pr.79	0*3	External operation mode at power on
Communication startup mode selection	Pr.340	1	Network operation mode
Communication EEPROM write selection	Pr.342	0*3	Written to RAM and EEPROM

*1 Setting items are the parameters name described in the sensorless servo (FR-E7□0EX) manuals.

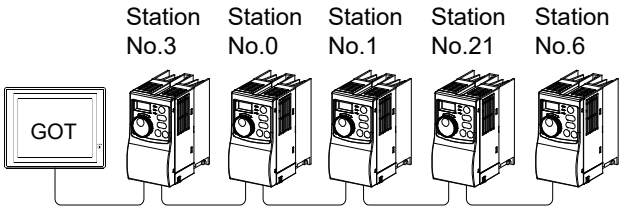
*2 Settings on the GOT can be changed.
When changing the settings on the GOT, be sure to change the parameters on the inverter to correspond with the GOT settings.

*3 Inverter default values (No need to change)

■Station number setting

Set each station number so that no station number overlaps.

The station number can be set regardless of the cable connection order. There is no problem if station numbers are not consecutive.



Station number setting example

• Direct specification

When setting the device, specify the station number of the inverter of which data is to be changed.

Specification range
0 to 31

• Indirect specification

When setting the device, indirectly specify the station number for the inverter to be changed using the 16-bit GOT internal register (GD10 to GD25).

When specifying the station number from 100 to 115 in GT Designer3, the corresponding value from GD10 to GD25 will be the station number of the inverter.

Specified station No.	Corresponding device	Setting range
100	GD10	0 to 31 For the setting other than the above, error (dedicated device is out of range) will occur.
101	GD11	
102	GD12	
103	GD13	
104	GD14	
105	GD15	
106	GD16	
107	GD17	
108	GD18	
109	GD19	
110	GD20	
111	GD21	
112	GD22	
113	GD23	
114	GD24	
115	GD25	

Precautions

The station number required for the inverter system will differ according to the selected driver.

• When selecting [FREQROL 700/800, Sensorless Servo]

Make sure to establish the inverter system with station No. 0.

18.5 FR-A700 (serial connection)

☞ Page 1497 Connectable devices
☞ Page 1498 System configuration
☞ Page 1501 Connection diagram
☞ Page 1504 GOT side settings
☞ Page 1506 Inverter side settings

18.5.1 Connectable devices

The following table shows the connectable models.

○: Supported, —: Not supported

Controller	Model name	Clock	Inverter side interface		Connectable model
			PU port	Built-in RS-485 terminal block	
FR-A700 series	FR-A7□0	—	○	○	GT37 SoftGOT3000

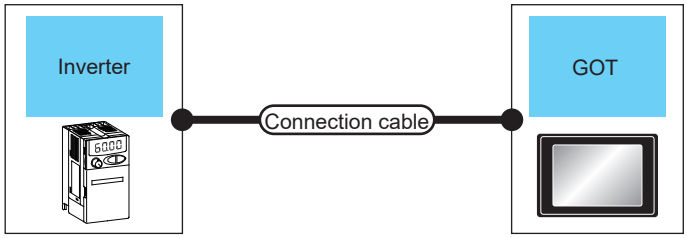
Precautions

- When the communication driver is [FREQROL 700/800, Sensorless Servo]

The settings of [Adjust] or [Broadcast] by GOT clock control will be disabled.

18.5.2 System configuration

When connecting to one inverter



For details on the maximum length of the connection cable, refer to the following.

☞ Page 1498 Maximum length

For details on the maximum number of connected devices, refer to the following.

☞ Page 1498 Maximum number of connected devices

Inverter		Communication type	Connection cable	GOT	
Connected device*1	Interface			Interface	Model
FR-A7□0	PU port	RS-485	☞ Page 1501 RS-485 connection diagram (1)	Built-in RS-232/422/485 interface	GT37 SoftGOT3000
				GT37-IF2000 + GT15-RS4-9S	GT37 SoftGOT3000
	Built-in RS-485 terminal block	RS-485	☞ Page 1501 RS-485 connection diagram (2)	Built-in RS-232/422/485 interface	GT37 SoftGOT3000
				GT37-IF2000 + GT15-RS4-9S	GT37 SoftGOT3000

*1 The GOT supports the FR-B, B3 series (explosion-proof type of FR-A700 series).

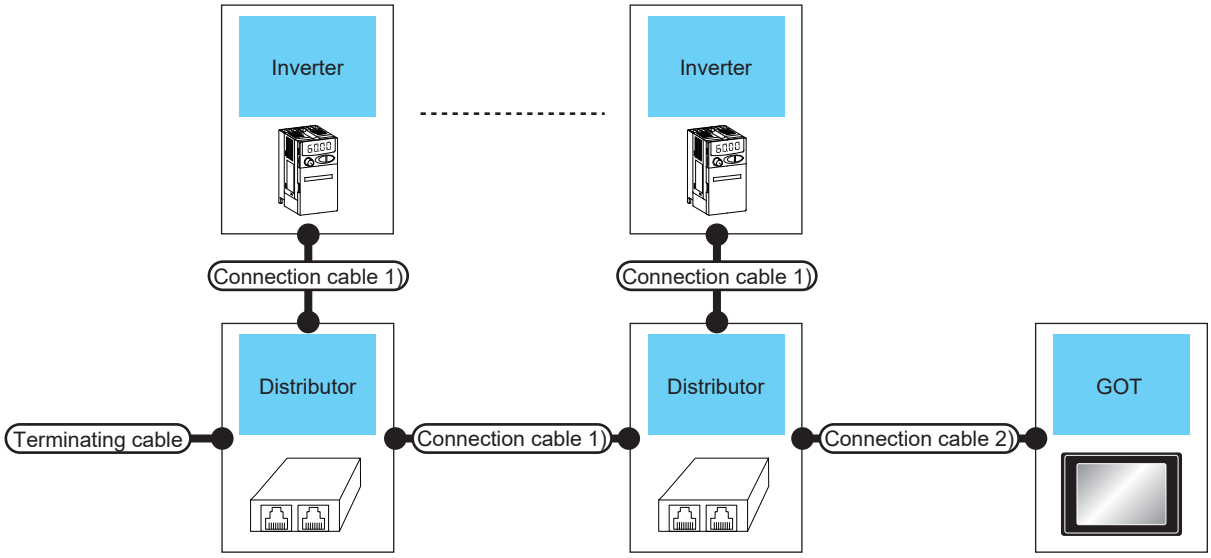
■Maximum length

The maximum length of the connection cable is 500 m.

■Maximum number of connected devices

Only one inverter can access one GOT at a time.

When connecting to multiple inverters (max. 31) (using distributors)



For details on the maximum length of the connection cable, refer to the following.

☞ Page 1499 Maximum length

For details on the maximum number of connected devices, refer to the following.

☞ Page 1499 Maximum number of connected devices

Inverter		Communication type	Terminal cable	Connection cable 1)	Distributor*2	Connection cable 2)	GOT	
Connected device*1	Interface						Interface	Model
FR-A7□0	PU port	RS-485	☞ Page 1502 RS-485 connection diagram (4)	☞ Page 1502 RS-485 connection diagram (3)	BMJ-8 (recommended)	☞ Page 1501 RS-485 connection diagram (1)	Built-in RS-232/422/485 interface	GT37 SoftGOT3000
							GT37-IF2000 + GT15-RS4-9S	GT37 SoftGOT3000

*1 The GOT supports the FR-B, B3 series (explosion-proof type of FR-A700 series).
*2 The distributor is a product manufactured by HAKKO ELECTRIC CO., LTD.
For details, contact HAKKO ELECTRIC CO., LTD.

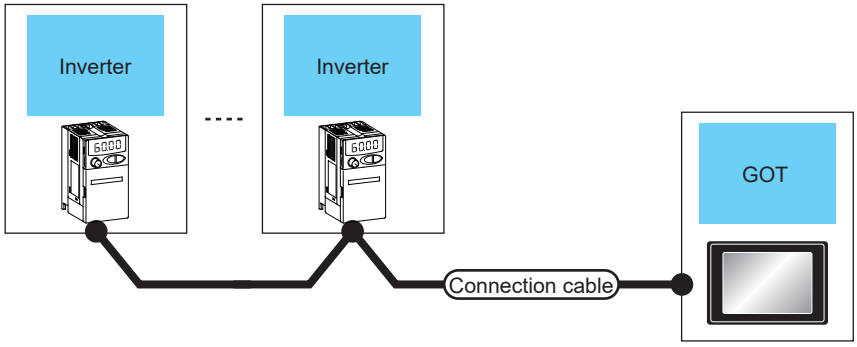
■Maximum length

The maximum length of the connection cable is 500 m.

■Maximum number of connected devices

31 inverters can access one GOT at a time.

When connecting to multiple inverters (max. 31) (using the built-in RS-485 terminal block)



For details on the maximum length of the connection cable, refer to the following.

☞ Page 1500 Maximum length

For details on the maximum number of connected devices, refer to the following.

☞ Page 1500 Maximum number of connected devices

Inverter		Communication type	Connection cable	GOT	
Connected device*1	Interface			Interface	Model
FR-A7□0	Built-in RS-485 terminal block	RS-485	☞ Page 1502 RS-485 connection diagram (5)	Built-in RS-232/422/485 interface	GT37 SoftGOT3000
				GT37-IF2000 + GT15-RS4-9S	GT37 SoftGOT3000

*1 The GOT supports the FR-B, B3 series (explosion-proof type of FR-A700 series).

■Maximum length

The maximum length of the connection cable is 500 m.

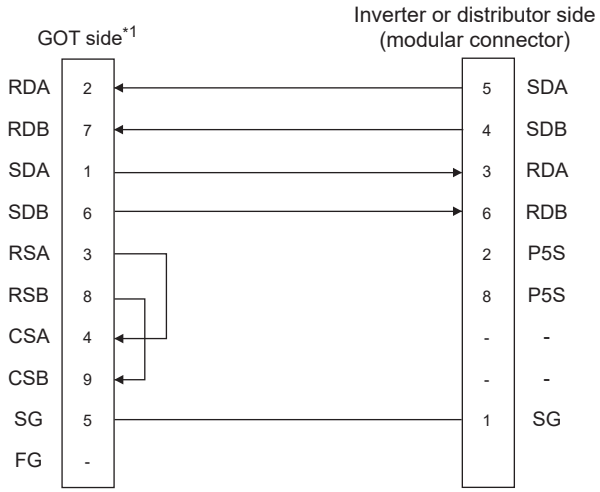
■Maximum number of connected devices

31 inverters can access one GOT at a time.

18.5.3 Connection diagram

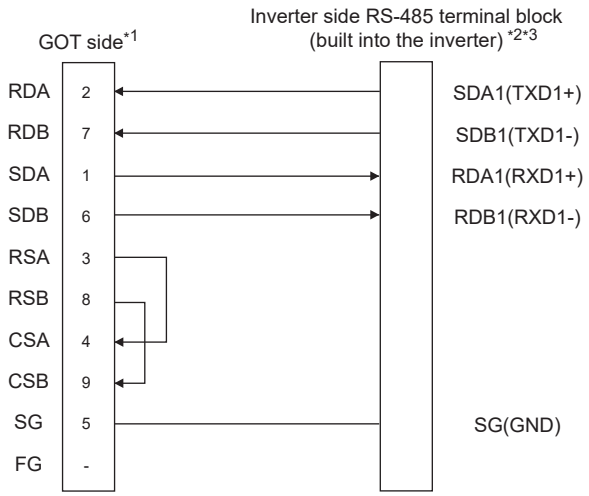
The following diagram shows the connection between the GOT and the inverter.

RS-485 connection diagram (1)



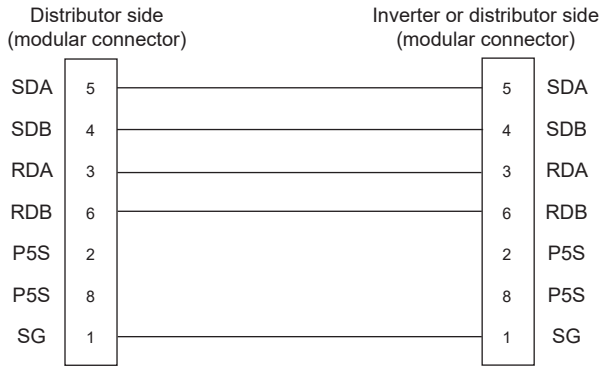
*1 For GT37 in the end position of the system configuration, set the terminating resistor to 330 Ω.
☞ Page 2956 Terminating resistors of GOT

RS-485 connection diagram (2)

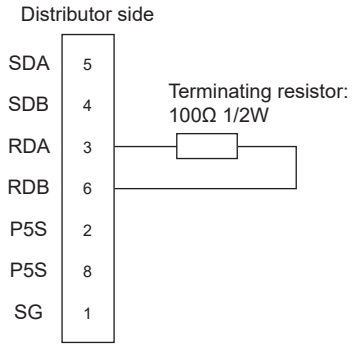


*1 For GT37 in the end position of the system configuration, set the terminating resistor to 330 Ω.
☞ Page 2956 Terminating resistors of GOT
*2 RDA2, RDB2, SDA2, and SDB2 terminals of the RS-485 terminal block (built into the inverter) cannot be used.
*3 Set the terminating resistor switch built into the inverter to ON (100 Ω).

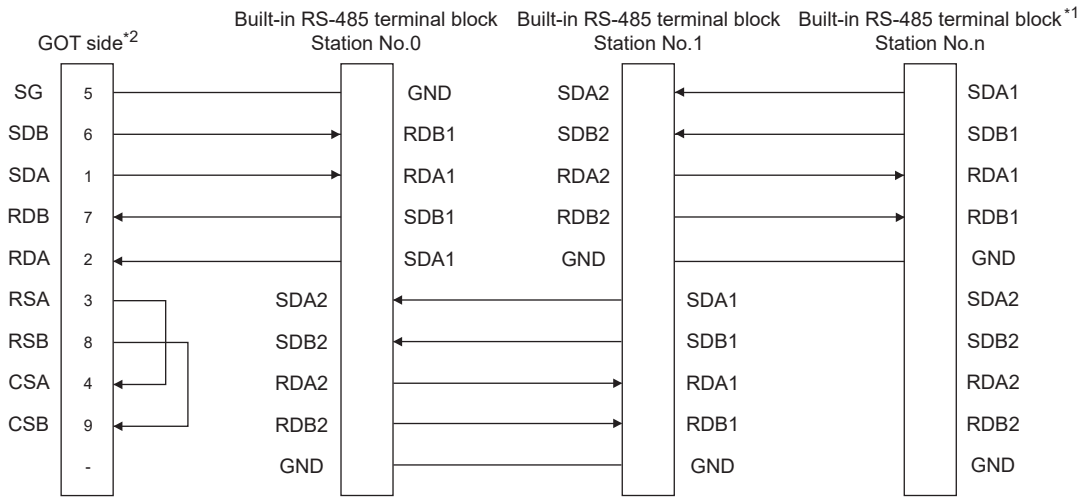
RS-485 connection diagram (3)



RS-485 connection diagram (4)



RS-485 connection diagram (5)



*1 Set the terminating resistor switch of the inverter located farthest from the GOT to ON (100 Ω).
*2 For GT37 in the end position of the system configuration, set the terminating resistor to 330 Ω.
☞ Page 2956 Terminating resistors of GOT

Preparation of the RS-485 cable

■Cable length

The length of the RS-485 cable must be 500 m or less.

■GOT side connector

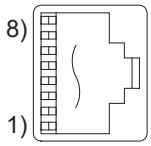
For the GOT side connector, refer to the following.

☞ Page 2954 GOT connector specifications

■Inverter connector specifications

- Pin layout in the PU port

When seen from the front of the inverter
(receptacle side)



Modular jack

Pin No.	Signal name	Remark
1	GND (SG)	
2	(P5S)	Not used
3	RXD+ (RDA)	
4	TXD- (SDB)	
5	TXD+ (SDA)	
6	RXD- (RDB)	
7	GND (SG)	
8	(P5S)	Not used

The contents in the parentheses indicate symbols described in the inverter manual.

The pins number 2 and 8 (P5S) are connected to the power supply for an operation panel or a parameter unit.

Do not use them in RS-485 communication.

- Connector of cable between FREQROL Series inverters

Use the commercial connectors and cables shown in the table below or the comparable products. (Refer to the manual for the inverter.)

Name	Model name	Specifications	Manufacturer
Connector	5-554720-3	RJ45 connector	Tyco International, Ltd
Modular ceiling rosette (Distributor)	BMJ-8	-	HAKKO ELECTRIC CO.,LTD.
Cable	SGLPEV 0.5mm × 4P	Cable conforming to EIA568 (such as cable 10BASE-T)	MITSUBISHI CABLE INDUSTRIES, LTD.

Connecting terminating resistors

■GOT side

When connecting a PLC to the GOT, a terminating resistor must be connected to the GOT.

Set the terminating resistor setting switch.

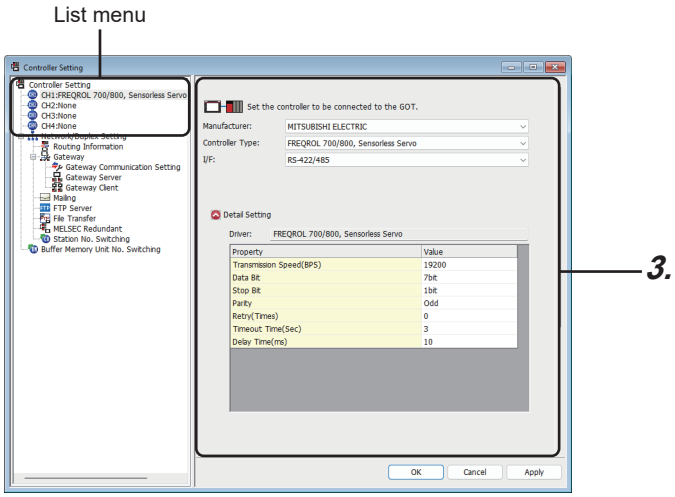
For the procedure to set the terminating resistor, refer to the following.

☞ Page 2956 Terminating resistors of GOT

18.5.4 GOT side settings

[Controller Setting]

Set the channel of the connected controller.



Operating procedure

1. Select [Common] → [Controller Setting] from the menu.
2. In the [Controller Setting] window, select the channel number to be used from the list menu.
3. Set the following items.

Item	Description
[Manufacturer]	[MITSUBISHI ELECTRIC]
[Controller Type]	[FREQROL 700/800, Sensorless Servo]
[I/F]	Configure the settings according to the communication format used.
[Detail Setting]	Configure the settings according to the usage environment. ☞ Page 1505 [Detail Setting]

4. When you have completed the settings, click the [OK] button.

Point

• Checking the controller settings

The settings of connecting equipment can be confirmed in [I/F Communication Setting].

For details, refer to the following.

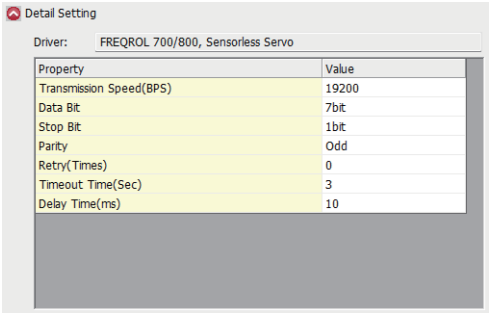
📖GT Designer3 (GOT3000) Screen Design Manual

Precautions

Make sure to use GD for screen switching devices and system information devices when the GOT is connected to only the inverter.

■[Detail Setting]

Configure the settings according to the usage environment.



Item	Description	Range
[Driver]	This item appears when communication drivers are selectable according to the settings of [Controller Type] and [I/F].	[FREQROL 700/800, Sensorless Servo]
[Transmission Speed]	Set this item to change the transmission speed used for communication with the connected equipment.	[9600] bps, [19200] bps, [38400] bps, [57600] bps, [115200] bps
[Data Bit]	Set this item to change the data length used for communication with the connected equipment.	[7 bit], [8 bit]
[Stop Bit]	Specify the stop bit length for communications.	[1 bit], [2 bit]
[Parity]	Specify whether or not to perform a parity check, and how it is performed during communication.	[None], [Even], [Odd]
[Retry]	Specify the number of retries to be performed during communication.	[0] times to [5] times
[Timeout Time]	Specify the time period for a communication to time out.	[1] second to [30] seconds
[Delay Time]	Specify the send delay time for a communication.	[0] ms to [300] ms

Precautions

The following shows the settable drivers.

- When connecting the GOT to one or more inverters

[FREQROL 700/800, Sensorless Servo]

18.5.5 Inverter side settings

Model name		Reference
FR-A700 series	FR-A7□0	☞ Page 1506 Connecting to FR-A700 series

Connecting to FR-A700 series

For details on the inverters, refer to the manual for the corresponding series.

Point

When operating the inverter from the GOT
When operating the inverter from the GOT, set the parameter of the inverter side so that the GOT connection destination of the inverter side is set to the mode with the command right.
For details, refer to the following manual.
📖Manual of the inverter to be connected to the GOT

Configure communication settings for the inverter.
Be sure to perform the inverter reset after updating each parameter.

Precautions

- Changing communication parameters

Do not make any change for each communication parameter of the inverter side from GOT.
If changed, the communication to the inverter cannot be made.

- When setting "8888" or "9999" to inverter parameter (Pr)

"8888" and "9999" designate special function.
When specifying from the GOT, it will be as follows.

Set value of inverter side	Value specified by GOT
8888	65520
9999	65535

■Communication port and the supported parameters

Inverter side interface	Inverter side parameter
PU connector	Pr.79, Pr.117 to Pr.124, Pr.340, Pr.342
RS-485 terminal	Pr.79, Pr.331 to Pr.337, Pr.340 to Pr.342, Pr.549

■Communication settings of inverter

Set the following parameters using the PU (parameter unit).

Do not change these parameters, even though they can be monitored from the GOT.

If they are changed, communication with the GOT is disabled.

Setting item*1	Parameter number		Set value		Contents of setting
	PU connector	RS-485			
PU communication station number/RS-485 communication station number	Pr.117	Pr.331	0 to 31		☞ Page 1508 Station number setting
PU communication speed/RS-485 communication speed*2	Pr.118	Pr.332	192*4		19200 bps
PU communication stop bit length/RS-485 communication stop bit length*2	Pr.119	Pr.333	10		Data length: 7 bits, stop bit: 1 bit
PU communication parity check/RS-485 communication parity check selection*2	Pr.120	Pr.334	1		Odd
Number of PU communication retries/RS-485 communication retry count	Pr.121	Pr.335	9999		The inverter will not come to an alarm stop.
PU communication check time interval/RS-485 communication check time interval	Pr.122	Pr.336	9999*4		Communication check suspension
PU communication waiting time setting/RS-485 communication waiting time setting	Pr.123	Pr.337	0		0ms
PU communication CR/LF selection/RS-485 communication CR/LF selection	Pr.124	Pr.341	1*3		With CR, without LF
Protocol selection	—	Pr.549	0*3		Mitsubishi Electric inverter protocol
Operation mode selection	Pr.79		PU connector	1	PU operation mode
			RS-485	0*3	External operation mode at power on
Communication startup mode selection	Pr.340		PU connector	0*3	Refer to Pr.79 settings.
			RS-485	1	Network operation mode
Communication EEPROM write selection	Pr.342		0*3		Written to RAM and EEPROM

*1 Setting items are the parameter names described in the FR-A700 series manuals.

*2 Settings on the GOT can be changed.
When changing the settings on the GOT, be sure to change the parameters on the inverter to correspond with the GOT settings.

*3 Inverter default values (No need to change)

*4 Since the value has been set as a default, no setting is required when connecting to the PU connector on the inverter side.

Point

• Automatic setting with Pr.999

Setting Pr.999 as shown below automatically configures the communication settings other than [PU communication station number] and [Communication EEPROM write selection] to the default communication settings of the GOT side collectively.

Parameter No.	Set value	Description	Operation in parameter setting mode
Pr.999 *1	10	GOT initial settings (PU connector)	[AUTO]→[GOT]→[1]Write
	11	GOT initial settings (RS-485 terminal)	-

*1 When monitoring the value of Pr.999, 9999 is always monitored.

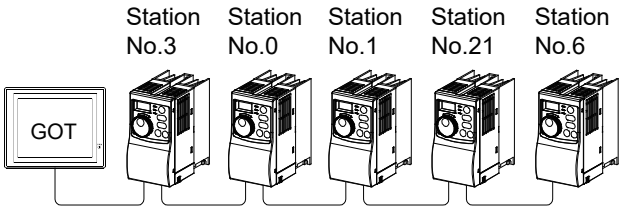
• Inverters available for automatic batch setting

Parameters are not automatically set in a batch depending on the SERIAL (production number) symbol of the inverter to be used. For details, contact your local distributor.

■Station number setting

Set each station number so that no station number overlaps.

The station number can be set regardless of the cable connection order. There is no problem if station numbers are not consecutive.



Station number setting example

• Direct specification

When setting the device, specify the station number of the inverter of which data is to be changed.

Specification range
0 to 31

• Indirect specification

When setting the device, indirectly specify the station number for the inverter to be changed using the 16-bit GOT internal register (GD10 to GD25).

When specifying the station number from 100 to 115 in GT Designer3, the corresponding value from GD10 to GD25 will be the station number of the inverter.

Specified station No.	Corresponding device	Setting range
100	GD10	0 to 31 For the setting other than the above, error (dedicated device is out of range) will occur.
101	GD11	
102	GD12	
103	GD13	
104	GD14	
105	GD15	
106	GD16	
107	GD17	
108	GD18	
109	GD19	
110	GD20	
111	GD21	
112	GD22	
113	GD23	
114	GD24	
115	GD25	

Precautions

The station number required for the inverter system will differ according to the selected driver.

• When selecting [FREQROL 700/800, Sensorless Servo]

Make sure to establish the inverter system with station No. 0.

18.6 FR-F700P (serial connection)

☞ Page 1509 Connectable devices
☞ Page 1510 System configuration
☞ Page 1513 Connection diagram
☞ Page 1516 GOT side settings
☞ Page 1518 Inverter side settings

18.6.1 Connectable devices

The following table shows the connectable models.

○: Supported, —: Not supported

Controller	Model name	Clock	Inverter side interface		Connectable model
			PU port	Built-in RS-485 terminal block	
FR-F700P series	FR-F7□0P	—	○	○	GT37 SoftGOT3000

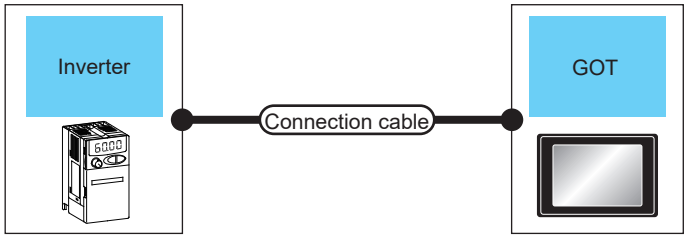
Precautions

- When the communication driver is [FREQROL 700/800, Sensorless Servo]

The settings of [Adjust] or [Broadcast] by GOT clock control will be disabled.

18.6.2 System configuration

When connecting to one inverter



For details on the maximum length of the connection cable, refer to the following.

☞ Page 1510 Maximum length

For details on the maximum number of connected devices, refer to the following.

☞ Page 1510 Maximum number of connected devices

Inverter		Communication type	Connection cable	GOT	
Controller	Interface			Interface	Model
FR-F7□0P	PU port	RS-485	☞ Page 1513 RS-485 connection diagram (1)	Built-in RS-232/422/485 interface	GT37 SoftGOT3000
				GT37-IF2000 + GT15-RS4-9S	GT37 SoftGOT3000
	Built-in RS-485 terminal block	RS-485	☞ Page 1513 RS-485 connection diagram (2)	Built-in RS-232/422/485 interface	GT37 SoftGOT3000
				GT37-IF2000 + GT15-RS4-9S	GT37 SoftGOT3000

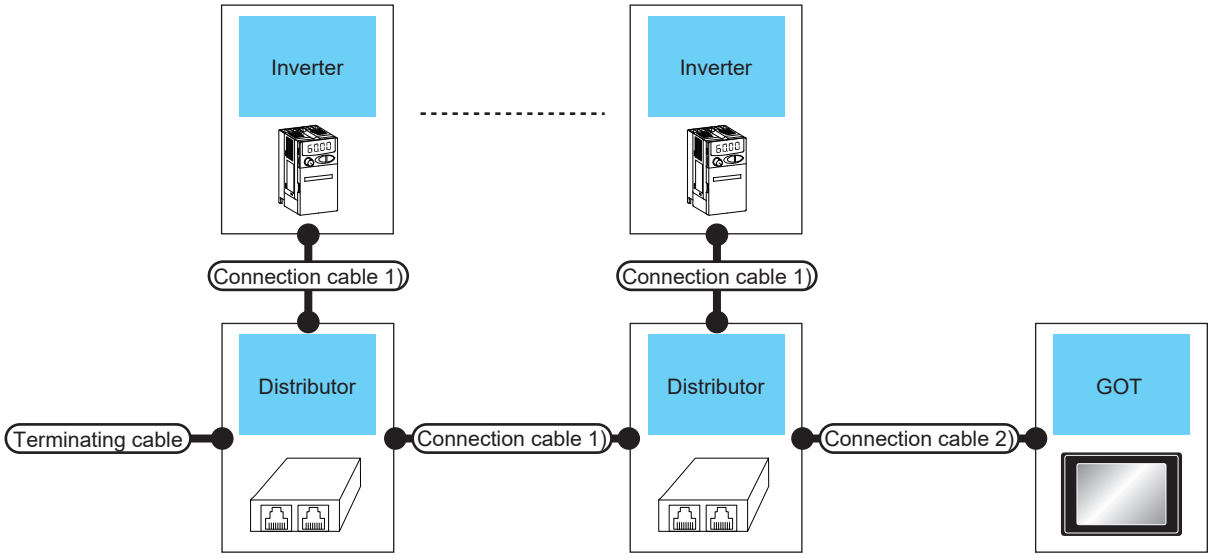
■Maximum length

The maximum length of the connection cable is 500 m.

■Maximum number of connected devices

Only one inverter can access one GOT at a time.

When connecting to multiple inverters (max. 31) (using distributors)



For details on the maximum length of the connection cable, refer to the following.

☞ Page 1511 Maximum length

For details on the maximum number of connected devices, refer to the following.

☞ Page 1511 Maximum number of connected devices

Inverter		Communication type	Terminal cable	Connection cable 1)	Distributor*1	Connection cable 2)	GOT	
Controller	Interface						Interface	Model
FR-F7□0P	PU port	RS-485	☞ Page 1514 RS-485 connection diagram (4)	☞ Page 1514 RS-485 connection diagram (3)	BMJ-8 (recommended)	☞ Page 1513 RS-485 connection diagram (1)	Built-in RS-232/422/485 interface	GT37 SoftGOT3000
							GT37-IF2000 + GT15-RS4-9S	GT37 SoftGOT3000

*1 The distributor is a product manufactured by HAKKO ELECTRIC CO., LTD.
For details, contact HAKKO ELECTRIC CO., LTD.

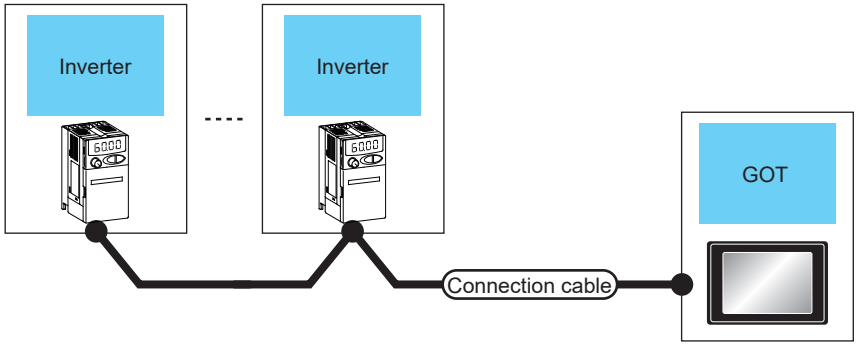
■Maximum length

The maximum length of the connection cable is 500 m.

■Maximum number of connected devices

31 inverters can access one GOT at a time.

When connecting to multiple inverters (max. 31) (using the built-in RS-485 terminal block)



For details on the maximum length of the connection cable, refer to the following.

☞ Page 1512 Maximum length

For details on the maximum number of connected devices, refer to the following.

☞ Page 1512 Maximum number of connected devices

Inverter		Communication type	Connection cable	GOT	
Controller	Interface			Interface	Model
FR-F7□0P	Built-in RS-485 terminal block	RS-485	☞ Page 1514 RS-485 connection diagram (5)	Built-in RS-232/422/485 interface	GT37 SoftGOT3000
				GT37-IF2000 + GT15-RS4-9S	GT37 SoftGOT3000

■Maximum length

The maximum length of the connection cable is 500 m.

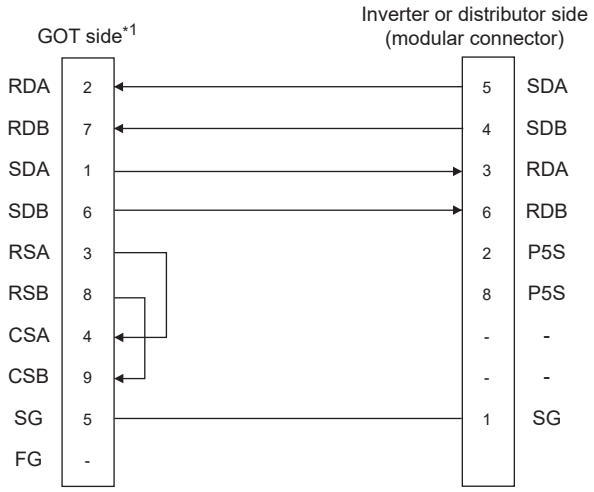
■Maximum number of connected devices

31 inverters can access one GOT at a time.

18.6.3 Connection diagram

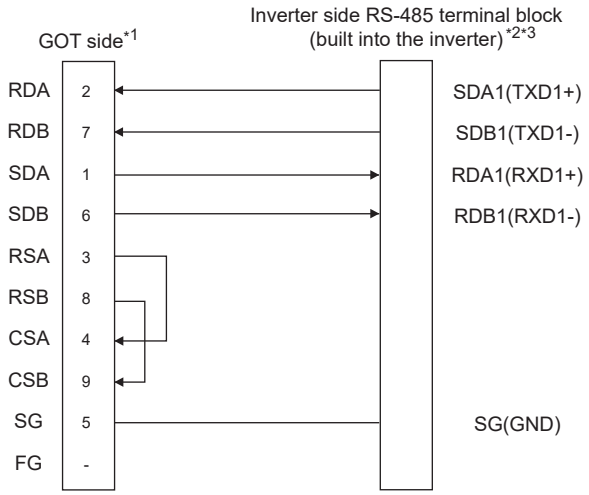
The following diagram shows the connection between the GOT and the inverter.

RS-485 connection diagram (1)



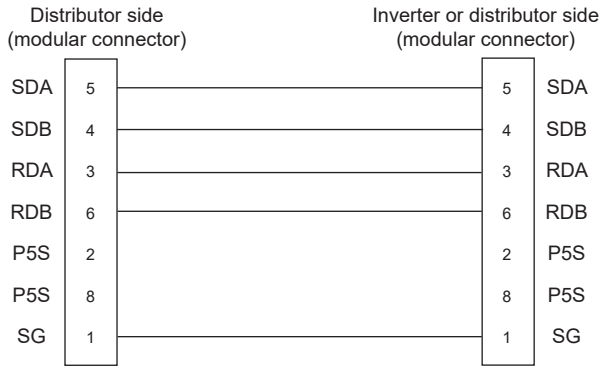
*1 For GT37 in the end position of the system configuration, set the terminating resistor to 330 Ω.
☞ Page 2956 Terminating resistors of GOT

RS-485 connection diagram (2)

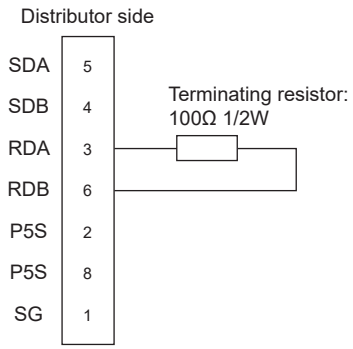


*1 For GT37 in the end position of the system configuration, set the terminating resistor to 330 Ω.
☞ Page 2956 Terminating resistors of GOT
*2 RDA2, RDB2, SDA2, and SDB2 terminals of the RS-485 terminal block (built into the inverter) cannot be used.
*3 Set the terminating resistor switch built into the inverter to ON (100 Ω).

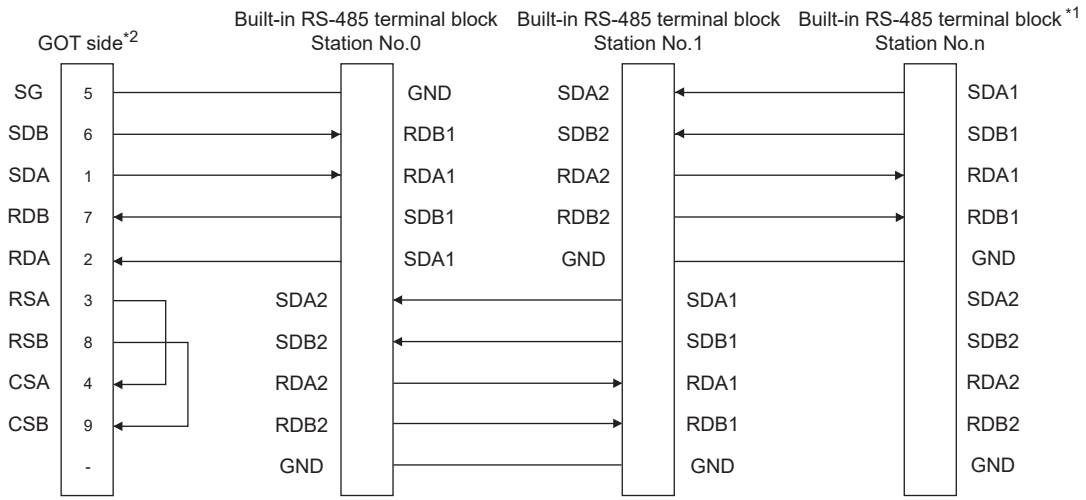
RS-485 connection diagram (3)



RS-485 connection diagram (4)



RS-485 connection diagram (5)



*1 Set the terminating resistor switch of the inverter located farthest from the GOT to ON (100 Ω).

*2 For GT37 in the end position of the system configuration, set the terminating resistor to 330 Ω.

☞ Page 2956 Terminating resistors of GOT

Preparation of the RS-485 cable

■Cable length

The length of the RS-485 cable must be 500 m or less.

■GOT side connector

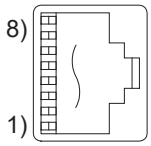
For the GOT side connector, refer to the following.

☞ Page 2954 GOT connector specifications

■Inverter connector specifications

- Pin layout in the PU port

When seen from the front of the inverter
(receptacle side)



Modular jack

Pin No.	Signal name	Remark
1	GND (SG)	
2	(P5S)	Not used
3	RXD+ (RDA)	
4	TXD- (SDB)	
5	TXD+ (SDA)	
6	RXD- (RDB)	
7	GND (SG)	
8	(P5S)	Not used

The contents in the parentheses indicate symbols described in the inverter manual.

The pins number 2 and 8 (P5S) are connected to the power supply for an operation panel or a parameter unit.

Do not use them in RS-485 communication.

- Connector of cable between FREQROL Series inverters

Use the commercial connectors and cables shown in the table below or the comparable products. (Refer to the manual for the inverter.)

Name	Model name	Specifications	Manufacturer
Connector	5-554720-3	RJ45 connector	Tyco International, Ltd
Modular ceiling rosette (Distributor)	BMJ-8	-	HAKKO ELECTRIC CO.,LTD.
Cable	SGLPEV 0.5mm × 4P	Cable conforming to EIA568 (such as cable 10BASE-T)	MITSUBISHI CABLE INDUSTRIES, LTD.

Connecting terminating resistors

■GOT side

When connecting a PLC to the GOT, a terminating resistor must be connected to the GOT.

Set the terminating resistor setting switch.

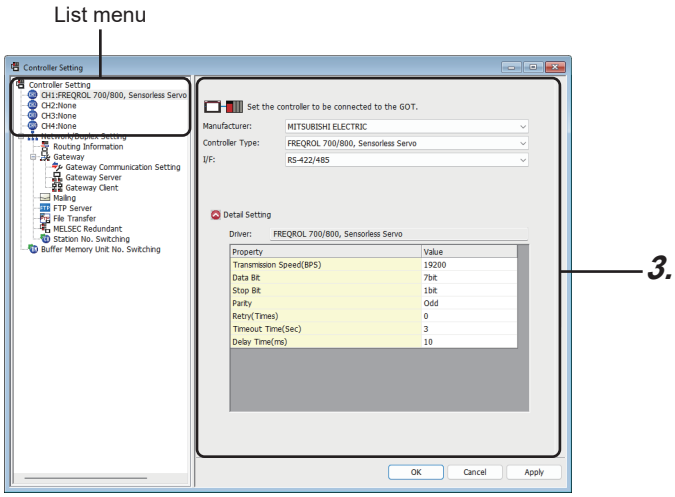
For the procedure to set the terminating resistor, refer to the following.

☞ Page 2956 Terminating resistors of GOT

18.6.4 GOT side settings

[Controller Setting]

Set the channel of the connected controller.



Operating procedure

1. Select [Common] → [Controller Setting] from the menu.
2. In the [Controller Setting] window, select the channel number to be used from the list menu.
3. Set the following items.

Item	Description
[Manufacturer]	[MITSUBISHI ELECTRIC]
[Controller Type]	[FREQROL 700/800, Sensorless Servo]
[I/F]	Configure the settings according to the communication format used.
[Detail Setting]	Configure the settings according to the usage environment. ☞ Page 1517 [Detail Setting]

4. When you have completed the settings, click the [OK] button.

Point

• Checking the controller settings

The settings of connecting equipment can be confirmed in [I/F Communication Setting].

For details, refer to the following.

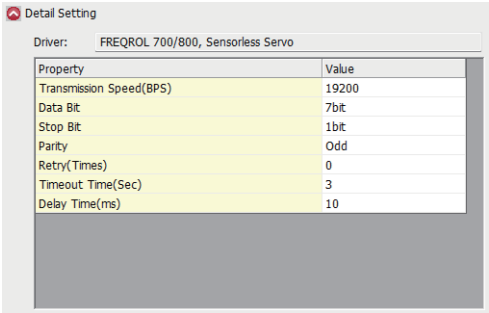
📖GT Designer3 (GOT3000) Screen Design Manual

Precautions

Make sure to use GD for screen switching devices and system information devices when the GOT is connected to only the inverter.

■[Detail Setting]

Configure the settings according to the usage environment.



Item	Description	Range
[Driver]	This item appears when communication drivers are selectable according to the settings of [Controller Type] and [I/F].	[FREQROL 700/800, Sensorless Servo]
[Transmission Speed]	Set this item to change the transmission speed used for communication with the connected equipment.	[9600] bps, [19200] bps, [38400] bps, [57600] bps, [115200] bps
[Data Bit]	Set this item to change the data length used for communication with the connected equipment.	[7 bit], [8 bit]
[Stop Bit]	Specify the stop bit length for communications.	[1 bit], [2 bit]
[Parity]	Specify whether or not to perform a parity check, and how it is performed during communication.	[None], [Even], [Odd]
[Retry]	Specify the number of retries to be performed during communication.	[0] times to [5] times
[Timeout Time]	Specify the time period for a communication to time out.	[1] second to [30] seconds
[Delay Time]	Specify the send delay time for a communication.	[0] ms to [300] ms

Precautions

The following shows the settable drivers.

- When connecting the GOT to one or more inverters

[FREQROL 700/800, Sensorless Servo]

18.6.5 Inverter side settings

Model name		Reference
FR-F700P series	FR-F7□0P	☞ Page 1518 Connection to FR-F700P series

Connection to FR-F700P series

For details on the inverters, refer to the manual for the corresponding series.

Point

When operating the inverter from the GOT
When operating the inverter from the GOT, set the parameter of the inverter side so that the GOT connection destination of the inverter side is set to the mode with the command right.
For details, refer to the following manual.
📖Manual of the inverter to be connected to the GOT

Configure communication settings for the inverter.
Be sure to perform the inverter reset after updating each parameter.

Precautions

- Changing communication parameters

Do not make any change for each communication parameter of the inverter side from GOT.
If changed, the communication to the inverter cannot be made.

- When setting "8888" or "9999" to inverter parameter (Pr)

"8888" and "9999" designate special function.
When specifying from the GOT, it will be as follows.

Set value of inverter side	Value specified by GOT
8888	65520
9999	65535

■Communication port and the supported parameters

Inverter side interface	Inverter side parameter
PU connector	Pr.79, Pr.117 to Pr.124, Pr.340, Pr.342
RS-485 terminal	Pr.79, Pr.331 to Pr.337, Pr.340 to Pr.342, Pr.549

■Communication settings of inverter

Set the following parameters using the PU (parameter unit).

Before setting the parameters, set Pr.160 (User group read selection) to 0 so that simple mode + extended mode parameters are displayed.

Do not change these parameters, even though they can be monitored from the GOT.

If they are changed, communication with the GOT is disabled.

Setting item*1	Parameter number		Set value		Contents of setting
	PU connector	RS-485			
PU communication station number/RS-485 communication station number	Pr.117	Pr.331	0 to 31		☞ Page 1520 Station number setting
PU communication speed/RS-485 communication speed*2	Pr.118	Pr.332	192*4		19200 bps
PU communication stop bit length/RS-485 communication stop bit length*2	Pr.119	Pr.333	10		Data length: 7 bits, stop bit: 1 bit
PU communication parity check/RS-485 communication parity check selection*2	Pr.120	Pr.334	1		Odd
Number of PU communication retries/RS-485 communication retry count	Pr.121	Pr.335	9999		The inverter will not come to an alarm stop.
PU communication check time interval/RS-485 communication check time interval	Pr.122	Pr.336	9999*4		Communication check suspension
PU communication waiting time setting/RS-485 communication waiting time setting	Pr.123	Pr.337	0		0ms
PU communication CR/LF selection/RS-485 communication CR/LF selection	Pr.124	Pr.341	1*3		With CR, without LF
Protocol selection	—	Pr.549	0*3		Mitsubishi Electric inverter protocol
Operation mode selection	Pr.79		PU connector	1	PU operation mode
			RS-485	0*3	External operation mode at power on
Communication startup mode selection	Pr.340		PU connector	0*3	Refer to Pr.79 settings.
			RS-485	1	Network operation mode
Communication EEPROM write selection	Pr.342		0*3		Written to RAM and EEPROM

*1 The parameter names described in the FR-F700P series manuals.

*2 Settings on the GOT can be changed.
When changing the settings on the GOT, be sure to change the parameters on the inverter to correspond with the GOT settings.

*3 Inverter default values (No need to change)

*4 Since the value has been set as a default, no setting is required when connecting to the PU connector on the inverter side.

Point

Automatic setting with Pr.999

Setting Pr.999 as shown below automatically configures the communication settings other than [PU communication station number] and [Communication EEPROM write selection] to the default communication settings of the GOT side collectively.

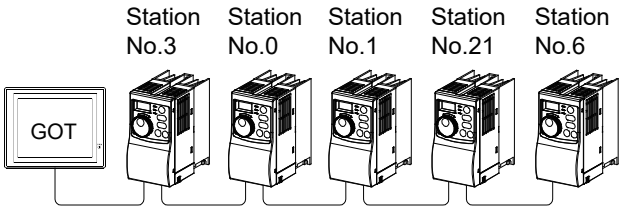
Parameter No.	Set value	Description	Operation in parameter setting mode
Pr.999 *1	10	GOT initial settings (PU connector)	[AUTO]→[GOT]→[1]Write
	11	GOT initial settings (RS-485 terminal)	-

*1 When monitoring the value of Pr.999, 9999 is always monitored.

■Station number setting

Set each station number so that no station number overlaps.

The station number can be set regardless of the cable connection order. There is no problem if station numbers are not consecutive.



Station number setting example

• Direct specification

When setting the device, specify the station number of the inverter of which data is to be changed.

Specification range
0 to 31

• Indirect specification

When setting the device, indirectly specify the station number for the inverter to be changed using the 16-bit GOT internal register (GD10 to GD25).

When specifying the station number from 100 to 115 in GT Designer3, the corresponding value from GD10 to GD25 will be the station number of the inverter.

Specified station No.	Corresponding device	Setting range
100	GD10	0 to 31 For the setting other than the above, error (dedicated device is out of range) will occur.
101	GD11	
102	GD12	
103	GD13	
104	GD14	
105	GD15	
106	GD16	
107	GD17	
108	GD18	
109	GD19	
110	GD20	
111	GD21	
112	GD22	
113	GD23	
114	GD24	
115	GD25	

Precautions

The station number required for the inverter system will differ according to the selected driver.

• When selecting [FREQROL 700/800, Sensorless Servo]

Make sure to establish the inverter system with station No. 0.

18.7 FR-A800 (serial connection)

☞ Page 1521 Connectable devices
☞ Page 1522 System configuration
☞ Page 1525 Connection diagram
☞ Page 1528 GOT side settings
☞ Page 1531 Inverter side settings

18.7.1 Connectable devices

The following table shows the connectable models.

○: Supported, —: Not supported

Controller	Model name	Clock	Inverter side interface			Connectable model
			PU port	Built-in RS-485 terminal block	Control terminal option	
FR-A800 series	FR-A8□0 FR-A8□2 FR-A8□6 FR-A8□0-GN FR-A8□2-GN	—	○	○	—	GT37 SoftGOT3000
	FR-A8□0-GF FR-A8□2-GF	—	○	—	—	GT37 SoftGOT3000
	FR-A8□0-E FR-A8□2-E FR-A8□6-E	—	○	—	A8ERS	GT37 SoftGOT3000

Precautions

The clock function is enabled or disabled depending on the selected driver.

- When the communication driver is [FREQROL 700/800, Sensorless Servo]

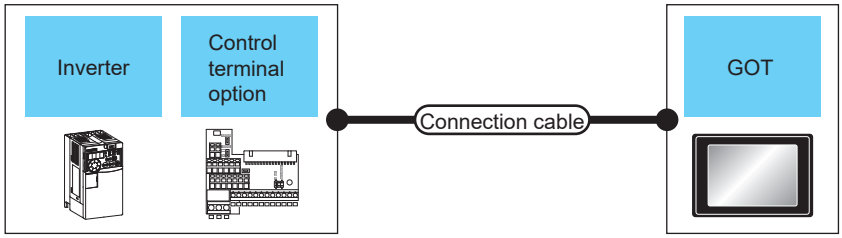
The settings of [Adjust] or [Broadcast] by GOT clock control will be disabled.

- When the communication driver is [FREQROL(Batch monitor)]

The clock function is enabled by using the PLC function of the FR-A800 series.

18.7.2 System configuration

When connecting to one inverter



For details on the maximum length of the connection cable, refer to the following.

☞ Page 1522 Maximum length

For details on the maximum number of connected devices, refer to the following.

☞ Page 1522 Maximum number of connected devices

Inverter		Communication type	Connection cable	GOT	
Connected device*1	Interface			Interface	Model
FR-A8□0 FR-A8□2 FR-A8□6 FR-A8□0-E FR-A8□2-E FR-A8□6-E FR-A8□0-GF FR-A8□2-GF FR-A8□0-GN FR-A8□2-GN	PU port	RS-485	☞ Page 1525 RS-485 connection diagram (1)	Built-in RS-232/422/485 interface	GT37 SoftGOT3000
				GT37-IF2000 + GT15-RS4-9S	GT37 SoftGOT3000
FR-A8□0 FR-A8□2 FR-A8□6 FR-A8□0-GN FR-A8□2-GN	Built-in RS-485 terminal block	RS-485	☞ Page 1525 RS-485 connection diagram (2)	Built-in RS-232/422/485 interface	GT37 SoftGOT3000
				GT37-IF2000 + GT15-RS4-9S	GT37 SoftGOT3000
FR-A8□0-E FR-A8□2-E FR-A8□6-E	Control terminal option (A8ERS)*2	RS-485	☞ Page 1525 RS-485 connection diagram (2)	Built-in RS-232/422/485 interface	GT37 SoftGOT3000
				GT37-IF2000 + GT15-RS4-9S	GT37 SoftGOT3000

*1 The GOT supports the FR-B, B3 series (explosion-proof type of FR-A800 series).
*2 The control terminal option and the PU port cannot be used at the same time.

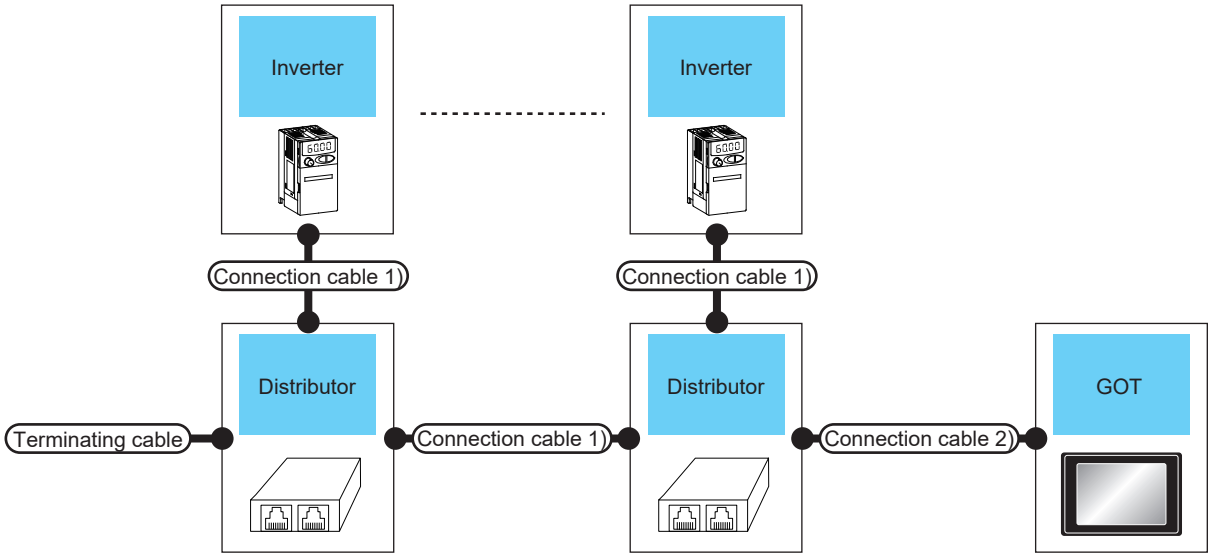
■Maximum length

The maximum length of the connection cable is 500 m.

■Maximum number of connected devices

Only one inverter can access one GOT at a time.

When connecting to multiple inverters (max. 31) (using distributors)



For details on the maximum length of the connection cable, refer to the following.

☞ Page 1523 Maximum length

For details on the maximum number of connected devices, refer to the following.

☞ Page 1523 Maximum number of connected devices

Inverter		Communication type	Terminal cable	Connection cable 1)	Distributor*2	Connection cable 2)	GOT	
Connected device*1	Interface						Interface	Model
FR-A8□0 FR-A8□2 FR-A8□6 FR-A8□0-E FR-A8□2-E FR-A8□6-E FR-A8□0-GF FR-A8□2-GF FR-A8□0-GN FR-A8□2-GN	PU port	RS-485	☞ Page 1526 RS-485 connection diagram (4)	☞ Page 1526 RS-485 connection diagram (3)	BMJ-8 (recommended)	☞ Page 1525 RS-485 connection diagram (1)	Built-in RS-232/422/485 interface	GT37 SoftGOT3000
							GT37-IF2000 + GT15-RS4-9S	GT37 SoftGOT3000

*1 The GOT supports the FR-B, B3 series (explosion-proof type of FR-A800 series).
*2 The distributor is a product manufactured by HAKKO ELECTRIC CO., LTD.
For details, contact HAKKO ELECTRIC CO., LTD.

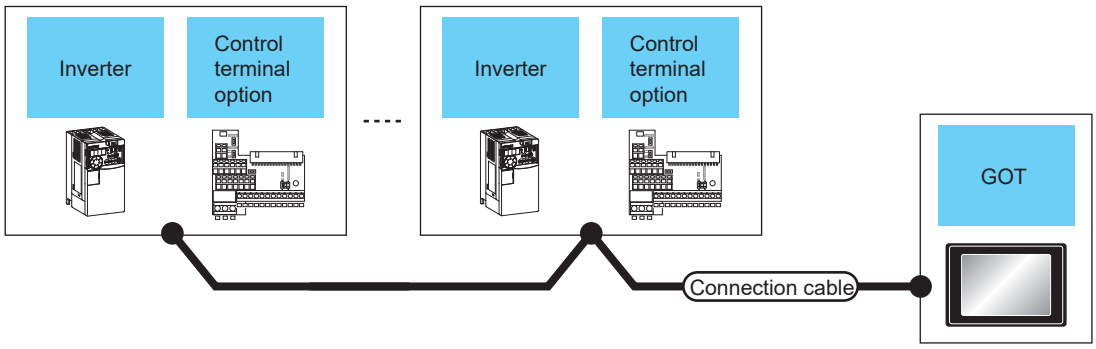
■Maximum length

The maximum length of the connection cable is 500 m.

■Maximum number of connected devices

31 inverters can access one GOT at a time.

When connecting to multiple inverters (max. 31) (using the built-in RS-485 terminal block or control terminal option)



For details on the maximum length of the connection cable, refer to the following.

☞ Page 1524 Maximum length

For details on the maximum number of connected devices, refer to the following.

☞ Page 1524 Maximum number of connected devices

Inverter		Communication type	Connection cable	GOT	
Connected device*1	Interface			Interface	Model
FR-A8□0 FR-A8□2 FR-A8□6 FR-A8□0-GN FR-A8□2-GN	Built-in RS-485 terminal block	RS-485	☞ Page 1526 RS-485 connection diagram (5)	Built-in RS-232/422/485 interface	GT37 SoftGOT3000
				GT37-IF2000 + GT15-RS4-9S	GT37 SoftGOT3000
FR-A8□0-E FR-A8□2-E FR-A8□6-E	Control terminal option (A8ERS)*2	RS-485	☞ Page 1526 RS-485 connection diagram (5)	Built-in RS-232/422/485 interface	GT37 SoftGOT3000
				GT37-IF2000 + GT15-RS4-9S	GT37 SoftGOT3000

*1 The GOT supports the FR-B, B3 series (explosion-proof type of FR-A800 series).
*2 The control terminal option and the PU port cannot be used at the same time.

■Maximum length

The maximum length of the connection cable is 500 m.

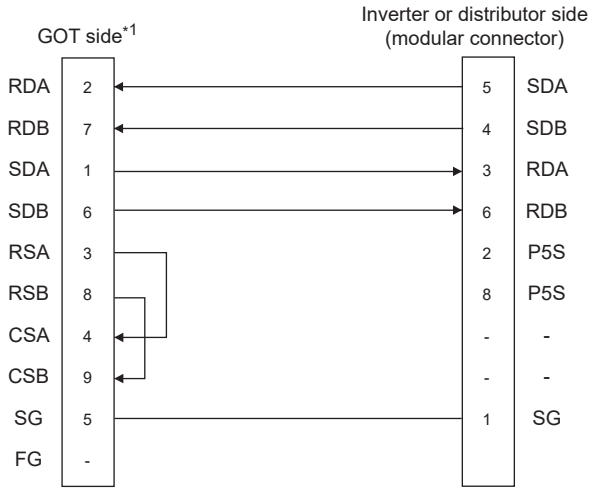
■Maximum number of connected devices

31 inverters can access one GOT at a time.

18.7.3 Connection diagram

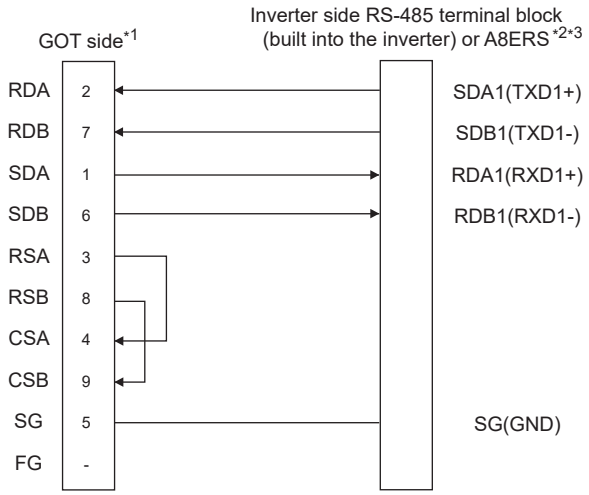
The following diagram shows the connection between the GOT and the inverter.

RS-485 connection diagram (1)



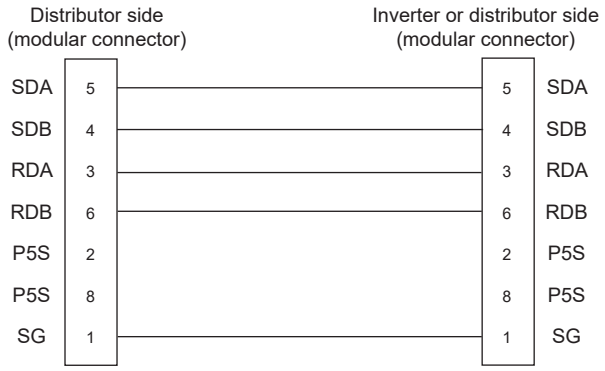
*1 For GT37 in the end position of the system configuration, set the terminating resistor to 330 Ω.
☞ Page 2956 Terminating resistors of GOT

RS-485 connection diagram (2)

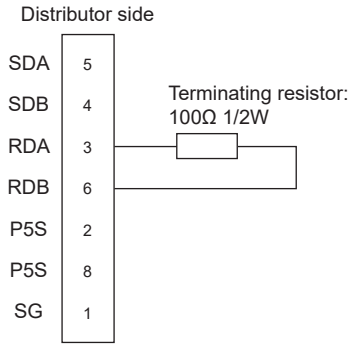


*1 For GT37 in the end position of the system configuration, set the terminating resistor to 330 Ω.
☞ Page 2956 Terminating resistors of GOT
*2 RDA2, RDB2, SDA2, and SDB2 terminals of the RS-485 terminal block (built into the inverter) cannot be used.
*3 Set the terminating resistor switch of the inverter to ON (100 Ω).

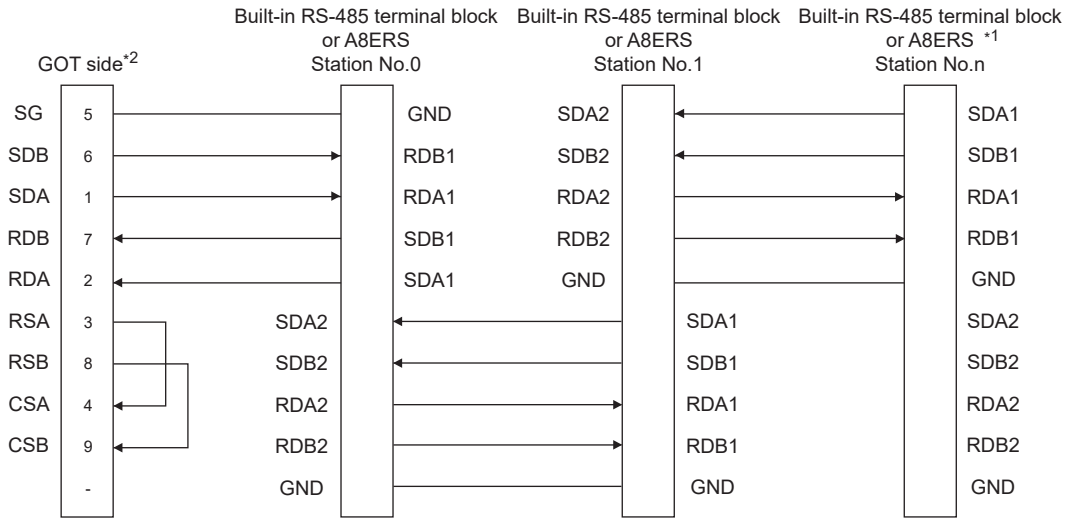
RS-485 connection diagram (3)



RS-485 connection diagram (4)



RS-485 connection diagram (5)



*1 Set the terminating resistor switch of the inverter located farthest from the GOT to ON (100 Ω).

*2 For GT37 in the end position of the system configuration, set the terminating resistor to 330 Ω.

☞ Page 2956 Terminating resistors of GOT

Preparation of the RS-485 cable

■Cable length

The length of the RS-485 cable must be 500 m or less.

■GOT side connector

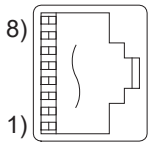
For the GOT side connector, refer to the following.

☞ Page 2954 GOT connector specifications

■Inverter connector specifications

- Pin layout in the PU port

When seen from the front of the inverter
(receptacle side)



Modular jack

Pin No.	Signal name	Remark
1	GND (SG)	
2	(P5S)	Not used
3	RXD+ (RDA)	
4	TXD- (SDB)	
5	TXD+ (SDA)	
6	RXD- (RDB)	
7	GND (SG)	
8	(P5S)	Not used

The contents in the parentheses indicate symbols described in the inverter manual.

The pins number 2 and 8 (P5S) are connected to the power supply for an operation panel or a parameter unit.

Do not use them in RS-485 communication.

- Connector of cable between FREQROL Series inverters

Use the commercial connectors and cables shown in the table below or the comparable products. (Refer to the manual for the inverter.)

Name	Model name	Specifications	Manufacturer
Connector	5-554720-3	RJ45 connector	Tyco International, Ltd
Modular ceiling rosette (Distributor)	BMJ-8	-	HAKKO ELECTRIC CO.,LTD.
Cable	SGLPEV 0.5mm × 4P	Cable conforming to EIA568 (such as cable 10BASE-T)	MITSUBISHI CABLE INDUSTRIES, LTD.

Connecting terminating resistors

■GOT side

When connecting a PLC to the GOT, a terminating resistor must be connected to the GOT.

Set the terminating resistor setting switch.

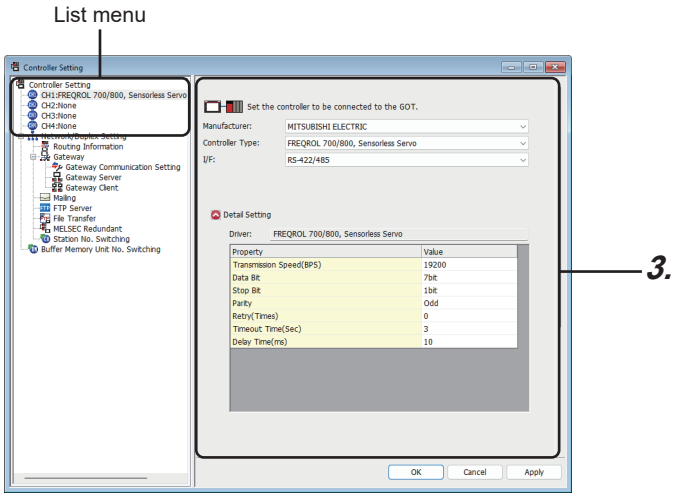
For the procedure to set the terminating resistor, refer to the following.

☞ Page 2956 Terminating resistors of GOT

18.7.4 GOT side settings

[Controller Setting]

Set the channel of the connected controller.



Operating procedure

1. Select [Common] → [Controller Setting] from the menu.

2. In the [Controller Setting] window, select the channel number to be used from the list menu.

3. Set the following items.

Item	Description
[Manufacturer]	[MITSUBISHI ELECTRIC]
[Controller Type]	• [FREQROL 700/800, Sensorless Servo] • [FREQROL 800/E700NE(Batch monitor)]
[I/F]	Configure the settings according to the communication format used.
[Detail Setting]	Configure the settings according to the usage environment. ☞ Page 1529 [Detail Setting]

4. When you have completed the settings, click the [OK] button.

Point

• When [Controller Type] is set to [FREQROL 800/E700NE(Batch monitor)]

The [Faults history] and [Batch monitor] functions of FR Configurator2 can be realized on GOT by creating the screens.

• Checking the controller settings

The settings of connecting equipment can be confirmed in [I/F Communication Setting].

For details, refer to the following.

📖GT Designer3 (GOT3000) Screen Design Manual

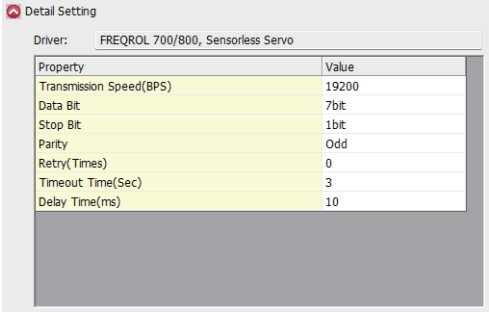
Precautions

Make sure to use GD for screen switching devices and system information devices when the GOT is connected to only the inverter.

■[Detail Setting]

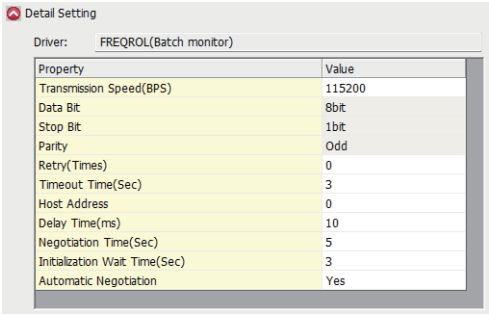
Configure the settings according to the usage environment.

- [FREQROL 700/800, Sensorless Servo]



Item	Description	Range
[Driver]	This item appears when communication drivers are selectable according to the settings of [Controller Type] and [I/F].	[FREQROL 700/800, Sensorless Servo]
[Transmission Speed]	Set this item to change the transmission speed used for communication with the connected equipment.	[9600] bps, [19200] bps, [38400] bps, [57600] bps, [115200] bps
[Data Bit]	Set this item to change the data length used for communication with the connected equipment.	[7 bit], [8 bit]
[Stop Bit]	Specify the stop bit length for communications.	[1 bit], [2 bit]
[Parity]	Specify whether or not to perform a parity check, and how it is performed during communication.	[None], [Even], [Odd]
[Retry]	Specify the number of retries to be performed during communication.	[0] times to [5] times
[Timeout Time]	Specify the time period for a communication to time out.	[1] second to [30] seconds
[Delay Time]	Specify the send delay time for a communication.	[0] ms to [300] ms

• [FREQROL(Batch monitor)]



Item	Description	Range
[Driver]	This item appears when communication drivers are selectable according to the settings of [Controller Type] and [I/F].	[FREQROL(Batch monitor)]
[Transmission Speed]	Set this item to change the transmission speed used for communication with the connected equipment.	[9600] bps, [19200] bps, [38400] bps, [57600] bps, [115200] bps
[Data Bit]	Set this item to change the data length used for communication with the connected equipment.	[8 bit]
[Stop Bit]	Specify the stop bit length for communications.	[1 bit]
[Parity]	Specify whether or not to perform a parity check, and how it is performed during communication.	[Odd]
[Retry]	Specify the number of retries to be performed during communication.	[0] times to [5] times
[Timeout Time]	Specify the time period for a communication to time out.	[1] second to [30] seconds
[Host Address]	Specify the station number of the inverter in the system configuration.	[0] to [31]
[Delay Time]	Specify the send delay time for a communication.	[0] ms to [300] ms
[Negotiation Time]	Set the time period that the GOT side communication setting is sent to the inverter.	[1] second to [10] seconds
[Initialization Wait Time]	Set the wait time from when the communication setting is changed until when the communication starts.	[1] second to [10] seconds
[Automatic Negotiation]	Set whether to use the automatic connection.	[Yes], [No]

Point

• Communication interface setting by the Utility

The communication interface setting can be changed on the Utility's [Communication Settings] after writing [Controller Setting] of project data.

For details on the Utility, refer to the following manuals.

📖GOT3000 Series User's Manual (Utility & Maintenance Functions)

• Precedence in communication settings

When settings are made by GT Designer3 or the Utility, the latest setting is effective.

• Cutting the portion of multiple connection of the controller

By setting GOT internal device, GOT can cut the portion of multiple connection of the controller.

For example, faulty station that has communication timeout can be cut from the system.

For details of the setting contents of GOT internal device, refer to the following manual.

📖GT Designer3 (GOT3000) Screen Design Manual

Precautions

The following shows the settable drivers.

• When connecting the GOT to one or more inverters

[FREQROL 700/800, Sensorless Servo]

[FREQROL(Batch monitor)]

• When automatically connecting the GOT to an inverter or using the PLC function of an inverter

[FREQROL(Batch monitor)]

18.7.5 Inverter side settings

Model name		Reference
FR-A800 series	FR-A8□0 FR-A8□2 FR-A8□6 FR-A8□0-E FR-A8□2-E FR-A8□6-E FR-A8□0-GF FR-A8□2-GF FR-A8□0-GN FR-A8□2-GN	☞ Page 1531 Connection to FR-A800 series

Connection to FR-A800 series

For details on the inverters, refer to the manual for the corresponding series.

Point

When operating the inverter from the GOT
When operating the inverter from the GOT, set the parameter of the inverter side so that the GOT connection destination of the inverter side is set to the mode with the command right.
For details, refer to the following manual.
📖Manual of the inverter to be connected to the GOT

Configure the inverter communication settings by one of the following three methods.
To automatically reconfigure the GOT side communication settings to the inverter side communication settings in batches and to perform the automatic connection, refer to the following.
☞ Page 1532 Communication settings of inverter (Automatic connection)
To automatically reconfigure the GOT side default communication settings to the inverter side communication settings in batches, refer to the following.
☞ Page 1532 Automatic setting with Pr.999
To manually reconfigure the GOT side communication settings to the inverter communication settings, refer to the following.
☞ Page 1534 Communication settings of inverter (Manual setting)
Be sure to perform the inverter reset after updating each parameter.

Precautions

- Changing communication parameters

Do not make any change for each communication parameter of the inverter side from GOT.
If changed, the communication to the inverter cannot be made.

- When setting "8888" or "9999" to inverter parameter (Pr)

"8888" and "9999" designate special function.
When specifying from the GOT, it will be as follows.

Set value of inverter side	Value specified by GOT
8888	65520
9999	65535

■Communication port and the supported parameters

Inverter side interface	Inverter side parameter
PU connector	Pr.79, Pr.117 to Pr.124, Pr.340, Pr.342, Pr.414
RS-485 terminal	Pr.79, Pr.331 to Pr.337, Pr.340 to Pr.342, Pr.414, Pr.549

■Communication settings of inverter (Automatic connection)

When [Automatic Negotiation] is set to [Yes] in the GOT communication settings, the inverter parameters are reconfigured to the GOT communication settings.

Set the following parameters before the automatic connection.

Setting item	Parameter number		Setting range	Contents of setting
	PU connector	RS-485		
PU communication station number/RS-485 communication station number	Pr.117	Pr.331	0 to 31	☞ Page 1535 Station number setting
PLC function operation selection	Pr.414		0 to 2	0: Disable PLC function 1 or 2: Enable PLC function
Protocol selection	-	Pr.549	0, 1	0: Mitsubishi Electric inverter protocol 1: MODBUS RTU protocol

The following shows the parameters to be reconfigured by the automatic connection.

Setting item	Parameter number	
	PU connector	RS-485
PU communication speed/RS-485 communication speed	Pr.118	Pr.332
PU communication stop bit length/data length/RS-485 communication stop bit length/data length	Pr.119	Pr.333
PU communication parity check/RS-485 communication parity check	Pr.120	Pr.334
Number of PU communication retries/RS-485 communication retry count	Pr.121	Pr.335
PU communication check time interval/RS-485 communication check time interval	Pr.122	Pr.336
PU communication waiting time setting/RS-485 communication waiting time setting	Pr.123	Pr.337
PU communication CR/LF selection/RS-485 communication CR/LF selection	Pr.124	Pr.341

Before performing the automatic connection, connect all the GOTs and the inverters.

After the automatic connection is performed, if a station is added or changed, or the communication settings are not reconfigured normally, change the settings with the automatic batch parameter setting (Pr.999) separately.

If the inverter power turns off while the automatic connection is executed, execute the automatic connection on the GOT again.

If the automatic connection fails, a communication timeout error occurs.

If the automatic connection succeeds, the GOT normally starts communicating with each station.

Precautions

The automatic connection requires the total time of the user-set adjustment time and initialization wait time.

By monitoring the Notify Automatic Connection Status (GS277), you can check the completion of the automatic connection.

For details, refer to the following.

📖GT Designer3 (GOT3000) Screen Design Manual

■Automatic setting with Pr.999

Setting Pr.999 as shown below automatically configures the communication settings to the default communication settings of the GOT side collectively.

Parameter number	Set value	Description	Operation in parameter setting mode
Pr.999*1	10	GOT (FREQROL 700/800, Sensorless Servo) initial settings (PU connector)	[AUTO] → [GOT] → [1] Write
	11	GOT (FREQROL 700/800, Sensorless Servo) initial settings (RS-485 terminal)	-
	12	GOT (FREQROL(Batch monitor)) initial settings (PU connector)	[AUTO] → [GOT] → [2] Write
	13	GOT (FREQROL(Batch monitor)) initial settings (RS-485 terminal)	-

*1 When monitoring the value of Pr.999, 9999 is always monitored.

The following shows the values to be automatically set in batches when the above values are set for Pr.999.

- Pr.999=10

Pr.No.	Setting item	Set value
79	Operation mode selection	1
118	PU communication speed	192
119	PU communication stop bit length/data length	10
120	PU communication parity check	1
121	Number of PU communication retries	9999
122	PU communication check time interval	9999
123	PU communication waiting time setting	0ms
124	PU communication CR/LF selection	1
340	Communication startup mode selection	0

- Pr.999=11

Pr.No.	Setting item	Set value
79	Operation mode selection	0
332	RS-485 communication speed	192
333	RS-485 communication stop bit length/data length	10
334	RS-485 communication parity check	1
335	RS-485 communication retry count	9999
336	RS-485 communication check time interval	9999
337	RS-485 communication waiting time setting	0ms
340	Communication startup mode selection	1
341	RS-485 communication CR/LF selection	1
549	Protocol selection	0

- Pr.999=12

Pr.No.	Setting item	Set value
79	Operation mode selection	1
118	PU communication speed	1152
119	PU communication stop bit length/data length	0
120	PU communication parity check	1
121	Number of PU communication retries	9999
122	PU communication check time interval	9999
123	PU communication waiting time setting	0ms
124	PU communication CR/LF selection	1
340	Communication startup mode selection	0
414	PLC function operation selection	2*1

*1 Before configuring the automatic batch setting, if Pr.414 is set to 1, the setting is not changed.

- Pr.999=13

Pr.No.	Setting item	Set value
79	Operation mode selection	0
332	RS-485 communication speed	1152
333	RS-485 communication stop bit length/data length	0
334	RS-485 communication parity check	1
335	RS-485 communication retry count	9999
336	RS-485 communication check time interval	9999
337	RS-485 communication waiting time setting	0ms
340	Communication startup mode selection	1
341	RS-485 communication CR/LF selection	1
414	PLC function operation selection	2*1
549	Protocol selection	0

*1 Before configuring the automatic batch setting, if Pr.414 is set to 1, the setting is not changed.

■Communication settings of inverter (Manual setting)

Set the following parameters using the PU (operation panel or parameter unit).

Before setting the parameters, set Pr.160 (User group read selection) to 0 so that simple mode + extended mode parameters are displayed.

Do not change these parameters, even though they can be monitored from the GOT.

If they are changed, communication with the GOT is disabled.

Setting item*1	Parameter number		Set value		Contents of setting
	PU connector	RS-485			
PU communication station number/RS-485 communication station number	Pr.117	Pr.331	0 to 31		☞ Page 1535 Station number setting
PU communication speed/RS-485 communication speed*2	Pr.118	Pr.332	192*3		19200 bps
PU communication stop bit length/data length/RS-485 communication stop bit length/data length*2	Pr.119	Pr.333	10*4		Data length: 7 bits, stop bit: 1 bit
PU communication parity check/RS-485 communication parity check*2	Pr.120	Pr.334	1		Odd
Number of PU communication retries/RS-485 communication retry count	Pr.121	Pr.335	9999		The inverter will not come to an alarm stop.
PU communication check time interval/RS-485 communication check time interval	Pr.122	Pr.336	9999*3		Communication check suspension
PU communication waiting time setting/RS-485 communication waiting time setting	Pr.123	Pr.337	0		0ms
PU communication CR/LF selection/RS-485 communication CR/LF selection	Pr.124	Pr.341	1*5		With CR, without LF
Protocol selection	—	Pr.549	0*5		Mitsubishi Electric inverter protocol
Operation mode selection	Pr.79		PU connector	1	PU operation mode
			RS-485	0*5	External operation mode at power on
Communication startup mode selection	Pr.340		PU connector	0*5	Refer to Pr.79 settings.
			RS-485	1	Network operation mode
Communication EEPROM write selection	Pr.342		0*5		Written to RAM and EEPROM
PLC function operation selection*6	Pr.414		1, 2		Enabled with 1 and 2.

*1 The parameter names described in the FR-A800 series manuals.

*2 Settings on the GOT can be changed.
When changing the settings on the GOT, be sure to change the parameters on the inverter to correspond with the GOT settings.

*3 Since the value has been set as a default, no setting is required when connecting to the PU connector on the inverter side.

*4 To use [FREQROL(Batch monitor)] drivers, set 0.

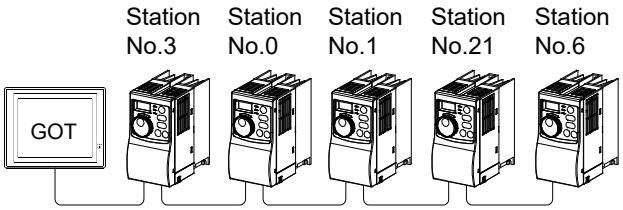
*5 Inverter default values (No need to change)

*6 The inverter side setting defaults to 0: Invalid. To use the PLC function, set 1 or 2.

■Station number setting

Set each station number so that no station number overlaps.

The station number can be set regardless of the cable connection order. There is no problem if station numbers are not consecutive.



Station number setting example

- Direct specification

When setting the device, specify the station number of the inverter of which data is to be changed.

Specification range
0 to 31

- Indirect specification

When setting the device, indirectly specify the station number for the inverter to be changed using the 16-bit GOT internal register (GD10 to GD25).

When specifying the station number from 100 to 115 in GT Designer3, the corresponding value from GD10 to GD25 will be the station number of the inverter.

Specified station No.	Corresponding device	Setting range
100	GD10	0 to 31 For the setting other than the above, error (dedicated device is out of range) will occur.
101	GD11	
102	GD12	
103	GD13	
104	GD14	
105	GD15	
106	GD16	
107	GD17	
108	GD18	
109	GD19	
110	GD20	
111	GD21	
112	GD22	
113	GD23	
114	GD24	
115	GD25	

Precautions

The station number required for the inverter system will differ according to the selected driver.

- When selecting [FREQROL 700/800, Sensorless Servo]

Make sure to establish the inverter system with station No. 0.

- When selecting [FREQROL(Batch monitor)]

Make sure to establish the inverter system with the station number set with the host address.

18.8 FR-A800 Plus (serial connection)

☞ Page 1536 Connectable devices
☞ Page 1537 System configuration
☞ Page 1540 Connection diagram
☞ Page 1543 GOT side settings
☞ Page 1546 Inverter side settings

18.8.1 Connectable devices

The following table shows the connectable models.

○: Supported, —: Not supported

Controller	Model name	Clock	Inverter side interface		Connectable model
			PU port	Built-in RS-485 terminal block	
FR-A800 Plus series	FR-A8□0-CRN FR-A8□2-CRN FR-A8□0-R2R FR-A8□2-R2R FR-A8□0-AWH FR-A8□0-LC	—	○	○	GT37 SoftGOT3000
	FR-A8□0-E-CRN FR-A8□2-E-CRN FR-A8□0-E-R2R FR-A8□2-E-R2R FR-A8□0-E-AWH FR-A8□0-E-LC	—	○	—	GT37 SoftGOT3000

Precautions

The clock function is enabled or disabled depending on the selected driver.

- When the communication driver is [FREQROL 700/800, Sensorless Servo]

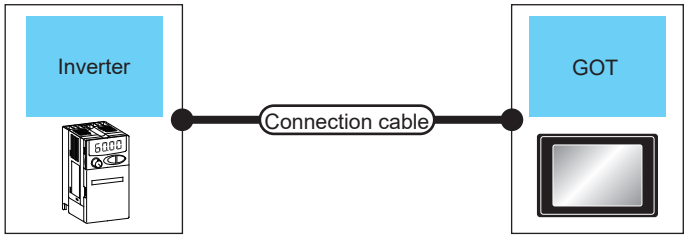
The settings of [Adjust] or [Broadcast] by GOT clock control will be disabled.

- When the communication driver is [FREQROL(Batch monitor)]

The clock function is enabled by using the PLC function of the FR-A800 Plus series.

18.8.2 System configuration

When connecting to one inverter



For details on the maximum length of the connection cable, refer to the following.

☞ Page 1537 Maximum length

For details on the maximum number of connected devices, refer to the following.

☞ Page 1537 Maximum number of connected devices

Inverter		Communication type	Connection cable	GOT	
Connected device*1	Interface			Interface	Model
FR-A8□0-CRN FR-A8□2-CRN FR-A8□0-E-CRN FR-A8□2-E-CRN FR-A8□0-R2R FR-A8□2-R2R FR-A8□0-E-R2R FR-A8□2-E-R2R FR-A8□0-AWH FR-A8□0-E-AWH FR-A8□0-LC FR-A8□0-E-LC	PU port	RS-485	☞ Page 1540 RS-485 connection diagram (1)	Built-in RS-232/422/485 interface	GT37 SoftGOT3000
				GT37-IF2000 + GT15-RS4-9S	GT37 SoftGOT3000
FR-A8□0-CRN FR-A8□2-CRN FR-A8□0-R2R FR-A8□2-R2R FR-A8□0-AWH FR-A8□0-LC	Built-in RS-485 terminal block	RS-485	☞ Page 1540 RS-485 connection diagram (2)	Built-in RS-232/422/485 interface	GT37 SoftGOT3000
				GT37-IF2000 + GT15-RS4-9S	GT37 SoftGOT3000

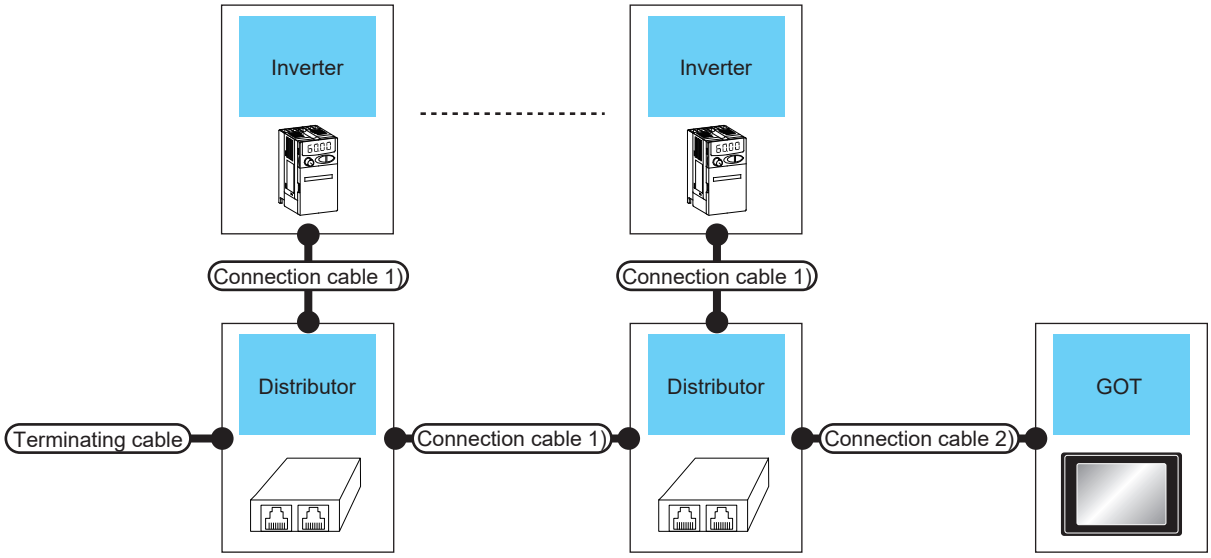
■Maximum length

The maximum length of the connection cable is 500 m.

■Maximum number of connected devices

Only one inverter can access one GOT at a time.

When connecting to multiple inverters (max. 31) (using distributors)



For details on the maximum length of the connection cable, refer to the following.

☞ Page 1538 Maximum length

For details on the maximum number of connected devices, refer to the following.

☞ Page 1538 Maximum number of connected devices

Inverter		Communication type	Terminal cable	Connection cable 1)	Distributor*1	Connection cable 2)	GOT	
Controller	Interface						Interface	Model
FR-A8□0-CRN FR-A8□2-CRN FR-A8□0-E-CRN FR-A8□2-E-CRN FR-A8□0-R2R FR-A8□2-R2R FR-A8□0-E-R2R FR-A8□2-E-R2R FR-A8□0-AWH FR-A8□0-E-AWH FR-A8□0-LC FR-A8□0-E-LC	PU port	RS-485	☞ Page 1541 RS-485 connection diagram (4)	☞ Page 1541 RS-485 connection diagram (3)	BMJ-8 (recommended)	☞ Page 1540 RS-485 connection diagram (1)	Built-in RS-232/422/485 interface	GT37 SoftGOT3000
							GT37-IF2000 + GT15-RS4-9S	GT37 SoftGOT3000

*1 The distributor is a product manufactured by HAKKO ELECTRIC CO., LTD.
For details, contact HAKKO ELECTRIC CO., LTD.

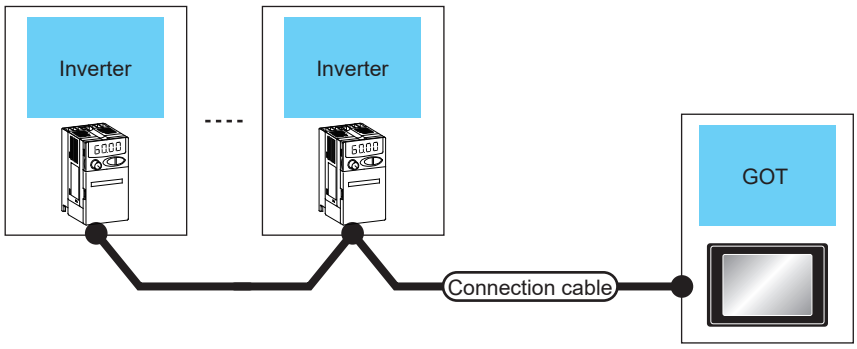
■Maximum length

The maximum length of the connection cable is 500 m.

■Maximum number of connected devices

31 inverters can access one GOT at a time.

When connecting to multiple inverters (max. 31) (using the built-in RS-485 terminal block)



For details on the maximum length of the connection cable, refer to the following.

☞ Page 1539 Maximum length

For details on the maximum number of connected devices, refer to the following.

☞ Page 1539 Maximum number of connected devices

Inverter		Communication type	Connection cable	GOT	
Controller	Interface			Interface	Model
FR-A8□0-CRN FR-A8□2-CRN FR-A8□0-R2R FR-A8□2-R2R FR-A8□0-AWH FR-A8□0-LC	Built-in RS-485 terminal block	RS-485	☞ Page 1541 RS-485 connection diagram (5)	Built-in RS-232/422/485 interface	GT37 SoftGOT3000
				GT37-IF2000 + GT15-RS4-9S	GT37 SoftGOT3000

■Maximum length

The maximum length of the connection cable is 500 m.

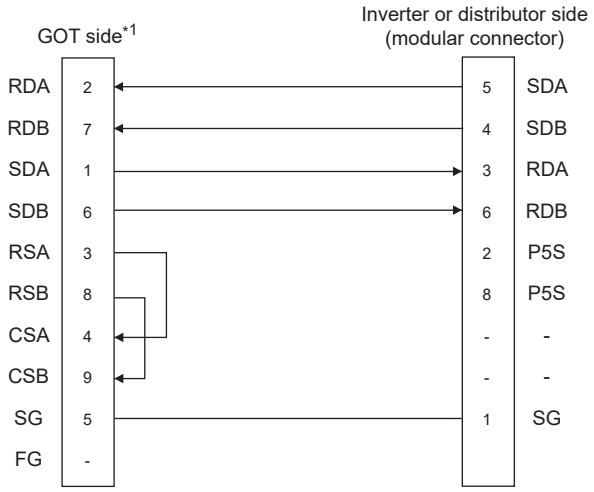
■Maximum number of connected devices

31 inverters can access one GOT at a time.

18.8.3 Connection diagram

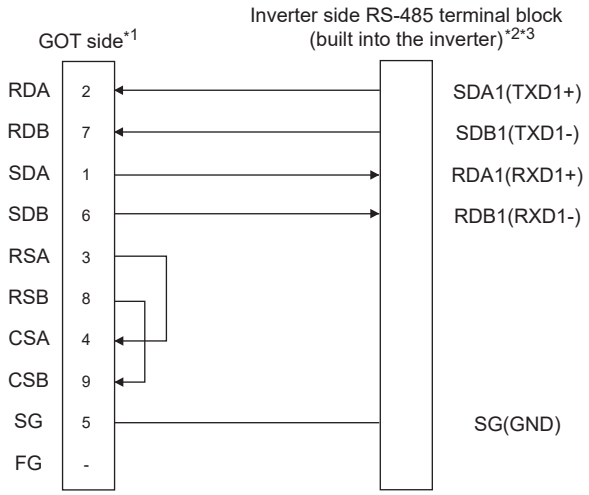
The following diagram shows the connection between the GOT and the inverter.

RS-485 connection diagram (1)



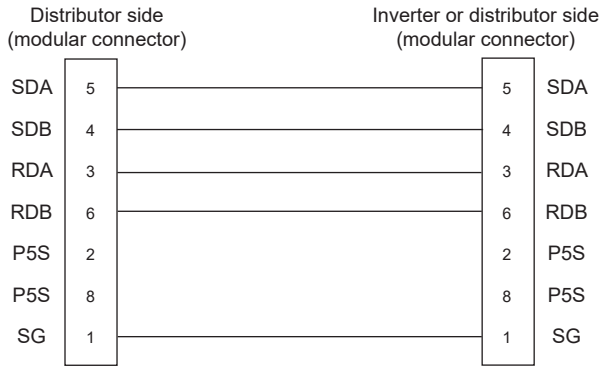
*1 For GT37 in the end position of the system configuration, set the terminating resistor to 330 Ω.
☞ Page 2956 Terminating resistors of GOT

RS-485 connection diagram (2)

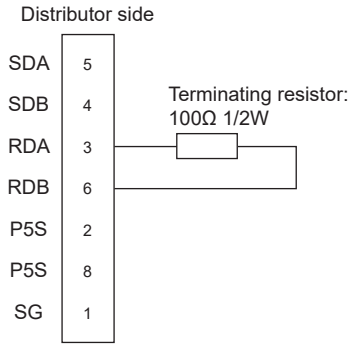


*1 For GT37 in the end position of the system configuration, set the terminating resistor to 330 Ω.
☞ Page 2956 Terminating resistors of GOT
*2 RDA2, RDB2, SDA2, and SDB2 terminals of the RS-485 terminal block (built into the inverter) cannot be used.
*3 Set the terminating resistor switch built into the inverter to ON (100 Ω).

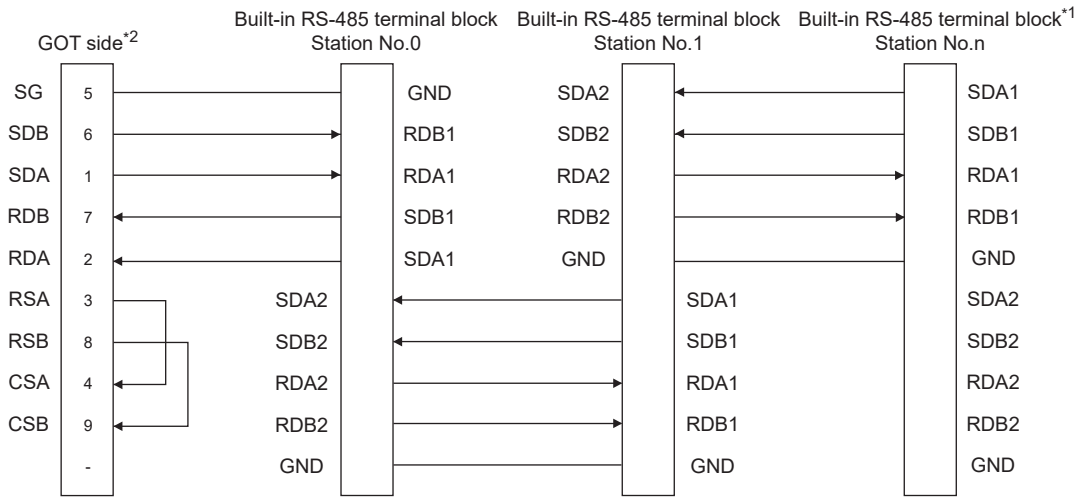
RS-485 connection diagram (3)



RS-485 connection diagram (4)



RS-485 connection diagram (5)



*1 Set the terminating resistor switch of the inverter located farthest from the GOT to ON (100 Ω).
*2 For GT37 in the end position of the system configuration, set the terminating resistor to 330 Ω.
☞ Page 2956 Terminating resistors of GOT

Preparation of the RS-485 cable

■Cable length

The length of the RS-485 cable must be 500 m or less.

■GOT side connector

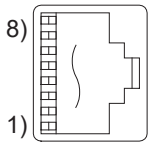
For the GOT side connector, refer to the following.

☞ Page 2954 GOT connector specifications

■Inverter connector specifications

- Pin layout in the PU port

When seen from the front of the inverter
(receptacle side)



Modular jack

Pin No.	Signal name	Remark
1	GND (SG)	
2	(P5S)	Not used
3	RXD+ (RDA)	
4	TXD- (SDB)	
5	TXD+ (SDA)	
6	RXD- (RDB)	
7	GND (SG)	
8	(P5S)	Not used

The contents in the parentheses indicate symbols described in the inverter manual.

The pins number 2 and 8 (P5S) are connected to the power supply for an operation panel or a parameter unit.

Do not use them in RS-485 communication.

- Connector of cable between FREQROL Series inverters

Use the commercial connectors and cables shown in the table below or the comparable products. (Refer to the manual for the inverter.)

Name	Model name	Specifications	Manufacturer
Connector	5-554720-3	RJ45 connector	Tyco International, Ltd
Modular ceiling rosette (Distributor)	BMJ-8	-	HAKKO ELECTRIC CO.,LTD.
Cable	SGLPEV 0.5mm × 4P	Cable conforming to EIA568 (such as cable 10BASE-T)	MITSUBISHI CABLE INDUSTRIES, LTD.

Connecting terminating resistors

■GOT side

When connecting a PLC to the GOT, a terminating resistor must be connected to the GOT.

Set the terminating resistor setting switch.

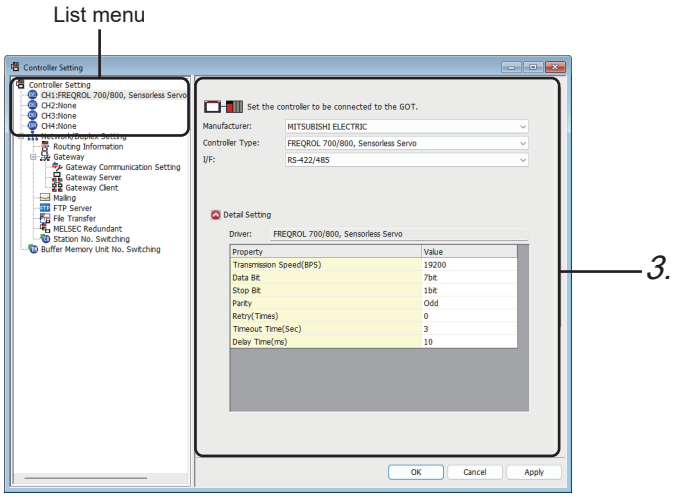
For the procedure to set the terminating resistor, refer to the following.

☞ Page 2956 Terminating resistors of GOT

18.8.4 GOT side settings

[Controller Setting]

Set the channel of the connected controller.



Operating procedure

1. Select [Common] → [Controller Setting] from the menu.

2. In the [Controller Setting] window, select the channel number to be used from the list menu.

3. Set the following items.

Item	Description
[Manufacturer]	[MITSUBISHI ELECTRIC]
[Controller Type]	• [FREQROL 700/800, Sensorless Servo] • [FREQROL 800/E700NE(Batch monitor)]
[I/F]	Configure the settings according to the communication format used.
[Detail Setting]	Configure the settings according to the usage environment. ☞ Page 1544 [Detail Setting]

4. When you have completed the settings, click the [OK] button.

Point

• When [Controller Type] is set to [FREQROL 800/E700NE(Batch monitor)]

The [Faults history] and [Batch monitor] functions of FR Configurator2 can be realized on GOT by creating the screens.

• Checking the controller settings

The settings of connecting equipment can be confirmed in [I/F Communication Setting].

For details, refer to the following.

📖GT Designer3 (GOT3000) Screen Design Manual

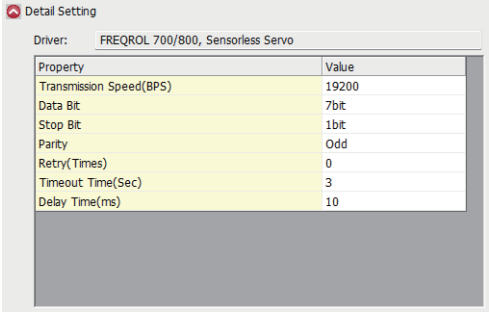
Precautions

Make sure to use GD for screen switching devices and system information devices when the GOT is connected to only the inverter.

■[Detail Setting]

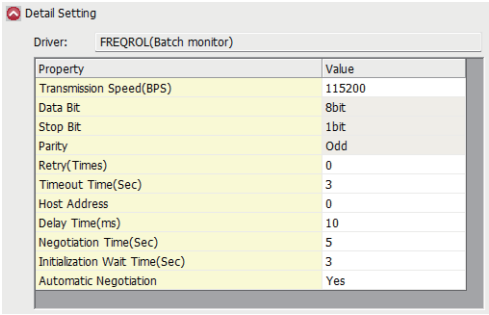
Configure the settings according to the usage environment.

- [FREQROL 700/800, Sensorless Servo]



Item	Description	Range
[Driver]	This item appears when communication drivers are selectable according to the settings of [Controller Type] and [I/F].	[FREQROL 700/800, Sensorless Servo]
[Transmission Speed]	Set this item to change the transmission speed used for communication with the connected equipment.	[9600] bps, [19200] bps, [38400] bps, [57600] bps, [115200] bps
[Data Bit]	Set this item to change the data length used for communication with the connected equipment.	[7 bit], [8 bit]
[Stop Bit]	Specify the stop bit length for communications.	[1 bit], [2 bit]
[Parity]	Specify whether or not to perform a parity check, and how it is performed during communication.	[None], [Even], [Odd]
[Retry]	Specify the number of retries to be performed during communication.	[0] times to [5] times
[Timeout Time]	Specify the time period for a communication to time out.	[1] second to [30] seconds
[Delay Time]	Specify the send delay time for a communication.	[0] ms to [300] ms

• [FREQROL(Batch monitor)]



Item	Description	Range
[Driver]	This item appears when communication drivers are selectable according to the settings of [Controller Type] and [I/F].	[FREQROL(Batch monitor)]
[Transmission Speed]	Set this item to change the transmission speed used for communication with the connected equipment.	[9600] bps, [19200] bps, [38400] bps, [57600] bps, [115200] bps
[Data Bit]	Set this item to change the data length used for communication with the connected equipment.	[8 bit]
[Stop Bit]	Specify the stop bit length for communications.	[1 bit]
[Parity]	Specify whether or not to perform a parity check, and how it is performed during communication.	[Odd]
[Retry]	Specify the number of retries to be performed during communication.	[0] times to [5] times
[Timeout Time]	Specify the time period for a communication to time out.	[1] second to [30] seconds
[Host Address]	Specify the station number of the inverter in the system configuration.	[0] to [31]
[Delay Time]	Specify the send delay time for a communication.	[0] ms to [300] ms
[Negotiation Time]	Set the time period that the GOT side communication setting is sent to the inverter.	[1] second to [10] seconds
[Initialization Wait Time]	Set the wait time from when the communication setting is changed until when the communication starts.	[1] second to [10] seconds
[Automatic Negotiation]	Set whether to use the automatic connection.	[Yes], [No]

Point

• Communication interface setting by the Utility

The communication interface setting can be changed on the Utility's [Communication Settings] after writing [Controller Setting] of project data.

For details on the Utility, refer to the following manuals.

📖GOT3000 Series User's Manual (Utility & Maintenance Functions)

• Precedence in communication settings

When settings are made by GT Designer3 or the Utility, the latest setting is effective.

• Cutting the portion of multiple connection of the controller

By setting GOT internal device, GOT can cut the portion of multiple connection of the controller.

For example, faulty station that has communication timeout can be cut from the system.

For details of the setting contents of GOT internal device, refer to the following manual.

📖GT Designer3 (GOT3000) Screen Design Manual

Precautions

The following shows the settable drivers.

• When connecting the GOT to one or more inverters

[FREQROL 700/800, Sensorless Servo]

[FREQROL(Batch monitor)]

• When automatically connecting the GOT to an inverter or using the PLC function of an inverter

[FREQROL(Batch monitor)]

18.8.5 Inverter side settings

Model name		Reference
FR-A800 Plus series	FR-A8□0-CRN FR-A8□2-CRN FR-A8□0-E-CRN FR-A8□2-E-CRN FR-A8□0-R2R FR-A8□2-R2R FR-A8□0-E-R2R FR-A8□2-E-R2R FR-A8□0-AWH FR-A8□0-E-AWH FR-A8□0-LC FR-A8□0-E-LC	☞ Page 1546 Connecting to FR-A800 Plus series

Connecting to FR-A800 Plus series

For details on the inverters, refer to the manual for the corresponding series.

Point

When operating the inverter from the GOT
When operating the inverter from the GOT, set the parameter of the inverter side so that the GOT connection destination of the inverter side is set to the mode with the command right.
For details, refer to the following manual.
📖Manual of the inverter to be connected to the GOT

Configure the inverter communication settings by one of the following three methods.
To automatically reconfigure the GOT side communication settings to the inverter side communication settings in batches and to perform the automatic connection, refer to the following.
☞ Page 1547 Communication settings of inverter (Automatic connection)
To automatically reconfigure the GOT side default communication settings to the inverter side communication settings in batches, refer to the following.
☞ Page 1548 Automatic setting with Pr.999
To manually reconfigure the GOT side communication settings to the inverter communication settings, refer to the following.
☞ Page 1549 Communication settings of inverter (Manual setting)
Be sure to perform the inverter reset after updating each parameter.

Precautions

- Changing communication parameters

Do not make any change for each communication parameter of the inverter side from GOT.
If changed, the communication to the inverter cannot be made.

- When setting "8888" or "9999" to inverter parameter (Pr)

"8888" and "9999" designate special function.
When specifying from the GOT, it will be as follows.

Set value of inverter side	Value specified by GOT
8888	65520
9999	65535

■Communication port and the supported parameters

Inverter side interface	Inverter side parameter
PU connector	Pr.79, Pr.117 to Pr.124, Pr.340, Pr.342, Pr.414
RS-485 terminal	Pr.79, Pr.331 to Pr.337, Pr.340 to Pr.342, Pr.414, Pr.549

■Communication settings of inverter (Automatic connection)

When [Automatic Negotiation] is set to [Yes] in the GOT communication settings, the inverter parameters are reconfigured to the GOT communication settings.

Set the following parameters before the automatic connection.

Setting item	Parameter number		Setting range	Contents of setting
	PU connector	RS-485		
PU communication station number/RS-485 communication station number	Pr.117	Pr.331	0 to 31	☞ Page 1553 Station number setting
PLC function operation selection	Pr.414		0 to 2	0: Disable PLC function 1 or 2: Enable PLC function
Protocol selection	-	Pr.549	0, 1	0: Mitsubishi Electric inverter protocol 1: MODBUS RTU protocol

The following shows the parameters to be reconfigured by the automatic connection.

Setting item	Parameter number	
	PU connector	RS-485
PU communication speed/RS-485 communication speed	Pr.118	Pr.332
PU communication stop bit length/data length/RS-485 communication stop bit length/data length	Pr.119	Pr.333
PU communication parity check/RS-485 communication parity check	Pr.120	Pr.334
Number of PU communication retries/RS-485 communication retry count	Pr.121	Pr.335
PU communication check time interval/RS-485 communication check time interval	Pr.122	Pr.336
PU communication waiting time setting/RS-485 communication waiting time setting	Pr.123	Pr.337
PU communication CR/LF selection/RS-485 communication CR/LF selection	Pr.124	Pr.341

Before performing the automatic connection, connect all the GOTs and the inverters.

After the automatic connection is performed, if a station is added or changed, or the communication settings are not reconfigured normally, change the settings with the automatic batch parameter setting (Pr.999) separately.

If the inverter power turns off while the automatic connection is executed, execute the automatic connection on the GOT again.

If the automatic connection fails, a communication timeout error occurs.

If the automatic connection succeeds, the GOT normally starts communicating with each station.

Precautions

The automatic connection requires the total time of the user-set adjustment time and initialization wait time.

By monitoring the Notify Automatic Connection Status (GS277), you can check the completion of the automatic connection.

For details, refer to the following.

📖GT Designer3 (GOT3000) Screen Design Manual

■Automatic setting with Pr.999

Setting Pr.999 as shown below automatically configures the communication settings to the default communication settings of the GOT side collectively.

Parameter number	Set value	Description	Operation in parameter setting mode
Pr.999*1	10	GOT (FREQROL 700/800, Sensorless Servo) initial settings (PU connector)	[AUTO] → [GOT] → [1] Write
	11	GOT (FREQROL 700/800, Sensorless Servo) initial settings (RS-485 terminal)	-
	12	GOT (FREQROL(Batch monitor)) initial settings (PU connector)	[AUTO] → [GOT] → [2] Write
	13	GOT (FREQROL(Batch monitor)) initial settings (RS-485 terminal)	-

*1 When monitoring the value of Pr.999, 9999 is always monitored.

The following shows the values to be automatically set in batches when the above values are set for Pr.999.

- Pr.999=10

Pr.No.	Setting item	Set value
79	Operation mode selection	1
118	PU communication speed	192
119	PU communication stop bit length/data length	10
120	PU communication parity check	1
121	Number of PU communication retries	9999
122	PU communication check time interval	9999
123	PU communication waiting time setting	0ms
124	PU communication CR/LF selection	1
340	Communication startup mode selection	0

- Pr.999=11

Pr.No.	Setting item	Set value
79	Operation mode selection	0
332	RS-485 communication speed	192
333	RS-485 communication stop bit length/data length	10
334	RS-485 communication parity check	1
335	RS-485 communication retry count	9999
336	RS-485 communication check time interval	9999
337	RS-485 communication waiting time setting	0ms
340	Communication startup mode selection	1
341	RS-485 communication CR/LF selection	1
549	Protocol selection	0

- Pr.999=12

Pr.No.	Setting item	Set value
79	Operation mode selection	1
118	PU communication speed	1152
119	PU communication stop bit length/data length	0
120	PU communication parity check	1
121	Number of PU communication retries	9999
122	PU communication check time interval	9999
123	PU communication waiting time setting	0ms
124	PU communication CR/LF selection	1
340	Communication startup mode selection	0
414	PLC function operation selection	2*1

*1 Before configuring the automatic batch setting, if Pr.414 is set to 1, the setting is not changed.

• Pr.999=13

Pr.No.	Setting item	Set value
79	Operation mode selection	0
332	RS-485 communication speed	1152
333	RS-485 communication stop bit length/data length	0
334	RS-485 communication parity check	1
335	RS-485 communication retry count	9999
336	RS-485 communication check time interval	9999
337	RS-485 communication waiting time setting	0ms
340	Communication startup mode selection	1
341	RS-485 communication CR/LF selection	1
414	PLC function operation selection	2*1
549	Protocol selection	0

*1 Before configuring the automatic batch setting, if Pr.414 is set to 1, the setting is not changed.

■Communication settings of inverter (Manual setting)

Set the following parameters using the PU (operation panel or parameter unit).

Before setting the parameters, set Pr.160 (User group read selection) to 0 so that simple mode + extended mode parameters are displayed.

Do not change these parameters, even though they can be monitored from the GOT.

If they are changed, communication with the GOT is disabled.

Setting item*1	Parameter number		Set value		Contents of setting
	PU connector	RS-485			
PU communication station number/RS-485 communication station number	Pr.117	Pr.331	0 to 31		☞ Page 1553 Station number setting
PU communication speed/RS-485 communication speed*2	Pr.118	Pr.332	192*3		19200 bps
PU communication stop bit length/data length/RS-485 communication stop bit length/data length*2	Pr.119	Pr.333	10*4		Data length: 7 bits, stop bit: 1 bit
PU communication parity check/RS-485 communication parity check*2	Pr.120	Pr.334	1		Odd
Number of PU communication retries/RS-485 communication retry count	Pr.121	Pr.335	9999		The inverter will not come to an alarm stop.
PU communication check time interval/RS-485 communication check time interval	Pr.122	Pr.336	9999*3		Communication check suspension
PU communication waiting time setting/RS-485 communication waiting time setting	Pr.123	Pr.337	0		0ms
PU communication CR/LF selection/RS-485 communication CR/LF selection	Pr.124	Pr.341	1*5		With CR, without LF
Protocol selection	—	Pr.549	0*5		Mitsubishi Electric inverter protocol
Operation mode selection	Pr.79		PU connector	1	PU operation mode
			RS-485	0*5	External operation mode at power on
Communication startup mode selection	Pr.340		PU connector	0*5	Refer to Pr.79 settings.
			RS-485	1	Network operation mode
Communication EEPROM write selection	Pr.342		0*5		Written to RAM and EEPROM
PLC function operation selection*6	Pr.414		1, 2		Enabled with 1 and 2.

*1 The parameter names described in the FR-A800 Plus series manuals
*2 Settings on the GOT can be changed.
When changing the settings on the GOT, be sure to change the parameters on the inverter to correspond with the GOT settings.
*3 Since the value has been set as a default, no setting is required when connecting to the PU connector on the inverter side.
*4 To use [FREQROL(Batch monitor)] drivers, set 0.
*5 Inverter default values (No need to change)
*6 The inverter side setting defaults to 0: Invalid. To use the PLC function, set 1 or 2.

■Parameters for monitoring data specific to FR-A800 Plus series

• How to monitor the winding length (upper + lower) (PV29)

Set Pr.645 (Winding diameter storage selection) to [1], and set Pr.1263 (Stored winding length (lower 4 digits)) and Pr.1298 (Stored winding length (upper 4 digits)) on the inverter side.

Communication drivers of FREQROL (Batch monitor) that supports monitoring PV are the setting target.

Setting item*1	Parameter number	Setting range	Contents of setting
Winding diameter storage selection	Pr.645	0, 1	Select whether to store the winding diameter and winding length. 0: Do not store. 1: Stores the current winding diameter.
Stored winding diameter	Pr.646	1 to 6553 mm	The stored winding diameter can be read/written.
Operation time with stored winding diameter	Pr.647	0 to 100 s	Set the time to hold the stored winding diameter after the start signal turns on.
Target winding diameter	Pr.648	1 to 6563 mm	Set the winding diameter to output the Target winding diameter achieved signal (Y233).
Winding length increment	Pr.1262	0	1km
		1	100m
		2	10m
		3	1m
		4	1cm
		5	1mm
Stored winding length (lower 4 digits)	Pr.1263	0 to 9999 m*2	The stored winding length (lower 4 digits) can be read/written.
Winding length detection (lower 4 digits)	Pr.1264	0 to 9999 m*2	Set the winding length (lower 4 digits) to output the Winding/unwinding completion signal (Y234).
Stored winding length (upper 4 digits)	Pr.1298	0 to 9999 m*2	The stored winding length (upper 4 digits) can be read/written.
Stored winding length increment	Pr.1299	0	1m
		1	1cm
		2	1mm
Winding length detection (upper 4 digits)	Pr.1346	0 to 9999 m*2	Set the winding length (lower 4 digits) to output the Winding/unwinding completion signal (Y234).

*1 The parameter names described in the FR-A800 Plus series manuals

*2 The unit differs depending on the setting of Pr.1262.

• How to monitor the actual line speed (PV27)

The actual line speed can be set with the input value of the line speed command by setting Pr.362 (Actual line speed input selection) to [0].

For the line speed command, a value can be set in Pr.360 by setting Pr.361 (Line speed command input selection) to [8].

Communication drivers of FREQROL (Batch monitor) that supports monitoring PV are the setting target.

Setting item*1	Parameter number	Setting range	Contents of setting
Line speed command voltage/current bias	Pr.350	0 to 100%	Set the converted value (%) of the bias voltage (current) for analog input.
Line speed command bias	Pr.351	0 to 6553.4 m/min*2	Set the bias line speed command value for analog input.
Line speed command voltage/current gain	Pr.352	0 to 100%	Set the converted value (%) of the gain voltage (current) for analog input.
Line speed command gain	Pr.353	0 to 6553.4 m/min*2 9999	Set the gain line speed command value for analog input.
Line speed command pulse input bias	Pr.354	0 to 500k pulses/s	Set the number of bias input pulses for pulse train input.
Line speed command pulse input gain	Pr.355	0 to 500k pulses/s	Set the number of gain input pulses for pulse train input.
Line speed command digital input bias	Pr.356	0 to 65535	Set the bias line speed command value for pulse train input.
Line speed command digital input gain	Pr.357	0 to 65535	Set the gain line speed command value for pulse train input.

Setting item[*1]	Parameter number	Setting range	Contents of setting
Line speed unit	Pr.358	0	m/min
		1	m/sec
		2	mm/min
		3	mm/sec
Line speed command value	Pr.360	0 to 6553.4 m/min[*2]	Set the line speed command value.
Line speed command input selection	Pr.361	0	According to the priority of the speed command rights
		1	Terminal JOG single-phase pulse train input
		2	FR-A8AP/FR-A8AL/FR-A8TP encoder pulse train input
		3	Terminal 2 (0 to 100%)
		4	Terminal 4 (20 to 100%)
		5	Terminal 1 (-100 to 100%)
		6	Terminal 6 (FR-A8AZ) (-100 to 100%)
		7	FR-A8AL single-phase pulse train input
		8	Line speed command according to the setting of Pr.360 (Line speed command value)
		9999	No function
Actual line speed input selection	Pr.362	0 (Default)	V* (line speed command)
		1	Terminal JOG single-phase pulse train input
		2	FR-A8AP/FR-A8AL/FR-A8TP encoder pulse train input (complementary 12 V / differential 5 V (A-, B-phases)[*3]
		3	Terminal 2 (analog value: 0 to 100%) (0 to 5 V DC)[*4]
		4	Terminal 4 (analog value: 20 to 100%) (4 to 20 mA DC)[*4]
		5	Terminal 1 (analog value: -100 to 100%) (0 to ±10 V DC)[*4]
		6	Terminal 6 (FR-A8AZ) (analog value: -100 to 100%) (0 to ±10 V DC)[*4]
		7	FR-A8AL single-phase pulse train input (PP, NP)
		9999	No function[*5]
Command pulse selection	Pr.428	0	Forward/Reverse pulse train (negative logic)
		1	Pulse train + rotation direction sign (negative logic)
		2	A/B-phase pulse train (negative logic)
		3	Forward/Reverse pulse train (positive logic)
		4	Pulse train + rotation direction sign (positive logic)
		5	A/B-phase pulse train (positive logic)
Start line speed command	Pr.622	0 to 6553.4 m/min[*2]	Set the line speed command to start operation.
Line multi-speed setting (high-speed)	Pr.1265	0 to 6553.4 m/min[*2]	Set the line speed command value when the RH signal is ON.
Line multi-speed setting (middle-speed)	Pr.1266	0 to 6553.4 m/min[*2]	Set the line speed command value when the RM signal is ON.
Line multi-speed setting (low-speed)	Pr.1267	0 to 6553.4 m/min[*2]	Set the line speed command value when the RL signal is ON.

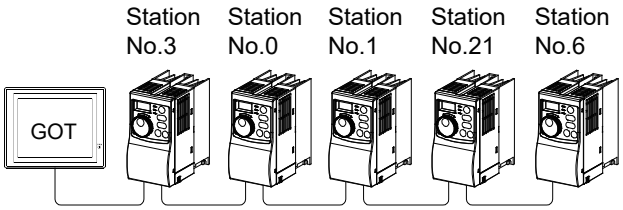
Setting item*1	Parameter number	Setting range	Contents of setting
Line multi-speed setting (speed 4)	Pr.1268	0 to 6553.4 m/min*2	The line speed from 4th speed to 15th speed can be set according to the combination of the RH, RM, RL and REX signals.
Line multi-speed setting (speed 5)	Pr.1269	0 to 6553.4 m/min*2	
Line multi-speed setting (speed 6)	Pr.1270	0 to 6553.4 m/min*2	
Line multi-speed setting (speed 7)	Pr.1271	0 to 6553.4 m/min*2	
Line multi-speed setting (speed 8)	Pr.1272	0 to 6553.4 m/min*2	
Line multi-speed setting (speed 9)	Pr.1273	0 to 6553.4 m/min*2	
Line multi-speed setting (speed 10)	Pr.1274	0 to 6553.4 m/min*2	
Line multi-speed setting (speed 11)	Pr.1275	0 to 6553.4 m/min*2	
Line multi-speed setting (speed 12)	Pr.1276	0 to 6553.4 m/min*2	
Line multi-speed setting (speed 13)	Pr.1277	0 to 6553.4 m/min*2	
Line multi-speed setting (speed 14)	Pr.1278	0 to 6553.4 m/min*2	
Line multi-speed setting (speed 15)	Pr.1279	0 to 6553.4 m/min*2	

*1 The parameter names described in the FR-A800 Plus series manuals
*2 The unit differs depending on the setting of Pr.358.
*3 When Pr.362 is set to [2], select the option to input the actual line speed with Pr.862.
*4 The input specification in the initial setting is indicated.
*5 When Pr.362 is set to [9999] (No function), the actual line speed is regarded as 0.

■Station number setting

Set each station number so that no station number overlaps.

The station number can be set regardless of the cable connection order. There is no problem if station numbers are not consecutive.



Station number setting example

- Direct specification

When setting the device, specify the station number of the inverter of which data is to be changed.

Specification range
0 to 31

- Indirect specification

When setting the device, indirectly specify the station number for the inverter to be changed using the 16-bit GOT internal register (GD10 to GD25).

When specifying the station number from 100 to 115 in GT Designer3, the corresponding value from GD10 to GD25 will be the station number of the inverter.

Specified station No.	Corresponding device	Setting range
100	GD10	0 to 31 For the setting other than the above, error (dedicated device is out of range) will occur.
101	GD11	
102	GD12	
103	GD13	
104	GD14	
105	GD15	
106	GD16	
107	GD17	
108	GD18	
109	GD19	
110	GD20	
111	GD21	
112	GD22	
113	GD23	
114	GD24	
115	GD25	

Precautions

The station number required for the inverter system will differ according to the selected driver.

- When selecting [FREQROL 700/800, Sensorless Servo]

Make sure to establish the inverter system with station No. 0.

- When selecting [FREQROL(Batch monitor)]

Make sure to establish the inverter system with the station number set with the host address.

18.9 FR-F800 (serial connection)

☞ Page 1554 Connectable devices
☞ Page 1555 System configuration
☞ Page 1558 Connection diagram
☞ Page 1561 GOT side settings
☞ Page 1564 Inverter side settings

18.9.1 Connectable devices

The following table shows the connectable models.

○: Supported, —: Not supported

Controller	Model name	Clock	Inverter side interface			Connectable model
			PU port	Built-in RS-485 terminal block	Control terminal option	
FR-F800 series	FR-F8□0 FR-F8□2 FR-F8□6	—	○	○	—	GT37 SoftGOT3000
	FR-F8□0-E FR-F8□2-E	—	○	—	A8ERS	GT37 SoftGOT3000

Precautions

The clock function is enabled or disabled depending on the selected driver.

- When the communication driver is [FREQROL 700/800, Sensorless Servo]

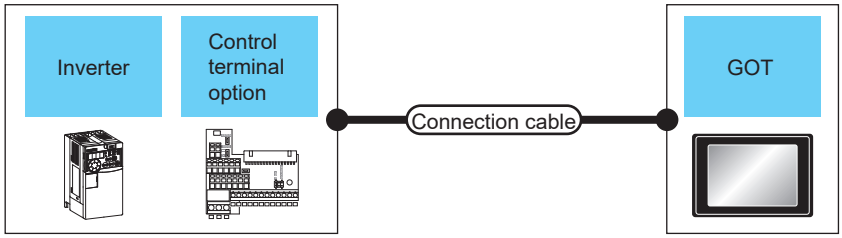
The settings of [Adjust] or [Broadcast] by GOT clock control will be disabled.

- When the communication driver is [FREQROL(Batch monitor)]

The clock function is enabled by using the PLC function of the FR-F800 series.

18.9.2 System configuration

When connecting to one inverter



For details on the maximum length of the connection cable, refer to the following.

☞ Page 1555 Maximum length

For details on the maximum number of connected devices, refer to the following.

☞ Page 1555 Maximum number of connected devices

Inverter		Communication type	Connection cable	GOT	
Controller	Interface			Interface	Model
FR-F8□0 FR-F8□2 FR-F8□6 FR-F8□0-E FR-F8□2-E	PU port	RS-485	☞ Page 1558 RS-485 connection diagram (1)	Built-in RS-232/422/485 interface	GT37 SoftGOT3000
				GT37-IF2000 + GT15-RS4-9S	GT37 SoftGOT3000
FR-F8□0 FR-F8□2 FR-F8□6	Built-in RS-485 terminal block	RS-485	☞ Page 1558 RS-485 connection diagram (2)	Built-in RS-232/422/485 interface	GT37 SoftGOT3000
				GT37-IF2000 + GT15-RS4-9S	GT37 SoftGOT3000
FR-F8□0-E FR-F8□2-E	Control terminal option (A8ERS)*1	RS-485	☞ Page 1558 RS-485 connection diagram (2)	Built-in RS-232/422/485 interface	GT37 SoftGOT3000
				GT37-IF2000 + GT15-RS4-9S	GT37 SoftGOT3000

*1 The control terminal option and the PU port cannot be used at the same time.

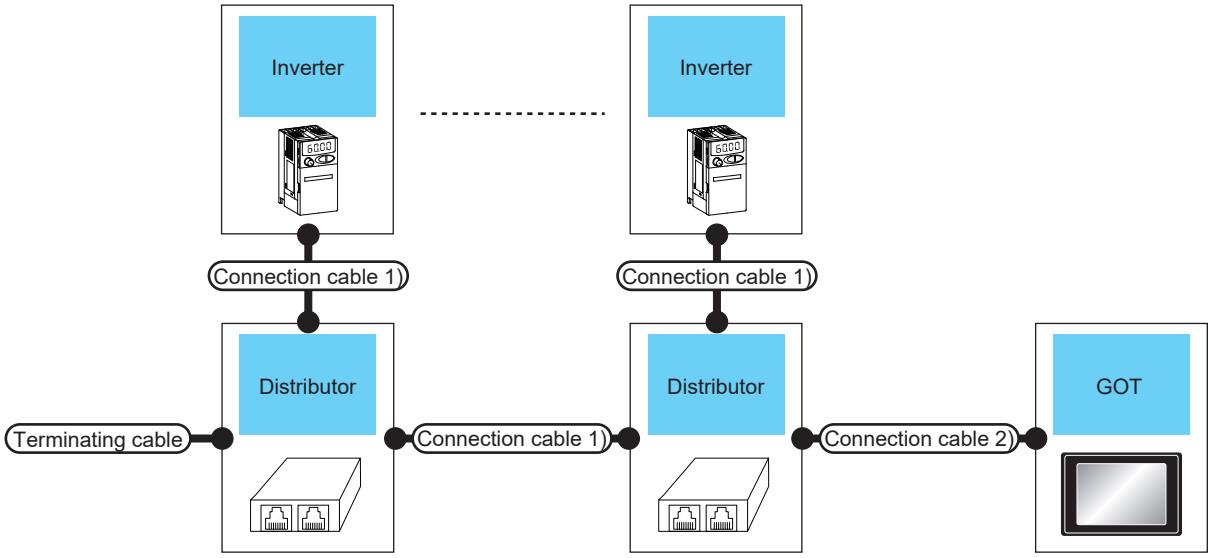
■Maximum length

The maximum length of the connection cable is 500 m.

■Maximum number of connected devices

Only one inverter can access one GOT at a time.

When connecting to multiple inverters (max. 31) (using distributors)



For details on the maximum length of the connection cable, refer to the following.

☞ Page 1556 Maximum length

For details on the maximum number of connected devices, refer to the following.

☞ Page 1556 Maximum number of connected devices

Inverter		Communication type	Terminal cable	Connection cable 1)	Distributor*1	Connection cable 2)	GOT	
Controller	Interface						Interface	Model
FR-F8□0 FR-F8□2 FR-F8□6 FR-F8□0-E FR-F8□2-E	PU port	RS-485	☞ Page 1559 RS-485 connection diagram (4)	☞ Page 1559 RS-485 connection diagram (3)	BMJ-8 (recommended)	☞ Page 1558 RS-485 connection diagram (1)	Built-in RS-232/422/485 interface	GT37 SoftGOT3000
							GT37-IF2000 + GT15-RS4-9S	GT37 SoftGOT3000

*1 The distributor is a product manufactured by HAKKO ELECTRIC CO., LTD.
For details, contact HAKKO ELECTRIC CO., LTD.

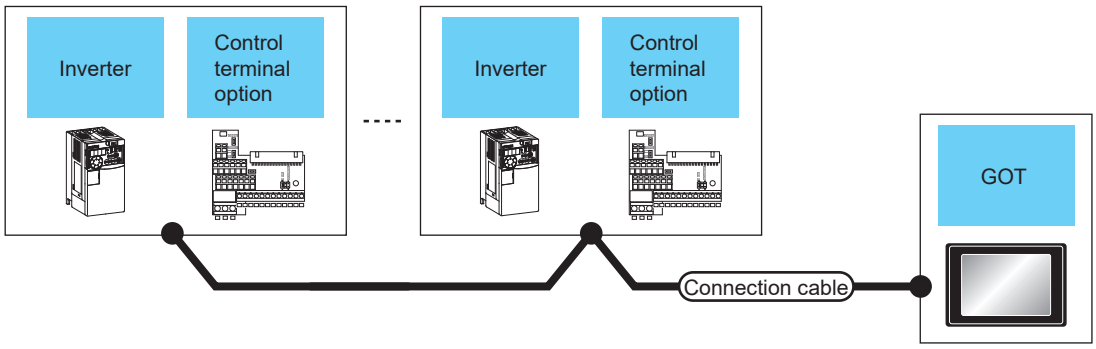
■Maximum length

The maximum length of the connection cable is 500 m.

■Maximum number of connected devices

31 inverters can access one GOT at a time.

When connecting to multiple inverters (max. 31) (using the built-in RS-485 terminal block or control terminal option)



For details on the maximum length of the connection cable, refer to the following.

☞ Page 1557 Maximum length

For details on the maximum number of connected devices, refer to the following.

☞ Page 1557 Maximum number of connected devices

Inverter		Communication type	Connection cable	GOT	
Controller	Interface			Interface	Model
FR-F8□0 FR-F8□2 FR-F8□6	Built-in RS-485 terminal block	RS-485	☞ Page 1559 RS-485 connection diagram (5)	Built-in RS-232/422/485 interface	GT37 SoftGOT3000
				GT37-IF2000 + GT15-RS4-9S	GT37 SoftGOT3000
FR-F8□0-E FR-F8□2-E	Control terminal option (A8ERS)*1	RS-485	☞ Page 1559 RS-485 connection diagram (5)	Built-in RS-232/422/485 interface	GT37 SoftGOT3000
				GT37-IF2000 + GT15-RS4-9S	GT37 SoftGOT3000

*1 The control terminal option and the PU port cannot be used at the same time.

■Maximum length

The maximum length of the connection cable is 500 m.

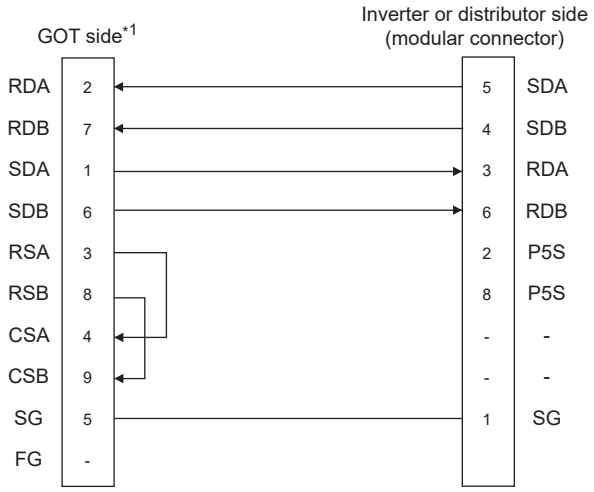
■Maximum number of connected devices

31 inverters can access one GOT at a time.

18.9.3 Connection diagram

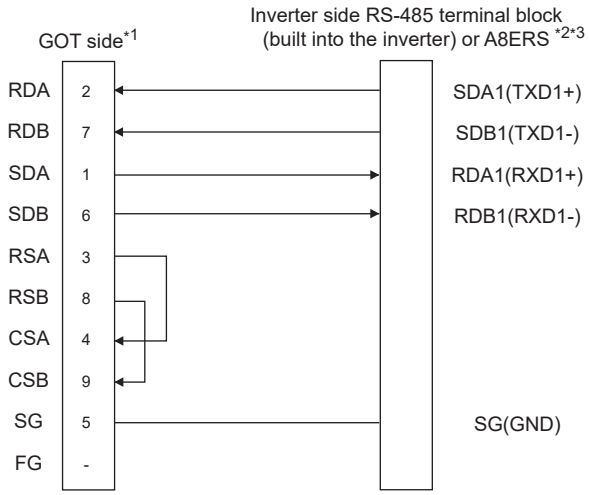
The following diagram shows the connection between the GOT and the inverter.

RS-485 connection diagram (1)



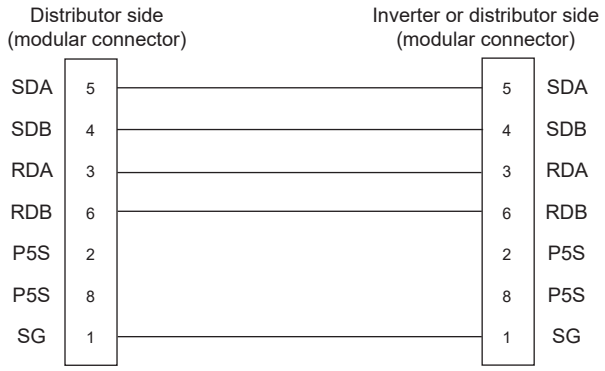
*1 For GT37 in the end position of the system configuration, set the terminating resistor to 330 Ω.
☞ Page 2956 Terminating resistors of GOT

RS-485 connection diagram (2)

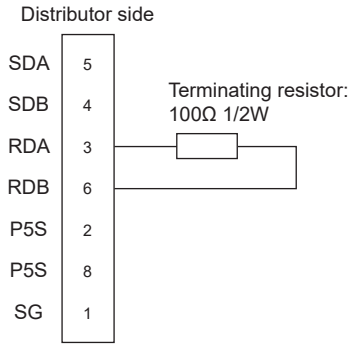


*1 For GT37 in the end position of the system configuration, set the terminating resistor to 330 Ω.
☞ Page 2956 Terminating resistors of GOT
*2 RDA2, RDB2, SDA2, and SDB2 terminals of the RS-485 terminal block (built into the inverter) cannot be used.
*3 Set the terminating resistor switch of the inverter to ON (100 Ω).

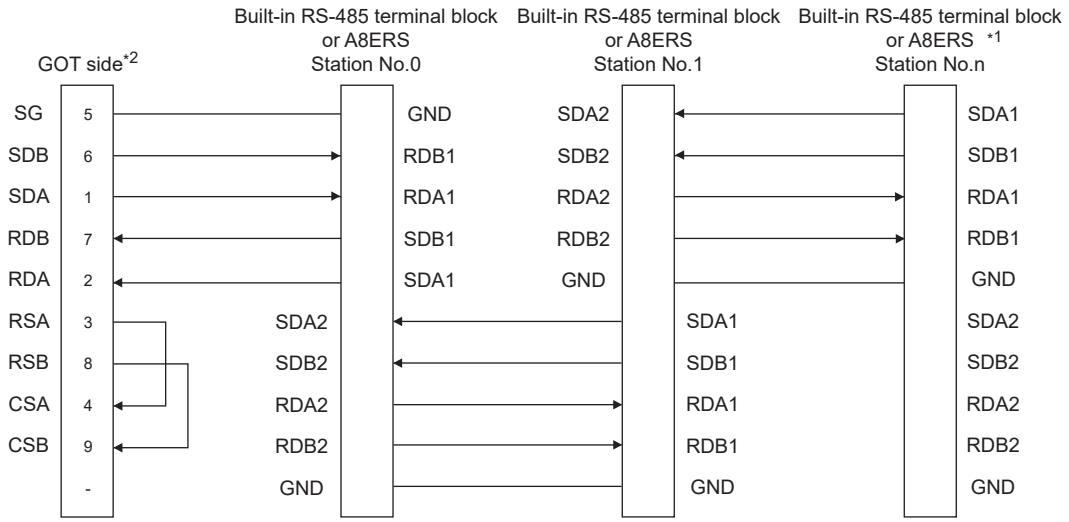
RS-485 connection diagram (3)



RS-485 connection diagram (4)



RS-485 connection diagram (5)



*1 Set the terminating resistor switch of the inverter located farthest from the GOT to ON (100 Ω).
*2 For GT37 in the end position of the system configuration, set the terminating resistor to 330 Ω.
☞ Page 2956 Terminating resistors of GOT

Preparation of the RS-485 cable

■Cable length

The length of the RS-485 cable must be 500 m or less.

■GOT side connector

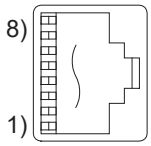
For the GOT side connector, refer to the following.

☞ Page 2954 GOT connector specifications

■Inverter connector specifications

- Pin layout in the PU port

When seen from the front of the inverter
(receptacle side)



Modular jack

Pin No.	Signal name	Remark
1	GND (SG)	
2	(P5S)	Not used
3	RXD+ (RDA)	
4	TXD- (SDB)	
5	TXD+ (SDA)	
6	RXD- (RDB)	
7	GND (SG)	
8	(P5S)	Not used

The contents in the parentheses indicate symbols described in the inverter manual.

The pins number 2 and 8 (P5S) are connected to the power supply for an operation panel or a parameter unit.

Do not use them in RS-485 communication.

- Connector of cable between FREQROL Series inverters

Use the commercial connectors and cables shown in the table below or the comparable products. (Refer to the manual for the inverter.)

Name	Model name	Specifications	Manufacturer
Connector	5-554720-3	RJ45 connector	Tyco International, Ltd
Modular ceiling rosette (Distributor)	BMJ-8	-	HAKKO ELECTRIC CO.,LTD.
Cable	SGLPEV 0.5mm × 4P	Cable conforming to EIA568 (such as cable 10BASE-T)	MITSUBISHI CABLE INDUSTRIES, LTD.

Connecting terminating resistors

■GOT side

When connecting a PLC to the GOT, a terminating resistor must be connected to the GOT.

Set the terminating resistor setting switch.

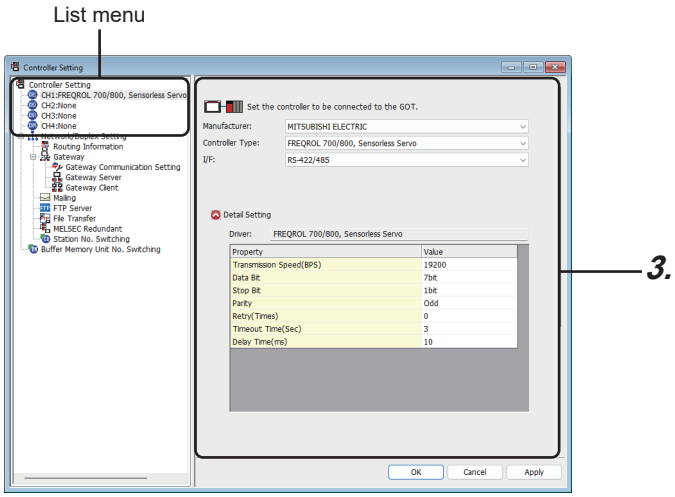
For the procedure to set the terminating resistor, refer to the following.

☞ Page 2956 Terminating resistors of GOT

18.9.4 GOT side settings

[Controller Setting]

Set the channel of the connected controller.



Operating procedure

1. Select [Common] → [Controller Setting] from the menu.

2. In the [Controller Setting] window, select the channel number to be used from the list menu.

3. Set the following items.

Item	Description
[Manufacturer]	[MITSUBISHI ELECTRIC]
[Controller Type]	• [FREQROL 700/800, Sensorless Servo] • [FREQROL 800/E700NE(Batch monitor)]
[I/F]	Configure the settings according to the communication format used.
[Detail Setting]	Configure the settings according to the usage environment. ☞ Page 1562 [Detail Setting]

4. When you have completed the settings, click the [OK] button.

Point

• When [Controller Type] is set to [FREQROL 800/E700NE(Batch monitor)]

The [Faults history] and [Batch monitor] functions of FR Configurator2 can be realized on GOT by creating the screens.

• Checking the controller settings

The settings of connecting equipment can be confirmed in [I/F Communication Setting].

For details, refer to the following.

📖GT Designer3 (GOT3000) Screen Design Manual

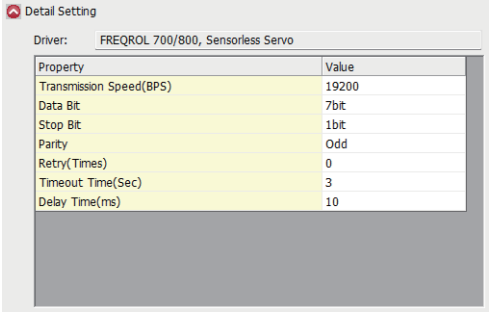
Precautions

Make sure to use GD for screen switching devices and system information devices when the GOT is connected to only the inverter.

■[Detail Setting]

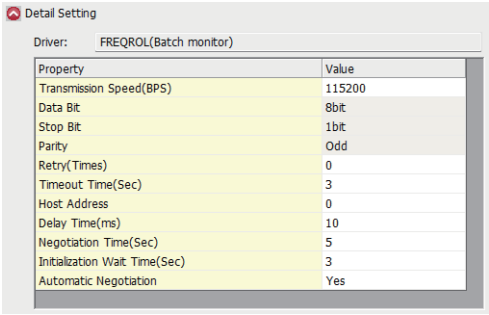
Configure the settings according to the usage environment.

- [FREQROL 700/800, Sensorless Servo]



Item	Description	Range
[Driver]	This item appears when communication drivers are selectable according to the settings of [Controller Type] and [I/F].	[FREQROL 700/800, Sensorless Servo]
[Transmission Speed]	Set this item to change the transmission speed used for communication with the connected equipment.	[9600] bps, [19200] bps, [38400] bps, [57600] bps, [115200] bps
[Data Bit]	Set this item to change the data length used for communication with the connected equipment.	[7 bit], [8 bit]
[Stop Bit]	Specify the stop bit length for communications.	[1 bit], [2 bit]
[Parity]	Specify whether or not to perform a parity check, and how it is performed during communication.	[None], [Even], [Odd]
[Retry]	Specify the number of retries to be performed during communication.	[0] times to [5] times
[Timeout Time]	Specify the time period for a communication to time out.	[1] second to [30] seconds
[Delay Time]	Specify the send delay time for a communication.	[0] ms to [300] ms

• [FREQROL(Batch monitor)]



Item	Description	Range
[Driver]	This item appears when communication drivers are selectable according to the settings of [Controller Type] and [I/F].	[FREQROL(Batch monitor)]
[Transmission Speed]	Set this item to change the transmission speed used for communication with the connected equipment.	[9600] bps, [19200] bps, [38400] bps, [57600] bps, [115200] bps
[Data Bit]	Set this item to change the data length used for communication with the connected equipment.	[8 bit]
[Stop Bit]	Specify the stop bit length for communications.	[1 bit]
[Parity]	Specify whether or not to perform a parity check, and how it is performed during communication.	[Odd]
[Retry]	Specify the number of retries to be performed during communication.	[0] times to [5] times
[Timeout Time]	Specify the time period for a communication to time out.	[1] second to [30] seconds
[Host Address]	Specify the station number of the inverter in the system configuration.	[0] to [31]
[Delay Time]	Specify the send delay time for a communication.	[0] ms to [300] ms
[Negotiation Time]	Set the time period that the GOT side communication setting is sent to the inverter.	[1] second to [10] seconds
[Initialization Wait Time]	Set the wait time from when the communication setting is changed until when the communication starts.	[1] second to [10] seconds
[Automatic Negotiation]	Set whether to use the automatic connection.	[Yes], [No]

Point

• Communication interface setting by the Utility

The communication interface setting can be changed on the Utility's [Communication Settings] after writing [Controller Setting] of project data.

For details on the Utility, refer to the following manuals.

📖GOT3000 Series User's Manual (Utility & Maintenance Functions)

• Precedence in communication settings

When settings are made by GT Designer3 or the Utility, the latest setting is effective.

• Cutting the portion of multiple connection of the controller

By setting GOT internal device, GOT can cut the portion of multiple connection of the controller.

For example, faulty station that has communication timeout can be cut from the system.

For details of the setting contents of GOT internal device, refer to the following manual.

📖GT Designer3 (GOT3000) Screen Design Manual

Precautions

The following shows the settable drivers.

• When connecting the GOT to one or more inverters

[FREQROL 700/800, Sensorless Servo]

[FREQROL(Batch monitor)]

• When automatically connecting the GOT to an inverter or using the PLC function of an inverter

[FREQROL(Batch monitor)]

18.9.5 Inverter side settings

Model name		Reference
FR-F800 series	FR-F8□0 FR-F8□2 FR-F8□6 FR-F8□0-E FR-F8□2-E	☞ Page 1564 Connection to FR-F800 series

Connection to FR-F800 series

For details on the inverters, refer to the manual for the corresponding series.

Point

When operating the inverter from the GOT
When operating the inverter from the GOT, set the parameter of the inverter side so that the GOT connection destination of the inverter side is set to the mode with the command right.
For details, refer to the following manual.
📖Manual of the inverter to be connected to the GOT

Configure the inverter communication settings by one of the following three methods.
To automatically reconfigure the GOT side communication settings to the inverter side communication settings in batches and to perform the automatic connection, refer to the following.
☞ Page 1565 Communication settings of inverter (Automatic connection)
To automatically reconfigure the GOT side default communication settings to the inverter side communication settings in batches, refer to the following.
☞ Page 1566 Automatic setting with Pr.999
To manually reconfigure the GOT side communication settings to the inverter communication settings, refer to the following.
☞ Page 1567 Communication settings of inverter (Manual setting)
Be sure to perform the inverter reset after updating each parameter.

Precautions

- Changing communication parameters

Do not make any change for each communication parameter of the inverter side from GOT.
If changed, the communication to the inverter cannot be made.

- When setting "8888" or "9999" to inverter parameter (Pr)

"8888" and "9999" designate special function.
When specifying from the GOT, it will be as follows.

Set value of inverter side	Value specified by GOT
8888	65520
9999	65535

■Communication port and the supported parameters

Inverter side interface	Inverter side parameter
PU connector	Pr.79, Pr.117 to Pr.124, Pr.340, Pr.342, Pr.414
RS-485 terminal	Pr.79, Pr.331 to Pr.337, Pr.340 to Pr.342, Pr.414, Pr.549

■Communication settings of inverter (Automatic connection)

When [Automatic Negotiation] is set to [Yes] in the GOT communication settings, the inverter parameters are reconfigured to the GOT communication settings.

Set the following parameters before the automatic connection.

Setting item	Parameter number		Setting range	Contents of setting
	PU connector	RS-485		
PU communication station number/RS-485 communication station number	Pr.117	Pr.331	0 to 31	☞ Page 1568 Station number setting
PLC function operation selection	Pr.414		0 to 2	0: Disable PLC function 1 or 2: Enable PLC function
Protocol selection	-	Pr.549	0, 1	0: Mitsubishi Electric inverter protocol 1: MODBUS RTU protocol

The following shows the parameters to be reconfigured by the automatic connection.

Setting item	Parameter number	
	PU connector	RS-485
PU communication speed/RS-485 communication speed	Pr.118	Pr.332
PU communication stop bit length/data length/RS-485 communication stop bit length/data length	Pr.119	Pr.333
PU communication parity check/RS-485 communication parity check	Pr.120	Pr.334
Number of PU communication retries/RS-485 communication retry count	Pr.121	Pr.335
PU communication check time interval/RS-485 communication check time interval	Pr.122	Pr.336
PU communication waiting time setting/RS-485 communication waiting time setting	Pr.123	Pr.337
PU communication CR/LF selection/RS-485 communication CR/LF selection	Pr.124	Pr.341

Before performing the automatic connection, connect all the GOTs and the inverters.

After the automatic connection is performed, if a station is added or changed, or the communication settings are not reconfigured normally, change the settings with the automatic batch parameter setting (Pr.999) separately.

If the inverter power turns off while the automatic connection is executed, execute the automatic connection on the GOT again.

If the automatic connection fails, a communication timeout error occurs.

If the automatic connection succeeds, the GOT normally starts communicating with each station.

Precautions

The automatic connection requires the total time of the user-set adjustment time and initialization wait time.

By monitoring the Notify Automatic Connection Status (GS277), you can check the completion of the automatic connection.

For details, refer to the following.

📖GT Designer3 (GOT3000) Screen Design Manual

■Automatic setting with Pr.999

Setting Pr.999 as shown below automatically configures the communication settings to the default communication settings of the GOT side collectively.

Parameter number	Set value	Description	Operation in parameter setting mode
Pr.999*1	10	GOT (FREQROL 700/800, Sensorless Servo) initial settings (PU connector)	[AUTO] → [GOT] → [1] Write
	11	GOT (FREQROL 700/800, Sensorless Servo) initial settings (RS-485 terminal)	-
	12	GOT (FREQROL(Batch monitor)) initial settings (PU connector)	[AUTO] → [GOT] → [2] Write
	13	GOT (FREQROL(Batch monitor)) initial settings (RS-485 terminal)	-

*1 When monitoring the value of Pr.999, 9999 is always monitored.

The following shows the values to be automatically set in batches when the above values are set for Pr.999.

- Pr.999=10

Pr.No.	Setting item	Set value
79	Operation mode selection	1
118	PU communication speed	192
119	PU communication stop bit length/data length	10
120	PU communication parity check	1
121	Number of PU communication retries	9999
122	PU communication check time interval	9999
123	PU communication waiting time setting	0ms
124	PU communication CR/LF selection	1
340	Communication startup mode selection	0

- Pr.999=11

Pr.No.	Setting item	Set value
79	Operation mode selection	0
332	RS-485 communication speed	192
333	RS-485 communication stop bit length/data length	10
334	RS-485 communication parity check	1
335	RS-485 communication retry count	9999
336	RS-485 communication check time interval	9999
337	RS-485 communication waiting time setting	0ms
340	Communication startup mode selection	1
341	RS-485 communication CR/LF selection	1
549	Protocol selection	0

- Pr.999=12

Pr.No.	Setting item	Set value
79	Operation mode selection	1
118	PU communication speed	1152
119	PU communication stop bit length/data length	0
120	PU communication parity check	1
121	Number of PU communication retries	9999
122	PU communication check time interval	9999
123	PU communication waiting time setting	0ms
124	PU communication CR/LF selection	1
340	Communication startup mode selection	0
414	PLC function operation selection	2*1

*1 Before configuring the automatic batch setting, if Pr.414 is set to 1, the setting is not changed.

• Pr.999=13

Pr.No.	Setting item	Set value
79	Operation mode selection	0
332	RS-485 communication speed	1152
333	RS-485 communication stop bit length/data length	0
334	RS-485 communication parity check	1
335	RS-485 communication retry count	9999
336	RS-485 communication check time interval	9999
337	RS-485 communication waiting time setting	0ms
340	Communication startup mode selection	1
341	RS-485 communication CR/LF selection	1
414	PLC function operation selection	2*1
549	Protocol selection	0

*1 Before configuring the automatic batch setting, if Pr.414 is set to 1, the setting is not changed.

■Communication settings of inverter (Manual setting)

Set the following parameters using the PU (operation panel or parameter unit).

Before setting the parameters, set Pr.160 (User group read selection) to 0 so that simple mode + extended mode parameters are displayed.

Do not change these parameters, even though they can be monitored from the GOT.

If they are changed, communication with the GOT is disabled.

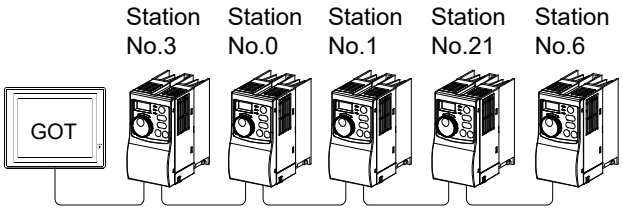
Setting item*1	Parameter number		Set value		Contents of setting
	PU connector	RS-485			
PU communication station number/RS-485 communication station number	Pr.117	Pr.331	0 to 31		☞ Page 1568 Station number setting
PU communication speed/RS-485 communication speed*2	Pr.118	Pr.332	192*3		19200 bps
PU communication stop bit length/data length/RS-485 communication stop bit length/data length*2	Pr.119	Pr.333	10*4		Data length: 7 bits, stop bit: 1 bit
PU communication parity check/RS-485 communication parity check*2	Pr.120	Pr.334	1		Odd
Number of PU communication retries/RS-485 communication retry count	Pr.121	Pr.335	9999		The inverter will not come to an alarm stop.
PU communication check time interval/RS-485 communication check time interval	Pr.122	Pr.336	9999*3		Communication check suspension
PU communication waiting time setting/RS-485 communication waiting time setting	Pr.123	Pr.337	0		0ms
PU communication CR/LF selection/RS-485 communication CR/LF selection	Pr.124	Pr.341	1*5		With CR, without LF
Protocol selection	—	Pr.549	0*5		Mitsubishi Electric inverter protocol
Operation mode selection	Pr.79		PU connector	1	PU operation mode
			RS-485	0*5	External operation mode at power on
Communication startup mode selection	Pr.340		PU connector	0*5	Refer to Pr.79 settings.
			RS-485	1	Network operation mode
Communication EEPROM write selection	Pr.342		0*5		Written to RAM and EEPROM
PLC function operation selection*6	Pr.414		1, 2		Enabled with 1 and 2.

*1 The parameter names described in the FR-F800 series manuals.
*2 Settings on the GOT can be changed.
When changing the settings on the GOT, be sure to change the parameters on the inverter to correspond with the GOT settings.
*3 Since the value has been set as a default, no setting is required when connecting to the PU connector on the inverter side.
*4 To use [FREQROL(Batch monitor)] drivers, set 0.
*5 Inverter default values (No need to change)
*6 The inverter side setting defaults to 0: Invalid. To use the PLC function, set 1 or 2.

■Station number setting

Set each station number so that no station number overlaps.

The station number can be set regardless of the cable connection order. There is no problem if station numbers are not consecutive.



Station number setting example

- Direct specification

When setting the device, specify the station number of the inverter of which data is to be changed.

Specification range
0 to 31

- Indirect specification

When setting the device, indirectly specify the station number for the inverter to be changed using the 16-bit GOT internal register (GD10 to GD25).

When specifying the station number from 100 to 115 in GT Designer3, the corresponding value from GD10 to GD25 will be the station number of the inverter.

Specified station No.	Corresponding device	Setting range
100	GD10	0 to 31 For the setting other than the above, error (dedicated device is out of range) will occur.
101	GD11	
102	GD12	
103	GD13	
104	GD14	
105	GD15	
106	GD16	
107	GD17	
108	GD18	
109	GD19	
110	GD20	
111	GD21	
112	GD22	
113	GD23	
114	GD24	
115	GD25	

Precautions

The station number required for the inverter system will differ according to the selected driver.

- When selecting [FREQROL 700/800, Sensorless Servo]

Make sure to establish the inverter system with station No. 0.

- When selecting [FREQROL(Batch monitor)]

Make sure to establish the inverter system with the station number set with the host address.

18.10 FR-E800 (serial connection)

☞ Page 1569 Connectable devices
☞ Page 1570 System configuration
☞ Page 1572 Connection diagram
☞ Page 1574 GOT side settings
☞ Page 1577 Inverter side settings

18.10.1 Connectable devices

The following table shows the connectable models.

○: Supported, —: Not supported

Controller	Model name	Clock	Inverter side interface	Connectable model
			PU port	
FR-E800 series	FR-E8□0	—	○	GT37 SoftGOT3000

Precautions

The clock function is enabled or disabled depending on the selected driver.

- When the communication driver is [FREQROL 700/800, Sensorless Servo]

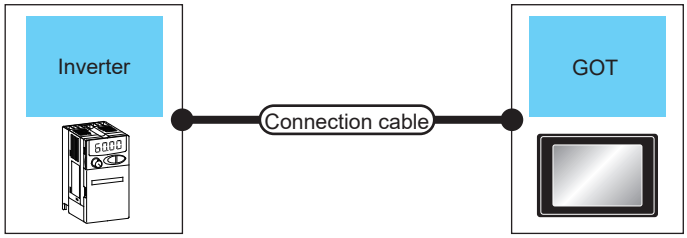
The settings of [Adjust] or [Broadcast] by GOT clock control will be disabled.

- When the communication driver is [FREQROL(Batch monitor)]

The clock function is enabled by using the PLC function of the FR-E800 series.

18.10.2 System configuration

When connecting to one inverter



For details on the maximum length of the connection cable, refer to the following.

☞ Page 1570 Maximum length

For details on the maximum number of connected devices, refer to the following.

☞ Page 1570 Maximum number of connected devices

Inverter		Communication type	Connection cable	GOT	
Controller	Interface			Interface	Model
FR-E8□0	PU port	RS-485	☞ Page 1572 RS-485 connection diagram (1)	Built-in RS-232/422/485 interface	GT37 SoftGOT3000
				GT37-IF2000 + GT15-RS4-9S	GT37 SoftGOT3000

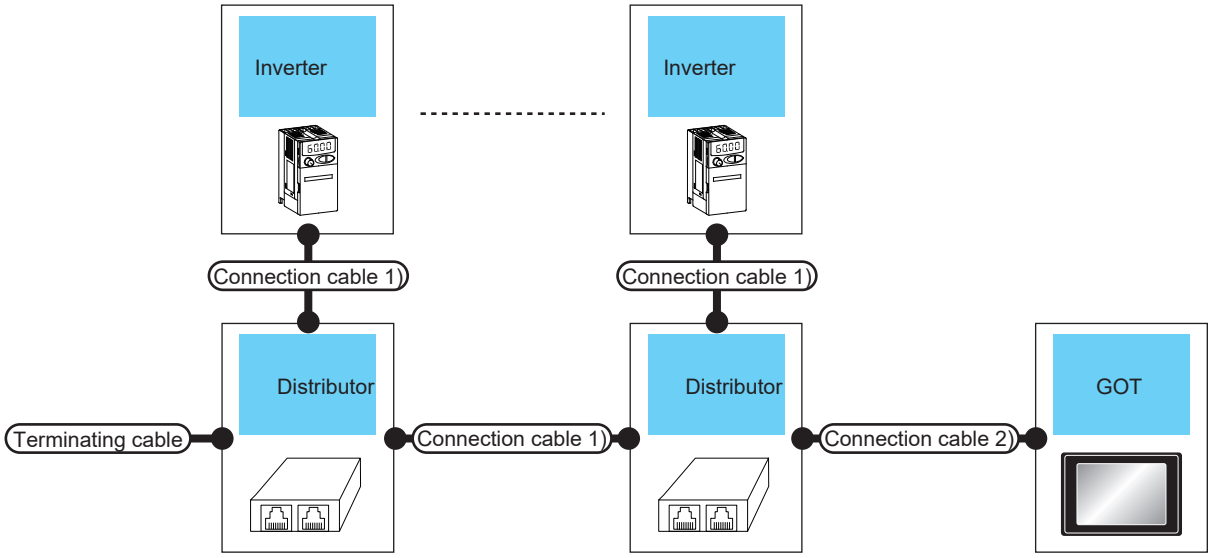
■Maximum length

The maximum length of the connection cable is 500 m.

■Maximum number of connected devices

Only one inverter can access one GOT at a time.

When connecting to multiple inverters (max. 31) (using distributors)



For details on the maximum length of the connection cable, refer to the following.

☞ Page 1571 Maximum length

For details on the maximum number of connected devices, refer to the following.

☞ Page 1571 Maximum number of connected devices

Inverter		Communication type	Terminal cable	Connection cable 1)	Distributor*1	Connection cable 2)	GOT	
Controller	Interface						Interface	Model
FR-E8□0	PU port	RS-485	☞ Page 1572 RS-485 connection diagram (3)	☞ Page 1572 RS-485 connection diagram (2)	BMJ-8 (recommended)	☞ Page 1572 RS-485 connection diagram (1)	Built-in RS-232/422/485 interface	GT37 SoftGOT3000
							GT37-IF2000 + GT15-RS4-9S	GT37 SoftGOT3000

*1 The distributor is a product manufactured by HAKKO ELECTRIC CO., LTD.
For details, contact HAKKO ELECTRIC CO., LTD.

■Maximum length

The maximum length of the connection cable is 500 m.

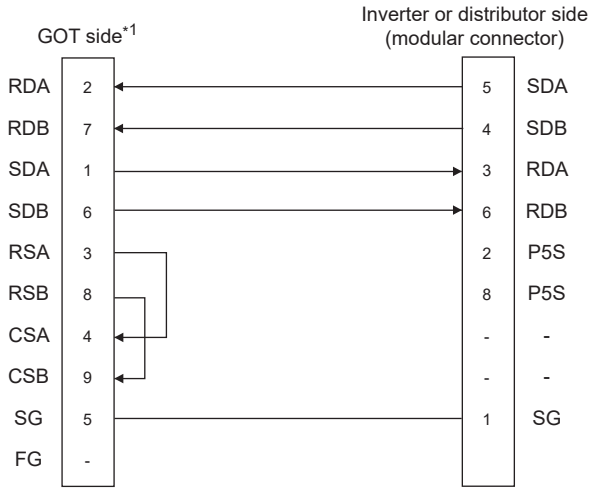
■Maximum number of connected devices

31 inverters can access one GOT at a time.

18.10.3 Connection diagram

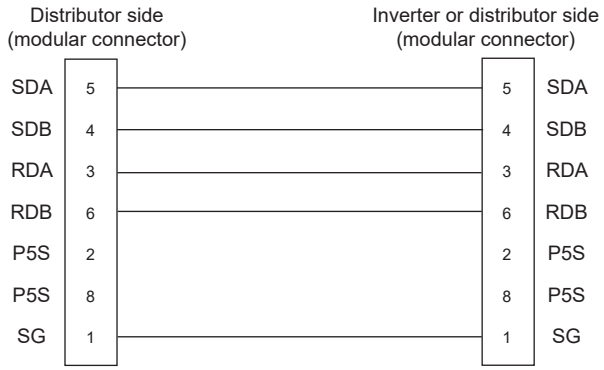
The following diagram shows the connection between the GOT and the inverter.

RS-485 connection diagram (1)

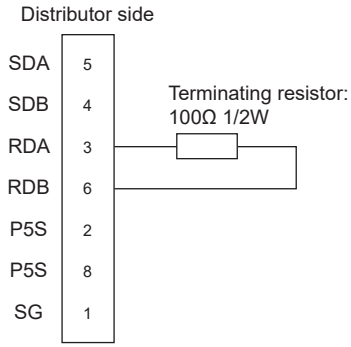


*1 For GT37 in the end position of the system configuration, set the terminating resistor to 330 Ω.
☞ Page 2956 Terminating resistors of GOT

RS-485 connection diagram (2)



RS-485 connection diagram (3)



Preparation of the RS-485 cable

■Cable length

The length of the RS-485 cable must be 500 m or less.

■GOT side connector

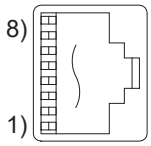
For the GOT side connector, refer to the following.

☞ Page 2954 GOT connector specifications

■Inverter connector specifications

- Pin layout in the PU port

When seen from the front of the inverter
(receptacle side)



Modular jack

Pin No.	Signal name	Remark
1	GND (SG)	
2	(P5S)	Not used
3	RXD+ (RDA)	
4	TXD- (SDB)	
5	TXD+ (SDA)	
6	RXD- (RDB)	
7	GND (SG)	
8	(P5S)	Not used

The contents in the parentheses indicate symbols described in the inverter manual.

The pins number 2 and 8 (P5S) are connected to the power supply for an operation panel or a parameter unit.

Do not use them in RS-485 communication.

- Connector of cable between FREQROL Series inverters

Use the commercial connectors and cables shown in the table below or the comparable products. (Refer to the manual for the inverter.)

Name	Model name	Specifications	Manufacturer
Connector	5-554720-3	RJ45 connector	Tyco International, Ltd
Modular ceiling rosette (Distributor)	BMJ-8	-	HAKKO ELECTRIC CO.,LTD.
Cable	SGLPEV 0.5mm × 4P	Cable conforming to EIA568 (such as cable 10BASE-T)	MITSUBISHI CABLE INDUSTRIES, LTD.

Connecting terminating resistors

■GOT side

When connecting a PLC to the GOT, a terminating resistor must be connected to the GOT.

Set the terminating resistor setting switch.

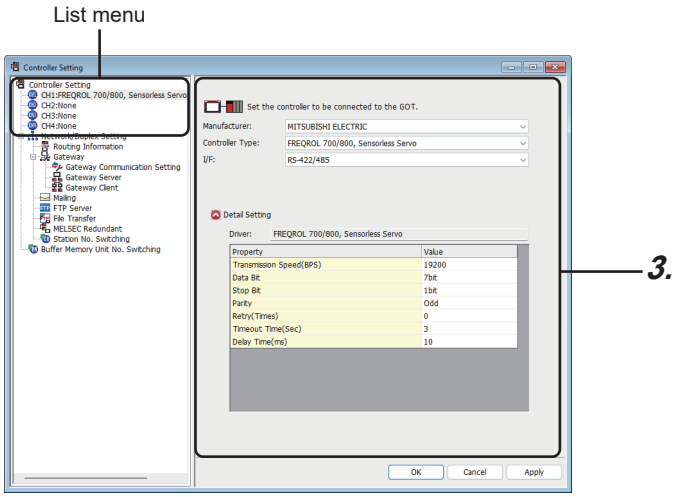
For the procedure to set the terminating resistor, refer to the following.

☞ Page 2956 Terminating resistors of GOT

18.10.4 GOT side settings

[Controller Setting]

Set the channel of the connected controller.



Operating procedure

1. Select [Common] → [Controller Setting] from the menu.

2. In the [Controller Setting] window, select the channel number to be used from the list menu.

3. Set the following items.

Item	Description
[Manufacturer]	[MITSUBISHI ELECTRIC]
[Controller Type]	• [FREQROL 700/800, Sensorless Servo] • [FREQROL 800/E700NE(Batch monitor)]
[I/F]	Configure the settings according to the communication format used.
[Detail Setting]	Configure the settings according to the usage environment. ☞ Page 1575 [Detail Setting]

4. When you have completed the settings, click the [OK] button.

Point

• When [Controller Type] is set to [FREQROL 800/E700NE(Batch monitor)]

The [Faults history] and [Batch monitor] functions of FR Configurator2 can be realized on GOT by creating the screens.

• Checking the controller settings

The settings of connecting equipment can be confirmed in [I/F Communication Setting].

For details, refer to the following.

📖GT Designer3 (GOT3000) Screen Design Manual

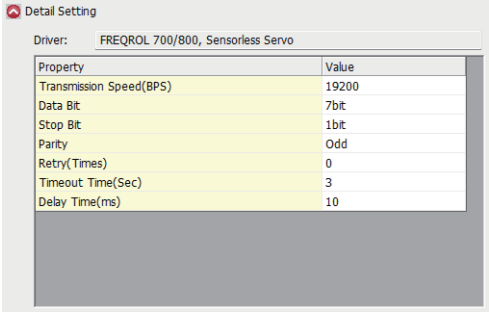
Precautions

Make sure to use GD for screen switching devices and system information devices when the GOT is connected to only the inverter.

■[Detail Setting]

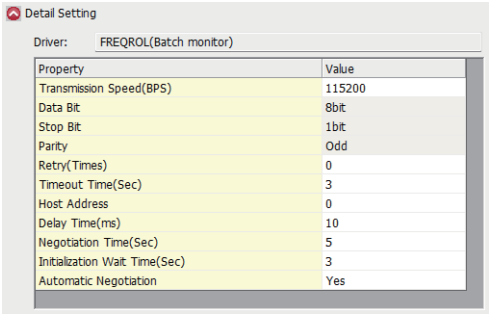
Configure the settings according to the usage environment.

- [FREQROL 700/800, Sensorless Servo]



Item	Description	Range
[Driver]	This item appears when communication drivers are selectable according to the settings of [Controller Type] and [I/F].	[FREQROL 700/800, Sensorless Servo]
[Transmission Speed]	Set this item to change the transmission speed used for communication with the connected equipment.	[9600] bps, [19200] bps, [38400] bps, [57600] bps, [115200] bps
[Data Bit]	Set this item to change the data length used for communication with the connected equipment.	[7 bit], [8 bit]
[Stop Bit]	Specify the stop bit length for communications.	[1 bit], [2 bit]
[Parity]	Specify whether or not to perform a parity check, and how it is performed during communication.	[None], [Even], [Odd]
[Retry]	Specify the number of retries to be performed during communication.	[0] times to [5] times
[Timeout Time]	Specify the time period for a communication to time out.	[1] second to [30] seconds
[Delay Time]	Specify the send delay time for a communication.	[0] ms to [300] ms

• [FREQROL(Batch monitor)]



Item	Description	Range
[Driver]	This item appears when communication drivers are selectable according to the settings of [Controller Type] and [I/F].	[FREQROL(Batch monitor)]
[Transmission Speed]	Set this item to change the transmission speed used for communication with the connected equipment.	[9600] bps, [19200] bps, [38400] bps, [57600] bps, [115200] bps
[Data Bit]	Set this item to change the data length used for communication with the connected equipment.	[8 bit]
[Stop Bit]	Specify the stop bit length for communications.	[1 bit]
[Parity]	Specify whether or not to perform a parity check, and how it is performed during communication.	[Odd]
[Retry]	Specify the number of retries to be performed during communication.	[0] times to [5] times
[Timeout Time]	Specify the time period for a communication to time out.	[1] second to [30] seconds
[Host Address]	Specify the station number of the inverter in the system configuration.	[0] to [31]
[Delay Time]	Specify the send delay time for a communication.	[0] ms to [300] ms
[Negotiation Time]	Set the time period that the GOT side communication setting is sent to the inverter.	[1] second to [10] seconds
[Initialization Wait Time]	Set the wait time from when the communication setting is changed until when the communication starts.	[1] second to [10] seconds
[Automatic Negotiation]	Set whether to use the automatic connection.	[Yes], [No]

Point

• Communication interface setting by the Utility

The communication interface setting can be changed on the Utility's [Communication Settings] after writing [Controller Setting] of project data.

For details on the Utility, refer to the following manuals.

📖GOT3000 Series User's Manual (Utility & Maintenance Functions)

• Precedence in communication settings

When settings are made by GT Designer3 or the Utility, the latest setting is effective.

• Cutting the portion of multiple connection of the controller

By setting GOT internal device, GOT can cut the portion of multiple connection of the controller.

For example, faulty station that has communication timeout can be cut from the system.

For details of the setting contents of GOT internal device, refer to the following manual.

📖GT Designer3 (GOT3000) Screen Design Manual

Precautions

The following shows the settable drivers.

• When connecting the GOT to one or more inverters

[FREQROL 700/800, Sensorless Servo]

[FREQROL(Batch monitor)]

• When automatically connecting the GOT to an inverter or using the PLC function of an inverter

[FREQROL(Batch monitor)]

18.10.5 Inverter side settings

Model name		Reference
FR-E800 series	FR-E8□0	☞ Page 1577 Connecting to FR-E800 series

Connecting to FR-E800 series

For details on the inverters, refer to the manual for the corresponding series.

Point

When operating the inverter from the GOT
When operating the inverter from the GOT, set the parameter of the inverter side so that the GOT connection destination of the inverter side is set to the mode with the command right.
For details, refer to the following manual.
📖Manual of the inverter to be connected to the GOT

Configure the inverter communication settings by one of the following three methods.
To automatically reconfigure the GOT side communication settings to the inverter side communication settings in batches and to perform the automatic connection, refer to the following.
☞ Page 1578 Communication settings of inverter (Automatic connection)
To automatically reconfigure the GOT side default communication settings to the inverter side communication settings in batches, refer to the following.
☞ Page 1579 Automatic setting with Pr.999
To manually reconfigure the GOT side communication settings to the inverter communication settings, refer to the following.
☞ Page 1580 Communication settings of inverter (Manual setting)
Be sure to perform the inverter reset after updating each parameter.

Precautions

- Changing communication parameters

Do not make any change for each communication parameter of the inverter side from GOT.
If changed, the communication to the inverter cannot be made.

- When setting "8888" or "9999" to inverter parameter (Pr)

"8888" and "9999" designate special function.
When specifying from the GOT, it will be as follows.

Set value of inverter side	Value specified by GOT
8888	65520
9999	65535

■Communication port and the supported parameters

Inverter side interface	Inverter side parameter
PU connector	Pr.79, Pr.117 to Pr.124, Pr.340, Pr.342, Pr.414, Pr.549

■Communication settings of inverter (Automatic connection)

When [Automatic Negotiation] is set to [Yes] in the GOT communication settings, the inverter parameters are reconfigured to the GOT communication settings.

Set the following parameters before the automatic connection.

Setting item	Parameter number	Setting range	Contents of setting
PU communication station number	Pr.117	0 to 31	☞ Page 1581 Station number setting
PLC function operation selection	Pr.414	0 to 2	0: Disable PLC function 1 or 2: Enable PLC function
Protocol selection	Pr.549	0, 1	0: Mitsubishi Electric inverter (computer link) protocol 1: MODBUS RTU protocol

The following shows the parameters to be reconfigured by the automatic connection.

Setting item	Parameter number
PU communication speed	Pr.118
PU communication stop bit length/data length	Pr.119
PU communication parity check	Pr.120
Number of PU communication retries	Pr.121
PU communication check time interval	Pr.122
PU communication waiting time setting	Pr.123
PU communication CR/LF selection	Pr.124

Before performing the automatic connection, connect all the GOTs and the inverters.

After the automatic connection is performed, if a station is added or changed, or the communication settings are not reconfigured normally, change the settings with the automatic batch parameter setting (Pr.999) separately.

If the inverter power turns off while the automatic connection is executed, execute the automatic connection on the GOT again.

If the automatic connection fails, a communication timeout error occurs.

If the automatic connection succeeds, the GOT normally starts communicating with each station.

■Automatic setting with Pr.999

Setting Pr.999 as shown below automatically configures the communication settings to the default communication settings of the GOT side collectively.

Parameter number	Set value	Description	Operation in parameter setting mode
Pr.999 *1	10	GOT ([FREQROL 700/800, Sensorless Servo]) initial settings	[AUTO] → [GOT] → [1] Write
	12	GOT ([FREQROL(Batch monitor)]) initial settings	[AUTO] → [GOT] → [2] Write

*1 When monitoring the value of Pr.999, 9999 is always monitored.

The following shows the values to be automatically set in batches when the above values are set for Pr.999.

- Pr.999=10

Pr.No.	Setting item	Set value
79	Operation mode selection	1
118	PU communication speed	192
119	PU communication stop bit length/data length	10
120	PU communication parity check	1
121	Number of PU communication retries	9999
122	PU communication check time interval	9999
123	PU communication waiting time setting	0ms
124	PU communication CR/LF selection	1
340	Communication startup mode selection	0
549	Protocol selection	0

- Pr.999=12

Pr.No.	Setting item	Set value
79	Operation mode selection	1
118	PU communication speed	1152
119	PU communication stop bit length/data length	0
120	PU communication parity check	1
121	Number of PU communication retries	9999
122	PU communication check time interval	9999
123	PU communication waiting time setting	0ms
124	PU communication CR/LF selection	1
340	Communication startup mode selection	0
414	PLC function operation selection	2 *1
549	Protocol selection	0

*1 Before configuring the automatic batch setting, if Pr.414 is set to 1, the setting is not changed.

■Communication settings of inverter (Manual setting)

Set the following parameters using the PU (parameter unit).

Do not change these parameters, even though they can be monitored from the GOT.

If they are changed, communication with the GOT is disabled.

Setting item*1	Parameter number	Set value	Contents of setting
PU communication station number	Pr.117	0 to 31	☞ Page 1581 Station number setting
PU communication speed*2	Pr.118	192*4	19200 bps
PU communication stop bit length/data length*2	Pr.119	10*6	Data length: 7 bits, stop bit: 1 bit
PU communication parity check*2	Pr.120	1	Odd
Number of PU communication retries	Pr.121	9999	The inverter will not come to an alarm stop.
PU communication check time interval	Pr.122	9999*4	Communication check suspension
PU communication wait time setting	Pr.123	0	0ms
PU communication CR/LF selection	Pr.124	1*3	With CR, without LF
Protocol selection	Pr.549	0	Mitsubishi Electric inverter (computer link) protocol
Operation mode selection	Pr.79	0*3	External operation mode at power on
Link start mode selection	Pr.340	1	Network operation mode
EEPROM write selection	Pr.342	0	Written to RAM and EEPROM
PLC function operation selection*5	Pr.414	1, 2	Enabled with 1 and 2.

*1 Setting items are the parameter names described in the FR-E800 series manuals.

*2 Settings on the GOT can be changed.
When changing the settings on the GOT, be sure to change the parameters on the inverter to correspond with the GOT settings.

*3 Inverter default values (No need to change)

*4 Since the value has been set as a default, no setting is required when connecting to the PU connector on the inverter side.

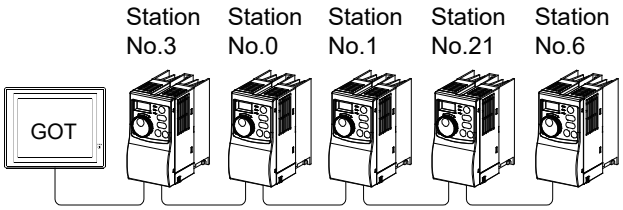
*5 The inverter side setting defaults to 0: Invalid. To use the PLC function, set 1 or 2.

*6 To use [FREQROL(Batch monitor)] drivers, set 0.

■Station number setting

Set each station number so that no station number overlaps.

The station number can be set regardless of the cable connection order. There is no problem if station numbers are not consecutive.



Station number setting example

- Direct specification

When setting the device, specify the station number of the inverter of which data is to be changed.

Specification range
0 to 31

- Indirect specification

When setting the device, indirectly specify the station number for the inverter to be changed using the 16-bit GOT internal register (GD10 to GD25).

When specifying the station number from 100 to 115 in GT Designer3, the corresponding value from GD10 to GD25 will be the station number of the inverter.

Specified station No.	Corresponding device	Setting range
100	GD10	0 to 31 For the setting other than the above, error (dedicated device is out of range) will occur.
101	GD11	
102	GD12	
103	GD13	
104	GD14	
105	GD15	
106	GD16	
107	GD17	
108	GD18	
109	GD19	
110	GD20	
111	GD21	
112	GD22	
113	GD23	
114	GD24	
115	GD25	

Precautions

The station number required for the inverter system will differ according to the selected driver.

- When selecting [FREQROL 700/800, Sensorless Servo]

Make sure to establish the inverter system with station No. 0.

- When selecting [FREQROL(Batch monitor)]

Make sure to establish the inverter system with the station number set with the host address.

18.11 FR-D800 (serial connection)

☞ Page 1582 Connectable devices
☞ Page 1583 System configuration
☞ Page 1586 Connection diagram
☞ Page 1589 GOT side settings
☞ Page 1592 Inverter side settings

18.11.1 Connectable devices

The following table shows the connectable models.

○: Supported, —: Not supported

Controller	Model name	Clock	Inverter side interface		Connectable model
			PU port	Built-in RS-485 terminal block	
FR-D800 series	FR-D8□0	—	○	○	GT37 SoftGOT3000

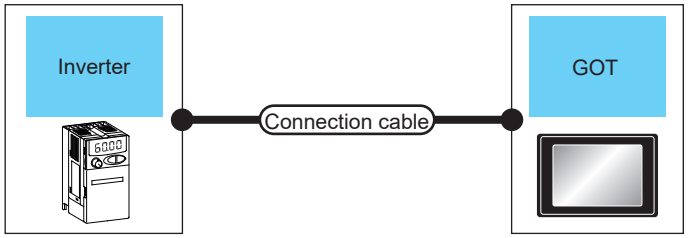
Precautions

- When the communication driver is [FREQROL 700/800, Sensorless Servo] or [FREQROL(Batch monitor)]

The settings of [Adjust] or [Broadcast] by GOT clock control will be disabled.

18.11.2 System configuration

When connecting to one inverter



For details on the maximum length of the connection cable, refer to the following.

☞ Page 1583 Maximum length

For details on the maximum number of connected devices, refer to the following.

☞ Page 1583 Maximum number of connected devices

Inverter		Communication type	Connection cable	GOT	
Controller	Interface			Interface	Model
FR-D8□0	PU port	RS-485	☞ Page 1586 RS-485 connection diagram (1)	Built-in RS-232/422/485 interface	GT37 SoftGOT3000
				GT37-IF2000 + GT15-RS4-9S	GT37 SoftGOT3000
	Built-in RS-485 terminal block	RS-485	☞ Page 1586 RS-485 connection diagram (2)	Built-in RS-232/422/485 interface	GT37 SoftGOT3000
				GT37-IF2000 + GT15-RS4-9S	GT37 SoftGOT3000

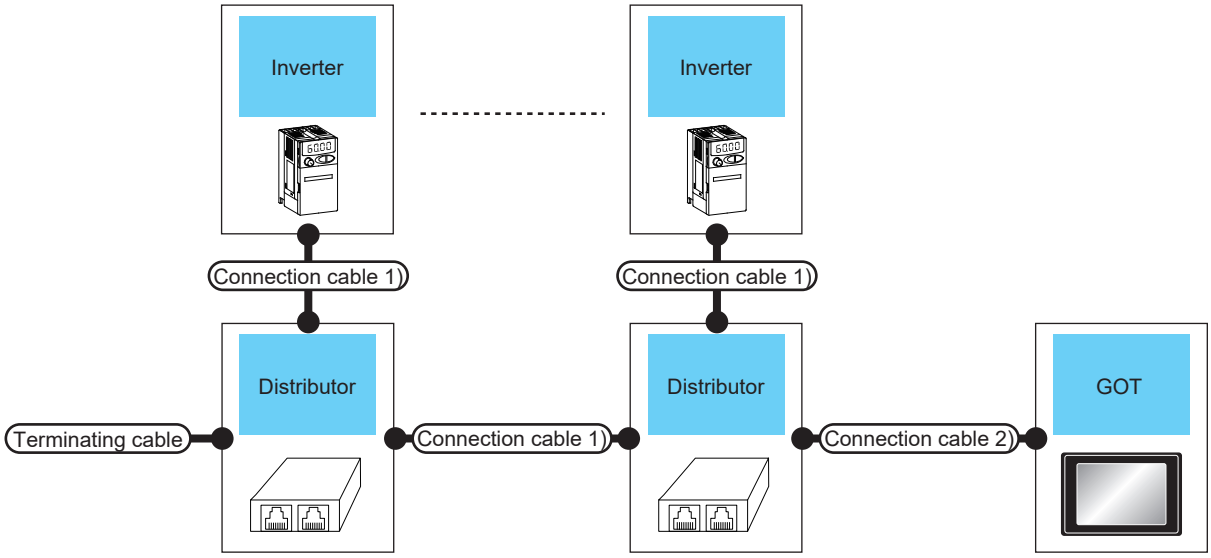
■Maximum length

The maximum length of the connection cable is 500 m.

■Maximum number of connected devices

Only one inverter can access one GOT at a time.

When connecting to multiple inverters (max. 31) (using distributors)



For details on the maximum length of the connection cable, refer to the following.

☞ Page 1584 Maximum length

For details on the maximum number of connected devices, refer to the following.

☞ Page 1584 Maximum number of connected devices

Inverter		Communication type	Terminal cable	Connection cable 1)	Distributor*1	Connection cable 2)	GOT	
Controller	Interface						Interface	Model
FR-D8□0	PU port	RS-485	☞ Page 1587 RS-485 connection diagram (4)	☞ Page 1587 RS-485 connection diagram (3)	BMJ-8 (recommended)	☞ Page 1586 RS-485 connection diagram (1)	Built-in RS-232/422/485 interface	GT37 SoftGOT3000
							GT37-IF2000 + GT15-RS4-9S	GT37 SoftGOT3000

*1 The distributor is a product manufactured by HAKKO ELECTRIC CO., LTD.
For details, contact HAKKO ELECTRIC CO., LTD.

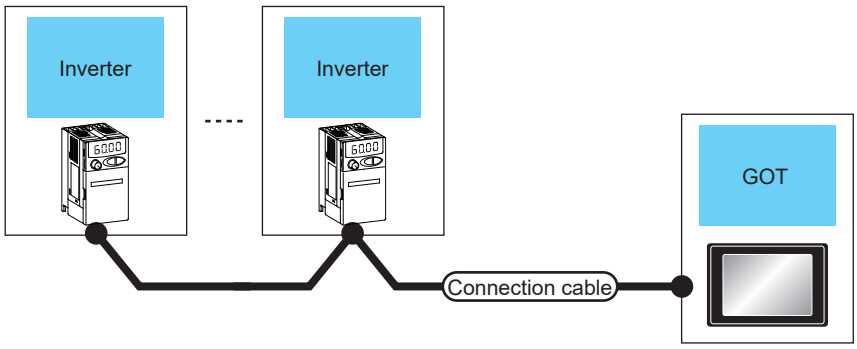
■Maximum length

The maximum length of the connection cable is 500 m.

■Maximum number of connected devices

31 inverters can access one GOT at a time.

When connecting to multiple inverters (max. 31) (using the built-in RS-485 terminal block)



For details on the maximum length of the connection cable, refer to the following.

☞ Page 1585 Maximum length

For details on the maximum number of connected devices, refer to the following.

☞ Page 1585 Maximum number of connected devices

Inverter		Communication type	Connection cable	GOT	
Connected device*1	Interface			Interface	Model
FR-D8□0	Built-in RS-485 terminal block	RS-485	☞ Page 1587 RS-485 connection diagram (5)	Built-in RS-232/422/485 interface	GT37 SoftGOT3000
				GT37-IF2000 + GT15-RS4-9S	GT37 SoftGOT3000

■Maximum length

The maximum length of the connection cable is 500 m.

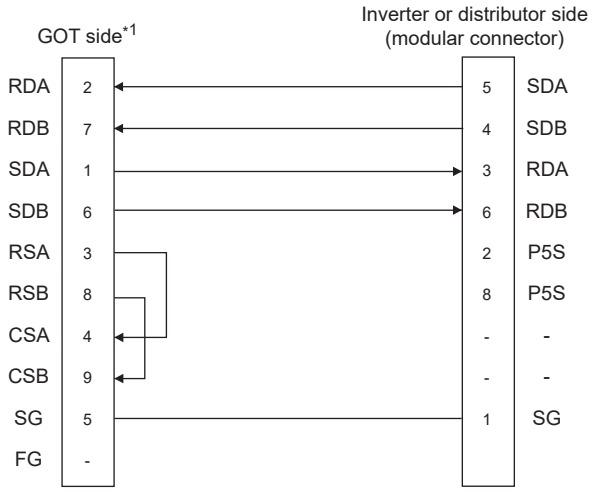
■Maximum number of connected devices

31 inverters can access one GOT at a time.

18.11.3 Connection diagram

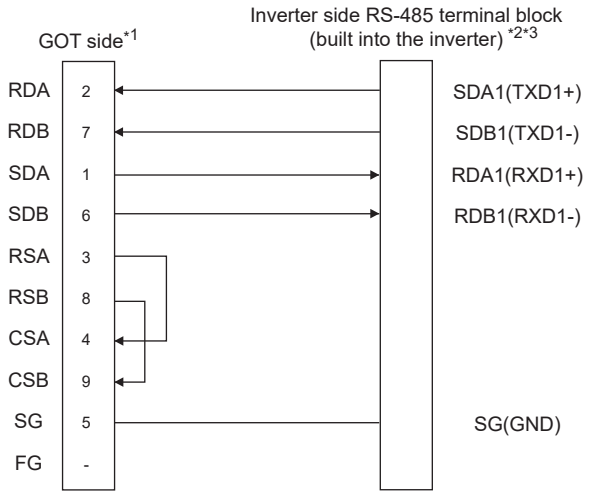
The following diagram shows the connection between the GOT and the inverter.

RS-485 connection diagram (1)



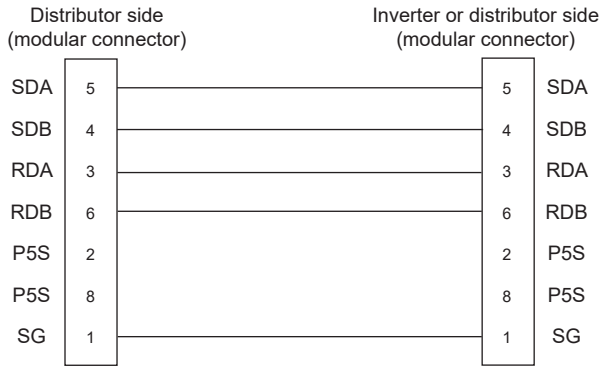
*1 For GT37 in the end position of the system configuration, set the terminating resistor to 330 Ω.
☞ Page 2956 Terminating resistors of GOT

RS-485 connection diagram (2)

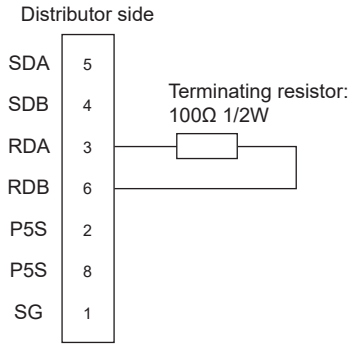


*1 For GT37 in the end position of the system configuration, set the terminating resistor to 330 Ω.
☞ Page 2956 Terminating resistors of GOT
*2 RDA2, RDB2, SDA2, and SDB2 terminals of the RS-485 terminal block (built into the inverter) cannot be used.
*3 Set the terminating resistor switch built into the inverter to ON (100 Ω).

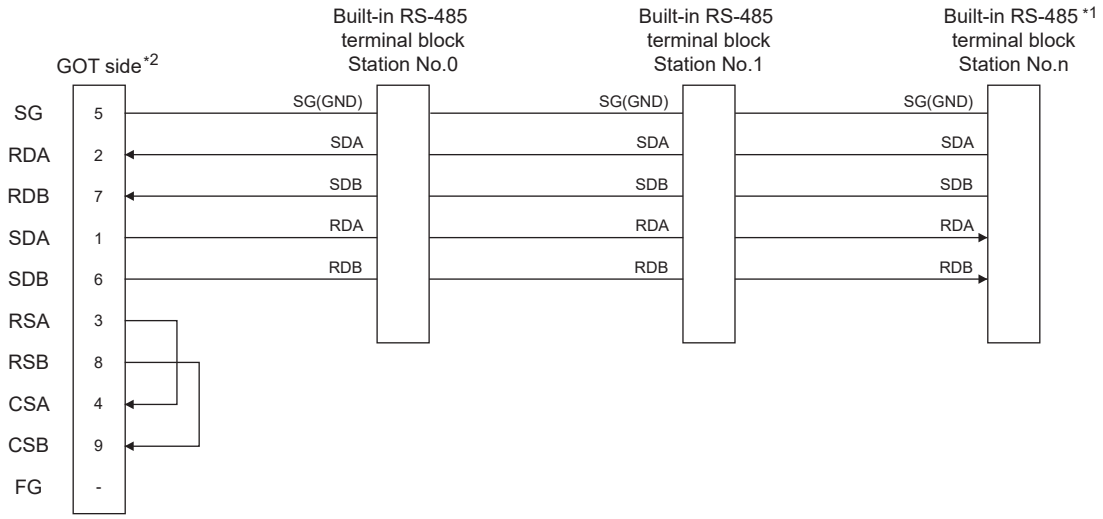
RS-485 connection diagram (3)



RS-485 connection diagram (4)



RS-485 connection diagram (5)



*1 Set the terminating resistor switch of the inverter located farthest from the GOT to ON (100 Ω).

*2 For GT37 in the end position of the system configuration, set the terminating resistor to 330 Ω.

☞ Page 2956 Terminating resistors of GOT

Preparation of the RS-485 cable

■Cable length

The length of the RS-485 cable must be 500 m or less.

■GOT side connector

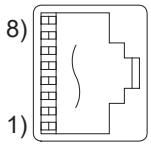
For the GOT side connector, refer to the following.

☞ Page 2954 GOT connector specifications

■Inverter connector specifications

- Pin layout in the PU port

When seen from the front of the inverter
(receptacle side)



Modular jack

Pin No.	Signal name	Remark
1	GND (SG)	
2	(P5S)	Not used
3	RXD+ (RDA)	
4	TXD- (SDB)	
5	TXD+ (SDA)	
6	RXD- (RDB)	
7	GND (SG)	
8	(P5S)	Not used

The contents in the parentheses indicate symbols described in the inverter manual.

The pins number 2 and 8 (P5S) are connected to the power supply for an operation panel or a parameter unit.

Do not use them in RS-485 communication.

- Connector of cable between FREQROL Series inverters

Use the commercial connectors and cables shown in the table below or the comparable products. (Refer to the manual for the inverter.)

Name	Model name	Specifications	Manufacturer
Connector	5-554720-3	RJ45 connector	Tyco International, Ltd
Modular ceiling rosette (Distributor)	BMJ-8	-	HAKKO ELECTRIC CO.,LTD.
Cable	SGLPEV 0.5mm × 4P	Cable conforming to EIA568 (such as cable 10BASE-T)	MITSUBISHI CABLE INDUSTRIES, LTD.

Connecting terminating resistors

■GOT side

When connecting a PLC to the GOT, a terminating resistor must be connected to the GOT.

Set the terminating resistor setting switch.

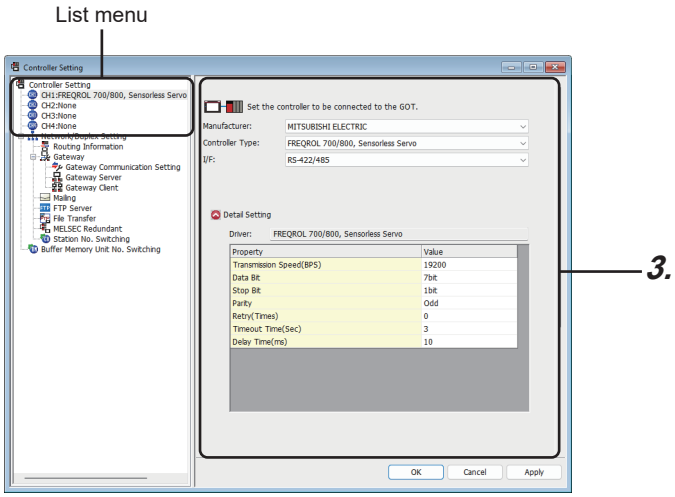
For the procedure to set the terminating resistor, refer to the following.

☞ Page 2956 Terminating resistors of GOT

18.11.4 GOT side settings

[Controller Setting]

Set the channel of the connected controller.



Operating procedure

1. Select [Common] → [Controller Setting] from the menu.

2. In the [Controller Setting] window, select the channel number to be used from the list menu.

3. Set the following items.

Item	Description
[Manufacturer]	[MITSUBISHI ELECTRIC]
[Controller Type]	• [FREQROL 700/800, Sensorless Servo] • [FREQROL 800/E700NE(Batch monitor)]
[I/F]	Configure the settings according to the communication format used.
[Detail Setting]	Configure the settings according to the usage environment. ☞ Page 1590 [Detail Setting]

4. When you have completed the settings, click the [OK] button.

Point

• When [Controller Type] is set to [FREQROL 800/E700NE(Batch monitor)]

The [Faults history] and [Batch monitor] functions of FR Configurator2 can be realized on GOT by creating the screens.

• Checking the controller settings

The settings of connecting equipment can be confirmed in [I/F Communication Setting].

For details, refer to the following.

📖GT Designer3 (GOT3000) Screen Design Manual

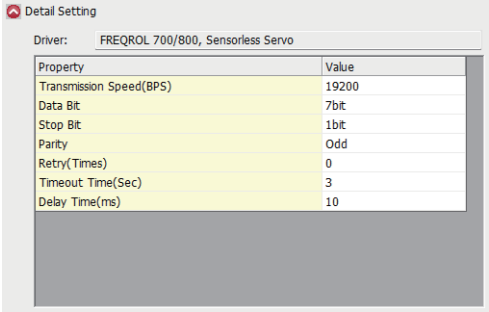
Precautions

Make sure to use GD for screen switching devices and system information devices when the GOT is connected to only the inverter.

■[Detail Setting]

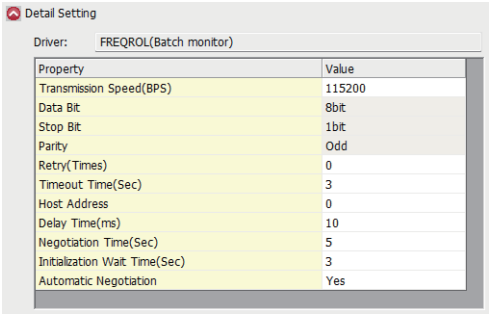
Configure the settings according to the usage environment.

- [FREQROL 700/800, Sensorless Servo]



Item	Description	Range
[Driver]	This item appears when communication drivers are selectable according to the settings of [Controller Type] and [I/F].	[FREQROL 700/800, Sensorless Servo]
[Transmission Speed]	Set this item to change the transmission speed used for communication with the connected equipment.	[9600] bps, [19200] bps, [38400] bps, [57600] bps, [115200] bps
[Data Bit]	Set this item to change the data length used for communication with the connected equipment.	[7 bit], [8 bit]
[Stop Bit]	Specify the stop bit length for communications.	[1 bit], [2 bit]
[Parity]	Specify whether or not to perform a parity check, and how it is performed during communication.	[None], [Even], [Odd]
[Retry]	Specify the number of retries to be performed during communication.	[0] times to [5] times
[Timeout Time]	Specify the time period for a communication to time out.	[1] second to [30] seconds
[Delay Time]	Specify the send delay time for a communication.	[0] ms to [300] ms

• [FREQROL(Batch monitor)]



Item	Description	Range
[Driver]	This item appears when communication drivers are selectable according to the settings of [Controller Type] and [I/F].	[FREQROL(Batch monitor)]
[Transmission Speed]	Set this item to change the transmission speed used for communication with the connected equipment.	[9600] bps, [19200] bps, [38400] bps, [57600] bps, [115200] bps
[Data Bit]	Set this item to change the data length used for communication with the connected equipment.	[8bit]
[Stop Bit]	Specify the stop bit length for communications.	[1bit]
[Parity]	Specify whether or not to perform a parity check, and how it is performed during communication.	[Odd]
[Retry]	Specify the number of retries to be performed during communication.	[0] times to [5] times
[Timeout Time]	Specify the time period for a communication to time out.	[1] second to [30] seconds
[Host Address]	Specify the station number of the inverter in the system configuration.	[0] to [31]
[Delay Time]	Specify the send delay time for a communication.	[0] ms to [300] ms
[Negotiation Time]	Set the time period that the GOT side communication setting is sent to the inverter.	[1] second to [10] seconds
[Initialization Wait Time]	Set the wait time from when the communication setting is changed until when the communication starts.	[1] second to [10] seconds
[Automatic Negotiation]	Set whether to use the automatic connection.	[Yes], [No]

Point

• Communication interface setting by the Utility

The communication interface setting can be changed on the Utility's [Communication Settings] after writing [Controller Setting] of project data.

For details on the Utility, refer to the following manuals.

📖GOT3000 Series User's Manual (Utility & Maintenance Functions)

• Precedence in communication settings

When settings are made by GT Designer3 or the Utility, the latest setting is effective.

• Cutting the portion of multiple connection of the controller

By setting GOT internal device, GOT can cut the portion of multiple connection of the controller.

For example, faulty station that has communication timeout can be cut from the system.

For details of the setting contents of GOT internal device, refer to the following manual.

📖GT Designer3 (GOT3000) Screen Design Manual

Precautions

The following shows the settable drivers.

• When connecting the GOT to one or more inverters

[FREQROL 700/800, Sensorless Servo]

[FREQROL(Batch monitor)]

• When automatically connecting the GOT to an inverter

[FREQROL(Batch monitor)]

18.11.5 Inverter side settings

Model name		Reference
FR-D800 series	FR-D8□0	☞ Page 1592 Connection to FR-D800 series

Connection to FR-D800 series

For details on the inverters, refer to the manual for the corresponding series.

Point

When operating the inverter from the GOT
When operating the inverter from the GOT, set the parameter of the inverter side so that the GOT connection destination of the inverter side is set to the mode with the command right.
For details, refer to the following manual.
📖Manual of the inverter to be connected to the GOT

Configure the inverter communication settings by one of the following three methods.
To automatically reconfigure the GOT side communication settings to the inverter side communication settings in batches and to perform the automatic connection, refer to the following.
☞ Page 1593 Communication settings of inverter (Automatic connection)
To automatically reconfigure the GOT side default communication settings to the inverter side communication settings in batches, refer to the following.
☞ Page 1594 Automatic setting with Pr.999
To manually reconfigure the GOT side communication settings to the inverter communication settings, refer to the following.
☞ Page 1595 Communication settings of inverter (Manual setting)
Be sure to perform the inverter reset after updating each parameter.

Precautions

- Changing communication parameters

Do not make any change for each communication parameter of the inverter side from GOT.
If changed, the communication to the inverter cannot be made.

- When setting "8888" or "9999" to inverter parameter (Pr)

"8888" and "9999" designate special function.
When specifying from the GOT, it will be as follows.

Set value of inverter side	Value specified by GOT
8888	65520
9999	65535

■Communication port and the supported parameters

Inverter side interface	Inverter side parameter
PU connector	Pr.79, Pr.117 to Pr.124, Pr.340, Pr.342, Pr.549
RS-485 terminal	Pr.79, Pr.331 to Pr.337, Pr.340 to Pr.342, Pr.549

■Communication settings of inverter (Automatic connection)

When [Automatic Negotiation] is set to [Yes] in the GOT communication settings, the inverter parameters are reconfigured to the GOT communication settings.

Set the following parameters before the automatic connection.

Setting item	Parameter number	Setting range	Contents of setting
PU communication station number	Pr.117	0 to 31	☞ Page 1596 Station number setting
Protocol selection	Pr.549	0, 1	0: Mitsubishi Electric inverter (computer link) protocol 1: MODBUS RTU protocol

The following shows the parameters to be reconfigured by the automatic connection.

Setting item	Parameter number
PU communication speed	Pr.118
PU communication stop bit length/data length	Pr.119
PU communication parity check	Pr.120
Number of PU communication retries	Pr.121
PU communication check time interval	Pr.122
PU communication waiting time setting	Pr.123
PU communication CR/LF selection	Pr.124

Before performing the automatic connection, connect all the GOTs and the inverters.

After the automatic connection is performed, if a station is added or changed, or the communication settings are not reconfigured normally, change the settings with the automatic batch parameter setting (Pr.999) separately.

If the inverter power turns off while the automatic connection is executed, execute the automatic connection on the GOT again.

If the automatic connection fails, a communication timeout error occurs.

If the automatic connection succeeds, the GOT normally starts communicating with each station.

■Automatic setting with Pr.999

Setting Pr.999 as shown below automatically configures the communication settings to the default communication settings of the GOT side collectively.

Parameter number	Set value	Description	Operation in parameter setting mode
Pr.999 *1	10	GOT ([FREQROL 700/800, Sensorless Servo]) initial settings	[AUTO] → [GOT] → [1] Write
	12	GOT ([FREQROL(Batch monitor)]) initial settings	[AUTO] → [GOT] → [2] Write

*1 When monitoring the value of Pr.999, 9999 is always monitored.

The following shows the values to be automatically set in batches when the above values are set for Pr.999.

- Pr.999=10

Pr.No.	Setting item	Set value
79	Operation mode selection	1
118	PU communication speed	192
119	PU communication stop bit length/data length	10
120	PU communication parity check	1
121	Number of PU communication retries	9999
122	PU communication check time interval	9999
123	PU communication waiting time setting	0ms
124	PU communication CR/LF selection	1
340	Communication startup mode selection	0
549	Protocol selection	0

- Pr.999=12

Pr.No.	Setting item	Set value
79	Operation mode selection	1
118	PU communication speed	1152
119	PU communication stop bit length/data length	0
120	PU communication parity check	1
121	Number of PU communication retries	9999
122	PU communication check time interval	9999
123	PU communication waiting time setting	0ms
124	PU communication CR/LF selection	1
340	Communication startup mode selection	0
414	PLC function operation selection	2*1
549	Protocol selection	0

*1 Before configuring the automatic batch setting, if Pr.414 is set to 1, the setting is not changed.

■Communication settings of inverter (Manual setting)

Set the following parameters using the PU (parameter unit).

Do not change these parameters, even though they can be monitored from the GOT.

If they are changed, communication with the GOT is disabled.

Setting item*1	Parameter number	Set value	Contents of setting
PU communication station number	Pr.117	0 to 31	☞ Page 1596 Station number setting
PU communication speed*2	Pr.118	192*4	19200 bps
PU communication stop bit length/data length*2	Pr.119	10*5	Data length: 7 bits, stop bit: 1 bit
PU communication parity check*2	Pr.120	1	Odd
Number of PU communication retries	Pr.121	9999	The inverter will not come to an alarm stop.
PU communication check time interval	Pr.122	9999*4	Communication check suspension
PU communication wait time setting	Pr.123	0	0ms
PU communication CR/LF selection	Pr.124	1*3	With CR, without LF
Protocol selection	Pr.549	0	Mitsubishi Electric inverter (computer link) protocol
Operation mode selection	Pr.79	0*3	External operation mode at power on
Link start mode selection	Pr.340	1	Network operation mode
EEPROM write selection	Pr.342	0	Written to RAM and EEPROM

*1 The parameter names described in the FR-D800 series manuals.

*2 Settings on the GOT can be changed.
When changing the settings on the GOT, be sure to change the parameters on the inverter to correspond with the GOT settings.

*3 Inverter default values (No need to change)

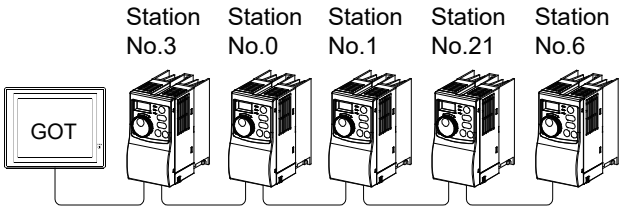
*4 Since the value has been set as a default, no setting is required when connecting to the PU connector on the inverter side.

*5 To use [FREQROL(Batch monitor)] drivers, set 0.

■Station number setting

Set each station number so that no station number overlaps.

The station number can be set regardless of the cable connection order. There is no problem if station numbers are not consecutive.



Station number setting example

• Direct specification

When setting the device, specify the station number of the inverter of which data is to be changed.

Specification range
0 to 31

• Indirect specification

When setting the device, indirectly specify the station number for the inverter to be changed using the 16-bit GOT internal register (GD10 to GD25).

When specifying the station number from 100 to 115 in GT Designer3, the corresponding value from GD10 to GD25 will be the station number of the inverter.

Specified station No.	Corresponding device	Setting range
100	GD10	0 to 31 For the setting other than the above, error (dedicated device is out of range) will occur.
101	GD11	
102	GD12	
103	GD13	
104	GD14	
105	GD15	
106	GD16	
107	GD17	
108	GD18	
109	GD19	
110	GD20	
111	GD21	
112	GD22	
113	GD23	
114	GD24	
115	GD25	

Precautions

The station number required for the inverter system will differ according to the selected driver.

• When selecting [FREQROL 700/800, Sensorless Servo]

Make sure to establish the inverter system with station No. 0.

• When selecting [FREQROL(Batch monitor)]

Make sure to establish the inverter system with the station number set with the host address.

18.12 MELIPM (serial connection)

☞ Page 1597 Connectable devices
☞ Page 1598 System configuration
☞ Page 1600 Connection diagram
☞ Page 1602 GOT side settings
☞ Page 1604 Inverter side settings

18.12.1 Connectable devices

The following table shows the connectable models.

○: Supported, —: Not supported

Controller	Model name	Clock	Inverter side interface	Connectable model
			PU port	
MELIPM series	MD-CX522-□K(-A0)	—	○	GT37 SoftGOT3000

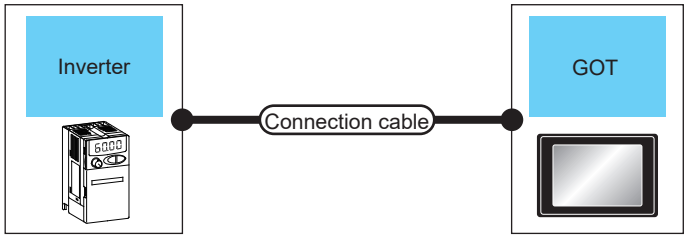
Precautions

- When the communication driver is [FREQROL 700/800, Sensorless Servo]

The settings of [Adjust] or [Broadcast] by GOT clock control will be disabled.

18.12.2 System configuration

When connecting to one inverter



For details on the maximum length of the connection cable, refer to the following.

☞ Page 1598 Maximum length

For details on the maximum number of connected devices, refer to the following.

☞ Page 1598 Maximum number of connected devices

Inverter		Communication type	Connection cable	GOT	
Controller	Interface			Interface	Model
MD-CX522-□K(-A0)	PU port	RS-485	☞ Page 1600 RS-485 connection diagram (1)	Built-in RS-232/422/485 interface	GT37 SoftGOT3000
				GT37-IF2000 + GT15-RS4-9S	GT37 SoftGOT3000

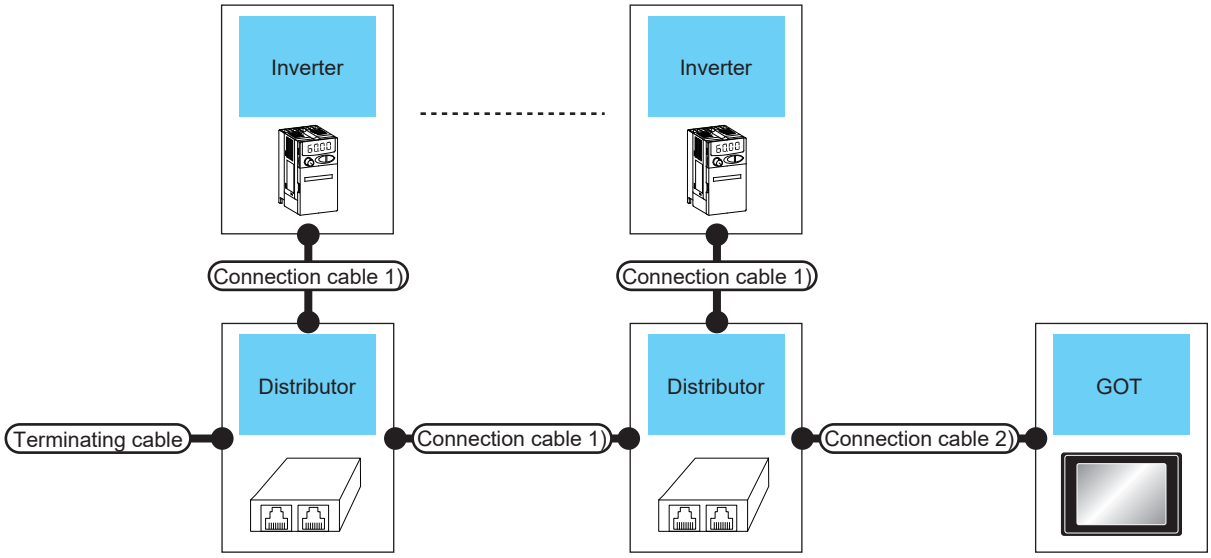
■Maximum length

The maximum length of the connection cable is 20 m.

■Maximum number of connected devices

Only one inverter can access one GOT at a time.

When connecting to multiple inverters (max. 31) (using distributors)



For details on the maximum length of the connection cable, refer to the following.

☞ Page 1599 Maximum length

For details on the maximum number of connected devices, refer to the following.

☞ Page 1599 Maximum number of connected devices

Inverter		Communication type	Terminal cable	Connection cable 1)	Distributor*1	Connection cable 2)	GOT	
Controller	Interface						Interface	Model
MD-CX522-□K(-A0)	PU port	RS-485	☞ Page 1600 RS-485 connection diagram (3)	☞ Page 1600 RS-485 connection diagram (2)	BMJ-8 (recommended)	☞ Page 1600 RS-485 connection diagram (1)	Built-in RS-232/422/485 interface	GT37 SoftGOT3000
							GT37-IF2000 + GT15-RS4-9S	GT37 SoftGOT3000

*1 The distributor is a product manufactured by HAKKO ELECTRIC CO., LTD.
For details, contact HAKKO ELECTRIC CO., LTD.

■Maximum length

The maximum length of the connection cable is 500 m.

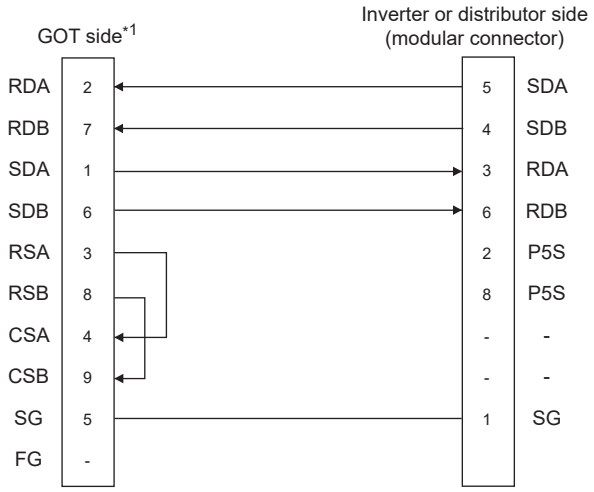
■Maximum number of connected devices

31 inverters can access one GOT at a time.

18.12.3 Connection diagram

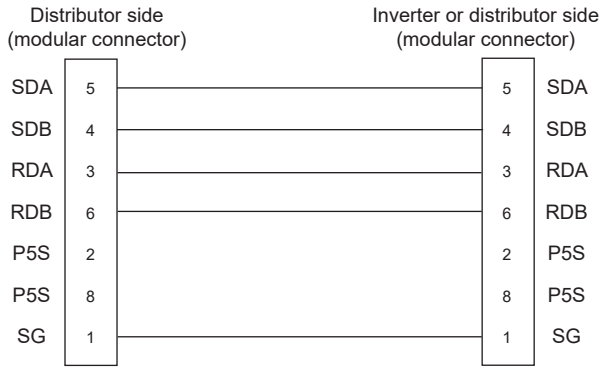
The following diagram shows the connection between the GOT and the inverter.

RS-485 connection diagram (1)

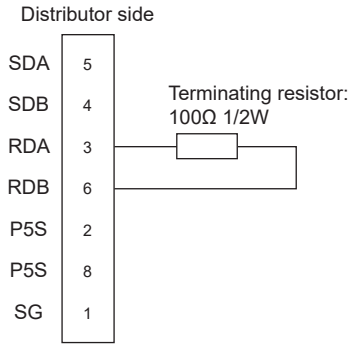


*1 For GT37 in the end position of the system configuration, set the terminating resistor to 330 Ω.
☞ Page 2956 Terminating resistors of GOT

RS-485 connection diagram (2)



RS-485 connection diagram (3)



Preparation of the RS-485 cable

■Cable length

The length of the RS-485 cable must be 500 m or less.

■GOT side connector

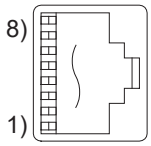
For the GOT side connector, refer to the following.

☞ Page 2954 GOT connector specifications

■Inverter connector specifications

- Pin layout in the PU port

When seen from the front of the inverter
(receptacle side)



Modular jack

Pin No.	Signal name	Remark
1	GND (SG)	
2	(P5S)	Not used
3	RXD+ (RDA)	
4	TXD- (SDB)	
5	TXD+ (SDA)	
6	RXD- (RDB)	
7	GND (SG)	
8	(P5S)	Not used

The contents in the parentheses indicate symbols described in the inverter manual.

The pins number 2 and 8 (P5S) are connected to the power supply for an operation panel or a parameter unit.

Do not use them in RS-485 communication.

- Connector of cable between FREQROL Series inverters

Use the commercial connectors and cables shown in the table below or the comparable products. (Refer to the manual for the inverter.)

Name	Model name	Specifications	Manufacturer
Connector	5-554720-3	RJ45 connector	Tyco International, Ltd
Modular ceiling rosette (Distributor)	BMJ-8	-	HAKKO ELECTRIC CO.,LTD.
Cable	SGLPEV 0.5mm × 4P	Cable conforming to EIA568 (such as cable 10BASE-T)	MITSUBISHI CABLE INDUSTRIES, LTD.

Connecting terminating resistors

■GOT side

When connecting a PLC to the GOT, a terminating resistor must be connected to the GOT.

Set the terminating resistor setting switch.

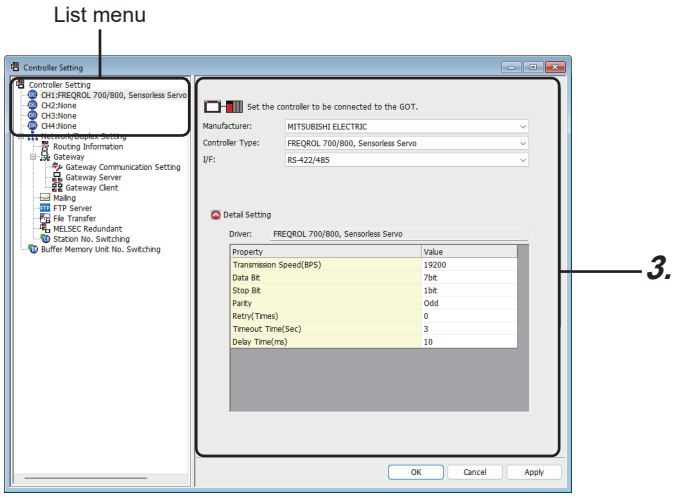
For the procedure to set the terminating resistor, refer to the following.

☞ Page 2956 Terminating resistors of GOT

18.12.4 GOT side settings

[Controller Setting]

Set the channel of the connected controller.



Operating procedure

1. Select [Common] → [Controller Setting] from the menu.
2. In the [Controller Setting] window, select the channel number to be used from the list menu.
3. Set the following items.

Item	Description
[Manufacturer]	[MITSUBISHI ELECTRIC]
[Controller Type]	[FREQROL 700/800, Sensorless Servo]
[I/F]	Configure the settings according to the communication format used.
[Detail Setting]	Configure the settings according to the usage environment. ☞ Page 1603 [Detail Setting]

4. When you have completed the settings, click the [OK] button.

Point

• Checking the controller settings

The settings of connecting equipment can be confirmed in [I/F Communication Setting].

For details, refer to the following.

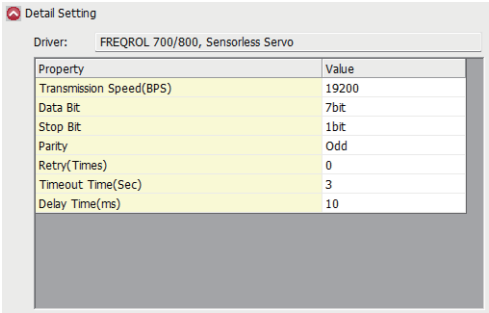
📖GT Designer3 (GOT3000) Screen Design Manual

Precautions

Make sure to use GD for screen switching devices and system information devices when the GOT is connected to only the inverter.

■[Detail Setting]

Configure the settings according to the usage environment.



Item	Description	Range
[Driver]	This item appears when communication drivers are selectable according to the settings of [Controller Type] and [I/F].	[FREQROL 700/800, Sensorless Servo]
[Transmission Speed]	Set this item to change the transmission speed used for communication with the connected equipment.	[9600] bps, [19200] bps, [38400] bps, [57600] bps, [115200] bps
[Data Bit]	Set this item to change the data length used for communication with the connected equipment.	[7 bit], [8 bit]
[Stop Bit]	Specify the stop bit length for communications.	[1 bit], [2 bit]
[Parity]	Specify whether or not to perform a parity check, and how it is performed during communication.	[None], [Even], [Odd]
[Retry]	Specify the number of retries to be performed during communication.	[0] times to [5] times
[Timeout Time]	Specify the time period for a communication to time out.	[1] second to [30] seconds
[Delay Time]	Specify the send delay time for a communication.	[0] ms to [300] ms

Precautions

The following shows the settable drivers.

- When connecting the GOT to one or more inverters

[FREQROL 700/800, Sensorless Servo]

18.12.5 Inverter side settings

Model name		Reference
MELIPM series	MD-CX522-□K(-A0)	☞ Page 1604 Connecting to MELIPM series

Connecting to MELIPM series

For details on the inverters, refer to the manual for the corresponding series.

Point

When operating the inverter from the GOT
When operating the inverter from the GOT, set the parameter of the inverter side so that the GOT connection destination of the inverter side is set to the mode with the command right.
For details, refer to the following manual.
📖Manual of the inverter to be connected to the GOT

Configure communication settings for the inverter.
Be sure to perform the inverter reset after updating each parameter.

Precautions

- Changing communication parameters

Do not make any change for each communication parameter of the inverter side from GOT.
If changed, the communication to the inverter cannot be made.

- When setting "8888" or "9999" to inverter parameter (Pr)

"8888" and "9999" designate special function.
When specifying from the GOT, it will be as follows.

Set value of inverter side	Value specified by GOT
8888	65520
9999	65535

■Communication port and the supported parameters

Inverter side interface	Inverter side parameter
PU connector	Pr.79, Pr.117 to Pr.124

■Communication settings of inverter

Set the following parameters using the PU (parameter unit).
After setting the parameters for the communication settings, reset the inverter.
Do not change these parameters, even though they can be monitored from the GOT.
If they are changed, communication with the GOT is disabled.

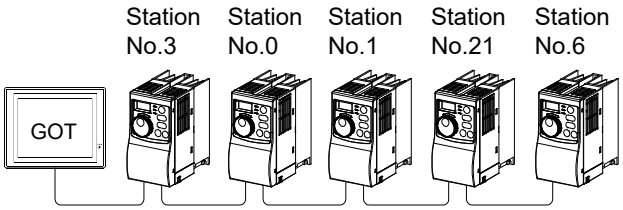
Setting item*1	Parameter number	Set value	Contents of setting
Communication station number	Pr.117	0 to 31	☞ Page 1605 Station number setting
Communication speed*2	Pr.118	192*3	19200 bps
Stop bit length/data length*2	Pr.119	10	Data length: 7 bits, stop bit: 1 bit
Parity check presence/absence*2	Pr.120	1	Odd
Number of communication retries	Pr.121	9999	The inverter will not come to an alarm stop.
Communication check time interval	Pr.122	9999	Communication check suspension
Wait time setting	Pr.123	0	0ms
CR-LF presence/absence selection	Pr.124	1*3	With CR, without LF

*1 Setting items are parameter names described in the manual of MELIPM series.
*2 Settings on the GOT can be changed.
When changing the settings on the GOT, be sure to change the parameters on the inverter to correspond with the GOT settings.
*3 Inverter default values (No need to change)

■Station number setting

Set each station number so that no station number overlaps.

The station number can be set regardless of the cable connection order. There is no problem if station numbers are not consecutive.



Station number setting example

- Direct specification

When setting the device, specify the station number of the inverter of which data is to be changed.

Specification range
0 to 31

- Indirect specification

When setting the device, indirectly specify the station number for the inverter to be changed using the 16-bit GOT internal register (GD10 to GD25).

When specifying the station number from 100 to 115 in GT Designer3, the corresponding value from GD10 to GD25 will be the station number of the inverter.

Specified station No.	Corresponding device	Setting range
100	GD10	0 to 31 For the setting other than the above, error (dedicated device is out of range) will occur.
101	GD11	
102	GD12	
103	GD13	
104	GD14	
105	GD15	
106	GD16	
107	GD17	
108	GD18	
109	GD19	
110	GD20	
111	GD21	
112	GD22	
113	GD23	
114	GD24	
115	GD25	

Precautions

The station number required for the inverter system will differ according to the selected driver.

- When selecting [FREQROL 700/800, Sensorless Servo]

Make sure to establish the inverter system with station No. 0.

19 CC-Link IE TSN connection

☞ Page 1606 FR-A800 (CC-Link IE TSN connection)
☞ Page 1618 FR-F800 (CC-Link IE TSN connection)
☞ Page 1630 FR-E800 (CC-Link IE TSN connection)
☞ Page 1642 FR-D800 (CC-Link IE TSN connection)

19.1 FR-A800 (CC-Link IE TSN connection)

☞ Page 1606 Connectable devices
☞ Page 1607 System configuration
☞ Page 1609 GOT side settings
☞ Page 1613 PLC side settings
☞ Page 1617 Inverter side settings

19.1.1 Connectable devices

The following table shows the connectable models.

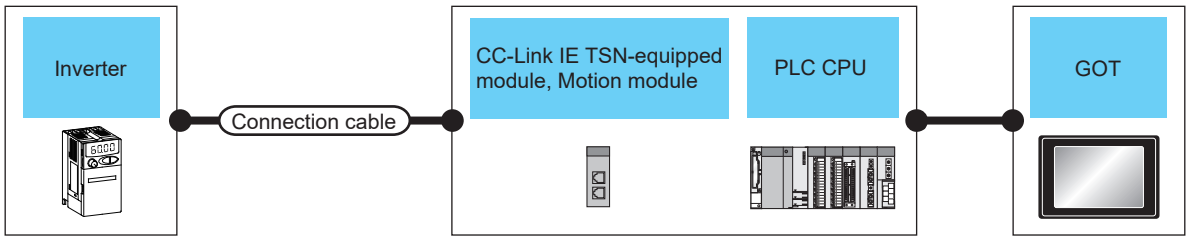
○: Supported, —: Not supported

Controller	Model	Clock	CC-Link IE TSN-equipped module or Motion module	Connectable model
FR-A800 series	FR-A8□0*1 FR-A8□2*1 FR-A8□6*1	—	RJ71GN11-T2 RJ71GN11-EIP RD78G4 RD78G8 RD78G16 RD78G32 RD78G64 RD78GHV RD78GHW	GT37 SoftGOT3000
	FR-A8□0-GN FR-A8□2-GN	—	RJ71GN11-T2 RJ71GN11-EIP RD78G4 RD78G8 RD78G16 RD78G32 RD78G64 RD78GHV RD78GHW	GT37 SoftGOT3000

*1 A built-in option (FR-A8NCG) is required.
Use an inverter with the following SERIAL (serial number).
SERIAL (serial number) is provided on the rating plate of the inverter.

Country of origin indication	SERIAL (serial number)
MADE in Japan	□96****** and later
MADE in China	□97****** and later

19.1.2 System configuration



For details on the connection cable and overall cable length, refer to the following.

☞ Page 1608 Connection cable
☞ Page 1608 Overall length

For details on the maximum number of connected devices, refer to the following.

☞ Page 1608 Maximum number of connected devices

Controller	CC-Link IE TSN Class	Connection cable	PLC*1		GOT	
			CC-Link IE TSN-equipped module or Motion module	CPU model	Interface	Model
FR-A8□0 FR-A8□2 FR-A8□6 FR-A8□0-GN FR-A8□2-GN	CC-Link IE TSN Class B (Synchronized Realtime Communication)	Twisted pair cable	RJ71GN11-T2 RD78G4 RD78G8 RD78G16 RD78G32 RD78G64 RD78GHV RD78GHW	RnCPU RnENCPU RnSFCPU	GT37-IF2000 + GT25-J71GN13-T2	GT37 SoftGOT3000
			RJ71GN11-EIP*2	RnCPU RnENCPU	GT37-IF2000 + GT25-J71GN13-T2	GT37 SoftGOT3000
			RJ71GN11-T2 RJ71GN11-EIP*2	MXR300-16 MXR300-32 MXR300-64 MXR500-128 MXR500-256	GT37-IF2000 + GT25-J71GN13-T2	GT37 SoftGOT3000
			FX5-CCLGN-MS	MXF100-8-N32 MXF100-8-P32 MXF100-16-N32 MXF100-16-P32	GT37-IF2000 + GT25-J71GN13-T2	GT37 SoftGOT3000

*1 For the system configuration between the GOT and PLC, refer to the following.
☞ Page 743 CC-Link IE TSN connection

*2 Connect the cable to the P1 port of the RJ71GN11-EIP.

Point

System configuration of the CC-Link IE TSN-equipped module or Motion module

For the system configuration of the CC-Link IE TSN-equipped module, refer to the following manuals.

📖MELSEC iQ-R CC-Link IE TSN User's Manual (Startup)

📖MELSEC iQ-R CC-Link IE TSN Plus Master/Local Module User's Manual

For the system configuration of the Motion module, refer to the following manual.

📖MELSEC iQ-R Motion Module User's Manual (Startup)

Connection cable

Use a connection cable that meets the following standards.

Standard	Category
100BASE-TX	Shielded twisted pair cable (double-shielded, STP) or shielded twisted pair cable (STP) of category 5 or higher
1000BASE-T	Shielded twisted pair cable (double-shielded, STP) or shielded twisted pair cable (STP) of category 5e or higher

For the twisted pair cable, use a straight cable.

Use cables that meet the IEEE802.3 100BASE-TX/1000BASE-T standards.

When using a hub, use a TSN Switch or General-purpose Switch according to the system configuration.

For usable TSN Switches and General-purpose Switches, refer to the following.

📖MELSEC iQ-R CC-Link IE TSN User's Manual (Startup)

Overall length

The overall cable length is 12100 m.

The overall cable length and cable length between stations vary depending on the connection method (line or star), the system configuration, etc.

For details, refer to the following manual.

📖MELSEC iQ-R CC-Link IE TSN User's Manual (Startup)

Maximum number of connected devices

The number of connectable local devices is 120 (1 inverter and 119 GOTs).

The following shows the number of GOTs connectable to one controller.

Controller	
Model	**Number of GOTs connectable to one inverter**
FR-A8□0 FR-A8□2 FR-A8□6 FR-A8□0-GN FR-A8□2-GN	119

Precautions

■GOT startup time

Connecting to the PLC or inverter takes longer time in the CC-Link IE TSN connection.

If the GOT is started during this time, a system alarm occurs.

Adjust the time to display the GOT startup screen to prevent a system alarm.

📖GT Designer3 (GOT3000) Screen Design Manual

■Connection status check after the GOT startup

The connection with the network cannot be established until the connection check with the master station is completed after the GOT startup.

To check the status of connection with the master station, use the CC-Link IE TSN Connection Status (GS1297) of the GOT internal device.

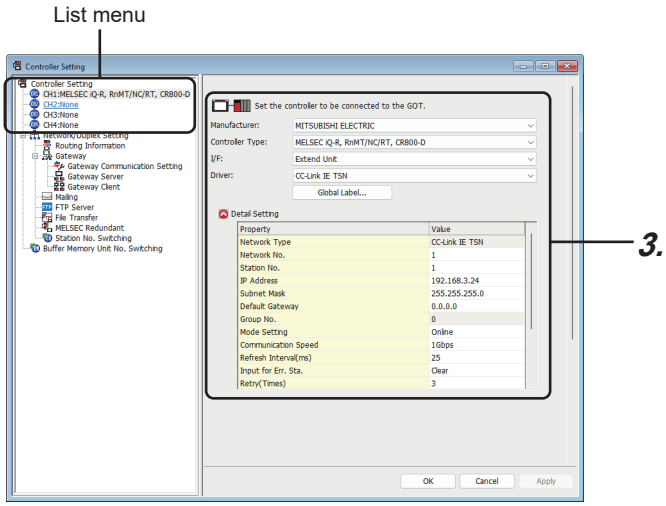
For details on the CC-Link IE TSN Connection Status (GS1297), refer to the following.

📖GT Designer3 (GOT3000) Screen Design Manual

19.1.3 GOT side settings

[Controller Setting]

Set the channel of the connected controller.



Operating procedure

1. Select [Common] → [Controller Setting] from the menu.

2. In the [Controller Setting] window, select the channel number to be used from the list menu.

3. Set the following items.

Item	Description
[Manufacturer]	[MITSUBISHI ELECTRIC]
[Controller Type]	[MELSEC iQ-R, RnMT/NC/RT, CR800-D]
[I/F]	[Extend Unit]
[Driver]	[CC-Link IE TSN]
[Detail Setting]	Configure the settings according to the usage environment. ☞ Page 1610 [Detail Setting]

4. When you have completed the settings, click the [OK] button.

Point

The controller settings can be checked in [I/F Communication Setting].
For details, refer to the following.
📖GT Designer3 (GOT3000) Screen Design Manual

■[Detail Setting]

Configure the settings according to the usage environment.

Detail Setting

Property	Value
Network Type	CC-Link IE TSN
Network No.	1
Station No.	1
IP Address	192.168.3.24
Subnet Mask	255.255.255.0
Default Gateway	0.0.0.0
Group No.	0
Mode Setting	Online
Communication Speed	1Gbps
Refresh Interval(ms)	25
Input for Err. Sta.	Clear
Retry(Times)	3
Timeout Time(Sec)	3
Delay Time(ms)	0
Monitor Speed	High(Normal)
CPU No. switching GD device first No. (3 points)	500
Module No. switching GD device first No. (16 points)	550
Servo axis switching GD device first No. (16 points)	10

Item	Description	Range
[Network Type]	Set the network type.	[CC-Link IE TSN]
[Network No.]	Set the network number.	[1] to [239]
[Station No.]	Set the station number of the GOT.	[1] to [120]
[IP Address][*1]	Set the IP address of the GOT.	[0.0.0.1] to [223.255.255.254]
[Subnet Mask]	When a subnetwork is used, set the subnet mask. (Only for connection via router) If the sub network is not used, the default value is set.	[0.0.0.0] to [255.255.255.255][*2]
[Default Gateway]	Set the router address of the default gateway where the GOT is connected. (Only for connection via router)	[0.0.0.0] to [223.255.255.254]
[Group No.]	—	[0]
[Mode Setting]	Set the operation mode of the GOT. For details on the unit communication test mode, refer to the following. ☞ Page 1612 Unit communication test	[Online], [Offline], [Module Communication Test]
[Communication Speed]	Set the communication speed of the GOT.	[1Gbps], [100Mbps][*3]
[Refresh Interval][*4]	Set the number of refreshes to secure the send/receive data per station during communication.	[1] ms to [1000] ms
[Input for Err. Sta.]	Set whether to hold or clear the input from the station where the data link has failed due to power-off or other reasons.	[Clear], [Hold]
[Retry]	Set the number of retries to be performed when a communication timeout occurs. When receiving no response after retries, the communication times out.	[0] times to [5] times
[Timeout Time]	Set the time period for a communication to time out.	[1] second to [90] seconds
[Delay Time]	Set the delay time for reducing the load of the network and destination PLC.	[0] ms to [300] ms
[Monitor Speed]	Set the monitor speed of the CC-Link IE TSN network. This setting is not valid in all systems.	[High(Normal)], [Middle], [Low]
[CPU No. switching GD device first No. (3 points)]	The item is displayed but cannot be set.	—
[Module No. switching GD device first No. (16 points)]	The item is displayed but cannot be set.	—
[Servo axis switching GD device first No. (16 points)]	The item is displayed but cannot be set.	—

*1 If any of the following settings is configured in the IP address, a communication timeout error occurs.
- The third octet and fourth octet are all 1 (*.*.255.255) or all 0 (*.*.0.0).
- The host part is all 1 (*.*.*.255) or all 0 (*.*.*.0).
- Some reserved addresses determined for special applications

For details, refer to the following manuals.
MELSEC iQ-R CC-Link IE TSN User's Manual (Application)
MELSEC iQ-R CC-Link IE TSN Plus Master/Local Module User's Manual
MELSEC iQ-R Motion Module User's Manual (Network)

*2 When the subnet mask field is filled with 0, the operation is the same as when the field is left blank.

*3 When setting to 100Mbps, the following conditions must be satisfied.
- CC-Link IE TSN communication unit (GT25-J71GN13-T2): Firmware version 02 or later
- CC-Link IE TSN master/local module (RJ71GN11-T2): Firmware version 04 or later

*4 For [Refresh Interval(ms)] in [Controller Setting] in GT Designer3, set 5 ms or more per 1K words for the total size of the device set in [Network Configuration Settings] in GX Works3.
Setting less than 5 ms may affect the processing of the GOT such as a decrease of the monitoring speed.
The following shows setting examples of the total device size and refresh interval.

Total device size	Refresh interval
1K words	5 ms or more
2K words	10 ms or more
3K words	15 ms or more
5K words	25 ms or more
36K words	180 ms or more

Point

- Controller settings using the GT37 utility

The controller settings can be changed in [Communication Settings] of the GT37 utility after writing [Communication Settings] of project data to GT37.
For details on the GT37 utility, refer to the following manual.
GOT3000 Series User's Manual (Utility & Maintenance Functions)

- Priority of the settings in [Controller Setting]

When the settings are configured in GT Designer3 or in the GT37 utility, the latest settings are effective.

■Unit communication test

In the unit communication test, connect port 1 and port 2 of the CC-Link IE TSN communication unit mounted on the GOT with a network cable, and check if the unit operates properly with the GOT.

The following shows the test procedure and how to check the test result.

1. Perform either of the following operations to set the GOT to the unit communication test mode.

- Write the project data for which [Mode Setting] in [Detail Setting] is set to [Stand-alone test mode] to the GOT.
- Set [Mode setting] in [Detail setting] to [Module Communication Test] in the GOT utility.

2. A unit communication test will start at GOT startup.

3. After the test is complete, check the result with the ERR LED on the communication unit and GOT internal devices (CC-Link IE TSN Module Communication Test Status (GS1114) or CC-Link IE TSN Module Communication Test Error (GS1115)).

Check		Test result
ERR LED on the communication unit		OFF: Normal ON: Error
GOT internal device	CC-Link IE TSN Module Communication Test Status (GS1114)	Notifies the execution status of a communication test of the CC-Link IE TSN communication unit. • b0: Turns on when a communication test is executed. • b1: Turns on while a communication test is being executed. • b2: Turns on when a communication test is complete. • b3 to b15: Use prohibited
	CC-Link IE TSN Module Communication Test Error (GS1115)	Notifies that an error has occurred during a communication test of the CC-Link IE TSN communication unit. • b0: Turns on if there is a problem with the port 1 side of the CC-Link IE TSN communication unit. • b1: Turns on if there is a problem with the connection interface (port 1) of the CC-Link IE TSN communication unit or the Ethernet cable terminal. • b2: Turns on if there is a problem with the port 1 side Ethernet cable of the CC-Link IE TSN communication unit. • b3 to b7: Use prohibited • b8: Turns on if there is a problem with the port 2 side of the CC-Link IE TSN communication unit. • b9: Turns on if there is a problem with the connection interface (port 2) of the CC-Link IE TSN communication unit or the Ethernet cable terminal. • b10: Turns on if there is a problem with the port 2 side Ethernet cable of the CC-Link IE TSN communication unit. • b11 to b15: Use prohibited

For details on the GOT internal devices (CC-Link IE TSN Module Communication Test Status (GS1114) and CC-Link IE TSN Module Communication Test Error (GS1115)), refer to the following.

📖GT Designer3 (GOT3000) Screen Design Manual

4. If no error is detected, change the setting of [Mode Setting] from [Module Communication Test] in [Detail setting].

Since the communication with the controller is not performed when [Mode setting] is set to [Module Communication Test], the communication timeout error occurs when the device of controller is monitored.

5. If any error is detected, replace the communication unit.

19.1.4 PLC side settings

Model		Reference
MELSEC MX Controller (MX-R Model)	MXR300-16 MXR300-32 MXR300-64 MXR500-128 MXR500-256	☞ Page 1614 System configuration
MELSEC MX Controller (MX-F Model)	MXF100-8-N32 MXF100-8-P32 MXF100-16-N32 MXF100-16-P32	☞ Page 1614 System configuration
MELSEC iQ-R series	R00CPU R01CPU R02CPU R04CPU R08CPU R16CPU R32CPU R120CPU R04ENCPU R08ENCPU R16ENCPU R32ENCPU R120ENCPU R08SFCPU R16SFCPU R32SFCPU R120SFCPU	☞ Page 1614 System configuration

This section describes the settings of the GOT, PLC, CC-Link IE TSN-equipped module, and Motion module in the system configuration shown below.

Point

For details on the CC-Link IE TSN-equipped module, refer to the following manuals.
📖MELSEC iQ-R CC-Link IE TSN User's Manual (Startup)
📖MELSEC iQ-R CC-Link IE TSN Plus Master/Local Module User's Manual
For details on the Motion module, refer to the following manual.
📖MELSEC iQ-R Motion Module User's Manual (Startup)

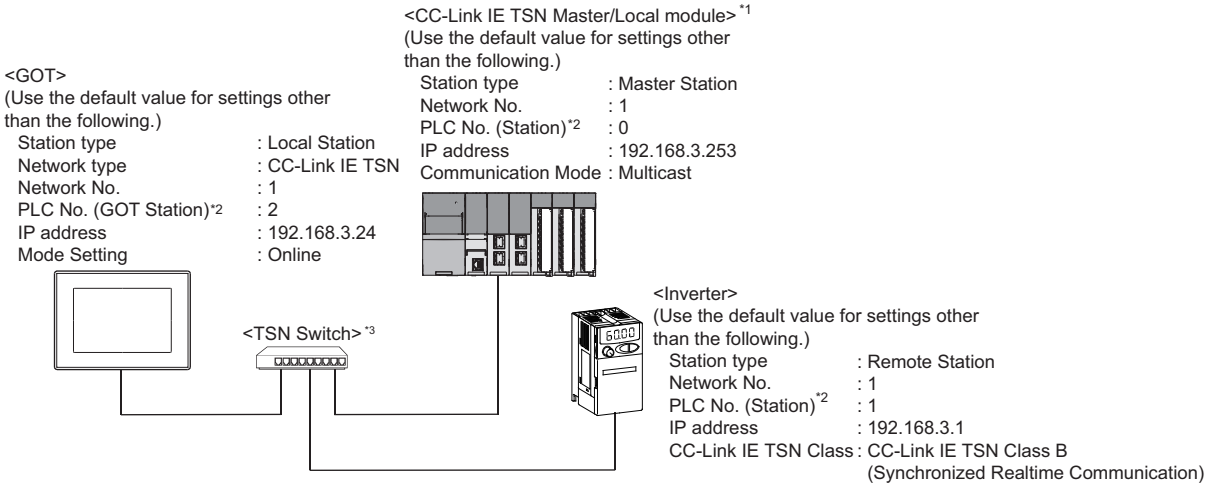
PART 5

System configuration

The following shows a system configuration example of a star topology using a CC-Link IE TSN Class B (Synchronized Realtime Communication) inverter and the CC-Link IE TSN master/local module (RJ71GN11-T2).

For details on the setting, refer to the following.

☞ Page 811 PLC side settings



*1 The CC-Link IE TSN master/local module is mounted on slot 0 of the base unit.
The start I/O No. of the CC-Link IE TSN master/local module is set to "0".

*2 For the following settings, the setting names are different on the PLC side and the GOT side.

Setting	Setting name		
	PLC side	GOT side	
		Controller settings	Connected Ethernet controller settings
Network number	[Network No.]	[GOT Net No.]	[Net No.]
PLC number	[Station]	[GOT Station]	[Station]

*3 Use a TSN Switch.
For details on the TSN Switch, refer to the following.
📖MELSEC iQ-R CC-Link IE TSN User's Manual (Startup)

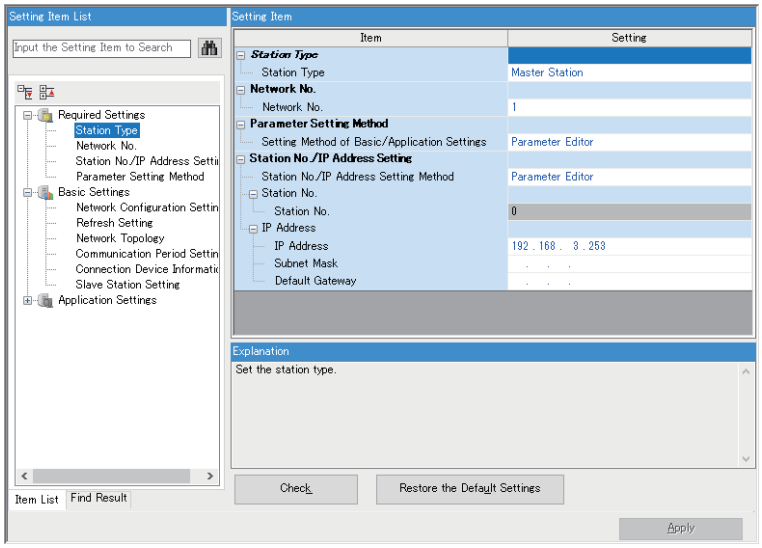
Point

To directly control an inverter from a GOT, set [Communication Mode] of the master station to [Multicast].

[Parameter] in GX Works3

The following shows a parameter setting example for connecting to the CC-Link IE TSN master/local module (RJ71GN11-T2).

■Module parameter



○: Necessary, △: As necessary, —: Not necessary

Item	Setting value	Setting for GOT connection
[Station Type]	Master station	○
[Network No.][*1]	1	○
[Setting Method of Basic/Application Settings]	Set in parameter	○
[Station No./IP Address Setting Method]	Set in parameter	○
[Station No.]	0	○
[IP Address]	192.168.3.253	△
[Subnet Mask]	—	—
[Default Gateway]	—	—

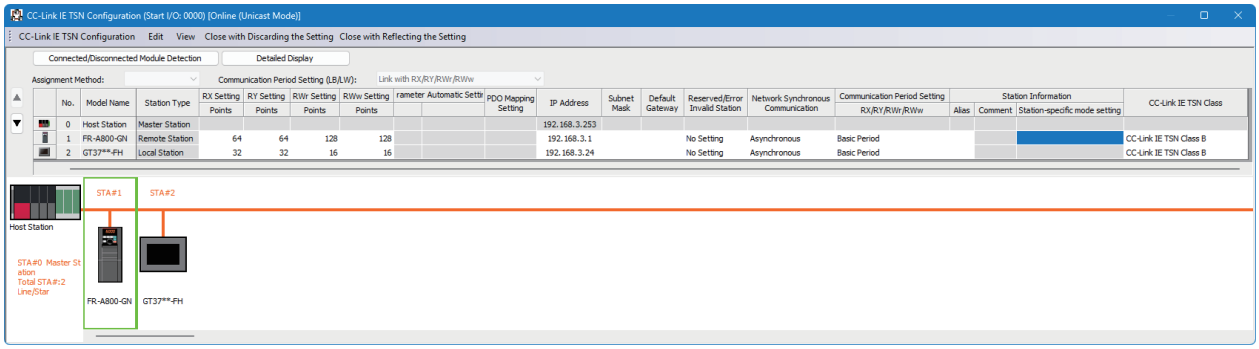
*1 Set the same network number as that of the GOT.

Point

- When changing the module parameter

After writing module parameters to the PLC CPU, turn off then on or reset the PLC CPU.

■Network configuration settings



○: Necessary, △: As necessary, —: Not necessary

Item	Setting value	Setting for GOT connection
[Station]	1	○
[Station Type]	Remote station	○
[IP Address]	192.168.3.1	○

Point

GOT network configuration settings

For the GOT network configuration settings, refer to the following.

☞ Page 812 [Parameter] in GX Works3

[Controller Setting] in GT Designer3

Item	Setting value
[Network Type]	CC-Link IE TSN
[Network No.]	1
[Station No.]	2
[IP Address]	192.168.3.24
[Subnet Mask]	255.255.255.0
[Default Gateway]	0.0.0.0
[Group No.]	0
[Mode Setting]	Online
[Communication Speed]	1 Gbps
[Refresh Interval]	25 ms
[Input for Err. Sta.]	Clear
[Retry]	3 times
[Timeout Time]	3 seconds
[Delay Time]	0 ms
[Monitor Speed]	High(Normal)

Point

[Controller Setting] in GT Designer3

For the setting method of [Controller Setting] in GT Designer3, refer to the following.

☞ Page 1609 [Controller Setting]

19.1.5 Inverter side settings

Model		Reference
FR-A800 series	FR-A8□0 FR-A8□2 FR-A8□6 FR-A8□0-GN FR-A8□2-GN	☞ Page 1617 Connection to FR-A800 series

Connection to FR-A800 series

For the inverter side settings, refer to the following.

📖FR-A800 series manuals

■Communication port and the supported parameters

Inverter side interface	Inverter side parameter
CC-Link IE TSN port	Pr.434 to Pr.441, Pr.1442 to Pr.1459

■Inverter communication settings

Set the following parameters using the PU (parameter unit).

Do not change these parameters, even though they can be monitored from the GOT.

If they are changed, communication with the GOT is disabled.

○: Necessary, △: As necessary, —: Not necessary

Setting item*1	Parameter number	Setting value	Setting for GOT connection
IP address 1*2*4	Pr.434	0 to 255	○
IP address 2*2*4	Pr.435	0 to 255	○
IP address 3*2*4	Pr.436	0 to 255	○
IP address 4*2*4	Pr.437	0 to 255	○
Subnet mask 1*2	Pr.438	255*3	△
Subnet mask 2*2	Pr.439	255*3	△
Subnet mask 3*2	Pr.440	255*3	△
Subnet mask 4*2	Pr.441	0*3	△
Ethernet IP filter address 1	Pr.1442	0*3	△
Ethernet IP filter address 2	Pr.1443	0*3	△
Ethernet IP filter address 3	Pr.1444	0*3	△
Ethernet IP filter address 4	Pr.1445	0*3	△
Ethernet IP filter address 2 range specification	Pr.1446	9999*3	△
Ethernet IP filter address 3 range specification	Pr.1447	9999*3	△
Ethernet IP filter address 4 range specification	Pr.1448	9999*3	△
Clock source selection	Pr.1459	0*3*5	△

*1 The parameter names described in the FR-A800 series manuals

*2 The setting can be changed on the GOT side.
When changing the setting on the GOT side, be sure to change the parameter of the inverter accordingly.

*3 Change the setting depending on the usage environment.

*4 Specifying a value from [1] to [254] with the rotary switch of the inverter enables the settings of the switch.
When the setting is changed, the new setting is applied after the inverter reset or at the next power-on.

*5 The time synchronization operation differs depending on whether the FR-LU08 is installed.
For details on the time synchronization operations, refer to the following.
📖FR-A800 series manuals

19.2 FR-F800 (CC-Link IE TSN connection)

☞ Page 1618 Connectable devices
☞ Page 1619 System configuration
☞ Page 1621 GOT side settings
☞ Page 1625 PLC side settings
☞ Page 1629 Inverter side settings

19.2.1 Connectable devices

The following table shows the connectable models.

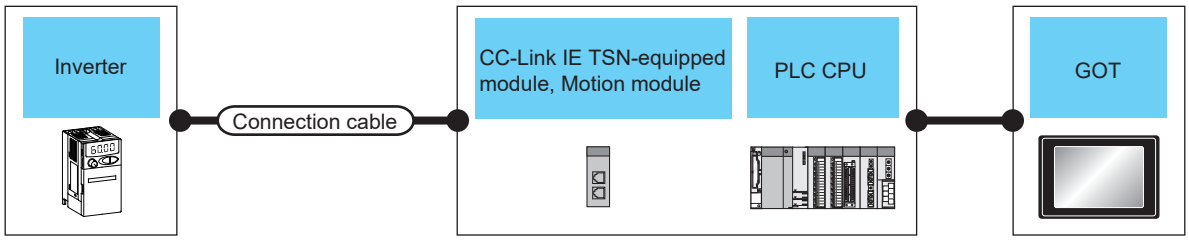
○: Supported, —: Not supported

Controller	Model	Clock	CC-Link IE TSN-equipped module or Motion module	Connectable model
FR-F800 series	FR-F8□0*1 FR-F8□2*1 FR-F8□6*1	—	RJ71GN11-T2 RJ71GN11-EIP RD78G4 RD78G8 RD78G16 RD78G32 RD78G64 RD78GHV RD78GHW	GT37 SoftGOT3000

*1 A built-in option (FR-A8NCG) is required.
Use an inverter with the following SERIAL (serial number).
SERIAL (serial number) is provided on the rating plate of the inverter.

Country of origin indication	SERIAL (serial number)
MADE in Japan	□96****** and later
MADE in China	□97****** and later

19.2.2 System configuration



For details on the connection cable and overall cable length, refer to the following.

☞ Page 1620 Connection cable
☞ Page 1620 Overall length

For details on the maximum number of connected devices, refer to the following.

☞ Page 1620 Maximum number of connected devices

Controller	CC-Link IE TSN Class	Connection cable	PLC*1		GOT	
			CC-Link IE TSN-equipped module or Motion module	CPU model	Interface	Model
FR-F8□0 FR-F8□2 FR-F8□6	CC-Link IE TSN Class B (Synchronized Realtime Communication)	Twisted pair cable	RJ71GN11-T2 RD78G4 RD78G8 RD78G16 RD78G32 RD78G64 RD78GHV RD78GHW	RnCPU RnENCPU RnSFCPU	GT37-IF2000 + GT25-J71GN13-T2	GT37 SoftGOT3000
			RJ71GN11-EIP*2	RnCPU RnENCPU	GT37-IF2000 + GT25-J71GN13-T2	GT37 SoftGOT3000
			RJ71GN11-T2 RJ71GN11-EIP*2	MXR300-16 MXR300-32 MXR300-64 MXR500-128 MXR500-256	GT37-IF2000 + GT25-J71GN13-T2	GT37 SoftGOT3000
			FX5-CCLGN-MS	MXF100-8-N32 MXF100-8-P32 MXF100-16-N32 MXF100-16-P32	GT37-IF2000 + GT25-J71GN13-T2	GT37 SoftGOT3000

*1 For the system configuration between the GOT and PLC, refer to the following.
☞ Page 743 CC-Link IE TSN connection

*2 Connect the cable to the P1 port of the RJ71GN11-EIP.

Point

System configuration of the CC-Link IE TSN-equipped module or Motion module

For the system configuration of the CC-Link IE TSN-equipped module, refer to the following manuals.

📖MELSEC iQ-R CC-Link IE TSN User's Manual (Startup)

📖MELSEC iQ-R CC-Link IE TSN Plus Master/Local Module User's Manual

For the system configuration of the Motion module, refer to the following manual.

📖MELSEC iQ-R Motion Module User's Manual (Startup)

Connection cable

Use a connection cable that meets the following standards.

Standard	Category
100BASE-TX	Shielded twisted pair cable (double-shielded, STP) or shielded twisted pair cable (STP) of category 5 or higher
1000BASE-T	Shielded twisted pair cable (double-shielded, STP) or shielded twisted pair cable (STP) of category 5e or higher

For the twisted pair cable, use a straight cable.

Use cables that meet the IEEE802.3 100BASE-TX/1000BASE-T standards.

When using a hub, use a TSN Switch or General-purpose Switch according to the system configuration.

For usable TSN Switches and General-purpose Switches, refer to the following.

📖MELSEC iQ-R CC-Link IE TSN User's Manual (Startup)

Overall length

The overall cable length is 12100 m.

The overall cable length and cable length between stations vary depending on the connection method (line or star), the system configuration, etc.

For details, refer to the following manual.

📖MELSEC iQ-R CC-Link IE TSN User's Manual (Startup)

Maximum number of connected devices

The number of connectable local devices is 120 (1 inverter and 119 GOTs).

The following shows the number of GOTs connectable to one controller.

Controller	
Model	**Number of GOTs connectable to one inverter**
FR-F8□0 FR-F8□2 FR-F8□6	119

Precautions

■GOT startup time

Connecting to the PLC or inverter takes longer time in the CC-Link IE TSN connection.

If the GOT is started during this time, a system alarm occurs.

Adjust the time to display the GOT startup screen to prevent a system alarm.

📖GT Designer3 (GOT3000) Screen Design Manual

■Connection status check after the GOT startup

The connection with the network cannot be established until the connection check with the master station is completed after the GOT startup.

To check the status of connection with the master station, use the CC-Link IE TSN Connection Status (GS1297) of the GOT internal device.

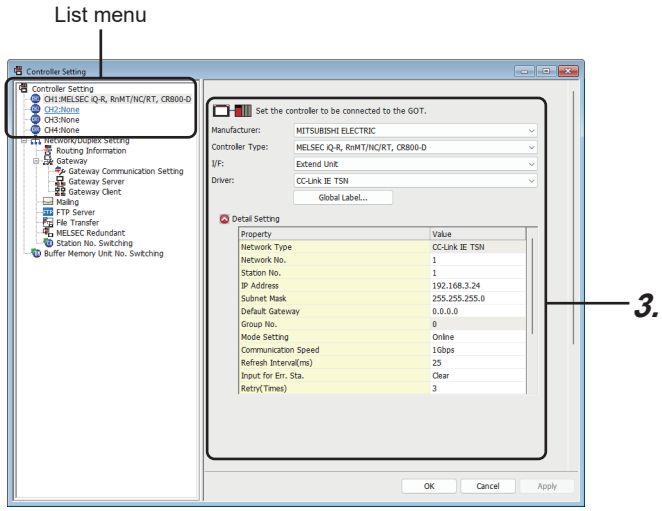
For details on the CC-Link IE TSN Connection Status (GS1297), refer to the following.

📖GT Designer3 (GOT3000) Screen Design Manual

19.2.3 GOT side settings

[Controller Setting]

Set the channel of the connected controller.



Operating procedure

1. Select [Common] → [Controller Setting] from the menu.

2. In the [Controller Setting] window, select the channel number to be used from the list menu.

3. Set the following items.

Item	Description
[Manufacturer]	[MITSUBISHI ELECTRIC]
[Controller Type]	[MELSEC iQ-R, RnMT/NC/RT, CR800-D]
[I/F]	[Extend Unit]
[Driver]	[CC-Link IE TSN]
[Detail Setting]	Configure the settings according to the usage environment. ☞ Page 1622 [Detail Setting]

4. When you have completed the settings, click the [OK] button.

Point

The controller settings can be checked in [I/F Communication Setting].
For details, refer to the following.
📖GT Designer3 (GOT3000) Screen Design Manual

PART 5

■[Detail Setting]

Configure the settings according to the usage environment.

Detail Setting

Property	Value
Network Type	CC-Link IE TSN
Network No.	1
Station No.	1
IP Address	192.168.3.24
Subnet Mask	255.255.255.0
Default Gateway	0.0.0.0
Group No.	0
Mode Setting	Online
Communication Speed	1Gbps
Refresh Interval(ms)	25
Input for Err. Sta.	Clear
Retry(Times)	3
Timeout Time(Sec)	3
Delay Time(ms)	0
Monitor Speed	High(Normal)
CPU No. switching GD device first No. (3 points)	500
Module No. switching GD device first No. (16 points)	550
Servo axis switching GD device first No. (16 points)	10

Item	Description	Range
[Network Type]	Set the network type.	[CC-Link IE TSN]
[Network No.]	Set the network number.	[1] to [239]
[Station No.]	Set the station number of the GOT.	[1] to [120]
[IP Address][*1]	Set the IP address of the GOT.	[0.0.0.1] to [223.255.255.254]
[Subnet Mask]	When a subnetwork is used, set the subnet mask. (Only for connection via router) If the sub network is not used, the default value is set.	[0.0.0.0] to [255.255.255.255][*2]
[Default Gateway]	Set the router address of the default gateway where the GOT is connected. (Only for connection via router)	[0.0.0.0] to [223.255.255.254]
[Group No.]	—	[0]
[Mode Setting]	Set the operation mode of the GOT. For details on the unit communication test mode, refer to the following. ☞ Page 1624 Unit communication test	[Online], [Offline], [Module Communication Test]
[Communication Speed]	Set the communication speed of the GOT.	[1Gbps], [100Mbps][*3]
[Refresh Interval][*4]	Set the number of refreshes to secure the send/receive data per station during communication.	[1] ms to [1000] ms
[Input for Err. Sta.]	Set whether to hold or clear the input from the station where the data link has failed due to power-off or other reasons.	[Clear], [Hold]
[Retry]	Set the number of retries to be performed when a communication timeout occurs. When receiving no response after retries, the communication times out.	[0] times to [5] times
[Timeout Time]	Set the time period for a communication to time out.	[1] second to [90] seconds
[Delay Time]	Set the delay time for reducing the load of the network and destination PLC.	[0] ms to [300] ms
[Monitor Speed]	Set the monitor speed of the CC-Link IE TSN network. This setting is not valid in all systems.	[High(Normal)], [Middle], [Low]
[CPU No. switching GD device first No. (3 points)]	The item is displayed but cannot be set.	—
[Module No. switching GD device first No. (16 points)]	The item is displayed but cannot be set.	—
[Servo axis switching GD device first No. (16 points)]	The item is displayed but cannot be set.	—

*1 If any of the following settings is configured in the IP address, a communication timeout error occurs.
- The third octet and fourth octet are all 1 (*.*.255.255) or all 0 (*.*.0.0).
- The host part is all 1 (*.*.*.255) or all 0 (*.*.*.0).
- Some reserved addresses determined for special applications

For details, refer to the following manuals.
MELSEC iQ-R CC-Link IE TSN User's Manual (Application)
MELSEC iQ-R CC-Link IE TSN Plus Master/Local Module User's Manual
MELSEC iQ-R Motion Module User's Manual (Network)

*2 When the subnet mask field is filled with 0, the operation is the same as when the field is left blank.

*3 When setting to 100Mbps, the following conditions must be satisfied.
- CC-Link IE TSN communication unit (GT25-J71GN13-T2): Firmware version 02 or later
- CC-Link IE TSN master/local module (RJ71GN11-T2): Firmware version 04 or later

*4 For [Refresh Interval(ms)] in [Controller Setting] in GT Designer3, set 5 ms or more per 1K words for the total size of the device set in [Network Configuration Settings] in GX Works3.
Setting less than 5 ms may affect the processing of the GOT such as a decrease of the monitoring speed.
The following shows setting examples of the total device size and refresh interval.

Total device size	Refresh interval
1K words	5 ms or more
2K words	10 ms or more
3K words	15 ms or more
5K words	25 ms or more
36K words	180 ms or more

Point

- Controller settings using the GT37 utility

The controller settings can be changed in [Communication Settings] of the GT37 utility after writing [Communication Settings] of project data to GT37.
For details on the GT37 utility, refer to the following manual.
GOT3000 Series User's Manual (Utility & Maintenance Functions)

- Priority of the settings in [Controller Setting]

When the settings are configured in GT Designer3 or in the GT37 utility, the latest settings are effective.

■Unit communication test

In the unit communication test, connect port 1 and port 2 of the CC-Link IE TSN communication unit mounted on the GOT with a network cable, and check if the unit operates properly with the GOT.

The following shows the test procedure and how to check the test result.

1. Perform either of the following operations to set the GOT to the unit communication test mode.

- Write the project data for which [Mode Setting] in [Detail Setting] is set to [Stand-alone test mode] to the GOT.
- Set [Mode setting] in [Detail setting] to [Module Communication Test] in the GOT utility.

2. A unit communication test will start at GOT startup.

3. After the test is complete, check the result with the ERR LED on the communication unit and GOT internal devices (CC-Link IE TSN Module Communication Test Status (GS1114) or CC-Link IE TSN Module Communication Test Error (GS1115)).

Check		Test result
ERR LED on the communication unit		OFF: Normal ON: Error
GOT internal device	CC-Link IE TSN Module Communication Test Status (GS1114)	Notifies the execution status of a communication test of the CC-Link IE TSN communication unit. • b0: Turns on when a communication test is executed. • b1: Turns on while a communication test is being executed. • b2: Turns on when a communication test is complete. • b3 to b15: Use prohibited
	CC-Link IE TSN Module Communication Test Error (GS1115)	Notifies that an error has occurred during a communication test of the CC-Link IE TSN communication unit. • b0: Turns on if there is a problem with the port 1 side of the CC-Link IE TSN communication unit. • b1: Turns on if there is a problem with the connection interface (port 1) of the CC-Link IE TSN communication unit or the Ethernet cable terminal. • b2: Turns on if there is a problem with the port 1 side Ethernet cable of the CC-Link IE TSN communication unit. • b3 to b7: Use prohibited • b8: Turns on if there is a problem with the port 2 side of the CC-Link IE TSN communication unit. • b9: Turns on if there is a problem with the connection interface (port 2) of the CC-Link IE TSN communication unit or the Ethernet cable terminal. • b10: Turns on if there is a problem with the port 2 side Ethernet cable of the CC-Link IE TSN communication unit. • b11 to b15: Use prohibited

For details on the GOT internal devices (CC-Link IE TSN Module Communication Test Status (GS1114) and CC-Link IE TSN Module Communication Test Error (GS1115)), refer to the following.

📖GT Designer3 (GOT3000) Screen Design Manual

4. If no error is detected, change the setting of [Mode Setting] from [Module Communication Test] in [Detail setting].

Since the communication with the controller is not performed when [Mode setting] is set to [Module Communication Test], the communication timeout error occurs when the device of controller is monitored.

5. If any error is detected, replace the communication unit.

19.2.4 PLC side settings

Model		Reference
MELSEC MX Controller (MX-R Model)	MXR300-16 MXR300-32 MXR300-64 MXR500-128 MXR500-256	☞ Page 1626 System configuration
MELSEC MX Controller (MX-F Model)	MXF100-8-N32 MXF100-8-P32 MXF100-16-N32 MXF100-16-P32	☞ Page 1626 System configuration
MELSEC iQ-R series	R00CPU R01CPU R02CPU R04CPU R08CPU R16CPU R32CPU R120CPU R04ENCPU R08ENCPU R16ENCPU R32ENCPU R120ENCPU R08SFCPU R16SFCPU R32SFCPU R120SFCPU	☞ Page 1626 System configuration

This section describes the settings of the GOT, PLC, CC-Link IE TSN-equipped module, and Motion module in the system configuration shown below.

Point

For details on the CC-Link IE TSN-equipped module, refer to the following manuals.
📖MELSEC iQ-R CC-Link IE TSN User's Manual (Startup)
📖MELSEC iQ-R CC-Link IE TSN Plus Master/Local Module User's Manual
For details on the Motion module, refer to the following manual.
📖MELSEC iQ-R Motion Module User's Manual (Startup)

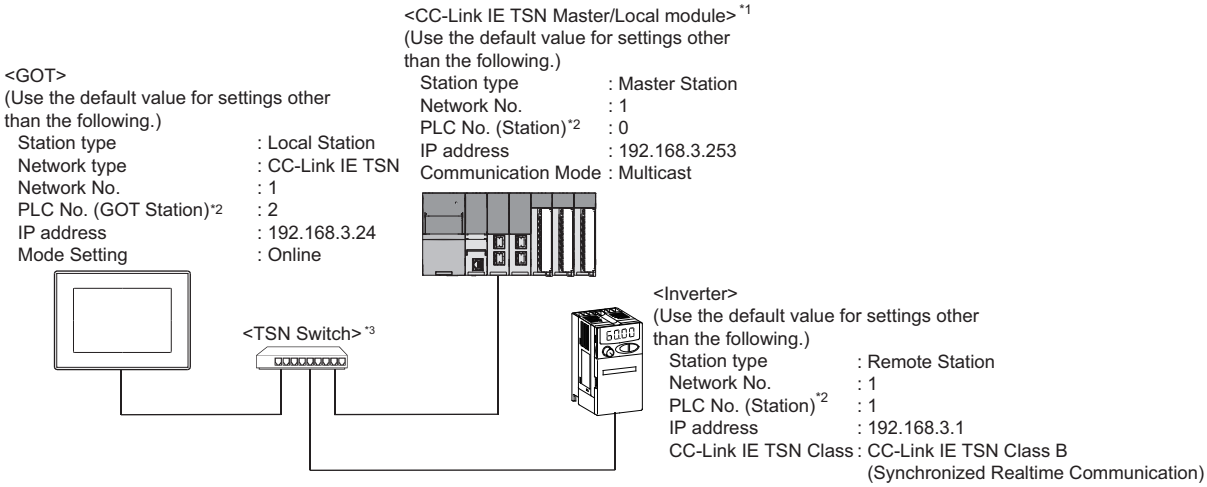
PART 5

System configuration

The following shows a system configuration example of a star topology using a CC-Link IE TSN Class B (Synchronized Realtime Communication) inverter and the CC-Link IE TSN master/local module (RJ71GN11-T2).

For details on the setting, refer to the following.

☞ Page 811 PLC side settings



*1 The CC-Link IE TSN master/local module is mounted on slot 0 of the base unit.
The start I/O No. of the CC-Link IE TSN master/local module is set to "0".

*2 For the following settings, the setting names are different on the PLC side and the GOT side.

Setting	Setting name		
	PLC side	GOT side	
		Controller settings	Connected Ethernet controller settings
Network number	[Network No.]	[GOT Net No.]	[Net No.]
PLC number	[Station]	[GOT Station]	[Station]

*3 Use a TSN Switch.
For details on the TSN Switch, refer to the following.
📖MELSEC iQ-R CC-Link IE TSN User's Manual (Startup)

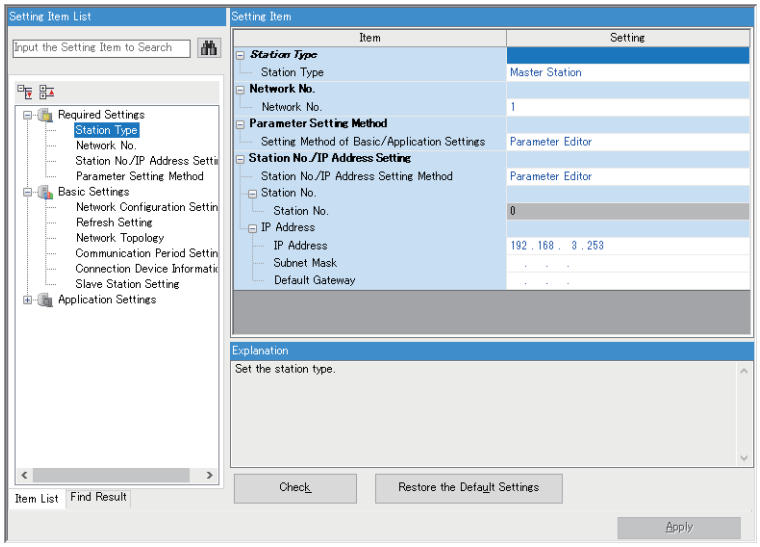
Point

To directly control an inverter from a GOT, set [Communication Mode] of the master station to [Multicast].

[Parameter] in GX Works3

The following shows a parameter setting example for connecting to the CC-Link IE TSN master/local module (RJ71GN11-T2).

■Module parameter



○: Necessary, △: As necessary, —: Not necessary

Item	Setting value	Setting for GOT connection
[Station Type]	Master station	○
[Network No.][*1]	1	○
[Setting Method of Basic/Application Settings]	Set in parameter	○
[Station No./IP Address Setting Method]	Set in parameter	○
[Station No.]	0	○
[IP Address]	192.168.3.253	△
[Subnet Mask]	—	—
[Default Gateway]	—	—

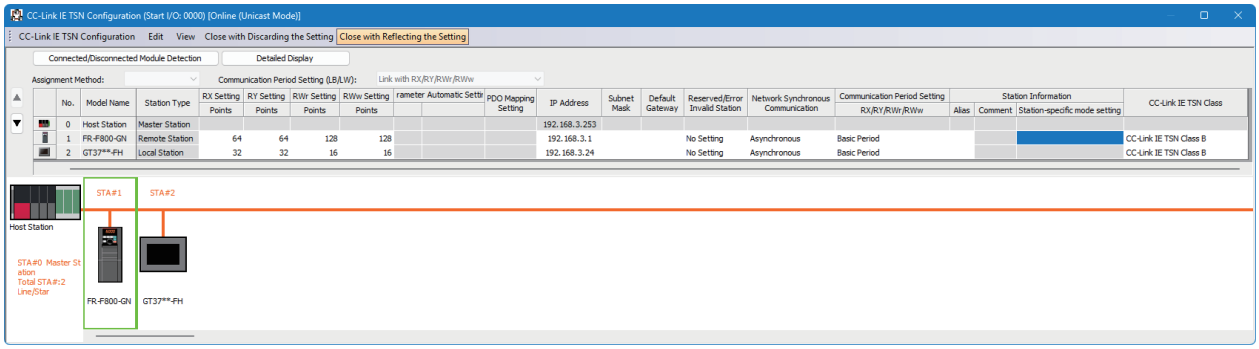
*1 Set the same network number as that of the GOT.

Point

- When changing the module parameter

After writing module parameters to the PLC CPU, turn off then on or reset the PLC CPU.

■Network configuration settings



○: Necessary, △: As necessary, —: Not necessary

Item	Setting value	Setting for GOT connection
[Station]	1	○
[Station Type]	Remote station	○
[IP Address]	192.168.3.1	○

Point

GOT network configuration settings

For the GOT network configuration settings, refer to the following.

☞ Page 812 [Parameter] in GX Works3

[Controller Setting] in GT Designer3

Item	Setting value
[Network Type]	CC-Link IE TSN
[Network No.]	1
[Station No.]	2
[IP Address]	192.168.3.24
[Subnet Mask]	255.255.255.0
[Default Gateway]	0.0.0.0
[Group No.]	0
[Mode Setting]	Online
[Communication Speed]	1 Gbps
[Refresh Interval]	25 ms
[Input for Err. Sta.]	Clear
[Retry]	3 times
[Timeout Time]	3 seconds
[Delay Time]	0 ms
[Monitor Speed]	High(Normal)

Point

[Controller Setting] in GT Designer3

For the setting method of [Controller Setting] in GT Designer3, refer to the following.

☞ Page 1621 [Controller Setting]

19.2.5 Inverter side settings

Model		Reference
FR-F800 series	FR-F8□0 FR-F8□2 FR-F8□6	☞ Page 1629 Connection to FR-F800 series

Connection to FR-F800 series

For the inverter side settings, refer to the following.

📖FR-F800 series manuals

■Communication port and the supported parameters

Inverter side interface	Inverter side parameter
CC-Link IE TSN port	Pr.434 to Pr.441, Pr.1442 to Pr.1459

■Inverter communication settings

Set the following parameters using the PU (parameter unit).

Do not change these parameters, even though they can be monitored from the GOT.

If they are changed, communication with the GOT is disabled.

○: Necessary, △: As necessary, —: Not necessary

Setting item*1	Parameter number	Setting value	Setting for GOT connection
IP address 1*2*4	Pr.434	0 to 255	○
IP address 2*2*4	Pr.435	0 to 255	○
IP address 3*2*4	Pr.436	0 to 255	○
IP address 4*2*4	Pr.437	0 to 255	○
Subnet mask 1*2	Pr.438	255*3	△
Subnet mask 2*2	Pr.439	255*3	△
Subnet mask 3*2	Pr.440	255*3	△
Subnet mask 4*2	Pr.441	0*3	△
Ethernet IP filter address 1	Pr.1442	0*3	△
Ethernet IP filter address 2	Pr.1443	0*3	△
Ethernet IP filter address 3	Pr.1444	0*3	△
Ethernet IP filter address 4	Pr.1445	0*3	△
Ethernet IP filter address 2 range specification	Pr.1446	9999*3	△
Ethernet IP filter address 3 range specification	Pr.1447	9999*3	△
Ethernet IP filter address 4 range specification	Pr.1448	9999*3	△
Clock source selection	Pr.1459	0*3*5	△

*1 The parameter names described in the FR-F800 series manuals.

*2 The setting can be changed on the GOT side.
When changing the setting on the GOT side, be sure to change the parameter of the inverter accordingly.

*3 Change the setting depending on the usage environment.

*4 Specifying a value from [1] to [254] with the rotary switch of the inverter enables the settings of the switch.
When the setting is changed, the new setting is applied after the inverter reset or at the next power-on.

*5 The time synchronization operation differs depending on whether the FR-LU08 is installed.
For details on the time synchronization operations, refer to the following.
📖FR-F800 series manuals

19.3 FR-E800 (CC-Link IE TSN connection)

☞ Page 1630 Connectable devices
☞ Page 1631 System configuration
☞ Page 1633 GOT side settings
☞ Page 1637 PLC side settings
☞ Page 1641 Inverter side settings

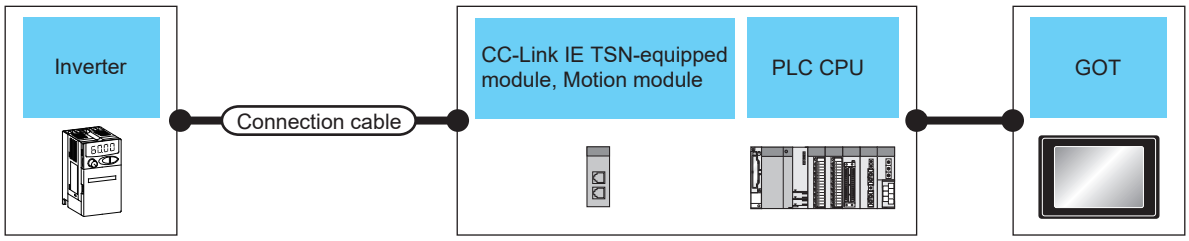
19.3.1 Connectable devices

The following table shows the connectable models.

○: Supported, —: Not supported

Controller	Model	Clock	CC-Link IE TSN-equipped module or Motion module	Connectable model
FR-E800 series	FR-E8□0-E	—	RJ71GN11-T2 RJ71GN11-EIP RD78G4 RD78G8 RD78G16 RD78G32 RD78G64 RD78GHV RD78GHW	GT37 SoftGOT3000

19.3.2 System configuration



For details on the connection cable and overall cable length, refer to the following.

☞ Page 1632 Connection cable
☞ Page 1632 Overall length

For details on the maximum number of connected devices, refer to the following.

☞ Page 1632 Maximum number of connected devices

Controller	CC-Link IE TSN Class	Connection cable	PLC*1		GOT	
			CC-Link IE TSN-equipped module or Motion module	CPU model	Interface	Model
FR-E8□0-E	CC-Link IE TSN Class A (Realtime Communication)	Twisted pair cable	RJ71GN11-T2 RD78G4 RD78G8 RD78G16 RD78G32 RD78G64 RD78GHV RD78GHW	RnCPU RnENCPU RnSFCPU	GT37-IF2000 + GT25-J71GN13-T2	GT37 SoftGOT3000
			RJ71GN11-EIP*2	RnCPU RnENCPU	GT37-IF2000 + GT25-J71GN13-T2	GT37 SoftGOT3000
			RJ71GN11-T2 RJ71GN11-EIP*2	MXR300-16 MXR300-32 MXR300-64 MXR500-128 MXR500-256	GT37-IF2000 + GT25-J71GN13-T2	GT37 SoftGOT3000
			FX5-CCLGN-MS	MXF100-8-N32 MXF100-8-P32 MXF100-16-N32 MXF100-16-P32	GT37-IF2000 + GT25-J71GN13-T2	GT37 SoftGOT3000

*1 For the system configuration between the GOT and PLC, refer to the following.
☞ Page 743 CC-Link IE TSN connection

*2 Connect the cable to the P1 port of the RJ71GN11-EIP.

Point

System configuration of the CC-Link IE TSN-equipped module or Motion module

For the system configuration of the CC-Link IE TSN-equipped module, refer to the following manuals.

📖MELSEC iQ-R CC-Link IE TSN User's Manual (Startup)

📖MELSEC iQ-R CC-Link IE TSN Plus Master/Local Module User's Manual

For the system configuration of the Motion module, refer to the following manual.

📖MELSEC iQ-R Motion Module User's Manual (Startup)

Connection cable

Use a connection cable that meets the following standards.

Standard	Category
100BASE-TX	Shielded twisted pair cable (double-shielded, STP) or shielded twisted pair cable (STP) of category 5 or higher
1000BASE-T	Shielded twisted pair cable (double-shielded, STP) or shielded twisted pair cable (STP) of category 5e or higher

For the twisted pair cable, use a straight cable.

Use cables that meet the IEEE802.3 100BASE-TX/1000BASE-T standards.

When using a hub, use a TSN Switch or General-purpose Switch according to the system configuration.

For usable TSN Switches and General-purpose Switches, refer to the following.

📖MELSEC iQ-R CC-Link IE TSN User's Manual (Startup)

Overall length

The overall cable length is 12100 m.

The overall cable length and cable length between stations vary depending on the connection method (line or star), the system configuration, etc.

For details, refer to the following manual.

📖MELSEC iQ-R CC-Link IE TSN User's Manual (Startup)

Maximum number of connected devices

The number of connectable local devices is 120 (1 inverter and 119 GOTs).

The following shows the number of GOTs connectable to one controller.

Controller	
Model	**Number of GOTs connectable to one inverter**
FR-E8□0-E	119

Precautions

■GOT startup time

Connecting to the PLC or inverter takes longer time in the CC-Link IE TSN connection.

If the GOT is started during this time, a system alarm occurs.

Adjust the time to display the GOT startup screen to prevent a system alarm.

📖GT Designer3 (GOT3000) Screen Design Manual

■Connection status check after the GOT startup

The connection with the network cannot be established until the connection check with the master station is completed after the GOT startup.

To check the status of connection with the master station, use the CC-Link IE TSN Connection Status (GS1297) of the GOT internal device.

For details on the CC-Link IE TSN Connection Status (GS1297), refer to the following.

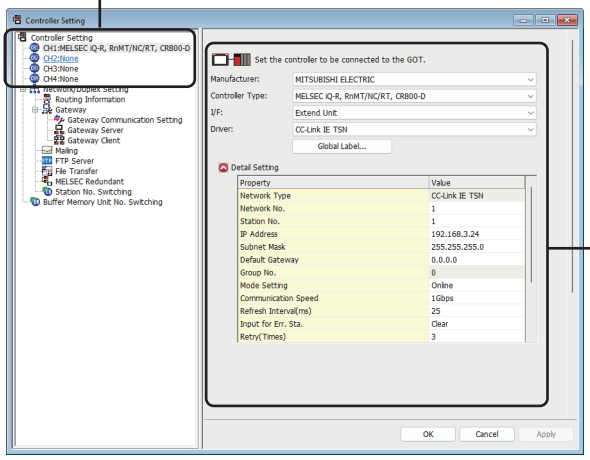
📖GT Designer3 (GOT3000) Screen Design Manual

19.3.3 GOT side settings

[Controller Setting]

Set the channel of the connected controller.

List menu



3.

Operating procedure

1. Select [Common] → [Controller Setting] from the menu.

2. In the [Controller Setting] window, select the channel number to be used from the list menu.

3. Set the following items.

Item	Description
[Manufacturer]	[MITSUBISHI ELECTRIC]
[Controller Type]	[MELSEC iQ-R, RnMT/NC/RT, CR800-D]
[I/F]	[Extend Unit]
[Driver]	[CC-Link IE TSN]
[Detail Setting]	Configure the settings according to the usage environment. ☞ Page 1634 [Detail Setting]

4. When you have completed the settings, click the [OK] button.

Point

The controller settings can be checked in [I/F Communication Setting].

For details, refer to the following.

📖GT Designer3 (GOT3000) Screen Design Manual

PART 5

■[Detail Setting]

Configure the settings according to the usage environment.

Detail Setting

Property	Value
Network Type	CC-Link IE TSN
Network No.	1
Station No.	1
IP Address	192.168.3.24
Subnet Mask	255.255.255.0
Default Gateway	0.0.0.0
Group No.	0
Mode Setting	Online
Communication Speed	1Gbps
Refresh Interval(ms)	25
Input for Err. Sta.	Clear
Retry(Times)	3
Timeout Time(Sec)	3
Delay Time(ms)	0
Monitor Speed	High(Normal)
CPU No. switching GD device first No. (3 points)	500
Module No. switching GD device first No. (16 points)	550
Servo axis switching GD device first No. (16 points)	10

Item	Description	Range
[Network Type]	Set the network type.	[CC-Link IE TSN]
[Network No.]	Set the network number.	[1] to [239]
[Station No.]	Set the station number of the GOT.	[1] to [120]
[IP Address][*1]	Set the IP address of the GOT.	[0.0.0.1] to [223.255.255.254]
[Subnet Mask]	When a subnetwork is used, set the subnet mask. (Only for connection via router) If the sub network is not used, the default value is set.	[0.0.0.0] to [255.255.255.255][*2]
[Default Gateway]	Set the router address of the default gateway where the GOT is connected. (Only for connection via router)	[0.0.0.0] to [223.255.255.254]
[Group No.]	—	[0]
[Mode Setting]	Set the operation mode of the GOT. For details on the unit communication test mode, refer to the following. ☞ Page 1636 Unit communication test	[Online], [Offline], [Module Communication Test]
[Communication Speed]	Set the communication speed of the GOT.	[1Gbps], [100Mbps][*3]
[Refresh Interval][*4]	Set the number of refreshes to secure the send/receive data per station during communication.	[1] ms to [1000] ms
[Input for Err. Sta.]	Set whether to hold or clear the input from the station where the data link has failed due to power-off or other reasons.	[Clear], [Hold]
[Retry]	Set the number of retries to be performed when a communication timeout occurs. When receiving no response after retries, the communication times out.	[0] times to [5] times
[Timeout Time]	Set the time period for a communication to time out.	[1] second to [90] seconds
[Delay Time]	Set the delay time for reducing the load of the network and destination PLC.	[0] ms to [300] ms
[Monitor Speed]	Set the monitor speed of the CC-Link IE TSN network. This setting is not valid in all systems.	[High(Normal)], [Middle], [Low]
[CPU No. switching GD device first No. (3 points)]	The item is displayed but cannot be set.	—
[Module No. switching GD device first No. (16 points)]	The item is displayed but cannot be set.	—
[Servo axis switching GD device first No. (16 points)]	The item is displayed but cannot be set.	—

*1 If any of the following settings is configured in the IP address, a communication timeout error occurs.
- The third octet and fourth octet are all 1 (*.*.255.255) or all 0 (*.*.0.0).
- The host part is all 1 (*.*.*.255) or all 0 (*.*.*.0).
- Some reserved addresses determined for special applications

For details, refer to the following manuals.
MELSEC iQ-R CC-Link IE TSN User's Manual (Application)
MELSEC iQ-R CC-Link IE TSN Plus Master/Local Module User's Manual
MELSEC iQ-R Motion Module User's Manual (Network)

*2 When the subnet mask field is filled with 0, the operation is the same as when the field is left blank.

*3 When setting to 100Mbps, the following conditions must be satisfied.
- CC-Link IE TSN communication unit (GT25-J71GN13-T2): Firmware version 02 or later
- CC-Link IE TSN master/local module (RJ71GN11-T2): Firmware version 04 or later

*4 For [Refresh Interval(ms)] in [Controller Setting] in GT Designer3, set 5 ms or more per 1K words for the total size of the device set in [Network Configuration Settings] in GX Works3.
Setting less than 5 ms may affect the processing of the GOT such as a decrease of the monitoring speed.
The following shows setting examples of the total device size and refresh interval.

Total device size	Refresh interval
1K words	5 ms or more
2K words	10 ms or more
3K words	15 ms or more
5K words	25 ms or more
36K words	180 ms or more

Point

- Controller settings using the GT37 utility

The controller settings can be changed in [Communication Settings] of the GT37 utility after writing [Communication Settings] of project data to GT37.
For details on the GT37 utility, refer to the following manual.
GOT3000 Series User's Manual (Utility & Maintenance Functions)

- Priority of the settings in [Controller Setting]

When the settings are configured in GT Designer3 or in the GT37 utility, the latest settings are effective.

■Unit communication test

In the unit communication test, connect port 1 and port 2 of the CC-Link IE TSN communication unit mounted on the GOT with a network cable, and check if the unit operates properly with the GOT.

The following shows the test procedure and how to check the test result.

1. Perform either of the following operations to set the GOT to the unit communication test mode.

- Write the project data for which [Mode Setting] in [Detail Setting] is set to [Stand-alone test mode] to the GOT.
- Set [Mode setting] in [Detail setting] to [Module Communication Test] in the GOT utility.

2. A unit communication test will start at GOT startup.

3. After the test is complete, check the result with the ERR LED on the communication unit and GOT internal devices (CC-Link IE TSN Module Communication Test Status (GS1114) or CC-Link IE TSN Module Communication Test Error (GS1115)).

Check		Test result
ERR LED on the communication unit		OFF: Normal ON: Error
GOT internal device	CC-Link IE TSN Module Communication Test Status (GS1114)	Notifies the execution status of a communication test of the CC-Link IE TSN communication unit. • b0: Turns on when a communication test is executed. • b1: Turns on while a communication test is being executed. • b2: Turns on when a communication test is complete. • b3 to b15: Use prohibited
	CC-Link IE TSN Module Communication Test Error (GS1115)	Notifies that an error has occurred during a communication test of the CC-Link IE TSN communication unit. • b0: Turns on if there is a problem with the port 1 side of the CC-Link IE TSN communication unit. • b1: Turns on if there is a problem with the connection interface (port 1) of the CC-Link IE TSN communication unit or the Ethernet cable terminal. • b2: Turns on if there is a problem with the port 1 side Ethernet cable of the CC-Link IE TSN communication unit. • b3 to b7: Use prohibited • b8: Turns on if there is a problem with the port 2 side of the CC-Link IE TSN communication unit. • b9: Turns on if there is a problem with the connection interface (port 2) of the CC-Link IE TSN communication unit or the Ethernet cable terminal. • b10: Turns on if there is a problem with the port 2 side Ethernet cable of the CC-Link IE TSN communication unit. • b11 to b15: Use prohibited

For details on the GOT internal devices (CC-Link IE TSN Module Communication Test Status (GS1114) and CC-Link IE TSN Module Communication Test Error (GS1115)), refer to the following.

📖GT Designer3 (GOT3000) Screen Design Manual

4. If no error is detected, change the setting of [Mode Setting] from [Module Communication Test] in [Detail setting].

Since the communication with the controller is not performed when [Mode setting] is set to [Module Communication Test], the communication timeout error occurs when the device of controller is monitored.

5. If any error is detected, replace the communication unit.

19.3.4 PLC side settings

Model		Reference
MELSEC MX Controller (MX-R Model)	MXR300-16 MXR300-32 MXR300-64 MXR500-128 MXR500-256	☞ Page 1638 System configuration
MELSEC MX Controller (MX-F Model)	MXF100-8-N32 MXF100-8-P32 MXF100-16-N32 MXF100-16-P32	☞ Page 1638 System configuration
MELSEC iQ-R series	R00CPU R01CPU R02CPU R04CPU R08CPU R16CPU R32CPU R120CPU R04ENCPU R08ENCPU R16ENCPU R32ENCPU R120ENCPU R08SFCPU R16SFCPU R32SFCPU R120SFCPU	☞ Page 1638 System configuration

This section describes the settings of the GOT, PLC, CC-Link IE TSN-equipped module, and Motion module in the system configuration shown below.

Point

For details on the CC-Link IE TSN-equipped module, refer to the following manuals.
📖MELSEC iQ-R CC-Link IE TSN User's Manual (Startup)
📖MELSEC iQ-R CC-Link IE TSN Plus Master/Local Module User's Manual
For details on the Motion module, refer to the following manual.
📖MELSEC iQ-R Motion Module User's Manual (Startup)

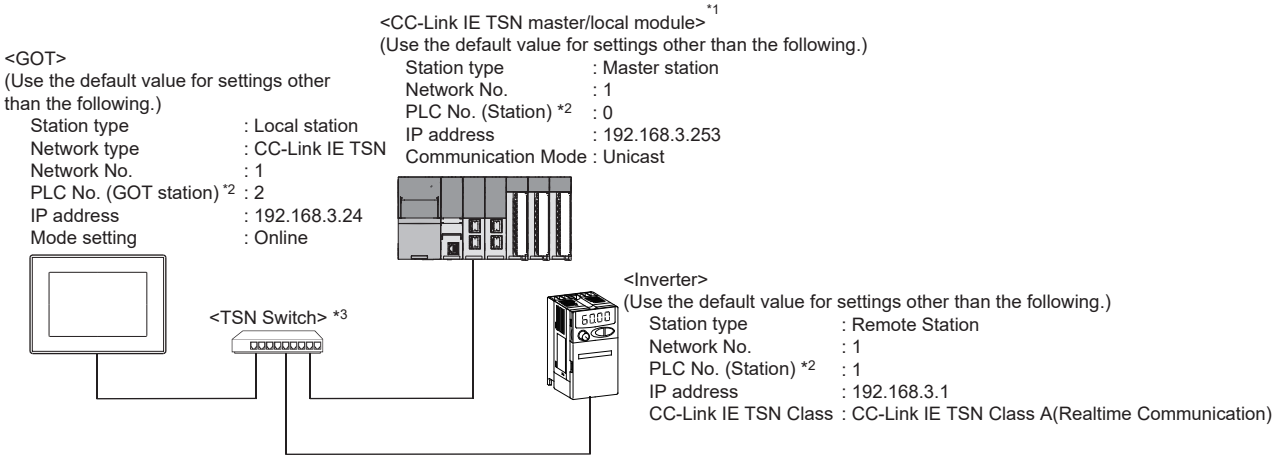
PART 5

System configuration

The following shows a system configuration example of a star topology using a CC-Link IE TSN Class A (Realtime Communication) inverter and the CC-Link IE TSN master/local module (RJ71GN11-T2).

For details on the setting, refer to the following.

☞ Page 811 PLC side settings



*1 The CC-Link IE TSN master/local module is mounted on slot 0 of the base unit.
The start I/O No. of the CC-Link IE TSN master/local module is set to "0".

*2 For the following settings, the setting names are different on the PLC side and the GOT side.

Setting	Setting name		
	PLC side	GOT side	
		Controller settings	Connected Ethernet controller settings
Network number	[Network No.]	[GOT Net No.]	[Net No.]
PLC number	[Station]	[GOT Station]	[Station]

*3 Use a TSN Switch.
For details on the TSN Switch, refer to the following.
MELSEC iQ-R CC-Link IE TSN User's Manual (Startup)

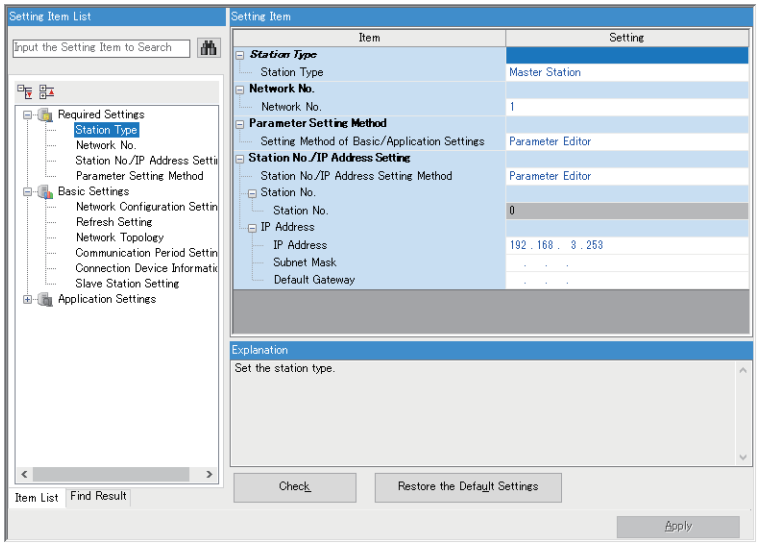
Point

To directly control an inverter from a GOT, set [Communication Mode] of the master station to [Multicast].

[Parameter] in GX Works3

The following shows a parameter setting example for connecting to the CC-Link IE TSN master/local module (RJ71GN11-T2).

■Module parameter



○: Necessary, △: As necessary, —: Not necessary

Item	Setting value	Setting for GOT connection
[Station Type]	Master station	○
[Network No.][*1]	1	○
[Setting Method of Basic/Application Settings]	Set in parameter	○
[Station No./IP Address Setting Method]	Set in parameter	○
[Station No.]	0	○
[IP Address]	192.168.3.253	△
[Subnet Mask]	—	—
[Default Gateway]	—	—

*1 Set the same network number as that of the GOT.

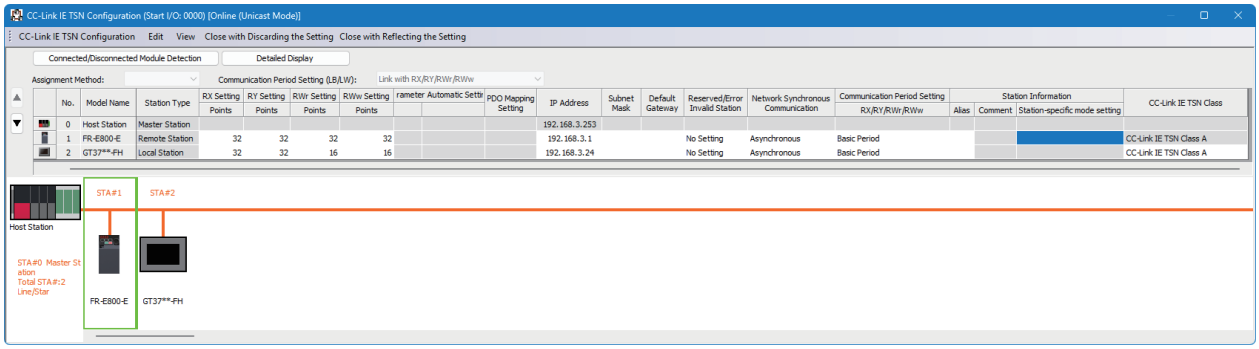
Point

- When changing the module parameter

After writing module parameters to the PLC CPU, turn off then on or reset the PLC CPU.

PART 5

■Network configuration settings



○: Necessary, △: As necessary, —: Not necessary

Item	Setting value	Setting for GOT connection
[Station]	1	○
[Station Type]	Remote station	○
[IP Address]	192.168.3.1	○

Point

GOT network configuration settings

For the GOT network configuration settings, refer to the following.

☞ Page 812 [Parameter] in GX Works3

[Controller Setting] in GT Designer3

Item	Setting value
[Network Type]	CC-Link IE TSN
[Network No.]	1
[Station No.]	2
[IP Address]	192.168.3.24
[Subnet Mask]	255.255.255.0
[Default Gateway]	0.0.0.0
[Group No.]	0
[Mode Setting]	Online
[Communication Speed]	1 Gbps
[Refresh Interval]	25 ms
[Input for Err. Sta.]	Clear
[Retry]	3 times
[Timeout Time]	3 seconds
[Delay Time]	0 ms
[Monitor Speed]	High(Normal)

Point

[Controller Setting] in GT Designer3

For the setting method of [Controller Setting] in GT Designer3, refer to the following.

☞ Page 1633 [Controller Setting]

19.3.5 Inverter side settings

Model		Reference
FR-E800 series	FR-E8□0-E	☞ Page 1641 Connection to FR-E800 series

Connection to FR-E800 series

For the inverter side settings, refer to the following.

📖FR-E800 series manuals

■Communication port and the supported parameters

Inverter side interface	Inverter side parameter
CC-Link IE TSN port	Pr.1427 to Pr.1429, Pr.1434 to Pr.1448

■Inverter communication settings

Set the following parameters using the PU (parameter unit).

Do not change these parameters, even though they can be monitored from the GOT.

If they are changed, communication with the GOT is disabled.

○: Necessary, △: As necessary, —: Not necessary

Setting item*1	Parameter number	Setting value	Setting for GOT connection
Ethernet function selection 1	Pr.1427	5001	△
Ethernet function selection 2	Pr.1428	45237	△
Ethernet function selection 3	Pr.1429	45238	○
Ethernet function selection 4	Pr.1430	9999	△
IP address 1*2	Pr.1434	0 to 255	○
IP address 2*2	Pr.1435	0 to 255	○
IP address 3*2	Pr.1436	0 to 255	○
IP address 4*2	Pr.1437	0 to 255	○
Subnet mask 1*2	Pr.1438	255*3	△
Subnet mask 2*2	Pr.1439	255*3	△
Subnet mask 3*2	Pr.1440	255*3	△
Subnet mask 4*2	Pr.1441	0*3	△
Ethernet IP filter address 1	Pr.1442	0*3	△
Ethernet IP filter address 2	Pr.1443	0*3	△
Ethernet IP filter address 3	Pr.1444	0*3	△
Ethernet IP filter address 4	Pr.1445	0*3	△
Ethernet IP filter address 2 range specification	Pr.1446	9999*3	△
Ethernet IP filter address 3 range specification	Pr.1447	9999*3	△
Ethernet IP filter address 4 range specification	Pr.1448	9999*3	△

*1 The parameter names described in the FR-E800 series manuals.

*2 The setting can be changed on the GOT side.
When changing the setting on the GOT side, be sure to change the parameter of the inverter accordingly.

*3 Change the setting depending on the usage environment.

19.4 FR-D800 (CC-Link IE TSN connection)

☞ Page 1642 Connectable devices
☞ Page 1643 System configuration
☞ Page 1645 GOT side settings
☞ Page 1649 PLC side settings
☞ Page 1653 Inverter side settings

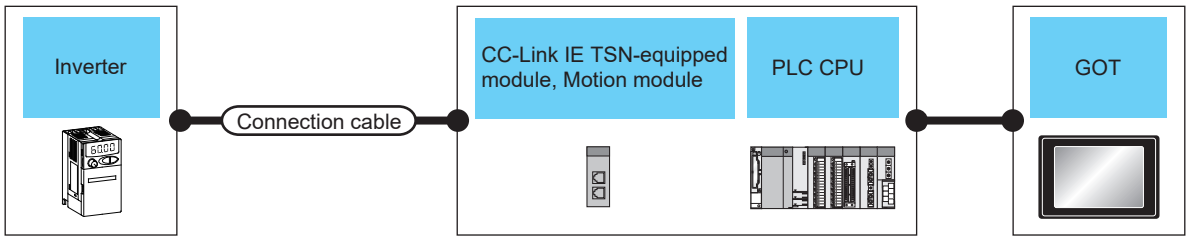
19.4.1 Connectable devices

The following table shows the connectable models.

○: Supported, —: Not supported

Controller	Model	Clock	CC-Link IE TSN-equipped module or Motion module	Connectable model
FR-D800 series	FR-D8□0-E	—	RJ71GN11-T2 RJ71GN11-EIP RD78G4 RD78G8 RD78G16 RD78G32 RD78G64 RD78GHV RD78GHW	GT37 SoftGOT3000

19.4.2 System configuration



For details on the connection cable and overall cable length, refer to the following.

☞ Page 1644 Connection cable
☞ Page 1644 Overall length

For details on the maximum number of connected devices, refer to the following.

☞ Page 1644 Maximum number of connected devices

Controller	CC-Link IE TSN Class	Connection cable	PLC*1		GOT	
			CC-Link IE TSN-equipped module or Motion module	CPU model	Interface	Model
FR-D8□0-E	CC-Link IE TSN Class A (Realtime Communication)	Twisted pair cable	RJ71GN11-T2 RD78G4 RD78G8 RD78G16 RD78G32 RD78G64 RD78GHV RD78GHW	RnCPU RnENCPU RnSFCPU	GT37-IF2000 + GT25-J71GN13-T2	GT37 SoftGOT3000
			RJ71GN11-EIP*2	RnCPU RnENCPU	GT37-IF2000 + GT25-J71GN13-T2	GT37 SoftGOT3000
			RJ71GN11-T2 RJ71GN11-EIP*2	MXR300-16 MXR300-32 MXR300-64 MXR500-128 MXR500-256	GT37-IF2000 + GT25-J71GN13-T2	GT37 SoftGOT3000
			FX5-CCLGN-MS	MXF100-8-N32 MXF100-8-P32 MXF100-16-N32 MXF100-16-P32	GT37-IF2000 + GT25-J71GN13-T2	GT37 SoftGOT3000

*1 For the system configuration between the GOT and PLC, refer to the following.
☞ Page 743 CC-Link IE TSN connection

*2 Connect the cable to the P1 port of the RJ71GN11-EIP.

Point

System configuration of the CC-Link IE TSN-equipped module or Motion module

For the system configuration of the CC-Link IE TSN-equipped module, refer to the following manuals.

📖MELSEC iQ-R CC-Link IE TSN User's Manual (Startup)

📖MELSEC iQ-R CC-Link IE TSN Plus Master/Local Module User's Manual

For the system configuration of the Motion module, refer to the following manual.

📖MELSEC iQ-R Motion Module User's Manual (Startup)

Connection cable

Use a connection cable that meets the following standards.

Standard	Category
100BASE-TX	Shielded twisted pair cable (double-shielded, STP) or shielded twisted pair cable (STP) of category 5 or higher
1000BASE-T	Shielded twisted pair cable (double-shielded, STP) or shielded twisted pair cable (STP) of category 5e or higher

For the twisted pair cable, use a straight cable.

Use cables that meet the IEEE802.3 100BASE-TX/1000BASE-T standards.

When using a hub, use a TSN Switch or General-purpose Switch according to the system configuration.

For usable TSN Switches and General-purpose Switches, refer to the following.

📖MELSEC iQ-R CC-Link IE TSN User's Manual (Startup)

Overall length

The overall cable length is 12100 m.

The overall cable length and cable length between stations vary depending on the connection method (line or star), the system configuration, etc.

For details, refer to the following manual.

📖MELSEC iQ-R CC-Link IE TSN User's Manual (Startup)

Maximum number of connected devices

The number of connectable local devices is 120 (1 inverter and 119 GOTs).

The following shows the number of GOTs connectable to one controller.

Controller	
Model	**Number of GOTs connectable to one inverter**
FR-D8□0-E	119

Precautions

■GOT startup time

Connecting to the PLC or inverter takes longer time in the CC-Link IE TSN connection.

If the GOT is started during this time, a system alarm occurs.

Adjust the time to display the GOT startup screen to prevent a system alarm.

📖GT Designer3 (GOT3000) Screen Design Manual

■Connection status check after the GOT startup

The connection with the network cannot be established until the connection check with the master station is completed after the GOT startup.

To check the status of connection with the master station, use the CC-Link IE TSN Connection Status (GS1297) of the GOT internal device.

For details on the CC-Link IE TSN Connection Status (GS1297), refer to the following.

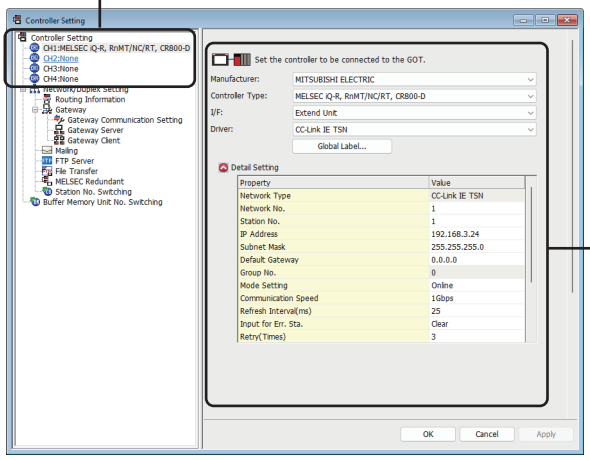
📖GT Designer3 (GOT3000) Screen Design Manual

19.4.3 GOT side settings

[Controller Setting]

Set the channel of the connected controller.

List menu



Operating procedure

1. Select [Common] → [Controller Setting] from the menu.

2. In the [Controller Setting] window, select the channel number to be used from the list menu.

3. Set the following items.

Item	Description
[Manufacturer]	[MITSUBISHI ELECTRIC]
[Controller Type]	[MELSEC iQ-R, RnMT/NC/RT, CR800-D]
[I/F]	[Extend Unit]
[Driver]	[CC-Link IE TSN]
[Detail Setting]	Configure the settings according to the usage environment. ☞ Page 1646 [Detail Setting]

4. When you have completed the settings, click the [OK] button.

Point

The controller settings can be checked in [I/F Communication Setting].

For details, refer to the following.

📖GT Designer3 (GOT3000) Screen Design Manual

■[Detail Setting]

Configure the settings according to the usage environment.

Detail Setting

Property	Value
Network Type	CC-Link IE TSN
Network No.	1
Station No.	1
IP Address	192.168.3.24
Subnet Mask	255.255.255.0
Default Gateway	0.0.0.0
Group No.	0
Mode Setting	Online
Communication Speed	1Gbps
Refresh Interval(ms)	25
Input for Err. Sta.	Clear
Retry(Times)	3
Timeout Time(Sec)	3
Delay Time(ms)	0
Monitor Speed	High(Normal)
CPU No. switching GD device first No. (3 points)	500
Module No. switching GD device first No. (16 points)	550
Servo axis switching GD device first No. (16 points)	10

Item	Description	Range
[Network Type]	Set the network type.	[CC-Link IE TSN]
[Network No.]	Set the network number.	[1] to [239]
[Station No.]	Set the station number of the GOT.	[1] to [120]
[IP Address][*1]	Set the IP address of the GOT.	[0.0.0.1] to [223.255.255.254]
[Subnet Mask]	When a subnetwork is used, set the subnet mask. (Only for connection via router) If the sub network is not used, the default value is set.	[0.0.0.0] to [255.255.255.255][*2]
[Default Gateway]	Set the router address of the default gateway where the GOT is connected. (Only for connection via router)	[0.0.0.0] to [223.255.255.254]
[Group No.]	—	[0]
[Mode Setting]	Set the operation mode of the GOT. For details on the unit communication test mode, refer to the following. ☞ Page 1648 Unit communication test	[Online], [Offline], [Module Communication Test]
[Communication Speed]	Set the communication speed of the GOT.	[1Gbps], [100Mbps][*3]
[Refresh Interval][*4]	Set the number of refreshes to secure the send/receive data per station during communication.	[1] ms to [1000] ms
[Input for Err. Sta.]	Set whether to hold or clear the input from the station where the data link has failed due to power-off or other reasons.	[Clear], [Hold]
[Retry]	Set the number of retries to be performed when a communication timeout occurs. When receiving no response after retries, the communication times out.	[0] times to [5] times
[Timeout Time]	Set the time period for a communication to time out.	[1] second to [90] seconds
[Delay Time]	Set the delay time for reducing the load of the network and destination PLC.	[0] ms to [300] ms
[Monitor Speed]	Set the monitor speed of the CC-Link IE TSN network. This setting is not valid in all systems.	[High(Normal)], [Middle], [Low]
[CPU No. switching GD device first No. (3 points)]	The item is displayed but cannot be set.	—
[Module No. switching GD device first No. (16 points)]	The item is displayed but cannot be set.	—
[Servo axis switching GD device first No. (16 points)]	The item is displayed but cannot be set.	—

*1 If any of the following settings is configured in the IP address, a communication timeout error occurs.
- The third octet and fourth octet are all 1 (*.*.255.255) or all 0 (*.*.0.0).
- The host part is all 1 (*.*.*.255) or all 0 (*.*.*.0).
- Some reserved addresses determined for special applications

For details, refer to the following manuals.
MELSEC iQ-R CC-Link IE TSN User's Manual (Application)
MELSEC iQ-R CC-Link IE TSN Plus Master/Local Module User's Manual
MELSEC iQ-R Motion Module User's Manual (Network)

*2 When the subnet mask field is filled with 0, the operation is the same as when the field is left blank.

*3 When setting to 100Mbps, the following conditions must be satisfied.
- CC-Link IE TSN communication unit (GT25-J71GN13-T2): Firmware version 02 or later
- CC-Link IE TSN master/local module (RJ71GN11-T2): Firmware version 04 or later

*4 For [Refresh Interval(ms)] in [Controller Setting] in GT Designer3, set 5 ms or more per 1K words for the total size of the device set in [Network Configuration Settings] in GX Works3.
Setting less than 5 ms may affect the processing of the GOT such as a decrease of the monitoring speed.
The following shows setting examples of the total device size and refresh interval.

Total device size	Refresh interval
1K words	5 ms or more
2K words	10 ms or more
3K words	15 ms or more
5K words	25 ms or more
36K words	180 ms or more

Point

- Controller settings using the GT37 utility

The controller settings can be changed in [Communication Settings] of the GT37 utility after writing [Communication Settings] of project data to GT37.
For details on the GT37 utility, refer to the following manual.
GOT3000 Series User's Manual (Utility & Maintenance Functions)

- Priority of the settings in [Controller Setting]

When the settings are configured in GT Designer3 or in the GT37 utility, the latest settings are effective.

■Unit communication test

In the unit communication test, connect port 1 and port 2 of the CC-Link IE TSN communication unit mounted on the GOT with a network cable, and check if the unit operates properly with the GOT.

The following shows the test procedure and how to check the test result.

1. Perform either of the following operations to set the GOT to the unit communication test mode.

- Write the project data for which [Mode Setting] in [Detail Setting] is set to [Stand-alone test mode] to the GOT.
- Set [Mode setting] in [Detail setting] to [Module Communication Test] in the GOT utility.

2. A unit communication test will start at GOT startup.

3. After the test is complete, check the result with the ERR LED on the communication unit and GOT internal devices (CC-Link IE TSN Module Communication Test Status (GS1114) or CC-Link IE TSN Module Communication Test Error (GS1115)).

Check		Test result
ERR LED on the communication unit		OFF: Normal ON: Error
GOT internal device	CC-Link IE TSN Module Communication Test Status (GS1114)	Notifies the execution status of a communication test of the CC-Link IE TSN communication unit. • b0: Turns on when a communication test is executed. • b1: Turns on while a communication test is being executed. • b2: Turns on when a communication test is complete. • b3 to b15: Use prohibited
	CC-Link IE TSN Module Communication Test Error (GS1115)	Notifies that an error has occurred during a communication test of the CC-Link IE TSN communication unit. • b0: Turns on if there is a problem with the port 1 side of the CC-Link IE TSN communication unit. • b1: Turns on if there is a problem with the connection interface (port 1) of the CC-Link IE TSN communication unit or the Ethernet cable terminal. • b2: Turns on if there is a problem with the port 1 side Ethernet cable of the CC-Link IE TSN communication unit. • b3 to b7: Use prohibited • b8: Turns on if there is a problem with the port 2 side of the CC-Link IE TSN communication unit. • b9: Turns on if there is a problem with the connection interface (port 2) of the CC-Link IE TSN communication unit or the Ethernet cable terminal. • b10: Turns on if there is a problem with the port 2 side Ethernet cable of the CC-Link IE TSN communication unit. • b11 to b15: Use prohibited

For details on the GOT internal devices (CC-Link IE TSN Module Communication Test Status (GS1114) and CC-Link IE TSN Module Communication Test Error (GS1115)), refer to the following.

📖GT Designer3 (GOT3000) Screen Design Manual

4. If no error is detected, change the setting of [Mode Setting] from [Module Communication Test] in [Detail setting].

Since the communication with the controller is not performed when [Mode setting] is set to [Module Communication Test], the communication timeout error occurs when the device of controller is monitored.

5. If any error is detected, replace the communication unit.

19.4.4 PLC side settings

Model		Reference
MELSEC MX Controller (MX-R Model)	MXR300-16 MXR300-32 MXR300-64 MXR500-128 MXR500-256	☞ Page 1650 System configuration
MELSEC MX Controller (MX-F Model)	MXF100-8-N32 MXF100-8-P32 MXF100-16-N32 MXF100-16-P32	☞ Page 1650 System configuration
MELSEC iQ-R series	R00CPU R01CPU R02CPU R04CPU R08CPU R16CPU R32CPU R120CPU R04ENCPU R08ENCPU R16ENCPU R32ENCPU R120ENCPU R08SFCPU R16SFCPU R32SFCPU R120SFCPU	☞ Page 1650 System configuration

This section describes the settings of the GOT, PLC, CC-Link IE TSN-equipped module, and Motion module in the system configuration shown below.

Point

For details on the CC-Link IE TSN-equipped module, refer to the following manuals.
📖MELSEC iQ-R CC-Link IE TSN User's Manual (Startup)
📖MELSEC iQ-R CC-Link IE TSN Plus Master/Local Module User's Manual
For details on the Motion module, refer to the following manual.
📖MELSEC iQ-R Motion Module User's Manual (Startup)

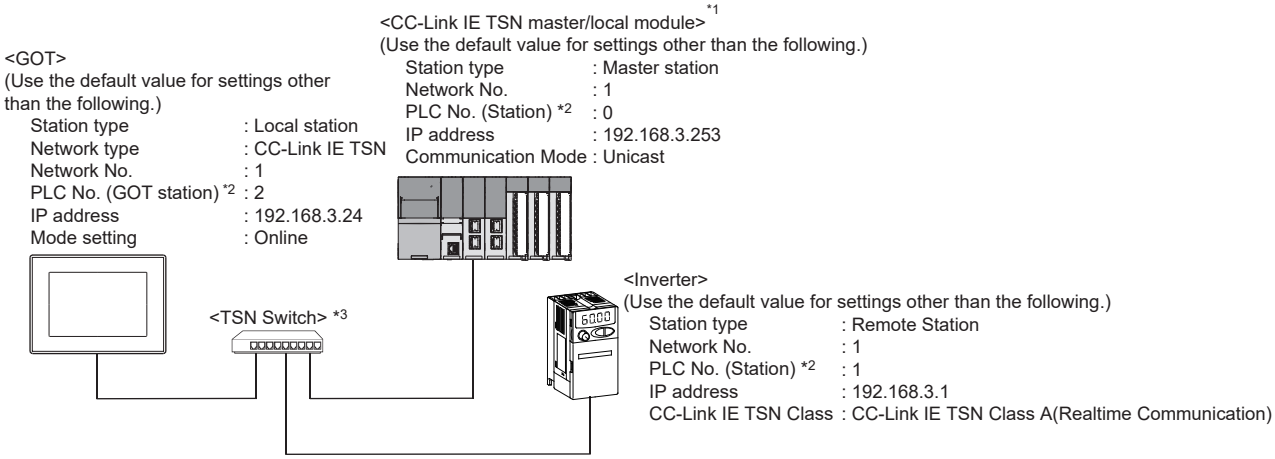
PART 5

System configuration

The following shows a system configuration example of a star topology using a CC-Link IE TSN Class A (Realtime Communication) inverter and the CC-Link IE TSN master/local module (RJ71GN11-T2).

For details on the setting, refer to the following.

☞ Page 811 PLC side settings



*1 The CC-Link IE TSN master/local module is mounted on slot 0 of the base unit.
The start I/O No. of the CC-Link IE TSN master/local module is set to "0".

*2 For the following settings, the setting names are different on the PLC side and the GOT side.

Setting	Setting name		
	PLC side	GOT side	
		Controller settings	Connected Ethernet controller settings
Network number	[Network No.]	[GOT Net No.]	[Net No.]
PLC number	[Station]	[GOT Station]	[Station]

*3 Use a TSN Switch.
For details on the TSN Switch, refer to the following.
MELSEC iQ-R CC-Link IE TSN User's Manual (Startup)

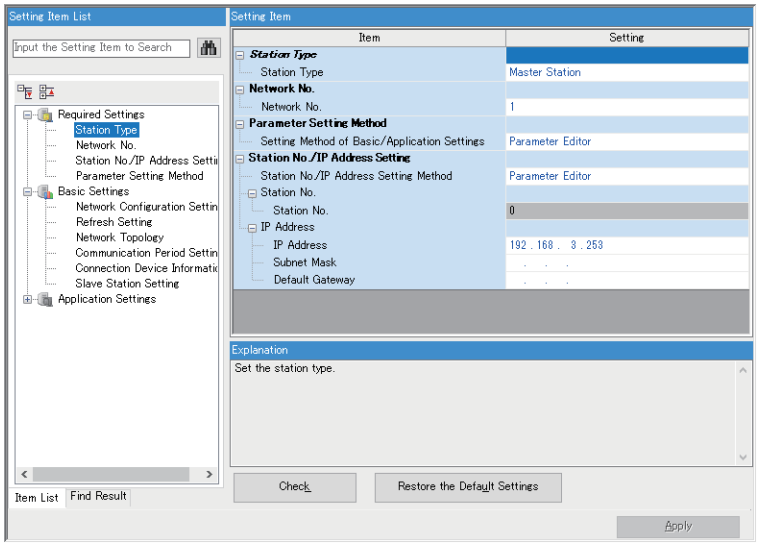
Point

To directly control an inverter from a GOT, set [Communication Mode] of the master station to [Multicast].

[Parameter] in GX Works3

The following shows a parameter setting example for connecting to the CC-Link IE TSN master/local module (RJ71GN11-T2).

■Module parameter



○: Necessary, △: As necessary, —: Not necessary

Item	Setting value	Setting for GOT connection
[Station Type]	Master station	○
[Network No.][*1]	1	○
[Setting Method of Basic/Application Settings]	Set in parameter	○
[Station No./IP Address Setting Method]	Set in parameter	○
[Station No.]	0	○
[IP Address]	192.168.3.253	△
[Subnet Mask]	—	—
[Default Gateway]	—	—

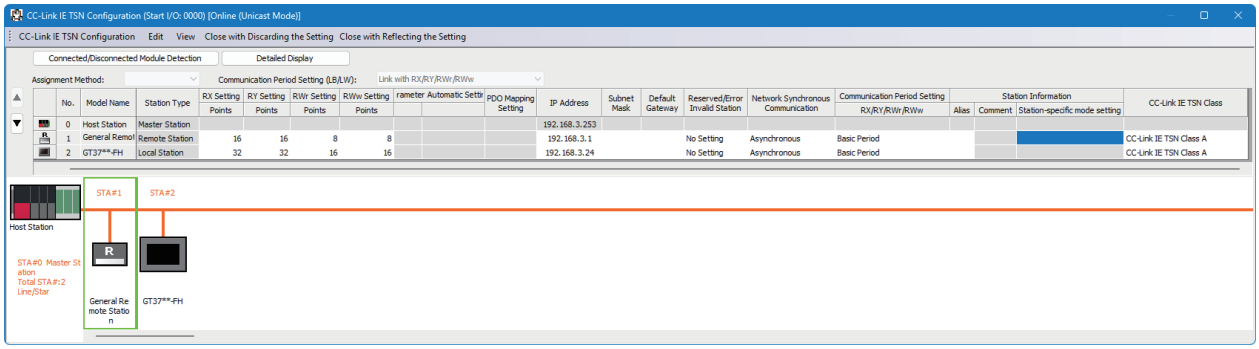
*1 Set the same network number as that of the GOT.

Point

- When changing the module parameter

After writing module parameters to the PLC CPU, turn off then on or reset the PLC CPU.

■Network configuration settings



○: Necessary, △: As necessary, —: Not necessary

Item	Setting value	Setting for GOT connection
[Station]	1	○
[Station Type]	Remote station	○
[IP Address]	192.168.3.1	○

Point

GOT network configuration settings

For the GOT network configuration settings, refer to the following.

☞ Page 812 [Parameter] in GX Works3

[Controller Setting] in GT Designer3

Item	Setting value
[Network Type]	CC-Link IE TSN
[Network No.]	1
[Station No.]	2
[IP Address]	192.168.3.24
[Subnet Mask]	255.255.255.0
[Default Gateway]	0.0.0.0
[Group No.]	0
[Mode Setting]	Online
[Communication Speed]	1 Gbps
[Refresh Interval]	25 ms
[Input for Err. Sta.]	Clear
[Retry]	3 times
[Timeout Time]	3 seconds
[Delay Time]	0 ms
[Monitor Speed]	High(Normal)

Point

[Controller Setting] in GT Designer3

For the setting method of [Controller Setting] in GT Designer3, refer to the following.

☞ Page 1645 [Controller Setting]

19.4.5 Inverter side settings

Model		Reference
FR-D800 series	FR-D8□0-E	☞ Page 1653 Connection to FR-D800 series

Connection to FR-D800 series

For the inverter side settings, refer to the following.

📖FR-D800 series manuals

■Communication port and the supported parameters

Inverter side interface	Inverter side parameter
CC-Link IE TSN port	Pr.1424, Pr.1425, Pr.1427 to Pr.1430, Pr.1434 to Pr.1448

■Inverter communication settings

Set the following parameters using the PU (parameter unit).

Do not change these parameters, even though they can be monitored from the GOT.

If they are changed, communication with the GOT is disabled.

○: Necessary, △: As necessary, —: Not necessary

Setting item*1	Parameter number	Setting value	Setting for GOT connection
Ethernet communication network number	Pr.1424	1*4	△
Ethernet communication station number	Pr.1425	1*4	△
Ethernet function selection 1	Pr.1427	5001	△
Ethernet function selection 2	Pr.1428	45237	△
Ethernet function selection 3	Pr.1429	45238	○
Ethernet function selection 4	Pr.1430	9999	△
IP address 1*2	Pr.1434	0 to 255	○
IP address 2*2	Pr.1435	0 to 255	○
IP address 3*2	Pr.1436	0 to 255	○
IP address 4*2	Pr.1437	0 to 255	○
Subnet mask 1*2	Pr.1438	255*3	△
Subnet mask 2*2	Pr.1439	255*3	△
Subnet mask 3*2	Pr.1440	255*3	△
Subnet mask 4*2	Pr.1441	0*3	△
Ethernet IP filter address 1	Pr.1442	0*3	△
Ethernet IP filter address 2	Pr.1443	0*3	△
Ethernet IP filter address 3	Pr.1444	0*3	△
Ethernet IP filter address 4	Pr.1445	0*3	△
Ethernet IP filter address 2 range specification	Pr.1446	9999*3	△
Ethernet IP filter address 3 range specification	Pr.1447	9999*3	△
Ethernet IP filter address 4 range specification	Pr.1448	9999*3	△

*1 The parameter names described in the FR-D800 series manuals.

*2 The setting can be changed on the GOT side.
When changing the setting on the GOT side, be sure to change the parameter of the inverter accordingly.

*3 Change the setting depending on the usage environment.

*4 Set the same network number as that of the PLC.
☞ Page 1651 [Parameter] in GX Works3

20 Connection through a PLC

☞ Page 1654 FR-E700 (connection through a PLC)
☞ Page 1658 FR-A800 (connection through a PLC)
☞ Page 1666 FR-A800 Plus (connection through a PLC)
☞ Page 1675 FR-F800 (connection through a PLC)
☞ Page 1682 FR-E800 (connection through a PLC)
☞ Page 1688 FR-D800 (connection through a PLC)

20.1 FR-E700 (connection through a PLC)

☞ Page 1654 Connectable devices
☞ Page 1655 System configuration
☞ Page 1655 GOT side settings
☞ Page 1656 Inverter side settings

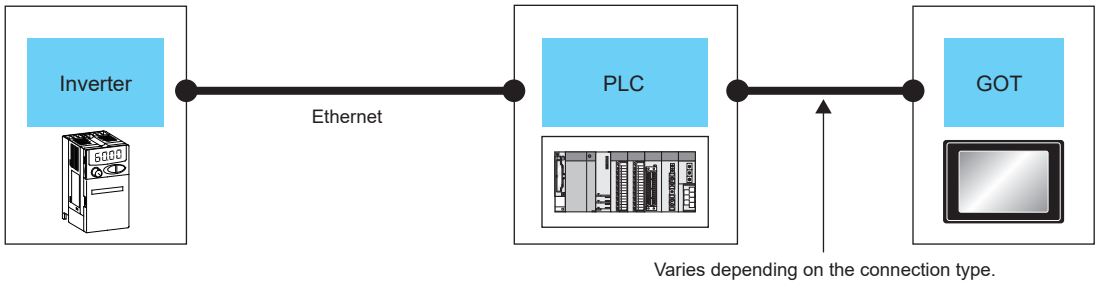
20.1.1 Connectable devices

The following table shows the connectable models.

○: Supported, —: Not supported

Controller	Model	Clock	Connectable model
FR-E700 series	FR-E7□0-NE	—	GT37 SoftGOT3000

20.1.2 System configuration



Controller	Communication type	PLC	Connection type*1	GOT		Maximum number of connected devices
		CPU model		Interface	Model	
FR-E7□0-NE*5	Ethernet	MX-R RCPU QCPU LCPU	For the system configuration between the GOT and PLC, refer to the following. ☞ Page 61 Ethernet connection*6 ☞ Page 518 Serial connection ☞ Page 682 Bus connection ☞ Page 703 MELSECNET/H connection*6 ☞ Page 743 CC-Link IE TSN connection*6 ☞ Page 845 CC-Link IE Controller Network connection*6 ☞ Page 921 CC-Link IE Field Network connection*4*6	*2	*2	*3

*1 The connection type depends on the CPU model.
☞ System configuration in each chapter

*2 Applicable GOTs differ depending on the connection type.
☞ System configuration in each chapter

*3 The number of connectable devices below depends on the connection type.
☞ System configuration in each chapter
• Number of GOTs connectable to one PLC
• Number of PLCs connectable to one GOT

*4 When connecting the GOT and PLC using the CC-Link IE Field Network connection and then connecting an inverter, connect the inverter via a CC-Link IE Field Network master/local module (master station).
In this case, a different network will be accessed, so the routing must be set.

*5 Use an inverter having SERIAL (serial number) "□88○○○○○○" or later.
For the FR-E700-SC-NNE and FR-E700-SC-ENE, use an inverter having SERIAL (serial number) "□88○○○○○○" or later.
SERIAL (serial number) is provided on the rating plate of the inverter.

*6 To monitor other networks, routing parameter settings are necessary.
For the routing parameter settings, refer to the following.
☞ Routing parameter settings described in each chapter

20.1.3 GOT side settings

The GOT side settings depend on the connection type between the GOT and PLC.

For details on the GOT side settings, refer to the following.

☞ Page 61 Ethernet connection

☞ Page 743 CC-Link IE TSN connection

☞ Page 921 CC-Link IE Field Network connection

20.1.4 Inverter side settings

Connecting an inverter and a PLC by Ethernet

For the inverter side settings, refer to the following.

📖FR-E700 series manuals

■Communication port and the supported parameters

Inverter side interface	Inverter side parameter
Ethernet connector	Pr.79, Pr.340, Pr.342, Pr.442 to Pr.445, Pr.502, Pr.549 to Pr.551, Pr.805 to Pr.812, Pr.830 to Pr.835, Pr.837 to Pr.852

■Inverter communication settings

Set the following parameters using the PU (parameter unit).

Do not change these parameters, even though they can be monitored from the GOT.

If they are changed, communication with the GOT is disabled.

○: Necessary, △: As necessary

Setting item*1	Parameter number	Setting value	Setting for GOT connection
Operation mode selection	Pr.79	0*2	△
Communication startup mode	Pr.340	10*2	△
Communication EEPROM write selection	Pr.342	0*2	△
Stop mode selection at communication error	Pr.502	0*2	△
Protocol selection	Pr.549	0	○
NET mode operation command source selection	Pr.550	0*2	△
PU mode operation command source selection	Pr.551	2*2	△
Ethernet communication network number	Pr.830	1 to 239	○
Ethernet communication station number	Pr.831	1 to 120	○
Link speed and duplex mode selection	Pr.832	0	△
Ethernet function selection 1	Pr.833	30, 31, 36, 38	○
Ethernet function selection 2	Pr.834	20*2	△
Ethernet function selection 3	Pr.835	9999*2	△
Ethernet signal loss detection function selection	Pr.851	3*2	△
Ethernet communication check time interval	Pr.852	1.5s*2	△
Ethernet IP address 1 (Built-in Ethernet)	Pr.805	0 to 255	○
Ethernet IP address 2 (Built-in Ethernet)	Pr.806	0 to 255	○
Ethernet IP address 3 (Built-in Ethernet)	Pr.807	0 to 255	○
Ethernet IP address 4 (Built-in Ethernet)	Pr.808	0 to 255	○
Subnet mask 1	Pr.809	255*2	△
Subnet mask 2	Pr.810	255*2	△
Subnet mask 3	Pr.811	255*2	△
Subnet mask 4	Pr.812	0*2	△
Gateway address 1	Pr.442	0*2	△
Gateway address 2	Pr.443	0*2	△
Gateway address 3	Pr.444	0*2	△
Gateway address 4	Pr.445	0*2	△
Ethernet IP filter address 1	Pr.837	0*2	△
Ethernet IP filter address 2	Pr.838	0*2	△
Ethernet IP filter address 3	Pr.839	0*2	△
Ethernet IP filter address 4	Pr.840	0*2	△
Ethernet IP filter address 2 range specification	Pr.841	9999*2	△
Ethernet IP filter address 3 range specification	Pr.842	9999*2	△
Ethernet IP filter address 4 range specification	Pr.843	9999*2	△
Ethernet command source specification IP address 1	Pr.844	0*2	△

Setting item*1	Parameter number	Setting value	Setting for GOT connection
Ethernet command source specification IP address 2	Pr.845	0*2	△
Ethernet command source specification IP address 3	Pr.846	0*2	△
Ethernet command source specification IP address 4	Pr.847	0*2	△
Ethernet command source selection IP address 3 range specification	Pr.848	9999*2	△
Ethernet command source selection IP address 4 range specification	Pr.849	9999*2	△
Ethernet TCP disconnection time coefficient	Pr.850	3600*2	△

*1 The parameter names described in the FR-E700 series manuals.
*2 Change the setting depending on the usage environment.

Precautions

■Monitoring PLC devices and virtual inverter devices simultaneously

In the following cases, the device monitor speed of the PLC that passes through the GOT and inverter decreases.

- Monitoring the device of the PLC and virtual device of the inverter on the same screen or background
- Resetting the inverter

By connecting a different channel for each controller with the multi-channel function, the decreasing device monitor speed of the PLC can be improved.

20.2 FR-A800 (connection through a PLC)

☞ Page 1658 Connectable devices
☞ Page 1659 System configuration
☞ Page 1660 GOT side settings
☞ Page 1661 Inverter side settings

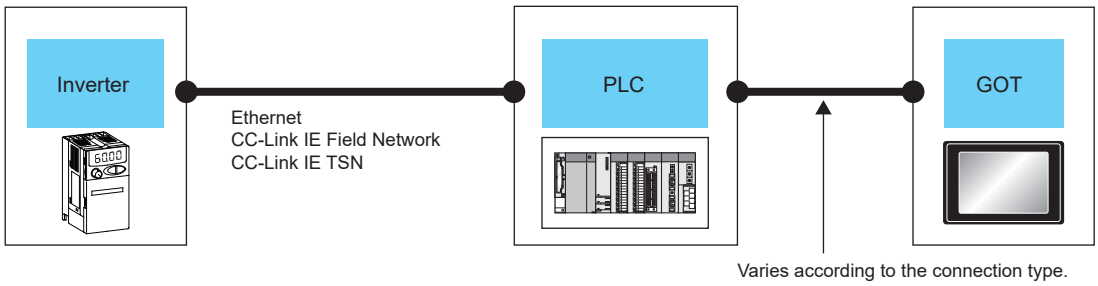
20.2.1 Connectable devices

The following table shows the connectable models.

○: Supported, —: Not supported

Controller	Model	Clock	Connectable model
FR-A800 series	FR-A8□0 FR-A8□2 FR-A8□6	—	GT37 SoftGOT3000
	FR-A8□0-E FR-A8□2-E FR-A8□6-E	—	GT37 SoftGOT3000
	FR-A8□0-GF FR-A8□2-GF	—	GT37 SoftGOT3000
	FR-A8□0-GN FR-A8□2-GN	—	GT37 SoftGOT3000

20.2.2 System configuration



Controller	Communication type	PLC	Connection type*1	GOT		Maximum number of connected devices
		CPU model		Interface	Model	
FR-A8□0-E*6 FR-A8□2-E*6 FR-A8□6-E*6	Ethernet	MX-R RCPU QCPU LCPU	For the system configuration between the GOT and PLC, refer to the following. ☞ Page 61 Ethernet connection*10 ☞ Page 518 Serial connection ☞ Page 682 Bus connection ☞ Page 703 MELSECNET/H connection*10 ☞ Page 743 CC-Link IE TSN connection*10 ☞ Page 845 CC-Link IE Controller Network connection*10 ☞ Page 921 CC-Link IE Field Network connection*4*10	*2	*2	*3
FR-A8□0*5 FR-A8□2*5 FR-A8□6*5 FR-A8□0-GF FR-A8□2-GF	CC-Link IE Field Network*4*9	MX-R RCPU QCPU LCPU				
FR-A8□0*7 FR-A8□2*7 FR-A8□6*7 FR-A8□0-GN FR-A8□2-GN	CC-Link IE TSN*8	MX-R MX-F RCPU				

*1 The connection type depends on the CPU model.
☞ System configuration in each chapter

*2 Applicable GOTs differ depending on the connection type.
☞ System configuration in each chapter

*3 The number of connectable devices below depends on the connection type.
☞ System configuration in each chapter
• Number of GOTs connectable to one PLC
• Number of PLCs connectable to one GOT

*4 When connecting the GOT and PLC using the CC-Link IE Field Network connection and then connecting an inverter, connect the inverter via a CC-Link IE Field Network master/local module (master station).
In this case, a different network will be accessed, so the routing must be set.

*5 The CC-Link IE Field Network communication option (FR-A8NCE) is required.
Use a CC-Link IE Field Network communication option (FR-A8NCE) having SERIAL (serial number) "□83○○○" or later.
SERIAL (serial number) is described on the CC-Link IE Field Network communication option (FR-A8NCE).

*6 When the communication type is the Ethernet connection and the communication format is TCP, use an inverter having SERIAL (serial number) "□7Z○○○○○○" or later.
SERIAL (serial number) is provided on the rating plate of the inverter.

*7 A built-in option (FR-A8NCG) is required.
Use an inverter with the following SERIAL (serial number).

Country of origin indication	SERIAL (serial number)
MADE in Japan	□96****** and later
MADE in China	□97****** and later

*8 When connecting the GOT and an inverter through a PLC, set the third octet of the inverter IP address to the network number and the fourth octet to the station number.
The following shows a setting example of the IP address when the network No. is "1" and the station No. is "2".

192.168.1.2

Station No.

Network No.

For details on the setting, refer to the following.
📖FR-A800-GN CC-LINK IE TSN FUNCTION MANUAL
📖FR-A8NCG INSTRUCTION MANUAL

*9 Use an inverter having SERIAL (serial number) "□83○○○○○○" or later.
SERIAL (serial number) is provided on the rating plate of the inverter.

*10 To monitor other networks, routing parameter settings are necessary.
For the routing parameter settings, refer to the following.
☞ Routing parameter settings described in each chapter

20.2.3 GOT side settings

The GOT side settings depend on the connection type between the GOT and PLC.

For details on the GOT side settings, refer to the following.

☞ Page 61 Ethernet connection
☞ Page 743 CC-Link IE TSN connection
☞ Page 921 CC-Link IE Field Network connection

20.2.4 Inverter side settings

Connecting an inverter and a PLC by Ethernet

For the inverter side settings, refer to the following.

📖FR-A800 series manuals

■Communication port and the supported parameters

Inverter side interface	Inverter side parameter
Ethernet connector	Pr.79, Pr.340, Pr.342, Pr.414, Pr.502, Pr.549 to Pr.551, Pr.779, Pr.1424 to Pr.1429, Pr.1431 to Pr.1432, Pr.1434 to Pr.1455

■Inverter communication settings

Set the following parameters using the PU (parameter unit).

Do not change these parameters, even though they can be monitored from the GOT.

If they are changed, communication with the GOT is disabled.

○: Necessary, △: As necessary

Setting item[*1]	Parameter number	Setting value	Setting for GOT connection
Operation mode selection	Pr.79	0[*2]	△
Communication startup mode	Pr.340	10[*2]	△
Communication EEPROM write selection	Pr.342	0[*2]	△
PLC function operation selection	Pr.414	0[*2*3]	△
Stop mode selection at communication error	Pr.502	0[*2]	△
Protocol selection	Pr.549	0	○
NET mode operation command source selection	Pr.550	5[*2]	△
PU mode operation command source selection	Pr.551	2[*2]	△
Operation frequency during communication error	Pr.779	9999[*2]	△
Ethernet communication network number	Pr.1424	1 to 239	○
Ethernet communication station number	Pr.1425	1 to 120	○
Link speed and duplex mode selection	Pr.1426	0[*2]	△
Ethernet function selection 1	Pr.1427	5000 to 5002, 5006 to 5008	○
Ethernet function selection 2	Pr.1428	9999[*2]	△
Ethernet function selection 3	Pr.1429	9999[*2]	△
Ethernet signal loss detection function selection	Pr.1431	0[*2]	△
Ethernet communication check time interval	Pr.1432	9999[*2]	△
Ethernet IP address 1 (Built-in Ethernet)	Pr.1434	0 to 255	○
Ethernet IP address 2 (Built-in Ethernet)	Pr.1435	0 to 255	○
Ethernet IP address 3 (Built-in Ethernet)	Pr.1436	0 to 255	○
Ethernet IP address 4 (Built-in Ethernet)	Pr.1437	0 to 255	○
Subnet mask 1	Pr.1438	255[*2]	△
Subnet mask 2	Pr.1439	255[*2]	△
Subnet mask 3	Pr.1440	255[*2]	△
Subnet mask 4	Pr.1441	0[*2]	△
Ethernet IP filter address 1	Pr.1442	0[*2]	△
Ethernet IP filter address 2	Pr.1443	0[*2]	△
Ethernet IP filter address 3	Pr.1444	0[*2]	△
Ethernet IP filter address 4	Pr.1445	0[*2]	△
Ethernet IP filter address 2 range specification	Pr.1446	9999[*2]	△
Ethernet IP filter address 3 range specification	Pr.1447	9999[*2]	△
Ethernet IP filter address 4 range specification	Pr.1448	9999[*2]	△
Ethernet command source specification IP address 1	Pr.1449	0[*2]	△
Ethernet command source specification IP address 2	Pr.1450	0[*2]	△
Ethernet command source specification IP address 3	Pr.1451	0[*2]	△
Ethernet command source specification IP address 4	Pr.1452	0[*2]	△

Setting item*1	Parameter number	Setting value	Setting for GOT connection
Ethernet command source selection IP address 3 range specification	Pr.1453	9999*2	△
Ethernet command source selection IP address 4 range specification	Pr.1454	9999*2	△
Keepalive time	Pr.1455	3600s*2	△

*1 The parameter names described in the FR-A800 series manuals.
*2 Change the setting depending on the usage environment.
*3 The inverter side setting defaults to 0: Invalid. To use the PLC function, set 1 or 2.

Precautions

■Connecting a PLC and an inverter using TCP/IP

When a PLC and an inverter are connected using TCP/IP, reconnection may not be possible after they are disconnected.
In such a case, reset the inverter, or shorten the keepalive time and Ethernet TCP disconnection time coefficient.
For setting the keepalive time and Ethernet TCP disconnection time coefficient, refer to the following.
📖FR-A800 series manuals

Connecting an inverter and a PLC via CC-Link IE Field Network

For the inverter side settings, refer to the following.

📖FR-A800 series manuals

■Communication port and the supported parameters

Inverter side interface	Inverter side parameter
Ethernet connector	Pr.79, Pr.313 to Pr.315, Pr.338 to Pr.340, Pr.342, Pr.349, Pr.434 to Pr.435, Pr.500 to Pr.502, Pr.541, Pr.550, Pr.779, Pr.804, Pr.810

■Inverter communication settings

Set the following parameters using the PU (parameter unit).

Do not change these parameters, even though they can be monitored from the GOT.

If they are changed, communication with the GOT is disabled.

○: Necessary, △: As necessary

Setting item*1	Parameter number	Setting value	Setting for GOT connection
Operation mode selection	Pr.79	0*2	△
Communication startup mode	Pr.340	10*2	△
DO0 output selection	Pr.313	9999*2	△
DO1 output selection	Pr.314	9999*2	△
DO2 output selection	Pr.315	9999*2	△
Communication operation command source	Pr.338	0*2	△
Communication speed command source	Pr.339	0*2	△
Communication EEPROM write selection	Pr.342	0*2	△
Communication reset selection	Pr.349	0*2	△
Network number (CC-Link IE)	Pr.434	1 to 239	○
Station number (CC-Link IE)	Pr.435	1 to 120	○
Communication error execution waiting time	Pr.500	0s*2	△
Communication error occurrence count display	Pr.501	0*2	△
Stop mode selection at communication error	Pr.502	0*2	△
Frequency command sign selection	Pr.541	0*2	△
NET mode operation command source selection	Pr.550	0*2	△
Operation frequency during communication error	Pr.779	9999*2	△
Torque command source selection	Pr.804	0*2	△
Torque limit input method selection	Pr.810	0*2	△

*1 The parameter names described in the FR-A800 series manuals.

*2 Change the setting depending on the usage environment.

Connecting an inverter and a PLC via CC-Link IE TSN

For the inverter side settings, refer to the following.

📖FR-A800 series manuals

■Communication port and the supported parameters

Inverter side interface	Inverter side parameter
CC-Link IE TSN port	Pr.434 to Pr.441, Pr.1442 to Pr.1459

■Inverter communication settings

Set the following parameters using the PU (parameter unit).

Do not change these parameters, even though they can be monitored from the GOT.

If they are changed, communication with the GOT is disabled.

○: Necessary, △: As necessary

Setting item*1	Parameter number	Setting value	Setting for GOT connection
IP address 1*3	Pr.434	0 to 255	○
IP address 2*3	Pr.435	0 to 255	○
IP address 3*3	Pr.436	0 to 255	○
IP address 4*3	Pr.437	0 to 255	○
Subnet mask 1	Pr.438	255*2	△
Subnet mask 2	Pr.439	255*2	△
Subnet mask 3	Pr.440	255*2	△
Subnet mask 4	Pr.441	0*2	△
Ethernet IP filter address 1	Pr.1442	0*2	△
Ethernet IP filter address 2	Pr.1443	0*2	△
Ethernet IP filter address 3	Pr.1444	0*2	△
Ethernet IP filter address 4	Pr.1445	0*2	△
Ethernet IP filter address 2 range specification	Pr.1446	9999*2	△
Ethernet IP filter address 3 range specification	Pr.1447	9999*2	△
Ethernet IP filter address 4 range specification	Pr.1448	9999*2	△
Clock source selection	Pr.1459	0*2*4	△

*1 The parameter names described in the FR-A800 series manuals.

*2 Change the setting depending on the usage environment.

*3 Specifying a value from [1] to [254] with the rotary switch of the inverter enables the settings of the switch.
When the setting is changed, the new setting is applied after the inverter reset or at the next power-on.

*4 The time synchronization operation differs depending on whether the FR-LU08 is installed.
For details on the time synchronization operations, refer to the following.
📖FR-A800 series manuals

Precautions

■Monitoring PLC devices and virtual inverter devices simultaneously

In the following cases, the device monitor speed of the PLC that passes through the GOT and inverter decreases.

- Monitoring the device of the PLC and virtual device of the inverter on the same screen or background
- Resetting the inverter

By connecting a different channel for each controller with the multi-channel function, the decreasing device monitor speed of the PLC can be improved.

■Link devices of CC-Link IE Field Network, CC-Link IE TSN, or CC-Link IE Field Network Basic connection

When functions (signals) are assigned to link devices (RX, RY, RWr, RWw) on the inverter, the GOT cannot write data to these virtual devices.

Example) CMD1 (Forward rotation command)

Since the forward rotation command is assigned to RY0 on the inverter, the GOT cannot write data to the virtual device, or CMD1 (forward rotation command).

For the functions (signals) assigned to the link devices (RX, RY, RWw, and RWr), refer to the following.

📖Manual of the inverter used

Control the functions (signals) assigned to the link devices (RX, RY, RWw, and RWr) on the master station.

For CC-Link IE Field Network Basic connection, refer to the following.

☞ Page 2455 CC-Link IE Field Network Basic connection

20.3 FR-A800 Plus (connection through a PLC)

☞ Page 1666 Connectable devices
☞ Page 1667 System configuration
☞ Page 1668 GOT side settings
☞ Page 1668 Inverter side settings

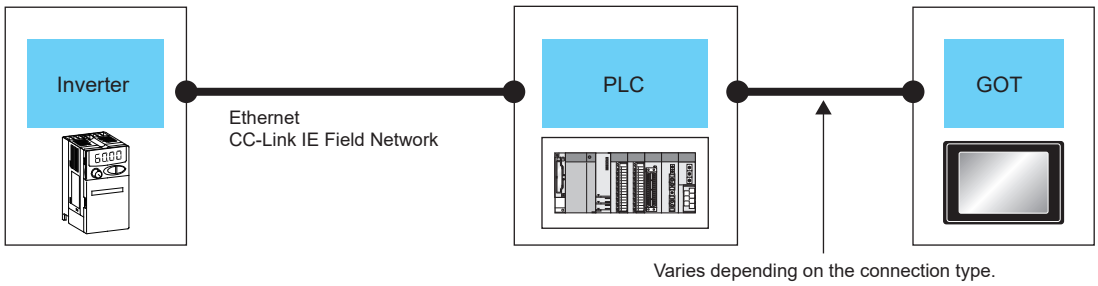
20.3.1 Connectable devices

The following table shows the connectable models.

○: Supported, —: Not supported

Controller	Model	Clock	Connectable model
FR-A800 Plus series	FR-A8□0-CRN FR-A8□2-CRN FR-A8□0-R2R FR-A8□2-R2R FR-A8□0-LC	—	GT37 SoftGOT3000
	FR-A8□0-E-CRN FR-A8□2-E-CRN FR-A8□0-E-R2R FR-A8□2-E-R2R FR-A8□0-E-AWH FR-A8□0-E-LC	—	GT37 SoftGOT3000

20.3.2 System configuration



Controller	Communication type	PLC CPU model	Connection type*1	GOT Interface	GOT Model	Maximum number of connected devices
FR-A8□0-E-CRN FR-A8□2-E-CRN FR-A8□0-E-R2R FR-A8□2-E-R2R FR-A8□0-E-AWH FR-A8□0-E-LC	Ethernet	MX-R RCPU QCPU LCPU	For the system configuration between the GOT and PLC, refer to the following. ☞ Page 61 Ethernet connection*7 ☞ Page 518 Serial connection ☞ Page 682 Bus connection ☞ Page 703 MELSECNET/H connection*7 ☞ Page 743 CC-Link IE TSN connection*7 ☞ Page 845 CC-Link IE Controller Network connection*7 ☞ Page 921 CC-Link IE Field Network connection*4*7	*2	*2	*3
FR-A8□0-CRN*5 FR-A8□2-CRN*5 FR-A8□0-R2R*5 FR-A8□2-R2R*5 FR-A8□0-LC*5	CC-Link IE Field Network*4*6	MX-R RCPU QCPU LCPU				

*1 The connection type depends on the CPU model.
☞ System configuration in each chapter

*2 Applicable GOTs differ depending on the connection type.
☞ System configuration in each chapter

*3 The number of connectable devices below depends on the connection type.
☞ System configuration in each chapter
• Number of GOTs connectable to one PLC
• Number of PLCs connectable to one GOT

*4 When connecting the GOT and PLC using the CC-Link IE Field Network connection and then connecting an inverter, connect the inverter via a CC-Link IE Field Network master/local module (master station).
In this case, a different network will be accessed, so the routing must be set.

*5 The CC-Link IE Field Network communication option (FR-A8NCE) is required.
Use a CC-Link IE Field Network communication option (FR-A8NCE) having SERIAL (serial number) "□83○○○" or later.
SERIAL (serial number) is described on the CC-Link IE Field Network communication option (FR-A8NCE).

*6 Use an inverter having SERIAL (serial number) "□83○○○○○○" or later.
SERIAL (serial number) is provided on the rating plate of the inverter.

*7 To monitor other networks, routing parameter settings are necessary.
For the routing parameter settings, refer to the following.
☞ Routing parameter settings described in each chapter

20.3.3 GOT side settings

The GOT side settings depend on the connection type between the GOT and PLC.

For details on the GOT side settings, refer to the following.

☞ Page 61 Ethernet connection
☞ Page 743 CC-Link IE TSN connection
☞ Page 921 CC-Link IE Field Network connection

20.3.4 Inverter side settings

Connecting an inverter and a PLC by Ethernet

For the inverter side settings, refer to the following.

📖FR-A800 Plus series manuals

■Communication port and the supported parameters

Inverter side interface	Inverter side parameter (R2R)	Inverter side parameter (CRN, AWH, LC)
Ethernet connector	Pr.79, Pr.340, Pr.342, Pr.442 to Pr.445, Pr.502, Pr.549 to Pr.551, Pr.1073 to Pr.1078, Pr.1431 to Pr.1432, Pr.1434 to Pr.1455	Pr.79, Pr.340, Pr.342, Pr.442 to Pr.445, Pr.502, Pr.549 to Pr.551, Pr.1424 to Pr.1429, Pr.1431 to Pr.1432, Pr.1434 to Pr.1455

■Inverter communication settings

Set the following parameters using the PU (parameter unit).

Do not change these parameters, even though they can be monitored from the GOT.

If they are changed, communication with the GOT is disabled.

○: Necessary, △: As necessary

Setting item[*1]	Parameter number	Setting value	Setting for GOT connection
Operation mode selection	Pr.79	0[*2]	△
Communication startup mode	Pr.340	10[*2]	△
Communication EEPROM write selection	Pr.342	0[*2]	△
Stop mode selection at communication error	Pr.502	0[*2]	△
Protocol selection	Pr.549	0	○
NET mode operation command source selection	Pr.550	9999[*2]	△
PU mode operation command source selection	Pr.551	2[*2]	△
Ethernet communication network number	Pr.1073(R2R) or Pr.1424 (CRN, AWH, LC)	1 to 239	○
Ethernet communication station number	Pr.1074(R2R) or Pr.1425 (CRN, AWH, LC)	1 to 120	○
Link speed and duplex mode selection	Pr.1075(R2R) or Pr.1426 (CRN, AWH, LC)	0	△
Ethernet function selection 1	Pr.1076(R2R) or Pr.1427 (CRN, AWH, LC)	5000 to 5002, 5006 to 5008	○
Ethernet function selection 2	Pr.1077(R2R) or Pr.1428 (CRN, AWH, LC)	45237[*2]	△
Ethernet function selection 3	Pr.1078(R2R) or Pr.1429 (CRN, AWH, LC)	9999[*2]	△
Ethernet signal loss detection function selection	Pr.1431	0[*2]	△
Ethernet communication check time interval	Pr.1432	9999[*2]	△
Ethernet IP address 1 (Built-in Ethernet)	Pr.1434	0 to 255	○
Ethernet IP address 2 (Built-in Ethernet)	Pr.1435	0 to 255	○
Ethernet IP address 3 (Built-in Ethernet)	Pr.1436	0 to 255	○

Setting item*1	Parameter number	Setting value	Setting for GOT connection
Ethernet IP address 4 (Built-in Ethernet)	Pr.1437	0 to 255	○
Subnet mask 1	Pr.1438	255*2	△
Subnet mask 2	Pr.1439	255*2	△
Subnet mask 3	Pr.1440	255*2	△
Subnet mask 4	Pr.1441	0*2	△
Ethernet IP filter address 1	Pr.1442	0*2	△
Ethernet IP filter address 2	Pr.1443	0*2	△
Ethernet IP filter address 3	Pr.1444	0*2	△
Ethernet IP filter address 4	Pr.1445	0*2	△
Ethernet IP filter address 2 range specification	Pr.1446	9999*2	△
Ethernet IP filter address 3 range specification	Pr.1447	9999*2	△
Ethernet IP filter address 4 range specification	Pr.1448	9999*2	△
Ethernet command source specification IP address 1	Pr.1449	0*2	△
Ethernet command source specification IP address 2	Pr.1450	0*2	△
Ethernet command source specification IP address 3	Pr.1451	0*2	△
Ethernet command source specification IP address 4	Pr.1452	0*2	△
Ethernet command source selection IP address 3 range specification	Pr.1453	9999*2	△
Ethernet command source selection IP address 4 range specification	Pr.1454	9999*2	△
Keepalive time	Pr.1455	3600s*2	△

*1 The parameter names described in the FR-A800 Plus series manuals.
*2 Change the setting depending on the usage environment.

Precautions

■Connecting a PLC and an inverter using TCP/IP

When a PLC and an inverter are connected using TCP/IP, reconnection may not be possible after they are disconnected.

In such a case, reset the inverter, or shorten the keepalive time and Ethernet TCP disconnection time coefficient.

For setting the keepalive time and Ethernet TCP disconnection time coefficient, refer to the following.

📖FR-A800 Plus series manuals

■Parameters for monitoring data specific to FR-A800 Plus series

• How to monitor the winding length (upper + lower) (PV29)

Set Pr.645 (Winding diameter storage selection) to [1], and set Pr.1263 (Stored winding length (lower 4 digits)) and Pr.1298 (Stored winding length (upper 4 digits)) on the inverter side.

Communication drivers of FREQROL (Batch monitor) that supports monitoring PV are the setting target.

Setting item *1	Parameter number	Setting range	Setting details
Winding diameter storage selection	Pr.645	0, 1	Select whether to store the winding diameter and winding length. 0: Do not store. 1: Stores the current winding diameter.
Stored winding diameter	Pr.646	1 to 6553 mm	The stored winding diameter can be read/written.
Operation time with stored winding diameter	Pr.647	0 to 100 s	Set the time to hold the stored winding diameter after the start signal turns on.
Target winding diameter	Pr.648	1 to 6563 mm	Set the winding diameter to output the Target winding diameter achieved signal (Y233).
Winding length increment	Pr.1262	0	1 km
		1	100 m
		2	10 m
		3	1 m
		4	1 cm
		5	1 mm
Stored winding length (lower 4 digits)	Pr.1263	0 to 9999 m *2	The stored winding length (lower 4 digits) can be read/written.
Winding length detection (lower 4 digits)	Pr.1264	0 to 9999 m *2	Set the winding length (lower 4 digits) to output the Winding/Unwinding Completion signal (Y234).
Stored winding length (upper 4 digits)	Pr.1298	0 to 9999 m *2	The stored winding length (upper 4 digits) can be read/written.
Stored winding length increment	Pr.1299	0	1 m
		1	1 cm
		2	1 mm
Winding length detection (upper 4 digits)	Pr.1346	0 to 9999 m *2	Set the winding length (upper 4 digits) to output the Winding/Unwinding Completion signal (Y234).

*1 The parameter names described in the FR-A800 Plus series manuals.

*2 The unit differs depending on the setting of Pr.1262.

• How to monitor the actual line speed (PV27)

The actual line speed can be set with the input value of the line speed command by setting Pr.362 (Actual line speed input selection) to [0].

For the line speed command, a value can be set in Pr.360 by setting Pr.361 (Line speed command input selection) to [8].

Communication drivers of FREQROL (Batch monitor) that supports monitoring PV are the setting target.

Setting item *1	Parameter number	Setting range	Setting details
Line speed command voltage/current bias	Pr.350	0 to 100%	Set the converted value (%) of the bias voltage (current) for analog input.
Line speed command bias	Pr.351	0 to 6553.4 m/min *2	Set the bias line speed command value for analog input.
Line speed command voltage/current gain	Pr.352	0 to 100%	Set the converted value (%) of the gain voltage (current) for analog input.
Line speed command gain	Pr.353	0 to 6553.4 m/min *2 9999	Set the gain line speed command value for analog input.
Line speed command pulse input bias	Pr.354	0 to 500 kpps	Set the number of bias input pulses for pulse train input.
Line speed command pulse input gain	Pr.355	0 to 500 kpps	Set the number of gain input pulses for pulse train input.
Line speed command digital input bias	Pr.356	0 to 65535	Set the bias line speed command value for pulse train input.
Line speed command digital input gain	Pr.357	0 to 65535	Set the gain line speed command value for pulse train input.
Line speed unit	Pr.358	0	m/min
		1	m/sec
		2	mm/min
		3	mm/sec
Line speed command value	Pr.360	0 to 6553.4 m/min *2	Set the line speed command value.
Line speed command input selection	Pr.361	0	According to the priority of the speed command rights
		1	Terminal JOG single-phase pulse train input
		2	FR-A8AP/FR-A8AL/FR-A8TP encoder pulse train input
		3	Terminal 2 (0 to 100%)
		4	Terminal 4 (20 to 100%)
		5	Terminal 1 (-100 to 100%)
		6	Terminal 6 (FR-A8AZ) (-100 to 100%)
		7	FR-A8AL single-phase pulse train input
		8	Line speed command according to the setting of Pr.360 (Line speed command value)
		9999	No function
Actual line speed input selection	Pr.362	0	V* (line speed command)
		1	Terminal JOG single-phase pulse train input
		2	FR-A8AP/FR-A8AL/FR-A8TP encoder pulse train input (complementary 12 V / differential 5 V (A-, B-phases) *3
		3	Terminal 2 (analog value: 0 to 100%) (0 to 5 V DC) *4
		4	Terminal 4 (analog value: 20 to 100%) (4 to 20 mA DC) *4
		5	Terminal 1 (analog value: -100 to 100%) (0 to ±10 V DC) *4
		6	Terminal 6 (FR-A8AZ) (analog value: -100 to 100%) (0 to ±10 V DC) *4
		7	FR-A8AL single-phase pulse train input (PP, NP)
		9999	No function *5
Command pulse selection	Pr.428	0	Forward/Reverse pulse train (negative logic)
		1	Pulse train + rotation direction sign (negative logic)
		2	A/B-phase pulse train (negative logic)
		3	Forward/Reverse pulse train (positive logic)
		4	Pulse train + rotation direction sign (positive logic)
		5	A/B-phase pulse train (positive logic)
Start line speed command	Pr.622	0 to 6553.4 m/min *2	Set the line speed command to start operation.
Line multi-speed setting (high-speed)	Pr.1265	0 to 6553.4 m/min *2	Set the line speed command value when the RH signal is ON.
Line multi-speed setting (middle-speed)	Pr.1266	0 to 6553.4 m/min *2	Set the line speed command value when the RM signal is ON.
Line multi-speed setting (low-speed)	Pr.1267	0 to 6553.4 m/min *2	Set the line speed command value when the RL signal is ON.

Setting item *1	Parameter number	Setting range	Setting details
Line multi-speed setting (speed 4)	Pr.1268	0 to 6553.4 m/min *2	The line speed from 4th speed to 15th speed can be set according to the combination of the RH, RM, RL and REX signals.
Line multi-speed setting (speed 5)	Pr.1269	0 to 6553.4 m/min *2	
Line multi-speed setting (speed 6)	Pr.1270	0 to 6553.4 m/min *2	
Line multi-speed setting (speed 7)	Pr.1271	0 to 6553.4 m/min *2	
Line multi-speed setting (speed 8)	Pr.1272	0 to 6553.4 m/min *2	
Line multi-speed setting (speed 9)	Pr.1273	0 to 6553.4 m/min *2	
Line multi-speed setting (speed 10)	Pr.1274	0 to 6553.4 m/min *2	
Line multi-speed setting (speed 11)	Pr.1275	0 to 6553.4 m/min *2	
Line multi-speed setting (speed 12)	Pr.1276	0 to 6553.4 m/min *2	
Line multi-speed setting (speed 13)	Pr.1277	0 to 6553.4 m/min *2	
Line multi-speed setting (speed 14)	Pr.1278	0 to 6553.4 m/min *2	
Line multi-speed setting (speed 15)	Pr.1279	0 to 6553.4 m/min *2	

*1 The parameter names described in the FR-A800 Plus series manuals.
*2 The unit differs depending on the setting of Pr.358.
*3 When Pr.362 is set to [2], select the option to input the actual line speed with Pr.862.
*4 The input specification in the initial setting is indicated.
*5 When Pr.362 is set to [9999] (No function), the actual line speed is regarded as 0.

Connecting an inverter and a PLC via CC-Link IE Field Network

For the inverter side settings, refer to the following.

📖FR-A800 Plus series manuals

■Communication port and the supported parameters

Inverter side interface	Inverter side parameter
Ethernet connector	Pr.79, Pr.313 to Pr.315, Pr.338 to Pr.340, Pr.342, Pr.349, Pr.434 to Pr.435, Pr.500 to Pr.502, Pr.541, Pr.550, Pr.779, Pr.804, Pr.810

■Inverter communication settings

Set the following parameters using the PU (parameter unit).

Do not change these parameters, even though they can be monitored from the GOT.

If they are changed, communication with the GOT is disabled.

○: Necessary, △: As necessary

Setting item*1	Parameter number	Setting value	Setting for GOT connection
Operation mode selection	Pr.79	0*2	△
Communication startup mode	Pr.340	10*2	△
DO0 output selection	Pr.313	9999*2	△
DO1 output selection	Pr.314	9999*2	△
DO2 output selection	Pr.315	9999*2	△
Communication operation command source	Pr.338	0*2	△
Communication speed command source	Pr.339	0*2	△
Communication EEPROM write selection	Pr.342	0*2	△
Communication reset selection	Pr.349	0*2	△
Network number (CC-Link IE)	Pr.434	1 to 239	○
Station number (CC-Link IE)	Pr.435	1 to 120	○
Communication error execution waiting time	Pr.500	0s*2	△
Communication error occurrence count display	Pr.501	0*2	△
Stop mode selection at communication error	Pr.502	0*2	△
Frequency command sign selection	Pr.541	0*2	△
NET mode operation command source selection	Pr.550	0*2	△
Operation frequency during communication error	Pr.779*3	9999*2	△
Torque command source selection	Pr.804	0*2	△
Torque limit input method selection	Pr.810	0*2	△

*1 The parameter names described in the FR-A800 Plus series manuals.
*2 Change the setting depending on the usage environment.
*3 For FR-A8□0-R2R and FR-A8□2-R2R, this setting is unavailable.

■Parameters for monitoring data specific to FR-A800 Plus series

• How to monitor the winding length (upper + lower) (PV29)

Set Pr.645 (Winding diameter storage selection) to [1], and set Pr.1263 (Stored winding length (lower 4 digits)) and Pr.1298 (Stored winding length (upper 4 digits)) on the inverter side.

Communication drivers of FREQROL (Batch monitor) that supports monitoring PV are the setting target.

Setting item *1	Parameter number	Setting range	Setting details
Winding diameter storage selection	Pr.645	0, 1	Select whether to store the winding diameter and winding length. 0: Do not store. 1: Stores the current winding diameter.
Stored winding diameter	Pr.646	1 to 6553 mm	The stored winding diameter can be read/written.
Operation time with stored winding diameter	Pr.647	0 to 100 s	Set the time to hold the stored winding diameter after the start signal turns on.
Target winding diameter	Pr.648	1 to 6563 mm	Set the winding diameter to output the Target winding diameter achieved signal (Y233).
Winding length increment	Pr.1262	0	1 km
		1	100 m
		2	10 m
		3	1 m
		4	1 cm
		5	1 mm
Stored winding length (lower 4 digits)	Pr.1263	0 to 9999 m *2	The stored winding length (lower 4 digits) can be read/written.
Winding length detection (lower 4 digits)	Pr.1264	0 to 9999 m *2	Set the winding length (lower 4 digits) to output the Winding/Unwinding Completion signal (Y234).
Stored winding length (upper 4 digits)	Pr.1298	0 to 9999 m *2	The stored winding length (upper 4 digits) can be read/written.
Stored winding length increment	Pr.1299	0	1 m
		1	1 cm
		2	1 mm
Winding length detection (upper 4 digits)	Pr.1346	0 to 9999 m *2	Set the winding length (upper 4 digits) to output the Winding/Unwinding Completion signal (Y234).

*1 The parameter names described in the FR-A800 Plus series manuals.
*2 The unit differs depending on the setting of Pr.1262.

Precautions

■Monitoring PLC devices and virtual inverter devices simultaneously

In the following cases, the device monitor speed of the PLC that passes through the GOT and inverter decreases.

• Monitoring the device of the PLC and virtual device of the inverter on the same screen or background
• Resetting the inverter

By connecting a different channel for each controller with the multi-channel function, the decreasing device monitor speed of the PLC can be improved.

■Link devices of CC-Link IE Field Network or CC-Link IE Field Network Basic connection

When functions (signals) are assigned to link devices (RX, RY, RWr, RWw) on the inverter, the GOT cannot write data to these virtual devices.

Example) CMD1 (Forward rotation command)

Since the forward rotation command is assigned to RY0 on the inverter, the GOT cannot write data to the virtual device, or CMD1 (forward rotation command).

For the functions (signals) assigned to the link devices (RX, RY, RWw, and RWr), refer to the following.

📖Manual of the inverter used

Control the functions (signals) assigned to the link devices (RX, RY, RWw, and RWr) on the master station.

For CC-Link IE Field Network Basic connection, refer to the following.

☞ Page 2455 CC-Link IE Field Network Basic connection

20.4 FR-F800 (connection through a PLC)

☞ Page 1675 Connectable devices
☞ Page 1675 System configuration
☞ Page 1676 GOT side settings
☞ Page 1677 Inverter side settings

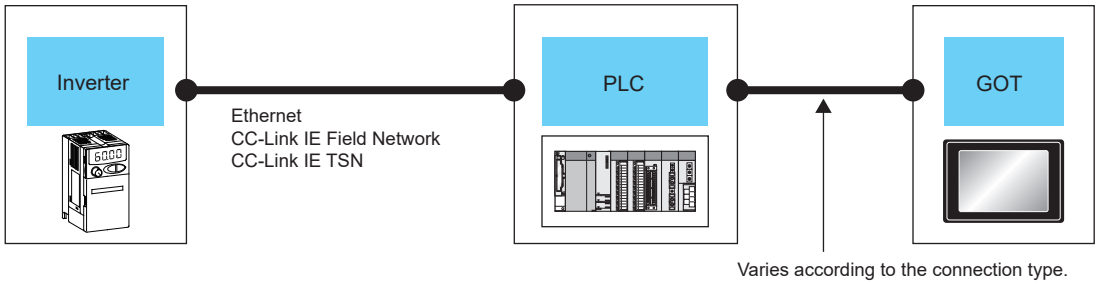
20.4.1 Connectable devices

The following table shows the connectable models.

○: Supported, —: Not supported

Controller	Model	Clock	Connectable model
FR-F800 series	FR-F8□0 FR-F8□2 FR-F8□6	—	GT37 SoftGOT3000
	FR-F8□0-E FR-F8□2-E	—	GT37 SoftGOT3000

20.4.2 System configuration



Controller	Communication type	PLC	Connection type*1	GOT		Maximum number of connected devices
		CPU model		Interface	Model	
FR-F8□0-E*6 FR-F8□2-E*6	Ethernet	MX-R RCPU QCPU LCPU	For the system configuration between the GOT and PLC, refer to the following. ☞ Page 61 Ethernet connection*10 ☞ Page 518 Serial connection ☞ Page 682 Bus connection ☞ Page 703 MELSECNET/H connection*10 ☞ Page 743 CC-Link IE TSN connection*10 ☞ Page 845 CC-Link IE Controller Network connection*10 ☞ Page 921 CC-Link IE Field Network connection*4*10	*2	*2	*3
FR-F8□0*5 FR-F8□2*5 FR-F8□6*5	CC-Link IE Field Network*4*9	MX-R RCPU QCPU LCPU				
FR-F8□0*7 FR-F8□2*7 FR-F8□6*7	CC-Link IE TSN*8	MX-R MX-F RCPU				

*1 The connection type depends on the CPU model.
☞ System configuration in each chapter

*2 Applicable GOTs differ depending on the connection type.
☞ System configuration in each chapter

*3 The number of connectable devices below depends on the connection type.
☞ System configuration in each chapter
• Number of GOTs connectable to one PLC
• Number of PLCs connectable to one GOT

*4 When connecting the GOT and PLC using the CC-Link IE Field Network connection and then connecting an inverter, connect the inverter via a CC-Link IE Field Network master/local module (master station).
In this case, a different network will be accessed, so the routing must be set.

*5 The CC-Link IE Field Network communication option (FR-A8NCE) is required.
Use a CC-Link IE Field Network communication option (FR-A8NCE) having SERIAL (serial number) "□83○○○" or later.
SERIAL (serial number) is described on the CC-Link IE Field Network communication option (FR-A8NCE).

*6 When the communication type is the Ethernet connection and the communication format is TCP, use an inverter having SERIAL (serial number) "□7Z○○○○○○" or later.
SERIAL (serial number) is provided on the rating plate of the inverter.

*7 A built-in option (FR-A8NCG) is required.
Use an inverter with the following SERIAL (serial number).

Country of origin indication	SERIAL (serial number)
MADE in Japan	□96****** and later
MADE in China	□97****** and later

*8 When connecting the GOT and an inverter through a PLC, set the third octet of the inverter IP address to the network number and the fourth octet to the station number.
The following shows a setting example of the IP address when the network No. is "1" and the station No. is "2".

192.168.1.2

Station No.

Network No.

For details on the setting, refer to the following.
📖FR-A800-GN CC-LINK IE TSN FUNCTION MANUAL
📖FR-A8NCG INSTRUCTION MANUAL

*9 Use an inverter having SERIAL (serial number) "□83○○○○○○" or later.
SERIAL (serial number) is provided on the rating plate of the inverter.

*10 To monitor other networks, routing parameter settings are necessary.
For the routing parameter settings, refer to the following.
☞ Routing parameter settings described in each chapter

20.4.3 GOT side settings

The GOT side settings depend on the connection type between the GOT and PLC.

For details on the GOT side settings, refer to the following.

☞ Page 61 Ethernet connection
☞ Page 743 CC-Link IE TSN connection
☞ Page 921 CC-Link IE Field Network connection

20.4.4 Inverter side settings

Connecting an inverter and a PLC by Ethernet

For the inverter side settings, refer to the following.

📖FR-F800 series manuals

■Communication port and the supported parameters

Inverter side interface	Inverter side parameter
Ethernet connector	Pr.79, Pr.340, Pr.342, Pr.414, Pr.502, Pr.549 to Pr.551, Pr.779, Pr.1424 to Pr.1429, Pr.1431 to Pr.1432, Pr.1434 to Pr.1455

■Inverter communication settings

Set the following parameters using the PU (parameter unit).

Do not change these parameters, even though they can be monitored from the GOT.

If they are changed, communication with the GOT is disabled.

○: Necessary, △: As necessary

Setting item[*1]	Parameter number	Setting value	Setting for GOT connection
Operation mode selection	Pr.79	0[*2]	△
Communication startup mode	Pr.340	10[*2]	△
Communication EEPROM write selection	Pr.342	0[*2]	△
PLC function operation selection	Pr.414	0[*2*3]	△
Stop mode selection at communication error	Pr.502	0[*2]	△
Protocol selection	Pr.549	0	○
NET mode operation command source selection	Pr.550	5[*2]	△
PU mode operation command source selection	Pr.551	2[*2]	△
Operation frequency during communication error	Pr.779	9999[*2]	△
Ethernet communication network number	Pr.1424	1 to 239	○
Ethernet communication station number	Pr.1425	1 to 120	○
Link speed and duplex mode selection	Pr.1426	0[*2]	△
Ethernet function selection 1	Pr.1427	5000 to 5002, 5006 to 5008	○
Ethernet function selection 2	Pr.1428	9999[*2]	△
Ethernet function selection 3	Pr.1429	9999[*2]	△
Ethernet signal loss detection function selection	Pr.1431	0[*2]	△
Ethernet communication check time interval	Pr.1432	9999[*2]	△
Ethernet IP address 1 (Built-in Ethernet)	Pr.1434	0 to 255	○
Ethernet IP address 2 (Built-in Ethernet)	Pr.1435	0 to 255	○
Ethernet IP address 3 (Built-in Ethernet)	Pr.1436	0 to 255	○
Ethernet IP address 4 (Built-in Ethernet)	Pr.1437	0 to 255	○
Subnet mask 1	Pr.1438	255[*2]	△
Subnet mask 2	Pr.1439	255[*2]	△
Subnet mask 3	Pr.1440	255[*2]	△
Subnet mask 4	Pr.1441	0[*2]	△
Ethernet IP filter address 1	Pr.1442	0[*2]	△
Ethernet IP filter address 2	Pr.1443	0[*2]	△
Ethernet IP filter address 3	Pr.1444	0[*2]	△
Ethernet IP filter address 4	Pr.1445	0[*2]	△
Ethernet IP filter address 2 range specification	Pr.1446	9999[*2]	△
Ethernet IP filter address 3 range specification	Pr.1447	9999[*2]	△
Ethernet IP filter address 4 range specification	Pr.1448	9999[*2]	△
Ethernet command source specification IP address 1	Pr.1449	0[*2]	△
Ethernet command source specification IP address 2	Pr.1450	0[*2]	△

Setting item*1	Parameter number	Setting value	Setting for GOT connection
Ethernet command source specification IP address 3	Pr.1451	0*2	△
Ethernet command source specification IP address 4	Pr.1452	0*2	△
Ethernet command source selection IP address 3 range specification	Pr.1453	9999*2	△
Ethernet command source selection IP address 4 range specification	Pr.1454	9999*2	△
Keepalive time	Pr.1455	3600s*2	△

*1 The parameter names described in the FR-F800 series manuals.
*2 Change the setting depending on the usage environment.
*3 The inverter side setting defaults to 0: Invalid. To use the PLC function, set 1 or 2.

Precautions

■Connecting a PLC and an inverter using TCP/IP

When a PLC and an inverter are connected using TCP/IP, reconnection may not be possible after they are disconnected.

In such a case, reset the inverter, or shorten the keepalive time and Ethernet TCP disconnection time coefficient.

For setting the keepalive time and Ethernet TCP disconnection time coefficient, refer to the following.

📖FR-F800 series manuals

Connecting an inverter and a PLC via CC-Link IE Field Network

For the inverter side settings, refer to the following.

📖FR-F800 series manuals

■Communication port and the supported parameters

Inverter side interface	Inverter side parameter
Ethernet connector	Pr.79, Pr.313 to Pr.315, Pr.338 to Pr.340, Pr.342, Pr.349, Pr.434 to Pr.435, Pr.500 to Pr.502, Pr.541, Pr.550, Pr.779, Pr.804, Pr.810

■Inverter communication settings

Set the following parameters using the PU (parameter unit).

Do not change these parameters, even though they can be monitored from the GOT.

If they are changed, communication with the GOT is disabled.

○: Necessary, △: As necessary

Setting item*1	Parameter number	Setting value	Setting for GOT connection
Operation mode selection	Pr.79	0*2	△
Communication startup mode	Pr.340	10*2	△
DO0 output selection	Pr.313	9999*2	△
DO1 output selection	Pr.314	9999*2	△
DO2 output selection	Pr.315	9999*2	△
Communication operation command source	Pr.338	0*2	△
Communication speed command source	Pr.339	0*2	△
Communication EEPROM write selection	Pr.342	0*2	△
Communication reset selection	Pr.349	0*2	△
Network number (CC-Link IE)	Pr.434	1 to 239	○
Station number (CC-Link IE)	Pr.435	1 to 120	○
Communication error execution waiting time	Pr.500	0s*2	△
Communication error occurrence count display	Pr.501	0*2	△
Stop mode selection at communication error	Pr.502	0*2	△
Frequency command sign selection	Pr.541	0*2	△
NET mode operation command source selection	Pr.550	0*2	△
Operation frequency during communication error	Pr.779*3	9999*2	△
Torque command source selection	Pr.804	0*2	△
Torque limit input method selection	Pr.810	0*2	△

*1 The parameter names described in the FR-F800 series manuals.
*2 Change the setting depending on the usage environment.
*3 For FR-A8□0-R2R and FR-A8□2-R2R, this setting is unavailable.

Connecting an inverter and a PLC via CC-Link IE TSN

For the inverter side settings, refer to the following.

📖FR-F800 series manuals

■Communication port and the supported parameters

Inverter side interface	Inverter side parameter
CC-Link IE TSN port	Pr.434 to Pr.441, Pr.1442 to Pr.1459

■Inverter communication settings

Set the following parameters using the PU (parameter unit).

Do not change these parameters, even though they can be monitored from the GOT.

If they are changed, communication with the GOT is disabled.

○: Necessary, △: As necessary

Setting item*1	Parameter number	Setting value	Setting for GOT connection
IP address 1*3	Pr.434	0 to 255	○
IP address 2*3	Pr.435	0 to 255	○
IP address 3*3	Pr.436	0 to 255	○
IP address 4*3	Pr.437	0 to 255	○
Subnet mask 1	Pr.438	255*2	△
Subnet mask 2	Pr.439	255*2	△
Subnet mask 3	Pr.440	255*2	△
Subnet mask 4	Pr.441	0*2	△
Ethernet IP filter address 1	Pr.1442	0*2	△
Ethernet IP filter address 2	Pr.1443	0*2	△
Ethernet IP filter address 3	Pr.1444	0*2	△
Ethernet IP filter address 4	Pr.1445	0*2	△
Ethernet IP filter address 2 range specification	Pr.1446	9999*2	△
Ethernet IP filter address 3 range specification	Pr.1447	9999*2	△
Ethernet IP filter address 4 range specification	Pr.1448	9999*2	△
Clock source selection	Pr.1459	0*2*4	△

*1 The parameter names described in the FR-F800 series manuals.

*2 Change the setting depending on the usage environment.

*3 Specifying a value from [1] to [254] with the rotary switch of the inverter enables the settings of the switch.
When the setting is changed, the new setting is applied after the inverter reset or at the next power-on.

*4 The time synchronization operation differs depending on whether the FR-LU08 is installed.
For details on the time synchronization operations, refer to the following.
📖FR-F800 series manuals

Precautions

■Monitoring PLC devices and virtual inverter devices simultaneously

In the following cases, the device monitor speed of the PLC that passes through the GOT and inverter decreases.

- Monitoring the device of the PLC and virtual device of the inverter on the same screen or background
- Resetting the inverter

By connecting a different channel for each controller with the multi-channel function, the decreasing device monitor speed of the PLC can be improved.

■Link devices of CC-Link IE Field Network, CC-Link IE TSN, or CC-Link IE Field Network Basic connection

When functions (signals) are assigned to link devices (RX, RY, RWr, RWw) on the inverter, the GOT cannot write data to these virtual devices.

Example) CMD1 (Forward rotation command)

Since the forward rotation command is assigned to RY0 on the inverter, the GOT cannot write data to the virtual device, or CMD1 (forward rotation command).

For the functions (signals) assigned to the link devices (RX, RY, RWw, and RWr), refer to the following.

📖Manual of the inverter used

Control the functions (signals) assigned to the link devices (RX, RY, RWw, and RWr) on the master station.

For CC-Link IE Field Network Basic connection, refer to the following.

☞ Page 2455 CC-Link IE Field Network Basic connection

20.5 FR-E800 (connection through a PLC)

☞ Page 1682 Connectable devices
☞ Page 1683 System configuration
☞ Page 1683 GOT side settings
☞ Page 1684 Inverter side settings

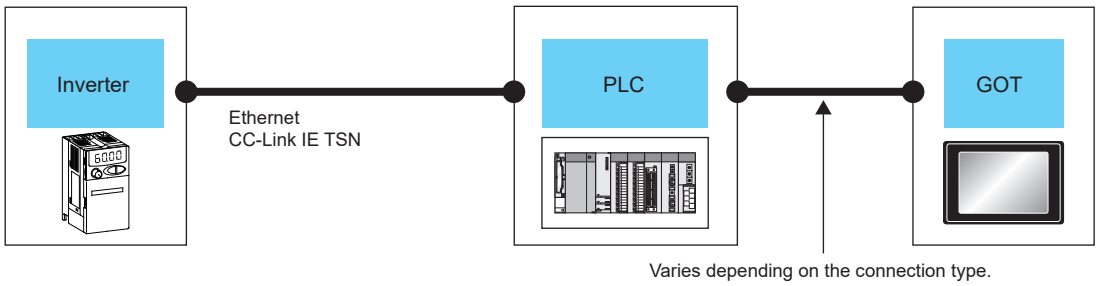
20.5.1 Connectable devices

The following table shows the connectable models.

○: Supported, —: Not supported

Controller	Model	Clock	Connectable model
FR-E800 series	FR-E8□0-E	—	GT37 SoftGOT3000

20.5.2 System configuration



Controller	Communication type	PLC	Connection type*1	GOT		Maximum number of connected devices
		CPU model		Interface	Model	
FR-E8□0-E	Ethernet	MX-R RCPU QCPU LCPU	For the system configuration between the GOT and PLC, refer to the following. ☞ Page 61 Ethernet connection*6 ☞ Page 518 Serial connection ☞ Page 682 Bus connection ☞ Page 703 MELSECNET/H connection*6 ☞ Page 743 CC-Link IE TSN connection*6 ☞ Page 845 CC-Link IE Controller Network connection*6 ☞ Page 921 CC-Link IE Field Network connection*4*6	*2	*2	*3
	CC-Link IE TSN*5	MX-R MX-F RCPU				

*1 The connection type depends on the CPU model.
☞ System configuration in each chapter

*2 Applicable GOTs differ depending on the connection type.
☞ System configuration in each chapter

*3 The number of connectable devices below depends on the connection type.
☞ System configuration in each chapter
• Number of GOTs connectable to one PLC
• Number of PLCs connectable to one GOT

*4 When connecting the GOT and PLC using the CC-Link IE Field Network connection and then connecting an inverter, connect the inverter via a CC-Link IE Field Network master/local module (master station).
In this case, a different network will be accessed, so the routing must be set.

*5 When connecting the GOT and an inverter through a PLC, set the third octet of the inverter IP address to the network number and the fourth octet to the station number.
The following shows a setting example of the IP address when the network No. is "1" and the station No. is "2".

192.168.1.2
Station No.
Network No.

*6 To monitor other networks, routing parameter settings are necessary.
For the routing parameter settings, refer to the following.
☞ Routing parameter settings described in each chapter

20.5.3 GOT side settings

The GOT side settings depend on the connection type between the GOT and PLC.
For details on the GOT side settings, refer to the following.

☞ Page 61 Ethernet connection
☞ Page 518 Serial connection
☞ Page 682 Bus connection
☞ Page 703 MELSECNET/H connection
☞ Page 743 CC-Link IE TSN connection
☞ Page 845 CC-Link IE Controller Network connection
☞ Page 921 CC-Link IE Field Network connection

20.5.4 Inverter side settings

Connecting an inverter and a PLC by Ethernet

For the inverter side settings, refer to the following.

📖FR-E800 series manuals

■Communication port and the supported parameters

Inverter side interface	Inverter side parameter
Ethernet connector	Pr.79, Pr.340, Pr.342, Pr.414, Pr.502, Pr.549 to Pr.551, Pr.779, Pr.1424 to Pr.1429, Pr.1431 to Pr.1432, Pr.1434 to Pr.1455

■Inverter communication settings

Set the following parameters using the PU (parameter unit).

Do not change these parameters, even though they can be monitored from the GOT.

If they are changed, communication with the GOT is disabled.

○: Necessary, △: As necessary

Setting item*1	Parameter number	Setting value	Setting for GOT connection
Operation mode selection	Pr.79	0*2	△
Communication startup mode	Pr.340	10*2	△
Communication EEPROM write selection	Pr.342	0*2	△
PLC function operation selection	Pr.414	0*2*3	△
Stop mode selection at communication error	Pr.502	0*2	△
Protocol selection	Pr.549	0	○
NET mode operation command source selection	Pr.550	5*2	△
PU mode operation command source selection	Pr.551	2*2	△
Operation frequency during communication error	Pr.779	9999*2	△
Ethernet communication network number	Pr.1424	1 to 239	○
Ethernet communication station number	Pr.1425	1 to 120	○
Link speed and duplex mode selection	Pr.1426	0*2	△
Ethernet function selection 1	Pr.1427	5000 to 5002, 5006 to 5008	○
Ethernet function selection 2	Pr.1428	9999*2	△
Ethernet function selection 3	Pr.1429	9999*2	△
Ethernet signal loss detection function selection	Pr.1431	0*2	△
Ethernet communication check time interval	Pr.1432	9999*2	△
Ethernet IP address 1 (Built-in Ethernet)	Pr.1434	0 to 255	○
Ethernet IP address 2 (Built-in Ethernet)	Pr.1435	0 to 255	○
Ethernet IP address 3 (Built-in Ethernet)	Pr.1436	0 to 255	○
Ethernet IP address 4 (Built-in Ethernet)	Pr.1437	0 to 255	○
Subnet mask 1	Pr.1438	255*2	△
Subnet mask 2	Pr.1439	255*2	△
Subnet mask 3	Pr.1440	255*2	△
Subnet mask 4	Pr.1441	0*2	△
Ethernet IP filter address 1	Pr.1442	0*2	△
Ethernet IP filter address 2	Pr.1443	0*2	△
Ethernet IP filter address 3	Pr.1444	0*2	△
Ethernet IP filter address 4	Pr.1445	0*2	△
Ethernet IP filter address 2 range specification	Pr.1446	9999*2	△
Ethernet IP filter address 3 range specification	Pr.1447	9999*2	△
Ethernet IP filter address 4 range specification	Pr.1448	9999*2	△
Ethernet command source specification IP address 1	Pr.1449	0*2	△
Ethernet command source specification IP address 2	Pr.1450	0*2	△

Setting item*1	Parameter number	Setting value	Setting for GOT connection
Ethernet command source specification IP address 3	Pr.1451	0*2	△
Ethernet command source specification IP address 4	Pr.1452	0*2	△
Ethernet command source selection IP address 3 range specification	Pr.1453	9999*2	△
Ethernet command source selection IP address 4 range specification	Pr.1454	9999*2	△
Keepalive time	Pr.1455	3600s*2	△

*1 The parameter names described in the FR-E800 series manuals.
*2 Change the setting depending on the usage environment.
*3 The inverter side setting defaults to 0: Invalid. To use the PLC function, set 1 or 2.

Precautions

■Connecting a PLC and an inverter using TCP/IP

When a PLC and an inverter are connected using TCP/IP, reconnection may not be possible after they are disconnected.
In such a case, reset the inverter, or shorten the keepalive time and Ethernet TCP disconnection time coefficient.
For setting the keepalive time and Ethernet TCP disconnection time coefficient, refer to the following.
📖FR-E800 series manuals

Connecting an inverter and a PLC via CC-Link IE TSN

For the inverter side settings, refer to the following.

📖FR-E800 series manuals

■Communication port and the supported parameters

Inverter side interface	Inverter side parameter
CC-Link IE TSN port	Pr.1427 to Pr.1429, Pr.1434 to Pr.1448

■Inverter communication settings

Set the following parameters using the PU (parameter unit).

Do not change these parameters, even though they can be monitored from the GOT.

If they are changed, communication with the GOT is disabled.

○: Necessary, △: As necessary

Setting item*1	Parameter number	Setting value	Setting for GOT connection
Ethernet function selection 1	Pr.1427	5001	△
Ethernet function selection 2	Pr.1428	45237	△
Ethernet function selection 3	Pr.1429	45238	○
Ethernet function selection 4	Pr.1430	9999	△
IP address 1	Pr.1434	0 to 255	○
IP address 2	Pr.1435	0 to 255	○
IP address 3	Pr.1436	0 to 255	○
IP address 4	Pr.1437	0 to 255	○
Subnet mask 1	Pr.1438	255 *2	△
Subnet mask 2	Pr.1439	255 *2	△
Subnet mask 3	Pr.1440	255 *2	△
Subnet mask 4	Pr.1441	0 *2	△
Ethernet IP filter address 1	Pr.1442	0 *2	△
Ethernet IP filter address 2	Pr.1443	0 *2	△
Ethernet IP filter address 3	Pr.1444	0 *2	△
Ethernet IP filter address 4	Pr.1445	0 *2	△
Ethernet IP filter address 2 range specification	Pr.1446	9999 *2	△
Ethernet IP filter address 3 range specification	Pr.1447	9999 *2	△
Ethernet IP filter address 4 range specification	Pr.1448	9999 *2	△

*1 The parameter names described in the FR-E800 series manuals.

*2 Change the setting depending on the usage environment.

Precautions

■Monitoring PLC devices and virtual inverter devices simultaneously

In the following cases, the device monitor speed of the PLC that passes through the GOT and inverter decreases.

- Monitoring the device of the PLC and virtual device of the inverter on the same screen or background
- Resetting the inverter

By connecting a different channel for each controller with the multi-channel function, the decreasing device monitor speed of the PLC can be improved.

■Link devices of CC-Link IE TSN or CC-Link IE Field Network Basic connection

When functions (signals) are assigned to link devices (RX, RY, RWr, RWw) on the inverter, the GOT cannot write data to these virtual devices.

Example) CMD1 (Forward rotation command)

Since the forward rotation command is assigned to RY0 on the inverter, the GOT cannot write data to the virtual device, or CMD1 (forward rotation command).

For the functions (signals) assigned to the link devices (RX, RY, RWw, and RWr), refer to the following.

📖Manual of the inverter used

Control the functions (signals) assigned to the link devices (RX, RY, RWw, and RWr) on the master station.

For CC-Link IE Field Network Basic connection, refer to the following.

☞ Page 2455 CC-Link IE Field Network Basic connection

20.6 FR-D800 (connection through a PLC)

☞ Page 1688 Connectable devices
☞ Page 1689 System configuration
☞ Page 1689 GOT side settings
☞ Page 1690 Inverter side settings

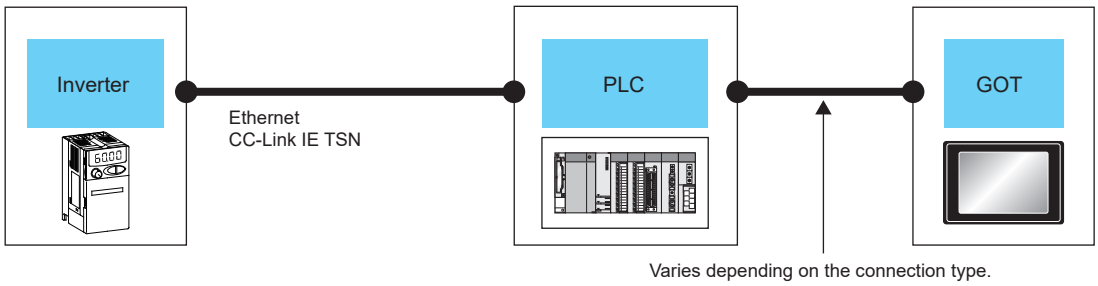
20.6.1 Connectable devices

The following table shows the connectable models.

○: Supported, —: Not supported

Controller	Model	Clock	Connectable model
FR-D800 series	FR-D8□0-E	—	GT37 SoftGOT3000

20.6.2 System configuration



Controller	Communication type	PLC	Connection type*1	GOT		Maximum number of connected devices
		CPU model		Interface	Model	
FR-D8□0-E	Ethernet	MX-R RCPU QCPU LCPU	For the system configuration between the GOT and PLC, refer to the following. ☞ Page 61 Ethernet connection*5 ☞ Page 518 Serial connection ☞ Page 682 Bus connection ☞ Page 703 MELSECNET/H connection*5 ☞ Page 743 CC-Link IE TSN connection*5 ☞ Page 845 CC-Link IE Controller Network connection*5 ☞ Page 921 CC-Link IE Field Network connection*5	*2	*2	*3
	CC-Link IE TSN*4	MX-R MX-F RCPU				

*1 The connection type depends on the CPU model.
☞ System configuration in each chapter

*2 Applicable GOTs differ depending on the connection type.
☞ System configuration in each chapter

*3 The number of connectable devices below depends on the connection type.
☞ System configuration in each chapter
• Number of GOTs connectable to one PLC
• Number of PLCs connectable to one GOT

*4 When connecting the GOT and an inverter through a PLC, set the third octet of the inverter IP address to the network number and the fourth octet to the station number.
The following shows a setting example of the IP address when the network No. is "1" and the station No. is "2".

192.168.1.2
Station No.
Network No.

*5 To monitor other networks, routing parameter settings are necessary.
For the routing parameter settings, refer to the following.
☞ Routing parameter settings described in each chapter

20.6.3 GOT side settings

The GOT side settings depend on the connection type between the GOT and PLC.
For details on the GOT side settings, refer to the following.

☞ Page 61 Ethernet connection
☞ Page 518 Serial connection
☞ Page 682 Bus connection
☞ Page 703 MELSECNET/H connection
☞ Page 743 CC-Link IE TSN connection
☞ Page 845 CC-Link IE Controller Network connection
☞ Page 921 CC-Link IE Field Network connection

20.6.4 Inverter side settings

Connecting an inverter and a PLC by Ethernet

For the inverter side settings, refer to the following.

📖FR-D800 series manuals

■Communication port and the supported parameters

Inverter side interface	Inverter side parameter
Ethernet connector	Pr.79, Pr.340, Pr.342, Pr.502, Pr.549 to Pr.551, Pr.779, Pr.1424 to Pr.1432, Pr.1434 to Pr.1455

■Inverter communication settings

Set the following parameters using the PU (parameter unit).

Do not change these parameters, even though they can be monitored from the GOT.

If they are changed, communication with the GOT is disabled.

○: Necessary, △: As necessary

Setting item[*1]	Parameter number	Setting value	Setting for GOT connection
Operation mode selection	Pr.79	0[*2]	△
Communication startup mode	Pr.340	10[*2]	△
Communication EEPROM write selection	Pr.342	0[*2]	△
Stop mode selection at communication error	Pr.502	0[*2]	△
Protocol selection	Pr.549	0	○
NET mode operation command source selection	Pr.550	5[*2]	△
PU mode operation command source selection	Pr.551	2[*2]	△
Operation frequency during communication error	Pr.779	9999[*2]	△
Ethernet communication network number	Pr.1424	1 to 239	○
Ethernet communication station number	Pr.1425	1 to 120	○
Link speed and duplex mode selection	Pr.1426	0[*2]	△
Ethernet function selection 1	Pr.1427	5000 to 5002, 5006 to 5008	○
Ethernet function selection 2	Pr.1428	15237[*2]	△
Ethernet function selection 3	Pr.1429	15238[*2]	△
Ethernet function selection 4	Pr.1430	9999[*2]	△
Ethernet signal loss detection function selection	Pr.1431	0[*2]	△
Ethernet communication check time interval	Pr.1432	9999[*2]	△
Ethernet IP address 1 (Built-in Ethernet)	Pr.1434	0 to 255	○
Ethernet IP address 2 (Built-in Ethernet)	Pr.1435	0 to 255	○
Ethernet IP address 3 (Built-in Ethernet)	Pr.1436	0 to 255	○
Ethernet IP address 4 (Built-in Ethernet)	Pr.1437	0 to 255	○
Subnet mask 1	Pr.1438	255[*2]	△
Subnet mask 2	Pr.1439	255[*2]	△
Subnet mask 3	Pr.1440	255[*2]	△
Subnet mask 4	Pr.1441	0[*2]	△
Ethernet IP filter address 1	Pr.1442	0[*2]	△
Ethernet IP filter address 2	Pr.1443	0[*2]	△
Ethernet IP filter address 3	Pr.1444	0[*2]	△
Ethernet IP filter address 4	Pr.1445	0[*2]	△
Ethernet IP filter address 2 range specification	Pr.1446	9999[*2]	△
Ethernet IP filter address 3 range specification	Pr.1447	9999[*2]	△
Ethernet IP filter address 4 range specification	Pr.1448	9999[*2]	△
Ethernet command source specification IP address 1	Pr.1449	0[*2]	△
Ethernet command source specification IP address 2	Pr.1450	0[*2]	△

Setting item*1	Parameter number	Setting value	Setting for GOT connection
Ethernet command source specification IP address 3	Pr.1451	0*2	△
Ethernet command source specification IP address 4	Pr.1452	0*2	△
Ethernet command source selection IP address 3 range specification	Pr.1453	9999*2	△
Ethernet command source selection IP address 4 range specification	Pr.1454	9999*2	△
Keepalive time	Pr.1455	3600 s*2	△

*1 The parameter names described in the FR-D800 series manuals.
*2 Change the setting depending on the usage environment.

Precautions

■Connecting a PLC and an inverter using TCP/IP

When a PLC and an inverter are connected using TCP/IP, reconnection may not be possible after they are disconnected.
In such a case, reset the inverter, or shorten the keepalive time and Ethernet TCP disconnection time coefficient.
For setting the keepalive time and Ethernet TCP disconnection time coefficient, refer to the following.
📖FR-D800 series manuals

Connecting an inverter and a PLC via CC-Link IE TSN

For the inverter side settings, refer to the following.

📖FR-D800 series manuals

■Communication port and the supported parameters

Inverter side interface	Inverter side parameter
CC-Link IE TSN port	Pr.1424, Pr1425, Pr.1427 to Pr.1430, Pr.1434 to Pr.1448

■Inverter communication settings

Set the following parameters using the PU (parameter unit).

Do not change these parameters, even though they can be monitored from the GOT.

If they are changed, communication with the GOT is disabled.

○: Necessary, △: As necessary

Setting item*1	Parameter number	Setting value	Setting for GOT connection
Ethernet communication network number	Pr.1424	1*3	△
Ethernet communication station number	Pr.1425	1*3	△
Ethernet function selection 1	Pr.1427	5001	△
Ethernet function selection 2	Pr.1428	45237	△
Ethernet function selection 3	Pr.1429	45238	○
Ethernet function selection 4	Pr.1430	9999	△
IP address 1	Pr.1434	0 to 255	○
IP address 2	Pr.1435	0 to 255	○
IP address 3	Pr.1436	0 to 255	○
IP address 4	Pr.1437	0 to 255	○
Subnet mask 1	Pr.1438	255 *2	△
Subnet mask 2	Pr.1439	255 *2	△
Subnet mask 3	Pr.1440	255 *2	△
Subnet mask 4	Pr.1441	0 *2	△
Ethernet IP filter address 1	Pr.1442	0 *2	△
Ethernet IP filter address 2	Pr.1443	0 *2	△
Ethernet IP filter address 3	Pr.1444	0 *2	△
Ethernet IP filter address 4	Pr.1445	0 *2	△
Ethernet IP filter address 2 range specification	Pr.1446	9999 *2	△
Ethernet IP filter address 3 range specification	Pr.1447	9999 *2	△
Ethernet IP filter address 4 range specification	Pr.1448	9999 *2	△

*1 The parameter names described in the FR-D800 series manuals.

*2 Change the setting depending on the usage environment.

*3 Set the same network number as that of the PLC.

☞ Page 1651 [Parameter] in GX Works3

Precautions

■Monitoring PLC devices and virtual inverter devices simultaneously

In the following cases, the device monitor speed of the PLC that passes through the GOT and inverter decreases.

- Monitoring the device of the PLC and virtual device of the inverter on the same screen or background
- Resetting the inverter

By connecting a different channel for each controller with the multi-channel function, the decreasing device monitor speed of the PLC can be improved.

■Link devices of CC-Link IE TSN or CC-Link IE Field Network Basic connection

When functions (signals) are assigned to link devices (RX, RY, RWr, RWw) on the inverter, the GOT cannot write data to these virtual devices.

Example) CMD1 (Forward rotation command)

Since the forward rotation command is assigned to RY0 on the inverter, the GOT cannot write data to the virtual device, or CMD1 (forward rotation command).

For the functions (signals) assigned to the link devices (RX, RY, RWw, and RWr), refer to the following.

📖Manual of the inverter used

Control the functions (signals) assigned to the link devices (RX, RY, RWw, and RWr) on the master station.

For CC-Link IE Field Network Basic connection, refer to the following.

☞ Page 2455 CC-Link IE Field Network Basic connection

21 Settable device range

This chapter describes the range of devices settable in GT Designer3.
The settable range varies with the selection for [Controller Type] in the [Controller Setting] window.
Configure the device setting according to the specifications of the controller to be used.
Device specifications differ depending on the controller model even among the controllers of the same series.
If a nonexistent device or a device number out of the range is set for an object, other objects for which correct devices are set may not be monitored.

☞ Page 1695 [FREQROL 700/800, Sensorless Servo]
☞ Page 1703 [FREQROL 800/E700NE(Batch monitor)]
☞ Page 1724 [MELSEC MX Controller]
☞ Page 1724 [MELSEC iQ-R, RnMT/NC/RT, CR800-D]
☞ Page 1724 [MELSEC-Q/QS, Q17nD/M/NC/DR/DSR, CRnD-700]
☞ Page 1724 [MELSEC-L]

21.1 Device setting dialog (Mitsubishi Electric equipment)

For the device setting dialog, refer to the following.

☞ Page 1189 Device setting dialog (Mitsubishi Electric equipment)

21.2 [FREQROL 700/800, Sensorless Servo]

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Item	Reference
Specifications of bit devices	☞ Page 1695 Monitoring-supported bit devices ([FREQROL 700/800, Sensorless Servo])
	☞ Page 1695 Availability of writing/reading data to/from bit devices ([FREQROL 700/800, Sensorless Servo])
Specifications of word devices	☞ Page 1696 Monitoring-supported word devices ([FREQROL 700/800, Sensorless Servo])
	☞ Page 1696 Availability of writing/reading data to/from word devices ([FREQROL 700/800, Sensorless Servo])
Specifications of virtual inverter devices	☞ Page 1697 Virtual inverter devices ([FREQROL 700/800, Sensorless Servo])

21.2.1 Monitoring-supported bit devices ([FREQROL 700/800, Sensorless Servo])

The following table shows monitoring-supported virtual bit devices for inverters.

To check whether writing/reading data to/from each device is available, refer to the following.

☞ Page 1695 Availability of writing/reading data to/from bit devices ([FREQROL 700/800, Sensorless Servo])

For details on virtual inverter devices, refer to the following.

☞ Page 1697 Virtual inverter devices ([FREQROL 700/800, Sensorless Servo])

○: Available

×: Not available

Device name		Device No. representation	Setting range	Specifications of EG devices*1	
				Assignment to EG devices	Access using a client
RS	Inverter status monitor	Decimal	0 to 15	×	×
WS	Operation command	Decimal	0 to 15	×	×

*1 For the devices assigned to EG devices (gateway devices) and the compatible clients, refer to the following.
📖GT Designer3 (GOT3000) Screen Design Manual

21.2.2 Availability of writing/reading data to/from bit devices ([FREQROL 700/800, Sensorless Servo])

The following shows the availability of writing/reading data to/from bit devices by device type.

When the device type is other than the bit type, set the device No. in multiples of 16.

R/W: Both read and write

R/-: Read only

-/W: Write only

-/-: No read/write access

Device name	Device type				
	Bit	Byte (8 bits)	Word (16 bits)	Double-word (32 bits)	Quad-word (64 bits)
RS	R/-	-/-	-/-	-/-	-/-
WS	-/W	-/-	-/-	-/-	-/-

21.2.3 Monitoring-supported word devices ([FREQROL 700/800, Sensorless Servo])

The following table shows monitoring-supported virtual word devices for inverters.

To check whether writing/reading data to/from each device is available, refer to the following.

☞ Page 1696 Availability of writing/reading data to/from word devices ([FREQROL 700/800, Sensorless Servo])

For details on virtual inverter devices, refer to the following.

☞ Page 1697 Virtual inverter devices ([FREQROL 700/800, Sensorless Servo])

○: Available

×: Not available

Device name		Device No. representation	Setting range	Specifications of EG devices*1	
				Assignment to EG devices	Access using a client
A	Alarm definition	Decimal	0 to 7	○	×
Pr	Parameter	Decimal	0 to 1500	○	×
SP	Special parameter	Decimal	108 to 127	○	×

*1 For the devices assigned to EG devices (gateway devices) and the compatible clients, refer to the following.
GT Designer3 (GOT3000) Screen Design Manual

21.2.4 Availability of writing/reading data to/from word devices ([FREQROL 700/800, Sensorless Servo])

The following shows the availability of writing/reading data to/from word devices by device type.

R/W: Both read and write

R/-: Read only

-/W: Write only

-/-: No read/write access

Device name	Device type			
	Word (16 bits)	Double-word (32 bits)	Quad-word (64 bits)	Bit of word data
A	R/-	-/-	-/-	-/-
Pr	R/W	-/-	-/-	-/-
SP*1	R/W	-/-	-/-	-/-

*1 Only reading is available for SP111 to SP114.
Only writing is available for SP124 and SP125.

21.2.5 Virtual inverter devices ([FREQROL 700/800, Sensorless Servo])

The following shows the correspondence between the virtual devices used in the GOT and the inverter data.

For details on the inverter parameters, refer to the following.

☞ Manual of the inverter used

Virtual device name	Reference
RS	☞ Page 1697 Inverter status monitor ([FREQROL 700/800, Sensorless Servo])
WS	☞ Page 1698 Operation command ([FREQROL 700/800, Sensorless Servo])
	☞ Page 1699 When activating WS devices ([FREQROL 700/800, Sensorless Servo])
A	☞ Page 1700 Alarm definition ([FREQROL 700/800, Sensorless Servo])
Pr	☞ Page 1700 Parameter ([FREQROL 700/800, Sensorless Servo])
SP	☞ Page 1701 Special parameter ([FREQROL 700/800, Sensorless Servo])
	☞ Page 1702 Specifications of SP122 and SP121 ([FREQROL 700/800, Sensorless Servo])

Inverter status monitor ([FREQROL 700/800, Sensorless Servo])

The settable devices vary by inverter model.

For the settable devices of each inverter, refer to the following.

📖Manual of the inverter used

Parameter settings may have been changed in the inverter.

To use the devices, check the parameters and set the parameters as required.

Ex.

Example) When using the FR-A800 series

Virtual device name	Name
RS0	RUN (Inverter running)
RS1	During forward rotation
RS2	During reverse rotation
RS3	SU (Up to frequency)
RS4	OL (Overload warning)
RS5	IPF (Instantaneous power failure/undervoltage)
RS6	FU (Output frequency detection)
RS7	ABC1 (Fault)
RS8	ABC2
RS9	Safety monitor output
RS15	Fault occurrence

Operation command ([FREQROL 700/800, Sensorless Servo])

The settable devices vary by inverter model.

For the settable devices of each inverter, refer to the following.

📖Manual of the inverter used

Parameter settings may have been changed in the inverter.

To use the devices, check the parameters and set the parameters as required.

Ex.

Example) When using the FR-A800 series

Virtual device name	Name
WS0*1*2	AU (Terminal 4 input selection)
WS1	Forward rotation command
WS2	Reverse rotation command
WS3*1*2	RL (Low-speed operation command)
WS4*1*2	RM (Middle-speed operation command)
WS5*1*2	RH (High-speed operation command)
WS6*1*2	RT (Second function selection)
WS7*1*2	MRS (Output stop)
WS8*1*2*3	JOG (Jog operation selection)
WS9*1*2*3	CS (Selection of automatic restart after instantaneous power failure, flying start)
WS10*1*2*3	STOP (Start self-holding selection)
WS11*1*2*3	RES (Inverter reset)

*1 When the GOT is connected to the PU connector and the operation mode is set to the PU operation mode, the device cannot be used.

*2 The monitor data can be changed by the settings of Pr.178 to Pr.189 (input terminal function selection).
For the relationship between the parameters and terminals, refer to the following.
📖Manual of the inverter used

*3 The device is invalid for the initial state of the inverter in which a function that cannot be controlled by the GOT is set or no function is set.
Change the relevant setting in Pr.178 to Pr.189 (input terminal function selection).

When using the operation command, note the following.

Precautions	Description
When setting a device for a bit switch	Do not select [Alternate] for [Switch Action] of the bit switch.
When activating WS devices	☞ Page 1699 When activating WS devices ([FREQROL 700/800, Sensorless Servo])

When activating WS devices ([FREQROL 700/800, Sensorless Servo])

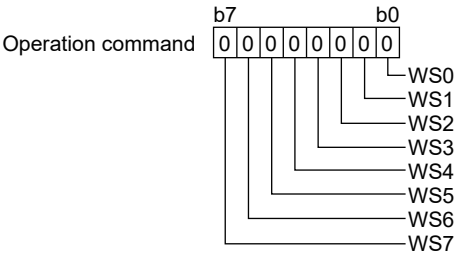
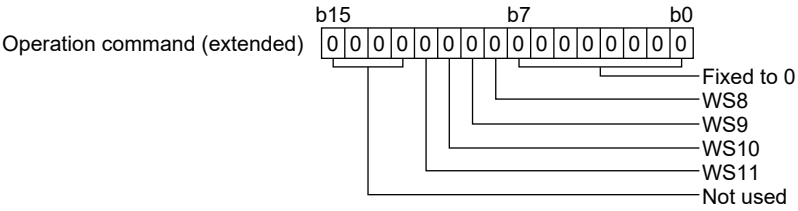
More than one WS device cannot turn on at once.

Turning on one WS device turns off the other WS devices.

Use SP122 or SP121 to turn on multiple WS devices simultaneously.

☞ Page 1702 Specifications of SP122 and SP121 ([FREQROL 700/800, Sensorless Servo])

The following shows the specifications of WS devices.

WS device	Specifications
WS0 to WS7	WS0 to WS7 are GOT's virtual devices corresponding to the inverter's operation commands (instruction code: HFA, bit length: 8 bits).  The function of each bit differs depending on the inverter. Example) A800 series inverter • WS0: AU (Terminal 4 input selection) • WS1: Forward rotation command • WS2: Reverse rotation command • WS3: RL (Low-speed operation command) • WS4: RM (Middle-speed operation command) • WS5: RH (High-speed operation command) • WS6: RT (Second function selection) • WS7: MRS (Output stop) When you turn on one of the WS0 to WS7 devices, the rest of these devices are turned off. Example) When you turn on WS1 WS0 and WS2 to WS7 are turned off.
WS8 to WS15	WS8 to WS11 are GOT's virtual devices corresponding to the inverter's operation commands (extended) (instruction code: HF9, bit length: 16 bits).  The function of each bit differs depending on the inverter. Example) A800 series inverter • WS8: JOG (Jog operation selection) • WS9: CS (Selection of automatic restart after instantaneous power failure, flying start) • WS10: STOP (Start self-holding selection) • WS11: RES (Inverter reset) Turning on a device out of WS8 to WS11 turns off WS0 to WS15 except the one that is turned on. Example) When you turn on WS9 WS0 to WS8 and WS10 to WS15 are turned off.

PART 5

Alarm definition ([FREQROL 700/800, Sensorless Servo])

The settable devices vary by inverter model.

For the settable devices of each inverter, refer to the following.

📖Manual of the inverter used

Ex.

Example) When using the FR-A800 series

Virtual device name	Name
A0	Second fault in past
A1	Latest fault
A2	Fourth fault in past
A3	Third fault in past
A4	Sixth fault in past
A5	Fifth fault in past
A6	Eighth fault in past
A7	Seventh fault in past

Parameter ([FREQROL 700/800, Sensorless Servo])

The virtual device numbers (Pr) used in the GOT correspond to the inverter parameter numbers.

For the inverter parameters, refer to the following.

📖Manual of the inverter used

When using a parameter, note the following.

Precautions	Description
When setting 8888 or 9999 to a parameter (Pr) of an inverter	Values 8888 and 9999 are used for particular purposes. To set these values to inverter parameters, write the following values to the GOT virtual device. • To set 8888: 65520 • To set 9999: 65535
When setting calibration parameters Pr900 to Pr905	Write one of the following values to SP108 (second parameter changing) as required. • H00: Offset/gain • H01: Analog • H02: Analog value at terminal

Special parameter ([FREQROL 700/800, Sensorless Servo])

If the GOT reads or writes data from or to a virtual device (SP), the inverter's instruction code corresponding to the SP device is used for communication.

For instruction details, and values to be read and written, refer to the following.

📖Manual of the inverter used

Ex.

Example) When using the FR-A800 series

Virtual device name	Name	Instruction code (hexadecimal)	
		Read	Write
SP108	Second parameter changing	—	—
SP109	Set frequency (RAM)	0502	8502
SP110	Set frequency (RAM, EEPROM)	0503	8503
SP111	Output frequency/speed	0800	—
SP112	Output current	0800	—
SP113	Output voltage	0800	—
SP114	Special monitor	0800	—
SP115	Special monitor selection No.	—	—
SP116	Faults history batch clear / Latest fault, Second fault in past	0631 0632	8628
SP117	Third fault in past, Fourth fault in past	0633 0634	—
SP118	Fifth fault in past, Sixth fault in past	0635 0636	—
SP119	Seventh fault in past, Eighth fault in past	0637 0638	—
SP121*1*2	Inverter status monitor (extended) / Operation command (extended)	0504 0624	8504
SP122*1*2	Inverter status monitor / Operation command	0504	8504
SP123	Operation mode	0510	8510 8511 8514
SP124	All parameter clear	—	84F0: Parameter clear 84F8: Parameter clear (excluding communication parameters) 84F1: All parameter clear 84F9: All parameter clear (excluding communication parameters)
SP125	Inverter reset	—	84E0: Inverter reset (no response) 84E1: Inverter reset (after acknowledgement)
SP127	Link parameter extended setting	—	—

*1 When the GOT is connected to the PU connector and the operation mode is set to the PU operation mode, the multispeed operation (WS3 to WS7, SP121, SP122) cannot be used.
For using the multi-speed operation, follow either of the operations below.
Connect the GOT to the RS-485 terminal and set the operation mode to the NET operation mode (Computer link operation mode), and then operate the inverter.
Change the motor speed with the set frequency (SP109, SP110), and then operate the inverter with the forward or reverse rotation (WS1, WS2, SP121, SP122).

*2 For the specifications of SP122 and SP121, refer to the following.
☞ Page 1702 Specifications of SP122 and SP121 ([FREQROL 700/800, Sensorless Servo])

Specifications of SP122 and SP121 ([FREQROL 700/800, Sensorless Servo])

SP122 and SP121 are the GOT's virtual devices corresponding to the inverter's ordinary and extended operation commands. The following shows the specifications of SP122 and SP121.

SP device	Specifications
SP122	SP122 is a GOT's virtual device corresponding to the inverter's operation commands (instruction code: HFA, bit length: 8 bits). The function of each bit differs depending on the inverter. Example) A800 series inverter • SP122.b0: AU (Terminal 4 input selection) • SP122.b1: Forward rotation command • SP122.b2: Reverse rotation command • SP122.b3: RL (Low-speed operation command) • SP122.b4: RM (Middle-speed operation command) • SP122.b5: RH (High-speed operation command) • SP122.b6: RT (Second function selection) • SP122.b7: MRS (Output stop) To send more than one command simultaneously, convert the binary value of the bits to be turned on to a decimal value, and write the decimal value to SP122. Example) Sending forward rotation command and RL (Low-speed operation command) simultaneously Binary: 00001010 Decimal: 10 Write 10 to SP122.
SP121	SP121 is a GOT's virtual device corresponding to the inverter's operation commands (extended) (instruction code: HF9, bit length: 16 bits). The function of each bit differs depending on the inverter. Example) A800 series inverter • SP121.b0: AU (Terminal 4 input selection) • SP121.b1: Forward rotation command • SP121.b2: Reverse rotation command • SP121.b3: RL (Low-speed operation command) • SP121.b4: RM (Middle-speed operation command) • SP121.b5: RH (High-speed operation command) • SP121.b6: RT (Second function selection) • SP121.b7: MRS (Output stop) • SP121.b8: JOG (Jog operation selection) • SP121.b9: CS (Selection of automatic restart after instantaneous power failure, flying start) • SP121.b10: STOP (Start self-holding selection) • SP121.b11: RES (Inverter reset) • SP121.b12 to SP122.b15: Not used To send more than one command simultaneously, convert the binary value of the device (with applicable bits on) to a decimal value, and write the decimal value to SP121. Example) Sending forward rotation command, RL (Low-speed operation command), and JOG (Jog operation selection) simultaneously Binary: 0000000100001010 Decimal: 266 Write 266 to SP121.

21.3 [FREQROL 800/E700NE(Batch monitor)]

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Item	Reference
Specifications of bit devices	☞ Page 1704 Monitoring-supported bit devices ([FREQROL 800/E700NE(Batch monitor)])
	☞ Page 1705 Availability of writing/reading data to/from bit devices ([FREQROL 800/E700NE(Batch monitor)])
Specifications of word devices	☞ Page 1705 Monitoring-supported word devices ([FREQROL 800/E700NE(Batch monitor)])
	☞ Page 1706 Availability of writing/reading data to/from word devices ([FREQROL 800/E700NE(Batch monitor)])
Specifications of double-word devices	☞ Page 1706 Monitoring-supported double-word devices ([FREQROL 800/E700NE(Batch monitor)])
	☞ Page 1707 Availability of writing/reading data to/from double-word devices ([FREQROL 800/E700NE(Batch monitor)])
Specifications of virtual inverter devices	☞ Page 1708 Virtual inverter devices ([FREQROL 800/E700NE(Batch monitor)])

21.3.1 Monitoring-supported bit devices ([FREQROL 800/E700NE(Batch monitor)])

The following table shows monitoring-supported virtual bit devices for inverters.

To check whether writing/reading data to/from each device is available, refer to the following.

☞ Page 1705 Availability of writing/reading data to/from bit devices ([FREQROL 800/E700NE(Batch monitor)])

For details on virtual inverter devices, refer to the following.

☞ Page 1708 Virtual inverter devices ([FREQROL 800/E700NE(Batch monitor)])

○: Available

×: Not available

Device name		Device No. representation	Setting range	Specifications of EG devices*1	
				Assignment to EG devices	Access using a client
RS	Inverter status monitor	Decimal	0 to 15	×	×
WS	Operation command	Decimal	0 to 15	×	×
IOST	I/O terminal monitor	Decimal	0 to 127	×	×
CMD	Operation command	Decimal	0 to 63	×	×
X*2	Input relay	Hexadecimal	00 to 7F	○	○
Y*2	Output relay	Hexadecimal	00 to 7F	○	○
M*2	Internal relay	Decimal	0 to 127	○	○
TC*2	Timer coil	Decimal	0 to 15	○	○ Not usable as word data
TT*2	Timer contact	Decimal	0 to 15	○	○ Not usable as word data
CC*2	Counter coil	Decimal	0 to 15	○	○ Not usable as word data
CT*2	Counter contact	Decimal	0 to 15	○	○ Not usable as word data
SC*2	Retentive timer coil	Decimal	0 to 15	○	○ Not usable as word data
SS*2	Retentive timer contact	Decimal	0 to 15	○	○ Not usable as word data
SM*2*3	Special relay	Decimal	0 to 2047	○	○

*1 For the devices assigned to EG devices (gateway devices) and the compatible clients, refer to the following.
📖GT Designer3 (GOT3000) Screen Design Manual

*2 Not available to FR-E7□0-NE.

*3 Functions are assigned to the SM devices by using the PLC function.
Do not write data from the GOT.

21.3.2 Availability of writing/reading data to/from bit devices ([FREQROL 800/E700NE(Batch monitor)])

The following shows the availability of writing/reading data to/from bit devices by device type.

When the device type is other than the bit type, set the device No. in multiples of 16.

R/W: Both read and write

R/-: Read only

-/W: Write only

-/-: No read/write access

Device name	Device type				
	Bit	Byte (8 bits)	Word (16 bits)	Double-word (32 bits)	Quad-word (64 bits)
RS	R/-	-/-	-/-	-/-	-/-
WS	-/W	-/-	-/-	-/-	-/-
IOST	R/-	-/-	-/-	-/-	-/-
CMD	-/W	-/-	-/-	-/-	-/-
X	R/W	-/-	R/W	R/W	-/-
Y	R/W	-/-	R/W	R/W	-/-
M	R/W	-/-	R/W	R/W	-/-
TC	R/W	-/-	-/-	-/-	-/-
TT	R/W	-/-	-/-	-/-	-/-
CC	R/W	-/-	-/-	-/-	-/-
CT	R/W	-/-	-/-	-/-	-/-
SC	R/W	-/-	-/-	-/-	-/-
SS	R/W	-/-	-/-	-/-	-/-
SM	R/W	-/-	R/W	R/W	-/-

21.3.3 Monitoring-supported word devices ([FREQROL 800/E700NE(Batch monitor)])

The following table shows monitoring-supported virtual word devices for inverters.

To check whether writing/reading data to/from each device is available, refer to the following.

☞ Page 1706 Availability of writing/reading data to/from word devices ([FREQROL 800/E700NE(Batch monitor)])

For details on virtual inverter devices, refer to the following.

☞ Page 1708 Virtual inverter devices ([FREQROL 800/E700NE(Batch monitor)])

○: Available

×: Not available

Device name		Device No. representation	Setting range	Specifications of EG devices*1	
				Assignment to EG devices	Access using a client
A	Alarm definition	Decimal	0 to 7	○	○
Pr	Parameter	Decimal	0 to 1500	○	○
SP	Special parameter	Decimal	108 to 127	○	○
TN*2	Timer current value	Decimal	0 to 15	○	○
CN*2	Counter current value	Decimal	0 to 15	○	○
SN*2	Retentive timer current value	Decimal	0 to 15	○	○
D*2	Data register	Decimal	0 to 255	○	○
SD*2	Special register	Decimal	0 to 2047	○	○

*1 For the devices assigned to EG devices (gateway devices) and the compatible clients, refer to the following.
📖GT Designer3 (GOT3000) Screen Design Manual

*2 Not available to FR-E7□0-NE.

21.3.4 Availability of writing/reading data to/from word devices ([FREQROL 800/E700NE(Batch monitor)])

The following shows the availability of writing/reading data to/from word devices by device type.

R/W: Both read and write

R/-: Read only

-/W: Write only

-/-: No read/write access

Device name	Device type			
	Word (16 bits)	Double-word (32 bits)	Quad-word (64 bits)	Bit of word data
A	R/-	-/-	-/-	-/-
Pr	R/W	-/-	-/-	-/-
SP*1	R/W	-/-	-/-	-/-
TN	R/W	R/W	-/-	-/-
CN	R/W	R/W	-/-	-/-
SN	R/W	R/W	-/-	-/-
D	R/W	R/W	-/-	R/W
SD	R/W	R/W	-/-	R/W

*1 Only reading is available for SP111 to SP114.
Only writing is available for SP124 and SP125.

21.3.5 Monitoring-supported double-word devices ([FREQROL 800/E700NE(Batch monitor)])

The following table shows monitoring-supported virtual double-word devices for inverters.

To check whether writing/reading data to/from each device is available, refer to the following.

☞ Page 1707 Availability of writing/reading data to/from double-word devices ([FREQROL 800/E700NE(Batch monitor)])

For details on virtual inverter devices, refer to the following.

☞ Page 1708 Virtual inverter devices ([FREQROL 800/E700NE(Batch monitor)])

○: Available

×: Not available

Device name		Device No. representation	Setting range	Specifications of EG devices*1	
				Assignment to EG devices	Access using a client
AL	Faults history	Decimal	0 to 899	×	×
LPr*2	Parameter (32-bit)	Decimal	0 to 1500	×	×
OP	Operation parameter	Decimal	0 to 5	×	×
PV	Current value monitor	Decimal	1 to 143	×	×

*1 For the devices assigned to EG devices (gateway devices) and the compatible clients, refer to the following.
📖GT Designer3 (GOT3000) Screen Design Manual

*2 If you specify LPr900 to LPr935, the following item is displayed in the device setting dialog.
[Setting items (for calibration parameters)]: [Bias/gain value], [Analog input value]
Enclose the device number in parentheses when selecting [Analog input value].
Example 1) Notation when [Bias/gain value] is selected: LPr900
Example 2) Notation when [Analog input value] is selected: LPr(900)
When LPr900 or LPr901 (Calibration parameter) is specified, selecting [Bias/gain value] or [Analog input value] does not affect the monitoring target.

21.3.6 Availability of writing/reading data to/from double-word devices ([FREQROL 800/E700NE(Batch monitor)])

The following shows the availability of writing/reading data to/from double-word devices by device type.

R/W: Both read and write

R/-: Read only

-/W: Write only

-/-: No read/write access

Device name	Device type			
	Word (16 bits)	Double-word (32 bits)	Quad-word (64 bits)	Bit of double-word data
AL	-/-	R/-	-/-	-/-
LPr	-/-	R/W	-/-	-/-
OP*1	-/-	R/W	-/-	-/-
PV	-/-	R/-	-/-	-/-

*1 Only reading is available for OP3.
Only writing is available for OP4 and OP5.

PART 5

21.3.7 Virtual inverter devices ([FREQROL 800/E700NE(Batch monitor)])

The following shows the correspondence between the virtual devices used in the GOT and the inverter data.
For details on the inverter parameters, refer to the following.
Manual of the inverter used

Virtual device name	Reference
RS*1	☞ Page 1709 Inverter status monitor ([FREQROL 800/E700NE(Batch monitor)])
WS*1	☞ Page 1710 Operation command ([FREQROL 800/E700NE(Batch monitor)])
	☞ Page 1711 Operation when turning on/off the WS devices ([FREQROL 800/E700NE(Batch monitor)])
IOST	☞ Page 1712 I/O terminal monitor ([FREQROL 800/E700NE(Batch monitor)])
CMD	☞ Page 1713 Operation command ([FREQROL 800/E700NE(Batch monitor)])
	☞ Page 1714 Operation when turning on/off one of the CMD3 to CMD12 devices ([FREQROL 800/E700NE(Batch monitor)])
	☞ Page 1714 Operation when turning on/off one of the CMD48 to CMD52 devices ([FREQROL 800/E700NE(Batch monitor)])
A*1	☞ Page 1715 Alarm definition ([FREQROL 800/E700NE(Batch monitor)])
Pr*1	☞ Page 1715 Parameter, parameter (32-bit) ([FREQROL 800/E700NE(Batch monitor)])
SP*1	☞ Page 1716 Special parameter ([FREQROL 800/E700NE(Batch monitor)])
	☞ Page 1717 Specifications of SP122 and SP121 ([FREQROL 800/E700NE(Batch monitor)])
AL	☞ Page 1718 Alarm history ([FREQROL 800/E700NE(Batch monitor)])
LPr	☞ Page 1715 Parameter, parameter (32-bit) ([FREQROL 800/E700NE(Batch monitor)])
OP	☞ Page 1720 Operation parameter ([FREQROL 800/E700NE(Batch monitor)])
PV	☞ Page 1721 Current value monitor ([FREQROL 800/E700NE(Batch monitor)])

*1 The virtual device is also usable for the conventional model.
When you create a project, use a different device.

The lists of virtual devices shown in this section explain some inverter models using the following abbreviations.

Series	Abbreviation	Model
FR-A800 Plus series	CRN	FR-A8□0-CRN FR-A8□2-CRN FR-A8□0-E-CRN FR-A8□2-E-CRN
	R2R	FR-A8□0-R2R FR-A8□2-R2R FR-A8□0-E-R2R FR-A8□2-E-R2R
	AWH	FR-A8□0-AWH FR-A8□0-E-AWH
	LC	FR-A8□0-LC FR-A8□0-E-LC
FR-E800 series	E800	FR-E8□0
	E	FR-E8□0-E
FR-D800 series	D800	FR-D8□0
	E	FR-D8□0-E

Inverter status monitor ([FREQROL 800/E700NE(Batch monitor)])

Parameter settings may have been changed in the inverter.

To use the devices, check the parameters and set the parameters as required.

📖Manual of the inverter used

○: Available

—: Not available

Virtual device name	Name	FR-A800 series FR-A800 Plus series FR-F800 series	FR-E800 series	FR-D800 series	FR-E700 series FR-E7□0-NE
RS0	RUN (Inverter running)	○*1	○*1	○*1	○*1
RS1	During forward rotation	○	○	○	○
RS2	During reverse rotation	○	○	○	○
RS3	SU (Up to frequency)	○*1	○	○	○
RS4	OL (Overload warning)	○*1	○	○	○
RS5	IPF (Instantaneous power failure/ undervoltage)	○*1	—	—	—
RS6	FU (Output frequency detection)	○*1	○*1	○*1	○*1
RS7	ABC1 (Fault)	○*1	○*1	○*1	○*1
RS8	ABC2	○*1	—	—	—
RS9	Safety monitor output	○	○	○	—
RS15	Fault occurrence	○	○	○	○

*1 The monitor data can be changed by the settings of Pr.190 to Pr.196 or Pr.313 to Pr.322 (output terminal function selection).
For the relationship between the parameters and terminals, refer to the following.
📖Manual of the inverter used

Operation command ([FREQROL 800/E700NE(Batch monitor)])

Parameter settings may have been changed in the inverter.

To use the devices, check the parameters and set the parameters as required.

📖Manual of the inverter used

○: Available

—: Not available

Virtual device name	Name	FR-A800 series FR-A800 Plus series FR-F800 series	FR-E800 series	FR-D800 series	FR-E700 series FR-E7□0-NE
WS0*1	AU (Terminal 4 input selection)	○*2	○	○	○
WS1	Forward rotation command	○	○	○	○
WS2	Reverse rotation command	○	○	○	○
WS3*1	RL (Low-speed operation command)	○*2	○*2	○*2	○*2
WS4*1	RM (Middle-speed operation command)	○*2	○*2	○*2	○*2
WS5*1	RH (High-speed operation command)	○*2	○*2	○*2	○*2
WS6*1	RT (Second function selection)	○*2	○	○	○
WS7*1	MRS (Output stop)	○*2	○*2	○	○*2
WS8*1	JOG (Jog operation selection)	○*2*3	○	○	—
WS9*1	CS (Selection of automatic restart after instantaneous power failure, flying start)	○*2*3	—	—	—
WS10*1	STOP (Start self-holding selection)	○*2*3	—	—	—
WS11*1	RES (Inverter reset)	○*2*3	○*2*3	—	○*2

*1 When the GOT is connected to the PU connector and the operation mode is set to the PU operation mode, the device cannot be used.

*2 The monitor data can be changed by the settings of Pr.178 to Pr.189 (input terminal function selection).
For the relationship between the parameters and terminals, refer to the following.
📖Manual of the inverter used

*3 The device is invalid for the initial state of the inverter in which a function that cannot be controlled by the GOT is set or no function is set.
Change the relevant setting in Pr.178 to Pr.189 (input terminal function selection).

When using the operation command, note the following.

Precautions	Description
When setting a device for a bit switch	Do not select [Alternate] for [Switch Action] of the bit switch.
When activating WS devices	☞ Page 1711 Operation when turning on/off the WS devices ([FREQROL 800/E700NE(Batch monitor)])

Operation when turning on/off the WS devices ([FREQROL 800/E700NE(Batch monitor)])

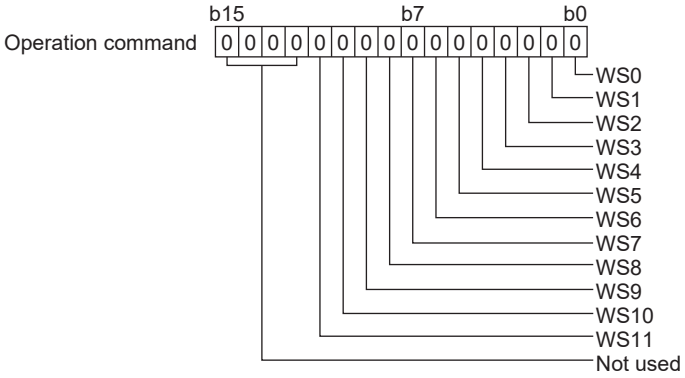
When you turn on/off one of the WS0 to WS15 devices, the rest of these devices are turned off.

Ex.

When you turn on WS9

WS0 to WS8 and WS10 to WS15 are turned off.

The following shows the relationship between the inverter's operation commands and WS devices.



The function of each bit differs depending on the inverter.

Ex.

A800 series inverter

- WS0: AU (Terminal 4 input selection)
- WS1: Forward rotation command
- WS2: Reverse rotation command
- WS3: RL (Low-speed operation command)
- WS4: RM (Middle-speed operation command)
- WS5: RH (High-speed operation command)
- WS6: RT (Second function selection)
- WS7: MRS (Output stop)
- WS8: JOG (Jog operation selection)
- WS9: CS (Selection of automatic restart after instantaneous power failure, flying start)
- WS10: STOP (Start self-holding selection)
- WS11: RES (Inverter reset)

Use SP122 or SP121 to control multiple WS devices simultaneously.

☞ Page 1717 Specifications of SP122 and SP121 ([FREQROL 800/E700NE(Batch monitor)])

I/O terminal monitor ([FREQROL 800/E700NE(Batch monitor)])

○: Available

—: Not available

Virtual device name	Name	FR-A800 series FR-A800 Plus series FR-F800 series	FR-E800 series		FR-D800 series		FR-E700 series
			E800	E	D800	E	FR-E7□0-NE
IOST1	Input terminal STF/DI0	○*1	○*1	○*1	○*1	○*1	○*1
IOST2	Input terminal STR/DI1	○*1	○*1	○*1	○*1	○*1	○*1
IOST3	Input terminal RL	○*1	○*1	—	○*1	○*1	○*1
IOST4	Input terminal RM	○*1	○*1	—	○*1	○*1	○*1
IOST5	Input terminal RH	○*1	○*1	—	○*1	○*1	○*1
IOST6	Input terminal RT	○*1	—	—	—	—	—
IOST7	Input terminal AU	○*1	—	—	—	—	—
IOST8	Input terminal JOG	○*1	—	—	—	—	—
IOST9	Input terminal CS	○*1	—	—	—	—	—
IOST10	Input terminal MRS	○*1	○*1	—	—	—	○*1
IOST11	Input terminal STOP	○*1	—	—	—	—	—
IOST12	Input terminal RES	○*1	○*1	—	—	—	○*1
IOST32	Output terminal RUN	○*1	○*1	—	○*1	○*1	○*1
IOST33	Output terminal SU	○*1	—	—	—	—	—
IOST34	Output terminal IPF	○*1	—	—	—	—	—
IOST35	Output terminal OL	○*1	—	—	—	—	—
IOST36	Output terminal FU	○*1	○*1	—	○*1	—	○*1
IOST37	Output terminal ABC1	○*1	○*1	○*1	○*1	○*1	○*1
IOST38	Output terminal ABC2	○*1	—	—	—	—	—
IOST39	Output terminal SO	○	—	—	—	—	—
IOST48	NET Y1 output	—	○*1*2	○*1*2	○*1	○*1	—
IOST49	NET Y2 output	—	○*1*2	○*1*2	○*1	○*1	—
IOST50	NET Y3 output	—	○*1*2	○*1*2	○*1	○*1	—
IOST51	NET Y4 output	—	○*1*2	○*1*2	○*1	○*1	—
IOST64	Option input terminal X0	○	○	○	—	—	—
IOST65	Option input terminal X1	○	○	○	—	—	—
IOST66	Option input terminal X2	○	○	○	—	—	—
IOST67	Option input terminal X3	○	○	○	—	—	—
IOST68	Option input terminal X4	○	○	○	—	—	—
IOST69	Option input terminal X5	○	○	○	—	—	—
IOST70	Option input terminal X6	○	○	○	—	—	—
IOST71	Option input terminal X7	○	○	○	—	—	—
IOST72	Option input terminal X8	○	○	○	—	—	—
IOST73	Option input terminal X9	○	○	○	—	—	—
IOST74	Option input terminal X10	○	○	○	—	—	—
IOST75	Option input terminal X11	○	○	○	—	—	—
IOST76	Option input terminal X12	○	○	○	—	—	—
IOST77	Option input terminal X13	○	○	○	—	—	—
IOST78	Option input terminal X14	○	○	○	—	—	—
IOST79	Option input terminal X15	○	○	○	—	—	—
IOST80	Option input terminal DY	○	○	○	—	—	—
IOST96	Option output terminal Y0/DO0	○*1	○*1	○*1	—	—	—
IOST97	Option output terminal Y1/DO1	○*1	○*1	○*1	—	—	—
IOST98	Option output terminal Y2/DO2	○*1	○*1	○*1	—	—	—
IOST99	Option output terminal Y3/DO3	○*1	○*1	○*1	—	—	—
IOST100	Option output terminal Y4/DO4	○*1	○*1	○*1	—	—	—
IOST101	Option output terminal Y5/DO5	○*1	○*1	○*1	—	—	—

Virtual device name	Name	FR-A800 series FR-A800 Plus series FR-F800 series	FR-E800 series		FR-D800 series		FR-E700 series
			E800	E	D800	E	FR-E7□0-NE
IOST102	Option output terminal Y6/DO6	○*1	○*1	○*1	—	—	—
IOST103	Option output terminal RA1	○*1	○*1	○*1	—	—	—
IOST104	Option output terminal RA2	○*1	○*1	○*1	—	—	—
IOST105	Option output terminal RA3	○*1	○*1	○*1	—	—	—

*1 The monitor data can be changed by the settings of Pr.178 to Pr.189 (input terminal function selection) or Pr.190 to Pr.196 or Pr.313 to Pr.322 (output terminal function selection).
For the relationship between the parameters and terminals, refer to the following.
📖Manual of the inverter used

*2 Use an inverter having SERIAL (serial number) "□□211○○○○○○" or later.
SERIAL (serial number) is provided on the rating plate of the inverter.

Operation command ([FREQROL 800/E700NE(Batch monitor)])

○: Available

—: Not available

Virtual device name	Name	FR-A800 series FR-A800 Plus series FR-F800 series	FR-E800 series	FR-D800 series	FR-E700 series FR-E7□0-NE
CMD0	Stop command	○	○	○	○
CMD1	Forward rotation command	○	○	○	○
CMD2	Reverse rotation command	○	○	○	○
CMD3*1	RL terminal	○*2	○*2	○*2	○*2
CMD4*1	RM terminal	○*2	○*2	○*2	○*2
CMD5*1	RH terminal	○*2	○*2	○*2	○*2
CMD6*1	RT terminal	○*2	—	—	○
CMD7*1	AU terminal	○*2	—	—	○
CMD8*1	JOG terminal	○*2*3	—	—	—
CMD9*1	CS terminal	○*2*3	—	—	—
CMD10*1	MRS terminal	○*2	○*2	—	○*2
CMD11*1	STOP terminal	○*2*3	—	—	—
CMD12*1	RES terminal	○*2*3	○*2*3	—	○*2
CMD16	Alarm history clear	○	○	○	○
CMD24	Inverter reset	○	○	○	○
CMD32	Parameter clear	○	○	○	○
CMD33	Parameter clear (communication parameters are not cleared)	○	○	○	○
CMD34	All parameter clear	○	○	○	○
CMD35	All parameter clear (communication parameters are not cleared)	○	○	○	○
CMD48	NET X1 input	—	○*2*3*4	○*2*3	—
CMD49	NET X2 input	—	○*2*3*4	○*2*3	—
CMD50	NET X3 input	—	○*2*3*4	○*2*3	—
CMD51	NET X4 input	—	○*2*3*4	○*2*3	—
CMD52	NET X5 input	—	○*2*3*4	○*2*3	—

*1 When the GOT is connected to the PU connector and the operation mode is set to the PU operation mode, the device cannot be used.

*2 The monitor data can be changed by the settings of Pr.178 to Pr.189 (input terminal function selection).
For the relationship between the parameters and terminals, refer to the following.
📖Manual of the inverter used

*3 The device is invalid for the initial state of the inverter in which a function that cannot be controlled by the GOT is set or no function is set.
Change the relevant setting in Pr.178 to Pr.189 (input terminal function selection).

*4 Use an inverter having SERIAL (serial number) "□□211○○○○○" or later.
SERIAL (serial number) is provided on the rating plate of the inverter.

When using the operation command, note the following.

Precautions	Description
When setting a device for a bit switch	Do not select [Alternate] for [Switch Action] of the bit switch.
Operation when a CMD device is turned on	☞ Page 1714 Operation when turning on/off one of the CMD3 to CMD12 devices ([FREQROL 800/E700NE(Batch monitor)]) ☞ Page 1714 Operation when turning on/off one of the CMD48 to CMD52 devices ([FREQROL 800/E700NE(Batch monitor)])

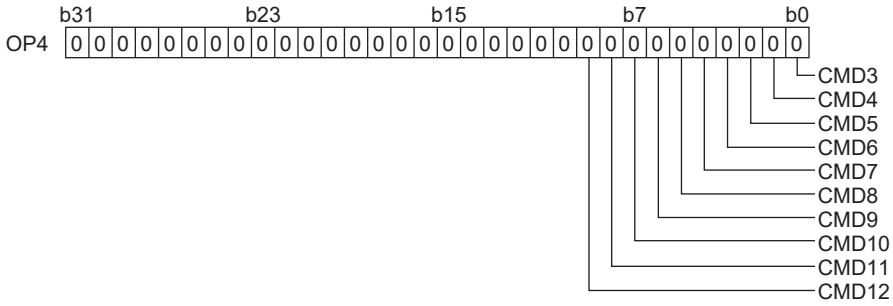
Operation when turning on/off one of the CMD3 to CMD12 devices ([FREQROL 800/E700NE(Batch monitor)])

The CMD3 to CMD12 devices cannot be controlled simultaneously.

When you turn on/off one of the CMD3 to CMD12 devices, the rest of these devices are turned off.

Use OP4 to control multiple devices from CMD3 to CMD12 simultaneously.

The following shows the relationship between CMD3 to CMD12 and OP4.



Ex.

Turning on the CMD3 (RL terminal) and CMD12 (RES terminal) devices

For a hexadecimal value, write 0201.

For a decimal value, write 513.

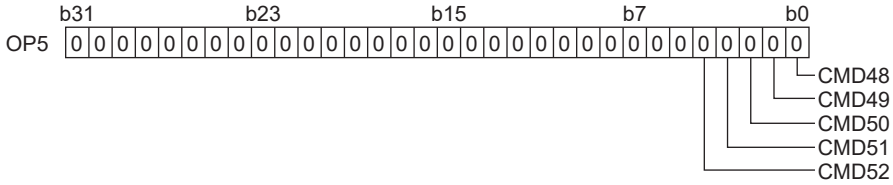
Operation when turning on/off one of the CMD48 to CMD52 devices ([FREQROL 800/E700NE(Batch monitor)])

The CMD48 to CMD52 devices cannot be controlled simultaneously.

When you turn on/off one of the CMD48 to CMD52 devices, the rest of these devices are turned off.

Use OP5 to control multiple devices from CMD48 to CMD52 simultaneously.

The following shows the relationship between CMD48 to CMD52 and OP5.



Ex.

Turning on the CMD48 (NET X1 input) and CMD52 (NET X5 input) devices

For a hexadecimal value, write 0011.

For a decimal value, write 17.

Alarm definition ([FREQROL 800/E700NE(Batch monitor)])

○: Available

—: Not available

Virtual device name	Name	FR-A800 series FR-A800 Plus series FR-F800 series	FR-E800 series	FR-D800 series	FR-E700 series FR-E7□0-NE
A0	Second fault in past	○	○	○	○
A1	Latest fault	○	○	○	○
A2	Fourth fault in past	○	○	○	○
A3	Third fault in past	○	○	○	○
A4	Sixth fault in past	○	○	○	○
A5	Fifth fault in past	○	○	○	○
A6	Eighth fault in past	○	○	○	○
A7	Seventh fault in past	○	○	○	○

Parameter, parameter (32-bit) ([FREQROL 800/E700NE(Batch monitor)])

The virtual device numbers (Pr and LPr) used in the GOT correspond to the inverter parameter numbers.

For the inverter parameters, refer to the following.

📖Manual of the inverter used

When using a parameter, note the following.

Precautions	Description
When setting 8888 or 9999 to a parameter (Pr) of an inverter	Values 8888 and 9999 are used for particular purposes. To set these values to inverter parameters using the virtual devices, write the following values from the GOT. • To set 8888: 65520 • To set 9999: 65535
When setting 8888 or 9999 to a 32-bit parameter (LPr) of an inverter	Values 8888 and 9999 are used for particular purposes. To set these values to inverter parameters, write the following values to the GOT virtual device. • To set 8888: 8888 • To set 9999: 9999 You are recommended to set the data type to [Real] for a parameter that can accept a value with a fractional part.
When specifying a calibration parameter or PID display	If you specify Pr900 to Pr933 (Calibration parameter), or Pr934 and Pr935 (PID display), whether the value below must be written to SP108 (Second parameter changing) depends on the specified device number and inverter model. • H00: Offset/gain • H01: Analog • H02: Analog value at terminal

Special parameter ([FREQROL 800/E700NE(Batch monitor)])

○: Available

—: Not available

Virtual device name	Name	FR-A800 series FR-A800 Plus series FR-F800 series	FR-E800 series	FR-D800 series	FR-E700 series FR-E7□0-NE
SP108	Second parameter changing	○	○	○	○
SP109	Set frequency (RAM)	○	○	○	○
SP110	Set frequency (RAM, EEPROM)	○	○	○	○
SP111	Output frequency/speed	○	○	○	○
SP112	Output current	○	○	○	○
SP113	Output voltage	○	○	○	○
SP114	Special monitor	○	○	○	○
SP115	Special monitor selection No.	○	○	○	○
SP116	Faults history batch clear / Latest fault, Second fault in past	○	○	○	○
SP117	Third fault in past, Fourth fault in past	○	○	○	○
SP118	Fifth fault in past, Sixth fault in past	○	○	○	○
SP119	Seventh fault in past, Eighth fault in past	○	○	○	○
SP121*1	Inverter status monitor (extended) / Operation command (extended)	○	○	○	○
SP122*1	Inverter status monitor / Operation command	○	○	○	○
SP123	Operation mode	○	○	○	○
SP124	All parameter clear	○	○	○	○
SP125	Inverter reset	○	○	○	○
SP127	Link parameter extended setting	○	○	○	○

*1 When the GOT is connected to the PU connector and the operation mode is set to the PU operation mode, SP121.b1, SP121.b2, SP122.b1, and SP122.b2 can be used.
For the specifications of SP122 and SP121, refer to the following.
☞ Page 1717 Specifications of SP122 and SP121 ([FREQROL 800/E700NE(Batch monitor)])

Specifications of SP122 and SP121 ([FREQROL 800/E700NE(Batch monitor)])

SP122 and SP121 are the GOT's virtual devices corresponding to the inverter's operation commands.

The following shows the specifications of SP122 and SP121.

SP device	Specifications
SP122	The function of each bit differs depending on the inverter. Example) A800 series inverter • SP122.b0: AU (Terminal 4 input selection) • SP122.b1: Forward rotation command • SP122.b2: Reverse rotation command • SP122.b3: RL (Low-speed operation command) • SP122.b4: RM (Middle-speed operation command) • SP122.b5: RH (High-speed operation command) • SP122.b6: RT (Second function selection) • SP122.b7: MRS (Output stop) • SP122.b8 to b15: Fixed to 0 SP122 (virtual device) is used to maintain compatibility with the conventional model. When [FREQROL 800/E700NE(Batch monitor)] is set, writing a value to SP122 clears each bit of SP122.b8 to SP122.b15. To send more than one command simultaneously, convert the binary value of the bits to be turned on to a decimal value, and write the decimal value to SP122. Example) Sending forward rotation command and RL (Low-speed operation command) simultaneously Binary: 0000000000001010 Decimal: 10 Write 10 to SP122.
SP121	The function of each bit differs depending on the inverter. Example) A800 series inverter • SP121.b0: AU (Terminal 4 input selection) • SP121.b1: Forward rotation command • SP121.b2: Reverse rotation command • SP121.b3: RL (Low-speed operation command) • SP121.b4: RM (Middle-speed operation command) • SP121.b5: RH (High-speed operation command) • SP121.b6: RT (Second function selection) • SP121.b7: MRS (Output stop) • SP121.b8: JOG (Jog operation selection) • SP121.b9: CS (Selection of automatic restart after instantaneous power failure, flying start) • SP121.b10: STOP (Start self-holding selection) • SP121.b11: RES (Inverter reset) To send more than one command simultaneously, convert the binary value of the device (with applicable bits on) to a decimal value, and write the decimal value to SP121. Example) Sending forward rotation command, RL (Low-speed operation command), and JOG (Jog operation selection) simultaneously Binary: 0000000100001010 Decimal: 266 Write 266 to SP121.

Alarm history ([FREQROL 800/E700NE(Batch monitor)])

○: Available

—: Not available

Virtual device name	Name	FR-A800 series FR-A800 Plus series FR-F800 series	FR-E800 series	FR-D800 series	FR-E700 series FR-E7□0-NE
AL0	Current fault	○	○	○	○
AL1	Current warning 1	—	○	○	—
AL2	Current warning 2	—	○	○	—
AL100	Faults history 1 (symbol)	○	○	○	○
AL101	Faults history 1 (output frequency)	○	○	○	○
AL102	Faults history 1 (output current)	○	○	○	○
AL103	Faults history 1 (output voltage)	○	○	○	○
AL104	Faults history 1 (energization time)	○	○	○	○
AL105	Faults history 1 (year)	○	○	○	—
AL106	Faults history 1 (month)	○	○	○	—
AL107	Faults history 1 (day)	○	○	○	—
AL108	Faults history 1 (hour)	○	○	○	—
AL109	Faults history 1 (minute)	○	○	○	—
AL200	Faults history 2 (symbol)	○	○	○	○
AL201	Faults history 2 (output frequency)	○	○	○	○
AL202	Faults history 2 (output current)	○	○	○	○
AL203	Faults history 2 (output voltage)	○	○	○	○
AL204	Faults history 2 (energization time)	○	○	○	○
AL205	Faults history 2 (year)	○	○	○	—
AL206	Faults history 2 (month)	○	○	○	—
AL207	Faults history 2 (day)	○	○	○	—
AL208	Faults history 2 (hour)	○	○	○	—
AL209	Faults history 2 (minute)	○	○	○	—
AL300	Faults history 3 (symbol)	○	○	○	○
AL301	Faults history 3 (output frequency)	○	○	○	○
AL302	Faults history 3 (output current)	○	○	○	○
AL303	Faults history 3 (output voltage)	○	○	○	○
AL304	Faults history 3 (energization time)	○	○	○	○
AL305	Faults history 3 (year)	○	○	○	—
AL306	Faults history 3 (month)	○	○	○	—
AL307	Faults history 3 (day)	○	○	○	—
AL308	Faults history 3 (hour)	○	○	○	—
AL309	Faults history 3 (minute)	○	○	○	—
AL400	Faults history 4 (symbol)	○	○	○	○
AL401	Faults history 4 (output frequency)	○	○	○	○
AL402	Faults history 4 (output current)	○	○	○	○
AL403	Faults history 4 (output voltage)	○	○	○	○
AL404	Faults history 4 (energization time)	○	○	○	○
AL405	Faults history 4 (year)	○	○	○	—
AL406	Faults history 4 (month)	○	○	○	—
AL407	Faults history 4 (day)	○	○	○	—
AL408	Faults history 4 (hour)	○	○	○	—
AL409	Faults history 4 (minute)	○	○	○	—
AL500	Faults history 5 (symbol)	○	○	○	○
AL501	Faults history 5 (output frequency)	○	○	○	○
AL502	Faults history 5 (output current)	○	○	○	○
AL503	Faults history 5 (output voltage)	○	○	○	○

Virtual device name	Name	FR-A800 series FR-A800 Plus series FR-F800 series	FR-E800 series	FR-D800 series	FR-E700 series FR-E7□0-NE
AL504	Faults history 5 (energization time)	○	○	○	○
AL505	Faults history 5 (year)	○	○	○	—
AL506	Faults history 5 (month)	○	○	○	—
AL507	Faults history 5 (day)	○	○	○	—
AL508	Faults history 5 (hour)	○	○	○	—
AL509	Faults history 5 (minute)	○	○	○	—
AL600	Faults history 6 (symbol)	○	○	○	○
AL601	Faults history 6 (output frequency)	○	○	○	○
AL602	Faults history 6 (output current)	○	○	○	○
AL603	Faults history 6 (output voltage)	○	○	○	○
AL604	Faults history 6 (energization time)	○	○	○	○
AL605	Faults history 6 (year)	○	○	○	—
AL606	Faults history 6 (month)	○	○	○	—
AL607	Faults history 6 (day)	○	○	○	—
AL608	Faults history 6 (hour)	○	○	○	—
AL609	Faults history 6 (minute)	○	○	○	—
AL700	Faults history 7 (symbol)	○	○	○	○
AL701	Faults history 7 (output frequency)	○	○	○	○
AL702	Faults history 7 (output current)	○	○	○	○
AL703	Faults history 7 (output voltage)	○	○	○	○
AL704	Faults history 7 (energization time)	○	○	○	○
AL705	Faults history 7 (year)	○	○	○	—
AL706	Faults history 7 (month)	○	○	○	—
AL707	Faults history 7 (day)	○	○	○	—
AL708	Faults history 7 (hour)	○	○	○	—
AL709	Faults history 7 (minute)	○	○	○	—
AL800	Faults history 8 (symbol)	○	○	○	○
AL801	Faults history 8 (output frequency)	○	○	○	○
AL802	Faults history 8 (output current)	○	○	○	○
AL803	Faults history 8 (output voltage)	○	○	○	○
AL804	Faults history 8 (energization time)	○	○	○	○
AL805	Faults history 8 (year)	○	○	○	—
AL806	Faults history 8 (month)	○	○	○	—
AL807	Faults history 8 (day)	○	○	○	—
AL808	Faults history 8 (hour)	○	○	○	—
AL809	Faults history 8 (minute)	○	○	○	—

Operation parameter ([FREQROL 800/E700NE(Batch monitor)])

○: Available

—: Not available

Virtual device name		Name	FR-A800 series FR-A800 Plus series FR-F800 series	FR-E800 series	FR-D800 series	FR-E700 series FR-E7□0-NE
OP0		Operation frequency(RAM)	○	○	○	○
OP1		Operation frequency (EEPROM)	○	○	○	○
OP2		Operation mode	○	○	○	○
OP3		Operating status	○	○	○	○
OP4	—	Input terminal command	○	○	○	○*1*2*3
	b0	CMD3: RL terminal				
	b1	CMD4: RM terminal				
	b2	CMD5: RH terminal				
	b3	CMD6: RT terminal				
	b4	CMD7: AU terminal				
	b5	CMD8: JOG terminal				
	b6	CMD9: CS terminal				
	b7	CMD10: MRS terminal				
	b8	CMD11: STOP terminal				
	b9	CMD12: RES terminal				
OP5	—	Input terminal command (extend)	—	○*4	○*2*3	—
	b0	CMD48: NET X1 input				
	b1	CMD49: NET X2 input				
	b2	CMD50: NET X3 input				
	b3	CMD51: NET X4 input				
	b4	CMD52: NET X5 input				

*1 When the GOT is connected to the PU connector and the operation mode is set to the PU operation mode, the device cannot be used.

*2 The monitor data can be changed by the settings of Pr.178 to Pr.189 (input terminal function selection).
For the relationship between the parameters and terminals, refer to the following.
📖Manual of the inverter used

*3 The device is invalid for the initial state of the inverter in which a function that cannot be controlled by the GOT is set or no function is set.
Change the relevant setting in Pr.178 to Pr.189 (input terminal function selection).

*4 Use an inverter having SERIAL (serial number) "□□211○○○○○○" or later.
SERIAL (serial number) is provided on the rating plate of the inverter.

Current value monitor ([FREQROL 800/E700NE(Batch monitor)])

○: Available

—: Not available

Virtual device name	Name	FR-A800 series	FR-A800 Plus series				FR-F800 series	FR-E800 series		FR-D800 series	FR-E700 series
			CRN	R2R	AWH	LC		E800	E		FR-E7□0-NE
PV1	Output frequency/speed	—	—	—	○	—	—	—	—	—	○
	Output frequency	○	○	○	—	○	○	○	○	○	—
PV2	Output current	○	○	○	○	○	○	○	○	○	○
PV3	Output voltage	○	○	○	○	○	○	○	○	○	○
PV5	Frequency setting value/ speed setting	—	—	—	○	—	—	—	—	—	○
	Frequency setting value	○	○	○	—	○	○	○	○	○	—
PV6	Speed/machine speed	○	○	○	—	○	○	○	○	○	—
	Operation speed	—	—	—	○	—	—	—	—	—	—
PV7	Motor torque	○	○	○	○	○	○	○	○	○	○
PV8	Converter output voltage	○	○	○	○	○	○	○	○	○	○
PV9	Regenerative brake duty	○	○	○	○	○	—	○	○	○	○
PV10	Electronic thermal O/L relay load factor	○	○	○	○	○	○	○	○	○	○
PV11	Output current peak value	○	○	○	○	○	○	○	○	○	○
PV12	Converter output voltage peak value	○	○	○	○	○	○	○	○	○	○
PV13	Input power	○	○	○	○	○	○	—	—	○	—
PV14	Output power	○	○	○	○	○	○	○	○	○	○
PV17	Load meter	○	○	○	○	○	○	○	○	○	—
PV18	Motor excitation current	○	○	○	○	○	○	○	○	○	—
PV19	Position pulse	○	○	—	—	○	—	—	—	—	—
	Analog output signal for dancer tension control	—	—	○	○	—	—	—	—	—	—
PV20	Cumulative energization time	○	○	○	○	○	○	○	○	○	○
PV22	Orientation status	○	○	—	—	○	—	—	—	—	—
	Winding diameter	—	—	○	○	—	—	—	—	—	—
PV23	Actual operation time	○	○	○	○	○	○	○	○	○	○
PV24	Motor load factor	○	○	○	○	○	○	○	○	○	○
PV25	Cumulative power	○	○	○	○	○	○	○	○	○	○
PV26	Line speed command	—	—	○	○	—	—	—	—	—	—
PV27	Actual line speed	—	—	○	○	—	—	—	—	—	—
PV28	Dancer compensation speed	—	—	○	○	—	—	—	—	—	—
PV29	Winding length (upper + lower)	—	—	—	○	—	—	—	—	—	—
PV30	Analog output signal 2 for dancer tension control	—	—	○	○	—	—	—	—	—	—
PV31	Line speed pulse monitor	—	—	○	○	—	—	—	—	—	—
PV32	Torque command	○	○	○	○	○	—	○	○	○	—
PV33	Torque current command	○	○	○	○	○	—	○	○	○	—
PV34	Motor output	○	○	○	○	○	○	—	—	—	—
PV35	Feedback pulse	○	○	○	○	○	—	—	—	—	—
PV36	Torque (positive polarity for driving torque/negative polarity for regenerative braking torque)	○	○	○	○	○	—	—	—	—	—
PV37	Heat sink temperature	—	—	—	—	—	—	—	—	○	—
PV38	Trace status	—	—	—	○	—	—	—	—	—	—

Virtual device name	Name	FR-A800 series	FR-A800 Plus series				FR-F800 series	FR-E800 series		FR-D800 series	FR-E700 series
			CRN	R2R	AWH	LC		E800	E		FR-E7□0-NE
PV39	SSCNET III(/H) communication status	○	○	—	—	○	—	—	—	—	—
PV40	PLC function user monitor 1	○	○	○	○	○	○	○	○	—	—
PV41	PLC function user monitor 2	○	○	○	○	○	○	○	○	—	—
PV42	PLC function user monitor 3	○	○	○	○	○	○	○	○	—	—
PV43	Station number (RS-485 terminals)	—	—	—	○	—	—	—	—	—	—
PV44	Station number (PU)	—	—	—	○	—	—	—	—	—	—
PV45	Station number (CC-Link)	—	—	—	○	—	—	—	—	—	—
PV46	Motor temperature	○	○	○	○	○	—	—	—	—	—
PV50	Energy saving effect	○	○	○	○	○	○	○	○	—	—
	Power saving effect / Energy saving effect	—	—	—	—	—	—	—	—	○	—
PV51	Cumulative energy saving	○	○	○	○	○	○	○	○	—	—
	Cumulative saved energy / Cumulative energy saving	—	—	—	—	—	—	—	—	○	—
PV52	PID set point	○	○	○	○	○	○	○	○	○	○
PV53	PID measured value	○	○	○	○	○	○	○	○	○	○
PV54	PID deviation	○	○	○	○	○	○	○	○	○	○
PV61	Motor thermal load factor	○	○	○	○	○	○	○	○	○	○
PV62	Inverter thermal load factor	○	○	○	○	○	○	○	○	○	○
PV63	Cumulative power 2	—	—	—	—	—	—	—	—	—	○
	Winding length (upper)	—	—	—	○	—	—	—	—	—	—
PV64	PTC thermistor resistance	○	○	○	○	○	○	—	—	○	—
PV67	PID measured value 2	○	○	○	○	○	○	○	○	○	—
PV68	Emergency drive status	—	—	—	—	—	—	—	—	○	—
PV69	PID input pressure value	—	—	—	—	—	○	—	—	—	—
PV71	Cumulative pulse	○	○	○	○	○	—	—	—	—	—
PV72	Cumulative pulse overflow times	○	○	○	○	○	—	—	—	—	—
PV73	Cumulative pulse (control terminal option)	○	○	○	○	○	—	—	—	—	—
PV74	Cumulative pulse overflow times (control terminal option)	○	○	○	○	○	—	—	—	—	—
PV75	Multi-revolution counter	○	○	—	—	○	—	—	—	—	—
PV77	32-bit cumulative energy (lower 16 bits)	—	—	—	○	—	—	—	—	—	—
PV78	32-bit cumulative energy (upper 16 bits)	—	—	—	○	—	—	—	—	—	—
PV79	32-bit cumulative energy (lower 16 bits)	—	—	—	○	—	—	—	—	—	—
PV80	32-bit cumulative energy (upper 16 bits)	—	—	—	○	—	—	—	—	—	—
PV81	BACnet reception status	—	—	—	—	—	○	—	—	—	—
	Tension command after taper compensation	—	—	○	○	—	—	—	—	—	—
PV82	BACnet token pass counter	—	—	—	—	—	○	—	—	—	—
	Winding diameter compensation torque command	—	—	○	○	—	—	—	—	—	—
PV83	BACnet valid APDU counter	—	—	—	—	—	○	—	—	—	—
	Inertia compensation	—	—	○	○	—	—	—	—	—	—

Virtual device name	Name	FR-A800 series	FR-A800 Plus series				FR-F800 series	FR-E800 series		FR-D800 series	FR-E700 series
			CRN	R2R	AWH	LC		E800	E		FR-E7□0-NE
PV84	BACnet communication error counter	—	—	—	—	—	○	—	—	—	—
	Mechanical loss compensation	—	—	○	○	—	—	—	—	—	—
PV85	BACnet terminal FM/CA output level	—	—	—	—	—	○	—	—	—	—
	Terminal 1 input voltage	—	—	○	○	—	—	—	—	—	—
PV86	BACnet terminal AM output level	—	—	—	—	—	○	—	—	—	—
	Terminal 1 input after calibration (%)	—	—	○	○	—	—	—	—	—	—
PV87	Remote output value 1	○	○	○	○	○	○	—	—	—	—
PV88	Remote output value 2	○	○	○	○	○	○	—	—	—	—
PV89	Remote output value 3	○	○	○	○	○	○	—	—	—	—
PV90	Remote output value 4	○	○	○	○	○	○	—	—	—	—
PV91	PID manipulated variable	○	○	○	○	○	○	○	○	○	—
PV92	Second PID set point	○	○	—	—	○	○	—	—	—	—
	PID torque control actual tension	—	—	○	—	—	—	—	—	—	—
PV93	Second PID measured value	○	○	—	—	○	○	—	—	—	—
	PID torque control manipulated tension	—	—	○	—	—	—	—	—	—	—
PV94	Second PID deviation	○	○	—	—	○	○	—	—	—	—
PV95	Second PID measured value 2	○	○	—	—	○	○	—	—	—	—
PV96	Second PID manipulated variable	○	○	—	—	○	○	—	—	—	—
PV97	Dancer main set speed (For FR-E800 and FR-D800, dancer main speed setting)	○	○	—	—	○	—	○	○	○	—
	Winding diameter compensation speed	—	—	○	○	—	—	—	—	—	—
PV98	Control circuit temperature	○	○	○	○	○	○	—	—	○	—

21.4 [MELSEC MX Controller]

For the device, refer to the following.

☞ Page 1196 [MELSEC MX Controller]

21.5 [MELSEC iQ-R, RnMT/NC/RT, CR800-D]

For the device, refer to the following.

☞ Page 1223 [MELSEC iQ-R, RnMT/NC/RT, CR800-D]

21.6 [MELSEC-Q/QS, Q17nD/M/NC/DR/DSR, CRnD-700]

For the device, refer to the following.

☞ Page 1329 [MELSEC-Q/QS, Q17nD/M/NC/DR/DSR, CRnD-700]

21.7 [MELSEC-L]

For the device, refer to the following.

☞ Page 1347 [MELSEC-L]

PART 6 Mitsubishi Electric servo amplifier

22 Ethernet connection

23 Serial connection

24 Connection through a PLC

25 Settable device range

22 Ethernet connection

☞ Page 1726 MELSERVO-J5, JET series (Built-in Ethernet port connection)
☞ Page 1741 MELSERVO-JE-C series (Built-in Ethernet port connection)

22.1 MELSERVO-J5, JET series (Built-in Ethernet port connection)

☞ Page 1726 Connectable devices
☞ Page 1727 System configuration
☞ Page 1734 GOT side settings
☞ Page 1738 Servo amplifier side settings

22.1.1 Connectable devices

The following table shows the connectable models.
○: Supported, —: Not supported

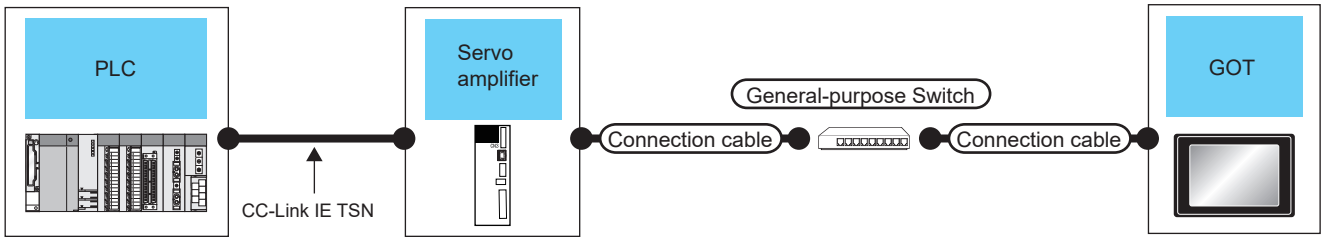
Controller	Model	Clock	Connectable model
MELSERVO-J5	MR-J5-□G MR-J5-□G-RJ MR-J5W2-□G MR-J5W3-□G MR-J5D1-□G4 MR-J5D2-□G4 MR-J5D3-□G4	—	GT37 SoftGOT3000
MELSERVO-JET	MR-JET-□G	—	GT37 SoftGOT3000

Precautions

Since the servo amplifier does not have a clock function, the settings of [Adjust] or [Broadcast] by GOT clock control will be disabled.

22.1.2 System configuration

Connecting a servo amplifier and a PLC or Motion module via CC-Link IE TSN



For details on the connection cables and the maximum segment length, refer to the following.

☞ Page 1727 Connection cable
☞ Page 1727 Maximum segment length

For details on the maximum number of connected devices, refer to the following.

☞ Page 1728 Maximum number of connected devices

Controller	Connection cable	External device	Connection cable	GOT	
				Interface	Model
MR-J5-□G MR-J5-□G-RJ MR-J5W2-□G MR-J5W3-□G MR-J5D1-□G4 MR-J5D2-□G4 MR-J5D3-□G4 MR-JET-□G	Twisted pair cable	General-purpose switching hub	Twisted pair cable	Built-in Ethernet interface of GOT	GT37 SoftGOT3000
				Ethernet interface of personal computer	GT37 SoftGOT3000

■Connection cable

Use a connection cable that meets the following standards.

Standard	Category
1000BASE-T	• For connection cable between the servo amplifier and the general-purpose switching hub Shielded twisted pair cable (double-shielded, STP) or shielded twisted pair cable (STP) of category 5e or higher*1 • For connection cable between the GOT and the general-purpose switching hub Shielded twisted pair cable (STP) or unshielded twisted pair cable (UTP) of category 5e or higher

*1 For the twisted pair cable, use a straight cable.

Use a hub to connect the servo amplifier.

Use cables, connectors, and hubs that meet the IEEE802.3 1000BASE-T standard.

■Maximum segment length

The maximum segment length (length between a general-purpose switching hub and a node) is 100 m.

The maximum length depends on the Ethernet equipment used.

When switching hubs are used, there is no theoretical limit to the number of cascade connections between switching hubs.

For the limit, contact the switching hub manufacturer.

■Maximum number of connected devices

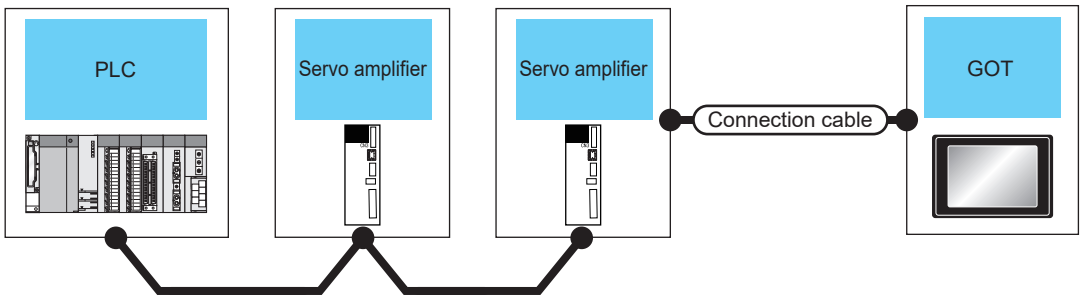
Up to 128 servo amplifiers can be connected to channels No. 1 to No. 4 of one GOT. (16 or less recommended)

The following shows the number of connectable controllers per GOT channel and the number of GOTs connectable to one controller.

Controller		GOT	
Model	**Number of GOTs connectable to one servo amplifier**	**Model**	**Number of connectable controllers per GOT channel**
MR-J5-□G MR-J5-□G-RJ MR-J5W2-□G MR-J5W3-□G MR-J5D1-□G4 MR-J5D2-□G4 MR-J5D3-□G4 MR-JET-□G	1	GT37 SoftGOT3000	120

Connecting servo amplifiers and PLC via CC-Link IE Field Network Basic

■Direct connection to a servo amplifier



CC-Link IE Field Network Basic

For details on the connection cables and the maximum segment length, refer to the following.

☞ • Connection cable

☞ • Maximum segment length

For details on the maximum number of connected devices, refer to the following.

☞ • Maximum number of connected devices

Controller	Connection cable	GOT	
		Interface	**Model**
MR-J5-□G MR-J5-□G-RJ MR-J5D1-□G4 MR-JET-□G	Twisted pair cable	Built-in Ethernet interface of GOT	GT37 SoftGOT3000
		Ethernet interface of personal computer	GT37 SoftGOT3000

• Connection cable

Use a connection cable that meets the following standards.

Standard	Category
1000BASE-T	Shielded twisted pair cable (STP) or unshielded twisted pair cable (UTP) of category 5e or higher

Use cables, connectors, and hubs that meet the IEEE802.3 1000BASE-T standard.

When only one GOT is connected, the GOT can be directly connected to the controller without a hub.

• Maximum segment length

The maximum segment length (length between a hub and a node) is 100 m.

The maximum length depends on the Ethernet equipment used.

The following shows the number of connectable hubs when a repeater hub is used.

1000BASE-T: The number differs depending on the hub to be used.

When switching hubs are used, there is no theoretical limit to the number of cascade connections between switching hubs.

For the limit, contact the switching hub manufacturer.

• Maximum number of connected devices

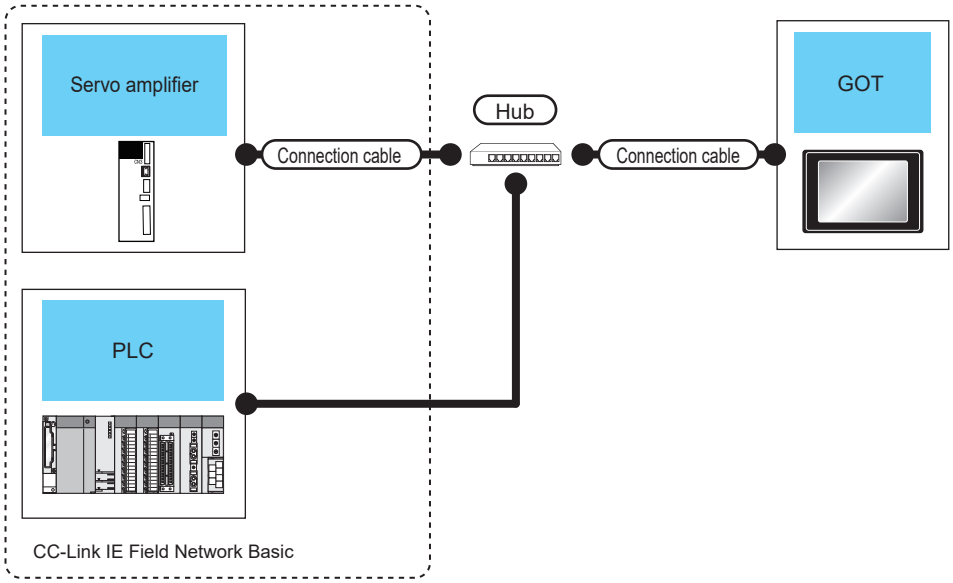
Up to 128 servo amplifiers can be connected to channels No. 1 to No. 4 of one GOT. (16 or less recommended)

The following shows the number of connectable controllers per GOT channel and the number of GOTs connectable to one controller.

Controller		GOT	
Model	**Number of GOTs connectable to one servo amplifier**	**Model**	**Number of connectable controllers per GOT channel**
MR-J5-□G MR-J5-□G-RJ MR-J5D1-□G4 MR-JET-□G	1	GT37 SoftGOT3000	16

PART 6

■Connection via a hub



For details on the connection cables and the maximum segment length, refer to the following.

☞ • Connection cable

☞ • Maximum segment length

For details on the maximum number of connected devices, refer to the following.

☞ • Maximum number of connected devices

Controller	Connection cable	External device	Connection cable	GOT	
				Interface	Model
MR-J5-□G MR-J5-□G-RJ MR-J5D1-□G4 MR-JET-□G	Twisted pair cable	HUB	Twisted pair cable	Built-in Ethernet interface of GOT	GT37 SoftGOT3000
				Ethernet interface of personal computer	GT37 SoftGOT3000

• Connection cable

Use a connection cable that meets the following standards.

Standard	Category
1000BASE-T	• For connection cable between the servo amplifier and the hub Shielded twisted pair cable (double-shielded, STP) or shielded twisted pair cable (STP) of category 5e or higher*1 • For connection cable between the GOT and the hub Shielded twisted pair cable (STP) or unshielded twisted pair cable (UTP) of category 5e or higher

*1 For the twisted pair cable, use a straight cable.

Use a hub to connect the servo amplifier.

Use cables, connectors, and hubs that meet the IEEE802.3 1000BASE-T standard.

• Maximum segment length

The maximum segment length (length between a hub and a node) is 100 m.

The maximum length depends on the Ethernet equipment used.

The following shows the number of connectable hubs when a repeater hub is used.

1000BASE-T: The number differs depending on the hub to be used.

When switching hubs are used, there is no theoretical limit to the number of cascade connections between switching hubs.

For the limit, contact the switching hub manufacturer.

• Maximum number of connected devices

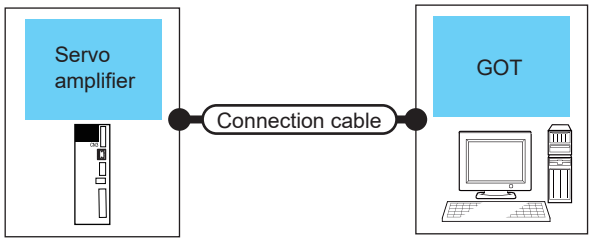
Up to 128 servo amplifiers can be connected to channels No. 1 to No. 4 of one GOT. (16 or less recommended)

The following shows the number of connectable controllers per GOT channel and the number of GOTs connectable to one controller.

Controller		GOT	
Model	Number of GOTs connectable to one servo amplifier	Model	Number of connectable controllers per GOT channel
MR-J5-□G MR-J5-□G-RJ MR-J5D1-□G4 MR-JET-□G	1	GT37 SoftGOT3000	16

PART 6

Direct connection to a servo amplifier



For details on the connection cables and the maximum segment length, refer to the following.

☞ Page 1733 Connection cable
☞ Page 1727 Maximum segment length

For details on the maximum number of connected devices, refer to the following.

☞ Page 1728 Maximum number of connected devices

Controller	Connection cable	GOT	
		Interface	Model
MR-J5-□G MR-J5-□G-RJ MR-J5W2-□G MR-J5W3-□G MR-J5D1-□G4 MR-J5D2-□G4 MR-J5D3-□G4 MR-JET-□G	Twisted pair cable	Ethernet interface of personal computer	GT37 SoftGOT3000 *1

*1 When GT SoftGOT3000 and Motion Control Software SWM-G are installed on the same personal computer, GT SoftGOT3000 can monitor a servo amplifier controlled by Motion software SWM-G.
Use firmware version 1.001B or later for Motion software SWM-G.
Since GT SoftGOT3000 and Motion Control Software SWM-G have different methods of connection with a servo amplifier, the IP communication mixed function needs to be set.
For Motion Control Software SWM-G and the IP communication mixed function, refer to the following.
📖Motion Control Software SWM-G User's Manual (Startup)

■Connection cable

Use a connection cable that meets the following standards.

Standard	Category
1000BASE-T	Shielded twisted pair cable (double-shielded STP or STP) of category 5e or higher

For the twisted pair cable, use a straight cable.

The destination device connected with the twisted pair cable varies with the configuration of the Ethernet network system used.

Connect the cable to the Ethernet module, hub, or other system equipment corresponding to the applicable Ethernet network system.

Use cables, connectors, and hubs that meet the IEEE802.3 1000BASE-T and ANSI/TIA/EIA-568-B (Category 5e) standards.

■Maximum segment length

The maximum segment length (length between a hub and a node) is 100 m.

■Maximum number of connected devices

Up to 128 servo amplifiers can be connected to channels No. 1 to No. 4 of one GOT. (16 or less recommended)

The following shows the number of connectable controllers per GOT channel and the number of GOTs connectable to one controller.

Controller		GOT	
Model	**Number of GOTs connectable to one servo amplifier**	**Model**	**Number of connectable controllers per GOT channel**
MR-J5-□G MR-J5-□G-RJ MR-J5W2-□G MR-J5W3-□G MR-J5D1-□G4 MR-J5D2-□G4 MR-J5D3-□G4 MR-JET-□G	1	GT37 SoftGOT3000	120

PART 6

22.1.3 GOT side settings

[GOT Ethernet Setting]

Set the GOT Ethernet interface in GT Designer3.

Item	Description
[GOT IP Address Setting]	Set the IP address of the GOT.
[GOT Ethernet Common Setting]	Set the default gateway and other common items for GOT Ethernet interfaces.
[IP filter Setting]	The GOT allows or blocks access from IP addresses specified in the filtering list.

For details on the setting, refer to the following.

📖GT Designer3 (GOT3000) Screen Design Manual

Set the GT SoftGOT3000 Ethernet interface on the personal computer.

Precautions

Do not use 0 and 255 at the end of an IP address.

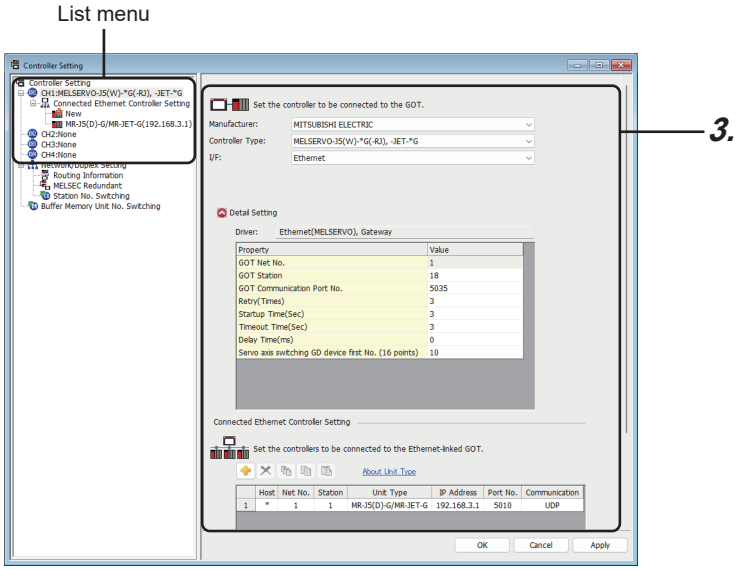
(Numbers of *.*.*.0 and *.*.*.255 are used by the system.)

The GOT may not monitor the controller correctly with the above numbers.

Consult with the administrator of the network before setting an IP address to the GOT.

[Controller Setting]

Set the channel of the connected controller.



Operating procedure

1. Select [Common] → [Controller Setting] from the menu.
2. In the [Controller Setting] window, select the channel number to be used from the list menu.
3. Set the following items.

Item	Description
[Manufacturer]	[MITSUBISHI ELECTRIC]
[Controller Type]	[MELSERVO-J5(W)-*G(-RJ), -JET-*G]
[I/F]	[Ethernet]
[Detail Setting]	Configure the settings according to the usage environment. ☞ Page 1735 [Detail Setting]
[Connected Ethernet Controller Setting]	Configure the settings according to the controller to be connected. ☞ Page 1737 [Connected Ethernet Controller Setting]

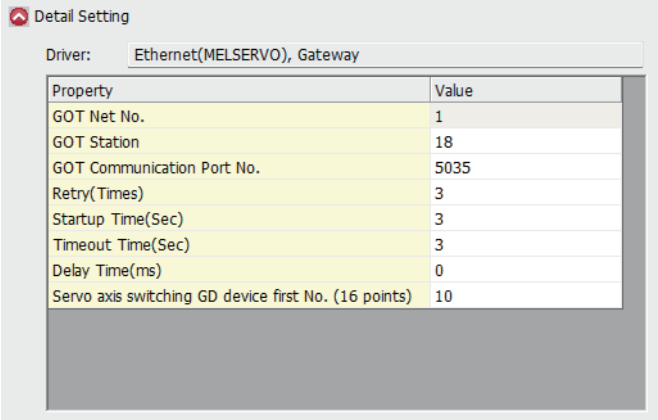
4. When you have completed the settings, click the [OK] button.

Point

The controller settings can be checked in [I/F Communication Setting].
For details, refer to the following.
GT Designer3 (GOT3000) Screen Design Manual

■[Detail Setting]

Configure the settings according to the usage environment.



Item	Description	Range
[Driver]	This item appears when communication drivers are selectable according to the settings of [Controller Type] and [I/F].	[Ethernet(MELSERVO), Gateway]
[GOT Net No.]	Set the network number of the GOT.	[1]
[GOT Station]*1*2	Set the station number of the GOT.	[1] to [254]
[GOT Communication Port No.]	Set the GOT port No. for the connection with the servo amplifier.	[1024] to [5010], [5014] to [49152], [49171] to [65534]
[Retry]	Set the number of retries to be performed when a communication timeout occurs. When receiving no response after retries, the communication times out.	• GOT: [0] times to [5] times • GT SoftGOT3000: [0] times to [10] times
[Startup Time]	Specify the time period from the GOT startup until the start of communication with the servo amplifier.	[3] seconds to [255] seconds
[Timeout Time]	Set the time period for a communication to time out.	[1] second to [90] seconds
[Delay Time]	Set the delay time for reducing the load of the network and destination PLC.	[0] ms to [10000] ms
[Servo axis switching GD device first No. (16 points)]	Set the start device number of the GD devices for servo axis switching. For details, refer to the following. ☞ Page 1736 Start device number of the GD devices for servo axis switching	[0] to [65520]

*1 Set values not set for [Station] in [Connected Ethernet Controller Setting].
☞ Page 1737 [Connected Ethernet Controller Setting]

*2 When connecting multiple GOTs in the Ethernet network, set a different value for [GOT Station] for each GOT.

■Start device number of the GD devices for servo axis switching

• Indirect specification of a servo axis number

For connection via a Motion CPU or Simple Motion module, a servo axis number can be indirectly specified with GOT internal registers (GD devices) by specifying a value (100 to 115) to the axis number of the servo amplifier device.

Set the start device number of the GD devices to be used in [Servo axis switching GD device first No. (16 points)].

Specify a servo axis number with 16 consecutive GD devices, starting the set device number.

When [10] is set to [Servo axis switching GD device first No. (16 points)], GD10 to GD25 are used to specify a servo axis number as shown in the following table.

Servo axis No.	GD device	Setting range
100	GD10	1 to 64 Setting a value outside the above range causes a device range error.
101	GD11	
102	GD12	
103	GD13	
104	GD14	
105	GD15	
106	GD16	
107	GD17	
108	GD18	
109	GD19	
110	GD20	
111	GD21	
112	GD22	
113	GD23	
114	GD24	
115	GD25	

• Indirect specification of a servo axis number on the initially displayed screen

Set [Servo axis switching GD device first No. (16 points)] so that the values of the GD devices are retained and monitored upon the GOT startup.

• Indirect specification of a servo axis number for multi-channel connection

If the setting rage of [Servo axis switching GD device first No. (16 points)] set for each channel overlaps, the axis number of the servo amplifier of each channel is switched simultaneously.

Set [Servo axis switching GD device first No. (16 points)] for each channel so that the setting range does not overlap.

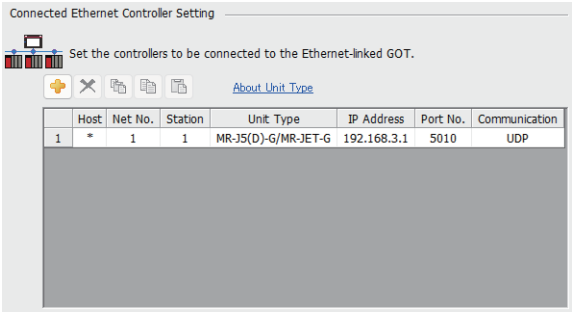
• Indirect specification of a station number and a servo axis number for multi-channel connection

When GD10 to GD25 are used to specify the station number of an inverter or non-Mitsubishi temperature controller connected, setting [10] to [Servo axis switching GD device first No. (16 points)] switches the axis number of the servo amplifier and the station number of an inverter or non-Mitsubishi temperature controller set to each channel simultaneously.

Set [Servo axis switching GD device first No. (16 points)] so that the setting range does not overlap the station number of an inverter or non-Mitsubishi temperature controller.

■[Connected Ethernet Controller Setting]

Set the controller to be connected to the GOT by Ethernet.



Item	Description	Range
[Host]	The host is displayed. The host is indicated with an asterisk (*).	—
[Net No.]*1	Set the network number of the connected servo amplifier.	[1]
[Station]*1*2	Set the station number of the connected servo amplifier.	[1] to [254]
[Unit Type]	[MR-J5(D)-G/MR-JET-G]	[MR-J5(D)-G/MR-JET-G]
[IP Address]	Set the IP address of the connected servo amplifier.	[0.0.0.1] to [255.255.255.254]*3
[Port No.]	Set the port number of the connected servo amplifier.	[5010]
[Communication]	Set the format of communication with the connected servo amplifier.	[UDP]

*1 [Net No.] and [Station] must match [Network No.] and [Station No.] set for the monitoring target device.

*2 Set values not set for [GOT Station] in [Detail Setting].
☞ Page 1735 [Detail Setting]

*3 Since [0.0.0.0] and [255.255.255.255] cannot be set in the servo amplifier, set the IP address within the range of [0.0.0.1] to [255.255.255.254].
When [0.0.0.0] or [255.255.255.255] is set, a communication error occurs.

Point

• Controller settings using the GT37 utility

The controller settings can be changed in [Communication Settings] of the GT37 utility after writing [Communication Settings] of project data to GT37.

For details on the GT37 utility, refer to the following manual.

📖GOT3000 Series User's Manual (Utility & Maintenance Functions)

• Priority of the settings in [Controller Setting]

When the settings are configured in GT Designer3 or in the GT37 utility, the latest settings are effective.

22.1.4 Servo amplifier side settings

Model		Reference
MELSERVO-J5	MR-J5-□G MR-J5-□G-RJ MR-J5W2-□G MR-J5W3-□G MR-J5D1-□G4 MR-J5D2-□G4 MR-J5D3-□G4	☞ Page 1738 Connection to MELSERVO-J5 or JET series
MELSERVO-JET	MR-JET-□G	☞ Page 1738 Connection to MELSERVO-J5 or JET series

This section describes the settings of the GOT and the servo amplifier in the system configuration shown below.

Point

- Servo amplifier

For details on the servo amplifier, refer to the following.

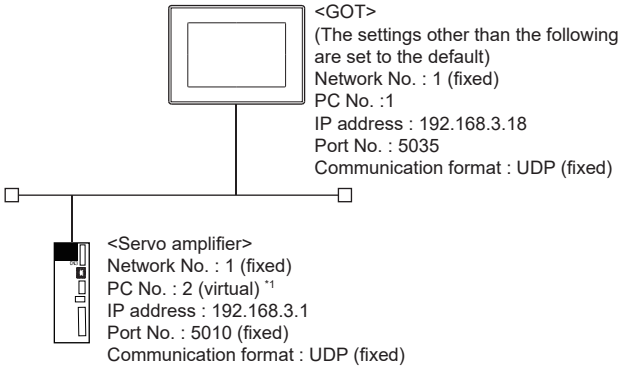
📖MELSERVO-J5 manuals

📖MELSERVO-JET manuals

Connection to MELSERVO-J5 or JET series

■System configuration

The following shows a system configuration example for connection to the MELSERVO-J5 series.

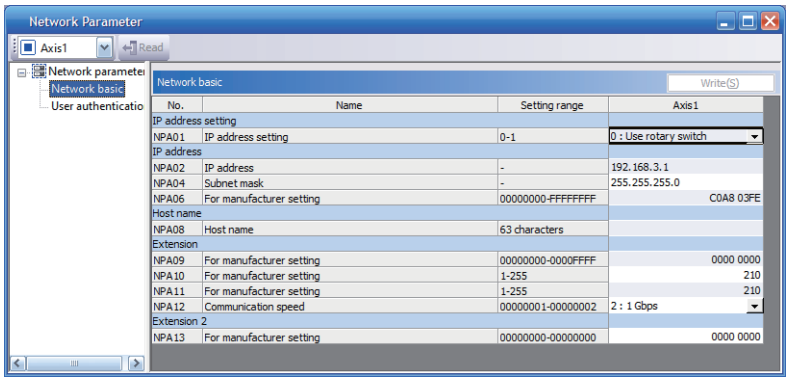


*1 Although the setting is nonexistent on the servo amplifier side, set a virtual value on the GOT side.
☞ Page 1740 [Controller Setting] and [Connected Ethernet Controller Setting] in GT Designer3

■IP address setting

The following shows an example of servo amplifier side settings for connection to the MELSERVO-J5 series.

- [Network basic] of MR Configurator2



Setting item	Description	Setting value
[NPA01]	Select whether to set the IP address with the rotary switches or parameter. The following shows the IP address when the rotary switches are used. • First octet to third octet: Values set in [NPA02] • Fourth octet: Values set with the rotary switches SW1 and SW2 When the parameter is used, the values set in [NPA02] are used as the IP address.	0: Use rotary switch 1: Use parameter
[NPA02]	Set the IP address.	192.168.3.1
[NPA04]	Set the subnet mask.	255.255.255.0

- IP address setting

Setting value of [NPA01]	Rotary switch (SW1, SW2)	IP address	
0: Use rotary switch	00h	First octet	The first octet set in [NPA02] is used.
		Second octet	The second octet set in [NPA02] is used.
		Third octet	The third octet set in [NPA02] is used.
		Fourth octet	The fourth octet set in [NPA02] is used.
	01h to FEh	First octet	The first octet set in [NPA02] is used.
		Second octet	The second octet set in [NPA02] is used.
		Third octet	The third octet set in [NPA02] is used.
		Fourth octet	The setting values of the rotary switches (SW1 and SW2) are used.
	FFh	First octet	Use prohibited
		Second octet	
		Third octet	
		Fourth octet	
1: Use parameter	—	First octet	The first octet set in [NPA02] is used.
		Second octet	The second octet set in [NPA02] is used.
		Third octet	The third octet set in [NPA02] is used.
		Fourth octet	The fourth octet set in [NPA02] is used.

■[Controller Setting] and [Connected Ethernet Controller Setting] in GT Designer3

The following shows an example of GOT side settings for connection to the MELSERVO-J5 series.

- Controller settings

Item	Setting value
[GOT Net No.]	1
[GOT Station]	1
[GOT Communication Port No.]	5035
[Retry]	3 times
[Startup Time]	3 seconds
[Timeout Time]	3 seconds
[Delay Time]	0 ms

- GOT Ethernet settings (standard port)

Item	Setting value
[GOT IP Address]	192.168.3.18
[Subnet Mask]	255.255.255.0
[Default Gateway]	0.0.0.0
[Peripheral S/W Communication Port No.]	5015
[Transparent Port No.]	5014

- Connected Ethernet controller settings

Item		Setting value
Ethernet setting No. 1	[Host]	*
	[Net No.]	1
	[Station]	2*1
	[Unit Type]	MR-J5(D)-G/MR-JET-G
	[IP Address]	192.168.3.1
	[Port No.]	5010
	[Communication]	UDP

*1 Set a value different from that of the GOT PLC number.

■Checking the communication status of the servo amplifier

- When using Windows Command Prompt

Execute a ping command in Windows Command Prompt.

1) At normal end

C:\>Ping 192.168.3.1

Reply from 192.168.3.1:bytes=32 time<1ms TTL=32

2) At abnormal end

C:\>Ping 192.168.3.1

Request timed out.

- In the case of abnormal end

In the case of abnormal end, check the following and execute the ping command again.

Cable connecting condition

Switch settings and network parameter settings

Operation state of PLC CPU (faulty or not)

IP address of the servo amplifier Ethernet port specified by the ping command

22.2 MELSERVO-JE-C series (Built-in Ethernet port connection)

☞ Page 1741 Connectable devices
☞ Page 1741 System configuration
☞ Page 1744 GOT side settings
☞ Page 1748 Servo amplifier side settings

22.2.1 Connectable devices

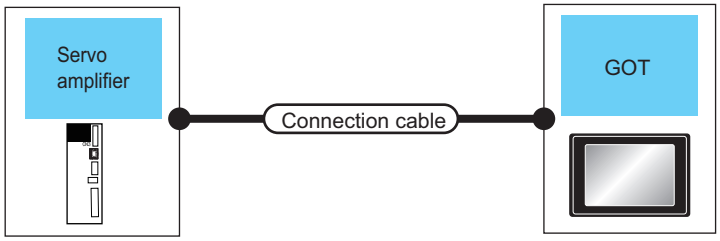
The following table shows the connectable models.

○: Supported, —: Not supported

Controller	Model	Clock	Connectable model
MELSERVO-JE	MR-JE-□C	—	GT37 SoftGOT3000

22.2.2 System configuration

Connection to one servo amplifier



For details on the connection cables and the maximum segment length, refer to the following.

☞ Page 1742 Connection cable
☞ Page 1742 Maximum segment length

For details on the maximum number of connected devices, refer to the following.

☞ Page 1742 Maximum number of connected devices

Controller	Connection cable	GOT	
		Interface	Model
MR-JE-C	Twisted pair cable	Built-in Ethernet interface of GOT	GT37 SoftGOT3000

■Connection cable

Use a connection cable that meets the following standards.

Standard	Category
1000BASE-T	Shielded twisted pair cable (STP) or unshielded twisted pair cable (UTP) of category 5e or higher

The destination device connected with the twisted pair cable varies with the configuration of the Ethernet network system used.

Connect the cable to the Ethernet module, hub, transceiver or other system equipment according to the Ethernet network system used.

Use cables, connectors, and hubs that meet the IEEE802.3 1000BASE-T standard.

When connecting Servo amplifier and GOT directly with Ethernet cable, remember that the by cross cable is available.

📖GOT3000 Series User's Manual (Hardware)

■Maximum segment length

The maximum segment length (length between a hub and a node) is 100 m.

The maximum length depends on the Ethernet equipment used.

The following shows the number of the connectable nodes when a repeater hub is used.

- 1000BASE-T: The number differs depending on the hub to be used.

When switching hubs are used, there is no theoretical limit to the number of cascade connections between switching hubs.

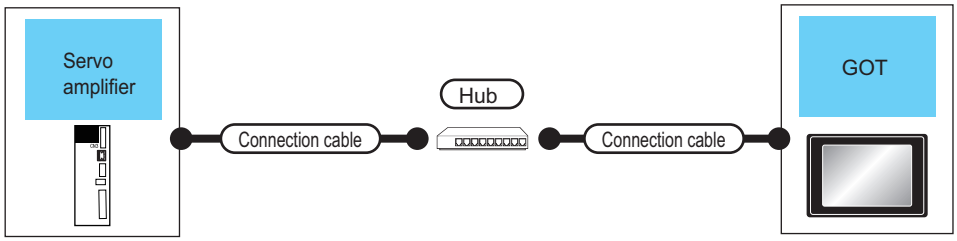
For the limit, contact the switching hub manufacturer.

■Maximum number of connected devices

The following shows the number of connectable controllers per GOT channel and the number of GOTs connectable to one controller.

Controller		GOT	
Model	Number of GOTs connectable to one servo amplifier	Model	Number of connectable controllers per GOT channel
MR-JE-C	1	GT37 SoftGOT3000	1

Connection to multiple servo amplifiers



For details on the connection cables and the maximum segment length, refer to the following.

☞ Page 1743 Connection cable
☞ Page 1743 Maximum segment length

For details on the maximum number of connected devices, refer to the following.

☞ Page 1743 Maximum number of connected devices

Controller	Connection cable	External device	Connection cable	GOT	
				Interface	Model
MR-JE-C	Twisted pair cable	HUB	Twisted pair cable	Built-in Ethernet interface of GOT	GT37 SoftGOT3000

■Connection cable

Use a connection cable that meets the following standards.

Standard	Category
1000BASE-T	• For connection cable between the servo amplifier and the hub Shielded twisted pair cable (STP) of category 5e or higher • For connection cable between the GOT and the hub Shielded twisted pair cable (STP) or unshielded twisted pair cable (UTP) of category 5e or higher

Use a hub to connect the servo amplifier.

Use cables, connectors, and hubs that meet the IEEE802.3 1000BASE-T standard.

■Maximum segment length

The maximum segment length (length between a hub and a node) is 100 m.

The maximum length depends on the Ethernet equipment used.

The following shows the number of the connectable nodes when a repeater hub is used.

- 1000BASE-T: The number differs depending on the hub to be used.

When switching hubs are used, there is no theoretical limit to the number of cascade connections between switching hubs.

For the limit, contact the switching hub manufacturer.

■Maximum number of connected devices

Up to 128 servo amplifiers can be connected to channels No. 1 to No. 4 of one GOT. (16 or less recommended)

The following shows the number of connectable controllers per GOT channel and the number of GOTs connectable to one controller.

Controller		GOT	
Model	**Number of GOTs connectable to one servo amplifier**	**Model**	**Number of connectable controllers per GOT channel**
MR-JE-C	1	GT37 SoftGOT3000	128

PART 6

22.2.3 GOT side settings

[GOT Ethernet Setting]

Set the GOT Ethernet interface in GT Designer3.

Item	Description
[GOT IP Address Setting]	Set the IP address of the GOT.
[GOT Ethernet Common Setting]	Set the default gateway and other common items for GOT Ethernet interfaces.
[IP filter Setting]	The GOT allows or blocks access from IP addresses specified in the filtering list.

For details on the setting, refer to the following.

📖GT Designer3 (GOT3000) Screen Design Manual

Precautions

Do not use 0 and 255 at the end of an IP address.

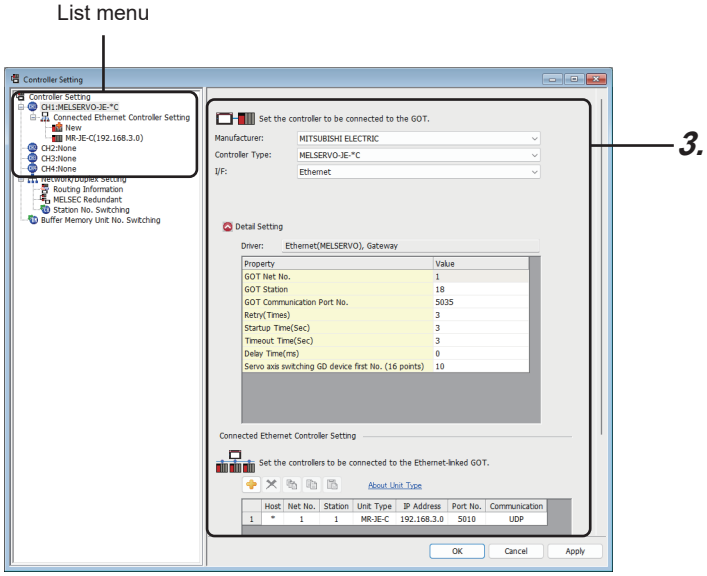
(Numbers of *.*.*.0 and *.*.*.255 are used by the system.)

The GOT may not monitor the controller correctly with the above numbers.

Consult with the administrator of the network before setting an IP address to the GOT.

[Controller Setting]

Set the channel of the connected controller.



Operating procedure

1. Select [Common] → [Controller Setting] from the menu.

2. In the [Controller Setting] window, select the channel number to be used from the list menu.

3. Set the following items.

Item	Description
[Manufacturer]	[MITSUBISHI ELECTRIC]
[Controller Type]	[MELSERVO-JE-*C]
[I/F]	[Ethernet]
[Detail Setting]	Configure the settings according to the usage environment. ☞ Page 1745 [Detail Setting]
[Connected Ethernet Controller Setting]	Configure the settings according to the controller to be connected. ☞ Page 1747 [Connected Ethernet Controller Setting]

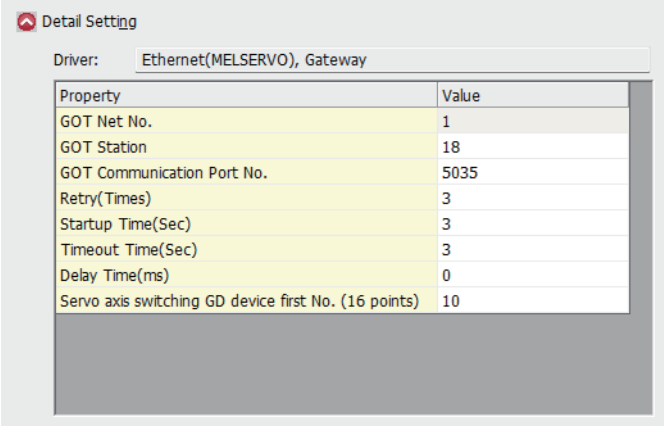
4. When you have completed the settings, click the [OK] button.

Point

The controller settings can be checked in [I/F Communication Setting].
For details, refer to the following.
GT Designer3 (GOT3000) Screen Design Manual

■[Detail Setting]

Configure the settings according to the usage environment.



Item	Description	Range
[Driver]	This item appears when communication drivers are selectable according to the settings of [Controller Type] and [I/F].	[Ethernet(MELSERVO), Gateway]
[GOT Net No.]	Set the network number of the GOT.	[1]
[GOT Station]*1*2	Set the station number of the GOT.	[1] to [254]
[GOT Communication Port No.]	Set the GOT port No. for the connection with the servo amplifier.	[1024] to [5010], [5014] to [49152], [49171] to [65534]
[Retry]	Set the number of retries to be performed when a communication timeout occurs. When receiving no response after retries, the communication times out.	[0] times to [5] times
[Startup Time]	Specify the time period from the GOT startup until the start of communication with the servo amplifier.	[3] seconds to [255] seconds
[Timeout Time]	Set the time period for a communication to time out.	[1] second to [90] seconds
[Delay Time]	Set the delay time for reducing the load of the network and destination PLC.	[0] ms to [10000] ms

*1 Set values not set for [Station] in [Connected Ethernet Controller Setting].
☞ Page 1737 [Connected Ethernet Controller Setting]
*2 When connecting multiple GOTs in the Ethernet network, set a different value for [GOT Station] for each GOT.

■Start device number of the GD devices for servo axis switching

• Indirect specification of a servo axis number

For connection via a Motion CPU or Simple Motion module, a servo axis number can be indirectly specified with GOT internal registers (GD devices) by specifying a value (100 to 115) to the axis number of the servo amplifier device.

Set the start device number of the GD devices to be used in [Servo axis switching GD device first No. (16 points)].

Specify a servo axis number with 16 consecutive GD devices, starting the set device number.

When [10] is set to [Servo axis switching GD device first No. (16 points)], GD10 to GD25 are used to specify a servo axis number as shown in the following table.

Servo axis No.	GD device	Setting range
100	GD10	1 to 64 Setting a value outside the above range causes a device range error.
101	GD11	
102	GD12	
103	GD13	
104	GD14	
105	GD15	
106	GD16	
107	GD17	
108	GD18	
109	GD19	
110	GD20	
111	GD21	
112	GD22	
113	GD23	
114	GD24	
115	GD25	

• Indirect specification of a servo axis number on the initially displayed screen

Set [Servo axis switching GD device first No. (16 points)] so that the values of the GD devices are retained and monitored upon the GOT startup.

• Indirect specification of a servo axis number for multi-channel connection

If the setting rage of [Servo axis switching GD device first No. (16 points)] set for each channel overlaps, the axis number of the servo amplifier of each channel is switched simultaneously.

Set [Servo axis switching GD device first No. (16 points)] for each channel so that the setting range does not overlap.

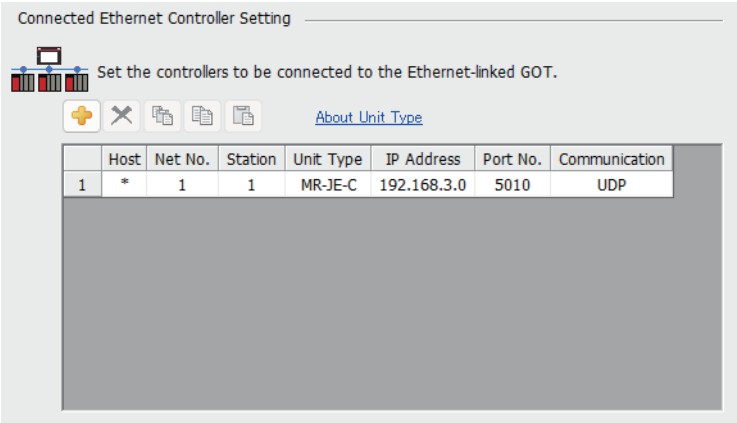
• Indirect specification of a station number and a servo axis number for multi-channel connection

When GD10 to GD25 are used to specify the station number of an inverter or non-Mitsubishi temperature controller connected, setting [10] to [Servo axis switching GD device first No. (16 points)] switches the axis number of the servo amplifier and the station number of an inverter or non-Mitsubishi temperature controller set to each channel simultaneously.

Set [Servo axis switching GD device first No. (16 points)] so that the setting range does not overlap the station number of an inverter or non-Mitsubishi temperature controller.

■[Connected Ethernet Controller Setting]

Set the controller to be connected to the GOT by Ethernet.



Item	Description	Range
[Host]	The host is displayed. The host is indicated with an asterisk (*).	—
[Net No.]	Set the network number of the connected servo amplifier.	1
[Station No.]*1	Set the station number of the connected servo amplifier.	[1] to [254]
[Unit Type]	[MR-JE-C]	[MR-JE-C]
[IP Address]	Set the IP address of the connected servo amplifier.	[0.0.0.0] to [255.255.255.255]
[Port No.]	Set the port number of the connected servo amplifier.	☞ Page 1747 [Port No.]
[Communication]	Set the format of communication with the connected servo amplifier.	[UDP], [TCP]

*1 Set values not set for [GOT Station] in [Detail Setting].
☞ Page 1735 [Detail Setting]

■[Port No.]

The setting range is as follows:

[Unit Type]	[Port No.]	[Communication]
[MR-JE-C]	[5010]	[UDP]
	[5012]	[TCP]

Point

• Controller settings using the GT37 utility

The controller settings can be changed in [Communication Settings] of the GT37 utility after writing [Communication Settings] of project data to GT37.

For details on the GT37 utility, refer to the following manual.

📖GOT3000 Series User's Manual (Utility & Maintenance Functions)

• Priority of the settings in [Controller Setting]

When the settings are configured in GT Designer3 or in the GT37 utility, the latest settings are effective.

22.2.4 Servo amplifier side settings

Model		Reference
MELSERVO-JE	MR-JE-□C	☞ Page 1748 Connection to MELSERVO-JE-C (connecting the GOT and one servo amplifier) ☞ Page 1751 Connection to MELSERVO-JE-C (connecting the GOT and multiple servo amplifiers)

This section describes the settings of the GOT and the servo amplifier in the system configuration shown below.

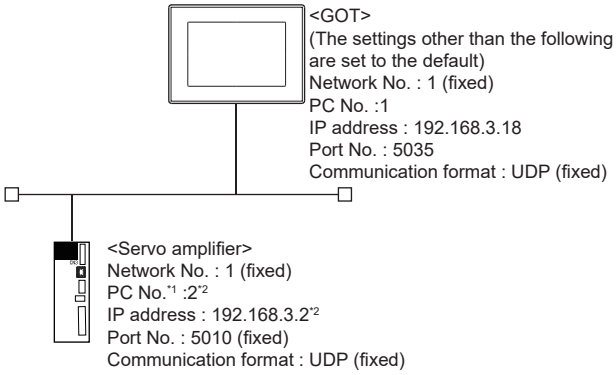
For details on the servo amplifier, refer to the following.

📖MELSERVO-JE-C manuals

Connection to MELSERVO-JE-C (connecting the GOT and one servo amplifier)

■System configuration

The following shows a system configuration example for connection to the MELSERVO-JE-C series.



*1 The PLC number corresponds to the identification number of the servo amplifier.

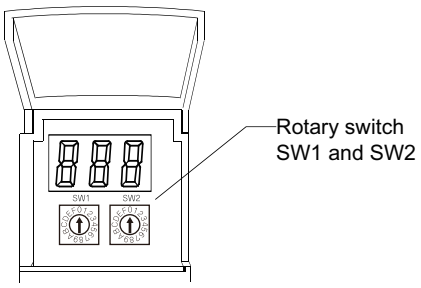
*2 The fourth octet of the IP address is consistent with the PLC number (Identification number).

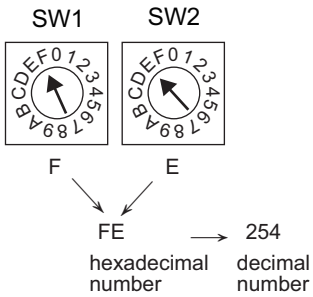
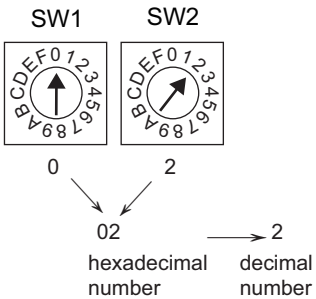
■Setting the identification number and IP address of the servo amplifier

The following shows an example of servo amplifier side settings for connection to the MELSERVO-JE-C series.

Set the identification number of the servo amplifier using rotary switches SW1 and SW2 which are found in front of the servo amplifier.

The fourth octet of the IP address is consistent with the identification number of the servo amplifier.



Setting item	Setting range	Range
Identification number	01_H to FE_H	02_H
First octet*1	192	192
Second octet*1	168	168
Third octet*1	3	3
Fourth octet	1 to 254  The value of the identification number converted from the hexadecimal number to the decimal number is the value of the fourth octet of IP address on the servo amplifier side.	2 

*1 The setting is not possible using rotary switches SW1 and SW2.

■[Controller Setting] and [Connected Ethernet Controller Setting] in GT Designer3

The following shows an example of GOT side settings for connection to the MELSERVO-JE-C series.

- Controller settings

Item	Setting value
[GOT Net No.]	1
[GOT Station]	1
[GOT Communication Port No.]	5035
[Retry]	3 times
[Startup Time]	3 seconds
[Timeout Time]	3 seconds
[Delay Time]	0 ms

- GOT Ethernet settings (standard port)

Item	Setting value
[GOT IP Address]	192.168.3.18
[Subnet Mask]	255.255.255.0
[Default Gateway]	0.0.0.0
[Peripheral S/W Communication Port No.]	5015
[Transparent Port No.]	5014

- Connected Ethernet controller settings

Item		Setting value
Ethernet setting No. 1	[Host]	*
	[Net No.]	1
	[Station]	2*1
	[Unit Type]	MR-JE-C
	[IP Address]	192.168.3.2
	[Port No.]*2	5010
	[Communication]*2	UDP

*1 Set a value different from that of the GOT PLC number.
*2 The following settings can also be configured for [Port No.] and [Communication].
[Port No.]: 5012
[Communication]: TCP

■Checking the communication status of the servo amplifier

- When using Windows Command Prompt

Execute a ping command in Windows Command Prompt.

1) At normal end

C:\>Ping 192.168.3.2

Reply from 192.168.3.2:bytes=32 time<1ms TTL=32

2) At abnormal end

C:\>Ping 192.168.3.2

Request timed out.

- In the case of abnormal end

In the case of abnormal end, check the following and execute the ping command again.

Cable connecting condition

Switch settings and network parameter settings

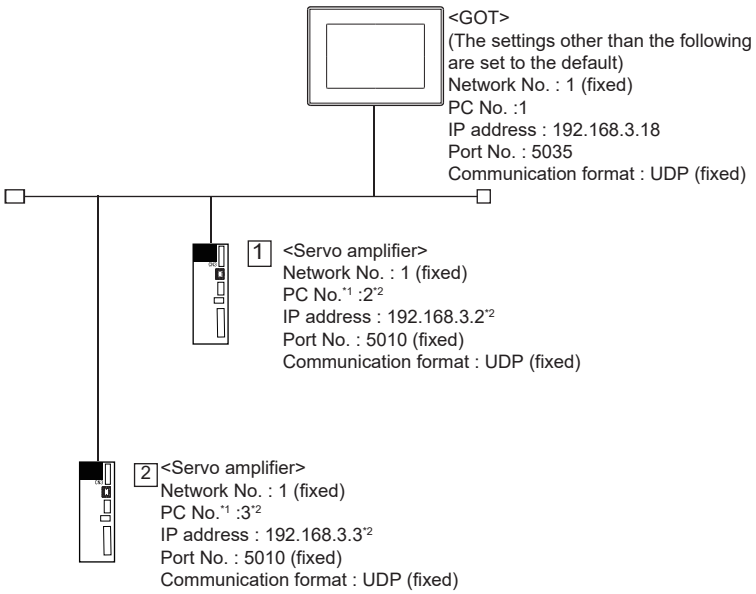
Operation state of PLC CPU (faulty or not)

IP address of the servo amplifier Ethernet port specified by the ping command

Connection to MELSERVO-JE-C (connecting the GOT and multiple servo amplifiers)

■System configuration

The following shows a system configuration example for connection to the MELSERVO-JE-C series.



*1 The PLC number corresponds to the identification number of the servo amplifier.

*2 The fourth octet of the IP address is consistent with the PLC number (Identification number).

■Setting the identification number and IP address of the servo amplifier

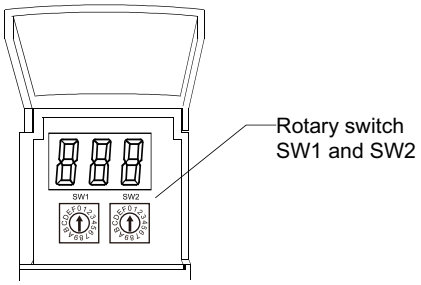
The following shows an example of servo amplifier side settings for connection to the MELSERVO-JE-C series.

Set the identification number of the servo amplifier using rotary switches SW1 and SW2 which are found in front of the servo amplifier.

The fourth octet of the IP address is consistent with the identification number of the servo amplifier.

For details on the setting method, refer to the following.

☞ Page 1748 Connection to MELSERVO-JE-C (connecting the GOT and one servo amplifier)



Setting item	Setting value	
	1	2
Identification number	02_H	03_H
First octet*1	192	192
Second octet*1	168	168
Third octet*1	3	3
Fourth octet	2	3

*1 The setting is not possible using rotary switches SW1 and SW2.

■[Controller Setting] and [Connected Ethernet Controller Setting] in GT Designer3

The following shows an example of GOT side settings for connection to the MELSERVO-JE-C series.

- Controller settings

Item	Setting value
[GOT Net No.]	1
[GOT Station]	1
[GOT Communication Port No.]	5035
[Retry]	3 times
[Startup Time]	3 seconds
[Timeout Time]	3 seconds
[Delay Time]	0 ms

- GOT Ethernet settings (standard port)

Item	Setting value
[GOT IP Address]	192.168.3.18
[Subnet Mask]	255.255.255.0
[Default Gateway]	0.0.0.0
[Peripheral S/W Communication Port No.]	5015
[Transparent Port No.]	5014

- Connected Ethernet controller settings

Item		Setting value	
		1	2
Ethernet setting No. 1	[Host]	*	—
	[Net No.]	1	1
	[Station]	2*1	3*1
	[Unit Type]	MR-JE-C	MR-JE-C
	[IP Address]	192.168.3.2	192.168.3.3
	[Port No.]*2	5010	5010
	[Communication]*2	UDP	UDP

*1 Set a value different from that of the GOT PLC number.

*2 The following settings can also be configured for [Port No.] and [Communication].
[Port No.]: 5012
[Communication]: TCP

■Checking the communication status of the servo amplifier

- When using Windows Command Prompt

Execute a ping command in Windows Command Prompt.

1) At normal end

C:\>Ping 192.168.3.2

Reply from 192.168.3.2:bytes=32 time<1ms TTL=32

2) At abnormal end

C:\>Ping 192.168.3.2

Request timed out.

- In the case of abnormal end

In the case of abnormal end, check the following and execute the ping command again.

Cable connecting condition

Switch settings and network parameter settings

Operation state of PLC CPU (faulty or not)

IP address of the servo amplifier Ethernet port specified by the ping command

Point

Communication setting other than identification number using rotary switches SW1 and SW2

In addition to the identification number set using rotary switches SW1 and SW2, communication settings can be configured also by the following methods.

- Using the SLMP command (IP address setting)
- Using MR Configurator2

For details, refer to the following manual.

MELSERVO-JE-C manuals

23 Serial connection

☞ Page 1754 MELSERVO-J3 series (serial connection)
☞ Page 1764 MELSERVO-J4 series (serial connection)

23.1 MELSERVO-J3 series (serial connection)

☞ Page 1754 Connectable devices
☞ Page 1755 System configuration
☞ Page 1757 Connection diagram
☞ Page 1760 GOT side settings
☞ Page 1762 Servo amplifier side settings

23.1.1 Connectable devices

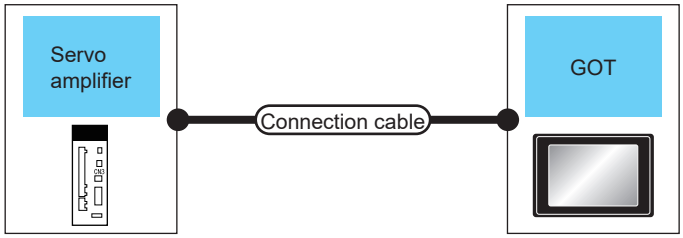
The following table shows the connectable models.

○: Supported, —: Not supported

Controller	Model	Clock	Servo amplifier side interface	Connectable model
			CN3	
MELSERVO-J3 series	MR-J3-□A MR-J3-□T	—	○	GT37 SoftGOT3000

23.1.2 System configuration

Connection to one servo amplifier



For details on the maximum length of the connection cable, refer to the following.

☞ Page 1755 Maximum length

For details on the maximum number of connected devices, refer to the following.

☞ Page 1755 Maximum number of connected devices

Servo amplifier		Communication type	Connection cable	GOT	
Controller	Interface			Interface	Model
MR-J3-□A MR-J3-□T	CN3	RS-232	DSV-CABV (1.5 m)*1 + GT35-C02HR2-9P	Built-in RS-232/422/485 interface	GT37 SoftGOT3000
			DSV-CABV (1.5 m)*1	GT37-IF2000 + GT15-RS2-9P	GT37 SoftGOT3000
		RS422	☞ Page 1757 RS-422 connection diagram (1)	Built-in RS-232/422/485 interface	GT37 SoftGOT3000
				GT37-IF2000 + GT15-RS4-9S	GT37 SoftGOT3000

*1 DSV-CABV is a product manufactured by Diatrend Corporation.
For details, contact Diatrend Corporation.

■Maximum length

- RS-232 cable

The maximum length of the connection cable is 1.7 m.

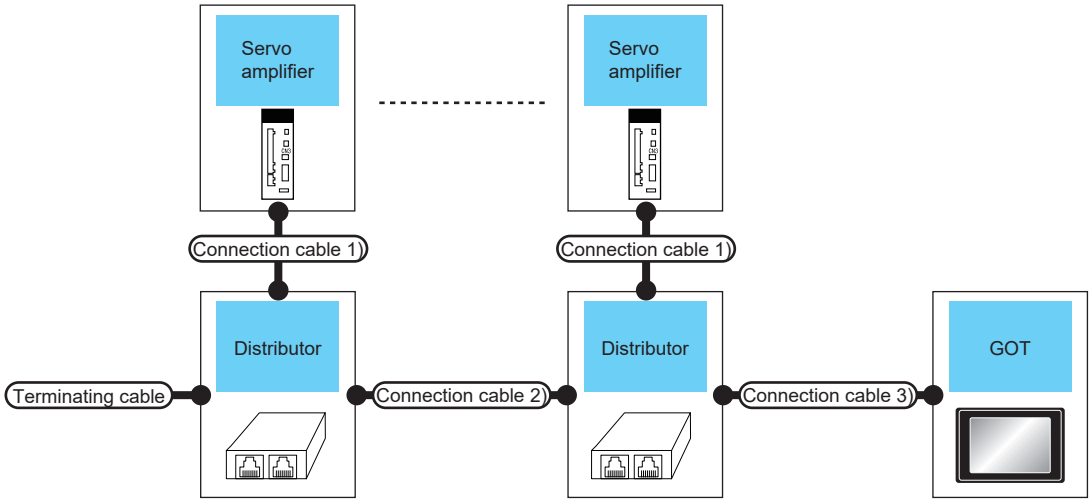
- RS422 cable

The maximum length of the connection cable is 30 m.

■Maximum number of connected devices

Only one servo amplifier can access one GOT at a time.

Connection to multiple servo amplifiers



For details on the maximum length of the connection cable, refer to the following.

☞ Page 1756 Maximum length

For details on the maximum number of connected devices, refer to the following.

☞ Page 1756 Maximum number of connected devices

Servo amplifier		Communication type	Terminating cable	Connection cable 1)	Connection cable 2)	Distributor*1	Connection cable 3)	GOT	
Controller	Interface							Interface	Model
MR-J3-□A MR-J3-□T	CN3	RS-422	☞ Page 1758 RS-422 connection diagram (4)	☞ Page 1757 RS-422 connection diagram (3)	☞ Page 1757 RS-422 connection diagram (2)	BMJ-8 (recommended)	☞ Page 1757 RS-422 connection diagram (1)	Built-in RS-232/422/485 interface	GT37 SoftGOT3000
								GT37-IF2000 + GT15-RS4-9S	GT37 SoftGOT3000

*1 The distributor is a product manufactured by HAKKO ELECTRIC CO., LTD. For details, contact HAKKO ELECTRIC CO., LTD.

■Maximum length

The maximum length of the connection cable is 30 m.

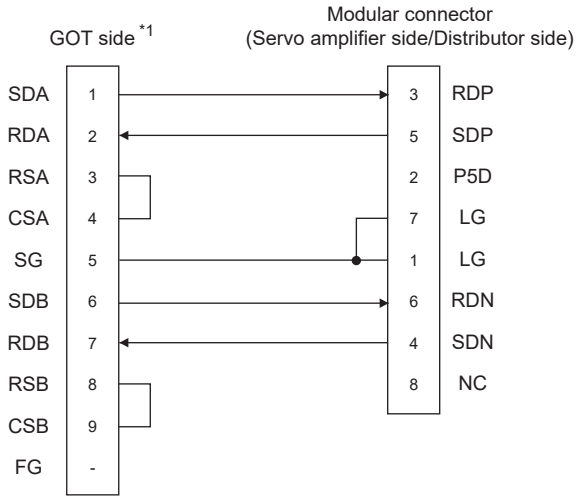
■Maximum number of connected devices

32 servo amplifiers can access one GOT at a time.

23.1.3 Connection diagram

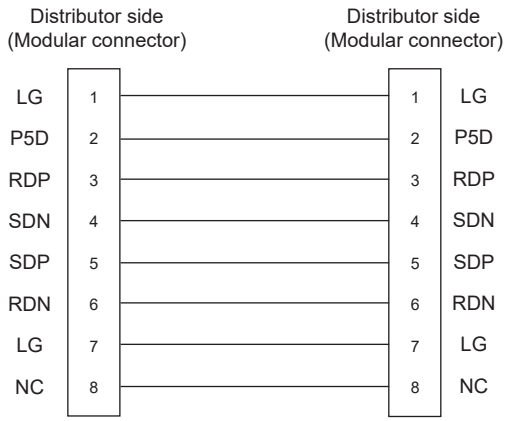
The following diagram shows the connection between the GOT and the servo amplifier.

RS-422 connection diagram (1)

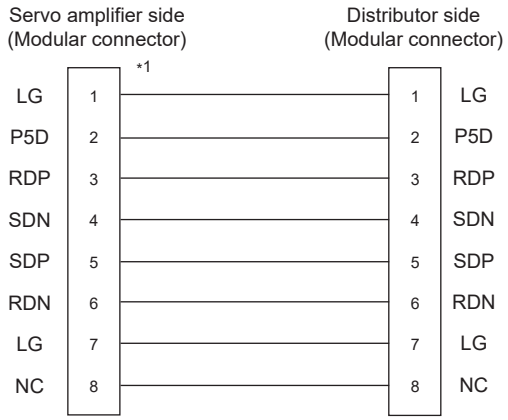


*1 For GT37 in the end position of the system configuration, set the terminating resistor so that it is not used.
☞ Page 2956 Terminating resistors of GOT

RS-422 connection diagram (2)

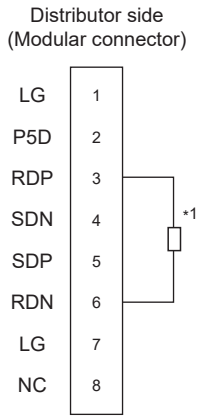


RS-422 connection diagram (3)



*1 Make the wiring between the distributor and the servo amplifier as short as possible.

RS-422 connection diagram (4)



*1 Terminate the section between RDP (pin 3) and RDN (pin 6) with a 150 Ω resistor.

Precautions when preparing a cable

- Cable length

The length of the RS-422 cable must be 30 m or less.

- GOT side connector

For the GOT side connector, refer to the following.

☞ Page 2954 GOT connector specifications

- Servo amplifier connector

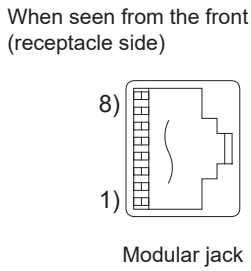
Use the connector compatible with the servo amplifier.

For details, refer to the following.

📖Instruction manual for the servo amplifier used

- Servo amplifier side modular connector

Modular connector pin arrangement



Pin No.	Signal name
1	LG
2	P5D
3	RDP
4	SDN
5	SDP
6	RDN
7	LG
8	NC

• Servo amplifier connection cable side connector

Refer to the following commercially available products for connectors and cables.

(Refer to the manual for the servo amplifier.)

Name	Model	Specifications	Manufacturer
Connector	TM10P-88P (Plug)	RJ45 connector	HIROSE ELECTRIC CO.,LTD.
Modular ceiling rosette (Distributor)	BMJ-8	-	HAKKO ELECTRIC CO.,LTD.
Cable	-	Cable conforming to EIA568 (such as cable 10BASE-T)	-

Connecting terminating resistors

When connecting the GOT and a servo amplifier, a terminating resistor must be connected to the GOT.

Set the DIP switch for terminating resistor setting so that it is not used.

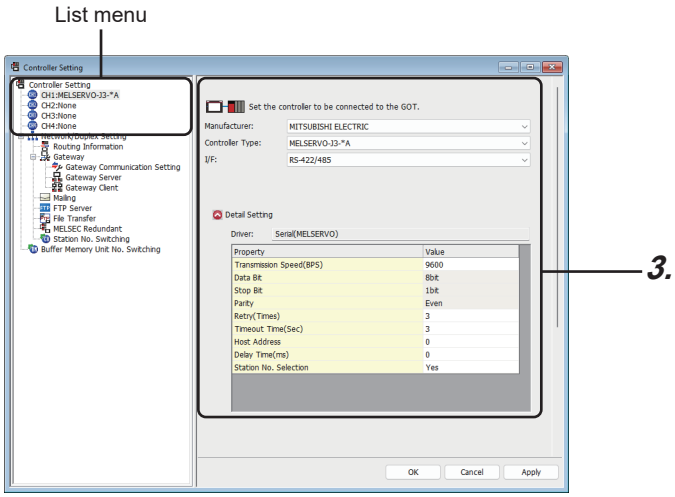
For the terminating resistor setting method, refer to the following.

☞ Page 2956 Terminating resistors of GOT

23.1.4 GOT side settings

[Controller Setting]

Set the channel of the connected controller.



Operating procedure

1. Select [Common] → [Controller Setting] from the menu.

2. In the [Controller Setting] window, select the channel number to be used from the list menu.

3. Set the following items.

Item	Description
[Manufacturer]	[MITSUBISHI ELECTRIC]
[Controller Type]	• [MELSERVO-J3-*A] • [MELSERVO-J3-*T]
[I/F]	Configure the settings according to the communication format used.
[Detail Setting]	Configure the settings according to the usage environment. ☞ Page 1761 [Detail Setting]

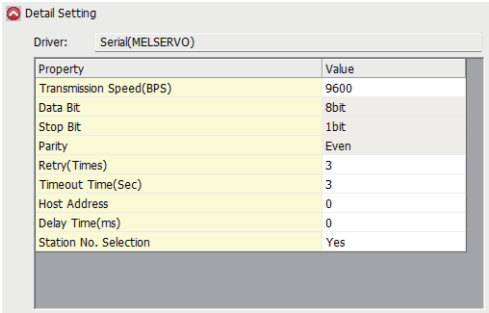
4. When you have completed the settings, click the [OK] button.

Point

The controller settings can be checked in [I/F Communication Setting].
For details, refer to the following.
📖GT Designer3 (GOT3000) Screen Design Manual

■[Detail Setting]

Configure the settings according to the usage environment.



Item	Description	Range
[Driver]	This item appears when communication drivers are selectable according to the settings of [Controller Type] and [I/F].	[Serial (MELSERVO)]
[Transmission Speed]	Set this item to change the transmission speed used for communication with the connected equipment.	[9600] bps, [19200] bps, [38400] bps, [57600] bps, [115200] bps
[Data Bit]	Set this item to change the data length used for communication with the connected equipment.	[8bit]
[Stop Bit]	Specify the stop bit length for communications.	[1bit]
[Parity]	Specify whether to perform a parity check during communication, and specify the type of the parity check when necessary.	[Even]
[Retry]	Specify the number of retries to be performed during communication.	[0] times to [5] times
[Timeout Time]	Specify the time period for a communication to time out.	[1] second to [30] seconds
[Host Address]	Specify the station number of the servo amplifier in the system configuration.	[0] to [31]
[Delay Time]	Set this item to adjust the transmission timing of the communication request from the GOT.	[0] ms to [300] ms
[Station No. Selection]	Select whether to use a station number during communication.	[Yes], [No]

Point

• Communication interface settings in the utility

The communication interface setting can be changed on the utility's [Communication setting] after writing [Controller Setting] of project data.

For details on the utility, refer to the following manual.

📖GOT3000 Series User's Manual (Utility & Maintenance Functions)

• Priority of the controller settings

When the settings are configured in GT Designer3 or in the utility, the latest settings are effective.

• Disconnecting some connections of the connected controllers

By setting the GOT internal device, the GOT can disconnect some connections of the connected controllers.

For example, a faulty station with a communication timeout can be disconnected from the controller.

For details on the GOT internal device settings, refer to the following manual.

📖GT Designer3 (GOT3000) Screen Design Manual

23.1.5 Servo amplifier side settings

Model		Reference
MELSERVO-J3 series	MR-J3-□A MR-J3-□T	☞ Page 1762 Connection to MELSERVO-J3 series

Connection to MELSERVO-J3 series

Point

MELSERVO-J3 series

For details on the MELSERVO-J3 series, refer to the following manual.

📖MR-J3 Series Servo Amplifier Instruction Manual

■Parameters of the MELSERVO-J3 series

Set the parameters of the MELSERVO-J3 series.

Item	Setting value
Basic parameter No. PC20	Station number setting: 0 to 31 (Default: 0)*1
Basic parameter No. PC21	Serial communication function selection (Default: 0000) Basic parameter No. PC21 [ ][(2)][(1)][ ] 1) Serial communication baud rate selection*2 0: 9600 bps 1:19200 bps 2: 38400 bps 3: 57600 bps 4: 115200 bps 2) RS-422 communication response delay time selection 0: Disabled 1: Enabled (Responding after a delay of 800 μs or more)

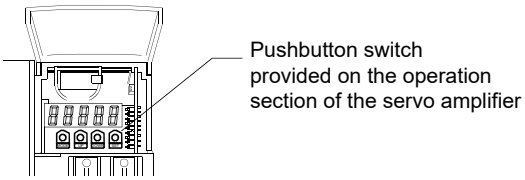
*1 Select a station number different from those of the other axes.

*2 Specify the same transmission speed as that of the GOT.
For the transmission speed setting on the GOT side, refer to the following.
☞ Page 1760 [Controller Setting]

Point

• Parameter setting

Set the parameter at the pushbutton switch provided on the operation section of the servo amplifier or setup software.



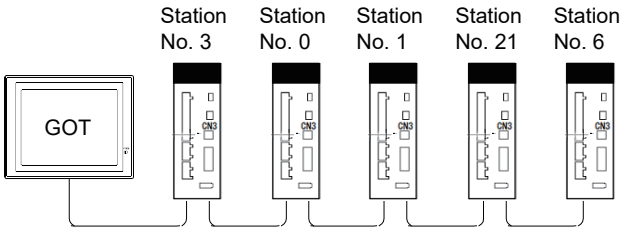
• When changing the parameter

Turn off then on the servo amplifier to be effective the new parameter.

■Station number setting

Set each station number so that no station number overlaps.

The station number can be set regardless of the cable connection order. There is no problem if station numbers are not consecutive.



Station number setting examples

- Direct specification

When setting the device, specify the station number of the servo amplifier of which data is to be changed.

Specification range
0 to 31

- Indirect specification

When setting the device, indirectly specify the station number for the servo amplifier to be changed using the 16-bit GOT internal register (GD10 to GD25).

When specifying the station number from 100 to 115 in GT Designer3, the corresponding value from GD10 to GD25 will be the station number of the servo amplifier.

Specified station No.	Corresponding device	Setting range
100	GD10	0 to 31 Setting a value outside the range causes a communication timeout error.
101	GD11	
102	GD12	
103	GD13	
104	GD14	
105	GD15	
106	GD16	
107	GD17	
108	GD18	
109	GD19	
110	GD20	
111	GD21	
112	GD22	
113	GD23	
114	GD24	
115	GD25	

- All station specification

The stations targeted for the write and read operations are different.

- All stations are targeted for the write operation.
- Station No. 0 is targeted for the read operation.

23.2 MELSERVO-J4 series (serial connection)

☞ Page 1764 Connectable devices
☞ Page 1765 System configuration
☞ Page 1767 Connection diagram
☞ Page 1770 GOT side settings
☞ Page 1772 Servo amplifier side settings

23.2.1 Connectable devices

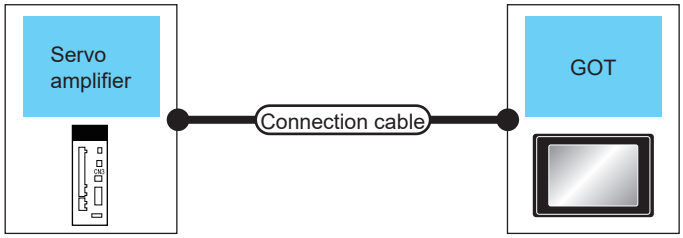
The following table shows the connectable models.

○: Supported, —: Not supported

Controller	Model	Clock	Servo amplifier side interface	Connectable model
			CN3	
MELSERVO-J4 series	MR-J4-□A MR-J4-□A-RJ	—	○	GT37 SoftGOT3000

23.2.2 System configuration

Connection to one servo amplifier



For details on the maximum length of the connection cable, refer to the following.

☞ Page 1765 Maximum length

For details on the maximum number of connected devices, refer to the following.

☞ Page 1765 Maximum number of connected devices

Servo amplifier		Communication type	Connection cable	GOT	
Controller	Interface			Interface	Model
MR-J4-□A MR-J4-□A-RJ*1*2	CN3	RS-232	DSV-CABV (1.5 m)*3 + GT35-C02HR2-9P	Built-in RS-232/422/485 interface	GT37 SoftGOT3000
			DSV-CABV (1.5 m)*3	GT37-IF2000 + GT15-RS2-9P	GT37 SoftGOT3000
		RS422	☞ Page 1757 RS-422 connection diagram (1)	Built-in RS-232/422/485 interface	GT37 SoftGOT3000
				GT37-IF2000 + GT15-RS4-9S	GT37 SoftGOT3000

*1 When using the positioning function, use the MR-J4-A-RJ servo amplifier with software version B3 or later.
*2 When using the indexer (turret) method for the positioning function, use the MR-J4-A-RJ servo amplifier with software version B3 or later.
*3 DSV-CABV is a product manufactured by Diatrend Corporation.
For details, contact Diatrend Corporation.

■Maximum length

- RS-232 cable

The maximum length of the connection cable is 1.7 m.

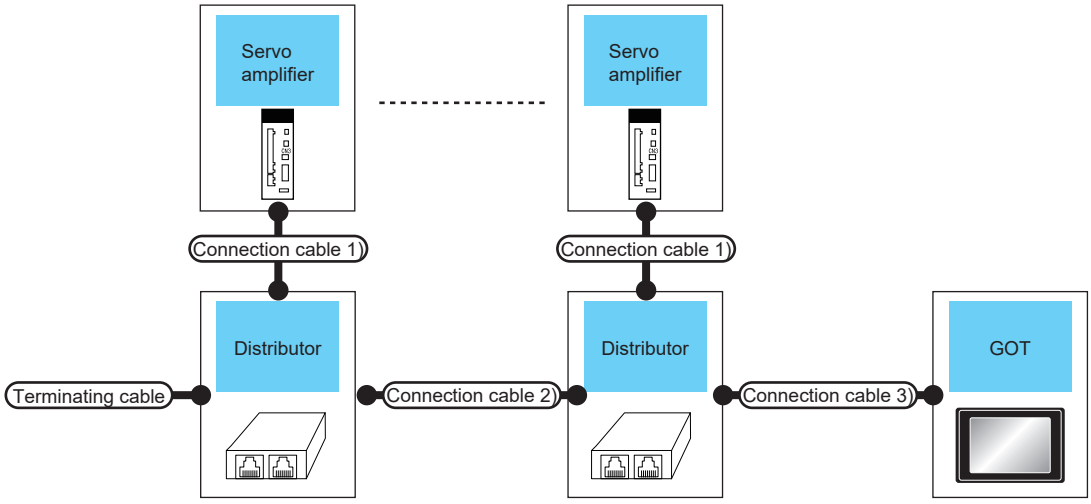
- RS422 cable

The maximum length of the connection cable is 30 m.

■Maximum number of connected devices

Only one servo amplifier can access one GOT at a time.

Connection to multiple servo amplifiers



For details on the maximum length of the connection cable, refer to the following.

☞ Page 1766 Maximum length

For details on the maximum number of connected devices, refer to the following.

☞ Page 1766 Maximum number of connected devices

Servo amplifier		Communication type	Terminating cable	Connection cable 1)	Connection cable 2)	Distributor*1	Connection cable 3)	GOT	
Controller	Interface							Interface	Model
MR-J4-□A MR-J4-□A-RJ	CN3	RS-422	☞ Page 1768 RS-422 connection diagram (4)	☞ Page 1767 RS-422 connection diagram (3)	☞ Page 1767 RS-422 connection diagram (2)	BMJ-8 (recommended)	☞ Page 1767 RS-422 connection diagram (1)	Built-in RS-232/422/485 interface	GT37 SoftGOT3000
								GT37-IF2000 + GT15-RS4-9S	GT37 SoftGOT3000

*1 The distributor is a product manufactured by HAKKO ELECTRIC CO., LTD. For details, contact HAKKO ELECTRIC CO., LTD.

■Maximum length

The maximum length of the connection cable is 30 m.

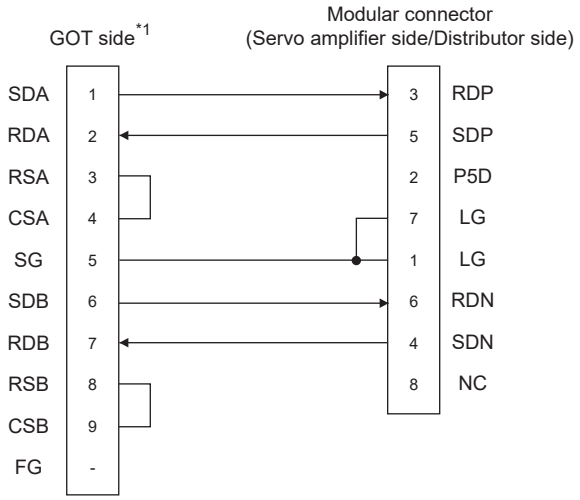
■Maximum number of connected devices

32 servo amplifiers can access one GOT at a time.

23.2.3 Connection diagram

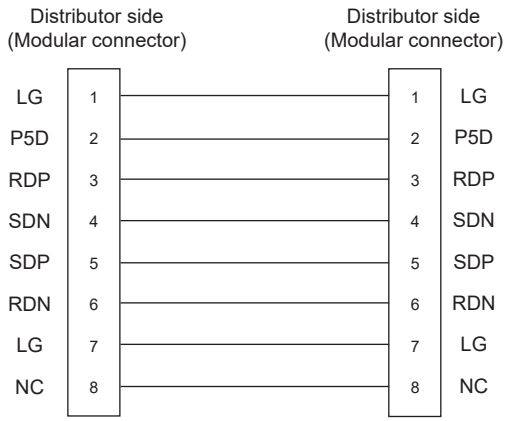
The following diagram shows the connection between the GOT and the servo amplifier.

RS-422 connection diagram (1)

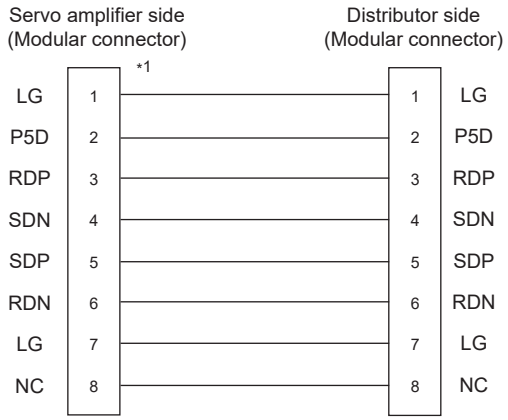


*1 For GT37 in the end position of the system configuration, set the terminating resistor so that it is not used.
☞ Page 2956 Terminating resistors of GOT

RS-422 connection diagram (2)

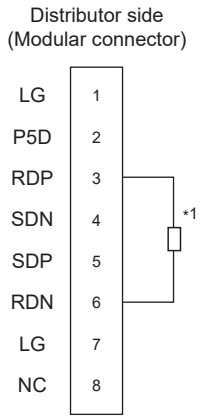


RS-422 connection diagram (3)



*1 Make the wiring between the distributor and the servo amplifier as short as possible.

RS-422 connection diagram (4)



*1 Terminate the section between RDP (pin 3) and RDN (pin 6) with a 150 Ω resistor.

Precautions when preparing a cable

- Cable length

The length of the RS-422 cable must be 30 m or less.

- GOT side connector

For the GOT side connector, refer to the following.

☞ Page 2954 GOT connector specifications

- Servo amplifier connector

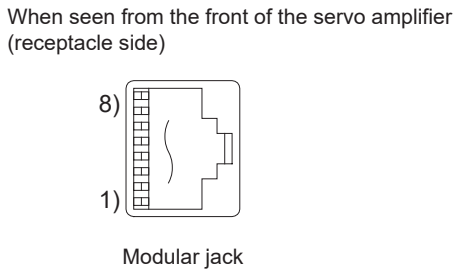
Use the connector compatible with the servo amplifier.

For details, refer to the following.

📖Instruction manual for the servo amplifier used

- Servo amplifier side modular connector

Modular connector pin arrangement



Pin No.	Signal name
1	LG
2	P5D
3	RDP
4	SDN
5	SDP
6	RDN
7	LG
8	NC

• Servo amplifier connection cable side connector

Refer to the following commercially available products for connectors and cables.

(Refer to the manual for the servo amplifier.)

Name	Model	Specifications	Manufacturer
Connector	TM10P-88P (Plug)	RJ45 connector	HIROSE ELECTRIC CO.,LTD.
Modular ceiling rosette (Distributor)	BMJ-8	-	HAKKO ELECTRIC CO.,LTD.
Cable	-	Cable conforming to EIA568 (such as cable 10BASE-T)	-

Connecting terminating resistors

When connecting the GOT and a servo amplifier, a terminating resistor must be connected to the GOT.

Set the DIP switch for terminating resistor setting so that it is not used.

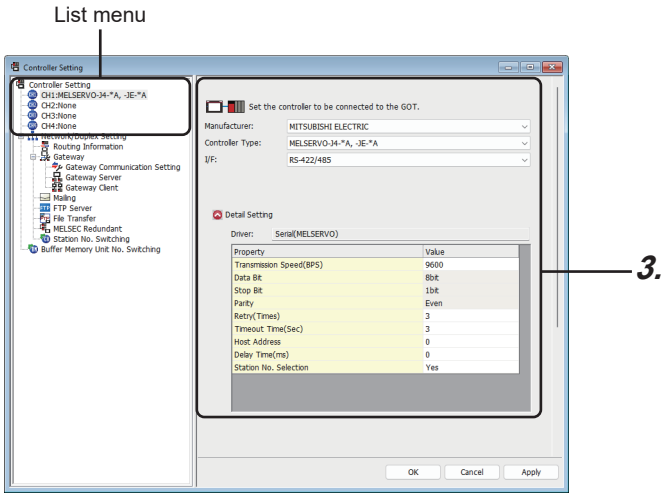
For the terminating resistor setting method, refer to the following.

☞ Page 2956 Terminating resistors of GOT

23.2.4 GOT side settings

[Controller Setting]

Set the channel of the connected controller.



Operating procedure

1. Select [Common] → [Controller Setting] from the menu.

2. In the [Controller Setting] window, select the channel number to be used from the list menu.

3. Set the following items.

Item	Description
[Manufacturer]	[MITSUBISHI ELECTRIC]
[Controller Type]	• [MELSERVO-J4-*A, -JE-*A] • [MELSERVO-J4-*A-RJ]
[I/F]	Configure the settings according to the communication format used.
[Detail Setting]	Configure the settings according to the usage environment. ☞ Page 1771 [Detail Setting]

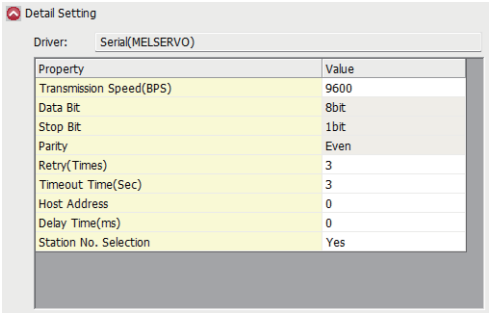
4. When you have completed the settings, click the [OK] button.

Point

The controller settings can be checked in [I/F Communication Setting].
For details, refer to the following.
📖GT Designer3 (GOT3000) Screen Design Manual

■[Detail Setting]

Configure the settings according to the usage environment.



Item	Description	Range
[Driver]	This item appears when communication drivers are selectable according to the settings of [Controller Type] and [I/F].	[Serial (MELSERVO)]
[Transmission Speed]	Set this item to change the transmission speed used for communication with the connected equipment.	[9600] bps, [19200] bps, [38400] bps, [57600] bps, [115200] bps
[Data Bit]	Set this item to change the data length used for communication with the connected equipment.	[8bit]
[Stop Bit]	Specify the stop bit length for communications.	[1bit]
[Parity]	Specify whether to perform a parity check during communication, and specify the type of the parity check when necessary.	[Even]
[Retry]	Specify the number of retries to be performed during communication.	[0] times to [5] times
[Timeout Time]	Specify the time period for a communication to time out.	[1] second to [30] seconds
[Host Address]	Specify the station number of the servo amplifier in the system configuration.	[0] to [31]
[Delay Time]	Set this item to adjust the transmission timing of the communication request from the GOT.	[0] ms to [300] ms
[Station No. Selection]	Select whether to use a station number during communication.	[Yes], [No]

Point

• Communication interface settings in the utility

The communication interface setting can be changed on the utility's [Communication setting] after writing [Controller Setting] of project data.

For details on the utility, refer to the following manual.

📖GOT3000 Series User's Manual (Utility & Maintenance Functions)

• Priority of the controller settings

When the settings are configured in GT Designer3 or in the utility, the latest settings are effective.

• Disconnecting some connections of the connected controllers

By setting the GOT internal device, the GOT can disconnect some connections of the connected controllers.

For example, a faulty station with a communication timeout can be disconnected from the controller.

For details on the GOT internal device settings, refer to the following manual.

📖GT Designer3 (GOT3000) Screen Design Manual

23.2.5 Servo amplifier side settings

Model		Reference
MELSERVO-J4 series	MR-J4-□A MR-J4-□A-RJ	☞ Page 1772 Connection to MELSERVO-J4 series

Connection to MELSERVO-J4 series

Point

MELSERVO-J4 series

For details on the MELSERVO-J4 series, refer to the following manual.

📖MR-J4 Series Servo Amplifier Instruction Manual

■Parameters of the MELSERVO-J4 series

Set the parameters of the MELSERVO-J4 series.

Item	Setting value
Basic parameter No. PC20	Station number setting: 0 to 31 (Default: 0)*1
Basic parameter No. PC21	Serial communication function selection (Default: 0000) Basic parameter No. PC21 □□(2)(1)□□ 1) Serial communication baud rate selection*2 0: 9600 bps 1:19200 bps 2: 38400 bps 3: 57600 bps 4: 115200 bps 2) RS-422 communication response delay time selection 0: Disabled 1: Enabled (Responding after a delay of 800 μs or more)

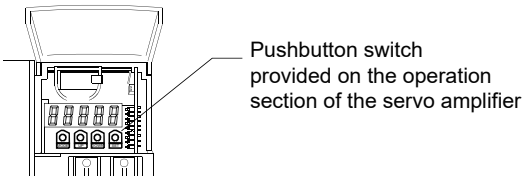
*1 Select a station number different from those of the other axes.

*2 Specify the same transmission speed as that of the GOT.
For the transmission speed setting on the GOT side, refer to the following.
☞ Page 1770 [Controller Setting]

Point

• Parameter setting

Set the parameter at the pushbutton switch provided on the operation section of the servo amplifier or setup software.



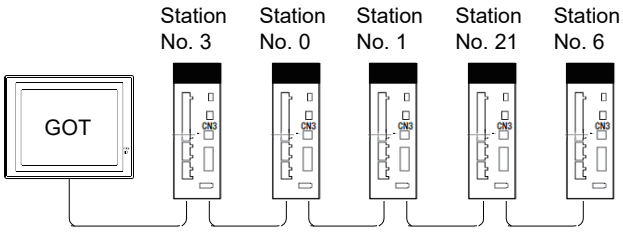
• When changing the parameter

Turn off then on the servo amplifier to be effective the new parameter.

■Station number setting

Set each station number so that no station number overlaps.

The station number can be set regardless of the cable connection order. There is no problem if station numbers are not consecutive.



Station number setting examples

- Direct specification

When setting the device, specify the station number of the servo amplifier of which data is to be changed.

Specification range
0 to 31

- Indirect specification

When setting the device, indirectly specify the station number for the servo amplifier to be changed using the 16-bit GOT internal register (GD10 to GD25).

When specifying the station number from 100 to 115 in GT Designer3, the corresponding value from GD10 to GD25 will be the station number of the servo amplifier.

Specified station No.	Corresponding device	Setting range
100	GD10	0 to 31 Setting a value outside the range causes a communication timeout error.
101	GD11	
102	GD12	
103	GD13	
104	GD14	
105	GD15	
106	GD16	
107	GD17	
108	GD18	
109	GD19	
110	GD20	
111	GD21	
112	GD22	
113	GD23	
114	GD24	
115	GD25	

- All station specification

The stations targeted for the write and read operations are different.

- All stations are targeted for the write operation.
- Station No. 0 is targeted for the read operation.

24 Connection through a PLC

☞ Page 1774 MELSERVO-J4 series (connection through a PLC)
☞ Page 1779 MELSERVO-J5, JET series (connection through a PLC)
☞ Page 1788 MELSERVO-JE-□B series (connection through a PLC)

24.1 MELSERVO-J4 series (connection through a PLC)

☞ Page 1774 Connectable devices
☞ Page 1775 System configuration
☞ Page 1778 GOT side settings

24.1.1 Connectable devices

The following table shows the connectable models.

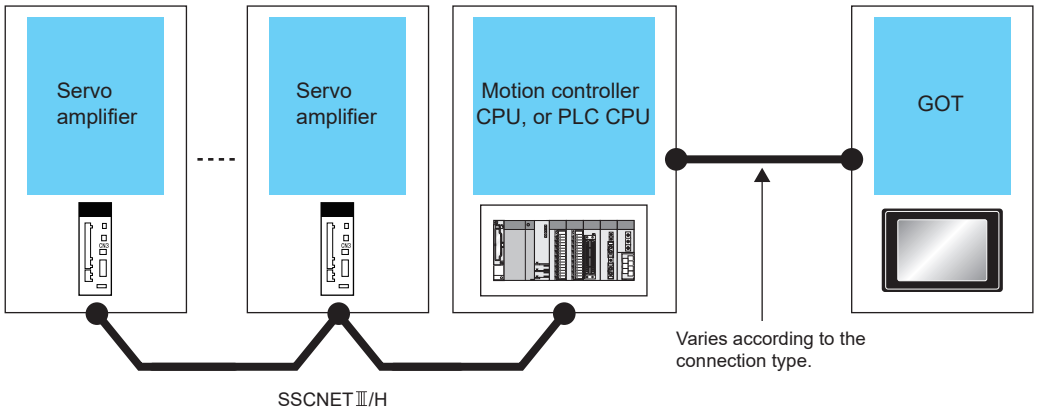
○: Supported, —: Not supported

Controller	Model	Clock	Connectable model
MELSERVO-J4	MR-J4-□B[*1*3] MR-J4-□B-RJ[*1*3] MR-J4-□B-LL[*3*4] MR-J4W2-□B[*1*3] MR-J4W3-□B[*1*3]	—	GT37 SoftGOT3000
	MR-J4-□GF[*2] MR-J4-□GF-RJ[*2]	—	GT37 SoftGOT3000

*1 Connected to the GOT through a Motion controller or Simple Motion module.
*2 Connected to the GOT through a Simple Motion module or CC-Link IE Field Network master/local module.
*3 If the models are J3-compatible, the GOT cannot monitor the servo amplifiers.
*4 Connected to the GOT through a Motion controller.

24.1.2 System configuration

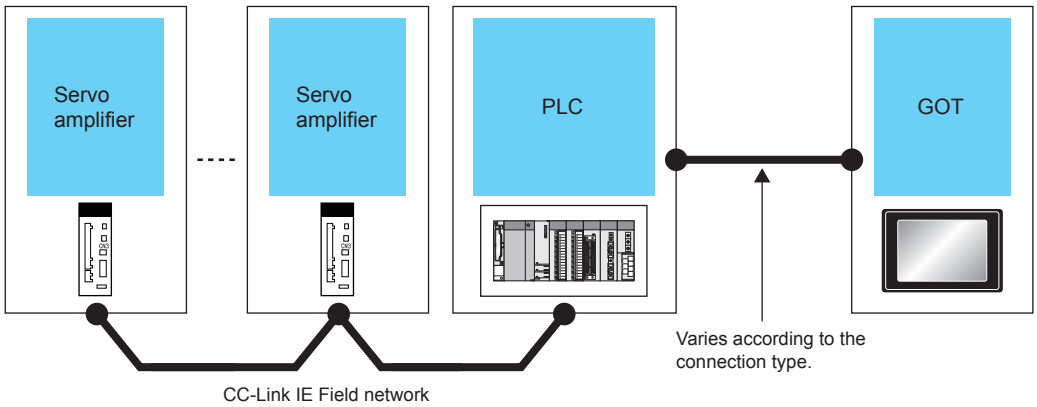
Connecting the GOT and servo amplifiers through a Motion controller or Simple Motion module



Controller	Communication type	Motion controller or PLC		Connection type*1*6	GOT		Maximum number of connected devices
		Simple Motion module or master/local module	CPU model		Interface	Model	
MR-J4-□B MR-J4-□B-RJ MR-J4W2-□B MR-J4W3-□B	SSCNETIII/H	—	RnMT Q17nDS Q170MS	For the system configuration between the GOT and the Motion controller or PLC, refer to the following. ☞ Page 61 Ethernet connection ☞ Page 518 Serial connection ☞ Page 651 USB connection ☞ Page 682 Bus connection ☞ Page 703 MELSECNET/H connection ☞ Page 921 CC-Link IE Field Network connection	*2	*2	*3
		RD77MS2 RD77MS4 RD77MS8 RD77MS16	RnCPU				
		QD77MS2*4 QD77MS4*4 QD77MS16*4	QnCPU				
		LD77MS2 LD77MS4 LD77MS16	LnCPU				
		FX5-40SSC-S FX5-80SSC-S*5	FX5CPU				
MR-J4-□B-LL		—	RnMT				

*1 The connection type depends on the CPU model.
☞ System configuration in each chapter
*2 Applicable GOTs differ depending on the connection type.
☞ System configuration in each chapter
*3 The maximum number of connected devices below depends on the connection type.
☞ System configuration in each chapter
• Number of GOTs connectable to one Motion controller or PLC
• Number of motion controllers or PLCs connectable to one GOT
*4 Use a module having a serial number starting with 15041.
*5 Use a module with software version 1.004 or later.
*6 GT SoftGOT3000 only supports Ethernet connection.

Connecting the GOT and servo amplifiers through a Simple Motion module or CC-Link IE Field network master/local module



Controller	Communication type	PLC		Connection type*1*8	GOT		Maximum number of connected devices
		Simple Motion module or master/local module	CPU model		Interface	Model	
MR-J4-□GF MR-J4-□GF-RJ	CC-Link IE Field Network*4	RD77GF4*5 RD77GF8*5 RD77GF16*5 RD77GF32	RnCPU	For the system configuration between the GOT and PLC, refer to the following. ☞ Page 61 Ethernet connection*6 ☞ Page 518 Serial connection ☞ Page 682 Bus connection ☞ Page 703 MELSECNET/H connection*6 ☞ Page 743 CC-Link IE TSN connection*6 ☞ Page 845 CC-Link IE Controller Network connection*6 ☞ Page 921 CC-Link IE Field Network connection*4*7 ☞ Page 1018 CC-Link connection (intelligent device station)	*2	*2	*3
		QD77GF4*5 QD77GF8*5 QD77GF16*5	QnCPU				
		RnENCPU	RnCPU				
		RJ71EN71 RJ71GF11-T2	RnCPU				
		QJ71GF11-T2*5	QnCPU				
		LJ71GF11-T2*5	LnCPU				

*1 The connection type depends on the CPU model.
☞ System configuration in each chapter

*2 Applicable GOTs differ depending on the connection type.
☞ System configuration in each chapter

*3 The maximum number of connected devices below depends on the connection type.
☞ System configuration in each chapter
• Number of GOTs connectable to one PLC
• Number of PLCs connectable to one GOT

*4 When connecting the GOT and PLC using the CC-Link IE Field Network connection and then connecting a servo amplifier, connect the servo amplifier through a CC-Link IE Field Network master/local module (master station).
In this case, a different network will be accessed, so the routing must be set.

*5 Use one with its version shown below or later.

Simple Motion module or master/local module	Motion mode	I/O mode
RD77GF4, RD77GF8, RD77GF16	Software version [01] or later	Software version [02] or later
RD77GF32	From the first product	From the first product
QD77GF4, QD77GF8, QD77GF16	From the first product	First 5 digits of serial No. 18022 or higher
QJ71GF11-T2	—	First 5 digits of serial No. 14102 or higher
LJ71GF11-T2	—	First 5 digits of serial No. 14102 or higher

*6 To monitor other networks, routing parameter settings are necessary.
For the routing parameter settings, refer to the following.
☞ Routing parameter settings described in each chapter
*7 Use a CC-Link IE Field Network communication unit (GT15-J71GF13-T2) with function version C or later.
*8 GT SoftGOT3000 only supports Ethernet connection.

24.1.3 GOT side settings

The GOT settings differ depending on the connection type.

For details on the GOT side settings, refer to the following.

☞ Page 61 Ethernet connection
☞ Page 518 Serial connection
☞ Page 651 USB connection
☞ Page 682 Bus connection
☞ Page 703 MELSECNET/H connection
☞ Page 743 CC-Link IE TSN connection
☞ Page 845 CC-Link IE Controller Network connection
☞ Page 921 CC-Link IE Field Network connection
☞ Page 1018 CC-Link connection (intelligent device station)

24.2 MELSERVO-J5, JET series (connection through a PLC)

☞ Page 1779 Connectable devices
☞ Page 1780 System configuration
☞ Page 1787 GOT side settings

24.2.1 Connectable devices

The following table shows the connectable models.

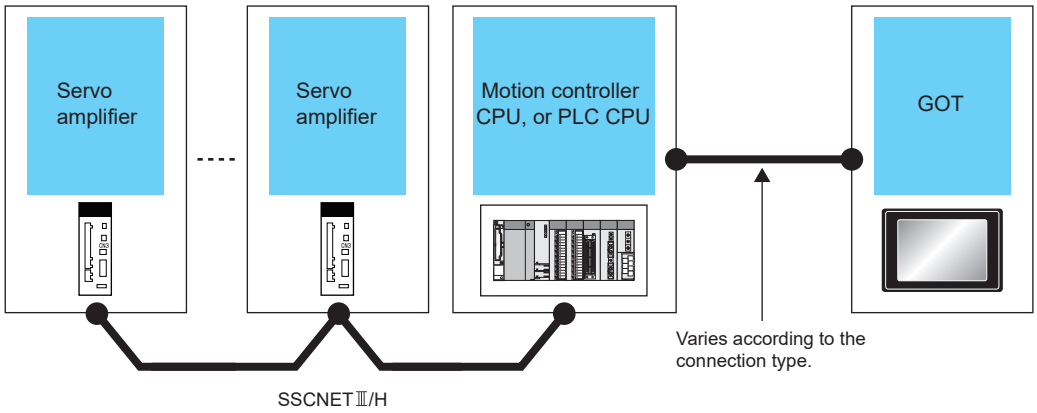
○: Supported, —: Not supported

Controller	Model	Clock	Connectable model
MELSERVO-J5	MR-J5-□B MR-J5-□B-RJ MR-J5-□B-LL MR-J5W2-□B MR-J5W3-□B	—	GT37 SoftGOT3000
	MR-J5-□G*1 MR-J5-□G-RJ*1 MR-J5W2-□G*1 MR-J5W3-□G*1 MR-J5D1-□G*1 MR-J5D2-□G4*1 MR-J5D3-□G4*1	—	GT37 SoftGOT3000
MELSERVO-JET	MR-JET-□G*1	—	GT37 SoftGOT3000

*1 Connected to the GOT through a Simple Motion module or CC-Link IE TSN master/local module.

24.2.2 System configuration

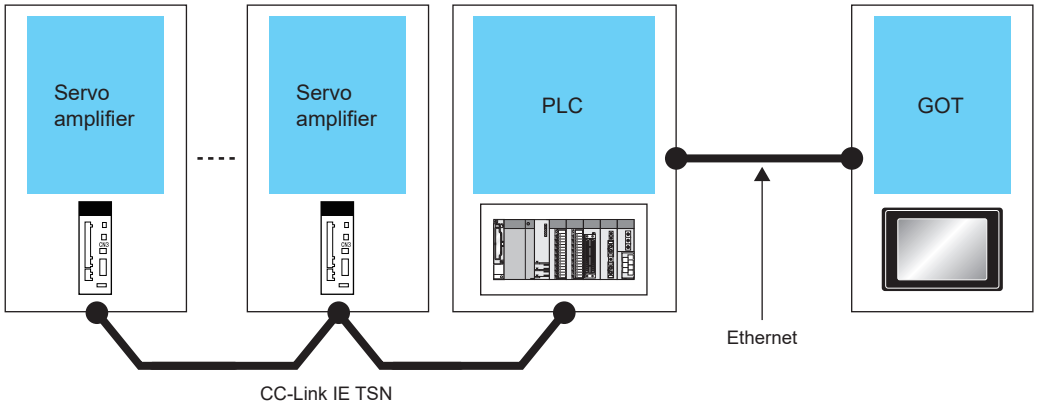
Connecting the GOT and servo amplifiers through a Motion controller or Simple Motion module



Controller	Communication type	Motion controller or PLC		Connection type*1*7	GOT		Maximum number of connected devices
		Simple Motion module	CPU model		Interface	Model	
MR-J5-□B MR-J5-□B-RJ MR-J5W2-□B MR-J5W3-□B	SSCNETIII/H	—	RnMT Q17nDS*5 Q170MS	For the system configuration between the GOT and the Motion controller or PLC, refer to the following. ☞ Page 61 Ethernet connection ☞ Page 518 Serial connection ☞ Page 651 USB connection ☞ Page 682 Bus connection ☞ Page 703 MELSECNET/H connection ☞ Page 845 CC-Link IE Controller Network connection ☞ Page 921 CC-Link IE Field Network connection ☞ Page 1018 CC-Link connection (intelligent device station)	*2	*2	*3
		RD77MS2*6 RD77MS4*6 RD77MS8*6 RD77MS16*6	RnCPU				
		QD77MS2*4 QD77MS4*4 QD77MS16*4	QnCPU				
MR-J5-□B-LL		—	RnMT				

*1 The connection type depends on the CPU model.
☞ System configuration in each chapter
*2 Applicable GOTs differ depending on the connection type.
☞ System configuration in each chapter
*3 The maximum number of connected devices below depends on the connection type.
☞ System configuration in each chapter
• Number of GOTs connectable to one Motion controller or PLC
• Number of motion controllers or PLCs connectable to one GOT
*4 Use a module having a serial number starting with 23092.
*5 Use a module with OS software version 00Y or later.
*6 Use a module with software version 13 or later.
*7 GT SoftGOT3000 only supports Ethernet connection.

Connecting the GOT and servo amplifiers through a Motion module



For details on the maximum number of connected devices, refer to the following.

☞ Page 1782 Maximum number of connected devices

Controller	Communication type	PLC		Connection type	GOT	
		Motion module*4	CPU model		Interface	Model
MR-J5-□G MR-J5-□G-RJ MR-J5W2-□G MR-J5W3-□G MR-J5D1-□G4 MR-J5D2-□G4 MR-J5D3-□G4 MR-JET-□G	CC-Link IE TSN	RD78G4 RD78G8 RD78G16 RD78G32 RD78G64 RD78GHV RD78GHW	RnCPU*1 RnENCPU*1 R12CCPU-V*1	For the system configuration between the GOT and PLC, refer to the following. ☞ Page 188 MELSEC iQ-R series (Built-in Ethernet port connection)*3	Built-in Ethernet interface of GOT	GT37 SoftGOT3000
		FX5-40SSC-G FX5-80SSC-G	FX5U*2 FX5UC*2	For the system configuration between the GOT and PLC, refer to the following. ☞ Page 291 MELSEC iQ-F series (Built-in Ethernet port connection)*3	Built-in Ethernet interface of GOT	GT37 SoftGOT3000

*1 Select either of the following for [Unit Type] in [Connected Ethernet Controller Setting] in GT Designer3.
- For RnCPU or RnENCPU: [RCPU]
- For R12CCPU-V: [RnCCPU/RnWCPU]

Set either of the following values for [Port No.].
- UDP: [5006]
- TCP: [5007]

For [Connected Ethernet Controller Setting] in GT Designer3, refer to the following.
☞ Page 205 [Connected Ethernet Controller Setting]

*2 Select [FX5CPU] for [Unit Type] in [Connected Ethernet Controller Setting] in GT Designer3.
For [Connected Ethernet Controller Setting] in GT Designer3, refer to the following.
☞ Page 301 [Connected Ethernet Controller Setting]

*3 To monitor other networks, routing parameter settings are necessary.
For the routing parameter settings, refer to the following.
- For MELSEC iQ-R
☞ Page 208 Routing parameter settings
- For MELSEC iQ-F
☞ Page 302 Routing parameter settings

*4 When monitoring a servo amplifier through a Motion module, the available mode on the servo amplifier varies depending on the firmware version of the Motion module to be used.
The following shows the details.

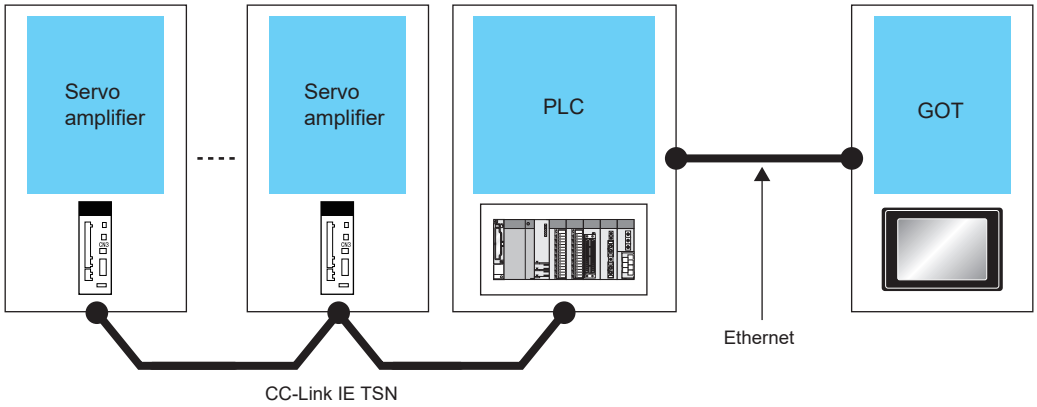
Motion module	Motion mode	Simple Motion mode
RD78G4 RD78G8 RD78G16	From the first product	Firmware version 16 or later
RD78G32 RD78G64	From the first product	Unavailable
RD78GHV RD78GHW	From the first product	Unavailable
FX5-40SSC-G FX5-80SSC-G	Unavailable	From the first product

■Maximum number of connected devices

Only one GOT can access one Motion module at a time.

Before accessing the Motion module being monitored by the GOT, end the monitoring by the GOT.

Connecting the GOT and servo amplifiers through a CC-Link IE TSN-equipped module



Controller	Communication type	PLC		Connection type	GOT		Maximum number of connected devices
		CC-Link IE TSN-equipped module	CPU model*1		Interface	Model	
MR-J5-□G*6 MR-J5-□G-RJ*6 MR-J5W2-□G*6 MR-J5W3-□G*6 MR-J5D1-□G4*6 MR-J5D2-□G4*6 MR-J5D3-□G4*6 MR-JET-□G*6	CC-Link IE TSN	RJ71GN11-T2*4	RnCPU RnENCPU RnSFCPU R12CCPU-V R102WCPU-W	For the system configuration between the GOT and PLC, refer to the following. ☞ Page 188 MELSEC iQ-R series (Built-in Ethernet port connection)*2	Built-in Ethernet interface of GOT	GT37 SoftGOT3000	*3
		RJ71GN11-EIP*5	RnCPU RnENCPU	For the system configuration between the GOT and PLC, refer to the following. ☞ Page 188 MELSEC iQ-R series (Built-in Ethernet port connection)*2	Built-in Ethernet interface of GOT	GT37 SoftGOT3000	
		RJ71GN11-T2 RJ71GN11-EIP*5	MXR300-16 MXR300-32 MXR300-64 MXR500-128 MXR500-256	For the system configuration between the GOT and PLC, refer to the following. ☞ Page 62 MELSEC MX Controller (MX-R Model) (Built-in Ethernet port connection)*2	Built-in Ethernet interface of GOT	GT37 SoftGOT3000	
		FX5-CCLGN-MS	MXF100-8-N32 MXF100-8-P32 MXF100-16-N32 MXF100-16-P32	For the system configuration between the GOT and PLC, refer to the following. ☞ Page 125 MELSEC MX Controller (MX-F Model) (Built-in Ethernet port connection)*2	Built-in Ethernet interface of GOT	GT37 SoftGOT3000	

*1 For [Connected Ethernet Controller Setting] in GT Designer3, refer to the following.
- For MELSEC MX Controller (MX-R Model)
☞ Page 73 [Connected Ethernet Controller Setting]
- For MELSEC MX Controller (MX-F Model)
☞ Page 136 [Connected Ethernet Controller Setting]
- For MELSEC iQ-R series
☞ Page 205 [Connected Ethernet Controller Setting]

*2 To monitor other networks, routing parameter settings are necessary.
For the routing parameter settings, refer to the following.
- For MELSEC MX Controller (MX-R Model)
☞ Page 75 Routing parameter settings
- For MELSEC MX Controller (MX-F Model)
☞ Page 138 Routing parameter settings
- For MELSEC iQ-R series
☞ Page 208 Routing parameter settings

*3 For details on the maximum number of connected devices, refer to the following.
- For MELSEC MX Controller (MX-R Model)
☞ Page 97 Connection to CC-Link IE TSN-equipped module
- For MELSEC MX Controller (MX-F Model)
☞ Page 161 Connection to CC-Link IE TSN-equipped module
- For MELSEC iQ-R series
☞ Page 248 Connection to CC-Link IE TSN-equipped module

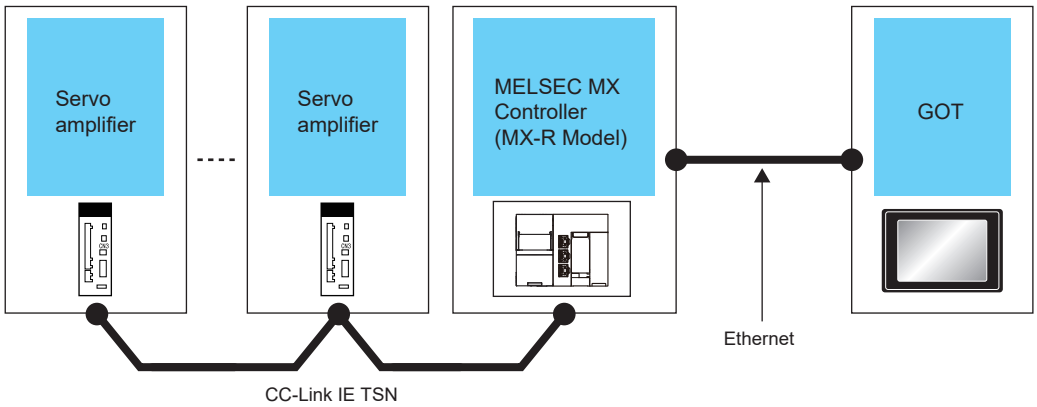
*4 Use the CC-Link IE TSN master/local module (RJ71GN11-T2) with firmware version 11 or later.

*5 Connect the cable to the P1 port of the RJ71GN11-EIP.

*6 Use a servo amplifier with firmware version as shown below.

Servo amplifier	Applicable firmware version
MR-J5-□G MR-J5-□G-RJ MR-J5W2-□G MR-J5W3-□G MR-JET-□G	B9 or later
MR-J5D1-□G4 MR-J5D2-□G4 MR-J5D3-□G4	C0 or later

Connecting the GOT and servo amplifiers through a MELSEC MX Controller (MX-R Model)



Controller	Communication type	PLC	Connection type	GOT		Maximum number of connected devices
		MELSEC MX Controller (MX-R Model)*1*4		Interface	Model	
MR-J5-□G MR-J5-□G-RJ MR-J5W2-□G MR-J5W3-□G MR-J5D1-□G4 MR-J5D2-□G4 MR-J5D3-□G4 MR-JET-□G	CC-Link IE TSN	MXR300-16 MXR300-32 MXR300-64 MXR500-128 MXR500-256	For the system configuration between the GOT and PLC, refer to the following. ☞ Page 62 MELSEC MX Controller (MX-R Model) (Built-in Ethernet port connection)*2	Built-in Ethernet interface of GOT	GT37 SoftGOT3000	*3

*1 Select either of the following for [Unit Type] in [Connected Ethernet Controller Setting] in GT Designer3.
- [MX-R(Ethernet)]
- [MX-R(Ethernet Encryption)]

Set [Port No.] as follows according to [Communication].
- UDP: [5006]
- TCP: [5007]
- TLS: Arbitrary port No.
- DTLS: Arbitrary port No.

For [Connected Ethernet Controller Setting] in GT Designer3, refer to the following.
☞ Page 73 [Connected Ethernet Controller Setting]

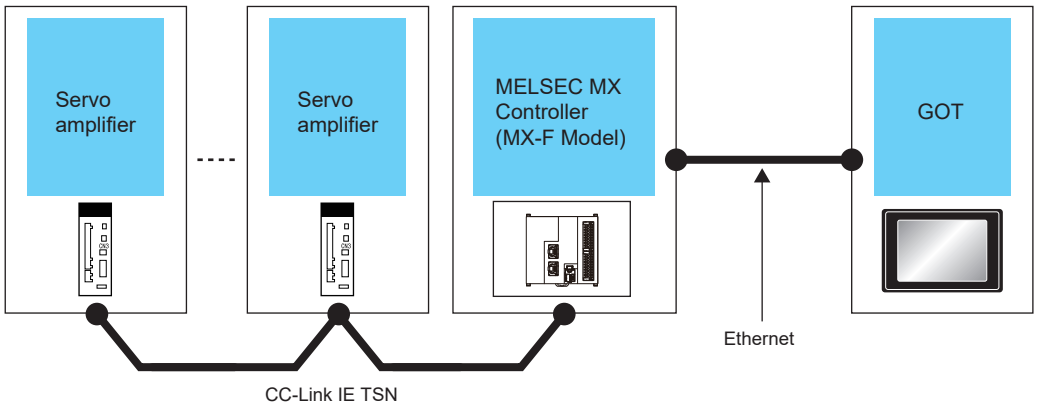
*2 To monitor other networks, routing parameter settings are necessary.
For the routing parameter settings, refer to the following.
☞ Page 75 Routing parameter settings

*3 For details on the maximum number of connected devices, refer to the following.
☞ Page 63 System configuration

*4 When monitoring the servo amplifiers through the MELSEC MX Controller (MX-R Model), the available mode for the servo amplifiers varies depending on the firmware version of the MELSEC MX Controller (MX-R Model) to be used.
The following shows the details.

MELSEC MX Controller (MX-R Model)	PLCopen Motion control FB mode	Simple Motion mode
MXR300-16 MXR300-32 MXR300-64 MXR500-128 MXR500-256	From the first product	Unavailable

Connecting the GOT and servo amplifiers through a MELSEC MX Controller (MX-F Model)



Controller	Communication type	PLC	Connection type	GOT		Maximum number of connected devices
		MELSEC MX Controller (MX-F Model)*1*4		Interface	Model	
MR-J5-□G MR-J5-□G-RJ MR-J5W2-□G MR-J5W3-□G MR-J5D1-□G4 MR-J5D2-□G4 MR-J5D3-□G4 MR-JET-□G	CC-Link IE TSN	MXF100-8-N32 MXF100-8-P32 MXF100-16-N32 MXF100-16-P32	For the system configuration between the GOT and PLC, refer to the following. ☞ Page 125 MELSEC MX Controller (MX-F Model) (Built-in Ethernet port connection)*2	Built-in Ethernet interface of GOT	GT37 SoftGOT3000	*3

*1 Select either of the following for [Unit Type] in [Connected Ethernet Controller Setting] in GT Designer3.
- [MX-F(Ethernet)]
- [MX-F(Ethernet Encryption)]

Set [Port No.] as follows according to [Communication].
- UDP: [5006]
- TCP: [5007]
- TLS: Arbitrary port No.
- DTLS: Arbitrary port No.

For [Connected Ethernet Controller Setting] in GT Designer3, refer to the following.
☞ Page 136 [Connected Ethernet Controller Setting]

*2 To monitor other networks, routing parameter settings are necessary.
For the routing parameter settings, refer to the following.
☞ Page 138 Routing parameter settings

*3 For details on the maximum number of connected devices, refer to the following.
☞ Page 126 System configuration

*4 When monitoring the servo amplifiers through the MELSEC MX Controller (MX-F Model), the available mode for the servo amplifiers varies depending on the firmware version of the MELSEC MX Controller (MX-F Model) to be used.
The following shows the details.

MELSEC MX Controller (MX-F Model)	PLCopen Motion control FB mode	Simple Motion mode
MXF100-8-N32 MXF100-8-P32 MXF100-16-N32 MXF100-16-P32	From the first product	Unavailable

24.2.3 GOT side settings

The GOT settings differ depending on the connection type between the relay module and the GOT.

For details on the GOT side settings, refer to the following.

☞ Page 61 Ethernet connection
☞ Page 518 Serial connection
☞ Page 651 USB connection
☞ Page 682 Bus connection
☞ Page 703 MELSECNET/H connection
☞ Page 845 CC-Link IE Controller Network connection
☞ Page 921 CC-Link IE Field Network connection
☞ Page 1018 CC-Link connection (intelligent device station)

24.3 MELSERVO-JE-□B series (connection through a PLC)

☞ Page 1788 Connectable devices
☞ Page 1789 System configuration
☞ Page 1790 GOT side settings

24.3.1 Connectable devices

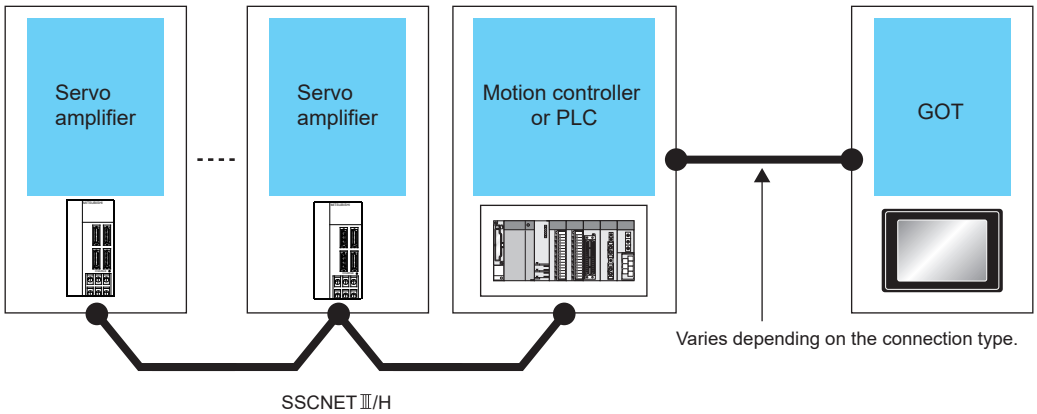
The following table shows the connectable models.

○: Supported, —: Not supported

Controller	Model	Clock	Connectable model
MELSERVO-JE	MR-JE-□B*1 MR-JE-□BF*1	—	GT37 SoftGOT3000

*1 Connected to the GOT through a Motion controller or Simple Motion module.

24.3.2 System configuration



Controller	Communication type	Motion controller or PLC		Connection type*1*7	GOT		Maximum number of connected devices
		Simple Motion module	CPU model		Interface	Model	
MR-JE-□B MR-JE-□BF	SSCNETIII/H	RD77MS2*4 RD77MS4*4 RD77MS8*4 RD77MS16*4	RnCPU	For the system configuration between the GOT and the Motion controller or PLC, refer to the following. ☞ Page 61 Ethernet connection ☞ Page 518 Serial connection ☞ Page 651 USB connection ☞ Page 682 Bus connection ☞ Page 703 MELSECNET/H connection ☞ Page 845 CC-Link IE Controller Network connection ☞ Page 921 CC-Link IE Field Network connection ☞ Page 1018 CC-Link connection (intelligent device station)	*2	*2	*3
		QD77MS2*5 QD77MS4*5 QD77MS16*5	QnCPU				
		LD77MS2*5 LD77MS4*5 LD77MS16*5	LnCPU				
		FX5-40SSC-S FX5-80SSC-S*6	FX5CPU				

*1 The connection type depends on the CPU model.
☞ System configuration in each chapter
*2 Applicable GOTs differ depending on the connection type.
☞ System configuration in each chapter
*3 The maximum number of connected devices below depends on the connection type.
☞ System configuration in each chapter
• Number of GOTs connectable to one Motion controller or PLC
• Number of motion controllers or PLCs connectable to one GOT
*4 Use the firmware version later than 3.
*5 Use a module having a serial number starting with 16102.
*6 Use a module with software version 1.004 or later.
*7 GT SoftGOT3000 only supports Ethernet connection.

24.3.3 GOT side settings

The GOT settings differ depending on the connection type between the relay module and the GOT.
For details on the GOT side settings, refer to the following.

☞ Page 61 Ethernet connection
☞ Page 518 Serial connection
☞ Page 651 USB connection
☞ Page 682 Bus connection
☞ Page 703 MELSECNET/H connection
☞ Page 845 CC-Link IE Controller Network connection
☞ Page 921 CC-Link IE Field Network connection
☞ Page 1018 CC-Link connection (intelligent device station)

25 Settable device range

This chapter describes the range of devices settable in GT Designer3.
The settable range varies with the selection for [Controller Type] in the [Controller Setting] window.
Configure the device setting according to the specifications of the controller to be used.
Device specifications differ depending on the controller model even among the controllers of the same series.
If a nonexistent device or a device number out of the range is set for an object, other objects for which correct devices are set may not be monitored.

☞ Page 1792 [MELSERVO-J3-*A]
☞ Page 1804 [MELSERVO-J3-*T]
☞ Page 1818 [MELSERVO-J4-*A, -JE-*A]
☞ Page 1838 [MELSERVO-J4-*A-RJ]
☞ Page 1862 [MELSERVO-JE-*C]
☞ Page 1881 [MELSERVO-J5(W)-*G(-RJ), -JET-*G]
☞ Page 1917 [MELSEC MX Controller]
☞ Page 1917 [MELSEC iQ-R, RnMT/NC/RT, CR800-D]
☞ Page 1917 [MELSEC iQ-F]
☞ Page 1917 [MELSEC-Q/QS, Q17nD/M/NC/DR/DSR, CRnD-700]
☞ Page 1917 [MELSEC-L]

25.1 Device setting dialog (Mitsubishi Electric equipment)

For the device setting dialog, refer to the following.

☞ Page 1189 Device setting dialog (Mitsubishi Electric equipment)

25.2 [MELSERVO-J3-*A]

GT37 SoftGOT3000

Item	Reference
Specifications of bit devices	☞ Page 1792 Monitoring-supported bit devices ([MELSERVO-J3-*A])
	☞ Page 1792 Availability of writing/reading data to/from bit devices ([MELSERVO-J3-*A])
Specifications of word devices	☞ Page 1793 Monitoring-supported word devices ([MELSERVO-J3-*A])
	☞ Page 1793 Availability of writing/reading data to/from word devices ([MELSERVO-J3-*A])
Specifications of double-word devices	☞ Page 1794 Monitoring-supported double-word devices ([MELSERVO-J3-*A])
	☞ Page 1794 Availability of writing/reading data to/from double-word devices ([MELSERVO-J3-*A])
Specifications of virtual servo amplifier devices	☞ Page 1795 Virtual servo amplifier devices ([MELSERVO-J3-*A])
	☞ Page 1802 Precautions for virtual servo amplifier devices ([MELSERVO-J3-*A])

25.2.1 Monitoring-supported bit devices ([MELSERVO-J3-*A])

The following table shows monitoring-supported virtual bit devices for servo amplifiers.

To check whether writing/reading data to/from each device is available, refer to the following.

☞ Page 1792 Availability of writing/reading data to/from bit devices ([MELSERVO-J3-*A])

For details on virtual servo amplifier devices, refer to the following.

☞ Page 1795 Virtual servo amplifier devices ([MELSERVO-J3-*A])

○: Available

×: Not available

Device name		Device No. representation	Setting range	Specifications of EG devices*1	
				Assignment to EG devices	Access using a client
SP	Servo amplifier request	Decimal	0 to 6	×	×
OM	Operation mode selection	Decimal	0 to 4	×	×
TMB	Instruction demand (for test operation)	Decimal	1 to 6	×	×

*1 For the devices assigned to EG devices (gateway devices) and the compatible clients, refer to the following.
📖GT Designer3 (GOT3000) Screen Design Manual

25.2.2 Availability of writing/reading data to/from bit devices ([MELSERVO-J3-*A])

The following shows the availability of writing/reading data to/from bit devices by device type.

When the device type is other than the bit type, set the device No. in multiples of 16.

R/W: Both read and write

R/-: Read only

-/W: Write only

-/-: No read/write access

Device name	Device type				
	Bit	Byte (8 bits)	Word (16 bits)	Double-word (32 bits)	Quad-word (64 bits)
SP	-/W	-/-	-/-	-/-	-/-
OM	-/W	-/-	-/-	-/-	-/-
TMB	-/W	-/-	-/-	-/-	-/-

25.2.3 Monitoring-supported word devices ([MELSERVO-J3-*A])

The following table shows monitoring-supported virtual word devices for servo amplifiers.

To check whether writing/reading data to/from each device is available, refer to the following.

☞ Page 1793 Availability of writing/reading data to/from word devices ([MELSERVO-J3-*A])

For details on virtual servo amplifier devices, refer to the following.

☞ Page 1795 Virtual servo amplifier devices ([MELSERVO-J3-*A])

○: Available

×: Not available

Device name		Device No. representation	Setting range	Specifications of EG devices*1	
				Assignment to EG devices	Access using a client
PA	Basic parameter	Decimal	1 to 19 1001 to 1019	○	×
PB	Gain filter parameter	Decimal	1 to 45 1001 to 1045	○	×
PC	Extension setting parameter	Decimal	1 to 50 1001 to 1050	○	×
PD	I/O setting parameter	Decimal	1 to 30 1001 to 1030	○	×
ST	Status display	Decimal	1 to 14	○	×
AL	Alarm (current alarm)	Decimal	0 to 1 11 to 25	○	×
AL	Alarm (alarm history)	Decimal	200 to 205 210 to 215 230 to 235	○	×
DI	External input signal	Decimal	0 to 2	×	×
DO	External output signal	Decimal	0 to 1	×	×

*1 For the devices assigned to EG devices (gateway devices) and the compatible clients, refer to the following.
GT Designer3 (GOT3000) Screen Design Manual

25.2.4 Availability of writing/reading data to/from word devices ([MELSERVO-J3-*A])

The following shows the availability of writing/reading data to/from word devices by device type.

R/W: Both read and write

R/-: Read only

-/W: Write only

-/-: No read/write access

Device name	Device type			
	Word (16 bits)	Double-word (32 bits)	Quad-word (64 bits)	Bit of word data
PA	R/W	R/W	-/-	-/-
PB	R/W	R/W	-/-	-/-
PC	R/W	R/W	-/-	-/-
PD	R/W	R/W	-/-	-/-
ST	R/-	R/-	-/-	-/-
AL	R/-	R/-	-/-	-/-
DI*1	R/-	R/W	-/-	-/-
DO	R/-	R/-	-/-	-/-

*1 Only reading is available for DI0 to DI3.

25.2.5 Monitoring-supported double-word devices ([MELSERVO-J3-*A])

The following table shows monitoring-supported virtual double-word devices for servo amplifiers.

To check whether writing/reading data to/from each device is available, refer to the following.

☞ Page 1794 Availability of writing/reading data to/from double-word devices ([MELSERVO-J3-*A])

For details on virtual servo amplifier devices, refer to the following.

☞ Page 1795 Virtual servo amplifier devices ([MELSERVO-J3-*A])

○: Available

×: Not available

Device name		Device No. representation	Setting range	Specifications of EG devices*1	
				Assignment to EG devices	Access using a client
TMI	Input signal for test operation (for test operation)	Decimal	0	×	×
TMO	Forced output of signal pin (for test operation)	Decimal	0	×	×
TMD	Set data (for test operation)	Decimal	0 to 1, 3	×	×

*1 For the devices assigned to EG devices (gateway devices) and the compatible clients, refer to the following.
GT Designer3 (GOT3000) Screen Design Manual

25.2.6 Availability of writing/reading data to/from double-word devices ([MELSERVO-J3-*A])

The following shows the availability of writing/reading data to/from double-word devices by device type.

R/W: Both read and write

R/-: Read only

-/W: Write only

-/-: No read/write access

Device name	Device type			
	Word (16 bits)	Double-word (32 bits)	Quad-word (64 bits)	Bit of word data
TMI	-/-	-/W	-/-	-/-
TMO	-/-	-/W	-/-	-/-
TMD	-/-	-/W	-/-	-/-

25.2.7 Virtual servo amplifier devices ([MELSERVO-J3-*A])

The following shows the correspondence between the virtual devices used in the GOT and the servo amplifier data.

Virtual device name	Reference
SP	☞ Page 1795 Servo amplifier request ([MELSERVO-J3-*A])
OM	☞ Page 1795 Operation mode selection ([MELSERVO-J3-*A])
TMB	☞ Page 1796 Instruction demand (for test operation) ([MELSERVO-J3-*A])
PA	☞ Page 1796 Basic parameter ([MELSERVO-J3-*A])
PB	☞ Page 1797 Gain filter parameter ([MELSERVO-J3-*A])
PC	☞ Page 1798 Extension setting parameter ([MELSERVO-J3-*A])
PD	☞ Page 1799 I/O setting parameter ([MELSERVO-J3-*A])
ST	☞ Page 1799 Status display ([MELSERVO-J3-*A])
AL	☞ Page 1800 Alarm ([MELSERVO-J3-*A])
DI	☞ Page 1800 External input signal ([MELSERVO-J3-*A])
DO	☞ Page 1800 External output signal ([MELSERVO-J3-*A])
TMI	☞ Page 1801 Input signal for test operation (for test operation) ([MELSERVO-J3-*A])
TMO	☞ Page 1801 Forced output of signal pin (for test operation) ([MELSERVO-J3-*A])
TMD	☞ Page 1801 Set data (for test operation) ([MELSERVO-J3-*A])

Servo amplifier request ([MELSERVO-J3-*A])

Virtual device name	Name	Symbol
SP0	Status display data clear	—
SP1	Current alarm clear	—
SP2	Alarm history clear	—
SP3	External input signal prohibited	—
SP4	External output signal prohibited	—
SP5	External input signal resumed	—
SP6	External output signal resumed	—

When using the servo amplifier request, note the following.

Precautions	Description
When setting a device for a bit switch	Do not select [Alternate] for [Switch Action] of the bit switch.

Operation mode selection ([MELSERVO-J3-*A])

Virtual device name	Name	Symbol
OM0	Normal mode (not test operation mode)	—
OM1	JOG operation	—
OM2	Positioning operation	—
OM3	Motorless operation	—
OM4	Output signal (DO) forced output	—

When using the operation mode selection, note the following.

Precautions	Description
When setting a device for a bit switch	Do not select [Alternate] for [Switch Action] of the bit switch.

Instruction demand (for test operation) ([MELSERVO-J3-*A])

Virtual device name	Name	Symbol
TMB1	Temporary stop command	—
TMB2	Test operation (positioning operation) start command	—
TMB3	Forward rotation direction	—
TMB4	Reverse rotation direction	—
TMB5	Restart for remaining distance	—
TMB6	Remaining distance clear	—

When using the instruction demand (for test operation), note the following.

Precautions	Description
When setting a device for a bit switch	Do not select [Alternate] for [Switch Action] of the bit switch.

Basic parameter ([MELSERVO-J3-*A])

Use an appropriate device according to the write destination of the servo amplifier.

- PA1 to PA50: Writing data to the RAM of a servo amplifier
- PA1001 to PA1050: Writing data to the EEPROM of a servo amplifier

For the parameters prefixed by an asterisk (*), setting becomes effective when the power is turned off once and back on after setting the parameter data.

Virtual device name	Name	Symbol
PA1, PA1001	Control mode	*STY
PA2, PA1002	Regenerative brake option	*REG
PA3, PA1003	Absolute position detection system	*ABS
PA4, PA1004	Function selection A-1	*AOP1
PA5, PA1005	Number of command input pulses per revolution	*FBP
PA6, PA1006	Electronic gear numerator (command pulse multiplication numerator)	CMX
PA7, PA1007	Electronic gear denominator (command pulse multiplication denominator)	CDV
PA8, PA1008	Auto tuning mode	ATU
PA9, PA1009	Auto tuning response	RSP
PA10, PA1010	In-position range	INP
PA11, PA1011	Forward rotation torque limit	TLP
PA12, PA1012	Reverse rotation torque limit	TLN
PA13, PA1013	Command pulse input form	*PLSS
PA14, PA1014	Rotation direction selection	*POL
PA15, PA1015	Encoder output pulses	*ENR
PA16 to PA18, PA1016 to PA1018	For manufacturer setting	—
PA19, PA1019	Parameter block	*BLK

Gain filter parameter ([MELSERVO-J3-*A])

Use an appropriate device according to the write destination of the servo amplifier.

- PB1 to PB50: Writing data to the RAM of a servo amplifier
- PB1001 to PB1050: Writing data to the EEPROM of a servo amplifier

For the parameters prefixed by an asterisk (*), setting becomes effective when the power is turned off once and back on after setting the parameter data.

Virtual device name	Name	Symbol
PB1, PB1001	Adaptive tuning mode (Adaptive filter II)	FILT
PB2, PB1002	Vibration suppression control tuning mode (advanced vibration suppression control)	VRFT
PB3, PB1003	Position command acceleration/deceleration time constant (position smoothing)	PST
PB4, PB1004	Feed forward gain	FFC
PB5, PB1005	For manufacturer setting	—
PB6, PB1006	Ratio of load inertia moment to servo motor inertia moment	GD2
PB7, PB1007	Model control gain	PG1
PB8, PB1008	Position control gain	PG2
PB9, PB1009	Speed control gain	VG2
PB10, PB1010	Speed integral compensation	VIC
PB11, PB1011	Speed differential compensation	VDC
PB12, PB1012	For manufacturer setting	—
PB13, PB1013	Machine resonance suppression filter 1	NH1
PB14, PB1014	Notch shape selection 1	NHQ1
PB15, PB1015	Machine resonance suppression filter 2	NH2
PB16, PB1016	Notch shape selection 2	NHQ2
PB17, PB1017	For manufacturer setting	—
PB18, PB1018	Low-pass filter setting	LPF
PB19, PB1019	Vibration suppression control vibration frequency setting	VRF1
PB20, PB1020	Vibration suppression control resonance frequency setting	VRF2
PB21 to PB22, PB1021 to PB1022	For manufacturer setting	—
PB23, PB1023	Low-pass filter setting	VFBF
PB24, PB1024	Slight vibration suppression control	*MVS
PB25, PB1025	Function selection B-1	*BOP1
PB26, PB1026	Gain changing selection	*CDP
PB27, PB1027	Gain switching condition	CDL
PB28, PB1028	Gain switching time constant	CDT
PB29, PB1029	Ratio of load inertia moment to servo motor after gain switching	GD2B
PB30, PB1030	Position loop gain after gain switching	PG2B
PB31, PB1031	Speed loop gain after gain switching	VG2B
PB32, PB1032	Speed integral compensation after gain switching	VICB
PB33, PB1033	Suppression control and vibration frequency setting after gain switching	VRF1B
PB34, PB1034	Suppression control and resonance frequency setting after gain switching	VRF2B
PB35 to PB45, PB1035 to PB1045	For manufacturer setting	—

Extension setting parameter ([MELSERVO-J3-*A])

Use an appropriate device according to the write destination of the servo amplifier.

- PC1 to PC50: Writing data to the RAM of a servo amplifier
- PC1001 to PC1050: Writing data to the EEPROM of a servo amplifier

For the parameters prefixed by an asterisk (*), setting becomes effective when the power is turned off once and back on after setting the parameter data.

Virtual device name	Name	Symbol
PC1, PC1001	Acceleration time constant	STA
PC2, PC1002	Deceleration time constant	STB
PC3, PC1003	S-pattern acceleration/deceleration time constant	STC
PC4, PC1004	Torque command time constant	TQC
PC5, PC1005	Internal speed command1/limit1	SC1
PC6, PC1006	Internal speed command2/limit2	SC2
PC7, PC1007	Internal speed command3/limit3	SC3
PC8, PC1008	Internal speed command4/limit4	SC4
PC9, PC1009	Internal speed command5/limit5	SC5
PC10, PC1010	Internal speed command6/limit6	SC6
PC11, PC1011	Internal speed command7/limit7	SC7
PC12, PC1012	Analog speed command maximum speed/limit maximum speed	VCM
PC13, PC1013	Analog torque command maximum output	TLC
PC14, PC1014	Analog monitor 1 output	MOD1
PC15, PC1015	Analog monitor 2 output	MOD2
PC16, PC1016	Electromagnetic brake sequence output	MBR
PC17, PC1017	Zero speed	ZSP
PC18, PC1018	Alarm history clear	*BPS
PC19, PC1019	Encoder output pulse selection	*ENRS
PC20, PC1020	Station number setting	*SNO
PC21, PC1021	Communication function selection	*SOP
PC22, PC1022	Function selection C-1	*COP1
PC23, PC1023	Function selection C-2	*COP2
PC24, PC1024	Function selection C-3	*COP3
PC25, PC1025	For manufacturer setting	—
PC26, PC1026	Function selection C-5	*COP5
PC27 to PC29, PC1027 to PC1029	For manufacturer setting	—
PC30, PC1030	Acceleration time constant 2	STA2
PC31, PC1031	Deceleration time constant 2	STB2
PC32, PC1032	Command input pulse multiplication numerator 2	CMX2
PC33, PC1033	Command input pulse multiplication numerator 3	CMX3
PC34, PC1034	Command input pulse multiplication numerator 4	CMX4
PC35, PC1035	Internal torque limit 2	TL2
PC36, PC1036	Status display selection	*DMD
PC37, PC1037	Analog speed command offset/limit offset	VCO
PC38, PC1038	Analog torque command offset/limit offset	TPO
PC39, PC1039	Analog monitor 1 offset	MO1
PC40, PC1040	Analog monitor 2 offset	MO2
PC41 to PC50, PC1041 to PC1050	For manufacturer setting	—

I/O setting parameter ([MELSERVO-J3-*A])

Use an appropriate device according to the write destination of the servo amplifier.

- PD1 to PD50: Writing data to the RAM of a servo amplifier
- PD1001 to PD1050: Writing data to the EEPROM of a servo amplifier

For the parameters prefixed by an asterisk (*), setting becomes effective when the power is turned off once and back on after setting the parameter data.

Virtual device name	Name	Symbol
PD1, PD1001	Input signal automatic ON selection 1	*DIA1
PD2, PD1002	For manufacturer setting	—
PD3, PD1003	Input device selection 1 (CN1-15)	*DI1
PD4, PD1004	Input device selection 2 (CN1-16)	*DI2
PD5, PD1005	Input device selection 3 (CN1-17)	*DI3
PD6, PD1006	Input device selection 4 (CN1-18)	*DI4
PD7, PD1007	Input device selection 5 (CN1-19)	*DI5
PD8, PD1008	Input device selection 6 (CN1-41)	*DI6
PD9, PD1009	For manufacturer setting	—
PD10, PD1010	Input device selection 8 (CN1-43)	*DI8
PD11, PD1011	Input device selection 9 (CN1-44)	*DI9
PD12, PD1012	Input device selection 10 (CN1-45)	*DI10
PD13, PD1013	Output device selection 1 (CN1-22)	*DO1
PD14, PD1014	Output device selection 2 (CN1-23)	*DO2
PD15, PD1015	Output device selection 3 (CN1-24)	*DO3
PD16, PD1016	Output device selection 4 (CN1-25)	*DO4
PD17, PD1017	For manufacturer setting	—
PD18, PD1018	Output device selection 6 (CN1-49)	*DO6
PD19, PD1019	Input filter setting	*DIF
PD20, PD1020	Function selection D-1	*DOP1
PD21, PD1021	For manufacturer setting	—
PD22, PD1022	Function selection D-3	*DOP3
PD23, PD1023	For manufacturer setting	—
PD24, PD1024	Function selection D-5	*DOP5
PD25 to PD30, PD1025 to PD1030	For manufacturer setting	—

Status display ([MELSERVO-J3-*A])

Virtual device name	Name	Symbol
ST0	Cumulative feedback pulses	—
ST1	Servo motor speed	—
ST2	Droop pulses	—
ST3	Cumulative command pulses	—
ST4	Command pulse frequency	—
ST5	Speed command voltage/speed limit voltage	—
ST6	Analog torque command voltage/limit voltage	—
ST7	Regenerative load ratio	—
ST8	Effective load ratio	—
ST9	Peak load ratio	—
ST10	Instantaneous torque	—
ST11	Within one-revolution position	—
ST12	ABS counter	—
ST13	Load inertia moment ratio	—
ST14	Bus voltage	—

Alarm ([MELSERVO-J3-*A])

Virtual device name	Name	Symbol
AL0	Current alarm number	—
AL1	Detailed data of current alarms	—
AL11	Servo status when alarm occurs, cumulative feedback pulses	—
AL12	Servo status when alarm occurs, servo motor speed	—
AL13	Servo status when alarm occurs, droop pulses	—
AL14	Servo status when alarm occurs, cumulative command pulses	—
AL15	Servo status when alarm occurs, command pulse frequency	—
AL16	Servo status when alarm occurs, analog speed command voltage/limit voltage	—
AL17	Servo status when alarm occurs, analog torque command voltage/limit voltage	—
AL18	Servo status when alarm occurs, regenerative load ratio	—
AL19	Servo status when alarm occurs, effective load ratio	—
AL20	Servo status when alarm occurs, peak load ratio	—
AL21	Servo status when alarm occurs, Instantaneous torque	—
AL22	Servo status when alarm occurs, within one-revolution position	—
AL23	Servo status when alarm occurs, ABS counter	—
AL24	Servo status when alarm occurs, load inertia moment ratio	—
AL25	Servo status when alarm occurs, bus voltage	—
AL200	Alarm number from Alarm History most recent alarm	—
AL201	Alarm number from Alarm History first alarm in past	—
AL202	Alarm number from Alarm History second alarm in past	—
AL203	Alarm number from Alarm History third alarm in past	—
AL204	Alarm number from Alarm History fourth alarm in past	—
AL205	Alarm number from Alarm History fifth alarm in past	—
AL210	Alarm occurrence time in alarm history most recent alarm	—
AL211	Alarm occurrence time in alarm history first alarm in past	—
AL212	Alarm occurrence time in alarm history second alarm in past	—
AL213	Alarm occurrence time in alarm history third alarm in past	—
AL214	Alarm occurrence time in alarm history fourth alarm in past	—
AL215	Alarm occurrence time in alarm history fifth alarm in past	—
AL230	Detailed alarm from Alarm History most recent alarm	—
AL231	Detailed alarm from Alarm History first alarm in past	—
AL232	Detailed alarm from Alarm History second alarm in past	—
AL233	Detailed alarm from Alarm History third alarm in past	—
AL234	Detailed alarm from Alarm History fourth alarm in past	—
AL235	Detailed alarm from Alarm History fifth alarm in past	—

External input signal ([MELSERVO-J3-*A])

Virtual device name	Name	Symbol	Data to be read from the servo amplifier
DI0	Input device statuses	—	For the mapping of the bits corresponding to the data to be read, refer to the following. MR-J3-_A Instruction Manual
DI1	External input pin statuses	—	
DI2	Statuses of input devices switched on through communication	—	

External output signal ([MELSERVO-J3-*A])

Virtual device name	Name	Symbol	Data to be read from the servo amplifier
DO0	Output device statuses	—	For the mapping of the bits corresponding to the data to be read, refer to the following. MR-J3-_A Instruction Manual
DO1	External output pin statuses	—	

Input signal for test operation (for test operation) ([MELSERVO-J3-*A])

Virtual device name	Name	Symbol
TMI0	Input signal for test operation	—

When using the input signal for test operation (for test operation), note the following.

Precautions	Description
Writing a value to a virtual device using an object	Numerical input cannot be used. Use a word switch for writing.

Forced output of signal pin (for test operation) ([MELSERVO-J3-*A])

Virtual device name	Name	Symbol
TMO0	Forced output of signal pin	—

When using the forced output of signal pin (for test operation), note the following.

Precautions	Description
Writing a value to a virtual device using an object	Numerical input cannot be used. Use a word switch for writing.

Set data (for test operation) ([MELSERVO-J3-*A])

Virtual device name	Name	Symbol
TMD0	Writes the speed (test mode)	—
TMD1	Writes the acceleration/deceleration time constant (test mode)	—
TMD3	Writes the moving distance (test mode)	—

When using the set data (for test operation), note the following.

Precautions	Description
Writing a value to a virtual device using an object	Numerical input cannot be used. Use a word switch for writing.

25.2.8 Precautions for virtual servo amplifier devices ([MELSERVO-J3-*A])

Monitoring servo amplifier

Carefully read the manual of servo amplifier to be connected and fully understand the operating procedures before monitoring.
Before operation, check the parameter settings and adjust them as required. Improper settings may cause some machines to perform unexpected operation.
The parameter settings must not be changed excessively. Operation will be insatiable.

Data length of a virtual device

Set the data length of a virtual device as shown below.

Virtual device	Data length
PRM, ST, AL, PA, PB, PC, PD, POS, SPD, ACT, DCT, DWL, AUX	16 bits or 32 bits Depending on the servo amplifier data
DI, DO, TMI, TMO, TMD	32 bits

If the above data length is not set, data will be specified incorrectly for the servo amplifier or cannot be properly monitored by the GOT.

Item	Operation	
Monitoring	Handling 16-bit data as 32-bit data	The upper 16 bits are displayed as 0.
	Handling 32-bit data as 16-bit data	The lower 16 bits only are displayed.
Writing	The GOT writes within the range of data length set. Note that the servo amplifier responds correctly while the written data is invalid in the servo amplifier side when the written data is out of the range of values which can be set by the servo amplifier.	

Memory to which parameter values are written

Parameter values are written to the RAM or EEPROM of a servo amplifier.

Write destination	Precautions
RAM	Remember that the written parameter values are cleared when the servo amplifier is turned off.
EEPROM	The written parameter values are not cleared when the servo amplifier is turned off. However, there is a limit on the number of times data can be written to EEPROM. If you update the data frequently (at least once an hour), write parameter values to RAM. For details, refer to the manual of the servo amplifier used.

Data type and format settings for using virtual servo amplifier devices (direct connection between the GOT and servo amplifier)

To specify virtual servo amplifier devices in the object setting or other settings, the data type and format must be set according to the notation of the values handled by the virtual devices.

For notation of the virtual device values, refer to the following.

📖Instruction manual for the servo amplifier used

📖MR Configurator2 Help

The following shows a setting example for using virtual servo amplifier devices for an object.

Ex.

When using a numerical display

Notation of the virtual device values	Setting
Decimal number (positive values only)	• [Data Type]: [Unsigned BIN16] ([Unsigned BIN32] for 65536 or more) • [Format]: [Unsigned Decimal]
Decimal number (positive and negative values)	• [Data Type]: [Signed BIN16] ([Signed BIN32] for -32769 or less, and 32768 or more) • [Format]: [Signed Decimal]
Hexadecimal number	• [Data Type]: [Unsigned BIN16] ([Unsigned BIN32] for 0x10000 or more) • [Format]: [Hexadecimal]
Decimal point notation (positive values only)	• [Data Type]: [Real] • [Format]: [Real] • [Digits (Integral)]: Set the number of digits in the integral portion. • [Digits (Fractional)]: Set the number of digits in the fractional portion.
Decimal point notation (positive and negative values)	
When the notation varies by digit	• [Data Type]: [Unsigned BIN16] ([Unsigned BIN32] for 0x10000 or more) • [Format]: [Hexadecimal] • On the [Operation/Script] tab, select [Data Operation] for [Operation Type], and set [Bit Mask] or [Bit Shift].

Specifying consecutive virtual servo amplifier devices

The GOT does not support writing/reading data to/from consecutive virtual servo amplifier devices.

25.3 [MELSERVO-J3-*T]

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Item	Reference
Specifications of bit devices	☞ Page 1804 Monitoring-supported bit devices ([MELSERVO-J3-*T])
	☞ Page 1804 Availability of writing/reading data to/from bit devices ([MELSERVO-J3-*T])
Specifications of word devices	☞ Page 1805 Monitoring-supported word devices ([MELSERVO-J3-*T])
	☞ Page 1806 Availability of writing/reading data to/from word devices ([MELSERVO-J3-*T])
Specifications of double-word devices	☞ Page 1807 Monitoring-supported double-word devices ([MELSERVO-J3-*T])
	☞ Page 1807 Availability of writing/reading data to/from double-word devices ([MELSERVO-J3-*T])
Specifications of virtual servo amplifier devices	☞ Page 1808 Virtual servo amplifier devices ([MELSERVO-J3-*T])
	☞ Page 1817 Precautions for virtual servo amplifier devices ([MELSERVO-J3-*T])

25.3.1 Monitoring-supported bit devices ([MELSERVO-J3-*T])

The following table shows monitoring-supported virtual bit devices for servo amplifiers.

To check whether writing/reading data to/from each device is available, refer to the following.

☞ Page 1804 Availability of writing/reading data to/from bit devices ([MELSERVO-J3-*T])

For details on virtual servo amplifier devices, refer to the following.

☞ Page 1808 Virtual servo amplifier devices ([MELSERVO-J3-*T])

○: Available

×: Not available

Device name		Device No. representation	Setting range	Specifications of EG devices*1	
				Assignment to EG devices	Access using a client
SP	Servo amplifier request	Decimal	0 to 6	×	×
OM	Operation mode selection	Decimal	0 to 5	×	×
TMB	Instruction demand (for test operation)	Decimal	1 to 6	×	×

*1 For the devices assigned to EG devices (gateway devices) and the compatible clients, refer to the following.
📖GT Designer3 (GOT3000) Screen Design Manual

25.3.2 Availability of writing/reading data to/from bit devices ([MELSERVO-J3-*T])

The following shows the availability of writing/reading data to/from bit devices by device type.

When the device type is other than the bit type, set the device No. in multiples of 16.

R/W: Both read and write

R/-: Read only

-/W: Write only

-/-: No read/write access

Device name	Device type				
	Bit	Byte (8 bits)	Word (16 bits)	Double-word (32 bits)	Quad-word (64 bits)
SP	-/W	-/-	-/-	-/-	-/-
OM	-/W	-/-	-/-	-/-	-/-
TMB	-/W	-/-	-/-	-/-	-/-

25.3.3 Monitoring-supported word devices ([MELSERVO-J3-*T])

The following table shows monitoring-supported virtual word devices for servo amplifiers.

To check whether writing/reading data to/from each device is available, refer to the following.

☞ Page 1806 Availability of writing/reading data to/from word devices ([MELSERVO-J3-*T])

For details on virtual servo amplifier devices, refer to the following.

☞ Page 1808 Virtual servo amplifier devices ([MELSERVO-J3-*T])

○: Available

×: Not available

Device name		Device No. representation	Setting range	Specifications of EG devices*1	
				Assignment to EG devices	Access using a client
PA	Basic parameter	Decimal	1 to 19 1001 to 1019	○	×
PB	Gain filter parameter	Decimal	1 to 45 1001 to 1045	○	×
PC	Extension setting parameter	Decimal	1 to 50 1001 to 1050	○	×
PD	I/O setting parameter	Decimal	1 to 30 1001 to 1030	○	×
PO	Option unit parameter	Decimal	1 to 35 1001 to 1035	○	×
ST	Status display	Decimal	0 to 17	○	×
AL	Alarm (current alarm)	Decimal	0 to 1 11 to 28	○	×
AL	Alarm (alarm history)	Decimal	200 to 205 210 to 215 230 to 235	○	×
POS	Point table (position)	Decimal	1 to 255 1001 to 1255	○	×
SPD	Point table (speed)	Decimal	1 to 255 1001 to 1255	○	×
ACT	Point table (acceleration time constant)	Decimal	1 to 255 1001 to 1255	○	×
DCT	Point table (deceleration time constant)	Decimal	1 to 255 1001 to 1255	○	×
DWL	Point table (dwell)	Decimal	1 to 255 1001 to 1255	○	×
AUX	Point table (auxiliary function)	Decimal	1 to 255 1001 to 1255	○	×
MCD*2	Point table (M code)	Decimal	1 to 255 1001 to 1255	○	×
DI	External input signal	Decimal	0 to 7	×	×
DO	External output signal	Decimal	0 to 4	×	×

*1 For the devices assigned to EG devices (gateway devices) and the compatible clients, refer to the following.
📖GT Designer3 (GOT3000) Screen Design Manual

*2 MCD cannot be used as a real number.

PART 6

25.3.4 Availability of writing/reading data to/from word devices ([MELSERVO-J3-*T])

The following shows the availability of writing/reading data to/from word devices by device type.

R/W: Both read and write

R/-: Read only

-/W: Write only

-/-: No read/write access

Device name	Device type			
	Word (16 bits)	Double-word (32 bits)	Quad-word (64 bits)	Bit of word data
PA	R/W	R/W	-/-	-/-
PB	R/W	R/W	-/-	-/-
PC	R/W	R/W	-/-	-/-
PD	R/W	R/W	-/-	-/-
PO	R/W	R/W	-/-	-/-
ST	R/-	R/-	-/-	-/-
AL	R/-	R/-	-/-	-/-
POS	R/W	R/W	-/-	-/-
SPD	R/W	R/W	-/-	-/-
ACT	R/W	R/W	-/-	-/-
DCT	R/W	R/W	-/-	-/-
DWL	R/W	R/W	-/-	-/-
AUX	R/W	R/W	-/-	-/-
MCD	R/W	R/W	-/-	-/-
DI*1	R/-	R/W	-/-	-/-
DO	R/-	R/-	-/-	-/-

*1 Only reading is available for DI0 to DI4.

25.3.5 Monitoring-supported double-word devices ([MELSERVO-J3-*T])

The following table shows monitoring-supported virtual double-word devices for servo amplifiers.

To check whether writing/reading data to/from each device is available, refer to the following.

☞ Page 1807 Availability of writing/reading data to/from double-word devices ([MELSERVO-J3-*T])

For details on virtual servo amplifier devices, refer to the following.

☞ Page 1808 Virtual servo amplifier devices ([MELSERVO-J3-*T])

○: Available

×: Not available

Device name		Device No. representation	Setting range	Specifications of EG devices*1	
				Assignment to EG devices	Access using a client
TMI	Input signal for test operation (for test operation)	Decimal	0 to 2	×	×
TMO	Forced output of signal pin (for test operation)	Decimal	0 to 1	×	×
TMD	Set data (for test operation)	Decimal	0 to 1, 3	×	×

*1 For the devices assigned to EG devices (gateway devices) and the compatible clients, refer to the following.
GT Designer3 (GOT3000) Screen Design Manual

25.3.6 Availability of writing/reading data to/from double-word devices ([MELSERVO-J3-*T])

The following shows the availability of writing/reading data to/from double-word devices by device type.

R/W: Both read and write

R/-: Read only

-/W: Write only

-/-: No read/write access

Device name	Device type			
	Word (16 bits)	Double-word (32 bits)	Quad-word (64 bits)	Bit of word data
TMI	-/-	-/W	-/-	-/-
TMO	-/-	-/W	-/-	-/-
TMD	-/-	-/W	-/-	-/-

25.3.7 Virtual servo amplifier devices ([MELSERVO-J3-*T])

The following shows the correspondence between the virtual devices used in the GOT and the servo amplifier data.

Virtual device name	Reference
SP	☞ Page 1808 Servo amplifier request ([MELSERVO-J3-*T])
OM	☞ Page 1809 Operation mode selection ([MELSERVO-J3-*T])
TMB	☞ Page 1809 Instruction demand (for test operation) ([MELSERVO-J3-*T])
PA	☞ Page 1809 Basic parameter ([MELSERVO-J3-*T])
PB	☞ Page 1810 Gain filter parameter ([MELSERVO-J3-*T])
PC	☞ Page 1811 Extension setting parameter ([MELSERVO-J3-*T])
PD	☞ Page 1812 I/O setting parameter ([MELSERVO-J3-*T])
PO	☞ Page 1812 Option unit parameter ([MELSERVO-J3-*T])
ST	☞ Page 1813 Status display ([MELSERVO-J3-*T])
AL	☞ Page 1814 Alarm ([MELSERVO-J3-*T])
POS	☞ Page 1814 Point table (position) ([MELSERVO-J3-*T])
SPD	☞ Page 1815 Point table (speed) ([MELSERVO-J3-*T])
ACT	☞ Page 1815 Point table (acceleration time constant) ([MELSERVO-J3-*T])
DCT	☞ Page 1815 Point table (deceleration time constant) ([MELSERVO-J3-*T])
DWL	☞ Page 1815 Point table (dwell) ([MELSERVO-J3-*T])
AUX	☞ Page 1815 Point table (auxiliary function) ([MELSERVO-J3-*T])
MCD	☞ Page 1815 Point table (M code) ([MELSERVO-J3-*T])
DI	☞ Page 1816 External input signal ([MELSERVO-J3-*T])
DO	☞ Page 1816 External output signal ([MELSERVO-J3-*T])
TMI	☞ Page 1816 Input signal for test operation (for test operation) ([MELSERVO-J3-*T])
TMO	☞ Page 1816 Forced output of signal pin (for test operation) ([MELSERVO-J3-*T])
TMD	☞ Page 1816 Set data (for test operation) ([MELSERVO-J3-*T])

Servo amplifier request ([MELSERVO-J3-*T])

Virtual device name	Name	Symbol
SP0	Status display data clear	—
SP1	Current alarm clear	—
SP2	Alarm history clear	—
SP3	External input signal prohibited	—
SP4	External output signal prohibited	—
SP5	External input signal resumed	—
SP6	External output signal resumed	—

When using the servo amplifier request, note the following.

Precautions	Description
When setting a device for a bit switch	Do not select [Alternate] for [Switch Action] of the bit switch.

Operation mode selection ([MELSERVO-J3-*T])

Virtual device name	Name	Symbol
OM0	Normal mode (not test operation mode)	—
OM1	JOG operation	—
OM2	Positioning operation	—
OM3	Motorless operation	—
OM4	Output signal (DO) forced output	—
OM5	Single-step feed	—

When using the operation mode selection, note the following.

Precautions	Description
When setting a device for a bit switch	Do not select [Alternate] for [Switch Action] of the bit switch.

Instruction demand (for test operation) ([MELSERVO-J3-*T])

Virtual device name	Name	Symbol
TMB1	Temporary stop command	—
TMB2	Test operation (positioning operation) start command	—
TMB3	Forward rotation direction	—
TMB4	Reverse rotation direction	—
TMB5	Restart for remaining distance	—
TMB6	Remaining distance clear	—

When using the instruction demand (for test operation), note the following.

Precautions	Description
When setting a device for a bit switch	Do not select [Alternate] for [Switch Action] of the bit switch.

Basic parameter ([MELSERVO-J3-*T])

Use an appropriate device according to the write destination of the servo amplifier.

- PA1 to PA50: Writing data to the RAM of a servo amplifier
- PA1001 to PA1050: Writing data to the EEPROM of a servo amplifier

For the parameters prefixed by an asterisk (*), setting becomes effective when the power is turned off once and back on after setting the parameter data.

Virtual device name	Name	Symbol
PA1, PA1001	Control mode	*STY
PA2, PA1002	Regenerative brake option	*REG
PA3, PA1003	Absolute position detection system	*ABS
PA4, PA1004	Function selection A-1	*AOP1
PA5, PA1005	Feeding function selection	*FTY
PA6, PA1006	Electronic gear numerator	*CMX
PA7, PA1007	Electronic gear denominator	*CDV
PA8, PA1008	Auto tuning mode	ATU
PA9, PA1009	Auto tuning response	RSP
PA10, PA1010	In-position range	INP
PA11, PA1011	Forward rotation torque limit	TLP
PA12, PA1012	Reverse rotation torque limit	TLN
PA13, PA1013	For manufacturer setting	—
PA14, PA1014	Rotation direction selection	*POL
PA15, PA1015	Encoder output pulses	*ENR
PA16 to PA18, PA1016 to PA1018	For manufacturer setting	—
PA19, PA1019	Parameter block	*BLK

Gain filter parameter ([MELSERVO-J3-*T])

Use an appropriate device according to the write destination of the servo amplifier.

- PB1 to PB50: Writing data to the RAM of a servo amplifier
- PB1001 to PB1050: Writing data to the EEPROM of a servo amplifier

For the parameters prefixed by an asterisk (*), setting becomes effective when the power is turned off once and back on after setting the parameter data.

Virtual device name	Name	Symbol
PB1, PB1001	Adaptive tuning mode (Adaptive filter II)	FILT
PB2, PB1002	Vibration suppression control tuning mode (advanced vibration suppression control)	VRFT
PB3, PB1003	For manufacturer setting	—
PB4, PB1004	Feed forward gain	FFC
PB5, PB1005	For manufacturer setting	—
PB6, PB1006	Ratio of load inertia moment to servo motor inertia moment	GD2
PB7, PB1007	Model control gain	PG1
PB8, PB1008	Position control gain	PG2
PB9, PB1009	Speed control gain	VG2
PB10, PB1010	Speed integral compensation	VIC
PB11, PB1011	Speed differential compensation	VDC
PB12, PB1012	For manufacturer setting	—
PB13, PB1013	Machine resonance suppression filter 1	NH1
PB14, PB1014	Notch shape selection 1	NHQ1
PB15, PB1015	Machine resonance suppression filter 2	NH2
PB16, PB1016	Notch shape selection 2	NHQ2
PB17, PB1017	For manufacturer setting	—
PB18, PB1018	Low-pass filter setting	LPF
PB19, PB1019	Vibration suppression control vibration frequency setting	VRF1
PB20, PB1020	Vibration suppression control resonance frequency setting	VRF2
PB21 to PB22, PB1021 to PB1022	For manufacturer setting	—
PB23, PB1023	Low-pass filter setting	VFBF
PB24, PB1024	Slight vibration suppression control	*MVS
PB25, PB1025	For manufacturer setting	—
PB26, PB1026	Gain changing selection	*CDP
PB27, PB1027	Gain switching condition	CDL
PB28, PB1028	Gain switching time constant	CDT
PB29, PB1029	Ratio of load inertia moment to servo motor after gain switching	GD2B
PB30, PB1030	Position loop gain after gain switching	PG2B
PB31, PB1031	Speed loop gain after gain switching	VG2B
PB32, PB1032	Speed integral compensation after gain switching	VICB
PB33, PB1033	Suppression control and vibration frequency setting after gain switching	VRF1B
PB34, PB1034	Suppression control and resonance frequency setting after gain switching	VRF2B
PB35 to PB45, PB1035 to PB1045	For manufacturer setting	—

Extension setting parameter ([MELSERVO-J3-*T])

Use an appropriate device according to the write destination of the servo amplifier.

- PC1 to PC50: Writing data to the RAM of a servo amplifier
- PC1001 to PC1050: Writing data to the EEPROM of a servo amplifier

For the parameters prefixed by an asterisk (*), setting becomes effective when the power is turned off once and back on after setting the parameter data.

Virtual device name	Name	Symbol
PC1, PC1001	For manufacturer setting	—
PC2, PC1002	Home position return type	*ZTY
PC3, PC1003	Direction of home position return	*ZDIR
PC4, PC1004	Home position return speed	ZRF
PC5, PC1005	Creep speed	CRF
PC6, PC1006	Home position shift distance	ZST
PC7, PC1007	Home position return position data	*ZPS
PC8, PC1008	Moving distance after proximity dog	DCT
PC9, PC1009	Stopper type home position return stopper time	ZTM
PC10, PC1010	Stopper type home position return torque limit value	ZTT
PC11, PC1011	Rough match output range	CRP
PC12, PC1012	Jog speed	JOG
PC13, PC1013	S-pattern acceleration/deceleration time constant	*STC
PC14, PC1014	Backlash compensation	*BKC
PC15, PC1015	For manufacturer setting	—
PC16, PC1016	Electromagnetic brake sequence output	MBR
PC17, PC1017	Zero speed	ZSP
PC18, PC1018	Alarm history clear	*BPS
PC19, PC1019	Encoder output pulse selection	*ENRS
PC20, PC1020	Station number setting	*SNO
PC21, PC1021	RS-422 communication function selection	*SOP
PC22, PC1022	Function selection C-1	*COP1
PC23, PC1023	For manufacturer setting	—
PC24, PC1024	Function selection C-3	*COP3
PC25, PC1025	For manufacturer setting	—
PC26, PC1026	Function selection C-5	*COP5
PC27, PC1027	For manufacturer setting	—
PC28, PC1028	Function selection C-7	*COP7
PC29 to PC30, PC1029 to PC1030	For manufacturer setting	—
PC31, PC1031	Software limit + Low	LMPL
PC32, PC1032	Software limit + High	LMPH
PC33, PC1033	Software limit - Low	LMNL
PC34, PC1034	Software limit - High	LMNH
PC35, PC1035	Internal torque limit 2	TL2
PC36, PC1036	Status display selection	*DMD
PC37, PC1037	Position range output address + Low	*LPPL
PC38, PC1038	Position range output address + High	*LPPH
PC39, PC1039	Position range output address - Low	*LNPL
PC40, PC1040	Position range output address - High	*LNPH
PC41 to PC50, PC1041 to PC1050	For manufacturer setting	—

I/O setting parameter ([MELSERVO-J3-*T])

Use an appropriate device according to the write destination of the servo amplifier.

- PD1 to PD50: Writing data to the RAM of a servo amplifier
- PD1001 to PD1050: Writing data to the EEPROM of a servo amplifier

For the parameters prefixed by an asterisk (*), setting becomes effective when the power is turned off once and back on after setting the parameter data.

Virtual device name	Name	Symbol
PD1, PD1001	Input signal automatic ON selection 1	*DIA1
PD2, PD1002	For manufacturer setting	—
PD3, PD1003	Input signal automatic ON selection 3	*DIA3
PD4, PD1004	Input signal automatic ON selection 4	*DIA4
PD5, PD1005	For manufacturer setting	—
PD6, PD1006	Input device selection 2 (CN6-2)	*DI2
PD7, PD1007	Input device selection 3 (CN6-3)	*DI3
PD8, PD1008	Input device selection 4 (CN6-4)	*DI4
PD9, PD1009	Output signal device selection 1 (CN6-14)	*DO1
PD10, PD1010	Output signal device selection 2 (CN6-15)	*DO2
PD11, PD1011	Output signal device selection 3 (CN6-16)	*DD3
PD12 to PD15, PD1012 to PD1015	For manufacturer setting	—
PD16, PD1016	Input polarity selection	*DIAB
PD17 to PD18, PD1017 to PD1018	For manufacturer setting	—
PD19, PD1019	Input filter setting	*DIF
PD20, PD1020	Function selection D-1	*DOP1
PD21, PD1021	For manufacturer setting	—
PD22, PD1022	Function selection D-3	*DOP3
PD23, PD1023	For manufacturer setting	—
PD24, PD1024	Function selection D-5	*DOP5
PD25 to PD30, PD1025 to PD1030	For manufacturer setting	—

Option unit parameter ([MELSERVO-J3-*T])

Use an appropriate device according to the write destination of the servo amplifier.

- PO1 to PO35: Writing data to the RAM of a servo amplifier
- PO1001 to PO1035: Writing data to the EEPROM of a servo amplifier

Virtual device name	Name	Symbol
PO1, PO1001	For manufacturer setting	—
PO2, PO1002	MR-J3-D01 Input signal device selection 1 (CN10-21, 26)	*ODI1
PO3, PO1003	MR-J3-D01 Input signal device selection 2 (CN10-27, 28)	*ODI2
PO4, PO1004	MR-J3-D01 Input signal device selection 3 (CN10-29, 30)	*ODI3
PO5, PO1005	MR-J3-D01 Input signal device selection 4 (CN10-31, 32)	*ODI4
PO6, PO1006	MR-J3-D01 Input signal device selection 5 (CN10-33, 34)	*ODI5
PO7, PO1007	MR-J3-D01 Input signal device selection 6 (CN10-35, 36)	*ODI6
PO8, PO1008	MR-J3-D01 Output signal device selection 1 (CN10-46, 47)	*ODO1
PO9, PO1009	MR-J3-D01 Output signal device selection 2 (CN10-48, 49)	*ODO2
PO10, PO1010	Function selection 0-1	*OOP1
PO11, PO1011	For manufacturer setting	—
PO12, PO1012	Function selection 0-3	*OOP3
PO13, PO1013	MR-J3-D01 Analog monitor 1 output	MOD1
PO14, PO1014	MR-J3-D01 Analog monitor 2 output	MOD2
PO15, PO1015	MR-J3-D01 Analog monitor 1 offset	MO1

Virtual device name	Name	Symbol
PO16, PO1016	MR-J3-D01 Analog monitor 2 offset	MO2
PO17 to 20, PO1017 to PO1020	For manufacturer setting	—
PO21, PO1021	MR-J3-D01 Override offset	VCO
PO22, PO1022	MR-J3-D01 Analog torque limitation offset	TLO
PO23 to PO35, PO1023 to PO1035	For manufacturer setting	—

Status display ([MELSERVO-J3-*T])

Virtual device name	Name	Symbol
ST0	Current position	—
ST1	Command position	—
ST2	Command remaining distance	—
ST3	Point table No.	—
ST4	Cumulative feedback pulses	—
ST5	Servo motor speed	—
ST6	Droop pulses	—
ST7	Override voltage	—
ST8	Override	—
ST9	Analog torque command voltage/limit voltage	—
ST10	Regenerative load ratio	—
ST11	Effective load ratio	—
ST12	Peak load ratio	—
ST13	Instantaneous torque	—
ST14	Within one-revolution position	—
ST15	ABS counter	—
ST16	Load inertia moment ratio	—
ST17	Bus voltage	—

Alarm ([MELSERVO-J3-*T])

Virtual device name	Name	Symbol
AL0	Current alarm number	—
AL1	Detailed data of current alarms	—
AL11	Servo status when alarm occurs, current position	—
AL12	Servo status when alarm occurs, command position	—
AL13	Servo status when alarm occurs, command remaining distance	—
AL14	Servo status when alarm occurs, point table No.	—
AL15	Servo status when alarm occurs, cumulative feedback pulses	—
AL16	Servo status when alarm occurs, servo motor speed	—
AL17	Servo status when alarm occurs, droop pulses	—
AL18	Servo status when alarm occurs, override voltage	—
AL19	Servo status when alarm occurs, override	—
AL20	Servo status when alarm occurs, analog torque limit voltage	—
AL21	Servo status when alarm occurs, regenerative load ratio	—
AL22	Servo status when alarm occurs, effective load ratio	—
AL23	Servo status when alarm occurs, peak load ratio	—
AL24	Servo status when alarm occurs, Instantaneous torque	—
AL25	Servo status when alarm occurs, within one-revolution position	—
AL26	Servo status when alarm occurs, ABS counter	—
AL27	Servo status when alarm occurs, load inertia moment ratio	—
AL28	Servo status when alarm occurs, Bus voltage	—
AL200	Alarm number from Alarm History most recent alarm	—
AL201	Alarm number from Alarm History first alarm in past	—
AL202	Alarm number from Alarm History second alarm in past	—
AL203	Alarm number from Alarm History third alarm in past	—
AL204	Alarm number from Alarm History fourth alarm in past	—
AL205	Alarm number from Alarm History fifth alarm in past	—
AL210	Alarm occurrence time in alarm history most recent alarm	—
AL211	Alarm occurrence time in alarm history first alarm in past	—
AL212	Alarm occurrence time in alarm history second alarm in past	—
AL213	Alarm occurrence time in alarm history third alarm in past	—
AL214	Alarm occurrence time in alarm history fourth alarm in past	—
AL215	Alarm occurrence time in alarm history fifth alarm in past	—
AL230	Detailed alarm from Alarm History most recent alarm	—
AL231	Detailed alarm from Alarm History first alarm in past	—
AL232	Detailed alarm from Alarm History second alarm in past	—
AL233	Detailed alarm from Alarm History third alarm in past	—
AL234	Detailed alarm from Alarm History fourth alarm in past	—
AL235	Detailed alarm from Alarm History fifth alarm in past	—

Point table (position) ([MELSERVO-J3-*T])

Use an appropriate device according to the write destination of the servo amplifier.

- POS1 to POS255: Writing data to the RAM of a servo amplifier
- POS1001 to POS1255: Writing data to the EEPROM of a servo amplifier

Virtual device name	Name	Symbol
POS1 to POS255, POS1001 to POS1255	Point table/position data No. 1 to No. 255	—

Point table (speed) ([MELSERVO-J3-*T])

Use an appropriate device according to the write destination of the servo amplifier.

- SPD1 to SPD255: Writing data to the RAM of a servo amplifier
- SPD1001 to SPD1255: Writing data to the EEPROM of a servo amplifier

Virtual device name	Name	Symbol
SPD1 to SPD255, SPD1001 to SPD1255	Point table/speed data No. 1 to No. 255	—

Point table (acceleration time constant) ([MELSERVO-J3-*T])

Use an appropriate device according to the write destination of the servo amplifier.

- ACT1 to ACT255: Writing data to the RAM of a servo amplifier
- ACT1001 to ACT1255: Writing data to the EEPROM of a servo amplifier

Virtual device name	Name	Symbol
ACT1 to ACT255, ACT1001 to ACT1255	Point table/acceleration time constant No. 1 to No. 255	—

Point table (deceleration time constant) ([MELSERVO-J3-*T])

Use an appropriate device according to the write destination of the servo amplifier.

- DCT1 to DCT255: Writing data to the RAM of a servo amplifier
- DCT1001 to DCT1255: Writing data to the EEPROM of a servo amplifier

Virtual device name	Name	Symbol
DCT1 to DCT255, DCT1001 to DCT1255	Point table/deceleration time constant No. 1 to No. 255	—

Point table (dwell) ([MELSERVO-J3-*T])

Use an appropriate device according to the write destination of the servo amplifier.

- DWL1 to DWL255: Writing data to the RAM of a servo amplifier
- DWL1001 to DWL1255: Writing data to the EEPROM of a servo amplifier

Virtual device name	Name	Symbol
DWL1 to DWL255, DWL1001 to DWL1255	Point table/dwell No. 1 to No. 255	—

Point table (auxiliary function) ([MELSERVO-J3-*T])

Use an appropriate device according to the write destination of the servo amplifier.

- AUX1 to AUX255: Writing data to the RAM of a servo amplifier
- AUX1001 to AUX1255: Writing data to the EEPROM of a servo amplifier

Virtual device name	Name	Symbol
AUX1 to AUX255, AUX1001 to AUX1255	Point table/auxiliary function No. 1 to No. 255	—

Point table (M code) ([MELSERVO-J3-*T])

Use an appropriate device according to the write destination of the servo amplifier.

- MCD1 to MCD255: Writing data to the RAM of a servo amplifier
- MCD1001 to MCD1255: Writing data to the EEPROM of a servo amplifier

Virtual device name	Name	Symbol
MCD1 to MCD255, MCD1001 to MCD1255	Point table/M code No.1 to No.255	—

External input signal ([MELSERVO-J3-*T])

Virtual device name	Name	Symbol	Data to be read from the servo amplifier
DI0	Input device statuses 1	—	For the mapping of the bits corresponding to the data to be read, refer to the following. ☞ MR-J3-_T Instruction Manual
DI1	Input device statuses 2	—	
DI2	Input device statuses 3	—	
DI3	External input pin statuses 1	—	
DI4	External input pin statuses 2	—	
DI5	Statuses of input devices switched on through communication 1	—	For the mapping of the bits corresponding to the data to be read or written, refer to the following. ☞ MR-J3-_T Instruction Manual
DI6	Statuses of input devices switched on through communication 2	—	
DI7	Statuses of input devices switched on through communication 3	—	

External output signal ([MELSERVO-J3-*T])

Virtual device name	Name	Symbol	Data to be read from the servo amplifier
DO0	Output device statuses 1	—	For the mapping of the bits corresponding to the data to be read, refer to the following. ☞ MR-J3-_T Instruction Manual
DO1	Output device statuses 2	—	
DO2	Output device statuses 3	—	
DO3	External output pin statuses 1	—	
DO4	External output pin statuses 2	—	

Input signal for test operation (for test operation) ([MELSERVO-J3-*T])

Virtual device name	Name	Symbol
TMI0	Input signal for test operation 1	—
TMI1	Input signal for test operation 2	—
TMI2	Input signal for test operation 3	—

When using the input signal for test operation (for test operation), note the following.

Precautions	Description
Writing a value to a virtual device using an object	Numerical input cannot be used. Use a word switch for writing.

Forced output of signal pin (for test operation) ([MELSERVO-J3-*T])

Virtual device name	Name	Symbol
TMO0	Forced output from signal pin (CN6)	—
TMO1	Forced output from signal pin (CN10)	—

When using the forced output of signal pin (for test operation), note the following.

Precautions	Description
Writing a value to a virtual device using an object	Numerical input cannot be used. Use a word switch for writing.

Set data (for test operation) ([MELSERVO-J3-*T])

Virtual device name	Name	Symbol
TMD0	Writes the speed (test mode)	—
TMD1	Writes the acceleration/deceleration time constant (test mode)	—
TMD3	Writes the moving distance (test mode)	—

When using the set data (for test operation), note the following.

Precautions	Description
Writing a value to a virtual device using an object	Numerical input cannot be used. Use a word switch for writing.

25.3.8 Precautions for virtual servo amplifier devices ([MELSERVO-J3-*T])

For the precautions for virtual servo amplifier devices, refer to the following.

☞ Page 1802 Precautions for virtual servo amplifier devices ([MELSERVO-J3-*A])

25.4 [MELSERVO-J4-*A, -JE-*A]

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Item	Reference
Specifications of bit devices	☞ Page 1818 Monitoring-supported bit devices ([MELSERVO-J4-*A, -JE-*A])
	☞ Page 1818 Availability of writing/reading data to/from bit devices ([MELSERVO-J4-*A, -JE-*A])
Specifications of word devices	☞ Page 1819 Monitoring-supported word devices ([MELSERVO-J4-*A, -JE-*A])
	☞ Page 1820 Availability of writing/reading data to/from word devices ([MELSERVO-J4-*A, -JE-*A])
Specifications of double-word devices	☞ Page 1821 Monitoring-supported double-word devices ([MELSERVO-J4-*A, -JE-*A])
	☞ Page 1821 Availability of writing/reading data to/from double-word devices ([MELSERVO-J4-*A, -JE-*A])
Specifications of virtual servo amplifier devices	☞ Page 1822 Virtual servo amplifier devices ([MELSERVO-J4-*A, -JE-*A])
	☞ Page 1837 Precautions for virtual servo amplifier devices ([MELSERVO-J4-*A, -JE-*A])

25.4.1 Monitoring-supported bit devices ([MELSERVO-J4-*A, -JE-*A])

The following table shows monitoring-supported virtual bit devices for servo amplifiers.

To check whether writing/reading data to/from each device is available, refer to the following.

☞ Page 1818 Availability of writing/reading data to/from bit devices ([MELSERVO-J4-*A, -JE-*A])

For details on virtual servo amplifier devices, refer to the following.

☞ Page 1822 Virtual servo amplifier devices ([MELSERVO-J4-*A, -JE-*A])

○: Available

×: Not available

Device name		Device No. representation	Setting range	Specifications of EG devices*1	
				Assignment to EG devices	Access using a client
SP	Servo amplifier request	Decimal	0 to 6	×	×
OM	Operation mode selection	Decimal	0 to 4	×	×
TMB	Instruction demand (for test operation)	Decimal	1 to 6	×	×
OTI	One-touch tuning instruction	Decimal	0 to 5	×	×

*1 For the devices assigned to EG devices (gateway devices) and the compatible clients, refer to the following.
📖GT Designer3 (GOT3000) Screen Design Manual

25.4.2 Availability of writing/reading data to/from bit devices ([MELSERVO-J4-*A, -JE-*A])

The following shows the availability of writing/reading data to/from bit devices by device type.

When the device type is other than the bit type, set the device No. in multiples of 16.

R/W: Both read and write

R/-: Read only

-/W: Write only

-/-: No read/write access

Device name	Device type				
	Bit	Byte (8 bits)	Word (16 bits)	Double-word (32 bits)	Quad-word (64 bits)
SP	-/W	-/-	-/-	-/-	-/-
OM	-/W	-/-	-/-	-/-	-/-
TMB	-/W	-/-	-/-	-/-	-/-
OTI	-/W	-/-	-/-	-/-	-/-

25.4.3 Monitoring-supported word devices ([MELSERVO-J4-*A, -JE-*A])

The following table shows monitoring-supported virtual word devices for servo amplifiers.

To check whether writing/reading data to/from each device is available, refer to the following.

☞ Page 1820 Availability of writing/reading data to/from word devices ([MELSERVO-J4-*A, -JE-*A])

For details on virtual servo amplifier devices, refer to the following.

☞ Page 1822 Virtual servo amplifier devices ([MELSERVO-J4-*A, -JE-*A])

○: Available

×: Not available

Device name		Device No. representation	Setting range	Specifications of EG devices*1	
				Assignment to EG devices	Access using a client
PA	Basic parameter	Decimal	1 to 32 1001 to 1032	○	×
PB	Gain filter parameter	Decimal	1 to 64 1001 to 1064	○	×
PC	Extension setting parameter	Decimal	1 to 80 1001 to 1080	○	×
PD	I/O setting parameter	Decimal	1 to 48 1001 to 1048	○	×
PL	Linear servo motor/DD motor setting parameter	Decimal	1 to 48 1001 to 1048	○	×
ST	Status display	Decimal	0 to 41	○	×
AL	Alarm (current alarm, J3A compatible)	Decimal	0 to 1 11 to 25	○	×
AL	Alarm (alarm history, J3A compatible)	Decimal	200 to 205 210 to 215 230 to 235	○	×
PE	Extension setting No.2 parameter	Decimal	1 to 64 1001 to 1064	○	×
PF	Extension setting No.3 parameter	Decimal	1 to 48 1001 to 1048	○	×
ALM	Alarm (current alarm J4A extend)	Decimal	0 to 1 11 to 52	○	×
ALM	Alarm (alarm history J4A extend)	Decimal	200 to 215 220 to 235 240 to 255	○	×
MD	Machine diagnosis data	Decimal	0 to 11	×	×
OTS	One-touch tuning data	Decimal	0 to 3	×	×
DI	External input signal	Decimal	0 to 2	×	×
DO	External output signal	Decimal	0 to 1	×	×

*1 For the devices assigned to EG devices (gateway devices) and the compatible clients, refer to the following.
📖GT Designer3 (GOT3000) Screen Design Manual

25.4.4 Availability of writing/reading data to/from word devices ([MELSERVO-J4-*A, -JE-*A])

The following shows the availability of writing/reading data to/from word devices by device type.

R/W: Both read and write

R/-: Read only

-/W: Write only

-/-: No read/write access

Device name	Device type			
	Word (16 bits)	Double-word (32 bits)	Quad-word (64 bits)	Bit of word data
PA	R/W	R/W	-/-	-/-
PB	R/W	R/W	-/-	-/-
PC	R/W	R/W	-/-	-/-
PD	R/W	R/W	-/-	-/-
PL	R/W	R/W	-/-	-/-
ST	R/-	R/-	-/-	-/-
AL	R/-	R/-	-/-	-/-
PE	R/W	R/W	-/-	-/-
PF	R/W	R/W	-/-	-/-
ALM	R/-	R/-	-/-	-/-
MD	R/-	R/-	-/-	-/-
OTS	R/-	R/-	-/-	-/-
DI*1	R/-	R/W	-/-	-/-
DO	R/-	R/-	-/-	-/-

*1 Only reading is available for DI0 to DI1.

25.4.5 Monitoring-supported double-word devices ([MELSERVO-J4-*A, -JE-*A])

The following table shows monitoring-supported virtual double-word devices for servo amplifiers.

To check whether writing/reading data to/from each device is available, refer to the following.

☞ Page 1821 Availability of writing/reading data to/from double-word devices ([MELSERVO-J4-*A, -JE-*A])

For details on virtual servo amplifier devices, refer to the following.

☞ Page 1822 Virtual servo amplifier devices ([MELSERVO-J4-*A, -JE-*A])

○: Available

×: Not available

Device name		Device No. representation	Setting range	Specifications of EG devices*1	
				Assignment to EG devices	Access using a client
ALD	Life diagnosis	Decimal	0 to 1	×	×
TMI	Input signal for test operation (for test operation)	Decimal	0	×	×
TMO	Forced output of signal pin (for test operation)	Decimal	0	×	×
TMD	Set data (for test operation)	Decimal	0 to 1, 3	×	×

*1 For the devices assigned to EG devices (gateway devices) and the compatible clients, refer to the following.
GT Designer3 (GOT3000) Screen Design Manual

25.4.6 Availability of writing/reading data to/from double-word devices ([MELSERVO-J4-*A, -JE-*A])

The following shows the availability of writing/reading data to/from double-word devices by device type.

R/W: Both read and write

R/-: Read only

-/W: Write only

-/-: No read/write access

Device name	Device type			
	Word (16 bits)	Double-word (32 bits)	Quad-word (64 bits)	Bit of word data
ALD	-/-	R/-	-/-	-/-
TMI	-/-	-/W	-/-	-/-
TMO	-/-	-/W	-/-	-/-
TMD	-/-	-/W	-/-	-/-

25.4.7 Virtual servo amplifier devices ([MELSERVO-J4-*A, -JE-*A])

The following shows the correspondence between the virtual devices used in the GOT and the servo amplifier data.

Virtual device name	Reference
SP	☞ Page 1822 Servo amplifier request ([MELSERVO-J4-*A, -JE-*A])
OM	☞ Page 1823 Operation mode selection ([MELSERVO-J4-*A, -JE-*A])
TMB	☞ Page 1823 Instruction demand (for test operation) ([MELSERVO-J4-*A, -JE-*A])
OTI	☞ Page 1823 One-touch tuning instruction ([MELSERVO-J4-*A, -JE-*A])
PA	☞ Page 1824 Basic parameter ([MELSERVO-J4-*A, -JE-*A])
PB	☞ Page 1825 Gain filter parameter ([MELSERVO-J4-*A, -JE-*A])
PC	☞ Page 1826 Extension setting parameter ([MELSERVO-J4-*A, -JE-*A])
PD	☞ Page 1828 I/O setting parameter ([MELSERVO-J4-*A, -JE-*A])
PL	☞ Page 1829 Linear servo motor/DD motor setting parameter ([MELSERVO-J4-*A, -JE-*A])
ST	☞ Page 1830 Status display ([MELSERVO-J4-*A, -JE-*A])
AL	☞ Page 1831 Alarm (MELSERVO-J3-*A compatible) ([MELSERVO-J4-*A, -JE-*A])
PE	☞ Page 1832 Extension setting No.2 parameter ([MELSERVO-J4-*A, -JE-*A])
PF	☞ Page 1833 Extension setting No.3 parameter ([MELSERVO-J4-*A, -JE-*A])
ALM	☞ Page 1834 Alarm (MELSERVO-J4-*A extended) ([MELSERVO-J4-*A, -JE-*A])
MD	☞ Page 1835 Machine diagnosis data ([MELSERVO-J4-*A, -JE-*A])
OTS	☞ Page 1836 One-touch tuning data ([MELSERVO-J4-*A, -JE-*A])
DI	☞ Page 1836 External input signal in MR-J4-□A ([MELSERVO-J4-*A, -JE-*A])
	☞ Page 1836 External input signal in MR-JE-□A ([MELSERVO-J4-*A, -JE-*A])
DO	☞ Page 1836 External output signal in MR-J4-□A ([MELSERVO-J4-*A, -JE-*A])
	☞ Page 1836 External output signal in MR-JE-□A ([MELSERVO-J4-*A, -JE-*A])
ALD	☞ Page 1836 Life diagnosis ([MELSERVO-J4-*A, -JE-*A])
TMI	☞ Page 1837 Input signal for test operation (for test operation) ([MELSERVO-J4-*A, -JE-*A])
TMO	☞ Page 1837 Forced output of signal pin (for test operation) ([MELSERVO-J4-*A, -JE-*A])
TMD	☞ Page 1837 Set data (for test operation) ([MELSERVO-J4-*A, -JE-*A])

Servo amplifier request ([MELSERVO-J4-*A, -JE-*A])

○: Available

×: Not available

Virtual device name	Name	Symbol	MR-J4-□A	MR-JE-□A
SP0	Status display data clear	—	○	○
SP1	Current alarm clear	—	○	○
SP2	Alarm history clear	—	○	○
SP3	External input signal prohibited	—	○	○
SP4	External output signal prohibited	—	○	○
SP5	External input signal resumed	—	○	○
SP6	External output signal resumed	—	○	○

When using the servo amplifier request, note the following.

Precautions	Description
When setting a device for a bit switch	Do not select [Alternate] for [Switch Action] of the bit switch.

Operation mode selection ([MELSERVO-J4-*A, -JE-*A])

○: Available

×: Not available

Virtual device name	Name	Symbol	MR-J4-□A	MR-JE-□A
OM0	Normal mode (not test operation mode)	—	○	○
OM1	JOG operation	—	○	○
OM2	Positioning operation	—	○	○
OM4	Output signal (DO) forced output	—	○	○

When using the operation mode selection, note the following.

Precautions	Description
When setting a device for a bit switch	Do not select [Alternate] for [Switch Action] of the bit switch.

Instruction demand (for test operation) ([MELSERVO-J4-*A, -JE-*A])

○: Available

×: Not available

Virtual device name	Name	Symbol	MR-J4-□A	MR-JE-□A
TMB1	Temporary stop command	—	○	○
TMB2	Test operation (positioning operation) start command	—	○	○
TMB3	Forward rotation direction	—	○	○
TMB4	Reverse rotation direction	—	○	○
TMB5	Restart for remaining distance	—	○	○
TMB6	Remaining distance clear	—	○	○

When using the instruction demand (for test operation), note the following.

Precautions	Description
When setting a device for a bit switch	Do not select [Alternate] for [Switch Action] of the bit switch.

One-touch tuning instruction ([MELSERVO-J4-*A, -JE-*A])

○: Available

×: Not available

Virtual device name	Name	Symbol	MR-J4-□A	MR-JE-□A
OTI0	One-touch tuning start command (Basic mode)	—	○	○
OTI1	One-touch tuning start command (High mode)	—	○	○
OTI2	One-touch tuning start command (Low mode)	—	○	○
OTI3	One-touch tuning stop command	—	○	○
OTI4	Return to initial value	—	○	○
OTI5	Return to value before adjustment	—	○	○

Basic parameter ([MELSERVO-J4-*A, -JE-*A])

Use an appropriate device according to the write destination of the servo amplifier.

- PA1 to PA32: Writing data to the RAM of a servo amplifier
- PA1001 to PA1032: Writing data to the EEPROM of a servo amplifier

For the parameters prefixed by an asterisk (*), setting becomes effective when the power is turned off once and back on after setting the parameter data.

○: Available

×: Not available

Virtual device name	Name	Symbol	MR-J4-□A	MR-JE-□A
PA1, PA1001	Operation mode	*STY	○	○
PA2, PA1002	Regenerative brake option	*REG	○	○
PA3, PA1003	Absolute position detection system	*ABS	○	×
PA4, PA1004	Function selection A-1	*AOP1	○	○
PA5, PA1005	Number of command input pulses per revolution	*FBP	○	○
PA6, PA1006	Electronic gear numerator (command pulse multiplication numerator)	CMX	○	○
PA7, PA1007	Electronic gear denominator (command pulse multiplication denominator)	CDV	○	○
PA8, PA1008	Auto tuning mode	ATU	○	○
PA9, PA1009	Auto tuning response	RSP	○	○
PA10, PA1010	In-position range	INP	○	○
PA11, PA1011	Forward rotation torque limit	TLP	○	○
PA12, PA1012	Reverse rotation torque limit	TLN	○	○
PA13, PA1013	Command pulse input form	*PLSS	○	○
PA14, PA1014	Rotation direction selection	*POL	○	○
PA15, PA1015	Encoder output pulses	*ENR	○	○
PA16, PA1016	Encoder output pulses 2	*ENR2	○	○
PA17 to PA18, PA1017 to PA1018	For manufacturer setting	—	×	×
PA19, PA1019	Parameter block	*BLK	○	○
PA20, PA1020	Tough drive setting	*TDS	○	○
PA21, PA1021	Function selection A-3	*AOP3	○	○
PA22, PA1022	For manufacturer setting	—	×	×
PA23, PA1023	Drive recorder arbitrary alarm trigger setting	DRAT	○	○
PA24, PA1024	Function selection A-4	*AOP4	○	○
PA25, PA1025	One-touch tuning - Overshoot permissible level	OTHOV	○	○
PA26, PA1026	Function selection A-5	*AOP5	○	○
PA27 to PA32, PA1027 to PA1032	For manufacturer setting	—	×	×

Gain filter parameter ([MELSERVO-J4-*A, -JE-*A])

Use an appropriate device according to the write destination of the servo amplifier.

- PB1 to PB64: Writing data to the RAM of a servo amplifier
- PB1001 to PB1064: Writing data to the EEPROM of a servo amplifier

For the parameters prefixed by an asterisk (*), setting becomes effective when the power is turned off once and back on after setting the parameter data.

○: Available

×: Not available

Virtual device name	Name	Symbol	MR-J4-□A	MR-JE-□A
PB1, PB1001	Adaptive tuning mode (Adaptive filter II)	FILT	○	○
PB2, PB1002	Vibration suppression control tuning mode (advanced vibration suppression control)	VRFT	○	○
PB3, PB1003	Position command acceleration/deceleration time constant (position smoothing)	PST	○	○
PB4, PB1004	Feed forward gain	FFC	○	○
PB5, PB1005	For manufacturer setting	—	×	×
PB6, PB1006	Load inertia moment ratio	GD2	○	○
PB7, PB1007	Model control gain	PG1	○	○
PB8, PB1008	Position control gain	PG2	○	○
PB9, PB1009	Speed control gain	VG2	○	○
PB10, PB1010	Speed integral compensation	VIC	○	○
PB11, PB1011	Speed differential compensation	VDC	○	○
PB12, PB1012	Overshoot amount compensation	OVA	○	○
PB13, PB1013	Machine resonance suppression filter 1	NH1	○	○
PB14, PB1014	Notch shape selection 1	NHQ1	○	○
PB15, PB1015	Machine resonance suppression filter 2	NH2	○	○
PB16, PB1016	Notch shape selection 2	NHQ2	○	○
PB17, PB1017	Shaft resonance suppression filter	NHF	○	○
PB18, PB1018	Low-pass filter setting	LPF	○	○
PB19, PB1019	Vibration suppression control 1 - Vibration frequency	VRF11	○	○
PB20, PB1020	Vibration suppression control 1 - Resonance frequency	VRF12	○	○
PB21, PB1021	Vibration suppression control 1 - Vibration frequency damping	VRF13	○	○
PB22, PB1022	Vibration suppression control 1 - Resonance frequency damping	VRF14	○	○
PB23, PB1023	Low-pass filter setting	VFBF	○	○
PB24, PB1024	Slight vibration suppression control	*MVS	○	○
PB25, PB1025	Function selection B-1	*BOP1	○	○
PB26, PB1026	Gain switching function	*CDP	○	○
PB27, PB1027	Gain switching condition	CDL	○	○
PB28, PB1028	Gain switching time constant	CDT	○	○
PB29, PB1029	Load to motor inertia ratio after gain switching	GD2B	○	○
PB30, PB1030	Position loop gain after gain switching	PG2B	○	○
PB31, PB1031	Speed loop gain after gain switching	VG2B	○	○
PB32, PB1032	Speed integral compensation after gain switching	VICB	○	○
PB33, PB1033	Vibration suppression control 1 - Vibration frequency after gain switching	VRF1B	○	○
PB34, PB1034	Vibration suppression control 1 - Resonance frequency after gain switching	VRF2B	○	○
PB35, PB1035	Vibration suppression control 1 - Vibration frequency damping after gain switching	VRF3B	○	○
PB36, PB1036	Vibration suppression control 1 - Resonance frequency damping after gain switching	VRF4B	○	○
PB37 to PB44, PB1037 to PB1044	For manufacturer setting	—	×	×
PB45, PB1045	Command notch filter	CNHF	○	○

Virtual device name	Name	Symbol	MR-J4-□A	MR-JE-□A
PB46, PB1046	Machine resonance suppression filter 3	NH3	○	○
PB47, PB1047	Notch shape selection 3	NHQ3	○	○
PB48, PB1048	Machine resonance suppression filter 4	NH4	○	○
PB49, PB1049	Notch shape selection 4	NHQ4	○	○
PB50, PB1050	Machine resonance suppression filter 5	NH5	○	○
PB51, PB1051	Notch shape selection 5	NHQ5	○	○
PB52, PB1052	Vibration suppression control 2 - Vibration frequency	VRF21	○	○
PB53, PB1053	Vibration suppression control 2 - Resonance frequency	VRF22	○	○
PB54, PB1054	Vibration suppression control 2 - Vibration frequency damping	VRF23	○	○
PB55, PB1055	Vibration suppression control 2 - Resonance frequency damping	VRF24	○	○
PB56, PB1056	Vibration suppression control 2 - Vibration frequency after gain switching	VRF21B	○	○
PB57, PB1057	Vibration suppression control 2 - Resonance frequency after gain switching	VRF22B	○	○
PB58, PB1058	Vibration suppression control 2 - Vibration frequency damping after gain switching	VRF23B	○	○
PB59, PB1059	Vibration suppression control 2 - Resonance frequency damping after gain switching	VRF24B	○	○
PB60, PB1060	Model loop gain after gain switching	PG1B	○	○
PB61 to PB64, PB1061 to PB1064	For manufacturer setting	—	×	×

Extension setting parameter ([MELSERVO-J4-*A, -JE-*A])

Use an appropriate device according to the write destination of the servo amplifier.

- PC1 to PC80: Writing data to the RAM of a servo amplifier
- PC1001 to PC1080: Writing data to the EEPROM of a servo amplifier

For the parameters prefixed by an asterisk (*), setting becomes effective when the power is turned off once and back on after setting the parameter data.

○: Available

×: Not available

Virtual device name	Name	Symbol	MR-J4-□A	MR-JE-□A
PC1, PC1001	Acceleration time constant	STA	○	○
PC2, PC1002	Deceleration time constant	STB	○	○
PC3, PC1003	S-pattern acceleration/deceleration time constant	STC	○	○
PC4, PC1004	Torque command time constant	TQC	○	○
PC5, PC1005	Internal speed command1/limit1	SC1	○	○
PC6, PC1006	Internal speed command2/limit2	SC2	○	○
PC7, PC1007	Internal speed command3/limit3	SC3	○	○
PC8, PC1008	Internal speed command4/limit4	SC4	○	○
PC9, PC1009	Internal speed command5/limit5	SC5	○	○
PC10, PC1010	Internal speed command6/limit6	SC6	○	○
PC11, PC1011	Internal speed command7/limit7	SC7	○	○
PC12, PC1012	Analog speed command maximum speed/limit maximum speed	VCM	○	○
PC13, PC1013	Analog torque command maximum output	TLC	○	○
PC14, PC1014	Analog monitor 1 output	MOD1	○	○
PC15, PC1015	Analog monitor 2 output	MOD2	○	○
PC16, PC1016	Electromagnetic brake sequence output	MBR	○	○
PC17, PC1017	Zero speed	ZSP	○	○
PC18, PC1018	Alarm history clear	*BPS	○	○
PC19, PC1019	Encoder output pulse selection	*ENRS	○	○
PC20, PC1020	Station number setting	*SNO	○	×
PC21, PC1021	Communication function selection	*SOP	○	×
PC22, PC1022	Function selection C-1	*COP1	○	○

Virtual device name	Name	Symbol	MR-J4-□A	MR-JE-□A
PC23, PC1023	Function selection C-2	*COP2	○	○
PC24, PC1024	Function selection C-3	*COP3	○	○
PC25, PC1025	For manufacturer setting	—	×	×
PC26, PC1026	Function selection C-5	*COP5	○	○
PC27, PC1027	Function selection C-6	*COP6	○	○
PC28 to PC29, PC1028 to PC1029	For manufacturer setting	—	×	×
PC30, PC1030	Acceleration time constant 2	STA2	○	○
PC31, PC1031	Deceleration time constant 2	STB2	○	○
PC32, PC1032	Command input pulse multiplication numerator 2	CMX2	○	○
PC33, PC1033	Command input pulse multiplication numerator 3	CMX3	○	○
PC34, PC1034	Command input pulse multiplication numerator 4	CMX4	○	○
PC35, PC1035	Internal torque limit 2	TL2	○	○
PC36, PC1036	Status display selection	*DMD	○	○
PC37, PC1037	Analog speed command offset/limit offset	VCO	○	○
PC38, PC1038	Analog torque command offset/limit offset	TPO	○	○
PC39, PC1039	Analog monitor 1 offset	MO1	○	○
PC40, PC1040	Analog monitor 2 offset	MO2	○	○
PC41 to PC42, PC1041 to PC1042	For manufacturer setting	—	×	×
PC43, PC1043	Error excessive alarm detection level	ERZ	○	○
PC44 to PC50, PC1044 to PC1050	For manufacturer setting	—	×	×
PC51, PC1051	Forced stop deceleration time constant	RSBR	○	○
PC52 to PC53, PC1052 to PC1053	For manufacturer setting	—	×	×
PC54, PC1054	Vertical axis freefall prevention compensation amount	RSUP1	○	○
PC55 to PC59, PC1055 to PC1059	For manufacturer setting	—	×	×
PC60, PC1060	Function selection C-D	*COPD	○	○
PC61 to PC65, PC1061 to PC1065	For manufacturer setting	—	×	×
PC66, PC1066	Mark detection range+	LPSPL	×	○
PC67, PC1067	Mark detection range+	LPSPH	×	○
PC68, PC1068	Mark detection range-	LPSNL	×	○
PC69, PC1069	Mark detection range-	LPSNH	×	○
PC70, PC1070	Modbus-RTU Communication station number setting	*SNOM	×	○
PC71, PC1071	Function selection C-F	*COPF	×	○
PC72, PC1072	Function selection C-G	*COPG	×	○
PC73, PC1073	Error excessive warning level	ERW	×	○
PC74 to PC80, PC1074 to PC1080	For manufacturer setting	—	×	×

I/O setting parameter ([MELSERVO-J4-*A, -JE-*A])

Use an appropriate device according to the write destination of the servo amplifier.

- PD1 to PD48: Writing data to the RAM of a servo amplifier
- PD1001 to PD1048: Writing data to the EEPROM of a servo amplifier

For the parameters prefixed by an asterisk (*), setting becomes effective when the power is turned off once and back on after setting the parameter data.

○: Available

×: Not available

Virtual device name	Name	Symbol	MR-J4-□A	MR-JE-□A
PD1, PD1001	Input signal automatic on selection 1	*DIA1	○	○
PD2, PD1002	For manufacturer setting	—	×	×
PD3, PD1003	Input device selection 1L	*DI1L	○	○
PD4, PD1004	Input device selection 1H	*DI1H	○	○
PD5, PD1005	Input device selection 2L	*DI2L	○	×
PD6, PD1006	Input device selection 2H	*DI2H	○	×
PD7, PD1007	Input device selection 3L	*DI3L	○	×
PD8, PD1008	Input device selection 3H	*DI3H	○	×
PD9, PD1009	Input device selection 4L	*DI4L	○	×
PD10, PD1010	Input device selection 4H	*DI4H	○	×
PD11, PD1011	Input device selection 5L	*DI5L	○	○
PD12, PD1012	Input device selection 5H	*DI5H	○	○
PD13, PD1013	Input device selection 6L	*DI6L	○	○
PD14, PD1014	Input device selection 6H	*DI6H	○	○
PD15 to PD16, PD1015 to PD1016	For manufacturer setting	—	×	×
PD17, PD1017	Input device selection 8L	*DI8L	○	○
PD18, PD1018	Input device selection 8H	*DI8H	○	○
PD19, PD1019	Input device selection 9L	*DI9L	○	○
PD20, PD1020	Input device selection 9H	*DI9H	○	○
PD21, PD1021	Input device selection 10L	*DI10L	○	×
PD22, PD1022	Input device selection 10H	*DI10H	○	×
PD23, PD1023	Output device selection 1	*DO1	○	×
PD24, PD1024	Output device selection 2	*DO2	○	○
PD25, PD1025	Output device selection 3	*DO3	○	○
PD26, PD1026	Output device selection 4	*DO4	○	×
PD27, PD1027	For manufacturer setting	—	×	×
PD28, PD1028	Output device selection 6	*DO6	○	○
PD29, PD1029	Input filter setting	*DIF	○	○
PD30, PD1030	Function selection D-1	*DOP1	○	○
PD31, PD1031	For manufacturer setting	—	×	×
PD32, PD1032	Function selection D-3	*DOP3	○	○
PD33, PD1033	For manufacturer setting	—	×	×
PD34, PD1034	Function selection D-5	*DOP5	○	○
PD35 to PD40, PD1035 to PD1040	For manufacturer setting	—	×	×
PD41, PD1041	Input signal automatic on selection 3	*DIA3	×	○
PD42, PD1042	Input signal automatic on selection 4	*DIA4	×	○
PD43, PD1043	Input device selection 11L	*DI11L	×	○
PD44, PD1044	Input device selection 11H	*DI11H	×	○
PD45, PD1045	Input device selection 12L	*DI12L	×	○
PD46, PD1046	Input device selection 12H	*DI12H	×	○
PD47 to PD48, PD1047 to PD1048	For manufacturer setting	—	×	×

Linear servo motor/DD motor setting parameter ([MELSERVO-J4-*A, -JE-*A])

Use an appropriate device according to the write destination of the servo amplifier.

- PL1 to PL48: Writing data to the RAM of a servo amplifier
- PL1001 to PL1048: Writing data to the EEPROM of a servo amplifier

For the parameters prefixed by an asterisk (*), setting becomes effective when the power is turned off once and back on after setting the parameter data.

○: Available

×: Not available

Virtual device name	Name	Symbol	MR-J4-□A	MR-JE-□A
PL1, PL1001	Linear servo motor/DD motor function selection 1	*LIT1	○	×
PL2, PL1002	Linear encoder resolution - Numerator	*LIM	○	×
PL3, PL1003	Linear encoder resolution - Denominator	*LID	○	×
PL4, PL1004	Linear servo motor/DD motor function selection 2	*LIT2	○	×
PL5, PL1005	Position deviation error detection level	LB1	○	×
PL6, PL1006	Speed deviation error detection level	LB2	○	×
PL7, PL1007	Torque/thrust deviation error detection level	LB3	○	×
PL8, PL1008	Linear servo motor/DD motor function selection 3	*LIT3	○	×
PL9, PL1009	Magnetic pole detection voltage level	LPWM	○	×
PL10 to PL16, PL1010 to PL1016	For manufacturer setting	—	×	×
PL17, PL1017	Magnetic pole detection - Minute position detection method - Function selection	LTSTS	○	×
PL18, PL1018	Magnetic pole detection - Minute position detection method - Identification signal amplitude	IDLV	○	×
PL19 to PL48, PL1019 to PL1048	For manufacturer setting	—	×	×

Status display ([MELSERVO-J4-*A, -JE-*A])

○: Available

×: Not available

Virtual device name	Name	Symbol	MR-J4-□A	MR-JE-□A
ST0	Cumulative feedback pulses	—	○	○
ST1	Servo motor speed	—	○	○
ST2	Droop pulses	—	○	○
ST3	Cumulative command pulses	—	○	○
ST4	Command pulse frequency	—	○	○
ST5	Analog speed command voltage/limit voltage	—	○	○
ST6	Analog torque command voltage/limit voltage	—	○	○
ST7	Regenerative load ratio	—	○	○
ST8	Effective load ratio	—	○	○
ST9	Peak load ratio	—	○	○
ST10	Instantaneous torque	—	○	○
ST11	Within one-revolution position (1 pulse unit)	—	○	○
ST12	ABS counter	—	○	○
ST13	Load inertia moment ratio	—	○	○
ST14	Bus voltage	—	○	○
ST15 to ST31	For manufacturer setting	—	×	×
ST32	Internal temperature of encoder	—	○	○
ST33	Settling time	—	○	○
ST34	Oscillation detection frequency	—	○	○
ST35	Number of tough drive operations	—	○	○
ST36 to ST39	For manufacturer setting	—	×	×
ST40	Unit power consumption 1 (increment of 1 W)	—	○	○
ST41	Unit total power consumption 1 (increment of 1 Wh)	—	○	○

Alarm (MELSERVO-J3-*A compatible) ([MELSERVO-J4-*A, -JE-*A])

○: Available

×: Not available

Virtual device name	Name	Symbol	MR-J4-□A	MR-JE-□A
AL0	Current alarm number	—	○	○
AL1	Detailed data of current alarms	—	○	×
AL11	Servo status when alarm occurs Cumulative feedback pulses	—	○	○
AL12	Servo status when alarm occurs Servo motor speed	—	○	○
AL13	Servo status when alarm occurs Droop pulses	—	○	○
AL14	Servo status when alarm occurs cumulative command pulses	—	○	○
AL15	Servo status when alarm occurs command pulse frequency	—	○	○
AL16	Servo status(alarm) analog speed command voltage/limit voltage	—	○	○
AL17	Servo status(alarm) analog torque command voltage/limit voltage	—	○	○
AL18	Servo status when alarm occurs regenerative load ratio	—	○	○
AL19	Servo status when alarm occurs effective load ratio	—	○	○
AL20	Servo status when alarm occurs peak load ratio	—	○	○
AL21	Servo status when alarm occurs Instantaneous torque	—	○	○
AL22	Servo status(alarm) Within one-revolution position(1 pulse unit)	—	○	○
AL23	Servo status when alarm occurs ABS counter	—	○	○
AL24	Servo status when alarm occurs load inertia moment ratio	—	○	○
AL25	Servo status when alarm occurs Bus voltage	—	○	○
AL200	Alarm number from Alarm History most recent alarm	—	○	○
AL201	Alarm number from Alarm History first alarm in past	—	○	○
AL202	Alarm number from Alarm History second alarm in past	—	○	○
AL203	Alarm number from Alarm History third alarm in past	—	○	○
AL204	Alarm number from Alarm History fourth alarm in past	—	○	○
AL205	Alarm number from Alarm History fifth alarm in past	—	○	○
AL210	Alarm occurrence time in alarm history most recent alarm	—	○	○
AL211	Alarm occurrence time in alarm history first alarm in past	—	○	○
AL212	Alarm occurrence time in alarm history second alarm in past	—	○	○
AL213	Alarm occurrence time in alarm history third alarm in past	—	○	○
AL214	Alarm occurrence time in alarm history fourth alarm in past	—	○	○
AL215	Alarm occurrence time in alarm history fifth alarm in past	—	○	○
AL230	Detailed alarm from Alarm History most recent alarm	—	○	×
AL231	Detailed alarm from Alarm History first alarm in past	—	○	×
AL232	Detailed alarm from Alarm History second alarm in past	—	○	×
AL233	Detailed alarm from Alarm History third alarm in past	—	○	×
AL234	Detailed alarm from Alarm History fourth alarm in past	—	○	×
AL235	Detailed alarm from Alarm History fifth alarm in past	—	○	×

Extension setting No.2 parameter ([MELSERVO-J4-*A, -JE-*A])

Use an appropriate device according to the write destination of the servo amplifier.

- PE1 to PE64: Writing data to the RAM of a servo amplifier
- PE1001 to PE1064: Writing data to the EEPROM of a servo amplifier

For the parameters prefixed by an asterisk (*), setting becomes effective when the power is turned off once and back on after setting the parameter data.

○: Available

×: Not available

Virtual device name	Name	Symbol	MR-J4-□A	MR-JE-□A
PE1 to PE40, PE1001 to PE1040	For manufacturer setting	—	×	×
PE41, PE1041	Function selection E-3	EOP3	○	○
PE42 to PE43, PE1042 to PE1043	For manufacturer setting	—	×	×
PE44, PE1044	Lost motion compensation positive-side compensation value selection	LMCP	×	○
PE45, PE1045	Lost motion compensation negative-side compensation value selection	LMCN	×	○
PE46, PE1046	Lost motion filter setting	LMFLT	×	○
PE47, PE1047	Torque offset	TOF	×	○
PE48, PE1048	Lost motion compensation function selection	*LMOP	×	○
PE49, PE1049	Lost motion compensation timing	LMCD	×	○
PE50, PE1050	Lost motion compensation non-sensitive band	LMCT	×	○
PE51 to PE64, PE1051 to PE1064	For manufacturer setting	—	×	×

Extension setting No.3 parameter ([MELSERVO-J4-*A, -JE-*A])

Use an appropriate device according to the write destination of the servo amplifier.

- PF1 to PF48: Writing data to the RAM of a servo amplifier
- PF1001 to PF1048: Writing data to the EEPROM of a servo amplifier

For the parameters prefixed by an asterisk (*), setting becomes effective when the power is turned off once and back on after setting the parameter data.

○: Available

×: Not available

Virtual device name	Name	Symbol	MR-J4-□A	MR-JE-□A
PF1 to PF8, PF1001 to PF1008	For manufacturer setting	—	×	×
PF9, PF1009	Function selection F-5	*FOP5	○	○
PF10 to PF14, PF1010 to PF1014	For manufacturer setting	—	×	×
PF15, PF1015	Electronic dynamic brake operating time	DBT	○	×
PF16 to PF20, PF1016 to PF1020	For manufacturer setting	—	×	×
PF21, PF1021	Drive recorder switching time setting	DRT	○	○
PF22, PF1022	For manufacturer setting	—	×	×
PF23, PF1023	Vibration tough drive - Oscillation detection level	OSCL1	○	○
PF24, PF1024	Vibration tough drive function selection	OSCL2	○	○
PF25, PF1025	Instantaneous power failure tough drive - Detection time	CVAT	○	○
PF26 to PF30, PF1026 to PF1030	For manufacturer setting	—	×	×
PF31, PF1031	Machine diagnosis function - Friction judgment speed	FRIC	○	○
PF32 to PF44, PF1032 to PF1044	For manufacturer setting	—	×	×
PF45, PF1045	Function selection F-12	*FOP12	×	○
PF46, PF1046	Modbus-RTU communication - Communication timeout time	MIC	×	○
PF47 to PF48, PF1047 to PF1048	For manufacturer setting	—	×	×

Alarm (MELSERVO-J4-*A extended) ([MELSERVO-J4-*A, -JE-*A])

○: Available

×: Not available

Virtual device name	Name	Symbol	MR-J4-□A	MR-JE-□A
ALM0	Current alarm number	—	○	○
ALM1	Detailed data of current alarms	—	○	×
ALM11	Servo status(alarm) Cumulative feedback pulses	—	○	○
ALM12	Servo status(alarm) Servo motor speed	—	○	○
ALM13	Servo status(alarm) Droop pulses	—	○	○
ALM14	Servo status(alarm) Cumulative command pulses	—	○	○
ALM15	Servo status(alarm) Command pulse frequency	—	○	○
ALM16	Servo status(alarm) analog speed command voltage/limit voltage	—	○	○
ALM17	Servo status(alarm) analog torque command voltage/limit voltage	—	○	○
ALM18	Servo status(alarm) Regenerative load ratio	—	○	○
ALM19	Servo status(alarm) Effective load ratio	—	○	○
ALM20	Servo status(alarm) Peak load ratio	—	○	○
ALM21	Servo status(alarm) Instantaneous torque	—	○	○
ALM22	Servo status(alarm) Within one-revolution position(1 pulse unit)	—	○	○
ALM23	Servo status(alarm) ABS counter	—	○	○
ALM24	Servo status(alarm) Load inertia moment ratio	—	○	○
ALM25	Servo status(alarm) Bus voltage	—	○	○
ALM26 to ALM42	For manufacturer setting	—	×	×
ALM43	Servo status(alarm) Internal temperature of encoder	—	○	○
ALM44	Servo status(alarm) Setting time	—	○	○
ALM45	Servo status(alarm) Oscillation detection frequency	—	○	○
ALM46	Servo status(alarm) Number of tough drives	—	○	○
ALM47 to ALM50	For manufacturer setting	—	×	×
ALM51	Servo status(alarm) Unit power consumption 1 (increment of 1 W)	—	○	○
ALM52	Servo status(alarm) Unit total power consumption 1 (increment of 1 Wh)	—	○	○
ALM200	Alarm number from Alarm History most recent alarm	—	○	○
ALM201	Alarm number from Alarm History 1st alarm in past	—	○	○
ALM202	Alarm number from Alarm History 2nd alarm in past	—	○	○
ALM203	Alarm number from Alarm History 3rd alarm in past	—	○	○
ALM204	Alarm number from Alarm History 4th alarm in past	—	○	○
ALM205	Alarm number from Alarm History 5th alarm in past	—	○	○
ALM206	Alarm number from Alarm History 6th alarm in past	—	○	○
ALM207	Alarm number from Alarm History 7th alarm in past	—	○	○
ALM208	Alarm number from Alarm History 8th alarm in past	—	○	○
ALM209	Alarm number from Alarm History 9th alarm in past	—	○	○
ALM210	Alarm number from Alarm History 10th alarm in past	—	○	○
ALM211	Alarm number from Alarm History 11th alarm in past	—	○	○
ALM212	Alarm number from Alarm History 12th alarm in past	—	○	○
ALM213	Alarm number from Alarm History 13th alarm in past	—	○	○
ALM214	Alarm number from Alarm History 14th alarm in past	—	○	○
ALM215	Alarm number from Alarm History 15th alarm in past	—	○	○
ALM220	Alarm occurrence time in alarm history most recent alarm	—	○	○
ALM221	Alarm occurrence time in alarm history 1st alarm in past	—	○	○
ALM222	Alarm occurrence time in alarm history 2nd alarm in past	—	○	○
ALM223	Alarm occurrence time in alarm history 3rd alarm in past	—	○	○
ALM224	Alarm occurrence time in alarm history 4th alarm in past	—	○	○
ALM225	Alarm occurrence time in alarm history 5th alarm in past	—	○	○
ALM226	Alarm occurrence time in alarm history 6th alarm in past	—	○	○

Virtual device name	Name	Symbol	MR-J4-□A	MR-JE-□A
ALM227	Alarm occurrence time in alarm history 7th alarm in past	—	○	○
ALM228	Alarm occurrence time in alarm history 8th alarm in past	—	○	○
ALM229	Alarm occurrence time in alarm history 9th alarm in past	—	○	○
ALM230	Alarm occurrence time in alarm history 10th alarm in past	—	○	○
ALM231	Alarm occurrence time in alarm history 11th alarm in past	—	○	○
ALM232	Alarm occurrence time in alarm history 12th alarm in past	—	○	○
ALM233	Alarm occurrence time in alarm history 13th alarm in past	—	○	○
ALM234	Alarm occurrence time in alarm history 14th alarm in past	—	○	○
ALM235	Alarm occurrence time in alarm history 15th alarm in past	—	○	○
ALM240	Detailed alarm from Alarm History most recent alarm	—	○	×
ALM241	Detailed alarm from Alarm History 1st alarm in past	—	○	×
ALM242	Detailed alarm from Alarm History 2nd alarm in past	—	○	×
ALM243	Detailed alarm from Alarm History 3rd alarm in past	—	○	×
ALM244	Detailed alarm from Alarm History 4th alarm in past	—	○	×
ALM245	Detailed alarm from Alarm History 5th alarm in past	—	○	×
ALM246	Detailed alarm from Alarm History 6th alarm in past	—	○	×
ALM247	Detailed alarm from Alarm History 7th alarm in past	—	○	×
ALM248	Detailed alarm from Alarm History 8th alarm in past	—	○	×
ALM249	Detailed alarm from Alarm History 9th alarm in past	—	○	×
ALM250	Detailed alarm from Alarm History 10th alarm in past	—	○	×
ALM251	Detailed alarm from Alarm History 11th alarm in past	—	○	×
ALM252	Detailed alarm from Alarm History 12th alarm in past	—	○	×
ALM253	Detailed alarm from Alarm History 13th alarm in past	—	○	×
ALM254	Detailed alarm from Alarm History 14th alarm in past	—	○	×
ALM255	Detailed alarm from Alarm History 15th alarm in past	—	○	×

Machine diagnosis data ([MELSERVO-J4-*A, -JE-*A])

○: Available

×: Not available

Virtual device name	Name	Symbol	MR-J4-□A	MR-JE-□A
MD0	Machine diagnosis data station number	—	○	○
MD1	Machine diagnosis data shift judgment (test mode)	—	○	○
MD2	Machine diagnosis data status	—	○	○
MD3	Machine diagnosis data coulomb friction torque in positive direction	—	○	○
MD4	Machine diagnosis data friction torque at rated speed in positive direction	—	○	○
MD5	Machine diagnosis data coulomb friction torque in negative direction	—	○	○
MD6	Machine diagnosis data friction torque at rated speed in negative direction	—	○	○
MD7	Machine diagnosis data oscillation frequency (motor is stopped)	—	○	○
MD8	Machine diagnosis data vibration level (motor is stopped)	—	○	○
MD9	Machine diagnosis data oscillation frequency (motor is operating)	—	○	○
MD10	Machine diagnosis data vibration level (motor is operating)	—	○	○
MD11	Machine diagnosis data, rated speed at forward or reverse rotation torque	—	○	○

One-touch tuning data ([MELSERVO-J4-*A, -JE-*A])

○: Available

×: Not available

Virtual device name	Name	Symbol	MR-J4-□A	MR-JE-□A
OTS0	One-touch tuning status confirmation	—	○	○
OTS1	Error code list	—	○	○
OTS2	Settling time	—	○	○
OTS3	Overshoot amount	—	○	○

External input signal in MR-J4-□A ([MELSERVO-J4-*A, -JE-*A])

Virtual device name	Name	Symbol	Data to be read from the servo amplifier
DI0	Input device statuses	—	For the mapping of the bits corresponding to the data to be read, refer to the following. 📖MR-J4-_A_(-RJ)/MR-J4-03A6(-RJ) SERVO AMPLIFIER INSTRUCTION MANUAL
DI1	External input pin statuses	—	
DI2	Statuses of input devices switched on through communication	—	

External input signal in MR-JE-□A ([MELSERVO-J4-*A, -JE-*A])

Virtual device name	Name	Symbol	Data to be read from the servo amplifier
DI0	Input device statuses	—	System information
DI1	External input pin statuses	—	For the mapping of the bits corresponding to the data to be read, refer to the following. 📖MR-JE-_A SERVO AMPLIFIER INSTRUCTION MANUAL
DI2	Statuses of input devices switched on through communication	—	System information

External output signal in MR-J4-□A ([MELSERVO-J4-*A, -JE-*A])

Virtual device name	Name	Symbol	Data to be read from the servo amplifier
DO0	Output device statuses	—	For the mapping of the bits corresponding to the data to be read, refer to the following. 📖MR-J4-_A_(-RJ)/MR-J4-03A6(-RJ) SERVO AMPLIFIER INSTRUCTION MANUAL
DO1	External output pin statuses	—	

External output signal in MR-JE-□A ([MELSERVO-J4-*A, -JE-*A])

Virtual device name	Name	Symbol	Data to be read from the servo amplifier
DO0	Output device statuses	—	For the mapping of the bits corresponding to the data to be read, refer to the following. 📖MR-JE-_A SERVO AMPLIFIER INSTRUCTION MANUAL
DO1	External output pin statuses	—	System information

Life diagnosis ([MELSERVO-J4-*A, -JE-*A])

○: Available

×: Not available

Virtual device name	Name	Symbol	MR-J4-□A	MR-JE-□A
ALD0	Cumulative power-on time	—	○	○
ALD1	Number of inrush current switching times	—	○	○

Input signal for test operation (for test operation) ([MELSERVO-J4-*A, -JE-*A])

○: Available

×: Not available

Virtual device name	Name	Symbol	MR-J4-□A	MR-JE-□A
TMI0	Input signal for test operation	—	○	○

When using the input signal for test operation (for test operation), note the following.

Precautions	Description
Writing a value to a virtual device using an object	Numerical input cannot be used. Use a word switch for writing.

Forced output of signal pin (for test operation) ([MELSERVO-J4-*A, -JE-*A])

○: Available

×: Not available

Virtual device name	Name	Symbol	MR-J4-□A	MR-JE-□A
TMO0	Forced output of signal pin	—	○	○

When using the forced output of signal pin (for test operation), note the following.

Precautions	Description
Writing a value to a virtual device using an object	Numerical input cannot be used. Use a word switch for writing.

Set data (for test operation) ([MELSERVO-J4-*A, -JE-*A])

○: Available

×: Not available

Virtual device name	Name	Symbol	MR-J4-□A	MR-JE-□A
TMD0	Writes the speed (test mode)	—	○	○
TMD1	Writes the acceleration/deceleration time constant (test mode)	—	○	○
TMD3	Writes the moving distance (test mode)	—	○	○

When using the set data (for test operation), note the following.

Precautions	Description
Writing a value to a virtual device using an object	Numerical input cannot be used. Use a word switch for writing.

25.4.8 Precautions for virtual servo amplifier devices ([MELSERVO-J4-*A, -JE-*A])

For the precautions for virtual servo amplifier devices, refer to the following.

☞ Page 1802 Precautions for virtual servo amplifier devices ([MELSERVO-J3-*A])

25.5 [MELSERVO-J4-*A-RJ]

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Item	Reference
Specifications of bit devices	☞ Page 1838 Monitoring-supported bit devices ([MELSERVO-J4-*A-RJ])
	☞ Page 1838 Availability of writing/reading data to/from bit devices ([MELSERVO-J4-*A-RJ])
Specifications of word devices	☞ Page 1839 Monitoring-supported word devices ([MELSERVO-J4-*A-RJ])
	☞ Page 1840 Availability of writing/reading data to/from word devices ([MELSERVO-J4-*A-RJ])
Specifications of double-word devices	☞ Page 1841 Monitoring-supported double-word devices ([MELSERVO-J4-*A-RJ])
	☞ Page 1841 Availability of writing/reading data to/from double-word devices ([MELSERVO-J4-*A-RJ])
Specifications of virtual servo amplifier devices	☞ Page 1842 Virtual servo amplifier devices ([MELSERVO-J4-*A-RJ])
	☞ Page 1861 Precautions for virtual servo amplifier devices ([MELSERVO-J4-*A-RJ])

25.5.1 Monitoring-supported bit devices ([MELSERVO-J4-*A-RJ])

The following table shows monitoring-supported virtual bit devices for servo amplifiers.

To check whether writing/reading data to/from each device is available, refer to the following.

☞ Page 1838 Availability of writing/reading data to/from bit devices ([MELSERVO-J4-*A-RJ])

For details on virtual servo amplifier devices, refer to the following.

☞ Page 1842 Virtual servo amplifier devices ([MELSERVO-J4-*A-RJ])

○: Available

×: Not available

Device name		Device No. representation	Setting range	Specifications of EG devices*1	
				Assignment to EG devices	Access using a client
SP	Servo amplifier request	Decimal	0 to 6	×	×
OM	Operation mode selection	Decimal	0 to 5	×	×
TMB	Instruction demand (for test operation)	Decimal	1 to 6	×	×
OTI	One-touch tuning instruction	Decimal	0 to 5	×	×

*1 For the devices assigned to EG devices (gateway devices) and the compatible clients, refer to the following.
GT Designer3 (GOT3000) Screen Design Manual

25.5.2 Availability of writing/reading data to/from bit devices ([MELSERVO-J4-*A-RJ])

The following shows the availability of writing/reading data to/from bit devices by device type.

When the device type is other than the bit type, set the device No. in multiples of 16.

R/W: Both read and write

R/-: Read only

-/W: Write only

-/-: No read/write access

Device name	Device type				
	Bit	Byte (8 bits)	Word (16 bits)	Double-word (32 bits)	Quad-word (64 bits)
SP	-/W	-/-	-/-	-/-	-/-
OM	-/W	-/-	-/-	-/-	-/-
TMB	-/W	-/-	-/-	-/-	-/-
OTI	-/W	-/-	-/-	-/-	-/-

25.5.3 Monitoring-supported word devices ([MELSERVO-J4-*A-RJ])

The following table shows monitoring-supported virtual word devices for servo amplifiers.

To check whether writing/reading data to/from each device is available, refer to the following.

☞ Page 1840 Availability of writing/reading data to/from word devices ([MELSERVO-J4-*A-RJ])

For details on virtual servo amplifier devices, refer to the following.

☞ Page 1842 Virtual servo amplifier devices ([MELSERVO-J4-*A-RJ])

○: Available

×: Not available

Device name		Device No. representation	Setting range	Specifications of EG devices*1	
				Assignment to EG devices	Access using a client
PA	Basic parameter	Decimal	1 to 32 1001 to 1032	○	×
PB	Gain filter parameter	Decimal	1 to 64 1001 to 1064	○	×
PC	Extension setting parameter	Decimal	1 to 80 1001 to 1080	○	×
PD	I/O setting parameter	Decimal	1 to 48 1001 to 1048	○	×
PO	Option unit parameter	Decimal	1 to 32 1001 to 1032	○	×
PL	Linear servo motor/DD motor setting parameter	Decimal	1 to 48 1001 to 1048	○	×
PT	Positioning control parameter	Decimal	1 to 48 1001 to 1048	○	×
ST	Status display	Decimal	0 to 48	○	×
AL	Alarm (current alarm, J3A compatible)	Decimal	0 to 1 11 to 25	○	×
AL	Alarm (alarm history, J3A compatible)	Decimal	200 to 205 210 to 215 230 to 235	○	×
PE	Extension setting No.2 parameter	Decimal	1 to 64 1001 to 1064	○	×
PF	Extension setting No.3 parameter	Decimal	1 to 48 1001 to 1048	○	×
ALM	Alarm (current alarm J4A extend)	Decimal	0 to 1 11 to 59	○	×
ALM	Alarm (alarm history J4A extend)	Decimal	200 to 215 220 to 235 240 to 255	○	×
POS	Point table (position)	Decimal	1 to 255 1001 to 1255	○	×
SPD	Point table (speed)	Decimal	1 to 255 1001 to 1255	○	×
ACT	Point table (acceleration time constant)	Decimal	1 to 255 1001 to 1255	○	×
DCT	Point table (deceleration time constant)	Decimal	1 to 255 1001 to 1255	○	×
DWL	Point table (dwell)	Decimal	1 to 255 1001 to 1255	○	×
AUX	Point table (auxiliary function)	Decimal	1 to 255 1001 to 1255	○	×
MCD*2	Point table (M code)	Decimal	1 to 255 1001 to 1255	○	×
MD	Machine diagnosis data	Decimal	0 to 11	×	×
OTS	One-touch tuning data	Decimal	0 to 3	×	×

Device name		Device No. representation	Setting range	Specifications of EG devices*1	
				Assignment to EG devices	Access using a client
DI	External input signal	Decimal	0 to 6	×	×
DO	External output signal	Decimal	0 to 4	×	×

*1 For the devices assigned to EG devices (gateway devices) and the compatible clients, refer to the following.
GT Designer3 (GOT3000) Screen Design Manual
*2 MCD cannot be used as a real number.

25.5.4 Availability of writing/reading data to/from word devices ([MELSERVO-J4-*A-RJ])

The following shows the availability of writing/reading data to/from word devices by device type.

R/W: Both read and write

R/-: Read only

-/W: Write only

-/-: No read/write access

Device name	Device type			
	Word (16 bits)	Double-word (32 bits)	Quad-word (64 bits)	Bit of word data
PA	R/W	R/W	-/-	-/-
PB	R/W	R/W	-/-	-/-
PC	R/W	R/W	-/-	-/-
PD	R/W	R/W	-/-	-/-
PO	R/W	R/W	-/-	-/-
PL	R/W	R/W	-/-	-/-
PT	R/W	R/W	-/-	-/-
ST	R/-	R/-	-/-	-/-
AL	R/-	R/-	-/-	-/-
PE	R/W	R/W	-/-	-/-
PF	R/W	R/W	-/-	-/-
ALM	R/-	R/-	-/-	-/-
POS	R/W	R/W	-/-	-/-
SPD	R/W	R/W	-/-	-/-
ACT	R/W	R/W	-/-	-/-
DCT	R/W	R/W	-/-	-/-
DWL	R/W	R/W	-/-	-/-
AUX	R/W	R/W	-/-	-/-
MCD	R/W	R/W	-/-	-/-
MD	R/-	R/-	-/-	-/-
OTS	R/-	R/-	-/-	-/-
DI*1	R/-	R/W	-/-	-/-
DO	R/-	R/-	-/-	-/-

*1 Only reading is available for DI0 to DI1.

25.5.5 Monitoring-supported double-word devices ([MELSERVO-J4-*A-RJ])

The following table shows monitoring-supported virtual double-word devices for servo amplifiers.

To check whether writing/reading data to/from each device is available, refer to the following.

☞ Page 1841 Availability of writing/reading data to/from double-word devices ([MELSERVO-J4-*A-RJ])

For details on virtual servo amplifier devices, refer to the following.

☞ Page 1842 Virtual servo amplifier devices ([MELSERVO-J4-*A-RJ])

○: Available

×: Not available

Device name		Device No. representation	Setting range	Specifications of EG devices*1	
				Assignment to EG devices	Access using a client
LD	Current position latch data	Decimal	0 to 1	×	×
RR*2	Value of the general-purpose register (Rx)	Decimal	1 to 4 1001 to 1004	×	×
RD	Value of the general-purpose register (Dx)	Decimal	1 to 4	×	×
ALD	Life diagnosis	Decimal	0 to 1	×	×
TMI	Input signal for test operation (for test operation)	Decimal	0 to 2	×	×
TMO	Forced output of signal pin (for test operation)	Decimal	0	×	×
TMD	Set data (for test operation)	Decimal	0 to 1, 3	×	×

*1 For the devices assigned to EG devices (gateway devices) and the compatible clients, refer to the following.
GT Designer3 (GOT3000) Screen Design Manual

*2 Use the integer number when writing data to Rx.

25.5.6 Availability of writing/reading data to/from double-word devices ([MELSERVO-J4-*A-RJ])

The following shows the availability of writing/reading data to/from double-word devices by device type.

R/W: Both read and write

R/-: Read only

-/W: Write only

-/-: No read/write access

Device name	Device type			
	Word (16 bits)	Double-word (32 bits)	Quad-word (64 bits)	Bit of word data
LD	-/-	R/-	-/-	-/-
RR	-/-	R/W	-/-	-/-
RD	-/-	R/W	-/-	-/-
ALD	-/-	R/-	-/-	-/-
TMI	-/-	-/W	-/-	-/-
TMO	-/-	-/W	-/-	-/-
TMD	-/-	-/W	-/-	-/-

25.5.7 Virtual servo amplifier devices ([MELSERVO-J4-*A-RJ])

The following shows the correspondence between the virtual devices used in the GOT and the servo amplifier data.

Virtual device name	Reference
SP	☞ Page 1843 Servo amplifier request ([MELSERVO-J4-*A-RJ])
OM	☞ Page 1843 Operation mode selection ([MELSERVO-J4-*A-RJ])
TMB	☞ Page 1843 Instruction demand (for test operation) ([MELSERVO-J4-*A-RJ])
OTI	☞ Page 1843 One-touch tuning instruction ([MELSERVO-J4-*A-RJ])
PA	☞ Page 1844 Basic parameter ([MELSERVO-J4-*A-RJ])
PB	☞ Page 1845 Gain filter parameter ([MELSERVO-J4-*A-RJ])
PC	☞ Page 1846 Extension setting parameter ([MELSERVO-J4-*A-RJ])
PD	☞ Page 1848 I/O setting parameter ([MELSERVO-J4-*A-RJ])
PO	☞ Page 1849 Option setting parameter ([MELSERVO-J4-*A-RJ])
PL	☞ Page 1850 Linear servo motor/DD motor setting parameter ([MELSERVO-J4-*A-RJ])
PT	☞ Page 1850 Positioning control parameter ([MELSERVO-J4-*A-RJ])
ST	☞ Page 1852 Status display ([MELSERVO-J4-*A-RJ])
AL	☞ Page 1853 Alarm (MELSERVO-J3-*A compatible) ([MELSERVO-J4-*A-RJ])
PE	☞ Page 1854 Extension setting No.2 parameter ([MELSERVO-J4-*A-RJ])
PF	☞ Page 1855 Extension setting No.3 parameter ([MELSERVO-J4-*A-RJ])
ALM	☞ Page 1856 Alarm (MELSERVO-J4-*A extended) ([MELSERVO-J4-*A-RJ])
POS	☞ Page 1858 Point table (position) ([MELSERVO-J4-*A-RJ])
SPD	☞ Page 1858 Point table (speed) ([MELSERVO-J4-*A-RJ])
ACT	☞ Page 1858 Point table (acceleration time constant) ([MELSERVO-J4-*A-RJ])
DCT	☞ Page 1858 Point table (deceleration time constant) ([MELSERVO-J4-*A-RJ])
DWL	☞ Page 1858 Point table (dwell) ([MELSERVO-J4-*A-RJ])
AUX	☞ Page 1859 Point table (auxiliary function) ([MELSERVO-J4-*A-RJ])
MCD	☞ Page 1859 Point table (M code) ([MELSERVO-J4-*A-RJ])
MD	☞ Page 1859 Machine diagnosis data ([MELSERVO-J4-*A-RJ])
OTS	☞ Page 1859 One-touch tuning data ([MELSERVO-J4-*A-RJ])
DI	☞ Page 1860 External input signal ([MELSERVO-J4-*A-RJ])
DO	☞ Page 1860 External output signal ([MELSERVO-J4-*A-RJ])
LD	☞ Page 1860 Current position latch data ([MELSERVO-J4-*A-RJ])
RR	☞ Page 1860 Value of the general-purpose register (Rx) ([MELSERVO-J4-*A-RJ])
RD	☞ Page 1860 Value of the general-purpose register (Dx) ([MELSERVO-J4-*A-RJ])
ALD	☞ Page 1860 Life diagnosis ([MELSERVO-J4-*A-RJ])
TMI	☞ Page 1861 Input signal for test operation (for test operation) ([MELSERVO-J4-*A-RJ])
TMO	☞ Page 1861 Forced output of signal pin (for test operation) ([MELSERVO-J4-*A-RJ])
TMD	☞ Page 1861 Set data (for test operation) ([MELSERVO-J4-*A-RJ])

Servo amplifier request ([MELSERVO-J4-*A-RJ])

Virtual device name	Name	Symbol
SP0	Status display data clear	—
SP1	Current alarm clear	—
SP2	Alarm history clear	—
SP3	External input signal prohibited	—
SP4	External output signal prohibited	—
SP5	External input signal resumed	—
SP6	External output signal resumed	—

When using the servo amplifier request, note the following.

Precautions	Description
When setting a device for a bit switch	Do not select [Alternate] for [Switch Action] of the bit switch.

Operation mode selection ([MELSERVO-J4-*A-RJ])

Virtual device name	Name	Symbol
OM0	Normal mode (not test operation mode)	—
OM1	JOG operation	—
OM2	Positioning operation	—
OM4	Output signal (DO) forced output	—
OM5	Single-step feed operation	—

When using the operation mode selection, note the following.

Precautions	Description
When setting a device for a bit switch	Do not select [Alternate] for [Switch Action] of the bit switch.

Instruction demand (for test operation) ([MELSERVO-J4-*A-RJ])

Virtual device name	Name	Symbol
TMB1	Temporary stop command	—
TMB2	Test operation (positioning operation) start command	—
TMB3	Forward rotation direction	—
TMB4	Reverse rotation direction	—
TMB5	Restart for remaining distance	—
TMB6	Remaining distance clear	—

When using the instruction demand (for test operation), note the following.

Precautions	Description
When setting a device for a bit switch	Do not select [Alternate] for [Switch Action] of the bit switch.

One-touch tuning instruction ([MELSERVO-J4-*A-RJ])

Virtual device name	Name	Symbol
OTI0	One-touch tuning start command (Basic mode)	—
OTI1	One-touch tuning start command (High mode)	—
OTI2	One-touch tuning start command (Low mode)	—
OTI3	One-touch tuning stop command	—
OTI4	Return to initial value	—
OTI5	Return to value before adjustment	—

Basic parameter ([MELSERVO-J4-*A-RJ])

Use an appropriate device according to the write destination of the servo amplifier.

- PA1 to PA32: Writing data to the RAM of a servo amplifier
- PA1001 to PA1032: Writing data to the EEPROM of a servo amplifier

For the parameters prefixed by an asterisk (*), setting becomes effective when the power is turned off once and back on after setting the parameter data.

Virtual device name	Name	Symbol
PA1, PA1001	Operation mode	*STY
PA2, PA1002	Regenerative brake option	*REG
PA3, PA1003	Absolute position detection system	*ABS
PA4, PA1004	Function selection A-1	*AOP1
PA5, PA1005	Number of command input pulses per revolution	*FBP
PA6, PA1006	Electronic gear numerator (command pulse multiplication numerator)/number of gear teeth on machine side	*CMX
PA7, PA1007	Electronic gear denominator (command pulse multiplication denominator)/number of gear teeth on servo motor side	*CDV
PA8, PA1008	Auto tuning mode	ATU
PA9, PA1009	Auto tuning response	RSP
PA10, PA1010	In-position range	INP
PA11, PA1011	Forward rotation torque limit/positive direction thrust limit	TLP
PA12, PA1012	Reverse rotation torque limit/negative direction thrust limit	TLN
PA13, PA1013	Command pulse input form	*PLSS
PA14, PA1014	Rotation direction selection/travel direction selection	*POL
PA15, PA1015	Encoder output pulses	*ENR
PA16, PA1016	Encoder output pulses 2	*ENR2
PA17, PA1017	Servo motor series setting	*MSR
PA18, PA1018	Servo motor type setting	*MTY
PA19, PA1019	Parameter block	*BLK
PA20, PA1020	Tough drive setting	*TDS
PA21, PA1021	Function selection A-3	*AOP3
PA22, PA1022	Position control composition selection	*PCS
PA23, PA1023	Drive recorder arbitrary alarm trigger setting	DRAT
PA24, PA1024	Function selection A-4	AOP4
PA25, PA1025	One-touch tuning - Overshoot permissible level	OTHOV
PA26, PA1026	Function selection A-5	*AOP5
PA27 to PA32, PA1027 to PA1032	For manufacturer setting	—

Gain filter parameter ([MELSERVO-J4-*A-RJ])

Use an appropriate device according to the write destination of the servo amplifier.

- PB1 to PB64: Writing data to the RAM of a servo amplifier
- PB1001 to PB1064: Writing data to the EEPROM of a servo amplifier

For the parameters prefixed by an asterisk (*), setting becomes effective when the power is turned off once and back on after setting the parameter data.

Virtual device name	Name	Symbol
PB1, PB1001	Adaptive tuning mode (Adaptive filter II)	FILT
PB2, PB1002	Vibration suppression control tuning mode (advanced vibration suppression control II)	VRFT
PB3, PB1003	Position command acceleration/deceleration time constant (position smoothing)	PST
PB4, PB1004	Feed forward gain	FFC
PB5, PB1005	For manufacturer setting	—
PB6, PB1006	Load to motor inertia ratio/load to motor mass ratio	GD2
PB7, PB1007	Model control gain	PG1
PB8, PB1008	Position control gain	PG2
PB9, PB1009	Speed control gain	VG2
PB10, PB1010	Speed integral compensation	VIC
PB11, PB1011	Speed differential compensation	VDC
PB12, PB1012	Overshoot amount compensation	OVA
PB13, PB1013	Machine resonance suppression filter 1	NH1
PB14, PB1014	Notch shape selection 1	NHQ1
PB15, PB1015	Machine resonance suppression filter 2	NH2
PB16, PB1016	Notch shape selection 2	NHQ2
PB17, PB1017	Shaft resonance suppression filter	NHF
PB18, PB1018	Low-pass filter setting	LPF
PB19, PB1019	Vibration suppression control 1 - Vibration frequency	VRF11
PB20, PB1020	Vibration suppression control 1 - Resonance frequency	VRF12
PB21, PB1021	Vibration suppression control 1 - Vibration frequency damping	VRF13
PB22, PB1022	Vibration suppression control 1 - Resonance frequency damping	VRF14
PB23, PB1023	Low-pass filter setting	VFBF
PB24, PB1024	Slight vibration suppression control	*MVS
PB25, PB1025	Function selection B-1	*BOP1
PB26, PB1026	Gain switching function	*CDP
PB27, PB1027	Gain switching condition	CDL
PB28, PB1028	Gain switching time constant	CDT
PB29, PB1029	Load to motor inertia ratio/load to motor mass ratio after gain switching	GD2B
PB30, PB1030	Position loop gain after gain switching	PG2B
PB31, PB1031	Speed loop gain after gain switching	VG2B
PB32, PB1032	Speed integral compensation after gain switching	VICB
PB33, PB1033	Vibration suppression control 1 - Vibration frequency after gain switching	VRF1B
PB34, PB1034	Vibration suppression control 1 - Resonance frequency after gain switching	VRF2B
PB35, PB1035	Vibration suppression control 1 - Vibration frequency damping after gain switching	VRF3B
PB36, PB1036	Vibration suppression control 1 - Resonance frequency damping after gain switching	VRF4B
PB37 to PB44, PB1037 to PB1044	For manufacturer setting	—
PB45, PB1045	Command notch filter	CNHF
PB46, PB1046	Machine resonance suppression filter 3	NH3
PB47, PB1047	Notch shape selection 3	NHQ3
PB48, PB1048	Machine resonance suppression filter 4	NH4
PB49, PB1049	Notch shape selection 4	NHQ4
PB50, PB1050	Machine resonance suppression filter 5	NH5
PB51, PB1051	Notch shape selection 5	NHQ5
PB52, PB1052	Vibration suppression control 2 - Vibration frequency	VRF21

Virtual device name	Name	Symbol
PB53, PB1053	Vibration suppression control 2 - Resonance frequency	VRF22
PB54, PB1054	Vibration suppression control 2 - Vibration frequency damping	VRF23
PB55, PB1055	Vibration suppression control 2 - Resonance frequency damping	VRF24
PB56, PB1056	Vibration suppression control 2 - Vibration frequency after gain switching	VRF21B
PB57, PB1057	Vibration suppression control 2 - Resonance frequency after gain switching	VRF22B
PB58, PB1058	Vibration suppression control 2 - Vibration frequency damping after gain switching	VRF23B
PB59, PB1059	Vibration suppression control 2 - Resonance frequency damping after gain switching	VRF24B
PB60, PB1060	Model loop gain after gain switching	PG1B
PB61 to PB64, PB1061 to PB1064	For manufacturer setting	—

Extension setting parameter ([MELSERVO-J4-*A-RJ])

Use an appropriate device according to the write destination of the servo amplifier.

- PC1 to PC80: Writing data to the RAM of a servo amplifier
- PC1001 to PC1080: Writing data to the EEPROM of a servo amplifier

For the parameters prefixed by an asterisk (*), setting becomes effective when the power is turned off once and back on after setting the parameter data.

Virtual device name	Name	Symbol
PC1, PC1001	JOG operation acceleration time constant/acceleration time constant 1	STA
PC2, PC1002	JOG operation deceleration time constant/deceleration time constant 1	STB
PC3, PC1003	S-pattern acceleration/deceleration time constant	*STC
PC4, PC1004	Torque command time constant/thrust command time constant	TQC
PC5, PC1005	Automatic operation speed 1	SC1
PC6, PC1006	Automatic operation speed 2	SC2
PC7, PC1007	Manual operation speed 1	SC3
PC8, PC1008	Internal speed command4/limit4	SC4
PC9, PC1009	Internal speed command5/limit5	SC5
PC10, PC1010	Internal speed command6/limit6	SC6
PC11, PC1011	Internal speed command7/limit7	SC7
PC12, PC1012	Analog speed command maximum speed/limit maximum speed	VCM
PC13, PC1013	Analog torque command maximum output	TLC
PC14, PC1014	Analog monitor 1 output	MOD1
PC15, PC1015	Analog monitor 2 output	MOD2
PC16, PC1016	Electromagnetic brake sequence output	MBR
PC17, PC1017	Zero speed	ZSP
PC18, PC1018	Alarm history clear	*BPS
PC19, PC1019	Encoder output pulse selection	*ENRS
PC20, PC1020	Station number setting	*SNO
PC21, PC1021	RS-422 communication function selection	*SOP
PC22, PC1022	Function selection C-1	*COP1
PC23, PC1023	Function selection C-2	*COP2
PC24, PC1024	Function selection C-3	*COP3
PC25, PC1025	For manufacturer setting	—
PC26, PC1026	Function selection C-5	*COP5
PC27, PC1027	Function selection C-6	*COP6
PC28, PC1028	Function selection C-7	*COP7
PC29, PC1029	For manufacturer setting	—
PC30, PC1030	Home position return acceleration time constant/acceleration time constant 2	STA2
PC31, PC1031	Home position return deceleration time constant/deceleration time constant 2	STB2
PC32, PC1032	Command input pulse multiplication numerator 2	CMX2
PC33, PC1033	Command input pulse multiplication numerator 3	CMX3
PC34, PC1034	Command input pulse multiplication numerator 4	CMX4

Virtual device name	Name	Symbol
PC35, PC1035	Internal torque limit 2/internal thrust limit 2	TL2
PC36, PC1036	Status display selection	*DMD
PC37, PC1037	Analog override offset	VCO
PC38, PC1038	Analog torque command offset/limit offset	TPO
PC39, PC1039	Analog monitor 1 offset	MO1
PC40, PC1040	Analog monitor 2 offset	MO2
PC41 to PC42, PC1041 to PC1042	For manufacturer setting	—
PC43, PC1043	Error excessive alarm detection level	ERZ
PC44, PC1044	Function selection C-9	*COP9
PC45, PC1045	Function selection C-A	*COPA
PC46 to PC50, PC1046 to PC1050	For manufacturer setting	—
PC51, PC1051	Forced stop deceleration time constant	RSBR
PC52 to PC53, PC1052 to PC1053	For manufacturer setting	—
PC54, PC1054	Vertical axis freefall prevention compensation amount	RSUP1
PC55 to PC59, PC1055 to PC1059	For manufacturer setting	—
PC60, PC1060	Function selection C-D	*COPD
PC61 to PC65, PC1061 to PC1065	For manufacturer setting	—
PC66, PC1066	Mark detection range+(Low)	LPSPL
PC67, PC1067	Mark detection range+(High)	LPSPH
PC68, PC1068	Mark detection range-(Low)	LPSNL
PC69, PC1069	Mark detection range-(High)	LPSNH
PC70, PC1070	Modbus-RTU Communication station number setting	*SNOM
PC71, PC1071	Function selection C-F	*COPF
PC72, PC1072	Function selection C-G	*COPG
PC73, PC1073	Error excessive warning level	ERW
PC74 to PC80, PC1074 to PC1080	For manufacturer setting	—

I/O setting parameter ([MELSERVO-J4-*A-RJ])

Use an appropriate device according to the write destination of the servo amplifier.

- PD1 to PD48: Writing data to the RAM of a servo amplifier
- PD1001 to PD1048: Writing data to the EEPROM of a servo amplifier

For the parameters prefixed by an asterisk (*), setting becomes effective when the power is turned off once and back on after setting the parameter data.

Virtual device name	Name	Symbol
PD1, PD1001	Input signal automatic on selection 1	*DIA1
PD2, PD1002	For manufacturer setting	—
PD3, PD1003	Input device selection 1L	*DI1L
PD4, PD1004	Input device selection 1H	*DI1H
PD5, PD1005	Input device selection 2L	*DI2L
PD6, PD1006	Input device selection 2H	*DI2H
PD7, PD1007	Input device selection 3L	*DI3L
PD8, PD1008	Input device selection 3H	*DI3H
PD9, PD1009	Input device selection 4L	*DI4L
PD10, PD1010	Input device selection 4H	*DI4H
PD11, PD1011	Input device selection 5L	*DI5L
PD12, PD1012	Input device selection 5H	*DI5H
PD13, PD1013	Input device selection 6L	*DI6L
PD14, PD1014	Input device selection 6H	*DI6H
PD15 to PD16, PD1015 to PD1016	For manufacturer setting	—
PD17, PD1017	Input device selection 8L	*DI8L
PD18, PD1018	Input device selection 8H	*DI8H
PD19, PD1019	Input device selection 9L	*DI9L
PD20, PD1020	Input device selection 9H	*DI9H
PD21, PD1021	Input device selection 10L	*DI10L
PD22, PD1022	Input device selection 10H	*DI10H
PD23, PD1023	Output device selection 1	*DO1
PD24, PD1024	Output device selection 2	*DO2
PD25, PD1025	Output device selection 3	*DO3
PD26, PD1026	Output device selection 4	*DO4
PD27, PD1027	For manufacturer setting	—
PD28, PD1028	Output device selection 6	*DO6
PD29, PD1029	Input filter setting	*DIF
PD30, PD1030	Function selection D-1	*DOP1
PD31, PD1031	Function selection D-2	*DOP2
PD32, PD1032	Function selection D-3	*DOP3
PD33, PD1033	Function selection D-4	*DOP4
PD34, PD1034	Function selection D-5	*DOP5
PD35 to PD40, PD1035 to PD1040	For manufacturer setting	—
PD41, PD1041	Input signal automatic on selection 3	*DIA3
PD42, PD1042	Input signal automatic on selection 4	*DIA4
PD43, PD1043	Input device selection 11L	*DI11L
PD44, PD1044	Input device selection 11H	*DI11H
PD45, PD1045	Input device selection 12L	*DI12L
PD46, PD1046	Input device selection 12H	*DI12H
PD47, PD1047	Output device selection 7	*DO7
PD48, PD1048	For manufacturer setting	—

Option setting parameter ([MELSERVO-J4-*A-RJ])

Use an appropriate device according to the write destination of the servo amplifier.

- PO1 to PO32: Writing data to the RAM of a servo amplifier
- PO1001 to PO1032: Writing data to the EEPROM of a servo amplifier

For the parameters prefixed by an asterisk (*), setting becomes effective when the power is turned off once and back on after setting the parameter data.

Virtual device name	Name	Symbol
PO1, PO1001	For manufacturer setting	—
PO2, PO1002	MR-D01 input device selection 1	*ODI1
PO3, PO1003	MR-D01 input device selection 2	*ODI2
PO4, PO1004	MR-D01 input device selection 3	*ODI3
PO5, PO1005	MR-D01 input device selection 4	*ODI4
PO6, PO1006	MR-D01 input device selection 5	*ODI5
PO7, PO1007	MR-D01 input device selection 6	*ODI6
PO8, PO1008	MR-D01 output device selection 1	*ODO1
PO9, PO1009	MR-D01 output device selection 2	*ODO2
PO10, PO1010	Function selection O-1	*OOP1
PO11, PO1011	Function selection O-2	*OOP2
PO12, PO1012	Function selection O-3	*OOP3
PO13, PO1013	MR-D01 analog monitor 1 output selection	OMOD1
PO14, PO1014	MR-D01 analog monitor 2 output selection	OMOD2
PO15, PO1015	MR-D01 Analog monitor 1 offset	OMO1
PO16, PO1016	MR-D01 Analog monitor 2 offset	OMO2
PO17 to PO20, PO1017 to PO1020	For manufacturer setting	—
PO21, PO1021	MR-D01 override offset	OVCO
PO22, PO1022	MR-D01 analog torque limitation offset	OTLO
PO23 to PO26, PO1023 to PO1026	For manufacturer setting	—
PO27, PO1027	MR-D01 input device selection 7	*ODI7
PO28, PO1028	MR-D01 input device selection 8	*ODI8
PO29 to PO32, PO1029 to PO1032	For manufacturer setting	—

Linear servo motor/DD motor setting parameter ([MELSERVO-J4-*A-RJ])

Use an appropriate device according to the write destination of the servo amplifier.

- PL1 to PL48: Writing data to the RAM of a servo amplifier
- PL1001 to PL1048: Writing data to the EEPROM of a servo amplifier

For the parameters prefixed by an asterisk (*), setting becomes effective when the power is turned off once and back on after setting the parameter data.

Virtual device name	Name	Symbol
PL1, PL1001	Linear servo motor/DD motor function selection 1	*LIT1
PL2, PL1002	Linear encoder resolution - Numerator	*LIM
PL3, PL1003	Linear encoder resolution - Denominator	*LID
PL4, PL1004	Linear servo motor/DD motor function selection 2	*LIT2
PL5, PL1005	Position deviation error detection level	LB1
PL6, PL1006	Speed deviation error detection level	LB2
PL7, PL1007	Torque/thrust deviation error detection level	LB3
PL8, PL1008	Linear servo motor/DD motor function selection 3	*LIT3
PL9, PL1009	Magnetic pole detection voltage level	LPWM
PL10 to PL16, PL1010 to PL1016	For manufacturer setting	—
PL17, PL1017	Magnetic pole detection - Minute position detection method - Function selection	LTSTS
PL18, PL1018	Magnetic pole detection - Minute position detection method - Identification signal amplitude	IDLV
PL19 to PL48, PL1019 to PL1048	For manufacturer setting	—

Positioning control parameter ([MELSERVO-J4-*A-RJ])

Use an appropriate device according to the write destination of the servo amplifier.

- PT1 to PT48: Writing data to the RAM of a servo amplifier
- PT1001 to PT1048: Writing data to the EEPROM of a servo amplifier

For the parameters prefixed by an asterisk (*), setting becomes effective when the power is turned off once and back on after setting the parameter data.

Virtual device name	Name	Symbol
PT1, PT1001	Command mode selection	*CTY
PT2, PT1002	Function selection T-1	*TOP1
PT3, PT1003	Feeding function selection	*FTY
PT4, PT1004	Home position return type	*ZTY
PT5, PT1005	Home position return speed	ZRF
PT6, PT1006	Creep speed	CRF
PT7, PT1007	Home position shift distance	ZST
PT8, PT1008	Home position return position data	*ZPS
PT9, PT1009	Moving distance after proximity dog	DCT
PT10, PT1010	Stopper type home position return stopper time	ZTM
PT11, PT1011	Stopper type home position return torque limit value	ZTT
PT12, PT1012	Rough match output range	CRP
PT13, PT1013	JOG operation	JOG
PT14, PT1014	Backlash compensation	*BKC
PT15, PT1015	Software limit +(Low)	LMPL
PT16, PT1016	Software limit +(High)	LMPH
PT17, PT1017	Software limit -(Low)	LMNL
PT18, PT1018	Software limit -(High)	LMNH
PT19, PT1019	Position range output address +(Low)	*LPPL
PT20, PT1020	Position range output address +(High)	*LPPH
PT21, PT1021	Position range output address -(Low)	*LNPL
PT22, PT1022	Position range output address -(High)	*LNPH

Virtual device name	Name	Symbol
PT23, PT1023	OUT1 output setting time	OUT1
PT24, PT1024	OUT2 output setting time	OUT2
PT25, PT1025	OUT3 output setting time	OUT3
PT26, PT1026	Function selection T-2	*TOP2
PT27, PT1027	Operation mode selection	*ODM
PT28, PT1028	Number of stations per rotation	*STN
PT29, PT1029	Function selection T-3	*TOP3
PT30, PT1030	Mark sensor stop movement amount (Low)	MSTL
PT31, PT1031	Mark sensor stop movement amount (High)	MSTH
PT32 to PT33, PT1032 to PT1033	For manufacturer setting	—
PT34, PT1034	Point table/program default	*PDEF
PT35, PT1035	Function selection T-5	*TOP5
PT36 to PT37, PT1036 to PT1037	For manufacturer setting	—
PT38, PT1038	Function selection T-7	*TOP7
PT39, PT1039	Torque limit delay time	INT
PT40, PT1040	Station home position shift distance	*SZS
PT41, PT1041	Home position return inhibit selection	ORP
PT42, PT1042	Digital override minimum multiplication	*OVM
PT43, PT1043	Digital override pitch width	*OVS
PT44, PT1044	For manufacturer setting	—
PT45, PT1045	Home position return type 2	*CZTY
PT46 to PT48, PT1046 to PT1048	For manufacturer setting	—

Status display ([MELSERVO-J4-*A-RJ])

Virtual device name	Name	Symbol
ST0	Cumulative feedback pulses	—
ST1	Servo motor speed	—
ST2	Droop pulses	—
ST3	Cumulative command pulses	—
ST4	Command pulse frequency	—
ST5	Analog speed command voltage/analog speed limit voltage	—
ST6	Analog torque limit voltage/analog torque command voltage	—
ST7	Regenerative load ratio	—
ST8	Effective load ratio	—
ST9	Peak load ratio	—
ST10	Instantaneous torque	—
ST11	Within one-revolution position	—
ST12	ABS counter	—
ST13	Load inertia moment ratio	—
ST14	Bus voltage	—
ST15	Load-side cumulative feedback pulses	—
ST16	Load-side droop pulses	—
ST17	Load-side encoder information 1	—
ST18	Load-side encoder information 2	—
ST19 to ST21	For manufacturer setting	—
ST22	Temperature of servo motor thermistor	—
ST23	Servo motor-side cumulative feedback pulses (before gear)	—
ST24	Electrical angle	—
ST25 to ST29	For manufacturer setting	—
ST30	Servo motor-side/load-side position deviation	—
ST31	Servo motor-side/load-side speed deviation	—
ST32	Internal temperature of encoder	—
ST33	Settling time	—
ST34	Oscillation detection frequency	—
ST35	Number of tough drive operations	—
ST36 to ST39	For manufacturer setting	—
ST40	Unit power consumption	—
ST41	Unit total power consumption	—
ST42	Current position	—
ST43	Command position	—
ST44	Command remaining distance	—
ST45	Point table No./program No./station position No.	—
ST46	Step No.	—
ST47	Analog override voltage	—
ST48	Override level	—

Alarm (MELSERVO-J3-*A compatible) ([MELSERVO-J4-*A-RJ])

Virtual device name	Name	Symbol
AL0	Current alarm number	—
AL1	Detailed data of current alarms	—
AL11	Servo status when alarm occurs Cumulative feedback pulses	—
AL12	Servo status when alarm occurs Servo motor speed	—
AL13	Servo status when alarm occurs Droop pulses	—
AL14	Servo status when alarm occurs cumulative command pulses	—
AL15	Servo status when alarm occurs command pulse frequency	—
AL16	Servo status(alarm) analog speed command voltage/limit voltage	—
AL17	Servo status(alarm) analog torque command voltage/limit voltage	—
AL18	Servo status when alarm occurs regenerative load ratio	—
AL19	Servo status when alarm occurs effective load ratio	—
AL20	Servo status when alarm occurs peak load ratio	—
AL21	Servo status when alarm occurs Instantaneous torque	—
AL22	Servo status(alarm) Within one-revolution position(1 pulse unit)	—
AL23	Servo status when alarm occurs ABS counter	—
AL24	Servo status when alarm occurs load inertia moment ratio	—
AL25	Servo status when alarm occurs Bus voltage	—
AL200	Alarm number from Alarm History most recent alarm	—
AL201	Alarm number from Alarm History first alarm in past	—
AL202	Alarm number from Alarm History second alarm in past	—
AL203	Alarm number from Alarm History third alarm in past	—
AL204	Alarm number from Alarm History fourth alarm in past	—
AL205	Alarm number from Alarm History fifth alarm in past	—
AL210	Alarm occurrence time in alarm history most recent alarm	—
AL211	Alarm occurrence time in alarm history first alarm in past	—
AL212	Alarm occurrence time in alarm history second alarm in past	—
AL213	Alarm occurrence time in alarm history third alarm in past	—
AL214	Alarm occurrence time in alarm history fourth alarm in past	—
AL215	Alarm occurrence time in alarm history fifth alarm in past	—
AL230	Detailed alarm from Alarm History most recent alarm	—
AL231	Detailed alarm from Alarm History first alarm in past	—
AL232	Detailed alarm from Alarm History second alarm in past	—
AL233	Detailed alarm from Alarm History third alarm in past	—
AL234	Detailed alarm from Alarm History fourth alarm in past	—
AL235	Detailed alarm from Alarm History fifth alarm in past	—

Extension setting No.2 parameter ([MELSERVO-J4-*A-RJ])

Use an appropriate device according to the write destination of the servo amplifier.

- PE1 to PE64: Writing data to the RAM of a servo amplifier
- PE1001 to PE1064: Writing data to the EEPROM of a servo amplifier

For the parameters prefixed by an asterisk (*), setting becomes effective when the power is turned off once and back on after setting the parameter data.

Virtual device name	Name	Symbol
PE1, PE1001	Fully closed loop function selection 1	*FCT1
PE2, PE1002	For manufacturer setting	—
PE3, PE1003	Fully closed loop function selection 2	*FCT2
PE4, PE1004	Fully closed loop control - Feedback pulse electronic gear 1 - Numerator	*FBN
PE5, PE1005	Fully closed loop control - Feedback pulse electronic gear 1 - Denominator	*FBD
PE6, PE1006	Fully closed loop control - Speed deviation error detection level	BC1
PE7, PE1007	Fully closed loop control - Position deviation error detection level	BC2
PE8, PE1008	Fully closed loop dual feedback filter	DUF
PE9, PE1009	For manufacturer setting	—
PE10, PE1010	Fully closed loop function selection 3	FCT3
PE11 to PE33, PE1011 to PE1033	For manufacturer setting	—
PE34, PE1034	Fully closed loop control - Feedback pulse electronic gear 2 - Numerator	*FBN2
PE35, PE1035	Fully closed loop control - Feedback pulse electronic gear 2 - Denominator	*FBD2
PE36 to PE40, PE1036 to PE1040	For manufacturer setting	—
PE41, PE1041	Function selection E-3	EOP3
PE42 to PE43, PE1042 to PE1043	For manufacturer setting	—
PE44, PE1044	Lost motion compensation positive-side compensation value selection	LMCP
PE45, PE1045	Lost motion compensation negative-side compensation value selection	LMCN
PE46, PE1046	Lost motion filter setting	LMFLT
PE47, PE1047	Torque offset	TOF
PE48, PE1048	Lost motion compensation function selection	*LMOP
PE49, PE1049	Lost motion compensation timing	LMCD
PE50, PE1050	Lost motion compensation non-sensitive band	LMCT
PE51 to PE64, PE1051 to PE1064	For manufacturer setting	—

Extension setting No.3 parameter ([MELSERVO-J4-*A-RJ])

Use an appropriate device according to the write destination of the servo amplifier.

- PF1 to PF48: Writing data to the RAM of a servo amplifier
- PF1001 to PF1048: Writing data to the EEPROM of a servo amplifier

For the parameters prefixed by an asterisk (*), setting becomes effective when the power is turned off once and back on after setting the parameter data.

Virtual device name	Name	Symbol
PF1 to PF8, PF1001 to PF1008	For manufacturer setting	—
PF9, PF1009	Function selection F-5	*FOP5
PF10 to PF14, PF1010 to PF1014	For manufacturer setting	—
PF15, PF1015	Electronic dynamic brake operating time	DBT
PF16 to PF17, PF1016 to PF1017	For manufacturer setting	—
PF18, PF1018	STO diagnosis error detection time	*STOD
PF19 to PF20, PF1019 to PF1020	For manufacturer setting	—
PF21, PF1021	Drive recorder switching time setting	DRT
PF22, PF1022	For manufacturer setting	—
PF23, PF1023	Vibration tough drive - Oscillation detection level	OSCL1
PF24, PF1024	Vibration tough drive function selection	OSCL2
PF25, PF1025	SEMI-F47 function - Instantaneous power failure detection time	CVAT
PF26 to PF30, PF1026 to PF1030	For manufacturer setting	—
PF31, PF1031	Machine diagnosis function - Friction judgment speed	FRIC
PF32 to PF33, PF1032 to PF1033	For manufacturer setting	—
PF34, PF1034	RS-422 communication function selection 3	*SOP3
PF35 to PF44, PF1035 to PF1044	For manufacturer setting	—
PF45, PF1045	Function selection F-12	*FOP12
PF46, PF1046	Modbus-RTU communication - Communication timeout time	MIC
PF47 to PF48, PF1047 to PF1048	For manufacturer setting	—

Alarm (MELSERVO-J4-*A extended) ([MELSERVO-J4-*A-RJ])

Virtual device name	Name	Symbol
ALM0	Current alarm number	—
ALM1	Detailed data of current alarms	—
ALM11	Servo status(alarm) Cumulative feedback pulses	—
ALM12	Servo status(alarm) Servo motor speed	—
ALM13	Servo status(alarm) Droop pulses	—
ALM14	Servo status(alarm) Cumulative command pulses	—
ALM15	Servo status(alarm) Command pulse frequency	—
ALM16	Servo status(alarm) analog speed command voltage/limit voltage	—
ALM17	Servo status(alarm) analog torque command voltage/limit voltage	—
ALM18	Servo status(alarm) Regenerative load ratio	—
ALM19	Servo status(alarm) Effective load ratio	—
ALM20	Servo status(alarm) Peak load ratio	—
ALM21	Servo status(alarm) Instantaneous torque	—
ALM22	Servo status when alarm occurs, within one-revolution position(1 pulse unit)	—
ALM23	Servo status(alarm) ABS counter	—
ALM24	Servo status(alarm) Load inertia moment ratio	—
ALM25	Servo status(alarm) Bus voltage	—
ALM26	Servo status(alarm) Load-side cumulative feedback pulses	—
ALM27	Servo status(alarm) Load-side droop pulses	—
ALM28	Servo status(alarm) Load-side encoder information 1	—
ALM29	Servo status(alarm) Load-side encoder information 2	—
ALM30 to ALM32	For manufacturer setting	—
ALM33	Servo status(alarm) Temperature of servo motor thermistor	—
ALM34	Servo status(alarm) Servo motor-side cumulative feedback pulses (before gear)	—
ALM35	Servo status(alarm) Electrical angle	—
ALM36 to ALM40	For manufacturer setting	—
ALM41	Servo status(alarm) Servo motor-side/load-side position deviation	—
ALM42	Servo status(alarm) Servo motor-side/load-side speed deviation	—
ALM43	Servo status(alarm) Internal temperature of encoder	—
ALM44	Servo status(alarm) Setting time	—
ALM45	Servo status(alarm) Oscillation detection frequency	—
ALM46	Servo status(alarm) Number of tough drives	—
ALM47 to ALM50	For manufacturer setting	—
ALM51	Servo status(alarm) Unit power consumption	—
ALM52	Servo status(alarm) Unit total power consumption	—
ALM53	Servo status(alarm) Current position	—
ALM54	Servo status(alarm) Command position	—
ALM55	Servo status(alarm) Command remaining distance	—
ALM56	Servo status(alarm) Point table No./Program No./Station position No.	—
ALM57	Servo status(alarm) Step No.	—
ALM58	Servo status(alarm) Analog override voltage	—
ALM59	Servo status(alarm) Override level	—
ALM200	Alarm number from Alarm History most recent alarm	—
ALM201	Alarm number from Alarm History 1st alarm in past	—
ALM202	Alarm number from Alarm History 2nd alarm in past	—
ALM203	Alarm number from Alarm History 3rd alarm in past	—
ALM204	Alarm number from Alarm History 4th alarm in past	—
ALM205	Alarm number from Alarm History 5th alarm in past	—
ALM206	Alarm number from Alarm History 6th alarm in past	—
ALM207	Alarm number from Alarm History 7th alarm in past	—
ALM208	Alarm number from Alarm History 8th alarm in past	—

Virtual device name	Name	Symbol
ALM209	Alarm number from Alarm History 9th alarm in past	—
ALM210	Alarm number from Alarm History 10th alarm in past	—
ALM211	Alarm number from Alarm History 11th alarm in past	—
ALM212	Alarm number from Alarm History 12th alarm in past	—
ALM213	Alarm number from Alarm History 13th alarm in past	—
ALM214	Alarm number from Alarm History 14th alarm in past	—
ALM215	Alarm number from Alarm History 15th alarm in past	—
ALM220	Alarm occurrence time in alarm history most recent alarm	—
ALM221	Alarm occurrence time in alarm history 1st alarm in past	—
ALM222	Alarm occurrence time in alarm history 2nd alarm in past	—
ALM223	Alarm occurrence time in alarm history 3rd alarm in past	—
ALM224	Alarm occurrence time in alarm history 4th alarm in past	—
ALM225	Alarm occurrence time in alarm history 5th alarm in past	—
ALM226	Alarm occurrence time in alarm history 6th alarm in past	—
ALM227	Alarm occurrence time in alarm history 7th alarm in past	—
ALM228	Alarm occurrence time in alarm history 8th alarm in past	—
ALM229	Alarm occurrence time in alarm history 9th alarm in past	—
ALM230	Alarm occurrence time in alarm history 10th alarm in past	—
ALM231	Alarm occurrence time in alarm history 11th alarm in past	—
ALM232	Alarm occurrence time in alarm history 12th alarm in past	—
ALM233	Alarm occurrence time in alarm history 13th alarm in past	—
ALM234	Alarm occurrence time in alarm history 14th alarm in past	—
ALM235	Alarm occurrence time in alarm history 15th alarm in past	—
ALM240	Detailed alarm from Alarm History most recent alarm	—
ALM241	Detailed alarm from Alarm History 1st alarm in past	—
ALM242	Detailed alarm from Alarm History 2nd alarm in past	—
ALM243	Detailed alarm from Alarm History 3rd alarm in past	—
ALM244	Detailed alarm from Alarm History 4th alarm in past	—
ALM245	Detailed alarm from Alarm History 5th alarm in past	—
ALM246	Detailed alarm from Alarm History 6th alarm in past	—
ALM247	Detailed alarm from Alarm History 7th alarm in past	—
ALM248	Detailed alarm from Alarm History 8th alarm in past	—
ALM249	Detailed alarm from Alarm History 9th alarm in past	—
ALM250	Detailed alarm from Alarm History 10th alarm in past	—
ALM251	Detailed alarm from Alarm History 11th alarm in past	—
ALM252	Detailed alarm from Alarm History 12th alarm in past	—
ALM253	Detailed alarm from Alarm History 13th alarm in past	—
ALM254	Detailed alarm from Alarm History 14th alarm in past	—
ALM255	Detailed alarm from Alarm History 15th alarm in past	—

Point table (position) ([MELSERVO-J4-*A-RJ])

Use an appropriate device according to the write destination of the servo amplifier.

- POS1 to POS255: Writing data to the RAM of a servo amplifier
- POS1001 to POS1255: Writing data to the EEPROM of a servo amplifier

Virtual device name	Name	Symbol
POS1 to POS255, POS1001 to POS1255	Point table/position data No. 1 to No. 255	—

Point table (speed) ([MELSERVO-J4-*A-RJ])

Use an appropriate device according to the write destination of the servo amplifier.

- SPD1 to SPD255: Writing data to the RAM of a servo amplifier
- SPD1001 to SPD1255: Writing data to the EEPROM of a servo amplifier

Virtual device name	Name	Symbol
SPD1 to SPD255, SPD1001 to SPD1255	Point table/speed data No. 1 to No. 255	—

Point table (acceleration time constant) ([MELSERVO-J4-*A-RJ])

Use an appropriate device according to the write destination of the servo amplifier.

- ACT1 to ACT255: Writing data to the RAM of a servo amplifier
- ACT1001 to ACT1255: Writing data to the EEPROM of a servo amplifier

Virtual device name	Name	Symbol
ACT1 to ACT255, ACT1001 to ACT1255	Point table/acceleration time constant No. 1 to No. 255	—

Point table (deceleration time constant) ([MELSERVO-J4-*A-RJ])

Use an appropriate device according to the write destination of the servo amplifier.

- DCT1 to DCT255: Writing data to the RAM of a servo amplifier
- DCT1001 to DCT1255: Writing data to the EEPROM of a servo amplifier

Virtual device name	Name	Symbol
DCT1 to DCT255, DCT1001 to DCT1255	Point table/deceleration time constant No. 1 to No. 255	—

Point table (dwell) ([MELSERVO-J4-*A-RJ])

Use an appropriate device according to the write destination of the servo amplifier.

- DWL1 to DWL255: Writing data to the RAM of a servo amplifier
- DWL1001 to DWL1255: Writing data to the EEPROM of a servo amplifier

Virtual device name	Name	Symbol
DWL1 to DWL255, DWL1001 to DWL1255	Point table/dwell No. 1 to No. 255	—

Point table (auxiliary function) ([MELSERVO-J4-*A-RJ])

Use an appropriate device according to the write destination of the servo amplifier.

- AUX1 to AUX255: Writing data to the RAM of a servo amplifier
- AUX1001 to AUX1255: Writing data to the EEPROM of a servo amplifier

Virtual device name	Name	Symbol
AUX1 to AUX255, AUX1001 to AUX1255	Point table/auxiliary function No. 1 to No. 255	—

Point table (M code) ([MELSERVO-J4-*A-RJ])

Use an appropriate device according to the write destination of the servo amplifier.

- MCD1 to MCD255: Writing data to the RAM of a servo amplifier
- MCD1001 to MCD1255: Writing data to the EEPROM of a servo amplifier

Virtual device name	Name	Symbol
MCD1 to MCD255, MCD1001 to MCD1255	Point table/M code No.1 to No.255	—

Machine diagnosis data ([MELSERVO-J4-*A-RJ])

Virtual device name	Name	Symbol
MD0	Machine diagnosis data station number	—
MD1	Machine diagnosis data shift judgment (test mode)	—
MD2	Machine diagnosis data status	—
MD3	Machine diagnosis data coulomb friction torque in positive direction	—
MD4	Machine diagnosis data friction torque at rated speed in positive direction	—
MD5	Machine diagnosis data coulomb friction torque in negative direction	—
MD6	Machine diagnosis data friction torque at rated speed in negative direction	—
MD7	Machine diagnosis data oscillation frequency (motor is stopped)	—
MD8	Machine diagnosis data vibration level (motor is stopped)	—
MD9	Machine diagnosis data oscillation frequency (motor is operating)	—
MD10	Machine diagnosis data vibration level (motor is operating)	—
MD11	Machine diagnosis data, rated speed at forward or reverse rotation torque	—

One-touch tuning data ([MELSERVO-J4-*A-RJ])

Virtual device name	Name	Symbol
OTS0	One-touch tuning status confirmation	—
OTS1	Error code list	—
OTS2	Settling time	—
OTS3	Overshoot amount	—

External input signal ([MELSERVO-J4-*A-RJ])

Virtual device name	Name	Symbol	Data to be read from the servo amplifier
DI0	Input device statuses 1	—	For the mapping of the bits corresponding to the data to be read, refer to the following. MR-J4-_A_(-RJ)/MR-J4-03A6(-RJ) SERVO AMPLIFIER INSTRUCTION MANUAL
DI1	Input device statuses 2	—	
DI2	Input device statuses 3	—	
DI3	External input pin statuses	—	
DI4	Statuses of input devices switched on through communication 1	—	For the mapping of the bits corresponding to the data to be read or written, refer to the following. MR-J4-_A_(-RJ)/MR-J4-03A6(-RJ) SERVO AMPLIFIER INSTRUCTION MANUAL
DI5	Statuses of input devices switched on through communication 2	—	
DI6	Statuses of input devices switched on through communication 3	—	

External output signal ([MELSERVO-J4-*A-RJ])

Virtual device name	Name	Symbol	Data to be read from the servo amplifier
DO0	Output device statuses 1	—	For the mapping of the bits corresponding to the data to be read, refer to the following. MR-J4-_A_(-RJ)/MR-J4-03A6(-RJ) SERVO AMPLIFIER INSTRUCTION MANUAL
DO1	Output device statuses 2	—	
DO2	Output device statuses 3	—	
DO3	Output device statuses 4	—	
DO4	External output pin statuses	—	

Current position latch data ([MELSERVO-J4-*A-RJ])

Virtual device name	Name	Symbol
LD0	Position data unit	—
LD1	Current position latch data	—

Value of the general-purpose register (Rx) ([MELSERVO-J4-*A-RJ])

Use an appropriate device according to the write destination of the servo amplifier.

- RR1 to RR4: Writing data to the RAM of a servo amplifier
- RR1001 to RR1004: Writing data to the EEPROM of a servo amplifier

Virtual device name	Name	Symbol
RR1, RR1001	Value of the general-purpose register (R1)	—
RR2, RR1002	Value of the general-purpose register (R2)	—
RR3, RR1003	Value of the general-purpose register (R3)	—
RR4, RR1004	Value of the general-purpose register (R4)	—

Value of the general-purpose register (Dx) ([MELSERVO-J4-*A-RJ])

Virtual device name	Name	Symbol
RD1	Value of the general-purpose register (D1)	—
RD2	Value of the general-purpose register (D2)	—
RD3	Value of the general-purpose register (D3)	—
RD4	Value of the general-purpose register (D4)	—

Life diagnosis ([MELSERVO-J4-*A-RJ])

Virtual device name	Name	Symbol
ALD0	Cumulative power-on time	—
ALD1	Number of inrush current switching times	—

Input signal for test operation (for test operation) ([MELSERVO-J4-*A-RJ])

Virtual device name	Name	Symbol
TMI0	Input signal for test operation 1	—
TMI1	Input signal for test operation 2	—
TMI2	Input signal for test operation 3	—

When using the input signal for test operation (for test operation), note the following.

Precautions	Description
Writing a value to a virtual device using an object	Numerical input cannot be used. Use a word switch for writing.

Forced output of signal pin (for test operation) ([MELSERVO-J4-*A-RJ])

Virtual device name	Name	Symbol
TMO0	Forced output of signal pin	—

When using the forced output of signal pin (for test operation), note the following.

Precautions	Description
Writing a value to a virtual device using an object	Numerical input cannot be used. Use a word switch for writing.

Set data (for test operation) ([MELSERVO-J4-*A-RJ])

Virtual device name	Name	Symbol
TMD0	Writes the speed (test mode)	—
TMD1	Writes the acceleration/deceleration time constant (test mode)	—
TMD3	Writes the moving distance (test mode)	—

When using the set data (for test operation), note the following.

Precautions	Description
Writing a value to a virtual device using an object	Numerical input cannot be used. Use a word switch for writing.

25.5.8 Precautions for virtual servo amplifier devices ([MELSERVO-J4-*A-RJ])

For the precautions for virtual servo amplifier devices, refer to the following.

☞ Page 1802 Precautions for virtual servo amplifier devices ([MELSERVO-J3-*A])

25.6 [MELSERVO-JE-*C]

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Item	Reference
Specifications of bit devices	☞ Page 1862 Monitoring-supported bit devices ([MELSERVO-JE-*C])
	☞ Page 1862 Availability of writing/reading data to/from bit devices ([MELSERVO-JE-*C])
Specifications of word devices	☞ Page 1863 Monitoring-supported word devices ([MELSERVO-JE-*C])
	☞ Page 1864 Availability of writing/reading data to/from word devices ([MELSERVO-JE-*C])
Specifications of double-word devices	☞ Page 1865 Monitoring-supported double-word devices ([MELSERVO-JE-*C])
	☞ Page 1865 Availability of writing/reading data to/from double-word devices ([MELSERVO-JE-*C])
Specifications of virtual servo amplifier devices	☞ Page 1866 Virtual servo amplifier devices ([MELSERVO-JE-*C])
	☞ Page 1880 Precautions for virtual servo amplifier devices ([MELSERVO-JE-*C])

25.6.1 Monitoring-supported bit devices ([MELSERVO-JE-*C])

The following table shows monitoring-supported virtual bit devices for servo amplifiers.

To check whether writing/reading data to/from each device is available, refer to the following.

☞ Page 1862 Availability of writing/reading data to/from bit devices ([MELSERVO-JE-*C])

For details on virtual servo amplifier devices, refer to the following.

☞ Page 1866 Virtual servo amplifier devices ([MELSERVO-JE-*C])

○: Available

×: Not available

Device name		Device No. representation	Setting range	Specifications of EG devices*1	
				Assignment to EG devices	Access using a client
SP	Servo amplifier request	Decimal	0 to 6	×	×
OM	Operation mode selection	Decimal	0 to 2 4 to 5	×	×
TMB	Instruction demand (for test operation)	Decimal	1 to 6	×	×
OTI	One-touch tuning instruction	Decimal	0 to 5	×	×

*1 For the devices assigned to EG devices (gateway devices) and the compatible clients, refer to the following.
📖GT Designer3 (GOT3000) Screen Design Manual

25.6.2 Availability of writing/reading data to/from bit devices ([MELSERVO-JE-*C])

The following shows the availability of writing/reading data to/from bit devices by device type.

When the device type is other than the bit type, set the device No. in multiples of 16.

R/W: Both read and write

R/-: Read only

-/W: Write only

-/-: No read/write access

Device name	Device type				
	Bit	Byte (8 bits)	Word (16 bits)	Double-word (32 bits)	Quad-word (64 bits)
SP	-/W	-/-	-/-	-/-	-/-
OM	-/W	-/-	-/-	-/-	-/-
TMB	-/W	-/-	-/-	-/-	-/-
OTI	-/W	-/-	-/-	-/-	-/-

25.6.3 Monitoring-supported word devices ([MELSERVO-JE-*C])

The following table shows monitoring-supported virtual word devices for servo amplifiers.

To check whether writing/reading data to/from each device is available, refer to the following.

☞ Page 1864 Availability of writing/reading data to/from word devices ([MELSERVO-JE-*C])

For details on virtual servo amplifier devices, refer to the following.

☞ Page 1866 Virtual servo amplifier devices ([MELSERVO-JE-*C])

○: Available

×: Not available

Device name		Device No. representation	Setting range	Specifications of EG devices*1	
				Assignment to EG devices	Access using a client
PA	Basic parameter	Decimal	1 to 32 1001 to 1032	○	×
PB	Gain filter parameter	Decimal	1 to 64 1001 to 1064	○	×
PC	Extension setting parameter	Decimal	1 to 80 1001 to 1080	○	×
PD	I/O setting parameter	Decimal	1 to 48 1001 to 1048	○	×
PT	Positioning control parameter	Decimal	1 to 80 1001 to 1080	○	×
PN	Network setting parameter	Decimal	1 to 48 1001 to 1048	×	×
ST	Status display	Decimal	0 to 48	○	×
PE	Extension setting No.2 parameter	Decimal	1 to 64 1001 to 1064	○	×
PF	Extension setting No.3 parameter	Decimal	1 to 48 1001 to 1048	○	×
ALM	Alarm (Current alarm)	Decimal	0 to 1 11 to 59	○	×
ALM	Alarm (Alarm history)	Decimal	200 to 215 220 to 235 240 to 255	○	×
MD	Machine diagnosis data	Decimal	0 to 11	×	×
OTS	One-touch tuning data	Decimal	0 to 3	×	×
DI	External input signal	Decimal	0 to 6	×	×
DO	External output signal	Decimal	0 to 4	×	×

*1 For the devices assigned to EG devices (gateway devices) and the compatible clients, refer to the following.
📖GT Designer3 (GOT3000) Screen Design Manual

25.6.4 Availability of writing/reading data to/from word devices ([MELSERVO-JE-*C])

The following shows the availability of writing/reading data to/from word devices by device type.

R/W: Both read and write

R/-: Read only

-/W: Write only

-/-: No read/write access

Device name	Device type			
	Word (16 bits)	Double-word (32 bits)	Quad-word (64 bits)	Bit of word data
PA	R/W	R/W	-/-	-/-
PB	R/W	R/W	-/-	-/-
PC	R/W	R/W	-/-	-/-
PD	R/W	R/W	-/-	-/-
PT	R/W	R/W	-/-	-/-
PN	R/W	R/W	-/-	-/-
ST	R/-	R/-	-/-	-/-
PE	R/W	R/W	-/-	-/-
PF	R/W	R/W	-/-	-/-
ALM	R/-	R/-	-/-	-/-
MD	R/-	R/-	-/-	-/-
OTS	R/-	R/-	-/-	-/-
DI*1	R/-	R/W	-/-	-/-
DO	R/-	R/-	-/-	-/-

*1 Only reading is available for DI0 to DI3.

25.6.5 Monitoring-supported double-word devices ([MELSERVO-JE-*C])

The following table shows monitoring-supported virtual double-word devices for servo amplifiers.

To check whether writing/reading data to/from each device is available, refer to the following.

☞ Page 1865 Availability of writing/reading data to/from double-word devices ([MELSERVO-JE-*C])

For details on virtual servo amplifier devices, refer to the following.

☞ Page 1866 Virtual servo amplifier devices ([MELSERVO-JE-*C])

○: Available

×: Not available

Device name		Device No. representation	Setting range	Specifications of EG devices*1	
				Assignment to EG devices	Access using a client
LD	Current position latch data	Decimal	0 to 1	×	×
RR	Value of the general-purpose register (Rx)	Decimal	1 to 4 1001 to 1004	×	×
RD	Value of the general-purpose register (Dx)	Decimal	1 to 4	×	×
ALD	Life diagnosis	Decimal	0 to 1	×	×
TMI	Input signal for test operation (for test operation)	Decimal	0 to 2	×	×
TMO	Forced output of signal pin (for test operation)	Decimal	0	×	×
TMD	Set data (for test operation)	Decimal	0 to 1 3	×	×

*1 For the devices assigned to EG devices (gateway devices) and the compatible clients, refer to the following.
GT Designer3 (GOT3000) Screen Design Manual

25.6.6 Availability of writing/reading data to/from double-word devices ([MELSERVO-JE-*C])

The following shows the availability of writing/reading data to/from double-word devices by device type.

R/W: Both read and write

R/-: Read only

-/W: Write only

-/-: No read/write access

Device name	Device type			
	Word (16 bits)	Double-word (32 bits)	Quad-word (64 bits)	Bit of double-word data
LD	-/-	R/-	-/-	-/-
RR	-/-	R/W	-/-	-/-
RD	-/-	R/W	-/-	-/-
ALD	-/-	R/-	-/-	-/-
TMI	-/-	-/W	-/-	-/-
TMO	-/-	-/W	-/-	-/-
TMD	-/-	-/W	-/-	-/-

25.6.7 Virtual servo amplifier devices ([MELSERVO-JE-*C])

The following shows the correspondence between the virtual devices used in the GOT and the servo amplifier data.

Virtual device name	Reference
SP	☞ Page 1867 Servo amplifier request ([MELSERVO-JE-*C])
OM	☞ Page 1867 Operation mode selection ([MELSERVO-JE-*C])
TMB	☞ Page 1867 Instruction demand (for test operation) ([MELSERVO-JE-*C])
OTI	☞ Page 1867 One-touch tuning instruction ([MELSERVO-JE-*C])
PA	☞ Page 1868 Basic parameter ([MELSERVO-JE-*C])
PB	☞ Page 1869 Gain filter parameter ([MELSERVO-JE-*C])
PC	☞ Page 1870 Extension setting parameter ([MELSERVO-JE-*C])
PD	☞ Page 1872 I/O setting parameter ([MELSERVO-JE-*C])
PT	☞ Page 1873 Positioning control parameter ([MELSERVO-JE-*C])
PN	☞ Page 1874 Network setting parameter ([MELSERVO-JE-*C])
ST	☞ Page 1875 Status display ([MELSERVO-JE-*C])
PE	☞ Page 1875 Extension setting No.2 parameter ([MELSERVO-JE-*C])
PF	☞ Page 1876 Extension setting No.3 parameter ([MELSERVO-JE-*C])
ALM	☞ Page 1876 Alarm (MELSERVO-J4-*A extended) ([MELSERVO-JE-*C])
MD	☞ Page 1878 Machine diagnosis data ([MELSERVO-JE-*C])
OTS	☞ Page 1878 One-touch tuning data ([MELSERVO-JE-*C])
DI	☞ Page 1878 External input signal ([MELSERVO-JE-*C])
DO	☞ Page 1879 External output signal ([MELSERVO-JE-*C])
LD	☞ Page 1879 Current position latch data ([MELSERVO-JE-*C])
RR	☞ Page 1879 Value of the general-purpose register (Rx) ([MELSERVO-JE-*C])
RD	☞ Page 1879 Value of the general-purpose register (Dx) ([MELSERVO-JE-*C])
ALD	☞ Page 1879 Life diagnosis ([MELSERVO-JE-*C])
TMI	☞ Page 1880 Input signal for test operation (for test operation) ([MELSERVO-JE-*C])
TMO	☞ Page 1880 Forced output of signal pin (for test operation) ([MELSERVO-JE-*C])
TMD	☞ Page 1880 Set data (for test operation) ([MELSERVO-JE-*C])

Servo amplifier request ([MELSERVO-JE-*C])

Virtual device name	Name	Symbol
SP0	Status display data clear	—
SP1	Current alarm clear	—
SP2	Alarm history clear	—
SP3	External input signal prohibited	—
SP4	External output signal prohibited	—
SP5	External input signal resumed	—
SP6	External output signal resumed	—

When using the servo amplifier request, note the following.

Precautions	Description
When setting a device for a bit switch	Do not select [Alternate] for [Switch Action] of the bit switch.

Operation mode selection ([MELSERVO-JE-*C])

Virtual device name	Name	Symbol
OM0	Normal mode (not test operation mode)	—
OM1	JOG operation	—
OM2	Positioning operation	—
OM4	Output signal (DO) forced output	—
OM5	Single-step feed operation	—

When using the operation mode selection, note the following.

Precautions	Description
When setting a device for a bit switch	Do not select [Alternate] for [Switch Action] of the bit switch.

Instruction demand (for test operation) ([MELSERVO-JE-*C])

Virtual device name	Name	Symbol
TMB1	Temporary stop command	—
TMB2	Test operation (positioning operation) start command	—
TMB3	Forward rotation direction	—
TMB4	Reverse rotation direction	—
TMB5	Restart for remaining distance	—
TMB6	Remaining distance clear	—

When using the instruction demand (for test operation), note the following.

Precautions	Description
When setting a device for a bit switch	Do not select [Alternate] for [Switch Action] of the bit switch.

One-touch tuning instruction ([MELSERVO-JE-*C])

Virtual device name	Name	Symbol
OTI0	One-touch tuning start command (Basic mode)	—
OTI1	One-touch tuning start command (High mode)	—
OTI2	One-touch tuning start command (Low mode)	—
OTI3	One-touch tuning stop command	—
OTI4	Return to initial value	—
OTI5	Return to value before adjustment	—

Basic parameter ([MELSERVO-JE-*C])

Use an appropriate device according to the write destination of the servo amplifier.

- PA1 to PA32: Writing data to the RAM of a servo amplifier
- PA1001 to PA1032: Writing data to the EEPROM of a servo amplifier

For the parameters prefixed by an asterisk (*), setting becomes effective when the power is turned off once and back on after setting the parameter data.

Device name	Name	Symbol
PA1, PA1001	Operation mode	*STY
PA2, PA1002	Regenerative brake option	*REG
PA3, PA1003	Absolute position detection system	*ABS
PA4, PA1004	Function selection A-1	*AOP1
PA5, PA1005	Number of command input pulses per revolution	*FBP
PA6, PA1006	Electronic gear numerator	CMX
PA7, PA1007	Electronic gear denominator	CDV
PA8, PA1008	Auto tuning mode	ATU
PA9, PA1009	Auto tuning response	RSP
PA10, PA1010	In-position range	INP
PA11, PA1011	Forward rotation torque limit	TLP
PA12, PA1012	Reverse rotation torque limit	TLN
PA13, PA1013	Command pulse input form	*PLSS
PA14, PA1014	Rotation direction selection	*POL
PA15, PA1015	Encoder output pulses	*ENR
PA16, PA1016	Encoder output pulses 2	*ENR2
PA17 to PA18, PA1017 to PA1018	For manufacturer setting	—
PA19, PA1019	Parameter block	*BLK
PA20, PA1020	Tough drive setting	*TDS
PA21, PA1021	Function selection A-3	*AOP3
PA22, PA1022	For manufacturer setting	—
PA23, PA1023	Drive recorder arbitrary alarm trigger setting	DRAT
PA24, PA1024	Function selection A-4	*AOP4
PA25, PA1025	One-touch tuning - Overshoot permissible level	OTHOV
PA26, PA1026	Function selection A-5	*AOP5
PA27, PA1027	For manufacturer setting	—
PA28, PA1028	Function selection A-6	*AOP6
PA29 to PA32, PA1029 to PA1032	For manufacturer setting	—

Gain filter parameter ([MELSERVO-JE-*C])

Use an appropriate device according to the write destination of the servo amplifier.

- PB1 to PB64: Writing data to the RAM of a servo amplifier
- PB1001 to PB1064: Writing data to the EEPROM of a servo amplifier

For the parameters prefixed by an asterisk (*), setting becomes effective when the power is turned off once and back on after setting the parameter data.

Device name	Name	Symbol
PB1, PB1001	Adaptive tuning mode (Adaptive filter II)	FILT
PB2, PB1002	Vibration suppression control tuning mode (advanced vibration suppression control II)	VRFT
PB3, PB1003	Position command acceleration/deceleration time constant (position smoothing)	PST
PB4, PB1004	Feed forward gain	FFC
PB5, PB1005	For manufacturer setting	—
PB6, PB1006	Load inertia moment ratio	GD2
PB7, PB1007	Model control gain	PG1
PB8, PB1008	Position control gain	PG2
PB9, PB1009	Speed control gain	VG2
PB10, PB1010	Speed integral compensation	VIC
PB11, PB1011	Speed differential compensation	VDC
PB12, PB1012	Overshoot amount compensation	OVA
PB13, PB1013	Machine resonance suppression filter 1	NH1
PB14, PB1014	Notch shape selection 1	NHQ1
PB15, PB1015	Machine resonance suppression filter 2	NH2
PB16, PB1016	Notch shape selection 2	NHQ2
PB17, PB1017	Shaft resonance suppression filter	NHF
PB18, PB1018	Low-pass filter setting	LPF
PB19, PB1019	Vibration suppression control 1 - Vibration frequency	VRF11
PB20, PB1020	Vibration suppression control 1 - Resonance frequency	VRF12
PB21, PB1021	Vibration suppression control 1 - Vibration frequency damping	VRF13
PB22, PB1022	Vibration suppression control 1 - Resonance frequency damping	VRF14
PB23, PB1023	Low-pass filter setting	VFBF
PB24, PB1024	Slight vibration suppression control	*MVS
PB25, PB1025	Function selection B-1	*BOP1
PB26, PB1026	Gain switching function	*CDP
PB27, PB1027	Gain switching condition	CDL
PB28, PB1028	Gain switching time constant	CDT
PB29, PB1029	Load to motor inertia ratio after gain switching	GD2B
PB30, PB1030	Position loop gain after gain switching	PG2B
PB31, PB1031	Speed loop gain after gain switching	VG2B
PB32, PB1032	Speed integral compensation after gain switching	VICB
PB33, PB1033	Vibration suppression control 1 - Vibration frequency after gain switching	VRF1B
PB34, PB1034	Vibration suppression control 1 - Resonance frequency after gain switching	VRF2B
PB35, PB1035	Vibration suppression control 1 - Vibration frequency damping after gain switching	VRF3B
PB36, PB1036	Vibration suppression control 1 - Resonance frequency damping after gain switching	VRF4B
PB37 to PB44, PB1037 to PB1044	For manufacturer setting	—
PB45, PB1045	Command notch filter	CNHF
PB46, PB1046	Machine resonance suppression filter 3	NH3
PB47, PB1047	Notch shape selection 3	NHQ3
PB48, PB1048	Machine resonance suppression filter 4	NH4
PB49, PB1049	Notch shape selection 4	NHQ4
PB50, PB1050	Machine resonance suppression filter 5	NH5
PB51, PB1051	Notch shape selection 5	NHQ5
PB52, PB1052	Vibration suppression control 2 - Vibration frequency	VRF21

Device name	Name	Symbol
PB53, PB1053	Vibration suppression control 2 - Resonance frequency	VRF22
PB54, PB1054	Vibration suppression control 2 - Vibration frequency damping	VRF23
PB55, PB1055	Vibration suppression control 2 - Resonance frequency damping	VRF24
PB56, PB1056	Vibration suppression control 2 - Vibration frequency after gain switching	VRF21B
PB57, PB1057	Vibration suppression control 2 - Resonance frequency after gain switching	VRF22B
PB58, PB1058	Vibration suppression control 2 - Vibration frequency damping after gain switching	VRF23B
PB59, PB1059	Vibration suppression control 2 - Resonance frequency damping after gain switching	VRF24B
PB60, PB1060	Model loop gain after gain switching	PG1B
PB61 to PB64, PB1061 to PB1064	For manufacturer setting	—

Extension setting parameter ([MELSERVO-JE-*C])

Use an appropriate device according to the write destination of the servo amplifier.

- PC1 to PC80: Writing data to the RAM of a servo amplifier
- PC1001 to PC1080: Writing data to the EEPROM of a servo amplifier

For the parameters prefixed by an asterisk (*), setting becomes effective when the power is turned off once and back on after setting the parameter data.

Device name	Name	Symbol
PC1, PC1001	Acceleration time constant	STA
PC2, PC1002	Deceleration time constant	STB
PC3, PC1003	S-pattern acceleration/deceleration time constant	STC
PC4, PC1004	Torque command time constant	TQC
PC5, PC1005	Internal speed command 1	SC1
PC6, PC1006	Internal speed command 2	SC2
PC7, PC1007	Internal speed command 3	SC3
PC8, PC1008	Internal speed command 4	SC4
PC9, PC1009	Internal speed command 5	SC5
PC10, PC1010	Internal speed command 6	SC6
PC11, PC1011	Internal speed command 7	SC7
PC12, PC1012	Analog speed command maximum speed	VCM
PC13, PC1013	Analog torque command maximum output	TLC
PC14 to PC15, PC1014 to PC1015	For manufacturer setting	—
PC16, PC1016	Electromagnetic brake sequence output	MBR
PC17, PC1017	Zero speed	ZSP
PC18, PC1018	Alarm history clear	*BPS
PC19, PC1019	Encoder output pulse selection	*ENRS
PC20 to PC21, PC1020 to PC1021	For manufacturer setting	—
PC22, PC1022	Function selection C-1	*COP1
PC23, PC1023	Function selection C-2	*COP2
PC24, PC1024	Function selection C-3	*COP3
PC25, PC1025	Function selection C-4	*COP4
PC26, PC1026	Function selection C-5	*COP5
PC27, PC1027	Function selection C-6	*COP6
PC28, PC1028	For manufacturer setting	—
PC29, PC1029	Function selection C-8	*COP8
PC30, PC1030	Acceleration time constant 2	STA2
PC31, PC1031	Deceleration time constant 2	STB2
PC32, PC1032	Command input pulse multiplication numerator 2	CMX2
PC33, PC1033	Command input pulse multiplication numerator 3	CMX3
PC34, PC1034	Command input pulse multiplication numerator 4	CMX4
PC35, PC1035	Internal torque limit 2	TL2

Device name	Name	Symbol
PC36, PC1036	For manufacturer setting	—
PC37, PC1037	Analog speed command offset	VCO
PC38, PC1038	Analog torque command offset	TPO
PC39 to PC42, PC1039 to PC1042	For manufacturer setting	—
PC43, PC1043	Error excessive alarm detection level	ERZ
PC44 to PC45, PC1044 to PC1045	For manufacturer setting	—
PC46, PC1046	Torque limit time constant	TLFT
PC47 to PC50, PC1047 to PC1050	For manufacturer setting	—
PC51, PC1051	Forced stop deceleration time constant	RSBR
PC52 to PC53, PC1052 to PC1053	For manufacturer setting	—
PC54, PC1054	Vertical axis freefall prevention compensation amount	RSUP1
PC55 to PC59, PC1055 to PC1059	For manufacturer setting	—
PC60, PC1060	Function selection C-D	*COPD
PC61 to PC72, PC1061 to PC1072	For manufacturer setting	—
PC73, PC1073	Error excessive warning level	ERW
PC74, PC1074	For manufacturer setting	—
PC75, PC1075	Following error output level	FEWL
PC76, PC1076	Following error output level	FEWH
PC77, PC1077	Following error output filtering time	FEWF
PC78 to PC80, PC1078 to PC1080	For manufacturer setting	—

I/O setting parameter ([MELSERVO-JE-*C])

Use an appropriate device according to the write destination of the servo amplifier.

- PD1 to PD48: Writing data to the RAM of a servo amplifier
- PD1001 to PD1048: Writing data to the EEPROM of a servo amplifier

For the parameters prefixed by an asterisk (*), setting becomes effective when the power is turned off once and back on after setting the parameter data.

Device name	Name	Symbol
PD1, PD1001	Input signal automatic on selection 1	*DIA1
PD2 to PD4, PD1002 to PD1004	For manufacturer setting	—
PD5, PD1005	Input device selection 1L	*DI1L
PD6, PD1006	Input device selection 1M	*DI1M
PD7, PD1007	Input device selection 1H	*DI1H
PD8, PD1008	Input device selection 2L	*DI2L
PD9, PD1009	Input device selection 2M	*DI2M
PD10, PD1010	Input device selection 2H	*DI2H
PD11, PD1011	Input device selection 3L	*DI3L
PD12, PD1012	Input device selection 3M	*DI3M
PD13, PD1013	Input device selection 3H	*DI3H
PD14, PD1014	Input device selection 4L	*DI4L
PD15, PD1015	Input device selection 4M	*DI4M
PD16, PD1016	Input device selection 4H	*DI4H
PD17, PD1017	Input device selection 5L	*DI5L
PD18, PD1018	Input device selection 5M	*DI5M
PD19, PD1019	Input device selection 5H	*DI5H
PD20 to 22, PD1020 to PD1022	For manufacturer setting	—
PD23, PD1023	Input device selection 7L	*DI7L
PD24, PD1024	Input device selection 7M	*DI7M
PD25, PD1025	Input device selection 7H	*DI7H
PD26, PD1026	Input device selection 8L	*DI8L
PD27, PD1027	Input device selection 8M	*DI8M
PD28, PD1028	Input device selection 8H	*DI8H
PD29, PD1029	Output device selection 1	*DO1
PD30, PD1030	Output device selection 2	*DO2
PD31, PD1031	Output device selection 3	*DO3
PD32, PD1032	Output device selection 4	*DO4
PD33, PD1033	For manufacturer setting	—
PD34, PD1034	Input filter setting	*DIF
PD35, PD1035	Function selection D-1	*DOP1
PD36, PD1036	For manufacturer setting	—
PD37, PD1037	Function selection D-3	*DOP3
PD38, PD1038	Function selection D-4	*DOP4
PD39, PD1039	Function selection D-5	*DOP5
PD40 to PD48, PD1040 to PD1048	For manufacturer setting	—

Positioning control parameter ([MELSERVO-JE-*C])

Use an appropriate device according to the write destination of the servo amplifier.

- PT1 to PT80: Writing data to the RAM of a servo amplifier
- PT1001 to PT1080: Writing data to the EEPROM of a servo amplifier

For the parameters prefixed by an asterisk (*), setting becomes effective when the power is turned off once and back on after setting the parameter data.

Device name	Name	Symbol
PT1, PT1001	Command mode selection	*CTY
PT2, PT1002	For manufacturer setting	—
PT3, PT1003	Feeding function selection	*FTY
PT4, PT1004	For manufacturer setting	—
PT5, PT1005	Home position return speed	ZRF
PT6, PT1006	Creep speed	CRF
PT7, PT1007	Home position shift distance	ZST
PT8, PT1008	For manufacturer setting	—
PT9, PT1009	Moving distance after proximity dog	DCT
PT10, PT1010	Stopper type home position return stopper time	ZTM
PT11, PT1011	Stopper type home position return torque limit value	ZTT
PT12 to PT14, PT1012 to PT1014	For manufacturer setting	—
PT15, PT1015	Software limit +	LMPL
PT16, PT1016	Software limit +	LMPH
PT17, PT1017	Software limit -	LMNL
PT18, PT1018	Software limit -	LMNH
PT19 to 25, PT1019 to PT1025	For manufacturer setting	—
PT26, PT1026	Function selection T-2	*TOP2
PT27 to 28, PT1027 to PT1028	For manufacturer setting	—
PT29, PT1029	Function selection T-3	*TOP3
PT30 to PT40, PT1030 to PT1040	For manufacturer setting	—
PT41, PT1041	Home position return inhibit function selection	ORP
PT42 to PT44, PT1042 to PT1044	For manufacturer setting	—
PT45, PT1045	Home position return method	HMM
PT46 to PT48, PT1046 to PT1048	For manufacturer setting	—
PT49, PT1049	Torque slope	TQS
PT50, PT1050	Profile speed command	PVC
PT51, PT1051	Maximum profile speed	MPVC
PT52, PT1052	Speed limit	VLMT
PT53 to 56, PT1053 to PT1056	For manufacturer setting	—
PT57, PT1057	Home position shift distance (extension parameter)	ZSTH
PT58, PT1058	Home position return position data (extension parameter)	*ZPSH
PT59, PT1059	Travel distance after proximity dog (extension parameter)	DCTH
PT60, PT1060	Function selection T-8	*TOP8
PT61, PT1061	Home position return acceleration time constant	HMA
PT62, PT1062	Home position return deceleration time constant	HMB
PT63, PT1063	Zero speed 2 level	ZSP2L
PT64, PT1064	Zero speed 2 filter time	ZSP2F
PT65, PT1065	In-position 2 output range	INP2R
PT66, PT1066	In-position 2 output filter time	INP2F
PT67, PT1067	Speed reached 2 output range	SA2R
PT68, PT1068	Speed reached 2 output filter time	SA2F
PT69 to 80, PT1069 to PT1080	For manufacturer setting	—

Network setting parameter ([MELSERVO-JE-*C])

Use an appropriate device according to the write destination of the servo amplifier.

- PN1 to PN48: Writing data to the RAM of a servo amplifier
- PN1001 to PN1048: Writing data to the EEPROM of a servo amplifier

For the parameters prefixed by an asterisk (*), setting becomes effective when the power is turned off once and back on after setting the parameter data.

Device name	Name	Symbol
PN1, PN1001	For manufacturer setting	—
PN2, PN1002	Communication error detection time	CERT
PN3 to PN5, PN1003 to PN1005	For manufacturer setting	—
PN6, PN1006	Function selection N-1	NOP1
PN7, PN1007	For manufacturer setting	—
PN8, PN1008	Function selection N-2	NOP2
PN9, PN1009	For manufacturer setting	—
PN10, PN1010	Ethernet communication time-out selection	EIC
PN11, PN1011	IP address setting 1	*IPAD1
PN12, PN1012	IP address setting 2	*IPAD2
PN13, PN1013	IP address setting 3	*IPAD3
PN14, PN1014	IP address setting 4	*IPAD4
PN15, PN1015	Subnet mask setting 1	*SNMK1
PN16, PN1016	Subnet mask setting 2	*SNMK2
PN17, PN1017	Subnet mask setting 3	*SNMK3
PN18, PN1018	Subnet mask setting 4	*SNMK4
PN19, PN1019	Default gateway setting 1	*DGW1
PN20, PN1020	Default gateway setting 2	*DGW2
PN21, PN1021	Default gateway setting 3	*DGW3
PN22, PN1022	Default gateway setting 4	*DGW4
PN23, PN1023	Keepalive time	*KAA
PN24, PN1024	IP address filter 1	*IPAF1
PN25, PN1025	IP address filter 2	*IPAF2
PN26, PN1026	IP address filter 3	*IPAF3
PN27, PN1027	IP address filter 4	*IPAF4
PN28, PN1028	IP address filter 2 range specification	*IPFR2
PN29, PN1029	IP address filter 3 range specification	*IPFR3
PN30, PN1030	IP address filter 4 range specification	*IPFR4
PN31, PN1031	Operation specification IP address 1	*IPOA1
PN32, PN1032	Operation specification IP address 2	*IPOA2
PN33, PN1033	Operation specification IP address 3	*IPOA3
PN34, PN1034	Operation specification IP address 4	*IPOA4
PN35, PN1035	Operation specification IP address 3 range spec.	*IPOR3
PN36, PN1036	Operation specification IP address 4 range spec.	*IPOR4
PN37 to PN48, PN1037 to PN1048	For manufacturer setting	—

Status display ([MELSERVO-JE-*C])

Device name	Name	Symbol
ST0	Cumulative feedback pulses	—
ST1	Servo motor speed	—
ST2	Droop pulses	—
ST3	Cumulative command pulses	—
ST4	Command pulse frequency	—
ST5	Analog speed command voltage	—
ST6	Analog torque command voltage	—
ST7	Regenerative load ratio	—
ST8	Effective load ratio	—
ST9	Peak load ratio	—
ST10	Instantaneous torque	—
ST11	Within one-revolution position	—
ST12	ABS counter	—
ST13	Load inertia moment ratio	—
ST14	Bus voltage	—
ST15 to ST31	For manufacturer setting	—
ST32	Encoder inside temperature	—
ST33	Settling time	—
ST34	Oscillation detection frequency	—
ST35	Number of tough drive operations	—
ST36 to ST39	For manufacturer setting	—
ST40	Unit power consumption	—
ST41	Unit total power consumption	—
ST42	Current position	—
ST43	Command position	—
ST44	Command remaining distance	—
ST45 to ST48	For manufacturer setting	—

Extension setting No.2 parameter ([MELSERVO-JE-*C])

Use an appropriate device according to the write destination of the servo amplifier.

- PE1 to PE64: Writing data to the RAM of a servo amplifier
- PE1001 to PE1064: Writing data to the EEPROM of a servo amplifier

For the parameters prefixed by an asterisk (*), setting becomes effective when the power is turned off once and back on after setting the parameter data.

Device name	Name	Symbol
PE1 to PE40, PE1001 to PE1040	For manufacturer setting	—
PE41, PE1041	Function selection E-3	EOP3
PE42 to PE43, PE1042 to PE1043	For manufacturer setting	—
PE44, PE1044	Lost motion compensation positive-side compensation value selection	LMCP
PE45, PE1045	Lost motion compensation negative-side compensation value selection	LMCN
PE46, PE1046	Lost motion filter setting	LMFLT
PE47, PE1047	Torque offset	TOF
PE48, PE1048	Lost motion compensation function selection	*LMOP
PE49, PE1049	Lost motion compensation timing	LMCD
PE50, PE1050	Lost motion compensation non-sensitive band	LMCT
PE51 to PE64, PE1051 to PE1064	For manufacturer setting	—

Extension setting No.3 parameter ([MELSERVO-JE-*C])

Use an appropriate device according to the write destination of the servo amplifier.

- PF1 to PF48: Writing data to the RAM of a servo amplifier
- PF1001 to PF1048: Writing data to the EEPROM of a servo amplifier

For the parameters prefixed by an asterisk (*), setting becomes effective when the power is turned off once and back on after setting the parameter data.

Device name	Name	Symbol
PF1 to PF8, PF1001 to PF1008	For manufacturer setting	—
PF9, PF1009	Function selection F-5	*FOP5
PF10 to PF14, PF1010 to PF1014	For manufacturer setting	—
PF15, PF1015	Electronic dynamic brake operating time	DBT
PF16 to PF20, PF1016 to PF1020	For manufacturer setting	—
PF21, PF1021	Drive recorder switching time setting	DRT
PF22, PF1022	For manufacturer setting	—
PF23, PF1023	Vibration tough drive - Oscillation detection level	OSCL1
PF24, PF1024	Vibration tough drive function selection	OSCL2
PF25, PF1025	Instantaneous power failure tough drive - Detection time	CVAT
PF26 to PF30, PF1026 to PF1030	For manufacturer setting	—
PF31, PF1031	Machine diagnosis function - Friction judgment speed	FRIC
PF32 to PF48, PF1032 to PF1048	For manufacturer setting	—

Alarm (MELSERVO-J4-*A extended) ([MELSERVO-JE-*C])

Device name	Name	Symbol
ALM0	Current alarm number	—
ALM1	Detailed data of current alarms	—
ALM11	Servo status(alarm) Cumulative feedback pulses	—
ALM12	Servo status(alarm) Servo motor speed	—
ALM13	Servo status(alarm) Droop pulses	—
ALM14	Servo status(alarm) Cumulative command pulses	—
ALM15	Servo status(alarm) Command pulse frequency	—
ALM16	Servo status(alarm) Analog speed command voltage	—
ALM17	Servo status(alarm) Analog torque command voltage	—
ALM18	Servo status(alarm) Regenerative load ratio	—
ALM19	Servo status(alarm) Effective load ratio	—
ALM20	Servo status(alarm) Peak load ratio	—
ALM21	Servo status(alarm) Instantaneous torque	—
ALM22	Servo status(alarm) Within one-revolution position	—
ALM23	Servo status(alarm) ABS counter	—
ALM24	Servo status(alarm) Load inertia moment ratio	—
ALM25	Servo status(alarm) Bus voltage	—
ALM26 to ALM42	For manufacturer setting	—
ALM43	Servo status(alarm) Encoder inside temperature	—
ALM44	Servo status(alarm) Settling time	—
ALM45	Servo status(alarm) Oscillation detection frequency	—
ALM46	Servo status(alarm) Number of tough drive operations	—
ALM47 to ALM50	For manufacturer setting	—
ALM51	Servo status(alarm) Unit power consumption	—
ALM52	Servo status(alarm) Unit total power consumption	—
ALM53	Servo status(alarm) Current position	—

Device name	Name	Symbol
ALM54	Servo status(alarm) Command position	—
ALM55	Servo status(alarm) Command remaining distance	—
ALM56 to ALM59	For manufacturer setting	—
ALM200	Alarm number from Alarm History most recent alarm	—
ALM201	Alarm number from Alarm History 1st alarm in past	—
ALM202	Alarm number from Alarm History 2nd alarm in past	—
ALM203	Alarm number from Alarm History 3rd alarm in past	—
ALM204	Alarm number from Alarm History 4th alarm in past	—
ALM205	Alarm number from Alarm History 5th alarm in past	—
ALM206	Alarm number from Alarm History 6th alarm in past	—
ALM207	Alarm number from Alarm History 7th alarm in past	—
ALM208	Alarm number from Alarm History 8th alarm in past	—
ALM209	Alarm number from Alarm History 9th alarm in past	—
ALM210	Alarm number from Alarm History 10th alarm in past	—
ALM211	Alarm number from Alarm History 11th alarm in past	—
ALM212	Alarm number from Alarm History 12th alarm in past	—
ALM213	Alarm number from Alarm History 13th alarm in past	—
ALM214	Alarm number from Alarm History 14th alarm in past	—
ALM215	Alarm number from Alarm History 15th alarm in past	—
ALM220	Alarm occurrence time in alarm history most recent alarm	—
ALM221	Alarm occurrence time in alarm history 1st alarm in past	—
ALM222	Alarm occurrence time in alarm history 2nd alarm in past	—
ALM223	Alarm occurrence time in alarm history 3rd alarm in past	—
ALM224	Alarm occurrence time in alarm history 4th alarm in past	—
ALM225	Alarm occurrence time in alarm history 5th alarm in past	—
ALM226	Alarm occurrence time in alarm history 6th alarm in past	—
ALM227	Alarm occurrence time in alarm history 7th alarm in past	—
ALM228	Alarm occurrence time in alarm history 8th alarm in past	—
ALM229	Alarm occurrence time in alarm history 9th alarm in past	—
ALM230	Alarm occurrence time in alarm history 10th alarm in past	—
ALM231	Alarm occurrence time in alarm history 11th alarm in past	—
ALM232	Alarm occurrence time in alarm history 12th alarm in past	—
ALM233	Alarm occurrence time in alarm history 13th alarm in past	—
ALM234	Alarm occurrence time in alarm history 14th alarm in past	—
ALM235	Alarm occurrence time in alarm history 15th alarm in past	—
ALM240	Detailed alarm from Alarm History most recent alarm	—
ALM241	Detailed alarm from Alarm History 1st alarm in past	—
ALM242	Detailed alarm from Alarm History 2nd alarm in past	—
ALM243	Detailed alarm from Alarm History 3rd alarm in past	—
ALM244	Detailed alarm from Alarm History 4th alarm in past	—
ALM245	Detailed alarm from Alarm History 5th alarm in past	—
ALM246	Detailed alarm from Alarm History 6th alarm in past	—
ALM247	Detailed alarm from Alarm History 7th alarm in past	—
ALM248	Detailed alarm from Alarm History 8th alarm in past	—
ALM249	Detailed alarm from Alarm History 9th alarm in past	—
ALM250	Detailed alarm from Alarm History 10th alarm in past	—
ALM251	Detailed alarm from Alarm History 11th alarm in past	—
ALM252	Detailed alarm from Alarm History 12th alarm in past	—
ALM253	Detailed alarm from Alarm History 13th alarm in past	—
ALM254	Detailed alarm from Alarm History 14th alarm in past	—
ALM255	Detailed alarm from Alarm History 15th alarm in past	—

Machine diagnosis data ([MELSERVO-JE-*C])

Virtual device name	Name	Symbol
MD0	Machine diagnosis data parameter number	—
MD1	Machine diagnosis data shift judgment (test mode)	—
MD2*1	Machine diagnosis data status	—
MD3*2	Machine diagnosis data coulomb friction torque in positive direction	—
MD4*2	Machine diagnosis data friction torque at rated speed in positive direction	—
MD5*2	Machine diagnosis data coulomb friction torque in negative direction	—
MD6*2	Machine diagnosis data friction torque at rated speed in negative direction	—
MD7*2	Machine diagnosis data oscillation frequency (motor is stopped)	—
MD8*2	Machine diagnosis data vibration level (motor is stopped)	—
MD9*2	Machine diagnosis data oscillation frequency (motor is operating)	—
MD10*2	Machine diagnosis data vibration level (motor is operating)	—
MD11	Machine diagnosis data, rated speed at forward or reverse rotation torque	—

*1 While the servo amplifier is estimating the corresponding machine status in the machine diagnosis, do not write data to the parameters of the servo amplifier from another GOT.
Doing so may cause the servo amplifier to malfunction.

*2 When MD2 indicates that the servo amplifier does not complete the machine diagnosis (is estimating or warning of the machine status), do not monitor MD3 to MD6 (friction states) and MD7 to MD10 (vibration/oscillation states).
To start monitoring those devices upon the estimation completion, set [Trigger] in the applicable object settings.

One-touch tuning data ([MELSERVO-JE-*C])

Virtual device name	Name	Symbol
OTS0	One-touch tuning status confirmation	—
OTS1	Error code list	—
OTS2	Settling time	—
OTS3	Overshoot amount	—

External input signal ([MELSERVO-JE-*C])

Virtual device name	Name	Symbol	Data to be read from the servo amplifier
DI0	Input device statuses	—	System information
DI1	Input device statuses	—	
DI2	Input device statuses	—	
DI3	External input pin statuses	—	The statuses of the listed input devices are assigned to the bits in order from bit 0 and read. For details on the input devices, refer to the following. 📖MR-JE-_C Servo Amplifier Instruction Manual
DI4	Statuses of input devices switched on through communication	—	System information
DI5	Statuses of input devices switched on through communication	—	
DI6	Statuses of input devices switched on through communication	—	

External output signal ([MELSERVO-JE-*C])

Virtual device name	Name	Symbol	Data to be read from the servo amplifier
DO0	Output device statuses	—	System information
DO1	Output device statuses	—	
DO2	Output device statuses	—	
DO4	External output pin statuses	—	The statuses of the listed output devices are assigned to the bits in order from bit 0 and read. For details on the output devices, refer to the following. MR-JE-_C Servo Amplifier Instruction Manual

Current position latch data ([MELSERVO-JE-*C])

Virtual device name	Name	Symbol
LD0	Position data unit	—
LD1	Current position latch data	—

Value of the general-purpose register (Rx) ([MELSERVO-JE-*C])

Use an appropriate device according to the write destination of the servo amplifier.

- RR1 to RR4: Writing data to the RAM of a servo amplifier
- RR1001 to RR1004: Writing data to the EEPROM of a servo amplifier

Virtual device name	Name	Symbol
RR1, RR1001	Value of the general-purpose register (R1)	—
RR2, RR1002	Value of the general-purpose register (R2)	—
RR3, RR1003	Value of the general-purpose register (R3)	—
RR4, RR1004	Value of the general-purpose register (R4)	—

Value of the general-purpose register (Dx) ([MELSERVO-JE-*C])

Virtual device name	Name	Symbol
RD1	Value of the general-purpose register (D1)	—
RD2	Value of the general-purpose register (D2)	—
RD3	Value of the general-purpose register (D3)	—
RD4	Value of the general-purpose register (D4)	—

Life diagnosis ([MELSERVO-JE-*C])

Virtual device name	Name	Symbol
ALD0	Cumulative power-on time	—
ALD1	Number of inrush current switching times	—

Input signal for test operation (for test operation) ([MELSERVO-JE-*C])

Virtual device name	Name	Symbol
TMI0	Input signal for test operation 1	—
TMI1	Input signal for test operation 2	—
TMI2	Input signal for test operation 3	—

When using the input signal for test operation (for test operation), note the following.

Precautions	Description
Writing a value to a virtual device using an object	Numerical input cannot be used. Use a word switch for writing.

Forced output of signal pin (for test operation) ([MELSERVO-JE-*C])

Virtual device name	Name	Symbol
TMO0	Forced output of signal pin	—

When using the forced output of signal pin (for test operation), note the following.

Precautions	Description
Writing a value to a virtual device using an object	Numerical input cannot be used. Use a word switch for writing.

Set data (for test operation) ([MELSERVO-JE-*C])

Virtual device name	Name	Symbol
TMD0	Writes the speed (test mode)	—
TMD1	Writes the acceleration/deceleration time constant (test mode)	—
TMD3	Writes the moving distance (test mode)	—

When using the set data (for test operation), note the following.

Precautions	Description
Writing a value to a virtual device using an object	Numerical input cannot be used. Use a word switch for writing.

25.6.8 Precautions for virtual servo amplifier devices ([MELSERVO-JE-*C])

For the precautions for virtual servo amplifier devices, refer to the following.

☞ Page 1302 Precautions for virtual servo amplifier devices ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])

25.7 [MELSERVO-J5(W)-*G(-RJ), -JET-*G]

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Item	Reference
Specifications of bit devices	☞ Page 1881 Monitoring-supported bit devices ([MELSERVO-J5(W)-*G(-RJ), -JET-*G])
	☞ Page 1882 Availability of writing/reading data to/from bit devices ([MELSERVO-J5(W)-*G(-RJ), -JET-*G])
Specifications of word devices	☞ Page 1883 Monitoring-supported word devices ([MELSERVO-J5(W)-*G(-RJ), -JET-*G])
	☞ Page 1886 Availability of writing/reading data to/from word devices ([MELSERVO-J5(W)-*G(-RJ), -JET-*G])
Specifications of double-word devices	☞ Page 1887 Monitoring-supported double-word devices ([MELSERVO-J5(W)-*G(-RJ), -JET-*G])
	☞ Page 1887 Availability of writing/reading data to/from double-word devices ([MELSERVO-J5(W)-*G(-RJ), -JET-*G])
Specifications of virtual servo amplifier devices	☞ Page 1888 Virtual servo amplifier devices ([MELSERVO-J5(W)-*G(-RJ), -JET-*G])
	☞ Page 1916 Precautions for virtual servo amplifier devices ([MELSERVO-J5(W)-*G(-RJ), -JET-*G])

25.7.1 Monitoring-supported bit devices ([MELSERVO-J5(W)-*G(-RJ), -JET-*G])

The following table shows monitoring-supported virtual bit devices for servo amplifiers.

To check whether writing/reading data to/from each device is available, refer to the following.

☞ Page 1882 Availability of writing/reading data to/from bit devices ([MELSERVO-J5(W)-*G(-RJ), -JET-*G])

For details on virtual servo amplifier devices, refer to the following.

☞ Page 1888 Virtual servo amplifier devices ([MELSERVO-J5(W)-*G(-RJ), -JET-*G])

○: Available

×: Not available

Device name		Device No. representation	Setting range	Specifications of EG devices*1	
				Assignment to EG devices	Access using a client
SP	Servo amplifier request	Decimal	AA(Axis designation)-SP(Device) Notation example: AA3-SP0 • Axis designation: 1 to 3 (direct), 100 to 115 (indirect) • Device (decimal): 0 to 6	×	×
OM	Operation mode selection	Decimal	AA(Axis designation)-OM(Device) Notation example: AA3-OM0 • Axis designation: 1 to 3 (direct), 100 to 115 (indirect) • Device (decimal): 0 to 2, 4 to 5	×	×
TMB	Instruction demand (for test operation)	Decimal	AA(Axis designation)-TMB(Device) Notation example: AA3-TMB1 • Axis designation: 1 to 3 (direct), 100 to 115 (indirect) • Device (decimal): 1 to 6	×	×
OTI	One-touch tuning instruction	Decimal	AA(Axis designation)-OTI(Device) Notation example: AA3-OTI0 • Axis designation: 1 to 3 (direct), 100 to 115 (indirect) • Device (decimal): 0 to 5	×	×
GFDI	Gear failure diagnosis instruction	Decimal	AA(Axis designation)-GFDI(Device) Notation example: AA3-GFDI0 • Axis designation: 1 to 3 (direct), 100 to 115 (indirect) • Device (decimal): 0 to 1	×	×
ECCDI	Encoder communication circuit diagnosis instruction	Decimal	AA(Axis designation)-ECCDI(Device) Notation example: AA3-ECCDI0 • Axis designation: 1 to 3 (direct), 100 to 115 (indirect) • Device (decimal): 0 to 1	×	×

*1 For the devices assigned to EG devices (gateway devices) and the compatible clients, refer to the following.
GT Designer3 (GOT3000) Screen Design Manual

For indirect specification of an axis designation, refer to the following.

Page 1230 Indirect specification of an axis number or axis designation ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])

25.7.2 Availability of writing/reading data to/from bit devices ([MELSERVO-J5(W)-*G(-RJ), -JET-*G])

The following shows the availability of writing/reading data to/from bit devices by device type.

When the device type is other than the bit type, set the device No. in multiples of 16.

R/W: Both read and write

R/-: Read only

-/W: Write only

-/-: No read/write access

Device name	Device type				
	Bit	Byte (8 bits)	Word (16 bits)	Double-word (32 bits)	Quad-word (64 bits)
SP	-/W	-/-	-/-	-/-	-/-
OM	-/W	-/-	-/-	-/-	-/-
TMB	-/W	-/-	-/-	-/-	-/-
OTI	-/W	-/-	-/-	-/-	-/-
GFDI	-/W	-/-	-/-	-/-	-/-
ECCDI	-/W	-/-	-/-	-/-	-/-

25.7.3 Monitoring-supported word devices ([MELSERVO-J5(W)-*G(-RJ), -JET-*G])

The following table shows monitoring-supported virtual word devices for servo amplifiers.

To check whether writing/reading data to/from each device is available, refer to the following.

☞ Page 1886 Availability of writing/reading data to/from word devices ([MELSERVO-J5(W)-*G(-RJ), -JET-*G])

For details on virtual servo amplifier devices, refer to the following.

☞ Page 1888 Virtual servo amplifier devices ([MELSERVO-J5(W)-*G(-RJ), -JET-*G])

○: Available

×: Not available

Device name		Device No. representation	Setting range	Specifications of EG devices*1	
				Assignment to EG devices	Access using a client
PA	Basic parameter	Decimal	AA(Axis designation)-PA(Device) Notation example: AA3-PA1 • Axis designation: 1 to 3 (direct), 100 to 115 (indirect) • Device (decimal): 1 to 44, 1001 to 1044	×	×
PB	Gain filter parameter	Decimal	AA(Axis designation)-PB(Device) Notation example: AA3-PB1 • Axis designation: 1 to 3 (direct), 100 to 115 (indirect) • Device (decimal): 1 to 92, 1001 to 1092	×	×
PC	Extension setting parameter	Decimal	AA(Axis designation)-PC(Device) Notation example: AA3-PC1 • Axis designation: 1 to 3 (direct), 100 to 115 (indirect) • Device (decimal): 1 to 90, 1001 to 1090	×	×
PD	I/O setting parameter	Decimal	AA(Axis designation)-PD(Device) Notation example: AA3-PD1 • Axis designation: 1 to 3 (direct), 100 to 115 (indirect) • Device (decimal): 1 to 72, 1001 to 1072	×	×
PT	Positioning control parameter	Decimal	AA(Axis designation)-PT(Device) Notation example: AA3-PT1 • Axis designation: 1 to 3 (direct), 100 to 115 (indirect) • Device (decimal): 1 to 90, 1001 to 1090	×	×
PN	Network setting parameter	Decimal	AA(Axis designation)-PN(Device) Notation example: AA3-PN1 • Axis designation: 1 to 3 (direct), 100 to 115 (indirect) • Device (decimal): 1 to 32, 1001 to 1032	×	×
ST	Status display	Decimal	AA(Axis designation)-ST(Device) Notation example: AA3-ST0 • Axis designation: 1 to 3 (direct), 100 to 115 (indirect) • Device (decimal): 0 to 48	×	×
PE	Extension setting No.2 parameter	Decimal	AA(Axis designation)-PE(Device) Notation example: AA3-PE1 • Axis designation: 1 to 3 (direct), 100 to 115 (indirect) • Device (decimal): 1 to 88, 1001 to 1088	×	×
PF	Extension setting No.3 parameter	Decimal	AA(Axis designation)-PF(Device) Notation example: AA3-PF1 • Axis designation: 1 to 3 (direct), 100 to 115 (indirect) • Device (decimal): 1 to 99, 1001 to 1099	×	×
ALM	Alarm (Current alarm)	Decimal	AA(Axis designation)-ALM(Device) Notation example: AA3-ALM0 • Axis designation: 1 to 3 (direct), 100 to 115 (indirect) • Device (decimal): 0 to 2, 11 to 59	×	×

Device name		Device No. representation	Setting range	Specifications of EG devices*1	
				Assignment to EG devices	Access using a client
ALM	Alarm (Alarm history)	Decimal	AA(Axis designation)-ALM(Device) Notation example: AA3-ALM200 • Axis designation: 1 to 3 (direct), 100 to 115 (indirect) • Device (decimal): 200 to 215, 220 to 235, 240 to 255, 260 to 275, 280 to 295, 300 to 315	×	×
POS	Point table (position)	Decimal	AA(Axis designation)-POS(Device) Notation example: AA3-POS1 • Axis designation (decimal): 1 to 3 (direct), 100 to 115 (indirect) • Device (decimal): 1 to 255, 1001 to 1255	×	×
SPD	Point table (speed)	Decimal	AA(Axis designation)-SPD(Device) Notation example: AA3-SPD1 • Axis designation (decimal): 1 to 3 (direct), 100 to 115 (indirect) • Device (decimal): 1 to 255, 1001 to 1255	×	×
ACT	Point table (acceleration time constant)	Decimal	AA(Axis designation)-ACT(Device) Notation example: AA3-ACT1 • Axis designation (decimal): 1 to 3 (direct), 100 to 115 (indirect) • Device (decimal): 1 to 255, 1001 to 1255	×	×
DCT	Point table (deceleration time constant)	Decimal	AA(Axis designation)-DCT(Device) Notation example: AA3-DCT1 • Axis designation (decimal): 1 to 3 (direct), 100 to 115 (indirect) • Device (decimal): 1 to 255, 1001 to 1255	×	×
DWL	Point table (dwell)	Decimal	AA(Axis designation)-DWL(Device) Notation example: AA3-DWL1 • Axis designation (decimal): 1 to 3 (direct), 100 to 115 (indirect) • Device (decimal): 1 to 255, 1001 to 1255	×	×
AUX	Point table (auxiliary function)	Decimal	AA(Axis designation)-AUX(Device) Notation example: AA3-AUX1 • Axis designation (decimal): 1 to 3 (direct), 100 to 115 (indirect) • Device (decimal): 1 to 255, 1001 to 1255	×	×
MCD	Point table (M code)	Decimal	AA(Axis designation)-MCD(Device) Notation example: AA3-MCD1 • Axis designation (decimal): 1 to 3 (direct), 100 to 115 (indirect) • Device (decimal): 1 to 255, 1001 to 1255	×	×
MD	Machine diagnosis data	Decimal	AA(Axis designation)-MD(Device) Notation example: AA3-MD0 • Axis designation: 1 to 3 (direct), 100 to 115 (indirect) • Device (decimal): 0 to 21	×	×
OTS	One-touch tuning data	Decimal	AA(Axis designation)-OTS(Device) Notation example: AA3-OTS0 • Axis designation: 1 to 3 (direct), 100 to 115 (indirect) • Device (decimal): 0 to 5, 3000	×	×
DI	External input signal	Decimal	AA(Axis designation)-DI(Device) Notation example: AA3-DI0 • Axis designation: 1 to 3 (direct), 100 to 115 (indirect) • Device (decimal): 0 to 6	×	×
DO	External output signal	Decimal	AA(Axis designation)-DO(Device) Notation example: AA3-DO0 • Axis designation: 1 to 3 (direct), 100 to 115 (indirect) • Device (decimal): 0 to 4	×	×

Device name		Device No. representation	Setting range	Specifications of EG devices*1	
				Assignment to EG devices	Access using a client
PO	Option unit parameter	Decimal	AA(Axis designation)-PO(Device) Notation example: AA3-PO1 • Axis designation: 1 to 3 (direct), 100 to 115 (indirect) • Device (decimal): 1 to 2, 1001 to 1002	×	×
PS	Special parameter	Decimal	AA(Axis designation)-PS(Device) Notation example: AA3-PS1 • Axis designation: 1 to 3 (direct), 100 to 115 (indirect) • Device (decimal): 1 to 99, 1001 to 1099	×	×
PL*2	Motor extension parameter	Decimal	AA(Axis designation)-PL(Device) Notation example: AA3-PL1 • Axis designation: 1 to 3 (direct), 100 to 115 (indirect) • Device (decimal): 1 to 72, 1001 to 1072	×	×
	Linear servo motor/DD motor setting parameter			×	×
PU	Multi encoder parameter	Decimal	AA(Axis designation)-PU(Device) Notation example: AA3-PU1 • Axis designation: 1 to 3 (direct), 100 to 115 (indirect) • Device (decimal): 1 to 44, 1001 to 1044	×	×
PVS	Positioning extension parameter	Decimal	AA(Axis designation)-PVS(Device) Notation example: AA3-PVS1 • Axis designation: 1 to 3 (direct), 100 to 115 (indirect) • Device (decimal): 1 to 32, 1001 to 1032	×	×
NPA	Network basic parameter	Decimal	1 to 12 2001 to 2032	×	×
GFDS	Gear failure diagnosis data	Decimal	AA(Axis designation)-GFDS(Device) Notation example: AA3-GFDS0 • Axis designation: 1 to 3 (direct), 100 to 115 (indirect) • Device (decimal): 0 to 5	×	×
ECCDS	Encoder communication circuit diagnosis data	Decimal	AA(Axis designation)-ECCDS(Device) Notation example: AA3-ECCDS0 • Axis designation: 1 to 3 (direct), 100 to 115 (indirect) • Device (decimal): 0 to 5	×	×

*1 For the devices assigned to EG devices (gateway devices) and the compatible clients, refer to the following.
GT Designer3 (GOT3000) Screen Design Manual

*2 The device name depends on the servo amplifier.
MR-J5-G(-RJ) or MR-J5W□-G: Motor extension setting parameter
Other than MR-J5-G(-RJ) or MR-J5W□-G: Linear servo motor/DD motor setting parameter

For indirect specification of an axis designation, refer to the following.

☞ Page 1230 Indirect specification of an axis number or axis designation ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])

25.7.4 Availability of writing/reading data to/from word devices ([MELSERVO-J5(W)-*G(-RJ), -JET-*G])

The following shows the availability of writing/reading data to/from word devices by device type.

R/W: Both read and write

R/-: Read only

-/W: Write only

-/-: No read/write access

Device name	Device type			
	Word (16 bits)	Double-word (32 bits)	Quad-word (64 bits)	Bit of word data
PA	R/W	R/W	-/-	-/-
PB	R/W	R/W	-/-	-/-
PC	R/W	R/W	-/-	-/-
PD	R/W	R/W	-/-	-/-
PT	R/W	R/W	-/-	-/-
PN	R/W	R/W	-/-	-/-
ST	R/-	R/-	-/-	-/-
PE	R/W	R/W	-/-	-/-
PF	R/W	R/W	-/-	-/-
ALM	R/-	R/-	-/-	-/-
POS	R/W	R/W	-/-	-/-
SPD	R/W	R/W	-/-	-/-
ACT	R/W	R/W	-/-	-/-
DCT	R/W	R/W	-/-	-/-
DWL	R/W	R/W	-/-	-/-
AUX	R/W	R/W	-/-	-/-
MCD	R/W	R/W	-/-	-/-
MD	R/-	R/-	-/-	-/-
OTS*1	R/W	R/W	-/-	-/-
DI*2	R/-	R/W	-/-	-/-
DO	R/-	R/-	-/-	-/-
PO	R/W	R/W	-/-	-/-
PS	R/W	R/W	-/-	-/-
PL	R/W	R/W	-/-	-/-
PU	R/W	R/W	-/-	-/-
PVS	R/W	R/W	-/-	-/-
NPA*3	R/W	R/W	-/-	-/-
GFDS	R/-	R/-	-/-	-/-
ECCDS	R/-	R/-	-/-	-/-

*1 Only reading is available for OTS0 to OTS5.

*2 Only reading is available for DI0 to DI3.

*3 Only reading is available for NPA1, NPA8, and NPA2001 to NPA2032.

25.7.5 Monitoring-supported double-word devices ([MELSERVO-J5(W)-*G(-RJ), -JET-*G])

The following table shows monitoring-supported virtual double-word devices for servo amplifiers.

To check whether writing/reading data to/from each device is available, refer to the following.

☞ Page 1887 Availability of writing/reading data to/from double-word devices ([MELSERVO-J5(W)-*G(-RJ), -JET-*G])

For details on virtual servo amplifier devices, refer to the following.

☞ Page 1888 Virtual servo amplifier devices ([MELSERVO-J5(W)-*G(-RJ), -JET-*G])

○: Available

×: Not available

Device name		Device No. representation	Setting range	Specifications of EG devices*1	
				Assignment to EG devices	Access using a client
ALD	Life diagnosis	Decimal	AA(Axis designation)-ALD(Device) Notation example: AA3-ALD0 • Axis designation: 1 to 3 (direct), 100 to 115 (indirect) • Device (decimal): 0 to 1	×	×
TMI	Input signal for test operation (for test operation)	Decimal	AA(Axis designation)-TMI(Device) Notation example: AA3-TMI0 • Axis designation: 1 to 3 (direct), 100 to 115 (indirect) • Device (decimal): 0 to 2	×	×
TMO	Forced output of signal pin (for test operation)	Decimal	AA(Axis designation)-TMO(Device) Notation example: AA3-TMO0 • Axis designation: 1 to 3 (direct), 100 to 115 (indirect) • Device (decimal): 0	×	×
TMD	Set data (for test operation)	Decimal	AA(Axis designation)-TMD(Device) Notation example: AA3-TMD0 • Axis designation: 1 to 3 (direct), 100 to 115 (indirect) • Device (decimal): 0 to 1, 3	×	×

*1 For the devices assigned to EG devices (gateway devices) and the compatible clients, refer to the following.
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For indirect specification of an axis designation, refer to the following.

☞ Page 1230 Indirect specification of an axis number or axis designation ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])

25.7.6 Availability of writing/reading data to/from double-word devices ([MELSERVO-J5(W)-*G(-RJ), -JET-*G])

The following shows the availability of writing/reading data to/from double-word devices by device type.

R/W: Both read and write

R/-: Read only

-/W: Write only

-/-: No read/write access

Device name	Device type			
	Word (16 bits)	Double-word (32 bits)	Quad-word (64 bits)	Bit of word data
ALD	-/-	R/-	-/-	-/-
TMI	-/-	-/W	-/-	-/-
TMO	-/-	-/W	-/-	-/-
TMD	-/-	-/W	-/-	-/-

25.7.7 Virtual servo amplifier devices ([MELSERVO-J5(W)-*G(-RJ), -JET-*G])

The following shows the correspondence between the virtual devices used in the GOT and the servo amplifier data.

Virtual device name	Reference
SP	☞ Page 1889 Servo amplifier request ([MELSERVO-J5(W)-*G(-RJ), -JET-*G])
OM	☞ Page 1889 Operation mode selection ([MELSERVO-J5(W)-*G(-RJ), -JET-*G])
TMB	☞ Page 1889 Instruction demand (for test operation) ([MELSERVO-J5(W)-*G(-RJ), -JET-*G])
OTI	☞ Page 1890 One-touch tuning instruction ([MELSERVO-J5(W)-*G(-RJ), -JET-*G])
GFDI	☞ Page 1890 Gear failure diagnosis instruction ([MELSERVO-J5(W)-*G(-RJ), -JET-*G])
ECCDI	☞ Page 1890 Encoder communication circuit diagnosis instruction ([MELSERVO-J5(W)-*G(-RJ), -JET-*G])
PA	☞ Page 1891 Basic setting parameter ([MELSERVO-J5(W)-*G(-RJ), -JET-*G])
PB	☞ Page 1892 Gain filter parameter ([MELSERVO-J5(W)-*G(-RJ), -JET-*G])
PC	☞ Page 1894 Extension setting parameter ([MELSERVO-J5(W)-*G(-RJ), -JET-*G])
PD	☞ Page 1895 I/O setting parameter ([MELSERVO-J5(W)-*G(-RJ), -JET-*G])
PT	☞ Page 1896 Positioning control parameters ([MELSERVO-J5(W)-*G(-RJ), -JET-*G])
PN	☞ Page 1898 Network setting parameters ([MELSERVO-J5(W)-*G(-RJ), -JET-*G])
ST	☞ Page 1899 Status display ([MELSERVO-J5(W)-*G(-RJ), -JET-*G])
PE	☞ Page 1900 Extension setting No.2 parameter ([MELSERVO-J5(W)-*G(-RJ), -JET-*G])
PF	☞ Page 1901 Extension setting No.3 parameter ([MELSERVO-J5(W)-*G(-RJ), -JET-*G])
ALM	☞ Page 1903 Alarm ([MELSERVO-J5(W)-*G(-RJ), -JET-*G])
	☞ Page 1907 Specifications of ALM260 to ALM275, ALM280 to ALM295, and ALM300 to ALM315 ([MELSERVO-J5(W)-*G(-RJ), -JET-*G])
POS	☞ Page 1907 Point table (position) ([MELSERVO-J5(W)-*G(-RJ), -JET-*G])
SPD	☞ Page 1907 Point table (speed) ([MELSERVO-J5(W)-*G(-RJ), -JET-*G])
ACT	☞ Page 1908 Point table (acceleration time constant) ([MELSERVO-J5(W)-*G(-RJ), -JET-*G])
DCT	☞ Page 1908 Point table (deceleration time constant) ([MELSERVO-J5(W)-*G(-RJ), -JET-*G])
DWL	☞ Page 1908 Point table (dwell) ([MELSERVO-J5(W)-*G(-RJ), -JET-*G])
AUX	☞ Page 1908 Point table (auxiliary function) ([MELSERVO-J5(W)-*G(-RJ), -JET-*G])
MCD	☞ Page 1909 Point table (M code) ([MELSERVO-J5(W)-*G(-RJ), -JET-*G])
MD	☞ Page 1909 Machine diagnosis data ([MELSERVO-J5(W)-*G(-RJ), -JET-*G])
OTS	☞ Page 1910 One-touch tuning data ([MELSERVO-J5(W)-*G(-RJ), -JET-*G])
DI	☞ Page 1910 External input signal in MR-J5-G(-RJ) and MR-J5W□-G ([MELSERVO-J5(W)-*G(-RJ), -JET-*G]) ☞ Page 1911 External input signal in MR-J5D□-G ([MELSERVO-J5(W)-*G(-RJ), -JET-*G]) ☞ Page 1911 External input signal in MR-JET-G ([MELSERVO-J5(W)-*G(-RJ), -JET-*G])
DO	☞ Page 1911 External output signal in MR-J5-G(-RJ) and MR-J5W□-G ([MELSERVO-J5(W)-*G(-RJ), -JET-*G]) ☞ Page 1912 External output signal in MR-J5D□-G ([MELSERVO-J5(W)-*G(-RJ), -JET-*G]) ☞ Page 1912 External output signal in MR-JET-G ([MELSERVO-J5(W)-*G(-RJ), -JET-*G])
PO	☞ Page 1912 Option unit parameter ([MELSERVO-J5(W)-*G(-RJ), -JET-*G])
PS	☞ Page 1912 Special parameter ([MELSERVO-J5(W)-*G(-RJ), -JET-*G])
PL	☞ Page 1913 Linear servo motor/DD motor setting parameters ([MELSERVO-J5(W)-*G(-RJ), -JET-*G])
PU	☞ Page 1913 Multi encoder parameter ([MELSERVO-J5(W)-*G(-RJ), -JET-*G])
PVS	☞ Page 1914 Positioning control parameters ([MELSERVO-J5(W)-*G(-RJ), -JET-*G])
NPA	☞ Page 1915 Network basic parameter ([MELSERVO-J5(W)-*G(-RJ), -JET-*G])
GFDS	☞ Page 1915 Gear failure diagnosis data ([MELSERVO-J5(W)-*G(-RJ), -JET-*G])
ECCDS	☞ Page 1915 Encoder communication circuit diagnosis data ([MELSERVO-J5(W)-*G(-RJ), -JET-*G])
ALD	☞ Page 1916 Life Diagnosis ([MELSERVO-J5(W)-*G(-RJ), -JET-*G])
TMI	☞ Page 1916 Input signal for test operation (for test operation) ([MELSERVO-J5(W)-*G(-RJ), -JET-*G])
TMO	☞ Page 1916 Forced output of signal pin (for test operation) ([MELSERVO-J5(W)-*G(-RJ), -JET-*G])
TMD	☞ Page 1916 Set data (for test operation) ([MELSERVO-J5(W)-*G(-RJ), -JET-*G])

Servo amplifier request ([MELSERVO-J5(W)-*G(-RJ), -JET-*G])

○: Available

—: Not available

Virtual device name	Name	Symbol	MR-J5-G(-RJ), MR-J5W□-G	MR-JET-G	MR-J5D□-G
SP0	Status display data clear	—	○	○	○
SP1	Current alarm clear	—	○	○	○
SP2	Alarm history clear	—	○	○	○
SP3	External input signal prohibited	—	○	○	○
SP4	External output signal prohibited	—	○	○	○
SP5	External input signal resumed	—	○	○	○
SP6	External output signal resumed	—	○	○	○

When using the servo amplifier request, note the following.

Precautions	Description
When setting a device for a bit switch	Do not select [Alternate] for [Switch Action] of the bit switch.

Operation mode selection ([MELSERVO-J5(W)-*G(-RJ), -JET-*G])

○: Available

—: Not available

Virtual device name	Name	Symbol	MR-J5-G(-RJ), MR-J5W□-G	MR-JET-G	MR-J5D□-G
OM0	Cancel test operation mode	—	○	○	○
OM1	JOG operation	—	○	○	○
OM2	Positioning operation	—	○	○	○
OM4	Output signal (DO) forced output	—	○	○	○
OM5	Single-step feed operation	—	○	○	○

When using the operation mode selection, note the following.

Precautions	Description
When setting a device for a bit switch	Do not select [Alternate] for [Switch Action] of the bit switch.

Instruction demand (for test operation) ([MELSERVO-J5(W)-*G(-RJ), -JET-*G])

○: Available

—: Not available

Virtual device name	Name	Symbol	MR-J5-G(-RJ), MR-J5W□-G	MR-JET-G	MR-J5D□-G
TMB1	Pause	—	○	○	○
TMB2	Test operation (positioning operation) start command	—	○	○	○
TMB3	Forward rotation direction	—	○	○	○
TMB4	Reverse rotation direction	—	○	○	○
TMB5	Restart for remaining distance	—	○	○	○
TMB6	Remaining distance clear	—	○	○	○

When using the instruction demand (for test operation), note the following.

Precautions	Description
When setting a device for a bit switch	Do not select [Alternate] for [Switch Action] of the bit switch.

One-touch tuning instruction ([MELSERVO-J5(W)-*G(-RJ), -JET-*G])

○: Available

—: Not available

Virtual device name	Name	Symbol	MR-J5-G(-RJ), MR-J5W□-G	MR-JET-G	MR-J5D□-G
OTI0	One-touch tuning start command (Basic mode)	—	○	○	○
OTI1	One-touch tuning start command (High mode)	—	○	○	○
OTI2	One-touch tuning start command (Low mode)	—	○	○	○
OTI3	One-touch tuning stop command	—	○	○	○
OTI4	Return to initial value	—	○	○	○
OTI5	Return to value before adjustment	—	○	○	○

When using the one-touch tuning instruction, note the following.

Precautions	Description
When setting a device for a bit switch	Do not select [Alternate] for [Switch Action] of the bit switch.

Gear failure diagnosis instruction ([MELSERVO-J5(W)-*G(-RJ), -JET-*G])

○: Available

—: Not available

Virtual device name	Name	Symbol	MR-J5-G(-RJ), MR-J5W□-G	MR-JET-G	MR-J5D□-G
GFDI0	Backlash estimation start command	—	○	—	○
GFDI1	Backlash estimation stop command	—	○	—	○

When using the gear failure diagnosis instruction, note the following.

Precautions	Description
When setting a device for a bit switch	Do not select [Alternate] for [Switch Action] of the bit switch.

Encoder communication circuit diagnosis instruction ([MELSERVO-J5(W)-*G(-RJ), -JET-*G])

○: Available

—: Not available

Virtual device name	Name	Symbol	MR-J5-G(-RJ), MR-J5W□-G	MR-JET-G	MR-J5D□-G
ECCDI0	CN2 encoder communication circuit diagnosis start command	—	○	○	○
ECCDI1	CN2L encoder communication circuit diagnosis start command	—	○	○	○

When using the encoder communication circuit diagnosis instruction, note the following.

Precautions	Description
When setting a device for a bit switch	Do not select [Alternate] for [Switch Action] of the bit switch.

Basic setting parameter ([MELSERVO-J5(W)-*G(-RJ), -JET-*G])

Use an appropriate device according to the write destination of the servo amplifier.

- PA1 to PA44: Writing data to the RAM of a servo amplifier
- PA1001 to PA1044: Writing data to the FlashROM or EEPROM of a servo amplifier

For the parameters prefixed by an asterisk (*), setting becomes effective when the power is turned off once and back on after setting the parameter data.

○: Available

—: Not available

Virtual device name	Name	Symbol	MR-J5-G(-RJ), MR-J5W□-G	MR-JET-G	MR-J5D□-G
PA1, PA1001	Operation mode	**STY	○	—	○
PA2, PA1002	Regenerative brake option	**REG	○	○	○
PA3, PA1003	Absolute position detection system	*ABS	○	○	○
PA4, PA1004	Function selection A-1	*AOP1	○	○	○
PA5, PA1005	For manufacturer setting	—	—	—	—
PA6, PA1006	Electronic gear numerator	*CMX	○	○	○
PA7, PA1007	Electronic gear denominator	*CDV	○	○	○
PA8, PA1008	Auto tuning mode	ATU	○	○	○
PA9, PA1009	Auto tuning response	RSP	○	○	○
PA10, PA1010	In-position range	INP	○	○	○
PA11, PA1011	Forward rotation torque limit/positive direction thrust limit	TLP	○	○	○
PA12, PA1012	Reverse rotation torque limit/negative direction thrust limit	TLN	○	○	○
PA13, PA1013	For manufacturer setting	—	—	—	—
PA14, PA1014	Rotation direction selection/travel direction selection	*POL	○	○	○
PA15, PA1015	Encoder output pulses	*ENR	○	—	○
PA16, PA1016	Encoder output pulses 2	*ENR2	○	—	○
PA17, PA1017	Servo motor series setting	**MSR	○	—	○
PA18, PA1018	Servo motor type setting	**MTY	○	—	○
PA19, PA1019	Parameter block	*BLK	○	○	○
PA20, PA1020	Tough drive setting	*TDS	○	○	○
PA21, PA1021	Function selection A-3	*AOP3	○	○	○
PA22, PA1022	Position control composition selection	**PCS	○	○	○
PA23, PA1023	Drive recorder arbitrary alarm trigger setting	DRAT	○	○	○
PA24, PA1024	Function selection A-4	AOP4	○	○	○
PA25, PA1025	One-touch tuning - Overshoot permissible level	OTHOV	○	○	○
PA26, PA1026	Function selection A-5	*AOP5	○	○	○
PA27, PA1027	For manufacturer setting	—	—	—	—
PA28, PA1028	Function selection A-6	**AOP6	○	○	○
PA29 to PA33, PA1029 to PA1033	For manufacturer setting	—	—	—	—
PA34, PA1034	Quick tuning permissible travel distance	QDIS	○	○	○
PA35 to PA44, PA1035 to PA1044	For manufacturer setting	—	—	—	—

Gain filter parameter ([MELSERVO-J5(W)-*G(-RJ), -JET-*G])

Use an appropriate device according to the write destination of the servo amplifier.

- PB1 to PB92: Writing data to the RAM of a servo amplifier
- PB1001 to PB1092: Writing data to the FlashROM or EEPROM of a servo amplifier

For the parameters prefixed by an asterisk (*), setting becomes effective when the power is turned off once and back on after setting the parameter data.

○: Available

—: Not available

Virtual device name	Name	Symbol	MR-J5-G(-RJ), MR-J5W□-G	MR-JET-G	MR-J5D□-G
PB1, PB1001	Adaptive tuning mode (Adaptive filter II)	FILT	○	○	○
PB2, PB1002	Vib. supp. ctrl tuning mode (Adv. vib. supp. ctrl II)	VRFT	○	○	○
PB3, PB1003	Torque feedback loop gain	TFBGN	○	—	○
PB4, PB1004	Feed forward gain	FFC	○	○	○
PB5, PB1005	For manufacturer setting	—	—	—	—
PB6, PB1006	Load to motor inertia ratio/load to motor mass ratio	GD2	○	○	○
PB7, PB1007	Model control gain	PG1	○	○	○
PB8, PB1008	Position control gain	PG2	○	○	○
PB9, PB1009	Speed control gain	VG2	○	○	○
PB10, PB1010	Speed integral compensation	VIC	○	○	○
PB11, PB1011	Speed differential compensation	VDC	○	○	○
PB12, PB1012	Overshoot amount compensation	OVA	○	○	○
PB13, PB1013	Machine resonance suppression filter 1	NH1	○	○	○
PB14, PB1014	Notch shape selection 1	NHQ1	○	○	○
PB15, PB1015	Machine resonance suppression filter 2	NH2	○	○	○
PB16, PB1016	Notch shape selection 2	NHQ2	○	○	○
PB17, PB1017	Shaft resonance suppression filter	NHF	○	○	○
PB18, PB1018	Low-pass filter setting	LPF	○	○	○
PB19, PB1019	Vibration suppression control 1 - Vibration frequency	VRF11	○	○	○
PB20, PB1020	Vibration suppression control 1 - Resonance frequency	VRF12	○	○	○
PB21, PB1021	Vibration suppression control 1 - Vibration frequency damping	VRF13	○	○	○
PB22, PB1022	Vibration suppression control 1 - Resonance frequency damping	VRF14	○	○	○
PB23, PB1023	Low-pass filter setting	VFBF	○	○	○
PB24, PB1024	Slight vibration suppression control	*MVS	○	○	○
PB25, PB1025	Function selection B-1	*BOP1	○	○	○
PB26, PB1026	Gain switching function	*CDP	○	○	○
PB27, PB1027	Gain switching condition	CDL	○	○	○
PB28, PB1028	Gain switching time constant	CDT	○	○	○
PB29, PB1029	Gain changing - Load in. mom. rat./Load mass rat.	GD2B	○	○	○
PB30, PB1030	Position loop gain after gain switching	PG2B	○	○	○
PB31, PB1031	Speed loop gain after gain switching	VG2B	○	○	○
PB32, PB1032	Speed integral compensation after gain switching	VICB	○	○	○
PB33, PB1033	Vibration suppression control 1 - Vibration frequency after gain switching	VRF11B	○	○	○
PB34, PB1034	Vibration suppression control 1 - Resonance frequency after gain switching	VRF12B	○	○	○
PB35, PB1035	Vibration suppression control 1 - Vibration frequency damping after gain switching	VRF13B	○	○	○

Virtual device name	Name	Symbol	MR-J5-G(-RJ), MR-J5W□-G	MR-JET-G	MR-J5D□-G
PB36, PB1036	Vibration suppression control 1 - Resonance frequency damping after gain switching	VRF14B	○	○	○
PB37 to PB44, PB1037 to PB1044	For manufacturer setting	—	—	—	—
PB45, PB1045	Command notch filter	CNHF	○	○	○
PB46, PB1046	Machine resonance suppression filter 3	NH3	○	○	○
PB47, PB1047	Notch shape selection 3	NHQ3	○	○	○
PB48, PB1048	Machine resonance suppression filter 4	NH4	○	○	○
PB49, PB1049	Notch shape selection 4	NHQ4	○	○	○
PB50, PB1050	Machine resonance suppression filter 5	NH5	○	○	○
PB51, PB1051	Notch shape selection 5	NHQ5	○	○	○
PB52, PB1052	Vibration suppression control 2 - Vibration frequency	VRF21	○	○	○
PB53, PB1053	Vibration suppression control 2 - Resonance frequency	VRF22	○	○	○
PB54, PB1054	Vibration suppression control 2 - Vibration frequency damping	VRF23	○	○	○
PB55, PB1055	Vibration suppression control 2 - Resonance frequency damping	VRF24	○	○	○
PB56, PB1056	Vibration suppression control 2 - Vibration frequency after gain switching	VRF21B	○	○	○
PB57, PB1057	Vibration suppression control 2 - Resonance frequency after gain switching	VRF22B	○	○	○
PB58, PB1058	Vibration suppression control 2 - Vibration frequency damping after gain switching	VRF23B	○	○	○
PB59, PB1059	Vibration suppression control 2 - Resonance frequency damping after gain switching	VRF24B	○	○	○
PB60, PB1060	Model loop gain after gain switching	PG1B	○	○	○
PB61 to PB64, PB1061 to PB1064	For manufacturer setting	—	—	—	—
PB65, PB1065	Gain changing 2 condition	CDL2	○	○	○
PB66, PB1066	Gain changing 2 time constant	CDT2	○	○	○
PB67, PB1067	Gain changing 2 - Load in. mom. rat./Load mass rat.	GD2C	○	○	○
PB68, PB1068	Gain changing 2 position loop gain	PG2C	○	○	○
PB69, PB1069	Gain changing 2 speed loop gain	VG2C	○	○	○
PB70, PB1070	Gain changing 2 speed integral compensation	VICC	○	○	○
PB71, PB1071	Vib. supp. ctrl. 1 - Vib. frq. after gain changing 2	VRF11C	○	○	○
PB72, PB1072	Vib. supp. ctrl. 1 - Res. frq. after gain changing 2	VRF12C	○	○	○
PB73, PB1073	Vib. supp. ctrl. 1 - Vib. frq. damping aft. gain chng2	VRF13C	○	○	○
PB74, PB1074	Vib. supp. ctrl. 1 - Res. frq. damping aft. gain chng2	VRF14C	○	○	○
PB75, PB1075	Vib. supp. ctrl. 2 - Vib. frq. after gain changing 2	VRF21C	○	○	○
PB76, PB1076	Vib. supp. ctrl. 2 - Res. frq. after gain changing 2	VRF22C	○	○	○
PB77, PB1077	Vib. supp. ctrl. 2 - Vib. frq. damping aft. gain chng2	VRF23C	○	○	○
PB78, PB1078	Vib. supp. ctrl. 2 - Res. frq. damping aft. gain chng2	VRF24C	○	○	○
PB79, PB1079	Gain changing 2 model loop gain	PG1C	○	○	○
PB80, PB1080	For manufacturer setting	—	—	—	—
PB81, PB1081	Command filter	*CFIL	○	○	○
PB82, PB1082	Position command smoothing filter time constant	PFT	○	○	○
PB83 to PB92, PB1083 to PB1092	For manufacturer setting	—	—	—	—

Extension setting parameter ([MELSERVO-J5(W)-*G(-RJ), -JET-*G])

Use an appropriate device according to the write destination of the servo amplifier.

- PC1 to PC90: Writing data to the RAM of a servo amplifier
- PC1001 to PC1090: Writing data to the FlashROM or EEPROM of a servo amplifier

For the parameters prefixed by an asterisk (*), setting becomes effective when the power is turned off once and back on after setting the parameter data.

○: Available

—: Not available

Virtual device name	Name	Symbol	MR-J5-G(-RJ), MR-J5W□-G	MR-JET-G	MR-J5D□-G
PC1, PC1001	Error excessive alarm level	ERZ	○	○	○
PC2, PC1002	Electromagnetic brake sequence output	MBR	○	○	○
PC3, PC1003	Encoder output pulse selection	*ENRS	○	—	○
PC4, PC1004	Function selection C-1	**COP1	○	○	○
PC5, PC1005	Function selection C-2	**COP2	○	○	○
PC6, PC1006	Function selection C-3	*COP3	○	○	○
PC7, PC1007	Zero speed	ZSP	○	○	○
PC8, PC1008	Overspeed alarm detection level	OSL	○	○	○
PC9, PC1009	Analog monitor 1 output	MOD1	○	—	○
PC10, PC1010	Analog monitor 2 output	MOD2	○	—	○
PC11, PC1011	Analog monitor 1 offset	MO1	○	—	○
PC12, PC1012	Analog monitor 2 offset	MO2	○	—	○
PC13 to PC15, PC1013 to PC1015	For manufacturer setting	—	—	—	—
PC16, PC1016	Function selection C-3A	*COP3A	○	—	○
PC17, PC1017	Function selection C-4	**COP4	○	—	○
PC18, PC1018	Function selection C-5	*COP5	○	—	—
PC19, PC1019	Function selection C-6	*COP6	○	○	○
PC20, PC1020	Function selection C-7	*COP7	○	○	○
PC21, PC1021	Alarm history clear	*BPS	○	○	○
PC22 to PC23, PC1022 to PC1023	For manufacturer setting	—	—	—	—
PC24, PC1024	Forced stop deceleration time constant	RSBR	○	○	○
PC25, PC1025	For manufacturer setting	—	—	—	—
PC26, PC1026	Function selection C-8	**COP8	○	—	○
PC27, PC1027	Function selection C-9	**COP9	○	○	○
PC28, PC1028	For manufacturer setting	—	—	—	—
PC29, PC1029	Function selection C-B	*COPB	○	○	○
PC30, PC1030	For manufacturer setting	—	—	—	—
PC31, PC1031	Vertical ax.freefall prevention compensation amount	RSUP1	○	○	○
PC32 to PC37, PC1032 to PC1037	For manufacturer setting	—	—	—	—
PC38, PC1038	Error excessive warning level	ERW	○	○	○
PC39 to PC40, PC1039 to PC1040	For manufacturer setting	—	—	—	—
PC41,PC1041	Function selection C-J	*COPJ	—	—	○
PC42 to PC45, PC1042 to PC1045	For manufacturer setting	—	—	—	—
PC46, PC1046	Drive unit function selection 2	*DUOP2	—	—	○
PC47 to PC64, PC1047 to PC1064	For manufacturer setting	—	—	—	—
PC65, PC1065	Zero speed 2 level	ZSP2L	○	—	○
PC66, PC1066	Zero speed 2 filter time	ZSP2F	○	—	○

Virtual device name	Name	Symbol	MR-J5-G(-RJ), MR-J5W□-G	MR-JET-G	MR-J5D□-G
PC67, PC1067	Following error output level	FEW	○	○	○
PC68, PC1068	For manufacturer setting	—	—	—	—
PC69, PC1069	Following error output filter time	FEWF	○	○	○
PC70, PC1070	In-position 2 output range	INP2R	○	—	○
PC71, PC1071	In-position 2 output filter time	INP2F	○	—	○
PC72, PC1072	Speed reached 2 output range	SA2R	○	—	○
PC73, PC1073	Speed reached 2 output filter time	SA2F	○	—	○
PC74 to PC75, PC1074 to PC1075	For manufacturer setting	—	—	—	—
PC76, PC1076	Function selection C-E	*COPE	○	○	○
PC77, PC1077	For manufacturer setting	—	—	—	—
PC78, PC1078	Function selection C-F	*COPF	○	○	○
PC79, PC1079	Function selection C-G	*COPG	○	○	○
PC80, PC1080	For manufacturer setting	—	—	—	—
PC81, PC1081	Function selection C-H	**COPH	○	—	—
PC82 to PC90, PC1082 to PC1090	For manufacturer setting	—	—	—	—

I/O setting parameter ([MELSERVO-J5(W)-*G(-RJ), -JET-*G])

Use an appropriate device according to the write destination of the servo amplifier.

- PD1 to PD72: Writing data to the RAM of a servo amplifier
- PD1001 to PD1072: Writing data to the FlashROM or EEPROM of a servo amplifier

For the parameters prefixed by an asterisk (*), setting becomes effective when the power is turned off once and back on after setting the parameter data.

○: Available

—: Not available

Virtual device name	Name	Symbol	MR-J5-G(-RJ), MR-J5W□-G	MR-JET-G	MR-J5D□-G
PD1, PD1001	Input signal automatic on selection 1	*DIA1	○	○	○
PD2, PD1002	For manufacturer setting	—	—	—	—
PD3, PD1003	Input device selection 1	*DI1	○	○	○
PD4, PD1004	Input device selection 2	*DI2	○	○	○
PD5, PD1005	Input device selection 3	*DI3	○	○	○
PD6, PD1006	For manufacturer setting	—	—	—	—
PD7, PD1007	Output device selection 1	*DO1	○	○	○
PD8, PD1008	Output device selection 2	*DO2	○	○	○
PD9, PD1009	Output device selection 3	*DO3	○	○	○
PD10, PD1010	For manufacturer setting	—	—	—	—
PD11, PD1011	Input filter setting	*DIF	○	○	○
PD12, PD1012	Function selection D-1	*DOP1	○	○	○
PD13, PD1013	Function selection D-2	*DOP2	○	○	○
PD14, PD1014	Function selection D-3	*DOP3	○	○	○
PD15 to PD36, PD1015 to PD1036	For manufacturer setting	—	—	—	—
PD37, PD1037	Touch probe function selection	*TPOP	○	—	—
PD38, PD1038	Input device selection 4	*DI4	○	—	○
PD39, PD1039	Input device selection 5	*DI5	○	—	○
PD40, PD1040	For manufacturer setting	—	—	—	—
PD41, PD1041	Function selection D-4	*DOP4	○	○	○
PD42 to PD50, PD1042 to PD1050	For manufacturer setting	—	—	—	—
PD51, PD1051	Input device selection 3-2	*DI3W2	○	—	○

Virtual device name	Name	Symbol	MR-J5-G(-RJ), MR-J5W□-G	MR-JET-G	MR-J5D□-G
PD52 to PD59, PD1052 to PD1059	For manufacturer setting	—	—	—	—
PD60, PD1060	DI pin polarity selection	*DIP	○	○	○
PD61 to PD72, PD1061 to PD1072	For manufacturer setting	—	—	—	—

Positioning control parameters ([MELSERVO-J5(W)-*G(-RJ), -JET-*G])

Use an appropriate device according to the write destination of the servo amplifier.

- PT1 to PT90: Writing data to the RAM of a servo amplifier
- PT1001 to PT1090: Writing data to the FlashROM or EEPROM of a servo amplifier

For the parameters prefixed by an asterisk (*), setting becomes effective when the power is turned off once and back on after setting the parameter data.

○: Available

—: Not available

Virtual device name	Name	Symbol	MR-J5-G(-RJ), MR-J5W□-G	MR-JET-G	MR-J5D□-G
PT1, PT1001	Command mode selection	**CTY	○	○	○
PT2, PT1002	Function selection T-1	*TOP1	—	—	○
PT3, PT1003	Feeding function selection	*FTY	○	—	—
PT4, PT1004	For manufacturer setting	—	—	—	—
PT5, PT1005	Home position return speed	ZRF	○	○	○
PT6, PT1006	Creep speed	CRF	○	○	○
PT7, PT1007	Home position shift distance	ZST	○	○	○
PT8, PT1008	Home position return position data	ZPS	○	○	○
PT9, PT1009	Moving distance after proximity dog	DCT	○	○	○
PT10, PT1010	Stopper type home position return stopper time	ZTM	○	○	○
PT11, PT1011	Stopper type home position return torque limit value	ZTT	○	○	○
PT12, PT1012	Rough match output range	CRP	○	—	○
PT13 to PT14, PT1013 to PT1014	For manufacturer setting	—	—	—	—
PT15, PT1015	Software limit +	LMPL	○	—	—
	Software position limit+	LMP	—	○	○
PT16, PT1016	For manufacturer setting	—	—	—	—
PT17, PT1017	Software limit -	LMNL	○	—	—
	Software position limit-	LMN	—	○	○
PT18, PT1018	For manufacturer setting	—	—	—	—
PT19, PT1019	Position range output address +	*LPPL	○	—	—
	Position range output 1 address+	*LPP1	—	—	○
PT20, PT1020	For manufacturer setting	—	—	—	—
PT21, PT1021	Position range output address -	*LNPL	○	—	—
	Position range output 1 address-	*LNP1	—	—	○
PT22 to PT28, PT1022 to PT1028	For manufacturer setting	—	—	—	—
PT29, PT1029	Function selection T-3	*TOP3	○	○	○
PT30 to PT33, PT1030 to PT1033	For manufacturer setting	—	—	—	—
PT34, PT1034	Point table default	*PDEF	○	—	—
	Positioning operation data default	*PDEF	—	—	○
PT35 to PT37, PT1035 to PT1037	For manufacturer setting	—	—	—	—
PT38, PT1038	Function selection T-7	**TOP7	—	—	○

Virtual device name	Name	Symbol	MR-J5-G(-RJ), MR-J5W□-G	MR-JET-G	MR-J5D□-G
PT39 to PT40, PT1039 to PT1040	For manufacturer setting	—	—	—	—
PT41, PT1041	Home position return inhibit selection	ORP	○	—	—
	Function selection T-8	TOP8	—	○	○
PT42 to PT44, PT1042 to PT1044	For manufacturer setting	—	—	—	—
PT45, PT1045	Home position return method	HMM	○	○	○
PT46 to PT48, PT1046 to PT1048	For manufacturer setting	—	—	—	—
PT49, PT1049	Acceleration time constant	STA	○	—	○
PT50, PT1050	Deceleration time constant	STB	○	—	○
PT51, PT1051	S-pattern acceleration/deceleration time constant	STC	○	—	○
PT52, PT1052	For manufacturer setting	—	—	—	—
PT53, PT1053	Torque slope	TQS	○	—	○
PT54, PT1054	For manufacturer setting	—	—	—	—
PT55, PT1055	Function selection T-8	*TOP8	○	—	—
	Function selection T-10	*TOP10	—	○	○
PT56, PT1056	Home position return acceleration time constant	HMA	○	○	○
PT57, PT1057	Home position return deceleration time constant	HMB	○	○	○
PT58 to PT61, PT1058 to PT1061	For manufacturer setting	—	—	—	—
PT62, PT1062	Remote register-based position/speed specifying method selection	*DSS	○	—	—
PT62 to PT64, PT1062 to PT1064	For manufacturer setting	—	—	—	—
PT65, PT1065	Jog speed command	PVC	○	—	—
	Profile speed command		—	—	○
PT66, PT1066	Maximum profile speed	MPVC	○	—	○
PT67, PT1067	Speed limit	VLMT	○	○	○
PT68, PT1068	Function selection T-11	TOP11	—	○	○
PT69, PT1069	Home position shift distance (extension parameter)	ZSTH	○	—	—
PT70, PT1070	For manufacturer setting	—	—	—	—
PT71, PT1071	Travel distance after proximity dog (extension parameter)	DCTH	○	—	—
PT72 to PT90, PT1072 to PT1090	For manufacturer setting	—	—	—	—

Network setting parameters ([MELSERVO-J5(W)-*G(-RJ), -JET-*G])

Use an appropriate device according to the write destination of the servo amplifier.

- PN1 to PN32: Writing data to the RAM of a servo amplifier
- PN1001 to PN1032: Writing data to the FlashROM or EEPROM of a servo amplifier

For the parameters prefixed by an asterisk (*), setting becomes effective when the power is turned off once and back on after setting the parameter data.

○: Available

—: Not available

Virtual device name	Name	Symbol	MR-J5-G(-RJ), MR-J5W□-G	MR-JET-G	MR-J5D□-G
PN1, PN1001	For manufacturer setting	—	—	—	—
PN2, PN1002	Communication error detection time	CERT	○	○	○
PN3, PN1003	For manufacturer setting	—	—	—	—
PN4, PN1004	CC-Link IE communication network number	**NENO	○	—	—
PN5, PN1005	Communication error detection frequency setting	CERI	○	○	○
PN6, PN1006	Function selection N-1	NOP1	○	—	—
PN7 to PN12, PN1007 to PN1012	For manufacturer setting	—	—	—	—
PN13, PN1013	Network protocol setup	**NPS	—	—	○
PN14 to PN19, PN1014 to PN1019	For manufacturer setting	—	—	—	—
PN20, PN1020	Automatic parameter backup update interval	**PABI	—	○	○
PN21, PN1021	For manufacturer setting	—	—	—	—
PN22, PN1022	Function selection N-5	**NOP5	—	—	○
PN23 to PN32, PN1023 to PN1032	For manufacturer setting	—	—	—	—

Status display ([MELSERVO-J5(W)-*G(-RJ), -JET-*G])

○: Available

—: Not available

Virtual device name	Name	Symbol	MR-J5-G(-RJ), MR-J5W□-G	MR-JET-G	MR-J5D□-G
ST0	Cumulative feedback pulses	—	○	○	○
ST1	Servo motor speed	—	○	○	○
ST2	Droop pulses	—	○	○	○
ST3	Cumulative command pulses	—	○	○	○
ST4	Command pulse frequency	—	○	○	○
ST5 to ST6	For manufacturer setting	—	—	—	—
ST7	Regenerative load ratio	—	○	○	○
ST8	Effective load ratio	—	○	○	○
ST9	Peak load ratio	—	○	○	○
ST10	Torque/Instantaneous torque	—	○	○	○
ST11	Within one-revolution position	—	○	○	○
ST12	ABS counter	—	○	○	○
ST13	Load inertia moment ratio	—	○	○	○
ST14	Bus voltage	—	○	○	○
ST15	Load-side cumulative feedback pulses	—	○	—	○
ST16	Load-side droop pulses	—	○	—	○
ST17	Load-side encoder information 1	—	○	—	○
ST18	Load-side encoder information 2	—	○	—	○
ST19 to ST21	For manufacturer setting	—	—	—	—
ST22	Temperature of servo motor thermistor	—	○	○	○
ST23	Cumulative feedback pulses (Motor unit)	—	○	○	○
ST24	Electrical angle	—	○	—	○
ST25 to ST29	For manufacturer setting	—	—	—	—
ST30	Servo motor-side/load-side position deviation	—	○	—	○
ST31	Servo motor-side/load-side speed deviation	—	○	—	○
ST32	Encoder inside temperature	—	○	○	○
ST33	Settling time	—	○	○	○
ST34	Oscillation detection frequency	—	○	○	○
ST35	Number of tough drive operations	—	○	○	○
ST36 to ST39	For manufacturer setting	—	—	—	—
ST40	Unit power consumption	—	○	○	○
ST41	Unit total power consumption	—	○	○	○
ST42 to ST48	For manufacturer setting	—	—	—	—

Extension setting No.2 parameter ([MELSERVO-J5(W)-*G(-RJ), -JET-*G])

Use an appropriate device according to the write destination of the servo amplifier.

- PE1 to PE88: Writing data to the RAM of a servo amplifier
- PE1001 to PE1088: Writing data to the FlashROM or EEPROM of a servo amplifier

For the parameters prefixed by an asterisk (*), setting becomes effective when the power is turned off once and back on after setting the parameter data.

○: Available

—: Not available

Virtual device name	Name	Symbol	MR-J5-G(-RJ), MR-J5W□-G	MR-JET-G	MR-J5D□-G
PE1, PE1001	Fully closed loop function selection 1	**FCT1	○	—	○
PE2, PE1002	For manufacturer setting	—	—	—	—
PE3, PE1003	Fully closed loop function selection 2	*FCT2	○	—	○
PE4, PE1004	Fully closed loop ctrl. - F/B pls. elec. gear 1 nmrtr.	**FBN	○	—	○
PE5, PE1005	Fully closed loop ctrl. - F/B pls. elec. gear 1 dnmntr.	**FBD	○	—	○
PE6, PE1006	Fully closed loop control - Speed deviation error detection level	BC1	○	—	○
PE7, PE1007	Fully closed loop control - Position deviation error detection level	BC2	○	—	○
PE8, PE1008	Fully closed loop dual feedback filter	DUF	○	—	○
PE9, PE1009	For manufacturer setting	—	—	—	—
PE10, PE1010	Fully closed loop function selection 3	FCT3	○	—	○
PE11 to PE33, PE1011 to PE1033	For manufacturer setting	—	—	—	—
PE34, PE1034	Fully closed loop control - Feedback pulse electronic gear 2 - Numerator	**FBN2	○	—	—
PE35, PE1035	Fully closed loop control - Feedback pulse electronic gear 2 - Denominator	**FBD2	○	—	—
PE36 to PE40, PE1036 to PE1040	For manufacturer setting	—	—	—	—
PE41, PE1041	Function selection E-3	EOP3	○	○	○
PE42 to PE43, PE1042 to PE1043	For manufacturer setting	—	—	—	—
PE44, PE1044	Lost motion compensation positive-side compensation value selection	LMCP	○	○	○
PE45, PE1045	Lost motion compensation negative-side compensation value selection	LMCN	○	○	○
PE46, PE1046	Lost motion filter setting	LMFLT	○	○	○
PE47, PE1047	Torque offset	TOF	○	—	○
	Unbalanced torque offset		—	○	—
PE48, PE1048	Lost motion compensation function selection	*LMOP	○	○	○
PE49, PE1049	Lost motion compensation timing	LMCD	○	○	○
PE50, PE1050	Lost motion compensation non-sensitive band	LMCT	○	○	○
PE51, PE1051	Load-side encoder resolution setting	**EDV2	—	—	○
PE52, PE1052	For manufacturer setting	—	—	—	—
PE53, PE1053	Maximum torque limit 1	TLMX1	○	○	○
PE54 to PE88, PE1054 to PE1088	For manufacturer setting	—	—	—	—

Extension setting No.3 parameter ([MELSERVO-J5(W)-*G(-RJ), -JET-*G])

Use an appropriate device according to the write destination of the servo amplifier.

- PF1 to PF99: Writing data to the RAM of a servo amplifier
- PF1001 to PF1099: Writing data to the FlashROM or EEPROM of a servo amplifier

For the parameters prefixed by an asterisk (*), setting becomes effective when the power is turned off once and back on after setting the parameter data.

○: Available

—: Not available

Virtual device name	Name	Symbol	MR-J5-G(-RJ), MR-J5W□-G	MR-JET-G	MR-J5D□-G
PF1, PF1001	For manufacturer setting	—	—	—	—
PF2, PF1002	Function selection F-2	*FOP2	○	○	○
PF3 to PF5, PF1003 to PF1005	For manufacturer setting	—	—	—	—
PF6, PF1006	Function selection F-5	*FOP5	○	○	○
PF7 to PF11, PF1007 to PF1011	For manufacturer setting	—	—	—	—
PF12, PF1012	Electronic dynamic brake operating time	DBT	○	○	○
PF13 to PF17, PF1013 to PF1017	For manufacturer setting	—	—	—	—
PF18, PF1018	STO diagnosis error detection time	**STOD	○	—	○
PF19, PF1019	Friction failure prediction compen. coefficient 1	TSL	○	—	○
PF20, PF1020	Friction failure prediction compen. coefficient 2	TIC	○	—	○
PF21, PF1021	Drive recorder switching time setting	DRT	○	○	○
PF22, PF1022	For manufacturer setting	—	—	—	—
PF23, PF1023	Vibration tough drive - Oscillation detection level	OSCL1	○	○	○
PF24, PF1024	Vibration tough drive function selection	*OSCL2	○	—	○
	Function selection F-9	*FOP9	—	○	—
PF25, PF1025	SEMI-F47 Inst pwr.fail.det.t. (Inst pwr.fail.tuf.drv.)	CVAT	○	—	○
	Instantaneous power failure tough drive - Detection time	CVAT	—	○	—
PF26 to PF28, PF1026 to PF1028	For manufacturer setting	—	—	—	—
PF29, PF1029	Function selection F-10	*FOP10	—	—	○
PF30, PF1030	For manufacturer setting	—	—	—	—
PF31, PF1031	Machine diagnosis function - Friction judgment speed	FRIC	○	○	○
PF32, PF1032	Oscillation detection alarm time	*VIBT	○	○	○
PF33, PF1033	For manufacturer setting	—	—	—	—
PF34, PF1034	Machine diagnosis function selection	*MFP	○	○	○
PF35 to PF39, PF1035 to PF1039	For manufacturer setting	—	—	—	—
PF40, PF1040	Machine failure prediction parameter	MFPP	○	—	○
PF41, PF1041	Failure prediction - Servo motor total move distance	FPMT	○	—	○
PF42, PF1042	Friction failure prediction average characteristic	PAV	○	—	○
PF43, PF1043	Friction failure prediction standard deviation	PSD	○	—	○
PF44, PF1044	For manufacturer setting	—	—	—	—
PF45, PF1045	Vibration failure prediction average characteristic	VAV	○	—	○
PF46, PF1046	Vibration failure prediction standard deviation	VSC	○	—	○
PF47, PF1047	Servo motor total move distance offset	TMO	○	—	○
PF48 to PF65, PF1048 to PF1065	For manufacturer setting	—	—	—	—
PF66, PF1066	Gear ratio setting for backlash estimation	BLG	○	—	○
PF67, PF1067	Backlash nominal value	BLN	○	—	○

Virtual device name	Name	Symbol	MR-J5-G(-RJ), MR-J5W□-G	MR-JET-G	MR-J5D□-G
PF68, PF1068	Backlash threshold magnification	BLTT	○	—	○
PF69, PF1069	Static friction failure prediction avg. characteristic	SPAV2	○	—	○
PF70, PF1070	Static friction failure prediction standard deviation	SPSD2	○	—	○
PF71, PF1071	Belt failure prediction function selection	BFP	○	—	○
PF72, PF1072	Belt tension at installation	SBT	○	—	○
PF73, PF1073	Belt tension at extension	ABT	○	—	○
PF74, PF1074	Static friction at installation	SSF	○	—	○
PF75, PF1075	Static friction at extension	ASF	○	—	○
PF76, PF1076	Belt tension error threshold	BTS	○	—	○
PF77 to PF79, PF1077 to PF1079	For manufacturer setting	—	—	—	—
PF80, PF1080	Drive recorder Operation condition selection	DRMC	○	○	○
PF81, PF1081	Drive recorder Sampling operation selection	DRMS	○	○	○
PF82, PF1082	Drive recorder Trigger operation selection	DRTM	○	○	○
PF83, PF1083	Drive recorder Trigger operation axis common sel.	**DRTAX	○	—	○
PF84, PF1084	Drive recorder Trigger channel selection	DRTC	○	○	○
PF85, PF1085	Drive recorder Trigger level setting 1	DRTL1	○	○	○
PF86, PF1086	Drive recorder Trigger level setting 2	DRTL2	○	○	○
PF87, PF1087	Drive recorder Analog channel setting 1	DRAC1	○	○	○
PF88, PF1088	Drive recorder Analog channel setting 2	DRAC2	○	○	○
PF89, PF1089	Drive recorder Analog channel setting 3	DRAC3	○	○	○
PF90, PF1090	Drive recorder Analog channel setting 4	DRAC4	○	○	○
PF91, PF1091	Drive recorder Digital channel setting 1	DRDC1	○	○	○
PF92, PF1092	Drive recorder Digital channel setting 2	DRDC2	○	○	○
PF93, PF1093	Drive recorder Digital channel setting 3	DRDC3	○	○	○
PF94, PF1094	Drive recorder Digital channel setting 4	DRDC4	○	○	○
PF95, PF1095	Drive recorder History clear	**DRCLR	○	○	○
PF96 to PF99, PF1096 to PF1099	For manufacturer setting	—	—	—	—

Alarm ([MELSERVO-J5(W)-*G(-RJ), -JET-*G])

○: Available

—: Not available

Virtual device name	Name	Symbol	MR-J5-G(-RJ), MR-J5W□-G	MR-JET-G	MR-J5D□-G
ALM0	Current alarm number	—	○	○	○
ALM1	Detailed data of current alarms	—	○	○	○
ALM2[*1]	Currently occurring alarm number and detail number	—	○	○	○
ALM11	Servo status(alarm) Cumulative feedback pulses	—	○	○	○
ALM12	Servo status(alarm) Servo motor speed	—	○	○	○
ALM13	Servo status(alarm) Droop pulses	—	○	○	○
ALM14	Servo status(alarm) Cumulative command pulses	—	○	○	○
ALM15	Servo status(alarm) Command pulse frequency	—	○	○	○
ALM16 to ALM17	For manufacturer setting	—	—	—	—
ALM18	Servo status(alarm) Regenerative load ratio	—	○	○	○
ALM19	Servo status(alarm) Effective load ratio	—	○	○	○
ALM20	Servo status(alarm) Peak load ratio	—	○	○	○
ALM21	Servo status(alarm) Torque/Instantaneous torque	—	○	○	○
ALM22	Servo status(alarm) Within one-revolution position	—	○	○	○
ALM23	Servo status(alarm) ABS counter	—	○	○	○
ALM24	Servo status(alarm) Load inertia moment ratio	—	○	○	○
ALM25	Servo status(alarm) Bus voltage	—	○	○	○
ALM26	Servo status(alarm) Load-side cumulative feedback pulses	—	○	—	○
ALM27	Servo status(alarm) Load-side droop pulses	—	○	—	○
ALM28	Servo status(alarm) Load-side encoder information 1	—	○	—	○
ALM29	Servo status(alarm) Load-side encoder information 2	—	○	—	○
ALM30 to ALM32	For manufacturer setting	—	—	—	—
ALM33	Servo status(alarm) Temperature of servo motor thermistor	—	○	○	○
ALM34	Servo status(alarm) Cumulative feedback pulses (Motor unit)	—	○	○	○
ALM35	Servo status(alarm) Electrical angle	—	○	—	○
ALM36 to ALM40	For manufacturer setting	—	—	—	—
ALM41	Servo status(alarm) Servo motor-side/load-side position deviation	—	○	—	○
ALM42	Servo status(alarm) Servo motor-side/load-side speed deviation	—	○	—	○
ALM43	Servo status(alarm) Encoder inside temperature	—	○	○	○
ALM44	Servo status(alarm) Settling time	—	○	○	○
ALM45	Servo status(alarm) Oscillation detection frequency	—	○	○	○
ALM46	Servo status(alarm) Number of tough drive operations	—	○	○	○
ALM47 to ALM50	For manufacturer setting	—	—	—	—
ALM51	Servo status(alarm) Unit power consumption	—	○	○	○
ALM52	Servo status(alarm) Unit total power consumption	—	○	○	○
ALM53 to ALM59	For manufacturer setting	—	—	—	—
ALM200	Alarm number in alarm history: most recent alarm	—	○	○	○

Virtual device name	Name	Symbol	MR-J5-G(-RJ), MR-J5W□-G	MR-JET-G	MR-J5D□-G
ALM201	Alarm number in alarm history: 1st alarm in past	—	○	○	○
ALM202	Alarm number in alarm history: 2nd alarm in past	—	○	○	○
ALM203	Alarm number in alarm history: 3rd alarm in past	—	○	○	○
ALM204	Alarm number in alarm history: 4th alarm in past	—	○	○	○
ALM205	Alarm number in alarm history: 5th alarm in past	—	○	○	○
ALM206	Alarm number in alarm history: 6th alarm in past	—	○	○	○
ALM207	Alarm number in alarm history: 7th alarm in past	—	○	○	○
ALM208	Alarm number in alarm history: 8th alarm in past	—	○	○	○
ALM209	Alarm number in alarm history: 9th alarm in past	—	○	○	○
ALM210	Alarm number in alarm history: 10th alarm in past	—	○	○	○
ALM211	Alarm number in alarm history: 11th alarm in past	—	○	○	○
ALM212	Alarm number in alarm history: 12th alarm in past	—	○	○	○
ALM213	Alarm number in alarm history: 13th alarm in past	—	○	○	○
ALM214	Alarm number in alarm history: 14th alarm in past	—	○	○	○
ALM215	Alarm number in alarm history: 15th alarm in past	—	○	○	○
ALM220	Alarm occurrence time (cumulative power-on time) in alarm history: most recent alarm	—	○	○	○
ALM221	Alarm occurrence time (cumulative power-on time) in alarm history: 1st alarm in past	—	○	○	○
ALM222	Alarm occurrence time (cumulative power-on time) in alarm history: 2nd alarm in past	—	○	○	○
ALM223	Alarm occurrence time (cumulative power-on time) in alarm history: 3rd alarm in past	—	○	○	○
ALM224	Alarm occurrence time (cumulative power-on time) in alarm history: 4th alarm in past	—	○	○	○
ALM225	Alarm occurrence time (cumulative power-on time) in alarm history: 5th alarm in past	—	○	○	○
ALM226	Alarm occurrence time (cumulative power-on time) in alarm history: 6th alarm in past	—	○	○	○
ALM227	Alarm occurrence time (cumulative power-on time) in alarm history: 7th alarm in past	—	○	○	○
ALM228	Alarm occurrence time (cumulative power-on time) in alarm history: 8th alarm in past	—	○	○	○
ALM229	Alarm occurrence time (cumulative power-on time) in alarm history: 9th alarm in past	—	○	○	○
ALM230	Alarm occurrence time (cumulative power-on time) in alarm history: 10th alarm in past	—	○	○	○
ALM231	Alarm occurrence time (cumulative power-on time) in alarm history: 11th alarm in past	—	○	○	○
ALM232	Alarm occurrence time (cumulative power-on time) in alarm history: 12th alarm in past	—	○	○	○
ALM233	Alarm occurrence time (cumulative power-on time) in alarm history: 13th alarm in past	—	○	○	○
ALM234	Alarm occurrence time (cumulative power-on time) in alarm history: 14th alarm in past	—	○	○	○
ALM235	Alarm occurrence time (cumulative power-on time) in alarm history: 15th alarm in past	—	○	○	○
ALM240	Alarm detail number in alarm history: most recent alarm	—	○	○	○
ALM241	Alarm detail number in alarm history: 1st alarm in past	—	○	○	○
ALM242	Alarm detail number in alarm history: 2nd alarm in past	—	○	○	○

Virtual device name	Name	Symbol	MR-J5-G(-RJ), MR-J5W□-G	MR-JET-G	MR-J5D□-G
ALM243	Alarm detail number in alarm history: 3rd alarm in past	—	○	○	○
ALM244	Alarm detail number in alarm history: 4th alarm in past	—	○	○	○
ALM245	Alarm detail number in alarm history: 5th alarm in past	—	○	○	○
ALM246	Alarm detail number in alarm history: 6th alarm in past	—	○	○	○
ALM247	Alarm detail number in alarm history: 7th alarm in past	—	○	○	○
ALM248	Alarm detail number in alarm history: 8th alarm in past	—	○	○	○
ALM249	Alarm detail number in alarm history: 9th alarm in past	—	○	○	○
ALM250	Alarm detail number in alarm history: 10th alarm in past	—	○	○	○
ALM251	Alarm detail number in alarm history: 11th alarm in past	—	○	○	○
ALM252	Alarm detail number in alarm history: 12th alarm in past	—	○	○	○
ALM253	Alarm detail number in alarm history: 13th alarm in past	—	○	○	○
ALM254	Alarm detail number in alarm history: 14th alarm in past	—	○	○	○
ALM255	Alarm detail number in alarm history: 15th alarm in past	—	○	○	○
ALM260	Alarm occurrence time (year, month) in alarm history: most recent alarm	—	○	○	○
ALM261	Alarm occurrence time (year, month) in alarm history: 1st alarm in past	—	○	○	○
ALM262	Alarm occurrence time (year, month) in alarm history: 2nd alarm in past	—	○	○	○
ALM263	Alarm occurrence time (year, month) in alarm history: 3rd alarm in past	—	○	○	○
ALM264	Alarm occurrence time (year, month) in alarm history: 4th alarm in past	—	○	○	○
ALM265	Alarm occurrence time (year, month) in alarm history: 5th alarm in past	—	○	○	○
ALM266	Alarm occurrence time (year, month) in alarm history: 6th alarm in past	—	○	○	○
ALM267	Alarm occurrence time (year, month) in alarm history: 7th alarm in past	—	○	○	○
ALM268	Alarm occurrence time (year, month) in alarm history: 8th alarm in past	—	○	○	○
ALM269	Alarm occurrence time (year, month) in alarm history: 9th alarm in past	—	○	○	○
ALM270	Alarm occurrence time (year, month) in alarm history: 10th alarm in past	—	○	○	○
ALM271	Alarm occurrence time (year, month) in alarm history: 11th alarm in past	—	○	○	○
ALM272	Alarm occurrence time (year, month) in alarm history: 12th alarm in past	—	○	○	○
ALM273	Alarm occurrence time (year, month) in alarm history: 13th alarm in past	—	○	○	○
ALM274	Alarm occurrence time (year, month) in alarm history: 14th alarm in past	—	○	○	○
ALM275	Alarm occurrence time (year, month) in alarm history: 15th alarm in past	—	○	○	○
ALM280	Alarm occurrence time (date, hour) in alarm history: most recent alarm	—	○	○	○

Virtual device name	Name	Symbol	MR-J5-G(-RJ), MR-J5W□-G	MR-JET-G	MR-J5D□-G
ALM281	Alarm occurrence time (date, hour) in alarm history: 1st alarm in past	—	○	○	○
ALM282	Alarm occurrence time (date, hour) in alarm history: 2nd alarm in past	—	○	○	○
ALM283	Alarm occurrence time (date, hour) in alarm history: 3rd alarm in past	—	○	○	○
ALM284	Alarm occurrence time (date, hour) in alarm history: 4th alarm in past	—	○	○	○
ALM285	Alarm occurrence time (date, hour) in alarm history: 5th alarm in past	—	○	○	○
ALM286	Alarm occurrence time (date, hour) in alarm history: 6th alarm in past	—	○	○	○
ALM287	Alarm occurrence time (date, hour) in alarm history: 7th alarm in past	—	○	○	○
ALM288	Alarm occurrence time (date, hour) in alarm history: 8th alarm in past	—	○	○	○
ALM289	Alarm occurrence time (date, hour) in alarm history: 9th alarm in past	—	○	○	○
ALM290	Alarm occurrence time (date, hour) in alarm history: 10th alarm in past	—	○	○	○
ALM291	Alarm occurrence time (date, hour) in alarm history: 11th alarm in past	—	○	○	○
ALM292	Alarm occurrence time (date, hour) in alarm history: 12th alarm in past	—	○	○	○
ALM293	Alarm occurrence time (date, hour) in alarm history: 13th alarm in past	—	○	○	○
ALM294	Alarm occurrence time (date, hour) in alarm history: 14th alarm in past	—	○	○	○
ALM295	Alarm occurrence time (date, hour) in alarm history: 15th alarm in past	—	○	○	○
ALM300	Alarm occurrence time (minute, second) in alarm history: most recent alarm	—	○	○	○
ALM301	Alarm occurrence time (minute, second) in alarm history: 1st alarm in past	—	○	○	○
ALM302	Alarm occurrence time (minute, second) in alarm history: 2nd alarm in past	—	○	○	○
ALM303	Alarm occurrence time (minute, second) in alarm history: 3rd alarm in past	—	○	○	○
ALM304	Alarm occurrence time (minute, second) in alarm history: 4th alarm in past	—	○	○	○
ALM305	Alarm occurrence time (minute, second) in alarm history: 5th alarm in past	—	○	○	○
ALM306	Alarm occurrence time (minute, second) in alarm history: 6th alarm in past	—	○	○	○
ALM307	Alarm occurrence time (minute, second) in alarm history: 7th alarm in past	—	○	○	○
ALM308	Alarm occurrence time (minute, second) in alarm history: 8th alarm in past	—	○	○	○
ALM309	Alarm occurrence time (minute, second) in alarm history: 9th alarm in past	—	○	○	○
ALM310	Alarm occurrence time (minute, second) in alarm history: 10th alarm in past	—	○	○	○
ALM311	Alarm occurrence time (minute, second) in alarm history: 11th alarm in past	—	○	○	○
ALM312	Alarm occurrence time (minute, second) in alarm history: 12th alarm in past	—	○	○	○
ALM313	Alarm occurrence time (minute, second) in alarm history: 13th alarm in past	—	○	○	○
ALM314	Alarm occurrence time (minute, second) in alarm history: 14th alarm in past	—	○	○	○

Virtual device name	Name	Symbol	MR-J5-G(-RJ), MR-J5W□-G	MR-JET-G	MR-J5D□-G
ALM315	Alarm occurrence time (minute, second) in alarm history: 15th alarm in past	—	○	○	○

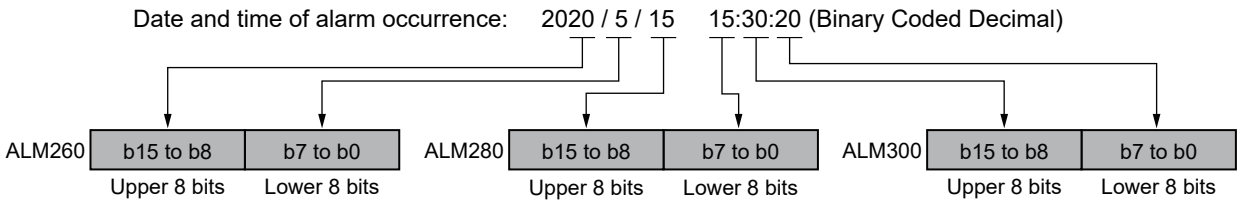
*1 Set [Data Type] and [Format] as shown below for the objects for which this device is set.
[Data Type]: [Unsigned BIN32]
[Format]: [Hexadecimal]

Specifications of ALM260 to ALM275, ALM280 to ALM295, and ALM300 to ALM315 ([MELSERVO-J5(W)-*G(-RJ), -JET-*G])

The date and time of alarm occurrence are stored in BCD code in the upper eight bits and lower eight bits of each device.

The time zone setting of the controller is applied to the date and time to be acquired.

Example) When the date and time of the most recent alarm occurrence is 15:30:20 May 15, 2020



When the date and time of alarm occurrence are those of 1999 or earlier, 0 is displayed.

Point table (position) ([MELSERVO-J5(W)-*G(-RJ), -JET-*G])

Use an appropriate device according to the write destination of the servo amplifier.

- POS1 to POS255: Writing data to the RAM of a servo amplifier
- POS1001 to POS1255: Writing data to the FlashROM or EEPROM of a servo amplifier

○: Available

—: Not available

Virtual device name	Name	Symbol	MR-J5-G(-RJ), MR-J5W□-G	MR-JET-G	MR-J5D□-G
POS1 to POS255, POS1001 to POS1255	Point table/position data No. 1 to No. 255	—	○	○	○

Point table (speed) ([MELSERVO-J5(W)-*G(-RJ), -JET-*G])

Use an appropriate device according to the write destination of the servo amplifier.

- SPD1 to SPD255: Writing data to the RAM of a servo amplifier
- SPD1001 to SPD1255: Writing data to the FlashROM or EEPROM of a servo amplifier

○: Available

—: Not available

Virtual device name	Name	Symbol	MR-J5-G(-RJ), MR-J5W□-G	MR-JET-G	MR-J5D□-G
SPD1 to SPD255, SPD1001 to SPD1255	Point table/speed data No. 1 to No. 255	—	○	○	○

Point table (acceleration time constant) ([MELSERVO-J5(W)-*G(-RJ), -JET-*G])

Use an appropriate device according to the write destination of the servo amplifier.

- ACT1 to ACT255: Writing data to the RAM of a servo amplifier
- ACT1001 to ACT1255: Writing data to the FlashROM or EEPROM of a servo amplifier

○: Available

—: Not available

Virtual device name	Name	Symbol	MR-J5-G(-RJ), MR-J5W□-G	MR-JET-G	MR-J5D□-G
ACT1 to ACT255, ACT1001 to ACT1255	Point table/acceleration time constant No. 1 to No. 255	—	○	○	○

Point table (deceleration time constant) ([MELSERVO-J5(W)-*G(-RJ), -JET-*G])

Use an appropriate device according to the write destination of the servo amplifier.

- DCT1 to DCT255: Writing data to the RAM of a servo amplifier
- DCT1001 to DCT1255: Writing data to the FlashROM or EEPROM of a servo amplifier

○: Available

—: Not available

Virtual device name	Name	Symbol	MR-J5-G(-RJ), MR-J5W□-G	MR-JET-G	MR-J5D□-G
DCT1 to DCT255, DCT1001 to DCT1255	Point table/deceleration time constant No. 1 to No. 255	—	○	○	○

Point table (dwell) ([MELSERVO-J5(W)-*G(-RJ), -JET-*G])

Use an appropriate device according to the write destination of the servo amplifier.

- DWL1 to DWL255: Writing data to the RAM of a servo amplifier
- DWL1001 to DWL1255: Writing data to the FlashROM or EEPROM of a servo amplifier

○: Available

—: Not available

Virtual device name	Name	Symbol	MR-J5-G(-RJ), MR-J5W□-G	MR-JET-G	MR-J5D□-G
DWL1 to DWL255, DWL1001 to DWL1255	Point table/dwell No. 1 to No. 255	—	○	○	○

Point table (auxiliary function) ([MELSERVO-J5(W)-*G(-RJ), -JET-*G])

Use an appropriate device according to the write destination of the servo amplifier.

- AUX1 to AUX255: Writing data to the RAM of a servo amplifier
- AUX1001 to AUX1255: Writing data to the FlashROM or EEPROM of a servo amplifier

○: Available

—: Not available

Virtual device name	Name	Symbol	MR-J5-G(-RJ), MR-J5W□-G	MR-JET-G	MR-J5D□-G
AUX1 to AUX255, AUX1001 to AUX1255	Point table/auxiliary function No. 1 to No. 255	—	○	○	○

Point table (M code) ([MELSERVO-J5(W)-*G(-RJ), -JET-*G])

Use an appropriate device according to the write destination of the servo amplifier.

- MCD1 to MCD255: Writing data to the RAM of a servo amplifier
- MCD1001 to MCD1255: Writing data to the FlashROM or EEPROM of a servo amplifier

○: Available

—: Not available

Virtual device name	Name	Symbol	MR-J5-G(-RJ), MR-J5W□-G	MR-JET-G	MR-J5D□-G
MCD1 to MCD255, MCD1001 to MCD1255	Point table/M code No.1 to No.255	—	○	○	○

Machine diagnosis data ([MELSERVO-J5(W)-*G(-RJ), -JET-*G])

○: Available

—: Not available

Virtual device name	Name	Symbol	MR-J5-G(-RJ), MR-J5W□-G	MR-JET-G	MR-J5D□-G
MD0	Machine diagnosis data: Station number	—	○	○	○
MD1	Machine diagnosis data shift judgment(test mode)	—	○	○	○
MD2[*1]	Machine diagnosis data status	—	○	○	○
MD3[*2]	Machine diagnosis data coulomb friction torque in positive direction	—	○	○	○
MD4[*2]	Machine diagnosis data friction torque at rated speed in positive direction	—	○	○	○
MD5[*2]	Machine diagnosis data coulomb friction torque in negative direction	—	○	○	○
MD6[*2]	Machine diagnosis data friction torque at rated speed in negative direction	—	○	○	○
MD7[*2]	Machine diagnosis data oscillation frequency(motor is stopped)	—	○	○	○
MD8[*2]	Machine diagnosis data vibration level(motor is stopped)	—	○	○	○
MD9[*2]	Machine diagnosis data oscillation frequency(motor is operating)	—	○	○	○
MD10[*2]	Machine diagnosis data vibration level(motor is operating)	—	○	○	○
MD11	Machine diagnosis data, rated speed at forward or reverse rotation torque	—	○	○	○
MD12	Machine diagnosis data: friction failure prediction - threshold creation progress	—	○	○[*3]	○
MD13	Machine diagnosis data: vibration failure prediction - threshold creation progress	—	○	○[*3]	○
MD14	Machine diagnosis data motor total move distance	—	○	○[*3]	○
MD15	Machine diagnosis data, friction failure prediction, upper threshold at forward rotation torque, lower threshold at reverse rotation torque	—	○	○[*3]	○
MD16	Machine diagnosis data, friction failure prediction, lower threshold at forward rotation torque, upper threshold at reverse rotation torque	—	○	○[*3]	○
MD17	Machine diagnosis data: vibration failure prediction - threshold acquisition	—	○	○[*3]	○
MD18	Machine diagnosis data trouble prediction status	—	○	○[*3]	○
MD19	Machine diagnosis data: Belt tension estimation value	—	○	○[*3]	○

Virtual device name	Name	Symbol	MR-J5-G(-RJ), MR-J5W□-G	MR-JET-G	MR-J5D□-G
MD20	Machine diagnosis data: static friction used in failure prediction	—	○	○*3	○
MD21	Machine diagnosis data: Belt tension threshold estimation	—	○	○*3	○

*1 While the servo amplifier is estimating the corresponding machine status in the machine diagnosis, do not write data to the parameters of the servo amplifier from another GOT.
Doing so may cause the servo amplifier to malfunction.

*2 When MD2 indicates that the servo amplifier does not complete the machine diagnosis (is estimating or warning of the machine status), do not monitor MD3 to MD6 (friction states) and MD7 to MD10 (vibration/oscillation states).
To start monitoring those devices upon the estimation completion, set [Trigger] in the applicable object settings.

*3 The commands assigned to MD12 to MD21 are not supported by MR-JET-G.
When the commands are used, the read values will be indefinite.

One-touch tuning data ([MELSERVO-J5(W)-*G(-RJ), -JET-*G])

○: Available

—: Not available

Virtual device name	Name	Symbol	MR-J5-G(-RJ), MR-J5W□-G	MR-JET-G	MR-J5D□-G
OTS0	One-touch tuning status confirmation	—	○	○	○
OTS1	Error code list	—	○	○	○
OTS2	Setting time	—	○	○	○
OTS3	Overshoot amount	—	○	○	○
OTS4	One-touch tuning command mode	—	○	○	○
OTS5	Load inertia moment ratio	—	○	○	○
OTS3000*1	Read/write permissible move distance	—	○	○	○

*1 Writing is not available when a negative value is set for the device value.

External input signal in MR-J5-G(-RJ) and MR-J5W□-G ([MELSERVO-J5(W)-*G(-RJ), -JET-*G])

Virtual device name	Name	Symbol	Data to be read from the servo amplifier
DI0	Input device statuses	—	The input device statuses corresponding to the setting values 0000 to 001F of the following are read. Pr. PF91_Drive recorder Digital channel setting 1 (DRDC1)
DI1	Input device statuses	—	The input device statuses corresponding to the setting values 0020 to 003F of the following are read. Pr. PF91_Drive recorder Digital channel setting 1 (DRDC1)
DI2	Input device statuses	—	The input device statuses corresponding to the setting values 0040 to 005F of the following are read. Pr. PF91_Drive recorder Digital channel setting 1 (DRDC1)
DI3	External input pin statuses	—	The statuses of the listed input devices are assigned to the bits in order from bit 0 and read. For details on the input devices, refer to the following. MR-J5 User's Manual (Hardware)
DI4	Statuses of input devices switched on through communication	—	The statuses of the input devices switched on through communication (input device statuses corresponding to the setting values 0000 to 001F of the following) are read. Pr. PF91_Drive recorder Digital channel setting 1 (DRDC1)
DI5	Statuses of input devices switched on through communication	—	The statuses of input devices switched on through communication (input device statuses corresponding to the setting values 0020 to 003F of the following) are read. Pr. PF91_Drive recorder Digital channel setting 1 (DRDC1)
DI6	Statuses of input devices switched on through communication	—	The statuses of the input devices switched on through communication (input device statuses corresponding to the setting values 0040 to 005F of the following) are read. Pr. PF91_Drive recorder Digital channel setting 1 (DRDC1)

External input signal in MR-J5D□-G ([MELSERVO-J5(W)-*G(-RJ), -JET-*G])

Virtual device name	Name	Symbol	Data to be read from the servo amplifier
DI0	Input device statuses	—	The input device statuses corresponding to the setting values 0000 to 001F of the following are read. Pr. PF91_Drive recorder Digital channel setting 1 (DRDC1)
DI1	Input device statuses	—	The input device statuses corresponding to the setting values 0020 to 003F of the following are read. Pr. PF91_Drive recorder Digital channel setting 1 (DRDC1)
DI2	Input device statuses	—	The input device statuses corresponding to the setting values 0040 to 005F of the following are read. Pr. PF91_Drive recorder Digital channel setting 1 (DRDC1)
DI3	External input pin statuses	—	The statuses of the listed input devices are assigned to the bits in order from bit 0 and read. For details on the input devices, refer to the following. 📖MR-J5 User's Manual (Hardware)
DI4	Statuses of input devices switched on through communication	—	The statuses of the input devices switched on through communication (input device statuses corresponding to the setting values 0000 to 001F of the following) are read. Pr. PF91_Drive recorder Digital channel setting 1 (DRDC1)
DI5	Statuses of input devices switched on through communication	—	The statuses of input devices switched on through communication (input device statuses corresponding to the setting values 0020 to 003F of the following) are read. Pr. PF91_Drive recorder Digital channel setting 1 (DRDC1)
DI6	Statuses of input devices switched on through communication	—	The statuses of the input devices switched on through communication (input device statuses corresponding to the setting values 0040 to 005F of the following) are read. Pr. PF91_Drive recorder Digital channel setting 1 (DRDC1)

External input signal in MR-JET-G ([MELSERVO-J5(W)-*G(-RJ), -JET-*G])

Virtual device name	Name	Symbol
DI0	Input device statuses	—
DI1	Input device statuses	—
DI2	Input device statuses	—
DI3	External input pin statuses	—
DI4	Statuses of input devices switched on through communication	—
DI5	Statuses of input devices switched on through communication	—
DI6	Statuses of input devices switched on through communication	—

External output signal in MR-J5-G(-RJ) and MR-J5W□-G ([MELSERVO-J5(W)-*G(-RJ), -JET-*G])

Virtual device name	Name	Symbol	Data to be read from the servo amplifier
DO0	Output device statuses	—	The output device statuses corresponding to the setting values 8000 to 801F of the following are read. Pr. PF91_Drive recorder Digital channel setting 1 (DRDC1)
DO1	Output device statuses	—	The output device statuses corresponding to the setting values 8020 to 803F of the following are read. Pr. PF91_Drive recorder Digital channel setting 1 (DRDC1)
DO2	Output device statuses	—	The output device statuses corresponding to the setting values 8040 to 805F of the following are read. Pr. PF91_Drive recorder Digital channel setting 1 (DRDC1)
DO4	External output pin statuses	—	The statuses of the listed output devices are assigned to the bits in order from bit 0 and read. For details on the output devices, refer to the following. 📖MR-J5 User's Manual (Hardware)

External output signal in MR-J5D□-G ([MELSERVO-J5(W)-*G(-RJ), -JET-*G])

Virtual device name	Name	Symbol	Data to be read from the servo amplifier
DO0	Output device statuses	—	The output device statuses corresponding to the setting values 8000 to 801F of the following are read. Pr. PF91_Drive recorder Digital channel setting 1 (DRDC1)
DO1	Output device statuses	—	The output device statuses corresponding to the setting values 8020 to 803F of the following are read. Pr. PF91_Drive recorder Digital channel setting 1 (DRDC1)
DO2	Output device statuses	—	The output device statuses corresponding to the setting values 8040 to 805F of the following are read. Pr. PF91_Drive recorder Digital channel setting 1 (DRDC1)
DO4	External output pin statuses	—	The statuses of the listed output devices are assigned to the bits in order from bit 0 and read. For details on the output devices, refer to the following. 📖MR-J5 User's Manual (Hardware)

External output signal in MR-JET-G ([MELSERVO-J5(W)-*G(-RJ), -JET-*G])

Virtual device name	Name	Symbol
DO0	Output device statuses	—
DO1	Output device statuses	—
DO2	Output device statuses	—
DO4	External output pin statuses	—

Option unit parameter ([MELSERVO-J5(W)-*G(-RJ), -JET-*G])

Use an appropriate device according to the write destination of the servo amplifier.

- PO1 to PO2: Writing data to the RAM of a servo amplifier
- PO1001 to PO1002: Writing data to the FlashROM or EEPROM of a servo amplifier

○: Available

—: Not available

Virtual device name	Name	Symbol	MR-J5-G(-RJ), MR-J5W□-G	MR-JET-G	MR-J5D□-G
PO1 to PO2, PO1001 to P1002	For manufacturer setting	—	—	—	—

Special parameter ([MELSERVO-J5(W)-*G(-RJ), -JET-*G])

Use an appropriate device according to the write destination of the servo amplifier.

- PS1 to PS99: Writing data to the RAM of a servo amplifier
- PS1001 to PS1099: Writing data to the FlashROM or EEPROM of a servo amplifier

○: Available

—: Not available

Virtual device name	Name	Symbol	MR-J5-G(-RJ), MR-J5W□-G	MR-JET-G	MR-J5D□-G
PS1 to PS99, PS1001 to PS1099	For manufacturer setting	—	—	—	—

Linear servo motor/DD motor setting parameters ([MELSERVO-J5(W)-*G(-RJ), -JET-*G])

Use an appropriate device according to the write destination of the servo amplifier.

- PL1 to PL72: Writing data to the RAM of a servo amplifier
- PL1001 to PL1072: Writing data to the FlashROM or EEPROM of a servo amplifier

For the parameters prefixed by an asterisk (*), setting becomes effective when the power is turned off once and back on after setting the parameter data.

○: Available

—: Not available

Virtual device name	Name	Symbol	MR-J5-G(-RJ), MR-J5W□-G	MR-JET-G	MR-J5D□-G
PL1, PL1001	Linear servo motor/DD motor function selection 1	**LIT1	○	—	—
	Function selection L-1		—	—	○
PL2, PL1002	Linear encoder resolution - Numerator	**LIM	○	—	○
PL3, PL1003	Linear encoder resolution - Denominator	**LID	○	—	○
PL4, PL1004	Linear servo motor/DD motor function selection 2	*LIT2	○	—	—
	Function selection L-2		—	—	○
PL5, PL1005	Position deviation error detection level	LB1	○	—	○
PL6, PL1006	Speed deviation error detection level	LB2	○	—	○
PL7, PL1007	Torque/thrust deviation error detection level	LB3	○	—	—
	Torque deviation error detection level		—	—	○
PL8, PL1008	Linear servo motor/DD motor function selection 3	*LIT3	○	—	—
	Function selection L-3		—	—	○
PL9, PL1009	Magnetic pole detection voltage level	LPWM	○	—	○
PL10 to PL16, PL1010 to PL1016	For manufacturer setting	—	—	—	—
PL17, PL1017	Magnetic pole detection - Minute position detection method - Function selection	LTSTS	○	—	○
PL18, PL1018	Mag.pole detn.-Min.pos.detn.meth.-Ident.sig.amp.	IDLV	○	—	○
PL19 to PL72, PL1019 to PL1072	For manufacturer setting	—	—	—	—

Multi encoder parameter ([MELSERVO-J5(W)-*G(-RJ), -JET-*G])

Use an appropriate device according to the write destination of the servo amplifier.

- PU1 to PU44: Writing data to the RAM of a servo amplifier
- PU1001 to PU1044: Writing data to the FlashROM or EEPROM of a servo amplifier

○: Available

—: Not available

Virtual device name	Name	Symbol	MR-J5-G(-RJ), MR-J5W□-G	MR-JET-G	MR-J5D□-G
PU1 to PU44, PU1001 to PU1044	For manufacturer setting	—	—	—	—

Positioning control parameters ([MELSERVO-J5(W)-*G(-RJ), -JET-*G])

Use an appropriate device according to the write destination of the servo amplifier.

- PVS1 to PVS32: Writing data to the RAM of a servo amplifier
- PVS1001 to PVS1032: Writing data to the FlashROM or EEPROM of a servo amplifier

For the parameters prefixed by an asterisk (*), setting becomes effective when the power is turned off once and back on after setting the parameter data.

○: Available

—: Not available

Virtual device name	Name	Symbol	MR-J5-G(-RJ), MR-J5W□-G	MR-JET-G	MR-J5D□-G
PVS1, PVS1001	Profile speed command extension setting	PVC2	○	—	○
PVS2, PVS1002	For manufacturer setting	—	—	—	—
PVS3, PVS1003	Maximum profile speed extension setting	MPVCE	○	—	○
PVS4, PVS1004	For manufacturer setting	—	—	—	—
PVS5, PVS1005	Profile acceleration	PACC	○	—	○
PVS6, PVS1006	For manufacturer setting	—	—	—	—
PVS7, PVS1007	Profile deceleration	PDEC	○	—	○
PVS8, PVS1008	For manufacturer setting	—	—	—	—
PVS9, PVS1009	Forced stop deceleration	RSBDEC	○	○	○
PVS10, PVS1010	For manufacturer setting	—	—	—	—
PVS11, PVS1011	Home position return speed extension setting	ZRFE	○	○	○
PVS12, PVS1012	For manufacturer setting	—	—	—	—
PVS13, PVS1013	Creep speed extension setting	CRFE	○	○	○
PVS14, PVS1014	For manufacturer setting	—	—	—	—
PVS15, PVS1015	Home position return acceleration	HMACC	○	○	○
PVS16, PVS1016	For manufacturer setting	—	—	—	—
PVS17, PVS1017	Home position return deceleration	HMDEC	○	○	○
PVS18, PVS1018	For manufacturer setting	—	—	—	—
PVS19, PVS1019	Speed reached 2 output range extension setting	SA2RE	○	—	○
PVS20, PVS1020	Zero speed 2 level extension setting	ZSP2LE	○	—	○
PVS21, PVS1021	Speed limit extension setting	VLMTE	○	○	○
PVS22, PVS1022	For manufacturer setting	—	—	—	—
PVS23, PVS1023	Speed unit conversion electronic gear numerator	*VCMX	○	○	○
PVS24, PVS1024	Speed unit conversion electronic gear denominator	*VCDV	○	○	○
PVS25, PVS1025	Acceleration unit conversion electronic gear nmrtr.	*ACMX	○	○	○
PVS26, PVS1026	Acceleration unit conversion electronic gear dnmntr.	*ACDV	○	○	○
PVS27 to PVS28, PVS1027 to PVS1028	For manufacturer setting	—	—	—	—
PVS29, PVS1029	Acceleration limit	ACCLMT	—	—	○
PVS30, PVS1030	For manufacturer setting	—	—	—	—
PVS31, PVS1031	Deceleration limit	DECLMT	—	—	○
PVS32, PVS1032	For manufacturer setting	—	—	—	—

Network basic parameter ([MELSERVO-J5(W)-*G(-RJ), -JET-*G])

Set [Data Type] and [Format] as shown below for the objects for which this device is set.

- [Data Type]: [Unsigned BIN32]
- [Format]: [Hexadecimal]

○: Available

—: Not available

Virtual device name	Name	Symbol	MR-J5-G(-RJ), MR-J5W□-G	MR-JET-G	MR-J5D□-G
NPA1	IP address setting	—	○	○	○
NPA2	IP address	—	○	○	○
NPA3	For manufacturer setting	—	—	—	—
NPA4	Subnet mask	—	○	○	○
NPA5 to NPA7	For manufacturer setting	—	—	—	—
NPA8	Host name	—	○	○	○
NPA9 to NPA11	For manufacturer setting	—	—	—	—
NPA12	Communication speed	—	—	—	○
NPA2001 to NPA2032	Host name expansion area	—	○	○	○

Gear failure diagnosis data ([MELSERVO-J5(W)-*G(-RJ), -JET-*G])

○: Available

—: Not available

Virtual device name	Name	Symbol	MR-J5-G(-RJ), MR-J5W□-G	MR-JET-G	MR-J5D□-G
GFDS0	Backlash estimation (threshold)	—	○	—	○
GFDS1	Backlash estimation (estimation value)	—	○	—	○
GFDS2	Backlash estimation (estimation progress)	—	○	—	○
GFDS3	Backlash estimation (status)	—	○	—	○
GFDS4	Backlash error number	—	○	—	○
GFDS5	Backlash estimation move distance	—	○	—	○

Encoder communication circuit diagnosis data ([MELSERVO-J5(W)-*G(-RJ), -JET-*G])

○: Available

—: Not available

Virtual device name	Name	Symbol	MR-J5-G(-RJ), MR-J5W□-G	MR-JET-G	MR-J5D□-G
ECCDS0	CN2 encoder communication circuit diagnosis possibility	—	○	○	○
ECCDS1	CN2L encoder communication circuit diagnosis possibility	—	○	○	○
ECCDS2	CN2 encoder communication circuit diagnosis status	—	○	○	○
ECCDS3	CN2L encoder communication circuit diagnosis status	—	○	○	○
ECCDS4	CN2 encoder communication circuit diagnosis result	—	○	○	○
ECCDS5	CN2L encoder communication circuit diagnosis result	—	○	○	○

Life Diagnosis ([MELSERVO-J5(W)-*G(-RJ), -JET-*G])

○: Available

—: Not available

Virtual device name	Name	Symbol	MR-J5-G(-RJ), MR-J5W□-G	MR-JET-G	MR-J5D□-G
ALD0	Cumulative power-on time	—	○	○	○
ALD1	Number of inrush current switching times	—	○	○	○

Input signal for test operation (for test operation) ([MELSERVO-J5(W)-*G(-RJ), -JET-*G])

○: Available

—: Not available

Virtual device name	Name	Symbol	MR-J5-G(-RJ), MR-J5W□-G	MR-JET-G	MR-J5D□-G
TMI0	Input signal for test operation	—	○	○	○
TMI1	Input signal for test operation	—	○	○	○
TMI2	For manufacturer setting	—	—	—	—

When using the input signal for test operation (for test operation), note the following.

Precautions	Description
Writing a value to a virtual device using an object	Numerical input cannot be used. Use a word switch for writing.

Forced output of signal pin (for test operation) ([MELSERVO-J5(W)-*G(-RJ), -JET-*G])

○: Available

—: Not available

Virtual device name	Name	Symbol	MR-J5-G(-RJ), MR-J5W□-G	MR-JET-G	MR-J5D□-G
TMO0	Forced output of signal pin	—	○	○	○

When using the forced output of signal pin (for test operation), note the following.

Precautions	Description
Writing a value to a virtual device using an object	Numerical input cannot be used. Use a word switch for writing.

Set data (for test operation) ([MELSERVO-J5(W)-*G(-RJ), -JET-*G])

○: Available

—: Not available

Virtual device name	Name	Symbol	MR-J5-G(-RJ), MR-J5W□-G	MR-JET-G	MR-J5D□-G
TMD0	Motor speed	—	○	○	○
TMD1	Write acceleration/deceleration time constant	—	○	○	○
TMD3	Move distance	—	○	○	○

25.7.8 Precautions for virtual servo amplifier devices ([MELSERVO-J5(W)-*G(-RJ), -JET-*G])

For the precautions for virtual servo amplifier devices, refer to the following.

☞ Page 1302 Precautions for virtual servo amplifier devices ([MELSEC iQ-R, RnMT/NC/RT, CR800-D])

25.8 [MELSEC MX Controller]

For the device, refer to the following.

☞ Page 1196 [MELSEC MX Controller]

25.9 [MELSEC iQ-R, RnMT/NC/RT, CR800-D]

For the device, refer to the following.

☞ Page 1223 [MELSEC iQ-R, RnMT/NC/RT, CR800-D]

25.10 [MELSEC iQ-F]

For the device, refer to the following.

☞ Page 1314 [MELSEC iQ-F]

25.11 [MELSEC-Q/QS, Q17nD/M/NC/DR/DSR, CRnD-700]

For the device, refer to the following.

☞ Page 1329 [MELSEC-Q/QS, Q17nD/M/NC/DR/DSR, CRnD-700]

25.12 [MELSEC-L]

For the device, refer to the following.

☞ Page 1347 [MELSEC-L]

PART 7 Mitsubishi Electric robot controller

26 Ethernet connection

27 Settable device range

26 Ethernet connection

☞ Page 1919 CR800-D (Built-in Ethernet port connection)
☞ Page 1931 CRnD-700 (Built-in Ethernet port connection)

Point

For details on the connection with CR800-R (R16RTCPU), CRnQ-700/CR750-Q/CR751-Q (Q172DRCPU), and CR800-Q (Q172DSRCPU), refer to following.
☞ Mitsubishi Electric PLC

26.1 CR800-D (Built-in Ethernet port connection)

☞ Page 1919 Connectable devices
☞ Page 1920 System configuration
☞ Page 1922 GOT side settings
☞ Page 1929 Robot controller side settings

26.1.1 Connectable devices

The following table shows the connectable models.
○: Supported, —: Not supported

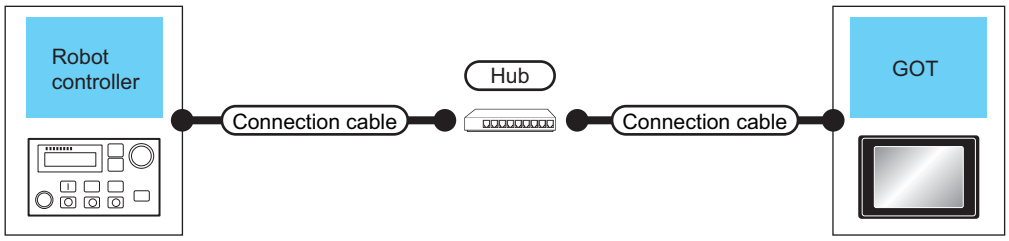
Controller	Model	Clock	Connectable model
Robot controller	CR800-D	○	GT37 SoftGOT3000

Precautions

When the robot controller is connected, use the GOT outside the safety fence.

PART 7

26.1.2 System configuration



For details on the connection cables and the maximum segment length, refer to the following.

☞ Page 1920 Connection cable
☞ Page 1921 Maximum segment length

For details on the maximum number of connected devices, refer to the following.

☞ Page 1921 Maximum number of connected devices

Controller	Connection cable	GOT	
		Interface	Model
CR800-D*1*2	Twisted pair cable	Built-in Ethernet interface of GOT	GT37 SoftGOT3000
		Ethernet interface of personal computer	GT37 SoftGOT3000

*1 For the system configuration of CR800-D, refer to the following manuals.
CR800-D manuals

*2 Select [CR800] for [Unit Type] in [Connected Ethernet Controller Setting] of GT Designer3.
For [Connected Ethernet Controller Setting] in GT Designer3, refer to the following.
☞ Page 1928 [Connected Ethernet Controller Setting]

Connection cable

Use a connection cable that meets the following standards.

Standard	Category
10BASE-T	Shielded twisted pair cable (STP) or unshielded twisted pair cable (UTP) of category 3 or higher
100BASE-TX	Shielded twisted pair cable (STP) or unshielded twisted pair cable (UTP) of category 5 or higher
1000BASE-T	Shielded twisted pair cable (STP) or unshielded twisted pair cable (UTP) of category 5e or higher

The destination device connected with the twisted pair cable varies with the configuration of the Ethernet network system used.

Connect the cable to the Ethernet module, hub, or other system equipment corresponding to the applicable Ethernet network system.

Use cables, connectors, and hubs that meet the IEEE802.3 10BASE-T/100BASE-TX/1000BASE-T standards.

When only one GOT is connected, the GOT can be directly connected to the controller without a hub.

Maximum segment length

The maximum segment length (length between a hub and a node) is 100 m.
The maximum length depends on the Ethernet equipment used.
The following shows the number of connectable hubs when a repeater hub is used.

- 10BASE-T: Up to 4 for a cascade connection (within 500 m)
- 100BASE-TX: Up to 2 for a cascade connection (within 205 m)
- 1000BASE-T: The number differs depending on the hub to be used.

When switching hubs are used, there is no theoretical limit to the number of cascade connections between switching hubs.
For the limit, contact the switching hub manufacturer.

Precautions

When multiple network devices (including GOTs) are connected in the same segment, the network load increases and the transmission speed between the GOT and PLC may be reduced.
The following actions may improve the communication performance.

- Use a switching hub compatible with 1000BASE-T (1 Gbps) or more.
- Reduce the number of devices monitored by the GOT.

Maximum number of connected devices

The following shows the number of GOTs connectable to one controller.

Controller	
Model	**Number of GOTs connectable to one robot controller**
CR800-D	8 (1 recommended)

PART 7

26.1.3 GOT side settings

[GOT Ethernet Setting]

Set the GOT Ethernet interface in GT Designer3.

Item	Description
[GOT IP Address Setting]	Set the IP address of the GOT.
[GOT Ethernet Common Setting]	Set the default gateway and other common items for GOT Ethernet interfaces.
[IP filter Setting]	The GOT allows or blocks access from IP addresses specified in the filtering list.

For details on the setting, refer to the following.

📖GT Designer3 (GOT3000) Screen Design Manual

Set the GT SoftGOT3000 Ethernet interface on the personal computer.

Precautions

Do not use 0 and 255 at the end of an IP address.

(Numbers of *.*.*.0 and *.*.*.255 are used by the system.)

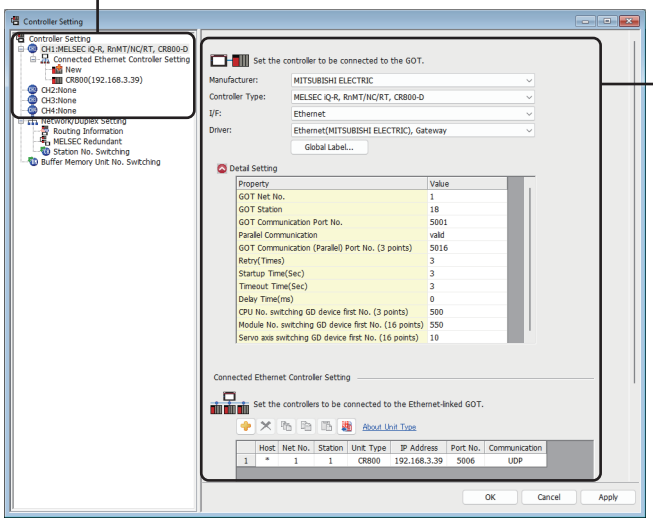
The GOT may not monitor the controller correctly with the above numbers.

Consult with the administrator of the network before setting an IP address to the GOT.

[Controller Setting]

Set the channel of the connected controller.

List menu



Operating procedure

1. Select [Common] → [Controller Setting] from the menu.

2. In the [Controller Setting] window, select the channel number to be used from the list menu.

3. Set the following items.

Item	Description
[Manufacturer]	[MITSUBISHI ELECTRIC]
[Controller Type]	[MELSEC iQ-R, RnMT/NC/RT, CR800-D]
[I/F]	[Ethernet]
[Driver]	[Ethernet(MITSUBISHI ELECTRIC), Gateway]
[Detail Setting]	Configure the settings according to the usage environment. ☞ Page 1924 [Detail Setting]
[Connected Ethernet Controller Setting]	Configure the settings according to the controller to be connected. ☞ Page 1928 [Connected Ethernet Controller Setting]

4. When you have completed the settings, click the [OK] button.

Point

The controller settings can be checked in [I/F Communication Setting].
For details, refer to the following.
📖GT Designer3 (GOT3000) Screen Design Manual

PART 7

■[Detail Setting]

Configure the settings according to the usage environment.

Detail Setting

Property	Value
GOT Net No.	1
GOT Station	18
GOT Communication Port No.	5001
Parallel Communication	valid
GOT Communication (Parallel) Port No. (3 points)	5016
Retry(Times)	3
Startup Time(Sec)	3
Timeout Time(Sec)	3
Delay Time(ms)	0
CPU No. switching GD device first No. (3 points)	500
Module No. switching GD device first No. (16 points)	550
Servo axis switching GD device first No. (16 points)	10

Item	Description	Range
[GOT Net No.]	Set the network number of the GOT.	[1] to [239]
[GOT Station]*1*2	Set the station number of the GOT.	[1] to [120]
[GOT Communication Port No.]	Set the GOT port number for connection with the Ethernet module.	[1024] to [5010], [5014] to [49152], [49171] to [65534]
[Parallel Communication]	Enables or disables the parallel communication. When this setting is enabled, [GOT Communication (Parallel) Port No. (3 points)] can be set. When communicating with multiple devices on a single channel, distributing the communication ports can reduce the communication load.	[Valid], [Invalid]
[GOT Communication (Parallel) Port No. (3 points)]	Set the GOT port number used for the parallel communication.	• [Parallel Communication] is [invalid]: [0] • [Parallel Communication] is [valid]: [1024] to [5008], [5014] to [49150], [49171] to [65532]
[Retry(Times)]	Set the number of retries to be performed when a communication timeout occurs. When receiving no response after retries, the communication times out.	• GOT: [0] times to [5] times • GT SoftGOT3000: [0] times to [10] times
[Startup Time]	Set the time period from the GOT startup until the start of communication with the PLC CPU.	[3] seconds to [255] seconds
[Timeout Time]	Set the time period for a communication to time out.	[1] second to [90] seconds
[Delay Time]	Set the delay time for reducing the load of the network and destination PLC.	[0] ms to [10000] ms
[CPU No. switching GD device first No. (3 points)]	Set the start device number of the GD devices for CPU number switching. For details, refer to the following. ☞ Page 1925 Start device number of the GD devices for CPU number switching	[0] to [65520]
[Module No. switching GD device first No. (16 points)]	Set the start device number of the GD devices for module number switching. For details, refer to the following. ☞ Page 1926 Start device number of the GD devices for module number switching	[0] to [65520]
[Servo axis switching GD device first No. (16 points)]	Set the start device number of the GD devices for servo axis switching. For details, refer to the following. ☞ Page 1927 Start device number of the GD devices for servo axis switching	[0] to [65520]

*1 Set values not set for [Station] in [Connected Ethernet Controller Setting].
☞ Page 1928 [Connected Ethernet Controller Setting]

*2 When connecting multiple GOTs in the Ethernet network, set a different value for [GOT Station] for each GOT.

Point

Setting example in [Controller Setting]

For examples of [Controller Setting], refer to the following.

☞ Page 1929 Robot controller side settings

■Start device number of the GD devices for CPU number switching

• Indirect specification of a CPU number

[CPU No.] can be indirectly specified with the GOT internal registers (GD devices) by specifying a value (100 to 102) to [CPU No.] in the device setting dialog in GT Designer3.

Set the start device number of the GD devices to be used in [CPU No. switching GD device first No. (3 points)].

[CPU No.] is specified with three consecutive GD devices, starting from the set device number.

When [500] is set to [CPU No. switching GD device first No. (3 points)], GD500 to GD502 are used to specify [CPU No.] as shown in the following table.

CPU No.	GD device	Setting range
100	GD500	1 to 4 Setting a value outside the range causes a communication timeout error. Specifying a nonexistent CPU number or a CPU number not supporting a multiple CPU system with a device causes a controller error.
101	GD501	
102	GD502	

• Indirect specification of a CPU number on the initially displayed screen

Set [CPU No. switching GD device first No. (3 points)] so that the values of the GD devices are retained and monitored upon the GOT startup.

• Indirect specification of a CPU number for multi-channel connection

If the setting range of [CPU No. switching GD device first No. (3 points)] set for each channel overlaps, the monitoring target CPU number set to each channel is switched simultaneously.

Set [CPU No. switching GD device first No. (3 points)] for each channel so that the setting range does not overlap.

• Indirect specification of a station number and a CPU number for multi-channel connection

When GD10 to GD25 are used to specify the station number of an inverter or non-Mitsubishi temperature controller connected, setting [10] to [CPU No. switching GD device first No. (3 points)] in a different channel switches the monitoring target CPU number and station number of an inverter or non-Mitsubishi temperature controller set to each channel simultaneously.

Set [CPU No. switching GD device first No. (3 points)] so that the setting range does not overlap the station number of an inverter or non-Mitsubishi temperature controller.

■Start device number of the GD devices for module number switching

• Indirect specification of a module number

For connection via a Simple Motion module, [Unit No.] can be specified with the GOT internal registers (GD devices) by specifying a value (100 to 10F) to [Unit No.] in the device setting dialog in GT Designer3.

Set the start device number of the GD devices to be used in [Module No. switching GD device first No. (16 points)].

[Unit No.] is specified with 16 consecutive GD devices, starting from the set device number.

When [550] is set to [Module No. switching GD device first No. (16 points)], GD550 to GD565 are used to specify [Unit No.] as shown in the following table.

Module No.	GD device	Setting range
100	GD550	00 to FF Setting a value outside the above range causes a device range error.
101	GD551	
102	GD552	
103	GD553	
104	GD554	
105	GD555	
106	GD556	
107	GD557	
108	GD558	
109	GD559	
10A	GD560	
10B	GD561	
10C	GD562	
10D	GD563	
10E	GD564	
10F	GD565	

• Indirect specification of a module number on the initially displayed screen

Set [Module No. switching GD device first No. (16 points)] so that the values of the GD devices are retained and monitored upon the GOT startup.

• Indirect specification of a module number for multi-channel connection

If the setting range of [Module No. switching GD device first No. (16 points)] set for each channel overlaps, the module number of the Simple Motion module via the servo amplifier device of each channel is switched simultaneously.

Set [Module No. switching GD device first No. (16 points)] for each channel so that the setting range does not overlap.

• Indirect specification of a station number and a module number for multi-channel connection

When GD10 to GD25 are used to specify the station number of an inverter or non-Mitsubishi temperature controller connected, setting [10] to [Module No. switching GD device first No. (16 points)] switches the module number of the Simple Motion module via the servo amplifier device and the station number of an inverter or non-Mitsubishi temperature controller set to each channel simultaneously.

Set [Module No. switching GD device first No. (16 points)] so that the setting range does not overlap the station number of an inverter or non-Mitsubishi temperature controller.

■Start device number of the GD devices for servo axis switching

• Indirect specification of a servo axis number

For connection via a Motion CPU or Simple Motion module, a servo axis number can be indirectly specified with GOT internal registers (GD devices) by specifying a value (100 to 115) to the axis number of the servo amplifier device.

Set the start device number of the GD devices to be used in [Servo axis switching GD device first No. (16 points)].

Specify a servo axis number with 16 consecutive GD devices, starting the set device number.

When [10] is set to [Servo axis switching GD device first No. (16 points)], GD10 to GD25 are used to specify a servo axis number as shown in the following table.

Servo axis No.	GD device	Setting range
100	GD10	1 to 64 Setting a value outside the above range causes a device range error.
101	GD11	
102	GD12	
103	GD13	
104	GD14	
105	GD15	
106	GD16	
107	GD17	
108	GD18	
109	GD19	
110	GD20	
111	GD21	
112	GD22	
113	GD23	
114	GD24	
115	GD25	

• Indirect specification of a servo axis number on the initially displayed screen

Set [Servo axis switching GD device first No. (16 points)] so that the values of the GD devices are retained and monitored upon the GOT startup.

• Indirect specification of a servo axis number for multi-channel connection

If the setting rage of [Servo axis switching GD device first No. (16 points)] set for each channel overlaps, the axis number of the servo amplifier of each channel is switched simultaneously.

Set [Servo axis switching GD device first No. (16 points)] for each channel so that the setting range does not overlap.

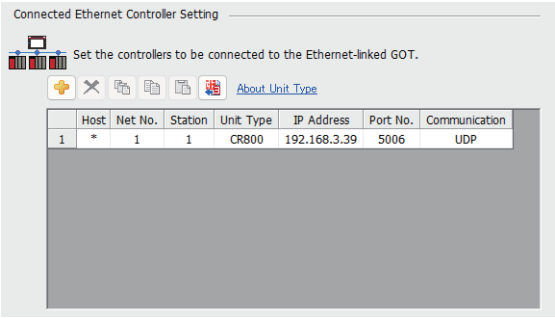
• Indirect specification of a station number and a servo axis number for multi-channel connection

When GD10 to GD25 are used to specify the station number of an inverter or non-Mitsubishi temperature controller connected, setting [10] to [Servo axis switching GD device first No. (16 points)] switches the axis number of the servo amplifier and the station number of an inverter or non-Mitsubishi temperature controller set to each channel simultaneously.

Set [Servo axis switching GD device first No. (16 points)] so that the setting range does not overlap the station number of an inverter or non-Mitsubishi temperature controller.

■[Connected Ethernet Controller Setting]

Set the controller to be connected to the GOT by Ethernet.



Item	Description	Range
[Host]	The host is displayed. It refers to a station that can be connected without setting a station number. The host is indicated with an asterisk (*).	—
[Net No.]	Set the network number of the connected Ethernet equipment.	[1] to [239]
[Station No.]*1	Set the station number of the connected Ethernet equipment.	[1] to [64]
[Unit Type]	Select the model of the connected Ethernet equipment.	[CR800]
[IP Address]	Set the IP address of the connected Ethernet equipment.	[0.0.0.0] to [255.255.255.255]
[Port No.]	Set the port number of the connected Ethernet equipment.	☞ Page 1928 [Port No.]
[Communication]	Set the communication format of the connected Ethernet equipment.	[UDP], [TCP]

*1 Set values not set for [GOT Station] in [Detail Setting].
☞ Page 1924 [Detail Setting]

■[Port No.]

The setting range is as follows:

[Unit Type]	[Port No.]	[Communication]
[CR800]	[5006]	[UDP]
	[5007]	[TCP]

Point

• Examples of [Connected Ethernet Controller Setting]

For examples of [Connected Ethernet Controller Setting], refer to the following.

☞ Page 1929 Robot controller side settings

• Controller settings using the GT37 utility

The controller settings can be changed in [Communication Settings] of the GT37 utility after writing [Communication Settings] of project data to GT37.

For details on the GT37 utility, refer to the following manual.

📖GOT3000 Series User's Manual (Utility & Maintenance Functions)

• Priority of the settings in [Controller Setting]

When the settings are configured in GT Designer3 or in the GT37 utility, the latest settings are effective.

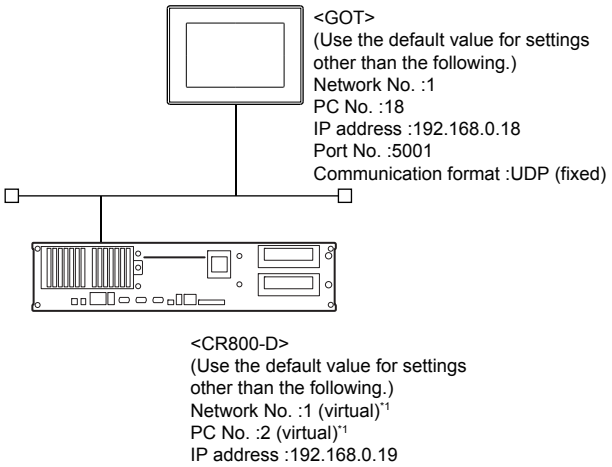
26.1.4 Robot controller side settings

Model		Reference
Robot controller	CR800-D	☞ Page 1929 Connection to robot controller (CR800-D)

Connection to robot controller (CR800-D)

This section describes the settings of the GOT and the robot controller (CR800-D) in the system configuration shown below.
For details on the robot controller (CR800-D), refer to the following manuals.
📖CR800-D manuals

■System configuration

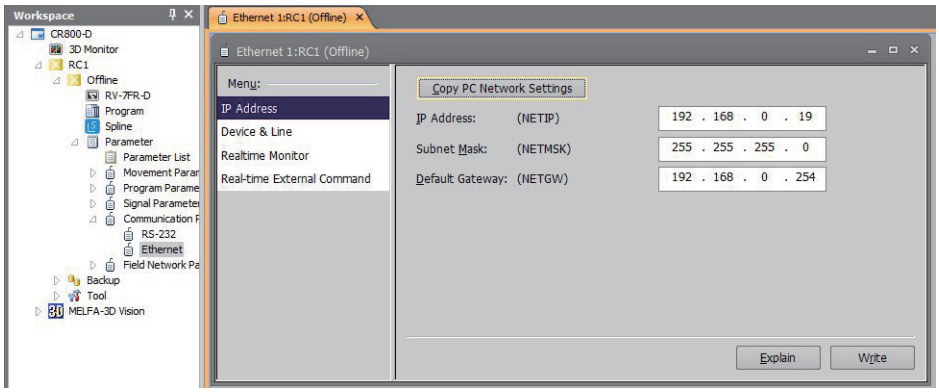


*1 These setting items do not exist at the robot controller side. However, the virtual values must be set on the GOT side.
☞ Page 1930 [Controller Setting] and [Connected Ethernet Controller Setting] of GT Designer3

■Parameter settings for CR800-D

Set the parameters using RT ToolBox3.

Select [Online] → [Parameter] → [Communication Parameter] → [Ethernet] and set [IP Address].



○: Necessary, △: As necessary, —: Not necessary

Item	Setting value	Setting for GOT connection
[IP Address (NETIP)]	192.168.0.19	○

■[Controller Setting] and [Connected Ethernet Controller Setting] of GT Designer3

For the setting method of [Controller Setting] and [Connected Ethernet Controller Setting] in GT Designer3, refer to the following.

☞ Page 1922 GOT side settings

• Controller settings

Item	Setting value
[GOT Net No.]	1
[GOT Station]	18
[GOT Communication Port No.]	5001
[Retry]	3 times
[Startup Time]	3 seconds
[Timeout Time]	3 seconds
[Delay Time]	0 ms

• GOT Ethernet settings

Item	Setting value
[GOT IP Address]	192.168.0.18
[Subnet Mask]	255.255.255.0
[Default Gateway]	0.0.0.0
[Peripheral S/W Communication Port No.]	5015
[Transparent Port No.]	5014

• Connected Ethernet controller settings

Item		Setting value
Ethernet setting No. 1	[Host]	*
	[Net No.]	1
	[Station]	1
	[Unit Type]	CR800
	[IP Address]	192.168.0.19
	[Port No.]*1	5006
	[Communication]*1	UDP

*1 The following settings can also be configured for [Port No.] and [Communication].
[Port No.]: 5007
[Communication]: TCP

■Checking the communication status of the robot controller

• When using Windows Command Prompt

Execute a ping command in Windows Command Prompt.

At normal end

C:\>Ping 192.168.0.19

Reply from 192.168.0.19:bytes=32 time<1ms TTL=32

At abnormal end

C:\>Ping 192.168.0.19

Request timed out.

• In the case of abnormal end

In the case of abnormal end, check the following and execute the ping command again.

Cable connecting condition

Parameter settings

Operation state of CR800-D (faulty or not)

IP address of the CR800-D specified by the ping command

26.2 CRnD-700 (Built-in Ethernet port connection)

☞ Page 1931 Connectable devices
☞ Page 1931 System configuration
☞ Page 1933 GOT side settings
☞ Page 1939 Robot controller side settings

26.2.1 Connectable devices

The following table shows the connectable models.

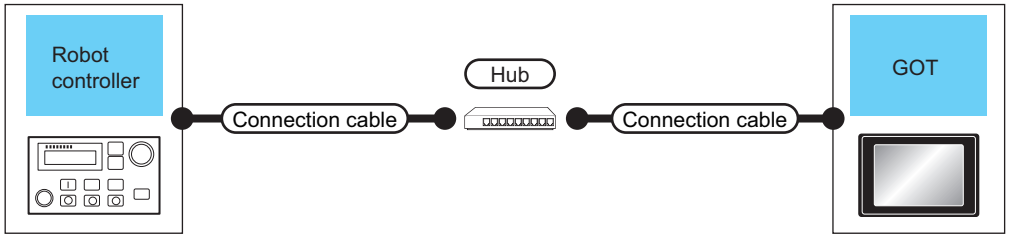
○: Supported, —: Not supported

Controller	Model	Clock	Connectable model
Robot controller	CRnD-700 CR750-D CR751-D	○	GT37 SoftGOT3000

Precautions

When the robot controller is connected, use the GOT outside the safety fence.

26.2.2 System configuration



For details on the connection cables and the maximum segment length, refer to the following.

☞ Page 1932 Connection cable
☞ Page 1932 Maximum segment length

For details on the maximum number of connected devices, refer to the following.

☞ Page 1932 Maximum number of connected devices

Controller	Connection cable	GOT	
		Interface	Model
CRnD-700*1*2 CR750-D*1*2 CR751-D*1*2	Twisted pair cable	Built-in Ethernet interface of GOT	GT37 SoftGOT3000
		Ethernet interface of personal computer	GT37 SoftGOT3000

*1 For the system configuration of CRnD-700, CR750-D/CR751-D, refer to the following manual.
CRnD-700 or CR750-D/CR751-D manual

*2 Select [CRnD-700] for [Unit Type] in [Connected Ethernet Controller Setting] of GT Designer3.
For [Connected Ethernet Controller Setting] in GT Designer3, refer to the following.
☞ Page 1938 [Connected Ethernet Controller Setting]

Connection cable

Use a connection cable that meets the following standards.

Standard	Category
10BASE-T	Shielded twisted pair cable (STP) or unshielded twisted pair cable (UTP) of category 3 or higher
100BASE-TX	Shielded twisted pair cable (STP) or unshielded twisted pair cable (UTP) of category 5 or higher
1000BASE-T	Shielded twisted pair cable (STP) or unshielded twisted pair cable (UTP) of category 5e or higher

The destination device connected with the twisted pair cable varies with the configuration of the Ethernet network system used.

Connect the cable to the Ethernet module, hub, or other system equipment corresponding to the applicable Ethernet network system.

Use cables, connectors, and hubs that meet the IEEE802.3 10BASE-T/100BASE-TX/1000BASE-T standards.

When only one GOT is connected, the GOT can be directly connected to the controller without a hub.

Maximum segment length

The maximum segment length (length between a hub and a node) is 100 m.

The maximum length depends on the Ethernet equipment used.

The following shows the number of connectable hubs when a repeater hub is used.

- 10BASE-T: Up to 4 for a cascade connection (within 500 m)
- 100BASE-TX: Up to 2 for a cascade connection (within 205 m)
- 1000BASE-T: The number differs depending on the hub to be used.

When switching hubs are used, there is no theoretical limit to the number of cascade connections between switching hubs.

For the limit, contact the switching hub manufacturer.

Precautions

When multiple network devices (including GOTs) are connected in the same segment, the network load increases and the transmission speed between the GOT and PLC may be reduced.

The following actions may improve the communication performance.

- Use a switching hub compatible with 1000BASE-T (1 Gbps) or more.
- Reduce the number of devices monitored by the GOT.

Maximum number of connected devices

The following shows the number of GOTs connectable to one controller.

Controller	
Model	**Number of GOTs connectable to one robot controller**
CRnD-700 CR750-D CR751-D	1

26.2.3 GOT side settings

[GOT Ethernet Setting]

Set the GOT Ethernet interface in GT Designer3.

Item	Description
[GOT IP Address Setting]	Set the IP address of the GOT.
[GOT Ethernet Common Setting]	Set the default gateway and other common items for GOT Ethernet interfaces.
[IP filter Setting]	The GOT allows or blocks access from IP addresses specified in the filtering list.

For details on the setting, refer to the following.

📖GT Designer3 (GOT3000) Screen Design Manual

Set the GT SoftGOT3000 Ethernet interface on the personal computer.

Precautions

Do not use 0 and 255 at the end of an IP address.

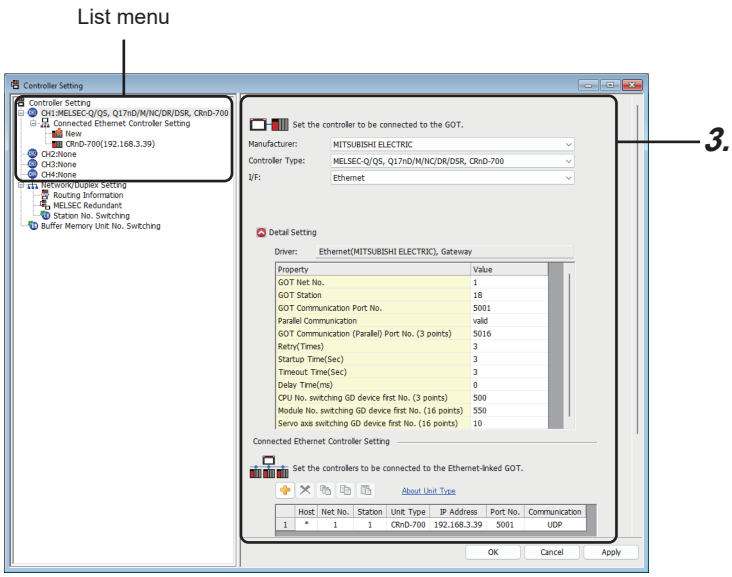
(Numbers of *.*.*.0 and *.*.*.255 are used by the system.)

The GOT may not monitor the controller correctly with the above numbers.

Consult with the administrator of the network before setting an IP address to the GOT.

[Controller Setting]

Set the channel of the connected controller.



Operating procedure

1. Select [Common] → [Controller Setting] from the menu.
2. In the [Controller Setting] window, select the channel number to be used from the list menu.
3. Set the following items.

Item	Description
[Manufacturer]	[MITSUBISHI ELECTRIC]
[Controller Type]	[MELSEC-Q/QS,Q17nD/M/NC/DR/DSR,CRnD-700]
[I/F]	[Ethernet]
[Driver]	[Ethernet(MITSUBISHI ELECTRIC), Gateway]
[Detail Setting]	Configure the settings according to the usage environment. ☞ Page 1934 [Detail Setting]
[Connected Ethernet Controller Setting]	Configure the settings according to the controller to be connected. ☞ Page 1938 [Connected Ethernet Controller Setting]

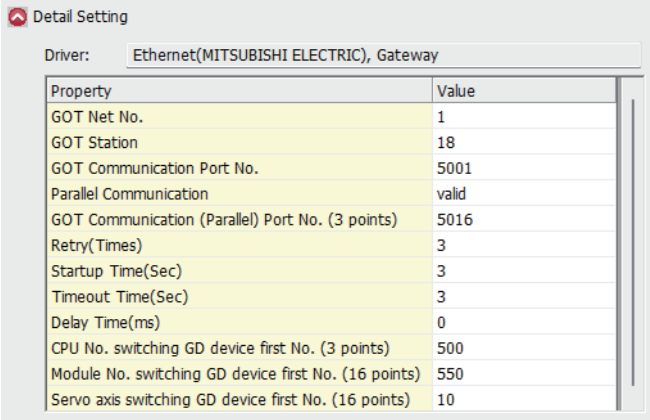
4. When you have completed the settings, click the [OK] button.

Point

The controller settings can be checked in [I/F Communication Setting].
For details, refer to the following.
GT Designer3 (GOT3000) Screen Design Manual

■[Detail Setting]

Configure the settings according to the usage environment.



Item	Description	Range
[GOT Net No.]	Set the network number of the GOT.	[1] to [239]
[GOT Station]*1*2	Set the station number of the GOT.	[1] to [120]
[GOT Communication Port No.]	Set the GOT port number for connection with the Ethernet module.	[1024] to [5010], [5014] to [49152], [49171] to [65534]
[Parallel Communication]	Enables or disables the parallel communication. When this setting is enabled, [GOT Communication (Parallel) Port No. (3 points)] can be set. When communicating with multiple devices on a single channel, distributing the communication ports can reduce the communication load.	[Valid], [Invalid]
[GOT Communication (Parallel) Port No. (3 points)]	Set the GOT port number used for the parallel communication.	• [Parallel Communication] is [invalid]: [0] • [Parallel Communication] is [valid]: [1024] to [5008], [5014] to [49150], [49171] to [65532]
[Retry(Times)]	Set the number of retries to be performed when a communication timeout occurs. When receiving no response after retries, the communication times out.	• GOT: [0] times to [5] times • GT SoftGOT3000: [0] times to [10] times
[Startup Time]	Set the time period from the GOT startup until the start of communication with the PLC CPU.	[3] seconds to [255] seconds
[Timeout Time]	Set the time period for a communication to time out.	[1] second to [90] seconds
[Delay Time]	Set the delay time for reducing the load of the network and destination PLC.	[0] ms to [10000] ms
[CPU No. switching GD device first No. (3 points)]	Set the start device number of the GD devices for CPU number switching. For details, refer to the following. ☞ Page 1935 Start device number of the GD devices for CPU number switching	[0] to [65520]
[Module No. switching GD device first No. (16 points)]	Set the start device number of the GD devices for module number switching. For details, refer to the following. ☞ Page 1936 Start device number of the GD devices for module number switching	[0] to [65520]
[Servo axis switching GD device first No. (16 points)]	Set the start device number of the GD devices for servo axis switching. For details, refer to the following. ☞ Page 1937 Start device number of the GD devices for servo axis switching	[0] to [65520]

*1 Set values not set for [Station] in [Connected Ethernet Controller Setting].
☞ Page 1938 [Connected Ethernet Controller Setting]

*2 When connecting multiple GOTs in the Ethernet network, set a different value for [GOT Station] for each GOT.

Point

Setting example in [Controller Setting]

For examples of [Controller Setting], refer to the following.

☞ Page 1939 Robot controller side settings

■Start device number of the GD devices for CPU number switching

• Indirect specification of a CPU number

[CPU No.] can be indirectly specified with the GOT internal registers (GD devices) by specifying a value (100 to 102) to [CPU No.] in the device setting dialog in GT Designer3.

Set the start device number of the GD devices to be used in [CPU No. switching GD device first No. (3 points)].

[CPU No.] is specified with three consecutive GD devices, starting from the set device number.

When [500] is set to [CPU No. switching GD device first No. (3 points)], GD500 to GD502 are used to specify [CPU No.] as shown in the following table.

CPU No.	GD device	Setting range
100	GD500	1 to 4 Setting a value outside the range causes a communication timeout error. Specifying a nonexistent CPU number or a CPU number not supporting a multiple CPU system with a device causes a controller error.
101	GD501	
102	GD502	

• Indirect specification of a CPU number on the initially displayed screen

Set [CPU No. switching GD device first No. (3 points)] so that the values of the GD devices are retained and monitored upon the GOT startup.

• Indirect specification of a CPU number for multi-channel connection

If the setting range of [CPU No. switching GD device first No. (3 points)] set for each channel overlaps, the monitoring target CPU number set to each channel is switched simultaneously.

Set [CPU No. switching GD device first No. (3 points)] for each channel so that the setting range does not overlap.

• Indirect specification of a station number and a CPU number for multi-channel connection

When GD10 to GD25 are used to specify the station number of an inverter or non-Mitsubishi temperature controller connected, setting [10] to [CPU No. switching GD device first No. (3 points)] in a different channel switches the monitoring target CPU number and station number of an inverter or non-Mitsubishi temperature controller set to each channel simultaneously.

Set [CPU No. switching GD device first No. (3 points)] so that the setting range does not overlap the station number of an inverter or non-Mitsubishi temperature controller.

■Start device number of the GD devices for module number switching

• Indirect specification of a module number

For connection via a Simple Motion module, [Unit No.] can be specified with the GOT internal registers (GD devices) by specifying a value (100 to 10F) to [Unit No.] in the device setting dialog in GT Designer3.

Set the start device number of the GD devices to be used in [Module No. switching GD device first No. (16 points)].

[Unit No.] is specified with 16 consecutive GD devices, starting from the set device number.

When [550] is set to [Module No. switching GD device first No. (16 points)], GD550 to GD565 are used to specify [Unit No.] as shown in the following table.

Module No.	GD device	Setting range
100	GD550	00 to FF Setting a value outside the above range causes a device range error.
101	GD551	
102	GD552	
103	GD553	
104	GD554	
105	GD555	
106	GD556	
107	GD557	
108	GD558	
109	GD559	
10A	GD560	
10B	GD561	
10C	GD562	
10D	GD563	
10E	GD564	
10F	GD565	

• Indirect specification of a module number on the initially displayed screen

Set [Module No. switching GD device first No. (16 points)] so that the values of the GD devices are retained and monitored upon the GOT startup.

• Indirect specification of a module number for multi-channel connection

If the setting range of [Module No. switching GD device first No. (16 points)] set for each channel overlaps, the module number of the Simple Motion module via the servo amplifier device of each channel is switched simultaneously.

Set [Module No. switching GD device first No. (16 points)] for each channel so that the setting range does not overlap.

• Indirect specification of a station number and a module number for multi-channel connection

When GD10 to GD25 are used to specify the station number of an inverter or non-Mitsubishi temperature controller connected, setting [10] to [Module No. switching GD device first No. (16 points)] switches the module number of the Simple Motion module via the servo amplifier device and the station number of an inverter or non-Mitsubishi temperature controller set to each channel simultaneously.

Set [Module No. switching GD device first No. (16 points)] so that the setting range does not overlap the station number of an inverter or non-Mitsubishi temperature controller.

■Start device number of the GD devices for servo axis switching

• Indirect specification of a servo axis number

For connection via a Motion CPU or Simple Motion module, a servo axis number can be indirectly specified with GOT internal registers (GD devices) by specifying a value (100 to 115) to the axis number of the servo amplifier device.

Set the start device number of the GD devices to be used in [Servo axis switching GD device first No. (16 points)].

Specify a servo axis number with 16 consecutive GD devices, starting the set device number.

When [10] is set to [Servo axis switching GD device first No. (16 points)], GD10 to GD25 are used to specify a servo axis number as shown in the following table.

Servo axis No.	GD device	Setting range
100	GD10	1 to 64 Setting a value outside the above range causes a device range error.
101	GD11	
102	GD12	
103	GD13	
104	GD14	
105	GD15	
106	GD16	
107	GD17	
108	GD18	
109	GD19	
110	GD20	
111	GD21	
112	GD22	
113	GD23	
114	GD24	
115	GD25	

• Indirect specification of a servo axis number on the initially displayed screen

Set [Servo axis switching GD device first No. (16 points)] so that the values of the GD devices are retained and monitored upon the GOT startup.

• Indirect specification of a servo axis number for multi-channel connection

If the setting rage of [Servo axis switching GD device first No. (16 points)] set for each channel overlaps, the axis number of the servo amplifier of each channel is switched simultaneously.

Set [Servo axis switching GD device first No. (16 points)] for each channel so that the setting range does not overlap.

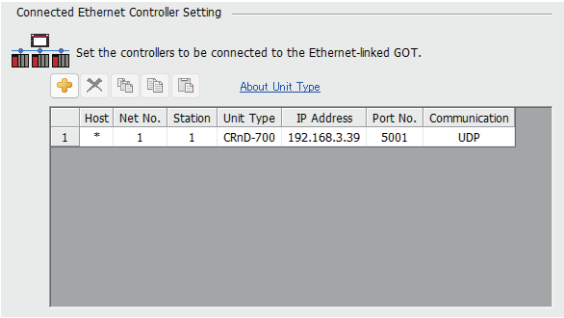
• Indirect specification of a station number and a servo axis number for multi-channel connection

When GD10 to GD25 are used to specify the station number of an inverter or non-Mitsubishi temperature controller connected, setting [10] to [Servo axis switching GD device first No. (16 points)] switches the axis number of the servo amplifier and the station number of an inverter or non-Mitsubishi temperature controller set to each channel simultaneously.

Set [Servo axis switching GD device first No. (16 points)] so that the setting range does not overlap the station number of an inverter or non-Mitsubishi temperature controller.

■[Connected Ethernet Controller Setting]

Set the controller to be connected to the GOT by Ethernet.



Item	Description	Range
[Host]	The host is displayed. It refers to a station that can be connected without setting a station number. The host is indicated with an asterisk (*).	—
[Net No.]	Set the network number of the connected Ethernet equipment.	[1] to [239]
[Station No.]*1	Set the station number of the connected Ethernet equipment.	[1] to [64]
[Unit Type]	Select the model of the connected Ethernet equipment.	[CRnD-700]
[IP Address]	Set the IP address of the connected Ethernet equipment.	[0.0.0.0] to [255.255.255.255]
[Port No.]	Set the port number of the connected Ethernet equipment.	[5001]
[Communication]	Set the communication format of the connected Ethernet equipment.	[UDP]

*1 Set values not set for [GOT Station] in [Detail Setting].
☞ Page 1934 [Detail Setting]

Point

• Examples of [Connected Ethernet Controller Setting]

For examples of [Connected Ethernet Controller Setting], refer to the following.

☞ Page 1939 Robot controller side settings

• Controller settings using the GT37 utility

The controller settings can be changed in [Communication Settings] of the GT37 utility after writing [Communication Settings] of project data to GT37.

For details on the GT37 utility, refer to the following manual.

📖GOT3000 Series User's Manual (Utility & Maintenance Functions)

• Priority of the settings in [Controller Setting]

When the settings are configured in GT Designer3 or in the GT37 utility, the latest settings are effective.

26.2.4 Robot controller side settings

Model		Reference
Robot controller	CRnD-700 CR750-D CR751-D	☞ Page 1939 Connection to robot controller (CRnD-700, CR750-D, or CR751-D)

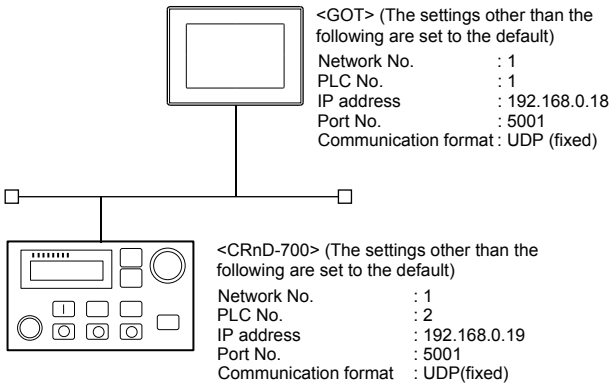
Connection to robot controller (CRnD-700, CR750-D, or CR751-D)

The following describes the settings of the GOT and the robot controller (CRnD-700, CR750-D, or CR751-D) in the system configuration shown below.

For details on the robot controller (CRnD-700, CR750-D, or CR751-D), refer to the following manual.

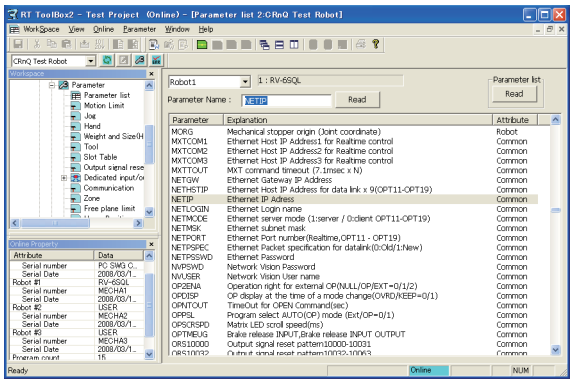
📖CRnD-700 or CR750-D/CR751-D manual

■System configuration



■Parameter settings for CRnD-700, CR750-D, and CR751-D

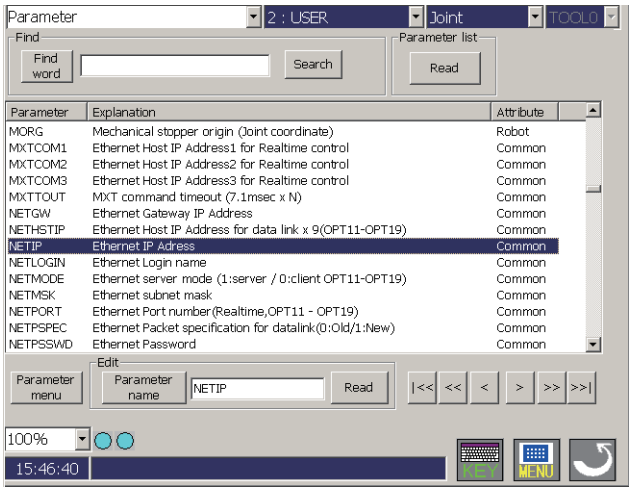
- For RT ToolBox2



○: Necessary, △: As necessary, —: Not necessary

Item	Setting value	Setting for GOT connection
[NETIP]	192.168.0.19	○
[GOTPORT]	5001	○

• For R32TB and R56TB



(For R56TB)

○: Necessary, △: As necessary, —: Not necessary

Item	Setting value	Setting for GOT connection
[NETIP]	192.168.0.19	○
[GOTPORT]	5001	○

■[Controller Setting] and [Connected Ethernet Controller Setting] of GT Designer3

For the setting method of [Controller Setting] and [Connected Ethernet Controller Setting] in GT Designer3, refer to the following.

☞ Page 1933 GOT side settings

• Communication settings

Item	Setting value
[GOT Net No.]	1
[GOT Station]	1
[GOT Communication Port No.]	5001
[Retry]	3 times
[Startup Time]	3 seconds
[Timeout Time]	3 seconds
[Delay Time]	0 ms

• GOT Ethernet settings

Item	Setting value
[GOT IP Address]	192.168.0.18
[Subnet Mask]	255.255.255.0
[Default Gateway]	0.0.0.0
[Peripheral S/W Communication Port No.]	5015
[Transparent Port No.]	5014

• Connected Ethernet controller settings

Item		Setting value
Ethernet setting No. 1	[Host]	*
	[Net No.]	1
	[Station]	2
	[Unit Type]	CRnD-700
	[IP Address]	192.168.0.19
	[Port No.]	5001
	[Communication]	UDP

■Checking the communication status of the robot controller

- When using Windows Command Prompt

Execute a ping command in Windows Command Prompt.

At normal end

C:\>Ping 192.168.0.19

Reply from 192.168.0.19:bytes=32 time<1ms TTL=32

At abnormal end

C:\>Ping 192.168.0.19

Request timed out.

- In the case of abnormal end

In the case of abnormal end, check the following and execute the ping command again.

Cable connecting condition

Parameter settings

Operation state of the CRnD-700. (faulty or not)

IP address of the CRnD-700 specified by the ping command

27 Settable device range

This chapter describes the range of devices settable in GT Designer3.
The settable range varies with the selection for [Controller Type] in the [Controller Setting] window.
Configure the device setting according to the specifications of the controller to be used.
Device specifications differ depending on the controller model even among the controllers of the same series.
If a nonexistent device or a device number out of the range is set for an object, other objects for which correct devices are set may not be monitored.

27.1 Device setting dialog (Mitsubishi Electric equipment)

For the device setting dialog, refer to the following.
☞ Page 1189 Device setting dialog (Mitsubishi Electric equipment)

27.2 [MELSEC iQ-R, RnMT/NC/RT, CR800-D]

For the device, refer to the following.
☞ Page 1223 [MELSEC iQ-R, RnMT/NC/RT, CR800-D]

27.3 [MELSEC-Q/QS, Q17nD/M/NC/DR/DSR, CRnD-700]

For the device, refer to the following.
☞ Page 1329 [MELSEC-Q/QS, Q17nD/M/NC/DR/DSR, CRnD-700]

PART 8 Mitsubishi Electric CNC

28 CC-Link connection (intelligent device station)

28 CC-Link connection (intelligent device station)

☞ Page 1944 M700VS/M70V series (CC-Link connection (intelligent device station))
☞ Page 1952 M800/M80 series (CC-Link connection (intelligent device station))

28.1 M700VS/M70V series (CC-Link connection (intelligent device station))

☞ Page 1944 Connectable devices
☞ Page 1945 System configuration
☞ Page 1946 GOT side settings
☞ Page 1951 CNC side settings

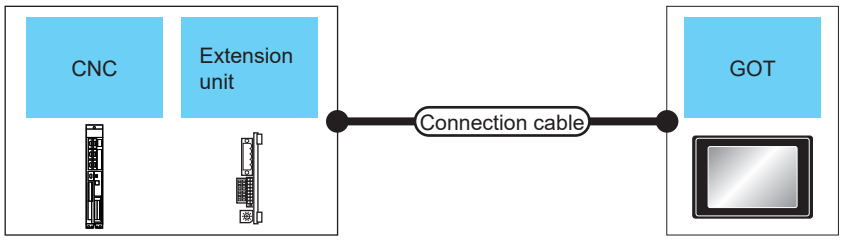
28.1.1 Connectable devices

The following table shows the connectable models.

○: Supported, —: Not supported

Controller	Model	Clock	CNC side interface	Connectable model
			CC-Link module	
M700VS/M70V series	M700VS M70V	—	FCU7-HN746	GT37 SoftGOT3000

28.1.2 System configuration



For details on the maximum length of the connection cable, refer to the following.

☞ Page 1945 Maximum length

For details on the maximum number of connected devices, refer to the following.

☞ Page 1945 Maximum number of connected devices

CNC		Communication type	Connection cable	GOT	
Controller	Interface			Interface	Model
M700VS*3 M70V*3	FCU7-HN746	CC-Link(ID)	CC-Link dedicated cable*2	GT37-IF2000 + GT15-J61BT13*1	GT37 SoftGOT3000

*1 In the controller settings, set the mode to Ver.1.
For details on settings, refer to the following.
☞ Page 1946 [Controller Setting]

*2 For the specifications and inquiries of the CC-Link dedicated cable, refer to the following.
CC-Link Partner Association's home page: http://www.cc-link.org/

*3 In the controller settings, set the transmission method to cyclic.
☞ Page 1946 [Controller Setting]

Precautions

■Starting the GOT connected to CNC (CC-Link connection (intelligent device station))

For the CNC connection (CC-Link connection (intelligent device station)), the data link is started approximately 10 seconds after the GOT startup.

■When a network error occurs in the system alarm

In the CNC connection (CC-Link connection (intelligent device station)), when a network error occurs in the system alarm, the system alarm display cannot be canceled even though the causes are removed.
To cancel the system alarm display, restart the GOT.

Maximum length

The overall cable length and cable length between stations vary depending on the conditions such as the type of the cable used and the total number of stations.
For details, refer to the following manuals.

📖M700V Series Specifications Manual IB-1500916(ENG)

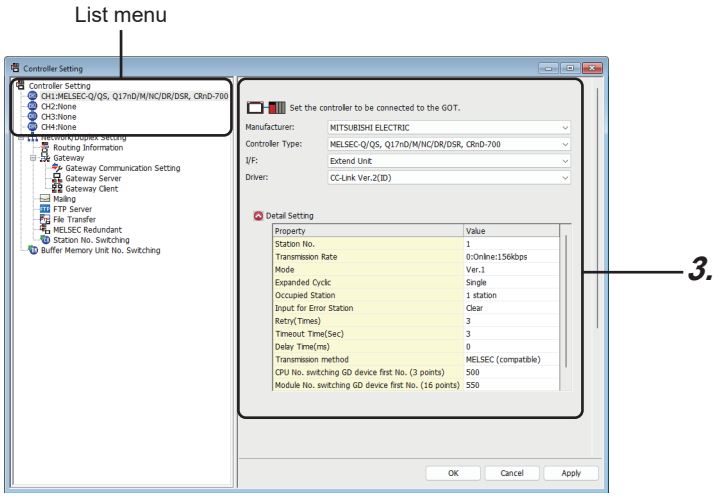
📖M70V Series Specifications Manual IB-1500954(ENG)

Maximum number of connected devices

26 GOTs can access one CNC at a time.

28.1.3 GOT side settings

[Controller Setting]



Operating procedure

1. Select [Common] → [Controller Setting] from the menu.
2. In the [Controller Setting] window, select the channel number to be used from the list menu.
3. Set the following items.

Item	Description
[Manufacturer]	[MITSUBISHI ELECTRIC]
[Controller Type]	[MELSEC-Q/QS, Q17nD/M/NC/DR, CRnD-700]
[I/F]	[Extend Unit]
[Driver]	[CC-Link Ver.2(ID)]
[Detail Setting]	Configure the settings according to the usage environment. ☞ Page 1947 [Detail Setting]

4. When you have completed the settings, click the [OK] button.

Point

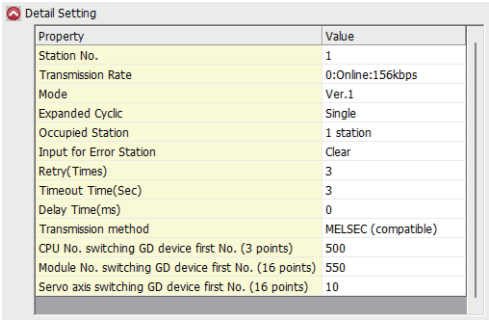
The controller settings can be checked in [I/F Communication Setting].
For details, refer to the following.
📖GT Designer3 (GOT3000) Screen Design Manual

Precautions

To monitor a CNC device, set the CPU number to match the CNC CPU number in the GT Designer3 window for device settings.

■[Detail Setting]

Configure the settings according to the usage environment.



Item	Description	Range
[Station No.]	Set the station number of the GOT.	[1] to [64]
[Transmission Rate][*1]	Set the transmission speed and a mode of the GOT.	[0:Online:156kbps] to [E:Hardware Test:10Mbps]
[Mode]	Set the CC-Link mode.	[Ver.1], [Ver.2], [Additional], [Offline]
[Expanded Cyclic]	Set the cyclic point expansion.	[Single], [Double], [Quadruple], [Octuple]
[Occupied Station]	Set the number of stations occupied by the GOT.	[1 Station], [4 Stations]
[Input for Error Station]	Set whether to clear or hold the error at an error occurrence.	[Clear], [Hold]
[Retry]	Set the number of retries to be performed when a communication timeout occurs. When receiving no response after retries, the communication times out.	[0] times to [5] times
[Timeout Time]	Set the time period for a communication to time out.	[1] second to [90] seconds
[Delay Time]	Set the delay time for reducing the load of the network and destination PLC.	[0] ms to [300] ms
[Transmission method][*2]	Set the CC-Link transmission method.	[MELSEC (compatible)], [Cyclic]
[CPU No. switching GD device first No. (3 points)]	Set the start device number of the GD devices for CPU number switching. For details, refer to the following. ☞ Page 1949 Start device number of the GD devices for CPU number switching	[0] to [65520]
[Module No. switching GD device first No. (16 points)]	Set the start device number of the GD devices for module number switching. For details, refer to the following. ☞ Page 1950 Start device number of the GD devices for module number switching	[0] to [65520]
[Servo axis switching GD device first No. (16 points)]	Set the start device number of the GD devices for servo axis switching. For details, refer to the following. ☞ Page 1951 Start device number of the GD devices for servo axis switching	[0] to [65520]

*1 Transmission speed settings
The following lists the transmission speed settings of the CC-Link communication.

Setting value	Description
0	Online: 156kbps
1	Online: 625kbps
2	Online: 2.5Mbps
3	Online: 5Mbps
4	Online: 10Mbps
5	Line test: 156kbps
6	Line test: 625kbps
7	Line test: 2.5Mbps
8	Line test: 5Mbps
9	Line test: 10Mbps
A	Hardware test: 156kbps
B	Hardware test: 625kbps
C	Hardware test: 2.5Mbps
D	Hardware test: 5Mbps
E	Hardware test: 10Mbps

For details on the hardware test, refer to the following manual.
📖Master/Local Module User's Manual of the CC-Link module to be used

*2 Set to [Cyclic] when connecting to the M700VS/M70V series.

Precautions

■Using cyclic transmission

• I/O signal for master station

Do not turn on the reserved output signals in the output signals (remote output: RY) to the GOT from the master station.
When the reserved output signal is turned on, the CNC system may be malfunctioned.
For the assignment of I/O signals in the GOT, refer to the following manuals.
📖MODEL GT15-J61BT13 CC-Link communication unit User's Manual
📖GT15 CC-Link communication unit User's Manual

• CC-Link mode

The compatible CC-Link version differs depending on the CNC model.
M700VS/M70V: Ver.2, Ver.1
M800/M80: Ver.2, Ver.1

• When the GOT malfunctions

The cyclic output status remains the same as before becoming faulty.

■For transient transmission

• Access range for monitoring

The GOT can access to the CNC mounting the master and local station of the CC-Link system.
It cannot access another network via the CC-Link module.

■Start device number of the GD devices for CPU number switching

• Indirect specification of a CPU number

[CPU No.] can be indirectly specified with the GOT internal registers (GD devices) by specifying a value (100 to 102) to [CPU No.] in the device setting dialog in GT Designer3.

Set the start device number of the GD devices to be used in [CPU No. switching GD device first No. (3 points)].

[CPU No.] is specified with three consecutive GD devices, starting from the set device number.

When [500] is set to [CPU No. switching GD device first No. (3 points)], GD500 to GD502 are used to specify [CPU No.] as shown in the following table.

CPU No.	GD device	Setting range
100	GD500	1 to 4 Setting a value outside the range causes a communication timeout error. Specifying a nonexistent CPU number or a CPU number not supporting a multiple CPU system with a device causes a controller error.
101	GD501	
102	GD502	

• Indirect specification of a CPU number on the initially displayed screen

Set [CPU No. switching GD device first No. (3 points)] so that the values of the GD devices are retained and monitored upon the GOT startup.

• Indirect specification of a CPU number for multi-channel connection

If the setting range of [CPU No. switching GD device first No. (3 points)] set for each channel overlaps, the monitoring target CPU number set to each channel is switched simultaneously.

Set [CPU No. switching GD device first No. (3 points)] for each channel so that the setting range does not overlap.

• Indirect specification of a station number and a CPU number for multi-channel connection

When GD10 to GD25 are used to specify the station number of an inverter or non-Mitsubishi temperature controller connected, setting [10] to [CPU No. switching GD device first No. (3 points)] in a different channel switches the monitoring target CPU number and station number of an inverter or non-Mitsubishi temperature controller set to each channel simultaneously.

Set [CPU No. switching GD device first No. (3 points)] so that the setting range does not overlap the station number of an inverter or non-Mitsubishi temperature controller.

■Start device number of the GD devices for module number switching

• Indirect specification of a module number

For connection via a Simple Motion module, [Unit No.] can be specified with the GOT internal registers (GD devices) by specifying a value (100 to 10F) to [Unit No.] in the device setting dialog in GT Designer3.

Set the start device number of the GD devices to be used in [Module No. switching GD device first No. (16 points)].

[Unit No.] is specified with 16 consecutive GD devices, starting from the set device number.

When [550] is set to [Module No. switching GD device first No. (16 points)], GD550 to GD565 are used to specify [Unit No.] as shown in the following table.

Module No.	GD device	Setting range
100	GD550	00 to FF Setting a value outside the above range causes a device range error.
101	GD551	
102	GD552	
103	GD553	
104	GD554	
105	GD555	
106	GD556	
107	GD557	
108	GD558	
109	GD559	
10A	GD560	
10B	GD561	
10C	GD562	
10D	GD563	
10E	GD564	
10F	GD565	

• Indirect specification of a module number on the initially displayed screen

Set [Module No. switching GD device first No. (16 points)] so that the values of the GD devices are retained and monitored upon the GOT startup.

• Indirect specification of a module number for multi-channel connection

If the setting range of [Module No. switching GD device first No. (16 points)] set for each channel overlaps, the module number of the Simple Motion module via the servo amplifier device of each channel is switched simultaneously.

Set [Module No. switching GD device first No. (16 points)] for each channel so that the setting range does not overlap.

• Indirect specification of a station number and a module number for multi-channel connection

When GD10 to GD25 are used to specify the station number of an inverter or non-Mitsubishi temperature controller connected, setting [10] to [Module No. switching GD device first No. (16 points)] switches the module number of the Simple Motion module via the servo amplifier device and the station number of an inverter or non-Mitsubishi temperature controller set to each channel simultaneously.

Set [Module No. switching GD device first No. (16 points)] so that the setting range does not overlap the station number of an inverter or non-Mitsubishi temperature controller.

■Start device number of the GD devices for servo axis switching

• Indirect specification of a servo axis number

For connection via a Motion CPU or Simple Motion module, a servo axis number can be indirectly specified with GOT internal registers (GD devices) by specifying a value (100 to 115) to the axis number of the servo amplifier device.

Set the start device number of the GD devices to be used in [Servo axis switching GD device first No. (16 points)].

Specify a servo axis number with 16 consecutive GD devices, starting the set device number.

When [10] is set to [Servo axis switching GD device first No. (16 points)], GD10 to GD25 are used to specify a servo axis number as shown in the following table.

Servo axis No.	GD device	Setting range
100	GD10	1 to 64 Setting a value outside the above range causes a device range error.
101	GD11	
102	GD12	
103	GD13	
104	GD14	
105	GD15	
106	GD16	
107	GD17	
108	GD18	
109	GD19	
110	GD20	
111	GD21	
112	GD22	
113	GD23	
114	GD24	
115	GD25	

• Indirect specification of a servo axis number on the initially displayed screen

Set [Servo axis switching GD device first No. (16 points)] so that the values of the GD devices are retained and monitored upon the GOT startup.

• Indirect specification of a servo axis number for multi-channel connection

If the setting rage of [Servo axis switching GD device first No. (16 points)] set for each channel overlaps, the axis number of the servo amplifier of each channel is switched simultaneously.

Set [Servo axis switching GD device first No. (16 points)] for each channel so that the setting range does not overlap.

• Indirect specification of a station number and a servo axis number for multi-channel connection

When GD10 to GD25 are used to specify the station number of an inverter or non-Mitsubishi temperature controller connected, setting [10] to [Servo axis switching GD device first No. (16 points)] switches the axis number of the servo amplifier and the station number of an inverter or non-Mitsubishi temperature controller set to each channel simultaneously.

Set [Servo axis switching GD device first No. (16 points)] so that the setting range does not overlap the station number of an inverter or non-Mitsubishi temperature controller.

28.1.4 CNC side settings

For details on the CC-Link settings of the M700VS/M70V series, contact our company.

28.2 M800/M80 series (CC-Link connection (intelligent device station))

☞ Page 1952 Connectable devices
☞ Page 1953 System configuration
☞ Page 1954 GOT side settings
☞ Page 1959 CNC side settings

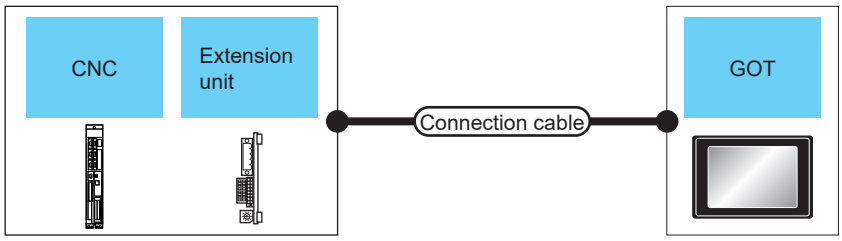
28.2.1 Connectable devices

The following table shows the connectable models.

○: Supported, —: Not supported

Controller	Model	Clock	CNC side interface		Connectable model
			Function extension relay module	CC-Link extension module	
M800/M80 series	M800W/M80W	—	—	FCU8-EX561	GT37 SoftGOT3000
	M80/M800S	—	FCU8-EX702 or FCU8-EX703	FCU8-EX561	GT37 SoftGOT3000

28.2.2 System configuration



For details on the maximum length of the connection cable, refer to the following.

☞ Page 1953 Maximum length

For details on the maximum number of connected devices, refer to the following.

☞ Page 1953 Maximum number of connected devices

CNC		Communication type	Connection cable	GOT	
Controller	Interface			Interface	Model
M800W/M80W*3*4	FCU8-EX561(WN561)	CC-Link(ID)	CC-Link dedicated cable*2	GT37-IF2000 + GT15-J61BT13*1	GT37 SoftGOT3000
M80/M800S*3*4	FCU8-EX702 or FCU8-EX703 + FCU8-EX561(WN561)				

*1 In the controller settings, set the mode to Ver.1.
For details on settings, refer to the following.
☞ Page 1954 [Controller Setting]

*2 For the specifications and inquiries of the CC-Link dedicated cable, refer to the following.
CC-Link Partner Association's home page: http://www.cc-link.org/

*3 In the controller settings, set the transmission method to cyclic.
☞ Page 1954 [Controller Setting]

*4 Use a CNC with the following software version.

Controller	Software version
M800W	BND-2005W000-C6
M80W	BND-2008W000-C6
M80	BND-2007W000-C6
M800S	BND-2006W000-C6

Precautions

■Starting the GOT connected to CNC (CC-Link connection (intelligent device station))

For the CNC connection (CC-Link connection (intelligent device station)), the data link is started approximately 10 seconds after the GOT startup.

■When a network error occurs in the system alarm

In the CNC connection (CC-Link connection (intelligent device station)), when a network error occurs in the system alarm, the system alarm display cannot be canceled even though the causes are removed.
To cancel the system alarm display, restart the GOT.

Maximum length

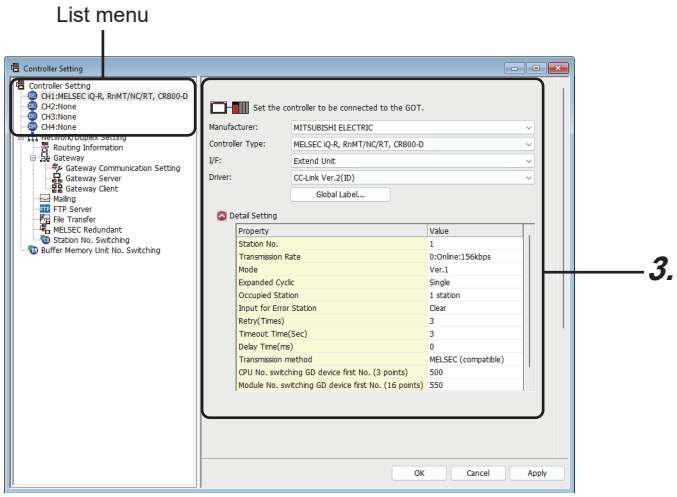
The overall cable length and cable length between stations vary depending on the conditions such as the type of the cable used and the total number of stations.
For details, refer to the following manual.
📖M800/M80/E80/C80 Series Specifications Manual (Function) IB-1501505(ENG)

Maximum number of connected devices

26 GOTs can access one CNC at a time.

28.2.3 GOT side settings

[Controller Setting]



Operating procedure

1. Select [Common] → [Controller Setting] from the menu.

2. In the [Controller Setting] window, select the channel number to be used from the list menu.

3. Set the following items.

Item	Description
[Manufacturer]	[MITSUBISHI ELECTRIC]
[Controller Type]	[MELSEC iQ-R, RnMT/NC/RT, CR800-D]
[I/F]	[Extend Unit]
[Driver]	[CC-Link Ver.2(ID)]
[Detail Setting]	Configure the settings according to the usage environment. ☞ Page 1955 [Detail Setting]

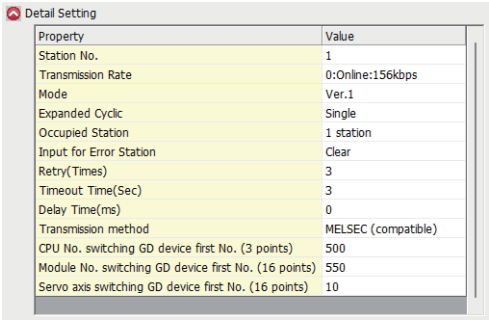
4. When you have completed the settings, click the [OK] button.

Point

The controller settings can be checked in [I/F Communication Setting].
For details, refer to the following.
📖GT Designer3 (GOT3000) Screen Design Manual

■[Detail Setting]

Configure the settings according to the usage environment.



Detail Setting

Property	Value
Station No.	1
Transmission Rate	0:Online:156kbps
Mode	Ver.1
Expanded Cyclic	Single
Occupied Station	1 station
Input for Error Station	Clear
Retry(Times)	3
Timeout Time(Sec)	3
Delay Time(ms)	0
Transmission method	MELSEC (compatible)
CPU No. switching GD device first No. (3 points)	500
Module No. switching GD device first No. (16 points)	550
Servo axis switching GD device first No. (16 points)	10

Item	Description	Range
[Station No.]	Set the station number of the GOT.	[1] to [64]
[Transmission Rate][*1]	Set the transmission speed and a mode of the GOT.	[0:Online:156kbps] to [E:Hardware Test:10Mbps]
[Mode]	Set the CC-Link mode.	[Ver.1], [Ver.2], [Additional], [Offline]
[Expanded Cyclic]	Set the cyclic point expansion.	[Single], [Double], [Quadruple], [Octuple]
[Occupied Station]	Set the number of stations occupied by the GOT.	[1 Station], [4 Stations]
[Input for Error Station]	Set whether to clear or hold the error at an error occurrence.	[Clear], [Hold]
[Retry]	Set the number of retries to be performed when a communication timeout occurs. When receiving no response after retries, the communication times out.	[0] times to [5] times
[Timeout Time]	Set the time period for a communication to time out.	[1] second to [90] seconds
[Delay Time]	Set the delay time for reducing the load of the network and destination PLC.	[0] ms to [300] ms
[Transmission method][*2]	Set the CC-Link transmission method.	[MELSEC (compatible)], [Cyclic]
[CPU No. switching GD device first No. (3 points)]	Set the start device number of the GD devices for CPU number switching. For details, refer to the following. ☞ Page 1957 Start device number of the GD devices for CPU number switching	[0] to [65520]
[Module No. switching GD device first No. (16 points)]	Set the start device number of the GD devices for module number switching. For details, refer to the following. ☞ Page 1958 Start device number of the GD devices for module number switching	[0] to [65520]
[Servo axis switching GD device first No. (16 points)]	Set the start device number of the GD devices for servo axis switching. For details, refer to the following. ☞ Page 1959 Start device number of the GD devices for servo axis switching	[0] to [65520]

*1 Transmission speed settings
The following lists the transmission speed settings of the CC-Link communication.

Setting value	Description
0	Online: 156kbps
1	Online: 625kbps
2	Online: 2.5Mbps
3	Online: 5Mbps
4	Online: 10Mbps
5	Line test: 156kbps
6	Line test: 625kbps
7	Line test: 2.5Mbps
8	Line test: 5Mbps
9	Line test: 10Mbps
A	Hardware test: 156kbps
B	Hardware test: 625kbps
C	Hardware test: 2.5Mbps
D	Hardware test: 5Mbps
E	Hardware test: 10Mbps

For details on the hardware test, refer to the following manual.
📖Master/Local Module User's Manual of the CC-Link module to be used

*2 Set to [Cyclic] when connecting to the M800/M80 series.

Precautions

■Using cyclic transmission

• I/O signal for master station

Do not turn on the reserved output signals in the output signals (remote output: RY) to the GOT from the master station.
When the reserved output signal is turned on, the CNC system may be malfunctioned.
For the assignment of I/O signals in the GOT, refer to the following manuals.
📖MODEL GT15-J61BT13 CC-Link communication unit User's Manual
📖GT15 CC-Link communication unit User's Manual

• CC-Link mode

The compatible CC-Link version differs depending on the CNC model.
M700VS/M70V: Ver.2, Ver.1
M800/M80: Ver.2, Ver.1

• When the GOT malfunctions

The cyclic output status remains the same as before becoming faulty.

■For transient transmission

• Access range for monitoring

The GOT can access to the CNC mounting the master and local station of the CC-Link system.
It cannot access another network via the CC-Link module.

■Start device number of the GD devices for CPU number switching

• Indirect specification of a CPU number

[CPU No.] can be indirectly specified with the GOT internal registers (GD devices) by specifying a value (100 to 102) to [CPU No.] in the device setting dialog in GT Designer3.

Set the start device number of the GD devices to be used in [CPU No. switching GD device first No. (3 points)].

[CPU No.] is specified with three consecutive GD devices, starting from the set device number.

When [500] is set to [CPU No. switching GD device first No. (3 points)], GD500 to GD502 are used to specify [CPU No.] as shown in the following table.

CPU No.	GD device	Setting range
100	GD500	1 to 4 Setting a value outside the range causes a communication timeout error. Specifying a nonexistent CPU number or a CPU number not supporting a multiple CPU system with a device causes a controller error.
101	GD501	
102	GD502	

• Indirect specification of a CPU number on the initially displayed screen

Set [CPU No. switching GD device first No. (3 points)] so that the values of the GD devices are retained and monitored upon the GOT startup.

• Indirect specification of a CPU number for multi-channel connection

If the setting range of [CPU No. switching GD device first No. (3 points)] set for each channel overlaps, the monitoring target CPU number set to each channel is switched simultaneously.

Set [CPU No. switching GD device first No. (3 points)] for each channel so that the setting range does not overlap.

• Indirect specification of a station number and a CPU number for multi-channel connection

When GD10 to GD25 are used to specify the station number of an inverter or non-Mitsubishi temperature controller connected, setting [10] to [CPU No. switching GD device first No. (3 points)] in a different channel switches the monitoring target CPU number and station number of an inverter or non-Mitsubishi temperature controller set to each channel simultaneously.

Set [CPU No. switching GD device first No. (3 points)] so that the setting range does not overlap the station number of an inverter or non-Mitsubishi temperature controller.

■Start device number of the GD devices for module number switching

• Indirect specification of a module number

For connection via a Simple Motion module, [Unit No.] can be specified with the GOT internal registers (GD devices) by specifying a value (100 to 10F) to [Unit No.] in the device setting dialog in GT Designer3.

Set the start device number of the GD devices to be used in [Module No. switching GD device first No. (16 points)].

[Unit No.] is specified with 16 consecutive GD devices, starting from the set device number.

When [550] is set to [Module No. switching GD device first No. (16 points)], GD550 to GD565 are used to specify [Unit No.] as shown in the following table.

Module No.	GD device	Setting range
100	GD550	00 to FF Setting a value outside the above range causes a device range error.
101	GD551	
102	GD552	
103	GD553	
104	GD554	
105	GD555	
106	GD556	
107	GD557	
108	GD558	
109	GD559	
10A	GD560	
10B	GD561	
10C	GD562	
10D	GD563	
10E	GD564	
10F	GD565	

• Indirect specification of a module number on the initially displayed screen

Set [Module No. switching GD device first No. (16 points)] so that the values of the GD devices are retained and monitored upon the GOT startup.

• Indirect specification of a module number for multi-channel connection

If the setting range of [Module No. switching GD device first No. (16 points)] set for each channel overlaps, the module number of the Simple Motion module via the servo amplifier device of each channel is switched simultaneously.

Set [Module No. switching GD device first No. (16 points)] for each channel so that the setting range does not overlap.

• Indirect specification of a station number and a module number for multi-channel connection

When GD10 to GD25 are used to specify the station number of an inverter or non-Mitsubishi temperature controller connected, setting [10] to [Module No. switching GD device first No. (16 points)] switches the module number of the Simple Motion module via the servo amplifier device and the station number of an inverter or non-Mitsubishi temperature controller set to each channel simultaneously.

Set [Module No. switching GD device first No. (16 points)] so that the setting range does not overlap the station number of an inverter or non-Mitsubishi temperature controller.

■Start device number of the GD devices for servo axis switching

• Indirect specification of a servo axis number

For connection via a Motion CPU or Simple Motion module, a servo axis number can be indirectly specified with GOT internal registers (GD devices) by specifying a value (100 to 115) to the axis number of the servo amplifier device.

Set the start device number of the GD devices to be used in [Servo axis switching GD device first No. (16 points)].

Specify a servo axis number with 16 consecutive GD devices, starting the set device number.

When [10] is set to [Servo axis switching GD device first No. (16 points)], GD10 to GD25 are used to specify a servo axis number as shown in the following table.

Servo axis No.	GD device	Setting range
100	GD10	1 to 64 Setting a value outside the above range causes a device range error.
101	GD11	
102	GD12	
103	GD13	
104	GD14	
105	GD15	
106	GD16	
107	GD17	
108	GD18	
109	GD19	
110	GD20	
111	GD21	
112	GD22	
113	GD23	
114	GD24	
115	GD25	

• Indirect specification of a servo axis number on the initially displayed screen

Set [Servo axis switching GD device first No. (16 points)] so that the values of the GD devices are retained and monitored upon the GOT startup.

• Indirect specification of a servo axis number for multi-channel connection

If the setting rage of [Servo axis switching GD device first No. (16 points)] set for each channel overlaps, the axis number of the servo amplifier of each channel is switched simultaneously.

Set [Servo axis switching GD device first No. (16 points)] for each channel so that the setting range does not overlap.

• Indirect specification of a station number and a servo axis number for multi-channel connection

When GD10 to GD25 are used to specify the station number of an inverter or non-Mitsubishi temperature controller connected, setting [10] to [Servo axis switching GD device first No. (16 points)] switches the axis number of the servo amplifier and the station number of an inverter or non-Mitsubishi temperature controller set to each channel simultaneously.

Set [Servo axis switching GD device first No. (16 points)] so that the setting range does not overlap the station number of an inverter or non-Mitsubishi temperature controller.

28.2.4 CNC side settings

For details on the CC-Link settings of the M800/M80 series, contact our company.

PART 9 AZBIL equipment

29 Control equipment (serial connection)

30 Settable device range

29 Control equipment (serial connection)

☞ Page 1961 Connectable devices
☞ Page 1962 System configuration
☞ Page 1972 Connection diagram
☞ Page 1979 GOT side settings
☞ Page 1982 Control equipment side settings

29.1 Connectable devices

The following table shows the connectable models.

○: Supported, —: Not supported

Controller	Model	Clock	Communication type	Connectable model
DMC	DMC10	—	RS-232 RS-485	GT37 SoftGOT3000
SDC	SDC15	—	RS-232 RS-485	GT37 SoftGOT3000
	SDC35 SDC36	—	RS-232 RS-485	GT37 SoftGOT3000
	SDC40A SDC40B SDC40G	—	RS-232 RS-485	GT37 SoftGOT3000

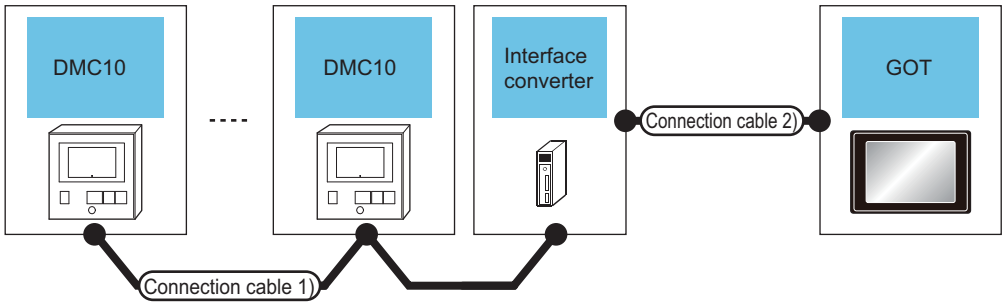
29.2 System configuration

☞ Page 1962 Connection to DMC10
☞ Page 1964 Connection to SDC15
☞ Page 1966 Connection to SDC35 or SDC36
☞ Page 1968 Connection to SDC40A, SDC40B, or SDC40G

29.2.1 Connection to DMC10

☞ Page 1962 When using a converter
☞ Page 1963 Direct connection

When using a converter



For details on the maximum number of connected devices, refer to the following.

☞ Page 1962 Maximum number of connected devices

Temperature controller	Connection cable 1)		Converter*1		Connection cable 2)		GOT	
Model	Cable model Connection diagram number	Maximum length	Model	Communication type	Cable model Connection diagram number	Maximum length	Interface	Model
DMC10	User preparing Page 1973 RS-485 connection diagram (1)	500 m	CMC10L	RS-232	User preparing Page 1972 RS-232 connection diagram (1)	15 m	Built-in RS-232 interface + GT35-C02HR2-9P	GT37 SoftGOT3000
							GT37-IF2000 + GT15-RS2-9P	GT37 SoftGOT3000

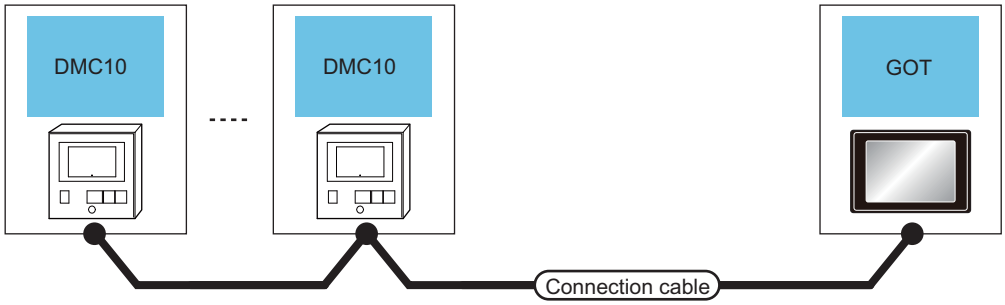
*1 Product manufactured by Azbil Corporation.
For details on the product, contact Azbil Corporation.

■Maximum number of connected devices

The following shows the number of connectable GOTs.

Controller	GOT	
Model	Model	Number of connectable controllers per GOT channel
DMC10	GT37 SoftGOT3000	31

Direct connection



For details on the maximum number of connected devices, refer to the following.

☞ Page 1963 Maximum number of connected devices

Temperature controller		Connection cable		GOT	
Model	**Communication type**	**Cable model Connection diagram number**	**Maximum length**	**Interface**	**Model**
DMC10	RS-485	User preparing Page 1976 RS-485 connection diagram (7)	500 m	Built-in RS-485 interface	GT37 SoftGOT3000
			500 m	GT37-IF2000 + GT15-RS4-9S	GT37 SoftGOT3000
		User preparing Page 1974 RS-485 connection diagram (4)	500 m	GT37-IF2000 + GT15-RS4-TE	GT37 SoftGOT3000
		User preparing Page 1973 RS-485 connection diagram (2)	500 m*1	FA-LTBGT2R4CBL05 (0.5 m)*2 FA-LTBGT2R4CBL10 (1 m)*2 FA-LTBGT2R4CBL20 (2 m)*2	GT37 SoftGOT3000

*1 Including the cable length of the option devices.
*2 Product manufactured by MITSUBISHI ELECTRIC ENGINEERING COMPANY LIMITED.
For details on the product, contact MITSUBISHI ELECTRIC ENGINEERING COMPANY LIMITED.

■Maximum number of connected devices

The following shows the number of connectable GOTs.

Controller	GOT	
Model	**Model**	**Number of connectable controllers per GOT channel**
DMC10	GT37 SoftGOT3000	16

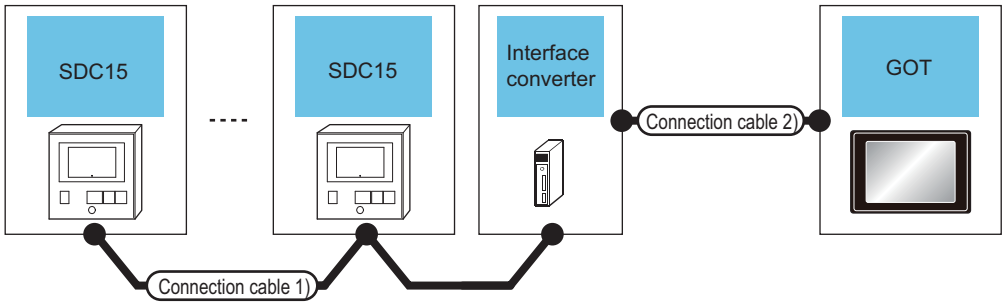
29.2.2 Connection to SDC15

☞ Page 1964 When using a converter
☞ Page 1965 Direct connection

Precautions

Make sure to establish the temperature controller system with at least one station.
☞ Page 1980 [Detail Setting]

When using a converter



For details on the maximum number of connected devices, refer to the following.
☞ Page 1964 Maximum number of connected devices

Temperature controller	Connection cable 1)		Converter*1		Connection cable 2)		GOT	
Model	Cable model Connection diagram number	Maximum length	Model	Communication type	Cable model Connection diagram number	Maximum length	Interface	Model
SDC15	User preparing Page 1973 RS-485 connection diagram (1)	500 m	CMC10L	RS-232	User preparing Page 1972 RS-232 connection diagram (1)	15 m	Built-in RS-232 interface + GT35-C02HR2-9P	GT37 SoftGOT3000
							GT37-IF2000 + GT15-RS2-9P	GT37 SoftGOT3000

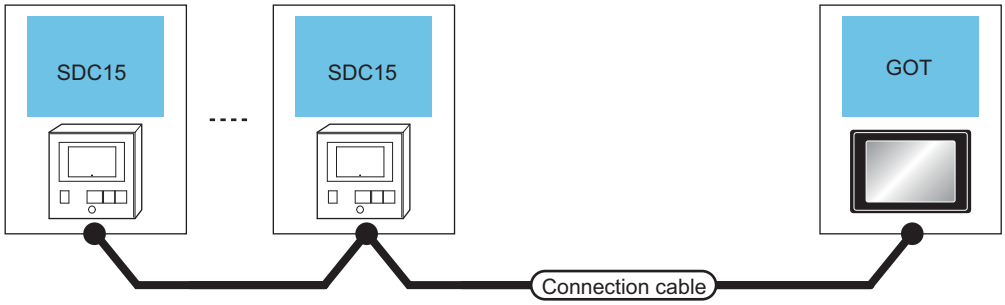
*1 Product manufactured by Azbil Corporation.
For details on the product, contact Azbil Corporation.

■Maximum number of connected devices

The following shows the number of connectable GOTs.

Controller	GOT	
Model	Model	Number of connectable controllers per GOT channel
SDC15	GT37 SoftGOT3000	31

Direct connection



For details on the maximum number of connected devices, refer to the following.

☞ Page 1965 Maximum number of connected devices

Temperature controller		Connection cable		GOT	
Model	**Communication type**	**Cable model Connection diagram number**	**Maximum length**	**Interface**	**Model**
SDC15	RS-485	User preparing Page 1976 RS-485 connection diagram (7)	500 m	Built-in RS-485 interface	GT37 SoftGOT3000
				GT37-IF2000 + GT15-RS4-9S	GT37 SoftGOT3000
		User preparing Page 1974 RS-485 connection diagram (4)	500 m	GT37-IF2000 + GT15-RS4-TE	GT37 SoftGOT3000
		User preparing Page 1973 RS-485 connection diagram (2)	500 m*1	FA-LTBGT2R4CBL05 (0.5 m)*2 FA-LTBGT2R4CBL10 (1 m)*2 FA-LTBGT2R4CBL20 (2 m)*2	GT37 SoftGOT3000

*1 Including the cable length of the option devices.
*2 Product manufactured by MITSUBISHI ELECTRIC ENGINEERING COMPANY LIMITED.
For details on the product, contact MITSUBISHI ELECTRIC ENGINEERING COMPANY LIMITED.

■Maximum number of connected devices

The following shows the number of connectable GOTs.

Controller	GOT	
Model	**Model**	**Number of connectable controllers per GOT channel**
SDC15	GT37 SoftGOT3000	31

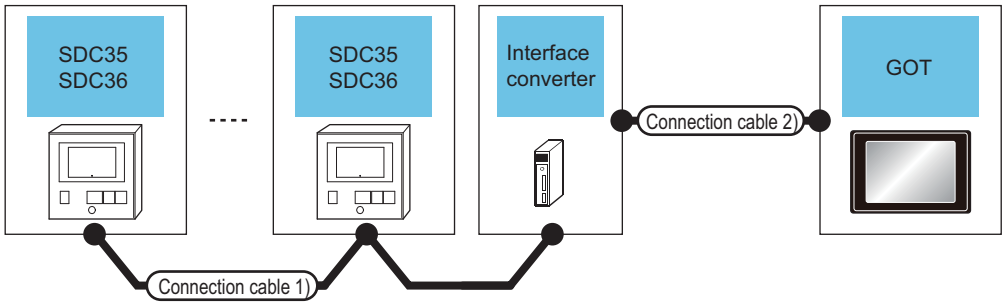
29.2.3 Connection to SDC35 or SDC36

☞ Page 1966 When using a converter
☞ Page 1967 Direct connection

Precautions

Make sure to establish the temperature controller system with at least one station.
☞ Page 1980 [Detail Setting]

When using a converter



For details on the maximum number of connected devices, refer to the following.
☞ Page 1966 Maximum number of connected devices

Temperature controller	Connection cable 1)		Converter*1		Connection cable 2)		GOT	
Model	Cable model Connection diagram number	Maximum length	Model	Communication type	Cable model Connection diagram number	Maximum length	Interface	Model
SDC35 SDC36	User preparing Page 1973 RS-485 connection diagram (1)	500 m	CMC10L	RS-232	User preparing Page 1972 RS-232 connection diagram (1)	15 m	Built-in RS-232 interface + GT35-C02HR2-9P	GT37 SoftGOT3000
							GT37-IF2000 + GT15-RS2-9P	GT37 SoftGOT3000

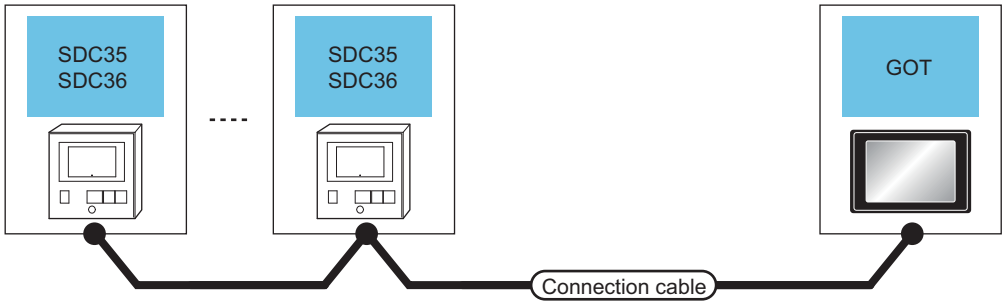
*1 Product manufactured by Azbil Corporation.
For details on the product, contact Azbil Corporation.

■Maximum number of connected devices

The following shows the number of connectable GOTs.

Controller	GOT	
Model	Model	Number of connectable controllers per GOT channel
SDC35 SDC36	GT37 SoftGOT3000	31

Direct connection



For details on the maximum number of connected devices, refer to the following.

☞ Page 1967 Maximum number of connected devices

Temperature controller		Connection cable		GOT	
Model	**Communication type**	**Cable model Connection diagram number**	**Maximum length**	**Interface**	**Model**
SDC35 SDC36	RS-485	User preparing Page 1976 RS-485 connection diagram (7)	500 m	Built-in RS-485 interface	GT37 SoftGOT3000
				GT37-IF2000 + GT15-RS4-9S	GT37 SoftGOT3000
		User preparing Page 1974 RS-485 connection diagram (4)	500 m	GT37-IF2000 + GT15-RS4-TE	GT37 SoftGOT3000
		User preparing Page 1973 RS-485 connection diagram (2)	500 m*1	FA-LTBGT2R4CBL05 (0.5 m)*2 FA-LTBGT2R4CBL10 (1 m)*2 FA-LTBGT2R4CBL20 (2 m)*2	GT37 SoftGOT3000

*1 Including the cable length of the option devices.
*2 Product manufactured by MITSUBISHI ELECTRIC ENGINEERING COMPANY LIMITED.
For details on the product, contact MITSUBISHI ELECTRIC ENGINEERING COMPANY LIMITED.

■Maximum number of connected devices

The following shows the number of connectable GOTs.

Controller	GOT	
Model	**Model**	**Number of connectable controllers per GOT channel**
SDC35 SDC36	GT37 SoftGOT3000	31

29.2.4 Connection to SDC40A, SDC40B, or SDC40G

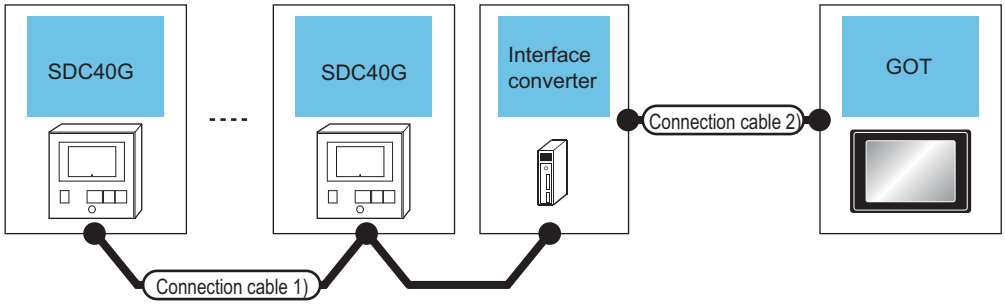
☞ Page 1968 When using a converter (SDC40G)
☞ Page 1969 Direct connection to one temperature controller (SDC40A or SDC40B)
☞ Page 1970 Direct connection to multiple temperature controllers (SDC40A, SDC40B, or SDC40G)

Precautions

Make sure to establish the temperature controller system with at least one station.

☞ Page 1980 [Detail Setting]

When using a converter (SDC40G)



For details on the maximum number of connected devices, refer to the following.

☞ Page 1968 Maximum number of connected devices

Temperature controller	Connection cable 1)		Converter*1		Connection cable 2)		GOT	
Model	Cable model Connection diagram number	Maximum length	Model	Communication type	Cable model Connection diagram number	Maximum length	Interface	Model
SDC40G	User preparing Page 1973 RS-485 connection diagram (1)	500 m	CMC10L	RS-232	User preparing Page 1972 RS-232 connection diagram (1)	15 m	Built-in RS-232 interface + GT35-C02HR2-9P	GT37 SoftGOT3000
							GT37-IF2000 + GT15-RS2-9P	GT37 SoftGOT3000

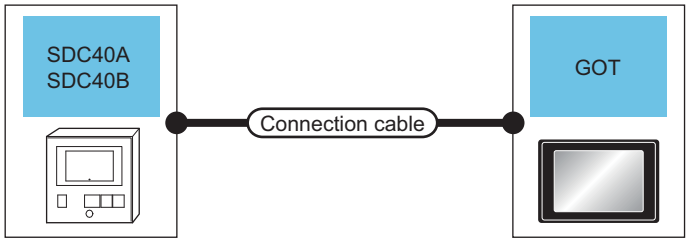
*1 Product manufactured by Azbil Corporation.
For details on the product, contact Azbil Corporation.

■Maximum number of connected devices

The following shows the number of connectable GOTs.

Controller	GOT	
Model	Model	Number of connectable controllers per GOT channel
SDC40G	GT37 SoftGOT3000	31

Direct connection to one temperature controller (SDC40A or SDC40B)



For details on the maximum number of connected devices, refer to the following.

☞ Page 1969 Maximum number of connected devices

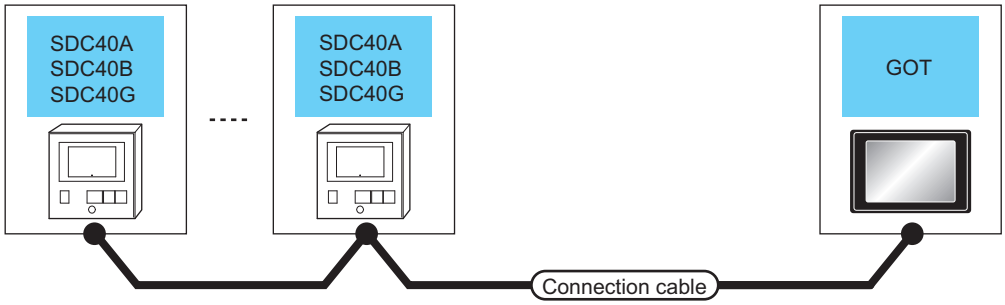
Temperature controller		Connection cable		GOT	
Model	**Communication type**	**Cable model Connection diagram number**	**Maximum length**	**Interface**	**Model**
SDC40A SDC40B	RS-232	User preparing Page 1972 RS-232 connection diagram (2)	15 m	Built-in RS-232 interface + GT35-C02HR2-9P	GT37 SoftGOT3000
				GT37-IF2000 + GT15-RS2-9P	GT37 SoftGOT3000

■Maximum number of connected devices

The following shows the number of connectable GOTs.

Controller	GOT	
Model	**Model**	**Number of connectable controllers per GOT channel**
SDC40A SDC40B	GT37 SoftGOT3000	1

Direct connection to multiple temperature controllers (SDC40A, SDC40B, or SDC40G)



For details on the maximum number of connected devices, refer to the following.

☞ Page 1971 Maximum number of connected devices

Temperature controller		Connection cable		GOT	
Model	**Communication type**	**Cable model Connection diagram number**	**Maximum length**	**Interface**	**Model**
SDC40A SDC40B SDC40G	RS-485 (4-wire)	User preparing Page 1975 RS-485 connection diagram (5)	500 m	Built-in RS-485 interface	GT37 SoftGOT3000
				GT37-IF2000 + GT15-RS4-9S	GT37 SoftGOT3000
		User preparing Page 1975 RS-485 connection diagram (6)	500 m	GT37-IF2000 + GT15-RS4-TE	GT37 SoftGOT3000
		User preparing Page 1974 RS-485 connection diagram (3)	500 m*1	FA-LTBGT2R4CBL05 (0.5 m)*2 FA-LTBGT2R4CBL10 (1 m)*2 FA-LTBGT2R4CBL20 (2 m)*2	GT37 SoftGOT3000
	RS-485 (2-wire)	User preparing Page 1977 RS-485 connection diagram (9)	500 m	Built-in RS-485 interface	GT37 SoftGOT3000
				GT37-IF2000 + GT15-RS4-9S	GT37 SoftGOT3000
		User preparing Page 1977 RS-485 connection diagram (10)	500 m	GT37-IF2000 + GT15-RS4-TE	GT37 SoftGOT3000
		User preparing Page 1976 RS-485 connection diagram (8)	500 m*1	FA-LTBGT2R4CBL05 (0.5 m)*2 FA-LTBGT2R4CBL10 (1 m)*2 FA-LTBGT2R4CBL20 (2 m)*2	GT37 SoftGOT3000

*1 Including the cable length of the option devices.
*2 Product manufactured by MITSUBISHI ELECTRIC ENGINEERING COMPANY LIMITED.
For details on the product, contact MITSUBISHI ELECTRIC ENGINEERING COMPANY LIMITED.

■Maximum number of connected devices

The following shows the number of connectable GOTs.

Controller		GOT	
Model	**Communication type**	**Model**	**Number of connectable controllers per GOT channel**
SDC40A SDC40B SDC40G	RS-485 (4-wire)	GT37 SoftGOT3000	16
	RS-485 (2-wire)	GT37 SoftGOT3000	16

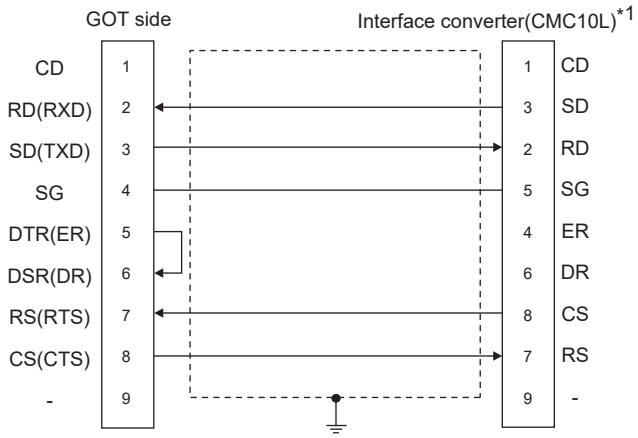
29.3 Connection diagram

The following diagram shows the connection between the GOT and the control equipment.

☞ Page 1972 RS-232 cable
☞ Page 1973 RS-485 cable

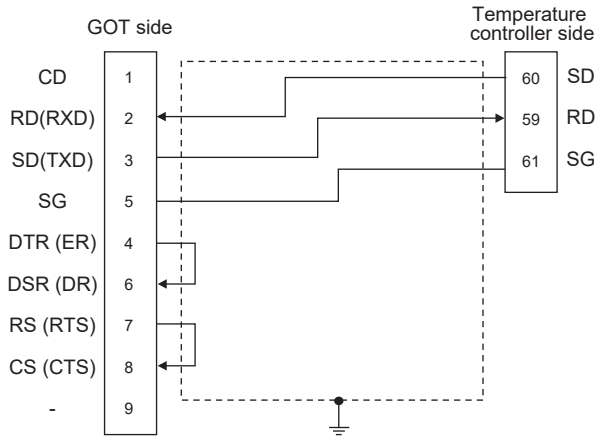
29.3.1 RS-232 cable

RS-232 connection diagram (1)



*1 When connecting to the GOT, select the TERMINAL mode with the mode selector switch.
For the setting method, refer to the following.
☞ Page 1984 Connection to CMC10L

RS-232 connection diagram (2)



Precautions when preparing a cable

■Cable length

The length of the RS-232 cable must be 15 m or less.

■GOT side connector

For the GOT side connector, refer to the following.

☞ Page 2954 GOT connector specifications

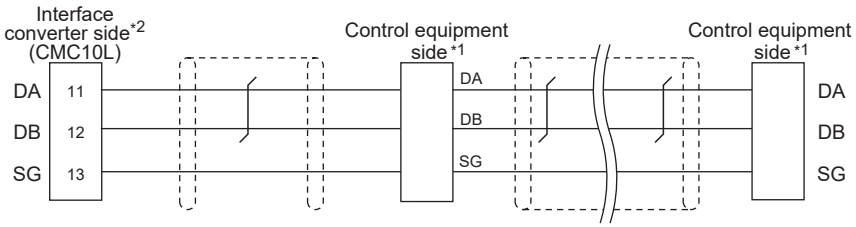
■AZBIL control equipment side connector

Use the connector compatible with the AZBIL control equipment side module.

For details, refer to the user's manual of the AZBIL control equipment.

29.3.2 RS-485 cable

RS-485 connection diagram (1)

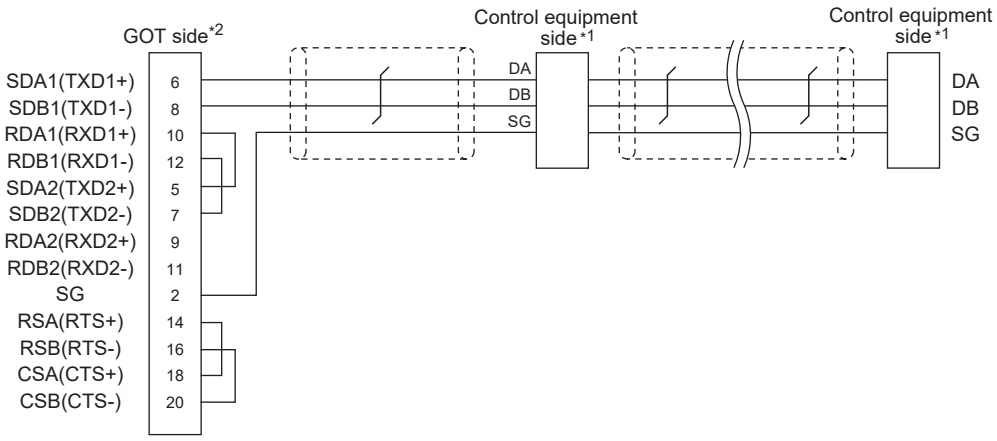


*1 Pin numbers of the control equipment differ depending on the model.
Refer to the following table.

Signal name	Model of control equipment			
	DMC10	SDC15	SDC35 SDC36	SDC40G
	Pin No.	Pin No.	Pin No.	Pin No.
DA	4	16	22	22
DB	5	17	23	23
SG	6	18	24	24

*2 Disable the terminating resistor.
For details on the terminating resistor settings, refer to the following.
☞ Page 1984 Connection to CMC10L

RS-485 connection diagram (2)

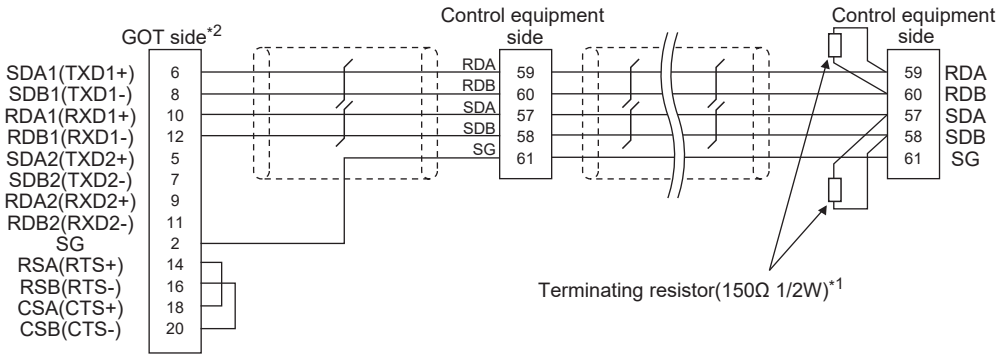


*1 Pin numbers of the control equipment differ depending on the model.
Refer to the following table.

Signal name	Model of control equipment		
	DMC10	SDC15	SDC35 SDC36
	Pin No.	Pin No.	Pin No.
DA	4	16	22
DB	5	17	23
SG	6	18	24

*2 Set the terminating resistor setting switch so that it is not used.
☞ Page 1978 Terminating resistor settings

RS-485 connection diagram (3)

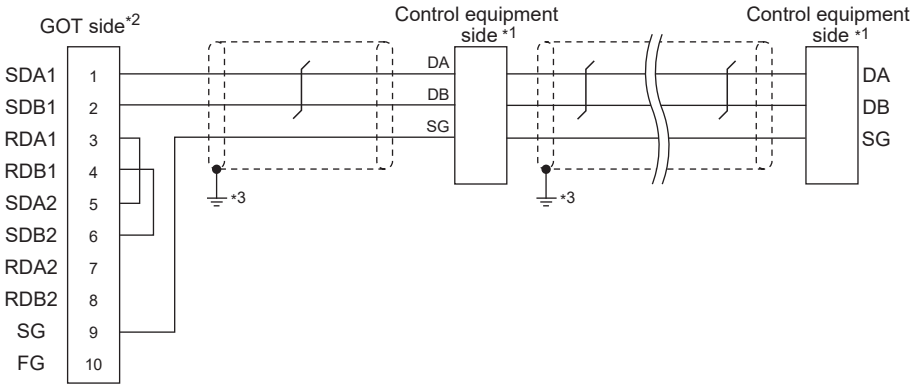


*1 A terminating resistor should be provided for a control equipment which will be the terminal.

*2 Set the terminating resistor setting switch to 330Ω.

☞ Page 1978 Terminating resistor settings

RS-485 connection diagram (4)



*1 Pin numbers of the control equipment differ depending on the model.
Refer to the following table.

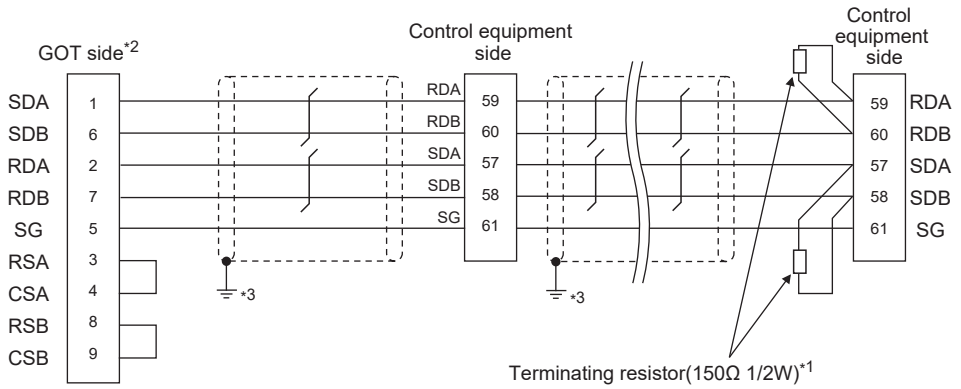
Signal name	Model of control equipment		
	DMC10	SDC15	SDC35 SDC36
	Pin No.	Pin No.	Pin No.
DA	4	16	22
DB	5	17	23
SG	6	18	24

*2 Set the terminating resistor setting switch so that it is not used.

☞ Page 1978 Terminating resistor settings

*3 Connect the FG ground of the shield to the one end, not at both ends.

RS-485 connection diagram (5)



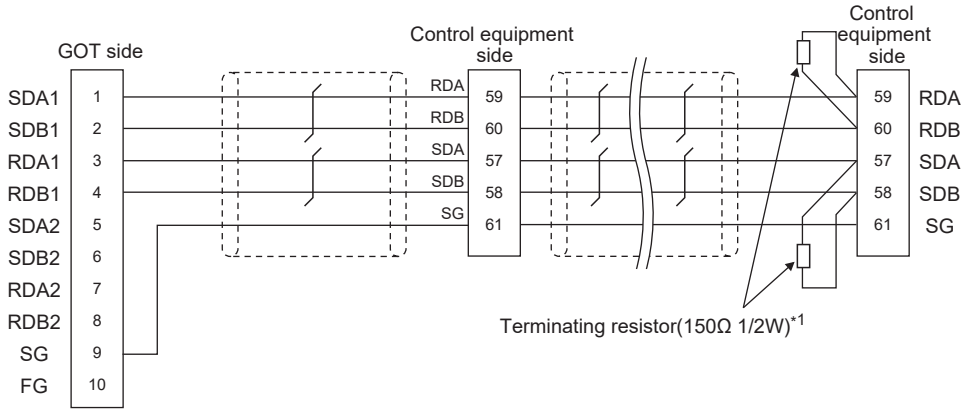
*1 A terminating resistor should be provided for a control equipment which will be the terminal.

*2 Set the terminating resistor setting switch to 330Ω.

☞ Page 1978 Terminating resistor settings

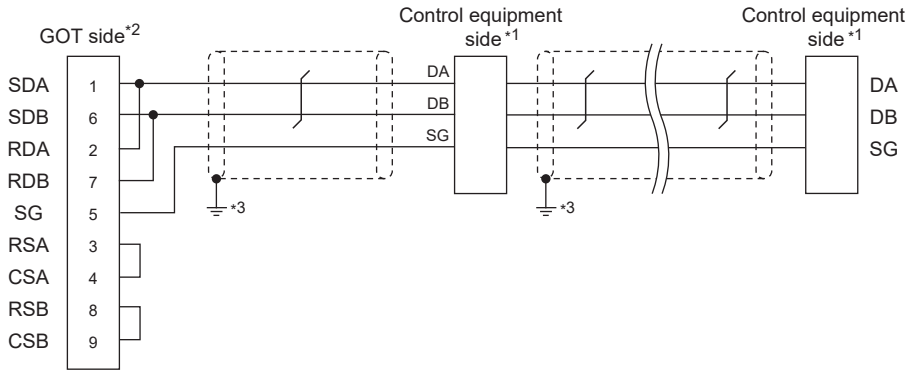
*3 Connect the FG ground of the shield to the one end, not at both ends.

RS-485 connection diagram (6)



*1 A terminating resistor should be provided for a control equipment which will be the terminal.

RS-485 connection diagram (7)



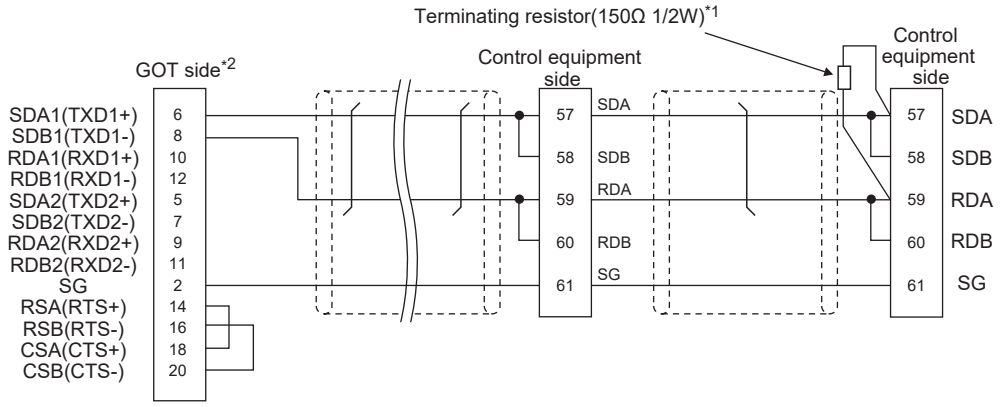
*1 Pin numbers of the control equipment differ depending on the model.
Refer to the following table.

Signal name	Model of control equipment		
	DMC10	SDC15	SDC35 SDC36
	Pin No.	Pin No.	Pin No.
DA	4	16	22
DB	5	17	23
SG	6	18	24

*2 Set the terminating resistor setting switch so that it is not used.
☞ Page 1978 Terminating resistor settings

*3 Connect the FG ground of the shield to the one end, not at both ends.

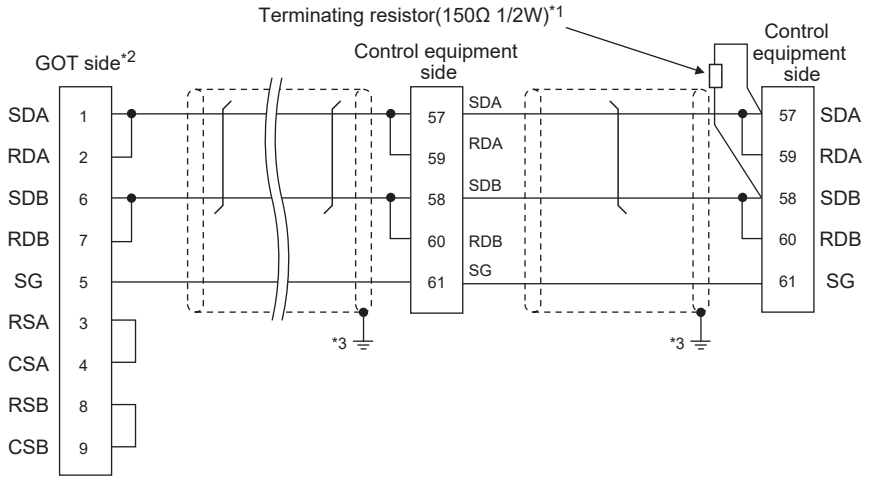
RS-485 connection diagram (8)



*1 A terminating resistor should be provided for a control equipment which will be the terminal.

*2 Set the terminating resistor setting switch to 330Ω.
☞ Page 1978 Terminating resistor settings

RS-485 connection diagram (9)



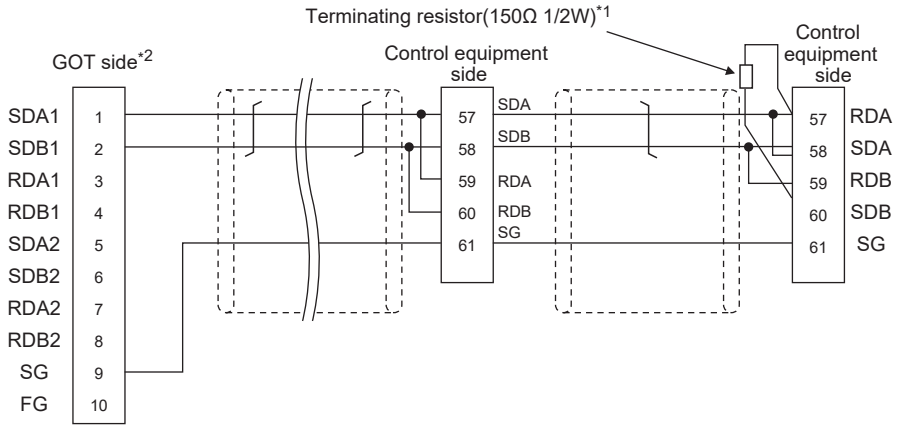
*1 A terminating resistor should be provided for a control equipment which will be the terminal.

*2 Set the terminating resistor setting switch to 330Ω.

☞ Page 1978 Terminating resistor settings

*3 Connect the FG ground of the shield to the one end, not at both ends.

RS-485 connection diagram (10)



*1 A terminating resistor should be provided for a control equipment which will be the terminal.

Precautions when preparing a cable

■Cable length

The length of the RS-485 cable must be within the maximum length.

■GOT side connector

For the GOT side connector, refer to the following.

☞ Page 2954 GOT connector specifications

■AZBIL control equipment side connector

Use the connector compatible with the AZBIL control equipment side module.

For details, refer to the user's manual of the AZBIL control equipment.

Terminating resistor settings

■GOT side

Set the terminating resistor using the terminating resistor setting switch.

For the procedure to set the terminating resistor, refer to the following.

☞ Page 2956 Terminating resistors of GOT

■AZBIL control equipment side

When connecting an AZBIL control equipment to the GOT, a terminating resistor must be connected.

☞ Page 2956 Terminating resistors of GOT

29.4 GOT side settings

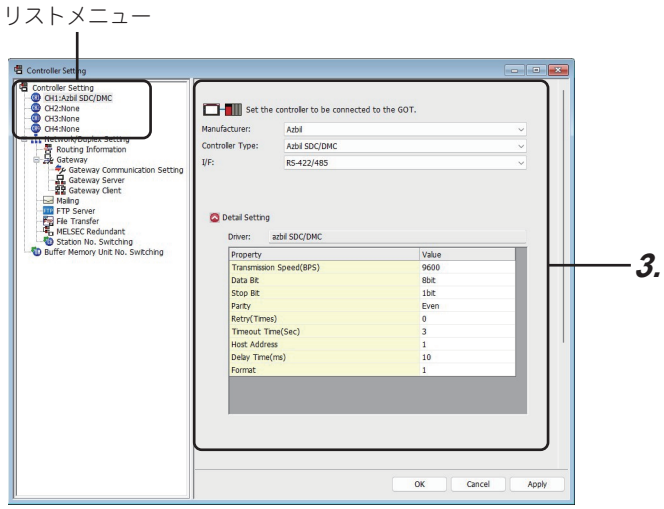
☞ Page 1979 [Controller Setting]
☞ Page 1980 [Detail Setting]

Precautions

By setting the GOT internal device, the GOT can disconnect some connections of the connected controllers. For example, a faulty station with a communication timeout can be disconnected from the controller.
For details on the GOT internal device settings, refer to the following manual.
📖GT Designer3 (GOT3000) Screen Design Manual

29.4.1 [Controller Setting]

Set the channel of the equipment to be connected to the GOT.



Operating procedure

1. Select [Common] → [Controller Setting] from the menu.
2. In the [Controller Setting] window, select the channel number to be used from the list menu.
3. Set the following items.

Item	Description
[Manufacturer]	[Azbil]
[Controller Type]	[Azbil SDC/DMC]
[I/F]	Interface to be used
[Detail Setting]	Configure the settings according to the usage environment. ☞ Page 1980 [Detail Setting]
[Connected Ethernet Controller Setting]	Configure the settings according to the controller to be connected.

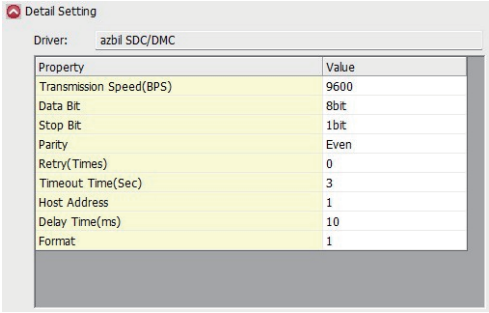
4. When you have completed the settings, click the [OK] button.

Point

The controller settings can be checked in [I/F Communication Setting].
For details, refer to the following.
📖GT Designer3 (GOT3000) Screen Design Manual

29.4.2 [Detail Setting]

Configure the settings according to the usage environment.



Item	Description	Range
[Transmission Speed]	Set this item to change the transmission speed used for communication with the connected equipment.	[9600] bps [19200] bps [38400] bps [57600] bps [115200] bps
[Data Bit]	Set this item to change the data length used for communication with the connected equipment.	[7bit] [8bit]
[Stop Bit]	Specify the stop bit length for communications.	[1bit] [2bit]
[Parity]	Specify whether or not to perform a parity check, and how it is performed during communication.	[None] [Even] [Odd]
[Retry]	Specify the number of retries to be performed during communication.	[0] times to [5] times
[Timeout Time]	Specify the timeout period during communication.	[1] second to [30] seconds
[Host Address]*1	Specify the station number of the temperature controller in the system configuration (including the GOT).	[1] to [15]
[Delay Time]	Specify the send delay time during communication.*2	[0] ms to [300] ms
[Format]	Select the communication format. • Format 1: only continuous access • Format 2: continuous and random access ☞ Page 1981 Format setting	[1], [2]

*1 Host address is ignored when connecting to DMC10 or SDC.
*2 Do not specify [0] for the send delay time.

Point

• Controller settings using the GT37 utility

The controller settings can be changed in [Communication Settings] of the GT37 utility after writing [Communication Settings] of project data to GT37.

For details on the GT37 utility, refer to the following manual.

📖GOT3000 Series User's Manual (Utility & Maintenance Functions)

• Priority of the settings in [Controller Setting]

When the settings are configured in GT Designer3 or in the GT37 utility, the latest settings are effective.

Format setting

The available format depends on the control equipment model.

Model	Compatible format
SDC40A SDC40B SDC40G	Format 1 only
DMC10 SDC15 SDC35 SDC36	Format 1, Format 2

For the continuous access and random access of the control equipment, refer to the following manual.

User's Manual of the AZBIL control equipment

Precautions

If the system includes both models compatible with format 1 only and models compatible with both format 1 and 2, select format 1.

29.5 Control equipment side settings

Configure the AZBIL control equipment settings.

For details of AZBIL control equipment, refer to the following manual.

User's Manual of the AZBIL control equipment

GOT connection destination	Reference
DMC10	☞ Page 1982 Connection to DMC10
SDC15 SDC35SDC36	☞ Page 1983 Connection to SDC15, SDC35, or SDC36
SDC40A SDC40B SDC40G	☞ Page 1983 Connection to SDC40A, SDC40B, or SDC40G
CMC10L	☞ Page 1984 Connection to CMC10L

29.5.1 Connection to DMC10

☞ Page 1982 Communication settings
☞ Page 1982 Equipment address setting

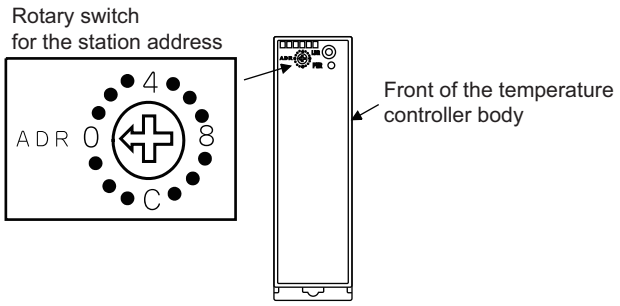
Communication settings

Configure the communication settings using the Smart Loader Package (SLP-D10) of the temperature controller.

Item	Setting value	Range
Transmission speed	Adjust the settings with the GOT settings. ☞ Page 1980 [Detail Setting]	2400 bps to 19200 bps
Communication mode	CPL	—
Data length	Adjust the settings with the GOT settings. ☞ Page 1980 [Detail Setting]	8 bits
Parity bit	Adjust the settings with the GOT settings. ☞ Page 1980 [Detail Setting]	Even, none
Stop bit	Adjust the settings with the GOT settings. ☞ Page 1980 [Detail Setting]	1 bit, 2 bits
Minimum response time	Set a value.	1 ms, 10 ms, 100 ms, 200 ms
Equipment address	Set a value other than "0". Set a station address different from those of the other modules.	0 to F

Equipment address setting

Set the equipment address using the rotary switch on the temperature controller.



29.5.2 Connection to SDC15, SDC35, or SDC36

Communication settings

Configure the communication settings by operating the keys or Smart Loader Package (SLP-C35) of the temperature controller.

Item	Setting value	Range
Transmission speed	Adjust the settings with the GOT settings. ☞ Page 1980 [Detail Setting]	4800 bps to 38400 bps
Data length	Adjust the settings with the GOT settings. ☞ Page 1980 [Detail Setting]	7 bits, 8 bits
Parity bit	Adjust the settings with the GOT settings. ☞ Page 1980 [Detail Setting]	Odd, even, none
Stop bit	Adjust the settings with the GOT settings. ☞ Page 1980 [Detail Setting]	1 bit, 2 bits
Minimum response time	Set a value.	1 ms to 250 ms
Equipment address	Set a value other than "0". Set a station address different from those of the other modules.	0 to 127

29.5.3 Connection to SDC40A, SDC40B, or SDC40G

Communication settings

Configure the communication settings by operating the keys or Smart Loader Package (SLP-C35) of the temperature controller.

Item	Setting value	Range
Transmission speed	Adjust the settings with the GOT settings. ☞ Page 1980 [Detail Setting]	4800 bps, 9600 bps
Data length	Adjust the settings with the GOT settings. ☞ Page 1980 [Detail Setting]	8 bits
Parity bit	Adjust the settings with the GOT settings. ☞ Page 1980 [Detail Setting]	Even, none
Stop bit	Adjust the settings with the GOT settings. ☞ Page 1980 [Detail Setting]	1 bit, 2 bits
Equipment address	Set a value other than "0". Set a station address different from those of the other modules.	0 to 127

29.5.4 Connection to CMC10L

☞ Page 1984 Communication settings
☞ Page 1984 Settings with switches

Communication settings

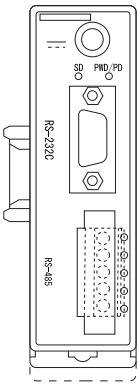
Configure the communication settings using the DIP switch of the converter.

Item	Setting value	Range
Transmission speed	Adjust the settings with the GOT settings. ☞ Page 1980 [Detail Setting]	300 bps to 38400 bps
Frame length	The sum of data length, parity bit, and stop bit.	8 bits to 15 bits

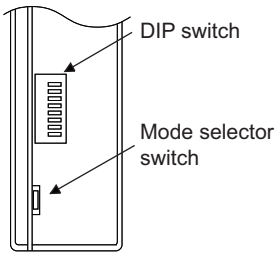
Settings with switches

The following settings can be configured using the switches on the converter.

Switch	Setting details	Reference
DIP switch	Transmission speed	☞ Page 1984 Transmission speed settings
	Frame length	☞ Page 1985 Frame length settings
	Terminating resistor	☞ Page 1985 Terminating resistor settings
Mode selector switch	Switching between the TERMINAL mode and the MODEM mode	☞ Page 1985 Mode selector switch settings



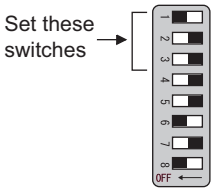
Front view of CMC10L body



Rear view of CMC10L body

■Transmission speed settings

Set the transmission speed using the DIP switch on the converter.

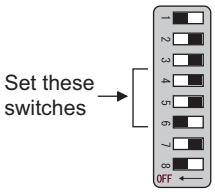


Transmission speed (bps)	Switch No.		
	1	2	3
9600	ON	OFF	ON
19200	OFF	ON	ON
38400	ON	ON	ON

■Frame length settings

Set the frame length using the DIP switch on the converter.

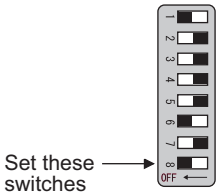
The frame length is the sum of data length, parity bit, and stop bit.



Frame length	Switch No.		
	4	5	6
8 bits	OFF	OFF	OFF
9 bits	ON	OFF	OFF
10 bits	OFF	ON	OFF
11 bits	ON	ON	OFF
12 bits	OFF	OFF	ON
13 bits	ON	OFF	ON
14 bits	OFF	ON	ON
15 bits	ON	ON	ON

■Terminating resistor settings

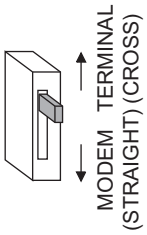
Set the terminating resistor using the DIP switch on the converter.



Terminating resistor	Switch No.
	8
Enable	ON
Disable	OFF

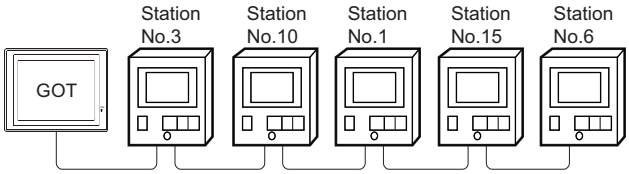
■Mode selector switch settings

Set the switch to "TERMINAL".



29.5.5 Station number setting

Do not set the same station number as the other stations.
The station number can be set regardless of the cable connection order. There is no problem if station numbers are not consecutive.



Examples of station number setting

Direct specification

For the device setting, the specification range is from 0 to 127.

Indirect specification

When setting the device, indirectly specify the station number for the temperature controller to be changed using the 16-bit GOT internal data register (GD10 to GD25).
When specifying the station number from the following table on GT Designer3, the corresponding value from GD10 to GD25 will be the station number of the temperature controller.

Specified station No.	Corresponding device	Setting range
200	GD10	0 to 127 Setting a value outside the above range causes a device range error.
201	GD11	
202	GD12	
203	GD13	
204	GD14	
205	GD15	
206	GD16	
207	GD17	
208	GD18	
209	GD19	
210	GD20	
211	GD21	
212	GD22	
213	GD23	
214	GD24	
215	GD25	

30 Settable device range

This chapter describes the range of devices settable in GT Designer3.
The settable range varies with the selection for [Controller Type] in the [Controller Setting] window.
Configure the device setting according to the specifications of the controller to be used.
Device specifications differ depending on the controller model even among the controllers of the same series.
If a nonexistent device or a device number out of the range is set for an object, other objects for which correct devices are set may not be monitored.
☞ Page 1987 AZBIL equipment ([Azbil SDC/DMC])

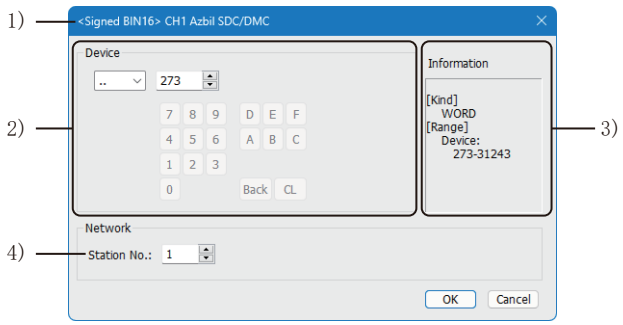
30.1 AZBIL equipment ([Azbil SDC/DMC])

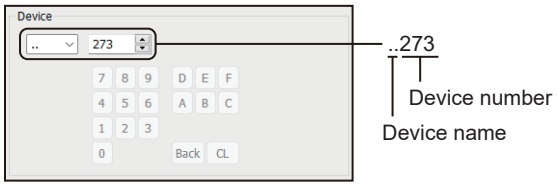
GT37 SoftGOT3000

Item	Reference
Device setting dialog	☞ Page 1987 Device setting dialog ([Azbil SDC/DMC])
Specifications of word devices	☞ Page 1988 Monitoring-supported word devices ([Azbil SDC/DMC])
	☞ Page 1988 Availability of writing/reading data to/from word devices ([Azbil SDC/DMC])

30.1.1 Device setting dialog ([Azbil SDC/DMC])

Set a device to be monitored.



Item		Description
1)	Title	Data type and channel number of the device to be set
2)	[Device]	Set the device name and device number. If a bit number needs to be specified, the setting item is displayed. Example) Setting of ..273 
3)	[Information]	Displays the setting range of each setting item according to the selected device.
4)	[Station No.]	Specify a station number. The setting range is [0] to [127] (direct) or [200] to [215] (indirect). For indirect specification of a station number, refer to the following. ☞ Page 1988 Indirect specification of a station number ([Azbil SDC/DMC])

Indirect specification of a station number ([Azbil SDC/DMC])

When you specify any of 200 to 215 for the station number, the value of the corresponding GOT data register (GD10 to GD25) is used as the station number.

The following shows the correspondence between station number setting values and GOT data registers (GD).

Station No.	GOT data register (GD)	Setting range
200	GD10	[0] to [127] Setting a value outside the above range causes a device range error.
201	GD11	
:	:	
214	GD24	
215	GD25	

30.1.2 Monitoring-supported word devices ([Azbil SDC/DMC])

The following table shows monitoring-supported word devices.

To check whether writing/reading data to/from each device is available, refer to the following.

☞ Page 1988 Availability of writing/reading data to/from word devices ([Azbil SDC/DMC])

For the formats of devices, refer to the following.

📖GT Designer3 (GOT3000) Screen Design Manual

○: Available

×: Not available

Device name		Device No. representation	Setting range	Specifications of EG devices*1	
				Assignment to EG devices	Access using a client
..	Data	Decimal	273 to 31243	○	○

*1 For the devices assigned to EG devices (gateway devices) and the compatible clients, refer to the following.
📖GT Designer3 (GOT3000) Screen Design Manual

30.1.3 Availability of writing/reading data to/from word devices ([Azbil SDC/DMC])

The following shows the availability of writing/reading data to/from word devices by device type.

R/W: Both read and write

R/-: Read only

-/W: Write only

-/-: No read/write access

Device name	Device type			
	Word (16 bits)	Double-word (32 bits)	Quad-word (64 bits)	Bit of word data
..	R/W	-/-	-/-	R/W

PART 10 OMRON equipment

31 PLC (Ethernet connection)

32 Temperature controller (serial connection)

33 Settable device range

31 PLC (Ethernet connection)

☞ Page 1990 SYSMAC CJ2, CP2 series (Built-in Ethernet port connection)
☞ Page 1999 SYSMAC CJ1, CJ2, CS1 series (Ethernet module connection)
☞ Page 2007 NJ, NX (Built-in Ethernet port connection)
☞ Page 2015 NJ (Ethernet module connection)

31.1 SYSMAC CJ2, CP2 series (Built-in Ethernet port connection)

☞ Page 1990 Connectable devices
☞ Page 1991 System configuration
☞ Page 1993 GOT side settings
☞ Page 1997 PLC side settings

31.1.1 Connectable devices

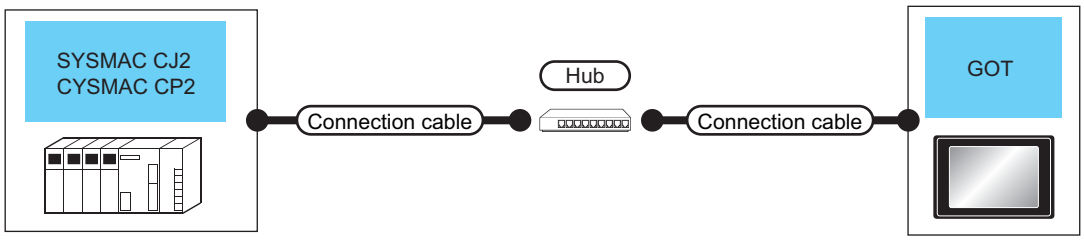
The following table shows the connectable models.

○: Supported, —: Not supported

Controller	Model	Clock	Connectable model
SYSMAC CJ2	CJ2H-CPU68-EIP CJ2H-CPU67-EIP CJ2H-CPU66-EIP CJ2H-CPU65-EIP CJ2H-CPU64-EIP	○	GT37 SoftGOT3000 *1
	CJ2M-CPU31 CJ2M-CPU32 CJ2M-CPU33 CJ2M-CPU34 CJ2M-CPU35	○	GT37 SoftGOT3000 *1
SYSMAC CP2	CP2E-N14 CP2E-N20CP2E-N30 CP2E-N40 CP2E-N60	○	GT37 SoftGOT3000

*1 The Ethernet network redundancy is not supported.

31.1.2 System configuration



For details on the connection cables and the maximum segment length, refer to the following.

☞ Page 1991 Connection cable
☞ Page 1992 Maximum segment length

For details on the maximum number of connected devices, refer to the following.

☞ Page 1992 Maximum number of connected devices

Controller	Connection cable	GOT	
		Interface	Model
SYSMAC CJ2 SYSMAC CP2	Twisted pair cable	Built-in Ethernet interface of GOT	GT37 SoftGOT3000
		Ethernet interface of personal computer	GT37 SoftGOT3000

Connection cable

Use a connection cable that meets the following standards.

Standard	Category
10BASE-T	Shielded twisted pair cable (STP) or unshielded twisted pair cable (UTP) of category 3 or higher
100BASE-TX	Shielded twisted pair cable (STP) or unshielded twisted pair cable (UTP) of category 5 or higher
1000BASE-T	Shielded twisted pair cable (STP) or unshielded twisted pair cable (UTP) of category 5e or higher

The destination device connected with the twisted pair cable varies with the configuration of the Ethernet network system used.

Connect the cable to the Ethernet module, hub, or other system equipment corresponding to the applicable Ethernet network system.

Use cables, connectors, and hubs that meet the IEEE802.3 10BASE-T/100BASE-TX/1000BASE-T standards.

When only one GOT is connected, the GOT can be directly connected to the device without a hub.

Maximum segment length

The maximum segment length (length between a hub and a node) is 100 m.
The maximum length depends on the Ethernet equipment used.
The following shows the number of connectable hubs when a repeater hub is used.

- 10BASE-T: Up to 4 for a cascade connection (within 500 m)
- 100BASE-TX: Up to 2 for a cascade connection (within 205 m)
- 1000BASE-T: The number differs depending on the hub to be used.

When switching hubs are used, there is no theoretical limit to the number of cascade connections between switching hubs.
For the limit, contact the switching hub manufacturer.

Precautions

When multiple network devices (including GOTs) are connected in the same segment, the network load increases and the transmission speed between the GOT and PLC may be reduced.
The following actions may improve the communication performance.

- Use a switching hub compatible with 1000BASE-T (1 Gbps) or more.
- Reduce the number of devices monitored by the GOT.

Maximum number of connected devices

Up to 128 CPU modules can be connected to channels No. 1 to No. 4 of one GOT. (16 or less recommended)
The following shows the number of connectable controllers per GOT channel and the number of GOTs connectable to one controller.

Controller			GOT	
Model	Number of GOTs connectable to one PLC		Model	Number of connectable controllers per GOT channel
	TCP	UDP		
SYSMAC CJ2 SYSMAC CP2	16*1	Unlimited*2	GT37 SoftGOT3000	128

*1 If it is connected to devices other than the GOT using the connection, the number of connectable GOTs decreases.
For details, refer to the OMRON PLC user's manual.
Manual of the OMRON PLC

*2 There is no restriction for the number of GOTs. However, if the number of GOTs increases, the communication becomes high-loaded, and it may affect the communication performance.

31.1.3 GOT side settings

[GOT Ethernet Setting]

Set the GOT Ethernet interface in GT Designer3.

Item	Description
[GOT IP Address Setting]	Set the IP address of the GOT.
[GOT Ethernet Common Setting]	Set the default gateway and other common items for GOT Ethernet interfaces.
[IP filter Setting]	The GOT allows or blocks access from IP addresses specified in the filtering list.

For details on the setting, refer to the following.

📖GT Designer3 (GOT3000) Screen Design Manual

Set the GT SoftGOT3000 Ethernet interface on the personal computer.

Precautions

Do not use 0 and 255 at the end of an IP address.

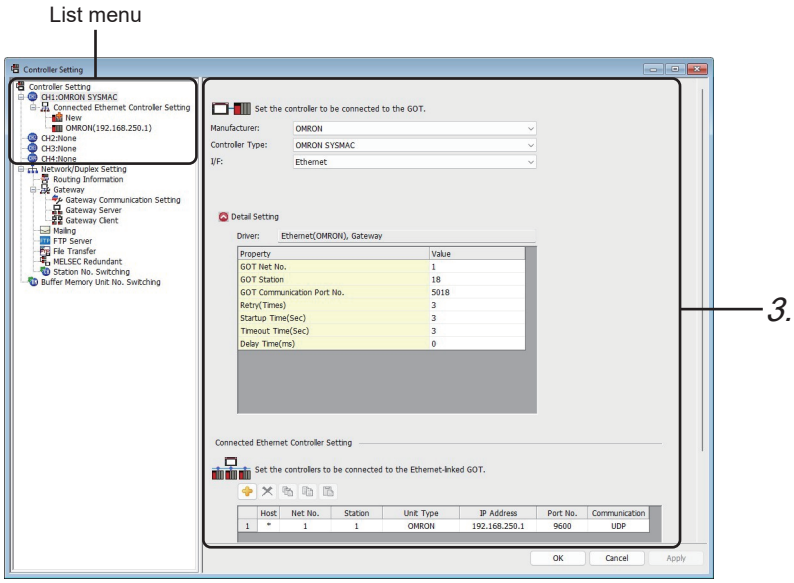
(Numbers of *.*.*.0 and *.*.*.255 are used by the system)

The GOT may not monitor the controller correctly with the above numbers.

Consult with the administrator of the network before setting an IP address to the GOT.

[Controller Setting]

Set the channel of the equipment to be connected to the GOT.



Operating procedure

1. Select [Common] → [Controller Setting] from the menu.
2. In the [Controller Setting] window, select the channel number to be used from the list menu.
3. Set the following items.

Item	Description
[Manufacturer]	[OMRON]
[Controller Type]	[OMRON SYSMAC]
[I/F]	[Ethernet]
[Detail Setting]	Configure the settings according to the usage environment. ☞ Page 1995 [Detail Setting]
[Connected Ethernet Controller Setting]	Configure the settings according to the controller to be connected. ☞ Page 1996 [Connected Ethernet Controller Setting]

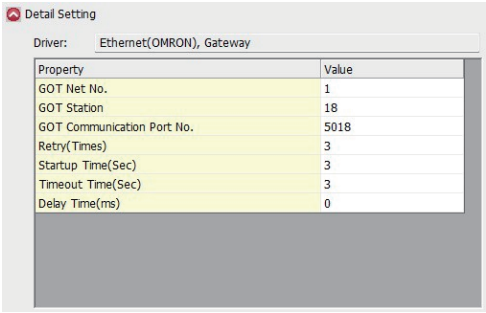
4. When you have completed the settings, click the [OK] button.

Point

The controller settings can be checked in [I/F Communication Setting].
For details, refer to the following.
📖GT Designer3 (GOT3000) Screen Design Manual

■[Detail Setting]

Configure the settings according to the usage environment.



Item	Description	Range
[Driver]	This item appears when communication drivers are selectable according to the settings of [Controller Type] and [I/F].	[Ethernet(OMRON), Gateway]
[GOT Net No.]	Set the network number of the GOT.	[1] to [127]
[GOT Station]*2*3	Set the station number of the GOT.	[1] to [254]
[GOT Communication Port No.]*1*3	Set the GOT port number for the connection with the Ethernet equipment.	[1024] to [5010], [5014] to [49152], [49171] to [65534]
[Retry]	Set the number of retries to be performed when a communication timeout occurs. When receiving no response after retries, the communication times out.	[0] times to [5] times
[Startup Time]	Set the time period from the GOT startup until the start of communication with the PLC CPU.	[3] seconds to [255] seconds
[Timeout Time]	Set a communication timeout period.	[1] second to [90] seconds
[Delay Time]	Set the delay time for reducing the load of the network and destination PLC.	[0] ms to [10000] ms

*1 Set [FINS UDP Port] of OMRON PLC CX-Programmer to the same value that is set in [GOT Communication Port No.].

*2 Set values not set for [Station] in [Connected Ethernet Controller Setting].

☞ Page 1996 [Connected Ethernet Controller Setting]

*3 Set a value within the setting range of the software for the programming apparatus.

☞ Page 1997 PLC side settings

Point

• Controller settings using the GT37 utility

The controller settings can be changed in [Communication Settings] of the GT37 utility after writing [Communication Settings] of project data to GT37.

For details on the GT37 utility, refer to the following manual.

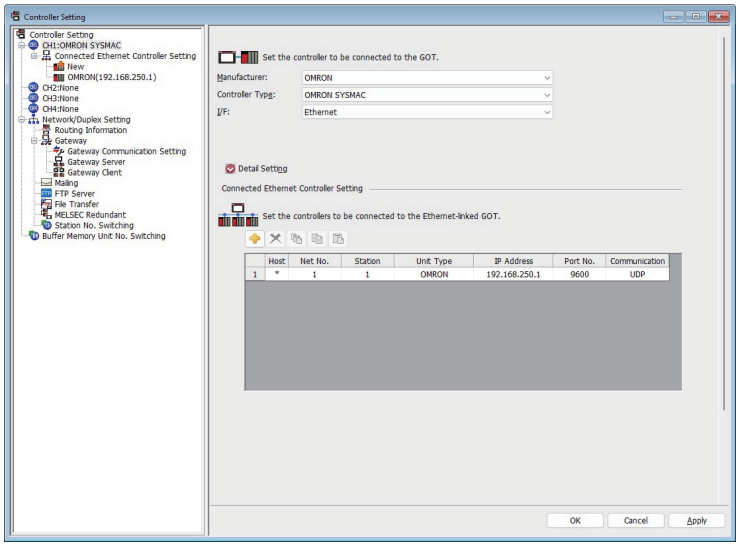
📖GOT3000 Series User's Manual (Utility & Maintenance Functions)

• Priority of the settings in [Controller Setting]

When the settings are configured in GT Designer3 or in the GT37 utility, the latest settings are effective.

■[Connected Ethernet Controller Setting]

Set the controller to be connected to the GOT by Ethernet.



Item	Description	Range
[Host]	The host is displayed. It refers to a station that can be connected without setting a station number. The host is indicated with an asterisk (*).	—
[Net No.]	Set the network number of the connected Ethernet equipment.	[1] to [127]
[Station]*1	Set the station number of the connected Ethernet equipment.	[1] to [254]
[Unit Type]	Select the model of the connected Ethernet equipment.	[OMRON]
[IP Address]	Set the IP address of the connected Ethernet equipment.	[0.0.0.0] to [255.255.255.255]
[Port No.]	Set the port number of the connected Ethernet equipment.	[256] to [65534]
[Communication]	Set the communication format of the connected Ethernet equipment.	[UDP], [TCP]

*1 Set values not set for [GOT Station] in [Detail Setting].
☞ Page 1995 [Detail Setting]

Precautions

■Station number setting

When connecting two or more GOTs in the Ethernet network, set a different station number to each GOT.

☞ Page 1995 [Detail Setting]

■IP address setting

Do not use the IP address "192.168.0.18" when using multiple GOTs with the GOT 1000 series mixed.

Doing so may cause a communication error on the GOT.

31.1.4 PLC side settings

Configure the settings for the OMRON PLC.
For details on OMRON PLCs, refer to the following manual.
📖Manual of the OMRON PLC
For the communication between the OMRON PLC (SYSMAC CJ2 or CP2 series) and the GOT, use the FINS communication.
For the FINS communication, the node must be specified according to the FINS address system. However, for the Ethernet network, the data transfer according to the IP address is required.
The following four methods are available for converting the FINS node address to the IP address.

- Automatic generation method (dynamic)
- Automatic generation method (static)
- IP address table conversion method
- Combined method

For details on OMRON PLCs, refer to the following manual.
📖Manual of the OMRON PLC

Node setting switch

Set the node setting switch on the module to the value of [Station] in [Connected Ethernet Controller Setting] in GT Designer3.
Note that the node setting switch is set in hexadecimal.
Convert this hexadecimal number to decimal, and set the value to [Station].

	Host	Net No.	Station	Unit Type	IP Address	Port No.	Communication
1	*	1	1	OMRON	192.168.3.1	9600	UDP

Set the node setting switch of the module to this value.

CX-Programmer setting

Use a software for programming apparatus (CX-Programmer Ver.3.20 or later) to configure the PLC communication settings.

Item		Setting range			
		Automatic generation method (dynamic)	Automatic generation method (static)*4*5	IP address table method*4*6	Combined method*4
Ethernet module CPU highly-functional module	Global	All 1 (Default)	All 1 (Default)	All 1 (Default)	All 1 (Default)
	IP address*1	192.168.0.1*3	192.168.0.1*3	192.168.0.1	192.168.0.1
	Subnet mask	255.255.255.0	255.255.255.0	255.255.255.0	255.255.255.0
	FINS UDP port*1	9600	9600	9600	9600
	IP address conversion	Automatic generation method (dynamic)	Automatic generation method (static)	IP address table method	Combined method
	IP address table	—	—	Destination node address: 11*7 Destination IP address: 192.168.0.18	—*8
	Transmission speed	Automatic detection (Default)	Automatic detection (Default)	Automatic detection (Default)	Automatic detection (Default)
	Dynamic node IP address change*2	Change dynamically (Default)*9	Change dynamically (Default)	Change dynamically (Default)	Change dynamically (Default)

*1 Set the values of [IP Address] and [Port No.] in [Connected Ethernet Controller Setting] in GT Designer3 to [IP address] and [FINS UDP Port].

	Host	Net No.	Station	Unit Type	IP Address	Port No.	Communication
1	*	1	1	OMRON	192.168.3.1	9600	UDP

*2 The dynamic node IP address change function is available only when the Ethernet module to be used is Ver.1.3 or later.
Configure the settings in the module setting of CX-Programmer Ver.5.0 or later or in the WEB function.
For details on the dynamic node IP address change, refer to the following manual.
Manual of the OMRON PLC

*3 Set the node setting switch on the module to the lowest byte of the [IP Address].
Note that the node setting switch is set in hexadecimal. Convert this hexadecimal number to decimal, and set the value to the lowest byte of [IP Address].

*4 In GT Designer3, set the value of [GOT Communication Port No.] in [Detail Setting] to [Port No.] in [Connected Ethernet Controller Setting].

	Host	Net No.	Station	Unit Type	IP Address	Port No.	Communication
1	*	1	1	OMRON	192.168.3.1	9600	UDP

Property	Value
GOT Net No.	1
GOT Station	18
GOT Communication Port No.	9600
Retry(Times)	3
Startup Time(Sec)	3
Timeout Time(Sec)	3
Delay Time(ms)	0

*5 In GT Designer3, set the value of [GOT Station] in [Detail Setting] to the lowest byte of [GOT IP address] in [GOT IP Address Setting].

Property	Value
GOT Net No.	1
GOT Station	18
GOT Communication Port No.	9600
Retry(Times)	3
Startup Time(Sec)	3
Timeout Time(Sec)	3
Delay Time(ms)	0

GOT IP Address: 192 . 168 . 3 . 18

*6 In GT Designer3, set the value of [IP Address Table] to [GOT IP address] in [GOT IP Address Setting] and to [GOT Station] in [Detail Setting].

Property	Value
GOT Net No.	1
GOT Station	18
GOT Communication Port No.	9600
Retry(Times)	3
Startup Time(Sec)	3
Timeout Time(Sec)	3
Delay Time(ms)	0

Set this value to [Destination Node Address] in [IP Address Table].

GOT IP Address: 192 . 168 . 3 . 18

Set this address to [Destination IP Address] in [IP Address Table].

*7 Set the lowest byte of [Destination IP Address] to [Destination Node Address].

*8 To use [IP Address Table], apply the settings of the IP address table method.

*9 Not to set the dynamical change, set the same value to [GOT Communication Port No.] in [Detail Setting] and [Port No.] in [Connected Ethernet Controller Setting] in GT Designer3.

31.2 SYSMAC CJ1, CJ2, CS1 series (Ethernet module connection)

☞ Page 1999 Connectable devices
☞ Page 2000 System configuration
☞ Page 2002 GOT side settings
☞ Page 2005 PLC side settings

31.2.1 Connectable devices

The following table shows the connectable models.

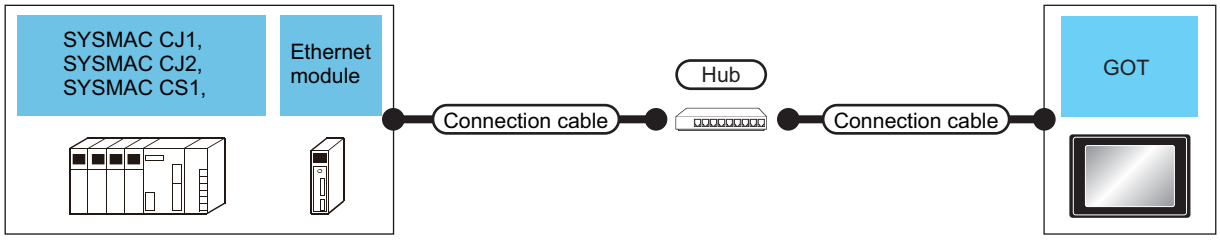
○: Supported, —: Not supported

Controller	Model	Clock	Ethernet module*1	Connectable model
SYSMAC CJ1	CJ1M-CPU13 CJ1M-CPU12 CJ1M-CPU11 CJ1M-CPU23 CJ1M-CPU22 CJ1M-CPU21	○	CJ1W-ETN21 CJ1W-EIP21	GT37 SoftGOT3000 *2
SYSMAC CJ2	CJ2H-CPU68 CJ2H-CPU67 CJ2H-CPU66 CJ2H-CPU65 CJ2H-CPU64 CJ2H-CPU68-EIP CJ2H-CPU67-EIP CJ2H-CPU66-EIP CJ2H-CPU65-EIP CJ2H-CPU64-EIP	○	CJ1W-ETN21 CJ1W-EIP21	GT37 SoftGOT3000 *2
	CJ2M-CPU11 CJ2M-CPU12 CJ2M-CPU13 CJ2M-CPU14 CJ2M-CPU15 CJ2M-CPU31 CJ2M-CPU32 CJ2M-CPU33 CJ2M-CPU34 CJ2M-CPU35	○	CJ1W-ETN21 CJ1W-EIP21	GT37 SoftGOT3000 *2
SYSMAC CS1	CS1H-CPU67H CS1H-CPU66H CS1H-CPU65H CS1H-CPU64H CS1H-CPU63H	○	CS1W-ETN21 CS1W-EIP21	GT37 SoftGOT3000 *2
	CS1G-CPU45H CS1G-CPU44H CS1G-CPU43H CS1G-CPU42H	○	CS1W-ETN21 CS1W-EIP21	GT37 SoftGOT3000 *2
	CS1D-CPU67H CS1D-CPU65H CS1D-CPU67P CS1D-CPU65P CS1D-CPU67S CS1D-CPU65S CS1D-CPU44S CS1D-CPU42S	○	CS1W-ETN21 CS1W-EIP21 CS1D-ETN21D	GT37 SoftGOT3000 *2

*1 Product manufactured by OMRON Corporation.
For details on the product, contact OMRON Corporation.

*2 The Ethernet network redundancy is not supported.

31.2.2 System configuration



For details on the connection cables and the maximum segment length, refer to the following.

☞ Page 2000 Connection cable
☞ Page 2001 Maximum segment length

For details on the maximum number of connected devices, refer to the following.

☞ Page 2001 Maximum number of connected devices

Controller	Ethernet module	Connection cable	GOT	
			Interface	Model
SYSMAC CJ1 SYSMAC CJ2 SYSMAC CS1	*1	Twisted pair cable	Built-in Ethernet interface of GOT	GT37 SoftGOT3000
			Ethernet interface of personal computer	GT37 SoftGOT3000

*1 For the connectable Ethernet modules, refer to the following.
☞ Page 1999 Connectable devices

Connection cable

Use a connection cable that meets the following standards.

Standard	Category
10BASE-T	Shielded twisted pair cable (STP) or unshielded twisted pair cable (UTP) of category 3 or higher
100BASE-TX	Shielded twisted pair cable (STP) or unshielded twisted pair cable (UTP) of category 5 or higher
1000BASE-T	Shielded twisted pair cable (STP) or unshielded twisted pair cable (UTP) of category 5e or higher

The destination device connected with the twisted pair cable varies with the configuration of the Ethernet network system used.

Connect the cable to the Ethernet module, hub, or other system equipment corresponding to the applicable Ethernet network system.

Use cables, connectors, and hubs that meet the IEEE802.3 10BASE-T/100BASE-TX/1000BASE-T standards.

When only one GOT is connected, the GOT can be directly connected to the device without a hub.

Maximum segment length

The maximum segment length (length between a hub and a node) is 100 m.
The maximum length depends on the Ethernet equipment used.
The following shows the number of connectable hubs when a repeater hub is used.

- 10BASE-T: Up to 4 for a cascade connection (within 500 m)
- 100BASE-TX: Up to 2 for a cascade connection (within 205 m)
- 1000BASE-T: The number differs depending on the hub to be used.

When switching hubs are used, there is no theoretical limit to the number of cascade connections between switching hubs.
For the limit, contact the switching hub manufacturer.

Precautions

When multiple network devices (including GOTs) are connected in the same segment, the network load increases and the transmission speed between the GOT and PLC may be reduced.
The following actions may improve the communication performance.

- Use a switching hub compatible with 1000BASE-T (1 Gbps) or more.
- Reduce the number of devices monitored by the GOT.

Maximum number of connected devices

Up to 128 CPU modules can be connected to channels No. 1 to No. 4 of one GOT. (16 or less recommended)
The following shows the number of connectable controllers per GOT channel and the number of GOTs connectable to one controller.

Controller			GOT	
Model	Number of GOTs connectable to one PLC		Model	Number of connectable controllers per GOT channel
	TCP	UDP		
SYSMAC CJ1 SYSMAC CJ2 SYSMAC CS1	16*1	Unlimited*2	GT37 SoftGOT3000	128

*1 If it is connected to devices other than the GOT using the connection, the number of connectable GOTs decreases.
For details, refer to the OMRON PLC user's manual.
Manual of the OMRON PLC

*2 There is no restriction for the number of GOTs. However, if the number of GOTs increases, the communication becomes high-loaded, and it may affect the communication performance.

31.2.3 GOT side settings

[GOT Ethernet Setting]

Set the GOT Ethernet interface in GT Designer3.

Item	Description
[GOT IP Address Setting]	Set the IP address of the GOT.
[GOT Ethernet Common Setting]	Set the default gateway and other common items for GOT Ethernet interfaces.
[IP filter Setting]	The GOT allows or blocks access from IP addresses specified in the filtering list.

For details on the setting, refer to the following.

📖GT Designer3 (GOT3000) Screen Design Manual

Set the GT SoftGOT3000 Ethernet interface on the personal computer.

Precautions

Do not use 0 and 255 at the end of an IP address.

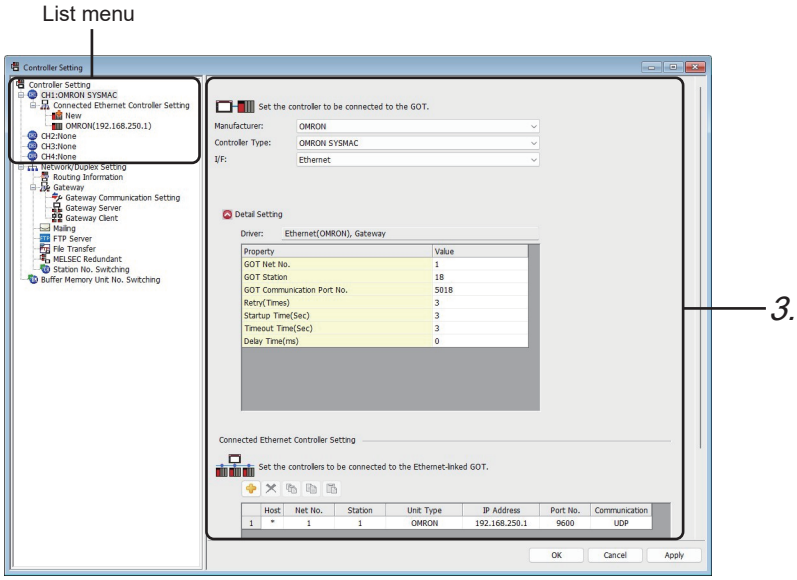
(Numbers of *.*.*.0 and *.*.*.255 are used by the system)

The GOT may not monitor the controller correctly with the above numbers.

Consult with the administrator of the network before setting an IP address to the GOT.

[Controller Setting]

Set the channel of the equipment to be connected to the GOT.



Operating procedure

1. Select [Common] → [Controller Setting] from the menu.
2. In the [Controller Setting] window, select the channel number to be used from the list menu.
3. Set the following items.

Item	Description
[Manufacturer]	[OMRON]
[Controller Type]	[OMRON SYSMAC]
[I/F]	[Ethernet]
[Detail Setting]	Configure the settings according to the usage environment. ☞ Page 2003 [Detail Setting]
[Connected Ethernet Controller Setting]	Configure the settings according to the controller to be connected. ☞ Page 2004 [Connected Ethernet Controller Setting]

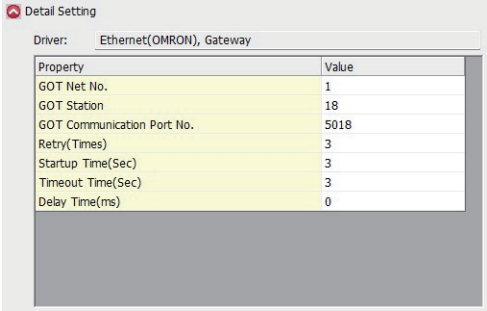
4. When you have completed the settings, click the [OK] button.

Point

The controller settings can be checked in [I/F Communication Setting].
For details, refer to the following.
GT Designer3 (GOT3000) Screen Design Manual

■[Detail Setting]

Configure the settings according to the usage environment.



Item	Description	Range
[Driver]	This item appears when communication drivers are selectable according to the settings of [Controller Type] and [I/F].	[Ethernet(OMRON), Gateway]
[GOT Net No.]	Set the network number of the GOT.	[1] to [127]
[GOT Station]*2*3	Set the station number of the GOT.	[1] to [254]
[GOT Communication Port No.]*1*3	Set the GOT port number for the connection with the Ethernet equipment.	[1024] to [5010], [5014] to [49152], [49171] to [65534]
[Retry]	Set the number of retries to be performed when a communication timeout occurs. When receiving no response after retries, the communication times out.	[0] times to [5] times
[Startup Time]	Set the time period from the GOT startup until the start of communication with the PLC CPU.	[3] seconds to [255] seconds
[Timeout Time]	Set a communication timeout period.	[1] second to [90] seconds
[Delay Time]	Set the delay time for reducing the load of the network and destination PLC.	[0] ms to [10000] ms

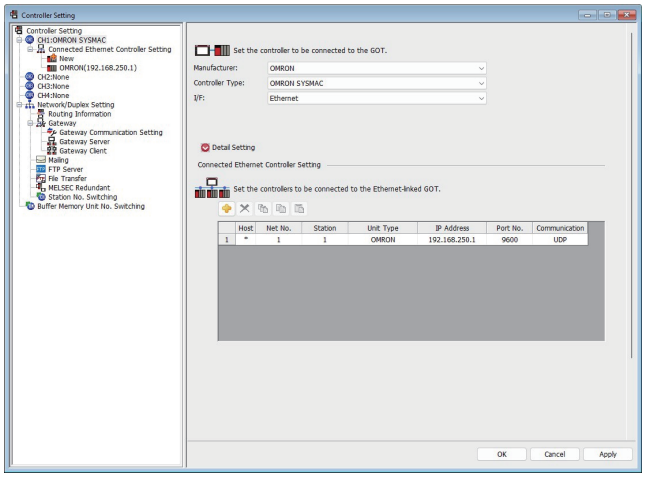
*1 Set [FINS UDP Port] of OMRON PLC CX-Programmer to the same value that is set in [GOT Communication Port No.].
*2 Set values not set for [Station] in [Connected Ethernet Controller Setting].
☞ Page 2004 [Connected Ethernet Controller Setting]
*3 Set a value within the setting range of the software for the programming apparatus.
☞ Page 2005 PLC side settings

Point

• Controller settings using the GT37 utility
The controller settings can be changed in [Communication Settings] of the GT37 utility after writing [Communication Settings] of project data to GT37.
For details on the GT37 utility, refer to the following manual.
GOT3000 Series User's Manual (Utility & Maintenance Functions)
• Priority of the settings in [Controller Setting]
When the settings are configured in GT Designer3 or in the GT37 utility, the latest settings are effective.

■[Connected Ethernet Controller Setting]

Set the controller to be connected to the GOT by Ethernet.



Item	Description	Range
[Host]	The host is displayed. It refers to a station that can be connected without setting a station number. The host is indicated with an asterisk (*).	—
[Net No.]	Set the network number of the connected Ethernet equipment.	[1] to [127]
[Station]*1	Set the station number of the connected Ethernet equipment.	[1] to [254]
[Unit Type]	Select the model of the connected Ethernet equipment.	[OMRON]
[IP Address]	Set the IP address of the connected Ethernet equipment.	[0.0.0.0] to [255.255.255.255]
[Port No.]	Set the port number of the connected Ethernet equipment.	[256] to [65534]
[Communication]	Set the communication format of the connected Ethernet equipment.	[UDP], [TCP]

*1 Set values not set for [GOT Station] in [Detail Setting].
☞ Page 2003 [Detail Setting]

Precautions

■Station number setting

When connecting two or more GOTs in the Ethernet network, set a different station number to each GOT.

☞ Page 2003 [Detail Setting]

■IP address setting

Do not use the IP address "192.168.0.18" when using multiple GOTs with the GOT 1000 series mixed.

Doing so may cause a communication error on the GOT.

31.2.4 PLC side settings

Configure the settings for the OMRON PLC.

For details on OMRON PLCs, refer to the following manual.

📖Manual of the OMRON PLC

For the communication between the OMRON PLC (SYSMAC CJ1, CJ2, or CS1 series) and the GOT, use the FINS communication.

For the FINS communication, the node must be specified according to the FINS address system. However, for the Ethernet network, the data transfer according to the IP address is required.

The following four methods are available for converting the FINS node address to the IP address.

- Automatic generation method (dynamic)
- Automatic generation method (static)
- IP address table conversion method
- Combined method

For details on OMRON PLCs, refer to the following manual.

📖Manual of the OMRON PLC

Node setting switch

Set the node setting switch on the module to the value of [Station] in [Connected Ethernet Controller Setting] in GT Designer3.

Note that the node setting switch is set in hexadecimal.

Convert this hexadecimal number to decimal, and set the value to [Station].

	Host	Net No.	Station	Unit Type	IP Address	Port No.	Communication
1	*	1	1	OMRON	192.168.3.1	9600	UDP

Set the node setting switch of the module to this value.

CX-Programmer setting

Use a software for programming apparatus (CX-Programmer Ver.3.20 or later) to configure the PLC communication settings.

Item		Setting range			
		Automatic generation method (dynamic)	Automatic generation method (static)*4*5	IP address table method*4*6	Combined method*4
Ethernet module CPU highly-functional module	Global	All 1 (Default)	All 1 (Default)	All 1 (Default)	All 1 (Default)
	IP address*1	192.168.0.1*3	192.168.0.1*3	192.168.0.1	192.168.0.1
	Subnet mask	255.255.255.0	255.255.255.0	255.255.255.0	255.255.255.0
	FINS UDP port*1	9600	9600	9600	9600
	IP address conversion	Automatic generation method (dynamic)	Automatic generation method (static)	IP address table method	Combined method
	IP address table	—	—	Destination node address: 11*7 Destination IP address: 192.168.0.18	—*8
	Transmission speed	Automatic detection (Default)	Automatic detection (Default)	Automatic detection (Default)	Automatic detection (Default)
	Dynamic node IP address change*2	Change dynamically (Default)*9	Change dynamically (Default)	Change dynamically (Default)	Change dynamically (Default)

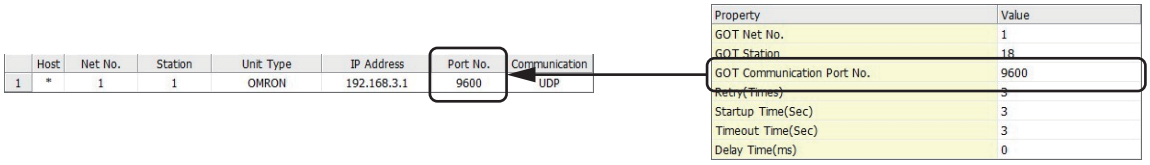
*1 Set the values of [IP Address] and [Port No.] in [Connected Ethernet Controller Setting] in GT Designer3 to [IP address] and [FINS UDP Port].

	Host	Net No.	Station	Unit Type	IP Address	Port No.	Communication
1	*	1	1	OMRON	192.168.3.1	9600	UDP

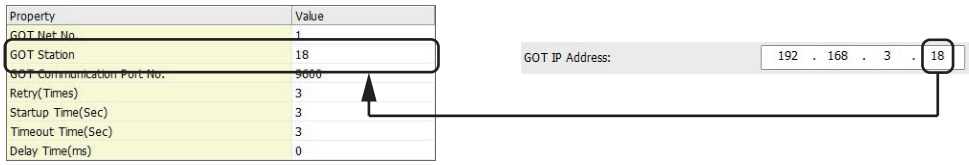
*2 The dynamic node IP address change function is available only when the Ethernet module to be used is Ver.1.3 or later.
Configure the settings in the module setting of CX-Programmer Ver.5.0 or later or in the WEB function.
For details on the dynamic node IP address change, refer to the following manual.
Manual of the OMRON PLC

*3 Set the node setting switch on the module to the lowest byte of the [IP Address].
Note that the node setting switch is set in hexadecimal. Convert this hexadecimal number to decimal, and set the value to the lowest byte of [IP Address].

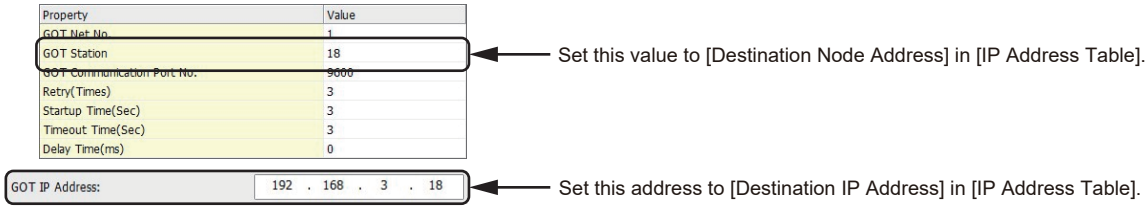
*4 In GT Designer3, set the value of [GOT Communication Port No.] in [Detail Setting] to [Port No.] in [Connected Ethernet Controller Setting].



*5 In GT Designer3, set the value of [GOT Station] in [Detail Setting] to the lowest byte of [GOT IP address] in [GOT IP Address Setting].



*6 In GT Designer3, set the value of [IP Address Table] to [GOT IP address] in [GOT IP Address Setting] and to [GOT Station] in [Detail Setting].



*7 Set the lowest byte of [Destination IP Address] to [Destination Node Address].

*8 To use [IP Address Table], apply the settings of the IP address table method.

*9 Not to set the dynamical change, set the same value to [GOT Communication Port No.] in [Detail Setting] and [Port No.] in [Connected Ethernet Controller Setting] in GT Designer3.

31.3 NJ, NX (Built-in Ethernet port connection)

☞ Page 2007 Connectable devices
☞ Page 2008 System configuration
☞ Page 2011 GOT side settings
☞ Page 2014 PLC side settings

31.3.1 Connectable devices

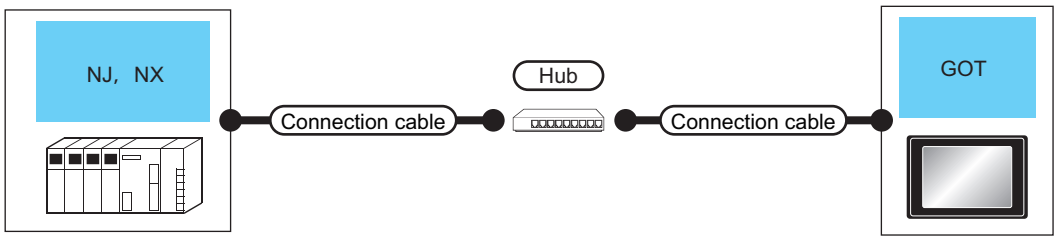
The following table shows the connectable models.

○: Supported, —: Not supported

Controller	Model	Clock	Connectable model
NJ	NJ501-1500 NJ501-1400 NJ501-1300 NJ501-1520 NJ501-1420 NJ501-1320 NJ501-1340	○*1	GT37 SoftGOT3000
	NJ301-1200 NJ301-1100	○*1	GT37 SoftGOT3000
	NJ101-1000 NJ101-9000 NJ101-1020 NJ101-9020	○*1	GT37 SoftGOT3000
NX	NX1P2-1140DT NX1P2-1140DT1 NX1P2-1040DT NX1P2-1040DT1 NX1P2-9024DT NX1P2-9024DT1	○*1	GT37 SoftGOT3000
	NX701-1700 NX701-1600	○*1	GT37 SoftGOT3000
	NX502-1700 NX502-1600 NX502-1500 NX502-1400 NX502-1300	○*1	GT37 SoftGOT3000
	NX102-1200 NX102-1100 NX102-1000 NX102-9000	○*1	GT37 SoftGOT3000

*1 The time setting function of the GOT is supported.

31.3.2 System configuration



For details on the connection cables and the maximum segment length, refer to the following.

☞ Page 2009 Connection cable
☞ Page 2009 Maximum segment length

For details on the maximum number of connected devices, refer to the following.

☞ Page 2010 Maximum number of connected devices

Controller	Connection cable	GOT	
		Interface	Model
NJ NX	Twisted pair cable	Built-in Ethernet interface of GOT	GT37 SoftGOT3000
		Ethernet interface of personal computer	GT37 SoftGOT3000

Connection cable

Use a connection cable that meets the following standards.

Standard	Category
10BASE-T	Shielded twisted pair cable (STP) or unshielded twisted pair cable (UTP) of category 3 or higher
100BASE-TX	Shielded twisted pair cable (STP) or unshielded twisted pair cable (UTP) of category 5 or higher
1000BASE-T	Shielded twisted pair cable (STP) or unshielded twisted pair cable (UTP) of category 5e or higher

The destination device connected with the twisted pair cable varies with the configuration of the Ethernet network system used.

Connect the cable to the Ethernet module, hub, or other system equipment corresponding to the applicable Ethernet network system.

Use cables, connectors, and hubs that meet the IEEE802.3 10BASE-T/100BASE-TX/1000BASE-T standards.

When only one GOT is connected, the GOT can be directly connected to the device without a hub.

Maximum segment length

The maximum segment length (length between a hub and a node) is 100 m.

The maximum length depends on the Ethernet equipment used.

The following shows the number of connectable hubs when a repeater hub is used.

- 10BASE-T: Up to 4 for a cascade connection (within 500 m)
- 100BASE-TX: Up to 2 for a cascade connection (within 205 m)
- 1000BASE-T: The number differs depending on the hub to be used.

When switching hubs are used, there is no theoretical limit to the number of cascade connections between switching hubs.

For the limit, contact the switching hub manufacturer.

Precautions

When multiple network devices (including GOTs) are connected in the same segment, the network load increases and the transmission speed between the GOT and PLC may be reduced.

The following actions may improve the communication performance.

- Use a switching hub compatible with 1000BASE-T (1 Gbps) or more.
- Reduce the number of devices monitored by the GOT.

Maximum number of connected devices

Up to 128 CPU modules can be connected to channels No. 1 to No. 4 of one GOT. (16 or less recommended)

The following shows the number of connectable controllers per GOT channel and the number of GOTs connectable to one controller.

Controller				GOT	
Model		Number of GOTs connectable to one PLC		Model	Number of connectable controllers per GOT channel
		Connection: CLASS3	Connection: UCMM		
NJ		32*1	32*1	GT37 SoftGOT3000	128
NX	NX1P2	32*1	32*1	GT37 SoftGOT3000	128
	NX701	128 for 1 port*1 (256 in total for 2 ports)	32 for 1 port*1 (64 in total for 2 ports)	GT37 SoftGOT3000	128
	NX102	32 for 1 port*1 (64 in total for 2 ports)	32 for 1 port*1 (64 in total for 2 ports)	GT37 SoftGOT3000	128

*1 If it is connected to devices other than the GOT using the connection, the number of connectable GOTs decreases.
For details, refer to the OMRON PLC user's manual.
Manual of the OMRON PLC

31.3.3 GOT side settings

[GOT Ethernet Setting]

Set the GOT Ethernet interface in GT Designer3.

Item	Description
[GOT IP Address Setting]	Set the IP address of the GOT.
[GOT Ethernet Common Setting]	Set the default gateway and other common items for GOT Ethernet interfaces.
[IP filter Setting]	The GOT allows or blocks access from IP addresses specified in the filtering list.

For details on the setting, refer to the following.

📖GT Designer3 (GOT3000) Screen Design Manual

Set the GT SoftGOT3000 Ethernet interface on the personal computer.

Precautions

Do not use 0 and 255 at the end of an IP address.

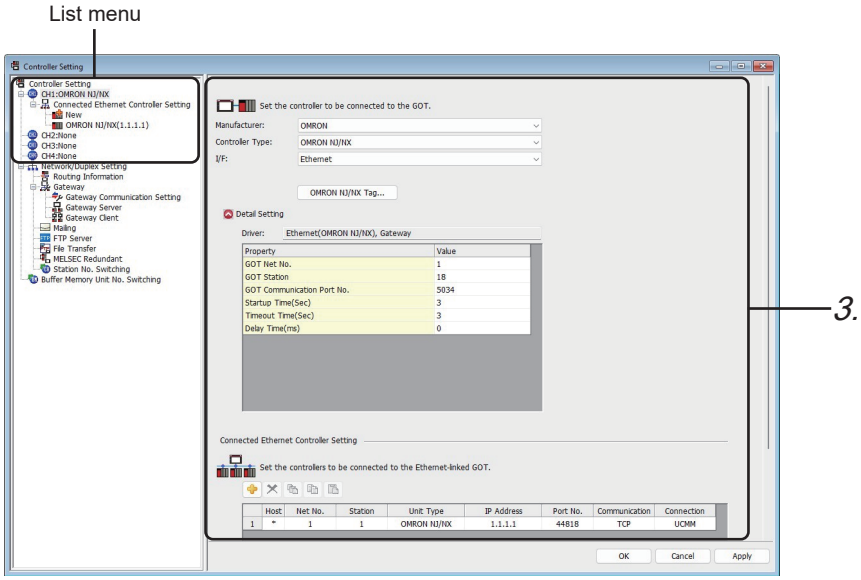
(Numbers of *.*.*.0 and *.*.*.255 are used by the system)

The GOT may not monitor the controller correctly with the above numbers.

Consult with the administrator of the network before setting an IP address to the GOT.

[Controller Setting]

Set the channel of the equipment to be connected to the GOT.



Operating procedure

1. Select [Common] → [Controller Setting] from the menu.
2. In the [Controller Setting] window, select the channel number to be used from the list menu.
3. Set the following items.

Item	Description
[Manufacturer]	[OMRON]
[Controller Type]	[OMRON NJ/NX]
[I/F]	[Ethernet]
[Detail Setting]	Configure the settings according to the usage environment. ☞ Page 2012 [Detail Setting]
[Connected Ethernet Controller Setting]	Configure the settings according to the controller to be connected. ☞ Page 2013 [Connected Ethernet Controller Setting]

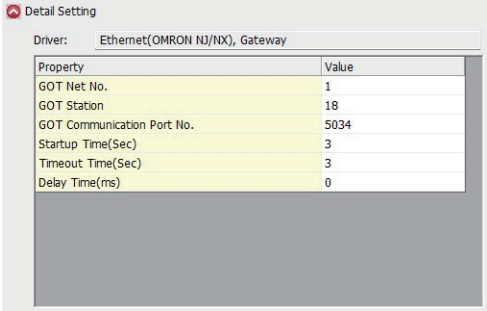
4. When you have completed the settings, click the [OK] button.

Point

The controller settings can be checked in [I/F Communication Setting].
For details, refer to the following.
GT Designer3 (GOT3000) Screen Design Manual

■[Detail Setting]

Configure the settings according to the usage environment.



[Driver]	Description	Range
[Driver]	This item appears when communication drivers are selectable according to the settings of [Controller Type] and [I/F].	[Ethernet(OMRON NJ/NX), Gateway]
[GOT Net No.]	Set the network number of the GOT.	[1] to [239]
[GOT Station]*1	Set the station number of the GOT.	[1] to [64]
[GOT Communication Port No.]	Set the GOT port number for the connection with the Ethernet equipment.	[1024] to [5010], [5014] to [49152], [49171] to [65534]
[Startup Time]	Set the time period from the GOT startup until the start of communication with the PLC CPU.	[3] seconds to [255] seconds
[Timeout Time]	Set a communication timeout period.	[1] second to [90] seconds
[Delay Time]	Set the delay time for reducing the load of the network and destination PLC.	[0] ms to [10000] ms

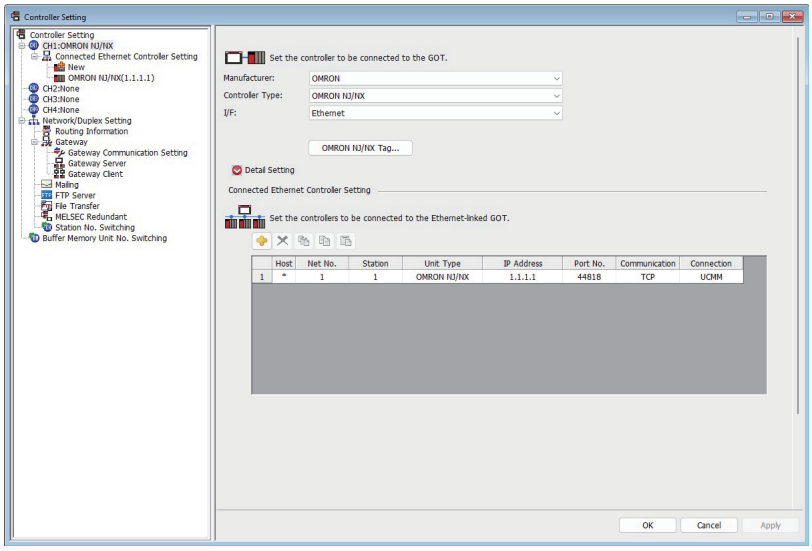
*1 Set values not set for [Station] in [Connected Ethernet Controller Setting].
Page 2013 [Connected Ethernet Controller Setting]

Point

• Controller settings using the GT37 utility
The controller settings can be changed in [Communication Settings] of the GT37 utility after writing [Communication Settings] of project data to GT37.
For details on the GT37 utility, refer to the following manual.
GOT3000 Series User's Manual (Utility & Maintenance Functions)
• Priority of the settings in [Controller Setting]
When the settings are configured in GT Designer3 or in the GT37 utility, the latest settings are effective.

■[Connected Ethernet Controller Setting]

Set the controller to be connected to the GOT by Ethernet.



Item	Description	Range
[Host]	The host is displayed. It refers to a station that can be connected without setting a station number. The host is indicated with an asterisk (*).	—
[Net No.]	Set the network number of the connected Ethernet equipment.	[1] to [239]
[Station]*1	Set the station number of the connected Ethernet equipment.	[1] to [64]
[Unit Type]	Select the model of the connected Ethernet equipment.	[OMRON NJ/NX]
[IP Address]	Set the IP address of the connected Ethernet equipment.	[0.0.0.0] to [255.255.255.255]*2
[Port No.]	Set the port number of the connected Ethernet equipment.	[44818]
[Communication]	Set the communication format of the connected Ethernet equipment.	[TCP]
[Connection]	Set the connection.	[UCMM], [Class3]

*1 Set values not set for [GOT Station] in [Detail Setting].
☞ Page 2012 [Detail Setting]

*2 NX701, NX502, and NX102 have two built-in EtherNet/IP ports.
Set [IP Address] in [Connected Ethernet Controller Setting] in GT Designer3 according to the port number setting of the NX701, NX502, or NX102 to be connected.

Precautions

■Station number setting

When connecting two or more GOTs in the Ethernet network, set a different station number to each GOT.

☞ Page 2013 [Connected Ethernet Controller Setting]

■IP address setting

Do not use the IP address "192.168.0.18" when using multiple GOTs with the GOT 1000 series mixed.

Doing so may cause a communication error on the GOT.

31.3.4 PLC side settings

Configure the settings for the OMRON PLC.
For details on OMRON PLCs, refer to the following manual.
📖Manual of the OMRON PLC
Use the automation software Sysmac Studio to configure the PLC communication settings.
For the NJ/NX series versions compatible with Sysmac Studio, refer to the following manual.
📖Manual of the OMRON PLC

Precautions

If data is written to or read from an OMRON NJ/NX tag immediately after the OMRON NJ or NX series is turned on, a system alarm may occur.
In such a case, specify a longer time after which the GOT starts communicating with the OMRON NJ or NX series by setting [Startup Time] in the communication detail settings.
For details, refer to the following manual.
📖GT Designer3 (GOT3000) Screen Design Manual

Settings in the automation software Sysmac Studio

Item	Description	Range
IP address*1*3	Set the IP address.	0.0.0.0 to 255.255.255.255
Subnet mask*2*3	When a subnetwork is used, set the subnet mask. (Only for connection via router) If the sub network is not used, the default value (255.255.255.0) is set.	0.0.0.0 to 255.255.255.255

*1 Apply the same setting as [Connected Ethernet Controller Setting] of the GOT.
☞ Page 2013 [Connected Ethernet Controller Setting]
*2 Apply the same setting as [GOT Ethernet Setting] of the GOT.
☞ Page 2011 [GOT Ethernet Setting]
*3 NX701, NX502, and NX102 have two built-in EtherNet/IP ports that can be set individually.

31.4 NJ (Ethernet module connection)

☞ Page 2015 Connectable devices
☞ Page 2016 System configuration
☞ Page 2018 GOT side settings
☞ Page 2021 PLC side settings

31.4.1 Connectable devices

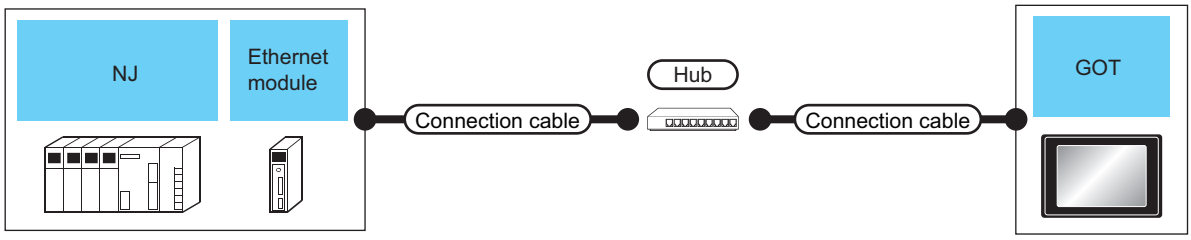
The following table shows the connectable models.

○: Supported, —: Not supported

Controller	Model	Clock	Ethernet module*1	Connectable model
NJ	NJ501-1500 NJ501-1400 NJ501-1300 NJ501-1520 NJ501-1420 NJ501-1320 NJ501-1340	○*2	CJ1W-EIP21*3	GT37 SoftGOT3000
	NJ301-1200 NJ301-1100	○*2	CJ1W-EIP21*3	GT37 SoftGOT3000
	NJ101-1000 NJ101-9000 NJ101-1020 NJ101-9020	○*2	CJ1W-EIP21*3	GT37 SoftGOT3000

*1 Product manufactured by OMRON Corporation.
For details on the product, contact OMRON Corporation.
*2 The time setting function of the GOT is supported.
*3 Use an EtherNet/IP module Ver.2.1 or later.
Also, use a CPU module Ver.1.01 or later and Sysmac Studio Ver.1.02 or later.

31.4.2 System configuration



For details on the connection cables and the maximum segment length, refer to the following.

☞ Page 2016 Connection cable
☞ Page 2017 Maximum segment length

For details on the maximum number of connected devices, refer to the following.

☞ Page 2017 Maximum number of connected devices

Controller	Ethernet module	Connection cable	GOT	
			Interface	Model
NJ	*1	Twisted pair cable	Built-in Ethernet interface of GOT	GT37 SoftGOT3000
			Ethernet interface of personal computer	GT37 SoftGOT3000

*1 For the connectable Ethernet modules, refer to the following.
☞ Page 2015 Connectable devices

Connection cable

Use a connection cable that meets the following standards.

Standard	Category
10BASE-T	Shielded twisted pair cable (STP) or unshielded twisted pair cable (UTP) of category 3 or higher
100BASE-TX	Shielded twisted pair cable (STP) or unshielded twisted pair cable (UTP) of category 5 or higher
1000BASE-T	Shielded twisted pair cable (STP) or unshielded twisted pair cable (UTP) of category 5e or higher

The destination device connected with the twisted pair cable varies with the configuration of the Ethernet network system used.

Connect the cable to the Ethernet module, hub, or other system equipment corresponding to the applicable Ethernet network system.

Use cables, connectors, and hubs that meet the IEEE802.3 10BASE-T/100BASE-TX/1000BASE-T standards.

When only one GOT is connected, the GOT can be directly connected to the device without a hub.

Maximum segment length

The maximum segment length (length between a hub and a node) is 100 m.
The maximum length depends on the Ethernet equipment used.
The following shows the number of connectable hubs when a repeater hub is used.

- 10BASE-T: Up to 4 for a cascade connection (within 500 m)
- 100BASE-TX: Up to 2 for a cascade connection (within 205 m)
- 1000BASE-T: The number differs depending on the hub to be used.

When switching hubs are used, there is no theoretical limit to the number of cascade connections between switching hubs.
For the limit, contact the switching hub manufacturer.

Precautions

When multiple network devices (including GOTs) are connected in the same segment, the network load increases and the transmission speed between the GOT and PLC may be reduced.
The following actions may improve the communication performance.

- Use a switching hub compatible with 1000BASE-T (1 Gbps) or more.
- Reduce the number of devices monitored by the GOT.

Maximum number of connected devices

Up to 128 CPU modules can be connected to channels No. 1 to No. 4 of one GOT. (16 or less recommended)
The following shows the number of connectable controllers per GOT channel and the number of GOTs connectable to one controller.

Controller			GOT	
Model	Number of GOTs connectable to one PLC		Model	Number of connectable controllers per GOT channel
	Connection: CLASS3	Connection: UCMM		
NJ	128*1	32*1	GT37 SoftGOT3000	128

*1 If it is connected to devices other than the GOT using the connection, the number of connectable GOTs decreases.
For details, refer to the OMRON PLC user's manual.
Manual of the OMRON PLC

31.4.3 GOT side settings

[GOT Ethernet Setting]

Set the GOT Ethernet interface in GT Designer3.

Item	Description
[GOT IP Address Setting]	Set the IP address of the GOT.
[GOT Ethernet Common Setting]	Set the default gateway and other common items for GOT Ethernet interfaces.
[IP filter Setting]	The GOT allows or blocks access from IP addresses specified in the filtering list.

For details on the setting, refer to the following.

📖GT Designer3 (GOT3000) Screen Design Manual

Set the GT SoftGOT3000 Ethernet interface on the personal computer.

Precautions

Do not use 0 and 255 at the end of an IP address.

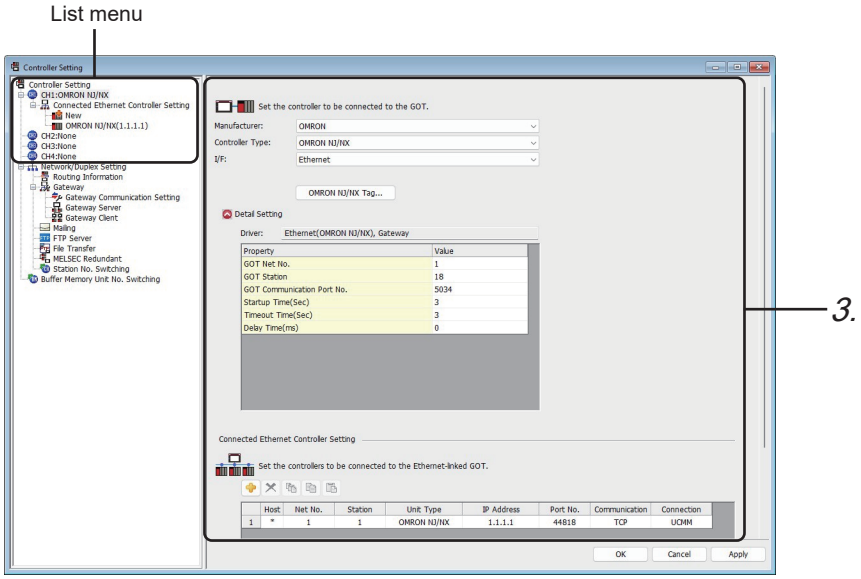
(Numbers of *.*.*.0 and *.*.*.255 are used by the system)

The GOT may not monitor the controller correctly with the above numbers.

Consult with the administrator of the network before setting an IP address to the GOT.

[Controller Setting]

Set the channel of the equipment to be connected to the GOT.



Operating procedure

1. Select [Common] → [Controller Setting] from the menu.
2. In the [Controller Setting] window, select the channel number to be used from the list menu.
3. Set the following items.

Item	Description
[Manufacturer]	[OMRON]
[Controller Type]	[OMRON NJ/NX]
[I/F]	[Ethernet]
[Detail Setting]	Configure the settings according to the usage environment. ☞ Page 2019 [Detail Setting]
[Connected Ethernet Controller Setting]	Configure the settings according to the controller to be connected. ☞ Page 2020 [Connected Ethernet Controller Setting]

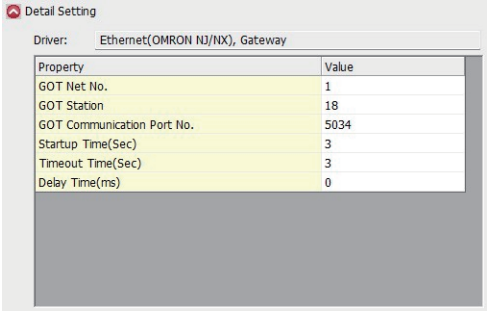
4. When you have completed the settings, click the [OK] button.

Point

The controller settings can be checked in [I/F Communication Setting].
For details, refer to the following.
GT Designer3 (GOT3000) Screen Design Manual

■[Detail Setting]

Configure the settings according to the usage environment.



[Driver]	Description	Range
[Driver]	This item appears when communication drivers are selectable according to the settings of [Controller Type] and [I/F].	[Ethernet(OMRON NJ/NX), Gateway]
[GOT Net No.]	Set the network number of the GOT.	[1] to [239]
[GOT Station]*1	Set the station number of the GOT.	[1] to [64]
[GOT Communication Port No.]	Set the GOT port number for the connection with the Ethernet equipment.	[1024] to [5010], [5014] to [49152], [49171] to [65534]
[Startup Time]	Set the time period from the GOT startup until the start of communication with the PLC CPU.	[3] seconds to [255] seconds
[Timeout Time]*2	Set a communication timeout period.	[1] second to [90] seconds
[Delay Time]	Set the delay time for reducing the load of the network and destination PLC.	[0] ms to [10000] ms

*1 Set values not set for [Station] in [Connected Ethernet Controller Setting].
☞ Page 2020 [Connected Ethernet Controller Setting]

*2 When [CJ1W-EIP21] is set for [Unit Type] in [Connected Ethernet Controller Setting], even if [Timeout Time] is set to 10 seconds or shorter, the GOT operates with the communication timeout period of 10 seconds.
If [CJ1W-EIP21] and [OMRON NJ/NX] are selectable for [Unit Type] in [Connected Ethernet Controller Setting], and [OMRON NJ/NX] (built-in port connecting side) is set, the GOT also operates with the communication timeout period of 10 seconds.
☞ Page 2020 [Connected Ethernet Controller Setting]

Point

- Controller settings using the GT37 utility

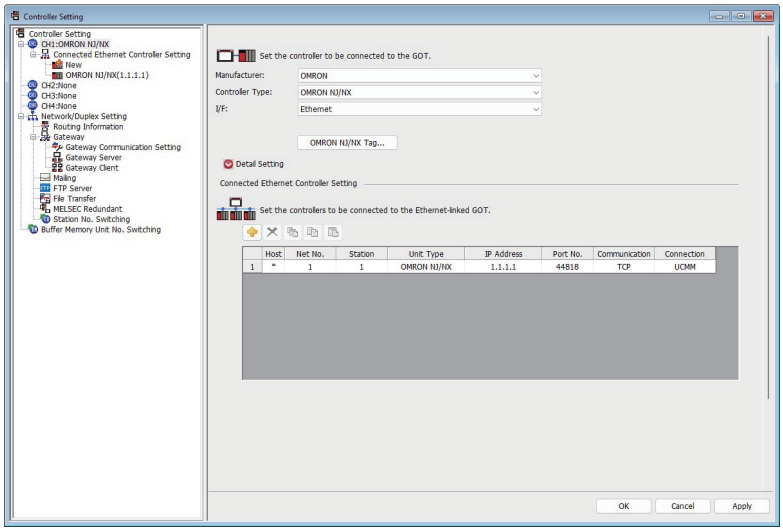
The controller settings can be changed in [Communication Settings] of the GT37 utility after writing [Communication Settings] of project data to GT37.
For details on the GT37 utility, refer to the following manual.
GOT3000 Series User's Manual (Utility & Maintenance Functions)

- Priority of the settings in [Controller Setting]

When the settings are configured in GT Designer3 or in the GT37 utility, the latest settings are effective.

■[Connected Ethernet Controller Setting]

Set the controller to be connected to the GOT by Ethernet.



Item	Description	Range
[Host]	The host is displayed. It refers to a station that can be connected without setting a station number. The host is indicated with an asterisk (*).	—
[Net No.]	Set the network number of the connected Ethernet equipment.	[1] to [239]
[Station]*1	Set the station number of the connected Ethernet equipment.	[1] to [64]
[Unit Type]	Select the model of the connected Ethernet equipment.	[CJ1W-EIP21]
[IP Address]	Set the IP address of the connected Ethernet equipment.	[0.0.0.0] to [255.255.255.255]
[Port No.]	Set the port number of the connected Ethernet equipment.	[44818]
[Communication]	Set the communication format of the connected Ethernet equipment.	[TCP]
[Connection]	Set the connection.	[UCMM], [Class3]

*1 Set values not set for [GOT Station] in [Detail Setting].
☞ Page 2019 [Detail Setting]

Precautions

■Station number setting

When connecting two or more GOTs in the Ethernet network, set a different station number to each GOT.

☞ Page 2020 [Connected Ethernet Controller Setting]

■IP address setting

Do not use the IP address "192.168.0.18" when using multiple GOTs with the GOT 1000 series mixed.

Doing so may cause a communication error on the GOT.

31.4.4 PLC side settings

Configure the settings for the OMRON PLC.
For details on OMRON PLCs, refer to the following manual.
📖Manual of the OMRON PLC
Use the automation software Sysmac Studio to configure the PLC communication settings.
For the NJ series versions compatible with Sysmac Studio, refer to the following manual.
📖Manual of the OMRON PLC

Precautions

If data is written to or read from an OMRON NJ tag immediately after the OMRON NJ NX series is turned on, a system alarm may occur.
In such a case, specify a longer time after which the GOT starts communicating with the OMRON NJ series by setting [Startup Time] in the communication detail settings.
For details, refer to the following manual.
📖GT Designer3 (GOT3000) Screen Design Manual

Settings in the automation software Sysmac Studio

Item	Description	Range
IP address*1	Set the IP address.	0.0.0.0 to 255.255.255.255
Subnet mask*2	When a subnetwork is used, set the subnet mask. (Only for connection via router) If the sub network is not used, the default value (255.255.255.0) is set.	0.0.0.0 to 255.255.255.255

*1 Apply the same setting as [Connected Ethernet Controller Setting] of the GOT.
☞ Page 2020 [Connected Ethernet Controller Setting]
*2 Apply the same setting as [GOT Ethernet Setting] of the GOT.
☞ Page 2018 [GOT Ethernet Setting]

32 Temperature controller (serial connection)

☞ Page 2022 Connectable devices
☞ Page 2023 System configuration
☞ Page 2030 Connection diagram
☞ Page 2037 GOT side settings
☞ Page 2039 Temperature controller side settings

32.1 Connectable devices

The following table shows the connectable models.
○: Supported, —: Not supported

Series	Model	Communication type	Connectable model
THERMAC NEO	E5AN-H E5EN-H E5AN-HT E5EN-HT	RS-232 RS-422 RS-485	GT37 SoftGOT3000
	E5CN-H E5CN-HT	RS-232 RS-485	GT37 SoftGOT3000
E5□C	E5CC E5DC E5GC E5EC E5AC E5CC-T E5EC-T E5AC-T ESCC-B E5EC-B	RS-232 RS-485	GT37 SoftGOT3000
E5□D	E5CD E5ED E5CD-B E5ED-B	RS-232 RS-485	GT37 SoftGOT3000
THERMAC R	E5AR E5ER E5AR-T E5ER-T	RS-232 RS-485	GT37 SoftGOT3000

Precautions

Since the temperature controller does not have a clock function, the settings of "time adjusting" or "time broadcast" by GOT clock control will be disabled.

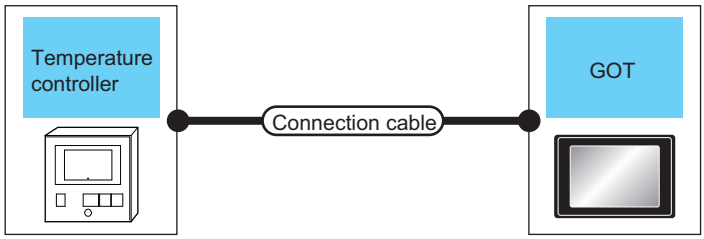
32.2 System configuration

☞ Page 2023 Connection to THERMAC NEO series
☞ Page 2026 Connection to E5□C series or E5□D series
☞ Page 2028 Connection to THERMAC R series

32.2.1 Connection to THERMAC NEO series

☞ Page 2023 When connecting to one temperature controller
☞ Page 2024 When connecting to multiple temperature controllers (via a converter)
☞ Page 2025 When connecting to multiple temperature controllers

When connecting to one temperature controller



For details on the maximum number of connected devices, refer to the following.

☞ Page 2023 Maximum number of connected devices

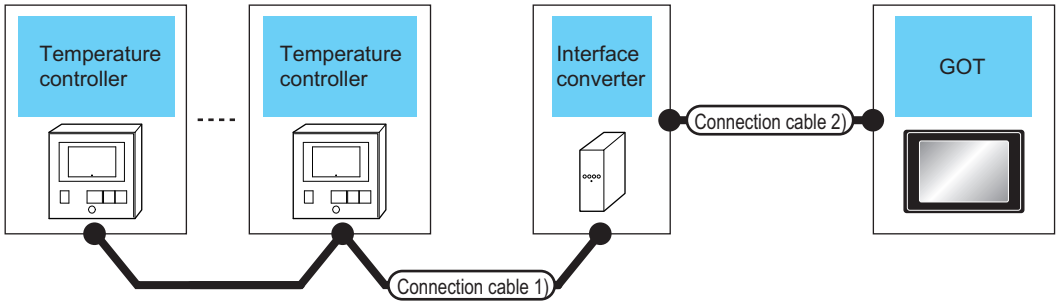
Temperature controller		Connection cable		GOT	
Model	**Communication type**	**Cable model Connection diagram number**	**Maximum length**	**Interface**	**Model**
E5AN-H E5EN-H E5AN-HT E5EN-HT E5CN-H E5CN-HT	RS-232	User preparing Page 2030 RS-232 connection diagram (1)	15 m	Built-in RS-232 interface + GT35-C02HR2-9P	GT37 SoftGOT3000
				GT37-IF2000 + GT15-RS2-9P	GT37 SoftGOT3000

■Maximum number of connected devices

The following shows the number of connectable GOTs.

Controller	GOT	
Model	**Model**	**Number of connectable controllers per GOT channel**
E5AN-H E5EN-H E5AN-HT E5EN-HT E5CN-H E5CN-HT	GT37 SoftGOT3000	1

When connecting to multiple temperature controllers (via a converter)



For details on the maximum number of connected devices, refer to the following.

☞ Page 2024 Maximum number of connected devices

Temperature controller	Connection cable 1)		Converter*1		Connection cable 2)		GOT	
Model	Cable model Connection diagram number	Maximum length	Model	Communication type	Cable model Connection diagram number	Maximum length	Interface	Model
E5AN-H E5EN-H E5AN-HT E5EN-HT E5CN-H E5CN-HT	User preparing Page 2032 RS-485 connection diagram (1)	500 m	K3SC-10	RS-232	User preparing Page 2030 RS-232 connection diagram (2)	15 m	Built-in RS-232 interface + GT35-C02HR2-9P	GT37 SoftGOT3000
							GT37-IF2000 + GT15-RS2-9P	GT37 SoftGOT3000

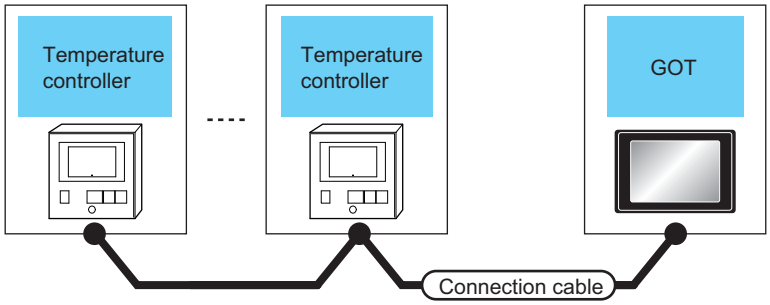
*1 The converter is a product manufactured by OMRON Corporation.
For details on the product, contact OMRON Corporation.

■Maximum number of connected devices

The following shows the number of connectable GOTs.

Controller	GOT	
Model	Model	Number of connectable controllers per GOT channel
E5AN-H E5EN-H E5AN-HT E5EN-HT E5CN-H E5CN-HT	GT37 SoftGOT3000	32

When connecting to multiple temperature controllers



For details on the maximum number of connected devices, refer to the following.

☞ Page 2025 Maximum number of connected devices

Temperature controller		Connection cable		GOT	
Model	**Communication type**	**Cable model Connection diagram number**	**Maximum length**	**Interface**	**Model**
E5AN-H E5EN-H E5AN-HT E5EN-HT E5CN-H E5CN-HT	RS-485	User preparing Page 2035 RS-485 connection diagram (4)	500 m	Built-in RS-485 interface	GT37 SoftGOT3000
		User preparing Page 2034 RS-485 connection diagram (3)	500 m	GT37-IF2000 + GT15-RS4-TE	GT37 SoftGOT3000
E5AN-H E5EN-H E5AN-HT E5EN-HT	RS-422	User preparing Page 2031 RS-422 connection diagram (1)	500 m	Built-in RS-422 interface	GT37 SoftGOT3000
				GT37-IF2000 + GT15-RS4-9S	GT37 SoftGOT3000

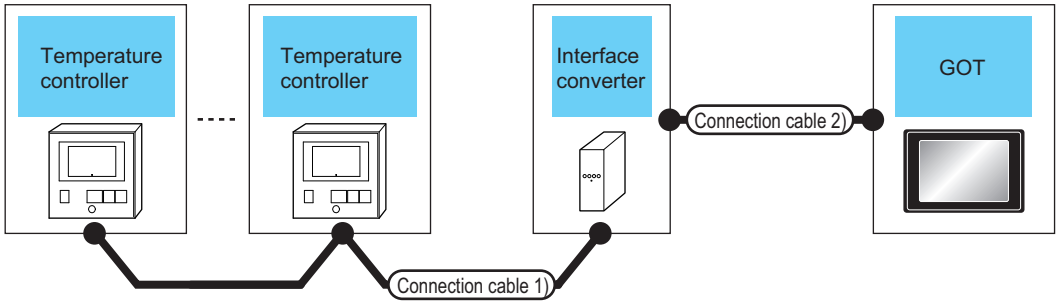
■Maximum number of connected devices

The following shows the number of connectable GOTs.

Controller	GOT	
Model	**Model**	**Number of connectable controllers per GOT channel**
E5AN-H E5EN-H E5AN-HT E5EN-HT E5CN-H E5CN-HT	GT37 SoftGOT3000	31

32.2.2 Connection to E5□C series or E5□D series

When connecting to multiple temperature controllers (via a converter)



For details on the maximum number of connected devices, refer to the following.

☞ Page 2026 Maximum number of connected devices

Temperature controller	Connection cable 1)		Converter*1		Connection cable 2)		GOT	
Model	Cable model Connection diagram number	Maximum length	Model	Communication type	Cable model Connection diagram number	Maximum length	Interface	Model
E5CC E5DC E5GC E5EC E5AC E5CC-T E5EC-T E5AC-T E5CC-B E5CD-B E5ED-B E5CD E5ED E5CD-B E5ED-B	User preparing Page 2032 RS-485 connection diagram (1)	500 m	K3SC-10	RS-232	User preparing Page 2030 RS-232 connection diagram (2)	15 m	Built-in RS-232 interface + GT35-C02HR2-9P	GT37 SoftGOT3000
							GT37-IF2000 + GT15-RS2-9P	GT37 SoftGOT3000

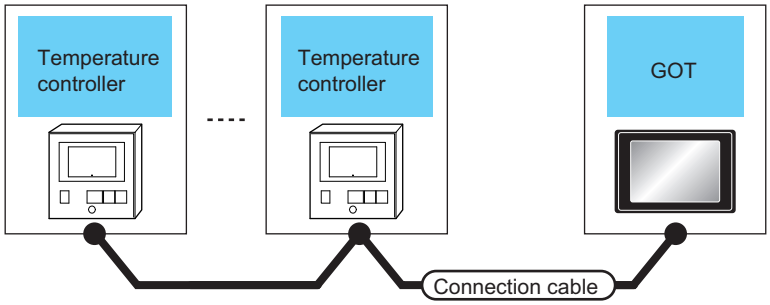
*1 The converter is a product manufactured by OMRON Corporation.
For details on the product, contact OMRON Corporation.

■Maximum number of connected devices

The following shows the number of connectable GOTs.

Controller	GOT	
Model	Model	Number of connectable controllers per GOT channel
E5CC E5DC E5GC E5EC E5AC E5CC-T E5EC-T E5AC-T E5CC-B E5CD-B E5ED-B E5CD E5ED E5CD-B E5ED-B	GT37 SoftGOT3000	32

When connecting to multiple temperature controllers



For details on the maximum number of connected devices, refer to the following.

☞ Page 2028 Maximum number of connected devices

Temperature controller		Connection cable		GOT	
Model	**Communication type**	**Cable model Connection diagram number**	**Maximum length**	**Interface**	**Model**
E5CC E5DC E5GC E5EC E5AC E5CD-B E5ED-B	RS-485	User preparing Page 2033 RS-485 connection diagram (2)	500 m	FA-LTBGT2R4CBL05 (0.5 m) FA-LTBGT2R4CBL10 (1 m) FA-LTBGT2R4CBL20 (2 m)	GT37 SoftGOT3000
E5CC E5DC E5GC E5EC E5AC E5CC-T E5EC-T E5AC-T E5CD E5ED	RS-485	User preparing Page 2035 RS-485 connection diagram (4)	500 m	Built-in RS-485 interface	GT37 SoftGOT3000
		User preparing Page 2034 RS-485 connection diagram (3)	500 m	GT37-IF2000 + GT15-RS4-TE	GT37 SoftGOT3000
ESCC-B E5EC-B E5CD-B E5ED-B	RS-485	User preparing Page 2036 RS-485 connection diagram (5)	500 m	Built-in RS-485 interface	GT37 SoftGOT3000
				GT37-IF2000 + GT15-RS4-9S	GT37 SoftGOT3000
ESCC E5EC E5CC-B E5EC-B E5CD E5ED E5CD-B E5ED-B	RS-485	User preparing Page 2036 RS-485 connection diagram (6)	500 m	GT37-IF2000 + GT15-RS4-TE	GT37 SoftGOT3000

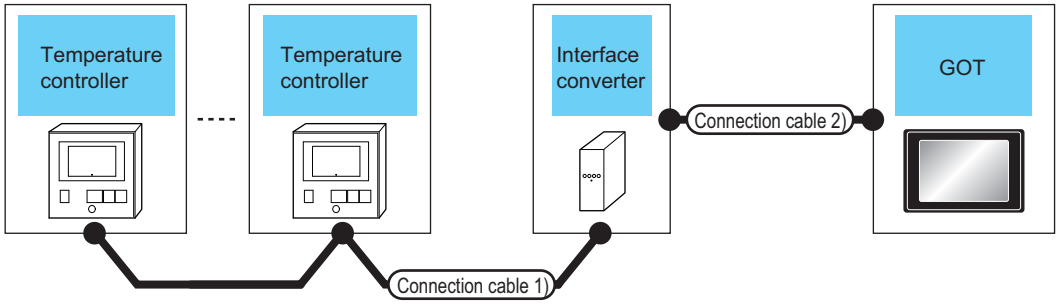
■Maximum number of connected devices

The following shows the number of connectable GOTs.

Controller	GOT	
Model	**Model**	**Number of connectable controllers per GOT channel**
E5CC E5DC E5GC E5EC E5AC E5CC-T E5EC-T E5AC-T E5CC-B E5EC-B E5CD E5ED E5CD-B E5ED-B	GT37 SoftGOT3000	31

32.2.3 Connection to THERMAC R series

When connecting to multiple temperature controllers (via a converter)



For details on the maximum number of connected devices, refer to the following.

☞ Page 2028 Maximum number of connected devices

Temperature controller	Connection cable 1)		Converter*1		Connection cable 2)		GOT	
Model	**Cable model Connection diagram number**	**Maximum length**	**Model**	**Communication type**	**Cable model Connection diagram number**	**Maximum length**	**Interface**	**Model**
E5AR E5ER E5AR-T E5ER-T	User preparing Page 2032 RS-485 connection diagram (1)	500 m	K3SC-10	RS-232	User preparing Page 2030 RS-232 connection diagram (2)	15 m	Built-in RS-232 interface + GT35-C02HR2-9P	GT37 SoftGOT3000
							GT37-IF2000 + GT15-RS2-9P	GT37 SoftGOT3000

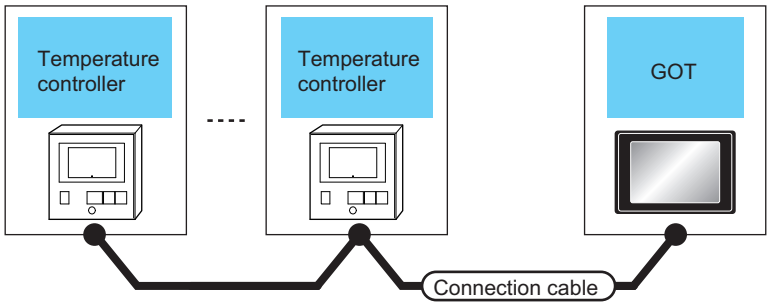
*1 The converter is a product manufactured by OMRON Corporation.
For details on the product, contact OMRON Corporation.

■Maximum number of connected devices

The following shows the number of connectable GOTs.

Controller	GOT	
Model	**Model**	**Number of connectable controllers per GOT channel**
E5AR E5ER E5AR-T E5ER-T	GT37 SoftGOT3000	32

When connecting to multiple temperature controllers



For details on the maximum number of connected devices, refer to the following.

☞ Page 2029 Maximum number of connected devices

Temperature controller		Connection cable		GOT	
Model	**Communication type**	**Cable model Connection diagram number**	**Maximum length**	**Interface**	**Model**
E5AR E5ER	RS-485	User preparing Page 2033 RS-485 connection diagram (2)	500 m	FA-LTBGT2R4CBL05 (0.5 m) FA-LTBGT2R4CBL10 (1 m) FA-LTBGT2R4CBL20 (2 m)	GT37 SoftGOT3000
		User preparing Page 2035 RS-485 connection diagram (4)	500 m	Built-in RS-485 interface	GT37 SoftGOT3000
E5AR E5ER E5AR-T E5ER-T	RS-485	User preparing Page 2034 RS-485 connection diagram (3)	500 m	GT37-IF2000 + GT15-RS4-TE	GT37 SoftGOT3000

■Maximum number of connected devices

The following shows the number of connectable GOTs.

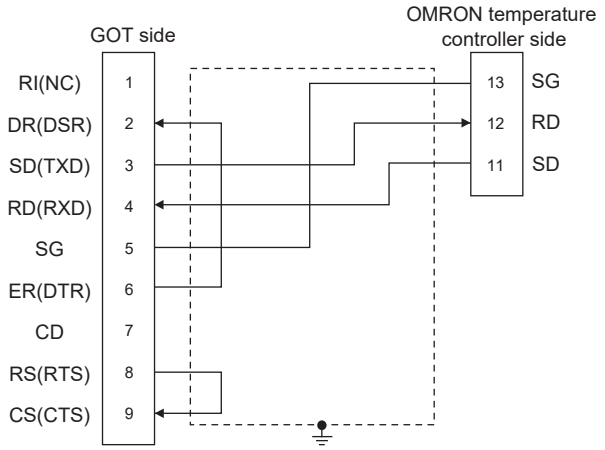
Controller	GOT	
Model	**Model**	**Number of connectable controllers per GOT channel**
E5AR E5ER E5AR-T E5ER-T	GT37 SoftGOT3000	31

32.3 Connection diagram

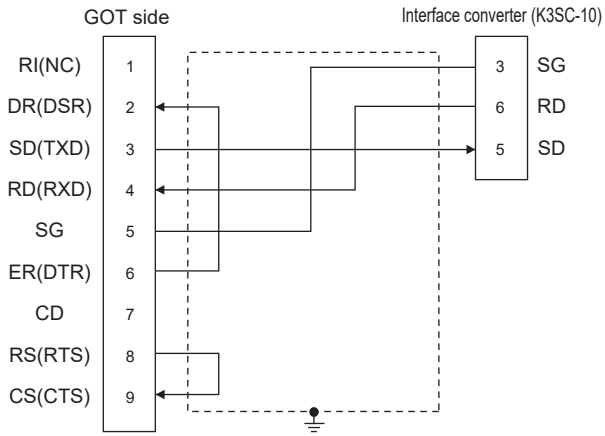
The following diagram shows the connection between the GOT and the controller.

32.3.1 RS-232 cable

RS-232 connection diagram (1)



RS-232 connection diagram (2)



Preparation of the RS-232 cable

■Cable length

The length of the RS-232 cable must be 15 m or less.

■GOT side connector

For the GOT side connector, refer to the following.

☞ Page 2954 GOT connector specifications

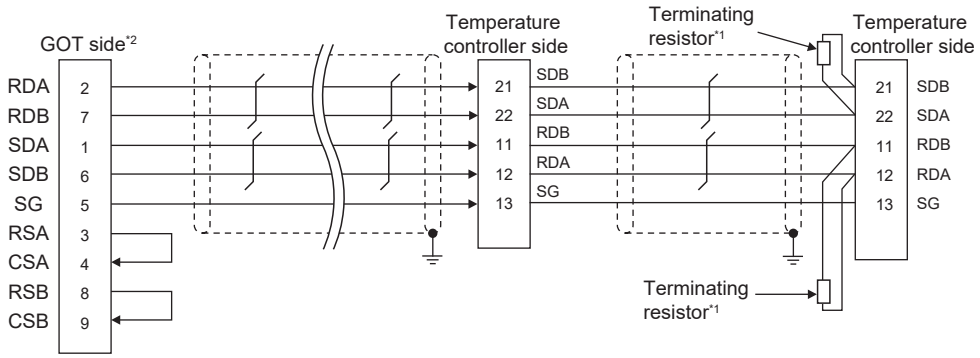
■OMRON temperature controller side connector

Use a connector compatible with the OMRON PLC.

For details, refer to the user's manual of the OMRON temperature controller.

32.3.2 RS-422 cable

RS-422 connection diagram (1)



*1 A terminating resistor of 240Ω 1/2W should be provided for a temperature controller which will be the terminal.
*2 Set the terminating resistor to 330Ω on the GOT in the end position.

Preparation of the RS-422 cable

■Cable length

The length of the RS-422 cable must be 500 m or less.

■GOT side connector

For the GOT side connector, refer to the following.

☞ Page 2954 GOT connector specifications

■OMRON temperature controller side connector

Use a connector compatible with the OMRON PLC.

For details, refer to the user's manual of the OMRON temperature controller.

Terminating resistor settings

■GOT side

Set the terminating resistor setting switch to 330Ω.

For details on the terminating resistor settings, refer to the following.

☞ Page 2956 Terminating resistors of GOT

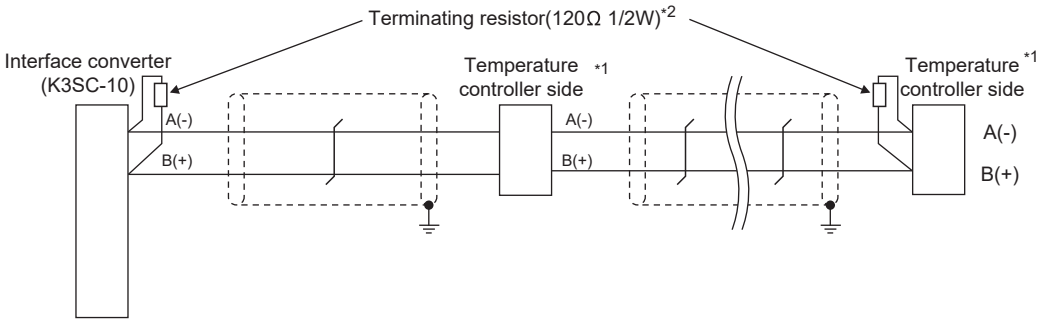
■OMRON temperature controller side

When connecting the GOT and an OMRON temperature controller, a terminating resistor must be connected to the OMRON temperature controller side.

📖Manual of the OMRON temperature controller

32.3.3 RS-485 cable

RS-485 connection diagram (1)

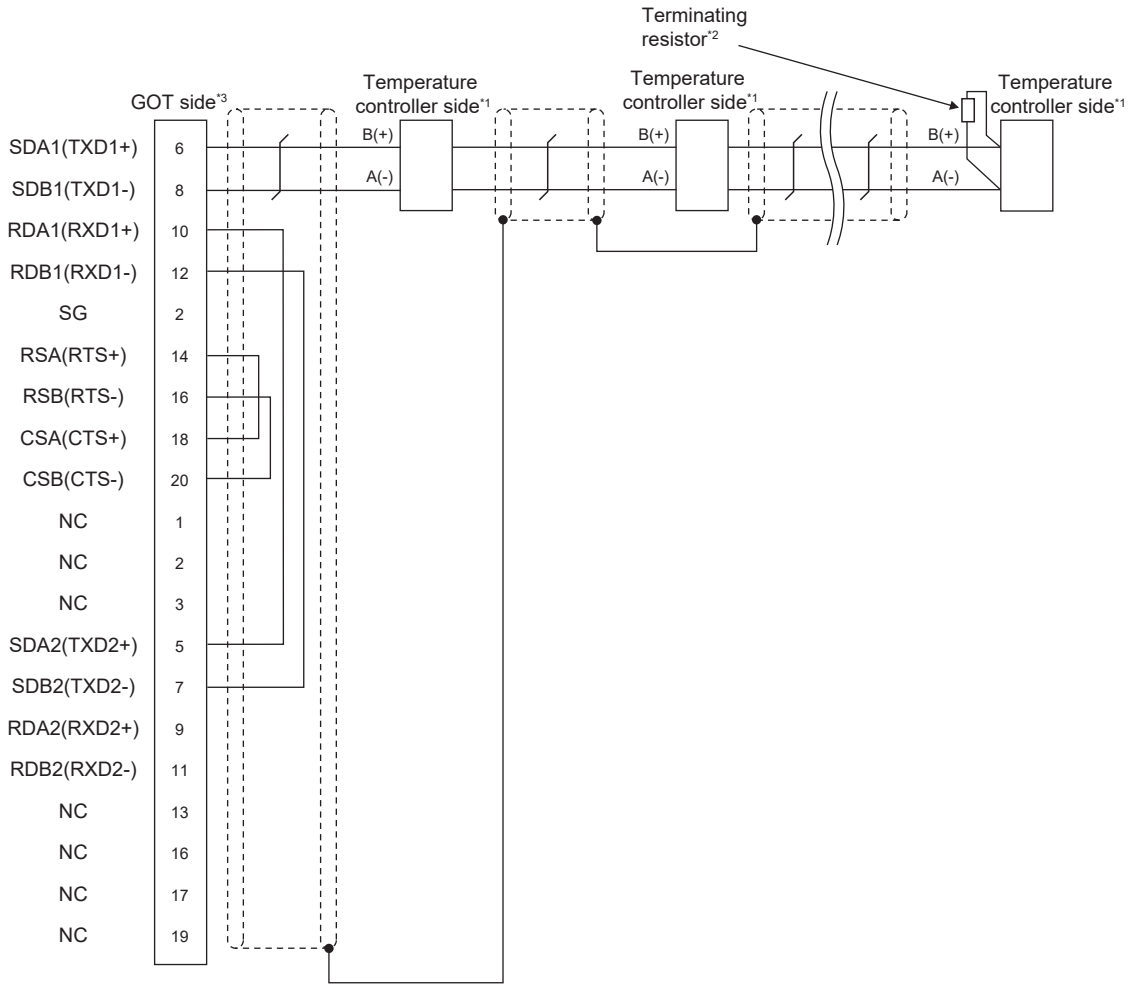


*1 Pin numbers of the temperature controller differ depending on the model.
Refer to the following.

Signal name	Temperature controller model						Converter (K3SC-10)
	E5AN-H E5EN-H E5AN-HT E5EN-HT	E5CC(-T) E5EC(-T) E5AC(-T)	E5CC-B E5EC-B	E5DC	E5GC	E5AR(-T) E5ER(-T)	
	Pin No.	Pin No.	Pin No.	Pin No.	Pin No.	Pin No.	Pin No.
A(-)	12	14	19 or 20	4	8	2	8
B(+)	11	13	17 or 18	3	7	1	11

*2 A terminating resistor should be provided for a temperature controller which will be the terminal and the converter.

RS-485 connection diagram (2)

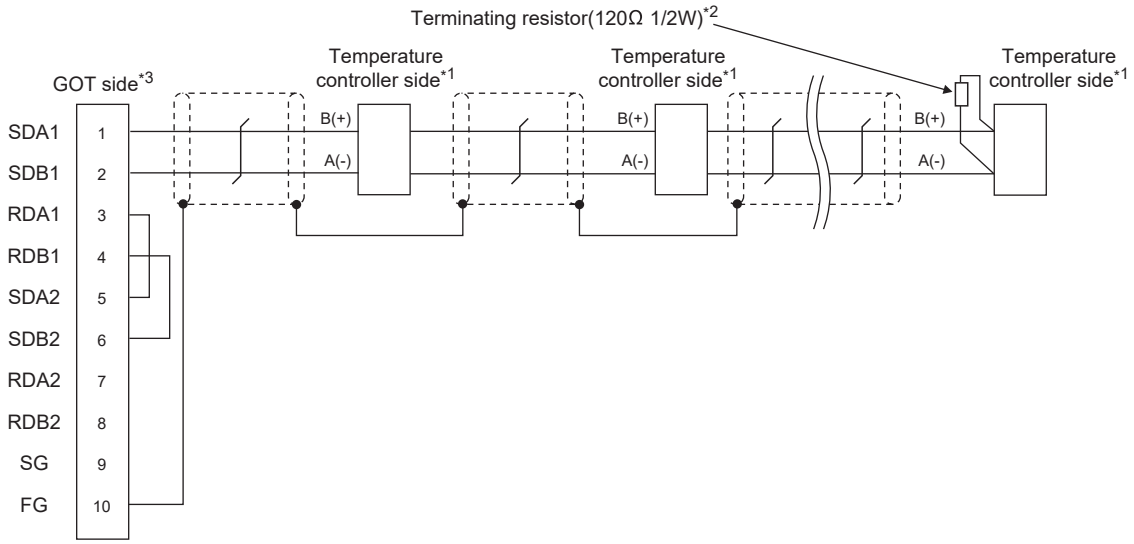


*1 Pin numbers of the temperature controller differ depending on the model.
Refer to the following.

Signal name	Temperature controller model					
	E5AN-H E5EN-H E5AN-HT E5EN-HT	E5CC(-T) E5EC(-T) E5AC(-T) E5CD E5ED	E5CC-B E5EC-B E5CD-B E5ED-B	E5DC	E5GC	E5AR(-T) E5ER(-T)
	Pin No.	Pin No.	Pin No.	Pin No.	Pin No.	Pin No.
A(-)	12	14	19 or 20	4	8	2
B(+)	11	13	17 or 18	3	7	1

*2 A terminating resistor should be provided for a temperature controller which will be the terminal.
*3 Set the terminating resistor to 330Ω on the GOT in the end position.
☞ Page 2956 Terminating resistors of GOT

RS-485 connection diagram (3)

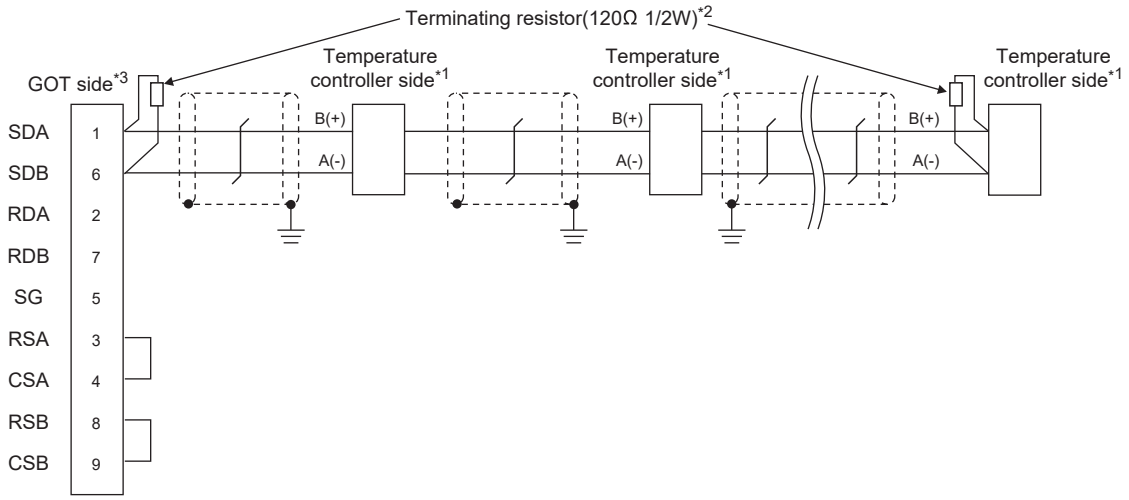


*1 Pin numbers of the temperature controller differ depending on the model.
Refer to the following.

Signal name	Temperature controller model					
	E5AN-H E5EN-H E5AN-HT E5EN-HT	**E5CC(-T) E5EC(-T) E5AC(-T) E5CD E5ED**	**E5CC-B E5EC-B E5CD-B E5ED-B**	**E5DC**	**E5GC**	**E5AR(-T) E5ER(-T)**
	Pin No.	**Pin No.**	**Pin No.**	**Pin No.**	**Pin No.**	**Pin No.**
A(-)	12	14	19 or 20	4	8	2
B(+)	11	13	17 or 18	3	7	1

*2 A terminating resistor should be provided for a temperature controller which will be the terminal.
*3 Set the terminating resistor to 330Ω on the GOT in the end position.
☞ Page 2956 Terminating resistors of GOT

RS-485 connection diagram (4)

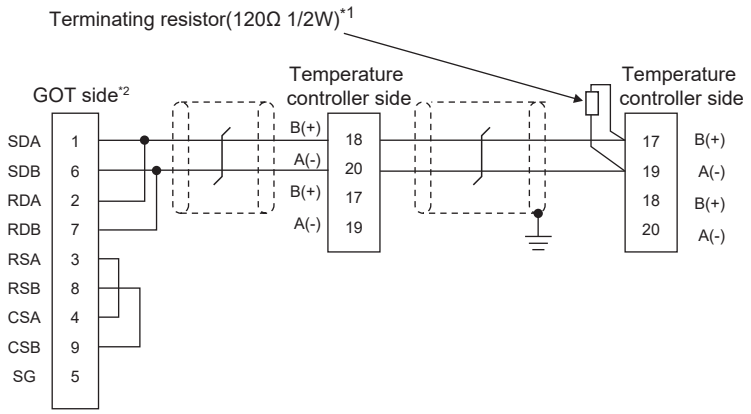


*1 Pin numbers of the temperature controller differ depending on the model.
Refer to the following.

Signal name	Temperature controller model					
	E5AN-H E5EN-H E5AN-HT E5EN-HT	E5CC(-T) E5EC(-T) E5AC(-T) E5CD E5ED	E5CC-B E5EC-B E5CD-B E5ED-B	E5DC	E5GC	E5AR(-T) E5ER(-T)
	Pin No.	Pin No.	Pin No.	Pin No.	Pin No.	Pin No.
A(-)	12	14	19 or 20	4	8	2
B(+)	11	13	17 or 18	3	7	1

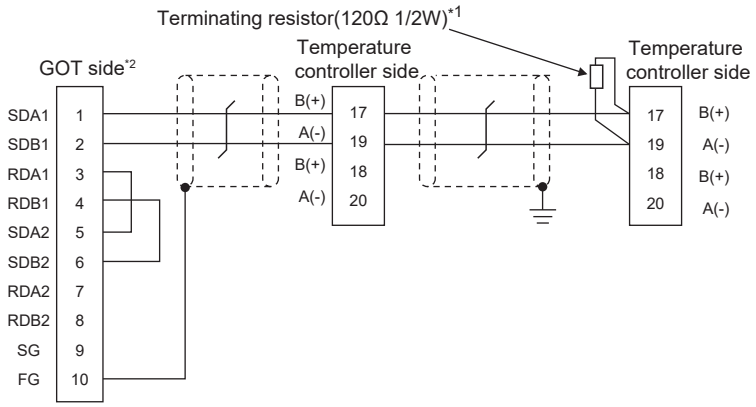
*2 A terminating resistor should be provided for a temperature controller which will be the terminal.
*3 Set the terminating resistor to 330Ω on the GOT in the end position.

RS-485 connection diagram (5)



*1 A terminating resistor should be provided for a temperature controller which will be the terminal.
*2 Set the terminating resistor to 330Ω on the GOT in the end position.

RS-485 connection diagram (6)



*1 A terminating resistor should be provided for a temperature controller which will be the terminal.
*2 Set the terminating resistor to 330Ω on the GOT in the end position.

Preparation of the RS-485 cable

■Cable length

The length of the RS-485 cable must be 500 m or less.

■GOT side connector

For the GOT side connector, refer to the following.

☞ Page 2954 GOT connector specifications

■OMRON temperature controller side connector

Use a connector compatible with the OMRON PLC.

For details, refer to the user's manual of the OMRON temperature controller.

Terminating resistor settings

■GOT side

Set the terminating resistor setting switch to 330Ω.

For details on the terminating resistor settings, refer to the following.

☞ Page 2956 Terminating resistors of GOT

■OMRON temperature controller side

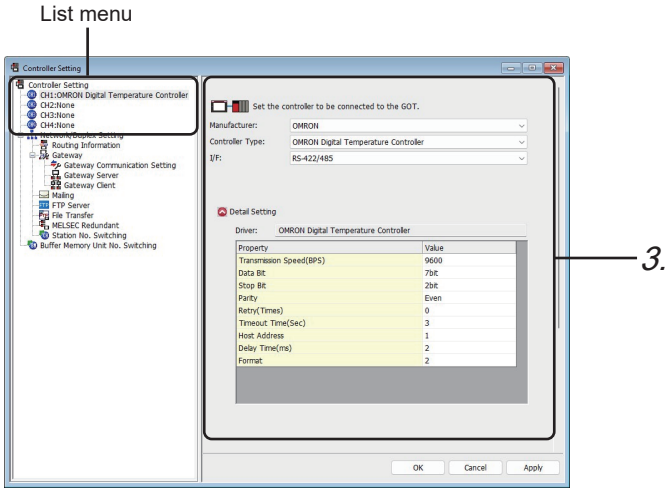
When connecting the GOT and a OMRON temperature controller, a terminating resistor must be connected to the OMRON temperature controller side.

📖Manual of the OMRON temperature controller

32.4 GOT side settings

32.4.1 [Controller Setting]

Set the channel of the equipment to be connected to the GOT.



Operating procedure

1. Select [Common] → [Controller Setting] from the menu.

2. In the [Controller Setting] window, select the channel number to be used from the list menu.

3. Set the following items.

Item	Description
[Manufacturer]	[OMRON]
[Controller Type]	[OMRON Temperature Controller/Digital Controller]
[I/F]	Interface to be used
[Detail Setting]	Configure the settings according to the usage environment. ☞ Page 2038 [Detail Setting]
[Connected Ethernet Controller Setting]	Configure the settings according to the controller to be connected.

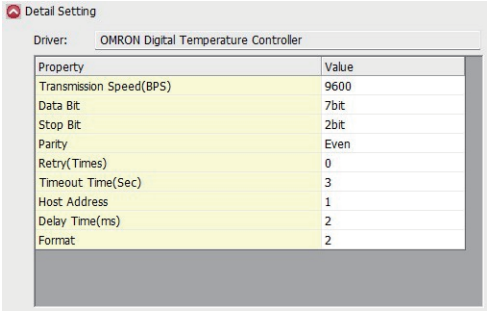
4. When you have completed the settings, click the [OK] button.

Point

The controller settings can be checked in [I/F Communication Setting].
For details, refer to the following.
📖GT Designer3 (GOT3000) Screen Design Manual

32.4.2 [Detail Setting]

Configure the settings according to the usage environment.



Item	Description	Range
[Transmission Speed]	Set this item to change the transmission speed used for communication with the connected equipment.	[9600] bps [19200] bps [38400] bps [57600] bps [115200] bps
[Data Bit]	Set this item to change the data length used for communication with the connected equipment.	[7 bit], [8 bit]
[Stop Bit]	Specify the stop bit length for communications.	[1 bit], [2 bit]
[Parity]	Specify whether or not to perform a parity check, and how it is performed during communication.	[None] [Even] [Odd]
[Retry]	Specify the number of retries to be performed during communication.	[0] times to [5] times
[Timeout Time]	Specify the timeout period during communication.	[1] second to [30] seconds
[Host Address]	Specify the station number of the temperature controller in the system configuration (including the GOT).	[0] to [99]
[Delay Time]*1	Specify the send delay time during communication.	[0] ms to [300] ms
[Format]*2	Select the communication format. • Format 1: only continuous access • Format 2: continuous and random access	[1], [2]

*1 When connecting to the temperature controller E5ZN, set the send delay time to 5 ms or more.

*2 Make sure to select format 1 when connecting with the previous models (manufactured in December 2007 or earlier) of the THERMAC NEO series (E5AN, E5CN, E5EN, and E5GN).
For the continuous access and random access of the temperature controller, refer to the following manual.
📖Manual of the OMRON temperature controller

Point

• Controller settings using the GT37 utility

The controller settings can be changed in [Communication Settings] of the GT37 utility after writing [Communication Settings] of project data to GT37.

For details on the GT37 utility, refer to the following manual.

📖GOT3000 Series User's Manual (Utility & Maintenance Functions)

• Priority of the settings in [Controller Setting]

When the settings are configured in GT Designer3 or in the GT37 utility, the latest settings are effective.

32.5 Temperature controller side settings

Configure the settings for the OMRON temperature controller.

For details on OMRON temperature controllers, refer to the following manual.

📖Manual of the OMRON temperature controller

GOT connection destination		Reference
Temperature controller	E5AN-H, E5EN-H, E5CN-H, E5AN-HT, E5EN-HT, E5CN-HT	☞ Page 2039 Connection to E5AN-H, E5EN-H, E5CN-H, E5AN-HT, E5EN-HT, or E5CN-HT
	E5CC(-T,-B), E5DC, E5GC, E5EC(-T,-B), E5AC(-T)	☞ Page 2039 Connection to E5CC(-T,-B), E5DC, E5GC, E5EC(-T,-B), or E5AC(-T)
	E5CD(-B), E5ED(-B)	☞ Page 2040 Connection to E5CD(-B) or E5ED(-B)
	E5AR(-T), E5ER(-T)	☞ Page 2040 Connection to E5AR(-T) or E5ER(-T)
Interface converter	K3SC-10	☞ Page 2040 Connection to K3SC-10

32.5.1 Connection to E5AN-H, E5EN-H, E5CN-H, E5AN-HT, E5EN-HT, or E5CN-HT

Configure the communication data settings using the keys of the temperature controller.

Item	Setting value	Range
Protocol	CompoWay/F (Sysway)	—
Transmission speed	Adjust the settings with the GOT settings. ☞ Page 2038 [Detail Setting]	1200 bps to 57600 bps
Data length		8 bits, 7 bits
Parity bit		Even, odd, none
Stop bit		1 bit, 2 bits
Communication unit No.	Set a unit number different from those of the other unit.	0 to 99
CMWT (Communications writing)*1	ON	—

*1 When changing the device values of the temperature controller from the GOT, turn on CMWT (Communications writing) in advance.

32.5.2 Connection to E5CC(-T,-B), E5DC, E5GC, E5EC(-T,-B), or E5AC(-T)

Configure the communication data settings using the keys of the temperature controller.

Item	Setting value	Range
Protocol	CompoWay/F (Sysway)	—
Transmission speed	Adjust the settings with the GOT settings. ☞ Page 2038 [Detail Setting]	9600 bps to 57600 bps
Data length		8 bits, 7 bits
Parity bit		Even, odd, none
Stop bit		1 bit, 2 bits
Communication unit No.	Set a unit number different from those of the other unit.	0 to 99
CMWT (Communications writing)*1	ON	—

*1 When changing the device values of the temperature controller from the GOT, turn on CMWT (Communications writing) in advance.

32.5.3 Connection to E5CD(-B) or E5ED(-B)

Configure the communication data settings using the keys of the temperature controller.

Item	Setting value	Range
Protocol	CompoWay/F (Sysway)	—
Transmission speed	Adjust the settings with the GOT settings. ☞ Page 2038 [Detail Setting]	9600 bps to 115200 bps
Data length		8 bits, 7 bits
Parity bit		Even, odd, none
Stop bit		1 bit, 2 bits
Communication unit No.	Set a unit number different from those of the other unit.	0 to 99
CMWT (Communications writing)*1	ON	—

*1 When changing the device values of the temperature controller from the GOT, turn on CMWT (Communications writing) in advance.

32.5.4 Connection to E5AR(-T) or E5ER(-T)

Configure the communication data settings using the keys of the temperature controller.

Item	Setting value	Range
Protocol	CompoWay/F (Sysway)	—
Transmission speed	Adjust the settings with the GOT settings. ☞ Page 2038 [Detail Setting]	9600 bps to 57600 bps
Data length		8 bits, 7 bits
Parity bit		Even, odd, none
Stop bit		1 bit, 2 bits
Communication unit No.	Set a unit number different from those of the other unit.	0 to 99
CMWT (Communications writing)*1	ON	—

*1 When changing the device values of the temperature controller from the GOT, turn on CMWT (Communications writing) in advance.

32.5.5 Connection to K3SC-10

☞ Page 2040 Communication settings
☞ Page 2041 Settings with the DIP switch

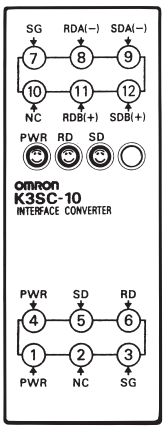
Communication settings

Configure the communication settings using the DIP switch of the temperature controller.

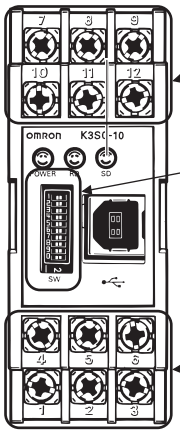
Item	Setting value	Range
Transmission speed	Adjust the settings with the GOT settings. ☞ Page 2038 [Detail Setting]	19200 bps, 38400 bps
Data length		7 bits, 8 bits
Parity bit		Even, odd, none
Stop bit		1 bit, 2 bits
Communication type	RS-232C ⇔ RS-485	RS-232C ⇔ RS-422, RS-232C ⇔ RS-485
Echo back	Without	With, Without

Settings with the DIP switch

☞ Page 2041 Transmission speed settings
☞ Page 2042 Settings for data length, parity bit, stop bit, communication type, and echo back

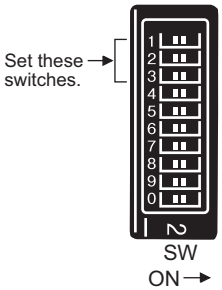


Front of K3SC-10 body



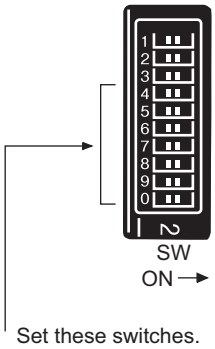
Inside of K3SC-10 body
(When removing the front cover)

■Transmission speed settings



Transmission speed (bps)	Switch No.		
	1	2	3
1200	ON	OFF	OFF
2400	OFF	ON	OFF
4800	ON	ON	OFF
9600	OFF	OFF	OFF
19200	ON	OFF	ON
38400	OFF	ON	ON

■Settings for data length, parity bit, stop bit, communication type, and echo back

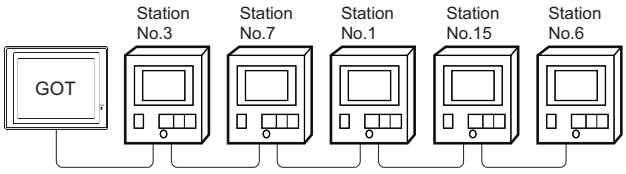


Setting item	Setting value	Switch No.						
		4	5	6	7	8	9	0
Data length	7 bits	OFF	—	—	—	—	—	—
	8 bits	ON	—	—	—	—	—	—
Stop bit	2 bits	—	OFF	—	—	—	—	—
	1 bit	—	ON	—	—	—	—	—
Parity	Even	—	—	OFF	OFF	—	—	—
	Odd	—	—	ON	OFF	—	—	—
	None	—	—	OFF	ON	—	—	—
Communication type	RS232C⇔RS422	—	—	—	—	OFF	ON	—
	RS-232C⇔RS485	—	—	—	—	OFF	OFF	—
Echo back	Without	—	—	—	—	—	—	OFF
	With	—	—	—	—	—	—	ON

32.5.6 Station number setting

Do not set the same station number as the other stations.

The station number can be set regardless of the cable connection order. There is no problem if station numbers are not consecutive.



Examples of station number setting

Direct specification

When setting the device, directly specify the station number for the temperature controller to be changed.

Model	Setting range
E5AN, E5EN, E5CN, E5GN	0 to 99
E5ZN	0 to 15

Indirect specification

When setting the device, indirectly specify the station number for the temperature controller to be changed using the 16-bit GOT internal data register (GD10 to GD25).

When specifying the station number from 100 to 115 in GT Designer3, the corresponding value from GD10 to GD25 will be the station number of the temperature controller.

Specified station No.	Corresponding device	Setting range
100	GD10	0 to 99 Setting a value outside the above range causes a device range error.
101	GD11	
102	GD12	
103	GD13	
104	GD14	
105	GD15	
106	GD16	
107	GD17	
108	GD18	
109	GD19	
110	GD20	
111	GD21	
112	GD22	
113	GD23	
114	GD24	
115	GD25	

All station specification

The stations targeted for the write and read operations are different.

- All stations are targeted for the write operation.
- Only one station is targeted for the read operation.

Precautions

Make sure to establish the temperature controller system with at least one station.

Point

By setting the GOT internal device, the GOT can disconnect some connections of the connected controllers.
For example, a faulty station with a communication timeout can be disconnected from the controller.
For details on the GOT internal device settings, refer to the following manual.
GT Designer3 (GOT3000) Screen Design Manual

33 Settable device range

This chapter describes the range of devices settable in GT Designer3.
The settable range varies with the selection for [Controller Type] in the [Controller Setting] window.
Configure the device setting according to the specifications of the controller to be used.
Device specifications differ depending on the controller model even among the controllers of the same series.
If a nonexistent device or a device number out of the range is set for an object, other objects for which correct devices are set may not be monitored.

☞ Page 2044 OMRON equipment ([OMRON SYSMAC])
☞ Page 2048 OMRON equipment ([OMRON NJ/NX])
☞ Page 2049 OMRON equipment ([OMRON Digital Temperature Controller])

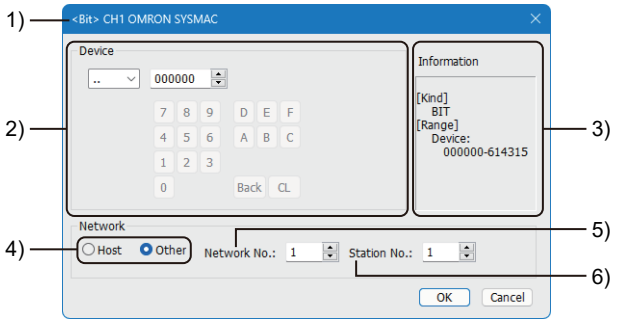
33.1 OMRON equipment ([OMRON SYSMAC])

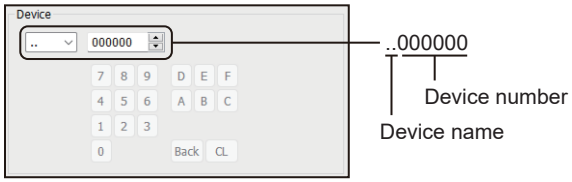
GT37 SoftGOT3000

Item	Reference
Device setting dialog	☞ Page 2044 Device setting dialog ([OMRON SYSMAC])
Specifications of bit devices	☞ Page 2045 Monitoring-supported bit devices ([OMRON SYSMAC])
	☞ Page 2046 Availability of writing/reading data to/from bit devices ([OMRON SYSMAC])
Specifications of word devices	☞ Page 2046 Monitoring-supported word devices ([OMRON SYSMAC])
	☞ Page 2047 Availability of writing/reading data to/from word devices ([OMRON SYSMAC])

33.1.1 Device setting dialog ([OMRON SYSMAC])

Set a device to be monitored.



Item		Description
1)	Title	Data type and channel number of the device to be set
2)	[Device]	Set the device name and device number. If a bit number needs to be specified, the setting item is displayed. Example) Setting of ..000000 
3)	[Information]	Displays the setting range of each setting item according to the selected device.
4)	Station type specification	Select the station type (host or other) for the controller to be monitored.
5)	[Network No.]	This item appears when [Other] is selected for the station type. Set the network number.
6)	[Station No.]	This item appears when [Other] is selected for the station type. Specify a station number.

33.1.2 Monitoring-supported bit devices ([OMRON SYSMAC])

The following table shows monitoring-supported bit devices.

To check whether writing/reading data to/from each device is available, refer to the following.

☞ Page 2046 Availability of writing/reading data to/from bit devices ([OMRON SYSMAC])

For the formats of devices, refer to the following.

📖GT Designer3 (GOT3000) Screen Design Manual

○: Available

×: Not available

Device name		Device No. representation	Setting range	Specifications of EG devices*1	
				Assignment to EG devices	Access using a client
..	I/O relay, internal auxiliary relay	Decimal	..(Channel No.)(Bit No.) Notation example: ..614300 The last two digits represent a bit number. • Channel No. (decimal): 0000 to 6143 • Bit No.: 00 to 15	○	○
LR	Data link relay	Decimal	LR(Channel No.)(Bit No.) Notation example: LR19900 The last two digits represent a bit number. • Channel No. (decimal): 000 to 199 • Bit No.: 00 to 15	○	○
HR	Holding relay	Decimal	HR(Channel No.)(Bit No.) Notation example: HR51100 The last two digits represent a bit number. • Channel No. (decimal): 000 to 511 • Bit No.: 00 to 15	○	○
WR	Internal auxiliary relay, work relay	Decimal	WR(Channel No.)(Bit No.) Notation example: WR51100 The last two digits represent a bit number. • Channel No. (decimal): 000 to 511 • Bit No.: 00 to 15	○	○
TIM	Timer contact	Decimal	0 to 4095	○	○
CNT	Counter contact	Decimal	0 to 4095	○	○
AR	Auxiliary memory relay	Decimal	AR(Channel No.)(Bit No.) Notation example: AR1153500 The last two digits represent a bit number. • Channel No. (decimal): 00000 to 11535 • Bit No.: 00 to 15	○	○

*1 For the devices assigned to EG devices (gateway devices) and the compatible clients, refer to the following.
📖GT Designer3 (GOT3000) Screen Design Manual

33.1.3 Availability of writing/reading data to/from bit devices ([OMRON SYSMAC])

The following shows the availability of writing/reading data to/from bit devices by device type.

When the device type is other than the bit type, set the device No. in multiples of 16.

R/W: Both read and write

R/-: Read only

-/W: Write only

-/-: No read/write access

Device name	Device type				
	Bit	Byte (8 bits)	Word (16 bits)	Double-word (32 bits)	Quad-word (64 bits)
..	R/W	-/-	R/W	R/W	-/-
LR	R/W	-/-	R/W	R/W	-/-
HR	R/W	-/-	R/W	R/W	-/-
WR	R/W	-/-	R/W	R/W	-/-
TIM	R/-	-/-	-/-	-/-	-/-
CNT	R/-	-/-	-/-	-/-	-/-
AR	R/W	-/-	R/W	R/W	-/-

33.1.4 Monitoring-supported word devices ([OMRON SYSMAC])

The following table shows monitoring-supported word devices.

To check whether writing/reading data to/from each device is available, refer to the following.

☞ Page 2047 Availability of writing/reading data to/from word devices ([OMRON SYSMAC])

For the formats of devices, refer to the following.

📖GT Designer3 (GOT3000) Screen Design Manual

○: Available

×: Not available

Device name		Device No. representation	Setting range	Specifications of EG devices*1	
				Assignment to EG devices	Access using a client
TIM*2*3	Timer (current value)	Decimal	0 to 4095	○	○
CNT*2*3	Counter (current value)	Decimal	0 to 4095	○	○
DM	Data memory	Decimal	0 to 32767	○	○
EM*4	Extension data memory, EM current bank	Decimal	0 to 32767	○	○
E*4	Extension data memory	Hexadecimal + decimal	E(Bank No.)-(Device) Notation example: E18-100 • Bank No. (hexadecimal): 0 to 18 • Device (decimal): 0 to 32767	○	○

*1 For the devices assigned to EG devices (gateway devices) and the compatible clients, refer to the following.
📖GT Designer3 (GOT3000) Screen Design Manual

*2 A valid value ranges from 0 to 9999. (This applies to the 16-bit/32-bit device data.)

*3 This is handled as a BCD value in the PLC. When serial connection is used between the PLC and the GOT, this is handled as an unsigned 16-bit binary data in the GOT.
For the object for monitoring on the GOT, select [Unsigned BIN16] for [Data Type].

*4 Writing or reading data extending across banks is not possible.

33.1.5 Availability of writing/reading data to/from word devices ([OMRON SYSMAC])

The following shows the availability of writing/reading data to/from word devices by device type.

When executing the touch switch function that has been set during the bit specification of the word device, do not write any data to the word device through the sequence program.

R/W: Both read and write

R/-: Read only

-/W: Write only

-/-: No read/write access

Device name	Device type			
	Word (16 bits)	Double-word (32 bits)	Quad-word (64 bits)	Bit of word data
TIM	R/W	R/W	-/-	R/W
CNT	R/W	R/W	-/-	R/W
DM	R/W	R/W	-/-	R/W
EM	R/W	R/W	-/-	R/W
E	R/W	R/W	-/-	R/W

33.2 OMRON equipment ([OMRON NJ/NX])

GT37 SoftGOT3000

Item	Reference
Device setting dialog	☞ Page 2048 Device setting dialog ([OMRON NJ/NX])
Device specifications	☞ Page 2048 Monitoring-supported devices ([OMRON NJ/NX])

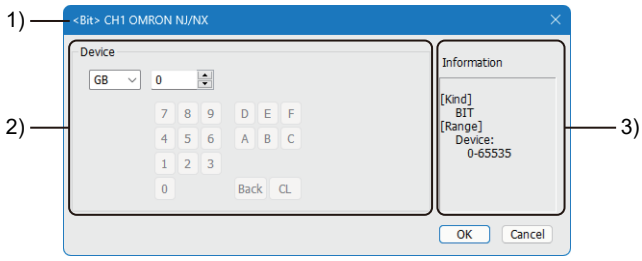
33.2.1 Device setting dialog ([OMRON NJ/NX])

Set a device to be monitored.

In the device setting dialog, only GOT internal devices are settable.

For how to set OMRON NJ/NX tags, refer to the following.

📖GT Designer3 (GOT3000) Screen Design Manual



Item		Description
1)	Title	Data type and channel number of the device to be set
2)	[Device]	Set the device name and device number. If a bit number needs to be specified, the setting item is displayed.
3)	[Information]	Displays the setting range of each setting item according to the selected device.

33.2.2 Monitoring-supported devices ([OMRON NJ/NX])

To monitor the OMRON NJ or NX series, use OMRON NJ/NX tags.

For the usable OMRON NJ/NX tags, refer to the following.

📖GT Designer3 (GOT3000) Screen Design Manual

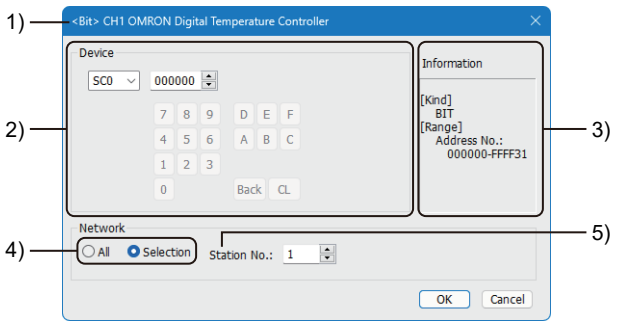
33.3 OMRON equipment ([OMRON Digital Temperature Controller])

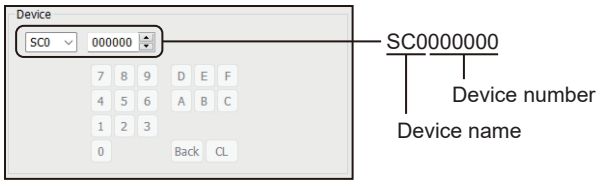
GT37 SoftGOT3000

Item	Reference
Device setting dialog	☞ Page 2050 Device setting dialog ([OMRON Digital Temperature Controller])
Specifications of bit devices	☞ Page 2051 Monitoring-supported bit devices ([OMRON Digital Temperature Controller])
	☞ Page 2051 Availability of writing/reading data to/from bit devices ([OMRON Digital Temperature Controller])
Specifications of word devices	☞ Page 2052 Monitoring-supported word devices ([OMRON Digital Temperature Controller])
	☞ Page 2052 Availability of writing/reading data to/from word devices ([OMRON Digital Temperature Controller])
Specifications of double-word devices	☞ Page 2053 Monitoring-supported double-word devices ([OMRON Digital Temperature Controller])
	☞ Page 2054 Availability of writing/reading data to/from double-word devices ([OMRON Digital Temperature Controller])

33.3.1 Device setting dialog ([OMRON Digital Temperature Controller])

Set a device to be monitored.



Item		Description	
1)	Title	Data type and channel number of the device to be set	
2)	[Device]	Set the device name and device number. If a bit number needs to be specified, the setting item is displayed. Example) Setting of SC0000000  	
3)	[Information]	Displays the setting range of each setting item according to the selected device.	
4)	Monitor target specification	Set the monitoring target of the set device.	
		[All]	Select this item when writing data to all the connected temperature controllers. During monitoring, the temperature controller of station number 1 is monitored. When data is input from a numerical input object, the data is written to all the connected temperature controllers. When no data is input, the temperature controller of station number 1 is monitored.
		[Selection]	Select this item when monitoring the temperature controller that has the specified station number.
5)	[Station No.]	This item appears when [Selection] is selected for the monitor target specification. The setting range is [0] to [99] (direct) or [100] to [115] (indirect). For indirect specification of a station number, refer to the following. ☞ Page 2050 Indirect specification of a station number ([OMRON Digital Temperature Controller])	

Indirect specification of a station number ([OMRON Digital Temperature Controller])

When you specify any of 100 to 115 for the station number, the value of the corresponding GOT data register (GD10 to GD25) is used as the station number.

The following shows the correspondence between station number setting values and GOT data registers (GD).

Station No.	GOT data register (GD)	Setting range
100	GD10	[0] to [99] Setting a value outside the above range causes a device range error.
101	GD11	
:	:	
114	GD24	
115	GD25	

33.3.2 Monitoring-supported bit devices ([OMRON Digital Temperature Controller])

The following table shows monitoring-supported bit devices.

To check whether writing/reading data to/from each device is available, refer to the following.

☞ Page 2051 Availability of writing/reading data to/from bit devices ([OMRON Digital Temperature Controller])

For the formats of devices, refer to the following.

📖GT Designer3 (GOT3000) Screen Design Manual

○: Available

×: Not available

Device name		Device No. representation	Setting range	Specifications of EG devices*1	
				Assignment to EG devices	Access using a client
SC0	Status (Variable type C0)	Hexadecimal + decimal	SC0(Address No.)(Bit No.) Notation example: SC0FFFF00 • Address No. (hexadecimal): 0000 to FFFF • Bit No. (decimal): 00 to 31	○	○ (Not usable as word data)
SC4	Status (Variable type C4)	Hexadecimal + decimal	SC4(Address No.)(Bit No.) Notation example: SC4FFFF00 • Address No. (hexadecimal): 0000 to FFFF • Bit No. (decimal): 00 to 31	○	○ (Not usable as word data)

*1 For the devices assigned to EG devices (gateway devices) and the compatible clients, refer to the following.
📖GT Designer3 (GOT3000) Screen Design Manual

33.3.3 Availability of writing/reading data to/from bit devices ([OMRON Digital Temperature Controller])

The following shows the availability of writing/reading data to/from bit devices by device type.

When the device type is other than the bit type, set the device No. in multiples of 16.

R/W: Both read and write

R/-: Read only

-/W: Write only

-/-: No read/write access

Device name	Device type				
	Bit	Byte (8 bits)	Word (16 bits)	Double-word (32 bits)	Quad-word (64 bits)
SC0	R/-	-/-	-/-	-/-	-/-
SC4	R/-	-/-	-/-	-/-	-/-

33.3.4 Monitoring-supported word devices ([OMRON Digital Temperature Controller])

The following table shows monitoring-supported word devices.

To check whether writing/reading data to/from each device is available, refer to the following.

☞ Page 2052 Availability of writing/reading data to/from word devices ([OMRON Digital Temperature Controller])

For the formats of devices, refer to the following.

📖GT Designer3 (GOT3000) Screen Design Manual

○: Available

×: Not available

Device name		Device No. representation	Setting range	Specifications of EG devices*1	
				Assignment to EG devices	Access using a client
A*2*3	Operation command	Hexadecimal	0000 to 00FF	○	○ (Not usable as bit data)

*1 For the devices assigned to EG devices (gateway devices) and the compatible clients, refer to the following.
📖GT Designer3 (GOT3000) Screen Design Manual

*2 Numerical input cannot be used.
Use a word switch for writing.

*3 This device corresponds to the command code in the operation instruction command of CompoWay/F communication.

33.3.5 Availability of writing/reading data to/from word devices ([OMRON Digital Temperature Controller])

The following shows the availability of writing/reading data to/from word devices by device type.

R/W: Both read and write

R/-: Read only

-/W: Write only

-/-: No read/write access

Device name	Device type			
	Word (16 bits)	Double-word (32 bits)	Quad-word (64 bits)	Bit of word data
A	-/W	-/-	-/-	-/-

33.3.6 Monitoring-supported double-word devices ([OMRON Digital Temperature Controller])

The following table shows monitoring-supported double-word devices.

To check whether writing/reading data to/from each device is available, refer to the following.

☞ Page 2054 Availability of writing/reading data to/from double-word devices ([OMRON Digital Temperature Controller])

For the formats of devices, refer to the following.

📖GT Designer3 (GOT3000) Screen Design Manual

○: Available

×: Not available

Device name		Device No. representation	Setting range	Specifications of EG devices*1	
				Assignment to EG devices	Access using a client
C0	Variable area C0	Hexadecimal	0000 to FFFF	×	×
C1	Variable area C1	Hexadecimal	0000 to FFFF	×	×
C3	Variable area C3	Hexadecimal	0000 to FFFF	×	×
C4	Variable area C4	Hexadecimal	0000 to FFFF	×	×
C5	Variable area C5	Hexadecimal	0000 to FFFF	×	×
C6	Variable area C6	Hexadecimal	0000 to FFFF	×	×
C7	Variable area C7	Hexadecimal	0000 to FFFF	×	×
C8	Variable area C8	Hexadecimal	0000 to FFFF	×	×
C9	Variable area C9	Hexadecimal	0000 to FFFF	×	×
CA	Variable area CA	Hexadecimal	0000 to FFFF	×	×
CB	Variable area CB	Hexadecimal	0000 to FFFF	×	×
CC	Variable area CC	Hexadecimal	0000 to FFFF	×	×
CD	Variable area CD	Hexadecimal	0000 to FFFF	×	×
CE	Variable area CE	Hexadecimal	0000 to FFFF	×	×
CF	Variable area CF	Hexadecimal	0000 to FFFF	×	×
D0	Variable area D0	Hexadecimal	0000 to FFFF	×	×
D1	Variable area D1	Hexadecimal	0000 to FFFF	×	×
D2	Variable area D2	Hexadecimal	0000 to FFFF	×	×
D3	Variable area D3	Hexadecimal	0000 to FFFF	×	×
D8	Variable area D8	Hexadecimal	0000 to FFFF	×	×
D9	Variable area D9	Hexadecimal	0000 to FFFF	×	×
DA	Variable area DA	Hexadecimal	0000 to FFFF	×	×

*1 For the devices assigned to EG devices (gateway devices) and the compatible clients, refer to the following.
GT Designer3 (GOT3000) Screen Design Manual

33.3.7 Availability of writing/reading data to/from double-word devices ([OMRON Digital Temperature Controller])

The following shows the availability of writing/reading data to/from double-word devices by device type.

R/W: Both read and write

R/-: Read only

-/W: Write only

-/-: No read/write access

Device name	Device type			
	Word (16 bits)	Double-word (32 bits)	Quad-word (64 bits)	Bit of double-word data
C0	-/-	R/-	-/-	-/-
C1	-/-	R/W	-/-	-/-
C3	-/-	R/W	-/-	-/-
C4	-/-	R/W	-/-	-/-
C5	-/-	R/W	-/-	-/-
C6	-/-	R/W	-/-	-/-
C7	-/-	R/W	-/-	-/-
C8	-/-	R/W	-/-	-/-
C9	-/-	R/W	-/-	-/-
CA	-/-	R/W	-/-	-/-
CB	-/-	R/W	-/-	-/-
CC	-/-	R/W	-/-	-/-
CD	-/-	R/W	-/-	-/-
CE	-/-	R/W	-/-	-/-
CF	-/-	R/W	-/-	-/-
D0	-/-	R/W	-/-	-/-
D1	-/-	R/W	-/-	-/-
D2	-/-	R/W	-/-	-/-
D3	-/-	R/W	-/-	-/-
D8	-/-	R/W	-/-	-/-
D9	-/-	R/W	-/-	-/-
DA	-/-	R/W	-/-	-/-

PART 11 KEYENCE equipment

34 PLC (Ethernet connection)

35 Settable device range

34 PLC (Ethernet connection)

☞ Page 2056 Connectable devices
☞ Page 2057 System configuration
☞ Page 2061 GOT side settings
☞ Page 2065 PLC side settings

34.1 Connectable devices

The following table shows the connectable models.

○: Supported, —: Not supported

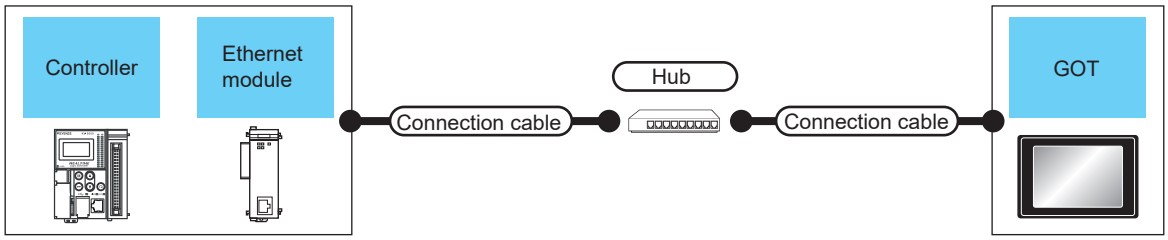
Controller	Model	Clock	PLC side interface		Connectable model
			Ethernet module*1	Built-in EtherNet/IP port of PLC	
KV-X	KV-X550 KV-X530 KV-X520 KV-X500	○	KV-XLE02	○	GT37 SoftGOT3000
KV-8000	KV-8000	○	KV-LE20V KV-LE21V KV-EP21V KV-XLE02	○	GT37 SoftGOT3000
KV-7000	KV-7500	○	KV-LE20V KV-LE21V KV-EP21V KV-XLE02	○	GT37 SoftGOT3000
	KV-7300	○	KV-LE20V KV-LE21V KV-EP21V KV-XLE02	—	
KV-5000	KV-5500 KV-5000	○	KV-LE20V KV-LE21V KV-EP21V	○	GT37 SoftGOT3000
KV-3000	KV-3000	○	KV-LE20V KV-LE21V KV-EP21V	—	GT37 SoftGOT3000
KV-1000	KV-1000	○	KV-LE20V KV-LE21V	—	
KV-700	KV-700	○	KV-LE20V KV-LE21V	—	
KV Nano	KV-N24□□ KV-N40□□ KV-N60□□	○	KV-N1+KV-NC1EP	—	GT37 SoftGOT3000
	KV-NC32T	○	KV-NC1EP	—	GT37 SoftGOT3000

*1 Product manufactured by KEYENCE CORPORATION
For details on the product, refer to the manual of KEYENCE CORPORATION.

34.2 System configuration

☞ Page 2057 Connection to Ethernet module
☞ Page 2059 Connection to the built-in EtherNet/IP port of PLC

34.2.1 Connection to Ethernet module



For details on the connection cables and the maximum segment length, refer to the following.

☞ Page 2057 Connection cable
☞ Page 2058 Maximum segment length

For details on the maximum number of connected devices, refer to the following.

☞ Page 2058 Maximum number of connected devices

Controller	Ethernet module	Connection cable	GOT	
			Interface	Model
KV-X550 KV-X530 KV-X520 KV-X500 KV-8000 KV-7500 KV-7300 KV-5500 KV-5000 KV-3000 KV-1000 KV-700 KV-N24□□ KV-N40□□ KV-N60□□ KV-NC32T	*1	Twisted pair cable	Built-in Ethernet interface of GOT	GT37 SoftGOT3000
			Ethernet interface of personal computer	GT37 SoftGOT3000

*1 For the connectable Ethernet modules, refer to the following.
☞ Page 2056 Connectable devices

Connection cable

Use a connection cable that meets the following standards.

Standard	Category
10BASE-T	Shielded twisted pair cable (STP) or unshielded twisted pair cable (UTP) of category 3 or higher
100BASE-TX	Shielded twisted pair cable (STP) of category 5 or higher
1000BASE-T	Shielded twisted pair cable (STP) or unshielded twisted pair cable (UTP) of category 5e or higher

The destination device connected with the twisted pair cable varies with the configuration of the Ethernet network system used.

Connect the cable to the Ethernet module, hub, or other system equipment corresponding to the applicable Ethernet network system.

Use cables, connectors, and hubs that meet the IEEE802.3 10BASE-T/100BASE-TX/1000BASE-T standards.

When only one GOT is connected, the GOT can be directly connected to the device without a hub.

Maximum segment length

The maximum segment length (length between a hub and a node) is 100 m.
The maximum length depends on the Ethernet equipment used.
The following shows the number of connectable hubs when a repeater hub is used.

- 10BASE-T: Up to 4 for a cascade connection (within 500 m)
- 100BASE-TX: Up to 2 for a cascade connection (within 205 m)
- 1000BASE-T: The number differs depending on the hub to be used.

When switching hubs are used, there is no theoretical limit to the number of cascade connections between switching hubs.
For the limit, contact the switching hub manufacturer.

Precautions

When multiple network devices (including GOTs) are connected in the same segment, the network load increases and the transmission speed between the GOT and PLC may be reduced.
The following actions may improve the communication performance.

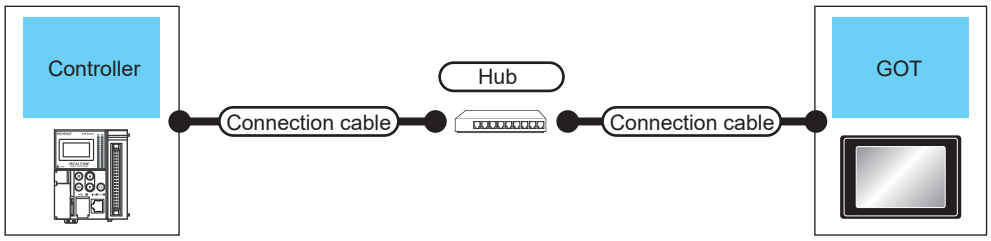
- Use a switching hub compatible with 1000BASE-T (1 Gbps) or more.
- Reduce the number of devices monitored by the GOT.

Maximum number of connected devices

Up to 128 CPU modules can be connected to channels No. 1 to No. 4 of one GOT. (16 or less recommended)
The following shows the number of connectable controllers per GOT channel and the number of GOTs connectable to one controller.

Controller			GOT		
Model	Number of GOTs connectable to one PLC		Model	Number of connectable controllers per GOT channel	
	TCP	UDP		TCP	UDP
KV-X550 KV-X530 KV-X520 KV-X500 KV-8000 KV-7500 KV-7300 KV-5500 KV-5000 KV-3000 KV-1000 KV-700 KV-N24□□ KV-N40□□ KV-N60□□ KV-NC32T	15	1	GT37 SoftGOT3000	128	128

34.2.2 Connection to the built-in EtherNet/IP port of PLC



For details on the connection cables and the maximum segment length, refer to the following.

☞ Page 2059 Connection cable
☞ Page 2060 Maximum segment length

For details on the maximum number of connected devices, refer to the following.

☞ Page 2060 Maximum number of connected devices

Controller	Connection cable	GOT	
		Interface	Model
KV-X550 KV-X530 KV-X520 KV-X500 KV-8000 KV-7500 KV-5500 KV-5000	Twisted pair cable	Built-in Ethernet interface of GOT	GT37 SoftGOT3000
		Ethernet interface of personal computer	GT37 SoftGOT3000

Connection cable

Use a connection cable that meets the following standards.

Standard	Category
10BASE-T	Shielded twisted pair cable (STP) or unshielded twisted pair cable (UTP) of category 3 or higher
100BASE-TX	Shielded twisted pair cable (STP) of category 5 or higher
1000BASE-T	Shielded twisted pair cable (STP) or unshielded twisted pair cable (UTP) of category 5e or higher

The destination device connected with the twisted pair cable varies with the configuration of the Ethernet network system used.

Connect the cable to the Ethernet module, hub, or other system equipment corresponding to the applicable Ethernet network system.

Use cables, connectors, and hubs that meet the IEEE802.3 10BASE-T/100BASE-TX/1000BASE-T standards.

When only one GOT is connected, the GOT can be directly connected to the device without a hub.

Maximum segment length

The maximum segment length (length between a hub and a node) is 100 m.
The maximum length depends on the Ethernet equipment used.
The following shows the number of connectable hubs when a repeater hub is used.

- 10BASE-T: Up to 4 for a cascade connection (within 500 m)
- 100BASE-TX: Up to 2 for a cascade connection (within 205 m)
- 1000BASE-T: The number differs depending on the hub to be used.

When switching hubs are used, there is no theoretical limit to the number of cascade connections between switching hubs.
For the limit, contact the switching hub manufacturer.

Precautions

When multiple network devices (including GOTs) are connected in the same segment, the network load increases and the transmission speed between the GOT and PLC may be reduced.
The following actions may improve the communication performance.

- Use a switching hub compatible with 1000BASE-T (1 Gbps) or more.
- Reduce the number of devices monitored by the GOT.

Maximum number of connected devices

Up to 128 CPU modules can be connected to channels No. 1 to No. 4 of one GOT. (16 or less recommended)
The following shows the number of connectable controllers per GOT channel and the number of GOTs connectable to one controller.

Controller			GOT		
Model	Number of GOTs connectable to one PLC		Model	Number of connectable controllers per GOT channel	
	TCP	UDP		TCP	UDP
KV-X550 KV-X530 KV-X520 KV-X500 KV-8000 KV-7500 KV-5500 KV-5000	15	1	GT37 SoftGOT3000	128	128

34.3 GOT side settings

☞ Page 2061 [GOT Ethernet Setting]
☞ Page 2062 [Controller Setting]

34.3.1 [GOT Ethernet Setting]

Set the GOT Ethernet interface in GT Designer3.

Item	Description
[GOT IP Address Setting]	Set the IP address of the GOT.
[GOT Ethernet Common Setting]	Set the default gateway and other common items for GOT Ethernet interfaces.
[IP filter Setting]	The GOT allows or blocks access from IP addresses specified in the filtering list.

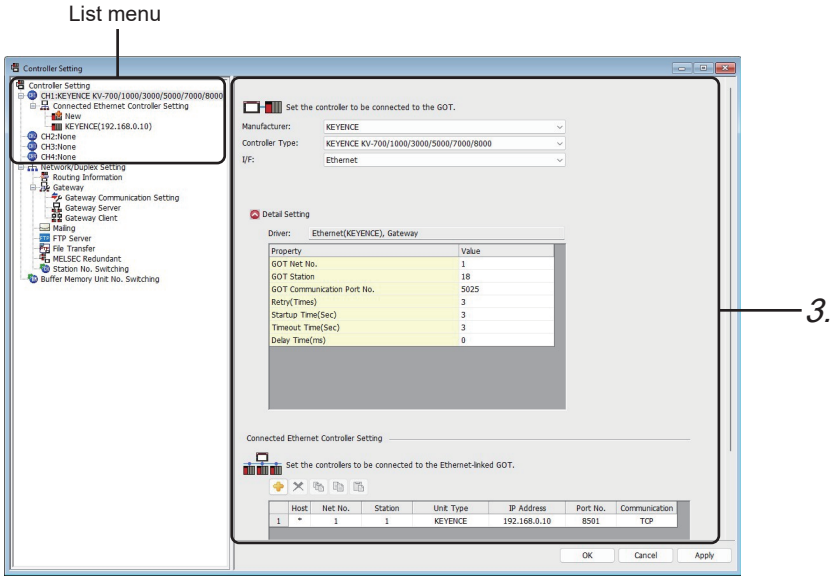
For details on the setting, refer to the following.
📖GT Designer3 (GOT3000) Screen Design Manual
Set the GT SoftGOT3000 Ethernet interface on the personal computer.

Precautions

Do not use 0 and 255 at the end of an IP address.
(Numbers of *.*.*.0 and *.*.*.255 are used by the system)
The GOT may not monitor the controller correctly with the above numbers.
Consult with the administrator of the network before setting an IP address to the GOT.

34.3.2 [Controller Setting]

Set the channel of the connected controller.



Operating procedure

1. Select [Common] → [Controller Setting] from the menu.

2. In the [Controller Setting] window, select the channel number to be used from the list menu.

3. Set the following items.

Item	Description
[Manufacturer]	[KEYENCE]
[Controller Type]	[KEYENCE KV-700/1000/3000/5000/7000/8000]
[I/F]	[Ethernet]
[Detail Setting]	Configure the settings according to the usage environment. ☞ Page 2063 [Detail Setting]
[Connected Ethernet Controller Setting]	Configure the settings according to the controller to be connected. ☞ Page 2064 [Connected Ethernet Controller Setting]

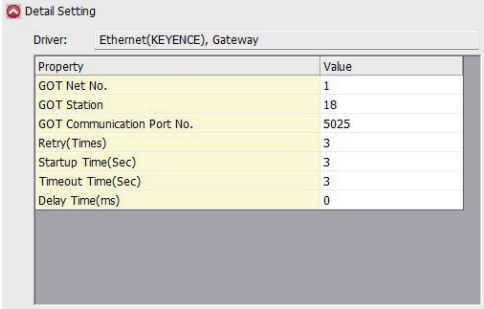
4. When you have completed the settings, click the [OK] button.

Point

The controller settings can be checked in [I/F Communication Setting].
For details, refer to the following.
📖GT Designer3 (GOT3000) Screen Design Manual

[Detail Setting]

Configure the settings according to the usage environment.



Item	Description	Range
[Driver]	This item appears when communication drivers are selectable according to the settings of [Controller Type] and [I/F].	[Ethernet(KEYENCE), Gateway]
[GOT Net No.]	Set the network number of the GOT.	[1] to [239]
[GOT Station]*1	Set the station number of the GOT.	[1] to [254]
[GOT Communication Port No.]	Set the GOT port number for the connection with the Ethernet equipment.	[1024] to [5010], [5014] to [49152], [49171] to [65534]
[Retry]	Set the number of retries to be performed when a communication timeout occurs. When receiving no response after retries, the communication times out.	[0] times to [5] times
[Startup Time]	Set the time period from the GOT startup until the start of communication with the PLC CPU.	[3] seconds to [255] seconds
[Timeout Time]	Set a communication timeout period.	[1] second to [90] seconds
[Delay Time]	Set the delay time for reducing the load of the network and destination PLC.	[0] ms to [10000] ms

*1 Set values not set for [Station] in [Connected Ethernet Controller Setting].
☞ Page 2064 [Connected Ethernet Controller Setting]

Point

• Controller settings using the GT37 utility

The controller settings can be changed in [Communication Settings] of the GT37 utility after writing [Communication Settings] of project data to GT37.

For details on the GT37 utility, refer to the following manual.

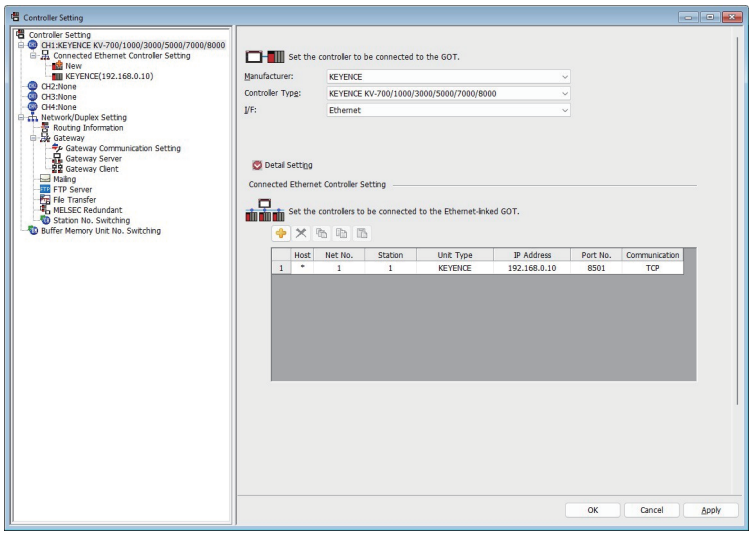
📖GOT3000 Series User's Manual (Utility & Maintenance Functions)

• Priority of the settings in [Controller Setting]

When the settings are configured in GT Designer3 or in the GT37 utility, the latest settings are effective.

[Connected Ethernet Controller Setting]

Set the controller to be connected to the GOT by Ethernet.



Item	Description	Range
[Host]	The host is displayed. It refers to a station that can be connected without setting a station number. The host is indicated with an asterisk (*).	—
[Net No.]	Set the network number of the connected Ethernet equipment.	[1] to [239]
[Station]*1	Set the station number of the connected Ethernet equipment.	[1] to [254]
[Unit Type]	Select the model of the connected Ethernet equipment.	[KEYENCE]
[IP Address]	Set the IP address of the connected Ethernet equipment.	[0.0.0.0] to [255.255.255.255]
[Port No.]	Set the port number of the connected Ethernet equipment.	[1] to [65535]
[Communication]*2	Set the communication format of the connected Ethernet equipment.	[UDP], [TCP]

*1 Set values not set for [GOT Station] in [Detail Setting].
☞ Page 2063 [Detail Setting]

*2 During UDP communication, if communications become unstable after a communication error due to noise, network disconnection, power failure, or other reasons, use TCP communication.

34.4 PLC side settings

Configure the settings for the KEYENCE PLC.
For details on KEYENCE PLCs, refer to the following manual.
📖Manual of the KEYENCE PLC

34.4.1 Parameter settings

Set the following parameters with the KEYENCE software package.

Settings for connection to the built-in EtherNet/IP port of PLC

Set the communication mode, IP address, and port number using the unit editor of KV STUDIO.

Item	Description	Range
Communication mode	Ethernet	—
IP address*1	Set the IP address.	0.0.0.0 to 255.255.255.255
Port number*1 (Host link)	Set the port number.	1 to 65535

*1 Apply the same setting as [Connected Ethernet Controller Setting] of the GOT.
☞ Page 2064 [Connected Ethernet Controller Setting]

Settings for connection to the Ethernet module

Set the IP address and port number using the unit editor of KV STUDIO.

Item	Description	Range
IP address*1	Set the IP address.	0.0.0.0 to 255.255.255.255
Port number*1 (Host link)	Set the port number.	1 to 65535

*1 Apply the same setting as [Connected Ethernet Controller Setting] of the GOT.
☞ Page 2064 [Connected Ethernet Controller Setting]

35 Settable device range

This chapter describes the range of devices settable in GT Designer3.
The settable range varies with the selection for [Controller Type] in the [Controller Setting] window.
Configure the device setting according to the specifications of the controller to be used.
Device specifications differ depending on the controller model even among the controllers of the same series.
If a nonexistent device or a device number out of the range is set for an object, other objects for which correct devices are set may not be monitored.
☞ Page 2066 KEYENCE equipment ([KEYENCE KV-700/1000/3000/5000/7000/8000])

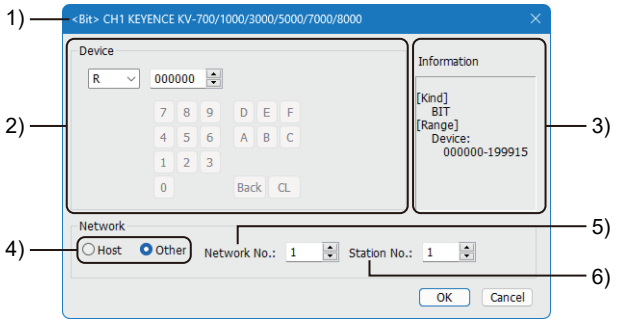
35.1 KEYENCE equipment ([KEYENCE KV-700/1000/3000/5000/7000/8000])

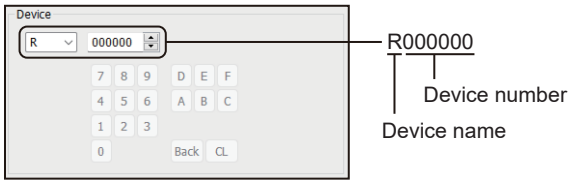
GT37 SoftGOT3000

Item	Reference
Device setting dialog	☞ Page 2066 KEYENCE equipment ([KEYENCE KV-700/1000/3000/5000/7000/8000])
Specifications of bit devices	☞ Page 2068 Monitoring-supported bit devices ([KEYENCE KV-700/1000/3000/5000/7000/8000])
	☞ Page 2069 Availability of writing/reading data to/from bit devices ([KEYENCE KV-700/1000/3000/5000/7000/8000])
Specifications of word devices	☞ Page 2070 Monitoring-supported word devices ([KEYENCE KV-700/1000/3000/5000/7000/8000])
	☞ Page 2071 Availability of writing/reading data to/from word devices ([KEYENCE KV-700/1000/3000/5000/7000/8000])
Specifications of double-word devices	☞ Page 2071 Monitoring-supported double-word devices ([KEYENCE KV-700/1000/3000/5000/7000/8000])
	☞ Page 2072 Availability of writing/reading data to/from double-word devices ([KEYENCE KV-700/1000/3000/5000/7000/8000])
Precautions	☞ Page 2072 Precautions ([KEYENCE KV-700/1000/3000/5000/7000/8000])

35.1.1 Device setting dialog ([KEYENCE KV-700/1000/3000/5000/7000/8000])

Set a device to be monitored.



Item		Description
1)	Title	Data type and channel number of the device to be set
2)	[Device]	Set the device name and device number. If a bit number needs to be specified, the setting item is displayed. Example) Setting of R000000 
3)	[Information]	Displays the setting range of each setting item according to the selected device.
4)	Station type specification	Select the station type (host or other) for the controller to be monitored.
5)	[Network No.]	This item appears when [Other] is selected for the station type. Set the network number.
6)	[Station No.]	This item appears when [Other] is selected for the station type. Specify a station number.

35.1.2 Monitoring-supported bit devices ([KEYENCE KV-700/1000/3000/5000/7000/8000])

The following table shows monitoring-supported bit devices.

To check whether writing/reading data to/from each device is available, refer to the following.

☞ Page 2069 Availability of writing/reading data to/from bit devices ([KEYENCE KV-700/1000/3000/5000/7000/8000])

For the formats of devices, refer to the following.

📖GT Designer3 (GOT3000) Screen Design Manual

○: Available

×: Not available

Device name		Device No. representation	Setting range	Specifications of EG devices*1	
				Assignment to EG devices	Access using a client
R*2	Relay	Decimal	R(Channel No.)(Bit No.) Notation example: R199900 • Channel No. (decimal): 0000 to 1999 • Bit No. (decimal): 00 to 15	○	×
B*3	Link relay	Hexadecimal	0000 to 7FFF	○	×
MR*2	Internal auxiliary relay	Decimal	MR(Channel No.)(Bit No.) Notation example: MR399900 • Channel No. (decimal): 0000 to 3999 • Bit No. (decimal): 00 to 15	○	×
LR	Latch relay	Decimal	LR(Channel No.)(Bit No.) Notation example: LR99900 • Channel No. (decimal): 000 to 999 • Bit No. (decimal): 00 to 15	○	×
T*3	Timer (contact)	Decimal	0000 to 3999	○	×
C*3	Counter (contact)	Decimal	0000 to 3999	○	×
CR	Control relay	Decimal	CR(Channel No.)(Bit No.) Notation example: CR8900 • Channel No. (decimal): 00 to 89 • Bit No. (decimal): 00 to 15	○	×
CTC*3*4	High-speed counter comparator (contact)	Decimal	0 to 7	×	×
VB	Work relay	Hexadecimal	0000 to F9FF	○	×

*1 For the devices assigned to EG devices (gateway devices) and the compatible clients, refer to the following.
📖GT Designer3 (GOT3000) Screen Design Manual

*2 When communication is performed through the following extension unit, the readable/writable device range is 00000 to 99915.
KV-L2□V
KV-LE2□V
KV-EP21V

*3 Monitoring on the GOT is possible only when a device is used in the sequence program.

*4 When writing, only resetting of the contact is possible.

35.1.3 Availability of writing/reading data to/from bit devices ([KEYENCE KV-700/1000/3000/5000/7000/8000])

The following shows the availability of writing/reading data to/from bit devices by device type.

When the device type is other than the bit type, set the device No. in multiples of 16.

R/W: Both read and write

R/-: Read only

-/W: Write only

-/-: No read/write access

Device name	Device type				
	Bit	Byte (8 bits)	Word (16 bits)	Double-word (32 bits)	Quad-word (64 bits)
R	R/W	-/-	R/W	R/W	-/-
B	R/W	-/-	R/W	R/W	-/-
MR	R/W	-/-	R/W	R/W	-/-
LR	R/W	-/-	R/W	R/W	-/-
T	R/W	-/-	-/-	-/-	-/-
C	R/W	-/-	-/-	-/-	-/-
CR	R/W	-/-	R/W	R/W	-/-
CTC	R/W	-/-	-/-	-/-	-/-
VB	R/W	-/-	R/W	R/W	-/-

35.1.4 Monitoring-supported word devices ([KEYENCE KV-700/1000/3000/5000/7000/8000])

The following table shows monitoring-supported word devices.

To check whether writing/reading data to/from each device is available, refer to the following.

☞ Page 2071 Availability of writing/reading data to/from word devices ([KEYENCE KV-700/1000/3000/5000/7000/8000])

For the formats of devices, refer to the following.

📖GT Designer3 (GOT3000) Screen Design Manual

○: Available

×: Not available

Device name		Device No. representation	Setting range	Specifications of EG devices*1	
				Assignment to EG devices	Access using a client
DM	Data memory	Decimal	00000 to 65534	○	○
CM	Control memory	Decimal	00000 to 11998	○	○ (Not usable as bit data)
W	Link register	Hexadecimal	0000 to 7FFF	○	○
EM	Extension data memory	Decimal	00000 to 65534	○	○
Z	Index register	Decimal	01 to 12	○	○ (Not usable as bit data)
FM	Extension data memory 2	Decimal	00000 to 32767	○	○
ZF	File register	Decimal	000000 to 032767 032768 to 065535 065536 to 098303 098304 to 131071 131072 to 163839 163840 to 196607 196608 to 229375 229376 to 262143 262144 to 294911 294912 to 327679 327680 to 360447 360448 to 393215 393216 to 425983 425984 to 458751 458752 to 491519 491520 to 524287	○	○
TM	Temporary data memory	Decimal	000 to 511	○	○ (Not usable as bit data)
VM	Work memory	Decimal	00000 to 63999	○	○

*1 For the devices assigned to EG devices (gateway devices) and the compatible clients, refer to the following.
📖GT Designer3 (GOT3000) Screen Design Manual

35.1.5 Availability of writing/reading data to/from word devices ([KEYENCE KV-700/1000/3000/5000/7000/8000])

The following shows the availability of writing/reading data to/from word devices by device type.

R/W: Both read and write

R/-: Read only

-/W: Write only

-/-: No read/write access

Device name	Device type			
	Word (16 bits)	Double-word (32 bits)	Quad-word (64 bits)	Bit of word data
A	-/W	-/-	-/-	-/-
DM	R/W	R/W	-/-	R/W
CM	R/W	R/W	-/-	-/-
W	R/W	R/W	-/-	R/W
EM	R/W	R/W	-/-	R/W
Z*1	R/W	R/W	-/-	-/-
FM	R/W	R/W	-/-	R/W
ZF	R/W	R/W	-/-	R/W
TM	R/W	R/W	-/-	-/-
VM	R/W	R/W	-/-	-/-

*1 With KV-3000, KV-5000, KV-5500, KV-7300, KV-7500, KV-8000, or KV Nano, Z devices cannot be specified as double-word (32-bit) data.
Use DZ devices.

35.1.6 Monitoring-supported double-word devices ([KEYENCE KV-700/1000/3000/5000/7000/8000])

The following table shows monitoring-supported double-word devices.

To check whether writing/reading data to/from each device is available, refer to the following.

☞ Page 2072 Availability of writing/reading data to/from double-word devices ([KEYENCE KV-700/1000/3000/5000/7000/8000])

For the formats of devices, refer to the following.

📖GT Designer3 (GOT3000) Screen Design Manual

○: Available

×: Not available

Device name		Device No. representation	Setting range	Specifications of EG devices*1	
				Assignment to EG devices	Access using a client
TC*2	Timer (current value)	Decimal	0000 to 3999	×	×
CC*2	Counter (current value)	Decimal	0000 to 3999	×	×
TS*2	Timer (set value)	Decimal	0000 to 3999	×	×
CS*2	Counter (set value)	Decimal	0000 to 3999	×	×
CTH*2	High-speed counter (current value)	Decimal	0 to 3	×	×
CTC*2	High-speed counter comparator (set value)	Decimal	0 to 7	×	×
DZ	Index register	Decimal	01 to 12	×	×
TRM	Digital trimmer	Decimal	0 to 7	×	×

*1 For the devices assigned to EG devices (gateway devices) and the compatible clients, refer to the following.
📖GT Designer3 (GOT3000) Screen Design Manual

*2 Monitoring on the GOT is possible only when a device is used in the sequence program.

35.1.7 Availability of writing/reading data to/from double-word devices ([KEYENCE KV-700/1000/3000/5000/7000/8000])

The following shows the availability of writing/reading data to/from double-word devices by device type.

R/W: Both read and write

R/-: Read only

-/W: Write only

-/-: No read/write access

Device name	Device type			
	Word (16 bits)	Double-word (32 bits)	Quad-word (64 bits)	Bit of double-word data
TC	-/-	R/W	-/-	-/-
CC	-/-	R/W	-/-	-/-
TS*1	-/-	R/W	-/-	-/-
CS*1	-/-	R/W	-/-	-/-
CTH	-/-	R/W	-/-	-/-
CTC	-/-	R/W	-/-	-/-
DZ	-/-	R/W	-/-	-/-
TRM	-/-	R/-	-/-	-/-

*1 Only reading is available for the KV-X series.

35.1.8 Precautions ([KEYENCE KV-700/1000/3000/5000/7000/8000])

Notation of KEYENCE equipment devices

The KEYENCE notation and XYM notation are available for the devices of KEYENCE PLCs.

The KEYENCE notation is used in GT Designer3.

PART 12 FUJI equipment

36 PLC (Ethernet connection)

37 Settable device range

36 PLC (Ethernet connection)

☞ Page 2074 Connectable devices
☞ Page 2075 System configuration
☞ Page 2078 GOT side settings
☞ Page 2082 PLC side settings

36.1 Connectable devices

The following table shows the connectable models.

○: Supported, —: Not supported

Controller	Model	Clock*1	PLC side interface		Connectable model
			Ethernet interface module*2	Built-in Ethernet port of PLC	
MICREX-SX SPH	SPH200	—	NP1L-ET1	—	GT37 SoftGOT3000
	SPH300			—	
	SPH2000	—	NP1L-ET1	○	GT37 SoftGOT3000
	SPH3000			○	

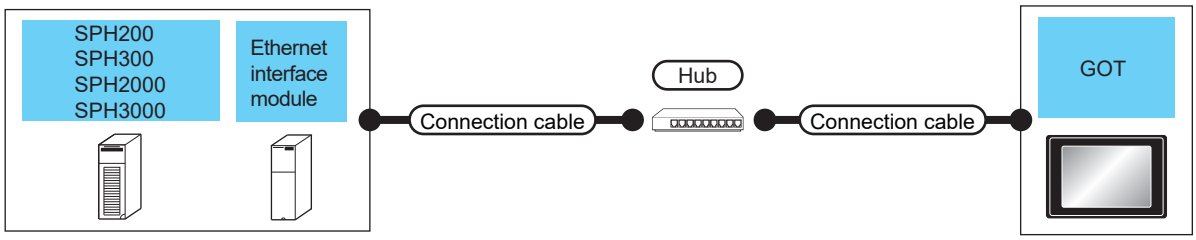
*1 The GOT clock function is available only for the PLC with the station number set with the host address.
For details on the host address setting, refer to the following.
☞ Page 2080 [Detail Setting]

*2 Product manufactured by Fuji Electric Co., Ltd.
For details on the product, contact Fuji Electric Co., Ltd.

36.2 System configuration

☞ Page 2075 Connection to Ethernet interface module
☞ Page 2076 Connection to the built-in Ethernet port of PLC

36.2.1 Connection to Ethernet interface module



For details on the connection cables and the maximum segment length, refer to the following.

☞ Page 2075 Connection cable
☞ Page 2076 Maximum segment length

For details on the maximum number of connected devices, refer to the following.

☞ Page 2076 Maximum number of connected devices

Controller	Ethernet interface module	Connection cable	GOT	
			Interface	Model
SPH200 SPH300 SPH2000 SPH3000	*1	Twisted pair cable	Built-in Ethernet interface of GOT	GT37 SoftGOT3000

*1 For the connectable Ethernet modules, refer to the following.
☞ Page 2074 Connectable devices

Connection cable

Use a connection cable that meets the following standards.

Standard	Category
10BASE-T	Shielded twisted pair cable (STP) or unshielded twisted pair cable (UTP) of category 3 or higher
100BASE-TX	Shielded twisted pair cable (STP) or unshielded twisted pair cable (UTP) of category 5 or higher
1000BASE-T	Shielded twisted pair cable (STP) or unshielded twisted pair cable (UTP) of category 5e or higher

The destination device connected with the twisted pair cable varies with the configuration of the Ethernet network system used.

Connect the cable to the Ethernet module, hub, or other system equipment corresponding to the applicable Ethernet network system.

Use cables, connectors, and hubs that meet the IEEE802.3 10BASE-T/100BASE-TX/1000BASE-T standards.

When only one GOT is connected, the GOT can be directly connected to the device without a hub.

Maximum segment length

The maximum segment length (length between a hub and a node) is 100 m.
The maximum length depends on the Ethernet equipment used.
The following shows the number of connectable hubs when a repeater hub is used.

- 10BASE-T: Up to 4 for a cascade connection (within 500 m)
- 100BASE-TX: Up to 2 for a cascade connection (within 205 m)
- 1000BASE-T: The number differs depending on the hub to be used.

When switching hubs are used, there is no theoretical limit to the number of cascade connections between switching hubs.
For the limit, contact the switching hub manufacturer.

Precautions

When multiple network devices (including GOTs) are connected in the same segment, the network load increases and the transmission speed between the GOT and PLC may be reduced.
The following actions may improve the communication performance.

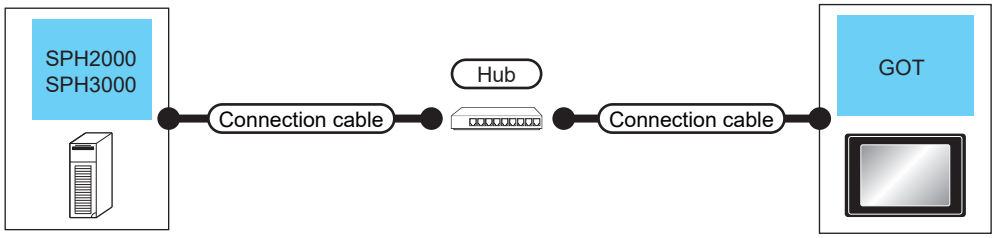
- Use a switching hub compatible with 1000BASE-T (1 Gbps) or more.
- Reduce the number of devices monitored by the GOT.

Maximum number of connected devices

Up to 128 CPU modules can be connected to channels No. 1 to No. 4 of one GOT. (16 or less recommended)
The following shows the number of connectable controllers per GOT channel and the number of GOTs connectable to one controller.

Controller		GOT	
Model	**Number of GOTs connectable to one PLC**	**Model**	**Number of connectable controllers per GOT channel**
SPH200 SPH300 SPH2000 SPH3000	8	GT37 SoftGOT3000	128

36.2.2 Connection to the built-in Ethernet port of PLC



For details on the connection cables and the maximum segment length, refer to the following.
☞ Page 2077 Connection cable
☞ Page 2077 Maximum segment length
For details on the maximum number of connected devices, refer to the following.
☞ Page 2077 Maximum number of connected devices

Controller	Connection cable	GOT	
		Interface	**Model**
SPH2000 SPH3000	Twisted pair cable	Built-in Ethernet interface of GOT	GT37 SoftGOT3000

Connection cable

Use a connection cable that meets the following standards.

Standard	Category
10BASE-T	Shielded twisted pair cable (STP) or unshielded twisted pair cable (UTP) of category 3 or higher
100BASE-TX	Shielded twisted pair cable (STP) or unshielded twisted pair cable (UTP) of category 5 or higher
1000BASE-T	Shielded twisted pair cable (STP) or unshielded twisted pair cable (UTP) of category 5e or higher

The destination device connected with the twisted pair cable varies with the configuration of the Ethernet network system used.

Connect the cable to the Ethernet module, hub, or other system equipment corresponding to the applicable Ethernet network system.

Use cables, connectors, and hubs that meet the IEEE802.3 10BASE-T/100BASE-TX/1000BASE-T standards.

When only one GOT is connected, the GOT can be directly connected to the device without a hub.

Maximum segment length

The maximum segment length (length between a hub and a node) is 100 m.

The maximum length depends on the Ethernet equipment used.

The following shows the number of connectable hubs when a repeater hub is used.

- 10BASE-T: Up to 4 for a cascade connection (within 500 m)
- 100BASE-TX: Up to 2 for a cascade connection (within 205 m)
- 1000BASE-T: The number differs depending on the hub to be used.

When switching hubs are used, there is no theoretical limit to the number of cascade connections between switching hubs.

For the limit, contact the switching hub manufacturer.

Precautions

When multiple network devices (including GOTs) are connected in the same segment, the network load increases and the transmission speed between the GOT and PLC may be reduced.

The following actions may improve the communication performance.

- Use a switching hub compatible with 1000BASE-T (1 Gbps) or more.
- Reduce the number of devices monitored by the GOT.

Maximum number of connected devices

Up to 128 CPU modules can be connected to channels No. 1 to No. 4 of one GOT. (16 or less recommended)

The following shows the number of connectable controllers per GOT channel and the number of GOTs connectable to one controller.

Controller		GOT	
Model	Number of GOTs connectable to one PLC	Model	Number of connectable controllers per GOT channel
SPH2000 SPH3000	10	GT37 SoftGOT3000	128

36.3 GOT side settings

☞ Page 2078 [GOT Ethernet Setting]
☞ Page 2079 [Controller Setting]

36.3.1 [GOT Ethernet Setting]

Set the GOT Ethernet interface in GT Designer3.

Item	Description
[GOT IP Address Setting]	Set the IP address of the GOT.
[GOT Ethernet Common Setting]	Set the default gateway and other common items for GOT Ethernet interfaces.
[IP filter Setting]	The GOT allows or blocks access from IP addresses specified in the filtering list.

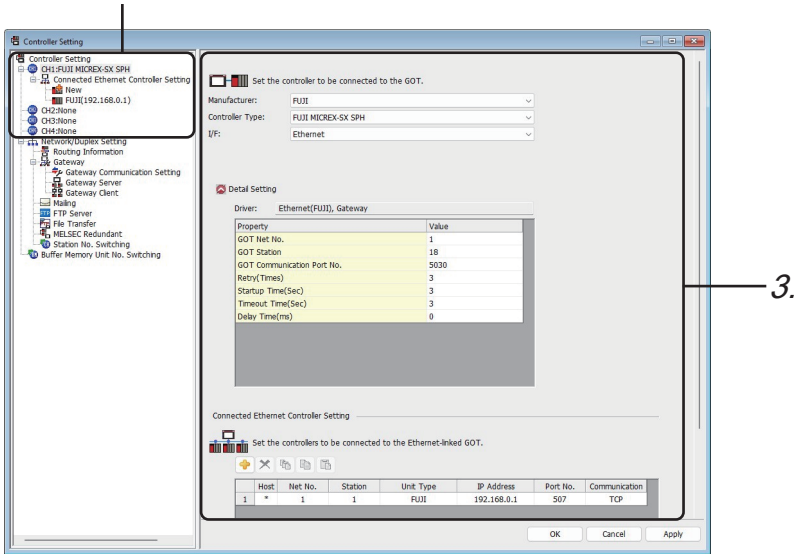
For details on the setting, refer to the following.
📖GT Designer3 (GOT3000) Screen Design Manual
Set the GT SoftGOT3000 Ethernet interface on the personal computer.

Precautions

Do not use 0 and 255 at the end of an IP address.
(Numbers of *.*.*.0 and *.*.*.255 are used by the system)
The GOT may not monitor the controller correctly with the above numbers.
Consult with the administrator of the network before setting an IP address to the GOT.

36.3.2 [Controller Setting]

Set the channel of the connected controller.



Operating procedure

1. Select [Common] → [Controller Setting] from the menu.

2. In the [Controller Setting] window, select the channel number to be used from the list menu.

3. Set the following items.

Item	Description
[Manufacturer]	[FUJI]
[Controller Type]	[FUJI MICREX-SX SPH]
[I/F]	[Ethernet]
[Detail Setting]	Configure the settings according to the usage environment. ☞ Page 2080 [Detail Setting]
[Connected Ethernet Controller Setting]	Configure the settings according to the controller to be connected. ☞ Page 2081 [Connected Ethernet Controller Setting]

4. When you have completed the settings, click the [OK] button.

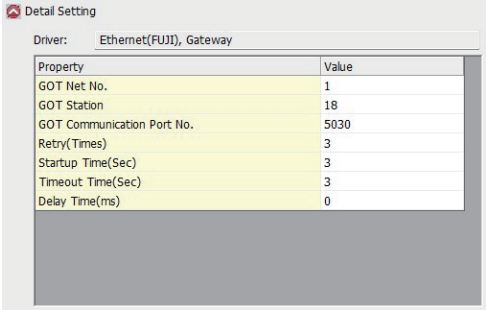
Point

The controller settings can be checked in [I/F Communication Setting].
For details, refer to the following.
📖GT Designer3 (GOT3000) Screen Design Manual

PART 12

[Detail Setting]

Configure the settings according to the usage environment.



Item	Description	Range
[Driver]	This item appears when communication drivers are selectable according to the settings of [Controller Type] and [I/F].	[Ethernet(FUJI), Gateway]
[GOT Net No.]	Set the network number of the GOT.	[1] to [239]
[GOT Station]*1	Set the station number of the GOT.	[1] to [254]
[GOT Communication Port No.]	Set the GOT port number for the connection with the Ethernet equipment.	[1024] to [5010], [5014] to [49152], [49171] to [65534]
[Retry]	Set the number of retries to be performed when a communication timeout occurs. When receiving no response after retries, the communication times out.	[0] times to [5] times
[Startup Time]	Set the time period from the GOT startup until the start of communication with the PLC CPU.	[3] seconds to [255] seconds
[Timeout Time]	Set a communication timeout period.	[1] second to [90] seconds
[Delay Time]	Set the delay time for reducing the load of the network and destination PLC.	[0] ms to [10000] ms

*1 Set values not set for [Station] in [Connected Ethernet Controller Setting].
☞ Page 2081 [Connected Ethernet Controller Setting]

Point

• Controller settings using the GT37 utility

The controller settings can be changed in [Communication Settings] of the GT37 utility after writing [Communication Settings] of project data to GT37.

For details on the GT37 utility, refer to the following manual.

📖GOT3000 Series User's Manual (Utility & Maintenance Functions)

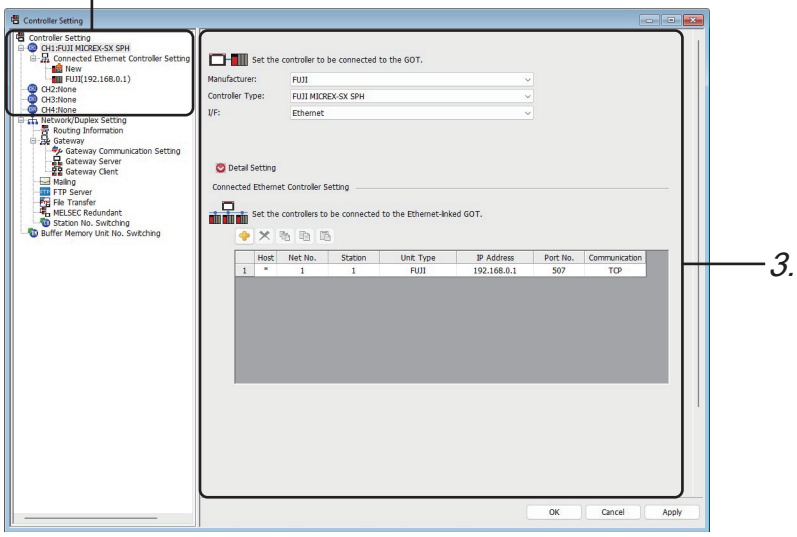
• Priority of the settings in [Controller Setting]

When the settings are configured in GT Designer3 or in the GT37 utility, the latest settings are effective.

[Connected Ethernet Controller Setting]

Set the controller to be connected to the GOT by Ethernet.

List menu



Item	Description	Range
[Host]	The host is displayed. It refers to a station that can be connected without setting a station number. The host is indicated with an asterisk (*).	—
[Net No.]	Set the network number of the connected Ethernet equipment.	[1] to [239]
[Station]*1	Set the station number of the connected Ethernet equipment.	[1] to [254]
[Unit Type]	Select the model of the connected Ethernet equipment.	[FUJI]
[IP Address]*2	Set the IP address of the connected Ethernet equipment.	[0.0.0.0] to [255.255.255.255]
[Port No.]	Set the port number of the connected Ethernet equipment.	[251] to [65531]
[Communication]	Set the communication format of the connected Ethernet equipment.	[TCP]

*1 Set values not set for [GOT Station] in [Detail Setting].
☞ Page 2080 [Detail Setting]

*2 Connection with the PLC is unavailable if the IP address is the default value.
Set the value to the IP address of the PLC to be connected.

36.4 PLC side settings

Configure the settings for the FUJI PLC.
For details on FUJI PLCs, refer to the following manual.
📖Manual of FUJI PLC

36.4.1 Setting the IP address and self port reference number

Precautions

In the system configuration, the PLC with the station number set with the host address must be included.
For details on the host address setting, refer to the following.
☞ Page 2080 [Detail Setting]

Connection to Ethernet interface module (NP1L-ET1)

Set the IP address and self port reference number using a peripheral tool of the PLC.

Item	Setting value	Range
IP address	Adjust the settings with the GOT settings. ☞ Page 2081 [Connected Ethernet Controller Setting]	PLC side IP address
Subnet mask	[ ].[ ].[ ].[ ]	PLC side settings
Default gateway IP address	[ ].[ ].[ ].[ ]	
Self port reference number	Set the value of the self port reference number plus 251. Also, the value must be the same as the one set in [Port No.] in the GOT. ☞ Page 2081 [Connected Ethernet Controller Setting]	
NP1L-ET1/ET2	Set the IP address and port number using parameters to match those set in the GOT. ☞ Page 2081 [Connected Ethernet Controller Setting]	—

Connection to the built-in Ethernet port of PLC

Set the IP address and self port reference number using a peripheral tool of the PLC.

Item	Setting value	Range
IP address	Adjust the settings with the GOT settings. ☞ Page 2081 [Connected Ethernet Controller Setting]	PLC side IP address
Subnet mask	[ ].[ ].[ ].[ ]	PLC side settings
Default gateway IP address	[ ].[ ].[ ].[ ]	
Self port reference number	Set the value of the self port reference number plus 251. Also, the value must be the same as the one set in [Port No.] in the GOT. ☞ Page 2081 [Connected Ethernet Controller Setting]	

Precautions

When connecting to the built-in Ethernet port of SPH2000 or SPH3000, the initial value of the loader command monitoring timer is set to 3000 (in units of 0.1 second).
If the GOT and PLC cannot communicate because the GOT power is off or other reasons, the PLC automatically disconnects the GOT after 300.0 seconds.
The initial value of the maximum number of connections is set to 10 for the loader command.
If the connection between the GOT and PLC is lost 10 times, the connection is automatically disconnected after the time set by the loader command monitoring timer value. Until the reconnection is enabled, you will not be able to monitor the PLC from the GOT.
For details, refer to the following manual.
📖Manual of FUJI PLC

37 Settable device range

This chapter describes the range of devices settable in GT Designer3.
The settable range varies with the selection for [Controller Type] in the [Controller Setting] window.
Configure the device setting according to the specifications of the controller to be used.
Device specifications differ depending on the controller model even among the controllers of the same series.
If a nonexistent device or a device number out of the range is set for an object, other objects for which correct devices are set may not be monitored.

☞ Page 2083 FUJI equipment ([FUJI MICREX-SX SPH])

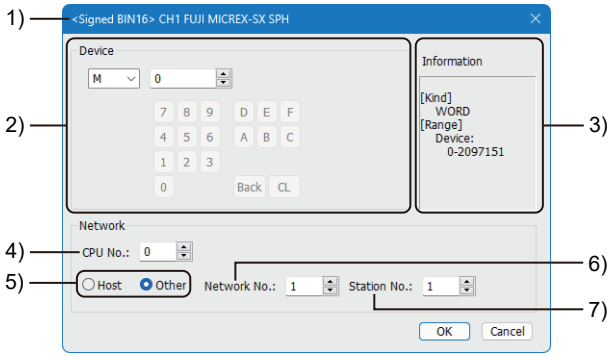
37.1 FUJI equipment ([FUJI MICREX-SX SPH])

GT37 SoftGOT3000

Item	Reference
Device setting dialog	☞ Page 2083 Device setting dialog ([FUJI MICREX-SX SPH])
Specifications of word devices	☞ Page 2084 Monitoring-supported word devices ([FUJI MICREX-SX SPH])
	☞ Page 2084 Availability of writing/reading data to/from word devices ([FUJI MICREX-SX SPH])
Notation of devices	☞ Page 2085 Notation of devices ([FUJI MICREX-SX SPH])

37.1.1 Device setting dialog ([FUJI MICREX-SX SPH])

Set a device to be monitored.



Item		Description
1)	Title	Data type and channel number of the device to be set
2)	[Device]	Set the device name and device number. If a bit number needs to be specified, the setting item is displayed. Example) Setting of M0
3)	[Information]	Displays the setting range of each setting item according to the selected device.
4)	[CPU No.]	Set the CPU number of the controller.
5)	Station type specification	Select the station type (host or other) for the controller to be monitored.
6)	[Network No.]	This item appears when [Other] is selected for the station type. Set the network number.
7)	[Station No.]	This item appears when [Other] is selected for the station type. Specify a station number.

37.1.2 Monitoring-supported word devices ([FUJI MICREX-SX SPH])

The following table shows monitoring-supported word devices.

To check whether writing/reading data to/from each device is available, refer to the following.

☞ Page 2084 Availability of writing/reading data to/from word devices ([FUJI MICREX-SX SPH])

For the formats of devices, refer to the following.

📖GT Designer3 (GOT3000) Screen Design Manual

○: Available

×: Not available

Device name		Device No. representation	Setting range	Specifications of EG devices*1	
				Assignment to EG devices	Access using a client
M	Non-retain memory	Decimal	0 to 2097151	○	○
L	Retain memory	Decimal	0 to 2097151	○	○
SM	System memory	Decimal	0 to 511	○	○

*1 For the devices assigned to EG devices (gateway devices) and the compatible clients, refer to the following.
📖GT Designer3 (GOT3000) Screen Design Manual

37.1.3 Availability of writing/reading data to/from word devices ([FUJI MICREX-SX SPH])

The following shows the availability of writing/reading data to/from word devices by device type.

R/W: Both read and write

R/-: Read only

-/W: Write only

-/-: No read/write access

Device name	Device type			
	Word (16 bits)	Double-word (32 bits)	Quad-word (64 bits)	Bit of word data*1
M	R/W	R/W	-/-	R/W
L	R/W	R/W	-/-	R/W
SM	R/W	R/W	-/-	R/W

*1 The GOT reads the value from a device and then write a value to the device.
Do not change the device value with a sequence program until the GOT completes writing a value to the device.

37.1.4 Notation of devices ([FUJI MICREX-SX SPH])

The notation of devices differs between the FUJI PLC programming software and GT Designer3.
The notation also differs according to the type of FUJI PLC programming software.

Notation of devices in the single CPU system ([FUJI MICREX-SX SPH])

n: Device number

Device		Notation of devices in GT Designer3	Notation of devices in the programming software	
			SX-Programmer Expert(D300win)	SX-Programmer Standard
Non-retain memory	Word device	Mn	%MW1.n	WMn
	Double-word device		%MD1.n	DMn
	Bit-specified word device	Mn.b0 to Mn.b15	%MX1.n.00 to %MX1.n.15	Mn0 to MnF*1
Retain memory	Word device	Ln	%MW3.n	WLn
	Double-word device		%MD3.n	DLn
	Bit-specified word device	Ln.b0 to Ln.b15	%MX3.n.00 to %MX3.n.15	Ln0 to LnF*1
System memory	Word device	SMn	%MW10.n	WSMn
	Double-word device		%MD10.n	DSMn
	Bit-specified word device	SMn.b0 to SMn.b15	%MX10.n.00 to %MX10.n.15	SMn0 to SMnF*1

*1 The device number is not displayed when it is 0.

Notation of devices in the multiple CPU system ([FUJI MICREX-SX SPH])

n: Device number

p: CPU number

Device		Notation of devices in GT Designer3	Notation of devices in the programming software	
			SX-Programmer Expert(D300win)	SX-Programmer Standard
Non-retain memory	Word device	0-FF/p Mn	%MWp.1.n	WMp.n
	Double-word device		%MDp.1.n	DMp.n
	Bit-specified word device	0-FF/p Mn.b0 to 0-FF/p Mn.b15	%MXp.1.n.00 to %MXp.1.n.15	Mp.n0 to Mp.nF*1
Retain memory	Word device	0-FF/p Ln	%MWp.3.n	WLp.n
	Double-word device		%MDp.3.n	DLp.n
	Bit-specified word device	0-FF/p Ln.b0 to 0-FF/p Ln.b15	%MXp.3.n.00 to %MXp.3.n.15	Lp.n0 to Lp.nF*1
System memory	Word device	0-FF/p SMn	%MWp.10.n	WSMp.n
	Double-word device		%MDp.10.n	DSMp.n
	Bit-specified word device	%MXp.10.n.01 to %MXp.10.n.15	%MX10.n.00 to %MX10.n.15	SMp.n0 to SMp.nF*1

*1 The device number is not displayed when it is 0.

PART 13 YASKAWA equipment

38 PLC (Ethernet connection)

39 Robot controller (Ethernet connection)

40 Settable device range

38 PLC (Ethernet connection)

☞ Page 2087 MP3000 series (Built-in Ethernet port connection)
☞ Page 2096 MP2000 series (Ethernet module connection)

38.1 MP3000 series (Built-in Ethernet port connection)

☞ Page 2087 Connectable devices
☞ Page 2087 System configuration
☞ Page 2089 GOT side settings
☞ Page 2093 PLC side settings

38.1.1 Connectable devices

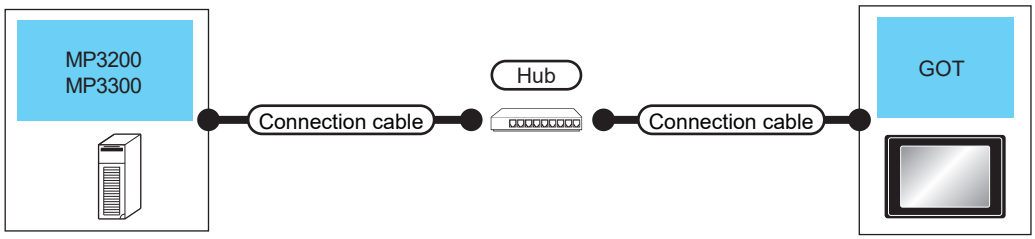
The following table shows the connectable models.

○: Supported, —: Not supported

Controller*1	Model	Clock	Connectable model
MP3000 series	MP3200	—	GT37 SoftGOT3000
	MP3300	—	GT37 SoftGOT3000

*1 The GOT is not applicable to the multiple CPU system configuration of YASKAWA PLC.

38.1.2 System configuration



☞ Page 2088 Connection cable
☞ Page 2088 Maximum segment length

For details on the maximum number of connected devices, refer to the following.

☞ Page 2088 Maximum number of connected devices

Controller	Connection cable	GOT	
		Interface	Model
MP3200 MP3300	Twisted pair cable	Built-in Ethernet interface of GOT	GT37 SoftGOT3000
		Ethernet interface of personal computer	GT37 SoftGOT3000

Connection cable

Use a connection cable that meets the following standards.

Standard	Category
10BASE-T	Shielded twisted pair cable (STP) or unshielded twisted pair cable (UTP) of category 3 or higher
100BASE-TX	Shielded twisted pair cable (STP) or unshielded twisted pair cable (UTP) of category 5 or higher
1000BASE-T	Shielded twisted pair cable (STP) or unshielded twisted pair cable (UTP) of category 5e or higher

The destination device connected with the twisted pair cable varies with the configuration of the Ethernet network system used.
Connect the cable to the Ethernet module, hub, or other system equipment corresponding to the applicable Ethernet network system.
Use cables, connectors, and hubs that meet the IEEE802.3 10BASE-T/100BASE-TX/1000BASE-T standards.
When only one GOT is connected, the GOT can be directly connected to the device without a hub.

Maximum segment length

The maximum segment length (length between a hub and a node) is 100 m.
The maximum length depends on the Ethernet equipment used.
The following shows the number of connectable hubs when a repeater hub is used.

- 10BASE-T: Up to 4 for a cascade connection (within 500 m)
- 100BASE-TX: Up to 2 for a cascade connection (within 205 m)
- 1000BASE-T: The number differs depending on the hub to be used.

When switching hubs are used, there is no theoretical limit to the number of cascade connections between switching hubs.
For the limit, contact the switching hub manufacturer.

Precautions

When multiple network devices (including GOTs) are connected in the same segment, the network load increases and the transmission speed between the GOT and PLC may be reduced.
The following actions may improve the communication performance.

- Use a switching hub compatible with 1000BASE-T (1 Gbps) or more.
- Reduce the number of devices monitored by the GOT.

Maximum number of connected devices

Up to 128 CPU modules can be connected to channels No. 1 to No. 4 of one GOT. (16 or less recommended)
The following shows the number of connectable controllers per GOT channel and the number of GOTs connectable to one controller.

Controller			GOT		
Model	Number of GOTs connectable to one PLC		Model	Number of connectable controllers per GOT channel	
	TCP	UDP		TCP	UDP
MP3200 MP3300	10	10	GT37 SoftGOT3000	128	128

38.1.3 GOT side settings

☞ Page 2089 [GOT Ethernet Setting]
☞ Page 2090 [Controller Setting]

[GOT Ethernet Setting]

Set the GOT Ethernet interface in GT Designer3.

Item	Description
[GOT IP Address Setting]	Set the IP address of the GOT.
[GOT Ethernet Common Setting]	Set the default gateway and other common items for GOT Ethernet interfaces.
[IP filter Setting]	The GOT allows or blocks access from IP addresses specified in the filtering list.

For details on the setting, refer to the following.

📖GT Designer3 (GOT3000) Screen Design Manual

Set the GT SoftGOT3000 Ethernet interface on the personal computer.

Precautions

Do not use 0 and 255 at the end of an IP address.

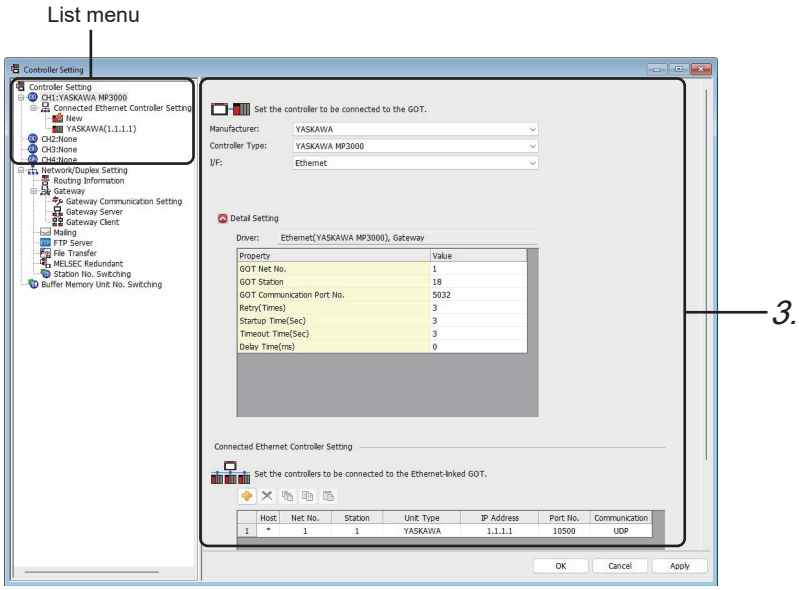
(Numbers of *.*.*.0 and *.*.*.255 are used by the system)

The GOT may not monitor the controller correctly with the above numbers.

Consult with the administrator of the network before setting an IP address to the GOT and controller.

[Controller Setting]

Set the channel of the connected controller.



Operating procedure

1. Select [Common] → [Controller Setting] from the menu.

2. In the [Controller Setting] window, select the channel number to be used from the list menu.

3. Set the following items.

Item	Description
[Manufacturer]	[YASKAWA]
[Controller Type]	[YASKAWA MP3000]
[I/F]	[Ethernet]
[Detail Setting]	Configure the settings according to the usage environment. ☞ Page 2091 [Detail Setting]
[Connected Ethernet Controller Setting]	Configure the settings according to the controller to be connected. ☞ Page 2092 [Connected Ethernet Controller Setting]

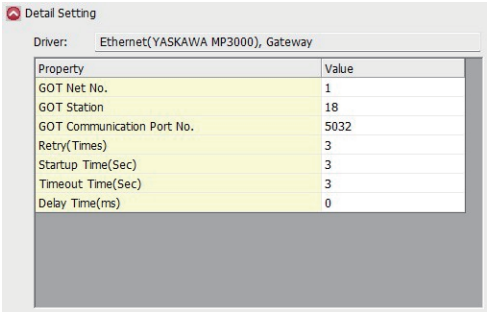
4. When you have completed the settings, click the [OK] button.

Point

The controller settings can be checked in [I/F Communication Setting].
For details, refer to the following.
📖GT Designer3 (GOT3000) Screen Design Manual

■[Detail Setting]

Configure the settings according to the usage environment.



Item	Description	Range
[Driver]	This item appears when communication drivers are selectable according to the settings of [Controller Type] and [I/F].	[Ethernet(YASKAWA MP3000), Gateway]
[GOT Net No.]	Set the network number of the GOT.	[1] to [239]
[GOT Station]*1	Set the station number of the GOT.	[1] to [64]
[GOT Communication Port No.]	Set the GOT port number for the connection with the Ethernet equipment.	[1024] to [5010], [5014] to [49152], [49171] to [65534]
[Retry]	Set the number of retries to be performed when a communication timeout occurs. When receiving no response after retries, the communication times out.	[0] times to [5] times
[Startup Time]	Set the time period from the GOT startup until the start of communication with the PLC CPU.	[3] seconds to [255] seconds
[Timeout Time]	Set a communication timeout period.	[1] second to [90] seconds
[Delay Time]	Set the delay time for reducing the load of the network and destination PLC.	[0] ms to [10000] ms

*1 Set values not set for [Station] in [Connected Ethernet Controller Setting].
☞ Page 2102 [Connected Ethernet Controller Setting]

Point

• Controller settings using the GT37 utility

The controller settings can be changed in [Communication Settings] of the GT37 utility after writing [Communication Settings] of project data to GT37.

For details on the GT37 utility, refer to the following manual.

📖GOT3000 Series User's Manual (Utility & Maintenance Functions)

• Priority of the settings in [Controller Setting]

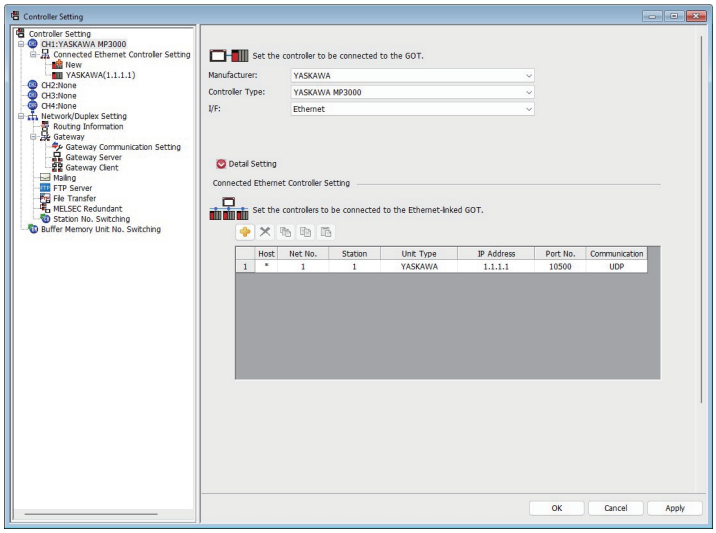
When the settings are configured in GT Designer3 or in the GT37 utility, the latest settings are effective.

Precautions

When connecting two or more GOTs in the Ethernet network, set a different station number to each GOT.

■[Connected Ethernet Controller Setting]

Set the controller to be connected to the GOT by Ethernet.



Item	Description	Range
[Host]	The host is displayed. It refers to a station that can be connected without setting a station number. The host is indicated with an asterisk (*).	-
[Net No.]	Set the network number of the connected Ethernet equipment.	[1] to [239]
[Station]*1	Set the station number of the connected Ethernet equipment.	[1] to [64]
[Unit Type]	Select the model of the connected Ethernet equipment.	[YASKAWA]
[IP Address]*2	Set the IP address of the connected Ethernet equipment.	[0.0.0.0] to [255.255.255.255]
[Port No.]	Set the port number of the connected Ethernet equipment.	[256] to [65534]
[Communication]	Select a communication format.	[UDP], [TCP]

*1 Set values not set for [GOT Station] in [Detail Setting].
☞ Page 2091 [Detail Setting]

*2 Connection with the PLC is unavailable if the IP address is the default value.
Set the value to the IP address of the PLC to be connected.

Precautions

Do not use the IP address "192.168.0.18" when using multiple GOTs with the GOT 1000 series mixed.
Doing so may cause a communication error on the GOT.

38.1.4 PLC side settings

Configure the settings for the YASKAWA PLC.

For details on YASKAWA PLCs, refer to the following manual.

📖Manual of YASKAWA PLC

☞ Page 2093 Connection to MP3000 series

Connection to MP3000 series

Configure the settings for the PLC to be connected to the GOT using a peripheral tool.

☞ Page 2093 Settings for the MP3000 series built-in Ethernet

☞ Page 2094 Sequence program (ladder program to receive massages)

■Settings for the MP3000 series built-in Ethernet

The following shows the settings with a peripheral tool.

Item			Setting value	Range
Transmission parameter setting	IP address		[ ].[ ].[ ].[ ]	PLC side IP address
	Subnet mask		[ ].[ ].[ ].[ ]	PLC side settings
	Gateway IP address		[ ].[ ].[ ].[ ]	
	Device name		Arbitrary	Up to 16 one-byte characters
Transmission parameter detailed setting	Engineering port		256 to 65535	For a connection with software MPE720
	Response time		0	Not required for communication with the GOT
	Count of retry		0	
Message communication of connection parameter setting	Connection number		1	1 to 20
	Local port		10500	256 to 65534
	Node IP address*1		[ ].[ ].[ ].[ ]	IP address of the GOT
	Node port*1		[ ]	Port number of the GOT
	Connection type		UDP	TCP, UDP
	Protocol type		Extended MEMOBUS	Extended MEMOBUS
	Code		BIN	BIN
	Detail	Auto receive	• When using the auto receive function: Valid • When using ladder program to receive messages: Invalid	Valid, invalid
		Transmission buffer channel	Set this item as required.	1 to 10
		Setting the slave I/F register	Default	—
	Node name		Arbitrary	Up to 32 one-byte characters (16 two-byte characters)

*1 The settings of the node IP address (remote station's IP address) and node port (remote station's port number) must be the same as those of the GOT.
For information on how to set the IP address on the GOT side, refer to the following.
☞ Page 2089 [GOT Ethernet Setting]
For information on how to set the port number on the GOT side, refer to the following.
☞ Page 2092 [Connected Ethernet Controller Setting]

■Sequence program (ladder program to receive massages)

To establish communication between the MP3000 series and the GOT3000series, a ladder program to receive messages is required.

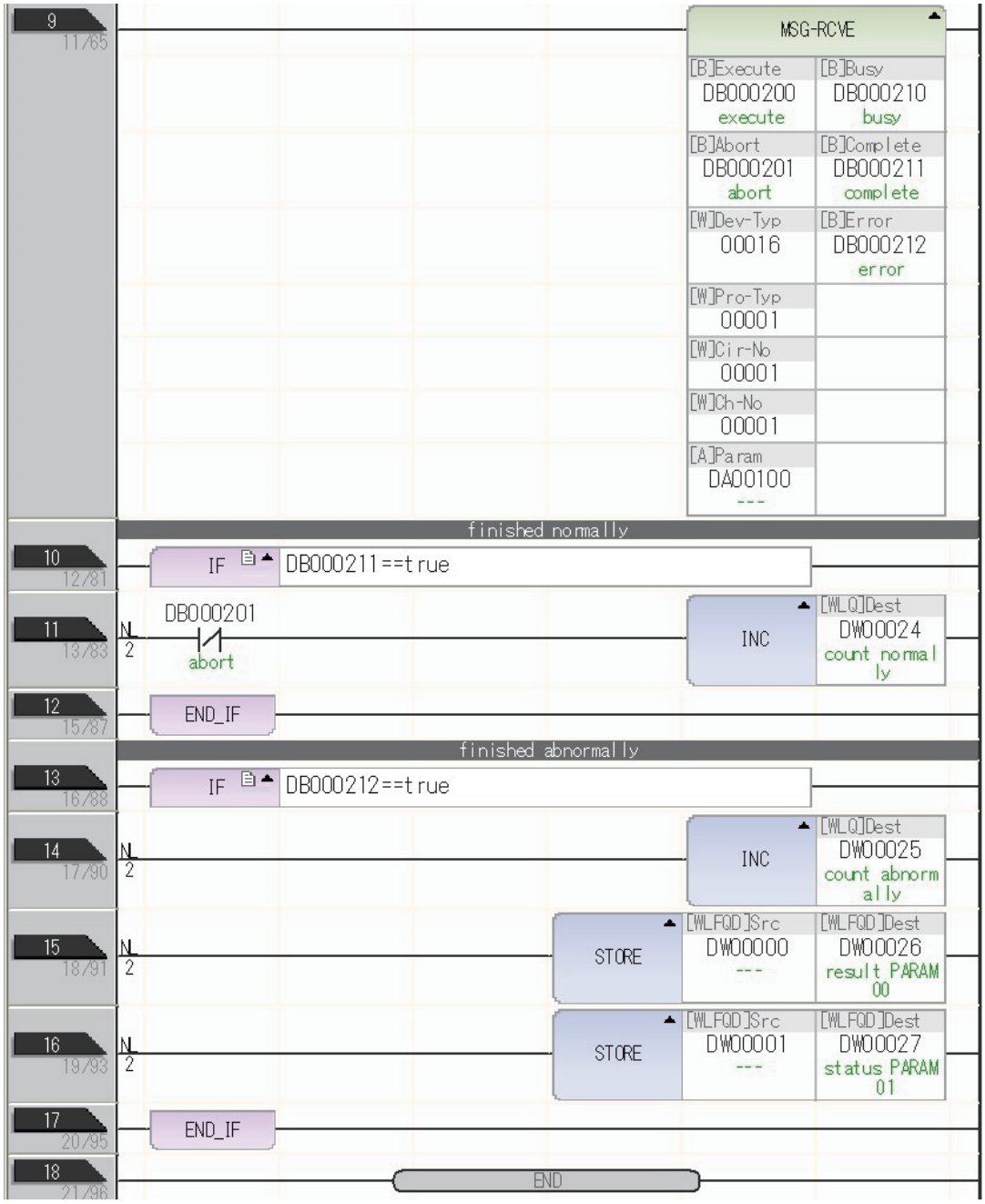
For connection with multiple GOT3000 series, the program is required for each GOT.

For details on the ladder program, refer to the following manual.

📖Manual of YASKAWA PLC

The following shows an example program using the MSG-RCVE function.

```
initializing
setting parameters for MSG-RCVE function during first scan after power on.
SB000003 for low sacn and SB000001 for high scan.
first scan after power on
0  0/0   IF  SB000003==true;

clear all D registers
1  1/2   SETW  [W]Dest DW00000 ---  [W]Data 00000  [W]Width 00200

set for connection No. (PARAM10)
2  2/-1  EXPRESSION
         DW00110=1      // using connection No.1

set for offset. (PARAM20-PARAM35)
3  3/5   EXPRESSION
         DW00120=0;     //coil offset MB low(0)
         DW00121=0;     //coil offset MB high(0)
         DW00122=0;     //input relay offset IB low(0)
         DW00123=0;     //input relay offset IB high(0)
         DW00124=0;     //input register offset IW low(0)
         DW00125=0;     //input register offset IW high(0)
         DW00126=0;     //hold register offset MW low(0)
         DW00127=0;     //hold register offset MW high(0)
         DW00128=0;     //data relay offset GB low(0)
         DW00129=0;     //data relay offset GB high(0)
         DW00130=0;     //data register offset GW low(0)
         DW00131=0;     //data register offset GW high(0)
         DW00132=0;     //output coil offset OB low(0)
         DW00133=0;     //output coil offset OB high(0)
         DW00134=0;     //output register offset OW low(0)
         DW00135=0;     //output register offset OW high(0)

M writing range (PARAM36-PARAM39)
4  4/37  EXPRESSION
         DW00136=0x0000;            //M writing range LO low
         DW00137=0x0000;            //M writing range LO lhigh
         DW00138=0xffff;      //M writing range HI low
         DW00139=0x000f;      //M writing range HI high

G writing range (PARAM36-PARAM39)
5  5/45  EXPRESSION
         DW00140=0x0000;            //G writing range LO low
         DW00141=0x0000;            //G writing range LO lhigh
         DW00142=0xffff;      //G writing range HI low
         DW00143=0x001f;      //G writing range HI high

O writing range (PARAM36-PARAM39)
6  6/53  EXPRESSION
         DW00144=0x0000;            //O writing range LO low
         DW00145=0x0000;            //O writing range LO lhigh
         DW00146=0x7fff;      //O writing range HI low
         DW00147=0x0001;      //O writing range HI high

7  7/61  END_IF

treatment for all time.
receiving command created.
8  8/62  SB000004 (Always ON)  DB000201 (abort)  DB000200 (execute)
```


9
11/65
MSG-RCVE
[B]Execute
DB000200
execute
[B]Busy
DB000210
busy
[B]Abort
DB000201
abort
[B]Complete
DB000211
complete
[W]Dev-Typ
00016
[B]Error
DB000212
error
[W]Pro-Typ
00001
[W]Cir-No
00001
[W]Ch-No
00001
[A]Param
DA00100
---
finished normally
10
12/81
IF
DB000211==true
11
13/83
N
2
DB000201
abort
INC
[WLQ]Dest
DW00024
count normal ly
12
15/87
END_IF
finished abnormally
13
16/88
IF
DB000212==true
14
17/90
N
2
INC
[WLQ]Dest
DW00025
count abnorm ally
15
18/91
N
2
STORE
[WLFQD]Src
DW00000

[WLFQD]Dest
DW00026
result PARAM 00
16
19/93
N
2
STORE
[WLFQD]Src
DW00001

[WLFQD]Dest
DW00027
status PARAM 01
17
20/95
END_IF
18
21/96
END

PART 13

38.2 MP2000 series (Ethernet module connection)

☞ Page 2096 Connectable devices
☞ Page 2097 System configuration
☞ Page 2099 GOT side settings
☞ Page 2103 PLC side settings

38.2.1 Connectable devices

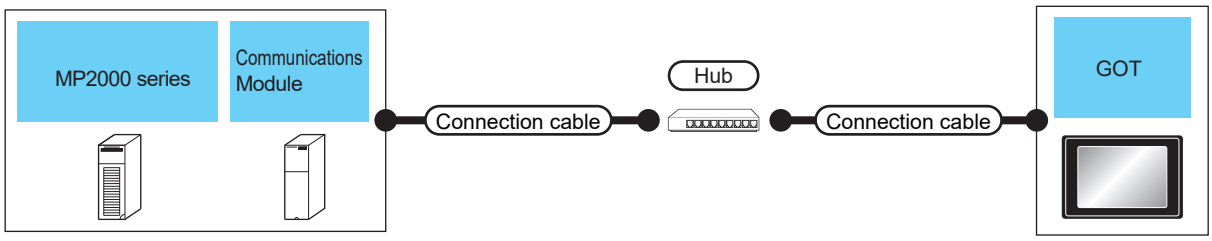
The following table shows the connectable models.

○: Supported, —: Not supported

Controller*1	Model	Clock	Communication module*2	Connectable model
MP2000 series	MP2200	—	218IF-01*3 218IF-02	GT37 SoftGOT3000
	MP2300	—	218IF-01*3 218IF-02	GT37 SoftGOT3000
	MP2300S	—	218IF-01*3 218IF-02	GT37 SoftGOT3000

*1 The GOT is not applicable to the multiple CPU system configuration of YASKAWA PLC.
*2 Product manufactured by YASKAWA Electric Corporation.
For details on the product, contact YASKAWA Electric Corporation.
*3 Use a CPU with software version 2.60 or later.

38.2.2 System configuration



For details on the connection cables and the maximum segment length, refer to the following.

☞ Page 2098 Connection cable
☞ Page 2098 Maximum segment length

For details on the maximum number of connected devices, refer to the following.

☞ Page 2098 Maximum number of connected devices

Controller	Communication module	Connection cable	GOT	
			Interface	Model
MP2200 MP2300 MP2300S	*1	Twisted pair cable	Built-in Ethernet interface of GOT	GT37 SoftGOT3000
			Ethernet interface of personal computer	GT37 SoftGOT3000

*1 For the connectable communication modules, refer to the following.
☞ Page 2096 Connectable devices

Connection cable

Use a connection cable that meets the following standards.

Standard	Category
10BASE-T	Shielded twisted pair cable (STP) or unshielded twisted pair cable (UTP) of category 3 or higher
100BASE-TX	Shielded twisted pair cable (STP) or unshielded twisted pair cable (UTP) of category 5 or higher
1000BASE-T	Shielded twisted pair cable (STP) or unshielded twisted pair cable (UTP) of category 5e or higher

The destination device connected with the twisted pair cable varies with the configuration of the Ethernet network system used.

Connect the cable to the Ethernet module, hub, or other system equipment corresponding to the applicable Ethernet network system.

Use cables, connectors, and hubs that meet the IEEE802.3 10BASE-T/100BASE-TX/1000BASE-T standards.

When only one GOT is connected, the GOT can be directly connected to the device without a hub.

Maximum segment length

The maximum segment length (length between a hub and a node) is 100 m.

The maximum length depends on the Ethernet equipment used.

The following shows the number of connectable hubs when a repeater hub is used.

- 10BASE-T: Up to 4 for a cascade connection (within 500 m)
- 100BASE-TX: Up to 2 for a cascade connection (within 205 m)
- 1000BASE-T: The number differs depending on the hub to be used.

When switching hubs are used, there is no theoretical limit to the number of cascade connections between switching hubs.

For the limit, contact the switching hub manufacturer.

Precautions

When multiple network devices (including GOTs) are connected in the same segment, the network load increases and the transmission speed between the GOT and PLC may be reduced.

The following actions may improve the communication performance.

- Use a switching hub compatible with 1000BASE-T (1 Gbps) or more.
- Reduce the number of devices monitored by the GOT.

Maximum number of connected devices

Up to 128 CPU modules can be connected to channels No. 1 to No. 4 of one GOT. (16 or less recommended)

The following shows the number of connectable controllers per GOT channel and the number of GOTs connectable to one controller.

Controller			GOT		
Model	Number of GOTs connectable to one PLC		Model	Number of connectable controllers per GOT channel	
	TCP	UDP		TCP	UDP
MP2200 MP2300 MP2300S	10	10	GT37 SoftGOT3000	128	128

38.2.3 GOT side settings

☞ Page 2099 [GOT Ethernet Setting]
☞ Page 2100 [Controller Setting]

[GOT Ethernet Setting]

Set the GOT Ethernet interface in GT Designer3.

Item	Description
[GOT IP Address Setting]	Set the IP address of the GOT.
[GOT Ethernet Common Setting]	Set the default gateway and other common items for GOT Ethernet interfaces.
[IP filter Setting]	The GOT allows or blocks access from IP addresses specified in the filtering list.

For details on the setting, refer to the following.

📖GT Designer3 (GOT3000) Screen Design Manual

Set the GT SoftGOT3000 Ethernet interface on the personal computer.

Precautions

Do not use 0 and 255 at the end of an IP address.

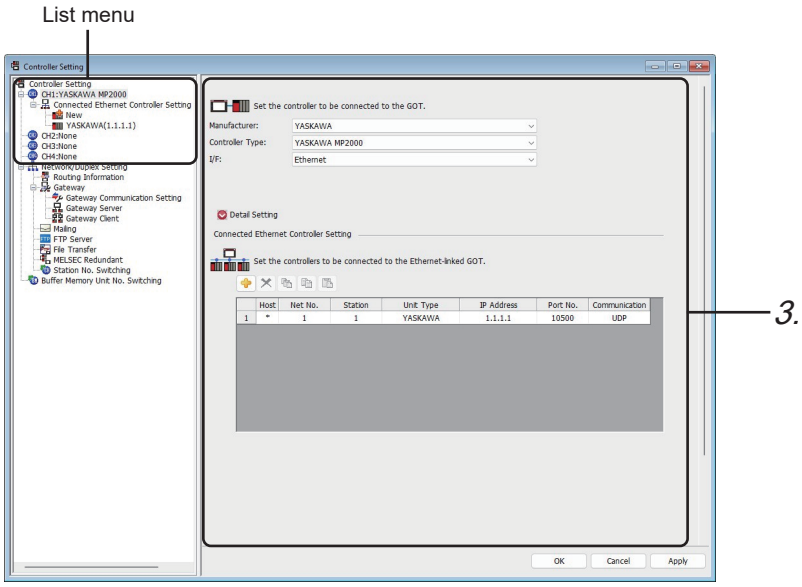
(Numbers of *.*.*.0 and *.*.*.255 are used by the system)

The GOT may not monitor the controller correctly with the above numbers.

Consult with the administrator of the network before setting an IP address to the GOT and controller.

[Controller Setting]

Set the channel of the connected controller.



Operating procedure

1. Select [Common] → [Controller Setting] from the menu.

2. In the [Controller Setting] window, select the channel number to be used from the list menu.

3. Set the following items.

Item	Description
[Manufacturer]	[YASKAWA]
[Controller Type]	[YASKAWA MP2000]
[I/F]	[Ethernet]
[Detail Setting]	Configure the settings according to the usage environment. ☞ Page 2101 [Detail Setting]
[Connected Ethernet Controller Setting]	Configure the settings according to the controller to be connected. ☞ Page 2102 [Connected Ethernet Controller Setting]

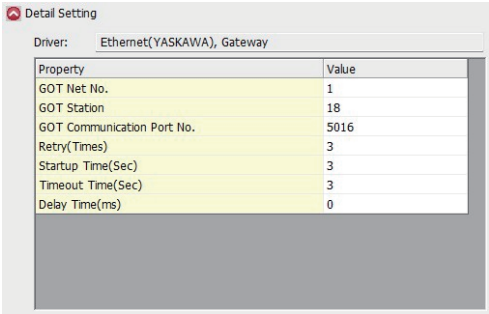
4. When you have completed the settings, click the [OK] button.

Point

The controller settings can be checked in [I/F Communication Setting].
For details, refer to the following.
📖GT Designer3 (GOT3000) Screen Design Manual

■[Detail Setting]

Configure the settings according to the usage environment.



Item	Description	Range
[Driver]	This item appears when communication drivers are selectable according to the settings of [Controller Type] and [I/F].	[Ethernet(YASKAWA), Gateway]
[GOT Net No.]	Set the network number of the GOT.	[1] to [239]
[GOT Station]*1	Set the station number of the GOT.	[1] to [64]
[GOT Communication Port No.]	Set the GOT port number for the connection with the Ethernet equipment.	[1024] to [5010], [5014] to [49152], [49171] to [65534]
[Retry]	Set the number of retries to be performed when a communication timeout occurs. When receiving no response after retries, the communication times out.	[0] times to [5] times
[Startup Time]	Set the time period from the GOT startup until the start of communication with the PLC CPU.	[3] seconds to [255] seconds
[Timeout Time]	Set a communication timeout period.	[1] second to [90] seconds
[Delay Time]	Set the delay time for reducing the load of the network and destination PLC.	[0] ms to [10000] ms

*1 Set values not set for [Station] in [Connected Ethernet Controller Setting].
☞ Page 2102 [Connected Ethernet Controller Setting]

Point

• Controller settings using the GT37 utility

The controller settings can be changed in [Communication Settings] of the GT37 utility after writing [Communication Settings] of project data to GT37.

For details on the GT37 utility, refer to the following manual.

📖GOT3000 Series User's Manual (Utility & Maintenance Functions)

• Priority of the settings in [Controller Setting]

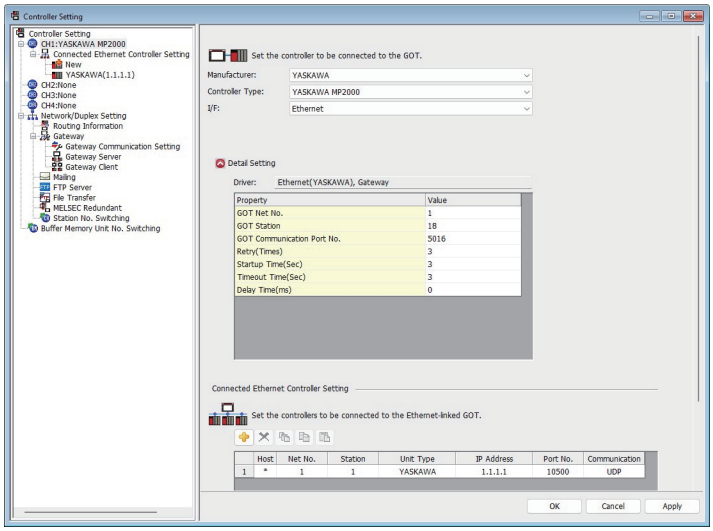
When the settings are configured in GT Designer3 or in the GT37 utility, the latest settings are effective.

Precautions

When connecting two or more GOTs in the Ethernet network, set a different station number to each GOT.

■[Connected Ethernet Controller Setting]

Set the controller to be connected to the GOT by Ethernet.



Item	Description	Range
[Host]	The host is displayed. It refers to a station that can be connected without setting a station number. The host is indicated with an asterisk (*).	—
[Net No.]	Set the network number of the connected Ethernet equipment.	[1] to [239]
[Station]*1	Set the station number of the connected Ethernet equipment.	[1] to [64]
[Unit Type]	Select the model of the connected Ethernet equipment.	[YASKAWA]
[IP Address]*2	Set the IP address of the connected Ethernet equipment.	[0.0.0.0] to [255.255.255.255]
[Port No.]	Set the port number of the connected Ethernet equipment.	[256] to [65534]
[Communication]	Select a communication format.	[UDP], [TCP]

*1 Set values not set for [GOT Station] in [Detail Setting].
☞ Page 2101 [Controller Setting]

*2 Connection with the PLC is unavailable if the IP address is the default value.
Set the value to the IP address of the PLC to be connected.

Precautions

Do not use the IP address "192.168.0.18" when using multiple GOTs with the GOT 1000 series mixed.
Doing so may cause a communication error on the GOT.

38.2.4 PLC side settings

Configure the settings for the YASKAWA PLC.

For details on YASKAWA PLCs, refer to the following manual.

📖Manual of YASKAWA PLC

☞ Page 2103 Connection to MP2000 series

Connection to MP2000 series

Configure the settings of the communication module to be connected to the GOT using a peripheral tool.

☞ Page 2103 Settings for 218IF-01
☞ Page 2104 Settings for 218IF-02
☞ Page 2105 Sequence program (ladder program to receive massages)

■Settings for 218IF-01

The following shows the settings with a peripheral tool.

Item		Setting value	Range
Parameter setting	Local IP address	[ ].[ ].[ ].[ ]	PLC side IP address
	Response time	[0]	Not required for communication with the GOT
	Count of retry	[0]	Not required for communication with the GOT
	CNO*1 (Connection number)	[1]	[1] to [20]
	Local port	[10500]	[256] to [65534]
	Node IP address*2	[ ].[ ].[ ].[ ]	IP address of the GOT
	Node port*2	[10500]	Port number of the GOT
	Connection type	[UDP] (recommended)	[TCP], [UDP]
	Protocol type	[Extended MEMOBUS]	[Extended MEMOBUS]
	Code	[BIN]	[BIN]
	Node name	[GOT3000]	Name of the GOT
Local port: TCP/IP setting	Subnet mask	[ ].[ ].[ ].[ ]	PLC side settings
	Gateway IP address	[ ].[ ].[ ].[ ]	
	System port No.	[10000]	
	TCP zero window timer value	[3] s	
	TCP retry time	[500]ms	
	TCP close time	[60] s	
	IP assemble time	[30] s	
	Max. packet length	[1500] bytes	

*1 When Mitsubishi Electric PLC and YASKAWA PLC are used together in the same network, do not set the same value for the PLC number of Mitsubishi Electric PLC and the CNO (Connection number) of YASKAWA PLC.

*2 The settings of the node IP address (remote station's IP address) and node port (remote station's port number) must be the same as those of the GOT.
For information on how to set the IP address on the GOT side, refer to the following.
☞ Page 2099 [GOT Ethernet Setting]
For information on how to set the port number on the GOT side, refer to the following.
☞ Page 2102 [Connected Ethernet Controller Setting]

■Settings for 218IF-02

The following shows the settings with a peripheral tool.

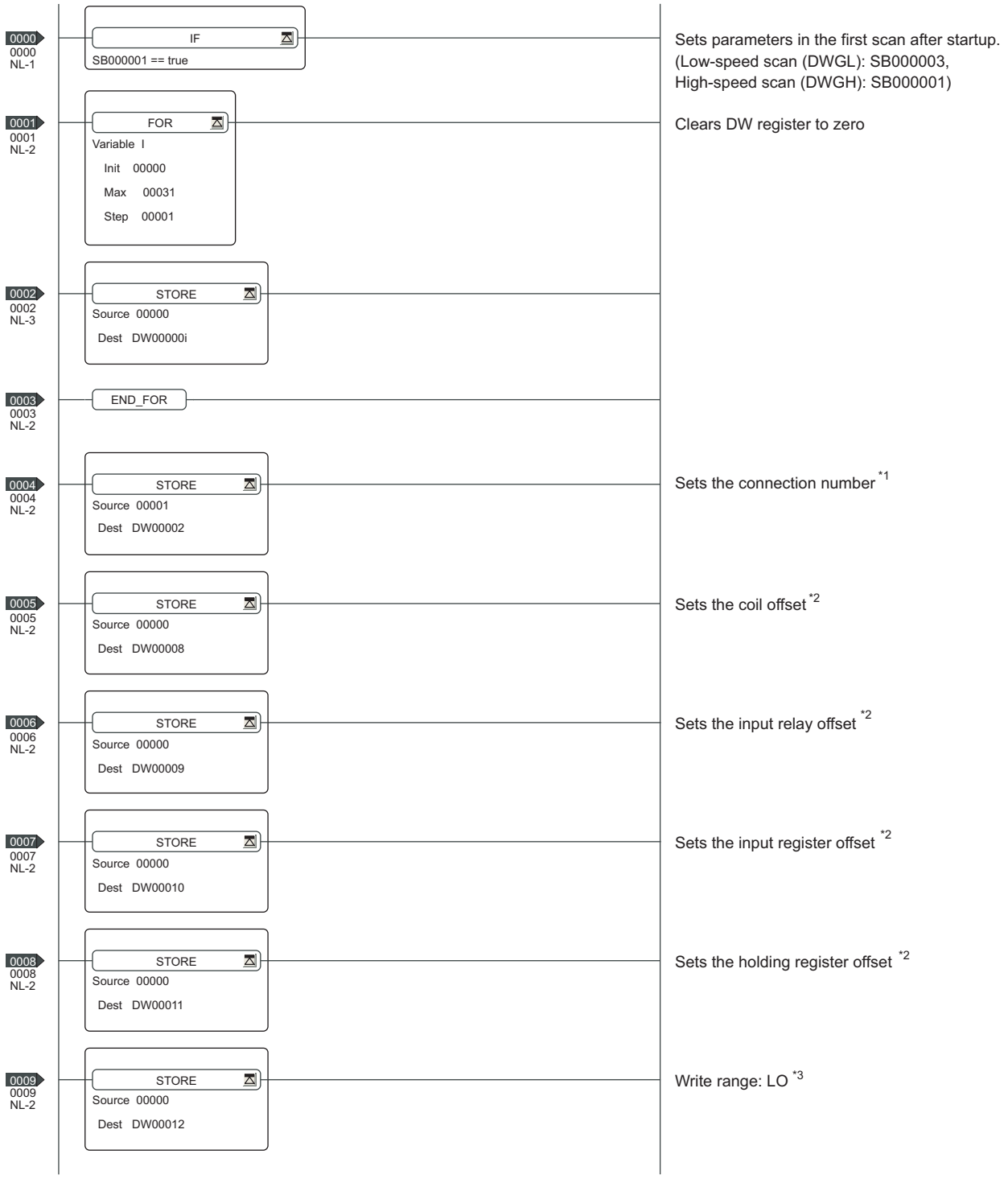
Item		Setting value	Range
Transmission parameter setting	IP address	[ ].[ ].[ ].[ ]	PLC side IP address
	Subnet mask	[ ].[ ].[ ].[ ]	PLC side settings
	Gateway IP address	[ ].[ ].[ ].[ ]	
	Device name	Arbitrary	Up to 16 one-byte characters
Transmission parameter detailed setting	Engineering port	256 to 65535	For a connection with software MPE720
	Response time	0	Not required for communication with the GOT
	Count of retry	0	
Message communication of connection parameter setting	Connection number	1	1 to 20
	Local port	10500	256 to 65534
	Node IP address*1	[ ].[ ].[ ].[ ]	IP address of the GOT
	Node port*1	[ ]	Port number of the GOT
	Connection type	UDP (recommended)	TCP, UDP
	Protocol type	Extended MEMOBUS	Extended MEMOBUS
	Code	BIN	BIN
	Node name	Arbitrary	Up to 32 one-byte characters (16 two-byte characters)

*1 The settings of the node IP address (remote station's IP address) and node port (remote station's port number) must be the same as those of the GOT.
For information on how to set the IP address on the GOT side, refer to the following.
☞ Page 2099 [GOT Ethernet Setting]
For information on how to set the port number on the GOT side, refer to the following.
☞ Page 2102 [Connected Ethernet Controller Setting]

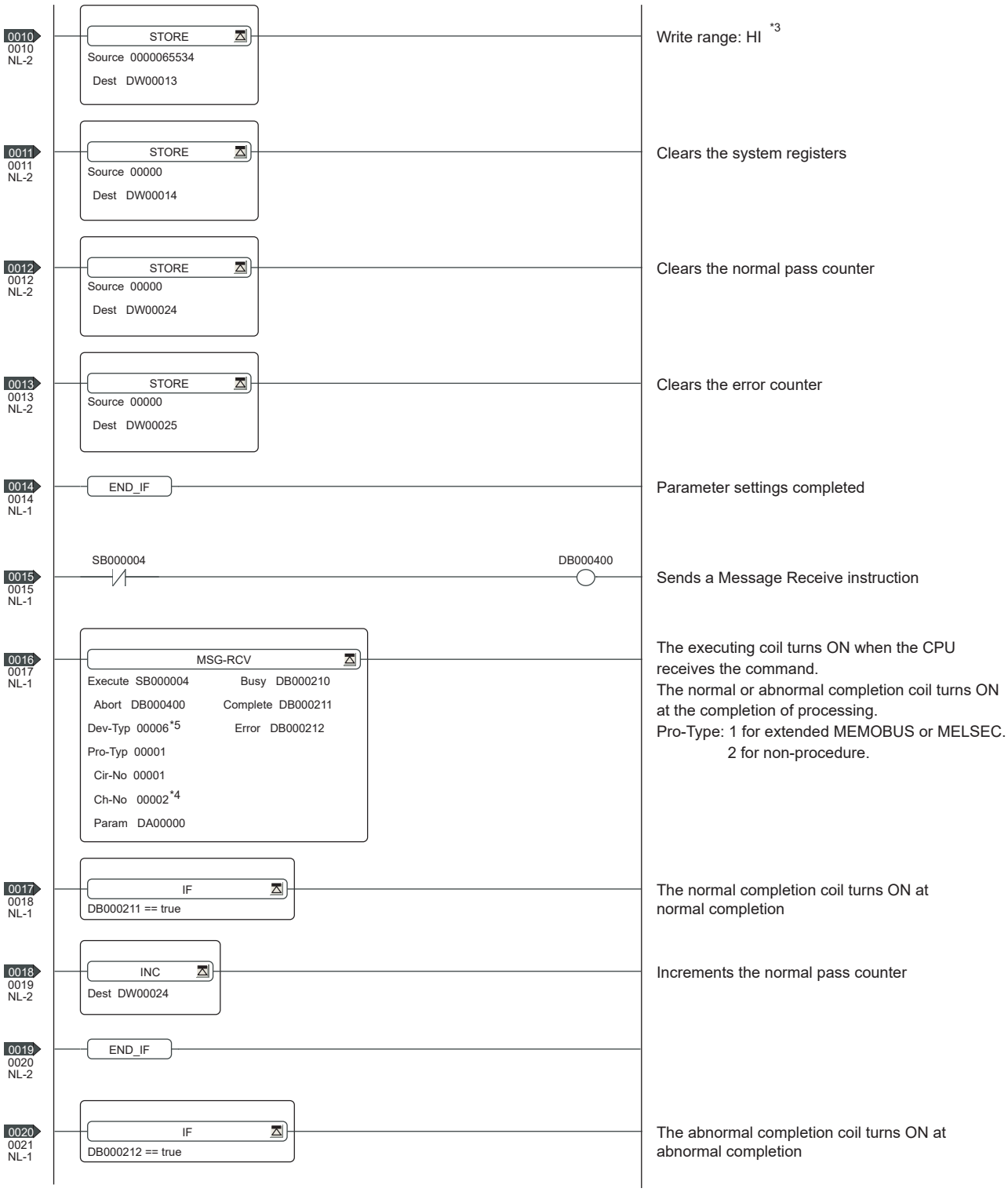
■Sequence program (ladder program to receive massages)

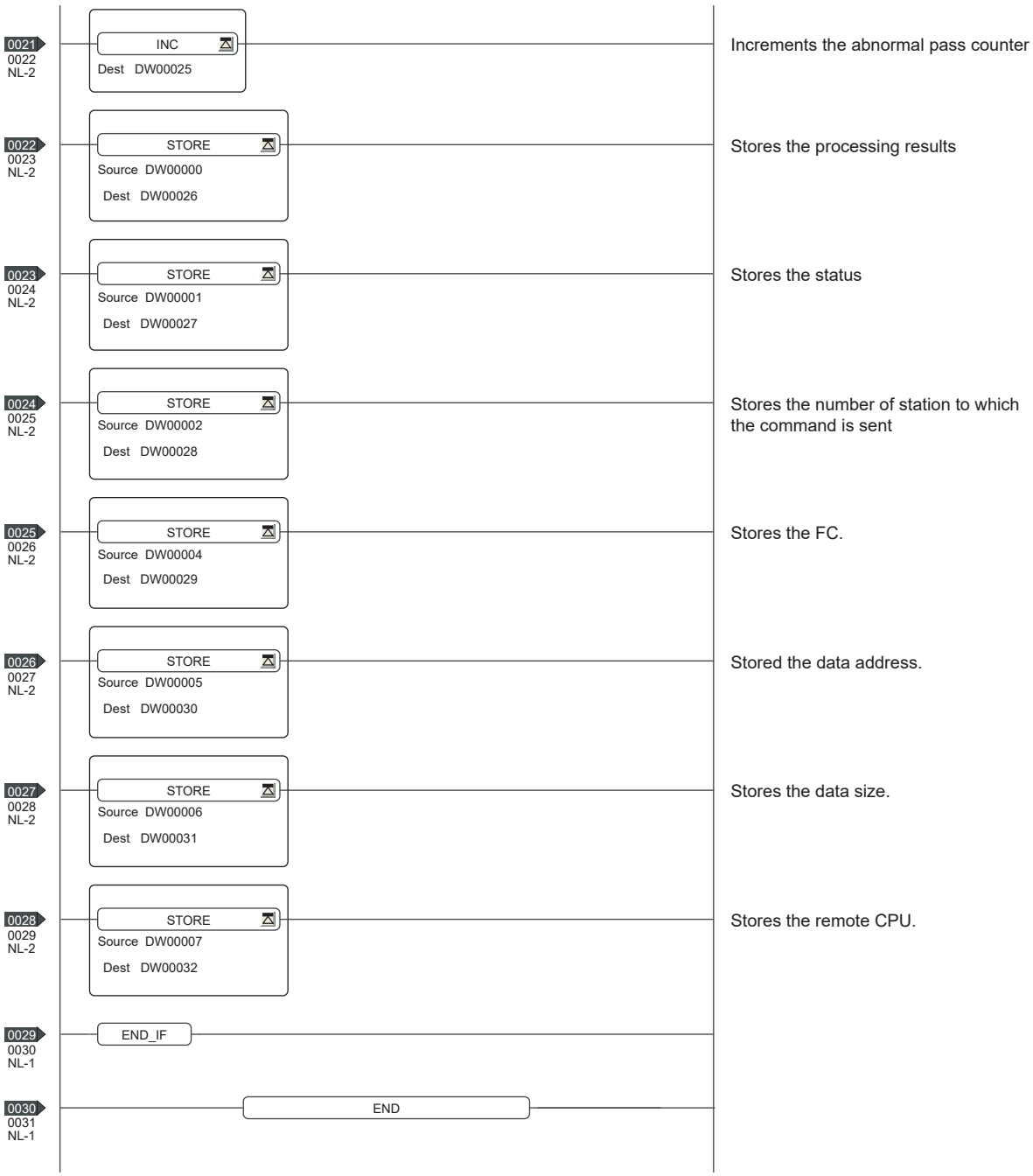
To establish communication between the MP2000 series and the GOT3000 series, a ladder program to receive messages is required.

For connection with multiple GOT3000 series, the program is required for each GOT.



PART 13


0010
0010
NL-2
STORE
Source 0000065534
Dest DW00013
Write range: HI *3
0011
0011
NL-2
STORE
Source 00000
Dest DW00014
Clears the system registers
0012
0012
NL-2
STORE
Source 00000
Dest DW00024
Clears the normal pass counter
0013
0013
NL-2
STORE
Source 00000
Dest DW00025
Clears the error counter
0014
0014
NL-1
END_IF
Parameter settings completed
0015
0015
NL-1
SB000004
DB000400
Sends a Message Receive instruction
0016
0017
NL-1
MSG-RCV
Execute SB000004
Busy DB000210
Abort DB000400
Complete DB000211
Dev-Typ 00006 *5
Error DB000212
Pro-Typ 00001
Cir-No 00001
Ch-No 00002 *4
Param DA00000
The executing coil turns ON when the CPU receives the command.
The normal or abnormal completion coil turns ON at the completion of processing.
Pro-Type: 1 for extended MEMOBUS or MELSEC.
2 for non-procedure.
0017
0018
NL-1
IF
DB000211 == true
The normal completion coil turns ON at normal completion
0018
0019
NL-2
INC
Dest DW00024
Increments the normal pass counter
0019
0020
NL-2
END_IF
0020
0021
NL-1
IF
DB000212 == true
The abnormal completion coil turns ON at abnormal completion



*1 For connection with multiple GOTs, a different connection number is required for each GOT.

*2 Set 0 to the PARAM08 to 11 of the MSG_RCV (input relay, input register, coil, holding register offset).
(Do not configure the offset setting.)
When the offset is needed, set [Option] → [Offset] to each object or add the offset value to configure the setting for the device.

*3 Set the writable range for the holding registers.

*4 For connection with multiple GOTs, a different channel number is required for each GOT.

*5 Set the Dev-Typ of the message receive function <MSG-RCV> to [00016] for the Ethernet port connection of 218IF-02.

39 Robot controller (Ethernet connection)

☞ Page 2108 Connectable devices
☞ Page 2109 System configuration
☞ Page 2111 GOT side settings
☞ Page 2115 Robot controller side settings

39.1 Connectable devices

The following table shows the connectable models.

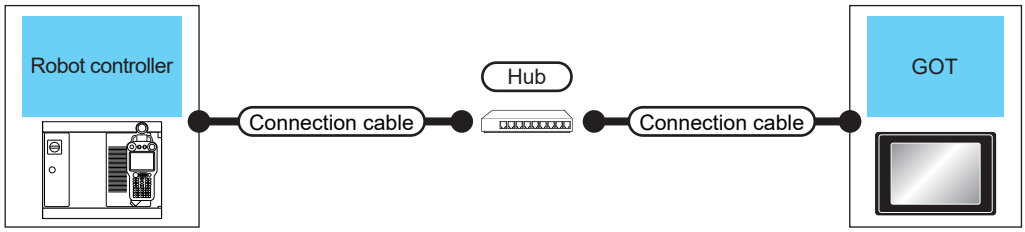
○: Supported, —: Not supported

Controller	Model	Clock	Communication type	Connectable model
YRC1000 series	YRC1000	—	Ethernet*1	GT37 SoftGOT3000
	YRC1000micro	—	Ethernet*1	GT37 SoftGOT3000

*1 The high speed Ethernet server function (option) of the YRC1000 or YRC1000micro is required.
For details, contact YASKAWA Electric Corporation.

39.2 System configuration

39.2.1 Connection to robot controller



For details on the connection cables and the maximum segment length, refer to the following.

☞ Page 2109 Connection cable
☞ Page 2110 Maximum segment length

For details on the maximum number of connected devices, refer to the following.

☞ Page 2110 Maximum number of connected devices

Robot controller	Connection cable	GOT	
		Interface	Model
YRC1000*1	Twisted pair cable	Built-in Ethernet interface of GOT	GT37 SoftGOT3000
		Ethernet interface of personal computer	GT37 SoftGOT3000
YRC1000micro	Twisted pair cable	Built-in Ethernet interface of GOT	GT37 SoftGOT3000
		Ethernet interface of personal computer	GT37 SoftGOT3000

*1 Connect the GOT to a LAN connector that can be used for the YRC1000's Ethernet function.
Do not connect the GOT to a LAN connector dedicated to the programming pendant.
For details, refer to the manual of the YASKAWA robot controller.

Connection cable

Use a connection cable that meets the following standards.

Standard	Category
10BASE-T	Shielded twisted pair cable (STP) or unshielded twisted pair cable (UTP) of category 3 or higher
100BASE-TX	Shielded twisted pair cable (STP) or unshielded twisted pair cable (UTP) of category 5 or higher
1000BASE-T	Shielded twisted pair cable (STP) or unshielded twisted pair cable (UTP) of category 5e or higher

The destination device connected with the twisted pair cable varies with the configuration of the Ethernet network system used.

Connect the cable to the Ethernet module, hub, or other system equipment corresponding to the applicable Ethernet network system.

Use cables, connectors, and hubs that meet the IEEE802.3 10BASE-T/100BASE-TX/1000BASE-T standards.

When only one GOT is connected, the GOT can be directly connected to the device without a hub.

Maximum segment length

The maximum segment length (length between a hub and a node) is 100 m.
The maximum length depends on the Ethernet equipment used.
The following shows the number of connectable hubs when a repeater hub is used.

- 10BASE-T: Up to 4 for a cascade connection (within 500 m)
- 100BASE-TX: Up to 2 for a cascade connection (within 205 m)
- 1000BASE-T: The number differs depending on the hub to be used.

When switching hubs are used, there is no theoretical limit to the number of cascade connections between switching hubs.
For the limit, contact the switching hub manufacturer.

Precautions

When multiple network devices (including GOTs) are connected in the same segment, the network load increases and the transmission speed between the GOT and PLC may be reduced.
The following actions may improve the communication performance.

- Use a switching hub compatible with 1000BASE-T (1 Gbps) or more.
- Reduce the number of devices monitored by the GOT.

Maximum number of connected devices

Up to 128 CPU modules can be connected to channels No. 1 to No. 4 of one GOT. (16 or less recommended)
The following shows the number of connectable controllers per GOT channel and the number of GOTs connectable to one controller.

Controller		GOT	
Model	**Number of GOTs connectable to one PLC**	**Model**	**Number of connectable controllers per GOT channel**
YRC1000 YRC1000micro	1	GT37 SoftGOT3000	1

39.3 GOT side settings

☞ Page 2111 [GOT Ethernet Setting]
☞ Page 2112 [Controller Setting]

39.3.1 [GOT Ethernet Setting]

Set the GOT Ethernet interface in GT Designer3.

Item	Description
[GOT IP Address Setting]	Set the IP address of the GOT.
[GOT Ethernet Common Setting]	Set the default gateway and other common items for GOT Ethernet interfaces.
[IP filter Setting]	The GOT allows or blocks access from IP addresses specified in the filtering list.

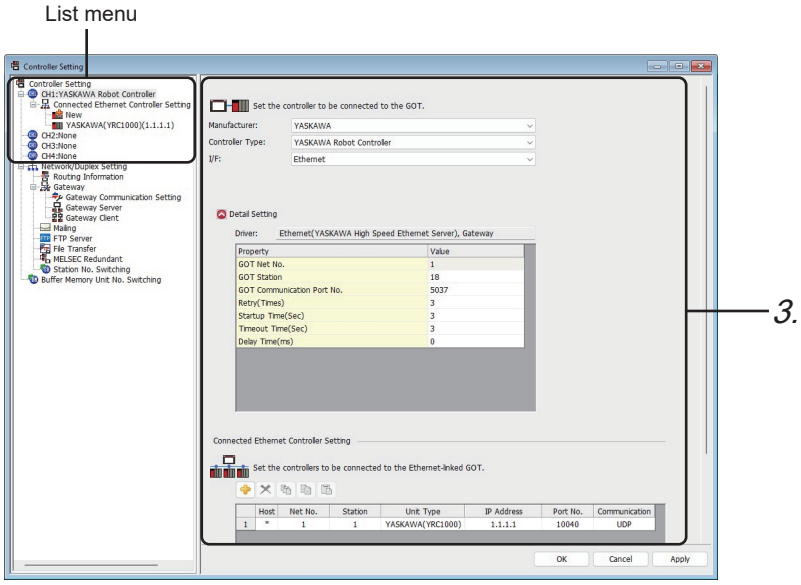
For details on the setting, refer to the following.
📖GT Designer3 (GOT3000) Screen Design Manual
Set the GT SoftGOT3000 Ethernet interface on the personal computer.

Precautions

Do not use 0 and 255 at the end of an IP address.
(Numbers of *.*.*.0 and *.*.*.255 are used by the system)
The GOT may not monitor the controller correctly with the above numbers.
Consult with the administrator of the network before setting an IP address to the GOT.

39.3.2 [Controller Setting]

Set the channel of the connected controller.



Operating procedure

1. Select [Common] → [Controller Setting] from the menu.

2. In the [Controller Setting] window, select the channel number to be used from the list menu.

3. Set the following items.

Item	Description
[Manufacturer]	[YASKAWA]
[Controller Type]	[YASKAWA Robot Controller]
[I/F]	[Ethernet]
[Detail Setting]	Configure the settings according to the usage environment. ☞ Page 2113 [Detail Setting]
[Connected Ethernet Controller Setting]	Configure the settings according to the controller to be connected. ☞ Page 2114 [Connected Ethernet Controller Setting]

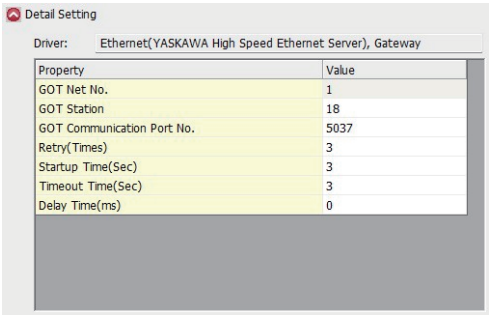
4. When you have completed the settings, click the [OK] button.

Point

The controller settings can be checked in [I/F Communication Setting].
For details, refer to the following.
📖GT Designer3 (GOT3000) Screen Design Manual

[Detail Setting]

Configure the settings according to the usage environment.



Item	Description	Range
[Driver]	This item appears when communication drivers are selectable according to the settings of [Controller Type] and [I/F].	[Ethernet(YASKAWA High Speed Ethernet Server), Gateway]
[GOT Net No.]	Set the network number of the GOT.	[1]
[GOT Station]*1	Set the station number of the GOT.	[1] to [120]
[GOT Communication Port No.]	Set the GOT port number for the connection with the Ethernet equipment.	[1024] to [5010], [5014] to [49152], [49171] to [65534]
[Retry]	Set the number of retries to be performed when a communication timeout occurs. When receiving no response after retries, the communication times out.	[0] times to [5] times
[Startup Time]	Set the time period from the GOT startup until the start of communication with the PLC CPU.	[3] seconds to [255] seconds
[Timeout Time]	Set a communication timeout period.	[1] second to [90] seconds
[Delay Time]	Set the delay time for reducing the load of the network and destination PLC.	[0] ms to [10000] ms

*1 Set values not set for [Station] in [Connected Ethernet Controller Setting].
☞ Page 2114 [Connected Ethernet Controller Setting]

Point

• Controller settings using the GT37 utility

The controller settings can be changed in [Communication Settings] of the GT37 utility after writing [Communication Settings] of project data to GT37.

For details on the GT37 utility, refer to the following manual.

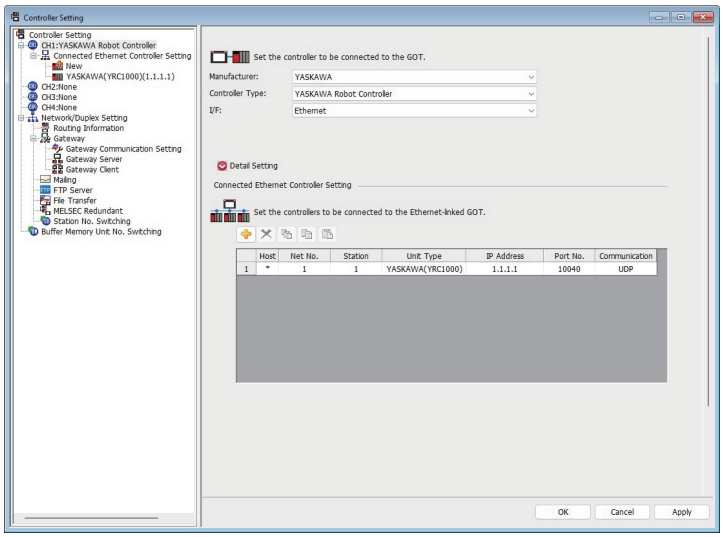
📖GOT3000 Series User's Manual (Utility & Maintenance Functions)

• Priority of the settings in [Controller Setting]

When the settings are configured in GT Designer3 or in the GT37 utility, the latest settings are effective.

[Connected Ethernet Controller Setting]

Set the controller to be connected to the GOT by Ethernet.



Item	Description	Range
[Host]	The host is displayed. It refers to a station that can be connected without setting a station number. The host is indicated with an asterisk (*).	—
[Net No.]	Set the network number of the connected Ethernet equipment.	[1]
[Station]*1	Set the station number of the connected Ethernet equipment.	[1] to [120]
[Unit Type]	Select the model of the connected Ethernet equipment.	[YASKAWA(YRC1000)]
[IP Address]*2	Set the IP address of the connected Ethernet equipment.	[0.0.0.0] to [255.255.255.255]
[Port No.]	Set the port number of the connected Ethernet equipment.	[10040]
[Communication]	Set the communication format of the connected Ethernet equipment.	[UDP]

*1 Set values not set for [GOT Station] in [Detail Setting].
☞ Page 2113 [Detail Setting]

*2 Connection with the robot controller is unavailable if the IP address is the default value.
Set the value to the IP address of the robot controller to be connected.

39.4 Robot controller side settings

Configure the settings for the YASKAWA robot controller.
For details on the YASKAWA robot controller, refer to the following.
Manual of the YASKAWA robot controller

39.4.1 Connection to robot controller

Configure the following settings by using the programming pendant.

- YRC1000
- YRC1000micro

LAN interface settings

Set the following items in the LAN interface settings.

Item	Setting details
IP address	IP address of the robot controller*1
Subnet mask	Subnet mask of the robot controller

*1 Adjust the settings with the GOT settings.
☞ Page 2114 [Connected Ethernet Controller Setting]

PART 13

40 Settable device range

This chapter describes the range of devices settable in GT Designer3.
The settable range varies with the selection for [Controller Type] in the [Controller Setting] window.
Configure the device setting according to the specifications of the controller to be used.
Device specifications differ depending on the controller model even among the controllers of the same series.
If a nonexistent device or a device number out of the range is set for an object, other objects for which correct devices are set may not be monitored.

☞ Page 2116 YASKAWA equipment ([YASKAWA MP2000])
☞ Page 2120 YASKAWA equipment ([YASKAWA MP3000])
☞ Page 2123 YASKAWA equipment ([YASKAWA Robot Controller])

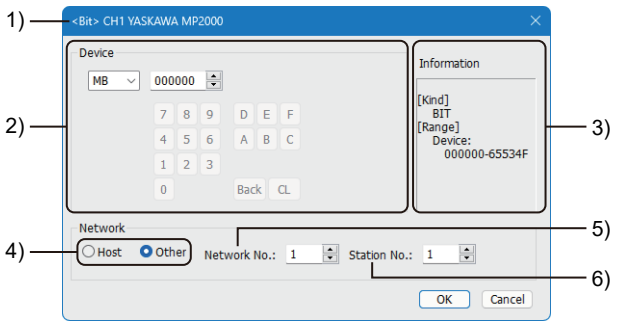
40.1 YASKAWA equipment ([YASKAWA MP2000])

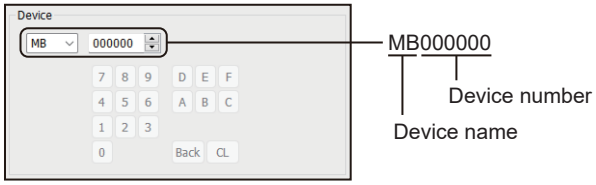
GT37 SoftGOT3000

Item	Reference
Device setting dialog	☞ Page 2117 Device setting dialog ([YASKAWA MP2000])
Specifications of bit devices	☞ Page 2118 Monitoring-supported bit devices ([YASKAWA MP2000])
	☞ Page 2118 Availability of writing/reading data to/from bit devices ([YASKAWA MP2000])
Specifications of word devices	☞ Page 2119 Monitoring-supported word devices ([YASKAWA MP2000])
	☞ Page 2119 Availability of writing/reading data to/from word devices ([YASKAWA MP2000])

40.1.1 Device setting dialog ([YASKAWA MP2000])

Set a device to be monitored.



Item		Description
1)	Title	Data type and channel number of the device to be set
2)	[Device]	Set the device name and device number. If a bit number needs to be specified, the setting item is displayed. Example) Setting of MB000000 
3)	[Information]	Displays the setting range of each setting item according to the selected device.
4)	[CPU No.]	Set the CPU number of the controller.
5)	Station type specification	Select the station type (host or other) for the controller to be monitored.
6)	[Network No.]	This item appears when [Other] is selected for the station type. Set the network number.
7)	[Station No.]	This item appears when [Other] is selected for the station type. Specify a station number.

40.1.2 Monitoring-supported bit devices ([YASKAWA MP2000])

The following table shows monitoring-supported bit devices.

To check whether writing/reading data to/from each device is available, refer to the following.

☞ Page 2118 Availability of writing/reading data to/from bit devices ([YASKAWA MP2000])

For the formats of devices, refer to the following.

📖GT Designer3 (GOT3000) Screen Design Manual

○: Available

×: Not available

Device name		Device No. representation	Setting range	Specifications of EG devices*1	
				Assignment to EG devices	Access using a client
IB	Input relay	Hexadecimal	00000 to 7FFFF	○	○
MB	Coils	Decimal + hexadecimal	MB(Word address)(Bit No.) Notation example: MB655340 The last digit represents a bit address. • Channel No. (decimal): 00000 to 65534 • Bit No. (hexadecimal): 0 to F	○	○

*1 For the devices assigned to EG devices (gateway devices) and the compatible clients, refer to the following.
📖GT Designer3 (GOT3000) Screen Design Manual

40.1.3 Availability of writing/reading data to/from bit devices ([YASKAWA MP2000])

The following shows the availability of writing/reading data to/from bit devices by device type.

When the device type is other than the bit type, set the device No. in multiples of 16.

R/W: Both read and write

R/-: Read only

-/W: Write only

-/-: No read/write access

Device name	Device type				
	Bit	Byte (8 bits)	Word (16 bits)	Double-word (32 bits)	Quad-word (64 bits)
IB	R/-	-/-	R/-	R/-	-/-
MB	R/W	-/-	R/W	R/W	-/-

40.1.4 Monitoring-supported word devices ([YASKAWA MP2000])

The following table shows monitoring-supported word devices.

To check whether writing/reading data to/from each device is available, refer to the following.

☞ Page 2119 Availability of writing/reading data to/from word devices ([YASKAWA MP2000])

For the formats of devices, refer to the following.

📖GT Designer3 (GOT3000) Screen Design Manual

○: Available

×: Not available

Device name		Device No. representation	Setting range	Specifications of EG devices*1	
				Assignment to EG devices	Access using a client
IW	Input register	Hexadecimal	0000 to 7FFF	○	○
MW	Holding register	Decimal	0 to 65534	○	○

*1 For the devices assigned to EG devices (gateway devices) and the compatible clients, refer to the following.
📖GT Designer3 (GOT3000) Screen Design Manual

40.1.5 Availability of writing/reading data to/from word devices ([YASKAWA MP2000])

The following shows the availability of writing/reading data to/from word devices by device type.

R/W: Both read and write

R/-: Read only

-/W: Write only

-/-: No read/write access

Device name	Device type			
	Word (16 bits)	Double-word (32 bits)	Quad-word (64 bits)	Bit of word data
IW	R/-	R/-	-/-	R/-
MW	R/W	R/W	-/-	R/W

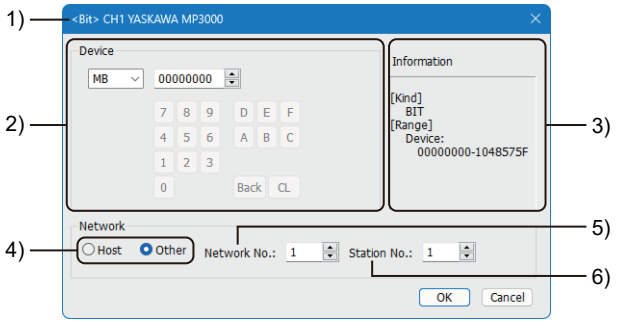
40.2 YASKAWA equipment ([YASKAWA MP3000])

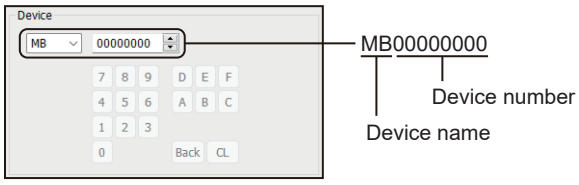
GT37 SoftGOT3000

Item	Reference
Device setting dialog	☞ Page 2120 Device setting dialog ([YASKAWA MP3000])
Specifications of bit devices	☞ Page 2121 Monitoring-supported bit devices ([YASKAWA MP3000])
	☞ Page 2121 Availability of writing/reading data to/from bit devices ([YASKAWA MP3000])
Specifications of word devices	☞ Page 2122 Monitoring-supported word devices ([YASKAWA MP3000])
	☞ Page 2122 Availability of writing/reading data to/from word devices ([YASKAWA MP3000])

40.2.1 Device setting dialog ([YASKAWA MP3000])

Set a device to be monitored.



Item		Description
1)	Title	Data type and channel number of the device to be set
2)	[Device]	Set the device name and device number. If a bit number needs to be specified, the setting item is displayed. Example) Setting of MB00000000 
3)	[Information]	Displays the setting range of each setting item according to the selected device.
4)	[CPU No.]	Set the CPU number of the controller.
5)	Station type specification	Select the station type (host or other) for the controller to be monitored.
6)	[Network No.]	This item appears when [Other] is selected for the station type. Set the network number.
7)	[Station No.]	This item appears when [Other] is selected for the station type. Specify a station number.

40.2.2 Monitoring-supported bit devices ([YASKAWA MP3000])

The following table shows monitoring-supported bit devices.

To check whether writing/reading data to/from each device is available, refer to the following.

☞ Page 2121 Availability of writing/reading data to/from bit devices ([YASKAWA MP3000])

For the formats of devices, refer to the following.

📖GT Designer3 (GOT3000) Screen Design Manual

○: Available

×: Not available

Device name		Device No. representation	Setting range	Specifications of EG devices*1	
				Assignment to EG devices	Access using a client
IB	Input register	Hexadecimal	000000 to 21FFFF	○	○
OB	Output register	Hexadecimal	000000 to 21FFFF	○	○
MB	Data register	Decimal + hexadecimal	MB(Word address)(Bit No.) Notation example: MB10485750 The last digit represents a bit address. • Channel No. (decimal): 0000000 to 1048575 • Bit No. (hexadecimal): 0 to F	○	○
YGB*2	G register	Decimal + hexadecimal	YGB(Word address)(Bit No.) Notation example: YGB20971510 The last digit represents a bit address. • Channel No. (decimal): 0000000 to 2097151 • Bit No. (hexadecimal): 0 to F	○	○
SB	System register	Decimal + hexadecimal	SB(Word address)(Bit No.) Notation example: SB655340 The last digit represents a bit address. • Channel No. (decimal): 00000 to 65534 • Bit No. (hexadecimal): 0 to F	○	○ (Not usable as word data)

*1 For the devices assigned to EG devices (gateway devices) and the compatible clients, refer to the following.
📖GT Designer3 (GOT3000) Screen Design Manual

*2 This device is displayed as GB in the peripherals of the YASKAWA PLC.

40.2.3 Availability of writing/reading data to/from bit devices ([YASKAWA MP3000])

The following shows the availability of writing/reading data to/from bit devices by device type.

When the device type is other than the bit type, set the device No. in multiples of 16.

R/W: Both read and write

R/-: Read only

-/W: Write only

-/-: No read/write access

Device name	Device type				
	Bit	Byte (8 bits)	Word (16 bits)	Double-word (32 bits)	Quad-word (64 bits)
IB	R/-	-/-	R/-	R/-	-/-
OB	R/W	-/-	R/W	R/W	-/-
MB	R/W	-/-	R/W	R/W	-/-
YGB	R/W	-/-	R/W	R/W	-/-
SB	R/W	-/-	R/W	R/W	-/-

40.2.4 Monitoring-supported word devices ([YASKAWA MP3000])

The following table shows monitoring-supported word devices.

To check whether writing/reading data to/from each device is available, refer to the following.

☞ Page 2122 Availability of writing/reading data to/from word devices ([YASKAWA MP3000])

For the formats of devices, refer to the following.

📖GT Designer3 (GOT3000) Screen Design Manual

○: Available

×: Not available

Device name		Device No. representation	Setting range	Specifications of EG devices*1	
				Assignment to EG devices	Access using a client
IW	Input register	Hexadecimal	00000 to 21FFF	○	○
OW	Output register	Hexadecimal	00000 to 21FFF	○	○
MW	Data register	Decimal	0 to 1048575	○	○
YGW*2	G register	Decimal	0 to 2097151	○	○
SW	System register	Decimal	0 to 65534	○	○

*1 For the devices assigned to EG devices (gateway devices) and the compatible clients, refer to the following.
📖GT Designer3 (GOT3000) Screen Design Manual

*2 This device is displayed as GW in the peripherals of the YASKAWA PLC.

40.2.5 Availability of writing/reading data to/from word devices ([YASKAWA MP3000])

The following shows the availability of writing/reading data to/from word devices by device type.

R/W: Both read and write

R/-: Read only

-/W: Write only

-/-: No read/write access

Device name	Device type			
	Word (16 bits)	Double-word (32 bits)	Quad-word (64 bits)	Bit of word data
IW	R/-	R/-	-/-	R/-
OW	R/W	R/W	-/-	R/W
MW	R/W	R/W	-/-	R/W
YGW	R/W	R/W	-/-	R/W
SW	R/W	R/W	-/-	R/W

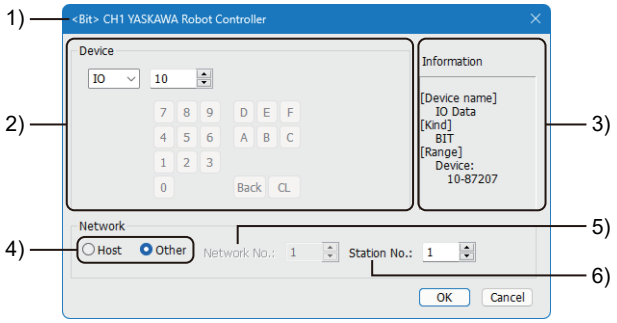
40.3 YASKAWA equipment ([YASKAWA Robot Controller])

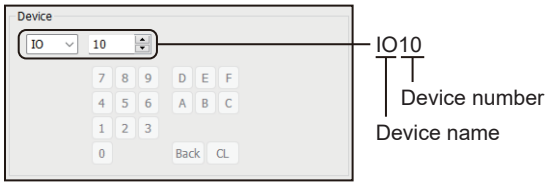
GT37 SoftGOT3000

Item	Reference
Device setting dialog	☞ Page 2123 Device setting dialog ([YASKAWA Robot Controller])
Specifications of bit devices	☞ Page 2124 Monitoring-supported bit devices ([YASKAWA Robot Controller])
	☞ Page 2124 IO Data device details ([YASKAWA Robot Controller])
	☞ Page 2125 Availability of writing/reading data to/from bit devices ([YASKAWA Robot Controller])
Specifications of byte devices	☞ Page 2125 Monitoring-supported byte devices ([YASKAWA Robot Controller])
	☞ Page 2126 Availability of writing/reading data to/from byte devices ([YASKAWA Robot Controller])
Specifications of word devices	☞ Page 2126 Monitoring-supported word devices ([YASKAWA Robot Controller])
	☞ Page 2127 Robot Control device details ([YASKAWA Robot Controller])
	☞ Page 2127 Availability of writing/reading data to/from word devices ([YASKAWA Robot Controller])
Specifications of double-word devices	☞ Page 2128 Monitoring-supported double-word devices ([YASKAWA Robot Controller])
	☞ Page 2128 Availability of writing/reading data to/from double-word devices ([YASKAWA Robot Controller])
Precautions	☞ Page 2128 Precautions ([YASKAWA Robot Controller])

40.3.1 Device setting dialog ([YASKAWA Robot Controller])

Set a device to be monitored.



Item		Description
1)	Title	Data type and channel number of the device to be set
2)	[Device]	Set the device name and device number. If a bit number needs to be specified, the setting item is displayed. Example) Setting of IO10 
3)	[Information]	Displays the setting range of each setting item according to the selected device.
4)	Station type specification	Select the station type (host or other) for the controller to be monitored.
5)	[Network No.]	This item appears when [Other] is selected for the station type. Set the network number. The setting value is fixed to [1].
6)	[Station No.]	This item appears when [Other] is selected for the station type. Specify a station number. The setting range is [1] to [120].

40.3.2 Monitoring-supported bit devices ([YASKAWA Robot Controller])

The following table shows monitoring-supported bit devices.

To check whether writing/reading data to/from each device is available, refer to the following.

☞ Page 2125 Availability of writing/reading data to/from bit devices ([YASKAWA Robot Controller])

For the formats of devices, refer to the following.

📖GT Designer3 (GOT3000) Screen Design Manual

○: Available

×: Not available

Device name		Device No. representation	Setting range	Specifications of EG devices*1	
				Assignment to EG devices	Access using a client
IO	IO Data	Decimal + octal	IO(Byte address)(Bit address) Notation example: IO87200 The last digit represents a bit address. • Byte address (decimal): 1 to 8720 • Bit address (octal): 0 to 7 For the relationship between the data and device range of the robot controller, refer to the following. ☞ Page 2124 IO Data device details ([YASKAWA Robot Controller])	○	○

*1 For the devices assigned to EG devices (gateway devices) and the compatible clients, refer to the following.
📖GT Designer3 (GOT3000) Screen Design Manual

40.3.3 IO Data device details ([YASKAWA Robot Controller])

The following shows the relationship between the data and device range of the robot controller.

The last digit of the device number represents a bit address.

Device range	Virtual device name
10 to 5127	Robot general-purpose input
10010 to 15127	Robot general-purpose output
20010 to 25127	External input
27010 to 29567	Network input
30010 to 35127	External output
37010 to 39567	Network output
40010 to 42567	Robot-dedicated input
50010 to 55127	Robot-dedicated output
60010 to 60647	Interface panel input
70010 to 79997	Auxiliary relay
80010 to 85127	Robot control status
87010 to 87207	Pseudo input

40.3.4 Availability of writing/reading data to/from bit devices ([YASKAWA Robot Controller])

The following shows the availability of writing/reading data to/from bit devices by device type.

When the device type is other than the bit type, set the device No. in multiples of 16.

R/W: Both read and write

R/-: Read only

-/W: Write only

-/-: No read/write access

Device name	Device type				
	Bit	Byte (8 bits)	Word (16 bits)	Double-word (32 bits)	Quad-word (64 bits)
IO*1	R/W	-/-	R/W	-/-	-/-

*1 Availability of reading/writing depends on the device number.
☞ Page 2124 IO Data device details ([YASKAWA Robot Controller])

40.3.5 Monitoring-supported byte devices ([YASKAWA Robot Controller])

The following table shows monitoring-supported byte devices.

To check whether writing/reading data to/from each device is available, refer to the following.

☞ Page 2126 Availability of writing/reading data to/from byte devices ([YASKAWA Robot Controller])

For the formats of devices, refer to the following.

📖GT Designer3 (GOT3000) Screen Design Manual

○: Available

×: Not available

Device name		Device No. representation	Setting range	Specifications of EG devices*1	
				Assignment to EG devices	Access using a client
B	Byte Variable	Decimal	0 to 1999	×	×

*1 For the devices assigned to EG devices (gateway devices) and the compatible clients, refer to the following.
📖GT Designer3 (GOT3000) Screen Design Manual

40.3.6 Availability of writing/reading data to/from byte devices ([YASKAWA Robot Controller])

The following shows whether writing/reading data to/from byte devices is available by device type.

R/W: Both read and write

R/-: Read only

-/W: Write only

-/-: No read/write access

Device name	Device type				
	Bit	Byte (8 bits)	Word (16 bits)	Double-word (32 bits)	Quad-word (64 bits)
B	-/-	R/W	-/-	-/-	-/-

40.3.7 Monitoring-supported word devices ([YASKAWA Robot Controller])

The following table shows monitoring-supported word devices.

To check whether writing/reading data to/from each device is available, refer to the following.

☞ Page 2127 Availability of writing/reading data to/from word devices ([YASKAWA Robot Controller])

For the formats of devices, refer to the following.

📖GT Designer3 (GOT3000) Screen Design Manual

○: Available

×: Not available

Device name		Device No. representation	Setting range	Specifications of EG devices*1	
				Assignment to EG devices	Access using a client
I	Integer Variable	Decimal	0 to 1999	○	○
M	Resister Data	Decimal	0 to 999	○	○
RC*2	Robot Control	Hexadecimal + decimal + decimal	RC(Command No.)-(Instance)((Attribute)) Notation example: RC70-8720(13) • Command No. (hexadecimal): 70 to 8C, 300 to 30C • Instance (decimal): 0 to 8720 • Attribute (decimal): 0 to 13 For the relationship between data that can be acquired using Robot Control and the virtual GOT devices, refer to the following. ☞ Page 2127 Robot Control device details ([YASKAWA Robot Controller])	×	×

*1 For the devices assigned to EG devices (gateway devices) and the compatible clients, refer to the following.
📖GT Designer3 (GOT3000) Screen Design Manual

*2 Not available for a text display or text input object.

40.3.8 Robot Control device details ([YASKAWA Robot Controller])

Data that can be acquired using the Robot Control is assigned to the GOT virtual device (RC device).
Specify the Command No., Instance, and Attribute for the RC device to enable monitoring of the corresponding data.
Note the following when using the RC device.

Precautions	Description
Basic use of the RC device	Read all the elements to a GOT internal device in a batch using the script function or device data transfer function to monitor the data stored in the device. Setting the RC device directly to an object or others to monitor each element individually will decrease the monitoring speed.
Setting of the device data type and number of devices	Check the size of each data corresponding to the Command No., Instance, and Attribute to be specified. Set the data type and number of devices in the device settings so that the corresponding data can be stored.
Objects for which the RC device cannot be used	Do not specify the RC device directly in the following object settings for which consecutive devices are used. • Text display: Monitor device • Text input: Monitor device • Parts movement: [Device] (When [Specified coordinates] is selected for [Move Way]) • Simple alarm display: Monitor device (When [Continuous] is selected for [Device No.]) • Recipe display (record list): [Control target record name], [Narrow down record names], or [Cursor row record name] • Trend graph: Monitor device (When [Continuous] is selected for [Device Setting]) • Document display: [Keyword Device] As described in the column for Basic use of the RC device, read all the elements to a GOT internal device in a batch to monitor the data stored in the device.

For details on each command, refer to the following.
📖Manual of the YASKAWA robot controller
The GOT supports the following commands.

Command No. (hexadecimal)	Command name
72	Status information read command
73	Execution job information read command
74	Axis configuration information read command
75	Robot position data read command
76	Position deviation read command
77	Torque data read command
7F	Robot position variable (P) read/write command
82	Alarm reset/error cancel command
88	Control time acquisition command
307	Robot position variable (P) multi-read/-write command
30A	Alarm data read command (subcode character string supported)
30B	Alarm history read command (subcode character string supported)

40.3.9 Availability of writing/reading data to/from word devices ([YASKAWA Robot Controller])

The following shows the availability of writing/reading data to/from word devices by device type.
R/W: Both read and write
R/-: Read only
-/W: Write only
-/-: No read/write access

Device name	Device type			
	Word (16 bits)	Double-word (32 bits)	Quad-word (64 bits)	Bit of word data
I	R/W	-/-	-/-	-/-
M	R/W	-/-	-/-	-/-
RC	R/W	R/W	-/-	R/-

40.3.10 Monitoring-supported double-word devices ([YASKAWA Robot Controller])

The following table shows monitoring-supported double-word devices.

To check whether writing/reading data to/from each device is available, refer to the following.

☞ Page 2128 Availability of writing/reading data to/from double-word devices ([YASKAWA Robot Controller])

For the formats of devices, refer to the following.

📖GT Designer3 (GOT3000) Screen Design Manual

○: Available

×: Not available

Device name		Device No. representation	Setting range	Specifications of EG devices*1	
				Assignment to EG devices	Access using a client
D	Double Int Variable	Decimal	0 to 1999	×	×

*1 For the devices assigned to EG devices (gateway devices) and the compatible clients, refer to the following.
📖GT Designer3 (GOT3000) Screen Design Manual

40.3.11 Availability of writing/reading data to/from double-word devices ([YASKAWA Robot Controller])

The following shows the availability of writing/reading data to/from double-word devices by device type.

R/W: Both read and write

R/-: Read only

-/W: Write only

-/-: No read/write access

Device name	Device type			
	Word (16 bits)	Double-word (32 bits)	Quad-word (64 bits)	Bit of double-word data
D	-/-	R/W	-/-	-/-

40.3.12 Precautions ([YASKAWA Robot Controller])

Precautions when writing devices in a batch ([YASKAWA Robot Controller])

When many devices are written in a batch using the recipe function or device data transfer function, system alarm 402 (communication timeout error) may occur.

Take either of the following corrective actions.

- Specifying a longer communication timeout period
- Reducing the number of devices written in a batch

PART 14 YOKOGAWA equipment

41 PLC (Ethernet connection)

42 Settable device range

41 PLC (Ethernet connection)

☞ Page 2130 Connectable devices
☞ Page 2131 System configuration
☞ Page 2135 GOT side settings
☞ Page 2139 PLC side settings

41.1 Connectable devices

The following table shows the connectable models.

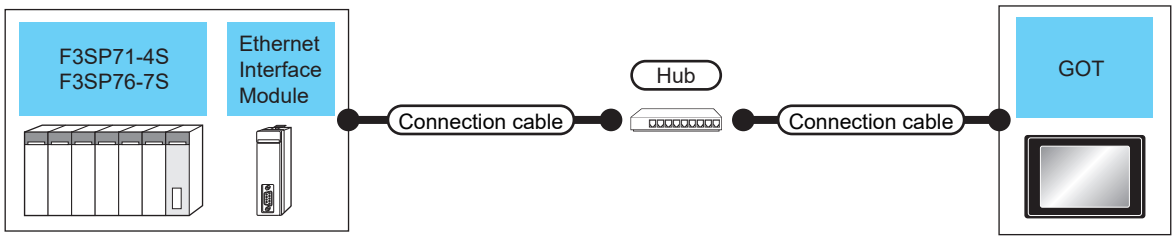
○: Supported, —: Not supported

Controller	Model	Clock	PLC side interface		Connectable model
			Ethernet interface module	Built-in Ethernet interface of PLC	
FA-M3	F3SP66	○	—	○	GT37 SoftGOT3000
	F3SP67	○		○	GT37 SoftGOT3000
FA-M3V	F3SP71-4S	○	F3LE11-0T	○	GT37 SoftGOT3000
	F3SP76-7S	○		○	GT37 SoftGOT3000

41.2 System configuration

☞ Page 2131 Connection to Ethernet interface module
☞ Page 2133 Connection to the built-in Ethernet interface of PLC

41.2.1 Connection to Ethernet interface module



For details on the connection cables and the maximum segment length, refer to the following.

☞ Page 2131 Connection cable
☞ Page 2132 Maximum segment length

For details on the maximum number of connected devices, refer to the following.

☞ Page 2132 Maximum number of connected devices

Controller	Ethernet interface module	Connection cable	GOT	
			Interface	Model
F3SP71-4S F3SP76-7S	*1	Twisted pair cable	Built-in Ethernet interface of GOT	GT37 SoftGOT3000
			Ethernet interface of personal computer	GT37 SoftGOT3000

*1 For the connectable Ethernet interface modules, refer to the following.
☞ Page 2130 Connectable devices

Connection cable

Use a connection cable that meets the following standards.

Standard	Category
10BASE-T	Shielded twisted pair cable (STP) or unshielded twisted pair cable (UTP) of category 3 or higher
100BASE-TX	Shielded twisted pair cable (STP) or unshielded twisted pair cable (UTP) of category 5 or higher
1000BASE-T	Shielded twisted pair cable (STP) or unshielded twisted pair cable (UTP) of category 5e or higher

The destination device connected with the twisted pair cable varies with the configuration of the Ethernet network system used.

Connect the cable to the Ethernet module, hub, or other system equipment corresponding to the applicable Ethernet network system.

Use cables, connectors, and hubs that meet the IEEE802.3 10BASE-T/100BASE-TX/1000BASE-T standards.

When only one GOT is connected, the GOT can be directly connected to the device without a hub.

Maximum segment length

The maximum segment length (length between a hub and a node) is 100 m.
The maximum length depends on the Ethernet equipment used.
The following shows the number of connectable hubs when a repeater hub is used.

- 10BASE-T: Up to 4 for a cascade connection (within 500 m)
- 100BASE-TX: Up to 2 for a cascade connection (within 205 m)
- 1000BASE-T: The number differs depending on the hub to be used.

When switching hubs are used, there is no theoretical limit to the number of cascade connections between switching hubs.
For the limit, contact the switching hub manufacturer.

Precautions

When multiple network devices (including GOTs) are connected in the same segment, the network load increases and the transmission speed between the GOT and PLC may be reduced.
The following actions may improve the communication performance.

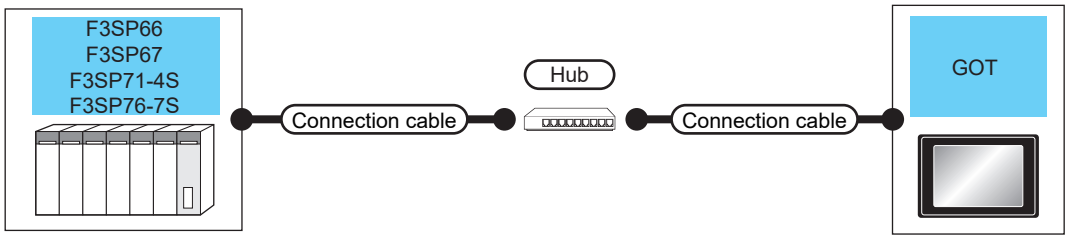
- Use a switching hub compatible with 1000BASE-T (1 Gbps) or more.
- Reduce the number of devices monitored by the GOT.

Maximum number of connected devices

Up to 128 CPU modules can be connected to channels No. 1 to No. 4 of one GOT. (16 or less recommended)
The following shows the number of connectable controllers per GOT channel and the number of GOTs connectable to one controller.

Controller			GOT		
Model	Number of GOTs connectable to one PLC		Model	Number of connectable controllers per GOT channel	
	TCP	UDP		TCP	UDP
F3SP71-4S F3SP76-7S	8	128	GT37 SoftGOT3000	128 (16 or less recommended)	128 (16 or less recommended)

41.2.2 Connection to the built-in Ethernet interface of PLC



For details on the connection cables and the maximum segment length, refer to the following.

☞ Page 2133 Connection cable
☞ Page 2134 Maximum segment length

For details on the maximum number of connected devices, refer to the following.

☞ Page 2134 Maximum number of connected devices

Controller	Connection cable	GOT	
		Interface	Model
F3SP66 F3SP67 F3SP71-4S F3SP76-7S	Twisted pair cable	Built-in Ethernet interface of GOT	GT37 SoftGOT3000
		Ethernet interface of personal computer	GT37 SoftGOT3000

Connection cable

Use a connection cable that meets the following standards.

Standard	Category
10BASE-T	Shielded twisted pair cable (STP) or unshielded twisted pair cable (UTP) of category 3 or higher
100BASE-TX	Shielded twisted pair cable (STP) or unshielded twisted pair cable (UTP) of category 5 or higher
1000BASE-T	Shielded twisted pair cable (STP) or unshielded twisted pair cable (UTP) of category 5e or higher

The destination device connected with the twisted pair cable varies with the configuration of the Ethernet network system used.

Connect the cable to the Ethernet module, hub, or other system equipment corresponding to the applicable Ethernet network system.

Use cables, connectors, and hubs that meet the IEEE802.3 10BASE-T/100BASE-TX/1000BASE-T standards.

When only one GOT is connected, the GOT can be directly connected to the device without a hub.

Maximum segment length

The maximum segment length (length between a hub and a node) is 100 m.
The maximum length depends on the Ethernet equipment used.
The following shows the number of connectable hubs when a repeater hub is used.

- 10BASE-T: Up to 4 for a cascade connection (within 500 m)
- 100BASE-TX: Up to 2 for a cascade connection (within 205 m)
- 1000BASE-T: The number differs depending on the hub to be used.

When switching hubs are used, there is no theoretical limit to the number of cascade connections between switching hubs.
For the limit, contact the switching hub manufacturer.

Precautions

When multiple network devices (including GOTs) are connected in the same segment, the network load increases and the transmission speed between the GOT and PLC may be reduced.
The following actions may improve the communication performance.

- Use a switching hub compatible with 1000BASE-T (1 Gbps) or more.
- Reduce the number of devices monitored by the GOT.

Maximum number of connected devices

Up to 128 CPU modules can be connected to channels No. 1 to No. 4 of one GOT. (16 or less recommended)
The following shows the number of connectable controllers per GOT channel and the number of GOTs connectable to one controller.

Controller			GOT		
Model	Number of GOTs connectable to one PLC		Model	Number of connectable controllers per GOT channel	
	TCP	UDP		TCP	UDP
F3SP66 F3SP67 F3SP71-4S F3SP76-7S	8	128	GT37 SoftGOT3000	128 (16 or less recommended)	128 (16 or less recommended)

41.3 GOT side settings

☞ Page 2135 [GOT Ethernet Setting]
☞ Page 2136 [Controller Setting]

41.3.1 [GOT Ethernet Setting]

Set the GOT Ethernet interface in GT Designer3.

Item	Description
[GOT IP Address Setting]	Set the IP address of the GOT.
[GOT Ethernet Common Setting]	Set the default gateway and other common items for GOT Ethernet interfaces.
[IP filter Setting]	The GOT allows or blocks access from IP addresses specified in the filtering list.

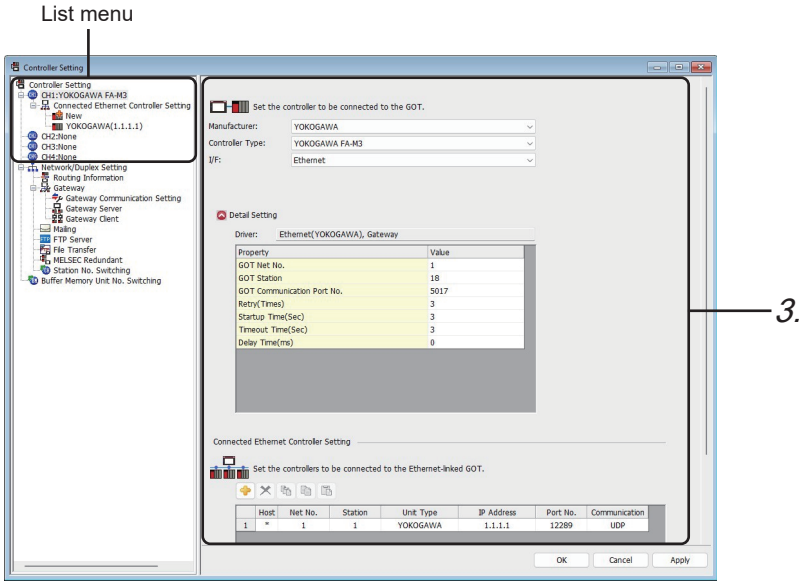
For details on the setting, refer to the following.
📖GT Designer3 (GOT3000) Screen Design Manual
Set the GT SoftGOT3000 Ethernet interface on the personal computer.

Precautions

Do not use 0 and 255 at the end of an IP address.
(Numbers of *.*.*.0 and *.*.*.255 are used by the system)
The GOT may not monitor the controller correctly with the above numbers.
Consult with the administrator of the network before setting an IP address to the GOT.

41.3.2 [Controller Setting]

Set the channel of the connected controller.



Operating procedure

1. Select [Common] → [Controller Setting] from the menu.

2. In the [Controller Setting] window, select the channel number to be used from the list menu.

3. Set the following items.

Item	Description
[Manufacturer]	[YOKOGAWA]
[Controller Type]	[YOKOGAWA FA-M3]
[I/F]	[Ethernet]
[Detail Setting]	Configure the settings according to the usage environment. ☞ Page 2137 [Detail Setting]
[Connected Ethernet Controller Setting]	Configure the settings according to the controller to be connected. ☞ Page 2138 [Connected Ethernet Controller Setting]

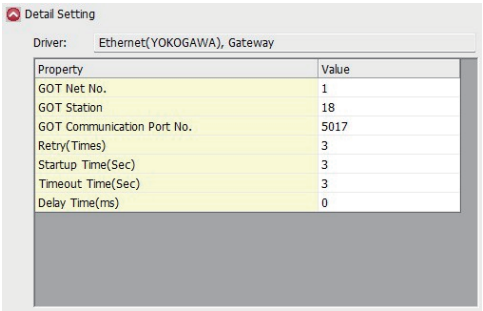
4. When you have completed the settings, click the [OK] button.

Point

The controller settings can be checked in [I/F Communication Setting].
For details, refer to the following.
📖GT Designer3 (GOT3000) Screen Design Manual

[Detail Setting]

Configure the settings according to the usage environment.



Item	Description	Range
[Driver]	This item appears when communication drivers are selectable according to the settings of [Controller Type] and [I/F].	[Ethernet(YOKOGAWA), Gateway]
[GOT Net No.]	Set the network number of the GOT.	[1] to [239]
[GOT Station]*1	Set the station number of the GOT.	[1] to [64]
[GOT Communication Port No.]	Set the GOT port number for the connection with the Ethernet equipment.	[1024] to [5010], [5014] to [49152], [49171] to [65534]
[Retry]	Set the number of retries to be performed when a communication timeout occurs. When receiving no response after retries, the communication times out.	[0] times to [5] times
[Startup Time]	Set the time period from the GOT startup until the start of communication with the PLC CPU.	[3] seconds to [255] seconds
[Timeout Time]	Set a communication timeout period.	[1] second to [90] seconds
[Delay Time]	Set the delay time for reducing the load of the network and destination PLC.	[0] ms to [10000] ms

*1 Set values not set for [Station] in [Connected Ethernet Controller Setting].
☞ Page 2138 [Connected Ethernet Controller Setting]

Point

• Controller settings using the GT37 utility

The controller settings can be changed in [Communication Settings] of the GT37 utility after writing [Communication Settings] of project data to GT37.

For details on the GT37 utility, refer to the following manual.

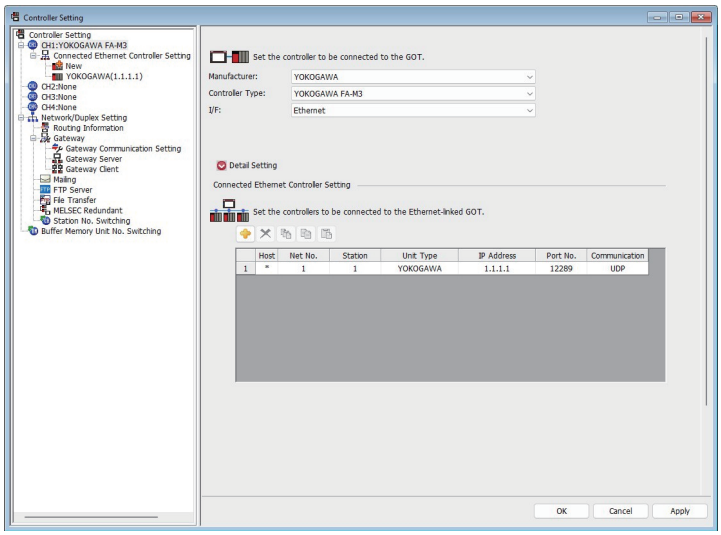
📖GOT3000 Series User's Manual (Utility & Maintenance Functions)

• Priority of the settings in [Controller Setting]

When the settings are configured in GT Designer3 or in the GT37 utility, the latest settings are effective.

[Connected Ethernet Controller Setting]

Set the controller to be connected to the GOT by Ethernet.



Item	Description	Range
[Host]	The host is displayed. It refers to a station that can be connected without setting a station number. The host is indicated with an asterisk (*).	—
[Net No.]	Set the network number of the connected Ethernet equipment.	[1] to [239]
[Station]*1	Set the station number of the connected Ethernet equipment.	[1] to [64]
[Unit Type]	Select the model of the connected Ethernet equipment.	[YOKOGAWA]
[IP Address]*2	Set the IP address of the connected Ethernet equipment.	[0.0.0.0] to [255.255.255.255]
[Port No.]*3	Set the port number of the connected Ethernet equipment.	[12289], [12291]
[Communication]*2	Select a communication format.	[UDP], [TCP]

*1 Set values not set for [GOT Station] in [Detail Setting].
☞ Page 2137 [Detail Setting]

*2 Set the same IP address and communication format as those set on the PLC side.

*3 Set the port number of the host link service used on the PLC side.

41.4 PLC side settings

Configure the settings for the YOKOGAWA PLC.

Connection destination	Model	Reference
Ethernet interface module	F3LE11-0T	☞ Page 2139 Connection to Ethernet interface module
Built-in Ethernet interface of PLC	F3SP66 F3SP67	☞ Page 2140 Connection to the built-in Ethernet interface of PLC
	F3SP71-4S F3SP76-7S	

For details on YOKOGAWA PLCs, refer to the following manual.

Manual of YOKOGAWA PLC

41.4.1 Connection to Ethernet interface module

When connecting to the Ethernet interface module, configure the settings using switches.

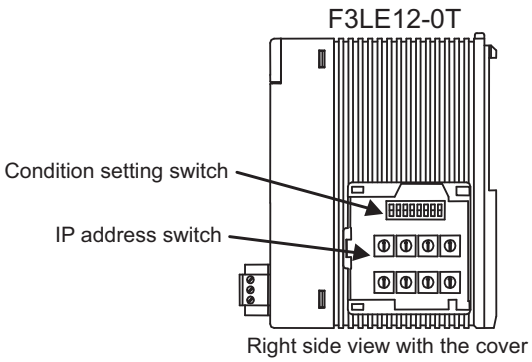
☞ Page 2139 IP address switches

☞ Page 2140 Condition setting switches

Point

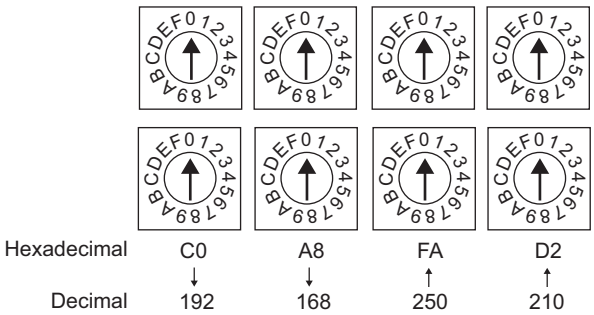
Switch settings

Configure the switch settings before installation on the base unit.



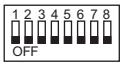
IP address switches

Set the IP address with the eight hex rotary switches on the side of the base unit.



Condition setting switches

Configure the settings for data format, write protection, line processing at TCP timeout error, and operation mode with the DIP switches on the side of the base unit.



Switch No.	Description	Setting value
1	Data code	OFF (ASCII)
2	Write protect	OFF (not protect)
3	Reserved	ON (not available), OFF (always)
4		
5		
6		
7		
8	Operation mode	OFF (normal operation)

41.4.2 Connection to the built-in Ethernet interface of PLC

This section describes the settings when connecting to the built-in Ethernet interface of PLC.
Configure the settings using a software for programming apparatus.

Project setting/configuration setting

Item	Setting value	Range	Description
IP address	Configure the settings according to the GOT settings. ☞ Page 2138 [Connected Ethernet Controller Setting]	0.0.0.0 to 255.255.255.255	Set the IP address of the connected PLC CPU.
Host link service A protocol*1 Port No.: 12289	Configure the settings according to the GOT settings. ☞ Page 2138 [Connected Ethernet Controller Setting]	0 = TCP/IP 1 = UDP/IP	Select the protocol to be used in the port A of the host link service via Ethernet.
Host link service A command data type*1 Port No.: 12289	0 = ASCII format	0 = ASCII format 1 = Binary format	Select the command data type to be used in the port A of the host link service via Ethernet.
Host link service B protocol*1 Port No.: 12291	Configure the settings according to the GOT settings. ☞ Page 2138 [Connected Ethernet Controller Setting]	0 = TCP/IP 1 = UDP/IP	Select the protocol to be used in the port B of the host link service via Ethernet.
Host link service B command data type*1 Port No.: 12291	0 = ASCII format	0 = ASCII format 1 = Binary format	Select the command data type to be used in the port B of the host link service via Ethernet.
Write protection	Set this item as required.	0 = Not protected 1 = Protected	Set this item to disable the write command to this module with the host link service via Ethernet.

*1 Use the port number of the host link service used as the port number set on the GOT side.
☞ Page 2138 [Connected Ethernet Controller Setting]

42 Settable device range

This chapter describes the range of devices settable in GT Designer3.
The settable range varies with the selection for [Controller Type] in the [Controller Setting] window.
Configure the device setting according to the specifications of the controller to be used.
Device specifications differ depending on the controller model even among the controllers of the same series.
If a nonexistent device or a device number out of the range is set for an object, other objects for which correct devices are set may not be monitored.
☞ Page 2141 YOKOGAWA equipment ([YOKOGAWA FA-M3])

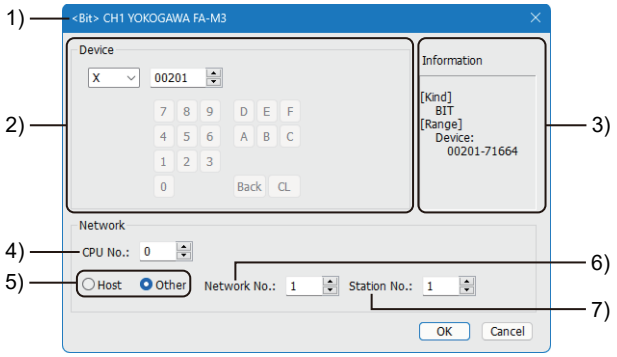
42.1 YOKOGAWA equipment ([YOKOGAWA FA-M3])

GT37 SoftGOT3000

Item	Reference
Device setting dialog	☞ Page 2142 Device setting dialog ([YOKOGAWA FA-M3])
Specifications of bit devices	☞ Page 2143 Monitoring-supported bit devices ([YOKOGAWA FA-M3])
	☞ Page 2144 Availability of writing/reading data to/from bit devices ([YOKOGAWA FA-M3])
Specifications of word devices	☞ Page 2145 Monitoring-supported word devices ([YOKOGAWA FA-M3])
	☞ Page 2146 Availability of writing/reading data to/from word devices ([YOKOGAWA FA-M3])
Precautions	☞ Page 2146 Precautions ([YOKOGAWA FA-M3])

42.1.1 Device setting dialog ([YOKOGAWA FA-M3])

Set a device to be monitored.



Item		Description
1)	Title	Data type and channel number of the device to be set
2)	[Device]	Set the device name and device number. If a bit number needs to be specified, the setting item is displayed. Example) Setting of X00201
3)	[Information]	Displays the setting range of each setting item according to the selected device.
4)	[CPU No.]	Set the CPU number of the controller. When monitoring a single CPU system, set [0]. When monitoring a multiple CPU system, set any of [0] to [4]. When [0] is set, the GOT monitors CPU No. 1.
5)	Station type specification	Select the station type (host or other) for the controller to be monitored.
6)	[Network No.]	This item appears when [Other] is selected for the station type. Set the network number.
7)	[Station No.]	This item appears when [Other] is selected for the station type. Specify a station number.

42.1.2 Monitoring-supported bit devices ([YOKOGAWA FA-M3])

The following table shows monitoring-supported bit devices.

To check whether writing/reading data to/from each device is available, refer to the following.

☞ Page 2144 Availability of writing/reading data to/from bit devices ([YOKOGAWA FA-M3])

For the formats of devices, refer to the following.

📖GT Designer3 (GOT3000) Screen Design Manual

○: Available

×: Not available

Device name		Device No. representation	Setting range	Specifications of EG devices*1	
				Assignment to EG devices	Access using a client
X	Input relay	Decimal + decimal	X(Slot No.)(Terminal No.) Notation example: X71601 • Slot No. (decimal): 002 to 716 • Terminal No. (decimal): 01 to 64	○	○
Y	Output relay	Decimal + decimal	Y(Slot No.)(Terminal No.) Notation example: Y71601 • Slot No. (decimal): 002 to 716 • Terminal No. (decimal): 01 to 64	○	○
I	Internal relay	Decimal	1 to 65535	○	○
TU	Timer	Decimal	1 to 3072	○	○ (Not usable as word data)
CU	Counter	Decimal	1 to 3072	○	○ (Not usable as word data)
M	Special relay	Decimal	1 to 9984	○	○
L	Link relay	Decimal + decimal	L(FA link module No. - 1)(Link relay No.) Notation example: L70001 • FA link module No. - 1 (decimal): 0 to 7 (Set the link module No. minus 1.) • Link relay No. (decimal): 0001 to 8192	○	○
E	Shared relay	Decimal	1 to 4096	○	○

*1 For the devices assigned to EG devices (gateway devices) and the compatible clients, refer to the following.
📖GT Designer3 (GOT3000) Screen Design Manual

42.1.3 Availability of writing/reading data to/from bit devices ([YOKOGAWA FA-M3])

The following shows the availability of writing/reading data to/from bit devices by device type.

When the device type is other than the bit type, set the device No. in multiples of 16.

R/W: Both read and write

R/-: Read only

-/W: Write only

-/-: No read/write access

Device name	Device type				
	Bit	Byte (8 bits)	Word (16 bits)	Double-word (32 bits)	Quad-word (64 bits)
X	R/-	-/-	R/-	R/-	-/-
Y	R/W	-/-	R/W	R/W	-/-
I	R/W	-/-	R/W	R/W	-/-
TU	R/W	-/-	-/-	-/-	-/-
CU	R/W	-/-	-/-	-/-	-/-
M	R/W	-/-	R/W	R/W	-/-
L	R/W	-/-	R/W	R/W	-/-
E	R/W	-/-	R/W	R/W	-/-

42.1.4 Monitoring-supported word devices ([YOKOGAWA FA-M3])

The following table shows monitoring-supported word devices.

To check whether writing/reading data to/from each device is available, refer to the following.

☞ Page 2146 Availability of writing/reading data to/from word devices ([YOKOGAWA FA-M3])

For the formats of devices, refer to the following.

📖GT Designer3 (GOT3000) Screen Design Manual

○: Available

×: Not available

Device name		Device No. representation	Setting range	Specifications of EG devices*1	
				Assignment to EG devices	Access using a client
TP	Timer	Decimal	1 to 3072	○	○ (Not usable as bit data)
CP	Counter	Decimal	1 to 3072	○	○ (Not usable as bit data)
D	Data register	Decimal	1 to 65535	○	○
Z	Special register	Decimal	1 to 1024	○	×
B	File register	Decimal	1 to 262144	○	○
V	Index register	Decimal	1 to 256	○	○
TS	Timer	Decimal	1 to 3072	○	○ (Not usable as bit data)
CS	Counter	Decimal	1 to 3072	○	○ (Not usable as bit data)
R	Shared register	Decimal	1 to 4096	○	○
W	Link register	Decimal + decimal	W(FA link module No. - 1)(Link register No.) Notation example: W70001 • FA link module No. - 1 (decimal): 0 to 7 (Set the link module No. minus 1.) • Link register No. (decimal): 0001 to 8192	○	×
F	Cache register	Decimal	000001 to 524288	○	○

*1 For the devices assigned to EG devices (gateway devices) and the compatible clients, refer to the following.
📖GT Designer3 (GOT3000) Screen Design Manual

PART 14

42.1.5 Availability of writing/reading data to/from word devices ([YOKOGAWA FA-M3])

The following shows the availability of writing/reading data to/from word devices by device type.

R/W: Both read and write

R/-: Read only

-/W: Write only

-/-: No read/write access

Device name	Device type			
	Word (16 bits)	Double-word (32 bits)	Quad-word (64 bits)	Bit of word data
TP	R/W	R/W	-/-	-/-
CP	R/W	R/W	-/-	-/-
D	R/W	R/W	-/-	R/W
Z	R/W	R/W	-/-	R/W
B	R/W	R/W	-/-	R/W
V	R/W	R/W	-/-	R/W
TS	R/-	R/-	-/-	-/-
CS	R/-	R/-	-/-	-/-
R	R/W	R/W	-/-	R/W
W	R/W	R/W	-/-	R/W
F	R/W	R/W	-/-	R/W

42.1.6 Precautions ([YOKOGAWA FA-M3])

Behavior when setting a device outside the device range ([YOKOGAWA FA-M3])

If a device outside the setting range is set for an object, the value display at the object is indefinite.

However, no error is displayed for system alarm.

A device to be set for an object must be in the device range of YOKOGAWA PLC.

For details on the device range of YOKOGAWA PLCs, refer to the following manual:

📖Manual of YOKOGAWA PLC

PART 15 ALLEN-BRADLEY equipment

43 PLC (Ethernet connection)

44 Settable device range

43 PLC (Ethernet connection)

☞ Page 2148 AB MicroLogix series (Built-in EtherNet/IP port connection)
☞ Page 2154 AB MicroLogix series (EtherNet/IP communication module connection)
☞ Page 2160 AB Control/CompactLogix (Built-in EtherNet/IP port connection)
☞ Page 2166 AB Control/CompactLogix (EtherNet/IP communication module connection)
☞ Page 2173 AB Control/CompactLogix (Tag) (Built-in EtherNet/IP port connection)
☞ Page 2179 AB Control/CompactLogix (Tag) (EtherNet/IP communication module connection)

43.1 AB MicroLogix series (Built-in EtherNet/IP port connection)

☞ Page 2148 Connectable devices
☞ Page 2148 System configuration
☞ Page 2150 GOT side settings
☞ Page 2153 PLC side settings

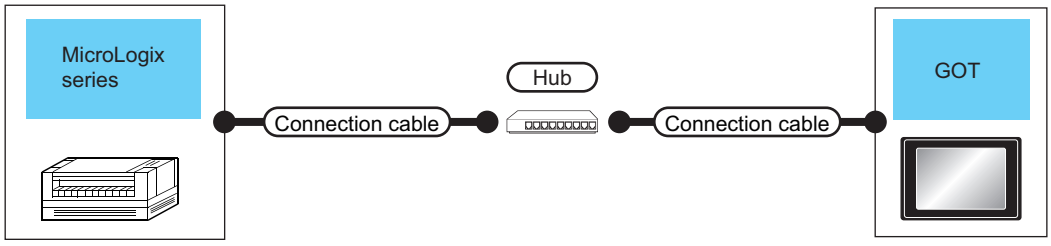
43.1.1 Connectable devices

The following table shows the connectable models.

○: Supported, —: Not supported

Controller		Model	Clock	Connectable model
MicroLogix series	MicroLogix1100	1763-L16BWA	—	GT37 SoftGOT3000
	MicroLogix1400	1766-L32AWA	—	GT37 SoftGOT3000

43.1.2 System configuration



For details on the connection cables and the maximum segment length, refer to the following.

☞ Page 2149 Connection cable
☞ Page 2149 Maximum segment length

For details on the maximum number of connected devices, refer to the following.

☞ Page 2149 Maximum number of connected devices

Controller	Connection cable	GOT	
		Interface	Model
MicroLogix1100 MicroLogix1400	Twisted pair cable	Built-in Ethernet interface of GOT	GT37 SoftGOT3000

Connection cable

Use a connection cable that meets the following standards.

Standard	Category
10BASE-T	Shielded twisted pair cable (STP) or unshielded twisted pair cable (UTP) of category 3 or higher
100BASE-TX	Shielded twisted pair cable (STP) or unshielded twisted pair cable (UTP) of category 5 or higher
1000BASE-T	Shielded twisted pair cable (STP) or unshielded twisted pair cable (UTP) of category 5e or higher

The destination device connected with the twisted pair cable varies with the configuration of the Ethernet network system used.
Connect the cable to the Ethernet module, hub, or other system equipment corresponding to the applicable Ethernet network system.
Use cables, connectors, and hubs that meet the IEEE802.3 10BASE-T/100BASE-TX/1000BASE-T standards.
When only one GOT is connected, the GOT can be directly connected to the device without a hub.

Maximum segment length

The maximum segment length (length between a hub and a node) is 100 m.
The maximum length depends on the Ethernet equipment used.
The following shows the number of connectable hubs when a repeater hub is used.

- 10BASE-T: Up to 4 for a cascade connection (within 500 m)
- 100BASE-TX: Up to 2 for a cascade connection (within 205 m)
- 1000BASE-T: The number differs depending on the hub to be used.

When switching hubs are used, there is no theoretical limit to the number of cascade connections between switching hubs.
For the limit, contact the switching hub manufacturer.

Precautions

When multiple network devices (including GOTs) are connected in the same segment, the network load increases and the transmission speed between the GOT and PLC may be reduced.
The following actions may improve the communication performance.

- Use a switching hub compatible with 1000BASE-T (1 Gbps) or more.
- Reduce the number of devices monitored by the GOT.

Maximum number of connected devices

Up to 128 CPU modules can be connected to channels No. 1 to No. 4 of one GOT. (16 or less recommended)
The following shows the number of connectable controllers per GOT channel and the number of GOTs connectable to one controller.

Controller		GOT	
Model	Number of GOTs connectable to one PLC	Model	Number of connectable controllers per GOT channel
MicroLogix1100 MicroLogix1400	32	GT37 SoftGOT3000	16

43.1.3 GOT side settings

☞ Page 2150 [GOT Ethernet Setting]
☞ Page 2150 [Controller Setting]

[GOT Ethernet Setting]

Set the GOT Ethernet interface in GT Designer3.

Item	Description
[GOT IP Address Setting]	Set the IP address of the GOT.
[GOT Ethernet Common Setting]	Set the default gateway and other common items for GOT Ethernet interfaces.
[IP filter Setting]	The GOT allows or blocks access from IP addresses specified in the filtering list.

For details on the setting, refer to the following.

📖GT Designer3 (GOT3000) Screen Design Manual

Set the GT SoftGOT3000 Ethernet interface on the personal computer.

Precautions

Do not use 0 and 255 at the end of an IP address.

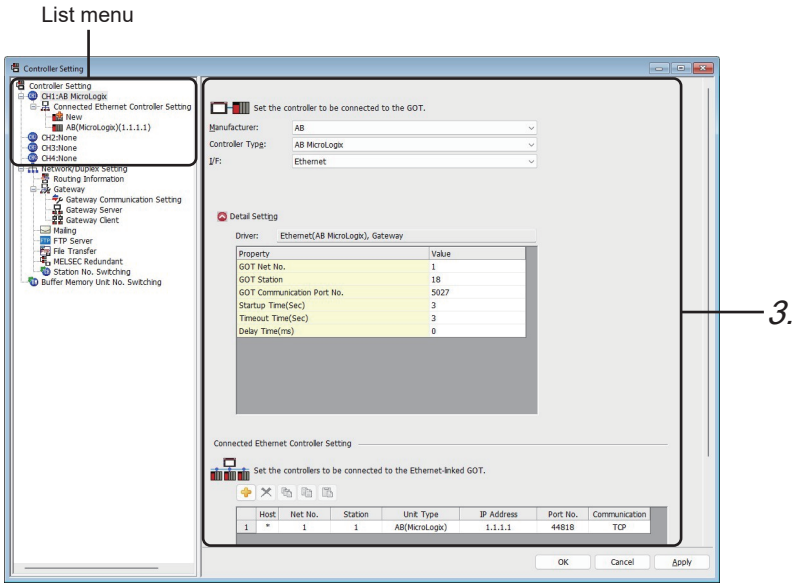
(Numbers of *.*.*.0 and *.*.*.255 are used by the system)

The GOT may not monitor the controller correctly with the above numbers.

Consult with the administrator of the network before setting an IP address to the GOT.

[Controller Setting]

Set the channel of the connected controller.



Operating procedure

1. Select [Common] → [Controller Setting] from the menu.
2. In the [Controller Setting] window, select the channel number to be used from the list menu.
3. Set the following items.

Item	Description
[Manufacturer]	[AB]
[Controller Type]	[AB MicroLogix]
[I/F]	[Ethernet]
[Detail Setting]	Configure the settings according to the usage environment. ☞ Page 2151 [Detail Setting]
[Connected Ethernet Controller Setting]	Configure the settings according to the controller to be connected. ☞ Page 2152 [Connected Ethernet Controller Setting]

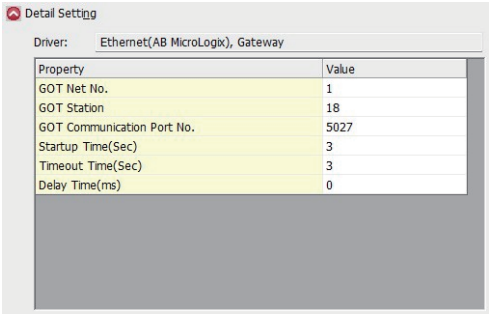
4. When you have completed the settings, click the [OK] button.

Point

The controller settings can be checked in [I/F Communication Setting].
For details, refer to the following.
📖GT Designer3 (GOT3000) Screen Design Manual

■[Detail Setting]

Make the settings according to the usage environment.



Item	Description	Range
[Driver]	This item appears when communication drivers are selectable according to the settings of [Controller Type] and [I/F].	[Ethernet(AB MicroLogix), Gateway]
[GOT Net No.]	Set the network number of the GOT.	[1] to [239]
[GOT Station]*1*2	Set the station number of the GOT.	[1] to [64]
[GOT Communication Port No.]	Set the GOT port number for the connection with the Ethernet equipment.	[1024] to [5010], [5014] to [49152], [49171] to [65534]
[Retry]	Set the number of retries to be performed when a communication timeout occurs. When receiving no response after retries, the communication times out.	[0] times to [5] times
[Startup Time]	Set the time period from the GOT startup until the start of communication with the PLC CPU.	[3] seconds to [255] seconds
[Timeout Time]	Set a communication timeout period.	[1] second to [90] seconds
[Delay Time]	Set the delay time for reducing the load of the network and destination PLC.	[0] ms to [10000] ms

*1 Set values not set for [Station] in [Connected Ethernet Controller Setting].
☞ Page 2159 [Connected Ethernet Controller Setting]
*2 When connecting multiple GOTs in the Ethernet network, set a different value for [GOT Station] for each GOT.

Point

• Controller settings using the GT37 utility

The controller settings can be changed in [Communication Settings] of the GT37 utility after writing [Communication Settings] of project data to GT37.

For details on the GT37 utility, refer to the following manual.

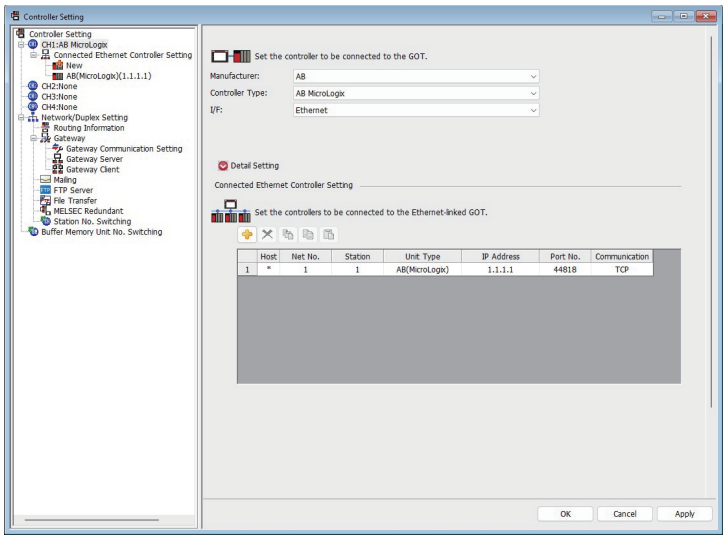
📖GOT3000 Series User's Manual (Utility & Maintenance Functions)

• Priority of the settings in [Controller Setting]

When the settings are configured in GT Designer3 or in the GT37 utility, the latest settings are effective.

■[Connected Ethernet Controller Setting]

Set the controller to be connected to the GOT by Ethernet.



Item	Description	Range
[Host]	The host is displayed. It refers to a station that can be connected without setting a station number. The host is indicated with an asterisk (*).	—
[Net No.]	Set the network number of the connected Ethernet equipment.	[1] to [239]
[Station]*1	Set the station number of the connected Ethernet equipment.	[1] to [64]
[Unit Type]	Select the model of the connected Ethernet equipment.	[AB(MicroLogix)]
[IP Address]	Set the IP address of the connected Ethernet equipment.	[0.0.0.0] to [255.255.255.255]
[Port No.]	Set the port number of the connected Ethernet equipment.	[44818]
[Communication]	Set the communication format of the connected Ethernet equipment.	[TCP]

*1 Set values not set for [GOT Station] in [Detail Setting].

☞ Page 2151 [Detail Setting]

43.1.4 PLC side settings

Configure the settings for the ALLEN-BRADLEY PLC.

For details on ALLEN-BRADLEY PLCs, refer to the following manuals.

📖Manuals of ALLEN-BRADLEY PLC

Parameter settings

Set the following parameters with the software package manufactured by the Allen-Bradley.

Item	Setting details	Remarks
Name	Setting a name	—
IP address	IP address of the connected module	For the IP address, make the same setting as that of each module set on GT Designer3. Do not set the same IP address as those of the GOT and controller on the Ethernet network. For the address setting on GT Designer3, refer to the following. ☞ Page 2151 [Detail Setting]

Precautions

Do not use 0 and 255 at the end of an IP address.

(Numbers of *.*.*.0 and *.*.*.255 are used by the system)

The GOT may not monitor the controller correctly with the above numbers.

Consult with the administrator of the network before setting an IP address to the controller.

43.2 AB MicroLogix series (EtherNet/IP communication module connection)

☞ Page 2154 Connectable devices
☞ Page 2155 System configuration
☞ Page 2156 GOT side settings
☞ Page 2159 PLC side settings

43.2.1 Connectable devices

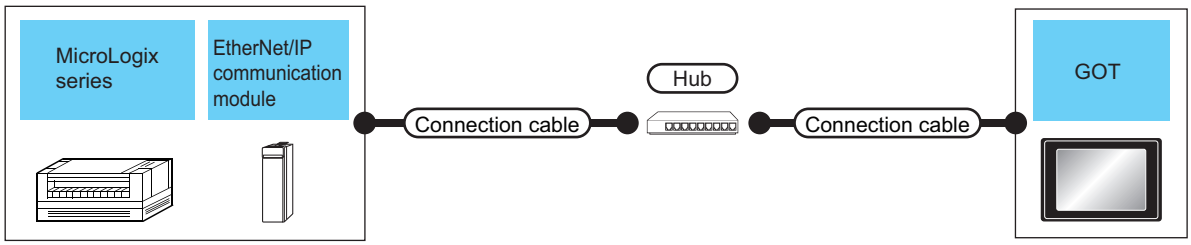
The following table shows the connectable models.

○: Supported, —: Not supported

Controller		Model	Clock	EtherNet/IP communication module*1	Connectable model
MicroLogix series	MicroLogix1000 (Digital CPU)	1761-L10BWA 1761-L10BWB 1761-L16AWA 1761-L16BWA 1761-L16BWB 1761-L16BBB 1761-L32AWA 1761-L32BWA 1761-L32BWB 1761-L32BBB 1761-L32AAA	—	1761-NET-ENI	GT37 SoftGOT3000
	MicroLogix1000 (Analog CPU)	1761-L20AWA-5A 1761-L20BWA-5A 1761-L20BWB-5A	—	1761-NET-ENI	GT37 SoftGOT3000
	MicroLogix1100	1763-L16BWA	—	1761-NET-ENI	GT37 SoftGOT3000
	MicroLogix1200	1762-L24BWA	—	1761-NET-ENI	GT37 SoftGOT3000
	MicroLogix1400	1766-L32AWA	—	1761-NET-ENI	GT37 SoftGOT3000
	MicroLogix1500	1764-LSP 1764-LRP	—	1761-NET-ENI	GT37 SoftGOT3000

*1 Product manufactured by Rockwell Automation, Inc.
For details on the product, contact Rockwell Automation, Inc.

43.2.2 System configuration



For details on the connection cables and the maximum segment length, refer to the following.

☞ Page 2155 Connection cable
☞ Page 2156 Maximum segment length

For details on the maximum number of connected devices, refer to the following.

☞ Page 2156 Maximum number of connected devices

Controller	EtherNet/IP communication module	Connection cable	GOT	
			Interface	Model
MicroLogix1000 MicroLogix1100 MicroLogix1200 MicroLogix1400 MicroLogix1500	*1	Twisted pair cable	Built-in Ethernet interface of GOT	GT37 SoftGOT3000

*1 For the connectable EtherNet/IP communication modules, refer to the following.
☞ Page 2154 Connectable devices

Connection cable

Use a connection cable that meets the following standards.

Standard	Category
10BASE-T	Shielded twisted pair cable (STP) or unshielded twisted pair cable (UTP) of category 3 or higher
100BASE-TX	Shielded twisted pair cable (STP) or unshielded twisted pair cable (UTP) of category 5 or higher
1000BASE-T	Shielded twisted pair cable (STP) or unshielded twisted pair cable (UTP) of category 5e or higher

The destination device connected with the twisted pair cable varies with the configuration of the Ethernet network system used.

Connect the cable to the Ethernet module, hub, or other system equipment corresponding to the applicable Ethernet network system.

Use cables, connectors, and hubs that meet the IEEE802.3 10BASE-T/100BASE-TX/1000BASE-T standards.

When only one GOT is connected, the GOT can be directly connected to the device without a hub.

Maximum segment length

The maximum segment length (length between a hub and a node) is 100 m.
The maximum length depends on the Ethernet equipment used.
The following shows the number of connectable hubs when a repeater hub is used.

- 10BASE-T: Up to 4 for a cascade connection (within 500 m)
- 100BASE-TX: Up to 2 for a cascade connection (within 205 m)
- 1000BASE-T: The number differs depending on the hub to be used.

When switching hubs are used, there is no theoretical limit to the number of cascade connections between switching hubs.
For the limit, contact the switching hub manufacturer.

Precautions

When multiple network devices (including GOTs) are connected in the same segment, the network load increases and the transmission speed between the GOT and PLC may be reduced.
The following actions may improve the communication performance.

- Use a switching hub compatible with 1000BASE-T (1 Gbps) or more.
- Reduce the number of devices monitored by the GOT.

Maximum number of connected devices

Up to 128 CPU modules can be connected to channels No. 1 to No. 4 of one GOT. (16 or less recommended)
The following shows the number of connectable controllers per GOT channel and the number of GOTs connectable to one controller.

Controller		GOT	
Model	**Number of GOTs connectable to one PLC**	**Model**	**Number of connectable controllers per GOT channel**
MicroLogix1000 MicroLogix1100 MicroLogix1200 MicroLogix1400 MicroLogix1500	32	GT37 SoftGOT3000	16

43.2.3 GOT side settings

☞ Page 2156 [GOT Ethernet Setting]
☞ Page 2157 [Controller Setting]

[GOT Ethernet Setting]

Set the GOT Ethernet interface in GT Designer3.

Item	Description
[GOT IP Address Setting]	Set the IP address of the GOT.
[GOT Ethernet Common Setting]	Set the default gateway and other common items for GOT Ethernet interfaces.
[IP filter Setting]	The GOT allows or blocks access from IP addresses specified in the filtering list.

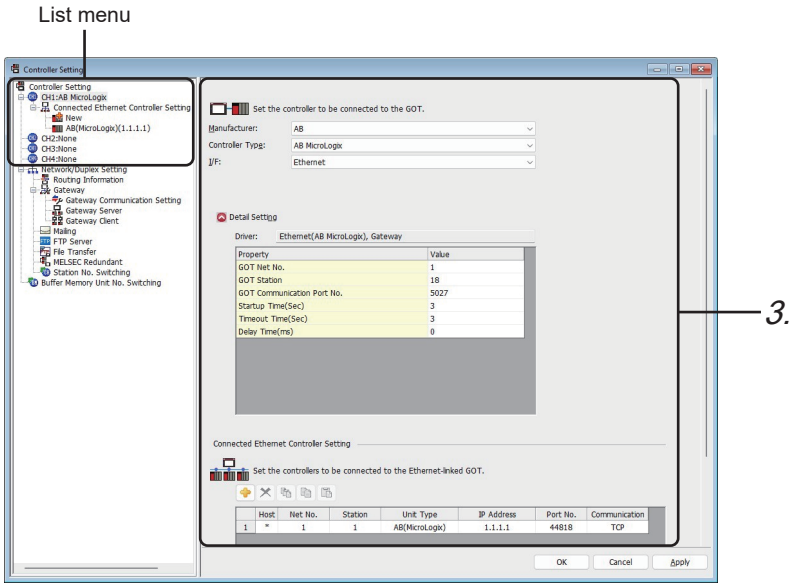
For details on the setting, refer to the following.
📖GT Designer3 (GOT3000) Screen Design Manual
Set the GT SoftGOT3000 Ethernet interface on the personal computer.

Precautions

Do not use 0 and 255 at the end of an IP address.
(Numbers of *.*.*.0 and *.*.*.255 are used by the system)
The GOT may not monitor the controller correctly with the above numbers.
Consult with the administrator of the network before setting an IP address to the GOT.

[Controller Setting]

Set the channel of the connected controller.



Operating procedure

1. Select [Common] → [Controller Setting] from the menu.

2. In the [Controller Setting] window, select the channel number to be used from the list menu.

3. Set the following items.

Item	Description
[Manufacturer]	[AB]
[Controller Type]	[AB MicroLogix]
[I/F]	[Ethernet]
[Detail Setting]	Configure the settings according to the usage environment. ☞ Page 2158 [Detail Setting]
[Connected Ethernet Controller Setting]	Configure the settings according to the controller to be connected. ☞ Page 2159 [Connected Ethernet Controller Setting]

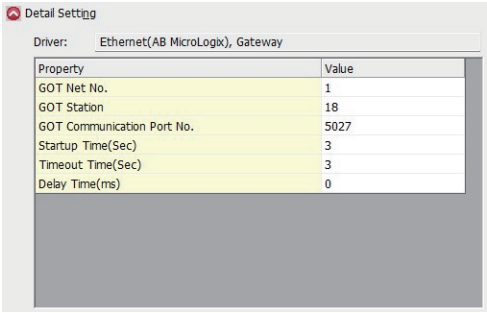
4. When you have completed the settings, click the [OK] button.

Point

The controller settings can be checked in [I/F Communication Setting].
For details, refer to the following.
📖GT Designer3 (GOT3000) Screen Design Manual

■[Detail Setting]

Make the settings according to the usage environment.



Item	Description	Range
[Driver]	This item appears when communication drivers are selectable according to the settings of [Controller Type] and [I/F].	[Ethernet(AB MicroLogix), Gateway]
[GOT Net No.]	Set the network number of the GOT.	[1] to [239]
[GOT Station][*1*2]	Set the station number of the GOT.	[1] to [64]
[GOT Communication Port No.]	Set the GOT port number for the connection with the Ethernet equipment.	[1024] to [5010], [5014] to [49152], [49171] to [65534]
[Retry]	Set the number of retries to be performed when a communication timeout occurs. When receiving no response after retries, the communication times out.	[0] times to [5] times
[Startup Time]	Set the time period from the GOT startup until the start of communication with the PLC CPU.	[3] seconds to [255] seconds
[Timeout Time]	Set a communication timeout period.	[1] second to [90] seconds
[Delay Time]	Set the delay time for reducing the load of the network and destination PLC.	[0] ms to [10000] ms

*1 Set values not set for [Station] in [Connected Ethernet Controller Setting].
☞ Page 2159 [Connected Ethernet Controller Setting]

*2 When connecting multiple GOTs in the Ethernet network, set a different value for [GOT Station] for each GOT.

Point

• Controller settings using the GT37 utility

The controller settings can be changed in [Communication Settings] of the GT37 utility after writing [Communication Settings] of project data to GT37.

For details on the GT37 utility, refer to the following manual.

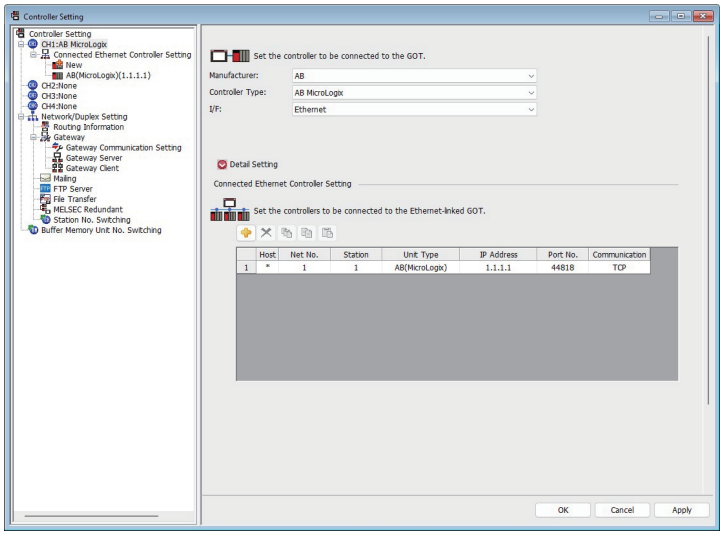
📖GOT3000 Series User's Manual (Utility & Maintenance Functions)

• Priority of the settings in [Controller Setting]

When the settings are configured in GT Designer3 or in the GT37 utility, the latest settings are effective.

■[Connected Ethernet Controller Setting]

Set the controller to be connected to the GOT by Ethernet.



Item	Description	Range
[Host]	The host is displayed. It refers to a station that can be connected without setting a station number. The host is indicated with an asterisk (*).	—
[Net No.]	Set the network number of the connected Ethernet equipment.	[1] to [239]
[Station]*1	Set the station number of the connected Ethernet equipment.	[1] to [64]
[Unit Type]	Select the model of the connected Ethernet equipment.	[AB(MicroLogix)]
[IP Address]	Set the IP address of the connected Ethernet equipment.	[0.0.0.0] to [255.255.255.255]
[Port No.]	Set the port number of the connected Ethernet equipment.	[44818]
[Communication]	Set the communication format of the connected Ethernet equipment.	[TCP]

*1 Set values not set for [GOT Station] in [Detail Setting].
☞ Page 2158 [Detail Setting]

43.2.4 PLC side settings

Configure the settings for the ALLEN-BRADLEY PLC.

For details on ALLEN-BRADLEY PLCs, refer to the following manuals.

📖Manuals of ALLEN-BRADLEY PLC

Parameter settings

Set the following parameters with the software package manufactured by the Allen-Bradley.

Item	Setting details	Remarks
Name	Setting a name	—
IP address	IP address of the connected module	For the IP address, make the same setting as that of each module set on GT Designer3. Do not set the same IP address as those of the GOT and controller on the Ethernet network. For the address setting on GT Designer3, refer to the following. ☞ Page 2158 [Detail Setting]
Slot	Slot number for installing the EtherNet/IP communication module	The EtherNet/IP communication module cannot be connected to the slot [0]. Set the slot number to [1] or later.

Precautions

Do not use 0 and 255 at the end of an IP address.

(Numbers of *.*.*.0 and *.*.*.255 are used by the system)

The GOT may not monitor the controller correctly with the above numbers.

Consult with the administrator of the network before setting an IP address to the controller.

43.3 AB Control/CompactLogix (Built-in EtherNet/IP port connection)

☞ Page 2160 Connectable devices
☞ Page 2160 System configuration
☞ Page 2162 GOT side settings
☞ Page 2165 PLC side settings

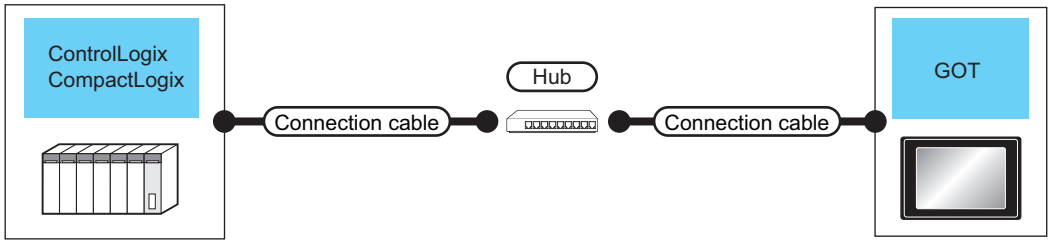
43.3.1 Connectable devices

The following table shows the connectable models.

○: Supported, —: Not supported

Controller		Model	Clock	Connectable model
ControlLogix series	ControlLogix5580	1756-L81E 1756-L82E 1756-L83E 1756-L84E 1756-L85E	—	GT37 SoftGOT3000
CompactLogix series	CompactLogix (1769-L3x)	1769-L32E 1769-L35E	—	GT37 SoftGOT3000

43.3.2 System configuration



For details on the connection cables and the maximum segment length, refer to the following.

☞ Page 2155 Connection cable
☞ Page 2156 Maximum segment length

For details on the maximum number of connected devices, refer to the following.

☞ Page 2156 Maximum number of connected devices

Controller	Connection cable	GOT	
		Interface	Model
ControlLogix5580	Twisted pair cable	Built-in Ethernet interface of GOT	GT37 SoftGOT3000
CompactLogix (1769-L3x)	Twisted pair cable	Built-in Ethernet interface of GOT	GT37 SoftGOT3000

Connection cable

Use a connection cable that meets the following standards.

Standard	Category
10BASE-T	Shielded twisted pair cable (STP) or unshielded twisted pair cable (UTP) of category 3 or higher
100BASE-TX	Shielded twisted pair cable (STP) or unshielded twisted pair cable (UTP) of category 5 or higher
1000BASE-T	Shielded twisted pair cable (STP) or unshielded twisted pair cable (UTP) of category 5e or higher

The destination device connected with the twisted pair cable varies with the configuration of the Ethernet network system used.
Connect the cable to the Ethernet module, hub, or other system equipment corresponding to the applicable Ethernet network system.
Use cables, connectors, and hubs that meet the IEEE802.3 10BASE-T/100BASE-TX/1000BASE-T standards.
When only one GOT is connected, the GOT can be directly connected to the device without a hub.

Maximum segment length

The maximum segment length (length between a hub and a node) is 100 m.
The maximum length depends on the Ethernet equipment used.
The following shows the number of connectable hubs when a repeater hub is used.

- 10BASE-T: Up to 4 for a cascade connection (within 500 m)
- 100BASE-TX: Up to 2 for a cascade connection (within 205 m)
- 1000BASE-T: The number differs depending on the hub to be used.

When switching hubs are used, there is no theoretical limit to the number of cascade connections between switching hubs.
For the limit, contact the switching hub manufacturer.

Precautions

When multiple network devices (including GOTs) are connected in the same segment, the network load increases and the transmission speed between the GOT and PLC may be reduced.
The following actions may improve the communication performance.

- Use a switching hub compatible with 1000BASE-T (1 Gbps) or more.
- Reduce the number of devices monitored by the GOT.

Maximum number of connected devices

Up to 128 CPU modules can be connected to channels No. 1 to No. 4 of one GOT. (16 or less recommended)
The following shows the number of connectable controllers per GOT channel and the number of GOTs connectable to one controller.

Controller		GOT	
Model	Number of GOTs connectable to one PLC	Model	Number of connectable controllers per GOT channel
ControlLogix5580	64	GT37 SoftGOT3000	10
CompactLogix (1769-L3x)	32	GT37 SoftGOT3000	10

43.3.3 GOT side settings

☞ Page 2162 [GOT Ethernet Setting]
☞ Page 2162 [Controller Setting]

[GOT Ethernet Setting]

Set the GOT Ethernet interface in GT Designer3.

Item	Description
[GOT IP Address Setting]	Set the IP address of the GOT.
[GOT Ethernet Common Setting]	Set the default gateway and other common items for GOT Ethernet interfaces.
[IP filter Setting]	The GOT allows or blocks access from IP addresses specified in the filtering list.

For details on the setting, refer to the following.

📖GT Designer3 (GOT3000) Screen Design Manual

Set the GT SoftGOT3000 Ethernet interface on the personal computer.

Precautions

Do not use 0 and 255 at the end of an IP address.

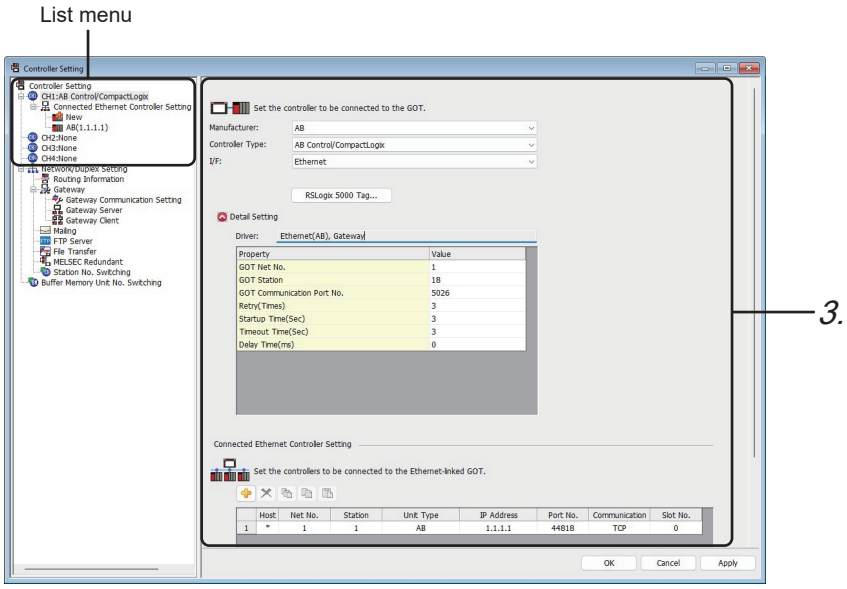
(Numbers of *.*.*.0 and *.*.*.255 are used by the system)

The GOT may not monitor the controller correctly with the above numbers.

Consult with the administrator of the network before setting an IP address to the GOT.

[Controller Setting]

Set the channel of the connected controller.



Operating procedure

1. Select [Common] → [Controller Setting] from the menu.
2. In the [Controller Setting] window, select the channel number to be used from the list menu.
3. Set the following items.

Item	Description
[Manufacturer]	[AB]
[Controller Type]	[AB Control/CompactLogix]
[I/F]	[Ethernet]
[Detail Setting]	Configure the settings according to the usage environment. ☞ Page 2163 [Detail Setting]
[Connected Ethernet Controller Setting]	Configure the settings according to the controller to be connected. ☞ Page 2164 [Connected Ethernet Controller Setting]

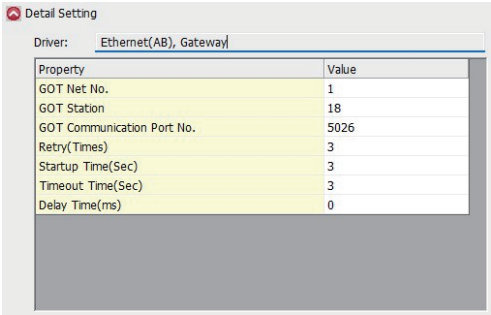
4. When you have completed the settings, click the [OK] button.

Point

The controller settings can be checked in [I/F Communication Setting].
For details, refer to the following.
📖GT Designer3 (GOT3000) Screen Design Manual

■[Detail Setting]

Make the settings according to the usage environment.



Item	Description	Range
[Driver]	This item appears when communication drivers are selectable according to the settings of [Controller Type] and [I/F].	[Ethernet(AB), Gateway]
[GOT Net No.]	Set the network number of the GOT.	[1] to [239]
[GOT Station]	Set the station number of the GOT.	[1] to [64]
[GOT Communication Port No.][*1*2]	Set the GOT port number for the connection with the Ethernet equipment.	[1024] to [5010], [5014] to [49152], [49171] to [65534]
[Retry]	Set the number of retries to be performed when a communication timeout occurs. When receiving no response after retries, the communication times out.	[0] times to [5] times
[Startup Time]	Set the time period from the GOT startup until the start of communication with the PLC CPU.	[3] seconds to [255] seconds
[Timeout Time]	Set a communication timeout period.	[1] second to [90] seconds
[Delay Time]	Set the delay time for reducing the load of the network and destination PLC.	[0] ms to [10000] ms

*1 Set values not set for [Station] in [Connected Ethernet Controller Setting].
☞ Page 2164 [Connected Ethernet Controller Setting]

*2 When connecting multiple GOTs in the Ethernet network, set a different value for [GOT Station] for each GOT.

Point

- Controller settings using the GT37 utility

The controller settings can be changed in [Communication Settings] of the GT37 utility after writing [Communication Settings] of project data to GT37.

For details on the GT37 utility, refer to the following manual.

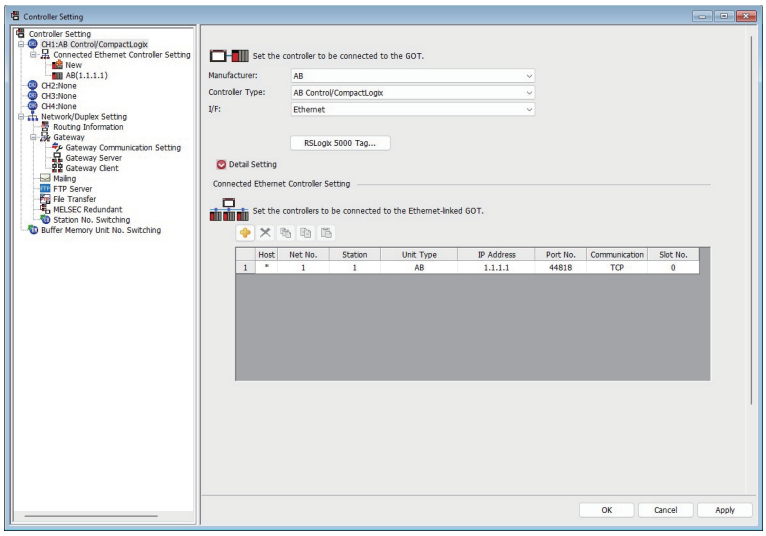
GOT3000 Series User's Manual (Utility & Maintenance Functions)

- Priority of the settings in [Controller Setting]

When the settings are configured in GT Designer3 or in the GT37 utility, the latest settings are effective.

■[Connected Ethernet Controller Setting]

Set the controller to be connected to the GOT by Ethernet.



Item	Description	Range
[Host]	The host is displayed. It refers to a station that can be connected without setting a station number. The host is indicated with an asterisk (*).	—
[Net No.]	Set the network number of the connected Ethernet equipment.	[1] to [239]
[Station]*1	Set the station number of the connected Ethernet equipment.	[1] to [64]
[Unit Type]	Select the model of the connected Ethernet equipment.	[AB]
[IP Address]	Set the IP address of the connected Ethernet equipment.	[0.0.0.0] to [255.255.255.255]
[Port No.]	Set the port number of the connected Ethernet equipment.	[44818]
[Communication]	Set the communication format of the connected Ethernet equipment.	[TCP]
[Slot No.]	Set the slot number to which the CPU module is installed in the PLC.	[0] to [16]

*1 Set values not set for [GOT Station] in [Detail Setting].

☞ Page 2163 [Detail Setting]

43.3.4 PLC side settings

Configure the settings for the ALLEN-BRADLEY PLC.

For details on ALLEN-BRADLEY PLCs, refer to the following manuals.

📖Manuals of ALLEN-BRADLEY PLC

Parameter settings

Set the following parameters with the software package manufactured by the Allen-Bradley.

Item	Setting details	Remarks
Name	Setting a name	—
IP address	IP address of the connected module	For the IP address, make the same setting as that of each module set on GT Designer3. Do not set the same IP address as those of the GOT and controller on the Ethernet network. For the address setting on GT Designer3, refer to the following. ☞ Page 2164 [Connected Ethernet Controller Setting]

Precautions

Do not use 0 and 255 at the end of an IP address.

(Numbers of *.*.*.0 and *.*.*.255 are used by the system)

The GOT may not monitor the controller correctly with the above numbers.

Consult with the administrator of the network before setting an IP address to the controller.

43.4 AB Control/CompactLogix (EtherNet/IP communication module connection)

☞ Page 2166 Connectable devices
☞ Page 2167 System configuration
☞ Page 2168 GOT side settings
☞ Page 2172 PLC side settings

43.4.1 Connectable devices

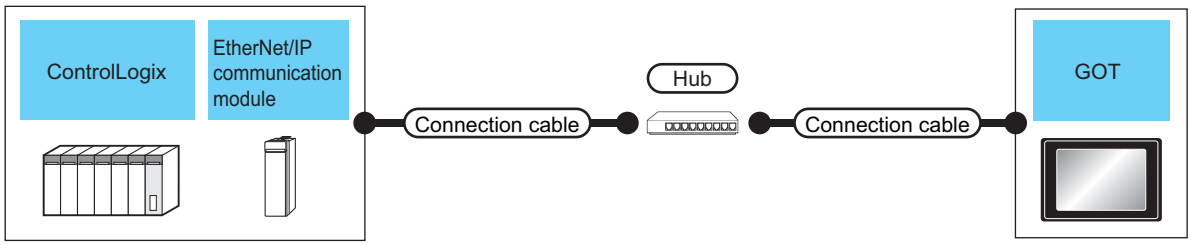
The following table shows the connectable models.

○: Supported, —: Not supported

Controller		Model	Clock	EtherNet/IP communication module*1	Connectable model
ControlLogix series	ControlLogix5560	1756-L61 1756-L62 1756-L63 1756-L64	—	1756-ENET (10 Mbps) 1756-ENBT (10/100 Mbps) 1756-EN2T (10/100 Mbps)	GT37 SoftGOT3000
	ControlLogix5570	1756-L71 1756-L72 1756-L73 1756-L74 1756-L75	—	1756-ENBT (10/100 Mbps) 1756-EN2T (10/100 Mbps) 1756-EN2TR 1756-EN3TR 1756-EN2TSC (10/100 Mbps)	GT37 SoftGOT3000
	GuardLogix5570	1756-L71S 1756-L72S 1756-L73S	—	1756-ENBT (10/100 Mbps) 1756-EN2T (10/100 Mbps) 1756-EN2TR 1756-EN3TR 1756-EN2TSC (10/100 Mbps)	GT37 SoftGOT3000
	ControlLogix5580	1756-L81E 1756-L82E 1756-L83E 1756-L84E 1756-L85E	—	1756-ENBT (10/100 Mbps) 1756-EN2T (10/100 Mbps) 1756-EN2TR 1756-EN3TR 1756-EN2TSC (10/100 Mbps)	GT37 SoftGOT3000

*1 Product manufactured by Rockwell Automation, Inc.
For details on the product, contact Rockwell Automation, Inc.

43.4.2 System configuration



For details on the connection cables and the maximum segment length, refer to the following.

☞ Page 2167 Connection cable
☞ Page 2168 Maximum segment length

For details on the maximum number of connected devices, refer to the following.

☞ Page 2168 Maximum number of connected devices

Controller	EtherNet/IP communication module	Connection cable	GOT	
			Interface	Model
ControlLogix5560 ControlLogix5570 GuardLogix5570 ControlLogix5580	*1	Twisted pair cable	Built-in Ethernet interface of GOT	GT37 SoftGOT3000

*1 For the connectable EtherNet/IP communication modules, refer to the following.
☞ Page 2166 Connectable devices

Connection cable

Use a connection cable that meets the following standards.

Standard	Category
10BASE-T	Shielded twisted pair cable (STP) or unshielded twisted pair cable (UTP) of category 3 or higher
100BASE-TX	Shielded twisted pair cable (STP) or unshielded twisted pair cable (UTP) of category 5 or higher
1000BASE-T	Shielded twisted pair cable (STP) or unshielded twisted pair cable (UTP) of category 5e or higher

The destination device connected with the twisted pair cable varies with the configuration of the Ethernet network system used.

Connect the cable to the Ethernet module, hub, or other system equipment corresponding to the applicable Ethernet network system.

Use cables, connectors, and hubs that meet the IEEE802.3 10BASE-T/100BASE-TX/1000BASE-T standards.

When only one GOT is connected, the GOT can be directly connected to the device without a hub.

Maximum segment length

The maximum segment length (length between a hub and a node) is 100 m.
The maximum length depends on the Ethernet equipment used.
The following shows the number of connectable hubs when a repeater hub is used.

- 10BASE-T: Up to 4 for a cascade connection (within 500 m)
- 100BASE-TX: Up to 2 for a cascade connection (within 205 m)
- 1000BASE-T: The number differs depending on the hub to be used.

When switching hubs are used, there is no theoretical limit to the number of cascade connections between switching hubs.
For the limit, contact the switching hub manufacturer.

Precautions

When multiple network devices (including GOTs) are connected in the same segment, the network load increases and the transmission speed between the GOT and PLC may be reduced.
The following actions may improve the communication performance.

- Use a switching hub compatible with 1000BASE-T (1 Gbps) or more.
- Reduce the number of devices monitored by the GOT.

Maximum number of connected devices

Up to 128 CPU modules can be connected to channels No. 1 to No. 4 of one GOT. (16 or less recommended)
The following shows the number of connectable controllers per GOT channel and the number of GOTs connectable to one controller.

Controller		GOT	
Model	**Number of GOTs connectable to one PLC**	**Model**	**Number of connectable controllers per GOT channel**
ControlLogix5560 ControlLogix5570 GuardLogix5570 ControlLogix5580	64	GT37 SoftGOT3000	10

43.4.3 GOT side settings

☞ Page 2168 [GOT Ethernet Setting]
☞ Page 2169 [Controller Setting]

[GOT Ethernet Setting]

Set the GOT Ethernet interface in GT Designer3.

Item	Description
[GOT IP Address Setting]	Set the IP address of the GOT.
[GOT Ethernet Common Setting]	Set the default gateway and other common items for GOT Ethernet interfaces.
[IP filter Setting]	The GOT allows or blocks access from IP addresses specified in the filtering list.

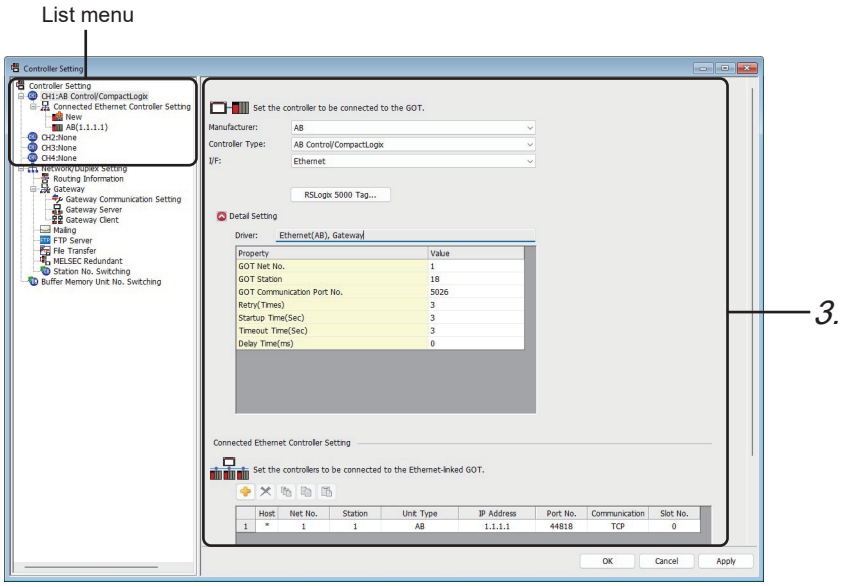
For details on the setting, refer to the following.
📖GT Designer3 (GOT3000) Screen Design Manual
Set the GT SoftGOT3000 Ethernet interface on the personal computer.

Precautions

Do not use 0 and 255 at the end of an IP address.
(Numbers of *.*.*.0 and *.*.*.255 are used by the system)
The GOT may not monitor the controller correctly with the above numbers.
Consult with the administrator of the network before setting an IP address to the GOT.

[Controller Setting]

Set the channel of the connected controller.



Operating procedure

1. Select [Common] → [Controller Setting] from the menu.

2. In the [Controller Setting] window, select the channel number to be used from the list menu.

3. Set the following items.

Item	Description
[Manufacturer]	[AB]
[Controller Type]	[AB Control/CompactLogix]
[I/F]	[Ethernet]
[Detail Setting]	Configure the settings according to the usage environment. ☞ Page 2170 [Detail Setting]
[Connected Ethernet Controller Setting]	Configure the settings according to the controller to be connected. ☞ Page 2171 [Connected Ethernet Controller Setting]

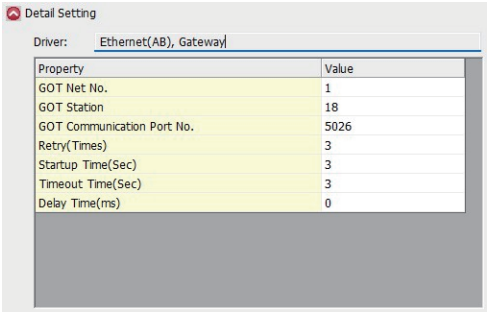
4. When you have completed the settings, click the [OK] button.

Point

The controller settings can be checked in [I/F Communication Setting].
For details, refer to the following.
📖GT Designer3 (GOT3000) Screen Design Manual

■[Detail Setting]

Make the settings according to the usage environment.



Item	Description	Range
[Driver]	This item appears when communication drivers are selectable according to the settings of [Controller Type] and [I/F].	[Ethernet(AB), Gateway]
[GOT Net No.]	Set the network number of the GOT.	[1] to [239]
[GOT Station]	Set the station number of the GOT.	[1] to [64]
[GOT Communication Port No.][*1*2]	Set the GOT port number for the connection with the Ethernet equipment.	[1024] to [5010], [5014] to [49152], [49171] to [65534]
[Retry]	Set the number of retries to be performed when a communication timeout occurs. When receiving no response after retries, the communication times out.	[0] times to [5] times
[Startup Time]	Set the time period from the GOT startup until the start of communication with the PLC CPU.	[3] seconds to [255] seconds
[Timeout Time]	Set a communication timeout period.	[1] second to [90] seconds
[Delay Time]	Set the delay time for reducing the load of the network and destination PLC.	[0] ms to [10000] ms

*1 Set values not set for [Station] in [Connected Ethernet Controller Setting].
☞ Page 2171 [Connected Ethernet Controller Setting]

*2 When connecting multiple GOTs in the Ethernet network, set a different value for [GOT Station] for each GOT.

Point

• Controller settings using the GT37 utility

The controller settings can be changed in [Communication Settings] of the GT37 utility after writing [Communication Settings] of project data to GT37.

For details on the GT37 utility, refer to the following manual.

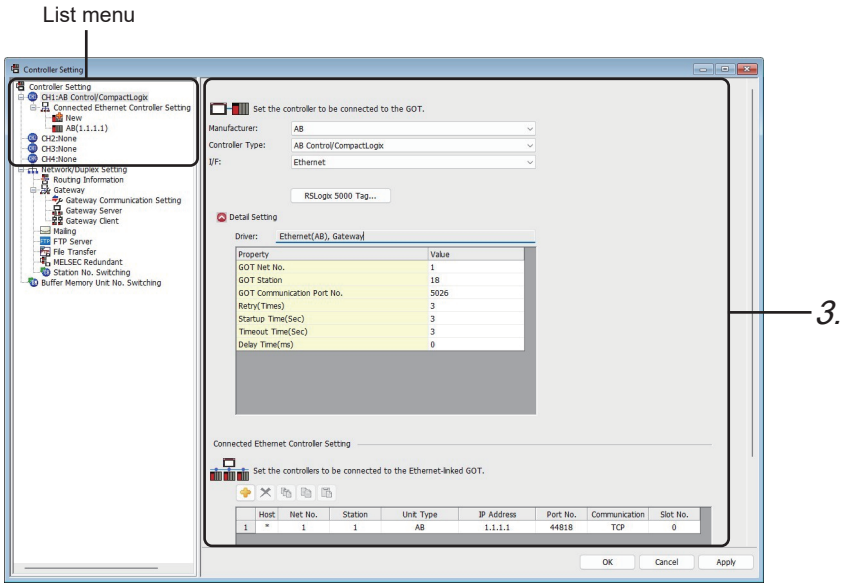
📖GOT3000 Series User's Manual (Utility & Maintenance Functions)

• Priority of the settings in [Controller Setting]

When the settings are configured in GT Designer3 or in the GT37 utility, the latest settings are effective.

■[Connected Ethernet Controller Setting]

Set the controller to be connected to the GOT by Ethernet.



Item	Description	Range
[Host]	The host is displayed. It refers to a station that can be connected without setting a station number. The host is indicated with an asterisk (*).	—
[Net No.]	Set the network number of the connected Ethernet equipment.	[1] to [239]
[Station]*1	Set the station number of the connected Ethernet equipment.	[1] to [64]
[Unit Type]	Select the model of the connected Ethernet equipment.	[AB]
[IP Address]	Set the IP address of the connected Ethernet equipment.	[0.0.0.0] to [255.255.255.255]
[Port No.]	Set the port number of the connected Ethernet equipment.	[44818]
[Communication]	Set the communication format of the connected Ethernet equipment.	[TCP]
[Slot No.]	Set the slot number to which the CPU module is installed in the PLC.	[0] to [16]

*1 Set values not set for [GOT Station] in [Detail Setting].
☞ Page 2170 [Detail Setting]

43.4.4 PLC side settings

Configure the settings for the ALLEN-BRADLEY PLC.

For details on ALLEN-BRADLEY PLCs, refer to the following manuals.

📖Manuals of ALLEN-BRADLEY PLC

☞ Page 2172 Parameter settings

☞ Page 2172 Rotary switch setting

Parameter settings

Set the following parameters with the software package manufactured by the Allen-Bradley.

Item	Setting details	Remarks
Name	Setting a name	—
IP address	IP address of the connected module	For the IP address, make the same setting as that of each module set on GT Designer3. Do not set the same IP address as those of the GOT and controller on the Ethernet network. For the address setting on GT Designer3, refer to the following. ☞ Page 2171 [Connected Ethernet Controller Setting]
Slot	Slot number for installing the EtherNet/IP communication module	The EtherNet/IP communication module cannot be connected to the slot [0]. Set the slot number to [1] or later.

Precautions

Do not use 0 and 255 at the end of an IP address.

(Numbers of *.*.*.0 and *.*.*.255 are used by the system)

The GOT may not monitor the controller correctly with the above numbers.

Consult with the administrator of the network before setting an IP address to the controller.

Rotary switch setting

The following EtherNet/IP communication modules have rotary switches to set the IP address.

- 1756-EN2T
- 1756-EN2TR
- 1756-EN3TR
- 1756-EN2TSC

The EtherNet/IP communication module has three rotary switches named X, Y, and Z.

The following shows the procedure to set IP address using the rotary switches X, Y, and Z.

Rotary switch setting value	Description
1 to 254	The fourth octet of the IP address is the value set by the rotary switches. The network address part is fixed to [192.168.1.***]. Set the IP address of EtherNet/IP communication module according to the GOT settings. ☞ Page 2171 [Connected Ethernet Controller Setting]
	• Rotary switch setting example If the switches are set to X=0, Y=3, Z=1, IP address of EtherNet/IP communication module will be [192.168.1.31].
888	The setting value that resets the EtherNet/IP communication module to its default setting. When the setting value is [888], the EtherNet/IP communication module cannot be connected with the GOT.
Other than the above	To set the IP address with a peripheral tool, set the values other than 1 to 254, or 888 for the rotary switches.

For details on the rotary switches, refer to the following manual.

📖Manual of EtherNet/IP communication module to be used

43.5 AB Control/CompactLogix (Tag) (Built-in EtherNet/IP port connection)

☞ Page 2173 Connectable devices
☞ Page 2173 System configuration
☞ Page 2175 GOT side settings
☞ Page 2178 PLC side settings

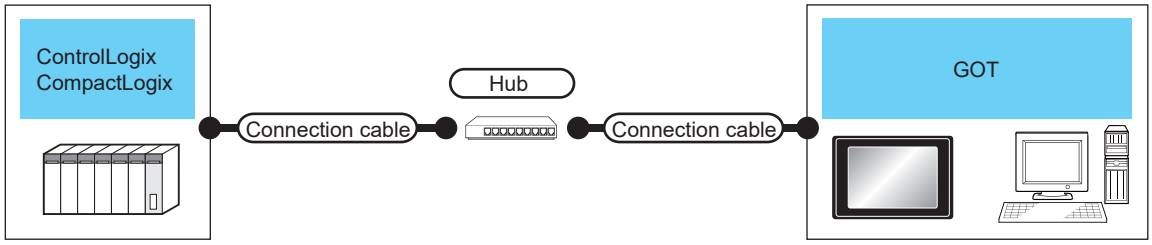
43.5.1 Connectable devices

The following table shows the connectable models.

○: Supported, —: Not supported

Controller		Model	Clock	Connectable model
ControlLogix series	ControlLogix5580	1756-L81E 1756-L82E 1756-L83E 1756-L84E 1756-L85E	—	GT37 SoftGOT3000
CompactLogix series	CompactLogix (1769-L3x)	1769-L32E 1769-L35E	—	GT37 SoftGOT3000

43.5.2 System configuration



For details on the connection cables and the maximum segment length, refer to the following.

☞ Page 2174 Connection cable
☞ Page 2174 Maximum segment length

For details on the maximum number of connected devices, refer to the following.

☞ Page 2174 Maximum number of connected devices

Controller	Connection cable	GOT	
		Interface	Model
ControlLogix5580	Twisted pair cable	Built-in Ethernet interface of GOT	GT37 SoftGOT3000
CompactLogix (1769-L3x)	Twisted pair cable	Built-in Ethernet interface of GOT	GT37 SoftGOT3000

Connection cable

Use a connection cable that meets the following standards.

Standard	Category
10BASE-T	Shielded twisted pair cable (STP) or unshielded twisted pair cable (UTP) of category 3 or higher
100BASE-TX	Shielded twisted pair cable (STP) or unshielded twisted pair cable (UTP) of category 5 or higher
1000BASE-T	Shielded twisted pair cable (STP) or unshielded twisted pair cable (UTP) of category 5e or higher

The destination device connected with the twisted pair cable varies with the configuration of the Ethernet network system used.

Connect the cable to the Ethernet module, hub, or other system equipment corresponding to the applicable Ethernet network system.

Use cables, connectors, and hubs that meet the IEEE802.3 10BASE-T/100BASE-TX/1000BASE-T standards.

When only one GOT is connected, the GOT can be directly connected to the device without a hub.

Maximum segment length

The maximum segment length (length between a hub and a node) is 100 m.

The maximum length depends on the Ethernet equipment used.

The following shows the number of connectable hubs when a repeater hub is used.

- 10BASE-T: Up to 4 for a cascade connection (within 500 m)
- 100BASE-TX: Up to 2 for a cascade connection (within 205 m)
- 1000BASE-T: The number differs depending on the hub to be used.

When switching hubs are used, there is no theoretical limit to the number of cascade connections between switching hubs.

For the limit, contact the switching hub manufacturer.

Precautions

When multiple network devices (including GOTs) are connected in the same segment, the network load increases and the transmission speed between the GOT and PLC may be reduced.

The following actions may improve the communication performance.

- Use a switching hub compatible with 1000BASE-T (1 Gbps) or more.
- Reduce the number of devices monitored by the GOT.

Maximum number of connected devices

Up to 128 CPU modules can be connected to channels No. 1 to No. 4 of one GOT. (16 or less recommended)

The following shows the number of connectable controllers per GOT channel and the number of GOTs connectable to one controller.

Controller		GOT	
Model	Number of GOTs connectable to one PLC	Model	Number of connectable controllers per GOT channel
ControlLogix5580	32	GT37 SoftGOT3000	16
CompactLogix (1769-L3x)	32	GT37 SoftGOT3000	16

43.5.3 GOT side settings

☞ Page 2175 [GOT Ethernet Setting]
☞ Page 2175 [Controller Setting]

[GOT Ethernet Setting]

Set the GOT Ethernet interface in GT Designer3.

Item	Description
[GOT IP Address Setting]	Set the IP address of the GOT.
[GOT Ethernet Common Setting]	Set the default gateway and other common items for GOT Ethernet interfaces.
[IP filter Setting]	The GOT allows or blocks access from IP addresses specified in the filtering list.

For details on the setting, refer to the following.

📖GT Designer3 (GOT3000) Screen Design Manual

Set the GT SoftGOT3000 Ethernet interface on the personal computer.

Precautions

Do not use 0 and 255 at the end of an IP address.

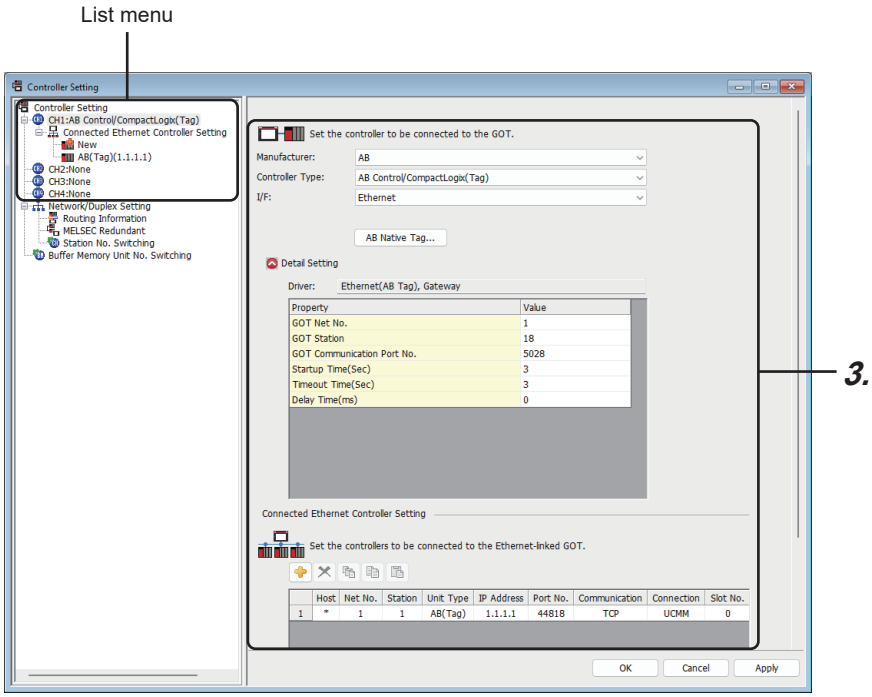
(Numbers of *.*.*.0 and *.*.*.255 are used by the system.)

The GOT may not monitor the controller correctly with the above numbers.

Consult with the administrator of the network before setting an IP address to the GOT.

[Controller Setting]

Set the channel of the connected controller.



Operating procedure

1. Select [Common] → [Controller Setting] from the menu.
2. In the [Controller Setting] window, select the channel number to be used from the list menu.
3. Set the following items.

Item	Description
[Manufacturer]	[AB]
[Controller Type]	[AB Control/CompactLogix(Tag)]
[I/F]	[Ethernet]
[Detail Setting]	Configure the settings according to the usage environment. ☞ Page 2176 [Detail Setting]
[Connected Ethernet Controller Setting]	Configure the settings according to the controller to be connected. ☞ Page 2177 [Connected Ethernet Controller Setting]

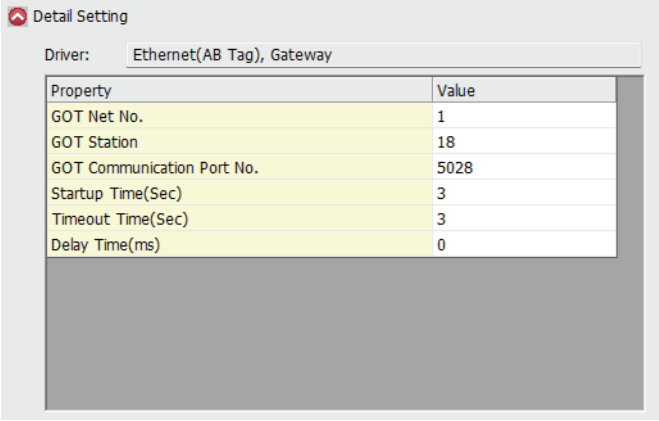
4. When you have completed the settings, click the [OK] button.

Point

The controller settings can be checked in [I/F Communication Setting].
For details, refer to the following.
📖GT Designer3 (GOT3000) Screen Design Manual

■[Detail Setting]

Configure the settings according to the usage environment.



Item	Description	Range
[Driver]	This item appears when communication drivers are selectable according to the settings of [Controller Type] and [I/F].	[Ethernet(AB Tag), Gateway]
[GOT Net No.]	Set the network number of the GOT.	[1] to [239]
[GOT Station]*1*2	Set the station number of the GOT.	[1] to [64]
[GOT Communication Port No.]	Set the GOT port number for the connection with the Ethernet equipment.	[1024] to [5010], [5014] to [49152], [49171] to [65534]
[Startup Time]	Set the time period from the GOT startup until the start of communication with the PLC CPU.	[3] seconds to [255] seconds
[Timeout Time]	Set a communication timeout period.	[1] second to [90] seconds
[Delay Time]	Set the delay time for reducing the load of the network and destination PLC.	[0] ms to [10000] ms

*1 Set values not set for [Station] in [Connected Ethernet Controller Setting].
☞ Page 2175 [Controller Setting]

*2 When connecting multiple GOTs in the Ethernet network, set a different value for [GOT Station] for each GOT.

Point

• Controller settings using the GT37 utility

The controller settings can be changed in [Communication Settings] of the GT37 utility after writing [Communication Settings] of project data to GT37.

For details on the GT37 utility, refer to the following manual.

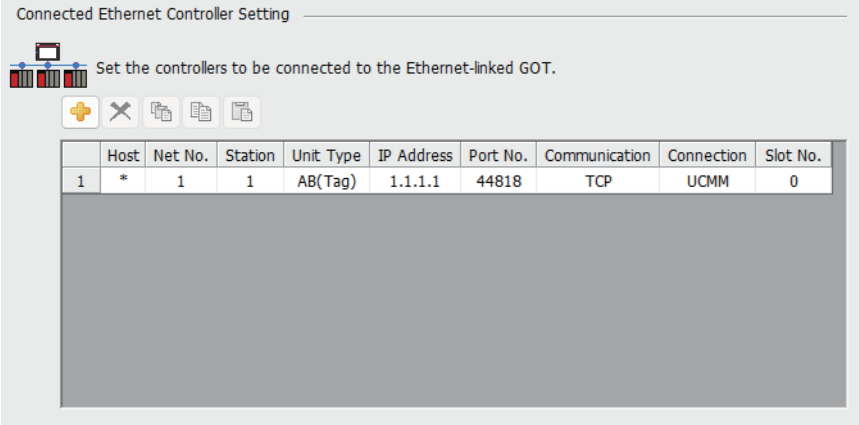
GOT3000 Series User's Manual (Utility & Maintenance Functions)

• Priority of the settings in [Controller Setting]

When the settings are configured in GT Designer3 or in the GT37 utility, the latest settings are effective.

■[Connected Ethernet Controller Setting]

Set the controller to be connected to the GOT by Ethernet.



Item	Description	Range
[Host]	The host is displayed. It refers to a station that can be connected without setting a station number. The host is indicated with an asterisk (*).	—
[Net No.]	Set the network number of the connected Ethernet equipment.	[1] to [239]
[Station]*1	Set the station number of the connected Ethernet equipment.	[1] to [64]
[Unit Type]	Select the model of the connected Ethernet equipment.	[AB(Tag)]
[IP Address]	Set the IP address of the connected Ethernet equipment.	[0.0.0.0] to [255.255.255.255]
[Port No.]*2	Set the port number of the connected Ethernet equipment.	[44818]
[Communication]	Set the communication format of the connected Ethernet equipment.	[TCP]
[Connection]	Set the message communication type according to the connected Ethernet equipment.	[UCMM], [Class3]
[Slot No.]	Set the slot number to which the CPU module is installed in the PLC.	[0] to [20]

*1 Set values not set for [GOT Station] in [Detail Setting].
☞ Page 2175 [Controller Setting]

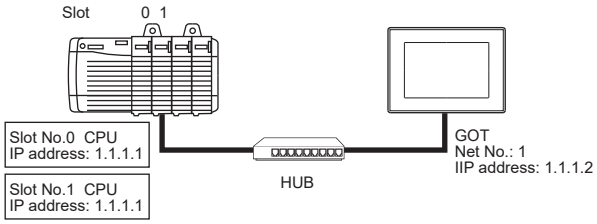
*2 The same IP address cannot be set for the same port number.
To set a duplicate IP address, set different port numbers.

■[Connected Ethernet Controller Setting] for a multiple CPU system

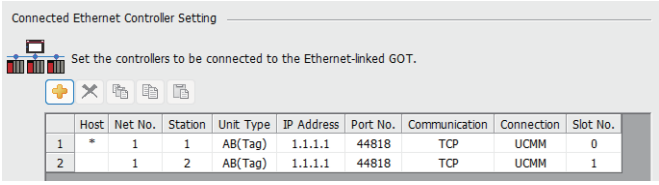
Monitoring in the multiple CPU system is possible by setting a different [Slot No.] for one module with the same IP address in [Connected Ethernet Controller Setting].

The following shows [Connected Ethernet Controller Setting] for configuring a system.

- System configuration example



- Example: Settings in [Connected Ethernet Controller Setting]



	Host	Net No.	Station	Unit Type	IP Address	Port No.	Communication	Connection	Slot No.
1	*	1	1	AB(Tag)	1.1.1.1	44818	TCP	UCMM	0
2		1	2	AB(Tag)	1.1.1.1	44818	TCP	UCMM	1

In the above settings, the GOT monitors the CPU as follows.

When [Net No.] is set to 1 and [Station No.] is set to 1 for an object, the GOT monitors the CPU whose slot number is 0.

When [Net No.] is set to 1 and [Station No.] is set to 2 for an object, the GOT monitors the CPU whose slot number is 1.

43.5.4 PLC side settings

Configure the settings for the ALLEN-BRADLEY PLC.

For details on ALLEN-BRADLEY PLCs, refer to the following manuals.

📖Manuals of ALLEN-BRADLEY PLC

Parameter settings

Set the following parameters with the software package manufactured by the Allen-Bradley.

Item	Setting details	Remarks
Name	Name of the parameter settings	—
IP Address	IP address of the connected module	For the IP address, make the same setting as that of each module set on GT Designer3. Do not set the same IP address as those of the GOT and controller on the Ethernet network. For the address setting on GT Designer3, refer to the following. ☞ Page 2184 [Connected Ethernet Controller Setting]

Precautions

Do not use 0 and 255 at the end of an IP address.

(Numbers of *.*.*.0 and *.*.*.255 are used by the system)

The GOT may not monitor the controller correctly with the above numbers.

Consult with the administrator of the network before setting an IP address to the controller.

43.6 AB Control/CompactLogix (Tag) (EtherNet/IP communication module connection)

☞ Page 2179 Connectable devices
☞ Page 2180 System configuration
☞ Page 2181 GOT side settings
☞ Page 2185 PLC side settings

43.6.1 Connectable devices

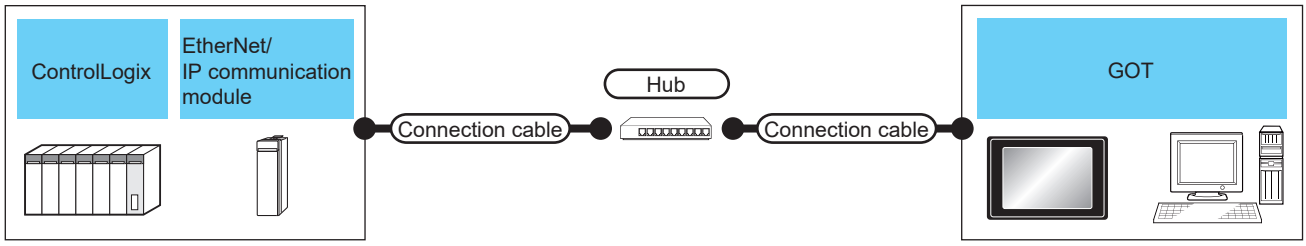
The following table shows the connectable models.

○: Supported, —: Not supported

Controller		Model	Clock	EtherNet/IP communication module*1	Connectable model
ControlLogix series	ControlLogix5560	1756-L61 1756-L62 1756-L63 1756-L64	—	1756-ENET (10 Mbps)*2 1756-ENBT (10/100 Mbps) 1756-EN2T (10/100 Mbps)	GT37 SoftGOT3000
	ControlLogix5570	1756-L71 1756-L72 1756-L73 1756-L74 1756-L75	—	1756-EN2T (10/100 Mbps) 1756-EN2TR (10/100 Mbps) 1756-EN3TR (10/100 Mbps) 1756-ENBT (10/100 Mbps) 1756-EN2TSC (10/100 Mbps)	GT37 SoftGOT3000
	GuardLogix5570	1756-L71S 1756-L72S 1756-L73S	—	1756-EN2TR (10/100 Mbps)	GT37 SoftGOT3000
	ControlLogix5580	1756-L81E 1756-L82E 1756-L83E 1756-L84E 1756-L85E	—	1756-EN2T (10/100 Mbps) 1756-EN2TR (10/100 Mbps) 1756-EN3TR (10/100 Mbps) 1756-ENBT (10/100 Mbps) 1756-EN2TSC (10/100 Mbps)	GT37 SoftGOT3000

*1 Product manufactured by Rockwell Automation, Inc.
For details on the product, contact Rockwell Automation, Inc.
*2 Available for 1756-ENET series B or later.

43.6.2 System configuration



For details on the connection cables and the maximum segment length, refer to the following.

☞ Page 2180 Connection cable
☞ Page 2181 Maximum segment length

For details on the maximum number of connected devices, refer to the following.

☞ Page 2181 Maximum number of connected devices

Controller	EtherNet/IP communication module	Connection cable	GOT	
			Interface	Model
ControlLogix5560 ControlLogix5570 GuardLogix5570 ControlLogix5580	*1	Twisted pair cable	Built-in Ethernet interface of GOT	GT37 SoftGOT3000
			Ethernet interface of personal computer	GT37 SoftGOT3000

*1 For the connectable EtherNet/IP communication modules, refer to the following.
☞ Page 2179 Connectable devices

Connection cable

Use a connection cable that meets the following standards.

Standard	Category
10BASE-T	Shielded twisted pair cable (STP) or unshielded twisted pair cable (UTP) of category 3 or higher
100BASE-TX	Shielded twisted pair cable (STP) or unshielded twisted pair cable (UTP) of category 5 or higher
1000BASE-T	Shielded twisted pair cable (STP) or unshielded twisted pair cable (UTP) of category 5e or higher

The destination device connected with the twisted pair cable varies with the configuration of the Ethernet network system used.

Connect the cable to the Ethernet module, hub, or other system equipment corresponding to the applicable Ethernet network system.

Use cables, connectors, and hubs that meet the IEEE802.3 10BASE-T/100BASE-TX/1000BASE-T standards.

When only one GOT is connected, the GOT can be directly connected to the device without a hub.

Maximum segment length

The maximum segment length (length between a hub and a node) is 100 m.
The maximum length depends on the Ethernet equipment used.
The following shows the number of connectable hubs when a repeater hub is used.

- 10BASE-T: Up to 4 for a cascade connection (within 500 m)
- 100BASE-TX: Up to 2 for a cascade connection (within 205 m)
- 1000BASE-T: The number differs depending on the hub to be used.

When switching hubs are used, there is no theoretical limit to the number of cascade connections between switching hubs.
For the limit, contact the switching hub manufacturer.

Precautions

When multiple network devices (including GOTs) are connected in the same segment, the network load increases and the transmission speed between the GOT and PLC may be reduced.
The following actions may improve the communication performance.

- Use a switching hub compatible with 1000BASE-T (1 Gbps) or more.
- Reduce the number of devices monitored by the GOT.

Maximum number of connected devices

Up to 128 CPU modules can be connected to channels No. 1 to No. 4 of one GOT. (16 or less recommended)
The following shows the number of connectable controllers per GOT channel and the number of GOTs connectable to one controller.

Controller		GOT	
Model	**Number of GOTs connectable to one PLC**	**Model**	**Number of connectable controllers per GOT channel**
ControlLogix5560 ControlLogix5570 GuardLogix5570 ControlLogix5580	32	GT37 SoftGOT3000	16

43.6.3 GOT side settings

☞ Page 2181 [GOT Ethernet Setting]
☞ Page 2182 [Controller Setting]

[GOT Ethernet Setting]

Set the GOT Ethernet interface in GT Designer3.

Item	Description
[GOT IP Address Setting]	Set the IP address of the GOT.
[GOT Ethernet Common Setting]	Set the default gateway and other common items for GOT Ethernet interfaces.
[IP filter Setting]	The GOT allows or blocks access from IP addresses specified in the filtering list.

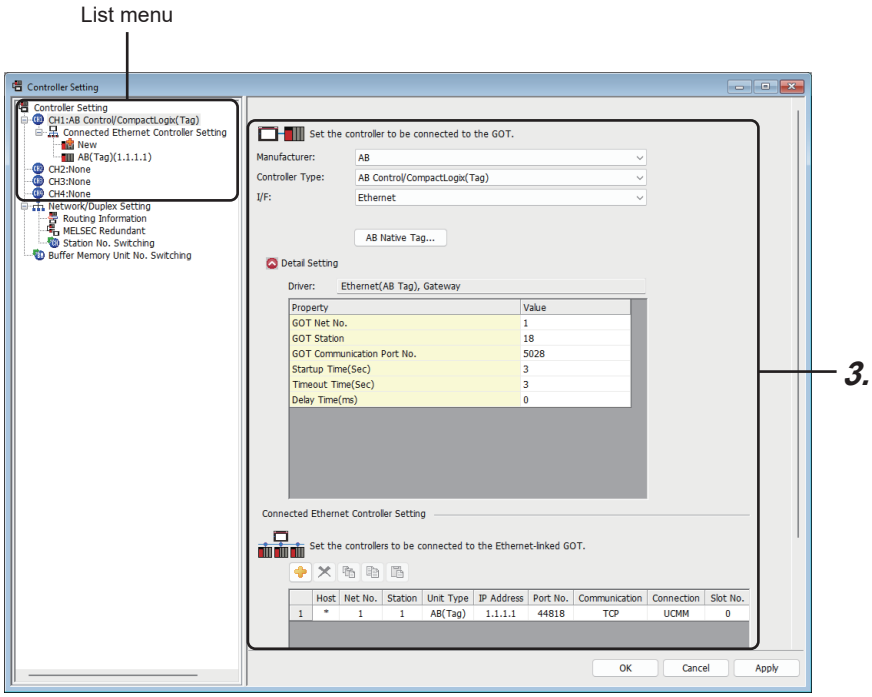
For details on the setting, refer to the following.
📖GT Designer3 (GOT3000) Screen Design Manual
Set the GT SoftGOT3000 Ethernet interface on the personal computer.

Precautions

Do not use 0 and 255 at the end of an IP address.
(Numbers of *.*.*.0 and *.*.*.255 are used by the system)
The GOT may not monitor the controller correctly with the above numbers.
Consult with the administrator of the network before setting an IP address to the GOT.

[Controller Setting]

Set the channel of the connected controller.



Operating procedure

1. Select [Common] → [Controller Setting] from the menu.

2. In the [Controller Setting] window, select the channel number to be used from the list menu.

3. Set the following items.

Item	Description
[Manufacturer]	[AB]
[Controller Type]	[AB Control/CompactLogix(Tag)]
[I/F]	[Ethernet]
[Detail Setting]	Configure the settings according to the usage environment. ☞ Page 2183 [Detail Setting]
[Connected Ethernet Controller Setting]	Configure the settings according to the controller to be connected. ☞ Page 2184 [Connected Ethernet Controller Setting]

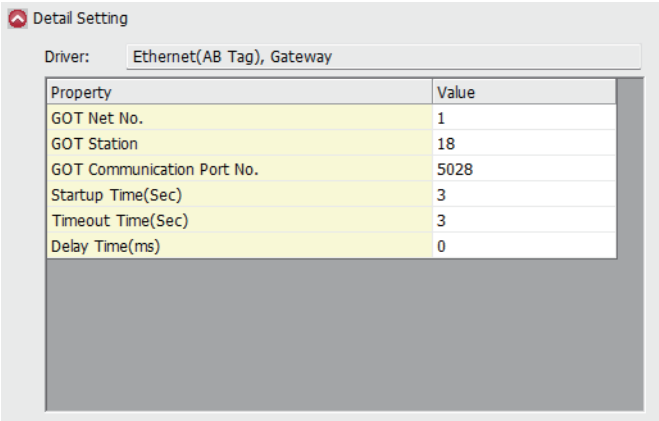
4. When you have completed the settings, click the [OK] button.

Point

The controller settings can be checked in [I/F Communication Setting].
For details, refer to the following.
📖GT Designer3 (GOT3000) Screen Design Manual

■[Detail Setting]

Configure the settings according to the usage environment.



Item	Description	Range
[Driver]	This item appears when communication drivers are selectable according to the settings of [Controller Type] and [I/F].	[Ethernet(AB Tag), Gateway]
[GOT Net No.]	Set the network number of the GOT.	[1] to [239]
[GOT Station][*1*2]	Set the station number of the GOT.	[1] to [64]
[GOT Communication Port No.]	Set the GOT port number for the connection with the Ethernet equipment.	[1024] to [5010], [5014] to [49152], [49171] to [65534]
[Startup Time]	Set the time period from the GOT startup until the start of communication with the PLC CPU.	[3] seconds to [255] seconds
[Timeout Time]	Set a communication timeout period.	[1] second to [90] seconds
[Delay Time]	Set the delay time for reducing the load of the network and destination PLC.	[0] ms to [10000] ms

*1 Set values not set for [Station] in [Connected Ethernet Controller Setting].
☞ Page 2184 [Connected Ethernet Controller Setting]

*2 When connecting multiple GOTs in the Ethernet network, set a different value for [GOT Station] for each GOT.

Point

• Controller settings using the GT37 utility

The controller settings can be changed in [Communication Settings] of the GT37 utility after writing [Communication Settings] of project data to GT37.

For details on the GT37 utility, refer to the following manual.

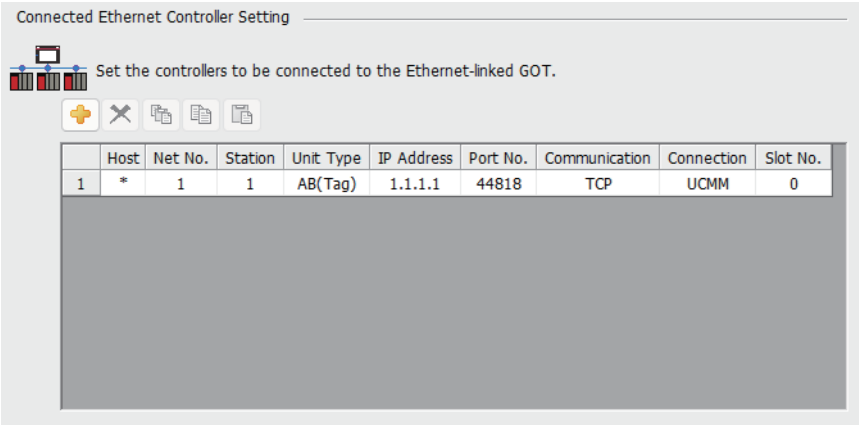
📖GOT3000 Series User's Manual (Utility & Maintenance Functions)

• Priority of the settings in [Controller Setting]

When the settings are configured in GT Designer3 or in the GT37 utility, the latest settings are effective.

■[Connected Ethernet Controller Setting]

Set the controller to be connected to the GOT by Ethernet.



	Host	Net No.	Station	Unit Type	IP Address	Port No.	Communication	Connection	Slot No.
1	*	1	1	AB(Tag)	1.1.1.1	44818	TCP	UCMM	0

Item	Description	Range
[Host]	The host is displayed. It refers to a station that can be connected without setting a station number. The host is indicated with an asterisk (*).	—
[Net No.]	Set the network number of the connected Ethernet equipment.	[1] to [239]
[Station]*1	Set the station number of the connected Ethernet equipment.	[1] to [64]
[Unit Type]	Select the model of the connected Ethernet equipment.	[AB(Tag)]
[IP Address]	Set the IP address of the connected Ethernet equipment.	[0.0.0.0] to [255.255.255.255]
[Port No.]*2	Set the port number of the connected Ethernet equipment.	[44818]
[Communication]	Set the communication format of the connected Ethernet equipment.	[TCP]
[Connection]	Set the message communication type according to the connected Ethernet equipment.	[UCMM], [Class3]
[Slot No.]	Set the slot number to which the CPU module is installed in the PLC.	[0] to [20]

*1 Set values not set for [GOT Station] in [Detail Setting].
☞ Page 2183 [Detail Setting]

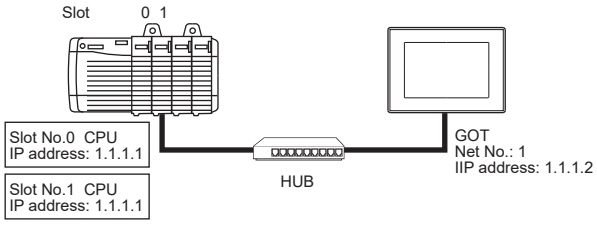
*2 The same IP address cannot be set for the same port number.
To set a duplicate IP address, set different port numbers.

■[Connected Ethernet Controller Setting] for a multiple CPU system

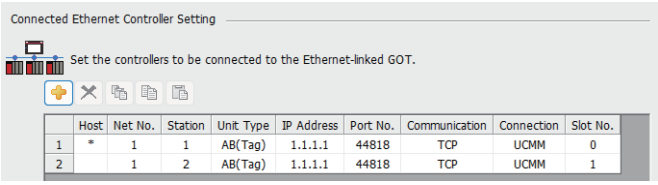
Monitoring in the multiple CPU system is possible by setting a different [Slot No.] for one module with the same IP address in [Connected Ethernet Controller Setting].

The following shows [Connected Ethernet Controller Setting] for configuring a system.

- System configuration example



- Example: Settings in [Connected Ethernet Controller Setting]



	Host	Net No.	Station	Unit Type	IP Address	Port No.	Communication	Connection	Slot No.
1	*	1	1	AB(Tag)	1.1.1.1	44818	TCP	UCMM	0
2		1	2	AB(Tag)	1.1.1.1	44818	TCP	UCMM	1

In the above settings, the GOT monitors the CPU as follows.

When [Net No.] is set to 1 and [Station No.] is set to 1 for an object, the GOT monitors the CPU whose slot number is 0.

When [Net No.] is set to 1 and [Station No.] is set to 2 for an object, the GOT monitors the CPU whose slot number is 1.

43.6.4 PLC side settings

Configure the settings for the ALLEN-BRADLEY PLC.

For details on ALLEN-BRADLEY PLCs, refer to the following manuals.

📖Manuals of ALLEN-BRADLEY PLC
☞ Page 2185 Parameter settings
☞ Page 2185 Rotary switch setting

Parameter settings

Set the following parameters with the software package manufactured by the Allen-Bradley.

Item	Setting details	Remarks
Name	Name of the parameter settings	—
IP Address	IP address of the connected module	For the IP address, make the same setting as that of each module set on GT Designer3. Do not set the same IP address as those of the GOT and controller on the Ethernet network. For the address setting on GT Designer3, refer to the following. ☞ Page 2184 [Connected Ethernet Controller Setting]
Slot	Slot number for installing the EtherNet/IP communication module	The EtherNet/IP communication module cannot be connected to the slot [0]. Set the slot number to [1] or later.

Precautions

Do not use 0 and 255 at the end of an IP address.

(Numbers of *.*.*.0 and *.*.*.255 are used by the system)

The GOT may not monitor the controller correctly with the above numbers.

Consult with the administrator of the network before setting an IP address to the controller.

Rotary switch setting

The following EtherNet/IP communication modules have rotary switches to set the IP address.

- 1756-EN2T
- 1756-EN2TR
- 1756-EN3TR
- 1756-EN2TSC

The EtherNet/IP communication module has three rotary switches named X, Y, and Z.

The following shows the procedure to set IP address using the rotary switches X, Y, and Z.

Rotary switch setting value	Description
1 to 254	The fourth octet of the IP address is the value set by the rotary switches. The network address part is fixed to [192.168.1.***]. Set the IP address of EtherNet/IP communication module according to the GOT settings. ☞ Page 2184 [Connected Ethernet Controller Setting]
	• Rotary switch setting example If the switches are set to X=0, Y=3, Z=1, IP address of EtherNet/IP communication module will be [192.168.1.31].
888	The setting value that resets the EtherNet/IP communication module to its default setting. When the setting value is [888], the EtherNet/IP communication module cannot be connected with the GOT.
Other than the above	To set the IP address with a peripheral tool, set the values other than 1 to 254, or 888 for the rotary switches.

For details on the rotary switches, refer to the following manual.

📖Manual of EtherNet/IP communication module to be used

44 Settable device range

This chapter describes the range of devices settable in GT Designer3.
The settable range varies with the selection for [Controller Type] in the [Controller Setting] window.
Configure the device setting according to the specifications of the controller to be used.
Device specifications differ depending on the controller model even among the controllers of the same series.
If a nonexistent device or a device number out of the range is set for an object, other objects for which correct devices are set may not be monitored.

☞ Page 2186 ALLEN-BRADLEY equipment ([AB MicroLogix])
☞ Page 2192 ALLEN-BRADLEY equipment ([AB Control/CompactLogix])
☞ Page 2196 ALLEN-BRADLEY equipment ([AB Control/CompactLogix(Tag)])

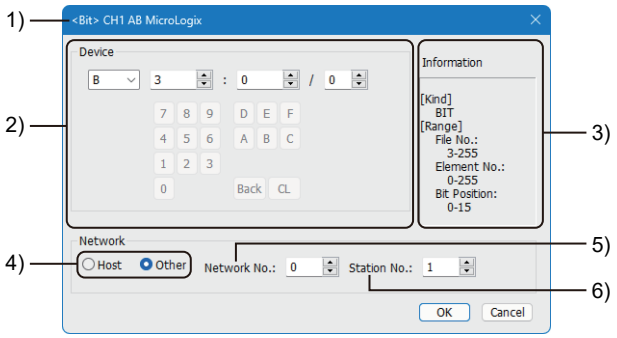
44.1 ALLEN-BRADLEY equipment ([AB MicroLogix])

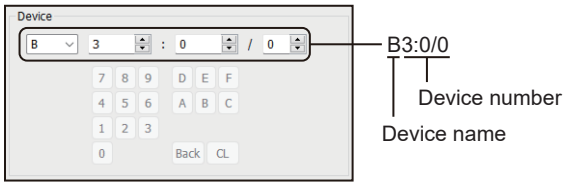
GT37 SoftGOT3000

Item	Reference
Device setting dialog	☞ Page 2187 Device setting dialog ([AB MicroLogix])
Specifications of bit devices	☞ Page 2188 Monitoring-supported bit devices ([AB MicroLogix])
	☞ Page 2189 Availability of writing/reading data to/from bit devices ([AB MicroLogix])
Specifications of word devices	☞ Page 2189 Monitoring-supported word devices ([AB MicroLogix])
	☞ Page 2190 Availability of writing/reading data to/from word devices ([AB MicroLogix])
Specifications of double-word devices	☞ Page 2191 Monitoring-supported double-word devices ([AB MicroLogix])
	☞ Page 2191 Availability of writing/reading data to/from double-word devices ([AB MicroLogix])

44.1.1 Device setting dialog ([AB MicroLogix])

Set a device to be monitored.



Item		Description
1)	Title	Data type and channel number of the device to be set
2)	[Device]	Set the device name and device number. If a bit number needs to be specified, the setting item is displayed. Example) Setting of B3:0/0 
3)	[Information]	Displays the setting range of each setting item according to the selected device.
4)	Station type specification	Select the station type (host or other) for the controller to be monitored.
5)	[Network No.]	This item appears when [Other] is selected for the station type. Set the network number.
6)	[Station No.]	This item appears when [Other] is selected for the station type. Specify a station number.

44.1.2 Monitoring-supported bit devices ([AB MicroLogix])

The following table shows monitoring-supported bit devices.

To check whether writing/reading data to/from each device is available, refer to the following.

☞ Page 2189 Availability of writing/reading data to/from bit devices ([AB MicroLogix])

For the formats of devices, refer to the following.

📖GT Designer3 (GOT3000) Screen Design Manual

The GOT reads the value from a device and then write a value to the device.

Do not change the device value with a sequence program until the GOT completes writing a value to the device.

○: Available

×: Not available

Device name		Device No. representation	Setting range	Specifications of EG devices*1	
				Assignment to EG devices	Access using a client
I	Input	Decimal	I:(Slot No.).(Element No.)/(Bit position) Notation example: I:16.7/0 • Slot No. (decimal): 0 to 16 • Element No. (decimal): 0 to 7 • Bit position (decimal): 0 to 15	○	○
O	Output	Decimal	O:(Slot No.).(Element No.)/(Bit position) Notation example: O:16.7/0 • Slot No. (decimal): 0 to 16 • Element No. (decimal): 0 to 7 • Bit position (decimal): 0 to 15	○	○
B	Bit	Decimal	B(File No.):(Element No.)/(Bit position) Notation example: B3:255/0 • File No. (decimal): 3 to 255 • Element No. (decimal): 0 to 255 • Bit position (decimal): 0 to 15	○	○
T	Timer (completion bit)	Decimal	T(File No.):(Element No.)/13(DN) Notation example: T3:255/13(DN) • File No. (decimal): 3 to 255 • Element No. (decimal): 0 to 255	○	×
	Timer (timing bit)		T(File No.):(Element No.)/14(TT) Notation example: T3:255/14(TT) • File No. (decimal): 3 to 255 • Element No. (decimal): 0 to 255		
C	Counter (completion bit)	Decimal	C(File No.):(Element No.)/13(DN) Notation example: C3:255/13(DN) • File No. (decimal): 3 to 255 • Element No. (decimal): 0 to 255	○	×
	Counter (down counter)		C(File No.):(Element No.)/14(CD) Notation example: C3:255/14(CD) • File No. (decimal): 3 to 255 • Element No. (decimal): 0 to 255		
	Counter (up counter)		C(File No.):(Element No.)/15(CU) Notation example: C3:255/15(CU) • File No. (decimal): 3 to 255 • Element No. (decimal): 0 to 255		

*1 For the devices assigned to EG devices (gateway devices) and the compatible clients, refer to the following.
📖GT Designer3 (GOT3000) Screen Design Manual

44.1.3 Availability of writing/reading data to/from bit devices ([AB MicroLogix])

The following shows the availability of writing/reading data to/from bit devices by device type.
When the device type is other than the bit type, set the device No. in multiples of 16.
R/W: Both read and write
R/-: Read only
-/W: Write only
-/-: No read/write access

Device name	Device type				
	Bit	Byte (8 bits)	Word (16 bits)	Double-word (32 bits)	Quad-word (64 bits)
I	R/W	-/-	-/-	-/-	-/-
O	R/W	-/-	-/-	-/-	-/-
B	R/W	-/-	-/-	-/-	-/-
T	R/W	-/-	-/-	-/-	-/-
C	R/W	-/-	-/-	-/-	-/-

44.1.4 Monitoring-supported word devices ([AB MicroLogix])

The following table shows monitoring-supported word devices.
To check whether writing/reading data to/from each device is available, refer to the following.
☞ Page 2190 Availability of writing/reading data to/from word devices ([AB MicroLogix])
For the formats of devices, refer to the following.
📖GT Designer3 (GOT3000) Screen Design Manual
○: Available
×: Not available

Device name		Device No. representation	Setting range	Specifications of EG devices*1	
				Assignment to EG devices	Access using a client
I	Input	Decimal	I:(Slot No.).(Element No.) Notation example: I:16.0 • Slot No. (decimal): 0 to 16 • Element No. (decimal): 0 to 7	○	○
O	Output	Decimal	O:(Slot No.).(Element No.) Notation example: O:16.0 • Slot No. (decimal): 0 to 16 • Element No. (decimal): 0 to 7	○	○
T	Timer (set value)	Decimal	T(File No.):(Element No.).1(PRE) Notation example: T3:255.1(PRE) • File No. (decimal): 3 to 255 • Element No. (decimal): 0 to 255	○	×
	Timer (current value)		T(File No.):(Element No.).2(ACC) Notation example: T3:255.2(ACC) • File No. (decimal): 3 to 255 • Element No. (decimal): 0 to 255		
C	Counter (set value)	Decimal	C(File No.):(Element No.).1(PRE) Notation example: C3:255.1(PRE) • File No. (decimal): 3 to 255 • Element No. (decimal): 0 to 255	○	×
	Counter (current value)		C(File No.):(Element No.).2(ACC) Notation example: C3:255.2(ACC) • File No. (decimal): 3 to 255 • Element No. (decimal): 0 to 255		

Device name		Device No. representation	Setting range	Specifications of EG devices*1	
				Assignment to EG devices	Access using a client
N	Integer	Decimal	N(File No.):(Element No.) Notation example: N7:0 • File No. (decimal): 3 to 255 • Element No. (decimal): 0 to 255	○	○
B	Bit	Decimal	B(File No.):(Element No.) Notation example: B3:0 • File No. (decimal): 3 to 255 • Element No. (decimal): 0 to 255	○	○
S	Status	Decimal	S(File No.):(Device) Notation example: S2:163 • File No. (decimal): 2 • Device (decimal): 0 to 163	○	○

*1 For the devices assigned to EG devices (gateway devices) and the compatible clients, refer to the following.
GT Designer3 (GOT3000) Screen Design Manual

44.1.5 Availability of writing/reading data to/from word devices ([AB MicroLogix])

The following shows the availability of writing/reading data to/from word devices by device type.

R/W: Both read and write

R/-: Read only

-/W: Write only

-/-: No read/write access

Device name	Device type			
	Word (16 bits)	Double-word (32 bits)	Quad-word (64 bits)	Bit of word data*1
I	R/W	R/W	-/-	-/-
O	R/W	R/W	-/-	-/-
T	R/W	R/-	-/-	R/W
C	R/W	R/-	-/-	R/W
N	R/W	R/W	-/-	R/W
B	R/W	R/W	-/-	-/-
S	R/W	R/W	-/-	R/W

*1 The GOT reads the value from a device and then write a value to the device.
Do not change the device value with a sequence program until the GOT completes writing a value to the device.

44.1.6 Monitoring-supported double-word devices ([AB MicroLogix])

The following table shows monitoring-supported double-word devices.

To check whether writing/reading data to/from each device is available, refer to the following.

☞ Page 2191 Availability of writing/reading data to/from double-word devices ([AB MicroLogix])

For the formats of devices, refer to the following.

📖GT Designer3 (GOT3000) Screen Design Manual

○: Available

×: Not available

Device name		Device No. representation	Setting range	Specifications of EG devices*1	
				Assignment to EG devices	Access using a client
L	32bit integer	Decimal	L(File No.):(Element No.) Notation example: L3:0 • File No. (decimal): 3 to 255 • Element No. (decimal): 0 to 255	×	×
F	32bit float	Decimal	F(File No.):(Element No.) Notation example: F3:0 • File No. (decimal): 3 to 255 • Element No. (decimal): 0 to 255	×	×

*1 For the devices assigned to EG devices (gateway devices) and the compatible clients, refer to the following.
📖GT Designer3 (GOT3000) Screen Design Manual

44.1.7 Availability of writing/reading data to/from double-word devices ([AB MicroLogix])

The following shows the availability of writing/reading data to/from double-word devices by device type.

R/W: Both read and write

R/-: Read only

-/W: Write only

-/-: No read/write access

Device name	Device type			
	Word (16 bits)	Double-word (32 bits)	Quad-word (64 bits)	Bit of double-word data
L	-/-	R/W	-/-	-/-
F	-/-	R/W	-/-	-/-

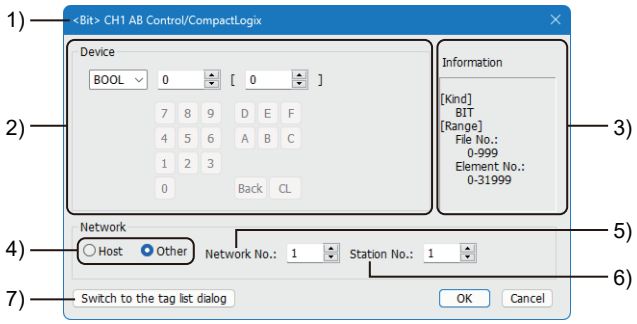
44.2 ALLEN-BRADLEY equipment ([AB Control/CompactLogix])

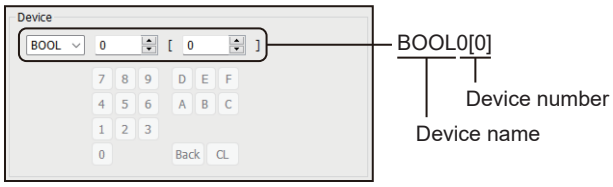
GT37 SoftGOT3000

Item	Reference
Device setting dialog	☞ Page 2192 Device setting dialog ([AB Control/CompactLogix])
Specifications of bit devices	☞ Page 2193 Monitoring-supported bit devices ([AB Control/CompactLogix])
	☞ Page 2193 Availability of writing/reading data to/from bit devices ([AB Control/CompactLogix])
Specifications of word devices	☞ Page 2194 Monitoring-supported word devices ([AB Control/CompactLogix])
	☞ Page 2194 Availability of writing/reading data to/from word devices ([AB Control/CompactLogix])
Specifications of double-word devices	☞ Page 2195 Monitoring-supported double-word devices ([AB Control/CompactLogix])
	☞ Page 2195 Availability of writing/reading data to/from double-word devices ([AB Control/CompactLogix])

44.2.1 Device setting dialog ([AB Control/CompactLogix])

Set a device to be monitored.



Item		Description
1)	Title	Data type and channel number of the device to be set
2)	[Device]	Set the device name and device number. If a bit number needs to be specified, the setting item is displayed. Example) Setting of BOOL0[0] 
3)	[Information]	Displays the setting range of each setting item according to the selected device.
4)	Station type specification	Select the station type (host or other) for the controller to be monitored.
5)	[Network No.]	This item appears when [Other] is selected for the station type. Set the network number.
6)	[Station No.]	This item appears when [Other] is selected for the station type. Specify a station number.
7)	[Switch to the tag list dialog] button	You can open the tag list dialog to check the tags imported to GT Designer3. 📖GT Designer3 (GOT3000) Screen Design Manual

44.2.2 Monitoring-supported bit devices ([AB Control/CompactLogix])

The following table shows monitoring-supported bit devices.

To check whether writing/reading data to/from each device is available, refer to the following.

☞ Page 2193 Availability of writing/reading data to/from bit devices ([AB Control/CompactLogix])

For the formats of devices, refer to the following.

📖GT Designer3 (GOT3000) Screen Design Manual

○: Available

×: Not available

Device name		Device No. representation	Setting range	Specifications of EG devices*1	
				Assignment to EG devices	Access using a client
BOOL	Bit data	Decimal	BOOL(File No.)[(Element No.)] Notation example: BOOL999[0] • File No. (decimal): 0 to 999 • Element No. (decimal): 0 to 31999	○	○

*1 For the devices assigned to EG devices (gateway devices) and the compatible clients, refer to the following.
📖GT Designer3 (GOT3000) Screen Design Manual

44.2.3 Availability of writing/reading data to/from bit devices ([AB Control/CompactLogix])

The following shows the availability of writing/reading data to/from bit devices by device type.

When the device type is other than the bit type, set the device No. in multiples of 16.

R/W: Both read and write

R/-: Read only

-/W: Write only

-/-: No read/write access

Device name	Device type				
	Bit	Byte (8 bits)	Word (16 bits)	Double-word (32 bits)	Quad-word (64 bits)
BOOL	R/W	-/-	-/-	-/-	-/-

44.2.4 Monitoring-supported word devices ([AB Control/CompactLogix])

The following table shows monitoring-supported word devices.

To check whether writing/reading data to/from each device is available, refer to the following.

☞ Page 2194 Availability of writing/reading data to/from word devices ([AB Control/CompactLogix])

For the formats of devices, refer to the following.

📖GT Designer3 (GOT3000) Screen Design Manual

○: Available

×: Not available

Device name		Device No. representation	Setting range	Specifications of EG devices*1	
				Assignment to EG devices	Access using a client
INT	Word data	Decimal	INT(File No.)[(Element No.)] Notation example: INT999[0] • File No. (decimal): 0 to 999 • Element No. (decimal): 0 to 999	○	○

*1 For the devices assigned to EG devices (gateway devices) and the compatible clients, refer to the following.
📖GT Designer3 (GOT3000) Screen Design Manual

44.2.5 Availability of writing/reading data to/from word devices ([AB Control/CompactLogix])

The following shows the availability of writing/reading data to/from word devices by device type.

R/W: Both read and write

R/-: Read only

-/W: Write only

-/-: No read/write access

Device name	Device type			
	Word (16 bits)	Double-word (32 bits)	Quad-word (64 bits)	Bit of word data
INT	R/W	R/W	-/-	R/W

44.2.6 Monitoring-supported double-word devices ([AB Control/CompactLogix])

The following table shows monitoring-supported double-word devices.

To check whether writing/reading data to/from each device is available, refer to the following.

☞ Page 2195 Availability of writing/reading data to/from double-word devices ([AB Control/CompactLogix])

For the formats of devices, refer to the following.

📖GT Designer3 (GOT3000) Screen Design Manual

○: Available

×: Not available

Device name		Device No. representation	Setting range	Specifications of EG devices*1	
				Assignment to EG devices	Access using a client
DINT	Double-word data	Decimal	DINT(File No.)[(Element No.)] Notation example: DINT999[0] • File No. (decimal): 0 to 999 • Element No. (hexadecimal): 0 to 999	×	×
REAL	Floating point data	Decimal	REAL(File No.)[(Element No.)] Notation example: REAL999[0] • File No. (decimal): 0 to 999 • Element No. (hexadecimal): 0 to 999	×	×

*1 For the devices assigned to EG devices (gateway devices) and the compatible clients, refer to the following.
📖GT Designer3 (GOT3000) Screen Design Manual

44.2.7 Availability of writing/reading data to/from double-word devices ([AB Control/CompactLogix])

The following shows the availability of writing/reading data to/from double-word devices by device type.

R/W: Both read and write

R/-: Read only

-/W: Write only

-/-: No read/write access

Device name	Device type			
	Word (16 bits)	Double-word (32 bits)	Quad-word (64 bits)	Bit of double-word data
DINT	-/-	R/W	-/-	-/-
REAL	-/-	R/W	-/-	-/-

44.3 ALLEN-BRADLEY equipment ([AB Control/CompactLogix(Tag)])

GT37 SoftGOT3000

Item	Reference
Device setting dialog	☞ Page 2196 Device setting dialog ([AB Control/CompactLogix(Tag)])
Device specifications	☞ Page 2196 Monitoring-supported devices ([AB Control/CompactLogix(Tag)])

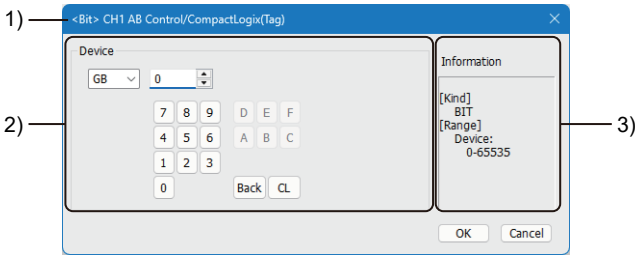
44.3.1 Device setting dialog ([AB Control/CompactLogix(Tag)])

Set a device to be monitored.

In the device setting dialog, only GOT internal devices are settable.

For how to set AB native tags, refer to the following.

📖GT Designer3 (GOT3000) Screen Design Manual



Item		Description
1)	Title	Data type and channel number of the device to be set
2)	[Device]	Set the device name and device number. If a bit number needs to be specified, the setting item is displayed.
3)	[Information]	Displays the setting range of each setting item according to the selected device.

44.3.2 Monitoring-supported devices ([AB Control/CompactLogix(Tag)])

When this communication driver is used, the AB native tags are usable in the device setting.

For details on usable AB native tags, refer to the following.

📖GT Designer3 (GOT3000) Screen Design Manual

PART 16 LS ELECTRIC equipment

45 PLC (Ethernet connection)

46 Settable device range

45 PLC (Ethernet connection)

☞ Page 2198 Connectable devices
☞ Page 2199 System configuration
☞ Page 2203 GOT side settings
☞ Page 2207 PLC side settings

45.1 Connectable devices

The following table shows the connectable models.

○: Supported, —: Not supported

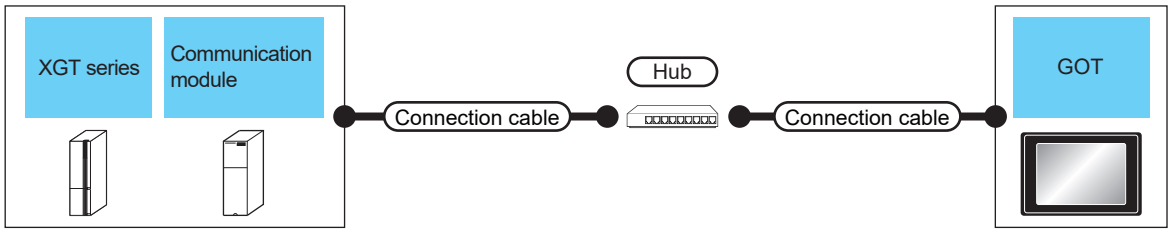
Controller		Model	Clock	PLC side interface		Connectable model
				Communication module*1	Built-in Ethernet port of PLC	
XGT series	XGK	XGK-CPUU XGK-CPUH XGK-CPUA XGK-CPUS XGK-CPUE	○	XGL-EFMT(B)	—	GT37 SoftGOT3000
		XGK-CPUUN XGK-CPUHN XGK-CPUSN	○	XGL-EFMT(B)	○	GT37 SoftGOT3000

*1 Product manufactured by LS ELECTRIC.
For details on the product, contact LS ELECTRIC.

45.2 System configuration

☞ Page 2199 Connection to communication module
☞ Page 2201 Connection to the built-in Ethernet port of PLC

45.2.1 Connection to communication module



For details on the connection cables and the maximum segment length, refer to the following.

☞ Page 2199 Connection cable
☞ Page 2200 Maximum segment length

For details on the maximum number of connected devices, refer to the following.

☞ Page 2200 Maximum number of connected devices

Controller	Communication module	Connection cable	GOT	
			Interface	Model
XGK-CPUU XGK-CPUH XGK-CPUA XGK-CPUS XGK-CPUE XGK-CPUUN XGK-CPUHN XGK-CPUSN	*1	Twisted pair cable	Built-in Ethernet interface of GOT	GT37 SoftGOT3000
			Ethernet interface of personal computer	GT37 SoftGOT3000

*1 For the connectable communication modules, refer to the following.
☞ Page 2198 Connectable devices

Connection cable

Use a connection cable that meets the following standards.

Standard	Category
10BASE-T	Shielded twisted pair cable (STP) or unshielded twisted pair cable (UTP) of category 3 or higher
100BASE-TX	Shielded twisted pair cable (STP) or unshielded twisted pair cable (UTP) of category 5 or higher
1000BASE-T	Shielded twisted pair cable (STP) or unshielded twisted pair cable (UTP) of category 5e or higher

The destination device connected with the twisted pair cable varies with the configuration of the Ethernet network system used.

Connect the cable to the Ethernet module, hub, or other system equipment corresponding to the applicable Ethernet network system.

Use cables, connectors, and hubs that meet the IEEE802.3 10BASE-T/100BASE-TX/1000BASE-T standards.

When only one GOT is connected, the GOT can be directly connected to the device without a hub.

Maximum segment length

The maximum segment length (length between a hub and a node) is 100 m.
The maximum length depends on the Ethernet equipment used.
The following shows the number of connectable hubs when a repeater hub is used.

- 10BASE-T: Up to 4 for a cascade connection (within 500 m)
- 100BASE-TX: Up to 2 for a cascade connection (within 205 m)
- 1000BASE-T: The number differs depending on the hub to be used.

When switching hubs are used, there is no theoretical limit to the number of cascade connections between switching hubs.
For the limit, contact the switching hub manufacturer.

Precautions

When multiple network devices (including GOTs) are connected in the same segment, the network load increases and the transmission speed between the GOT and PLC may be reduced.
The following actions may improve the communication performance.

- Use a switching hub compatible with 1000BASE-T (1 Gbps) or more.
- Reduce the number of devices monitored by the GOT.

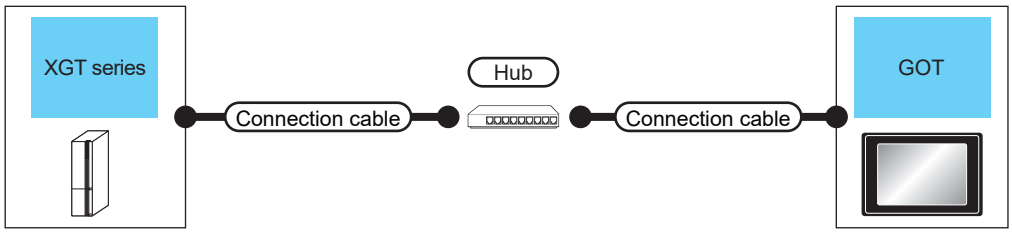
Maximum number of connected devices

Up to 128 CPU modules can be connected to channels No. 1 to No. 4 of one GOT. (16 or less recommended)
The following shows the number of connectable controllers per GOT channel and the number of GOTs connectable to one controller.

Controller		GOT	
Model	**Number of GOTs connectable to one PLC*1**	**Model**	**Number of connectable controllers per GOT channel**
XGK-CPUU XGK-CPUH XGK-CPUA XGK-CPUS XGK-CPUE XGK-CPUUN XGK-CPUHN XGK-CPUSN	16 (UDP and TCP in total)	GT37 SoftGOT3000	63 (UDP and TCP in total)

*1 Set the number of connected GOTs in the engineering software for the PLC.
☞ Page 2207 PLC side settings

45.2.2 Connection to the built-in Ethernet port of PLC



For details on the connection cables and the maximum segment length, refer to the following.

☞ Page 2201 Connection cable
☞ Page 2202 Maximum segment length

For details on the maximum number of connected devices, refer to the following.

☞ Page 2202 Maximum number of connected devices

Controller	Connection cable	GOT	
		Interface	Model
XGK-CPUUN XGK-CPUHN XGK-CPUSN	Twisted pair cable	Built-in Ethernet interface of GOT	GT37 SoftGOT3000
		Ethernet interface of personal computer	GT37 SoftGOT3000

Connection cable

Use a connection cable that meets the following standards.

Standard	Category
10BASE-T	Shielded twisted pair cable (STP) or unshielded twisted pair cable (UTP) of category 3 or higher
100BASE-TX	Shielded twisted pair cable (STP) or unshielded twisted pair cable (UTP) of category 5 or higher
1000BASE-T	Shielded twisted pair cable (STP) or unshielded twisted pair cable (UTP) of category 5e or higher

The destination device connected with the twisted pair cable varies with the configuration of the Ethernet network system used.

Connect the cable to the Ethernet module, hub, or other system equipment corresponding to the applicable Ethernet network system.

Use cables, connectors, and hubs that meet the IEEE802.3 10BASE-T/100BASE-TX/1000BASE-T standards.

When only one GOT is connected, the GOT can be directly connected to the device without a hub.

Maximum segment length

The maximum segment length (length between a hub and a node) is 100 m.
The maximum length depends on the Ethernet equipment used.
The following shows the number of connectable hubs when a repeater hub is used.

- 10BASE-T: Up to 4 for a cascade connection (within 500 m)
- 100BASE-TX: Up to 2 for a cascade connection (within 205 m)
- 1000BASE-T: The number differs depending on the hub to be used.

When switching hubs are used, there is no theoretical limit to the number of cascade connections between switching hubs.
For the limit, contact the switching hub manufacturer.

Precautions

When multiple network devices (including GOTs) are connected in the same segment, the network load increases and the transmission speed between the GOT and PLC may be reduced.
The following actions may improve the communication performance.

- Use a switching hub compatible with 1000BASE-T (1 Gbps) or more.
- Reduce the number of devices monitored by the GOT.

Maximum number of connected devices

Up to 128 CPU modules can be connected to channels No. 1 to No. 4 of one GOT. (16 or less recommended)
The following shows the number of connectable controllers per GOT channel and the number of GOTs connectable to one controller.

Controller		GOT	
Model	**Number of GOTs connectable to one PLC*1**	**Model**	**Number of connectable controllers per GOT channel**
XGK-CPUUN XGK-CPUHN XGK-CPUSN	4	GT37 SoftGOT3000	63

*1 Set the number of connected GOTs in the engineering software for the PLC.
☞ Page 2207 PLC side settings

45.3 GOT side settings

☞ Page 2203 [GOT Ethernet Setting]
☞ Page 2204 [Controller Setting]

45.3.1 [GOT Ethernet Setting]

Set the GOT Ethernet interface in GT Designer3.

Item	Description
[GOT IP Address Setting]	Set the IP address of the GOT.
[GOT Ethernet Common Setting]	Set the default gateway and other common items for GOT Ethernet interfaces.
[IP filter Setting]	The GOT allows or blocks access from IP addresses specified in the filtering list.

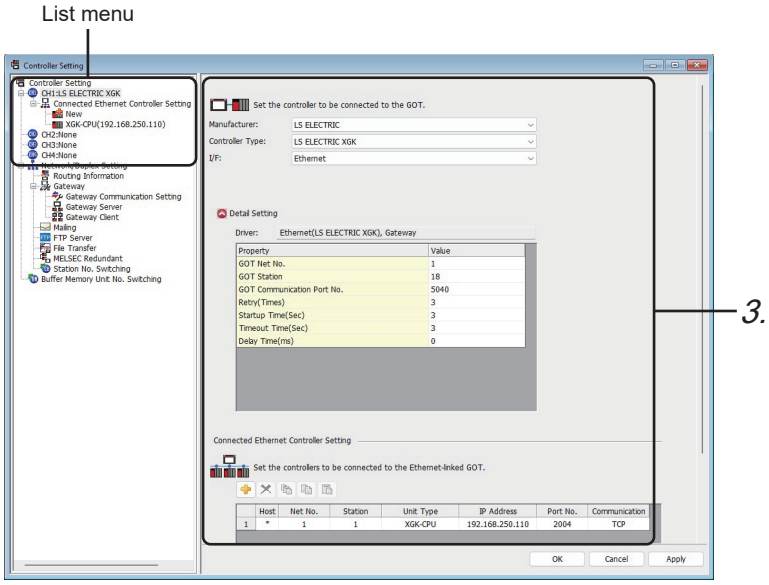
For details on the setting, refer to the following.
📖GT Designer3 (GOT3000) Screen Design Manual
Set the GT SoftGOT3000 Ethernet interface on the personal computer.

Precautions

Do not use 0 and 255 at the end of an IP address.
(Numbers of *.*.*.0 and *.*.*.255 are used by the system)
The GOT may not monitor the controller correctly with the above numbers.
Consult with the administrator of the network before setting an IP address to the GOT.

45.3.2 [Controller Setting]

Set the channel of the connected controller.



Operating procedure

1. Select [Common] → [Controller Setting] from the menu.

2. In the [Controller Setting] window, select the channel number to be used from the list menu.

3. Set the following items.

Item	Description
[Manufacturer]	[LS ELECTRIC]
[Controller Type]	[LS ELECTRIC XGK]
[I/F]	[Ethernet]
[Detail Setting]	Configure the settings according to the usage environment. ☞ Page 2205 [Detail Setting]
[Connected Ethernet Controller Setting]	Configure the settings according to the controller to be connected. ☞ Page 2206 [Connected Ethernet Controller Setting]

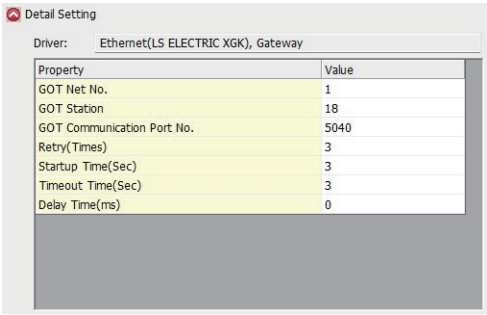
4. When you have completed the settings, click the [OK] button.

Point

The controller settings can be checked in [I/F Communication Setting].
For details, refer to the following.
📖GT Designer3 (GOT3000) Screen Design Manual

[Detail Setting]

Configure the settings according to the usage environment.



Item	Description	Range
[Driver]	This item appears when communication drivers are selectable according to the settings of [Controller Type] and [I/F].	[Ethernet(LS ELECTRIC XGK), Gateway]
[GOT Net No.]	Set the network number of the GOT.	[1] to [239]
[GOT Station]*1	Set the station number of the GOT.	[1] to [64]
[GOT Communication Port No.]	Set the GOT port number for the connection with the Ethernet equipment.	[1024] to [5010], [5014] to [49152], [49171] to [65534]
[Retry]	Set the number of retries to be performed when a communication timeout occurs. When receiving no response after retries, the communication times out.	[0] times to [5] times
[Startup Time]	Set the time period from the GOT startup until the start of communication with the PLC CPU.	[3] seconds to [255] seconds
[Timeout Time]	Set a communication timeout period.	[1] second to [90] seconds
[Delay Time]	Set the delay time for reducing the load of the network and destination PLC.	[0] ms to [10000] ms

*1 Set values not set for [Station] in [Connected Ethernet Controller Setting].
☞ Page 2206 [Connected Ethernet Controller Setting]

Point

• Controller settings using the GT37 utility

The controller settings can be changed in [Communication Settings] of the GT37 utility after writing [Communication Settings] of project data to GT37.

For details on the GT37 utility, refer to the following manual.

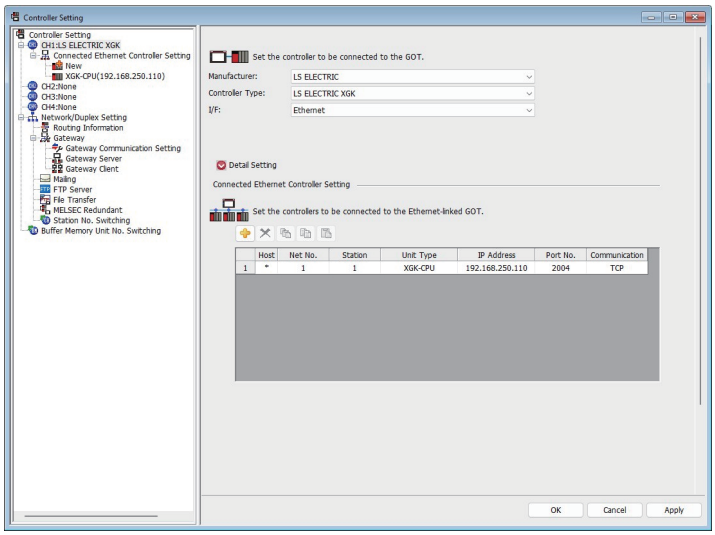
📖GOT3000 Series User's Manual (Utility & Maintenance Functions)

• Priority of the settings in [Controller Setting]

When the settings are configured in GT Designer3 or in the GT37 utility, the latest settings are effective.

[Connected Ethernet Controller Setting]

Set the controller to be connected to the GOT by Ethernet.



Item	Description	Range
[Host]	The host is displayed. It refers to a station that can be connected without setting a station number. The host is indicated with an asterisk (*).	—
[Net No.]	Set the network number of the connected Ethernet equipment.	[1] to [239]
[Station]*1	Set the station number of the connected Ethernet equipment.	[1] to [64]
[Unit Type]	Select the model of the connected Ethernet equipment.	☞ Page 2206 [Unit Type]
[IP Address]	Set the IP address of the connected Ethernet equipment.	[0.0.0.0] to [255.255.255.255]
[Port No.]	Set the port number of the connected Ethernet equipment.	☞ Page 2206 [Port No.], [Communication]
[Communication]	Set the communication format of the connected Ethernet equipment.	

*1 Set values not set for [GOT Station] in [Detail Setting].
☞ Page 2205 [Controller Setting]

*2 The setting range depends on the selection for [Unit Type].

■[Unit Type]

Select an item for [Unit Type] as shown below.

GOT connection destination	[Unit Type]
Communication module	[XGL-EFMT]
PLC	[XGK-CPU]

■[Port No.], [Communication]

The following shows the setting range.

[Unit Type]	[Port No.]	[Communication]
[XGL-EFMT]	[2004]	[TCP]
	[2005]	[UDP]
[XGK-CPU]	[2004]	[TCP]

45.4 PLC side settings

Configure the settings for the LS ELECTRIC PLC.
For details on LS ELECTRIC PLCs, refer to the following manual.
📖Manual of LS ELECTRIC PLC
Configure the settings in the XGT series engineering software.
☞ Page 2207 Settings for connection to the communication module
☞ Page 2207 Settings for connection to the built-in Ethernet port of PLC

45.4.1 Settings for connection to the communication module

Item	Setting details
IP address	IP address of the communication module*1
Number of dedicated connections	Set the number of GOTs connected to the communication module.
Sever mode	Select XGT Server.

*1 Adjust the settings with the GOT settings.
☞ Page 2206 [Connected Ethernet Controller Setting]

45.4.2 Settings for connection to the built-in Ethernet port of PLC

Item	Setting details
IP address	PLC side IP address*1
Number of dedicated connections	Set the number of GOTs connected to the PLC.
Driver	Select XGT Server.

*1 Adjust the settings with the GOT settings.
☞ Page 2206 [Connected Ethernet Controller Setting]

46 Settable device range

This chapter describes the range of devices settable in GT Designer3.
The settable range varies with the selection for [Controller Type] in the [Controller Setting] window.
Configure the device setting according to the specifications of the controller to be used.
Device specifications differ depending on the controller model even among the controllers of the same series.
If a nonexistent device or a device number out of the range is set for an object, other objects for which correct devices are set may not be monitored.
☞ Page 2208 LS ELECTRIC equipment ([LS ELECTRIC XGK])

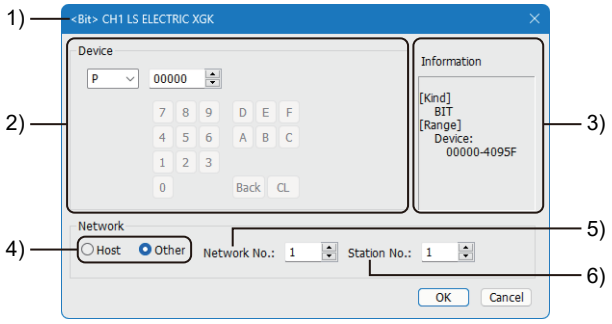
46.1 LS ELECTRIC equipment ([LS ELECTRIC XGK])

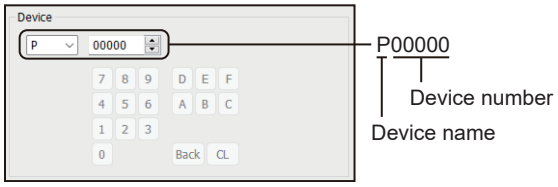
GT37 SoftGOT3000

Item	Reference
Device setting dialog	☞ Page 2208 Device setting dialog ([LS ELECTRIC XGK])
Specifications of bit devices	☞ Page 2209 Monitoring-supported bit devices ([LS ELECTRIC XGK])
	☞ Page 2210 Availability of writing/reading data to/from bit devices ([LS ELECTRIC XGK])
Specifications of word devices	☞ Page 2211 Monitoring-supported word devices ([LS ELECTRIC XGK])
	☞ Page 2211 Availability of writing/reading data to/from word devices ([LS ELECTRIC XGK])

46.1.1 Device setting dialog ([LS ELECTRIC XGK])

Set a device to be monitored.



Item		Description
1)	Title	Data type and channel number of the device to be set
2)	[Device]	Set the device name and device number. If a bit number needs to be specified, the setting item is displayed. Example) Setting of P00000 
3)	[Information]	Displays the setting range of each setting item according to the selected device.
4)	Station type specification	Select the station type (host or other) for the controller to be monitored.
5)	[Network No.]	This item appears when [Other] is selected for the station type. Set the network number.
6)	[Station No.]	This item appears when [Other] is selected for the station type. Specify a station number.

46.1.2 Monitoring-supported bit devices ([LS ELECTRIC XGK])

The following table shows monitoring-supported bit devices.

To check whether writing/reading data to/from each device is available, refer to the following.

☞ Page 2210 Availability of writing/reading data to/from bit devices ([LS ELECTRIC XGK])

For the formats of devices, refer to the following.

📖GT Designer3 (GOT3000) Screen Design Manual

○: Available

×: Not available

Device name		Device No. representation	Setting range	Specifications of EG devices*1	
				Assignment to EG devices	Access using a client
P	I/O Relay	Decimal + hexadecimal	P(Device)(Bit No.) Notation example: P40950 The last digit represents a bit address. • Device (decimal): 0 to 4095 • Bit No. (hexadecimal): 0 to F	○	○
L	Link relay	Decimal + hexadecimal	L(Device)(Bit No.) Notation example: L112630 The last digit represents a bit address. • Device (decimal): 0 to 11263 • Bit No. (hexadecimal): 0 to F	○	○
M	Auxiliary relay	Decimal + hexadecimal	M(Device)(Bit No.) Notation example: M40950 The last digit represents a bit address. • Device (decimal): 0 to 4095 • Bit No. (hexadecimal): 0 to F	○	○
K	Keep Relay	Decimal + hexadecimal	K(Device)(Bit No.) Notation example: K40950 The last digit represents a bit address. • Device (decimal): 0 to 4095 • Bit No. (hexadecimal): 0 to F	○	○
T	Timer	Decimal	0000 to 8191	○	○ (Not usable as word data)
C	Counter	Decimal	0000 to 4095	○	○ (Not usable as word data)
F	Special relay	Decimal + hexadecimal	F(Device)(Bit No.) Notation example: F40950 The last digit represents a bit address. • Device (decimal): 0 to 4095 • Bit No. (hexadecimal): 0 to F	○	○

*1 For the devices assigned to EG devices (gateway devices) and the compatible clients, refer to the following.
📖GT Designer3 (GOT3000) Screen Design Manual

46.1.3 Availability of writing/reading data to/from bit devices ([LS ELECTRIC XGK])

The following shows the availability of writing/reading data to/from bit devices by device type.

When the device type is other than the bit type, set the device No. in multiples of 16.

R/W: Both read and write

R/-: Read only

-/W: Write only

-/-: No read/write access

Device name	Device type				
	Bit	Byte (8 bits)	Word (16 bits)	Double-word (32 bits)	Quad-word (64 bits)
P	R/W	-/-	R/W	-/-	-/-
L	R/W	-/-	R/W	-/-	-/-
M	R/W	-/-	R/W	-/-	-/-
K	R/W	-/-	R/W	-/-	-/-
T	R/W	-/-	-/-	-/-	-/-
C	R/W	-/-	-/-	-/-	-/-
F*1	R/W	-/-	R/W	-/-	-/-

*1 Data cannot be written to F00000 to F1023F.

46.1.4 Monitoring-supported word devices ([LS ELECTRIC XGK])

The following table shows monitoring-supported word devices.

To check whether writing/reading data to/from each device is available, refer to the following.

☞ Page 2211 Availability of writing/reading data to/from word devices ([LS ELECTRIC XGK])

For the formats of devices, refer to the following.

📖GT Designer3 (GOT3000) Screen Design Manual

○: Available

×: Not available

Device name		Device No. representation	Setting range	Specifications of EG devices*1	
				Assignment to EG devices	Access using a client
D	Data register	Decimal	000000 to 524287	○	○
R	File register	Decimal	00000 to 32767	○	○
ZR	File register	Decimal	000000 to 524287	○	○
U*2	Analog Data Register	Hexadecimal + decimal	U(BaseNo.)(SlotNo.).(Special module No.) Notation example: U7F.00 • BaseNo. (hexadecimal): 0 to 7 • SlotNo. (hexadecimal): 0 to F • Special module No. (decimal): 00 to 31	○	○
N	Comm. Data Register	Decimal	00000 to 21503	○	○
Z	Index register	Decimal	000 to 255	○	○
T	Timer current value	Decimal	0000 to 8191	○	○ (Not usable as bit data)
C	Counter current value	Decimal	0000 to 4095	○	○ (Not usable as bit data)

*1 For the devices assigned to EG devices (gateway devices) and the compatible clients, refer to the following.
📖GT Designer3 (GOT3000) Screen Design Manual

*2 When the device type is the double-word (32 bits) type, set an even number for the special module number only.

46.1.5 Availability of writing/reading data to/from word devices ([LS ELECTRIC XGK])

The following shows the availability of writing/reading data to/from word devices by device type.

R/W: Both read and write

R/-: Read only

-/W: Write only

-/-: No read/write access

Device name	Device type			
	Word (16 bits)	Double-word (32 bits)	Quad-word (64 bits)	Bit of word data
D	R/W	R/W	-/-	R/W
R	R/W	R/W	-/-	R/W
ZR	R/W	R/W	-/-	R/W
U	R/W	R/W	-/-	R/W
N	R/W	R/W	-/-	R/W
Z	R/W	R/W	-/-	R/W
T	R/W	R/W	-/-	-/-
C	R/W	R/W	-/-	-/-

PART 17 SIEMENS equipment

47 PLC (Ethernet connection)

48 Settable device range

47 PLC (Ethernet connection)

☞ Page 2213 Connectable devices
☞ Page 2214 System configuration
☞ Page 2218 GOT side settings
☞ Page 2222 PLC side settings

47.1 Connectable devices

The following table shows the connectable models.
○: Supported, —: Not supported

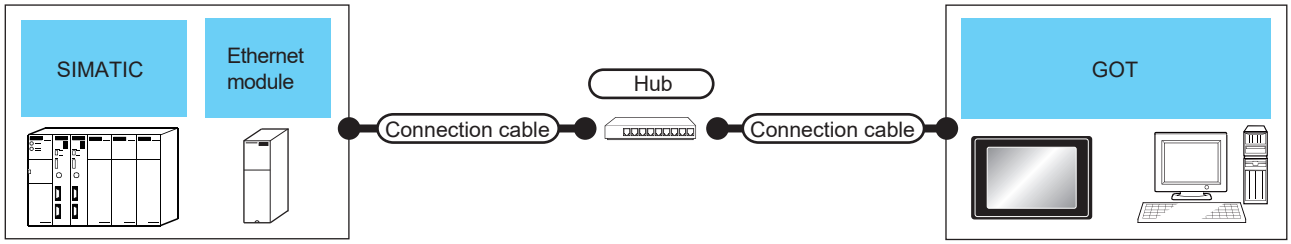
Controller	Clock	PLC side interface		Connectable model
		Ethernet module*1	Built-in PROFINET interface of PLC	
SIMATIC S7-200	—	CP 243-1*2 CP 243-1 IT*2	—	GT37 SoftGOT3000
SIMATIC S7-200 SMART	○	—	○	GT37 SoftGOT3000
SIMATIC S7-300	○	CP 343-1 CP 343-1 Lean CP 343-1 Advanced-IT	○	GT37 SoftGOT3000
SIMATIC S7-400	○	CP 443-1 CP 443-1 Advanced-IT	○	GT37 SoftGOT3000
SIMATIC S7-1200	—	—	○	GT37 SoftGOT3000
SIMATIC S7-1500	—	—	○	GT37 SoftGOT3000

*1 Product manufactured by Siemens AG.
For details on this product, contact Siemens AG.
*2 Use a CPU with version Release 1.20 or later.

47.2 System configuration

☞ Page 2214 Connection to Ethernet module
☞ Page 2216 Connecting to the built-in PROFINET interface of PLC

47.2.1 Connection to Ethernet module



For details on the connection cables and the maximum segment length, refer to the following.

☞ Page 2214 Connection cable
☞ Page 2215 Maximum segment length

For details on the maximum number of connected devices, refer to the following.

☞ Page 2215 Maximum number of connected devices

Controller	Ethernet module	Connection cable	GOT	
			Interface	Model
SIMATIC S7-200 SIMATIC S7-300 SIMATIC S7-400	*1	Twisted pair cable	Built-in Ethernet interface of GOT	GT37 SoftGOT3000
			Ethernet interface of personal computer	GT37 SoftGOT3000

*1 For the connectable Ethernet modules, refer to the following.
☞ Page 2213 Connectable devices

Connection cable

Use a connection cable that meets the following standards.

Standard	Category
10BASE-T	Shielded twisted pair cable (STP) or unshielded twisted pair cable (UTP) of category 3 or higher
100BASE-TX	Shielded twisted pair cable (STP) or unshielded twisted pair cable (UTP) of category 5 or higher
1000BASE-T	Shielded twisted pair cable (STP) or unshielded twisted pair cable (UTP) of category 5e or higher

The destination device connected with the twisted pair cable varies with the configuration of the Ethernet network system used.

Connect the cable to the Ethernet module, hub, transceiver or other system equipment according to the Ethernet network system used.

Use cables, connectors, and hubs that meet the IEEE802.3 10BASE-T/100BASE-TX/1000BASE-T standards.

To connect the controller and hub, use a cable according to the configuration of the controller.

Maximum segment length

The maximum segment length (length between a hub and a node) is 100 m.
The maximum length depends on the Ethernet equipment used.
The following shows the number of connectable hubs when a repeater hub is used.

- 10BASE-T: Up to 4 for a cascade connection (within 500 m)
- 100BASE-TX: Up to 2 for a cascade connection (within 205 m)
- 1000BASE-T: The number differs depending on the hub to be used.

When switching hubs are used, there is no theoretical limit to the number of cascade connections between switching hubs.
For the limit, contact the switching hub manufacturer.

Precautions

When multiple network devices (including GOTs) are connected in the same segment, the network load increases and the transmission speed between the GOT and PLC may be reduced.
The following actions may improve the communication performance.

- Use a switching hub compatible with 1000BASE-T (1 Gbps) or more.
- Reduce the number of devices monitored by the GOT.

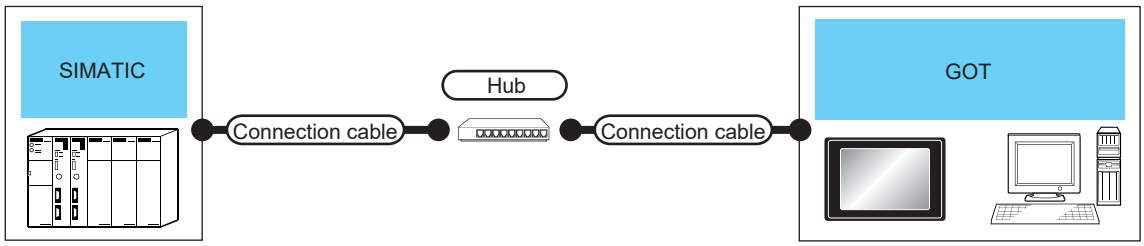
Maximum number of connected devices

Up to 128 CPU modules can be connected to channels No. 1 to No. 4 of one GOT. (16 or less recommended)
The following shows the number of connectable controllers per GOT channel and the number of GOTs connectable to one controller.

Controller		GOT	
Model	**Number of GOTs connectable to one PLC**	**Model**	**Number of connectable controllers per GOT channel**
SIMATIC S7-200 SIMATIC S7-300 SIMATIC S7-400	Depending on the PLC to be used*1 (32 recommended)	GT37 SoftGOT3000	128

*1 For details, refer to the manual of the PLC to be used.

47.2.2 Connecting to the built-in PROFINET interface of PLC



For details on the connection cables and the maximum segment length, refer to the following.

☞ Page 2216 Connection cable
☞ Page 2217 Maximum segment length

For details on the maximum number of connected devices, refer to the following.

☞ Page 2217 Maximum number of connected devices

Controller	Connection cable	GOT	
		Interface	Model
SIMATIC S7-200 SMART SIMATIC S7-300 SIMATIC S7-400 SIMATIC S7-1200 SIMATIC S7-1500	Twisted pair cable	Built-in Ethernet interface of GOT	GT37 SoftGOT3000
		Ethernet interface of personal computer	GT37 SoftGOT3000

Connection cable

Use a connection cable that meets the following standards.

Standard	Category
10BASE-T	Shielded twisted pair cable (STP) or unshielded twisted pair cable (UTP) of category 3 or higher
100BASE-TX	Shielded twisted pair cable (STP) or unshielded twisted pair cable (UTP) of category 5 or higher
1000BASE-T	Shielded twisted pair cable (STP) or unshielded twisted pair cable (UTP) of category 5e or higher

The destination device connected with the twisted pair cable varies with the configuration of the Ethernet network system used.

Connect the cable to the Ethernet module, hub, transceiver or other system equipment according to the Ethernet network system used.

Use cables, connectors, and hubs that meet the IEEE802.3 10BASE-T/100BASE-TX/1000BASE-T standards.

To connect the controller and hub, use a cable according to the configuration of the controller.

Maximum segment length

The maximum segment length (length between a hub and a node) is 100 m.
The maximum length depends on the Ethernet equipment used.
The following shows the number of connectable hubs when a repeater hub is used.

- 10BASE-T: Up to 4 for a cascade connection (within 500 m)
- 100BASE-TX: Up to 2 for a cascade connection (within 205 m)
- 1000BASE-T: The number differs depending on the hub to be used.

When switching hubs are used, there is no theoretical limit to the number of cascade connections between switching hubs.
For the limit, contact the switching hub manufacturer.

Precautions

When multiple network devices (including GOTs) are connected in the same segment, the network load increases and the transmission speed between the GOT and PLC may be reduced.
The following actions may improve the communication performance.

- Use a switching hub compatible with 1000BASE-T (1 Gbps) or more.
- Reduce the number of devices monitored by the GOT.

Maximum number of connected devices

Up to 128 CPU modules can be connected to channels No. 1 to No. 4 of one GOT. (16 or less recommended)
The following shows the number of connectable controllers per GOT channel and the number of GOTs connectable to one controller.

Controller		GOT	
Model	**Number of GOTs connectable to one PLC**	**Model**	**Number of connectable controllers per GOT channel**
SIMATIC S7-200 SMART SIMATIC S7-300 SIMATIC S7-400 SIMATIC S7-1200 SIMATIC S7-1500	Depending on the PLC to be used*1 (32 recommended)	GT37 SoftGOT3000	128

*1 For details, refer to the manual of the PLC to be used.

47.3 GOT side settings

☞ Page 2218 [GOT Ethernet Setting]
☞ Page 2219 [Controller Setting]

47.3.1 [GOT Ethernet Setting]

Set the GOT Ethernet interface in GT Designer3.

Item	Description
[GOT IP Address Setting]	Set the IP address of the GOT.
[GOT Ethernet Common Setting]	Set the default gateway and other common items for GOT Ethernet interfaces.
[IP filter Setting]	The GOT allows or blocks access from IP addresses specified in the filtering list.

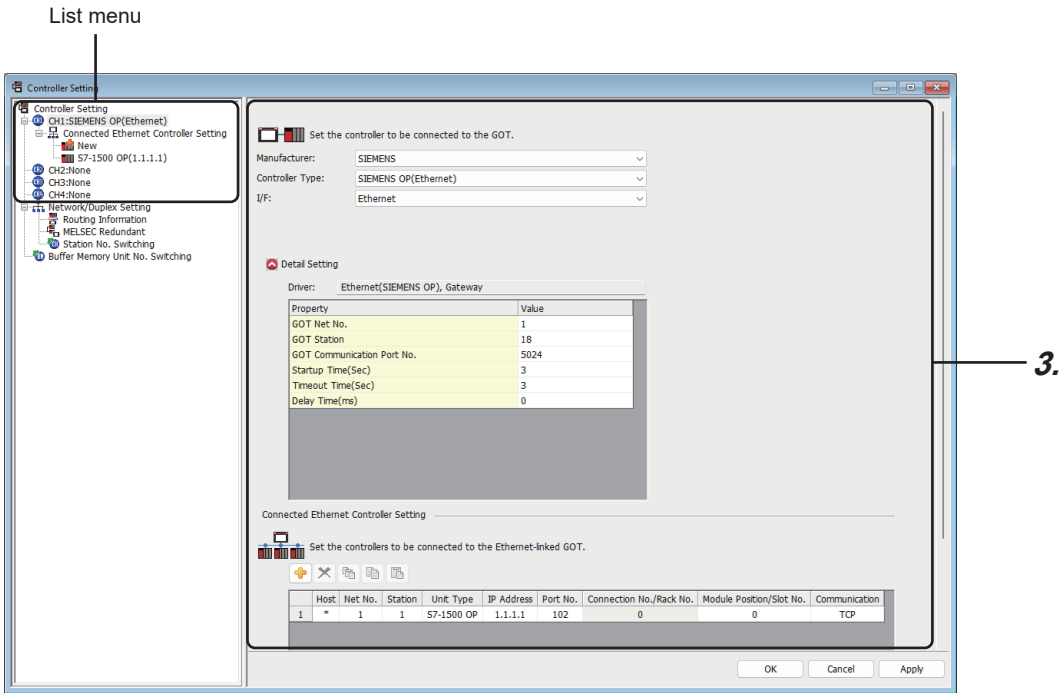
For details on the setting, refer to the following.
📖GT Designer3 (GOT3000) Screen Design Manual
Set the GT SoftGOT3000 Ethernet interface on the personal computer.

Precautions

Do not use 0 and 255 at the end of an IP address.
(Numbers of *.*.*.0 and *.*.*.255 are used by the system.)
The GOT may not monitor the controller correctly with the above numbers.
Consult with the administrator of the network before setting an IP address to the GOT.

47.3.2 [Controller Setting]

Set the channel of the connected controller.



Operating procedure

1. Select [Common] → [Controller Setting] from the menu.

2. In the [Controller Setting] window, select the channel number to be used from the list menu.

3. Set the following items.

Item	Description
[Manufacturer]	[SIEMENS]
[Controller Type]	[SIEMENS OP(Ethernet)]
[I/F]	[Ethernet]
[Detail Setting]	Configure the settings according to the usage environment. ☞ Page 2220 [Detail Setting]
[Connected Ethernet Controller Setting]	Configure the settings according to the controller to be connected. ☞ Page 2221 [Connected Ethernet Controller Setting]

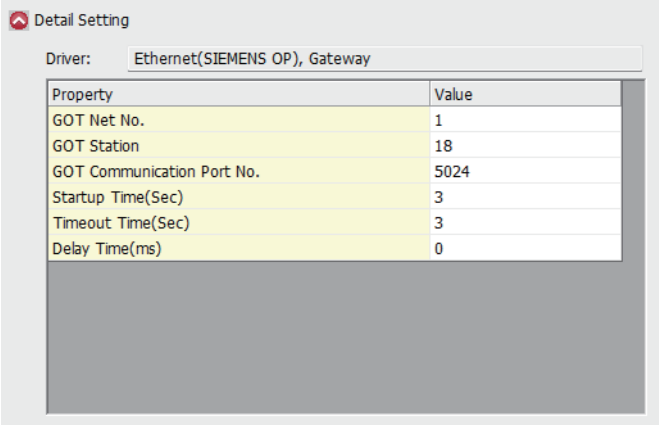
4. When you have completed the settings, click the [OK] button.

Point

The controller settings can be checked in [I/F Communication Setting].
For details, refer to the following.
📖GT Designer3 (GOT3000) Screen Design Manual

[Detail Setting]

Configure the settings according to the usage environment.



Item	Description	Range
[Driver]	This item appears when communication drivers are selectable according to the settings of [Controller Type] and [I/F].	[Ethernet(SIEMENS OP), Gateway]
[GOT Net No.]	Set the network number of the GOT.	[1] to [239]
[GOT Station]*1*2	Set the station number of the GOT.	[1] to [254]
[GOT Communication Port No.]	Set the GOT port number for the connection with the Ethernet equipment.	[1024] to [5010], [5014] to [49152], [49171] to [65534]
[Startup Time]*3	Specify the time period from the GOT startup until GOT starts the communication with the PLC CPU.	[3] seconds to [255] seconds
[Timeout Time]*4	Set the time period for a communication to time out.	[1] second to [90] seconds
[Delay Time]	Set the delay time for reducing the load of the network and destination PLC.	[0] ms to [10000] ms

*1 Set values not set for [Station] in [Connected Ethernet Controller Setting].
☞ Page 2221 [Connected Ethernet Controller Setting]
*2 When connecting multiple GOTs in the Ethernet network, set a different value for [GOT Station] for each GOT.
*3 After the PLC starts up, start the GOT communication.
When the GOT starts communication before the PLC starts up, a communication timeout occurs.
*4 If a time-out occurs with the initial communication by monitoring a nonexistent or turned-off station, the time-out can delay the communication with the normally operating station.

Point

• Controller settings using the GT37 utility

The controller settings can be changed in [Communication Settings] of the GT37 utility after writing [Communication Settings] of project data to GT37.

For details on the GT37 utility, refer to the following manual.

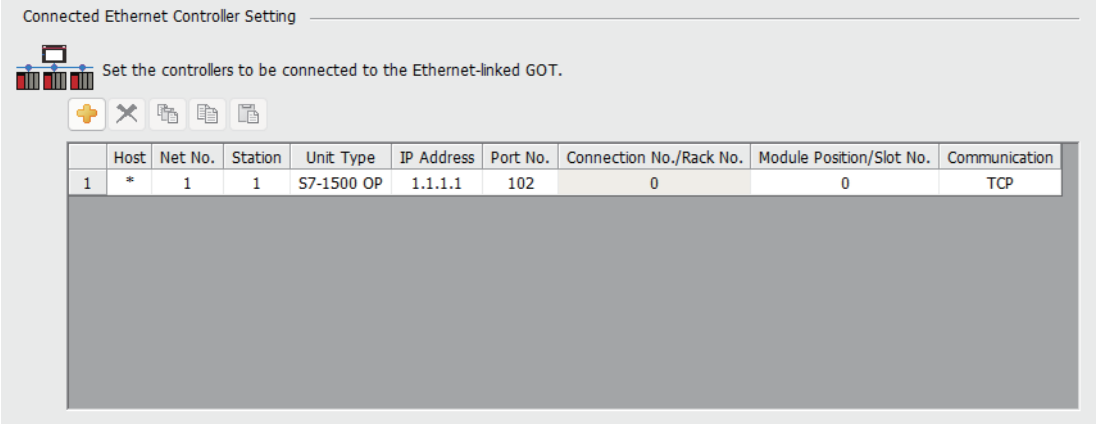
📖GOT3000 Series User's Manual (Utility & Maintenance Functions)

• Precedence in the controller settings

When the settings are configured in GT Designer3 or in the GT37 utility, the latest settings are effective.

[Connected Ethernet Controller Setting]

Set the controller to be connected to the GOT by Ethernet.



Item	Description	Range
[Host]	The host is displayed. It refers to a station that can be connected without setting a station number. The host is indicated with an asterisk (*).	—
[Net No.]	Set the network number of the connected Ethernet equipment.	[1] to [239]
[Station]*1	Set the station number of the connected Ethernet equipment.	[1] to [254]
[Unit Type]	Select the model of the connected Ethernet equipment.	[S7-1500 OP] [S7-200 OP] [S7-200 SMART OP] [S7-300/400 OP] [S7-1200 OP]
[IP Address]	Set the IP address of the connected Ethernet equipment.	[0.0.0.0] to [255.255.255.255]
[Port No.]	Set the port number of the connected Ethernet equipment.	[102]
[Connection No./Rack No.]	Set the connection No. and rack No. set on the PLC side.	S7-1500 OP: [0] S7-200 OP: [0] to [7] S7-200 SMART OP: [0] S7-300/400 OP: [0] to [7] S7-1200 OP: [0]
[Module Position/Slot No.]	Set the module position and slot No. set on the PLC side.	S7-1500 OP: [0] to [31] S7-200 OP: [0] to [6] S7-200 SMART OP: [1] S7-300/400 OP: [0] to [31] S7-1200 OP: [1]
[Communication]	Set the communication format of the connected Ethernet equipment.	[TCP]

*1 Set values not set for [GOT Station] in [Detail Setting].
☞ Page 2220 [Detail Setting]

47.4 PLC side settings

Configure the settings for the SIEMENS PLC.
For details on SIEMENS PLCs, refer to the following manuals.
📖Manuals of SIEMENS PLC

Point

To monitor a device, permit the access to the device in the PLC side settings.
For details on SIEMENS PLCs, refer to the following manuals.
📖Manuals of SIEMENS PLC

47.4.1 Parameter settings

Set the following parameters with the SIEMENS software package.

S7-200

Set the following parameters.

Item	Setting details	
Module Position	Value in [Position] of the Ethernet module	
Module Address	IP Address	PLC side IP address
	Subnet mask	PLC side subnet mask
Number of connections to configure for this module	Set 1 as the number of connected GOT.	
This is a Server connection: Servers respond to connection request from remote clients.	Mark the check box.	
Local Properties (Server)	Select [Accept all connection requests.].	
Remote Properties (Client)	Set 10.00 in [TSAP].	
Enable the Keep Alive function for this connection.	Unmark the check box.	

S7-200 SMART

Set the following parameters.

Item	Setting details	
Ethernet addresses	IP Address	PLC side IP address
	Subnet mask	PLC side subnet mask

S7-300/400

Set the following parameters.

■When using the Ethernet module

Item	Setting details	
Properties	IP Address	PLC side IP address
	Subnet mask	PLC side subnet mask

■When using the built-in Ethernet port

Item	Setting details	
Device name	Set [PN-IO]	
Properties	IP Address	PLC side IP address
	Subnet mask	PLC side subnet mask

S7-1200

Set the following parameters.

Item	Setting details	
Ethernet addresses	IP Address	PLC side IP address
	Subnet mask	PLC side subnet mask

S7-1500

Set the following parameters.

Item	Setting details	
Ethernet addresses	IP Address	PLC side IP address
	Subnet mask	PLC side subnet mask

Precautions

Do not use 0 and 255 at the end of an IP address.
(Numbers of *.*.*.0 and *.*.*.255 are used by the system.)
The GOT may not monitor the controller correctly with the above numbers.
Consult with the administrator of the network before setting an IP address to the controller.

48 Settable device range

This chapter describes the range of devices settable in GT Designer3.
The settable range varies with the selection for [Controller Type] in the [Controller Setting] window.
Configure the device setting according to the specifications of the controller to be used.
Device specifications differ depending on the controller model even among the controllers of the same series.
If a nonexistent device or a device number out of the range is set for an object, other objects for which correct devices are set may not be monitored.
☞ Page 2225 SIEMENS equipment ([SIEMENS OP(Ethernet)])

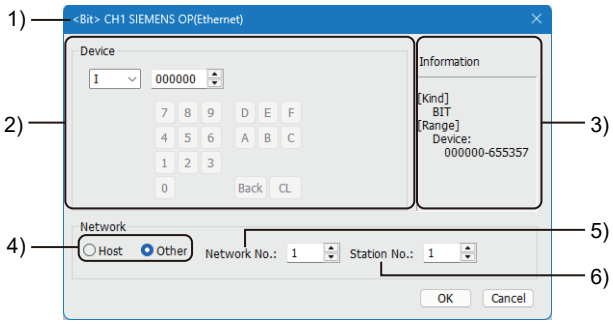
48.1 SIEMENS equipment ([SIEMENS OP(Ethernet)])

GT37 SoftGOT3000

Item	Reference
Device setting dialog	☞ Page 2225 Device setting dialog ([SIEMENS OP(Ethernet)])
Specifications of bit devices	☞ Page 2226 Monitoring-supported bit devices ([SIEMENS OP(Ethernet)])
	☞ Page 2227 Availability of writing/reading data to/from bit devices ([SIEMENS OP(Ethernet)])
Specifications of byte devices	☞ Page 2227 Monitoring-supported byte devices ([SIEMENS OP(Ethernet)])
	☞ Page 2228 Availability of writing/reading data to/from byte devices ([SIEMENS OP(Ethernet)])
Specifications of word devices	☞ Page 2228 Monitoring-supported word devices ([SIEMENS OP(Ethernet)])
	☞ Page 2229 Availability of writing/reading data to/from word devices ([SIEMENS OP(Ethernet)])
Specifications of double-word devices	☞ Page 2230 Monitoring-supported double-word devices ([SIEMENS OP(Ethernet)])
	☞ Page 2230 Availability of writing/reading data to/from double-word devices ([SIEMENS OP(Ethernet)])
Offset specifications	☞ Page 2231 Offset specifications ([SIEMENS OP(Ethernet)])
Notation of devices	☞ Page 2232 Notation of devices

48.1.1 Device setting dialog ([SIEMENS OP(Ethernet)])

Set a device to be monitored.



Item		Description
1)	Title	Data type and channel number of the device to be set
2)	[Device]	Set the device name and device number. If a bit number needs to be specified, the setting item is displayed. Example) Setting of I000000
3)	[Information]	Displays the setting range of each setting item according to the selected device.
4)	Station type specification	Select the station type (host or other) for the controller to be monitored. • [Host]: The controller set for [Host Address] of the [Controller Setting] window is monitored. • [Other]: The controller having the specified station number is monitored.
5)	[Network No.]	This item appears when [Other] is selected for the station type. Set the network number.
6)	[Station No.]	This item appears when [Other] is selected for the station type. Specify a station number.

48.1.2 Monitoring-supported bit devices ([SIEMENS OP(Ethernet)])

The following table shows monitoring-supported bit devices.

To check whether writing/reading data to/from each device is available, refer to the following.

☞ Page 2227 Availability of writing/reading data to/from bit devices ([SIEMENS OP(Ethernet)])

For the formats of devices, refer to the following.

📖GT Designer3 (GOT3000) Screen Design Manual

The notation of device setting is different between the SIEMENS PLC peripheral software and GOT.

For the notation of devices, refer to the following.

☞ Page 2232 Notation of devices

○: Available

×: Not available

Device name		Device No. representation	Setting range	Specifications of EG devices*1	
				Assignment to EG devices	Access using a client
I	Input relay	Decimal + octal	I(Byte address)(Bit address) Notation example: I655350 • Byte address (decimal): 00000 to 65535 • Bit address (octal): 0 to 7	○	○ (Not usable as word data)
Q*2	Output relay	Decimal + octal	Q(Byte address)(Bit address) Notation example: Q655350 • Byte address (decimal): 00000 to 65535 • Bit address (octal): 0 to 7	○	○ (Not usable as word data)
V	Variable memory	Decimal + octal	V(Byte address)(Bit address) Notation example: V204790 • Byte address (decimal): 00000 to 20479 • Bit address (octal): 0 to 7	○	○ (Not usable as word data)
M	Bit memory	Decimal + octal	M(Byte address)(Bit address) Notation example: M655350 • Byte address (decimal): 00000 to 65535 • Bit address (octal): 0 to 7	○	○ (Not usable as word data)
S	Sequence control relay	Decimal + octal	S(Byte address)(Bit address) Notation example: S310 • Byte address (decimal): 00 to 31 • Bit address (octal): 0 to 7	○	○
T	Timer	Decimal	0 to 255	○	×
C	Counter	Decimal	0 to 255	○	×
SM	Special memory	Decimal + octal	SM(Byte address)(Bit address) Notation example: SM20470 • Byte address (decimal): 0000 to 2047 • Bit address (octal): 0 to 7	○	○ (Not usable as word data)

*1 For the devices assigned to EG devices (gateway devices) and the compatible clients, refer to the following.
📖GT Designer3 (GOT3000) Screen Design Manual

*2 Writing is possible only while the programmable controller is running.

48.1.3 Availability of writing/reading data to/from bit devices ([SIEMENS OP(Ethernet)])

The following shows the availability of writing/reading data to/from bit devices by device type.

When the device type is other than the bit type, set the device No. in multiples of 16.

R/W: Both read and write

R/-: Read only

-/W: Write only

-/-: No read/write access

Device name	Device type				
	Bit	Byte (8 bits)	Word (16 bits)	Double-word (32 bits)	Quad-word (64 bits)
I*1	R/W	-/-	-/-	-/-	-/-
Q*1	R/W	-/-	-/-	-/-	-/-
V*1	R/W	-/-	-/-	-/-	-/-
M*1	R/W	-/-	-/-	-/-	-/-
S*1	R/W	-/-	-/-	-/-	-/-
T	R/-	-/-	-/-	-/-	-/-
C	R/-	-/-	-/-	-/-	-/-
SM*1	R/W	-/-	-/-	-/-	-/-

*1 To use the device as word data, use the word device that has the same device name appended with "W".
Example) Use IW for I.

48.1.4 Monitoring-supported byte devices ([SIEMENS OP(Ethernet)])

The following table shows monitoring-supported byte devices.

To check whether writing/reading data to/from each device is available, refer to the following.

☞ Page 2228 Availability of writing/reading data to/from byte devices ([SIEMENS OP(Ethernet)])

For the formats of devices, refer to the following.

📖GT Designer3 (GOT3000) Screen Design Manual

○: Available

×: Not available

Device name		Device No. representation	Setting range	Specifications of EG devices*1	
				Assignment to EG devices	Access using a client
IB	Input relay	Decimal	0 to 65535	×	×
QB	Output relay	Decimal	0 to 65535	×	×
MB	Bit memory	Decimal	0 to 65535	×	×

*1 For the devices assigned to EG devices (gateway devices) and the compatible clients, refer to the following.
📖GT Designer3 (GOT3000) Screen Design Manual

48.1.5 Availability of writing/reading data to/from byte devices ([SIEMENS OP(Ethernet)])

The following shows whether writing/reading data to/from byte devices is available by device type.

R/W: Both read and write

R/-: Read only

-/W: Write only

-/-: No read/write access

Device name	Device type				
	Byte (8 bits)	Word (16 bits)	Double-word (32 bits)	Quad-word (64 bits)	Bit of byte data
IB	R/W	-/-	-/-	-/-	-/-
QB	R/W	-/-	-/-	-/-	-/-
MB	R/W	-/-	-/-	-/-	-/-

48.1.6 Monitoring-supported word devices ([SIEMENS OP(Ethernet)])

The following table shows monitoring-supported word devices.

To check whether writing/reading data to/from each device is available, refer to the following.

☞ Page 2229 Availability of writing/reading data to/from word devices ([SIEMENS OP(Ethernet)])

For the formats of devices, refer to the following.

📖GT Designer3 (GOT3000) Screen Design Manual

○: Available

×: Not available

Device name		Device No. representation	Setting range	Specifications of EG devices*1	
				Assignment to EG devices	Access using a client
T*2	Timer	Decimal	0 to 65535	○	○ (Not usable as bit data)
C	Counter	Decimal	0 to 65535	○	○ (Not usable as bit data)
DB*3*4*5	Data register	Decimal	DB(Data block No.).DBW(Device) Notation example: DB65535.DBW0 • Data block No. (decimal): 1 to 65535 • Device (Data word No.) (decimal): 0 to 65534 (Set an even number.)	○	○
VW*5	Variable memory	Decimal	0 to 20478	○	○ (Not usable as bit data)
IW*5	Input relay	Decimal	0 to 65534	○	○ (Not usable as bit data)
QW*5*6	Output relay	Decimal	0 to 65534	○	○ (Not usable as bit data)
MW*5	Bit memory	Decimal	0 to 65534	○	○ (Not usable as bit data)
AIW*5	Analog input	Decimal	0 to 110	○	×
AQW*5*6	Analog output	Decimal	0 to 110	○	○ (Not usable as bit data)

Device name		Device No. representation	Setting range	Specifications of EG devices*1	
				Assignment to EG devices	Access using a client
SMW*5	Special memory	Decimal	0 to 2046	○	○ (Not usable as bit data)
SW*5	Sequence control relay	Decimal	0 to 30	○	○ (Not usable as bit data)

*1 For the devices assigned to EG devices (gateway devices) and the compatible clients, refer to the following.
GT Designer3 (GOT3000) Screen Design Manual
*2 Only one device can be set as the write destination.
Do not set this device as the write destination for a function to write data to consecutive devices such as the recipe function.
*3 It is necessary to define the data block using a peripheral software or sequence program, before using this device.
*4 Continuous access across data blocks is not possible.
*5 When the device type is the word (16 bits) type, set an even number for the device number.
When the device type is the double-word (32 bits) type, set the device number in multiples of 4.
*6 Writing is possible only while the programmable controller is running.

48.1.7 Availability of writing/reading data to/from word devices ([SIEMENS OP(Ethernet)])

The following shows the availability of writing/reading data to/from word devices by device type.

R/W: Both read and write

R/-: Read only

-/W: Write only

-/-: No read/write access

Device name	Device type			
	Word (16 bits)	Double-word (32 bits)	Quad-word (64 bits)	Bit of word data
T	R/W	R/W	-/-	-/-
C	R/W	R/W	-/-	-/-
DB	R/W	R/W	-/-	R/W
VW*1	R/W	R/W	-/-	-/-
IW*1	R/W	R/W	-/-	-/-
QW*1	R/W	R/W	-/-	-/-
MW*1	R/W	R/W	-/-	-/-
AIW	R/-	R/-	-/-	-/-
AQW	R/W	R/W	-/-	-/-
SMW*1	R/W	R/W	-/-	-/-
SW*1	R/W	R/W	-/-	-/-

*1 To use the device as bit data, use the bit device that has the same device name without "W".
Example) Use I for IW.

48.1.8 Monitoring-supported double-word devices ([SIEMENS OP(Ethernet)])

The following table shows monitoring-supported double-word devices.

To check whether writing/reading data to/from each device is available, refer to the following.

☞ Page 2230 Availability of writing/reading data to/from double-word devices ([SIEMENS OP(Ethernet)])

For the formats of devices, refer to the following.

📖GT Designer3 (GOT3000) Screen Design Manual

○: Available

×: Not available

Device name		Device No. representation	Setting range	Specifications of EG devices*1	
				Assignment to EG devices	Access using a client
ID	Input relay	Decimal	0 to 65532 (Set the number in multiples of 4.)	×	×
QD	Output relay	Decimal	0 to 65532 (Set the number in multiples of 4.)	×	×
MD	Bit memory	Decimal	0 to 65532 (Set the number in multiples of 4.)	×	×
HC	High-speed counter	Decimal	0 to 3	×	×

*1 For the devices assigned to EG devices (gateway devices) and the compatible clients, refer to the following.
📖GT Designer3 (GOT3000) Screen Design Manual

48.1.9 Availability of writing/reading data to/from double-word devices ([SIEMENS OP(Ethernet)])

The following shows the availability of writing/reading data to/from double-word devices by device type.

R/W: Both read and write

R/-: Read only

-/W: Write only

-/-: No read/write access

Device name	Device type			
	Word (16 bits)	Double-word (32 bits)	Quad-word (64 bits)	Bit of double-word data
ID	-/-	R/W	-/-	-/-
QD	-/-	R/W	-/-	-/-
MD	-/-	R/W	-/-	-/-
HC	-/-	R/-	-/-	-/-

48.1.10 Offset specifications ([SIEMENS OP(Ethernet)])

The following shows the offset specifications of each device when using the offset function.

For the notation and range of devices, refer to the following.

☞ Page 2226 Monitoring-supported bit devices ([SIEMENS OP(Ethernet)])
☞ Page 2227 Monitoring-supported byte devices ([SIEMENS OP(Ethernet)])
☞ Page 2228 Monitoring-supported word devices ([SIEMENS OP(Ethernet)])
☞ Page 2230 Monitoring-supported double-word devices ([SIEMENS OP(Ethernet)])

Device		Offset specifications
Bit device	I	When the bit address is increased by 8 bits, the byte address is increased by 1 byte. Example) Offset for I000000 When offset value is 10, I000012 is monitored.
	Q	
	V	
	M	
	S	
	SM	
	T	Example) Offset for T0 When offset value is 10, T10 is monitored.
	C	
Byte device	IB	Example) Offset for IB0 When offset value is 10, IB10 is monitored.
	QB	
	MB	
Word device	T	Example) Offset for T0 When offset value is 10, T10 is monitored.
	C	
	DB	The offset target is device number (data word number). When a bit is specified, the bit is not supported for the bit number offset.
		Example) Offset for DB1.DBW0 When offset value is 10, DB1.DBW10 is monitored.
	VW	Example) Offset for VW0 When offset value is 10, VW10 is monitored.
	IW	
	QW	
	MW	
	AIW	
	AQW	
	SMW	
	SW	
Double-word device	ID	Example) Offset for ID0 When offset value is 10, ID10 is monitored.
	QD	
	MD	
	HC	Example) Offset for HC0 When offset value is 1, HC1 is monitored.

48.1.11 Notation of devices

The notation of device setting is different between the SIEMENS PLC peripheral software and GOT.

Notation of bit devices

Notation in the GOT	Notation in the PLC
Q0007	Q0.7

Notation of bit-specified data register

Notation in the GOT	Notation in the PLC
DB1.DBW0.b0	DB1.DBX1.0
DB1.DBW0.b1	DB1.DBX1.1
:	:
DB1.DBW0.b7	DB1.DBX1.7
DB1.DBW0.b8	DB1.DBX0.0
:	:
DB1.DBW0.b15	DB1.DBX0.7
DB1.DBW2.b0	DB1.DBX3.0
:	:
DB1.DBW2.b7	DB1.DBX3.7
DB1.DBW2.b8	DB1.DBX2.0
:	:
DB1.DBW2.b15	DB1.DBX2.7
:	:

PART 18 Microcomputer

49 Microcomputer (Ethernet connection)

50 Microcomputer (serial connection)

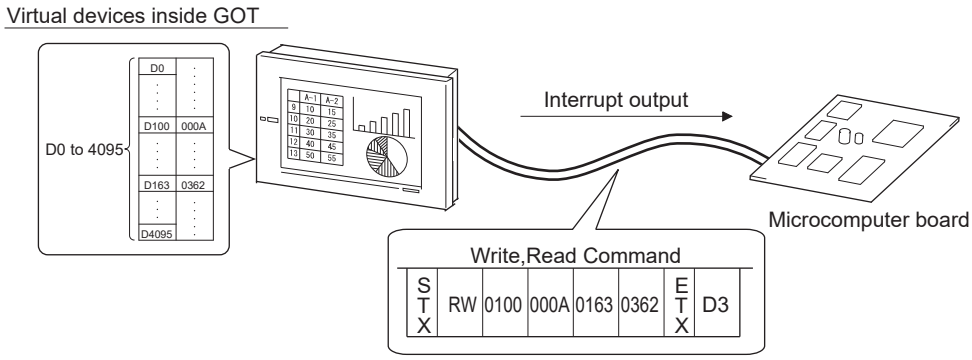
51 Settable device range

49 Microcomputer (Ethernet connection)

☞ Page 2234 Microcomputer connection (Ethernet)
☞ Page 2236 System configuration
☞ Page 2238 Device data area
☞ Page 2252 Message format
☞ Page 2303 GOT side settings

49.1 Microcomputer connection (Ethernet)

The microcomputer connection (Ethernet) is a function by which data can be written or read from a personal computer, microcomputer board, PLC, and others (hereinafter, host) to the virtual devices of the GOT by connecting the host and the GOT by Ethernet.
Interrupt output is also available from the GOT to the host.
The virtual devices in the GOT are used for the microcomputer connection.
PLC devices are not used.
☞ Page 2238 Device data area

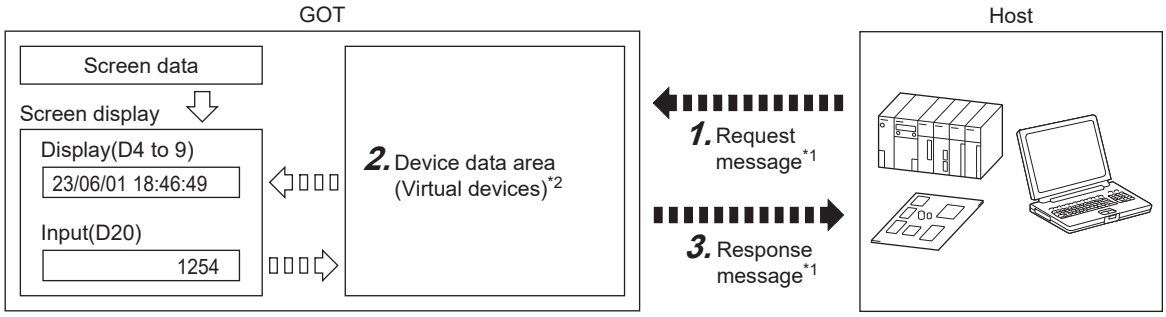


Precautions

The microcomputer connection (Ethernet) does not support the station monitoring function.

49.1.1 Flow of data processing

Reading or writing data



*1 ☞ Page 2252 Message format
*2 ☞ Page 2238 Device data area

Operating procedure

1. The host sends a request message (the read or write command) to the GOT.

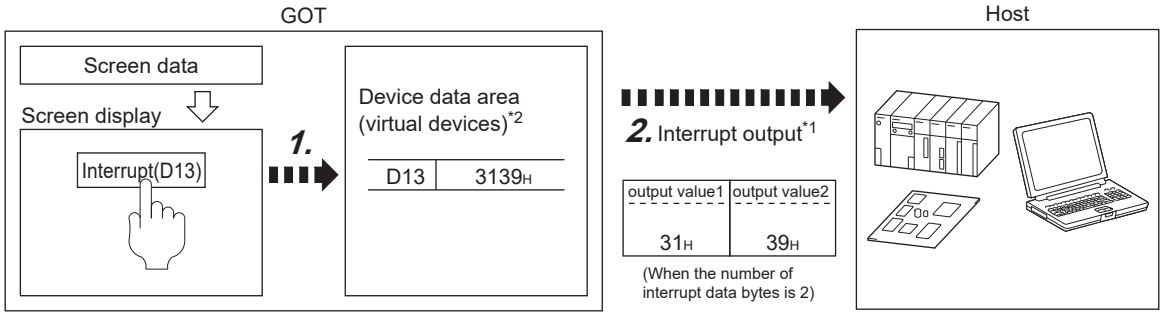
2. The GOT reads or writes data from or to its virtual devices according to the request from the host.

3. When reading or writing is complete, the GOT sends a response message (a read or write result) to the host.

Creating the following objects on the screen allows you to use the data read or written from or to the virtual devices.

- Numerical display object to display the data written by write command execution
- Numerical input object to input data to be uploaded to the host

■When outputting interrupts



*1 ☞ Page 2252 Message format
*2 ☞ Page 2238 Device data area

Operating procedure

1. Data are written to the virtual devices for interrupt output from the touch switches on the GOT.

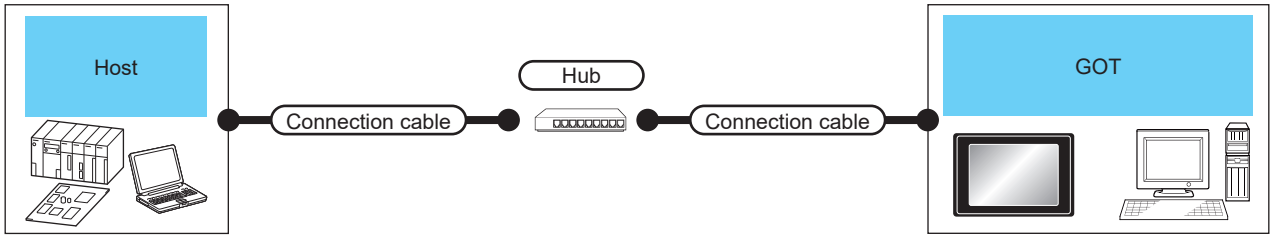
2. The GOT sends the written data (interrupt output) to the host.

Precautions

The interrupt output is available only for the TCP/IP connection.
The interrupt output cannot be executed in the UDP/IP connection.

49.2 System configuration

☞ Page 2236 Connection cable
☞ Page 2237 Maximum segment length
☞ Page 2237 Maximum number of connected devices



For details on the connection cables and the maximum segment length, refer to the following.

☞ Page 2236 Connection cable
☞ Page 2237 Maximum segment length

For details on the maximum number of connected devices, refer to the following.

☞ Page 2237 Maximum number of connected devices

Host	Connection cable	GOT	
Communication type		Interface	Model
Ethernet	Twisted pair cable	Built-in Ethernet interface of GOT	GT37 SoftGOT3000
		Ethernet interface of personal computer	GT37 SoftGOT3000

49.2.1 Connection cable

Use a connection cable that meets the following standards.

Standard	Category
10BASE-T	Shielded twisted pair cable (STP) or unshielded twisted pair cable (UTP) of category 3 or higher
100BASE-TX	Shielded twisted pair cable (STP) or unshielded twisted pair cable (UTP) of category 5 or higher
1000BASE-T	Shielded twisted pair cable (STP) or unshielded twisted pair cable (UTP) of category 5e or higher

The destination device connected with the twisted pair cable varies with the configuration of the Ethernet network system used.

Connect the cable to the Ethernet module, hub, or other system equipment corresponding to the applicable Ethernet network system.

Use cables, connectors, and hubs that meet the IEEE802.3 10BASE-T/100BASE-TX/1000BASE-T standards.

When only one GOT is connected, the GOT can be directly connected to the controller without a hub.

49.2.2 Maximum segment length

The maximum segment length (length between a hub and a node) is 100 m.
The maximum length depends on the Ethernet equipment used.
The following shows the number of connectable hubs when a repeater hub is used.

- 10BASE-T: Up to 4 for a cascade connection (within 500 m)
- 100BASE-TX: Up to 2 for a cascade connection (within 205 m)
- 1000BASE-T: The number differs depending on the hub to be used.

When switching hubs are used, there is no theoretical limit to the number of cascade connections between switching hubs.
For the limit, contact the switching hub manufacturer.

49.2.3 Maximum number of connected devices

Up to 128 CPU modules can be connected to channels No. 1 to No. 4 of one GOT. (16 or less recommended)
The following shows the number of connectable controllers per GOT channel and the number of GOTs connectable to one controller.

Controller		GOT		
Number of GOTs connectable to one host		Model	Number of connectable controllers per GOT channel	
UDP	TCP		UDP	TCP
Unlimited	Unlimited	GT37 SoftGOT3000	Unlimited	1

49.3 Device data area

☞ Page 2240 D devices
☞ Page 2244 R devices
☞ Page 2245 L devices
☞ Page 2246 M devices
☞ Page 2247 SD devices
☞ Page 2250 SM devices

The following shows a list of virtual devices inside the GOT available in the microcomputer connection (Ethernet), and the address specification values for each data format.

The address specification of the virtual devices differs depending on the data format.

Model	Virtual device*1			Address specification value*2				Reference
	Name	Device range (decimal)	Device type	Format 1, 2	Format 3, 4	Format 5	Format 6 to 9	
GT37 SoftGOT3000	D	0 to 4095	Word	0 to 4095	8000H to 9FFFH	0000H to 0FFFH	D0 to D4095	☞ Page 2240 D devices
	R	0 to 4095	Word	4096 to 8191	0000H to 1FFFH	1000H to 1FFFH	R0 to R4095	☞ Page 2244 R devices
	L	0 to 2047	Bit	8192 to 8319	A000H to A0FFH	2000H to 207FH	L0 to L2047	☞ Page 2245 L devices
	M	0 to 2047	Bit	8320 to 8447	2000H to 20FFH	2080H to 20FFH	M0 to M2047	☞ Page 2246 M devices
	SD	0 to 15	Word	8448 to 8463	2100H to 211FH (3000H to 300DH)*3	2100H to 210FH	SD0 to SD15	☞ Page 2247 SD devices
	SM	0 to 63	Bit	8464 to 8467	2200H to 2207H	2110H to 2113H	SM0 to SM63	☞ Page 2250 SM devices

*1 When reusing GOT900 series project data
• GOT-A900 series virtual devices (D0 to D2047)
Can be used as they are without changing the assignments.
• GOT-F900 series virtual devices
Since some of the assigned virtual device values differ as indicated below, change the assignment using device batch edit of GT Designer3.
Refer to the following manual for device batch edit of GT Designer3.
GT Designer3 (GOT3000) Screen Design Manual

*2 For the address specification method for each data format, refer to the following.
Page 2252 Message format
Formats 1, 2: GOT-A900 series microcomputer connection
Formats 3, 4: GOT-F900 series microcomputer connection
Format 5: SCHNEIDER EJH's memory link method
Formats 6, 7: 4E frame
Formats 8, 9: QnA compatible 3E frame

GOT3000 series virtual devices	GOT-F900 series virtual devices
D0 to D2047	—
D2048 to D4095	—
R0 to R4095	D0 to D4095
L0 to L2047	—
M0 to M2047	M0 to M2047
SD0 to SD15	D8000 to D8015 GD0 to GD6
SM0 to SM63	M8000 to M8063

*3 Access to SD3 to SD9 can also be made by the specification of the addresses (3000H to 300DH) of GD0 to GD6 in the GOT-F900 series.

Point

Values of virtual devices inside the GOT
When the GOT is turned off or reset, values are cleared to their defaults
(bit devices: OFF, word devices: 0).
Values are held in the memory when project data are written to the GOT.

49.3.1 D devices

The D devices are word devices into which GOT communication errors, clock data or other information are stored.
The user can also store data using the user area.

List of D devices

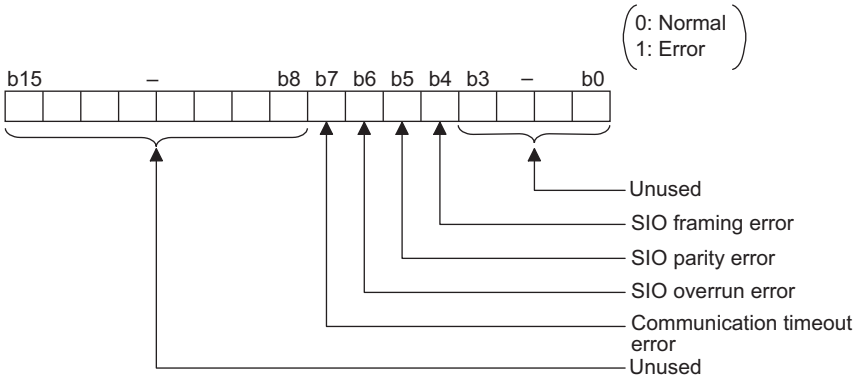
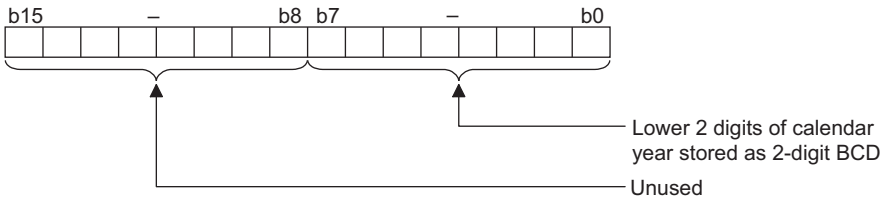
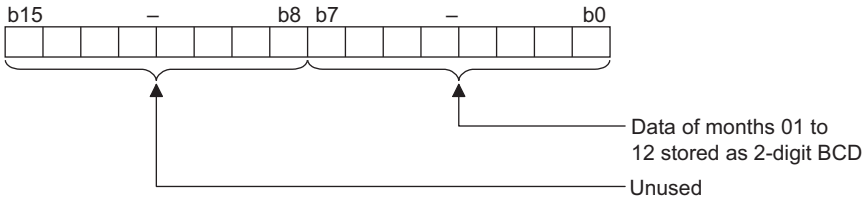
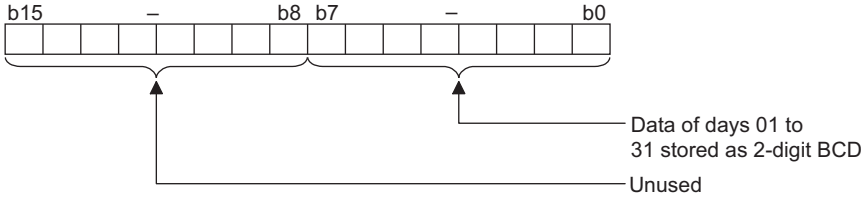
The following lists the D devices (virtual devices inside the GOT).

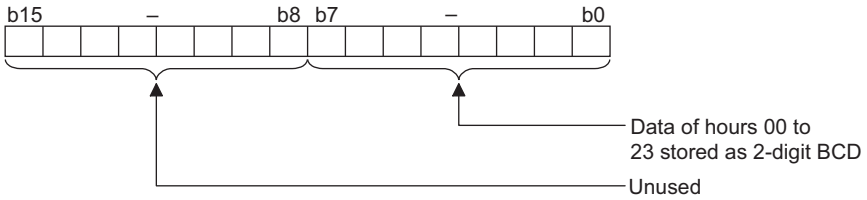
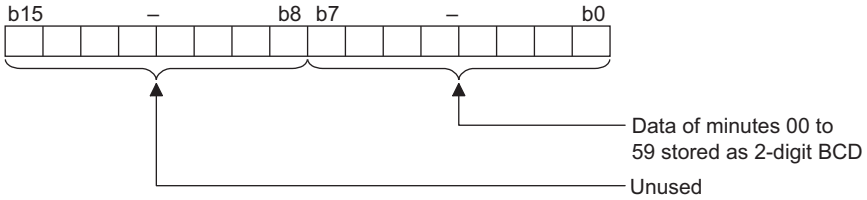
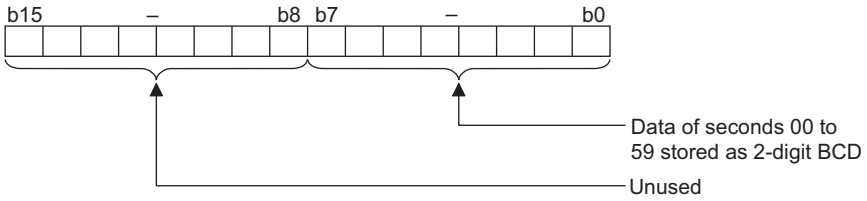
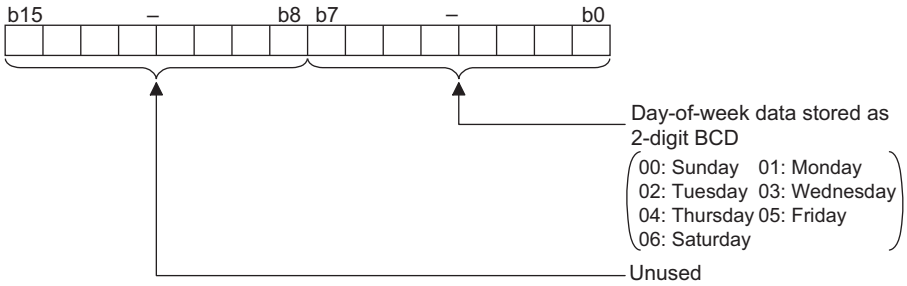
Point

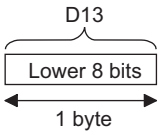
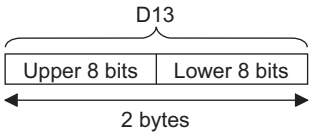
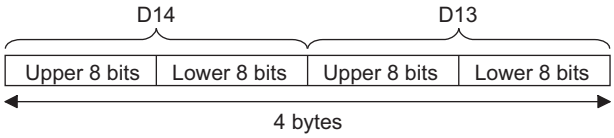
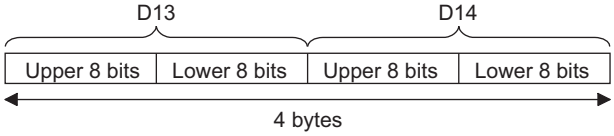
- The side where virtual devices are set

System: Set on the system side.

User: Set on the user side (by sending request messages from host or using the touch switches, etc. on the GOT).

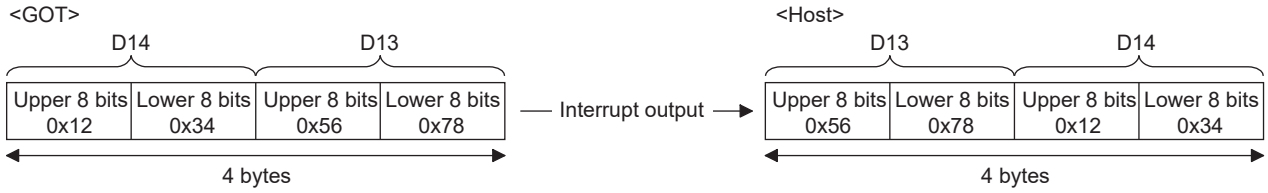
Address	Description	Set side
D0 to D2	Unused	—
D3	Communication error status Stores the communication error details of GOT.  • b4 to b6 turn on when an SIO error occurs, and turn off when a request message from the host is received successfully after the error occurrence. • b7 turns on about 3 seconds after the host side DTR becomes OFF, and turns off when transmission is performed successfully to the host after the error occurrence.	System
D4	Clock data (year)  	
D5	Clock data (month)  	
D6	Clock data (day)  	

Address	Description	Set side
D7	Clock data (hour)  	System
D8	Clock data (minute)  	
D9	Clock data (second)  	
D10	Clock data (day of the week)  	
D11 to D12	Unused	—

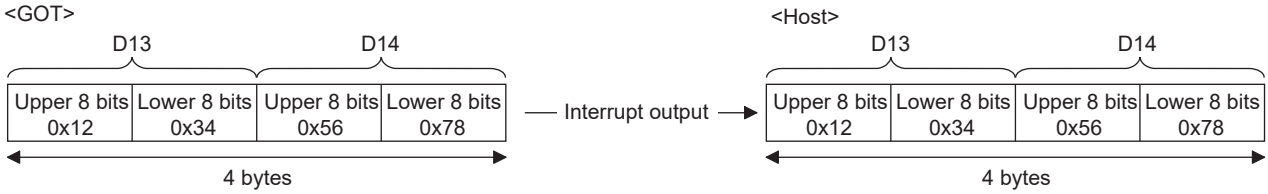
Address	Description	Set side
D13 to D14	Interrupt output When data are written to D13 and D14 from a GOT touch switch, for example, the data of D13 and D14 are transmitted (interrupt output) to the host side.*1*2 Set the data amount (number of bytes) to execute an interrupt output to [Interrupt Data Byte] in [Detail Setting]. ☞ Page 2305 [Detail Setting] To disable the interrupt output, turn on SM52 (interrupt code output disable flag). ☞ Page 2250 SM devices • Output value when [1] is set to [Interrupt Data Byte] in [Detail Setting]  • Output value when [2] is set to [Interrupt Data Byte] in [Detail Setting]  • Output value when [4] is set to [Interrupt Data Byte] in [Detail Setting]*3 (1) When [32bit Storage] is set to [LH Order] in [Detail Setting]  (2) When [32bit Storage] is set to [HL Order] in [Detail Setting]  To execute the interrupt output in format 1 or 2, set the data length to 8 bits in [Detail Setting]. When 7 bits is set, the uppermost bit (8th bit) is ignored. (Example: FFH → 7FH) ☞ Page 2305 [Detail Setting]	User
D15 to D19	Unused	—
D20 to D2031	User area	User
D2032 to D2034	Unused	—
D2035	1-second binary counter The counter is incremented at 1-second intervals after the GOT is turned on. (The time elapsed after GOT is turned on is stored in 1-second units.) Data are stored in binary format.	System
D2036 to D4095	User area	User

*1 After writing data, the interrupt data is output within a period of 1 to 10 ms.
*2 When data are written to D13 and D14 from the host side, interrupt output is not performed.
*3 When 32-bit data are written to D13 and D14, the values are output to the host side regardless of the setting for [32bit Storage] in [Detail Setting].
Example) When outputting 0x12345678 with unsigned 32-bit binary data

· LH Order



· HL Order



Differences in address specifications by data format

The device address specification differs depending on the data format.

The following shows the address specification values for each data format.

Model	Address	Address specification value*1				
		Format 1, 2	Format 3, 4		Format 5	Format 6 to 9
GT37 SoftGOT3000	D0	0	8000H 8001H	8000H (Upper 8 bits), 8001H (Lower 8 bits)	0000H	D0
	D1	1	8002H 8003H	8002H (Upper 8 bits), 8003H (Lower 8 bits)	0001H	D1
	⋮	⋮	⋮		⋮	⋮
	D4095	4095	9FFEH 9FFFH	9FFEH (Upper 8 bits), 9FFFH (Lower 8 bits)	0FFFH	D4095

*1 For the address specification method for each data format, refer to the following.
☞ Page 2252 Message format
Formats 1, 2: GOT-A900 series microcomputer connection
Formats 3, 4: GOT-F900 series microcomputer connection
Format 5: SCHNEIDER EJH's memory link method
Formats 6, 7: 4E frame
Formats 8, 9: QnA compatible 3E frame

49.3.2 R devices

The R devices are word devices into which user data are stored.
All of these devices can be used as a user area.

List of R devices and differences in address specification by data format

The following shows the R devices (virtual devices inside the GOT).
The address specification values different depending on the data format are also given below.

Model	Address	Address specification value*1				
		Format 1, 2	Format 3, 4		Format 5	Format 6 to 9
GT37 SoftGOT3000	R0	4096	0000H 0001H	0000H (Upper 8 bits) 0001H (Lower 8 bits)	1000H	R0
	R1	4097	0002H 0003H	0002H (Upper 8 bits) 0003H (Lower 8 bits)	1001H	R1
	⋮	⋮	⋮		⋮	⋮
	R4095	8191	1FFEH 1FFFH	1FFEH (Upper 8 bits) 1FFFH (Lower 8 bits)	1FFFH	R4095

*1 For the address specification method for each data format, refer to the following.
☞ Page 2252 Message format
Formats 1, 2: GOT-A900 series microcomputer connection
Formats 3, 4: GOT-F900 series microcomputer connection
Format 5: SCHNEIDER EJH's memory link method
Formats 6, 7: 4E frame
Formats 8, 9: QnA compatible 3E frame

49.3.3 L devices

The L devices are bit devices into which user data are stored.
All of these devices can be used as a user area.

List of L devices and differences in address specification by data format

The following shows the L devices (virtual devices inside the GOT).
The address specification values different depending on the data format are also given below.

Model	Address								Address specification value*1				
	b7	b6	b5	b4	b3	b2	b1	b0	Form at 1, 2	Format 3, 4		Form at 5	Format 6 to 9
										When GS580.b8, GS581.b8, GS582.b8, or GS583.b8 is ON	When GS580.b8, GS581.b8, GS582.b8, or GS583.b8 is OFF		
GT37 SoftGOT3000	L7	L6	L5	L4	L3	L2	L1	L0	8192	A000H	A001H	2000H	Same as address column on left*2
	L15	L14	L13	L12	L11	L10	L9	L8		A001H	A000H		
	L23	L22	L21	L20	L19	L18	L17	L16	8193	A002H	A003H	2001H	
	L31	L30	L29	L28	L27	L26	L25	L24		A003H	A002H		
	⋮								⋮	⋮	⋮	⋮	
	L2039	L2038	L2037	L2036	L2035	L2034	L2033	L2032	8319	A0FEH	A0FFH	207FH	
	L2047	L2046	L2045	L2044	L2043	L2042	L2041	L2040		A0FFH	A0FEH		

*1 For the address specification method for each data format, refer to the following.
☞ Page 2252 Message format
Formats 1, 2: GOT-A900 series microcomputer connection
Formats 3, 4: GOT-F900 series microcomputer connection
Format 5: SCHNEIDER EJH's memory link method
Formats 6, 7: 4E frame
Formats 8, 9: QnA compatible 3E frame

*2 For reading or writing data in word units, specify the addresses in 16-point units. (Example: L0, L16, L32, and others)

49.3.4 M devices

The M devices are bit devices into which user data are stored.
All of these devices can be used as a user area.

List of M devices and differences in address specification by data format

The following shows the M devices (virtual devices inside the GOT).
The address specification values different depending on the data format are also given below.

Model	Address								Address specification value*1				
	b7	b6	b5	b4	b3	b2	b1	b0	Form at 1, 2	Format 3, 4		Form at 5	Format 6 to 9
										When GS580.b8, GS581.b8, GS582.b8, or GS583.b8 is ON	When GS580.b8, GS581.b8, GS582.b8, or GS583.b8 is OFF		
GT37 SoftGOT3000	M7	M6	M5	M4	M3	M2	M1	M0	8320	2000H	2001H	2080H	Same as address column on left*2
	M15	M14	M13	M12	M11	M10	M9	M8		2001H	2000H		
	M23	M22	M21	M20	M19	M18	M17	M16	8321	2002H	2003H	2081H	
	M31	M30	M29	M28	M27	M26	M25	M24		2003H	2002H		
	⋮								⋮	⋮	⋮	⋮	
	M2039	M2038	M2037	M2036	M2035	M2034	M2033	M2032	8447	20FEH	20FFH	20FFH	
	M2047	M2046	M2045	M2044	M2043	M2042	M2041	M2040		20FFH	20FEH		

*1 For the address specification method for each data format, refer to the following.
☞ Page 2252 Message format
Formats 1, 2: GOT-A900 series microcomputer connection
Formats 3, 4: GOT-F900 series microcomputer connection
Format 5: SCHNEIDER EJH's memory link method
Formats 6, 7: 4E frame
Formats 8, 9: QnA compatible 3E frame

*2 For reading or writing data in word units, specify the addresses in 16-point units. (Example: M0, M16, M32, and others)

49.3.5 SD devices

The SD devices are word devices into which GOT communication errors (error codes), clock data and other information are stored.

List of SD devices

The following lists the SD devices (virtual devices inside the GOT).

Address	Description	Set side
SD0 SD1	100 ms counter (32 bits) The counter is incremented at 100 ms intervals after GOT is turned on. (The time elapsed after GOT is turned on is stored in 100 ms units.) (1) When [32bit Storage] is set to [LH Order] in [Detail Setting] The lower and upper bits are stored in SD0 and SD1 respectively. SD1 (Upper word) SD0 (Lower word) (2) When [32bit Storage] is set to [HL Order] in [Detail Setting] The upper and lower bits are stored in SD0 and SD1 respectively. SD0 (Upper word) SD1 (Lower word)	System
SD2	Communication error status An error data (error code) occurred during communication is stored. For details and corrective actions for the errors (error codes) that are stored into SD2, refer to the following. ☞ Page 2248 Details and actions for errors (error codes) stored into SD2	
SD3	Clock data (second) Second data of 00 to 59 is stored.	
SD4	Clock data (minute) Minute data of 00 to 59 is stored.	
SD5	Clock data (hour) Hour data of 00 to 23 is stored.	
SD6	Clock data (day) Day data of 01 to 31 is stored.	
SD7	Clock data (month) Month data of 01 to 12 is stored.	
SD8	Clock data (year) The last two digits of four-digit year data are stored.	
SD9	Clock data (day of the week) Day-of-the-week data is stored. 0: Sunday 1: Monday 2: Tuesday 3: Wednesday 4: Thursday 5: Friday 6: Saturday	
SD10 to SD15	Unused	—

Point

The side where virtual devices are set

System: Set on the system side.

User: Set on the user side (by sending request messages from host or using the touch switches, etc. on the GOT).

Details and actions for errors (error codes) stored into SD2

Error code	Description	Action
0	No error	-
1, 101	Parity error The parity bit does not match.	• Check the communication cable and communication module attachment. • Check the settings in [Detail Setting]. • Match the GOT and host transmission settings.
2, 102	Framing error The data bit and/or stop bit are not correct.	
3, 103	Overrun error The next data was transmitted from the host before GOT completes the processing of the data received.	• Check the settings in [Detail Setting]. • Decrease the transmission speed.
4, 104	Communication message error ETX/CR could not be found before the upper limit of the receive buffer was exceeded.	• Check the communication cable and communication module attachment. • Check the settings in [Detail Setting]. • Review the contents of the message to transmit.
5	Command error An unsupported command was used.	• Review the contents of the message to transmit. • Check the commands in the message. ☞ Page 2253 List of commands
105	Timeout error There is no response from the GOT, or the station of the specified address does not exist.	• Check the communication cable and communication module attachment. • Check the settings in [Detail Setting]. • Review the contents of the message to transmit.
106	Multiple units not connectable The RS-232 port is occupied.	• Check the communication cable and communication module attachment. • Check the settings in [Detail Setting]. • Check to see if the RS-232 port is occupied.
6, 107	Clock data setting error The setting value of the clock data has error.	• Review the contents of the message to transmit. • Check whether the nonexistent data is set (e.g. setting "07" at the day of the week) as clock data.

Differences in address specifications by data format

The device address specification differs depending on the data format.

The following shows the address specification values for each data format.

Model	Address	Address specification value*1				
		Format 1, 2	Format 3, 4*2		Format 5	Format 6 to 9
GT37 SoftGOT3000	SD0	8448	2100H 2101H	2100H (Upper 8 bits) 2101H (Lower 8 bits)	2100H	SD0
	SD1	8449	2102H 2103H	2102H (Upper 8 bits) 2103H (Lower 8 bits)	2101H	SD1
	SD2	8450	2104H 2105H	2104H (Upper 8 bits) 2105H (Lower 8 bits)	2102H	SD2
	SD3	8451	2106H (3000H) 2107H (3001H)	2106H(3000H) (Upper 8 bits) 2107H(3001H) (Lower 8 bits)	2103H	SD3
	SD4	8452	2108H (3002H) 2109H (3003H)	2108H(3002H) (Upper 8 bits) 2109H(3003H) (Lower 8 bits)	2104H	SD4
	SD5	8453	210AH (3004H) 210BH (3005H)	210AH(3004H) (Upper 8 bits) 210BH(3005H) (Lower 8 bits)	2105H	SD5
	SD6	8454	210CH (3006H) 210DH (3007H)	210CH(3006H) (Upper 8 bits) 210DH(3007H) (Lower 8 bits)	2106H	SD6
	SD7	8455	210EH (3008H) 210FH (3009H)	210EH(3008H) (Upper 8 bits) 210FH(3009H) (Lower 8 bits)	2107H	SD7
	SD8	8456	2110H (300AH) 2111H (300BH)	2110H(300AH) (Upper 8 bits) 2111H(300BH) (Lower 8 bits)	2108H	SD8
	SD9	8457	2112H (300CH) 2113H (300DH)	2112H(300CH) (Upper 8 bits) 2113H(300DH) (Lower 8 bits)	2109H	SD9

*1 For the address specification method for each data format, refer to the following.
☞ Page 2252 Message format
Formats 1, 2: GOT-A900 series microcomputer connection
Formats 3, 4: GOT-F900 series microcomputer connection
Format 5: SCHNEIDER EJH's memory link method
Formats 6, 7: 4E frame
Formats 8, 9: QnA compatible 3E frame

*2 SD3 to SD9 correspond to GD0 to GD6 in the GOT-F900 series.
Access to SD3 to SD9 can also be made by the specification of the addresses (3000H to 300DH) of GD0 to GD6 on the GOT-F900 series.

49.3.6 SM devices

The SM devices are bit devices into which interrupt outputs and clock data that turn on or off in 1-second cycles are stored.

List of SM devices

The following shows the SM devices (virtual devices inside the GOT).

<table>
<tr><th>Address</th><th>Description</th><th>Set side</th></tr>
<tr><td>SM0 to SM49</td><td>Interrupt output
When the ON or OFF state of SM0 to SM49 is changed by a touch switch on the GOT, for example, the interrupt codes shown below are transmitted (interrupt output) to the host side.*1*2
Set the data amount (number of bytes) to execute an interrupt output to [Interrupt Data Byte] in [Detail Setting].
☞ Page 2305 [Detail Setting]
<table>
<tr><th>Address</th><th>Event type</th><th>Interrupt code</th></tr>
<tr><td rowspan="2">SM0</td><td>Changed from OFF to ON</td><td>50H</td></tr>
<tr><td>Changed from ON to OFF</td><td>51H</td></tr>
<tr><td rowspan="2">SM1</td><td>Changed from OFF to ON</td><td>52H</td></tr>
<tr><td>Changed from ON to OFF</td><td>53H</td></tr>
<tr><td rowspan="2">SM2</td><td>Changed from OFF to ON</td><td>54H</td></tr>
<tr><td>Changed from ON to OFF</td><td>55H</td></tr>
<tr><td>~</td><td>~</td><td>~</td></tr>
<tr><td rowspan="2">SM48</td><td>Changed from OFF to ON</td><td>B0H</td></tr>
<tr><td>Changed from ON to OFF</td><td>B1H</td></tr>
<tr><td rowspan="2">SM49</td><td>Changed from OFF to ON</td><td>B2H</td></tr>
<tr><td>Changed from ON to OFF</td><td>B3H</td></tr>
</table></td><td>User</td></tr>
<tr><td>SM50</td><td>1-second cycle clock
Turns on and off in 1-second cycles.
0.5 0.5</td><td rowspan="2">System</td></tr>
<tr><td>SM51</td><td>2-second cycle clock
Turns on and off in 2-second cycles.
1 1</td></tr>
<tr><td>SM52</td><td>Interrupt code output disable flag
Enables or disables the output of the interrupt code and special interrupt code.
OFF: Output enabled, ON: Output disabled
When the output is set to be disabled, no interrupt data are output to the host.
(Relevant devices: D13 to D14, SM0 to SM49)</td><td>User</td></tr>
<tr><td>SM53 to SM63</td><td>Unused</td><td>—</td></tr>
</table>

*1 After the ON or OFF state is changed, the interrupt data is output within a period of 1 to 10 ms.
*2 When the ON or OFF state of SM0 to SM49 is changed from the host side, interrupt output is not performed.

Point

The side where virtual devices are set
System: Set on the system side.
User: Set on the user side (by sending request messages from host or using the touch switches, etc. on the GOT).

Differences in address specifications by data format

The device address specification differs depending on the data format.

The following shows the address specification values for each data format.

Model	Address								Address specification value*1				
	b7	b6	b5	b4	b3	b2	b1	b0	Form at 1, 2	Format 3, 4		Form at 5	Format 6 to 9
										When GS580.b8, GS581.b8, GS582.b8, or GS583.b8 is ON	When GS580.b8, GS581.b8, GS582.b8, or GS583.b8 is OFF		
GT37 SoftGOT3000	SM7	SM6	SM5	SM4	SM3	SM2	SM1	SM0	8464	2200H	2201H	2110H	*2*3
	SM15	SM14	SM13	SM12	SM11	SM10	SM9	SM8		2201H	2200H		
	SM23	SM22	SM21	SM20	SM19	SM18	SM17	SM16	8465	2202H	2203H	2111H	
	SM31	SM30	SM29	SM28	SM27	SM26	SM25	SM24		2203H	2202H		
	SM39	SM38	SM37	SM36	SM35	SM34	SM33	SM32	8466	2204H	2205H	2112H	
	SM47	SM46	SM45	SM44	SM43	SM42	SM41	SM40		2205H	2204H		
	Unused			SM52	SM51	SM50	SM49	SM48	8467	2206H	2207H	2113H	
	Unused								—	—	—		

*1 For the address specification method for each data format, refer to the following.
☞ Page 2252 Message format
Formats 1, 2: GOT-A900 series microcomputer connection
Formats 3, 4: GOT-F900 series microcomputer connection
Format 5: SCHNEIDER EJH's memory link method
Formats 6, 7: 4E frame
Formats 8, 9: QnA compatible 3E frame

*2 In formats 6 and 7, values are specified within a range of SM0 to SM52.

*3 For reading or writing data in word units, specify the addresses in 16-point units. (Example: SM0, SM16, SM32, and others)

49.4 Message format

☞ Page 2252 Data format type
☞ Page 2253 List of commands
☞ Page 2256 Format 1, 2
☞ Page 2268 Format 3, 4
☞ Page 2280 Format 5
☞ Page 2294 Format 8, 9

This section describes the format of messages that can be used in the microcomputer connection (Ethernet).

49.4.1 Data format type

Set the data format in [Detail Setting] in GT Designer3.

For details on the data format setting method, refer to the following.

☞ Page 2305 [Detail Setting]

Formats 1, 2 (GOT-A900 series microcomputer connection)

This is the same message format as when a microcomputer connection is established with the GOT-A900 series.

Type	Name	Description	Reference
Format 1	GOT-A900 series microcomputer connection (ASCII)	This format is used when the GOT is connected to the host in a 1:1 connection. The data format is ASCII.	☞ Page 2256 Format 1, 2
Format 2	GOT-A900 series microcomputer connection (Binary)	This format is used when the GOT is connected to the host in a 1:1 connection. The data format is binary.	

Formats 3, 4 (GOT-F900 series microcomputer connection)

This is the compatible message format with when a microcomputer connection is established with the GOT-F900 series.

Type	Name	Description	Reference
Format 3	GOT-F900 series microcomputer connection (ASCII)	This format is used to establish a 1:1 or m:n connection between the host and GOT. The data format is ASCII.	☞ Page 2268 Format 3, 4
Format 4	GOT-F900 series microcomputer connection (Binary)	This format is used to establish a 1:1 or m:n connection between the host and GOT. The data format is binary.	

Format 5 (SCHNEIDER EJH's memory link method)

This is the message format compatible with the protocol of the SCHNEIDER EJH's memory link method.

Type	Name	Description	Reference
Format 5	SCHNEIDER EJH's memory link method	This is the basic format of the SCHNEIDER EJH's memory link method.	☞ Page 2280 Format 5

Formats 6, 7 (4E frame)

This is the compatible message format with when a communication is performed using the MC protocol of Q/QnA series serial communication module.

Type	Name	Description	Reference
Format 6	4E frame (ASCII)	This is the basic format of the MC protocols. The data format is ASCII.	☞ Page 2283 Format 6, 7
Format 7	4E frame (Binary)	This is the basic format of the MC protocols. The data format is binary.	

Formats 8, 9 (QnA compatible 3E frame)

This is the compatible message format with when a communication is performed using the MC protocol of Q/QnA series serial communication module.

Type	Name	Description	Reference
Format 8	QnA compatible 3E frame (ASCII)	This is the basic format of the MC protocols. The data format is ASCII.	☞ Page 2294 Format 8, 9
Format 9	QnA compatible 3E frame (Binary)	This is the basic format of the MC protocols. The data format is binary.	

49.4.2 List of commands

Specify the number of devices within each device range in a request message.
If the specified number of devices exceeds the device range, the device value cannot be written or read by a command. For the device range, refer to the following.
☞ Page 2238 Device data area
Interrupt output is available in all formats only when [Protocol] is set to [TCP/IP] in [Detail Setting].

Point

Even though the time setting function and time notification function are set in the GOT time setting, the settings are disabled.
When reading from or writing to the clock data between the GOT and microcomputer, use the dedicated command.

Format 1 (GOT-A900 series microcomputer connection (ASCII))

Command		Command name	Description	Max. number of points processed
Symbol	ASCII code			
RD	52H 44H	Batch read in word units	Reads bit devices in 16-point units.	99 words (1584 points)
			Reads word devices in 1-point units.	99 points
WD	57H 44H	Batch write in word units	Writes to bit devices in 16-point units.	99 words (1584 points)
			Writes to word devices in 1-point units.	99 points
RR	52H 52H	Random read in word units*1	Reads multiple different bit devices in 16-point units.	256 words (4096 points)
			Reads multiple different word devices in 1-point units.	256 points
RW	52H 57H	Random write in word units*1	Writes to multiple different bit devices in 16-point units.	128 words (2048 points)
			Writes to multiple different word devices in 1-point units.	128 points
TR	54H 52H	Read clock data	Reads the clock data of the GOT.	—
TS	54H 53H	Set clock data	Sets the clock data of the GOT.	—

*1 Mixed specification of bit devices and word devices is also possible.

Format 2 (GOT-A900 series microcomputer connection (Binary))

Command	Command name	Description	Max. number of points processed
RD	Batch read in word units	Reads bit devices in 16-point units.	255 words (4080 points)
		Reads word devices in 1-point units.	255 points
WD	Batch write in word units	Writes to bit devices in 16-point units.	255 words (4080 points)
		Writes to word devices in 1-point units.	255 points
RR	Random read in word units*1	Reads multiple different bit devices in 16-point units.	512 words (8192 points)
		Reads multiple different word devices in 1-point units.	512 points
RW	Random write in word units*1	Writes to multiple different bit devices in 16-point units.	256 words (4096 points)
		Writes to multiple different word devices in 1-point units.	256 points
TR	Read clock data	Reads the clock data of the GOT.	—
TS	Set clock data	Sets the clock data of the GOT.	—

*1 Mixed specification of bit devices and word devices is also possible.

Formats 3, 4 (GOT-F900 series microcomputer connection)

Command		Command name	Description	Max. number of points processed
Symbol	ASCII code			
0	30H	Batch read (without station number)	Reads bit devices in byte units.	255 bytes (2040 points)
			Reads word devices in byte units.	255 bytes (127 points)
A	41H	Batch read (with station number)	Reads bit devices in byte units.	255 bytes (2040 points)
			Reads word devices in byte units.	255 bytes (127 points)
1	31H	Batch write (without station number)	Writes to bit devices in byte units.	255 bytes (2040 points)
			Writes to word devices in byte units.	255 bytes (127 points)
B	42H	Batch write (with station number)	Writes to bit devices in byte units.	255 bytes (2040 points)
			Writes to word devices in byte units.	255 bytes (127 points)
3	33H	Multi-point write in bit units (without station number)	Writes bit patterns (bit ON or OFF, inversion, direct specification) in 1-point units (8 bits for 1 point) to a specified device.	99 points
D	44H	Multi-point write in bit units (with station number)		
4	34H	Fill command (without station number)	Writes the same value to a range of specified devices.	—
E	45H	Fill command (with station number)		
5	35H	Set clock data (without station number)	Sets the clock data of the GOT.	—
F	46H	Set clock data (with station number)		
6	36H	Read clock data (without station number)	Reads the clock data of the GOT.	—
G	47H	Read clock data (with station number)		

Format 5 (SCHNEIDER EJH's memory link method)

Command		Command name	Description	Max. number of points processed
Symbol	ASCII code			
R	52H	Batch read in word units	Reads bit devices in 16-point units.	512 words (8192 points)
			Reads word devices in 1-point units.	512 points
W	57H	Batch write in word units	Writes to bit devices in 16-point units.	512 words (8192 points)
			Writes to word devices in 1-point units.	512 points
I	49H	Interrupt inquiry	Issues an interrupt inquiry.	—

Format 6 (4E frame (ASCII)), format 8 (QnA compatible 3E frame (ASCII))

Command	Sub-command	Command name	Description	Max. number of points processed
0401	0001	Batch read in bit units	Reads bit devices in 1-point units.	896 points
0401	0000	Batch read in word units	Reads bit devices in 16-point units.*3	256 words (4096 points)
			Reads word devices in 1-point units.	256 points
1401	0001	Batch write in bit units	Writes to bit devices in 1-point units.	896 points
1401	0000	Batch write in word units	Writes to bit devices in 16-point units.*3	244 words (3904 points)
			Writes to word devices in 1-point units.	244 points
0403	0000	Random read in word units*1	Reads multiple different bit devices in 16-point and 32-point units.*3	128 words (2048 points)
			Reads multiple different word devices in 1-point and 2-point units.	128 points
1402	0001	Random write in bit units	Writes to multiple different bit devices in 1-point units.	96 points

Command	Sub-command	Command name	Description	Max. number of points processed
1402	0000	Random write in word units*1	Writes to multiple different bit devices in 16-point and 32-point units.*3	64 words (1024 points)
			Writes to multiple different word devices in 1-point and 2-point units.	64 points
0406	0000	Multiple block batch read	Reads multiple blocks. A bit device (16 bits for 1 point) or a word device (1 word for 1 point) is regarded as one block.*3	80 points
1406	0000	Multiple block batch write	Writes multiple blocks. A bit device (16 bits for 1 point) or a word device (1 word for 1 point) is regarded as one block.*3	64 points
1901*2	0000	Read clock data	Reads the clock data of the GOT.	—
0901*2	0000	Set clock data	Sets the clock data of the GOT.	—

*1 Mixed specification of bit devices and word devices is also possible.
*2 This is a dedicated command of GOT for the microcomputer connection.
*3 Specify the address of bit devices in 16-point units. (Example: M0, M16, M32, and others)

Format 7 (4E frame (Binary)), format 9 (QnA compatible 3E frame (Binary))

Command	Sub-command	Command name	Description	Max. number of points processed
0401	0001	Batch read in bit units	Reads bit devices in 1-point units.	896 points
0401	0000	Batch read in word units	Reads bit devices in 16-point units.*3	512 words (8192 points)
			Reads word devices in 1-point units.	512 points
1401	0001	Batch write in bit units	Writes to bit devices in 1-point units.	896 points
1401	0000	Batch write in word units	Writes to bit devices in 16-point units.*3	496 words (7936 points)
			Writes to word devices in 1-point units.	496 points
0403	0000	Random read in word units*1	Reads multiple different bit devices in 16-point and 32-point units.*3	255 words (4080 points)
			Reads multiple different word devices in 1-point and 2-point units.	255 points
1402	0001	Random write in bit units	Writes to multiple different bit devices in 1-point units.	188 points
1402	0000	Random write in word units*1	Writes to multiple different bit devices in 16-point and 32-point units.*3	128 words (2048 points)
			Writes to multiple different word devices in 1-point and 2-point units.	128 points
0406	0000	Multiple block batch read	Reads multiple blocks. A bit device (16 bits for 1 point) or a word device (1 word for 1 point) is regarded as one block.*3	160 points
1406	0000	Multiple block batch write	Writes multiple blocks. A bit device (16 bits for 1 point) or a word device (1 word for 1 point) is regarded as one block.*3	128 points
1901*2	0000	Read clock data	Reads the clock data of the GOT.	—
0901*2	0000	Set clock data	Sets the clock data of the GOT.	—

*1 Mixed specification of bit devices and word devices is also possible.
*2 This is a dedicated command of GOT for the microcomputer connection.
*3 Specify the address of bit devices in 16-point units. (Example: M0, M16, M32, and others)

49.4.3 Format 1, 2

The following describes the message formats 1 and 2 (GOT-A900 series microcomputer connection).

Basic format of data communication

Item	Message format
Request message (host → GOT)	Command (H) (L) | Data
Response message during normal communication (GOT → host)	(1) During processing of read commands Data (2) During processing of write commands ACK 06H
Response message during faulty communication (GOT → host)	NAK 15H | Error Code
During interrupt output*2	Output value 1/2/4 bytes*1

*1 Set the number of interrupt data bytes in [Detail Setting] in GT Designer3.
For setting the number of interrupt data bytes, refer to the following.
☞ Page 2305 [Detail Setting]

*2 Interrupt output can be executed by writing the data to the interrupt output devices (D13 and D14).
☞ Page 2240 D devices

Details of data items in message format

Use the following data code during communication.

- Format 1: ASCII code (excluding interrupt output)
- Format 2: Binary code

■Control codes

Symbol	ASCII code	Description
EOT	04H	End of Transmission
ENQ	05H	Enquiry (start of enquiry)
NAK	15H	Negative ACK (error response)
ACK	06H	Acknowledge (write completion response)
LF	0AH	Line Feed
CL	0CH	Clear
CR	0DH	Carriage Return

■Command

Specify the contents to access from the host to GOT.

The command is converted to a 2-digit ASCII code (hexadecimal) and transmitted from the upper digit.

For details on the commands that can be used, refer to the following.

☞ Page 2253 List of commands

■Address

Specify the start number of the device data to be read or written.

In the format 1, the data notated in decimal is converted to a 4-digit ASCII code (hexadecimal) and transmitted from the upper digit.

In the format 2, the data notated in decimal is converted to a 2-digit binary code (binary) and transmitted from the upper digit.

For details on the device range that can be accessed, refer to the following.

☞ Page 2238 Device data area

■Number of points

Specify the number of device data to be read or written. (Setting range: Range of the maximum number of points processed for each command)

In the format 1, the data notated in decimal is converted to a 2-digit ASCII code (hexadecimal) and transmitted from the upper digit.

In the format 2, the data notated in decimal is converted to a 1-digit binary code (binary) and transmitted.

■Year, month, day, hour, minute, second and day of the week data

Specify the year, month, day, hour, minute, second, and day of the week data to be read or set to the GOT clock data.

In the format 1, the data notated in decimal is converted to a 2-digit ASCII code (hexadecimal) and transmitted from the upper digit.

In the format 2, the data notated in decimal is converted to a 1-digit binary code (binary) and transmitted from the upper digit.

☞ Page 2264 Read clock data (TR) command
☞ Page 2265 Set clock data (TS) command

■Data

Specify the data to read from or write to the specified device data. (word unit)

In the format 1, the data notated in hexadecimal is converted to a 4-digit ASCII code (hexadecimal) and transmitted from the upper digit.

In the format 2, the data notated in hexadecimal is converted to a 2-digit binary code (binary) and transmitted from the upper digit.

■Error code

This is the response message at faulty communication appended with error contents. Error code is transmitted in 1 byte.

For the error codes, refer to the following.

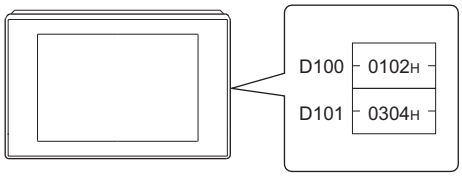
☞ Page 2267 Error code list

Message formats

■Batch read in word units (RD) command

- When reading a word device

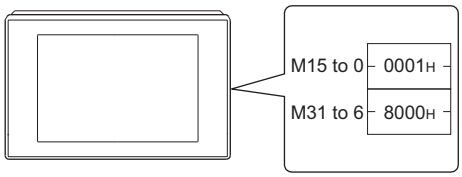
The following shows an example of reading the two points of the virtual devices D100 to D101.
(Assuming D100=0102H, D101=0304H are stored.)



Item	Message format
Request message (host → GOT)	(Format 1: GOT-A900 series microcomputer connection (ASCII)) Command: R D (52H 44H, (H) (L)); Address: 0 1 0 0 (30H 31H 30H 30H, (H) – – (L)); Number of points: 0 2 (30H 32H, (H) (L)) (Format 2: GOT-A900 series microcomputer connection (Binary)) Command: R D; Address: 00H 64H; Number of points: 02H
Response message during normal communication (GOT → host)	(Format 1: GOT-A900 series microcomputer connection (ASCII)) Data 1 (D100): 0 1 0 2 (30H 31H 30H 32H, (H) – – (L)); Data 2 (D101): 0 3 0 4 (30H 33H 30H 34H, (H) – – (L)) (Format 2: GOT-A900 series microcomputer connection (Binary)) Data 1 (D100): 01H 02H; Data 2 (D101): 03H 04H
Response message during faulty communication (GOT → host)	NAK: 15H; Error code: 06H The above is a case where the sum check error (06H) has occurred.

• When reading a bit device

The following shows an example of reading the two points of the virtual devices M0 to M31.
(Assuming M0=1 and M31=1 are stored.)

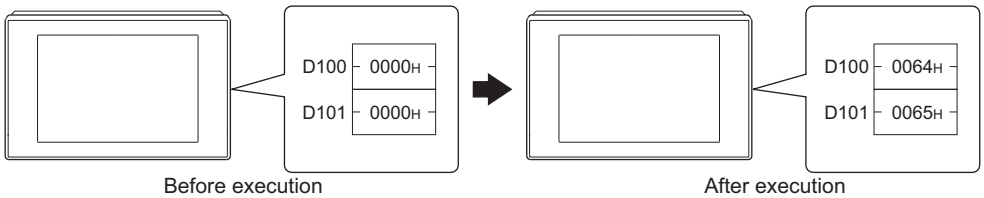


Item	Message format
Request message (host → GOT)	(Format 1: GOT-A900 series microcomputer connection (ASCII)) Command: R D (52H (H), 44H (L)) Address: 8 3 2 0 (38H (H), 33H –, 32H –, 30H (L)) Number of points: 0 2 (30H (H), 32H (L)) (Format 2: GOT-A900 series microcomputer connection (Binary)) Command: R D Address: 83H 20H Number of points: 02H
Response message during normal communication (GOT → host)	(Format 1: GOT-A900 series microcomputer connection (ASCII)) Data 1 (M15 to 0): 0 0 0 1 (30H (H), 30H –, 30H –, 31H (L)) Data 2 (M31 to 16): 8 0 0 0 (38H (H), 30H –, 30H –, 30H (L)) 0000000000000001 1000000000000000 M M M M M M M M M M M M M M M M M M M M M M M M M M M M M M M M 1 1 1 1 1 1 9 8 7 6 5 4 3 2 1 0 3 3 2 2 2 2 2 2 2 2 2 2 2 1 1 1 1 5 4 3 2 1 0 1 0 9 8 7 6 5 4 3 2 1 0 9 8 7 6 (Format 2: GOT-A900 series microcomputer connection (Binary)) Data 1 (M15 to 0): 00H 01H Data 2 (M31 to 16): 80H 00H 0000000000000001 1000000000000000 M M M M M M M M M M M M M M M M M M M M M M M M M M M M M M M M 1 1 1 1 1 1 9 8 7 6 5 4 3 2 1 0 3 3 2 2 2 2 2 2 2 2 2 2 2 1 1 1 1 5 4 3 2 1 0 1 0 9 8 7 6 5 4 3 2 1 0 9 8 7 6
Response message during faulty communication (GOT → host)	NAK: 15H Error code: 06H The above is a case where the sum check error (06H) has occurred.

■Batch write in word units (WD) command

- When writing to a word device

The following shows as example of writing "0064H"and "0065H" to virtual devices D100 and D101.



Item	Message format
Request message (host → GOT)	(Format 1: GOT-A900 series microcomputer connection (ASCII))

Command		Address				Number of points		Data 1(D100)				Data 2 (D101)			
W	D	0	1	0	0	0	2	0	0	6	4	0	0	6	5
57H	44H	30H	31H	30H	30H	30H	32H	30H	30H	36H	34H	30H	30H	36H	35H
(H)	(L)	(H)	–	–	(L)	(H)	(L)	(H)	–	–	(L)	(H)	–	–	(L)

(Format 2: GOT-A900 series microcomputer connection (Binary))

Command		Address		Number of points	Data1 (D100)		Data 2 (D101)	
W	D	00H	64H	02H	00H	64H	00H	65H

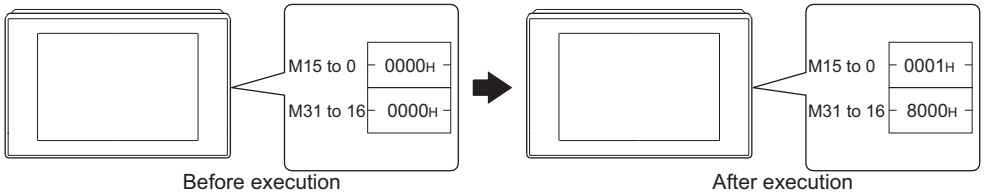
Response message during normal communication (GOT → host)
ACK
06H

Response message during faulty communication (GOT → host)	
NAK	Error code
15H	06H

The above is a case where the sum check error (06H) has occurred.

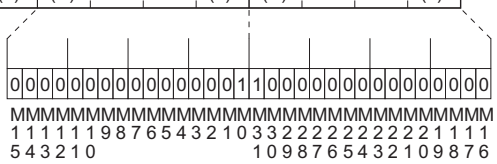
• When writing to a bit device

The following shows an example of writing "1"s to virtual devices M0 and M31.



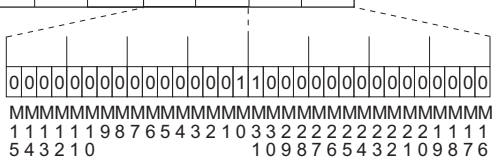
Item	Message format
Request message (host → GOT)	(Format 1: GOT-A900 series microcomputer connection (ASCII))

Command		Address				Number of points		Data 1 (M15 to 0)				Data 2 (M31 to 16)			
W	D	8	3	2	0	0	2	0	0	0	1	8	0	0	0
57H	44H	38H	33H	32H	30H	30H	32H	30H	30H	30H	31H	38H	30H	30H	30H
(H)	(L)	(H)	–	–	(L)	(H)	(L)	(H)	–	–	(L)	(H)	–	–	(L)



(Format 2: GOT-A900 series microcomputer connection (Binary))

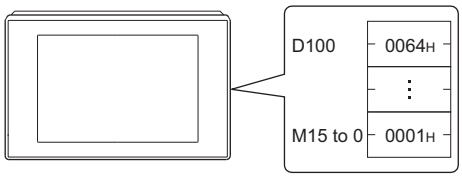
Command		Address		Number of points	Data 1 (M15 to 0)		Data 2 (M31 to 16)	
W	D	20H	80H	02H	00H	01H	80H	00H



Item	Message format
Response message during normal communication (GOT → host)	ACK: 06H
Response message during faulty communication (GOT → host)	NAK: 15H; Error code: 06H The above is a case where the sum check error (06H) has occurred.

■Random read in word units (RR) command

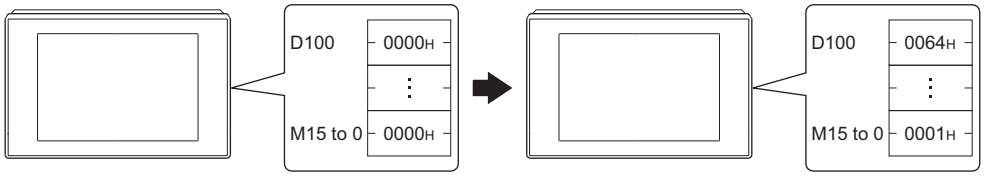
The following shows an example of reading the two points of the virtual devices D100 and M0 to M15.
(Assuming D100=0064H, M0=1are stored.)



Item	Message format
Request message (host → GOT)	(Format 1: GOT-A900 series microcomputer connection (ASCII)) Command: R R (52H (H), 52H (L)) Address 1: 0 1 0 0 (30H (H), 31H –, 30H –, 30H (L)) Address 2: 8 3 2 0 (38H (H), 33H –, 32H –, 30H (L)) (Format 2: GOT-A900 series microcomputer connection (Binary)) Command: R R Address 1: 00H 64H Address 2: 20H 80H
Response message during normal communication (GOT → host)	(Format 1: GOT-A900 series microcomputer connection (ASCII)) Data 1 (D100): 0 0 6 4 (30H (H), 30H –, 36H –, 34H (L)) Data 2 (M15 to 0): 0 0 0 1 (30H (H), 30H –, 30H –, 31H (L)) 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 1 M M M M M M M M M M M M M M M M 1 1 1 1 1 1 9 8 7 6 5 4 3 2 1 0 5 4 3 2 1 0 (Format 2: GOT-A900 series microcomputer connection (Binary)) Data 1 (D100): 00H 64H Data 2 (M15 to 0): 00H 01H 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 1 M M M M M M M M M M M M M M M M 1 1 1 1 1 1 9 8 7 6 5 4 3 2 1 0 5 4 3 2 1 0
Response message during faulty communication (GOT → host)	NAK: 15H Error code: 06H The above is a case where the sum check error (06H) has occurred.

■Random write in word units (RW) command

The following shows an example of writing "0064H" and "1" to virtual devices D100 and M0, respectively.



Before execution　　After execution

Item	Message format
Request message (host → GOT)	(Format 1: GOT-A900 series microcomputer connection (ASCII))

Command		Address 1				Data 1 (D100)				Address 2				Data 2 (M15 to 0)			
R	W	0	1	0	0	0	0	6	4	8	3	2	0	0	0	0	1
52H	57H	30H	31H	30H	30H	30H	30H	36H	34H	38H	33H	32H	30H	30H	30H	30H	31H
(H)	(L)	(H)	–	–	(L)	(H)	–	–	(L)	(H)	–	–	(L)	(H)	–	–	(L)

0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
M15	M14	M13	M12	M11	M10	M9	M8	M7	M6	M5	M4	M3	M2	M1	M0

(Format 2: GOT-A900 series microcomputer connection (Binary))

Command		Address 1		Data 1 (D100)		Address 2		Data 2 (M15 to 0)	
R	W	00H	64H	00H	00H	20H	80H	00H	01H

0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
M15	M14	M13	M12	M11	M10	M9	M8	M7	M6	M5	M4	M3	M2	M1	M0

Response message during normal communication (GOT → host)	ACK
	06H

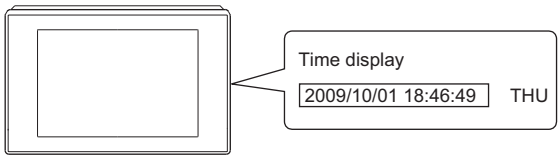
Response message during faulty communication (GOT → host)	NAK	Error code
	15H	06H

The above is a case where the sum check error (06H) has occurred.

■Read clock data (TR) command

The following shows an example of reading the clock data of GOT.

(Assuming that the clock data of GOT has been set to "2009, October 1, 18:46:49, Thursday".)

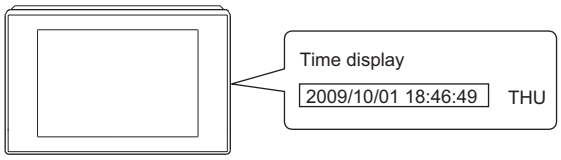


Item	Message format
Request message (host → GOT)	Command T R 54H 52H (H) (L)
Response message during normal communication (GOT → host)	(Format 1: GOT-A900 series microcomputer connection (ASCII)) Year data: 0 9 / 30H 39H (H) (L) Month data: 1 0 / 31H 30H (H) (L) Day data: 0 1 / 30H 31H (H) (L) Hour data: 1 8 / 31H 38H (H) (L) Minute data: 4 6 / 34H 36H (H) (L) Second data: 4 9 / 34H 39H (H) (L) Day-of-week data: 0 4 / 30H 34H (H) (L) (Format 2: GOT-A900 series microcomputer connection (Binary)) Year data: 09H Month data: 0AH Day data: 01H Hour data: 12H Minute data: 2EH Second data: 31H Day-of-week data: 04H
Response message during faulty communication (GOT → host)	NAK: 15H Error code: 06H The above is a case where the sum check error (06H) has occurred.

■Set clock data (TS) command

The following shows an example of setting the clock data of GOT.

(Assuming the clock data of GOT is to be set to "2009, October 1, 18:46:49 Thursday".)



After execution

Item	Message format
Request message (host → GOT)	(Format 1: GOT-A900 series microcomputer connection (ASCII)) Command: T (54H) S (53H) Year data: 0 (30H) 9 (39H) Month data: 1 (31H) 0 (30H) Day data: 0 (30H) 1 (31H) Hour data: 1 (31H) 8 (38H) Minute data: 4 (34H) 6 (36H) Second data: 4 (34H) 9 (39H) Day-of-week data: 0 (30H) 4 (34H) (Format 2: GOT-A900 series microcomputer connection (Binary)) Command: T S Year data: 09H Month data: 0AH Day data: 01H Hour data: 12H Minute data: 2EH Second data: 31H Day-of-week data: 04H
Response message during normal communication (GOT → host)	ACK 06H
Response message during faulty communication (GOT → host)	NAK: 15H Error code: 06H The above is a case where the sum check error (06H) has occurred.

Point

When a wrong day of the week has been set by the clock data setting command

If a wrong day of the week is set by the clock data setting commands, the corrected day of the week will be set.

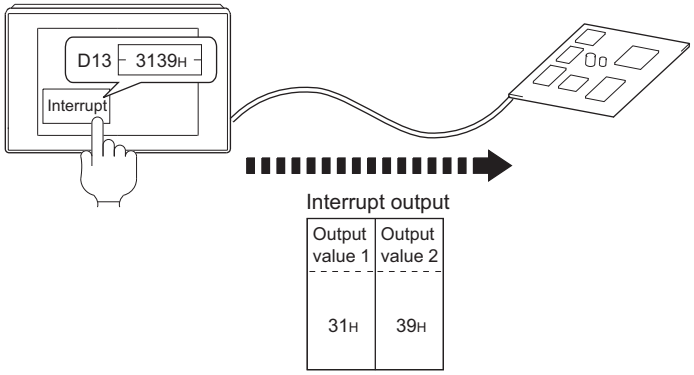
Example: When June 1, 2004 (Thursday) is set by the clock data setting command (The actual day of week is Tuesday.)

Tuesday (TUE) will be set.

■In the case of interrupt outputs

Write data to the interrupt output devices (D13 and D14) to output the data to the host.
(Assuming that "3139H" is written to D13 and "AA55H" to D14.)

Example) When [Interrupt Data Byte] in the communication detail settings is set to 2 byte as shown in (2) of the table below



Item	Message format
Interrupt output (GOT → host)	(1) When [Interrupt Data Byte] in [Detail Setting] is set to [1] Output value 1: 39H (2) When [Interrupt Data Byte] in [Detail Setting] is set to [2] Output value 1: 31H; Output value 2: 39H (3) When [Interrupt Data Byte] in [Detail Setting] is set to [4] • When [32bit Storage] is set to [LH Order] in [Detail Setting] Output value1: AAH; Output value2: 55H; Output value3: 31H; Output value4: 39H • When [32bit Storage] is set to [HL Order] in [Detail Setting] Output value1: 31H; Output value2: 39H; Output value3: AAH; Output value4: 55H

Point

Interrupt output
To disable the interrupt output, turn on SM52 (interrupt code output disable flag).
☞ Page 2250 SM devices

Error code list

The error contents (error code) are appended to the response message during faulty communication.

The following shows error code, error contents, cause, and measures.

Error code	Description	Action
06H	Sum check error The sum check code of the received data and the sum check code created from the received data are different.	• Review the contents of the message to transmit.
10H	Command error An unsupported command was used.	• Review the contents of the message to transmit. • Check the commands in the message. ☞ Page 2253 List of commands
11H	Message length error The upper limit of the data length that can be received by the GOT has been exceeded.	• Review the contents of the message to transmit. • Check the data length of the message. (data length of the data section, etc.)
12H	Communication message error ETX was not found within the upper limit of the receive buffer.	• Check the communication cable and communication module attachment. • Check the settings in [Detail Setting]. • Review the contents of the message to transmit.
15H	Clock data setting error The setting value of the clock data has error.	• Review the contents of the message to transmit. • Check whether the nonexistent data is set (e.g. setting "07" at the day of the week) as clock data.
7AH	Address error The start address of the read or write device is out of range.	• Review the contents of the message to transmit. • Check the devices that can be used and the device ranges. ☞ Page 2238 Device data area
7EH	Exceeded number of points error The read or write range has exceeded the device range.	

Precautions

■Storage order for 32-bit data

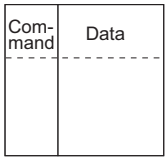
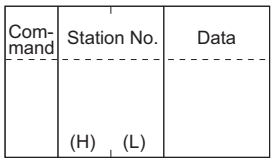
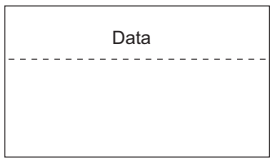
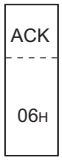
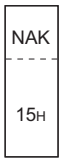
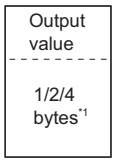
When 32-bit data is specified to use the program of the GOT-A900 series, set [HL Order] for [32bit Storage] in [Detail Setting].

If [LH Order] is set, higher-order bits and lower-order bits are reversed when 32-bit data is displayed or written to the GOT.

49.4.4 Format 3, 4

The following describes the message formats 3 and 4 (GOT-F900 series microcomputer connection).

Basic format of data communication

Item	Message format
Request message (host → GOT)	(1) Without station number 
	(2) With station number 
Response message during normal communication (GOT → host)	(1) During processing of read commands 
	(2) During processing of write commands 
Response message during faulty communication (GOT → host)	
During interrupt output*2	

*1 Set the number of interrupt data bytes in [Detail Setting] in GT Designer3.
For setting the number of interrupt data bytes, refer to the following.
☞ Page 2305 [Detail Setting]

*2 Interrupt output can be executed by writing the data to the interrupt output devices (D13 and D14).
☞ Page 2240 D devices

Details of data items in message format

Use the following data code during communication.

- Format 3: ASCII code (excluding interrupt output)
- Format 4: Binary code

■Control codes

Symbol	ASCII code	Description
EOT	04H	End of Transmission
ENQ	05H	Enquiry (start of enquiry)
NAK	15H	Negative ACK (error response)
ACK	06H	Acknowledge (write completion response)
LF	0AH	Line Feed
CL	0CH	Clear
CR	0DH	Carriage Return

■Command

Specify the contents to access from the host to GOT.

The command is converted to a 1-digit ASCII code (hexadecimal) and transmitted.

For details on the commands that can be used, refer to the following.

☞ Page 2253 List of commands

■Station number

The station number is used to identify the GOT with which the host communicates. (Setting range: 0 to 31)

In the format 3, the data notated in decimal is converted to a 2-digit ASCII code (hexadecimal) and transmitted from the upper digit.

In the format 4, the data notated in decimal is converted to a 1-digit binary code (binary) and transmitted.

The GOT processes only commands whose station number matches the "Host Address (0 to 31)" set in [Detail Setting]. (The GOT ignores the messages that do not include the matched station number.)

For the settings in [Detail Setting], refer to the following.

☞ Page 2305 [Detail Setting]

■Address

Specify the start number of the device data to be read or written.

In the format 3, the data notated in hexadecimal is converted to a 4-digit ASCII code (hexadecimal) and transmitted from the upper digit.

In the format 4, the data notated in hexadecimal is converted to a 2-digit binary code (binary) and transmitted from the upper digit.

For details on the device range that can be accessed, refer to the following.

☞ Page 2238 Device data area

■Bit pattern

Specify the pattern of the bits to change.

In the format 3, the data notated in hexadecimal is converted to a 2-digit ASCII code (hexadecimal) and transmitted from the upper digit.

In the format 4, the data notated in hexadecimal is converted to a 1-digit binary code (binary) and transmitted.

☞ Page 2275 Multi-point write in bit units (3) command (without station number), multi-point write in bit units (D) command (with station number)

■Write specification

Specify how to change the data of the specified address by bit pattern.

(Setting range: 0 to 3)

Data notated in decimal is converted to a 1-digit ASCII code (hexadecimal) and transmitted.

☞ Page 2275 Multi-point write in bit units (3) command (without station number), multi-point write in bit units (D) command (with station number)

■Number of bytes

Specify the number of bytes of the device data to be batch read or written. (Setting range: 0 to FFH)

In the format 3, the data notated in hexadecimal is converted to a 2-digit ASCII code (hexadecimal) and transmitted from the upper digit.

In the format 4, the data notated in hexadecimal is converted to a 1-digit binary code (binary) and transmitted.

■Number of points

Specify the number of device data to be written to multiple points in bit units. (Setting range: Range of the maximum number of points processed for each command)

In the format 3, the data notated in decimal is converted to a 2-digit ASCII code (hexadecimal) and transmitted from the upper digit.

In the format 4, the data notated in decimal is converted to a 1-digit binary code (binary) and transmitted.

■Year, month, day, hour, minute, second and day of the week data

Specify the year, month, day, hour, minute, second, and day of the week data to be read or set to the GOT clock data.

In the format 3, the data notated in decimal is converted to a 2-digit ASCII code (hexadecimal) and transmitted from the upper digit.

In the format 4, the data notated in decimal is converted to a 1-digit binary code (binary) and transmitted.

☞ Page 2277 Read clock data (6) command (without station number), read clock data (G) command (with station number)
☞ Page 2278 Set clock data (5) command (without station number), set clock data (F) command (with station number)

■Data

Specify the data to read from or write to the specified device data. (word unit)

In the format 3, the data notated in hexadecimal is converted to a 4-digit ASCII code (hexadecimal) and transmitted from the upper digit.

In the format 4, the data notated in hexadecimal is converted to a 2-digit binary code (binary) and transmitted from the upper digit.

■Write data

Specify the data to write to the specified device data.

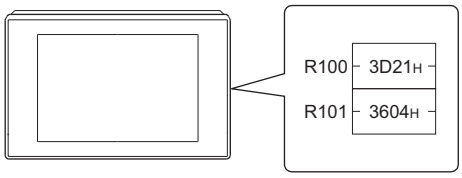
The data notated in hexadecimal is converted to a 2-digit ASCII code (hexadecimal) and transmitted from the upper digit.

Message format

■Batch read (0) command (without station number), batch read (A) command (with station number)

- When reading a word device

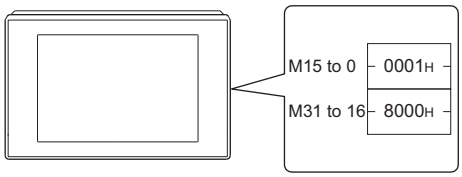
The following shows an example of reading four bytes of virtual devices R100 to R101 from the GOT at station No. 15. (Assuming R100=3D21H, R101=3604H are stored.)



Item	Message format
Request message (host → GOT)	(Format 3: GOT-F900 series microcomputer connection (ASCII)) Command: A (41H) Station No.: 1 (31H) (H), 5 (35H) (L) Address: 0 (30H) (H), 0 (30H) –, C (43H) –, 8 (38H) (L) Number of bytes: 0 (30H) (H), 4 (34H) (L) (Format 4: GOT-F900 series microcomputer connection (Binary)) Command: A Station No.: 0FH Address: 00H C8H Number of bytes: 04H
Response message during normal communication (GOT → host)	(Format 3: GOT-F900 series microcomputer connection (ASCII)) Data 1 (R100 upper): 3 (33H) (H), D (44H) (L) Data 2 (R100 lower): 2 (32H) (H), 1 (31H) (L) Data 3 (R101 upper): 3 (33H) (H), 6 (36H) (L) Data 4 (R101 lower): 0 (30H) (H), 4 (34H) (L) (Format 4: GOT-F900 series microcomputer connection (Binary)) Data 1 (R100 upper): 3DH Data 2 (R100 lower): 21H Data 3 (R101 upper): 36H Data 4 (R101 lower): 04H
Response message during faulty communication (GOT → host)	NAK 15H

• When reading a bit device

The following shows an example of reading four bytes of the virtual devices M0 to M31.
(Assuming M0=1 and M31=1 are stored.)

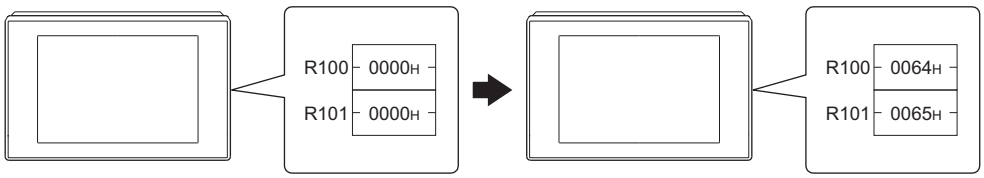


Item	Message format
Request message (host → GOT)	(Format 3: GOT-F900 series microcomputer connection (ASCII)) Command: A (41H) Station No.: 1 (31H) (H), 5 (35H) (L) Address: 2 (32H) (H), 0 (30H) –, 0 (30H) –, 0 (30H) (L) Number of bytes: 0 (30H) (H), 4 (34H) (L) (Format 4: GOT-F900 series microcomputer connection (Binary)) Command: A Station No.: 0FH Address: 20H 00H Number of bytes: 04H
Response message during normal communication (GOT → host)	(Format 3: GOT-F900 series microcomputer connection (ASCII)) Data 1 (M7 to 0): 0 (30H) (H), 1 (31H) (L) Data 2 (M15 to 8): 0 (30H) (H), 0 (30H) (L) Data 3 (M23 to 16): 0 (30H) (H), 0 (30H) (L) Data 4 (M31 to 24): 8 (38H) (H), 0 (30H) (L) 0 0 0 0 0 0 1 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 1 0 0 0 0 0 0 0 M M M M M M M M M M M M M M M M M M M M M M M M M M M M M M M M 7 6 5 4 3 2 1 0 1 1 1 1 1 1 9 8 2 2 2 2 1 1 1 1 3 3 2 2 2 2 2 2 5 4 3 2 1 0 3 2 1 0 9 8 7 6 1 0 9 8 7 6 5 4 (Format 4: GOT-F900 series microcomputer connection (Binary)) Data 1 (M7 to 0): 01H Data 2 (M15 to 8): 00H Data 3 (M23 to 16): 00H Data 4 (M31 to 24): 80H 0 0 0 0 0 0 1 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 1 0 0 0 0 0 0 0 M M M M M M M M M M M M M M M M M M M M M M M M M M M M M M M M 7 6 5 4 3 2 1 0 1 1 1 1 1 1 9 8 2 2 2 2 1 1 1 1 3 3 2 2 2 2 2 2 5 4 3 2 1 0 3 2 1 0 9 8 7 6 1 0 9 8 7 6 5 4
Response message during faulty communication (GOT → host)	NAK 15H

■Batch write (1) command (without station number), batch write (B) command (with station number)

- When writing to a word device

The following shows an example of writing "3D21H" and "3604H" to virtual devices R100 and R101 on the GOT at station No. 15.



Before execution　　After execution

Item	Message format
Request message (host → GOT)	(Format 3: GOT-F900 series microcomputer connection (ASCII))

Com-mand	Station No.		Address				Number of bytes		Data 1 (R100 upper)		Data 2 (R100 lower)		Data 3 (R101 upper)		Data 4 (R101 lower)	
B	1	5	0	0	C	8	0	4	3	D	2	1	3	6	0	4
42H	31H	35H	30H	30H	43H	38H	30H	34H	33H	44H	32H	31H	33H	36H	30H	34H
	(H)	(L)	(H)	–	–	(L)	(H)	(L)	(H)	(L)	(H)	(L)	(H)	(L)	(H)	(L)

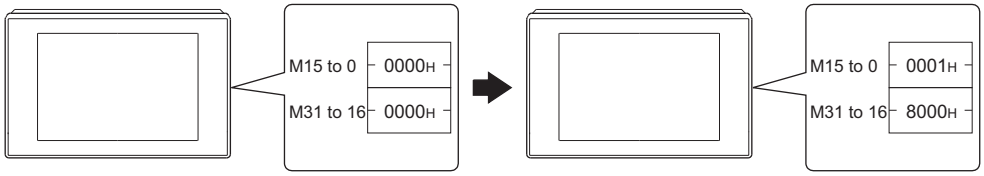
(Format 4: GOT-F900 series microcomputer connection (Binary))

Com-mand	Station No.	Address		Number of bytes	Data 1 (R100 upper)	Data 2 (R100 lower)	Data 3 (R101 upper)	Data 4 (R101 lower)
B	0FH	00H	C8H	04H	3DH	21H	36H	04H

Response message during normal communication (GOT → host)	ACK 06H
Response message during faulty communication (GOT → host)	NAK 15H

• When writing to a bit device

The following shows an example of writing "1" to virtual devices M0 and M31 on the GOT at station No. 15.

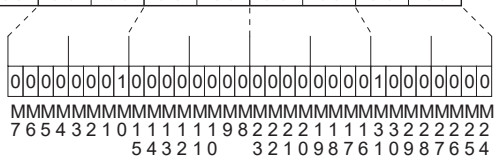


Before execution

After execution

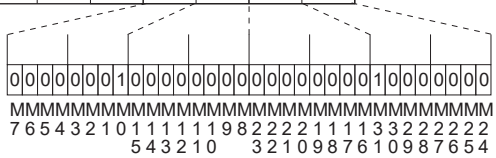
Item	Message format
Request message (host → GOT)	(Format 3: GOT-F900 series microcomputer connection (ASCII))

Com-mand	Station No.		Address				Number of bytes		Data 1 (M7 to 0)		Data 2 (M15 to 8)		Data 3 (M23 to 16)		Data 4 (M31 to 24)	
B	1	5	2	0	0	0	0	4	0	1	0	0	0	0	8	0
42H	31H	35H	32H	30H	30H	30H	30H	34H	30H	31H	30H	30H	30H	30H	38H	30H
	(H)	(L)	(H)	–	–	(L)	(H)	(L)	(H)	(L)	(H)	(L)	(H)	(L)	(H)	(L)



(Format 4: GOT-F900 series microcomputer connection (Binary))

Com-mand	Station No.	Address		Number of bytes	Data 1 (M7 to 0)	Data 2 (M15 to 8)	Data 3 (M23 to 16)	Data 4 (M31 to 24)
B	0FH	20H	00H	04H	01H	00H	00H	80H



Response message during normal communication (GOT → host)	ACK 06H
Response message during faulty communication (GOT → host)	NAK 15H

■Multi-point write in bit units (3) command (without station number), multi-point write in bit units (D) command (with station number)

The following shows an example of turning off the virtual device M31 and turning on the virtual device M2038 on the GOT at station No. 31.

Item	Message format
Request message (host → GOT)	(Format 3: GOT-F900 series microcomputer connection (ASCII))

Com-mand	Station No.		Number of points		Write specification 1	Address1				Bit pattern1		Write specification 2	Address2				Bit pattern2	
D	3	1	0	2	1	2	0	0	3	8	0	0	2	0	F	E	4	0
44H	33H	31H	30H	32H	31H	32H	30H	30H	33H	38H	30H	30H	32H	30H	46	45H	34H	30H
	(H)	(L)	(H)	(L)		(H)	–	–	(L)	(H)	(L)		(H)	–	–	(L)	(H)	(L)

*1 (write specification1=1)

Source data bit pattern	1	0	1	0	1	0	1	0
	1	0	0	0	0	0	0	0
Result	0	0	1	0	1	0	1	0
	M33	M32	M32	M32	M32	M32	M32	M32
	10	09	08	07	06	05	04	

*1 (write specification2=0)

Source data bit pattern	1	0	1	0	1	0	1	0
	0	1	0	0	0	0	0	0
Result	1	1	1	0	1	0	1	0
	M2000333	M2000332	M2000331	M2000330	M2000329	M2000328	M2000327	M2000326

(Format 4: GOT-F900 series microcomputer connection (Binary))

Com-mand	Station No.	Number of points	Write specification 1	Address1		Bit pattern1	Write specification 2	Address2		Bit pattern2
D	1FH	02H	1	20H	03H	80H	0	20H	FEH	40H

*1 (write specification1=1)

Source data bit pattern	1	0	1	0	1	0	1	0
	1	0	0	0	0	0	0	0
Result	0	0	1	0	1	0	1	0
	M33	M32	M32	M32	M32	M32	M32	M32
	10	09	08	07	06	05	04	

*1 (write specification2=0)

Source data bit pattern	1	0	1	0	1	0	1	0
	0	1	0	0	0	0	0	0
Result	1	1	1	0	1	0	1	0
	M2000333	M2000332	M2000331	M2000330	M2000329	M2000328	M2000327	M2000326

Response message during normal communication (GOT → host)	ACK 06H
Response message during faulty communication (GOT → host)	NAK 15H

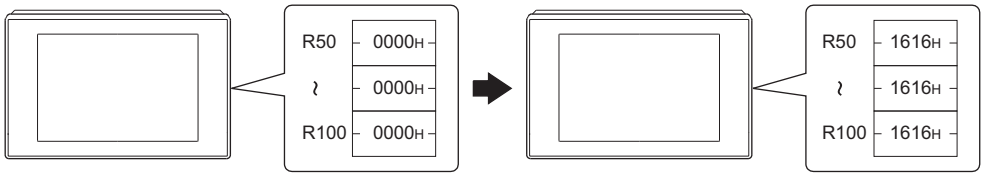
*1 The write specification specifies how the data of the specified address is changed in the bit pattern.

Write specification	Function	Description	Action example
0	ON specification	Bits set to "1" by the bit pattern are turned on.	Original data 1010 Bit pattern 1100
			Result 1110
1	OFF specification	Bits set to "1" by the bit pattern are turned off.	Original data 1010 Bit pattern 1100
			Result 0010

Write specification	Function	Description	Action example
2	Invert specification	Bits set to "1" by the bit pattern are inverted.	Original data 1010 Bit pattern 1100
			Result 0110
3	Write specification	The numerical values to write by the bit pattern are specified directly.	Original data 1010 Bit pattern 1100
			Result 1100

■Fill command (4) (without station number), fill command (E) (with station number)

The following shows an example of writing "16" to virtual devices R50 to R100 on the GOT at station No. 27.



Before execution

After execution

Item	Message format
Request message (host → GOT)	(Format 3: GOT-F900 series microcomputer connection (ASCII))

Com-mand	Station No.		Start address				End address				Write Data	
E	2	7	0	0	6	4	0	0	C	9	1	6
45H	32H	37H	30H	30H	36H	34H	30H	30H	43H	39H	31H	36H
	(H)	(L)	(H)	–	–	(L)	(H)	–	–	(L)	(H)	(L)

(Format 4: GOT-F900 series microcomputer connection (Binary))

Com-mand	Station No.	Start address		End address		Write Data
E	1BH	00H	64H	00H	C9H	16H

Response message during normal communication (GOT → host)	ACK 06H
Response message during faulty communication (GOT → host)	NAK 15H

Point

• Start address/end address specification conditions

Specify addresses so that the start address is the same or less than the end address.

Error response occurs in the following cases:

The address to specify has the start address greater than the end address.

Either of the start address or end address exceeds the device range that can be specified.

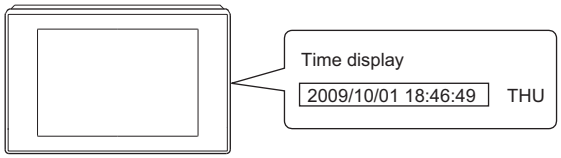
• Address specifying crossing over different devices

The start address and end address can be specified crossing over different devices.

■Read clock data (6) command (without station number), read clock data (G) command (with station number)

The following shows an example of reading the clock data of GOT at station No. 27.

(Assuming that the clock data of GOT has been set to "2009, October 1, 18:46:49, Thursday".)

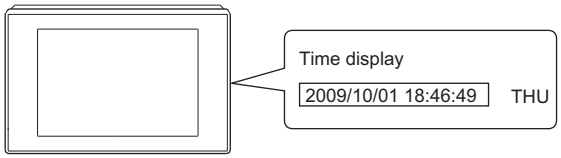


Item	Message format
Request message (host → GOT)	(Format 3: GOT-F900 series microcomputer connection (ASCII)) Command: G (47H) Station No.: 2 (32H) (H), 7 (37H) (L) (Format 4: GOT-F900 series microcomputer connection (Binary)) Command: G Station No.: 1BH
Response message during normal communication (GOT → host)	(Format 3: GOT-F900 series microcomputer connection (ASCII)) Year data: 0 (30H) (H), 9 (39H) (L) Month data: 1 (31H) (H), 0 (30H) (L) Day data: 0 (30H) (H), 1 (31H) (L) Hour data: 1 (31H) (H), 8 (38H) (L) Minute data: 4 (34H) (H), 6 (36H) (L) Second data: 4 (34H) (H), 9 (39H) (L) Day-of-week data: 0 (30H) (H), 4 (34H) (L) (Format 4: GOT-F900 series microcomputer connection (Binary)) Year data: 09H Month data: 0AH Day data: 01H Hour data: 12H Minute data: 2EH Second data: 31H Day-of-week data: 04H
Response message during faulty communication (GOT → host)	NAK 15H

■Set clock data (5) command (without station number), set clock data (F) command (with station number)

The following shows an example of setting clock data of GOT at station No. 27.

(Assuming the clock data of GOT is to be set to "2009, October 1, 18:46:49 Thursday".)



After execution

Item	Message format
Request message (host → GOT)	(Format 3: GOT-F900 series microcomputer connection (ASCII))

Com-mand	Station No.		Year data		Month data		Day Data		Hour data		Minute data		Second data		Day-of-week data	
F	2	7	0	9	1	0	0	1	1	8	4	6	4	9	0	4
46H	32H	37H	30H	39H	31H	30H	30H	31H	31H	38H	34H	36H	34H	39H	30H	34H
	(H)	(L)	(H)	(L)	(H)	(L)	(H)	(L)	(H)	(L)	(H)	(L)	(H)	(L)	(H)	(L)

(Format 4: GOT-F900 series microcomputer connection (Binary))

Com-mand	Station No.	Year data	Month data	Day data	Hour data	Minute data	Second data	Day-of-week data
F	1BH	09H	0AH	01H	12H	2EH	31H	04H

Response message during normal communication (GOT → host)	ACK 06H
Response message during faulty communication (GOT → host)	NAK 15H

Point

When a wrong day of the week has been set by the clock data setting command

If a wrong day of the week is set by the clock data setting commands, the corrected day of the week will be set.

Example: When June 1, 2004 (Thursday) is set by the clock data setting command (The actual day of week is Tuesday.)

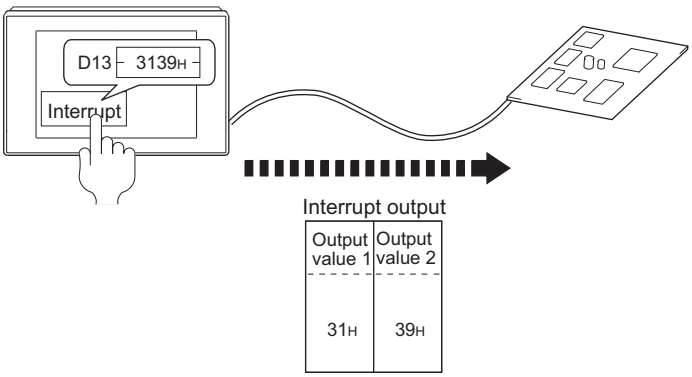
Tuesday (TUE) will be set.

■In the case of interrupt outputs

Write data to the interrupt output devices (D13 and D14) to output the data to the host.

(Assuming that "3139H" is written to D13 and "AA55H" to D14.)

Example) When [Interrupt Data Byte] in the communication detail settings is set to 2 byte as shown in (2) of the table below



Item	Message format
Interrupt output (GOT → host)	(1) When [Interrupt Data Byte] in [Detail Setting] is set to [1] Output value 1: 39H (2) When [Interrupt Data Byte] in [Detail Setting] is set to [2] Output value 1: 31H, Output value 2: 39H (3) When [Interrupt Data Byte] in [Detail Setting] is set to [4] • When [32bit Storage] is set to [LH Order] in [Detail Setting] Output value 1: AAH, Output value 2: 55H, Output value 3: 31H, Output value 4: 39H • When [32bit Storage] is set to [HL Order] in [Detail Setting] Output value 1: 31H, Output value 2: 39H, Output value 3: AAH, Output value 4: 55H

Point

Interrupt output

To disable the interrupt output, turn on SM52 (interrupt code output disable flag).

☞ Page 2250 SM devices

Error code list

When faulty, the error code is stored in SD2.

For details on error code stored in SD2, the error contents, cause and measures, refer to the following.

☞ Page 2248 Details and actions for errors (error codes) stored into SD2

When an error other than those to be stored in SD2 occurs, at faulty, only the NAK response is executed.

49.4.5 Format 5

The following describes the message format 5 (SCHNEIDER EJH's (former Digital Electronics Corporation) memory link method).

Basic format of data communication

This is the same format as the protocol of the SCHNEIDER EJH's memory link method.
For details on the basic format of data communication, refer to the following manual:
📖The connection manual of the device manufactured by SCHNEIDER EJH
This section describes items whose settings differ from the protocols of the SCHNEIDER EJH's memory link method and dedicated commands for a microcomputer connection of the GOT.
Example: Request message for the batch read in word units (R) command in format 5 (SCHNEIDER EJH's memory link method)

				Data length				ESC	Com-mand	Address		Number of points	
B									R				
42H	00H	00H	00H	00H	00H	00H	06H	1BH	52H	00H	64H	00H	02H

Details of data items in message format

Point

Data code during communication
Communication is performed in binary code.

■Command

Specify the contents to access from the host to GOT.
The command is converted to a 1-digit ASCII code (hexadecimal) and transmitted.
For details on the commands that can be used, refer to the following.
☞ Page 2253 List of commands

■Address

Specify the start number of the device data to be read or written.
The data notated in hexadecimal is converted to a 4-digit binary code (hexadecimal) and transmitted from the upper digit.
For details on the device range that can be accessed, refer to the following.
☞ Page 2238 Device data area

■Number of points

Specify the number of device data to be read or written. (Setting range: Range of the maximum number of points processed for each command)
The data notated in hexadecimal is converted to a 4-digit binary code (hexadecimal) and transmitted from the upper digit.

■Error code

This is the response message at faulty communication appended with error contents.
The data notated in hexadecimal is converted to a 2-digit binary code (hexadecimal) and transmitted from the upper digit.
For details on error code generated in format 5 (SCHNEIDER EJH's memory link method), refer to the following.
☞ Page 2282 Error code list

Point

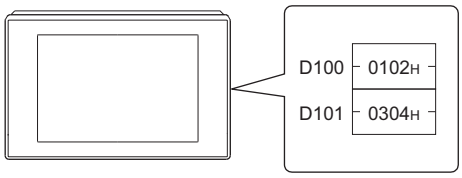
When connecting a microcomputer or others that uses the protocol of the SCHNEIDER EJH's memory link method with the GOT
To do so, correct the commands to be used and the device ranges to match the specifications of the GOT.

Message formats

The following shows the message format of the dedicated commands for a microcomputer connection of GOT.

■Batch read in word units (R) command

The following shows an example of reading the two points of the virtual devices D100 to D101.
(Assuming D100=0102H, D101=0304H are stored.)



Item	Message format
Request message (host → GOT)	
Response message during normal communication (GOT → host)	

Request message (host → GOT):

				Data length				ESC	Com-mand	Address		Number of points	
B									R				
42H	00H	00H	00H	00H	00H	00H	06H	1BH	52H	00H	64H	00H	02H

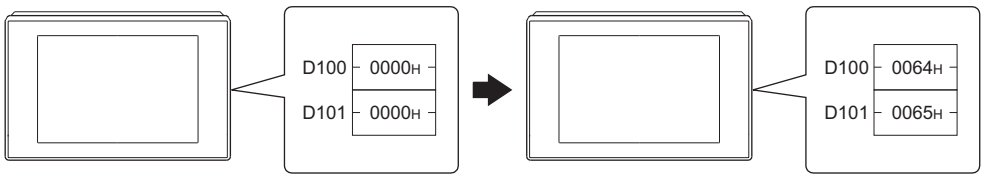
Response message during normal communication (GOT → host):

				Data length				ESC	Com-mand	Address		Number of points	
b									A				
42H	00H	00H	00H	00H	00H	00H	06H	1BH	41H	01H	02H	03H	04H

■Batch write in word units (WD) command

- When writing to a word device

The following shows as example of writing "0064H"and "0065H" to virtual devices D100 and D101.



Before execution

After execution

Item	Message format
Request message (host → GOT)	
Response message during normal communication (GOT → host)	

Request message (host → GOT):

				Data length				ESC	Com-mand	Address		Number of points		Data 1		Data 2	
B									W								
42H	00H	00H	00H	00H	00H	00H	0AH	1BH	57H	00H	64H	00H	02H	00H	64H	00H	65H

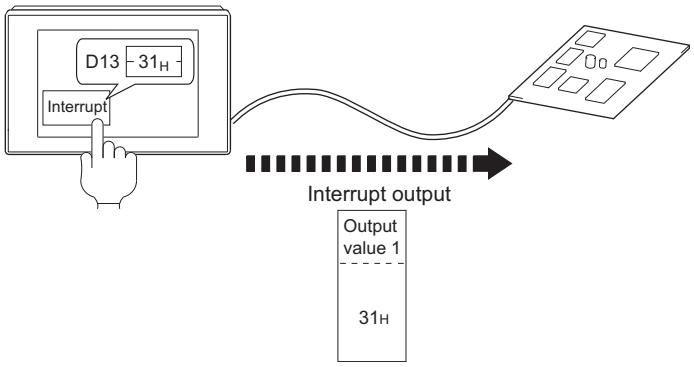
Response message during normal communication (GOT → host):

				Data length				ACK
b								
42H	00H	00H	00H	00H	00H	00H	06H	06H

■In the case of interrupt outputs

Write data to the interrupt output devices (D13 and D14) to output the data to the host.
(Assuming that "31H" is written to D13.)

Example) When [Interrupt Data Byte] in the communication detail settings is set to 1 byte as shown in the table below



Item	Message format
Interrupt output (GOT → host)	When [Interrupt Data Byte] in [Detail Setting] is set to [1] Output value 1 31H

Point

Interrupt output
To disable the interrupt output, turn on SM52 (interrupt code output disable flag).
☞ Page 2250 SM devices

Error code list

In the case of format 5 (SCHNEIDER EJH's memory link method), the details (error code) of the error are appended to the response message during faulty communication.
The following shows error code, error contents, cause, and measures.

Error code	Description	Action
10H	Command error An unsupported command was used.	• Review the contents of the message to transmit. • Check the commands in the message. ☞ Page 2253 List of commands
12H	Message length error The upper limit of the data length that can be received by the GOT has been exceeded.	
FAH	Address error The start address of the read or write device is out of range.	• Review the contents of the message to transmit. • Check the data length of the message. (data length of the data section, etc.)
FBH	Exceeded number of points error The read or write range has exceeded the device range.	• Review the contents of the message to transmit. • Check the devices that can be used and the device ranges. ☞ Page 2238 Device data area
FCH	Message format error The format of the received message has error.	• Check the settings in [Detail Setting]. • Review the contents of the message to transmit.
FFH	Timeout error There is no response from the GOT, or the station of the specified address does not exist.	• Check the communication cable and communication module attachment. • Check the settings in [Detail Setting]. • Review the contents of the message to transmit.

Precautions

When 32-bit data is specified to use the program of the SCHNEIDER EJH's memory link method, set [HL Order] for [32bit Storage] in [Detail Setting].
If [LH Order] is set, higher-order bits and lower-order bits are reversed when 32-bit data is displayed or written to the GOT.

49.4.6 Format 6, 7

The following describes the message formats 6 and 7 (4E frame).

Basic format of data communication

This is the same message format as when communication is performed using the MC protocol (4E frame) of the Q/QnA series serial communication module.

For details on the basic format of data communication, refer to the following manual:

📖MELSEC Communication Protocol Reference Manual

This section describes items whose settings differ from the MC protocol of the Q/QnA series serial communication module, and the dedicated commands for a GOT microcomputer connection.

Example: Request message for the batch read (0401) command in word units

Device name: D

Start device: 100

Device points: 2

Communication settings of GOT side: Network No.=1, PLC No.=1

<Format 6 (4E frame (ASCII))>

Request type				Serial No.				Fixed value				Network No.		PLC No.		Request destination module I/O No.				Request destination module station No.		Following *1
5	4	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	
35H	34H	30H	30H	30H	30H	30H	30H	30H	30H	30H	30H	30H	31H	30H	31H	30H	30H	30H	30H	30H	30H	
(H)	(L)	(H)	(L)	(H)	(L)	(H)	(L)	(H)	(L)	(H)	–	(H)	(L)	(H)	(L)	(H)	–	–	(L)	(H)	(L)	

<Format 7 (4E frame (Binary))>

Request type		Serial No.		Fixed value		Network No.	PLC No.	Request destination module I/O No.		Request destination module station No.	Request data length		CPU monitoring timer		Command		Sub-command		Head Device			Device code	Device points	
54H	00H	00H	00H	00H	00H	01H	01H	00H	00H	00H	0CH	00H	00H	00H	01H	04H	00H	00H	64H	00H	00H	A8H	02H	00H

Data length target range

Details of data items in message format

Point

Data code during communication

Communication of format 6 is performed in ASCII code.

Communication of the format 7 is performed in binary code.

The following table shows the contents of the data items.

Data item name	Contents	
	Format 6	**Format 7**
Request type (Microcomputer side)	Indicates it is a command message.	
	Command message: ASCII code 5400 (Fixed value)	Command message: 54H (Upper digit) (Fixed value)
Response type (GOT side)	Indicates it is a response message.	
	Response message: ASCII code D400 (Fixed value)	Response message: D4H (Upper digit) (Fixed value)
Serial number	Arbitrary number for recognition of the message appended at the microcomputer side. GOT sends the response message appending this serial number.	
Fixed value	Should be ASCII code 0000.	Should be "0000H".
Network number	Set the same number as the network number set in the GOT. For the settings in [Detail Setting], refer to the following. ☞ Page 2305 [Detail Setting]	
	Transmit the data converted to a 2-digit ASCII code from the upper digit.	Transmit the data converted to a 2-digit binary code.
PLC number	Set the same number as the PLC number set in the GOT. For the settings in [Detail Setting], refer to the following. ☞ Page 2305 [Detail Setting]	
	Transmit the data converted to a 2-digit ASCII code from the upper digit.	Transmit the data converted to a 2-digit binary code.
Request destination module I/O number	Ignore GOT.	
Request destination module station number	Ignore GOT.	
Request data length	Number of bytes from the start of CPU monitoring timer to the last request data.	
	Transmit the data converted to a 4-digit ASCII code from the upper digit.	Transmit the data converted to a 4-digit binary code from the lower two digits.
Response data length	Appended to the response message from the microcomputer side. Number of bytes from the start of end code to the last response data or last error response data.	
	Transmit the data converted to a 4-digit ASCII code from the upper digit.	Transmit the data converted to a 4-digit binary code from the lower two digits.
CPU monitoring timer	Ignore GOT.	
Command, Sub-command	Specify the access contents from the microcomputer side to GOT. For details on the commands that can be used, refer to the following. ☞ Page 2253 List of commands	
	Transmit the data converted to a 4-digit ASCII code from the upper digit.	Transmit the data converted to a 4-digit binary code from the lower two digits.
Device code	Specify the code by which the device data to be read or written is recognized. For details on the device range that can be accessed, refer to the following. ☞ Page 2238 Device data area	
	Transmit the 2-digit ASCII code corresponding to the following device codes. Device name / Device code M / M* SM / SM L / L* D / D* SD / SD R / R*	Transmit the 2-digit binary code corresponding to the following device codes. Device name / Device code M / 90H SM / 91H L / 92H D / A8H SD / A9H R / AFH

Data item name	Contents	
	Format 6	**Format 7**
Start device	Specify the start number of the device data to be read or written. For details on the device range that can be accessed, refer to the following. ☞ Page 2238 Device data area	
	Transmit the data notated in decimal converted to a 6-digit ASCII code, from the upper digit.	Transmit the data converted to a 6-digit binary code from the lower two digits.
Device points	Specify the number of device data to be read or written. (Setting range: Range of the maximum number of points processed for each command) <When using the random read or write command> When setting multiple bit accesses, word accesses or double word accesses, limit the total number of access points to within 64 points. <When using multiple block batch read or write commands> When setting multiple blocks, limit the total number of points of all blocks to within the maximum number of points processed for each command.	
	Transmit the data notated in decimal converted to a 4-digit ASCII code, from the upper digit.	Transmit the data converted to a 4-digit binary code from the lower two digits.
Year, month, day, hour, minute, second and day of the week data	Specify the year, month, day, hour, minute, second, and day of the week data to be read or set to the GOT clock data. ☞ Page 2286 Read clock data (1901) command ☞ Page 2289 Set clock data (0901) command	
	Transmit the data notated in decimal converted to a 2-digit ASCII code, from the upper digit.	Transmit the data converted to a 2-digit binary code.
End code (Microcomputer side)	Appended to the response message from the microcomputer side. If an error occurs at the microcomputer side, the error code is displayed. ☞ Page 2293 Error code list	
	Transmit the data notated in hexadecimal converted to a 4-digit ASCII code, from the upper digit.	Transmit the data converted to a 4-digit binary code from the lower two digits.

Point

When connecting a microcomputer, etc. that uses the MC protocol of the Q/QnA series serial communication module with the GOT, correct the commands to be used and the device ranges to match the GOT specifications.

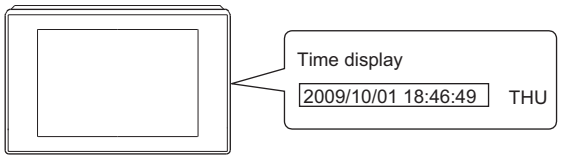
Message format

The following shows the message format of the dedicated commands for a microcomputer connection of GOT.

■Read clock data (1901) command

The following shows an example of reading the clock data of GOT.

(Assuming that the clock data of GOT has been set to "2009, October 1, 18:46:49, Thursday".)



Item	Message format
Request message (host → GOT)	(Format 6: 4E frame (ASCII))

Request type				Serial No.				Fixed value				Network No.		PLC No.		
5	4	0	0	0	0	0	0	0	0	0	0	0	1	0	1	Following *1
35H	34H	30H	30H	30H	30H	30H	30H	30H	30H	30H	30H	30H	31H	30H	31H	
(H)	–	–	(L)	(H)	–	–	(L)	(H)	–	–	(L)	(H)	(L)	(H)	(L)	

*1

Request destination module I/O No.				Request destination module station No.		Request data length				CPU monitoring timer				
0	0	0	0	0	0	0	0	0	C	0	0	0	0	→ 1)
30H	30H	30H	30H	30H	30H	30H	30H	30H	43H	30H	30H	30H	30H	
(H)	–	–	(L)	(H)	(L)	(H)	–	–	(L)	(H)	–	–	(L)	

Character A section

	Command				Sub-command			
1) →	1	9	0	1	0	0	0	0
	31H	39H	30H	31H	30H	30H	30H	30H
	(H)	–	–	(L)	(H)	–	–	(L)

(Format 7: 4E frame (Binary))

Data length target range

Request type		Serial No.		Fixed value		Network No.	PLC No.	Request destination module I/O No.		Request destination module station No.	Request data length		CPU monitoring timer		Command		Sub-command	
54H	00H	00H	00H	00H	00H	01H	01H	00H	00H	00H	06H	00H	00H	00H	01H	19H	00H	00H

Item	Message format
Response message during normal communication (GOT → host)	(Format 6: 4E frame (ASCII))

Response type				Serial No.				Fixed value				Network No.		PLC No.		
D	4	0	0	0	0	0	0	0	0	0	0	0	1	0	1	Following *1
44H	34H	30H	30H	30H	30H	30H	30H	30H	30H	30H	30H	30H	31H	30H	31H	
(H)	–	–	(L)	(H)	–	–	(L)	(H)	–	–	(L)	(H)	(L)	(H)	(L)	

*1

Request destination module I/O No.				Request destination module station No.		Response data length				End code				
0	0	0	0	0	0	0	0	1	2	0	0	0	0	→ 1)
30H	30H	30H	30H	30H	30H	30H	30H	31H	32H	30H	30H	30H	30H	
(H)	–	–	(L)	(H)	(L)	(H)	–	–	(L)	(H)	–	–	(L)	

Character B section

	Year data		Month data		Day data		Hour data		Minute data		Second data		Day-of-week data	
1) →	0	9	1	0	0	1	1	8	4	6	4	9	0	4
	30H	39H	31H	30H	30H	31H	31H	38H	34H	36H	34H	39H	30H	34H
	(H)	(L)	(H)	(L)	(H)	(L)	(H)	(L)	(H)	(L)	(H)	(L)	(H)	(L)

(Format 7: 4E frame (Binary))

Request type		Serial No.		Fixed value		Network No.	PLC No.	Request destination module I/O No.		Request destination module station No.	Response data length		Following *1
D4H	00H	00H	00H	00H	00H	01H	01H	00H	00H	00H	09H	00H	

Data length target range

*1

End code		Year data	Month data	Day data	Hour data	Minute data	Second data	Day-of-week data
00H	00H	09H	0AH	01H	12H	2EH	31H	04H

Item	Message format
Response message during faulty communication (GOT → host)	(Format 6: 4E frame (ASCII))

Response type				Serial No.				Fixed value				Network No.		PLC No.		Following *1
D	4	0	0	0	0	0	0	0	0	0	0	0	1	0	1	
44H	34H	30H	30H	30H	30H	30H	30H	30H	30H	30H	30H	30H	31H	30H	31H	
(H)	–	–	(L)	(H)	–	–	(L)	(H)	–	–	(L)	(H)	(L)	(H)	(L)	

*1

Request destination module I/O No.				Request destination module station No.		Response data length				End code				
0	0	0	0	0	0	0	0	1	6	0	0	5	6	→ 1)
30H	30H	30H	30H	30H	30H	30H	30H	31H	36H	30H	30H	35H	36H	
(H)	–	–	(L)	(H)	(L)	(H)	–	–	(L)	(H)	–	–	(L)	

1) →	Network No.		PLC No.		Request destination module I/O No.				Request destination module station No.		Command				Sub-command			
	0	0	0	0	0	0	0	0	0	0	1	9	0	1	0	0	0	0
	30H	30H	30H	30H	30H	30H	30H	30H	30H	30H	31H	39H	30H	31H	30H	30H	30H	30H
	(H)	(L)	(H)	(L)	(H)	–	–	(L)	(H)	(L)	(H)	–	–	(L)	(H)	–	–	(L)

(Format 7: 4E frame (Binary))

Request type		Serial No.		Fixed value		Network No.	PLC No.	Request destination module I/O No.		Request destination module station No.	Response data length		Following *1
D4H	00H	00H	00H	00H	00H	01H	01H	00H	00H	00H	0BH	00H	

Data length target range

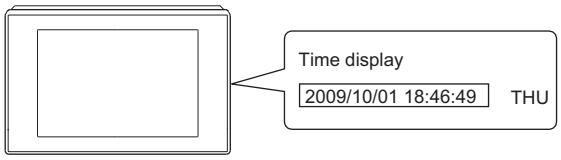
*1

End code		Network No.	PLC No.	Request destination module I/O No.		Request destination module station No.	Command		Sub-command	
56H	00H	00H	00H	00H	00H	00H	01H	19H	00H	00H

■Set clock data (0901) command

The following shows an example of setting the clock data of GOT.

(Assuming the clock data of GOT is to be set to "2009, October 1, 18:46:49 Thursday".)



After execution

Item	Message format
Request message (host → GOT)	(Format 6: 4E frame (ASCII))

Response type				Serial No.				Fixed value				Network No.		PLC No.		Following *1
5	4	0	0	0	0	0	0	0	0	0	0	0	1	0	1	
35H	34H	30H	30H	30H	30H	30H	30H	30H	30H	30H	30H	30H	31H	30H	31H	
(H)	–	–	(L)	(H)	–	–	(L)	(H)	–	–	(L)	(H)	(L)	(H)	(L)	

*1

	Request destination module I/O No.				Request destination module station No.		Request data length				CPU monitoring timer				Command				
	0	0	0	0	0	0	0	0	1	A	0	0	0	0	0	9	0	1	→ 1)
	30H	30H	30H	30H	30H	30H	30H	30H	31H	41H	30H	30H	30H	30H	31H	39H	30H	31H	
	(H)	–	–	(L)	(H)	(L)	(H)	–	–	(L)	(H)	–	–	(L)	(H)	–	–	(L)	

Character C section

	Sub-command				Year data		Month data		Day data		Hour data		Minute data		Second data		Day-of-week data	
1) →	0	0	0	0	0	9	1	0	0	1	1	8	4	6	4	9	0	4
	30H	30H	30H	30H	30H	39H	31H	30H	30H	31H	31H	38H	34H	36H	34H	39H	30H	34H
	(H)	–	–	(L)	(H)	(L)	(H)	(L)	(H)	(L)	(H)	(L)	(H)	(L)	(H)	(L)	(H)	(L)

(Format 7: 4E frame (Binary))

Request type		Serial No.		Fixed value		Network No.	PLC No.	Request destination module I/O No.		Request destination module station No.	Request data length		Following *1
54H	00H	00H	00H	00H	00H	01H	01H	00H	00H	00H	0DH	00H	

Data length target range

*1

CPU monitoring timer		Command		Sub-command		Year data	Month data	Day data	Hour data	Minute data	Second data	Day-of-week data
00H	00H	01H	09H	00H	00H	09H	0AH	01H	12H	2EH	31H	04H

Item	Message format

Response message during normal communication (GOT → host)

(Format 6: 4E frame (ASCII))

Response type				Serial No.				Fixed value				Network No.		PLC No.		Following *1
D	4	0	0	0	0	0	0	0	0	0	0	0	1	0	1	
44H	34H	30H	30H	30H	30H	30H	30H	30H	30H	30H	30H	30H	31H	30H	31H	
(H)	–	–	(L)	(H)	–	–	(L)	(H)	–	–	(L)	(H)	(L)	(H)	(L)	

*1

Request destination module I/O No.				Request destination module station No.		Response data length				End code			
0	0	0	0	0	0	0	0	0	4	0	0	0	0
30H	30H	30H	30H	30H	30H	30H	30H	30H	34H	30H	30H	30H	30H
(H)	–	–	(L)	(H)	(L)	(H)	–	–	(L)	(H)	–	–	(L)

(Format 7: 4E frame (Binary))

Data length target range

Request type		Serial No.		Fixed value		Network No.	PLC No.	Request destination module I/O No.		Request destination module station No.	Response data length		End code	
D4H	00H	00H	00H	00H	00H	01H	01H	00H	00H	00H	02H	00H	00H	00H

Response message during faulty communication (GOT → host)

(Format 6: 4E frame (ASCII))

Response type				Serial No.				Fixed value				Network No.		PLC No.		Following *1
D	4	0	0	0	0	0	0	0	0	0	0	0	1	0	1	
44H	34H	30H	30H	30H	30H	30H	30H	30H	30H	30H	30H	30H	31H	30H	31H	
(H)	–	–	(L)	(H)	–	–	(L)	(H)	–	–	(L)	(H)	(L)	(H)	(L)	

*1

Request destination module I/O No.				Request destination module station No.		Response data length				End code				
0	0	0	0	0	0	0	0	1	6	0	0	5	6	→ 1)
30H	30H	30H	30H	30H	30H	30H	30H	31H	36H	30H	30H	35H	36H	
(H)	–	–	(L)	(H)	(L)	(H)	–	–	(L)	(H)	–	–	(L)	

	Network No.		PLC No.		Request destination module I/O No.				Request destination module station No.		Command				Sub-command			
1) →	0	0	0	0	0	0	0	0	0	0	0	9	0	1	0	0	0	0
	30H	30H	30H	30H	30H	30H	30H	30H	30H	30H	30H	39H	30H	31H	30H	30H	30H	30H
	(H)	(L)	(H)	(L)	(H)	–	–	(L)	(H)	(L)	(H)	–	–	(L)	(H)	–	–	(L)

(Format 7: 4E frame (Binary))

Request type		Serial No.		Fixed value		Network No.	PLC No.	Request destination module I/O No.		Request destination module station No.	Response data length		Following*1
D4H	00H	00H	00H	00H	00H	01H	01H	00H	00H	00H	0BH	0H	

Data length target range

*1

End code		Network No.	PLC No.	Request destination module I/O No.		Request destination module station No.	Command		Sub-command	
56H	00H	00H	00H	00H	00H	00H	01H	09H	00H	00H

Point

When a wrong day of the week has been set by the clock data setting command

If a wrong day of the week is set by the clock data setting commands, the corrected day of the week will be set.

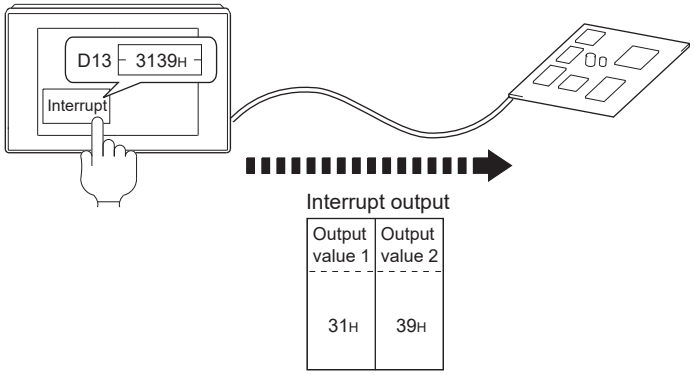
Example: When June 1, 2004 (Thursday) is set by the clock data setting command (The actual day of week is Tuesday.)

Tuesday (TUE) will be set.

■In the case of interrupt outputs

Write data to the interrupt output devices (D13 and D14) to output the data to the host.
(Assuming that "3139H" is written to D13 and "AA55H" to D14.)

Example) When [Interrupt Data Byte] in the communication detail settings is set to 2 byte as shown in (2) of the table below



Item	Message format
Interrupt output (GOT → host)	(1) When [Interrupt Data Byte] in [Detail Setting] is set to [1] Output value 1: 39H (2) When [Interrupt Data Byte] in [Detail Setting] is set to [2] Output value 1: 31H; Output value 2: 39H (3) When [Interrupt Data Byte] in [Detail Setting] is set to [4] • When [32bit Storage] is set to [LH Order] in [Detail Setting] Output value1: AAH; Output value2: 55H; Output value3: 31H; Output value4: 39H • When [32bit Storage] is set to [HL Order] in [Detail Setting] Output value1: 31H; Output value2: 39H; Output value3: AAH; Output value4: 55H

Point

Interrupt output
To disable the interrupt output, turn on SM52 (interrupt code output disable flag).
☞ Page 2250 SM devices

Error code list

The following shows error code, error contents, cause, and measures.

Error code	Description	Action
0002H	Device point error The specified device range to be read or written is incorrect.	• Check and correct the specified start device and number of points. ☞ Page 2238 Device data area
0050H	Request (command) type or response (response) type code error A code other than the specified value is set for the command type or response type.	• Check and correct the command type or response type set in the microcomputer.
0056H	Device error A nonexistent device has been specified.	• Check the devices that can be used and the device ranges. ☞ Page 2238 Device data area
0057H	Device point error • The command number of points specification from the microcomputer exceeds the maximum number of points processed at each process (number of points processed in one communication). • The start address (start device number) to specified number of points exceeds the maximum address (device number, step number) for each process.	• Correct the specified number of points, or the start address (device number). ☞ Page 2238 Device data area
	When writing data which the command bit length is longer or shorter than the specification, the set number of write data points differs from the specified number of points value.	• Check the command data length and set the data again.
0058H	• The command start address (start device number, start step number) specification from the microcomputer exceeds the range that can be specified. • A value outside the GOT parameter setting range is specified for reading or writing the microcomputer program or file register (R).	• Correct the values to values that can be specified in each process.
	• Word device is specified in the command for bit device. • In the command for word device, a bit device start number is specified in other than hexadecimal.	• Correct the command or the specified device.
00A1H	• Request content cannot be analyzed because the text length or request data length is too short.	• Review the text length or the header request data length.
00A2H	• Request cannot be processed.	• Correct the request content and command.
C0D6H	• The network number or station number is specified incorrectly.	• Review the method of specifying the network number and the station number.

49.4.7 Format 8, 9

The following describes the message formats 8 and 9 (QnA compatible 3E frame).

Basic format of data communication

This is the same message format as when communication is performed using the MC protocol (QnA compatible 3E frame) of the Q/QnA series serial communication module.

For details on the basic format of data communication, refer to the following manual:

📖MELSEC Communication Protocol Reference Manual

This section describes items whose settings differ from the MC protocol of the Q/QnA series serial communication module, and the dedicated commands for a GOT microcomputer connection.

Example: Request message for the batch read (0401) command in word units

Device name: D

Start device: 100

Device points: 2

Communication settings of GOT side: Network No.=1, PLC No.=1

(Format 8: QnA compatible 3E frame (ASCII))

Subheader				Network No.		PLC No.		Request destination module I/O No.				Request destination module station No.		Request data length				Following *1
5	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	1	8	
35H	30H	30H	30H	30H	31H	30H	31H	30H	30H	30H	30H	30H	30H	30H	30H	31H	38H	
(H)	(L)	(H)	(L)	(H)	(L)	(H)	(L)	(H)	–	–	(L)	(H)	(L)	(H)	(L)	(H)	(L)	

*1

Character A section

CPU monitoring timer				Command				Sub-command				Device code		Start Device						Device points			
0	0	0	0	0	4	0	1	0	0	0	0	D	*	0	0	0	1	0	0	0	0	0	2
30H	30H	30H	30H	30H	34H	30H	31H	30H	30H	30H	30H	44H	2AH	30H	30H	30H	31H	30H	30H	30H	30H	30H	32H
(H)	(L)	(H)	(L)	(H)	–	–	(L)	(H)	–	–	(L)	(H)	(L)	(H)	–	–	–	–	(L)	(H)	–	–	(L)

Data length target data

(Format 9: QnA compatible 3E frame (Binary))

Subheader		Network No.	PLC No.	Request destination module I/O No.		Request destination module station No.	Request data length		CPU monitoring timer		Command		Sub-command		Start Device			Device code	Device points	
50H	00H	01H	01H	00H	00H	00H	0CH	00H	00H	00H	01H	04H	00H	00H	64H	00H	00H	A8H	02H	00H

Data length target data

Details of data items in message format

Point

Data code during communication

Communication of format 8 is performed in ASCII code.

Communication of the format 9 is performed in Binary code.

The following table shows the contents of the data items.

Data item name	Contents	
	Format 8	**Format 9**
Subheader (Microcomputer side)	Indicates it is a command message.	
	Command message: ASCII code 5000 (Fixed value)	Command message: 50H (Upper digit) (Fixed value)
Subheader (GOT side)	Indicates it is a response message.	
	Response message: ASCII code D000 (Fixed value)	Response message: D0H (Upper digit) (Fixed value)
Network number	Set the same number as the network number set in the GOT. For the settings in [Detail Setting], refer to the following. ☞ Page 2305 [Detail Setting]	
	Transmit the data converted to a 2-digit ASCII code from the upper digit.	Transmit the data converted to a 2-digit binary code.
PLC number	Set the same number as the PLC number set in the GOT. For the settings in [Detail Setting], refer to the following. ☞ Page 2305 [Detail Setting]	
	Transmit the data converted to a 2-digit ASCII code from the upper digit.	Transmit the data converted to a 2-digit binary code.
Request destination module I/O number	Ignore GOT.	
Request destination module station number	Ignore GOT.	
Request data length	Number of bytes from the start of CPU monitoring timer to the last request data.	
	Transmit the data converted to a 4-digit ASCII code from the upper digit.	Transmit the data converted to a 4-digit binary code from the lower two digits.
Response data length	Appended to the response message from the microcomputer side. Number of bytes from the start of end code to the last response data or last error response data.	
	Transmit the data converted to a 4-digit ASCII code from the upper digit.	Transmit the data converted to a 4-digit binary code from the lower two digits.
CPU monitoring timer	Ignore GOT.	
Command, Sub-command	Specify the access contents from the microcomputer side to GOT. For details on the commands that can be used, refer to the following. ☞ Page 2253 List of commands	
	Transmit the data converted to a 4-digit ASCII code from the upper digit.	Transmit the data converted to a 4-digit binary code from the lower two digits.
Device code	Specify the code by which the device data to be read or written is recognized. For details on the device range that can be accessed, refer to the following. ☞ Page 2238 Device data area	
	Transmit the 2-digit ASCII code corresponding to the following device codes. Device name / Device code M / M* SM / SM L / L* D / D* SD / SD R / R*	Transmit the 2-digit binary code corresponding to the following device codes. Device name / Device code M / 90H SM / 91H L / 92H D / A8H SD / A9H R / AFH
Start device	Specify the start number of the device data to be read or written. For details on the device range that can be accessed, refer to the following. ☞ Page 2238 Device data area	
	Transmit the data notated in decimal converted to a 6-digit ASCII code, from the upper digit.	Transmit the data converted to a 6-digit binary code from the lower two digits.

Data item name	Contents	
	Format 8	**Format 9**
Device points	Specify the number of device data to be read or written. (Setting range: Range of the maximum number of points processed for each command) <When using the random read or write command> When setting multiple bit accesses, word accesses or double word accesses, limit the total number of access points to within 64 points. <When using multiple block batch read or write commands> When setting multiple blocks, limit the total number of points of all blocks to within the maximum number of points processed for each command.	
	Transmit the data notated in decimal converted to a 4-digit ASCII code, from the upper digit.	Transmit the data converted to a 4-digit binary code from the lower two digits.
Year, month, day, hour, minute, second and day of the week data	Specify the year, month, day, hour, minute, second, and day of the week data to be read or set to the GOT clock data. ☞ Page 2297 Read clock data (1901) command ☞ Page 2299 Set clock data (0901) command	
	Transmit the data notated in decimal converted to a 2-digit ASCII code, from the upper digit.	Transmit the data converted to a 2-digit binary code.
End code (Microcomputer side)	Appended to the response message from the microcomputer side. If an error occurs at the microcomputer side, the error code is displayed. ☞ Page 2302 Error code list	
	Transmit the data notated in hexadecimal converted to a 4-digit ASCII code, from the upper digit.	Transmit the data converted to a 4-digit binary code from the lower two digits.

Point

When connecting a microcomputer, etc. that uses the MC protocol of the Q/QnA series serial communication module with the GOT, correct the commands to be used and the device ranges to match the GOT specifications.

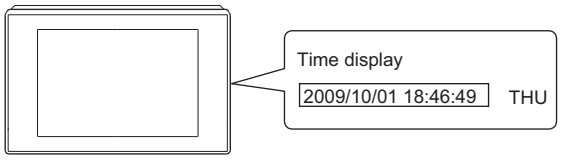
Message format

The following shows the message format of the dedicated commands for a microcomputer connection of GOT.

■Read clock data (1901) command

The following shows an example of reading the clock data of GOT.

(Assuming that the clock data of GOT has been set to "2009, October 1, 18:46:49, Thursday".)



Item	Message format
Request message (host → GOT)	(Format 8: QnA compatible 3E frame (ASCII))

Subheader				Network No.		PLC No.		Request destination module I/O No.				Request destination module station No.		Following *1
5	0	0	0	0	1	0	1	0	0	0	0	0	0	
35H	30H	30H	30H	30H	31H	30H	31H	30H	30H	30H	30H	30H	30H	
(H)	–	–	(L)	(H)	(L)	(H)	(L)	(H)	–	–	(L)	(H)	(L)	

*1 Character A section

	Request data length				CPU monitoring timer				Command				Sub-command			
	0	0	0	C	0	0	0	0	1	9	0	1	0	0	0	0
	30H	30H	30H	43H	30H	30H	30H	30H	31H	39H	30H	31H	30H	30H	30H	30H
	(H)	–	–	(L)	(H)	–	–	(L)	(H)	–	–	(L)	(H)	–	–	(L)

Data length target data

(Format 9: QnA compatible 3E frame (Binary))

Subheader		Network No.	PLC No.	Request destination module I/O No.		Request destination module station No.	Request data length		CPU monitoring timer		Command		Sub-command	
50H	00H	01H	01H	00H	00H	00H	06H	00H	00H	00H	01H	19H	00H	00H

Data length target data

Response message during normal communication (GOT → host)	(Format 8: QnA compatible 3E frame (ASCII))

Subheader				Network No.		PLC No.		Request destination module I/O No.				Request destination module station No.		Response data length				Following *1
D	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	1	2	
44H	30H	30H	30H	30H	31H	30H	31H	30H	30H	30H	30H	30H	30H	30H	30H	31H	32H	
(H)	–	–	(L)	(H)	(L)	(H)	(L)	(H)	–	–	(L)	(H)	(L)	(H)	–	–	(L)	

*1 Character B section

	End code				Year data		Month data		Day data		Hour data		Minute data		Second data		Day-of-week data	
	0	0	0	0	0	9	1	0	0	1	1	8	4	6	4	9	0	4
	30H	30H	30H	30H	30H	39H	31H	30H	30H	31H	31H	38H	34H	36H	34H	39H	30H	34H
	(H)	–	–	(L)	(H)	(L)	(H)	(L)	(H)	(L)	(H)	(L)	(H)	(L)	(H)	(L)	(H)	(L)

Data length target data

(Format 9: QnA compatible 3E frame (Binary))

Subheader		Network No.	PLC No.	Request destination module I/O No.		Request destination module station No.	Response data length		End code		Year data	Month data	Day data	Hour data	Minute data	Second data	Day-of-week data
D0H	00H	01H	01H	00H	00H	00H	09H	00H	00H	00H	09H	0AH	01H	12H	2EH	31H	04H

Data length target data

Item	Message format
Response message during faulty communication (GOT → host)	(Format 8: QnA compatible 3E frame (ASCII))

Subheader				Network No.		PLC No.		Request destination module I/O No.				Request destination module station No.		Response data length				Following *1
D	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	1	6	
44H	30H	30H	30H	30H	31H	30H	31H	30H	30H	30H	30H	30H	30H	30H	30H	31H	36H	
(H)	–	–	(L)	(H)	(L)	(H)	(L)	(H)	–	–	(L)	(H)	(L)	(H)	–	–	(L)	

*1

	End code				Network No.		PLC No.		Request destination module I/O No.				Request destination module station No.		
	0	0	5	6	0	0	0	0	0	0	0	0	0	0	→ 1)
	30H	30H	35H	36H	30H	30H	30H	30H	30H	30H	30H	30H	30H	30H	
	(H)	–	–	(L)	(H)	(L)	(H)	(L)	(H)	–	–	(L)	(H)	(L)	

Data length target data

	Command				Sub-command			
1) →	1	9	0	1	0	0	0	0
	31H	39H	30H	31H	30H	30H	30H	30H
	(H)	–	–	(L)	(H)	–	–	(L)

Data length target data

(Format 9: QnA compatible 3E frame (Binary))

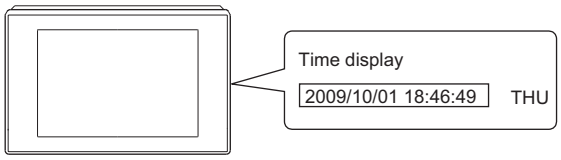
Subheader		Network No.	PLC No.	Request destination module I/O No.		Request destination module station No.	Response data length		End code		Network No.	PLC No.	Request destination module I/O No.		Request destination module station No.	Command		Sub-command	
D0H	00H	01H	01H	00H	00H	00H	0BH	00H	56H	00H	00H	00H	00H	00H	00H	01H	19H	00H	00H

Data length target data

■Set clock data (0901) command

The following shows an example of setting the clock data of GOT.

(Assuming the clock data of GOT is to be set to "2009, October 1, 18:46:49 Thursday".)



After execution

Item	Message format
Request message (host → GOT)	(Format 8: QnA compatible 3E frame (ASCII))

Subheader				Network No.		PLC No.		Request destination module I/O No.				Request destination module station No.		Following *1
5	0	0	0	0	1	0	1	0	0	0	0	0	0	
35H	30H	30H	30H	30H	31H	30H	31H	30H	30H	30H	30H	30H	30H	
(H)	–	–	(L)	(H)	(L)	(H)	(L)	(H)	–	–	(L)	(H)	(L)	

*1

	Response data length				CPU monitoring timer				Command				
	0	0	1	A	0	0	0	0	0	9	0	1	→ 1)
	30H	30H	31H	41H	30H	30H	30H	30H	31H	39H	30H	31H	
	(H)	–	–	(L)	(H)	–	–	(L)	(H)	–	–	(L)	

Data length target data

Character C section

	Sub-command				Year data		Month data		Day data		Hour data		Minute data		Second data		Day-of-week data	
1) →	0	0	0	0	0	9	1	0	0	1	1	8	4	6	4	9	0	4
	30H	30H	30H	30H	30H	39H	31H	30H	30H	31H	31H	38H	34H	36H	34H	39H	30H	34H
	(H)	–	–	(L)	(H)	(L)	(H)	(L)	(H)	(L)	(H)	(L)	(H)	(L)	(H)	(L)	(H)	(L)

Data length target data

(Format 9: QnA compatible 3E frame (Binary))

Subheader		Network No.	PLC No.	Request destination module I/O No.		Request destination module station No.	Request data length		Following *1
50H	00H	01H	01H	00H	00H	00H	0DH	00H	

*1

	CPU monitoring timer		Command		Sub-command		Year data	Month data	Day data	Hour data	Minute data	Second data	Day-of-week data
	00H	00H	01H	09H	00H	00H	09H	0AH	01H	12H	2EH	31H	04H

Data length target data

Item	Message format
Response message during normal communication (GOT → host)	(Format 8: QnA compatible 3E frame (ASCII))

Subheader				Network No.		PLC No.		Request destination module I/O No.				Request destination module station No.		Following *1
D	0	0	0	0	1	0	1	0	0	0	0	0	0	
44H	30H	30H	30H	30H	31H	30H	31H	30H	30H	30H	30H	30H	30H	
(H)	–	–	(L)	(H)	(L)	(H)	(L)	(H)	–	–	(L)	(H)	(L)	

*1

Response data length				End code			
0	0	0	4	0	0	0	0
30H	30H	30H	34H	30H	30H	30H	30H
(H)	–	–	(L)	(H)	–	–	(L)

Data length target data

(Format 9: QnA compatible 3E frame (Binary))

Subheader		Network No.	PLC No.	Request destination module I/O No.		Request destination module station No.	Response data length		End code	
D0H	00H	01H	01H	00H	00H	00H	02H	00H	00H	00H

Data length target data

Response message during faulty communication (GOT → host)	(Format 8: QnA compatible 3E frame (ASCII))

Subheader				Network No.		PLC No.		Request destination module I/O No.				Request destination module station No.		Response data length				Following *1
D	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	1	6	
44H	30H	30H	30H	30H	31H	30H	31H	30H	30H	30H	30H	30H	30H	30H	30H	31H	36H	
(H)	–	–	(L)	(H)	(L)	(H)	(L)	(H)	–	–	(L)	(H)	(L)	(H)	–	–	(L)	

*1

End code				Network No.		PLC No.		Request destination module I/O No.				Request destination module station No.		
0	0	5	6	0	0	0	0	0	0	0	0	0	0	→ 1)
30H	30H	35H	36H	30H	30H	30H	30H	30H	30H	30H	30H	30H	30H	
(H)	–	–	(L)	(H)	(L)	(H)	(L)	(H)	–	–	(L)	(H)	(L)	

Data length target data

1) →

Command				Sub-command			
0	9	0	1	0	0	0	0
30H	39H	30H	31H	30H	30H	30H	30H
(H)	–	–	(L)	(H)	–	–	(L)

Data length target data

(Format 9: QnA compatible 3E frame (Binary))

Subheader		Network No.	PLC No.	Request destination module I/O No.		Request destination module station No.	Response data length		End code		Network No.	PLC No.	Request destination module I/O No.		Request destination module station No.	Command		Sub-command	
D0H	00H	01H	01H	00H	00H	00H	0BH	00H	56H	00H	00H	00H	00H	00H	00H	01H	09H	00H	00H

Data length target data

Point

When a wrong day of the week has been set by the clock data setting command

If a wrong day of the week is set by the clock data setting commands, the corrected day of the week will be set.

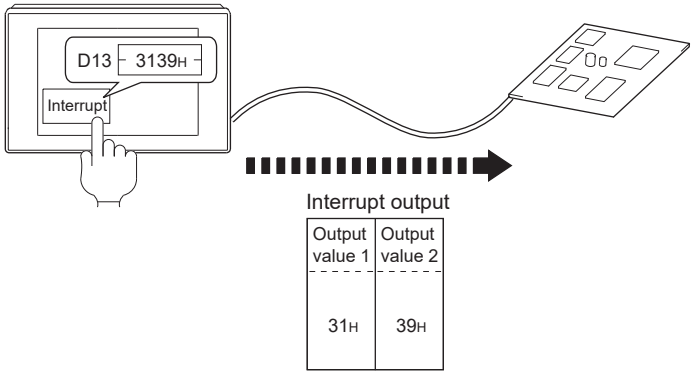
Example: When June 1, 2004 (Thursday) is set by the clock data setting command (The actual day of week is Tuesday.)

Tuesday (TUE) will be set.

■In the case of interrupt outputs

Write data to the interrupt output devices (D13 and D14) to output the data to the host.
(Assuming that "3139H" is written to D13 and "AA55H" to D14.)

Example) When [Interrupt Data Byte] in the communication detail settings is set to 2 byte as shown in (2) of the table below



Item	Message format
Interrupt output (GOT → host)	(1) When [Interrupt Data Byte] in [Detail Setting] is set to [1] Output value 1: 39H (2) When [Interrupt Data Byte] in [Detail Setting] is set to [2] Output value 1: 31H Output value 2: 39H (3) When [Interrupt Data Byte] in [Detail Setting] is set to [4] • When [32bit Storage] is set to [LH Order] in [Detail Setting] Output value1: AAH Output value2: 55H Output value3: 31H Output value4: 39H • When [32bit Storage] is set to [HL Order] in [Detail Setting] Output value1: 31H Output value2: 39H Output value3: AAH Output value4: 55H

Point

Interrupt output
To disable the interrupt output, turn on SM52 (interrupt code output disable flag).
☞ Page 2250 SM devices

Error code list

For the error codes, refer to the following.
☞ Page 2293 Error code list

49.5 GOT side settings

☞ Page 2303 [GOT Ethernet Setting]
☞ Page 2304 [Controller Setting]

49.5.1 [GOT Ethernet Setting]

Set the GOT Ethernet interface in GT Designer3.

Item	Description
[GOT IP Address Setting]	Set the IP address of the GOT.
[GOT Ethernet Common Setting]	Set the default gateway and other common items for GOT Ethernet interfaces.
[IP filter Setting]	The GOT allows or blocks access from IP addresses specified in the filtering list.

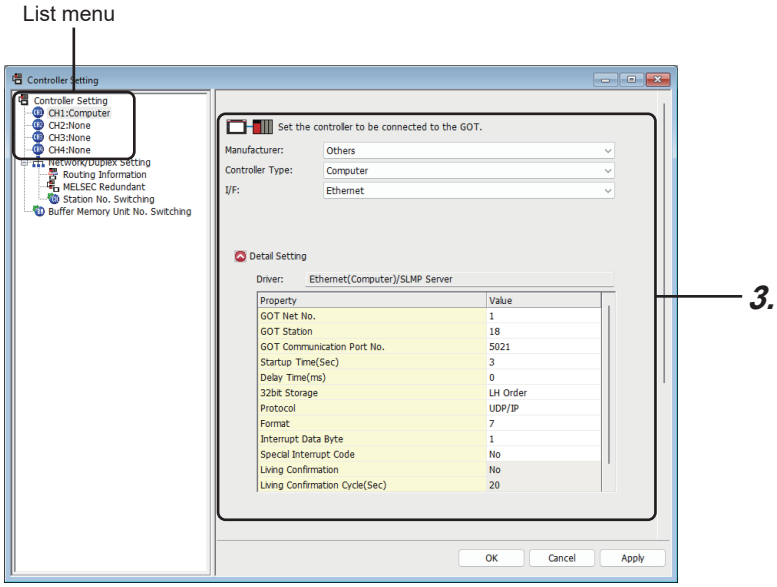
For details on the setting, refer to the following.
📖GT Designer3 (GOT3000) Screen Design Manual
Set the GT SoftGOT3000 Ethernet interface on the personal computer.

Precautions

Do not use 0 and 255 at the end of an IP address.
(Numbers of *.*.*.0 and *.*.*.255 are used by the system.)
The GOT may not monitor the controller correctly with the above numbers.
Consult with the administrator of the network before setting an IP address to the GOT.

49.5.2 [Controller Setting]

Set the channel of the connected controller.



Operating procedure

1. Select [Common] → [Controller Setting] from the menu.

2. In the [Controller Setting] window, select the channel number to be used from the list menu.

3. Set the following items.

Item	Description
[Manufacturer]	[Others]
[Controller Type]	[Computer]
[I/F]	[Ethernet]
[Detail Setting]	Configure the settings according to the usage environment. ☞ Page 2305 [Detail Setting]

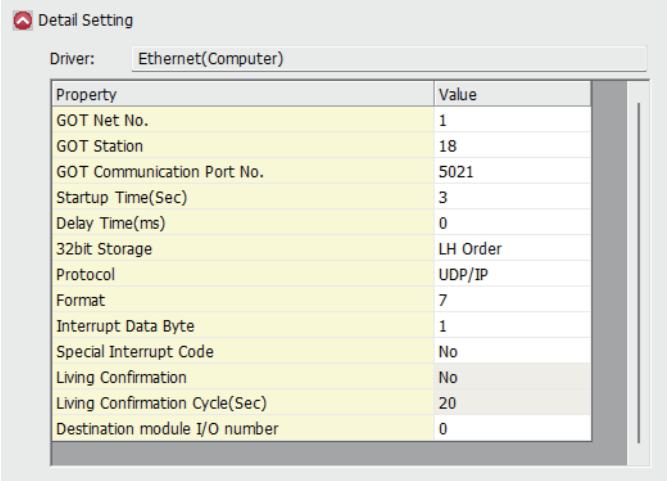
4. When you have completed the settings, click the [OK] button.

Point

The controller settings can be configured and checked in [I/F Communication Setting].
For details, refer to the following.
📖GT Designer3 (GOT3000) Screen Design Manual

[Detail Setting]

Configure the settings according to the usage environment.



Item	Description	Range
[Driver]	This item appears when communication drivers are selectable according to the settings of [Controller Type] and [I/F].	[Ethernet(Computer)]
[GOT Net No.]	Set the network number of the GOT.	[1] to [239]
[GOT Station]	Set the station number of the GOT.	[1] to [64]
[GOT Communication Port No.]	Set the GOT port number for connection with the Ethernet module.	[1024] to [5010], [5014] to [49152], [49171] to [65534]
[Startup Time]	Set the time period from the GOT startup until the start of communication with the PLC CPU.	• GOT (except GT SoftGOT3000): [3] seconds to [255] seconds • GT SoftGOT3000: [3] seconds
[Delay Time]	Set the delay time for reducing the load of the network and destination PLC.	[0] ms to [10000] ms
[32bit Storage]	Select the steps to store two words (32-bit data).	[LH Order] or [HL Order]
[Protocol]*1	Select the communication protocol.	[TCP/IP] or [UDP/IP]
[Format]	Select the communication format.	[1] to [9]
[Interrupt Data Byte]	Specify the number of bytes of interrupt data.	[1], [2], or [4]
[Special Interrupt Code]	Set whether or not to output the special interrupt code.	[Yes] or [No]
[Living Confirmation]*2	Set whether or not to perform a living confirmation.	[Yes] or [No]
Living Confirmation Cycle]*3	Set the sampling to perform a living confirmation.	[10] s to [100] s
[Destination module I/O number]	Set the values for the I/O number and the station number of the connection destination module that responds to the request from the controller.	[0], [Same as requested value]

*1 For the interrupt output, select [TCP/IP].
*2 Select [Yes] only when [Protocol] is [TCP/IP].
*3 The setting value can be changed when the [Living Confirmation] is [Yes].

Precautions

When the UDP/IP connection is selected and the commands are sent from multiple controllers simultaneously, the GOT may not receive all the commands.
Retry sending the commands on the controller, to receive them on the GOT again.

Point

Special interrupt code

The special interrupt codes are output at event occurrences.

If multiple events occur simultaneously, the special interrupt codes may not be output.

The following shows the special interrupt codes and the event types.

Special Interrupt Code (Hex)	Event type
20H	Base screen, overlap window 1 to 5 When the screen is switched by the screen switching device, the special interrupt code will be output. The base screen and each overlap window are switched independently. (Example of output) When all the screen switching device values assigned to the Base Screen and Overlap Window 1 to 2 are changed, 6 special interrupt codes are output.
21H	This code is output when a numerical or ASCII input is completed.
22H	This code is output when reading or writing of the recipe data is completed.
23H	This code is output when a barcode or RFID data is read.

• Controller settings using the GT37 utility

The controller settings can be changed in [Communication Settings] of the GT37 utility after writing [Communication Settings] of project data to GT37.

For details on the GT37 utility, refer to the following manual.

📖GOT3000 Series User's Manual (Utility & Maintenance Functions)

• Priority of the settings in [Controller Setting]

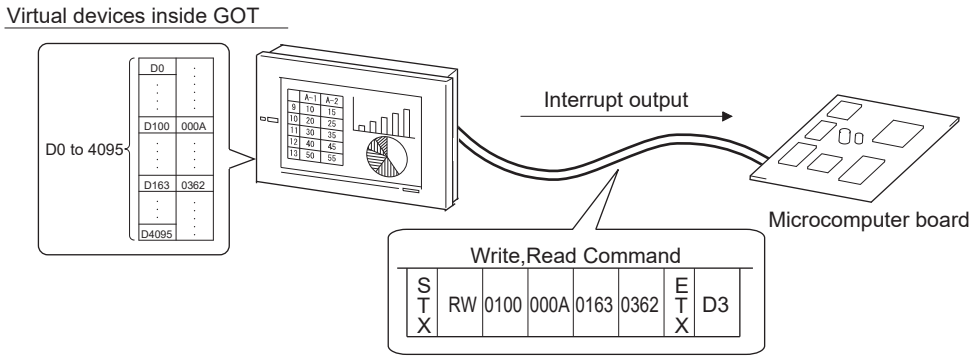
When the settings are configured in GT Designer3 or in the GT37 utility, the latest settings are effective.

50 Microcomputer (serial connection)

☞ Page 2307 Microcomputer connection (serial)
☞ Page 2309 System configuration
☞ Page 2310 Connection diagram
☞ Page 2312 Device data area
☞ Page 2326 Message format
☞ Page 2375 GOT side settings

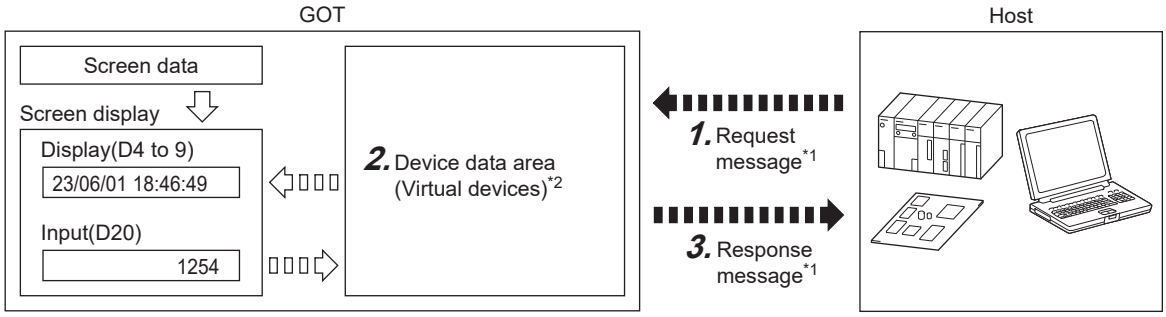
50.1 Microcomputer connection (serial)

The microcomputer connection (serial) is established between the GOT and the host (such as a personal computer, microcomputer board, or PLC) via serial connection, and allows the host to read/write data from/to virtual devices of the GOT. Interrupt output is also available from the GOT to the host.
The virtual devices in the GOT are used for the microcomputer connection.
PLC devices are not used.
☞ Page 2312 Device data area



50.1.1 Flow of data processing

Reading or writing data



*1 ☞ Page 2326 Message format
*2 ☞ Page 2312 Device data area

Operating procedure

1. The host sends a request message (the read or write command) to the GOT.

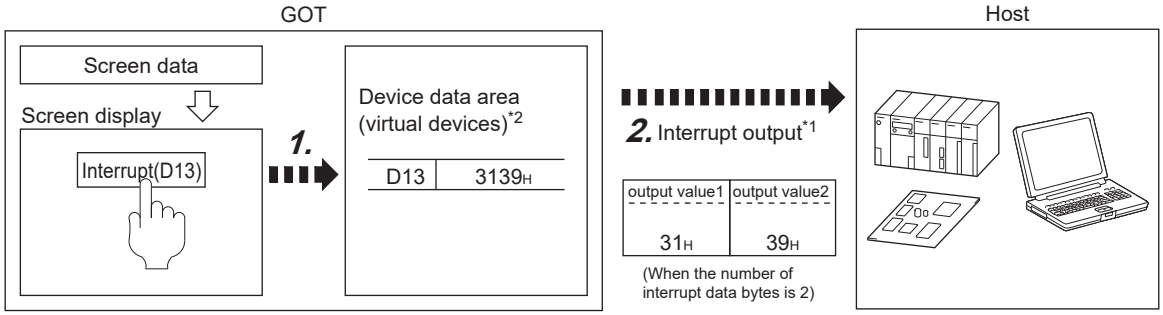
2. The GOT reads or writes data from or to its virtual devices according to the request from the host.

3. When reading or writing is complete, the GOT sends a response message (a read or write result) to the host.

Creating the following objects on the screen allows you to use the data read or written from or to the virtual devices.

- Numerical display object to display the data written by write command execution
- Numerical input object to input data to be uploaded to the host

When outputting interrupts



*1 ☞ Page 2326 Message format
*2 ☞ Page 2312 Device data area

Operating procedure

1. Data are written to the virtual devices for interrupt output from the touch switches on the GOT.

2. The GOT sends the written data (interrupt output) to the host.

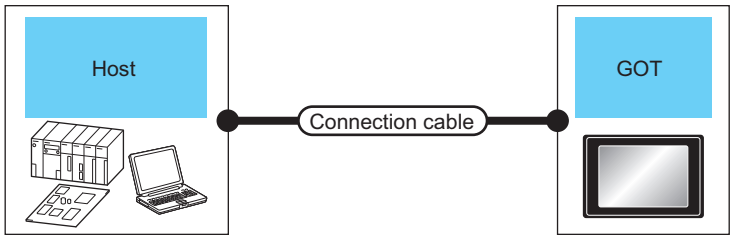
Precautions

Before performing operations such as package data writing that causes the GOT to transition to offline mode, stop data transmission between the GOT and the host.

In offline mode, the GOT cannot respond to the requests from the host.

Even after the GOT switches back from offline mode, the GOT may not communicate with the host until the communication timeout period of the host elapses.

50.2 System configuration



For details on the maximum number of connected devices, refer to the following.

☞ Page 2309 Maximum number of connected devices

Host		Connection cable	GOT	
Communication type	**Maximum length**	**Connection diagram number**	**Interface**	**Model**
RS-232	Depending on the specifications of the host	User preparing Page 2310 RS-232 connection diagram (1)	Built-in RS-232 interface + GT35-C02HR2-9P	GT37 SoftGOT3000
			GT15-RS2-9P	GT37 SoftGOT3000
			RS-232 interface of personal computer	GT37 SoftGOT3000
RS-422	Depending on the specifications of the host	User preparing Page 2311 RS-422 connection diagram (1)	Built-in RS-422 interface	GT37 SoftGOT3000
			GT15-RS4-9S	GT37 SoftGOT3000

50.2.1 Maximum number of connected devices

One GOT can access one host at a time.

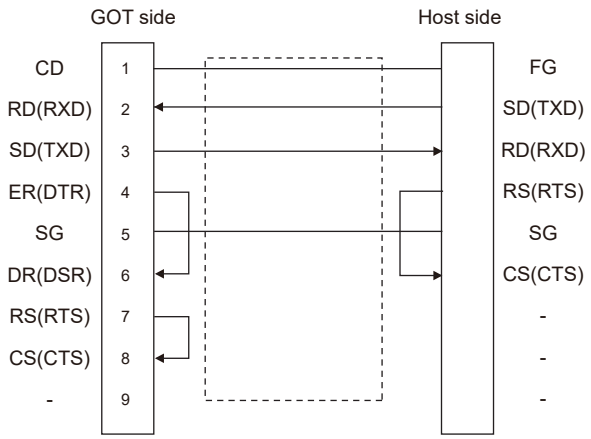
50.3 Connection diagram

The following diagram shows the connection between the GOT and the microcomputer.

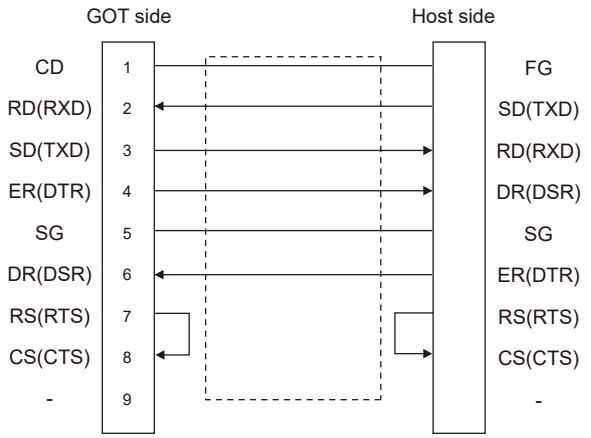
50.3.1 RS-232 cable

RS-232 connection diagram (1)

■Example of when the DTR/DSR signal is not used



■Example of when the DTR/DSR signal is used



Preparation of the RS-232 cable

■Cable length

The length of the RS-232 cable must be 15 m or less.

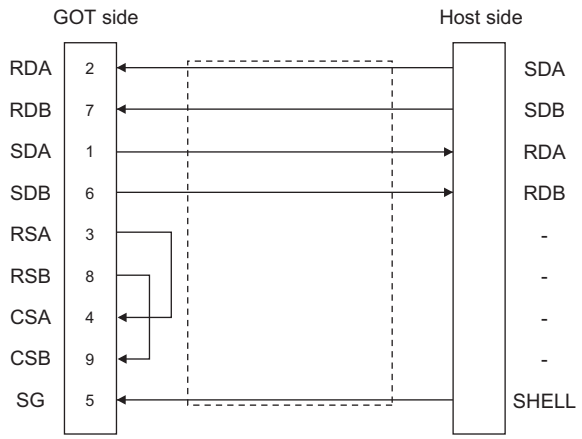
■GOT side connector

For the GOT side connector, refer to the following.

☞ Page 2954 GOT connector specifications

50.3.2 RS-422 cable

RS-422 connection diagram (1)



Preparation of the RS-422 cable

■Cable length

The length of the RS-422 cable must be 1200 m or less.

■GOT side connector

For the GOT side connector, refer to the following.

☞ Page 2954 GOT connector specifications

Terminating resistor settings

■GOT side

When connecting the GOT and a microcomputer, a terminating resistor must be connected to the GOT.

Set the DIP switch for terminating resistor setting so that it is not used.

For the procedure to set the terminating resistor, refer to the following.

☞ Page 2956 Terminating resistors of GOT

50.4 Device data area

☞ Page 2314 D devices
☞ Page 2318 R devices
☞ Page 2319 L devices
☞ Page 2320 M devices
☞ Page 2321 SD devices
☞ Page 2324 SM devices

The following shows a list of virtual devices inside the GOT available in the microcomputer connection (serial), and the address specification values for each data format.

The address specification of the virtual devices differs depending on the data format.

Model	Virtual device*1			Address specification value*2					Reference
	Name	Device range (decimal)	Device type	Format 1, 2	Format 3 to 6	Format 7 to 10	Format 11 to 13	Format 14, 15	
GT37 SoftGOT3000	D	0 to 4095	Word	0 to 4095	D0 to 4095	D0 to 4095	0000 to 0FFFH	8000 to 9FFFH	☞ Page 2314 D devices
	R	0 to 4095	Word	4096 to 8191	R0 to 4095	R0 to 4095	1000 to 1FFFH	0000 to 1FFFH	☞ Page 2318 R devices
	L	0 to 2047	Bit	8192 to 8319	L0 to 2047	L0 to 2047	2000 to 207FH	A000 to A0FFH	☞ Page 2319 L devices
	M	0 to 2047	Bit	8320 to 8447	M0 to 2047	M0 to 2047	2080 to 20FFH	2000 to 20FFH	☞ Page 2320 M devices
	SD	0 to 15	Word	8448 to 8463	D9000 to 9015	SD0 to 15	2100 to 210FH	2100 to 211FH (3000 to 300DH)*3	☞ Page 2321 SD devices
	SM	0 to 63	Bit	8464 to 8467	M9000 to 9063	SM0 to 63	2110 to 2113H	2200 to 2207H	☞ Page 2324 SM devices

*1 When reusing GOT900 series project data
- GOT-A900 series virtual devices (D0 to 2047)
  Can be used as they are without changing the assignments.
- GOT-F900 series virtual devices
  Since some of the assigned virtual device values differ as indicated below, change the assignment using device batch edit of GT Designer3.
  Refer to the following manual for device batch edit of GT Designer3.
  📖GT Designer3 (GOT3000) Screen Design Manual

GOT3000 series virtual devices	GOT-F900 series virtual devices
D0 to 2047	—
D2048 to 4095	—
R0 to 4095	D0 to 4095
L0 to 2047	—
M0 to 2047	M0 to 2047
SD0 to 15	D8000 to 8015 GD0 to 6
SM0 to 63	M8000 to 8063

*2 For the address specification method for each data format, refer to the following.
☞ Page 2326 Message format
Formats 1, 2: GOT-A900 series microcomputer connection
Formats 3 to 6: A compatible 1C frame
Formats 7 to 10: QnA compatible 3C/4C frame
Formats 11 to 13: SCHNEIDER EJH's memory link method
Formats 14, 15: GOT-F900 series microcomputer connection

*3 Access to SD3 to 9 can also be made by the specification of the addresses (3000 to 300DH) of GD0 to 6 in the GOT-F900 series.

Point

Values of virtual devices inside the GOT

When the GOT is turned off or reset, values are cleared to their defaults (bit devices: OFF, word devices: 0).

Values are held in the memory when project data are written to the GOT.

50.4.1 D devices

The D devices are word devices into which GOT communication errors, clock data or other information are stored.
The user can also store data using the user area.

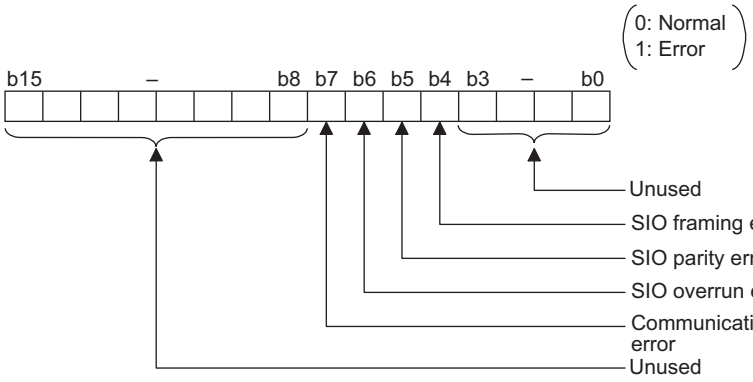
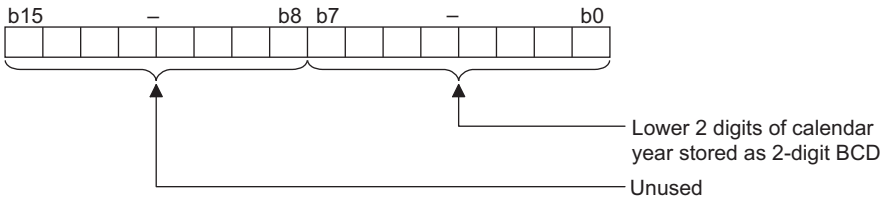
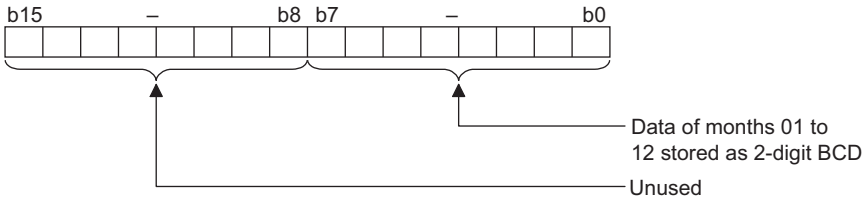
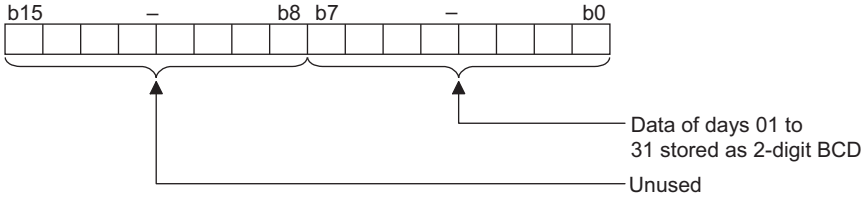
List of D devices

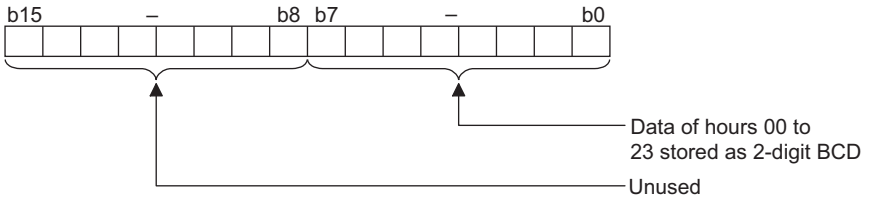
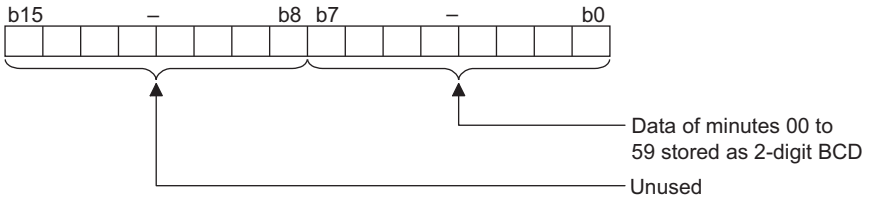
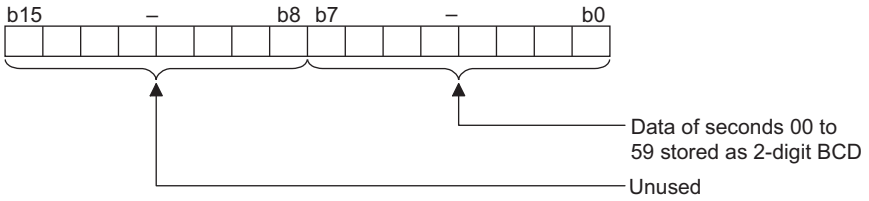
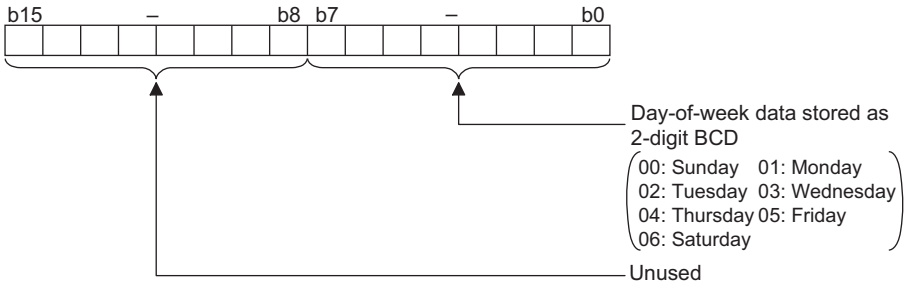
The following lists the D devices (virtual devices inside the GOT).

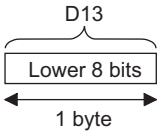
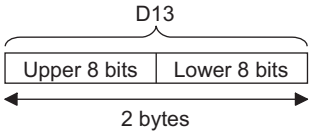
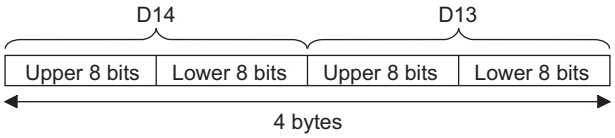
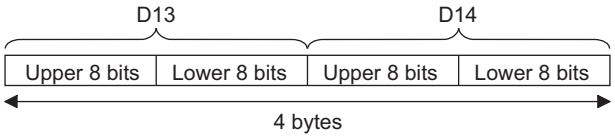
Point

The side where virtual devices are set

- System: Set on the system side.
- User: Set on the user side (by sending request messages from host or using the touch switches, etc. on the GOT).

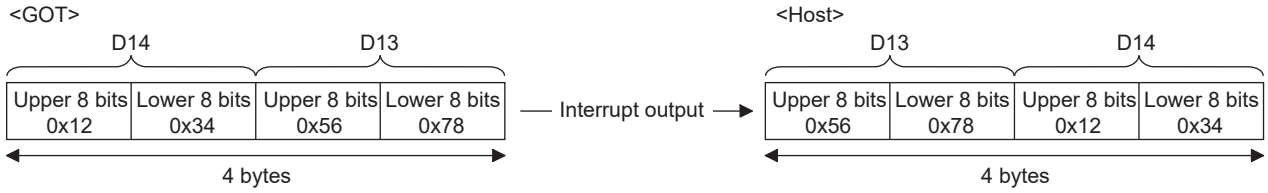
Address	Description	Set side
D0 to 2	Unused	—
D3	Communication error status Stores the communication error details of GOT.  • b4 to 6 turn on when an SIO error occurs, and turn off when a request message from the host is received successfully after the error occurrence. • b7 turns on about 3 seconds after the host side DTR becomes OFF, and turns off when transmission is performed successfully to the host after the error occurrence.	System
D4	Clock data (year)  	
D5	Clock data (month)  	
D6	Clock data (day)  	

Address	Description	Set side
D7	Clock data (hour)  	System
D8	Clock data (minute)  	
D9	Clock data (second)  	
D10	Clock data (day of the week)  	
D11 to 12	Unused	—

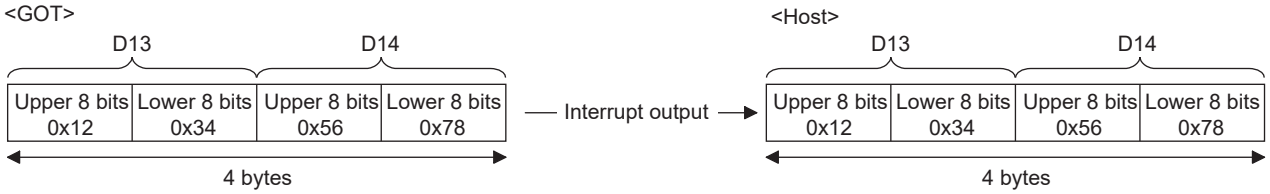
Address	Description	Set side
D13 D14	Interrupt output When data are written to D13 and D14 from a GOT touch switch, for example, the data of D13 and D14 are transmitted (interrupt output) to the host side.[*1*2] Set the data amount (bytes) for [Interrupt Data Byte(Byte)] in [Detail Setting]. ☞ Page 2376 [Detail Setting] To disable the interrupt output, turn on SM52 (interrupt code output disable flag). ☞ Page 2324 SM devices To execute the interrupt output in format 1, 2, 11, 14, or 15, set the data length to 8 bits in [Detail Setting]. When 7 bits is set, the uppermost bit (8th bit) is ignored. (Example: FFH → 7FH) ☞ Page 2376 [Detail Setting] • Output value when [1] is set to [Interrupt Data Byte(Byte)] in [Detail Setting]  • Output value when [2] is set to [Interrupt Data Byte(Byte)] in [Detail Setting]  • Output value when [4] is set to [Interrupt Data Byte(Byte)] in [Detail Setting][*3] (1) When [32bit Storage] is set to [LH Order] in [Detail Setting]  (2) When [32bit Storage] is set to [HL Order] in [Detail Setting] 	User
D15 to 19	Unused	—
D20 to 2031	User area	User
D2032 to 2034	Unused	—
D2035	1-second binary counter The counter is incremented at 1-second intervals after the GOT is turned on. (The time elapsed after GOT is turned on is stored in 1-second units.) Data are stored in binary format.	System
D2036 to 4095	User area	User

*1 After writing data, the interrupt data is output within a period of 1 to 10 ms.
*2 When data are written to D13 and D14 from the host side, interrupt output is not performed.
*3 When 32-bit data are written to D13 and D14, the values are output to the host side regardless of the setting for [32bit Storage] in [Detail Setting].
Example) When outputting 0x12345678 with unsigned 32-bit binary data

· LH Order



· HL Order



Differences in address specifications by data format

The device address specification differs depending on the data format.

The following shows the address specification values for each data format.

Model	Address	Address specification value*1					
		Format 1, 2	Format 3 to 6	Format 7 to 10	Format 11 to 13	Format 14, 15	
GT37 SoftGOT3000	D0	0	D0	D0	0000H	8000H 8001H	8000H (Upper 8 bits), 8001H (Lower 8 bits)
	D1	1	D1	D1	0001H	8002H 8003H	8002H (Upper 8 bits), 8003H (Lower 8 bits)
	⋮	⋮	⋮	⋮	⋮	⋮	
	D4095	4095	D4095	D4095	0FFFH	9FFEH 9FFFH	9FFEH (Upper 8 bits), 9FFFH (Lower 8 bits)

*1 For the address specification method for each data format, refer to the following.
☞ Page 2326 Message format
Formats 1, 2: GOT-A900 series microcomputer connection
Formats 3 to 6: A compatible 1C frame
Formats 7 to 10: QnA compatible 3C/4C frame
Formats 11 to 13: SCHNEIDER EJH's memory link method
Formats 14, 15: GOT-F900 series microcomputer connection

50.4.2 R devices

The R devices are word devices into which user data are stored.
All of these devices can be used as a user area.

List of R devices and differences in address specification by data format

The following shows the R devices (virtual devices inside the GOT).
The address specification values different depending on the data format are also given below.

Model	Address	Address specification value*1					
		Format 1, 2	Format 3 to 6	Format 7 to 10	Format 11 to 13	Format 14, 15	
GT37 SoftGOT3000	R0	4096	R0	R0	1000H	0000H 0001H	0000H (Upper 8 bits) 0001H (Lower 8 bits)
	R1	4097	R1	R1	1001H	0002H 0003H	0002H (Upper 8 bits) 0003H (Lower 8 bits)
	⋮	⋮	⋮	⋮	⋮	⋮	
	R4095	8191	R4095	R4095	1FFFH	1FFEH 1FFFH	1FFEH (Upper 8 bits) 1FFFH (Lower 8 bits)

*1 For the address specification method for each data format, refer to the following.
☞ Page 2326 Message format
Formats 1, 2: GOT-A900 series microcomputer connection
Formats 3 to 6: A compatible 1C frame
Formats 7 to 10: QnA compatible 3C/4C frame
Formats 11 to 13: SCHNEIDER EJH's memory link method
Formats 14, 15: GOT-F900 series microcomputer connection

50.4.3 L devices

The L devices are bit devices into which user data are stored.

All of these devices can be used as a user area.

List of L devices and differences in address specification by data format

The following shows the L devices (virtual devices inside the GOT).

The address specification values different depending on the data format are also given below.

Model	Address								Address specification value*1				
	b7	b6	b5	b4	b3	b2	b1	b0	Format 1, 2	Format 3 to 6	Format 7 to 10	Format 11 to 13	Format 14, 15
GT37 SoftGOT3000	L7	L6	L5	L4	L3	L2	L1	L0	8192	Same as address column on left*2		2000H	A000H
	L15	L14	L13	L12	L11	L10	L9	L8					A001H
	L23	L22	L21	L20	L19	L18	L17	L16	8193			2001H	A002H
	L31	L30	L29	L28	L27	L26	L25	L24					A003H
	⋮								⋮			⋮	⋮
	L2039	L2038	L2037	L2036	L2035	L2034	L2033	L2032	8319			207FH	A0FEH
	L2047	L2046	L2045	L2044	L2043	L2042	L2041	L2040					A0FFH

*1 For the address specification method for each data format, refer to the following.
☞ Page 2326 Message format
Formats 1, 2: GOT-A900 series microcomputer connection
Formats 3 to 6: A compatible 1C frame
Formats 7 to 10: QnA compatible 3C/4C frame
Formats 11 to 13: SCHNEIDER EJH's memory link method
Formats 14, 15: GOT-F900 series microcomputer connection

*2 For reading or writing data in word units, specify the addresses in 16-point units. (Example: L0, L16, L32, and others)

50.4.4 M devices

The M devices are bit devices into which user data are stored.
All of these devices can be used as a user area.

List of M devices and differences in address specification by data format

The following shows the M devices (virtual devices inside the GOT).
The address specification values different depending on the data format are also given below.

Model	Address								Address specification value*1				
	b7	b6	b5	b4	b3	b2	b1	b0	Format 1, 2	Format 3 to 6	Format 7 to 10	Format 11 to 13	Format 14, 15
GT37 SoftGOT3000	M7	M6	M5	M4	M3	M2	M1	M0	8320	Same as address column on left*2		2080H	2000H
	M15	M14	M13	M12	M11	M10	M9	M8					2001H
	M23	M22	M21	M20	M19	M18	M17	M16	8321			2081H	2002H
	M31	M30	M29	M28	M27	M26	M25	M24					2003H
	⋮								⋮			⋮	⋮
	M2039	M2038	M2037	M2036	M2035	M2034	M2033	M2032	8447			20FFH	20FEH
	M2047	M2046	M2045	M2044	M2043	M2042	M2041	M2040					20FFH

*1 For the address specification method for each data format, refer to the following.
☞ Page 2326 Message format
Formats 1, 2: GOT-A900 series microcomputer connection
Formats 3 to 6: A compatible 1C frame
Formats 7 to 10: QnA compatible 3C/4C frame
Formats 11 to 13: SCHNEIDER EJH's memory link method
Formats 14, 15: GOT-F900 series microcomputer connection

*2 For reading or writing data in word units, specify the addresses in 16-point units. (Example: M0, M16, M32, and others)

50.4.5 SD devices

The SD devices are word devices into which GOT communication errors (error codes), clock data and other information are stored.

List of SD devices

The following lists the SD devices (virtual devices inside the GOT).

Address	Description	Set side
SD0 SD1	100 ms counter (32 bits) The counter is incremented at 100 ms intervals after GOT is turned on. (The time elapsed after GOT is turned on is stored in 100 ms units.) (1) When [32bit Storage] is set to [LH Order] in [Detail Setting] ??The lower and upper bits are stored in SD0 and SD1 respectively. SD1 (Upper word) SD0 (Lower word) (2) When [32bit Storage] is set to [HL Order] in [Detail Setting] ??The upper and lower bits are stored in SD0 and SD1 respectively. SD0 (Upper word) SD1 (Lower word)	System
SD2	Communication error status An error data (error code) occurred during communication is stored. For details and corrective actions for the errors (error codes) that are stored into SD2, refer to the following. ☞ Page 2322 Details and actions for errors (error codes) stored into SD2	
SD3	Clock data (second) Second data of 00 to 59 is stored.	
SD4	Clock data (minute) Minute data of 00 to 59 is stored.	
SD5	Clock data (hour) Hour data of 00 to 23 is stored.	
SD6	Clock data (day) Day data of 01 to 31 is stored.	
SD7	Clock data (month) Month data of 01 to 12 is stored.	
SD8	Clock data (year) The last two digits of four-digit year data are stored.	
SD9	Clock data (day of the week) Day-of-the-week data is stored. 0: Sunday 1: Monday 2: Tuesday 3: Wednesday 4: Thursday 5: Friday 6: Saturday	
SD10 to 15	Unused	—

Point

The side where virtual devices are set

System: Set on the system side.

User: Set on the user side (by sending request messages from host or using the touch switches, etc. on the GOT).

Details and actions for errors (error codes) stored into SD2

Error code	Description	Action
0	No error	—
1, 101	Parity error The parity bit does not match.	• Check the communication cable and communication module attachment. • Check the settings in [Detail Setting]. • Match the GOT and host transmission settings.
2, 102	Framing error The data bit and/or stop bit are not correct.	
3, 103	Overrun error The next data was transmitted from the host before GOT completes the processing of the data received.	• Check the settings in [Detail Setting]. • Decrease the transmission speed.
4, 104	Communication message error ETX/CR could not be found before the upper limit of the receive buffer was exceeded.	• Check the communication cable and communication module attachment. • Check the settings in [Detail Setting]. • Review the contents of the message to transmit.
5	Command error An unsupported command was used.	• Review the contents of the message to transmit. • Check the commands in the message. ☞ Page 2327 List of commands
105	Timeout error There is no response from the GOT, or the station of the specified address does not exist.	• Check the communication cable and communication module attachment. • Check the settings in [Detail Setting]. • Review the contents of the message to transmit.
106	Multiple units not connectable The RS-232 port is occupied.	• Check the communication cable and communication module attachment. • Check the settings in [Detail Setting]. • Check to see if the RS-232 port is occupied.
6, 107	Clock data setting error The setting value of the clock data has error.	• Review the contents of the message to transmit. • Check whether the nonexistent data is set (e.g. setting "07" at the day of the week) as clock data.

Differences in address specifications by data format

The device address specification differs depending on the data format.

The following shows the address specification values for each data format.

Model	Address	Address specification value*1					
		Format 1, 2	Format 3 to 6	Format 7 to 10	Format 11 to 13	Format 14, 15*2	
GT37 SoftGOT3000	SD0	8448	D9000	SD0	2100H	2100H 2101H	2100H (Upper 8 bits) 2101H (Lower 8 bits)
	SD1	8449	D9001	SD1	2101H	2102H 2103H	2102H (Upper 8 bits) 2103H (Lower 8 bits)
	SD2	8450	D9002	SD2	2102H	2104H 2105H	2104H (Upper 8 bits) 2105H (Lower 8 bits)
	SD3	8451	D9003	SD3	2103H	2106H (3000H) 2107H (3001H)	2106H(3000H) (Upper 8 bits) 2107H(3001H) (Lower 8 bits)
	SD4	8452	D9004	SD4	2104H	2108H (3002H) 2109H (3003H)	2108H(3002H) (Upper 8 bits) 2109H(3003H) (Lower 8 bits)
	SD5	8453	D9005	SD5	2105H	210AH (3004H) 210BH (3005H)	210AH(3004H) (Upper 8 bits) 210BH(3005H) (Lower 8 bits)
	SD6	8454	D9006	SD6	2106H	210CH (3006H) 210DH (3007H)	210CH(3006H) (Upper 8 bits) 210DH(3007H) (Lower 8 bits)
	SD7	8455	D9007	SD7	2107H	210EH (3008H) 210FH (3009H)	210EH(3008H) (Upper 8 bits) 210FH(3009H) (Lower 8 bits)
	SD8	8456	D9008	SD8	2108H	2110H (300AH) 2111H (300BH)	2110H(300AH) (Upper 8 bits) 2111H(300BH) (Lower 8 bits)
	SD9	8457	D9009	SD9	2109H	2112H (300CH) 2113H (300DH)	2112H(300CH) (Upper 8 bits) 2113H(300DH) (Lower 8 bits)

*1 For the address specification method for each data format, refer to the following.
☞ Page 2326 Message format
Formats 1, 2: GOT-A900 series microcomputer connection
Formats 3 to 6: A compatible 1C frame
Formats 7 to 10: QnA compatible 3C/4C frame
Formats 11 to 13: SCHNEIDER EJH's memory link method
Formats 14, 15: GOT-F900 series microcomputer connection

*2 SD3 to 9 correspond to GD0 to 6 in the GOT-F900 series.
Access to SD3 to 9 can also be made by the specification of the addresses (3000 to 300DH) of GD0 to 6 on the GOT-F900 series.

50.4.6 SM devices

The SM devices are bit devices into which interrupt outputs and clock data that turn on or off in 1-second cycles are stored.

List of SM devices

The following shows the SM devices (virtual devices inside the GOT).

<table>
<tr><th>Address</th><th>Description</th><th>Set side</th></tr>
<tr><td>SM0 to 49</td><td>Interrupt output
When the ON or OFF state of SM0 to 49 is changed by a touch switch on the GOT, for example, the interrupt codes shown below are transmitted (interrupt output) to the host side.*1*2
Set the data amount (bytes) for [Interrupt Data Byte(Byte)] in [Detail Setting].
☞ Page 2376 [Detail Setting]
To disable the interrupt output, turn on SM52 (interrupt code output disable flag).
☞ Page 2324 SM devices
To execute the interrupt output in format 1, 2, 11, 14, or 15, set the data length to 8 bits in [Detail Setting].
When 7 bits is set, the uppermost bit (8th bit) is ignored. (Example: FFH → 7FH)
☞ Page 2376 [Detail Setting]
<table>
<tr><th>Address</th><th>Event type</th><th>Interrupt code</th></tr>
<tr><td rowspan="2">SM0</td><td>Changed from OFF to ON</td><td>50H</td></tr>
<tr><td>Changed from ON to OFF</td><td>51H</td></tr>
<tr><td rowspan="2">SM1</td><td>Changed from OFF to ON</td><td>52H</td></tr>
<tr><td>Changed from ON to OFF</td><td>53H</td></tr>
<tr><td rowspan="2">SM2</td><td>Changed from OFF to ON</td><td>54H</td></tr>
<tr><td>Changed from ON to OFF</td><td>55H</td></tr>
<tr><td>~</td><td>~</td><td>~</td></tr>
<tr><td rowspan="2">SM48</td><td>Changed from OFF to ON</td><td>B0H</td></tr>
<tr><td>Changed from ON to OFF</td><td>B1H</td></tr>
<tr><td rowspan="2">SM49</td><td>Changed from OFF to ON</td><td>B2H</td></tr>
<tr><td>Changed from ON to OFF</td><td>B3H</td></tr>
</table></td><td>User</td></tr>
<tr><td>SM50</td><td>1-second cycle clock
Turns on and off in 1-second cycles.
</td><td rowspan="2">System</td></tr>
<tr><td>SM51</td><td>2-second cycle clock
Turns on and off in 2-second cycles.
</td></tr>
<tr><td>SM52</td><td>Interrupt code output disable flag
Enables or disables the output of the interrupt code and special interrupt code.
OFF: Output enabled, ON: Output disabled
When the output is set to be disabled, no interrupt data are output to the host.
(Relevant devices: D13 to 14, SM0 to 49)</td><td>User</td></tr>
<tr><td>SM53 to 63</td><td>Unused</td><td>—</td></tr>
</table>

*1 After the ON or OFF state is changed, the interrupt data is output within a period of 1 to 10 ms.
*2 When the ON or OFF state of SM0 to 49 is changed from the host side, interrupt output is not performed.

Point

The side where virtual devices are set

- System: Set on the system side.
- User: Set on the user side (by sending request messages from host or using the touch switches, etc. on the GOT).

Differences in address specifications by data format

The device address specification differs depending on the data format.

The following shows the address specification values for each data format.

Model	Address								Address specification value*1				
	b7	b6	b5	b4	b3	b2	b1	b0	Format 1, 2	Format 3 to 6	Format 7 to 10	Format 11 to 13	Format 14, 15
GT37 SoftGOT3000	SM7	SM6	SM5	SM4	SM3	SM2	SM1	SM0	8464	*2*4	*3*4	2110H	2200H
	SM15	SM14	SM13	SM12	SM11	SM10	SM9	SM8					2201H
	SM23	SM22	SM21	SM20	SM19	SM18	SM17	SM16	8465			2111H	2202H
	SM31	SM30	SM29	SM28	SM27	SM26	SM25	SM24					2203H
	SM39	SM38	SM37	SM36	SM35	SM34	SM33	SM32	8466			2112H	2204H
	SM47	SM46	SM45	SM44	SM43	SM42	SM41	SM40					2205H
	Unused			SM52	SM51	SM50	SM49	SM48	8467			2113H	2206H
	Unused								—				—

*1 For the address specification method for each data format, refer to the following.
☞ Page 2326 Message format
Formats 1, 2: GOT-A900 series microcomputer connection
Formats 3 to 6: A compatible 1C frame
Formats 7 to 10: QnA compatible 3C/4C frame
Formats 11 to 13: SCHNEIDER EJH's memory link method
Formats 14, 15: GOT-F900 series microcomputer connection

*2 In formats 3 to 6, values are specified within a range of M9000 to 9052.

*3 In formats 7 to 10, values are specified within a range of SM0 to 52.

*4 For reading or writing data in word units, specify the addresses in 16-point units. (Example: SM0, SM16, SM32, and others)

50.5 Message format

☞ Page 2326 Data format type
☞ Page 2327 List of commands
☞ Page 2330 Format 1, 2
☞ Page 2342 Formats 3 to 6
☞ Page 2346 Formats 7 to 10
☞ Page 2352 Formats 11 to 13
☞ Page 2361 Format 14, 15

This section describes the format of messages that can be used in the microcomputer connection (serial).

50.5.1 Data format type

Set the data format in [Detail Setting] in GT Designer3.
For details on the data format setting method, refer to the following.
☞ Page 2376 [Detail Setting]

Formats 1, 2 (GOT-A900 series microcomputer connection)

This is the same message format as when a microcomputer connection is established with the GOT-A900 series.

Type	Name	Description	Reference
Format 1	GOT-A900 series microcomputer connection (format 1)	This format is used when the GOT is connected to the host in a 1:1 connection.	☞ Page 2330 Format 1, 2
Format 2	GOT-A900 series microcomputer connection (format 2)	This format is used for error responses to the GOT-A900 series microcomputer connection (format 1), with an error code appended.	

Formats 3 to 6 (A compatible 1C frame)

This is the same message format as when communication is performed using the dedicated protocol of the A series computer link module.

Type	Name	Description	Reference
Format 3	A compatible 1C frame (format 1)	This is the basic format of the dedicated protocols.	☞ Page 2342 Formats 3 to 6
Format 4	A compatible 1C frame (format 2)	This is the format with a block number appended to the A compatible 1C frame (format 1).	
Format 5	A compatible 1C frame (format 3)	This is the A compatible 1C frame (format 1) enclosed with STX and ETX.	
Format 6	A compatible 1C frame (format 4)	This is the format with CR and LF appended to the A compatible 1C frame (format 1).	

Formats 7 to 10 (QnA compatible 3C/4C frame)

This is the same message format as when communication is performed using the MC protocol of the Q/QnA series serial communication module.

Type	Name	Description	Reference
Format 7	QnA compatible 3C/4C frame (format 1)	This is the basic format of the MC protocols.	☞ Page 2346 Formats 7 to 10
Format 8	QnA compatible 3C/4C frame (format 2)	This is the format with a block number appended to the QnA compatible 3C/4C frame (format 1).	
Format 9	QnA compatible 3C/4C frame (format 3)	This is the QnA compatible 3C/4C frame (format 1) enclosed with STX and ETX.	
Format 10	QnA compatible 3C/4C frame (format 4)	This is the format with CR and LF appended to the QnA compatible 3C/4C frame (format 1).	

Formats 11 to 13 (SCHNEIDER EJH's memory link method)

This is the same format as the protocol of the SCHNEIDER EJH's memory link method.

Type	Name	Description	Reference
Format 11	SCHNEIDER EJH's memory link method (compatible mode)	This is the basic format of the SCHNEIDER EJH's memory link method.	☞ Page 2352 Formats 11 to 13
Format 12	SCHNEIDER EJH's memory link method (extended mode, ASCII code 1:1)	This is the format with sum check, CR, and LF appended to the SCHNEIDER EJH's memory link method (compatible mode).	
Format 13	SCHNEIDER EJH's memory link method (extended mode, ASCII code 1:n)	This is the format with a station number appended to the SCHNEIDER EJH's memory link method (extended mode, ASCII code 1:1).	

Formats 14, 15 (GOT-F900 series microcomputer connection)

This is the same message format as when a microcomputer connection is established with the GOT-F900 series.

Type	Name	Description	Reference
Format 14	GOT-F900 series microcomputer connection (format 1)	This format is used to establish a 1:1 or m:n connection between the host and GOT. The end code is CR.	☞ Page 2361 Format 14, 15
Format 15	GOT-F900 series microcomputer connection (format 2)	This format is used to establish a 1:1 or m:n connection between the host and GOT. The end code is ETX or sum check.	

50.5.2 List of commands

The following table lists the commands available for each data type.

Point

Even though the time setting function and time notification function are set in the GOT time setting, the settings are disabled.
When reading from or writing to the clock data between the GOT and host, use the dedicated command.

List of commands for formats 1, 2 (GOT-A900 series microcomputer connection)

Command		Command name	Description	Max. number of points processed
Symbol	ASCII code			
RD	52H 44H	Batch read in word units	Reads bit devices in 16-point units.	99 words (1584 points)
			Reads word devices in 1-point units.	99 points
WD	57H 44H	Batch write in word units	Writes to bit devices in 16-point units.	99 words (1584 points)
			Writes to word devices in 1-point units.	99 points
RR	52H 52H	Random read in word units*1	Reads multiple different bit devices in 16-point units.	256 words (4096 points)
			Reads multiple different word devices in 1-point units.	256 points
RW	52H 57H	Random write in word units*1	Writes to multiple different bit devices in 16-point units.	128 words (2048 points)
			Writes to multiple different word devices in 1-point units.	128 points
TR	54H 52H	Read clock data	Reads the clock data of the GOT.	—
TS	54H 53H	Set clock data	Sets the clock data of the GOT.	—

*1 Mixed specification of bit devices and word devices is also possible.

List of commands for formats 3 to 6 (A compatible 1C frame)

Command		Command name	Description	Max. number of points processed
Symbol	ASCII code			
BR JR	42H 52H 4AH 52H	Batch read in bit units	Reads bit devices in 1-point units.	64 points
WR QR	57H 52H 51H 52H	Batch read in word units	Reads bit devices in 16-point units.*2	64 words (1024 points)
			Reads word devices in 1-point units.	64 points
BW JW	42H 57H 4AH 57H	Batch write in bit units	Writes to bit devices in 1-point units.	64 points
WW QW	57H 57H 51H 57H	Batch write in word units	Writes to bit devices in 16-point units.*2	64 words (1024 points)
			Writes to word devices in 1-point units.	64 points
BT JT	42H 54H 4AH 54H	Test in bit units (random write)	Writes to multiple different bit devices in 1-point units.	64 points
WT QT	57H 54H 51H 54H	Test in word units (random write)	Writes to multiple different bit devices in 16-point units.*2	64 words (1024 points)
			Writes to multiple different word devices in 1-point units.	64 points
TR*1	54H 52H	Read clock data	Reads the clock data of the GOT.	—
TS*1	54H 53H	Set clock data	Sets the clock data of the GOT.	—

*1 This is a dedicated command of GOT for the microcomputer connection.
*2 Specify the address of bit devices in 16-point units. (Example: M0, M16, M32, and others)

List of commands for formats 7 to 10 (QnA compatible 3C/4C frame)

Command	Sub-command	Command name	Description	Max. number of points processed
0401	0001	Batch read in bit units	Reads bit devices in 1-point units.	64 points
0401	0000	Batch read in word units	Reads bit devices in 16-point units.*3	64 words (1024 points)
			Reads word devices in 1-point units.	64 points
1401	0001	Batch write in bit units	Writes to bit devices in 1-point units.	64 points
1401	0000	Batch write in word units	Writes to bit devices in 16-point units.*3	64 words (1024 points)
			Writes to word devices in 1-point units.	64 points
0403	0000	Random read in word units*1	Reads multiple different bit devices in 16-point and 32-point units.*3	64 words (1024 points)
			Reads multiple different word devices in 1-point and 2-point units.	64 points
1402	0001	Random write in bit units	Writes to multiple different bit devices in 1-point units.	64 points
1402	0000	Random write in word units*1	Writes to multiple different bit devices in 16-point and 32-point units.*3	64 words (1024 points)
			Writes to multiple different word devices in 1-point and 2-point units.	64 points
0406	0000	Multiple block batch read	Reads multiple blocks. A bit device (16 bits for 1 point) or a word device (1 word for 1 point) is regarded as one block.*3	64 points
1406	0000	Multiple block batch write	Writes multiple blocks. A bit device (16 bits for 1 point) or a word device (1 word for 1 point) is regarded as one block.*3	64 points
1901*2	0000	Read clock data	Reads the clock data of the GOT.	—
0901*2	0000	Set clock data	Sets the clock data of the GOT.	—

*1 Mixed specification of bit devices and word devices is also possible.
*2 This is a dedicated command of GOT for the microcomputer connection.
*3 Specify the address of bit devices in 16-point units. (Example: M0, M16, M32, and others)

List of commands for formats 11 to 13 (SCHNEIDER EJH's memory link method)

Command		Command name	Description	Max. number of points processed
Symbol	ASCII code			
R	52H	Batch read in word units	Reads bit devices in 16-point units.	128 words (2048 points)
			Reads word devices in 1-point units.	256 points
W	57H	Batch write in word units	Writes to bit devices in 16-point units.	Format 11: 496 words (7936 points) Format 12: 128 words (2048 points) Format 13: 128 words (2048 points)
			Writes to word devices in 1-point units.	Format 11: 496 points Format 12: 256 points Format 13: 256 points
I	49H	Interrupt inquiry	Issues an interrupt inquiry. (format 13 only)	—
N*1	4DH	Read clock data	Reads the clock data of the GOT.	—
M*1	4EH	Set clock data	Sets the clock data of the GOT.	—

*1 This is a dedicated command of GOT for the microcomputer connection.

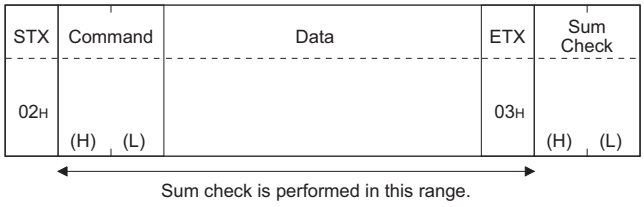
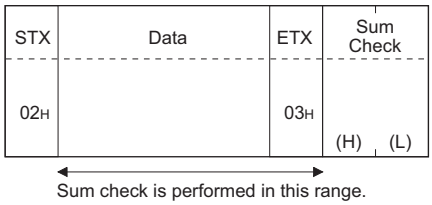
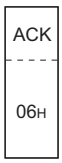
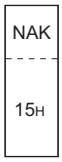
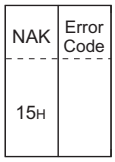
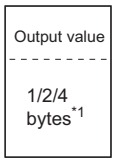
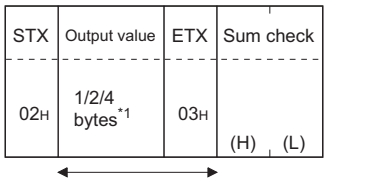
List of commands for formats 14, 15 (GOT-F900 series microcomputer connection)

Command		Command name	Description	Max. number of points processed
Symbol	ASCII code			
0	30H	Batch read (without station number)	Reads bit devices in byte units.	255 bytes (2040 points)
			Reads word devices in byte units.	255 bytes (127 points)
A	41H	Batch read (with station number)	Reads bit devices in byte units.	255 bytes (2040 points)
			Reads word devices in byte units.	255 bytes (127 points)
1	31H	Batch write (without station number)	Writes to bit devices in byte units.	255 bytes (2040 points)
			Writes to word devices in byte units.	255 bytes (127 points)
B	42H	Batch write (with station number)	Writes to bit devices in byte units.	255 bytes (2040 points)
			Writes to word devices in byte units.	255 bytes (127 points)
3	33H	Multi-point write in bit units (without station number)	Writes bit patterns (bit ON or OFF, inversion, direct specification) in 1-point units (8 bits for 1 point) to a specified device.	70 bytes (560 points)
D	44H	Multi-point write in bit units (with station number)		
4	34H	Fill command (without station number)	Writes the same value to a range of specified devices.	—
E	45H	Fill command (with station number)		
5	35H	Set clock data (without station number)	Sets the clock data of the GOT.	—
F	46H	Set clock data (with station number)		
6	36H	Read clock data (without station number)	Reads the clock data of the GOT.	—
G	47H	Read clock data (with station number)		

50.5.3 Format 1, 2

The following describes the message formats 1 and 2 (GOT-A900 series microcomputer connection).

Basic format of data communication

Item	Message format	
Request message (host → GOT)		
Response message during normal communication (GOT → host)	(1) During processing of read commands  (2) During processing of write commands 	
Response message during faulty communication (GOT → host)	(Format 1: GOT-A900 series microcomputer connection (format 1)) 	(Format 2: GOT-A900 series microcomputer connection (format 2)) 
During interrupt output*2	(Format 1: GOT-A900 series microcomputer connection (format 1)) 	(Format 2: GOT-A900 series microcomputer connection (format 2)) 

*1 Set the number of interrupt data bytes in [Detail Setting] in GT Designer3.
For setting the number of interrupt data bytes, refer to the following.
☞ Page 2376 [Detail Setting]

*2 Interrupt output can be executed by writing the data to the interrupt output devices (D13 and D14).
☞ Page 2314 D devices

Details of data items in message format

Use the ASCII code as the communication data code. (Excluding interrupt outputs)

■Control codes

Symbol	ASCII code	Description
STX	02H	Start of Text (start marker of message frame)
ETX	03H	End of Text (end marker of message frame)
EOT	04H	End of Transmission
ENQ	05H	Enquiry (start of enquiry)
NAK	15H	Negative ACK (error response)
ACK	06H	Acknowledge (write completion response)
LF	0AH	Line Feed
CL	0CH	Clear
CR	0DH	Carriage Return

■Command

Specify the contents to access from the host to GOT.

The command is converted to a 2-digit ASCII code (hexadecimal) and transmitted from the upper digit.

For details on the commands that can be used, refer to the following.

☞ Page 2327 List of commands

■Address

Specify the start number of the device data to be read or written.

The data notated in decimal is converted to a 4-digit ASCII code (hexadecimal) and transmitted from the upper digit.

For details on the device range that can be accessed, refer to the following.

☞ Page 2312 Device data area

■Number of points

Specify the number of device data to be read or written. (Setting range: 1 to 99)

The data notated in decimal is converted to a 2-digit ASCII code (hexadecimal) and transmitted from the upper digit.

■Year, month, day, hour, minute, second and day of the week data

Specify the year, month, day, hour, minute, second, and day of the week data to be read or set to the GOT clock data.

The data notated in decimal is converted to a 2-digit ASCII code (hexadecimal) and transmitted from the upper digit.

☞ Page 2338 Read clock data (TR) command

☞ Page 2339 Set clock data (TS) command

■Data

Specify the data to read from or write to the specified device data. (word unit)

The data notated in hexadecimal is converted to a 4-digit ASCII code (hexadecimal) and transmitted from the upper digit.

■Error code

This is the response message at faulty communication appended with error contents.

Error code is transmitted in 1 byte.

For details on the error codes generated in format 2 (GOT-A900 series microcomputer connection (format 2)), refer to the following.

☞ Page 2341 Error code list

■Sum check code

The sum check code is obtained by converting the lower 1 byte (8 bits) of the result (sum), after having added the sum check target data as binary data, to 2-digit ASCII code (hexadecimal).

STX	Command		Address				Number of points		ETX	Sum Check	
	R	D	0	1	0	0	0	2		B	C
02H	52H	44H	30H	31H	30H	30H	30H	32H	03H	42H	43H
	(H)	(L)	(H)	–	–	(L)	(H)	(L)		(H)	(L)

Sum check is performed in this range.

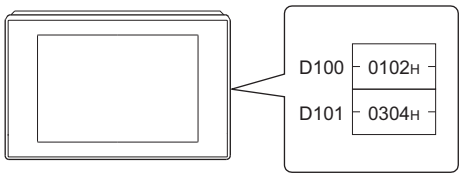
52H + 44H + 30H + 31H + 30H + 30H + 30H + 32H + 03H = 1BCH

Message format

■Batch read in word units (RD) command

- When reading a word device

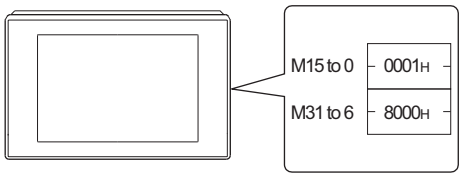
The following shows an example of reading the two points of the virtual devices D100 to 101.
(Assuming D100=0102H, D101=0304H are stored.)



Item	Message format
Request message (host → GOT)	STX: 02H; Command: R 52H (H), D 44H (L); Address: 0 30H (H), 1 31H –, 0 30H –, 0 30H (L); Number of points: 0 30H (H), 2 32H (L); ETX: 03H; Sum Check: B 42H (H), C 43H (L) Sum check is performed in this range.
Response message during normal communication (GOT → host)	STX: 02H; Data 1 (D100): 0 30H (H), 1 31H –, 0 30H –, 2 32H (L); Data 2 (D101): 0 30H (H), 3 33H –, 0 30H –, 4 34H (L); ETX: 03H; Sum Check: 8 38H (H), D 44H (L) Sum check is performed in this range.
Response message during faulty communication (GOT → host)	(Format 1: GOT-A900 series microcomputer connection (format 1)) NAK: 15H (Format 2: GOT-A900 series microcomputer connection (format 2)) NAK: 15H; Error code: 06H The above is a case where the sum check error (06H) has occurred.

• When reading a bit device

The following shows an example of reading the two points of the virtual devices M0 to 31.
(Assuming M0=1 and M31=1 are stored.)

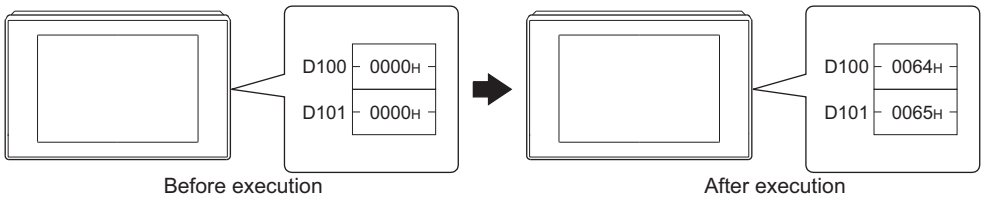


Item	Message format
Request message (host → GOT)	STX: 02H Command: R D (52H (H), 44H (L)) Address: 8 3 2 0 (38H (H), 33H –, 32H –, 30H (L)) Number of points: 0 2 (30H (H), 32H (L)) ETX: 03H Sum Check: C 8 (43H (H), 38H (L)) Sum check is performed in this range.
Response message during normal communication (GOT → host)	Sum check is performed in this range. STX: 02H Data 1 (M15 to 0): 0 0 0 1 (30H (H), 30H –, 30H –, 31H (L)) Data 2 (M31 to 16): 8 0 0 0 (38H (H), 30H –, 30H –, 30H (L)) ETX: 03H Sum Check: 8 C (38H (H), 43H (L)) 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 1 1 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 M15 M14 M13 M12 M11 M10 M9 M8 M7 M6 M5 M4 M3 M2 M1 M0 M31 M30 M29 M28 M27 M26 M25 M24 M23 M22 M21 M20 M19 M18 M17 M16
Response message during faulty communication (GOT → host)	(Format 1: GOT-A900 series microcomputer connection (format 1)) NAK: 15H (Format 2: GOT-A900 series microcomputer connection (format 2)) NAK: 15H Error code: 06H The above is a case where the sum check error (06H) has occurred.

■Batch write in word units (WD) command

- When writing to a word device

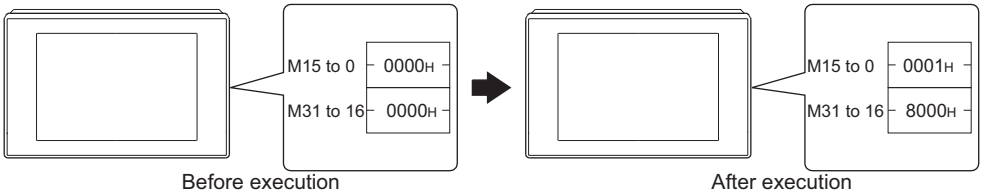
The following shows as example of writing "0064H"and "0065H" to virtual devices D100 to 101.



Item	Message format
Request message (host → GOT)	STX: 02H Command: W (57H (H)) D (44H (L)) Address: 0 (30H (H)) 1 (31H) 0 (30H) 0 (30H (L)) Number of points: 0 (30H (H)) 2 (32H (L)) Data 1(D100): 0 (30H (H)) 0 (30H) 6 (36H) 4 (34H (L)) Data 2 (D101): 0 (30H (H)) 0 (30H) 6 (36H) 5 (35H (L)) ETX: 03H Sum Check: 5 (35H (H)) 6 (36H (L)) Sum check is performed in this range.
Response message during normal communication (GOT → host)	ACK: 06H
Response message during faulty communication (GOT → host)	(Format 1: GOT-A900 series microcomputer connection (format 1)) NAK: 15H (Format 2: GOT-A900 series microcomputer connection (format 2)) NAK: 15H Error code: 06H The above is a case where the sum check error (06H) has occurred.

• When writing to a bit device

The following shows an example of writing "1"s to virtual devices M0 and M31.



Before execution

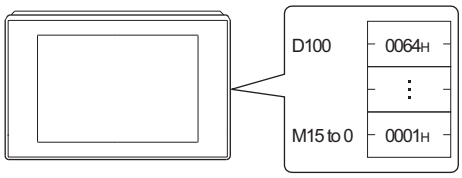
After execution

Item	Message format
Request message (host → GOT)	Sum check is performed in this range. STX: 02H Command: W 57H (H), D 44H (L) Address: 8 38H (H), 3 33H –, 2 32H –, 0 30H (L) Number of points: 0 30H (H), 2 32H (L) Data 1 (M15 to 0): 0 30H (H), 0 30H –, 0 30H –, 1 31H (L) Data 2 (M31 to 16): 8 38H (H), 0 30H –, 0 30H –, 0 30H (L) ETX: 03H Sum Check: 5 35H (H), 6 36H (L) 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 1 1 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 M15 M14 M13 M12 M11 M10 M9 M8 M7 M6 M5 M4 M3 M2 M1 M0 M31 M30 M29 M28 M27 M26 M25 M24 M23 M22 M21 M20 M19 M18 M17 M16
Response message during normal communication (GOT → host)	ACK 06H
Response message during faulty communication (GOT → host)	(Format 1: GOT-A900 series microcomputer connection (format 1)) NAK 15H (Format 2: GOT-A900 series microcomputer connection (format 2)) NAK 15H Error code 06H The above is a case where the sum check error (06H) has occurred.

PART 18

■Random read in word units (RR) command

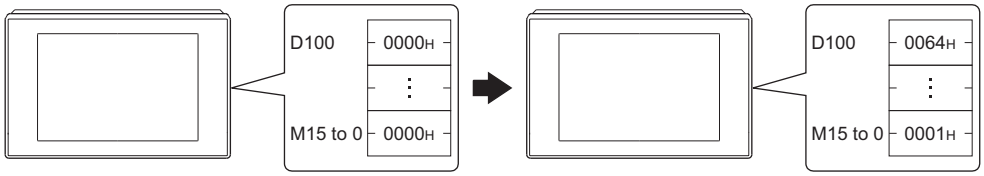
The following shows an example of reading the two points of the virtual devices D100 and M0 to 15.
(Assuming D100=0064H, M0=1are stored.)



Item	Message format
Request message (host → GOT)	STX: 02H Command: R (52H (H)), R (52H (L)) Address 1: 0 (30H (H)), 1 (31H –), 0 (30H –), 0 (30H (L)) Address 2: 8 (38H (H)), 3 (33H –), 2 (32H –), 0 (30H (L)) ETX: 03H Sum Check: 3 (33H (H)), 5 (35H (L)) Sum check is performed in this range.
Response message during normal communication (GOT → host)	Sum check is performed in this range. STX: 02H Data 1 (D100): 0 (30H (H)), 0 (30H –), 6 (36H –), 4 (34H (L)) Data 2 (M15 to 0): 0 (30H (H)), 0 (30H –), 0 (30H –), 1 (31H (L)) ETX: 03H Sum Check: 8 (38H (H)), E (45H (L)) 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 1 M15 M14 M13 M12 M11 M10 M9 M8 M7 M6 M5 M4 M3 M2 M1 M0
Response message during faulty communication (GOT → host)	(Format 1: GOT-A900 series microcomputer connection (format 1)) NAK: 15H (Format 2: GOT-A900 series microcomputer connection (format 2)) NAK: 15H Error code: 06H The above is a case where the sum check error (06H) has occurred.

■Random write in word units (RW) command

The following shows an example of writing "0064H" and "1" to virtual devices D100 and M0, respectively.



Before execution

After execution

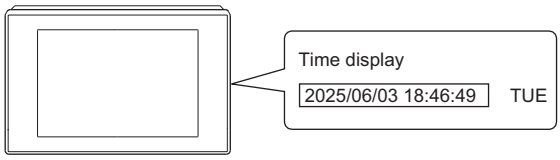
Item	Message format
Request message (host → GOT)	STX: 02H; Command: R 52H (H), W 57H (L); Following*1; ETX: 03H; Sum Check: C 43H (H), 5 35H (L) Sum check is performed in this range. *1 Address 1: 0 30H (H), 1 31H –, 0 30H –, 0 30H (L) Data 1 (D100): 0 30H (H), 0 30H –, 6 36H –, 4 34H (L) Address 2: 8 38H (H), 3 33H –, 2 32H –, 0 30H (L) Data 2 (M15 to 0): 0 30H (H), 0 30H –, 0 30H –, 1 31H (L) 0000000000000001 M15 M14 M13 M12 M11 M10 M9 M8 M7 M6 M5 M4 M3 M2 M1 M0
Response message during normal communication (GOT → host)	ACK: 06H
Response message during faulty communication (GOT → host)	(Format 1: GOT-A900 series microcomputer connection (format 1)) NAK: 15H (Format 2: GOT-A900 series microcomputer connection (format 2)) NAK: 15H; Error code: 06H The above is a case where the sum check error (06H) has occurred.

PART 18

■Read clock data (TR) command

The following shows an example of reading the clock data of GOT.

(Assuming that the clock data of GOT has been set to "2025, June 3, 18:46:49, Tuesday".)

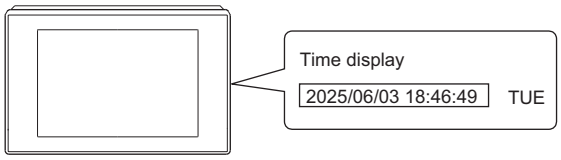


Item	Message format
Request message (host → GOT)	STX: 02H Command: T (54H (H)), R (52H (L)) ETX: 03H Sum Check: A (41H (H)), 9 (39H (L)) Sum check is performed in this range.
Response message during normal communication (GOT → host)	STX: 02H Year data: 0 (32H (H)), 4 (35H (L)) Month data: 0 (30H (H)), 6 (36H (L)) Day data: 0 (30H (H)), 1 (33H (L)) Hour data: 1 (31H (H)), 8 (38H (L)) Minute data: 4 (34H (H)), 6 (36H (L)) Second data: 4 (34H (H)), 9 (39H (L)) Day-of-week data: 0 (30H (H)), 2 (32H (L)) ETX: 03H Sum Check: D (44H (H)), 0 (30H (L)) Sum check is performed in this range.
Response message during faulty communication (GOT → host)	(Format 1: GOT-A900 series microcomputer connection (format 1)) NAK: 15H (Format 2: GOT-A900 series microcomputer connection (format 2)) NAK: 15H Error code: 06H The above is a case where the sum check error (06H) has occurred.

■Set clock data (TS) command

The following shows an example of setting the clock data of GOT.

(Assuming the clock data of GOT is to be set to "2025, June 3, 18:46:49 Tuesday".)



After execution

Item	Message format
Request message (host → GOT)	STX: 02H Command: T (54H (H)) S (53H (L)) Year data: 0 (32H (H)) 4 (35H (L)) Month data: 0 (30H (H)) 6 (36H (L)) Day data: 0 (30H (H)) 1 (33H (L)) Hour data: 1 (31H (H)) 8 (38H (L)) Minute data: 4 (34H (H)) 6 (36H (L)) Second data: 4 (34H (H)) 9 (39H (L)) Day-of-week data: 0 (30H (H)) 2 (32H (L)) ETX: 03H Sum Check: 7 (37H (H)) 7 (37H (L)) Sum check is performed in this range.
Response message during normal communication (GOT → host)	ACK: 06H
Response message during faulty communication (GOT → host)	(Format 1: GOT-A900 series microcomputer connection (format 1)) NAK: 15H (Format 2: GOT-A900 series microcomputer connection (format 2)) NAK: 15H, Error code: 06H The above is a case where the sum check error (06H) has occurred.

Point

When a wrong day of the week has been set by the clock data setting command

If a wrong day of the week is set by the clock data setting commands, the corrected day of the week will be set.

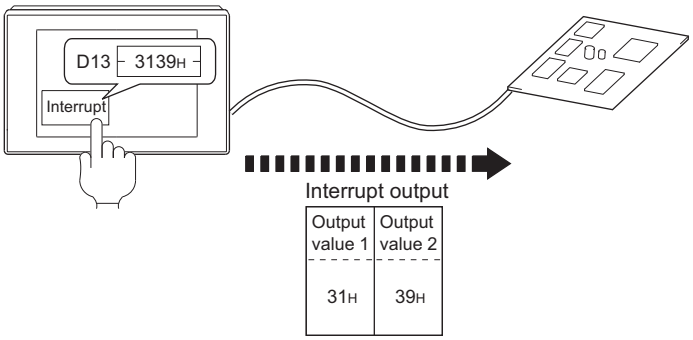
Example: When June 3, 2025 (Thursday) is set by the clock data setting command (The actual day of week is Tuesday.)

Tuesday (TUE) will be set.

■In the case of interrupt outputs

Write data to the interrupt output devices (D13 and D14) to output the data to the host.
(Assuming that "3139H" is written to D13 and "AA55H" to D14.)

Example) (2) in the table: When [Interrupt Data Byte(Byte)] in [Detail Setting] is set to [2]



Item	Message format
Interrupt output (GOT → host)	(1) When [Interrupt Data Byte(Byte)] in [Detail Setting] is set to [1]

(format 1: in the case of GOT-A900 Series microcomputer connection (format 1))

Output value 1
39H

(format 2: in the case of GOT-A900 Series microcomputer connection (format 2))

STX	Output value 1	ETX	Sum check	
			3	C
02H	39H	03H	33H	43H
			(H)	(L)

Sum check is performed in this range.

(2) When [Interrupt Data Byte(Byte)] in [Detail Setting] is set to [2]

(format 1: in the case of GOT-A900 Series microcomputer connection (format 1))

Output value 1	Output value 2
31H	39H

(format 2: in the case of GOT-A900 Series microcomputer connection (format 2))

STX	Output value 1	Output value 2	ETX	Sum check	
				6	D
02H	31H	39H	03H	36H	44H
				(H)	(L)

Sum check is performed in this range.

(3) When [Interrupt Data Byte(Byte)] in [Detail Setting] is set to [4]

• When [32bit Storage] is set to [LH Order] in [Detail Setting]

(format 1: in the case of GOT-A900 Series microcomputer connection (format 1))

Output value1	Output value2	Output value3	Output value4
AAH	55H	31H	39H

(format 2: in the case of GOT-A900 Series microcomputer connection (format 2))

STX	Output value1	Output value2	Output value3	Output value4	ETX	Sum Check	
						6	C
02H	AAH	55H	31H	39H	03H	36H	43H
						(H)	(L)

Sum check is performed in this range.

• When [32bit Storage] is set to [HL Order] in [Detail Setting]

(format 1: in the case of GOT-A900 Series microcomputer connection (format 1))

Output value1	Output value2	Output value3	Output value4
31H	39H	AAH	55H

(format 2: in the case of GOT-A900 Series microcomputer connection (format 2))

STX	Output value1	Output value2	Output value3	Output value4	ETX	Sum Check	
						6	C
02H	31H	39H	AAH	55H	03H	36H	43H
						(H)	(L)

Sum check is performed in this range.

Point

Interrupt output

To disable the interrupt output, turn on SM52 (interrupt code output disable flag).

☞ Page 2324 SM devices

To execute the interrupt output in format 1, 2, 11, 14, or 15, set the data length to 8 bits in [Detail Setting].

When 7 bits is set, the uppermost bit (8th bit) is ignored. (Example: FFH → 7FH)

☞ Page 2376 [Detail Setting]

Error code list

In the case of format 2 (GOT-A900 series microcomputer connection (format 2)), the error contents (error code) are appended to the response message during faulty communication.

The following shows error code, error contents, cause, and measures.

Error code	Description	Action
06H	Sum check error The sum check code of the received data and the sum check code created from the received data are different.	• Review the contents of the message to transmit.
10H	Command error An unsupported command was used.	• Review the contents of the message to transmit. • Check the commands in the message. ☞ Page 2327 List of commands
11H	Message length error The upper limit of the data length that can be received by the GOT has been exceeded.	• Review the contents of the message to transmit. • Check the data length of the message. (data length of the data section, etc.)
12H	Communication message error ETX was not found within the upper limit of the receive buffer.	• Check the communication cable and communication module attachment. • Check the settings in [Detail Setting]. • Review the contents of the message to transmit.
15H	Clock data setting error The setting value of the clock data has error.	• Review the contents of the message to transmit. • Check whether the nonexistent data is set (e.g. setting "07" at the day of the week) as clock data.
7AH	Address error The start address of the read or write device is out of range.	• Review the contents of the message to transmit. • Check the devices that can be used and the device ranges. ☞ Page 2312 Device data area
7BH	Exceeded number of points error The read or write range has exceeded the device range.	

Precautions

■Storage order for 32-bit data

When 32-bit data is specified to use the program of the GOT-A900 series, set [HL Order] for [32bit Storage] in [Detail Setting].

If [LH Order] is set, higher-order bits and lower-order bits are reversed when 32-bit data is displayed or written to the GOT.

50.5.4 Formats 3 to 6

The following describes the message formats 3 to 6 (A compatible 1C frame).

Basic format of data communication

This is the same message format as when communication is performed using the dedicated protocol (A compatible 1C frame) of the A series computer link module.

For details on the basic format of data communication, refer to the following manual:

📖MELSEC Communication Protocol Reference Manual

This section describes items whose settings differ from the dedicated protocol of the A series computer link module, and the dedicated commands for a GOT microcomputer connection.

Example: Request message for the batch read in word units (QR) command in format 4 (A compatible 1C frame (format 2))

Character A section

ENQ	Block No.		Station No.		PLC No.		Command		Wait	Address							Number of points		Sum Check	
	0	0	0	0	0	0	Q	R	0	D	0	0	0	1	0	0	0	2	B	A
05H	30H	30H	30H	30H	30H	30H	51H	52H	30H	44H	30H	30H	30H	31H	30H	30H	30H	32H	42H	41H
	(H)	(L)	(H)	(L)	(H)	(L)	(H)	(L)		(H)	–	–	–	–	–	(L)	(H)	(L)	(H)	(L)

Sum check is performed in this range.

Details of data items in message format

Use the ASCII code as the communication data code.

■Block number, PLC number

This item is ignored for a GOT microcomputer connection.

Specify "00".

"00" is converted to a 2-digit ASCII code (hexadecimal) and transmitted from the upper digit.

■Station number

Station number is used to identify the GOT with which the host communicates. (Setting range: 0 to 31)

The data notated in decimal is converted to a 2-digit ASCII code (hexadecimal) and transmitted from the upper digit.

The GOT processes only commands whose station number matches the "Host Address (0 to 31)" set in [Detail Setting]. (The GOT ignores the messages that do not include the matched station number.)

For the settings in [Detail Setting], refer to the following.

☞ Page 2376 [Detail Setting]

■Command

Specify the contents to access from the host to GOT.

The command is converted to a 2-digit ASCII code (hexadecimal) and transmitted from the upper digit.

For details on the commands that can be used, refer to the following.

☞ Page 2327 List of commands

■Message wait

This item is ignored for a GOT microcomputer connection.

Specify "0".

"0" is converted to a 1-digit ASCII code (hexadecimal) and transmitted.

■Address

Specify the start number of the device data to be read or written.

The data notated in decimal is converted to a 5-digit or 7-digit ASCII code (hexadecimal) and transmitted from the upper digit.

For details on the device range that can be accessed, refer to the following.

☞ Page 2312 Device data area

■Number of points

Specify the number of device data to be read or written. (Setting range: 1 to 40H)

The data notated in hexadecimal is converted to a 2-digit ASCII code (hexadecimal) and transmitted from the upper digit.

■Year, month, day, hour, minute, second and day of the week data

Specify the year, month, day, hour, minute, second, and day of the week data to be read or set to the GOT clock data.

The data notated in decimal is converted to a 2-digit ASCII code (hexadecimal) and transmitted from the upper digit.

☞ Page 2344 Read clock data (TR) command

☞ Page 2345 Set clock data (TS) command

■Error code

This is the response message at faulty communication appended with error contents.

The data notated in hexadecimal is converted to a 2-digit ASCII code (hexadecimal) and transmitted from the upper digit.

For details on the error codes generated in formats 3 to 6 (A compatible 1C frame), refer to the following.

☞ Page 2346 Error code list

Point

When connecting a microcomputer or other device that uses the dedicated protocol of the A series computer link module with the GOT, correct the commands to use and the device range according to the specifications of GOT.

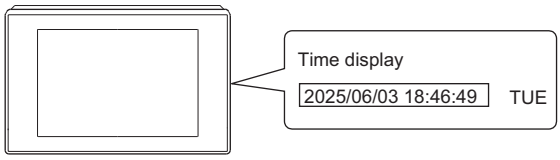
Message format

The following shows the message format of the dedicated commands for a microcomputer connection of GOT.

■Read clock data (TR) command

The following shows an example of reading the clock data of GOT.

(Assuming that the clock data of GOT has been set to "2025, June 3, 18:46:49, Tuesday".)



Item	Message format
Request message (host → GOT)	Example: Format 3 (A compatible 1C frame (format 1))
Response message during normal communication (GOT → host)	Example: Format 3 (A compatible 1C frame (format 1))
Response message during faulty communication (GOT → host)	Example: Format 3 (A compatible 1C frame (format 1))

Request message (host → GOT):

ENQ	Station No.		PLC No.		Command		Wait	Sum Check	
	0	0	0	0	T	R	0	9	6
05H	30H	30H	30H	30H	54H	52H	30H	39H	36H
	(H)	(L)	(H)	(L)	(H)	(L)		(H)	(L)

Sum check is performed in this range.

Response message during normal communication (GOT → host):

Character B section

STX	Station No.		PLC No.			ETX	Sum Check	
	0	0	0	0	Following*1		9	0
02H	30H	30H	30H	30H		03H	39H	30H
	(H)	(L)	(H)	(L)			(H)	(L)

Sum check is performed in this range.

*1

	Year data		Month data		Day data		Hour data		Minute data		Second data		Day-of-week data		
	0	4	0	6	0	1	1	8	4	6	4	9	0	2	
	32H	35H	30H	36H	30H	33H	31H	38H	34H	36H	34H	39H	30H	32H	
	(H)	(L)	(H)	(L)	(H)	(L)	(H)	(L)	(H)	(L)	(H)	(L)	(H)	(L)	

Response message during faulty communication (GOT → host):

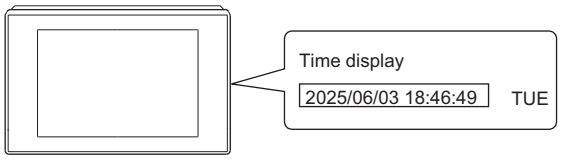
NAK	Station No.		PLC No.		Error code	
	0	0	0	0	0	5
15H	30H	30H	30H	30H	30H	35H
	(H)	(L)	(H)	(L)	(H)	(L)

The above is the case where an overrun error (05H) has occurred.

■Set clock data (TS) command

The following shows an example of setting the clock data of GOT.

(Assuming the clock data of GOT is to be set to "2025, June 3, 18:46:49 Tuesday".)



After execution

Item	Message format
Request message (host → GOT)	Example: Format 3 (A compatible 1C frame (format 1))
Response message during normal communication (GOT → host)	Example: Format 3 (A compatible 1C frame (format 1))
Response message during faulty communication (GOT → host)	Example: Format 3 (A compatible 1C frame (format 1))

Character C section

ENQ	Station No.		PLC No.		Command		Wait	Following*1	Sum Check	
05H	0	0	0	0	T	S	0		6	4
	30H	30H	30H	30H	54H	53H	30H		36H	34H
	(H)	(L)	(H)	(L)	(H)	(L)			(H)	(L)

Sum check is performed in this range.

*1

Year data		Month data		Day data		Hour data		Minute data		Second data		Day-of-week data	
0	4	0	6	0	1	1	8	4	6	4	9	0	2
32H	35H	30H	36H	30H	33H	31H	38H	34H	36H	34H	39H	30H	32H
(H)	(L)	(H)	(L)	(H)	(L)	(H)	(L)	(H)	(L)	(H)	(L)	(H)	(L)

ACK	Station No.		PLC No.	
06H	0	0	0	0
	30H	30H	30H	30H
	(H)	(L)	(H)	(L)

NAK	Station No.		PLC No.		Error code	
15H	0	0	0	0	0	5
	30H	30H	30H	30H	30H	35H
	(H)	(L)	(H)	(L)	(H)	(L)

The above is the case where an overrun error (05H) has occurred.

Point

When a wrong day of the week has been set by the clock data setting command

If a wrong day of the week is set by the clock data setting commands, the corrected day of the week will be set.

Example: When June 3, 2025 (Thursday) is set by the clock data setting command (The actual day of week is Tuesday.)

Tuesday (TUE) will be set.

Error code list

The following shows error code, error contents, cause, and measures.

Error code	Description	Action
01H	Parity error The parity bit does not match.	• Check the communication cable and communication module attachment. • Check the settings in [Detail Setting]. • Match the GOT and host transmission settings.
02H	Sum check error The sum check code of the received data and the sum check code created from the received data are different.	• Review the contents of the message to transmit.
03H	Protocol error The GOT has received a message that does not follow the control procedure of the format set in [Detail Setting].	• Check the settings in [Detail Setting]. • Review the contents of the message to transmit.
05H	Overrun error The next data was transmitted from the host before GOT completes the processing of the data received.	• Check the settings in [Detail Setting]. • Decrease the transmission speed.
06H	Character section error The character section specification error. • The method of specifying the character section is specified incorrectly. • The specified command is incorrect. • The number of points of the processing requests exceeds the allowable range. • A non-existent device has been specified. • The setting value of the clock data has error.	• Review the contents of the message to transmit. • Check the commands in the message. ☞ Page 2327 List of commands • Check the devices that can be used and the device ranges. ☞ Page 2312 Device data area • Check whether the nonexistent data is set (e.g. setting "07" at the day of the week) as clock data.
07H	Character error A character other than "A to Z", "0 to 9", space, and control codes has been received.	• Review the contents of the message to transmit.

50.5.5 Formats 7 to 10

The following describes the message formats 7 to 10 (QnA compatible 3C/4C frame).

Basic format of data communication

This is the same message format as when communication is performed using the MC protocol (QnA compatible 3C/4C frame) of the Q/QnA series serial communication module.

For details on the basic format of data communication, refer to the following manual:

📖MELSEC Communication Protocol Reference Manual

This section describes items whose settings differ from the MC protocol of the Q/QnA series serial communication module, and the dedicated commands for a GOT microcomputer connection.

Example: Request message for the batch read in word units (0401) command in format 8 (QnA compatible 4C frame (format 2))

ENQ	Block No.		Frame ID No.		Station No.		Network No.		PLC No.		Request destination module I/O No.				Request destination module station No.		Host Address No.		Following *1	Sum check	
	0	0	F	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0		5	4
05H	30H	30H	46H	38H	30H	30H	30H	30H	30H	30H	30H	30H	30H	30H	30H	30H	30H	30H		35H	34H
	(H)	(L)	(H)	(L)	(H)	(L)	(H)	(L)	(H)	(L)	(H)	–	–	(L)	(H)	(L)	(H)	(L)		(H)	(L)

Sum check is performed in this range.

Character A section

*1

Command				Sub-command				Device code		Head Device						Device points			
0	4	0	1	0	0	0	0	D	*	0	0	0	1	0	0	0	0	0	2
30H	34H	30H	31H	30H	30H	30H	30H	44H	2AH	30H	30H	30H	31H	30H	30H	30H	30H	30H	32H
(H)	–	–	(L)	(H)	–	–	(L)	(H)	(L)	(H)	–	–	–	–	(L)	(H)	–	–	(L)

Point

QnA compatible 4C frame (format 5)

The QnA compatible 4C frame (format 5) cannot be used in the GOT.

Details of data items in message format

Use the ASCII code as the communication data code.

■Block number, network number, PLC number, request destination module I/O number and station number

This item is ignored for a GOT microcomputer connection.

Specify "00". (The request destination module I/O number is "0000".)

"00" is converted to a 2-digit ASCII code (hexadecimal) and transmitted from the upper digit.

(The request destination module I/O number is 4-digit.)

■Station number

The station number is used to identify the GOT with which the host communicates. (Setting range: 0 to 1FH)

The data notated in hexadecimal is converted to a 2-digit ASCII code (hexadecimal) and transmitted from the upper digit.

The GOT processes only commands whose station number matches the "Host Address (0 to 31)" set in [Detail Setting]. (The GOT ignores the messages that do not include the matched station number.)

For the settings in [Detail Setting], refer to the following.

☞ Page 2376 [Detail Setting]

■Command, sub-command

Specify the contents to access from the host to GOT.

The command is converted to a 4-digit ASCII code (hexadecimal) and transmitted from the upper digit.

For details on the commands that can be used, refer to the following.

☞ Page 2327 List of commands

■Device code

Specify the code by which the device data to be read or written is recognized.

The command is converted to a 2-digit ASCII code (hexadecimal) and transmitted from the upper digit.

For details on the device range that can be accessed, refer to the following.

☞ Page 2312 Device data area

■Start device

Specify the start number of the device data to be read or written.

The data notated in decimal is converted to a 6-digit ASCII code (hexadecimal) and transmitted from the upper digit.

For details on the device range that can be accessed, refer to the following.

☞ Page 2312 Device data area

■Device points

Specify the number of device data to be read or written. (Setting range: 1 to 40H)

The data notated in hexadecimal is converted to a 2-digit ASCII code (hexadecimal) and transmitted from the upper digit.

When setting multiple devices as follows, limit the total number of points to within 64 points.

- When using the random read or write command

When setting multiple bit accesses, word accesses or double word accesses, limit the total number of access points to within 64 points.

- When using multiple block batch read or write commands

When setting multiple blocks, limit the total number of points of all blocks to within 64 points.

■Year, month, day, hour, minute, second and day of the week data

Specify the year, month, day, hour, minute, second, and day of the week data to be read or set to the GOT clock data.

The data notated in decimal is converted to a 2-digit ASCII code (hexadecimal) and transmitted from the upper digit.

☞ Page 2348 Read clock data (1901) command

☞ Page 2349 Set clock data (0901) command

■Error code

This is the response message at faulty communication appended with error contents.

The data notated in hexadecimal is converted to a 4-digit ASCII code (hexadecimal) and transmitted from the upper digit.

For details on the error codes generated in formats 7 to 10 (QnA compatible 3C/4C frame), refer to the following.

☞ Page 2351 Error code list

Point

When connecting a microcomputer, etc. that uses the MC protocol of the Q/QnA series serial communication module with the GOT, correct the commands to be used and the device ranges to match the GOT specifications.

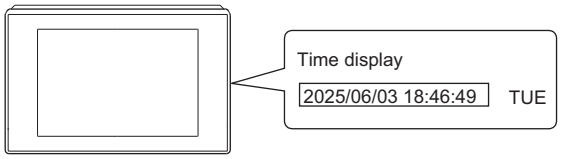
Message format

The following shows the message format of the dedicated commands for a microcomputer connection of GOT.

■Read clock data (1901) command

The following shows an example of reading the clock data of GOT.

(Assuming that the clock data of GOT has been set to "2025, June 3, 18:46:49, Tuesday".)



Item	Message format
Request message (host → GOT)	Example: Format 7 (QnA compatible 4C frame (format 1))
Response message during normal communication (GOT → host)	Example: Format 7 (QnA compatible 4C frame (format 1))

Request message (host → GOT)

ENQ	Frame ID No.		Station No.		Network No.		PLC No.		Request destination module I/O No.				Request destination module station No.		Following *1	Sum check	
	F	8	0	0	0	0	0	0	0	0	0	0	0	0		A	9
05H	46H	38H	30H	30H	30H	30H	30H	30H	30H	30H	30H	30H	30H	30H		41H	39H
	(H)	(L)	(H)	(L)	(H)	(L)	(H)	(L)	(H)	–	–	(L)	(H)	(L)		(H)	(L)

Sum check is performed in this range.

*1 Character A section

Host Address No.		Command				Sub-command			
0	0	1	9	0	1	0	0	0	0
30H	30H	31H	39H	30H	31H	30H	30H	30H	30H
(H)	(L)	(H)	–	–	(L)	(H)	–	–	(L)

Response message during normal communication (GOT → host)

STX	Frame ID No.		Station No.		Network No.		PLC No.		Request destination module I/O No.				Request destination module station No.		Following *1	ETX	Sum check	
	F	8	0	0	0	0	0	0	0	0	0	0	0	0			E	E
02H	46H	38H	30H	30H	30H	30H	30H	30H	30H	30H	30H	30H	30H	30H		03H	43H	43H
	(H)	(L)	(H)	(L)	(H)	(L)	(H)	(L)	(H)	–	–	(L)	(H)	(L)			(H)	(L)

Sum check is performed in this range.

*1 Character B section

Host Address No.		Year data		Month data		Day data		Hour data		Minute data		Second data		Day-of-week data	
0	0	0	4	0	6	0	1	1	8	4	6	4	9	0	2
30H	30H	32H	35H	30H	36H	30H	33H	31H	38H	34H	36H	34H	39H	30H	32H
(H)	(L)	(H)	(L)	(H)	(L)	(H)	(L)	(H)	(L)	(H)	(L)	(H)	(L)	(H)	(L)

Item	Message format
Response message during faulty communication (GOT → host)	Example: Format 7 (QnA compatible 4C frame (format 1))

NAK	Frame ID No.		Station No.		Network No.		PLC No.		Request destination module I/O No.				Request destination module station No.		Host Address No.		Following *1
15H	F	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	46H	38H	30H	30H	30H	30H	30H	30H	30H	30H	30H	30H	30H	30H	30H	30H	
	(H)	(L)	(H)	(L)	(H)	(L)	(H)	(L)	(H)	–	–	(L)	(H)	(L)	(H)	(L)	

*1

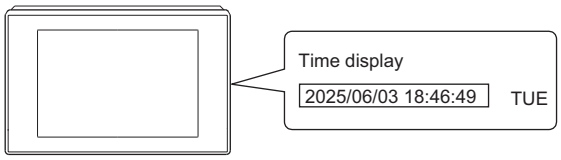
Error code			
7	F	6	9
37H	46H	36H	39H
(H)	–	–	(L)

The above is the case where a parity error (7F69H) has occurred.

■Set clock data (0901) command

The following shows an example of setting the clock data of GOT.

(Assuming the clock data of GOT is to be set to "2025, June 3, 18:46:49 Tuesday".)



After execution

Item	Message format
Request message (host → GOT)	Example: Format 7 (QnA compatible 4C frame (format 1))

ENQ	Frame ID No.		Station No.		Network No.		PLC No.		Request destination module I/O No.				Request destination module station No.		Host Address No.		Following *1	Sum check	
05H	F	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0		7	5
	46H	38H	30H	30H	30H	30H	30H	30H	30H	30H	30H	30H	30H	30H	30H	30H		37H	35H
	(H)	(L)	(H)	(L)	(H)	(L)	(H)	(L)	(H)	–	–	(L)	(H)	(L)	(H)	(L)		(H)	(L)

Sum check is performed in this range.

Character C section

*1

Command				Sub-command				
0	9	0	1	0	0	0	0	→ 1)
30H	39H	30H	31H	30H	30H	30H	30H	
(H)	–	–	(L)	(H)	–	–	(L)	

Character C section

	Year data		Month data		Day data		Hour data		Minute data		Second data		Day-of-week data	
1) →	0	4	0	6	0	1	1	8	4	6	4	9	0	2
	32H	35H	30H	36H	30H	33H	31H	38H	34H	36H	34H	39H	30H	32H
	(H)	(L)	(H)	(L)	(H)	(L)	(H)	(L)	(H)	(L)	(H)	(L)	(H)	(L)

Response message during normal communication (GOT → host)	Example: Format 7 (QnA compatible 4C frame (format 1))

ACK	Frame ID No.		Station No.		Network No.		PLC No.		Request destination module I/O No.				Request destination module station No.		Host Address No.	
06H	F	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	46H	38H	30H	30H	30H	30H	30H	30H	30H	30H	30H	30H	30H	30H	30H	30H
	(H)	(L)	(H)	(L)	(H)	(L)	(H)	(L)	(H)	–	–	(L)	(H)	(L)	(H)	(L)

Item	Message format
Response message during faulty communication (GOT → host)	Example: Format 7 (QnA compatible 4C frame (format 1))

NAK	Frame ID No.		Station No.		Network No.		PLC No.		Request destination module I/O No.				Request destination module station No.		Host Address No.		Following*1
	F	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
15H	46H	38H	30H	30H	30H	30H	30H	30H	30H	30H	30H	30H	30H	30H	30H	30H	
	(H)	(L)	(H)	(L)	(H)	(L)	(H)	(L)	(H)	–	–	(L)	(H)	(L)	(H)	(L)	

*1

	Error code			
	7	F	6	9
	37H	46H	36H	39H
	(H)	–	–	(L)

The above is the case where a parity error (7F69H) has occurred.

Point

When a wrong day of the week has been set by the clock data setting command

If a wrong day of the week is set by the clock data setting commands, the corrected day of the week will be set.

Example: When June 3, 2025 (Thursday) is set by the clock data setting command (The actual day of week is Tuesday.)

Tuesday (TUE) will be set.

Error code list

The following shows error code, error contents, cause, and measures.

Error code	Description	Action
7E40H	Command error An unsupported command or sub-command was used.	• Review the contents of the message to transmit. • Check the commands in the message. ☞ Page 2327 List of commands
7E41H	Data length error The number of devices specified for random read or write exceeds the settable number of devices.	• Review the contents of the message to transmit. • Check the devices that can be used and the device ranges. ☞ Page 2312 Device data area
7E42H	Number of data error The number of requests exceeds the command range.	
7E43H	Device error A non-existent device has been specified.	• Review the contents of the message to transmit. • Check the devices that can be used and the device ranges. ☞ Page 2312 Device data area
7E46H	Clock data setting error The setting value of the clock data has error.	• Review the contents of the message to transmit. • Check whether the nonexistent data is set (e.g. setting "07" at the day of the week) as clock data.
7E4FH	Exceeded number of points error The read or write range has exceeded the device range.	• Review the contents of the message to transmit. • Check the devices that can be used and the device ranges. ☞ Page 2312 Device data area
7F20H	Character error A character other than "A to Z", "0 to 9", space, and control codes has been received.	• Review the contents of the message to transmit.
7F23H	Communication message error ETX or CR+LF was not found within the upper limit of the receive buffer.	• Check the communication cable and communication module attachment. • Check the settings in [Detail Setting]. • Review the contents of the message to transmit.
7F24H	Sum check error The sum check code of the received data and the sum check code created from the received data are different.	• Review the contents of the message to transmit.
7F67H	Overrun error The next data was transmitted from the host before GOT completes the processing of the data received.	• Check the settings in [Detail Setting]. • Decrease the transmission speed.
7F68H	Framing error The data bit and/or stop bit are not correct.	• Check the communication cable and communication module attachment. • Check the settings in [Detail Setting]. • Match the GOT and host transmission settings.
7F69H	Parity error The parity bit does not match.	
7F6AH	Buffer full error The receive buffer overflowed.	• Check the communication cable and communication module attachment. • Check the settings in [Detail Setting]. • Review the contents of the message to transmit.

50.5.6 Formats 11 to 13

The following describes the message formats 11 to 13 (SCHNEIDER EJH's (former Digital Electronics Corporation) memory link method).

Basic format of data communication

This is the same format as the protocol of the SCHNEIDER EJH's memory link method.

For details on the basic format of data communication, refer to the following manual:

☞ The connection manual of the device manufactured by SCHNEIDER EJH

This section describes items whose settings differ from the protocols of the SCHNEIDER EJH's memory link method and dedicated commands for a microcomputer connection of the GOT.

Example: Request message for the batch read in word units (R) command in format 13 (SCHNEIDER EJH's memory link method (extended mode, ASCII code 1:n))

ENQ	Station No.		ESC	Com-mand	Address				Number of points				Sum Check		CR	LF
	0	0		R	0	0	6	4	0	0	0	2	5	E		
05H	30H	30H	1BH	52H	30H	30H	36H	34H	30H	30H	30H	32H	35H	45H	0DH	0AH
	(H)	(L)			(H)	–	–	(L)	(H)	–	–	(L)	(H)	(L)		

Sum check is performed in this range.

Point

Compatibility with the SCHNEIDER EJH's memory link method

In the case of formats 12 and 13 (SCHNEIDER EJH's memory link method (extended mode)), a communication error may occur since some communication packets are not compatible with the SCHNEIDER EJH's memory link method in the communication.

To ensure compatibility, turn on the digital compatible signals (GS580 to GS583) of the GOT internal device and communicate in the fully compatible message format.

Device	Function	Bit	Bit position	Settings
GS580	Microcomputer connection extended setting (CH1)	Digital compatible signal	b0	0: Partly compatible (Default) 1: Fully compatible
GS581	Microcomputer connection extended setting (CH2)	Digital compatible signal	b0	0: Partly compatible (Default) 1: Fully compatible
GS582	Microcomputer connection extended setting (CH3)	Digital compatible signal	b0	0: Partly compatible (Default) 1: Fully compatible
GS583	Microcomputer connection extended setting (CH4)	Digital compatible signal	b0	0: Partly compatible (Default) 1: Fully compatible

When the digital compatible signal turns on, interrupt outputs (D13 to D14, SM0 to SM49) are invalid.

To use interrupt outputs, turn off the digital compatible signal.

For details on the GOT internal devices, refer to the following.

☞ GT Designer3 (GOT3000) Screen Design Manual

Details of data items in message format

Use the ASCII code as the communication data code.

■Command

Specify the contents to access from the host to GOT.

The command is converted to a 1-digit ASCII code (hexadecimal) and transmitted.

For details on the commands that can be used, refer to the following.

☞ Page 2327 List of commands

■Station number

Station number is used to identify the GOT with which the host communicates. (Setting range: 0 to 1FH)

The data notated in hexadecimal is converted to a 2-digit ASCII code (hexadecimal) and transmitted from the upper digit.

The GOT processes only commands whose station number matches the "Host Address (0 to 31)" set in [Detail Setting]. (The GOT ignores the messages that do not include the matched station number.)

For the settings in [Detail Setting], refer to the following.

☞ Page 2375 [Controller Setting]

■Address

Specify the start number of the device data to be read or written.

The data notated in hexadecimal is converted to a 4-digit ASCII code (hexadecimal) and transmitted from the upper digit.

For details on the device range that can be accessed, refer to the following.

☞ Page 2312 Device data area

■Number of points

Specify the number of device data to be read or written.

The data notated in hexadecimal is converted to a 4-digit ASCII code (hexadecimal) and transmitted from the upper digit.

The setting range depends on the format and command.

Format	Command	Command name	Setting range
11	R	Batch read in word units	1 to 100H
	W	Batch write in word units	1 to 1F0H
12	R	Batch read in word units	1 to 100H
	W	Batch write in word units	
13	R	Batch read in word units	1 to 100H
	W	Batch write in word units	

■Year, month, day, hour, minute, second and day of the week data

Specify the year, month, day, hour, minute, second, and day of the week data to be read or set to the GOT clock data.

The data notated in decimal is converted to a 2-digit ASCII code (hexadecimal) and transmitted from the upper digit.

☞ Page 2354 Read clock data (N) command

☞ Page 2356 Set clock data (M) command

■Error code

This is the response message at faulty communication appended with error contents.

The data notated in hexadecimal is converted to a 2-digit ASCII code (hexadecimal) and transmitted from the upper digit.

For details on the error codes generated in formats 12 and 13 (SCHNEIDER EJH's memory link method (extended mode)), refer to the following.

☞ Page 2360 Error code list

Point

When connecting a microcomputer or others that uses the protocol of the SCHNEIDER EJH's memory link method with the GOT

To do so, correct the commands to be used and the device ranges to match the specifications of the GOT.

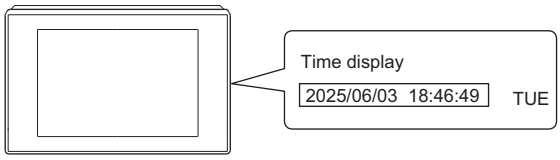
Message formats

The following shows the message format of the dedicated commands for a microcomputer connection of GOT.

■Read clock data (N) command

The following shows an example of reading the clock data of GOT.

(Assuming that the clock data of GOT has been set to "2025, June 3, 18:46:49, Tuesday".)



Item	Message format
Request message (host → GOT)	Example: Format 13 (SCHNEIDER EJH's memory link method (extended mode, ASCII code 1:n)) • Digital compatible signal (GS580 to GS583): OFF (Partly compatible) ENQ: 05H Station No.: 0 (30H (H)), 0 (30H (L)) ESC: 1BH Command: N (4EH) Sum Check: C (43H (H)), E (45H (L)) CR: 0DH LF: 0AH This range Sum check • Digital compatible signal (GS580 to GS583): ON (Fully compatible) ENQ: 05H Station No.: 0 (30H (H)), 0 (30H (L)) ESC: 1BH Command: N (4EH) Sum Check: C (43H (H)), 9 (39H (L)) CR: 0DH LF: 0AH This range Sum check

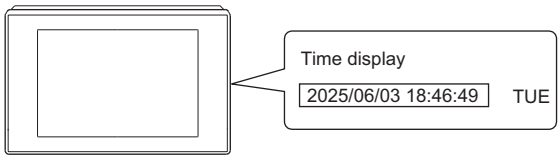
Item	Message format
Response message during normal communication (GOT → host)	Example: Format 13 (SCHNEIDER EJH's memory link method (extended mode, ASCII code 1:n)) • Digital compatible signal (GS580 to GS583): OFF (Partly compatible) STX: 02H; Station No.: 0 (30H (H)), 0 (30H (L)); ESC: 1BH; Command: A (41H); Following*1; ETX: 03H; Sum Check: 8 (38H (H)), E (45H (L)); CR: 0DH; LF: 0AH This range Sum check *1: Year data: 0 (32H (H)), 4 (35H (L)); Month data: 0 (30H (H)), 6 (36H (L)); Day data: 0 (30H (H)), 1 (33H (L)); Hour data: 1 (31H (H)), 8 (38H (L)); Minute data: 4 (34H (H)), 6 (36H (L)); Second data: 4 (34H (H)), 9 (39H (L)); Day-of-week data: 0 (30H (H)), 2 (32H (L)) • Digital compatible signal (GS580 to GS583): ON (Fully compatible) STX: 02H; Station No.: 0 (30H (H)), 0 (30H (L)); ESC: 1BH; Command: A (41H); Following*1; ETX: 03H; Sum Check: 8 (38H (H)), C (43H (L)); CR: 0DH; LF: 0AH This range Sum check *1: Year data: 0 (30H (H)), 4 (34H (L)); Month data: 0 (30H (H)), 6 (36H (L)); Day data: 0 (30H (H)), 1 (31H (L)); Hour data: 1 (31H (H)), 8 (38H (L)); Minute data: 4 (34H (H)), 6 (36H (L)); Second data: 4 (34H (H)), 9 (39H (L)); Day-of-week data: 0 (30H (H)), 2 (32H (L))
Response message during faulty communication (GOT → host)	Example: Format 13 (SCHNEIDER EJH's memory link method (extended mode, ASCII code 1:n)) NAK: 15H; Station No.: 0 (30H (H)), 0 (30H (L)); Error code: 0 (30H (H)), 6 (36H (L)); CR: 0DH; LF: 0AH The above is a case where the sum check error (06H) has occurred.

PART 18

■Set clock data (M) command

The following shows an example of setting the clock data of GOT.

(Assuming the clock data of GOT is to be set to "2025, June 3, 18:46:49 Tuesday".)



After execution

Item	Message format
Request message (host → GOT)	Example: Format 13 (SCHNEIDER EJH's memory link method (extended mode, ASCII code 1:n)) • Digital compatible signal (GS580 to GS583): OFF (Partly compatible) ENQ: 05H; Station No.: 0 30H (H), 0 30H (L); ESC: 1BH; Command: M 4DH; Following*1; Sum Check: 9 39H (H), A 41H (L); CR: 0DH; LF: 0AH Sum check is performed in this range. *1: Year data: 0 32H (H), 4 35H (L); Month data: 0 30H (H), 6 36H (L); Day data: 0 30H (H), 1 33H (L); Hour data: 1 31H (H), 8 38H (L); Minute data: 4 34H (H), 6 36H (L); Second data: 4 34H (H), 9 39H (L); Day-of-week data: 0 30H (H), 2 32H (L) • Digital compatible signal (GS580 to GS583): ON (Fully compatible) ENQ: 05H; Station No.: 0 30H (H), 0 30H (L); ESC: 1BH; Command: M 4DH; Following*1; Sum Check: 9 39H (H), 5 35H (L); CR: 0DH; LF: 0AH Sum check is performed in this range. *1: Year data: 0 32H (H), 4 35H (L); Month data: 0 30H (H), 6 36H (L); Day data: 0 30H (H), 1 33H (L); Hour data: 1 31H (H), 8 38H (L); Minute data: 4 34H (H), 6 36H (L); Second data: 4 34H (H), 9 39H (L); Day-of-week data: 0 30H (H), 2 32H (L)
Response message during normal communication (GOT → host)	Example: Format 13 (SCHNEIDER EJH's memory link method (extended mode, ASCII code 1:n)) ACK: 06H; Station No.: 0 30H (H), 0 30H (L); CR: 0DH; LF: 0AH
Response message during faulty communication (GOT → host)	Example: Format 13 (SCHNEIDER EJH's memory link method (extended mode, ASCII code 1:n)) NAK: 15H; Station No.: 0 30H (H), 0 30H (L); Error code: 0 30H (H), 6 36H (L); CR: 0DH; LF: 0AH The above is a case where the sum check error (06H) has occurred.

Point

When a wrong day of the week has been set by the clock data setting command

If a wrong day of the week is set by the clock data setting commands, the corrected day of the week will be set.

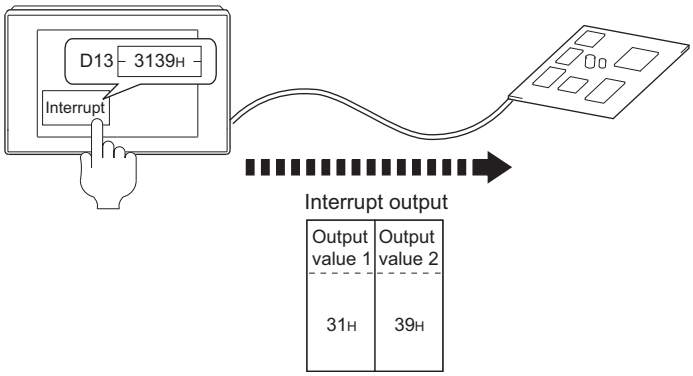
Example: When June 3, 2025 (Thursday) is set by the clock data setting command (The actual day of week is Tuesday.)

Tuesday (TUE) will be set.

■Interrupt inquiry

The following shows an example of interrupt inquiry when data are written to the interrupt output devices (D13 and D14). (Assuming that "3139H" is written to D13 and "AA55H" to D14.)

Example: When [Interrupt Data Byte(Byte)] is set to [2] in format 11



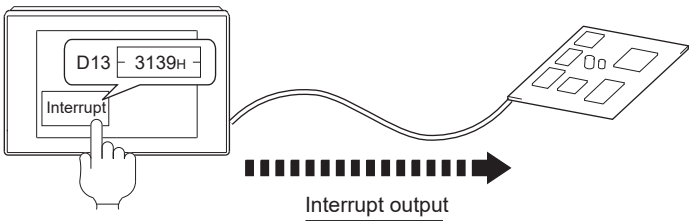
Item	Message format
Request message (host → GOT)	Example: Format 13 (SCHNEIDER EJH's memory link method (extended mode, ASCII code 1:n)) • Digital compatible signal (GS580 to GS583): OFF (Partly compatible) ENQ: 05H; Station No.: 0 (30H (H)), 0 (30H (L)); ESC: 1BH; Command: I (49H); Sum Check: C (43H (H)), 9 (39H (L)); CR: 0DH; LF: 0AH This range Sum check • Digital compatible signal (GS580 to GS583): ON (Fully compatible) ENQ: 05H; Station No.: 0 (30H (H)), 0 (30H (L)); ESC: 1BH; Command: I (49H); Sum Check: C (43H (H)), 4 (34H (L)); CR: 0DH; LF: 0AH This range Sum check

Item	Message format
Interrupt inquiry (GOT → host)	Example: Format 13 (SCHNEIDER EJH's memory link method (extended mode, ASCII code 1:n)) (1) When [Interrupt Data Byte(Byte)] in [Detail Setting] is set to [1] STX: 02H Station No.: 0 0 (30H 30H) (H) (L) ESC: 1BH Command: I (49H) Data quantity: 0 1 (30H 31H) (H) (L) Output value 1: 3 9 (33H 39H) (H) (L) ETX: 03H Sum Check: 9 4 (39H 44H) (H) (L) CR: 0DH LF: 0AH This range Sum check is performed. (2) When [Interrupt Data Byte(Byte)] in [Detail Setting] is set to [2] STX: 02H Station No.: 0 0 (30H 30H) (H) (L) ESC: 1BH Command: I (49H) Data quantity: 0 1 (30H 31H) (H) (L) Output value 1: 3 1 (33H 31H) (H) (L) Output value 2: 3 9 (33H 39H) (H) (L) ETX: 03H Sum Check: F 9 (46H 39H) (H) (L) CR: 0DH LF: 0AH Sum check is performed in this range. (3) When [Interrupt Data Byte(Byte)] in [Detail Setting] is set to [4] STX: 02H Station No.: 0 0 (30H 30H) (H) (L) ESC: 1BH Command: I (49H) Data quantity: 0 1 (30H 31H) (H) (L) Output value 1: A A (41H 41H) (H) (L) Output value 2: 5 5 (35H 35H) (H) (L) Output value 3: 3 1 (33H 31H) (H) (L) Output value 4: 3 9 (33H 39H) (H) (L) ETX: 03H Sum Check: E 7 (45H 37H) (H) (L) CR: 0DH LF: 0AH Sum check is performed in this range.

■In the case of interrupt outputs

Write data to the interrupt output devices (D13 and D14) to output the data to the host.
(Assuming that "3139H" is written to D13 and "AA55H" to D14.)

Example) When [Interrupt Data Byte] in the communication detail settings is set to 2 byte as shown in (2) of the table below



Interrupt output

Output value 1	Output value 2
31H	39H

Item	Message format
Interrupt output (GOT → host)	Example: Format 13 (SCHNEIDER EJH's memory link method (extended mode, ASCII code 1:n))

(1) When [Interrupt Data Byte(Byte)] in [Detail Setting] is set to [1]

STX	Station No.		ESC	Com-mand	Data quantity		Output value 1		ETX	Sum Check		CR	LF
	0	0		I	0	1	3	9		9	4		
02H	30H	30H	1BH	49H	30H	31H	33H	39H	03H	39H	44H	0DH	0AH
	(H)	(L)			(H)	(L)	(H)	(L)		(H)	(L)		

This range Sum check is performed.

(2) When [Interrupt Data Byte(Byte)] in [Detail Setting] is set to [2]

STX	Station No.		ESC	Com-mand	Data quantity		Output value 1		Output value 2		ETX	Sum Check		CR	LF
	0	0		I	0	2	3	1	3	9		F	9		
02H	30H	30H	1BH	49H	30H	32H	33H	31H	33H	39H	03H	46H	39H	0DH	0AH
	(H)	(L)			(H)	(L)	(H)	(L)	(H)	(L)		(H)	(L)		

Sum check is performed in this range.

(3) When [Interrupt Data Byte(Byte)] in [Detail Setting] is set to [4]

• When [32bit Storage] is set to [LH Order] in [Detail Setting]

STX	Station No.		ESC	Com-mand	Data quantity		Output value 1		Output value 2		Output value 3		Output value 4		ETX	Sum Check		CR	LF
	0	0		I	0	4	A	A	5	5	3	1	3	9		E	7		
02H	30H	30H	1BH	49H	30H	34H	41H	41H	35H	35H	33H	31H	33H	39H	03H	45H	37H	0DH	0AH
	(H)	(L)			(H)	(L)	(H)	(L)	(H)	(L)	(H)	(L)	(H)	(L)		(H)	(L)		

Sum check is performed in this range.

• When [32bit Storage] is set to [HL Order] in [Detail Setting]

STX	Station No.		ESC	Com-mand	Data quantity		Output value 1		Output value 2		Output value 3		Output value 4		ETX	Sum Check		CR	LF
	0	0		I	0	4	3	1	3	9	A	A	5	5		E	7		
02H	30H	30H	1BH	49H	30H	34H	33H	31H	33H	39H	41H	41H	35H	35H	03H	45H	37H	0DH	0AH
	(H)	(L)			(H)	(L)	(H)	(L)	(H)	(L)	(H)	(L)	(H)	(L)		(H)	(L)		

Sum check is performed in this range.

Point

Interrupt output

To disable the interrupt output, turn on SM52 (interrupt code output disable flag).

☞ Page 2324 SM devices

To execute the interrupt output in format 1, 2, 11, 14, or 15, set the data length to 8 bits in [Detail Setting].

When 7 bits is set, the uppermost bit (8th bit) is ignored. (Example: FFH → 7FH)

☞ Page 2376 [Detail Setting]

Error code list

When the message format is 12 or 13 (SCHNEIDER EJH's memory link method (extended mode)), if there is an error, the error code is added to the response message.

The following shows error code, error contents, cause, and measures.

Error code	Description	Action
06H	Sum check error The sum check code of the received data and the sum check code created from the received data are different.	• Review the contents of the message to transmit.
10H	Command error An unsupported command was used.	• Review the contents of the message to transmit. • Check the commands in the message. ☞ Page 2327 List of commands
12H	Message length error The upper limit of the data length that can be received by the GOT has been exceeded.	
16H	Clock data setting error The setting value of the clock data has error.	• Review the contents of the message to transmit. • Check whether the nonexistent data is set (e.g. setting "07" at the day of the week) as clock data.
FAH	Address error The start address of the read or write device is out of range.	• Review the contents of the message to transmit. • Check the data length of the message. (data length of the data section, etc.)
FBH	Exceeded number of points error The read or write range has exceeded the device range.	• Review the contents of the message to transmit. • Check the devices that can be used and the device ranges. ☞ Page 2312 Device data area
FCH	Message format error The format of the received message has error.	• Check the settings in [Detail Setting]. • Review the contents of the message to transmit.
FFH	Timeout error There is no response from the GOT, or the station of the specified address does not exist.	• Check the communication cable and communication module attachment. • Check the settings in [Detail Setting]. • Review the contents of the message to transmit.

Precautions

■Storage order for 32-bit data

When 32-bit data is specified to use the program of the SCHNEIDER EJH's memory link method, set [HL Order] for [32bit Storage] in the communication detail settings.

If [LH Order] is set, higher-order bits and lower-order bits are reversed when 32-bit data is displayed or written to the GOT.

50.5.7 Format 14, 15

The following describes the message formats 14 and 15 (GOT-F900 series microcomputer connection).

Basic format of data communication

Item	Message format	
Request message (host → GOT)	(Format 14: GOT-F900 series microcomputer connection (format 1)) (1) Without station number STX: 02H; Command; Data; CR: 0DH (2) With station number STX: 02H; Command; Station No. (H) (L); Data; CR: 0DH	(Format 15: GOT-F900 series microcomputer connection (format 2)) (1) Without station number STX: 02H; Command; Data; ETX: 03H; Sum Check (H) (L) Sum check is performed in this range. (2) With station number STX: 02H; Command; Station No. (H) (L); Data; ETX: 03H; Sum Check (H) (L) Sum check is performed in this range.
Response message during normal communication (GOT → host)	(1) During processing of read commands (Format 14: GOT-F900 series microcomputer connection (format 1)) STX: 02H; Data; CR: 0DH	(Format 15: GOT-F900 series microcomputer connection (format 2)) STX: 02H; Data; ETX: 03H; Sum Check (H) (L) Sum check is performed in this range.
	(2) During processing of write commands ACK: 06H	
Response message during faulty communication (GOT → host)	NAK: 15H	
During interrupt output*2	Output value: 1/2/4 bytes*1	

*1 Set the number of interrupt data bytes in [Detail Setting] in GT Designer3.
For setting the number of interrupt data bytes, refer to the following.
☞ Page 2376 [Detail Setting]

*2 Interrupt output can be executed by writing the data to the interrupt output devices (D13 and D14).
☞ Page 2314 D devices

Details of data items in message format

Use the ASCII code as the communication data code. (Excluding interrupt outputs)

■Control codes

Symbol	ASCII code	Description
STX	02H	Start of Text (start marker of message frame)
ETX	03H	End of Text (end marker of message frame)
EOT	04H	End of Transmission
ENQ	05H	Enquiry (start of enquiry)
NAK	15H	Negative ACK (error response)
ACK	06H	Acknowledge (write completion response)
LF	0AH	Line Feed
CL	0CH	Clear
CR	0DH	Carriage Return

■Command

Specify the contents to access from the host to GOT.

The command is converted to a 1-digit ASCII code (hexadecimal) and transmitted.

For details on the commands that can be used, refer to the following.

☞ Page 2327 List of commands

■Station number

Station number is used to identify the GOT with which the host communicates. (Setting range: 0 to 31)

The data notated in decimal is converted to a 2-digit ASCII code (hexadecimal) and transmitted from the upper digit.

The GOT processes only commands whose station number matches the "Host Address (0 to 31)" set in [Detail Setting]. (The GOT ignores the messages that do not include the matched station number.)

For the settings in [Detail Setting], refer to the following.

☞ Page 2376 [Detail Setting]

■Address

Specify the start number of the device data to be read or written.

The data notated in hexadecimal is converted to a 4-digit ASCII code (hexadecimal) and transmitted from the upper digit.

For details on the device range that can be accessed, refer to the following.

☞ Page 2312 Device data area

■Bit pattern

Specify the pattern of the bits to change.

The data notated in hexadecimal is converted to a 2-digit ASCII code (hexadecimal) and transmitted from the upper digit.

☞ Page 2368 Multi-point write in bit units (3) command (without station number), multi-point write in bit units (D) command (with station number)

■Write specification

Specify how to change the data of the specified address by bit pattern.

(Setting range: 0 to 3)

Data notated in decimal is converted to a 1-digit ASCII code (hexadecimal) and transmitted.

☞ Page 2368 Multi-point write in bit units (3) command (without station number), multi-point write in bit units (D) command (with station number)

■Number of bytes

Specify the number of bytes of the device data to be batch read or written. (Setting range: 0 to FFH)

The data notated in hexadecimal is converted to a 2-digit ASCII code (hexadecimal) and transmitted from the upper digit.

■Number of points

Specify the number of device data to be written to multiple points in bit units. (Setting range: 0 to 70)

The data notated in decimal is converted to a 2-digit ASCII code (hexadecimal) and transmitted from the upper digit.

■Year, month, day, hour, minute, second and day of the week data

Specify the year, month, day, hour, minute, second, and day of the week data to be read or set to the GOT clock data.

The data notated in decimal is converted to a 2-digit ASCII code (hexadecimal) and transmitted from the upper digit.

☞ Page 2371 Read clock data (6) command (without station number), read clock data (G) command (with station number)

☞ Page 2372 Set clock data (5) command (without station number), set clock data (F) command (with station number)

■Data

Specify the data to read from or write to the specified device data. (word unit)

The data notated in hexadecimal is converted to a 4-digit ASCII code (hexadecimal) and transmitted from the upper digit.

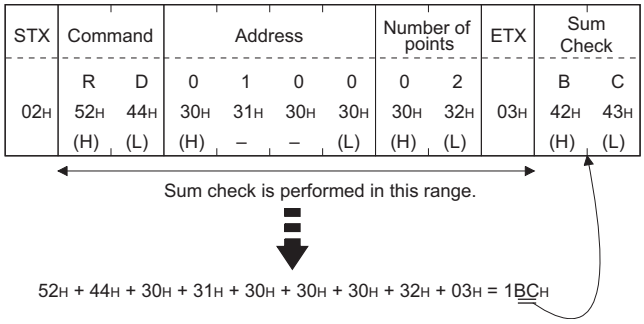
■Write data

Specify the data to write to the specified device data.

The data notated in hexadecimal is converted to a 2-digit ASCII code (hexadecimal) and transmitted from the upper digit.

■Sum check code (Format 15: GOT-F900 series microcomputer connection (format 2) only)

The sum check code is obtained by converting the lower 1 byte (8 bits) of the result (sum), after having added the sum check target data as binary data, to 2-digit ASCII code (hexadecimal).

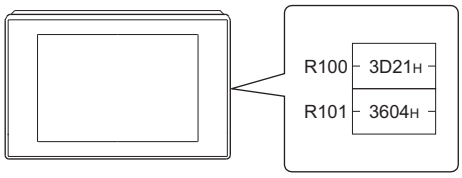


Message format

■Batch read (0) command (without station number), batch read (A) command (with station number)

- When reading a word device

The following shows an example of reading four bytes of virtual devices R100 to 101 from the GOT at station No. 15.
(Assuming R100=3D21H, R101=3604H are stored.)



Item	Message format
Request message (host → GOT)	(Format 14: GOT-F900 series microcomputer connection (format 1))

STX	Com-mand	Station No.		Address				Number of bytes		CR
	A	1	5	0	0	C	8	0	4	
02H	41H	31H	35H	30H	30H	43H	38H	30H	34H	0DH
		(H)	(L)	(H)	–	–	(L)	(H)	(L)	

(Format 15: GOT-F900 series microcomputer connection (format 2))

STX	Com-mand	Station No.		Address				Number of bytes		ETX	Sum Check	
	A	1	5	0	0	C	8	0	4		E	9
02H	41H	31H	35H	30H	30H	43H	38H	30H	34H	03H	45H	39H
		(H)	(L)	(H)	–	–	(L)	(H)	(L)		(H)	(L)

Sum check is performed in this range.

Response message during normal communication (GOT → host)	(Format 14: GOT-F900 series microcomputer connection (format 1))

STX	Data 1 (R100 upper)		Data 2 (R100 lower)		Data 3 (R101 upper)		Data 4 (R101 lower)		CR
	3	D	2	1	3	6	0	4	
02H	33H	44H	32H	31H	33H	36H	30H	34H	0DH
	(H)	(L)	(H)	(L)	(H)	(L)	(H)	(L)	

(Format 15: GOT-F900 series microcomputer connection (format 2))

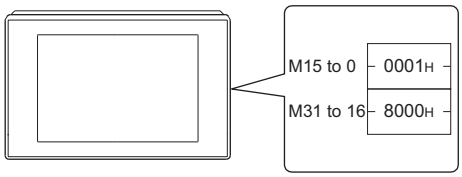
STX	Data 1 (R100 upper)		Data 2 (R100 lower)		Data 3 (R101 upper)		Data 4 (R101 lower)		ETX	Sum Check	
	3	D	2	1	3	6	0	4		A	A
02H	33H	44H	32H	31H	33H	36H	30H	34H	03H	41H	41H
	(H)	(L)	(H)	(L)	(H)	(L)	(H)	(L)		(H)	(L)

Sum check is performed in this range.

Response message during faulty communication (GOT → host)	NAK 15H

• When reading a bit device

The following shows an example of reading four bytes of the virtual devices M0 to 31.
(Assuming M0=1 and M31=1 are stored.)



Item	Message format
Request message (host → GOT)	(Format 14: GOT-F900 series microcomputer connection (format 1))

STX	Com-mand	Station No.		Address				Number of bytes		CR
	A	1	5	2	0	0	0	0	4	
02H	41H	31H	35H	32H	30H	30H	30H	30H	34H	0DH
		(H)	(L)	(H)	–	–	(L)	(H)	(L)	

(Format 15: GOT-F900 series microcomputer connection (format 2))

STX	Com-mand	Station No.		Address				Number of bytes		ETX	Sum Check	
	A	1	5	2	0	0	0	0	4		D	0
02H	41H	31H	35H	32H	30H	30H	30H	30H	34H	03H	44H	30H
		(H)	(L)	(H)	–	–	(L)	(H)	(L)		(H)	(L)

Sum check is performed in this range.

Response message during normal communication (GOT → host)

(Format 14: GOT-F900 series microcomputer connection (format 1))

STX	Data 1 (M7 to 0)		Data 2 (M15 to 8)		Data 3 (M23 to 16)		Data 4 (M31 to 24)		CR
	0	1	0	0	0	0	8	0	
02H	30H	31H	30H	30H	30H	30H	38H	30H	0DH
	(H)	(L)	(H)	(L)	(H)	(L)	(H)	(L)	

0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0
M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
7	6	5	4	3	2	1	0	1	1	1	1	1	1	9	8	2	2	2	2	1	1	1	1	3	3	2	2	2	2	2	2	2
								5	4	3	2	1	0			3	2	1	0	9	8	7	6	1	0	9	8	7	6	5	4	

(Format 15: GOT-F900 series microcomputer connection (format 2))

Sum check is performed in this range.

STX	Data 1 (M7 to 0)		Data 2 (M15 to 8)		Data 3 (M23 to 16)		Data 4 (M31 to 24)		ETX	Sum Check	
	0	1	0	0	0	0	8	0		8	C
02H	30H	31H	30H	30H	30H	30H	38H	30H	03H	38H	43H
	(H)	(L)	(H)	(L)	(H)	(L)	(H)	(L)		(H)	(L)

0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0
M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
7	6	5	4	3	2	1	0	1	1	1	1	1	1	9	8	2	2	2	2	1	1	1	1	3	3	2	2	2	2	2	2	2
								5	4	3	2	1	0			3	2	1	0	9	8	7	6	1	0	9	8	7	6	5	4	

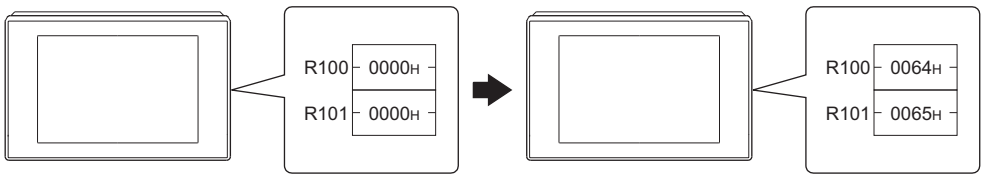
Response message during faulty communication (GOT → host)

NAK
15H

■Batch write (1) command (without station number), batch write (B) command (with station number)

- When writing to a word device

The following shows an example of writing "0064H" and "0065H" to virtual devices R100 and 101 on the GOT at station No. 15.



Before execution　　After execution

Item	Message format
Request message (host → GOT)	(Format 14: GOT-F900 series microcomputer connection (format 1))

STX	Com-mand	Station No.		Address				Number of bytes		Following*1	CR
	B	1	5	0	0	C	8	0	4		
02H	42H	31H	35H	30H	30H	43H	38H	30H	34H		0DH
		(H)	(L)	(H)	–	–	(L)	(H)	(L)		

(Format 15: GOT-F900 series microcomputer connection (format 2))

STX	Com-mand	Station No.		Address				Number of bytes		Following*1	ETX	Sum Check	
	B	1	5	0	0	C	8	0	4			9	1
02H	42H	31H	35H	30H	30H	43H	38H	30H	34H		03H	39H	31H
		(H)	(L)	(H)	–	–	(L)	(H)	(L)			(H)	(L)

Sum check is performed in this range.

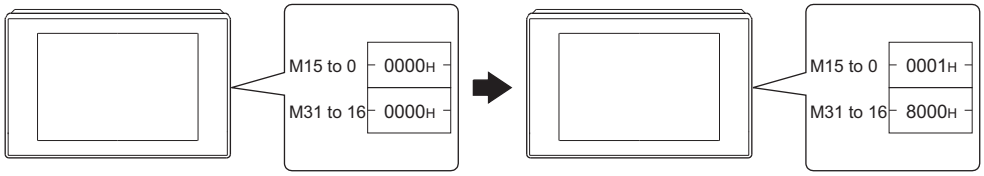
*1

	Data 1 (R100 upper)		Data 2 (R100 lower)		Data 3 (R101 upper)		Data 4 (R101 lower)		
	0	0	6	4	0	0	6	5	
	30H	30H	36H	34H	30H	30H	36H	35H	
	(H)	(L)	(H)	(L)	(H)	(L)	(H)	(L)	

Item	Message format
Response message during normal communication (GOT → host)	ACK 06H
Response message during faulty communication (GOT → host)	NAK 15H

• When writing to a bit device

The following shows an example of writing "1" to virtual devices M0 and M31 on the GOT at station No. 15.



Before execution

After execution

Item	Message format
Request message (host → GOT)	(Format 14: GOT-F900 series microcomputer connection (format 1))

STX	Com-mand	Station No.		Address				Number of bytes		Following*1	CR
	B	1	5	2	0	0	0	0	4		
02H	42H	31H	35H	32H	30H	30H	30H	30H	34H		0DH
		(H)	(L)	(H)	–	–	(L)	(H)	(L)		

(Format 15: GOT-F900 series microcomputer connection (format 2))

STX	Com-mand	Station No.		Address				Byte Number		Following*1	ETX	Sum Check	
	B	1	5	2	0	0	0	0	4			5	A
02H	42H	31H	35H	32H	30H	30H	30H	30H	34H		03H	35H	41H
		(H)	(L)	(H)	–	–	(L)	(H)	(L)			(H)	(L)

Sum check is performed in this range.

*1

	Data 1 (M7 to 0)		Data 2 (M15 to 8)		Data 3 (M23 to 16)		Data 4 (M31 to 24)		
	0	1	0	0	0	0	8	0	
	30H	31H	30H	30H	30H	30H	38H	30H	
	(H)	(L)	(H)	(L)	(H)	(L)	(H)	(L)	

0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0
M7	M6	M5	M4	M3	M2	M1	M0	M15	M14	M13	M12	M11	M10	M9	M8	M23	M22	M21	M20	M19	M18	M17	M16	M31	M30	M29	M28	M27	M26	M25	M24

Response message during normal communication (GOT → host)	ACK 06H
Response message during faulty communication (GOT → host)	NAK 15H

■Multi-point write in bit units (3) command (without station number), multi-point write in bit units (D) command (with station number)

The following shows an example of turning off the virtual device M31 and turning on the virtual device M2038 on the GOT at station No. 31.

Item	Message format
Request message (host → GOT)	(Format 14: GOT-F900 series microcomputer connection (format 1))

STX	Com-mand	Station No.		Number of points		Following*1	CR
	D	3	1	0	2		
02H	44H	33H	31H	30H	32H		0DH
		(H)	(L)	(H)	(L)		

(Format 15: GOT-F900 series microcomputer connection (format 2))

STX	Com-mand	Station No.		Number of points		Following *1	ETX	Sum check	
	D	3	1	0	2			E	C
02H	44H	33H	31H	30H	32H		03H	45H	43H
		(H)	(L)	(H)	(L)			(H)	(L)

Sum check is performed in this range.

*1

Write specification 1	Address1				Bit pattern1		Write specification 2	Address2				Bit pattern2	
1	2	0	0	3	8	0	0	2	0	F	E	4	0
31H	32H	30H	30H	33H	38H	30H	30H	32H	30H	46	45H	34H	30H
	(H)	–	–	(L)	(H)	(L)		(H)	–	–	(L)	(H)	(L)

*2 (write specification1=1)

Source data bit pattern	1	0	1	0	1	0	1	0
	1	0	0	0	0	0	0	0
Result	0	0	1	0	1	0	1	0
	M3	M2	M2	M2	M2	M2	M2	M2
	1	0	9	8	7	6	5	4

*2 (write specification2=0)

Source data bit pattern	1	0	1	0	1	0	1	0
	0	1	0	0	0	0	0	0
Result	1	1	1	0	1	0	1	0
	M2	M2	M2	M2	M2	M2	M2	M2
	0	0	0	0	0	0	0	0
	M3	M3	M3	M3	M3	M3	M3	M3
	9	8	7	6	5	4	3	2

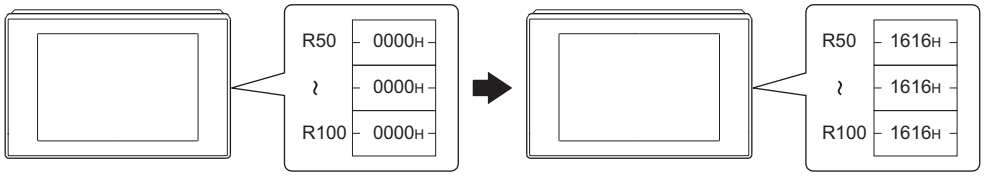
Item	Message format
Response message during normal communication (GOT → host)	ACK 06H
Response message during faulty communication (GOT → host)	NAK 15H

*1 The write specification specifies how the data of the specified address is changed in the bit pattern.

Write specification	Function	Description	Action example
0	ON specification	Bits set to "1" by the bit pattern are turned on.	Original data 1010 Bit pattern 1100
			Result 1110
1	OFF specification	Bits set to "1" by the bit pattern are turned off.	Original data 1010 Bit pattern 1100
			Result 0010
2	Invert specification	Bits set to "1" by the bit pattern are inverted.	Original data 1010 Bit pattern 1100
			Result 0110
3	Write specification	The numerical values to write by the bit pattern are specified directly.	Original data 1010 Bit pattern 1100
			Result 1100

■Fill command (4) (without station number), fill command (E) (with station number)

The following shows an example of writing "16" to virtual devices R50 to 100 on the GOT at station No. 27.



Before execution

After execution

Item	Message format
Request message (host → GOT)	(Format 14: GOT-F900 series microcomputer connection (format 1))

STX	Com-mand	Station No.		Start address				End address				Write Data		CR
	E	2	7	0	0	6	4	0	0	C	9	1	6	
02H	45H	32H (H)	37H (L)	30H (H)	30H –	36H –	34H (L)	30H (H)	30H –	43H –	39H (L)	31H (H)	36H (L)	0DH

(Format 15: GOT-F900 series microcomputer connection (format 2))

STX	Com-mand	Station No.		Start address				End address				Write Data		ETX	Sum Check	
	E	2	7	0	0	6	4	0	0	C	9	1	6		B	E
02H	45H	32H (H)	37H (L)	30H (H)	30H –	36H –	34H (L)	30H (H)	30H –	43H –	39H (L)	31H (H)	36H (L)	03H	42H (H)	45H (L)

Sum check is performed in this range.

Response message during normal communication (GOT → host)	ACK 06H
Response message during faulty communication (GOT → host)	NAK 15H

Point

• Start address/end address specification conditions

Specify addresses so that the start address is the same or less than the end address.

Error response occurs in the following cases:

The address to specify has the start address greater than the end address.

Either of the start address or end address exceeds the device range that can be specified.

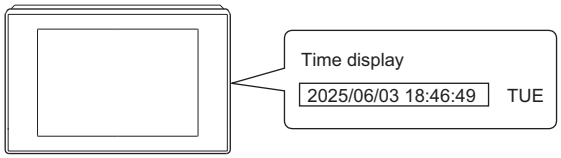
• Address specifying crossing over different devices

The start address and end address can be specified crossing over different devices.

■Read clock data (6) command (without station number), read clock data (G) command (with station number)

The following shows an example of reading the clock data of GOT at station No. 27.

(Assuming that the clock data of GOT has been set to "2025, June 3, 18:46:49, Tuesday".)

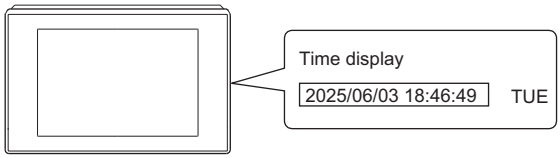


Item	Message format
Request message (host → GOT)	(Format 14: GOT-F900 series microcomputer connection (format 1)) STX: 02H Command: G 47H Station No.: 2 32H (H), 7 37H (L) CR: 0DH (Format 15: GOT-F900 series microcomputer connection (format 2)) STX: 02H Command: G 47H Station No.: 2 32H (H), 7 37H (L) ETX: 03H Sum Check: B 42H (H), 3 33H (L) Sum check is performed in this range.
Response message during normal communication (GOT → host)	(Format 14: GOT-F900 series microcomputer connection (format 1)) STX: 02H Year data: 0 32H (H), 4 35H (L) Month data: 0 30H (H), 6 36H (L) Day data: 0 30H (H), 1 33H (L) Hour data: 1 31H (H), 8 38H (L) Minute data: 4 34H (H), 6 36H (L) Second data: 4 34H (H), 9 39H (L) Day-of-week data: 0 30H (H), 2 32H (L) CR: 0DH (Format 15: GOT-F900 series microcomputer connection (format 2)) STX: 02H Year data: 0 32H (H), 4 35H (L) Month data: 0 30H (H), 6 36H (L) Day data: 0 30H (H), 1 33H (L) Hour data: 1 31H (H), 8 38H (L) Minute data: 4 34H (H), 6 36H (L) Second data: 4 34H (H), 9 39H (L) Day-of-week data: 0 30H (H), 2 32H (L) ETX: 03H Sum Check: D 44H (H), 0 30H (L) Sum check is performed in this range.
Response message during faulty communication (GOT → host)	NAK 15H

■Set clock data (5) command (without station number), set clock data (F) command (with station number)

The following shows an example of setting clock data of GOT at station No. 27.

(Assuming the clock data of GOT is to be set to "2025, June 3, 18:46:49 Tuesday".)



After execution

Item	Message format
Request message (host → GOT)	(Format 14: GOT-F900 series microcomputer connection (format 1))

STX	Com-mand	Station No.		Year data		Month data		Day Data		Hour data		Minute data		Second data		Day-of-week data		CR
	F	2	7	0	4	0	6	0	1	1	8	4	6	4	9	0	2	
02H	46H	32H	37H	32H	35H	30H	36H	30H	33H	31H	38H	34H	36H	34H	39H	30H	32H	0DH
		(H)	(L)	(H)	(L)	(H)	(L)	(H)	(L)	(H)	(L)	(H)	(L)	(H)	(L)	(H)	(L)	

(Format 15: GOT-F900 series microcomputer connection (format 2))

STX	Com-mand	Station No.			ETX	Sum Check	
	F	2	7	Following*1		7	F
02H	46H	32H	37H		03H	37H	46H
		(H)	(L)			(H)	(L)

Sum check is performed in this range.

*1

	Year data		Month data		Day data		Hour data		Minute data		Second data		Day-of-week data		
	0	4	0	6	0	1	1	8	4	6	4	9	0	2	
	32H	35H	30H	36H	30H	33H	31H	38H	34H	36H	34H	39H	30H	32H	
	(H)	(L)	(H)	(L)	(H)	(L)	(H)	(L)	(H)	(L)	(H)	(L)	(H)	(L)	

Response message during normal communication (GOT → host)	ACK 06H
Response message during faulty communication (GOT → host)	NAK 15H

Point

When a wrong day of the week has been set by the clock data setting command

If a wrong day of the week is set by the clock data setting commands, the corrected day of the week will be set.

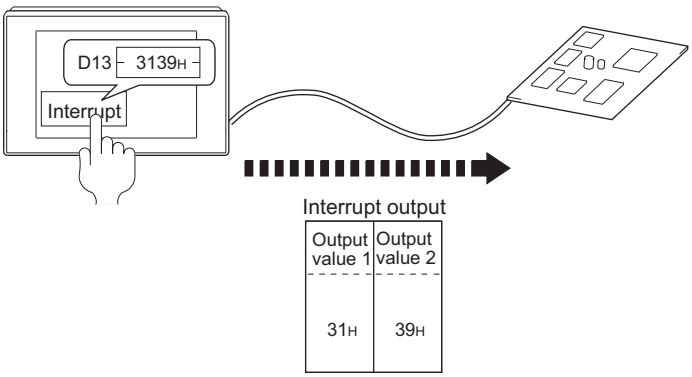
Example: When June 3, 2025 (Thursday) is set by the clock data setting command (The actual day of week is Tuesday.)

Tuesday (TUE) will be set.

■In the case of interrupt outputs

Write data to the interrupt output devices (D13 and D14) to output the data to the host.
(Assuming that "3139H" is written to D13 and "AA55H" to D14.)

Example) When [Interrupt Data Byte] in the communication detail settings is set to 2 byte as shown in (2) of the table below



Item	Message format
Interrupt output (GOT → host)	(1) When [Interrupt Data Byte(Byte)] in [Detail Setting] is set to [1] Output value 1: 39H (2) When [Interrupt Data Byte(Byte)] in [Detail Setting] is set to [2] Output value 1: 31H; Output value 2: 39H (3) When [Interrupt Data Byte(Byte)] in [Detail Setting] is set to [4] • When [32bit Storage] is set to [LH Order] in [Detail Setting] Output value 1: AAH; Output value 2: 55H; Output value 3: 31H; Output value 4: 39H • When [32bit Storage] is set to [HL Order] in [Detail Setting] Output value 1: 31H; Output value 2: 39H; Output value 3: AAH; Output value 4: 55H

Point

Interrupt output
To disable the interrupt output, turn on SM52 (interrupt code output disable flag).
☞ Page 2324 SM devices
To execute the interrupt output in format 1, 2, 11, 14, or 15, set the data length to 8 bits in the communication detail settings.
When 7 bits is set, the uppermost bit (8th bit) is ignored. (Example: FFH → 7FH)
☞ Page 2375 [Controller Setting]

Error code list

When faulty, the error code is stored in SD2.

For details on error code stored in SD2, the error contents, cause and measures, refer to the following.

☞ Page 2322 Details and actions for errors (error codes) stored into SD2

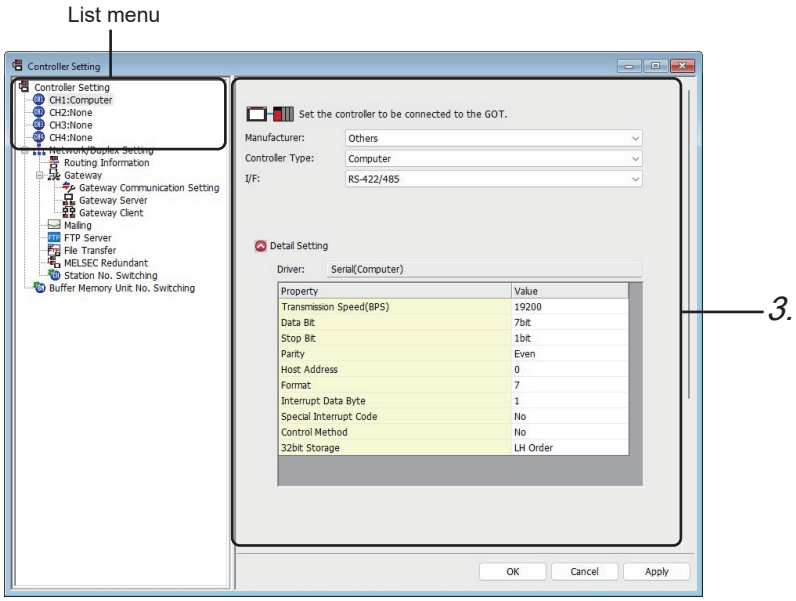
When an error other than those to be stored in SD2 occurs, at faulty, only the NAK response is executed.

50.6 GOT side settings

50.6.1 [Controller Setting]

Controller settings

Set the channel of the equipment to be connected to the GOT.



Operating procedure

1. Select [Common] → [Controller Setting] from the menu.
2. In the [Controller Setting] window, select the channel number to be used from the list menu.
3. Set the following items.

Item	Description
[Manufacturer]	[Others]
[Controller Type]	[Computer]
[I/F]	Interface to be used
[Detail Setting]	Configure the settings according to the usage environment. ☞ Page 2376 [Detail Setting]

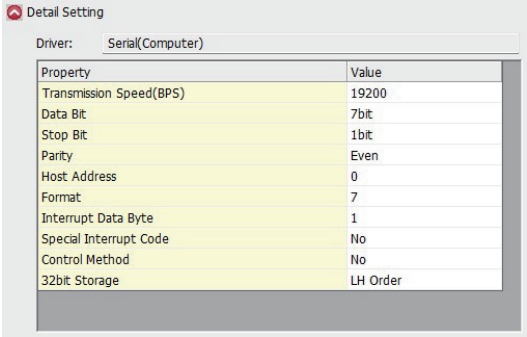
4. When you have completed the settings, click the [OK] button.

Point

The controller settings can be configured and checked in [I/F Communication Setting].
For details, refer to the following.
📖GT Designer3 (GOT3000) Screen Design Manual

[Detail Setting]

Configure the settings according to the usage environment.



Item	Description	Range
[Transmission Speed]	Set this item to change the transmission speed used for communication with the connected equipment.	[4800] bps, [9600] bps, [19200] bps, [38400] bps, [57600] bps, [115200] bps
[Data Bit]	Set this item to change the data length used for communication with the connected equipment.	[7 bit], [8 bit]
[Stop Bit]	Specify the stop bit length for communications.	[1 bit], [2 bit]
[Parity]	Specify whether or not to perform a parity check, and how it is performed during communication.	[None] [Even] [Odd]
[Host Address]	Specify the host address (the station number of the GOT connected to the microcomputer) in the connected network.	[0] to [31]
[Format]	Select the communication format.	[1] to [15]
[Interrupt Data Byte]	Specify the number of bytes of interrupt data.	[1], [2], or [4]
[Special Interrupt Code]	Set whether or not to output the special interrupt code.	[Yes], [No]
[Control Method]	Set this item when selecting the XON/XOFF control for the control method.	[XON], [XOFF], [No]
[32bit Storage]	Select the steps to store two words (32-bit data).	[LH Order] or [HL Order]

Point

• Special interrupt code

The special interrupt codes are output at event occurrences.

If multiple events occur simultaneously, the special interrupt codes may not be output.

The following shows the special interrupt codes and the event types.

Special Interrupt Code (Hex)	Event type
20H	Base screen, overlap window 1 to 5 When the screen is switched by the screen switching device, the special interrupt code will be output. The base screen and each overlap window are switched independently. (Example of output) When all the screen switching device values assigned to the Base Screen and Overlap Window 1 to 2 are changed, 6 special interrupt codes are output.
21H	This code is output when a numerical or ASCII input is completed.
22H	This code is output when reading or writing of the recipe data is completed.
23H	This code is output when a barcode or RFID data is read.

• Controller settings using the GT37 utility

The controller settings can be changed in [Communication Settings] of the GT37 utility after writing [Communication Settings] of project data to GT37.

For details on the GT37 utility, refer to the following manual.

📖GOT3000 Series User's Manual (Utility & Maintenance Functions)

• Priority of the settings in [Controller Setting]

When the settings are configured in GT Designer3 or in the GT37 utility, the latest settings are effective.

51 Settable device range

This chapter describes the range of devices settable in GT Designer3.
The settable range varies with the selection for [Controller Type] in the [Controller Setting] window.
Configure the device setting according to the specifications of the controller to be used.
Device specifications differ depending on the controller model even among the controllers of the same series.
If a nonexistent device or a device number out of the range is set for an object, other objects for which correct devices are set may not be monitored.
☞ Page 2378 Microcomputer ([Computer])

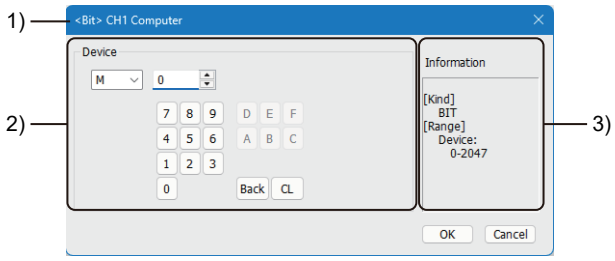
51.1 Microcomputer ([Computer])

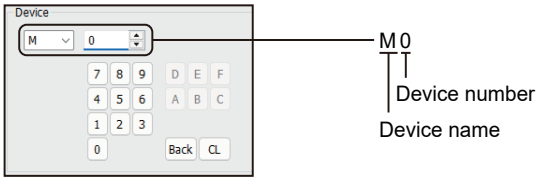
GT37 SoftGOT3000

Item	Reference
Device setting dialog	☞ Page 2378 Device setting dialog ([Computer])
Specifications of bit devices	☞ Page 2379 Monitoring-supported bit devices ([Computer])
	☞ Page 2379 Availability of writing/reading data to/from bit devices ([Computer])
Specifications of word devices	☞ Page 2380 Monitoring-supported word devices ([Computer])
	☞ Page 2380 Availability of writing/reading data to/from word devices ([Computer])

51.1.1 Device setting dialog ([Computer])

Set a device to be monitored.



Item		Description
1)	Title	Data type and channel number of the device to be set
2)	[Device]	Set the device name and device number. If a bit number needs to be specified, the setting item is displayed. Example) Setting of M0 
3)	[Information]	Displays the setting range of each setting item according to the selected device.

51.1.2 Monitoring-supported bit devices ([Computer])

The following table shows monitoring-supported bit devices.

To check whether writing/reading data to/from each device is available, refer to the following.

☞ Page 2379 Availability of writing/reading data to/from bit devices ([Computer])

For the formats of devices, refer to the following.

📖GT Designer3 (GOT3000) Screen Design Manual

○: Available

×: Not available

Device name		Device No. representation	Setting range	Specifications of EG devices*1	
				Assignment to EG devices	Access using a client
M	Internal relay	Decimal	0 to 2047	○	○
L	Latch relay	Decimal	0 to 2047	○	○
SM	Special relay	Decimal	0 to 63	○	○

*1 For the devices assigned to EG devices (gateway devices) and the compatible clients, refer to the following.
📖GT Designer3 (GOT3000) Screen Design Manual

51.1.3 Availability of writing/reading data to/from bit devices ([Computer])

The following shows the availability of writing/reading data to/from bit devices by device type.

When the device type is other than the bit type, set the device No. in multiples of 16.

R/W: Both read and write

R/-: Read only

-/W: Write only

-/-: No read/write access

Device name	Device type				
	Bit	Byte (8 bits)	Word (16 bits)	Double-word (32 bits)	Quad-word (64 bits)
M	R/W	-/-	R/W	R/W	-/-
L	R/W	-/-	R/W	R/W	-/-
SM	R/W	-/-	R/W	R/W	-/-

51.1.4 Monitoring-supported word devices ([Computer])

The following table shows monitoring-supported word devices.

To check whether writing/reading data to/from each device is available, refer to the following.

☞ Page 2380 Availability of writing/reading data to/from word devices ([Computer])

For the formats of devices, refer to the following.

📖GT Designer3 (GOT3000) Screen Design Manual

○: Available

×: Not available

Device name		Device No. representation	Setting range	Specifications of EG devices*1	
				Assignment to EG devices	Access using a client
D	Data register	Decimal	0 to 4095	○	○
SD	Special register	Decimal	0 to 15	○	○
R	File register	Decimal	0 to 4095	○	○

*1 For the devices assigned to EG devices (gateway devices) and the compatible clients, refer to the following.
📖GT Designer3 (GOT3000) Screen Design Manual

51.1.5 Availability of writing/reading data to/from word devices ([Computer])

The following shows the availability of writing/reading data to/from word devices by device type.

R/W: Both read and write

R/-: Read only

-/W: Write only

-/-: No read/write access

Device name	Device type			
	Word (16 bits)	Double-word (32 bits)	Quad-word (64 bits)	Bit of word data
D	R/W	R/W	-/-	R/W
SD	R/W	R/W	-/-	R/W
R	R/W	R/W	-/-	R/W

PART 19 MODBUS

52 MODBUS/TCP

53 MODBUS/RTU

54 Settable device range

52 MODBUS/TCP

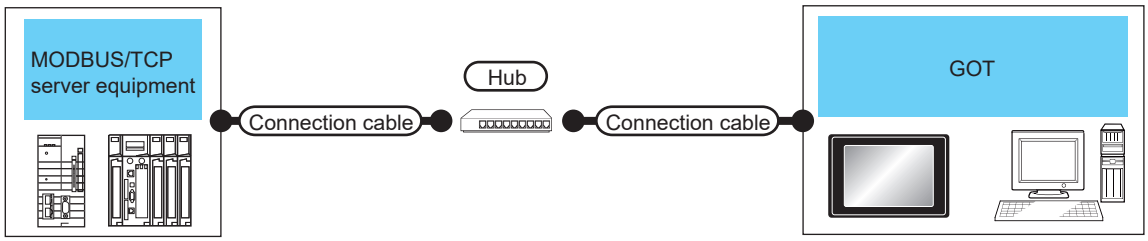
52.1 Client connection (MODBUS/TCP connection)

☞ Page 2382 Connectable devices
☞ Page 2382 System configuration
☞ Page 2384 GOT side settings
☞ Page 2389 MODBUS/TCP server side settings
☞ Page 2389 Function code
☞ Page 2390 MODBUS communication control function
☞ Page 2391 Example of connection

52.1.1 Connectable devices

GOT3000 series products support the client function of MODBUS/TCP communication, the open FA network.
Thus, the GOT can communicate with each MODBUS/TCP server equipment.

52.1.2 System configuration



For details on the connection cables and the maximum segment length, refer to the following.
☞ Page 2383 Connection cable
☞ Page 2383 Maximum segment length
For details on the maximum number of connected devices, refer to the following.
☞ Page 2383 Maximum number of connected devices

Controller	Communication type	Connection cable	External device	Connection cable	GOT*1	
					Interface	Model
MODBUS/TCP equipment	Ethernet	Twisted pair cable	Hub	Twisted pair cable	Built-in Ethernet interface of GOT	GT37 SoftGOT3000
					Ethernet interface of personal computer	GT37 SoftGOT3000

*1 For connection with an equipment that meets the 10BASE (-T/2/5) standard, use the switching hub and operate in an environment where 10 Mbps, 100 Mbps, and 1 Gbps can be mixed.

Connection cable

Use a connection cable that meets the following standards.

Standard	Category
10BASE-T	Shielded twisted pair cable (STP) or unshielded twisted pair cable (UTP) of category 3 or higher
100BASE-TX	Shielded twisted pair cable (STP) or unshielded twisted pair cable (UTP) of category 5 or higher
1000BASE-T	Shielded twisted pair cable (STP) or unshielded twisted pair cable (UTP) of category 5e or higher

Connect the GOT to the MODBUS/TCP equipment via a hub.
Use cables, connectors, and hubs that meet the IEEE802.3 10BASE-T/100BASE-TX/1000BASE-T standards.
For the twisted pair cable, use a straight cable.

Maximum segment length

The maximum segment length (length between a hub and a node) is 100 m.
The maximum length depends on the Ethernet equipment used.
The following shows the number of connectable hubs when a repeater hub is used.

- 10BASE-T: Up to 4 for a cascade connection (within 500 m)
- 100BASE-TX: Up to 2 for a cascade connection (within 205 m)
- 1000BASE-T: The number differs depending on the hub to be used.

When switching hubs are used, there is no theoretical limit to the number of cascade connections between switching hubs.
For the limit, contact the switching hub manufacturer.

Precautions

When multiple network devices (including GOTs) are connected in the same segment, the network load increases and the transmission speed between the GOT and PLC may be reduced.
The following actions may improve the communication performance.

- Use a switching hub compatible with 1000BASE-T (1 Gbps) or more.
- Reduce the number of devices monitored by the GOT.

Maximum number of connected devices

Up to 128 CPU modules can be connected to channels No. 1 to No. 4 of one GOT. (16 or less recommended)
The following shows the number of connectable controllers per GOT channel and the number of GOTs connectable to one controller.

Controller		GOT	
Model	**Number of GOTs connectable to one PLC**	**Model**	**Number of connectable controllers per GOT channel**
MODBUS/TCP equipment	Depends on the MODBUS/TCP equipment used.*1	GT37 SoftGOT3000	128

*1 For details, refer to the MODBUS/TCP equipment manual.

52.1.3 GOT side settings

☞ Page 2384 [GOT Ethernet Setting]
☞ Page 2385 [Controller Setting]

[GOT Ethernet Setting]

Set the GOT Ethernet interface in GT Designer3.

Item	Description
[GOT IP Address Setting]	Set the IP address of the GOT.
[GOT Ethernet Common Setting]	Set the default gateway and other common items for GOT Ethernet interfaces.
[IP filter Setting]	The GOT allows or blocks access from IP addresses specified in the filtering list.

For details on the setting, refer to the following.

📖GT Designer3 (GOT3000) Screen Design Manual

Set the GT SoftGOT3000 Ethernet interface on the personal computer.

Precautions

Do not use 0 and 255 at the end of an IP address.

(Numbers of *.*.*.0 and *.*.*.255 are used by the system)

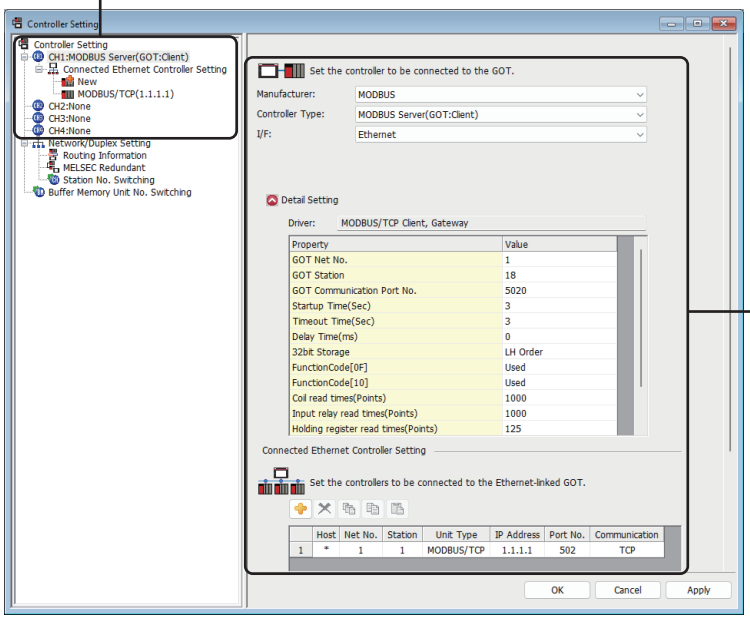
The GOT may not monitor the controller correctly with the above numbers.

Consult with the administrator of the network before setting an IP address to the GOT.

[Controller Setting]

Set the channel of the connected controller.

List menu



Operating procedure

1. Select [Common] → [Controller Setting] from the menu.

2. In the [Controller Setting] window, select the channel number to be used from the list menu.

3. Set the following items.

Item	Description
[Manufacturer]	[MODBUS]
[Controller Type]	[MODBUS Server(GOT:Client)]
[I/F]	[Ethernet]
[Detail Setting]	Configure the settings according to the usage environment. ☞ Page 2386 [Detail Setting]
[Connected Ethernet Controller Setting]	Configure the settings according to the controller to be connected. ☞ Page 2387 [Connected Ethernet Controller Setting]

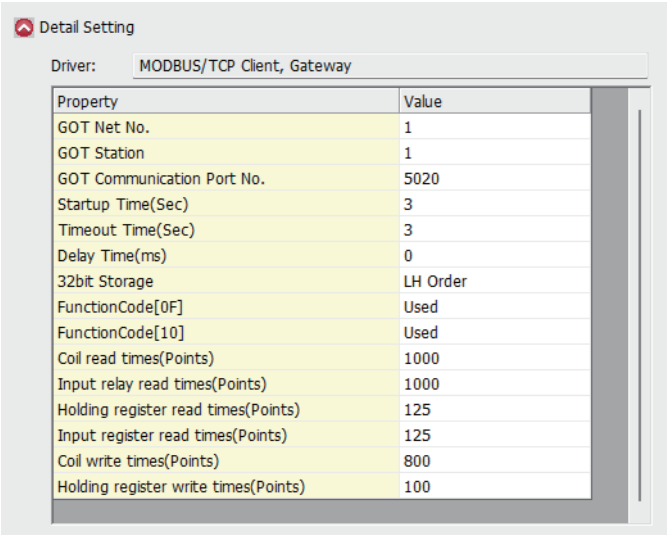
4. When you have completed the settings, click the [OK] button.

Point

The controller settings can be configured and checked in [I/F Communication Setting].
For details, refer to the following.
📖GT Designer3 (GOT3000) Screen Design Manual

■[Detail Setting]

Configure the settings according to the usage environment.



Item	Description	Range
[Driver]	This item appears when communication drivers are selectable according to the settings of [Controller Type] and [I/F].	[MODBUS/TCP Client, Gateway]
[GOT Net No.]	Set the network number of the GOT.	[1] to [239]
[GOT Station]*1*2	Set the station number of the GOT.	[1] to [247]
[GOT Communication Port No.]	Set the GOT port number for connection with the Ethernet module.	[1024] to [5010], [5014] to [49152], [49171] to [65534]
[Startup Time]	Set the time period from the GOT startup until the start of communication with the PLC CPU.	[3] seconds to [255] seconds
[Timeout Time]	Set the time period for a communication to time out.	[1] second to [90] seconds
[Delay Time]	Set the delay time for reducing the load of the network and destination PLC.	[0] ms to [10000] ms
[32bit Storage]	Select the steps to store two words (32-bit data).	[LH Order] or [HL Order]
[FunctionCode[0F]]	Set whether to use the function code [0F].	[Used] or [Unused]
[Function Code[10]]	Set whether to use the function code [10].	[Used] or [Unused]
[Coil read times]	Set the read points of the coil.	[1] to [2000] points
[Input relay read times]	Set the read points of the input relay.	[1] to [2000] points
[Holding register read times]	Set the read points of the holding register.	[1] to [125] points
[Input register read times]	Set the read points of the input register.	[1] to [125] points
[Coil write times]	Set the write points of the coil.	[1] to [800] points
[Holding register write times]	Set the write points of the holding register.	[1] to [100] points

*1 Set values not set for [Station] in [Connected Ethernet Controller Setting].
☞ Page 2387 [Connected Ethernet Controller Setting]

*2 When connecting two or more GOTs in the MODBUS/TCP network, set a different GOT station number to each GOT.

Point

• Controller settings using the GT37 utility

The controller settings can be changed in [Communication Settings] of the GT37 utility after writing [Communication Settings] of project data to GT37.

For details on the GT37 utility, refer to the following manual.

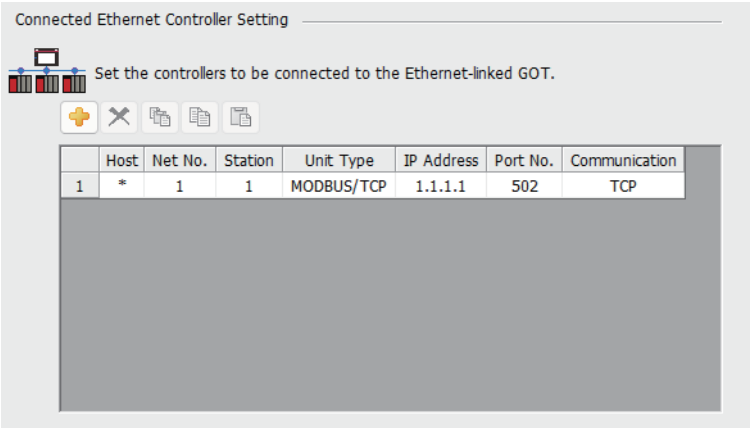
📖GOT3000 Series User's Manual (Utility & Maintenance Functions)

• Priority of the settings in [Controller Setting]

When the settings are configured in GT Designer3 or in the GT37 utility, the latest settings are effective.

■[Connected Ethernet Controller Setting]

Set the controller to be connected to the GOT by Ethernet.



Item	Description	Range
[Host]	The host is displayed. It refers to a station that can be connected without setting a station number. The host is indicated with an asterisk (*).	—
[Net No.]	Set the network number of the MODBUS/TCP equipment.	[1] to [239]
[Station No.]*2	Set the station number of the MODBUS/TCP equipment.	[1] to [247]
[Unit Type]*1	Select the MODBUS/TCP equipment.	[MODBUS/TCP], [MODBUS/TCP(unit ID fixed)]
[IP Address]	Set the IP address of the MODBUS/TCP equipment.	[0.0.0.0] to [255.255.255.255]
[Port No.]	Set the port number of the MODBUS/TCP equipment.	[1] to [65535]
[Communication]	Set the format of communication with the MODBUS/TCP equipment.	[TCP]

*1 When the module ID is required to be fixed to 255, select [MODBUS/TCP(unit ID fixed)].

*2 Set values not set for [GOT Station] in [Detail Setting].

☞ Page 2386 [Detail Setting]

Point

• Changing the host station on the GOT

The host can be changed by the GOT module utility.

For details on settings, refer to the following.

📖GOT3000 Series User's Manual (Utility & Maintenance Functions)

■Routing parameter settings

Up to 64 settings can be configured for [Transfer Net No.].

However, the same number cannot be set in [Transfer Net No.] twice or more (multiple times).

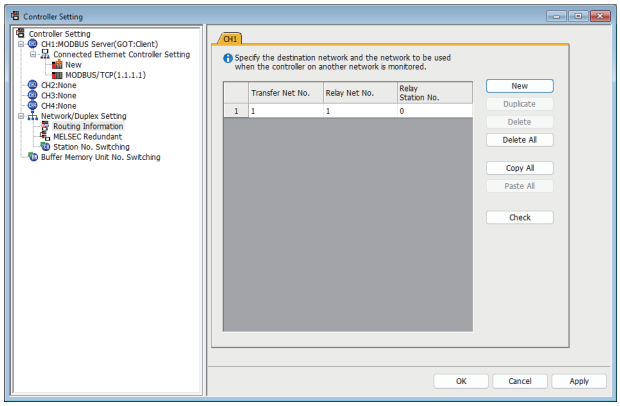
The GOT (host station) can access 64 different networks specified under [Transfer Net No.].

Point

Routing parameter settings

When communicating within the host network, routing parameter settings are not required.

For details on routing parameters, refer to the MODBUS/TCP equipment manual.



Item	Range
[Transfer Net No.]	[1] to [239]
[Relay Net No.]*1	[1] to [239]
[Relay Station No.]*1	[0] to [247]

*1 To access a different network via the built-in Ethernet port CPU, set the values of [Net No.] and [Station] that are set in [Connected Ethernet Controller Setting] in GT Designer3.

Point

Routing parameter settings for the relay station

Routing parameter settings are also necessary for the relay station.

For details on the settings, refer to the manual of the MODBUS/TCP equipment to be used.

52.1.4 MODBUS/TCP server side settings

For details on the MODBUS/TCP equipment, refer to the manual of the MODBUS/TCP equipment to be used.

52.1.5 Function code

The following shows the message format for the MODBUS communication.

Address	Function code	Data	CRC

The GOT supports the following function codes.

Function code	Function	Number of accessible devices per message [Unit: point(s)]
0x01	Read Coils	1 to 1000
0x02	Read Discrete Inputs	1 to 1000
0x03	Read Holding Registers	1 to 125
0x04	Read Input Registers	1 to 125
0x05	Write Single Coil	1
0x06	Write Single Register	1
0x0F	Write Multiple Coils	1 to 800
0x10	Write Multiple Register	1 to 123
0x14	Read File Record	1 to 124
0x15	Write File Record	1 to 122
0x17	Read/Write Multiple Registers	Read: 1 to 125 Write: 1 to 121

52.1.6 MODBUS communication control function

This function is to prevent a communication response delay by the equipment with different specifications in the MODBUS network.

The GOT special register (GS) controls available function codes.

Set this function when equipment applicable to the following conditions is used on the MODBUS network.

- Equipment that supports only some function codes
- Equipment whose maximum transfer size is small for function codes

The following lists the GOT special registers (GS) used for the MODBUS communication control function.

GOT special register (GS)	Description
GS579	Specification of the communication setting (common or individual) for each CH
GS570 to GS576	Common communication settings
GS590 to GS596	Individual communication settings for CH1
GS597 to GS603	Individual communication settings for CH2
GS604 to GS610	Individual communication settings for CH3
GS611 to GS617	Individual communication settings for CH4

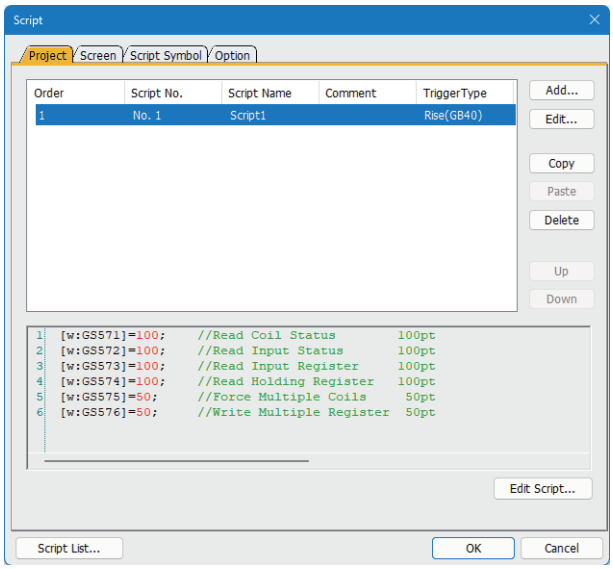
For details on the GOT special registers (GS), refer to the following manual.

📖GT Designer3 (GOT3000) Screen Design Manual

Precautions

At GOT startup, set MODBUS communication control function with project scripts, etc.

If settings are changed after communication start, a communication error may occur.

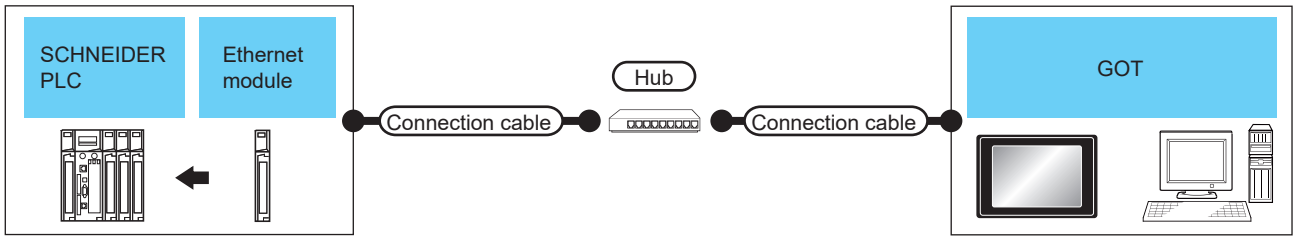


Setting example for project script

52.1.7 Example of connection

Connecting to SCHNEIDER PLC

■System configuration



For details on the connection cables and the maximum segment length, refer to the following.

☞ Page 2392 Connection cable
☞ Page 2392 Maximum segment length

For details on the maximum number of connected devices, refer to the following.

☞ Page 2392 Maximum number of connected devices

Controller	Ethernet module*2	Communication type	Connection cable	External device	Connection cable	GOT*1	
						Interface	Model
Modicon Premium series	TSX ETY 4102 TSX ETY 5102	Ethernet	Twisted pair cable	Hub	Twisted pair cable	Built-in Ethernet interface of GOT	GT37 SoftGOT3000
						Ethernet interface of personal computer	GT37 SoftGOT3000
Modicon Quantum series	140 NOE 771 00 140 NOE 771 10 140 NWM 100 00	Ethernet	Twisted pair cable	Hub	Twisted pair cable	Built-in Ethernet interface of GOT	GT37 SoftGOT3000
						Ethernet interface of personal computer	GT37 SoftGOT3000

*1 For connection with an equipment that meets the 10BASE (-T/2/5) standard, use the switching hub and operate in an environment where 10 Mbps, 100 Mbps, and 1 Gbps can be mixed.

*2 Product manufactured by SCHNEIDER ELECTRIC SA. For details on the product, contact SCHNEIDER ELECTRIC SA.

■Connection cable

Use a connection cable that meets the following standards.

Standard	Category
10BASE-T	Shielded twisted pair cable (STP) or unshielded twisted pair cable (UTP) of category 3 or higher
100BASE-TX	Shielded twisted pair cable (STP) or unshielded twisted pair cable (UTP) of category 5 or higher
1000BASE-T	Shielded twisted pair cable (STP) or unshielded twisted pair cable (UTP) of category 5e or higher

Connect the GOT to the Ethernet module via a hub.

Use cables, connectors, and hubs that meet the IEEE802.3 10BASE-T/100BASE-TX/1000BASE-T standards.

For the twisted pair cable, use a straight cable.

■Maximum segment length

The maximum segment length (length between a hub and a node) is 100 m.

The maximum length depends on the Ethernet equipment used.

The following shows the number of connectable hubs when a repeater hub is used.

- 10BASE-T: Up to 4 for a cascade connection (within 500 m)
- 100BASE-TX: Up to 2 for a cascade connection (within 205 m)
- 1000BASE-T: The number differs depending on the hub to be used.

When switching hubs are used, there is no theoretical limit to the number of cascade connections between switching hubs.

For the limit, contact the switching hub manufacturer.

■Maximum number of connected devices

Up to 128 CPU modules can be connected to channels No. 1 to No. 4 of one GOT. (16 or less recommended)

The following shows the number of connectable controllers per GOT channel and the number of GOTs connectable to one controller.

Controller		GOT	
Model	**Number of GOTs connectable to one PLC**	**Model**	**Number of connectable controllers per GOT channel**
Modicon Premium series Modicon Quantum series	64	GT37 SoftGOT3000	128

■PLC side settings

Configure the settings for the SCHNEIDER PLC.

For details on SCHNEIDER PLCs, refer to the following manual.

📖Manual of SCHNEIDER PLC

- Parameter settings

Set the parameter settings with programming software for SCHNEIDER PLC.

For the Modicon Premium series, use the programming software PL7 Pro.

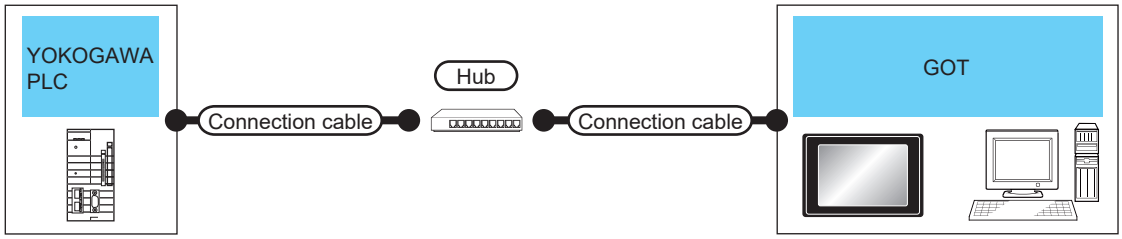
Item	Setting value
Processors	Connected CPU module
Memory cards	Memory card to be used
Module	Connected Ethernet module
IP Address	IP address for Ethernet module
Size of global address fields	Setting for device points Bits: Coil, Input Words: Input register, Maintenance register

For the Modicon Quantum series, use the programming software Concept.

Item	Setting value
PLC Selection	Connected CPU module
TCP/IP Ethernet	Numbers of unit
I/O Module Selection	Connected Ethernet module
Internet Address	IP address for Ethernet module

Connecting to YOKOGAWA PLC

■System configuration



For details on the connection cables and the maximum segment length, refer to the following.

☞ Page 2393 Connection cable
☞ Page 2394 Maximum segment length

For details on the maximum number of connected devices, refer to the following.

☞ Page 2394 Maximum number of connected devices

Controller	Communication type	Connection cable	External device	Connection cable	GOT*2	
					Interface	Model
STARDOM (NFCP100, NFJT100)*1	Ethernet	Twisted pair cable	Hub	Twisted pair cable	Built-in Ethernet interface of GOT	GT37 SoftGOT3000
					Ethernet interface of personal computer	GT37 SoftGOT3000

*1 When connecting STARDOM to MODBUS/TCP, Modbus Communication Portfolio License is required.
For details, refer to the following manual.
Manual of YOKOGAWA PLC

*2 For connection with an equipment that meets the 10BASE (-T/2/5) standard, use the switching hub and operate in an environment where 10 Mbps, 100 Mbps, and 1 Gbps can be mixed.

Precautions

When STARDOM is configured with a redundant system, the connection is not supported.

■Connection cable

Use a connection cable that meets the following standards.

Standard	Category
10BASE-T	Shielded twisted pair cable (STP) or unshielded twisted pair cable (UTP) of category 3 or higher
100BASE-TX	Shielded twisted pair cable (STP) or unshielded twisted pair cable (UTP) of category 5 or higher
1000BASE-T	Shielded twisted pair cable (STP) or unshielded twisted pair cable (UTP) of category 5e or higher

When connect a GOT to a PLC, connect to the PCL Ethernet port via a hub.

Use cables, connectors, and hubs that meet the IEEE802.3 10BASE-T/100BASE-TX/1000BASE-T standards.

For the twisted pair cable, use a straight cable.

■Maximum segment length

The maximum segment length (length between a hub and a node) is 100 m.

The maximum length depends on the Ethernet equipment used.

The following shows the number of connectable hubs when a repeater hub is used.

- 10BASE-T: Up to 4 for a cascade connection (within 500 m)
- 100BASE-TX: Up to 2 for a cascade connection (within 205 m)
- 1000BASE-T: The number differs depending on the hub to be used.

When switching hubs are used, there is no theoretical limit to the number of cascade connections between switching hubs. For the limit, contact the switching hub manufacturer.

■Maximum number of connected devices

Up to 128 CPU modules can be connected to channels No. 1 to No. 4 of one GOT. (16 or less recommended)

The following shows the number of connectable controllers per GOT channel and the number of GOTs connectable to one controller.

Controller		GOT	
Model	**Number of GOTs connectable to one PLC**	**Model**	**Number of connectable controllers per GOT channel**
STARDOM (NFCP100, NFJT100)	126	GT37 SoftGOT3000	128

■PLC side settings

Configure the settings for the YOKOGAWA PLC.

For details on YOKOGAWA PLCs, refer to the following manual.

📖Peripheral Software Manual for YOKOGAWA PLC

Point

Connection between STARDOM and the personal computer for communication settings

For the communication settings of STARDOM, STARDOM and the computer for communication settings must be connected to Ethernet using Resource Configurator (peripheral software).

- Modbus Communication Portfolio License

To set the communication settings for STARDOM, Modbus Communication Portfolio License must be installed on STARDOM.

For details on the communication settings, refer to the following manual.

📖STARDOM FCN/FCJ Guide

- Defining Logic POU

Define Logic POU using Logic Designer (peripheral software), and download the project to STARDOM.

Operating procedure

1. Start Logic Designer and create a new project using a template.

Use [STARDOM Serial Communication] template.

2. Insert Firmware Library to the new project.

Right-click [Library] under the project tree in Logic Designer.

Right-click [Insert] and select [Firmware Library].

Double-click the [SD_FCXPLCE_LIB] folder and double-click [SD_FCXPLCE_LIB.fwl] to select it.

The library path inserted in the procedures above is as follows.

{Install Folder}\LogicDesigner\Mwt\Plc\Fw_lib\SD_FCXPLCE_LIB\SD_FCXPLCE_LIB.fwl

3. Insert User Library to the new project.

Right-click [Library] under the project tree in Logic Designer.

Right-click [Insert] and select [User Library].

Double-click [SD_CMODBUSE_PF.mwt], [SD_CUTIL_PF.mwt] and [SD_CMODBUSS_PF.mwt] to select it. (When [STARDOM Serial Communication] is used for the template, [SD_CUTIL_PF.mwt] is inserted as default.)

The library path inserted in the procedures above is as follows.

{Install Folder}\LogicDesigner\Libraries\SD_CMODBUSE_PF.mwt

{Install Folder}\LogicDesigner\Libraries\SD_CUTIL_PF.mwt

{Install Folder}\LogicDesigner\Libraries\SD_CMODBUSS_PF.mwt

4. Copy a sample project POU to the new project.

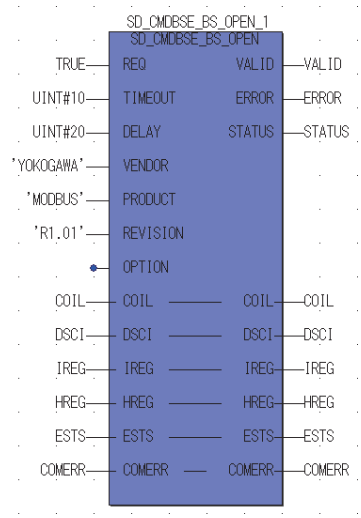
Open "SD_CMODBUSE_Sample1.mwt".

Right-click [ComEServerModbus*] in the Logic POU under the project tree in the SD_CMODBUSE_Sample1 project, and select [Copy].

Right-click the [Logic POU] under the project tree in the previously created project, and select [Paste].

Double-click the [ComEServerModbus*] file in the [ComEServerModbus*] folder.

For the following terminals, set as shown below.



5. Set devices to be monitored by a GOT.

Right-click the [ComEServerModbus*] file in the [ComEServerModbus*] folder in the logic POU under the project tree and select [Insert] - [Cord worksheet].

Set the variable devices to be monitored.

Instantiate Logic POU. Define an already defined instance to Task0.

Right-click [Physical hardware] - [Configuration:IPC_40/FCX01:FCX/Tasks/Task0:CYCLIC] and select [Insert] - [Program instance].

Define the program instance name and select ComEServerModbus for the program type.

6. Defining Target Setting

Define the IP address of STARDOM to set the communication settings.

Double-click [Physical hardware] - [Configuration:IPC_33/FCX01:FCX/Target Setting] and input the IP address or the host name.

7. Downloading the project

Execute [Build] - [Make]. (Same as when pressing the function key F9.)

Download after confirming that the compile error does not occur. Select [Download] in the project control dialog displayed when [Online] - [Project control] is selected.

When the download is completed, select [Cold] and start STARDOM.

■Device range

When performing monitoring with the GOT connected to a YOKOGAWA PLC and setting devices for objects, use devices within the device range of the YOKOGAWA PLC.

When a device outside the range is set on an object, an indefinite value is displayed on the object.

(No error is displayed in the system alarm.)

For details on the device range of YOKOGAWA PLCs, refer to the following manual:

📖Manual of YOKOGAWA PLC

Precautions

When the GOT does not communicate with STARDOM in a specified period while the GOT is turned on, STARDOM disconnects the line for the GOT. As the line is disconnected, the GOT displays an error when the GOT monitors STARDOM after the disconnection.

After the error displayed as the system alarm (No.402: timeout error) on the GOT, the normal communication is recovered and the GOT can monitor STARDOM.

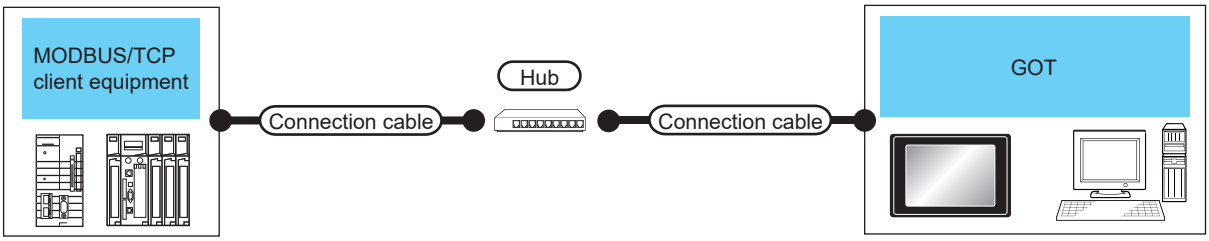
52.2 Server connection (MODBUS/TCP connection)

☞ Page 2398 Connectable devices
☞ Page 2398 System configuration
☞ Page 2400 GOT side settings
☞ Page 2403 MODBUS/TCP client side settings
☞ Page 2403 Function code

52.2.1 Connectable devices

GOT3000 series products support the server function of MODBUS/TCP communication, the open FA network.
Thus, the GOT can communicate with each MODBUS/TCP client equipment.

52.2.2 System configuration



For details on the connection cables and the maximum segment length, refer to the following.

☞ Page 2399 Connection cable
☞ Page 2399 Maximum segment length

For details on the maximum number of connected devices, refer to the following.

☞ Page 2399 Maximum number of connected devices

Controller	Communication type	Connection cable	External device	Connection cable	GOT*1	
					Interface	Model
MODBUS/TCP equipment	Ethernet	Twisted pair cable	Hub	Twisted pair cable	Built-in Ethernet interface of GOT	GT37 SoftGOT3000
					Interface of personal computer	GT37 SoftGOT3000

*1 For connection with an equipment that meets the 10BASE (-T/2/5) standard, use the switching hub and operate in an environment where 10 Mbps, 100 Mbps, and 1 Gbps can be mixed.

Connection cable

Use a connection cable that meets the following standards.

Standard	Category
10BASE-T	Shielded twisted pair cable (STP) or unshielded twisted pair cable (UTP) of category 3 or higher
100BASE-TX	Shielded twisted pair cable (STP) or unshielded twisted pair cable (UTP) of category 5 or higher
1000BASE-T	Shielded twisted pair cable (STP) or unshielded twisted pair cable (UTP) of category 5e or higher

Connect the GOT to the MODBUS/TCP equipment via a hub.
Use cables, connectors, and hubs that meet the IEEE802.3 10BASE-T/100BASE-TX/1000BASE-T standards.
For the twisted pair cable, use a straight cable.

Maximum segment length

The maximum segment length (length between a hub and a node) is 100 m.
The maximum length depends on the Ethernet equipment used.
The following shows the number of connectable hubs when a repeater hub is used.

- 10BASE-T: Up to 4 for a cascade connection (within 500 m)
- 100BASE-TX: Up to 2 for a cascade connection (within 205 m)
- 1000BASE-T: The number differs depending on the hub to be used.

When switching hubs are used, there is no theoretical limit to the number of cascade connections between switching hubs.
For the limit, contact the switching hub manufacturer.

Precautions

When multiple network devices (including GOTs) are connected in the same segment, the network load increases and the transmission speed between the GOT and PLC may be reduced.
The following actions may improve the communication performance.

- Use a switching hub compatible with 1000BASE-T (1 Gbps) or more.
- Reduce the number of devices monitored by the GOT.

Maximum number of connected devices

Up to 128 CPU modules can be connected to channels No. 1 to No. 4 of one GOT. (16 or less recommended)
The following shows the number of connectable controllers per GOT channel and the number of GOTs connectable to one controller.

Controller		GOT	
Model	**Number of GOTs connectable to one PLC**	**Model**	**Number of connectable controllers per GOT channel**
MODBUS/TCP equipment	Depends on the MODBUS/TCP equipment used.*1	GT37 SoftGOT3000	16

*1 For details, refer to the MODBUS/TCP equipment manual.

52.2.3 GOT side settings

☞ Page 2400 [GOT Ethernet Setting]
☞ Page 2401 [Controller Setting]

[GOT Ethernet Setting]

Set the GOT Ethernet interface in GT Designer3.

Item	Description
[GOT IP Address Setting]	Set the IP address of the GOT.
[GOT Ethernet Common Setting]	Set the default gateway and other common items for GOT Ethernet interfaces.
[IP filter Setting]	The GOT allows or blocks access from IP addresses specified in the filtering list.

For details on the setting, refer to the following.

📖GT Designer3 (GOT3000) Screen Design Manual

Set the GT SoftGOT3000 Ethernet interface on the personal computer.

Precautions

Do not use 0 and 255 at the end of an IP address.

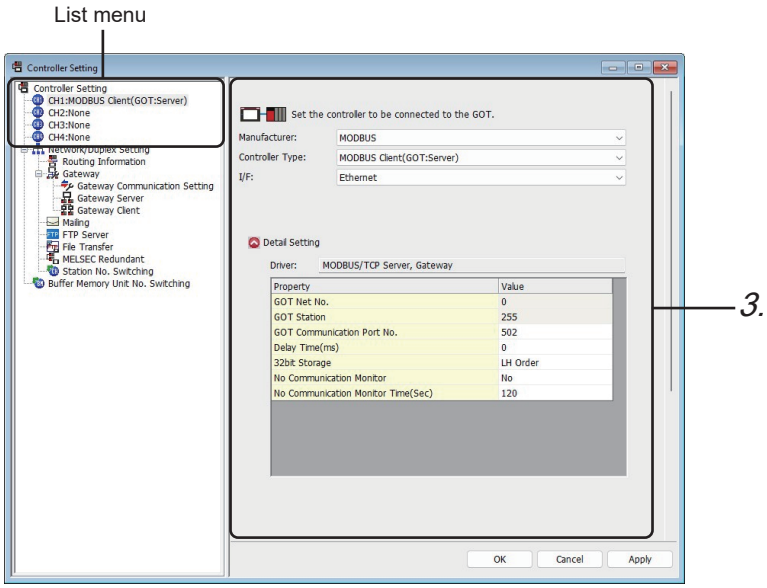
(Numbers of *.*.*.0 and *.*.*.255 are used by the system)

The GOT may not monitor the controller correctly with the above numbers.

Consult with the administrator of the network before setting an IP address to the GOT and controller.

[Controller Setting]

Set the channel of the equipment to be connected to the GOT.



Operating procedure

1. Select [Common] → [Controller Setting] from the menu.

2. In the [Controller Setting] window, select the channel number to be used from the list menu.

3. Set the following items.

Item	Description
[Manufacturer]	[MODBUS]
[Controller Type]	[MODBUS Client(GOT:Server)]
[I/F]	[Ethernet]
[Detail Setting]	Configure the settings according to the usage environment. ☞ Page 2386 [Detail Setting]

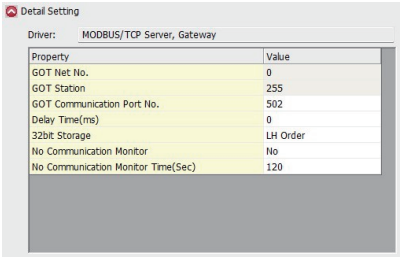
4. When you have completed the settings, click the [OK] button.

Point

The controller settings can be configured and checked in [I/F Communication Setting].
For details, refer to the following.
📖GT Designer3 (GOT3000) Screen Design Manual

■[Detail Setting]

Configure the settings according to the usage environment.



Item	Description	Range
[Driver]	This item appears when communication drivers are selectable according to the settings of [Controller Type] and [I/F].	[MODBUS/TCP Server, Gateway]
[GOT Net No.]	Not used	[0]
[GOT Station]	Not used	[255]
[GOT Communication Port No.]	Set the GOT port number for connection with the Ethernet module.	[502], [1024] to [5010], [5014] to [49152], [49171] to [65534]
[Delay Time]	Set the delay time for reducing the load of the network and destination PLC.	[0] ms to [10000] ms
[32bit Storage]	Select the steps to store two words (32-bit data).	[LH Order] or [HL Order]

Point

• Controller settings using the GT37 utility

The controller settings can be changed in [Communication Settings] of the GT37 utility after writing [Communication Settings] of project data to GT37.

For details on the GT37 utility, refer to the following manual.

GOT3000 Series User's Manual (Utility & Maintenance Functions)

• Priority of the settings in [Controller Setting]

When the settings are configured in GT Designer3 or in the GT37 utility, the latest settings are effective.

Precautions

■Send delay

Send delay is a setting used for low-speed devices that cannot respond when the send response is too fast.

When send delay is set with the GOT's communication devices detail settings, it is enabled for all master devices that are connected.

■Errors that occur in the GOT at MODBUS/TCP connection

In MODBUS/TCP connection, contents of the message display, causes, and countermeasures when an error occurs in the GOT are described below.

When the following errors occur, the GOT will generate a system alarm.

Error code	Contents of the message display	Cause	Countermeasures
309*1	Device reading error. Correct device.	• An error occurred when reading consecutive devices. • A device that is out of the monitor range is specified at a place where consecutive device is specified, such as graph function or system information.	Correct so that a device number in the monitor range is specified.
315*1	Device writing error. Correct device.	• Writing was attempted to a device number that is out of the monitor range. • Writing was attempted to a write-prohibit device.	Review the write target device and the device number.
322*1	The specified device is out of range. Confirm device range.	• A device read error occurs. • The GOT accesses the device that is out of range specified by the master station.	To take corrective actions, check the range that is allocated to the master station and range of the monitoring target device.

*1 May occur even if MODBUS/TCP equipment (client) connection is not used.

■Error codes (MODBUS Exception Codes) returned from the GOT (server) to MODBUS/TCP equipment (client)

The GOT (server) supports the following error codes (MODBUS Exception Codes) in response to requests from the MODBUS/TCP equipment (client).

When the following errors occur, the GOT will not generate a system alarm.

- Common error codes returned in response to requests from the GOT (server)

Error code (HEX)	Category	Description	Cause	Countermeasures
0x01	—	ILLEGAL FUNCTION	A function code not supported by the GOT was received.	Use only function codes supported by GOT. For details on the function codes supported by the GOT, refer to the following. ☞ Page 2403 Function code

- Error codes returned in response to read requests from the GOT (server)

Error code (HEX)	Category	Description	Cause	Countermeasures
0x02	Read/Write	ILLEGAL DATA ADDRESS	An out-of-range device was accessed.	Check that the device being accessed is correct.

- Error codes returned in response to write requests from the GOT (server)

Error code (HEX)	Category	Description	Cause	Countermeasures
0x02	Read/Write	ILLEGAL DATA ADDRESS	An out-of-range device was accessed.	Check that the device being accessed is correct.
0x03	Write	ILLEGAL DATA VALUE	The request packet (number of write points, number of write data bytes, and number of write data items) is inconsistent.	Check that a correct packet is sent from the master equipment.

52.2.4 MODBUS/TCP client side settings

For details on the MODBUS/TCP equipment, refer to the manual of the MODBUS/TCP equipment to be used.

52.2.5 Function code

The following shows the message format for the MODBUS communication.

Address	Function code	Data	CRC

The GOT supports the following function codes.

Function code	Function	Number of accessible devices per message [Unit: point(s)]
0x01	Read Coils	1 to 2000
0x02	Read Discrete Inputs	1 to 2000
0x03	Read Holding Registers	1 to 125
0x04	Read Input Registers	1 to 125
0x05	Write Single Coil	1
0x06	Write Single Register	1
0x0F	Write Multiple Coils	1 to 1968
0x10	Write Multiple Register	1 to 123

53 MODBUS/RTU

53.1 Client connection (MODBUS/RTU connection)

☞ Page 2404 Connectable devices
☞ Page 2405 System configuration
☞ Page 2406 Connection diagram
☞ Page 2412 GOT side settings
☞ Page 2414 MODBUS/RTU server side settings
☞ Page 2414 Station number setting
☞ Page 2415 Function code
☞ Page 2416 MODBUS communication control function

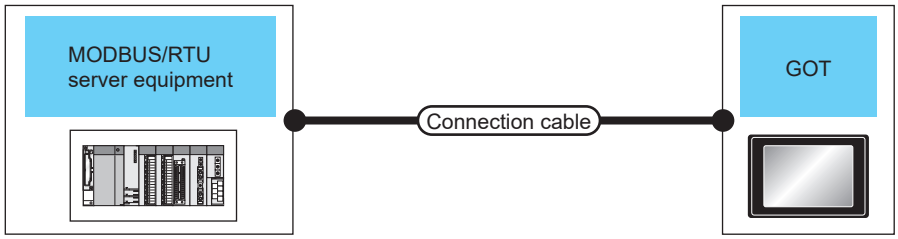
53.1.1 Connectable devices

GOT3000 series products support the client function of MODBUS communication, the open FA network.
Thus, the GOT can communicate with each MODBUS/RTU server equipment.

Precautions

The clock function is disabled even though time setting or time notification is set by the GOT clock setting.

53.1.2 System configuration



For details on the maximum number of connected devices, refer to the following.

☞ Page 2406 Maximum number of connected devices

Controller	Communication type	Connection cable	Maximum length	GOT	
				Interface	Model
MODBUS/RTU equipment	RS-232	☞ Page 2406 RS-232 connection diagram (1)	15m*1	Built-in RS-232 interface	GT37 SoftGOT3000
		☞ Page 2406 RS-232 connection diagram (2)	15m*1	GT37-IF2000 + GT15-RS2-9P	GT37 SoftGOT3000
	RS-422/485	☞ Page 2407 RS-422/485 connection diagram (1)(4-wire) or ☞ Page 2408 RS-422/485 connection diagram (2)(2-wire)	1200m*1	Built-in RS-422/485 interface	GT37 SoftGOT3000
		☞ Page 2409 RS-422/485 connection diagram (3)(4-wire) or ☞ Page 2410 RS-422/485 connection diagram (4)(2-wire)	1200m*1*3	Built-in RS-422/485 interface + FA-LTBGT2R4CBL05(0.5m)*2 FA-LTBGT2R4CBL10(1m)*2 FA-LTBGT2R4CBL20(2m)*2	GT37 SoftGOT3000
		☞ Page 2407 RS-422/485 connection diagram (1)(4-wire) or ☞ Page 2408 RS-422/485 connection diagram (2)(2-wire)	1200m*1	GT37-IF2000 + GT15-RS4-9S	GT37 SoftGOT3000
		☞ Page 2409 RS-422/485 connection diagram (3)(4-wire) or ☞ Page 2410 RS-422/485 connection diagram (4)(2-wire)	1200m*1*3	GT37-IF2000 + GT15-RS4-9S + FA-LTBGT2R4CBL05(0.5m)*2 FA-LTBGT2R4CBL10(1m)*2 FA-LTBGT2R4CBL20(2m)*2	GT37 SoftGOT3000
		☞ Page 2411 RS-422/485 connection diagram (5)(2-wire)	1200m*1	GT37-IF2000 + GT15-RS4-TE	GT37 SoftGOT3000

*1 The shortest specification on the MODBUS/RTU equipment side is prioritized.
*2 The terminal block converter is manufactured by MITSUBISHI ELECTRIC ENGINEERING COMPANY LIMITED.
For details on the product, contact MITSUBISHI ELECTRIC ENGINEERING COMPANY LIMITED.
*3 The cable length of the terminal block converter is included.

Maximum number of connected devices

The following shows the applicable GOT and the maximum number of connected devices.

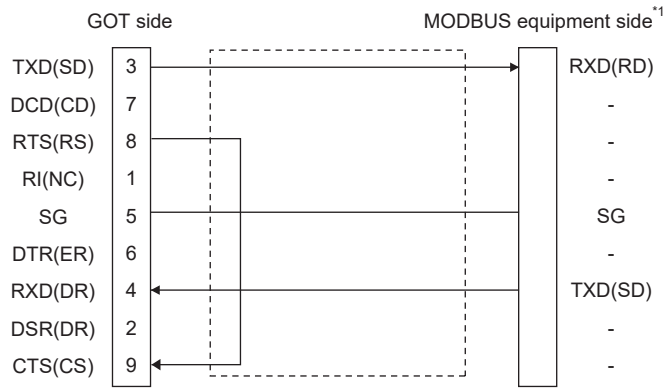
Controller	GOT		
Model	Model	Number of connectable controllers per GOT channel	
		RS-232	RS-422/485
MODBUS/RTU equipment	GT37 SoftGOT3000	1	31*1

*1 When it is less than 31 units, the number of the maximum connectable units on the MODBUS/RTU equipment side will apply.

53.1.3 Connection diagram

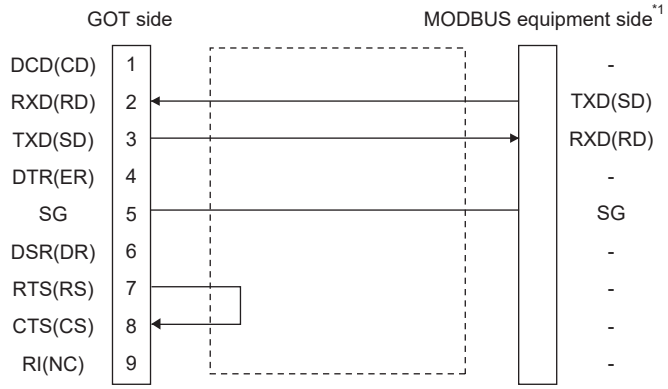
The following diagram shows the connection between the GOT and the controller.

RS-232 connection diagram (1)



*1 Some pieces of the MODBUS/RTU equipment require the control line (CTS, RTS) to be controlled.
Make sure to connect the cables and wires as described in the MODBUS/RTU equipment manual.

RS-232 connection diagram (2)



*1 Some pieces of the MODBUS/RTU equipment require the control line (CTS, RTS) to be controlled.
Make sure to connect the cables and wires as described in the MODBUS/RTU equipment manual.

Preparation of the RS-232 cable

■Cable length

The length of the RS-232 cable must be 15 m or less.

■GOT side connector

For the GOT side connector, refer to the following.

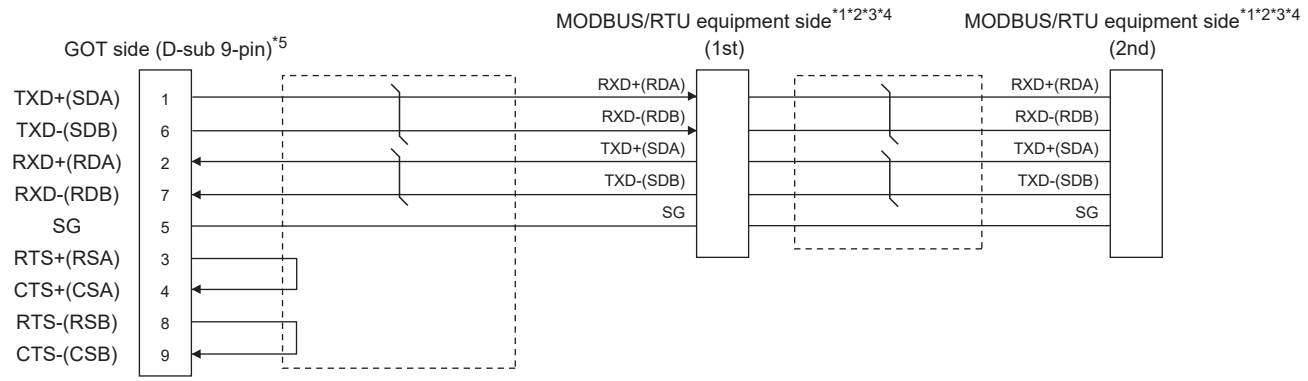
☞ Page 2954 GOT connector specifications

■MODBUS equipment side connector

Use the connector compatible with the MODBUS/RTU equipment side module.

For details, refer to the MODBUS/RTU equipment user's manual.

RS-422/485 connection diagram (1)



*1 The actual terminal layout on the MODBUS/RTU equipment may differ from the example shown above. TXD(+/-) and RXD(+/-) terminals can be separated from each other.
Make sure to connect the cables and wires as described in the MODBUS/RTU equipment manual.

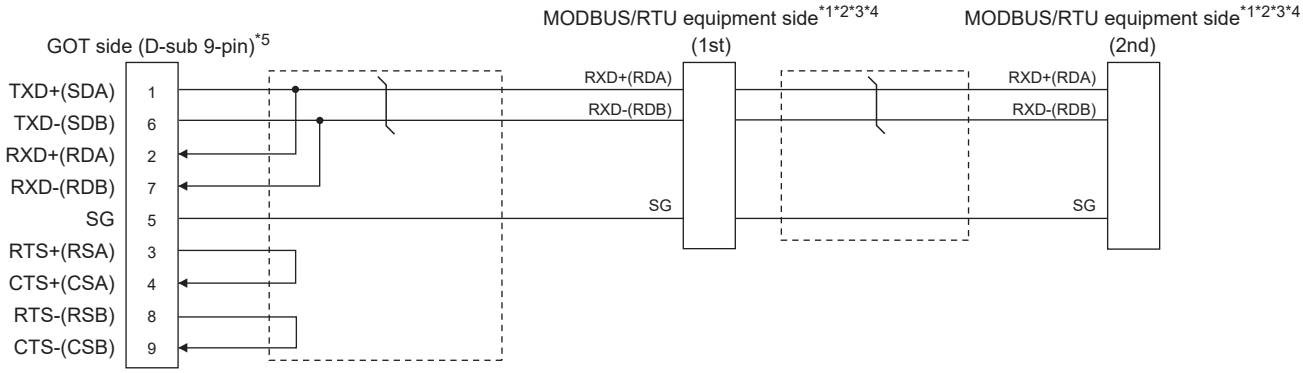
*2 Some pieces of the MODBUS/RTU equipment do not have SG.
In this case, the wiring between GOT and SG is unnecessary.

*3 Some pieces of MODBUS/RTU equipment require the control line (CTS, RTS, etc.) to be controlled.
Make sure to connect the cables and wires as described in the MODBUS/RTU equipment manual.

*4 For the terminating resistor of the MODBUS/RTU equipment, refer to the manual of the MODBUS/RTU equipment to be used.

*5 The GOT at the end requires a terminating resistor setting.
Set the terminating resistor setting switch on the GOT to 330 Ω.
☞ Page 2956 Terminating resistors of GOT

RS-422/485 connection diagram (2)



*1 The actual terminal layout on the MODBUS/RTU equipment may differ from the example shown above. TXD(+/-) and RXD(+/-) terminals can be separated from each other.
Make sure to connect the cables and wires as described in the MODBUS/RTU equipment manual.

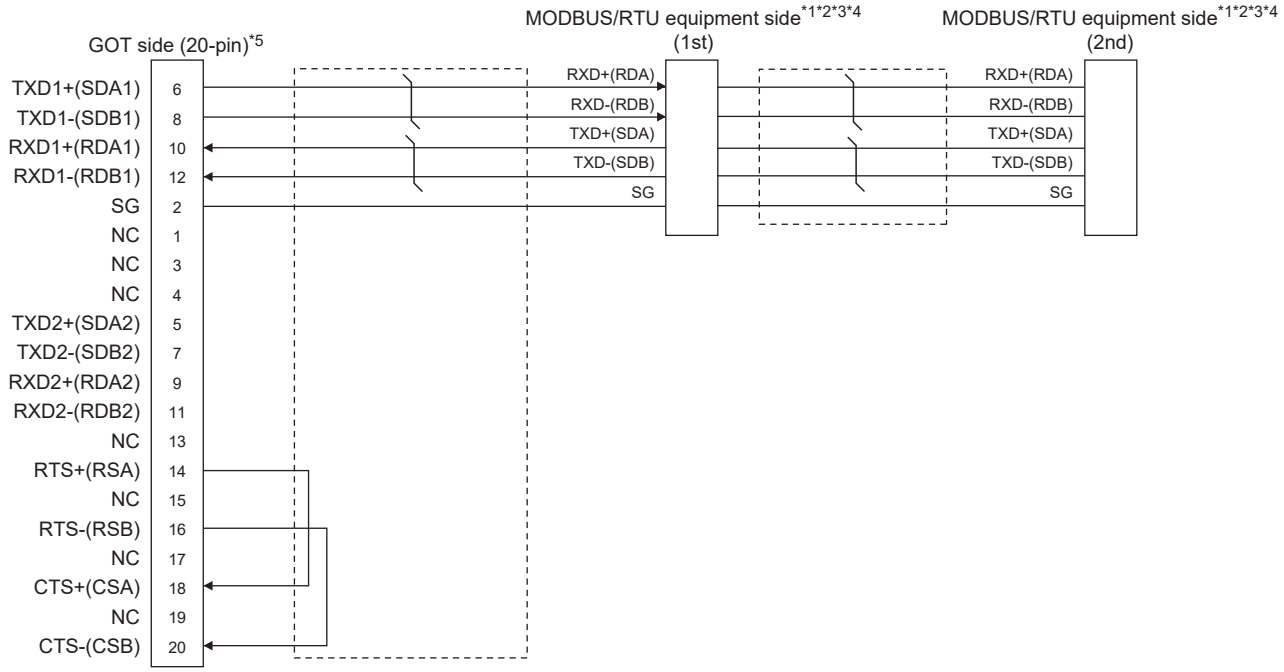
*2 Some pieces of the MODBUS/RTU equipment do not have SG.
In this case, the wiring between GOT and SG is unnecessary.

*3 Some pieces of MODBUS/RTU equipment require the control line (CTS, RTS, etc.) to be controlled.
Make sure to connect the cables and wires as described in the MODBUS/RTU equipment manual.

*4 For the terminating resistor of the MODBUS/RTU equipment, refer to the manual of the MODBUS/RTU equipment.

*5 The GOT at the end requires a terminating resistor setting.
Set the terminating resistor setting switch on the GOT to 100 Ω.
☞ Page 2956 Terminating resistors of GOT

RS-422/485 connection diagram (3)



*1 The actual terminal layout on the MODBUS/RTU equipment may differ from the example shown above. TXD(+/-) and RXD(+/-) terminals can be separated from each other.
Make sure to connect the cables and wires as described in the MODBUS/RTU equipment manual.

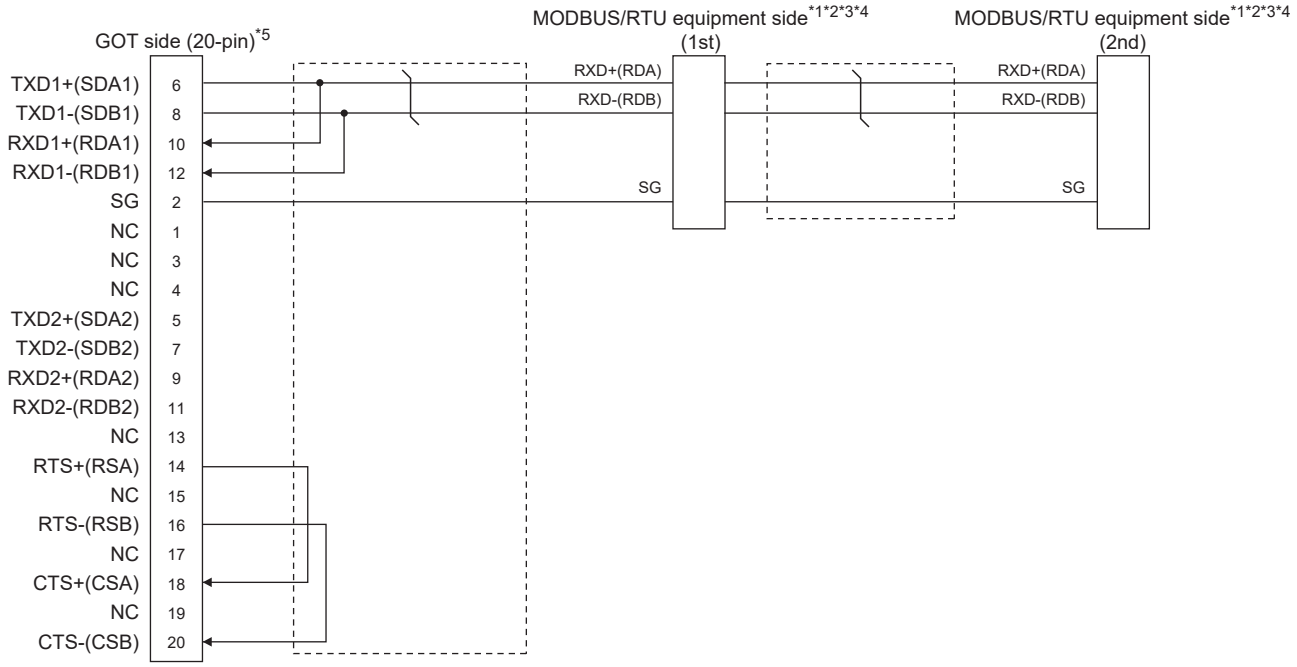
*2 Some pieces of the MODBUS/RTU equipment do not have SG.
In this case, the wiring between GOT and SG is unnecessary.

*3 Some pieces of MODBUS/RTU equipment require the control line (CTS, RTS, etc.) to be controlled.
Make sure to connect the cables and wires as described in the MODBUS/RTU equipment manual.

*4 For the terminating resistor of the MODBUS/RTU equipment, refer to the manual of the MODBUS/RTU equipment to be used.

*5 The GOT at the end requires a terminating resistor setting.
Set the terminating resistor setting switch on the GOT to 100 Ω.
☞ Page 2956 Terminating resistors of GOT

RS-422/485 connection diagram (4)



*1 The actual terminal layout on the MODBUS/RTU equipment may differ from the example shown above. TXD(+/-) and RXD(+/-) terminals can be separated from each other.
Make sure to connect the cables and wires as described in the MODBUS/RTU equipment manual.

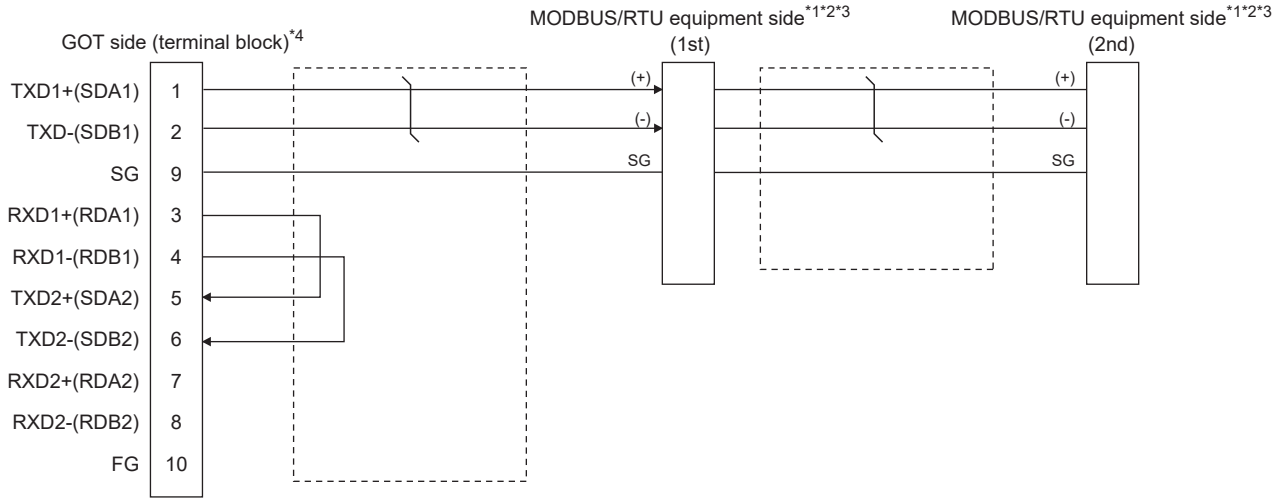
*2 Some pieces of the MODBUS/RTU equipment do not have SG.
In this case, the wiring between GOT and SG is unnecessary.

*3 Some pieces of MODBUS/RTU equipment require the control line (CTS, RTS, etc.) to be controlled.
Make sure to connect the cables and wires as described in the MODBUS/RTU equipment manual.

*4 For the terminating resistor of the MODBUS/RTU equipment, refer to the manual of the MODBUS/RTU equipment to be used.

*5 The GOT at the end requires a terminating resistor setting.
Set the terminating resistor setting switch on the GOT to 100 Ω.
☞ Page 2956 Terminating resistors of GOT

RS-422/485 connection diagram (5)



*1 The actual terminal layout on the MODBUS/RTU equipment may differ from the example shown above. TXD(+/-) and RXD(+/-) terminals can be separated from each other.
Make sure to connect the cables and wires as described in the MODBUS/RTU equipment manual.

*2 Some pieces of the MODBUS/RTU equipment do not have SG.
In this case, the wiring between GOT and SG is unnecessary.

*3 For the terminating resistor of the MODBUS/RTU equipment, refer to the manual of the MODBUS/RTU equipment.

*4 The GOT at the end requires a terminating resistor setting.
Set the terminating resistor setting switch on the GOT to 100 Ω.
☞ Page 2956 Terminating resistors of GOT

Preparation of the RS-422/485 cable

■Cable length

The length of the RS-422/485 cable must be 1200 m or less.

■GOT side connector

For the GOT side connector, refer to the following.
☞ Page 2954 GOT connector specifications

■MODBUS/RTU equipment side connector

Use the connector compatible with the MODBUS/RTU equipment side module.
For details, refer to the MODBUS equipment user's manual.

Terminating resistor settings

■GOT side

When connecting a piece of MODBUS/RTU equipment to the GOT, a terminating resistor must be connected to the GOT.
Set the terminating resistor using the terminating resistor setting switch.
For the procedure to set the terminating resistor, refer to the following.
☞ Page 2956 Terminating resistors of GOT

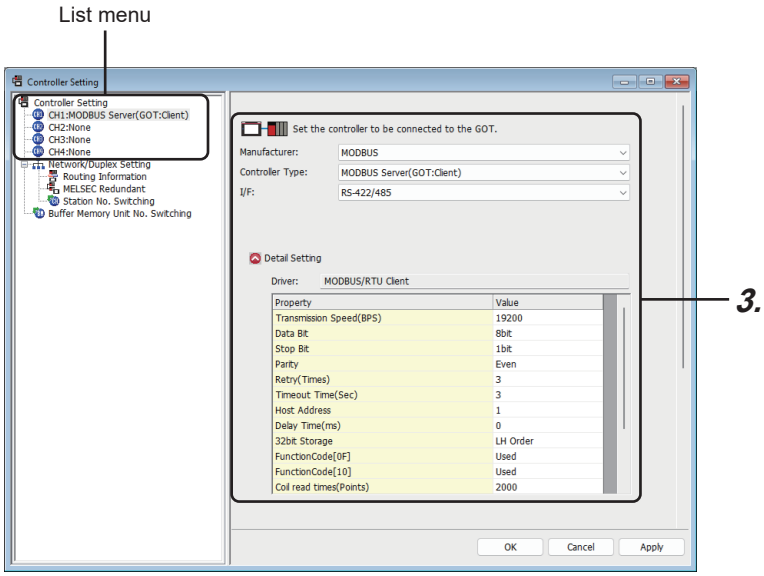
■MODBUS/RTU equipment side

When connecting a piece of MODBUS/RTU equipment to the GOT, a terminating resistor must be connected to the MODBUS/RTU equipment.
For details, refer to the MODBUS/RTU equipment user's manual.

53.1.4 GOT side settings

[Controller Setting]

Set the channel of the connected controller.



Operating procedure

1. Select [Common] → [Controller Setting] from the menu.
2. In the [Controller Setting] window, select the channel number to be used from the list menu.
3. Set the following items.

Item	Description
[Manufacturer]	[MODBUS]
[Controller Type]	[MODBUS Server(GOT:Client)]
[I/F]	Interface to be used
[Detail Setting]	Configure the settings according to the usage environment. ☞ Page 2413 [Detail Setting]

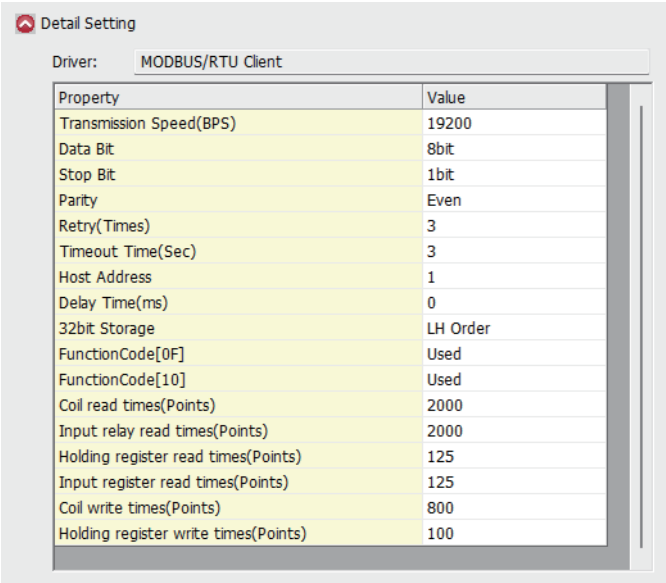
4. When you have completed the settings, click the [OK] button.

Point

The controller settings can be configured and checked in [I/F Communication Setting].
For details, refer to the following.
📖GT Designer3 (GOT3000) Screen Design Manual

■[Detail Setting]

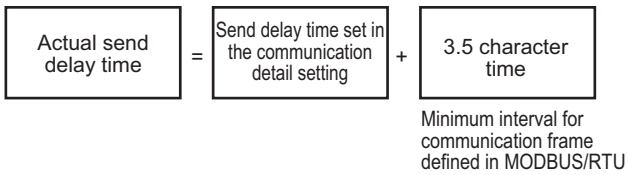
Configure the settings according to the usage environment.



Item	Description	Range
[Driver]	This item appears when communication drivers are selectable according to the settings of [Controller Type] and [I/F].	[MODBUS/RTU Client]
[Transmission Speed]	Set this item when change the transmission speed used for communication with the connected equipment.	[9600] bps, [19200] bps, [38400] bps, [57600] bps, [115200] bps
[Data Bit]	Set this item to change the data length used for communication with the connected equipment.	[7bit], [8bit]
[Stop Bit]	Specify the stop bit length for communications.	[1bit], [2bit]
[Parity]	Specify whether or not to perform a parity check, and how it is performed during communication.	[None], [Even], or [Odd]
[Retry]	Set the number of retries to be performed when a communication error occurs.	[0] times to [5] times
[Timeout Time]	Set the time period for a communication to time out.	[1] second to [30] seconds
[Host Address]*1	Specify the host address in the network of the GOT.	[1] to [247]
[Delay Time]*2	Set this item to adjust the transmission timing of the communication request from the GOT.	[0] ms to [300] ms
[32bit Storage]	Select the steps to store two words (32-bit data).	[LH Order] or [HL Order]
[FunctionCode[0F]]	Set whether to use the function code [0F].	[Used] or [Unused]
[Function Code[10]]	Set whether to use the function code [10].	[Used] or [Unused]
[Coil read times]	Set the read points of the coil.	[1] to [2000] points
[Input relay read times]	Set the read points of the input relay.	[1] to [2000] points
[Holding register read times]*3	Set the read points of the holding register.	[1] to [125] points
[Input register read times]	Set the read points of the input register.	[1] to [125] points
[Coil write times]	Set the write points of the coil.	[1] to [1968] points
[Holding register write times]	Set the write points of the holding register.	[1] to [123] points

*1 In the system configuration, the MODBUS/RTU server equipment with the station number set with the host address must be included.

*2 The GOT ensures in advance the minimum interval (3.5 characters time) for communication frame defined in the MODBUS/RTU. Therefore, the actual send delay time is as follows.



If the communication with MODBUS/RTU equipment is not established, some equipment which requires a delay longer than 3.5 character time may be connected.
When connecting to MODBUS/RTU equipment which requires a delay longer than 3.5 character time, adjust the send delay time.

*3 The GOT reads the holding register (400001) for checking whether the GOT can communicate with the controller.
When the controller is a MODBUS/RTU server equipment that does not have the holding register (400001), check whether the MODBUS/RTU equipment sends back a response to the request from the GOT. Communication is available when the MODBUS/RTU server equipment sends back a response, regardless of the message type (normal or abnormal).

Point

• Controller settings using the GT37 utility

The controller settings can be changed in [Communication Settings] of the GT37 utility after writing [Communication Settings] of project data to GT37.

For details on the GT37 utility, refer to the following manual.

GOT3000 Series User's Manual (Utility & Maintenance Functions)

• Priority of the settings in [Controller Setting]

When the settings are configured in GT Designer3 or in the GT37 utility, the latest settings are effective.

53.1.5 MODBUS/RTU server side settings

For details on the MODBUS/RTU server equipment, refer to the manual of MODBUS/RTU server equipment to be used.

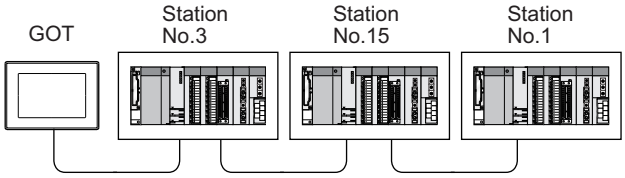
53.1.6 Station number setting

In the MODBUS network, up to 31 units of MODBUS/RTU server equipment can be connected to one GOT.

Assign a unique station number from 1 to 247 to each unit of the MODBUS/RTU server equipment.

In the system configuration, the MODBUS/RTU server equipment with the station number set with the host address must be included.

The station number can be set without regard to the cable connection order. There is no problem even if station numbers are not consecutive.



Examples of station number setting

Direct specification

When setting the device, specify the station number of the MODBUS/RTU server equipment to be changed.

Setting range: 1 to 247

Indirect specification

When setting the device, indirectly specify the station number of the MODBUS/RTU server equipment to be changed using the 16-bit GOT internal register (GD10 to GD16).

When specifying the station number from 248 to 254 on GT Designer3, the value of GD10 to GD16 corresponding to the station number specification is applied as the station number of the MODBUS/RTU server equipment.

Specification station NO.	Compatible device	Setting range
248	GD10	0 to 255 Setting a value outside the above range causes a device range error. • 0: All station specification (broadcast) • 255: Host station access
249	GD11	
250	GD12	
251	GD13	
252	GD14	
253	GD15	
254	GD16	

All station specification (broadcast)

Target station differs depending on write-in operation or read-out operation.

- For write-in operation, all station will be a target.
- For read-out operation, only the host station will be a target.

53.1.7 Function code

The following shows the message format for the MODBUS communication.

Address	Function code	Data	CRC

The GOT supports the following function codes.

Function code	Function	Number of accessible devices per message [Unit: point(s)]
0x01	Read Coils	1 to 2000
0x02	Read Discrete Inputs	1 to 2000
0x03	Read Holding Registers	1 to 125
0x04	Read Input Registers	1 to 125
0x05	Write Single Coil	1
0x06	Write Single Register	1
0x0F	Write Multiple Coils	1 to 1968
0x10	Write Multiple Register	1 to 123
0x14	Read File Record	1 to 124
0x15	Write File Record	1 to 122

53.1.8 MODBUS communication control function

This function is to prevent a communication response delay by the equipment with different specifications in the MODBUS network.

The GOT special register (GS) controls available function codes.

Set this function when equipment applicable to the following conditions is used on the MODBUS network.

- Equipment that supports only some function codes
- Equipment whose maximum transfer size is small for function codes

The following lists the GOT special registers (GS) used for the MODBUS communication control function.

GOT special register (GS)	Description
GS579	Specification of the communication setting (common or individual) for each CH
GS570 to GS576	Common communication settings
GS590 to GS596	Individual communication settings for CH1
GS597 to GS603	Individual communication settings for CH2
GS604 to GS610	Individual communication settings for CH3
GS611 to GS617	Individual communication settings for CH4

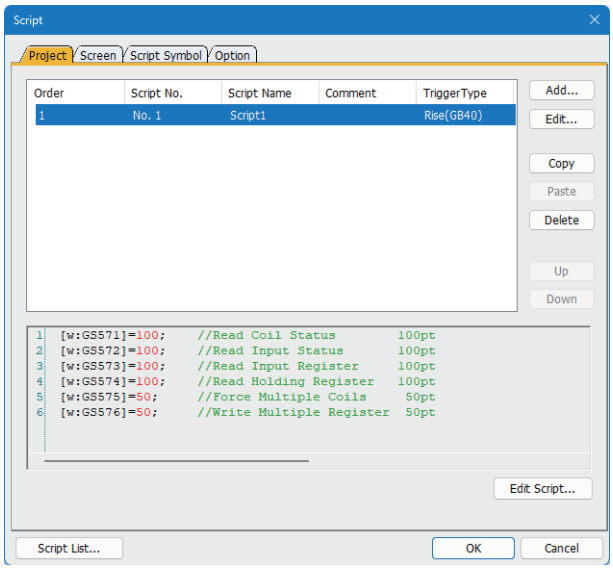
For details on the GOT special registers (GS), refer to the following manual.

📖GT Designer3 (GOT3000) Screen Design Manual

Precautions

At GOT startup, set MODBUS communication control function with project scripts, etc.

If settings are changed after communication start, a communication error may occur.



Setting example for project script

Point

The GOT can disconnect a part of the connected equipment by setting GOT internal devices.

For example, the faulty station where a communication timeout error occurs can be disconnected from the system.

For details on GOT internal device settings, refer to the following manual.

📖GT Designer3 (GOT3000) Screen Design Manual

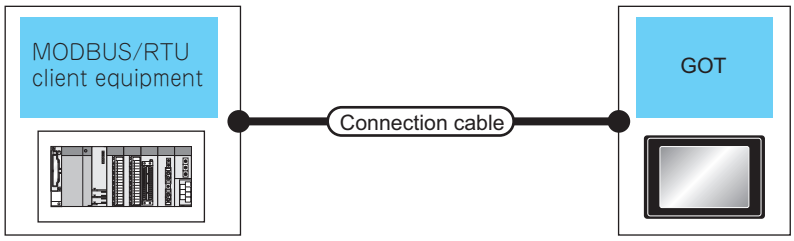
53.2 Server connection (MODBUS/RTU connection)

☞ Page 2417 Connectable devices
☞ Page 2418 System configuration
☞ Page 2419 Connection diagram
☞ Page 2424 GOT side settings
☞ Page 2426 MODBUS/RTU client side settings
☞ Page 2426 Function code
☞ Page 2426 GOT (server) operations for all station specification (broadcast)

53.2.1 Connectable devices

GOT3000 series products support the server function of MODBUS/RTU communication, the open FA network.
Thus, the GOT can communicate with each MODBUS master equipment.

53.2.2 System configuration



For details on the maximum number of connected devices, refer to the following.

☞ Page 2418 Maximum number of connected devices

Controller	Communication type	Connection cable	Maximum length	GOT	
				Interface	Model
MODBUS/RTU equipment	RS-232	☞ Page 2419 RS-232 connection diagram (1)	15 m*1	Built-in RS-232 interface + GT35-C02HR2-9P	GT37 SoftGOT3000
				GT37-IF2000 + GT15-RS4-9S	GT37 SoftGOT3000
	RS-422/485	☞ Page 2420 RS-422/485 connection diagram (1)(4-wire) or ☞ Page 2421 RS-422/485 connection diagram (2)(2-wire)	1200 m*1	FA-LTBGT2R4CBL05 (0.5 m)*2 FA-LTBGT2R4CBL10 (1 m)*2 FA-LTBGT2R4CBL20 (2 m)*2	GT37 SoftGOT3000
		☞ Page 2422 RS-422/485 connection diagram (3)(4-wire) or ☞ Page 2422 RS-422/485 connection diagram (4)(2-wire)	1200 m*1	Built-in RS-422/485 interface	GT37 SoftGOT3000
				GT37-IF2000 + GT15-RS4-9S	GT37 SoftGOT3000
		☞ Page 2423 RS-422/485 connection diagram (5)(2-wire)	1200 m*1	GT37-IF2000 + GT15-RS4-TE	GT37 SoftGOT3000

*1 The shortest specification on the MODBUS/RTU master equipment side is prioritized.
*2 Product manufactured by MITSUBISHI ELECTRIC ENGINEERING COMPANY LIMITED.
For details on the product, contact MITSUBISHI ELECTRIC ENGINEERING COMPANY LIMITED.

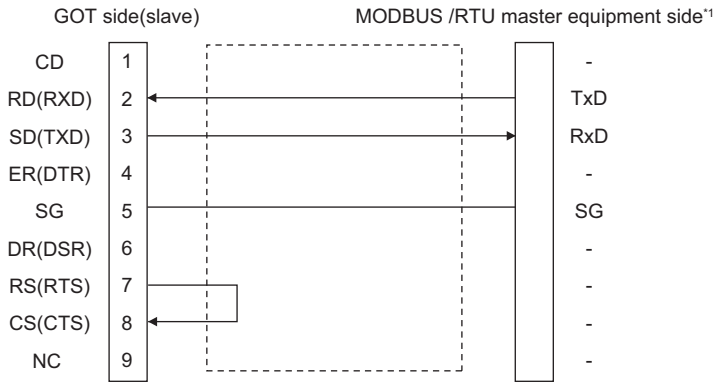
Maximum number of connected devices

One GOT can access one MODBUS/RTU equipment at a time.

53.2.3 Connection diagram

The following diagram shows the connection between the GOT and the controller.

RS-232 connection diagram (1)



*1 Some pieces of the MODBUS/RTU equipment require the control line (CTS, RTS) to be controlled. Make sure to connect the cables and wires as described in the MODBUS/RTU equipment manual.

Preparation of the RS-232 cable

■Cable length

The length of the RS-232 cable must be 15 m or less.

■GOT side connector

For the GOT side connector, refer to the following.

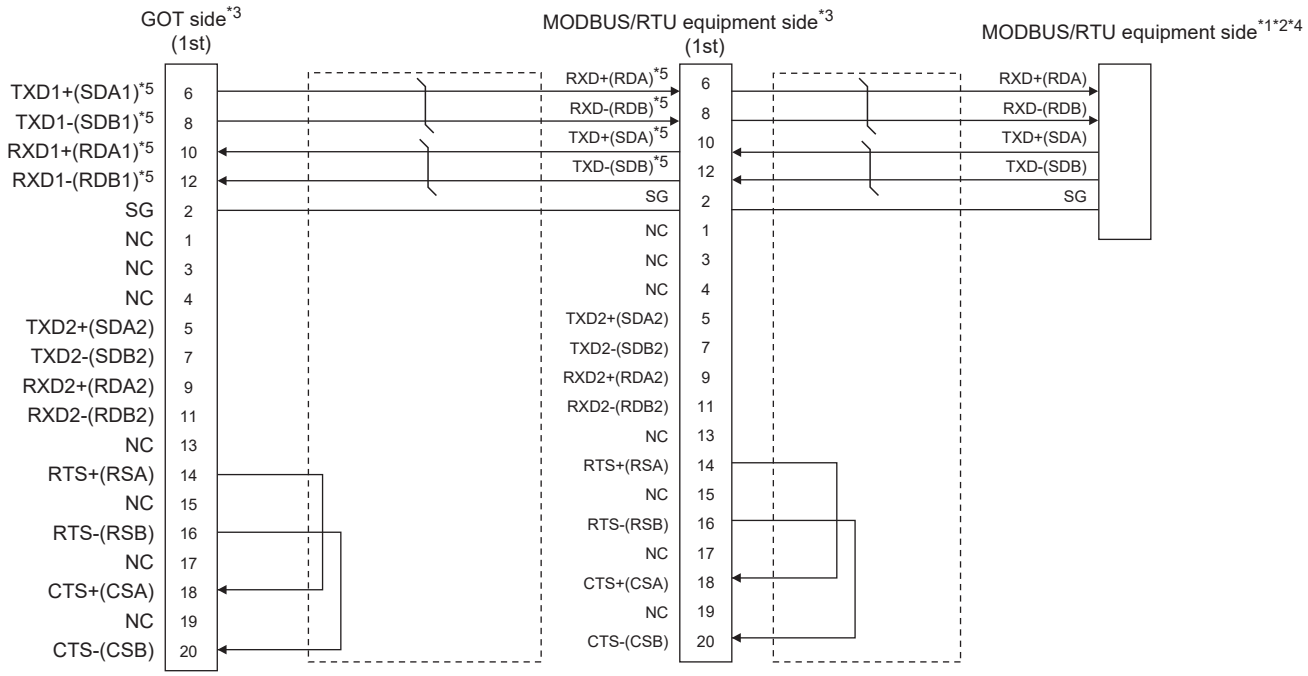
☞ Page 2954 GOT connector specifications

■MODBUS equipment side connector

Use the connector compatible with the MODBUS/RTU equipment side module.

For details, refer to the MODBUS/RTU equipment user's manual.

RS-422/485 connection diagram (1)



*1 Some pieces of the MODBUS/RTU equipment do not have SG.
In this case, the wiring between GOT and SG is unnecessary.

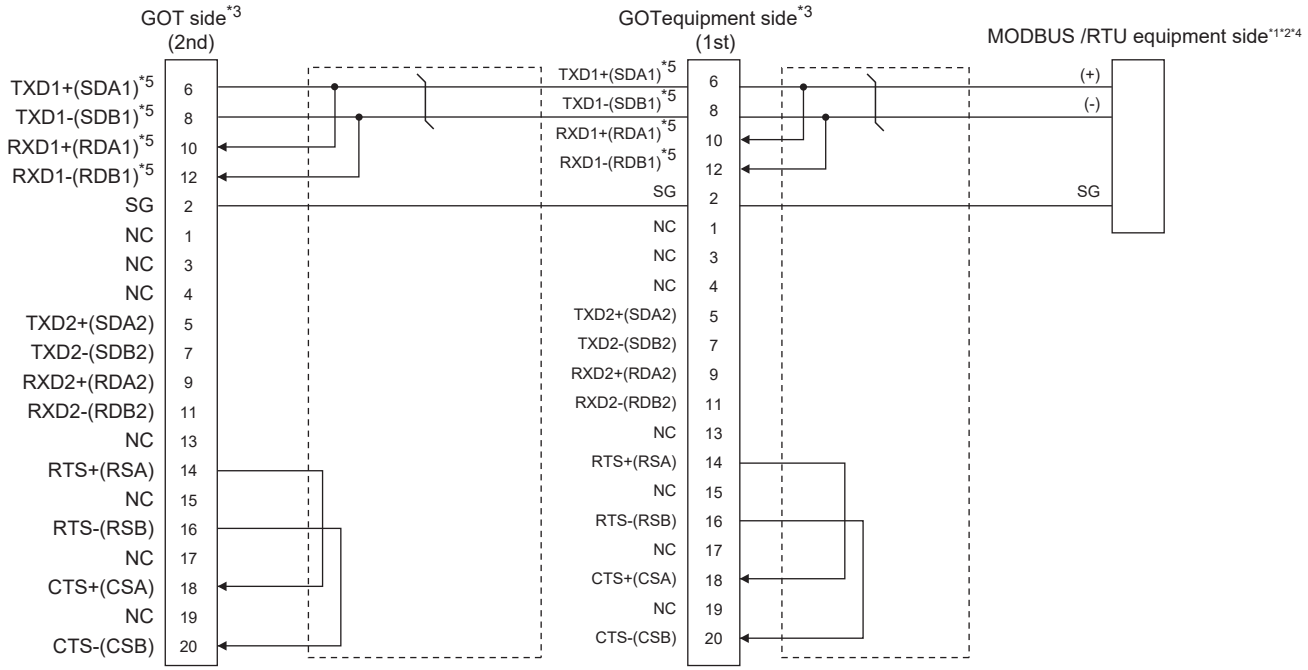
*2 Some pieces of MODBUS/RTU equipment require the control line (CTS, RTS, etc.) to be controlled.
Make sure to connect the cables and wires as described in the MODBUS/RTU equipment manual.

*3 For the terminating resistor of the MODBUS/RTU equipment, refer to the manual of the MODBUS/RTU equipment to be used.

*4 The GOT at the end requires a terminating resistor setting.
Set the terminating resistor setting switch on the GOT to 100 Ω.
☞ Page 2956 Terminating resistors of GOT

*5 Use the twisted pair cable for SDA1/SDB1 and RDA1/RDB1.

RS-422/485 connection diagram (2)



*1 The actual terminal layout on the MODBUS/RTU equipment may differ from the example shown above. TXD(+/-) and RXD(+/-) terminals can be separated from each other.
Make sure to connect the cables and wires as described in the MODBUS/RTU equipment manual.

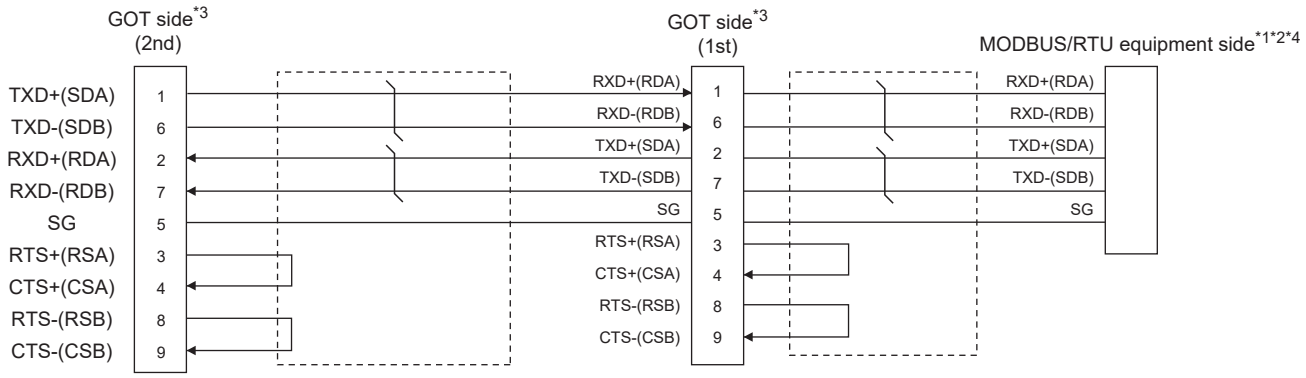
*2 Some pieces of the MODBUS/RTU equipment do not have SG.
In this case, the wiring between GOT and SG is unnecessary.

*3 The GOT at the end requires a terminating resistor setting.
Set the terminating resistor setting switch on the GOT to 100 Ω.
☞ Page 2956 Terminating resistors of GOT

*4 For the terminating resistor of the MODBUS/RTU equipment, refer to the manual of the MODBUS/RTU equipment to be used.

*5 Use the twisted pair cable for SDA1/SDB1 and RDA1/RDB1.

RS-422/485 connection diagram (3)



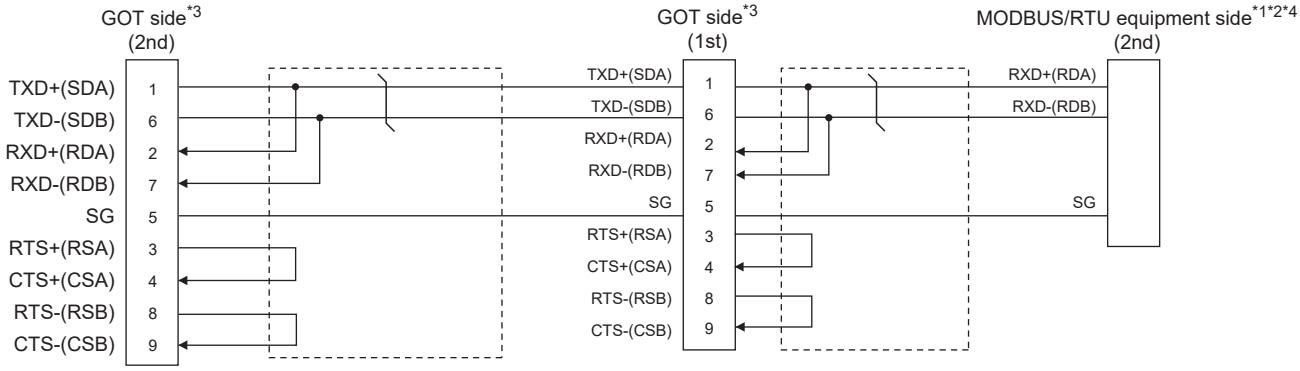
*1 Some pieces of the MODBUS/RTU equipment do not have SG.
In this case, the wiring between GOT and SG is unnecessary.

*2 Some pieces of MODBUS/RTU equipment require the control line (CTS, RTS, etc.) to be controlled.
Make sure to connect the cables and wires as described in the MODBUS/RTU equipment manual.

*3 The GOT at the end requires a terminating resistor setting.
Set the terminating resistor setting switch on the GOT to 330 Ω.
☞ Page 2956 Terminating resistors of GOT

*4 For the terminating resistor of the MODBUS/RTU equipment, refer to the manual of the MODBUS/RTU equipment to be used.

RS-422/485 connection diagram (4)



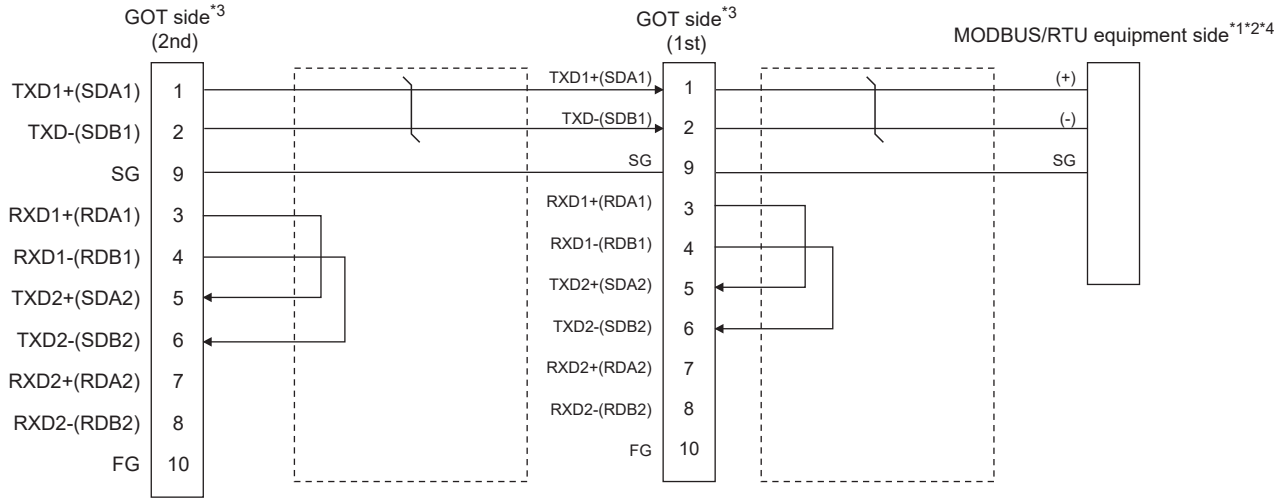
*1 The actual terminal layout on the MODBUS/RTU equipment may differ from the example shown above. TXD(+/-) and RXD(+/-) terminals can be separated from each other.
Make sure to connect the cables and wires as described in the MODBUS/RTU equipment manual.

*2 Some pieces of the MODBUS/RTU equipment do not have SG.
In this case, the wiring between GOT and SG is unnecessary.

*3 The GOT at the end requires a terminating resistor setting.
Set the terminating resistor setting switch on the GOT to 100 Ω.
☞ Page 2956 Terminating resistors of GOT

*4 For the terminating resistor of the MODBUS/RTU equipment, refer to the manual of the MODBUS/RTU equipment.

RS-422/485 connection diagram (5)



*1 The actual terminal layout on the MODBUS/RTU equipment may differ from the example shown above. TXD(+/-) and RXD(+/-) terminals can be separated from each other.
Make sure to connect the cables and wires as described in the MODBUS/RTU equipment manual.

*2 Some pieces of the MODBUS/RTU equipment do not have SG.
In this case, the wiring between GOT and SG is unnecessary.

*3 The GOT at the end requires a terminating resistor setting.
Set the terminating resistor setting switch on the GOT to 100 Ω.
☞ Page 2956 Terminating resistors of GOT

*4 For the terminating resistor of the MODBUS/RTU equipment, refer to the manual of the MODBUS/RTU equipment.

Preparation of the RS-422/485 cable

■Cable length

The length of the RS-422/485 cable must be 1200 m or less.

■GOT side connector

For the GOT side connector, refer to the following.

☞ Page 2954 GOT connector specifications

■MODBUS/RTU equipment side connector

Use the connector compatible with the MODBUS/RTU equipment side module.

For details, refer to the MODBUS equipment user's manual.

Terminating resistor settings

■GOT side

When connecting a piece of MODBUS/RTU equipment to the GOT, a terminating resistor must be connected to the GOT.

Set the terminating resistor using the terminating resistor setting switch.

For the procedure to set the terminating resistor, refer to the following.

☞ Page 2956 Terminating resistors of GOT

■MODBUS/RTU equipment side

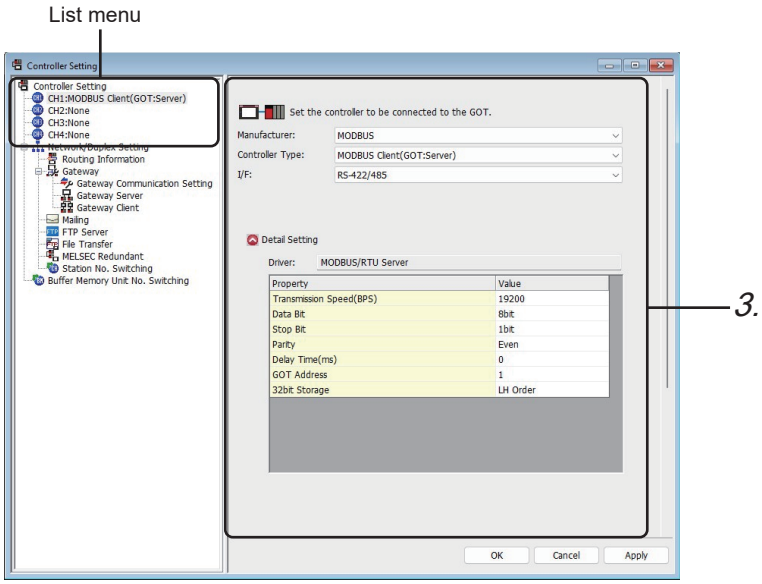
When connecting a piece of MODBUS/RTU equipment to the GOT, a terminating resistor must be connected to the MODBUS/RTU equipment.

For details, refer to the MODBUS/RTU equipment user's manual.

53.2.4 GOT side settings

[Controller Setting]

Set the channel of the equipment to be connected to the GOT.



Operating procedure

1. Select [Common] → [Controller Setting] from the menu.

2. In the [Controller Setting] window, select the channel number to be used from the list menu.

3. Set the following items.

Item	Description
[Manufacturer]	[MODBUS]
[Controller Type]	[MODBUS Client(GOT:Server)]
[I/F]	Interface to be used
[Detail Setting]	Configure the settings according to the usage environment. ☞ Page 2425 MODBUS/RTU equipment side

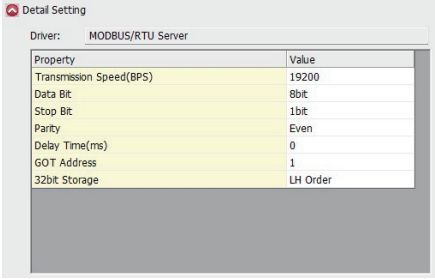
4. When you have completed the settings, click the [OK] button.

Point

The controller settings can be configured and checked in [I/F Communication Setting].
For details, refer to the following.
📖GT Designer3 (GOT3000) Screen Design Manual

[Detail Setting]

Make the settings according to the usage environment.



Item	Description	Range
[Driver]	This item appears when communication drivers are selectable according to the settings of [Controller Type] and [I/F].	[MODBUS/RTU Server]
[Transmission Speed]	Set this item when change the transmission speed used for communication with the connected equipment.	[9600] bps, [19200] bps, [38400] bps, [57600] bps, [115200] bps
[Data Bit]	Set this item to change the data length used for communication with the connected equipment.	[7bit], [8bit]
[Stop Bit]	Specify the stop bit length for communications.	[1bit], [2bit]
[Parity]	Specify whether or not to perform a parity check, and how it is performed during communication.	[None], [Even], or [Odd]
[Delay Time]*1	Set this item to adjust the transmission timing of the communication request from the GOT.	[0] ms to [300] ms
[GOT Station]	Set the station number of the GOT.	[1] to [247]
[32bit Storage]	Select the steps to store two words (32-bit data).	[LH Order] or [HL Order]

*1 The GOT ensures in advance the minimum interval (3.5 characters time) for communication frame defined in the MODBUS/RTU. Therefore, the actual send delay time is as follows.

Actual send delay time = Send delay time set in the communication detail setting + 3.5 character time

Minimum interval for communication frame defined in MODBUS/RTU

If the communication with MODBUS/RTU master equipment is not established, some equipment which requires a delay longer than 3.5 character time may be connected.
When connecting to MODBUS/RTU master equipment which requires a delay longer than 3.5 character time, adjust the send delay time.

Point

• Controller settings using the GT37 utility

The controller settings can be changed in [Communication Settings] of the GT37 utility after writing [Communication Settings] of project data to GT37.

For details on the GT37 utility, refer to the following manual.

GOT3000 Series User's Manual (Utility & Maintenance Functions)

• Priority of the settings in [Controller Setting]

When the settings are configured in GT Designer3 or in the GT37 utility, the latest settings are effective.

53.2.5 MODBUS/RTU client side settings

For details on the MODBUS/RTU equipment, refer to the manual of the MODBUS/RTU equipment to be used.

53.2.6 Function code

The following shows the message format for the MODBUS communication.

Address	Function code	Data	CRC

The GOT supports the following function codes.

Function code	Function	Number of accessible devices per message [Unit: point(s)]
0x01	Read Coils	1 to 2000
0x02	Read Discrete Inputs	1 to 2000
0x03	Read Holding Registers	1 to 125
0x04	Read Input Registers	1 to 125
0x05	Write Single Coil	1
0x06	Write Single Register	1
0x08*1	Diagnostics	—
0x0F	Write Multiple Coils	1 to 1968
0x10	Write Multiple Register	1 to 123

*1 Only available for the loopback (sub function code 0x0000).

53.2.7 GOT (server) operations for all station specification (broadcast)

The all station specification (broadcast) operates when [0] is specified as the client address in the request packet.
The following describes the GOT (server) operations for all station specification (broadcast) from the MODBUS/RTU equipment.

- The GOT will not respond to the read-out requests specifying all stations from the MODBUS/RTU equipment (read-out disabled).
- The GOT will perform writing for the write-in requests specifying all stations from the MODBUS/RTU equipment but will not respond.
- The GOT will not respond to the diagnosis requests specifying all stations from the MODBUS/RTU equipment (loopback disabled).

Precautions

■Errors that occur in the GOT at MODBUS/TCP connection

In MODBUS/RTU connection, contents of the message display, causes, and countermeasures when an error occurs in the GOT are described below.

When the following errors occur, the GOT will generate a system alarm.

Error code	Contents of the message display	Cause	Countermeasures
309*1	Device reading error. Correct device.	• An error occurred when reading consecutive devices. • A device that is out of the monitor range is specified at a place where consecutive device is specified, such as graph function or system information.	Correct so that a device number in the monitor range is specified.
315*1	Device writing error. Correct device.	• Writing was attempted to a device number that is out of the monitor range. • Writing was attempted to a write-prohibit device.	Review the write target device and the device number.
322*1	The specified device is out of range. Confirm device range.	• A device read error occurs. • The GOT accesses the device that is out of range specified by the master station.	To take corrective actions, check the range that is allocated to the master station and range of the monitoring target device.

*1 May occur even if MODBUS/RTU connection is not used.

■Error codes (MODBUS Exception Codes) returned from the GOT (server) to MODBUS/RTU equipment

The GOT (server) supports the following error codes (MODBUS Exception Codes) in response to requests from the MODBUS/RTU equipment.

When the following errors occur, the GOT will not generate a system alarm.

The description, causes, and countermeasures for each error code are described below.

• Common error codes returned in response to requests from the GOT (server)

Error code (HEX)	Category	Description	Cause	Countermeasures
0x01	—	ILLEGAL FUNCTION	A function code not supported by the GOT was received.	Use only function codes supported by GOT. For details on the function codes supported by the GOT, refer to the following. ☞ Page 2426 Function code

• Error codes returned in response to read requests from the GOT (server)

Error code (HEX)	Category	Description	Cause	Countermeasures
0x02	Read/Write	ILLEGAL DATA ADDRESS	An out-of-range device was accessed.	Check that the device being accessed is correct.

• Error codes returned in response to write requests from the GOT (server)

Error code (HEX)	Category	Description	Cause	Countermeasures
0x02	Read/Write	ILLEGAL DATA ADDRESS	An out-of-range device was accessed.	Check that the device being accessed is correct.
0x03	Write	ILLEGAL DATA VALUE	The request packet (number of write points, number of write data bytes, and number of write data items) is inconsistent.	Check that a correct packet is sent from the master equipment

• Error codes issued during diagnostics (function code 0x08)

Error code (HEX)	Category	Description	Cause	Countermeasures
0x01	—	ILLEGAL FUNCTION	A sub function code not supported by the GOT was received.	Use only 0x0000 (loopback) for the sub function codes.

■Placing the GOT into offline mode

Before performing operations such as package data writing that causes the GOT to transition to offline mode, stop data transmission between the GOT and the MODBUS/RTU equipment.
In offline mode, the GOT cannot respond to the requests from the MODBUS/RTU equipment.
Even after the GOT switches back from offline mode, the GOT may not communicate with the MODBUS/RTU equipment until the communication timeout period of the MODBUS/RTU equipment elapses.

54 Settable device range

This chapter describes the range of devices settable in GT Designer3.
The settable range varies with the selection for [Controller Type] in the [Controller Setting] window.
Configure the device setting according to the specifications of the controller to be used.
Device specifications differ depending on the controller model even among the controllers of the same series.
If a nonexistent device or a device number out of the range is set for an object, other objects for which correct devices are set may not be monitored.

☞ Page 2430 MODBUS ([MODBUS Server(GOT:Client)])
☞ Page 2436 MODBUS ([MODBUS Client(GOT:Server)])

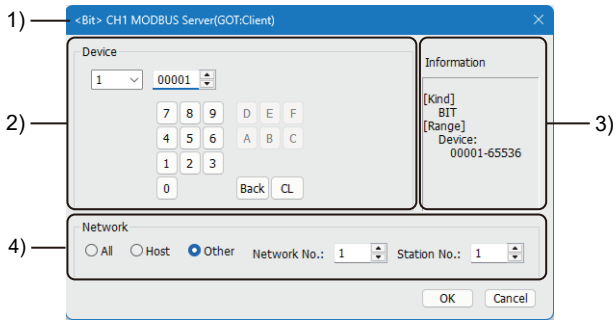
54.1 MODBUS ([MODBUS Server(GOT:Client)])

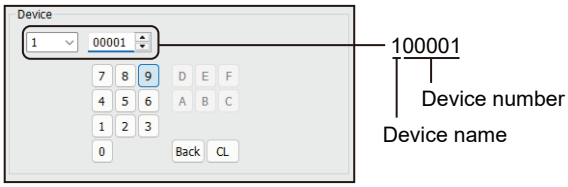
GT37 SoftGOT3000

Item	Reference
Device setting dialog	☞ Page 2430 Device setting dialog ([MODBUS Server(GOT:Client)])
Specifications of bit devices	☞ Page 2432 Monitoring-supported bit devices ([MODBUS Server(GOT:Client)])
	☞ Page 2433 Availability of writing/reading data to/from bit devices ([MODBUS Server(GOT:Client)])
Specifications of word devices	☞ Page 2433 Monitoring-supported word devices ([MODBUS Server(GOT:Client)])
	☞ Page 2434 Availability of writing/reading data to/from word devices ([MODBUS Server(GOT:Client)])
Notation of devices	☞ Page 2434 Notation of devices ([MODBUS Server(GOT:Client)])
Function code	☞ Page 2435 Function code ([MODBUS Server(GOT:Client)])

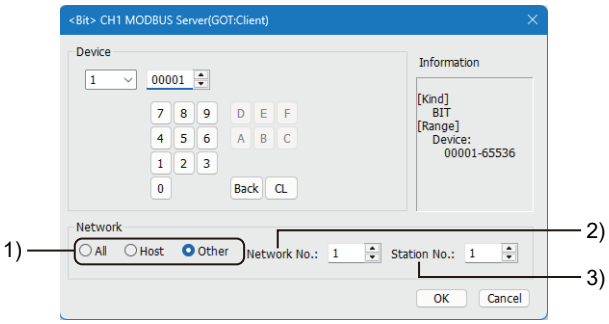
54.1.1 Device setting dialog ([MODBUS Server(GOT:Client)])

Set a device to be monitored.



Item		Description
1)	Title	Data type and channel number of the device to be set
2)	[Device]	Set the device name and device number. If a bit number needs to be specified, the setting item is displayed. Example) Setting of 100001 
3)	[Information]	Displays the setting range of each setting item according to the selected device.
4)	[Network Setting]	The setting depends on the connection type. The setting items depend on the controller setting. ☞ Page 2431 Network setting for the MODBUS/RTU connection ([MODBUS Server(GOT:Client)]) ☞ Page 2432 Network setting for the MODBUS/TCP connection ([MODBUS Server(GOT:Client)])

Network setting for the MODBUS/RTU connection ([MODBUS Server(GOT:Client)])



Item			Description
1)	Monitor target specification	—	Set the monitoring target of the set device.
		[All]	Select this item when writing data to all the connected controllers. During monitoring, the controller set for [Host Address] of the [Controller Setting] window is monitored. When data is input from a numerical input object, the data is written to all the connected controllers. When no data is input, the controller set for [Host Address] is monitored.
		[Host]	Select this item when monitoring the controller set as the host station.
		[Other]	Select this item when monitoring the controller that has the specified station number.
2)	[Network No.]		This item appears when [Other] is selected for the station type. For the MODBUS/RTU connection, set 1.
3)	[Station No.]		This item appears when [Other] is selected for the station type. Specify a station number. The setting range is [1] to [247] (direct) or [248] to [254] (indirect). For indirect specification of a station number, refer to the following. ☞ Page 2431 Indirect specification of a station number for the MODBUS/RTU master connection ([MODBUS Server(GOT:Client)])

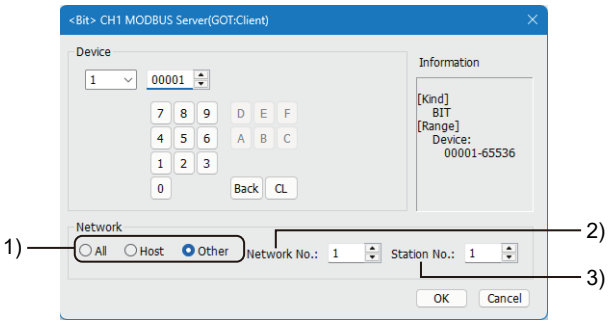
Indirect specification of a station number for the MODBUS/RTU master connection ([MODBUS Server(GOT:Client)])

When you specify any of 248 to 254 for the station number, the value of the corresponding GOT data register (GD10 to GD16) is used as the station number.

The following shows the correspondence between station number setting values and GOT data registers (GD).

Station No.	GOT data register (GD)	Setting range
248	GD10	[0] to [255] Setting a value outside the above range causes a device range error. When "0" is set, "All station specification (broadcast)" is specified. When "255" is set, the host station is specified.
249	GD11	
:	:	
253	GD15	
254	GD16	

Network setting for the MODBUS/TCP connection ([MODBUS Server(GOT:Client)])



Item			Description
1)	Monitor target specification	—	Set the monitoring target of the set device.
		[All]	Not available to the MODBUS/TCP connection.
		[Host]	Select this item when monitoring the controller set as the host station.
		[Other]	Select this item when monitoring the controller that has the specified station number.
2)	[Network No.]		This item appears when [Other] is selected for the station type. Set the network number. The setting range is [1] to [239].
3)	[Station No.]		This item appears when [Other] is selected for the station type. Specify a station number. The setting range is [1] to [247].

54.1.2 Monitoring-supported bit devices ([MODBUS Server(GOT:Client)])

The following table shows monitoring-supported bit devices.
The device range of MODBUS equipment varies by model.
When a model whose device range is not a specified using a multiple of 16 is used, monitoring to the maximum within the range may not be possible.
In this case, the device range is up to the number divisible by 16.

Ex.
For a model whose coil device range is from 0 to 9999
The range that can be actually monitored is from 0 to 9984.

To check whether writing/reading data to/from each device is available, refer to the following.
☞ Page 2433 Availability of writing/reading data to/from bit devices ([MODBUS Server(GOT:Client)])
For the formats of devices, refer to the following.
📖GT Designer3 (GOT3000) Screen Design Manual
○: Available
×: Not available

Device name		Device No. representation	Setting range	Specifications of EG devices*1	
				Assignment to EG devices	Access using a client
1	Input relay	Decimal	00001 to 65536	○	○ (Not usable as word data)
0	Coils	Decimal	00001 to 65536	○	○ (Not usable as word data)

*1 For the devices assigned to EG devices (gateway devices) and the compatible clients, refer to the following.
📖GT Designer3 (GOT3000) Screen Design Manual

54.1.3 Availability of writing/reading data to/from bit devices ([MODBUS Server(GOT:Client)])

The following shows the availability of writing/reading data to/from bit devices by device type.
When the device type is other than the bit type, set the device No. in multiples of 16.
R/W: Both read and write
R/-: Read only
-/W: Write only
-/-: No read/write access

Device name	Device type				
	Bit	Byte (8 bits)	Word (16 bits)	Double-word (32 bits)	Quad-word (64 bits)
1	R/-	-/-	-/-	-/-	-/-
0	R/W	-/-	-/-	-/-	-/-

54.1.4 Monitoring-supported word devices ([MODBUS Server(GOT:Client)])

The following table shows monitoring-supported word devices.
To check whether writing/reading data to/from each device is available, refer to the following.
☞ Page 2434 Availability of writing/reading data to/from word devices ([MODBUS Server(GOT:Client)])
For the formats of devices, refer to the following.
📖GT Designer3 (GOT3000) Screen Design Manual
○: Available
×: Not available

Device name		Device No. representation	Setting range	Specifications of EG devices*1	
				Assignment to EG devices	Access using a client
4	Holding register	Decimal	00001 to 65536	○	○ (Not usable as bit data)
3	Input register	Decimal	00001 to 65536	○	○ (Not usable as bit data)
6	Extension file register	Decimal	(File No.)-6(Device) Notation example: 418-600000 • File No. (decimal): 0 to 418 • Device (decimal): 00000 to 09999	○	○ (Not usable as bit data)

*1 For the devices assigned to EG devices (gateway devices) and the compatible clients, refer to the following.
📖GT Designer3 (GOT3000) Screen Design Manual

54.1.5 Availability of writing/reading data to/from word devices ([MODBUS Server(GOT:Client)])

The following shows the availability of writing/reading data to/from word devices by device type.

R/W: Both read and write

R/-: Read only

-/W: Write only

-/-: No read/write access

Device name	Device type			
	Word (16 bits)	Double-word (32 bits)	Quad-word (64 bits)	Bit of word data
4	R/W	R/W	-/-	R/W
3	R/-	R/-	-/-	R/-
6	R/W	R/W	-/-	R/W

54.1.6 Notation of devices ([MODBUS Server(GOT:Client)])

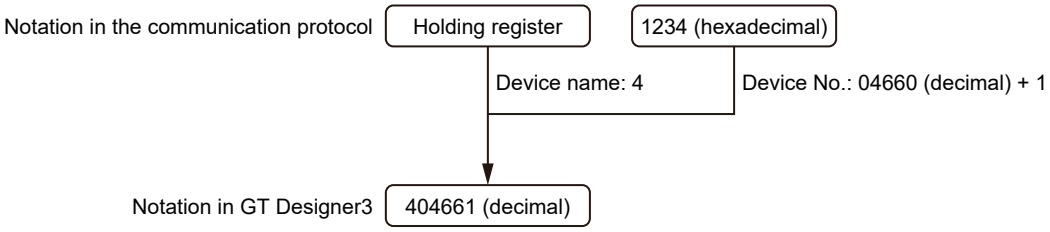
The notation of addresses and that of devices differ between the MODBUS/RTU communication protocol and GT Designer3. Set the devices using the notation used in GT Designer3.

Notation in the communication protocol		Notation in GT Designer3	
Device name	Address (hexadecimal)	Device name	Device No. (decimal)
Coils	0000 to FFFF	0	00001 to 65536
Input relay	0000 to FFFF	1	00001 to 65536
Input register	0000 to FFFF	3	00001 to 65536
Holding register	0000 to FFFF	4	00001 to 65536
Extension file register	0000 to 270F	6	00000 to 09999

Ex.

Monitoring the holding register 1234 (hexadecimal)

Set 404661 in GT Designer3.



54.1.7 Function code ([MODBUS Server(GOT:Client)])

The GOT supports the following function codes.

Function code	Function	Number of accessible devices per message [Unit: point(s)]	
		MODBUS/RTU	MODBUS/TCP
0x01	Read Coils	1 to 2000	1 to 1000
0x02	Read Discrete Inputs	1 to 2000	1 to 1000
0x03	Read Holding Registers	1 to 125	1 to 125
0x04	Read Input Registers	1 to 125	1 to 125
0x05	Write Single Coil	1	1
0x06	Write Single Register	1	1
0x0F	Write Multiple Coils	1 to 1968	1 to 800
0x10	Write Multiple Register	1 to 123	1 to 123
0x14	Read File Record	1 to 124	1 to 124
0x15	Write File Record	1 to 122	1 to 122

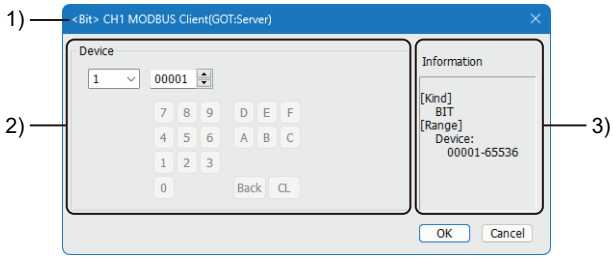
54.2 MODBUS ([MODBUS Client(GOT:Server)])

GT37 SoftGOT3000

Item	Reference
Device setting dialog	☞ Page 2436 Device setting dialog ([MODBUS Client(GOT:Server)])
Specifications of bit devices	☞ Page 2437 Monitoring-supported bit devices ([MODBUS Client(GOT:Server)])
	☞ Page 2437 Availability of writing/reading data to/from bit devices ([MODBUS Client(GOT:Server)])
Specifications of word devices	☞ Page 2438 Monitoring-supported word devices ([MODBUS Client(GOT:Server)])
	☞ Page 2438 Availability of writing/reading data to/from word devices ([MODBUS Client(GOT:Server)])
Notation of devices	☞ Page 2434 Notation of devices ([MODBUS Server(GOT:Client)])
Function code	☞ Page 2435 Function code ([MODBUS Server(GOT:Client)])

54.2.1 Device setting dialog ([MODBUS Client(GOT:Server)])

Set a device to be monitored.



Item		Description
1)	Title	Data type and channel number of the device to be set
2)	[Device]	Set the device name and device number. If a bit number needs to be specified, the setting item is displayed. Example) Setting of 100001
3)	[Information]	Displays the setting range of each setting item according to the selected device.

54.2.2 Monitoring-supported bit devices ([MODBUS Client(GOT:Server)])

The following table shows monitoring-supported bit devices.

To check whether writing/reading data to/from each device is available, refer to the following.

☞ Page 2437 Availability of writing/reading data to/from bit devices ([MODBUS Client(GOT:Server)])

For the formats of devices, refer to the following.

📖GT Designer3 (GOT3000) Screen Design Manual

○: Available

×: Not available

Device name		Device No. representation	Setting range	Specifications of EG devices*1	
				Assignment to EG devices	Access using a client
1	Input relay	Decimal	00001 to 65536	○	○
0	Coils	Decimal	00001 to 65536	○	○

*1 For the devices assigned to EG devices (gateway devices) and the compatible clients, refer to the following.
📖GT Designer3 (GOT3000) Screen Design Manual

54.2.3 Availability of writing/reading data to/from bit devices ([MODBUS Client(GOT:Server)])

The following shows the availability of writing/reading data to/from bit devices by device type.

When the device type is other than the bit type, set the device No. in multiples of 16.

R/W: Both read and write

R/-: Read only

-/W: Write only

-/-: No read/write access

Device name	Device type				
	Bit	Byte (8 bits)	Word (16 bits)	Double-word (32 bits)	Quad-word (64 bits)
1	R/W	-/-	R/W	R/W	-/-
0	R/W	-/-	R/W	R/W	-/-

54.2.4 Monitoring-supported word devices ([MODBUS Client(GOT:Server)])

The following table shows monitoring-supported word devices.

To check whether writing/reading data to/from each device is available, refer to the following.

☞ Page 2438 Availability of writing/reading data to/from word devices ([MODBUS Client(GOT:Server)])

For the formats of devices, refer to the following.

📖GT Designer3 (GOT3000) Screen Design Manual

○: Available

×: Not available

Device name		Device No. representation	Setting range	Specifications of EG devices*1	
				Assignment to EG devices	Access using a client
4	Holding register	Decimal	00001 to 65536	○	○
3	Input register	Decimal	00001 to 65536	○	○

*1 For the devices assigned to EG devices (gateway devices) and the compatible clients, refer to the following.
📖GT Designer3 (GOT3000) Screen Design Manual

54.2.5 Availability of writing/reading data to/from word devices ([MODBUS Client(GOT:Server)])

The following shows the availability of writing/reading data to/from word devices by device type.

R/W: Both read and write

R/-: Read only

-/W: Write only

-/-: No read/write access

Device name	Device type			
	Word (16 bits)	Double-word (32 bits)	Quad-word (64 bits)	Bit of word data
4	R/W	R/W	-/-	R/W
3	R/W	R/W	-/-	R/W

54.2.6 Function code ([MODBUS Client(GOT:Server)])

The GOT supports the following function codes.

Function code	Function	Number of accessible devices per message [Unit: point(s)]	
		MODBUS/RTU	MODBUS/TCP
0x01	Read Coils	1 to 2000	1 to 2000
0x02	Read Discrete Inputs	1 to 2000	1 to 2000
0x03	Read Holding Registers	1 to 125	1 to 125
0x04	Read Input Registers	1 to 125	1 to 125
0x05	Write Single Coil	1	1
0x06	Write Single Register	1	1
0x08*1	Diagnostics	—	—
0x0F	Write Multiple Coils	1 to 1968	1 to 1968
0x10	Write Multiple Register	1 to 123	1 to 123

*1 Only available for the loopback (sub function code 0x0000).

PART 20 CLPA

55 SLMP connection

56 Settable device range

57 CC-Link IE Field Network Basic connection

58 Settable device range

55 SLMP connection

☞ Page 2441 Connectable devices
☞ Page 2441 System configuration
☞ Page 2443 GOT side settings
☞ Page 2448 SLMP equipment side settings

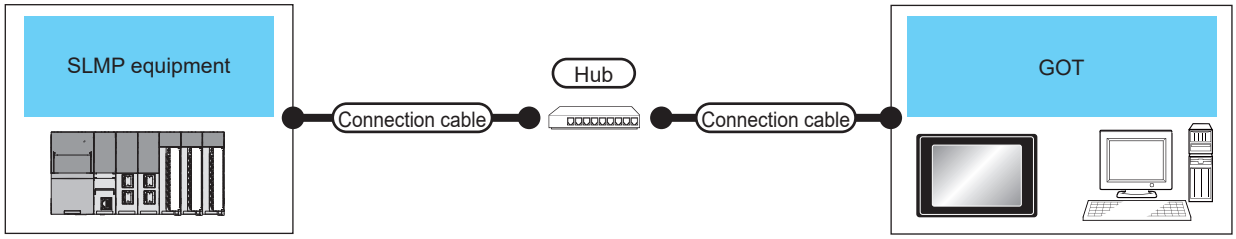
55.1 Connectable devices

GOT3000 series products support the client function of SLMP communication, the open FA network.
Thus, the GOT can communicate with each SLMP server equipment.

Precautions

When using our products used in MC protocol for SLMP protocol, there is a difference between the corresponding commands.
Refer to the following manual and check if they are convertible.
📖SLMP Reference Manual

55.2 System configuration



For details on the connection cables and the maximum segment length, refer to the following.
☞ Page 2442 Connection cable
☞ Page 2442 Maximum segment length
For details on the maximum number of connected devices, refer to the following.
☞ Page 2442 Maximum number of connected devices

Controller	Communication type	Connection cable	External device	Connection cable	GOT*1	
					Interface	Model
SLMP equipment*2	Ethernet	Twisted pair cable	Hub	Twisted pair cable	Built-in Ethernet interface of GOT	GT37 SoftGOT3000
					Ethernet interface of personal computer	GT37 SoftGOT3000

*1 For connection with an equipment that meets the 10BASE (-T/2/5) standard, use the switching hub and operate in an environment where 10 Mbps, 100 Mbps, and 1 Gbps can be mixed.
*2 After replacing an external device or an SLMP compatible device due to failure and so on, the devices may not communicate by changing the MAC address. (When replaced with a device that has the same IP address)
When a device in the Ethernet network is replaced, restart all devices in the network.

55.2.1 Connection cable

Use a connection cable that meets the following standards.

Standard	Category
10BASE-T	Shielded twisted pair cable (STP) or unshielded twisted pair cable (UTP) of category 3 or higher
100BASE-TX	Shielded twisted pair cable (STP) or unshielded twisted pair cable (UTP) of category 5 or higher
1000BASE-T	Shielded twisted pair cable (STP) or unshielded twisted pair cable (UTP) of category 5e or higher

Connect the GOT to the SLMP equipment via a hub.

Use cables, connectors, and hubs that meet the IEEE802.3 10BASE-T/100BASE-TX/1000BASE-T standards.

For the twisted pair cable, use a straight cable.

55.2.2 Maximum segment length

The maximum segment length (length between a hub and a node) is 100 m.

The maximum length depends on the Ethernet equipment used.

The following shows the number of connectable hubs when a repeater hub is used.

- 10BASE-T: Up to 4 for a cascade connection (within 500 m)
- 100BASE-TX: Up to 2 for a cascade connection (within 205 m)
- 1000BASE-T: The number differs depending on the hub to be used.

When switching hubs are used, there is no theoretical limit to the number of cascade connections between switching hubs.

For the limit, contact the switching hub manufacturer.

55.2.3 Maximum number of connected devices

Up to 128 CPU modules can be connected to channels No. 1 to No. 4 of one GOT. (16 or less recommended)

The following shows the number of connectable controllers per GOT channel and the number of GOTs connectable to one controller.

Controller			GOT	
Model	Number of GOTs connectable to one SLMP equipment		Model	Number of connectable controllers per GOT channel
	UDP	TCP		
SLMP equipment	Depends on the SLMP equipment used.*1	Depends on the SLMP equipment used.*1	GT37 SoftGOT3000	128

*1 For details, refer to the SLMP equipment manual.

55.3 GOT side settings

☞ Page 2443 [GOT Ethernet Setting]
☞ Page 2444 [Controller Setting]

55.3.1 [GOT Ethernet Setting]

Set the GOT Ethernet interface in GT Designer3.

Item	Description
[GOT IP Address Setting]	Set the IP address of the GOT.
[GOT Ethernet Common Setting]	Set the default gateway and other common items for GOT Ethernet interfaces.
[IP filter Setting]	The GOT allows or blocks access from IP addresses specified in the filtering list.

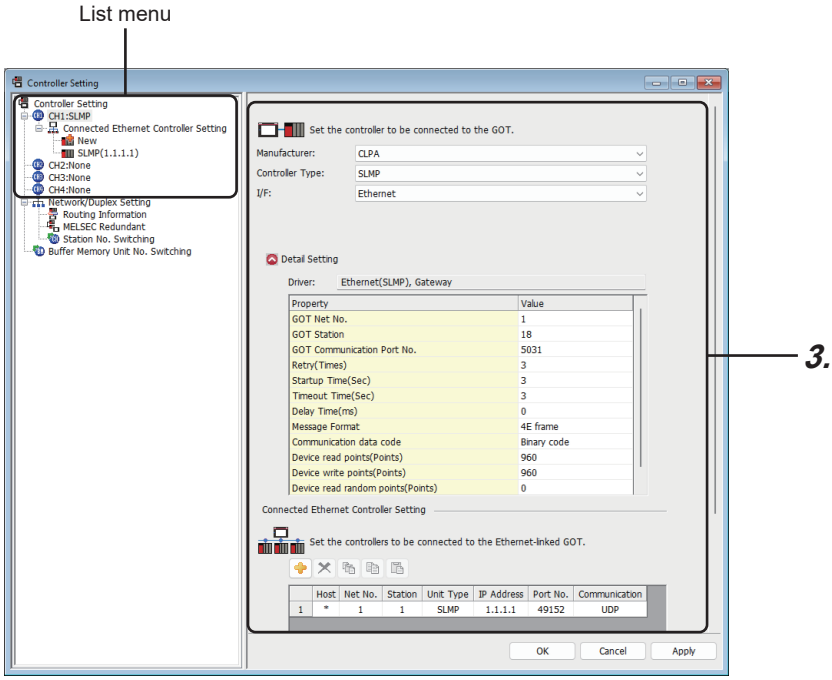
For details on the setting, refer to the following.
📖GT Designer3 (GOT3000) Screen Design Manual
Set the GT SoftGOT3000 Ethernet interface on the personal computer.

Precautions

Do not use 0 and 255 at the end of an IP address.
(Numbers of *.*.*.0 and *.*.*.255 are used by the system.)
The GOT may not monitor the controller correctly with the above numbers.
Consult with the administrator of the network before setting an IP address to the GOT.

55.3.2 [Controller Setting]

Set the channel of the connected controller.



Operating procedure

1. Select [Common] → [Controller Setting] from the menu.

2. In the [Controller Setting] window, select the channel number to be used from the list menu.

3. Set the following items.

Item	Description
[Manufacturer]	[CLPA]
[Controller Type]	[SLMP]
[I/F]	[Ethernet]
[Detail Setting]	Configure the settings according to the usage environment. ☞ Page 2445 [Detail Setting]
[Connected Ethernet Controller Setting]	Configure the settings according to the controller to be connected. ☞ Page 2446 [Connected Ethernet Controller Setting]

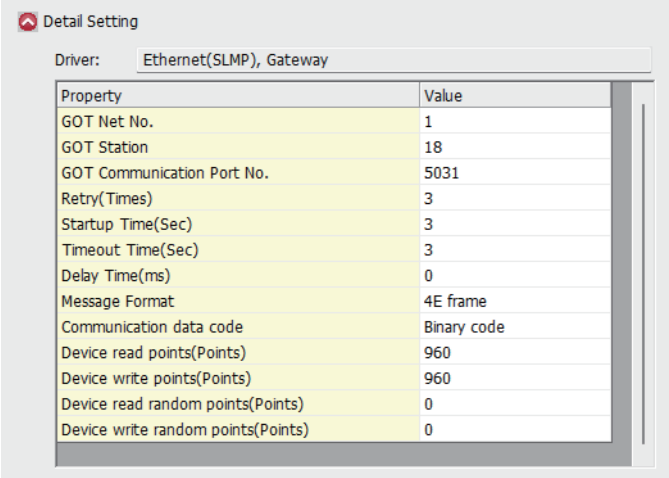
4. When you have completed the settings, click the [OK] button.

Point

The controller settings can be configured and checked in [I/F Communication Setting].
For details, refer to the following.
📖GT Designer3 (GOT3000) Screen Design Manual

[Detail Setting]

Configure the settings according to the usage environment.



Item	Description	Range
[Driver]	This item appears when communication drivers are selectable according to the settings of [Controller Type] and [I/F].	[Ethernet(SLMP), Gateway]
[GOT Net No].	Set the network number of the GOT.	[1] to [239]
[GOT Station]*1	Set the station number of the GOT.	[1] to [120]
[GOT Communication Port No.]	Set the GOT port number for connection with the Ethernet module.	[1024] to [5010], [5014] to [49152], [49171] to [65534]
[Retry]	Set the number of retries to be performed when a communication timeout occurs. When receiving no response after retries, the communication times out.	[0] times to [5] times
[Startup Time]	Set the time period from the GOT startup until the start of communication with the PLC CPU.	[3] seconds to [255] seconds
[Timeout Time]	Set the time period for a communication to time out.	[1] second to [90] seconds
[Delay Time]	Set the delay time for reducing the load of the network and destination PLC.	[0] ms to [10000] ms
[Message Format]	Set the message format.	[QnA compatible 3E frame] or [4E frame]
[Communication data code]	Set the communication data code.	[ASCII code] or [Binary code]
[Device read points]*2	Set the device read points.	[1] to [960] points
[Device write points]*2	Set the device write points.	[1] to [960] points
[Device read random points]*2	Device read random points	[0] to [192] points
[Device write random points]*2	Device write random points	[0] to [160] points

*1 Set values not set for [Station] in [Connected Ethernet Controller Setting].
☞ Page 2446 [Connected Ethernet Controller Setting]

*2 Pay attention to the following items for read/write points.
Set the points to be processed at one-time communication.
The point is in word device units. The point is to be 16 times of the set value for the bit device.
The points could be less than the set value when UDP protocol or ASCII code are used.

Point

• Controller settings using the GT37 utility

The controller settings can be changed in [Communication Settings] of the GT37 utility after writing [Communication Settings] of project data to GT37.

For details on the GT37 utility, refer to the following manual.

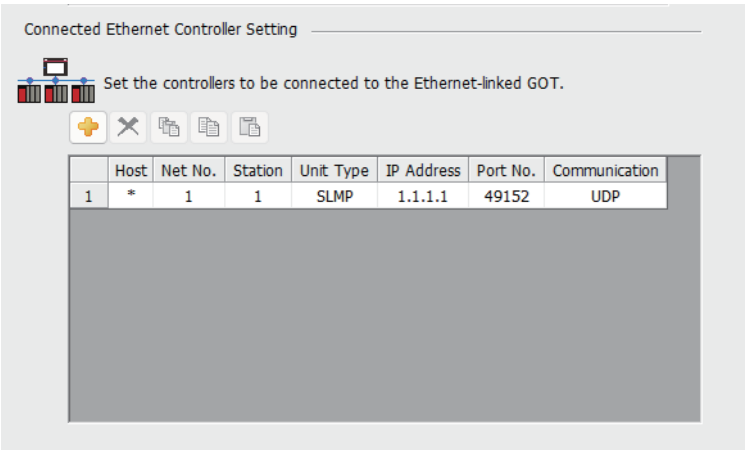
📖GOT3000 Series User's Manual (Utility & Maintenance Functions)

• Priority of the settings in [Controller Setting]

When the settings are configured in GT Designer3 or in the GT37 utility, the latest settings are effective.

[Connected Ethernet Controller Setting]

Set the controller to be connected to the GOT by Ethernet.



Item	Description	Range
[Host]	The host is displayed. It refers to a station that can be connected without setting a station number. The host is indicated with an asterisk (*).	—
[Net No.]	Set the network number of the SLMP equipment.	[1] to [239]
[Station No.]*1	Set the station number of the SLMP equipment.	[1] to [120], or [125]*2
[Unit Type]	Select the model of the SLMP equipment.	[SLMP]
[IP Address]	Set the IP address of the SLMP equipment.	[0.0.0.0] to [255.255.255.255]
[Port No.]	Set the port number of the SLMP equipment.	[1] to [65535]
[Communication]	Set the format of communication with the SLMP equipment.	[UDP] or [TCP]

*1 Set values not set for [GOT Station] in [Detail Setting].
☞ Page 2445 [Detail Setting]

*2 Set 125 to [Station] to access the master station of the CC-Link IE TSN network.

Point

• Changing the host station on the GOT

The host can be changed by the GOT module utility.

For details on settings, refer to the following.

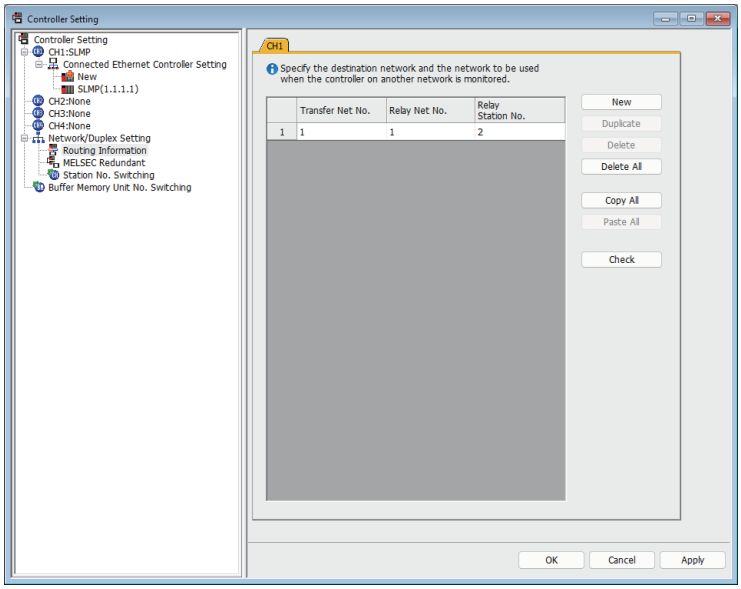
📖GOT3000 Series User's Manual (Utility & Maintenance Functions)

Routing parameter settings

Up to 64 settings can be configured for [Transfer Net No.].
However, the same number cannot be set in [Transfer Net No.] twice or more (multiple times).
The GOT (host station) can access 64 different networks specified under [Transfer Net No.].

Point

Routing parameter settings
When communicating within the host network, routing parameter settings are not required.
For details on routing parameters, refer to the following manual.
Manuals of SLMP equipment



Item	Range
[Transfer Net No.]	[1] to [239]
[Relay Net No.]	[1] to [239]
[Relay Station No.]	[0] to [120], or [125] *1

*1 When 125 is set to [Relay Station No.], the master station of CC-Link IE TSN can be accessed.

Point

Routing parameter settings for the relay station
Routing parameter settings are also necessary for the relay station.
For the setting, refer to the following.
Manuals of SLMP equipment

55.4 SLMP equipment side settings

Refer to the following manual for the setting of the SLMP equipment.

📖Manuals of SLMP equipment

Precautions

When the message format setting is not consistent with the communication frame type, monitoring may not be performed properly.

Set the message format according to the communication frame type of the SLMP-compatible equipment.

- ST type: QnA compatible 3E frame
- MT type: 4E frame

For details on the communication frame of the SLMP-compatible equipment, refer to the following.

📖Manuals of SLMP equipment

For setting the message format, refer to the following.

☞ Page 2445 [Detail Setting]

56 Settable device range

This chapter describes the range of devices settable in GT Designer3.
The settable range varies with the selection for [Controller Type] in the [Controller Setting] window.
Configure the device setting according to the specifications of the controller to be used.
Device specifications differ depending on the controller model even among the controllers of the same series.
If a nonexistent device or a device number out of the range is set for an object, other objects for which correct devices are set may not be monitored.
☞ Page 2450 CLPA ([SLMP])

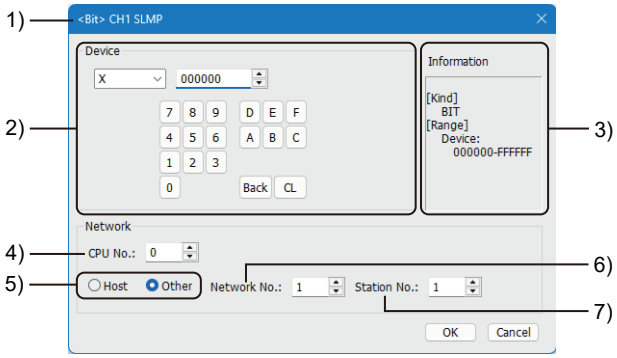
56.1 CLPA ([SLMP])

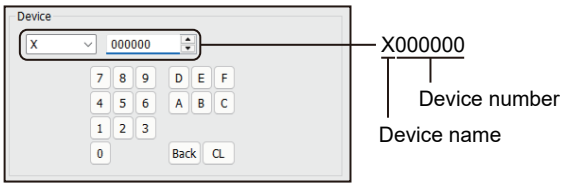
GT37 SoftGOT3000

Item	Reference
Device setting dialog	☞ Page 2450 Device setting dialog ([SLMP])
Specifications of bit devices	☞ Page 2451 Monitoring-supported bit devices ([SLMP])
	☞ Page 2452 Availability of writing/reading data to/from bit devices ([SLMP])
Specifications of word devices	☞ Page 2453 Monitoring-supported word devices ([SLMP])
	☞ Page 2454 Availability of writing/reading data to/from word devices ([SLMP])

56.1.1 Device setting dialog ([SLMP])

Set a device to be monitored.



Item		Description
1)	Title	Data type and channel number of the device to be set
2)	[Device]	Set the device name and device number. If a bit number needs to be specified, the setting item is displayed. Example) Setting of X000000 
3)	[Information]	Displays the setting range of each setting item according to the selected device.
4)	[CPU No.]	Set the CPU number of the controller.
5)	Station type specification	Select the station type (host or other) for the controller to be monitored. • [Host]: The controller to be monitored is the host station. • [Other]: The controller to be monitored is not the host station.
6)	[Network No.]	This item appears when [Other] is selected for the station type. Set the network number.
7)	[Station No.]	This item appears when [Other] is selected for the station type. Specify a station number.

56.1.2 Monitoring-supported bit devices ([SLMP])

The following table shows monitoring-supported bit devices.

To check whether writing/reading data to/from each device is available, refer to the following.

☞ Page 2452 Availability of writing/reading data to/from bit devices ([SLMP])

For the formats of devices, refer to the following.

📖GT Designer3 (GOT3000) Screen Design Manual

○: Available

×: Not available

Device name		Device No. representation	Setting range	Specifications of EG devices*1	
				Assignment to EG devices	Access using a client
X	Input	Hexadecimal	000000 to FFFFFF	○	○
Y	Output	Hexadecimal	000000 to FFFFFF	○	○
B	Link relay	Hexadecimal	000000 to FFFFFF	○	○
M	Internal relay	Decimal	0 to 16777215	○	○
L	Latch relay	Decimal	0 to 16777215	○	○
F	Annunciator	Decimal	0 to 16777215	○	○
V	Edge relay	Decimal	0 to 16777215	○	○
TC	Timer Coil	Decimal	0 to 16777215	○	○ (Not usable as word data)
TS	Timer contact	Decimal	0 to 16777215	○	○ (Not usable as word data)
CC	Counter Coil	Decimal	0 to 16777215	○	○ (Not usable as word data)
CS	Counter contact	Decimal	0 to 16777215	○	○ (Not usable as word data)
STC	Retentive timer Coil	Decimal	0 to 16777215	○	○ (Not usable as word data)
STS	Retentive timer Contact	Decimal	0 to 16777215	○	○ (Not usable as word data)
SB	Link special relay	Hexadecimal	000000 to FFFFFF	○	○
SM	Special relay	Decimal	0 to 16777215	○	○
DX	Direct access input	Hexadecimal	000000 to FFFFFF	○	○
DY	Direct access output	Hexadecimal	000000 to FFFFFF	○	○
JnX	Link input (link direct device)	Hexadecimal	J(Network No.)-X(Device) Notation example: J1-X000000 • Network No. (decimal): 1 to 239 • Device (hexadecimal): 000000 to FFFFFF	○	○
JnY	Link output (link direct device)	Hexadecimal	J(Network No.)-Y(Device) Notation example: J1-Y000000 • Network No. (decimal): 1 to 239 • Device (hexadecimal): 000000 to FFFFFF	○	○
JnB	Link relay (link direct device)	Hexadecimal	J(Network No.)-B(Device) Notation example: J1-B000000 • Network No. (decimal): 1 to 239 • Device (hexadecimal): 000000 to FFFFFF	○	○

Device name		Device No. representation	Setting range	Specifications of EG devices*1	
				Assignment to EG devices	Access using a client
JnSB	Link special relay (link direct device)	Hexadecimal	J(Network No.)-SB(Device) Notation example: J1-SB000000 • Network No. (decimal): 1 to 239 • Device (hexadecimal): 000000 to FFFFFF	○	○

*1 For the devices assigned to EG devices (gateway devices) and the compatible clients, refer to the following.
GT Designer3 (GOT3000) Screen Design Manual

56.1.3 Availability of writing/reading data to/from bit devices ([SLMP])

The following shows the availability of writing/reading data to/from bit devices by device type.

When the device type is other than the bit type, set the device No. in multiples of 16.

R/W: Both read and write

R/-: Read only

-/W: Write only

-/-: No read/write access

Device name	Device type				
	Bit	Byte (8 bits)	Word (16 bits)	Double-word (32 bits)	Quad-word (64 bits)
X	R/W	-/-	R/W	R/W	-/-
Y	R/W	-/-	R/W	R/W	-/-
B	R/W	-/-	R/W	R/W	-/-
M	R/W	-/-	R/W	R/W	-/-
L	R/W	-/-	R/W	R/W	-/-
F	R/W	-/-	R/W	R/W	-/-
V	R/W	-/-	R/W	R/W	-/-
TC	R/W	-/-	-/-	-/-	-/-
TS	R/W	-/-	-/-	-/-	-/-
CC	R/W	-/-	-/-	-/-	-/-
CS	R/W	-/-	-/-	-/-	-/-
STC	R/W	-/-	-/-	-/-	-/-
STS	R/W	-/-	-/-	-/-	-/-
SB	R/W	-/-	R/W	R/W	-/-
SM	R/W	-/-	R/W	R/W	-/-
DX	R/W	-/-	R/W	R/W	-/-
DY	R/W	-/-	R/W	R/W	-/-
JnX	R/W	-/-	R/W	R/W	-/-
JnY	R/W	-/-	R/W	R/W	-/-
JnB	R/W	-/-	R/W	R/W	-/-
JnSB	R/W	-/-	R/W	R/W	-/-

56.1.4 Monitoring-supported word devices ([SLMP])

The following table shows monitoring-supported word devices.

To check whether writing/reading data to/from each device is available, refer to the following.

☞ Page 2454 Availability of writing/reading data to/from word devices ([SLMP])

For the formats of devices, refer to the following.

📖GT Designer3 (GOT3000) Screen Design Manual

○: Available

×: Not available

Device name		Device No. representation	Setting range	Specifications of EG devices*1	
				Assignment to EG devices	Access using a client
TN	Timer (current value)	Decimal	0 to 16777215	○	○ (Not usable as bit data)
CN	Counter (current value)	Decimal	0 to 16777215	○	○ (Not usable as bit data)
STN	Retentive timer (current value)	Decimal	0 to 16777215	○	○ (Not usable as bit data)
D	Data register	Decimal	0 to 16777215	○	○
SD	Special register	Decimal	0 to 16777215	○	○
W	Link register	Hexadecimal	000000 to FFFFFF	○	○
SW	Link special register	Hexadecimal	000000 to FFFFFF	○	○
R	File register (Block switching method)	Decimal	0 to 16777215	○	○
ZR	File register (Serial number access method)	Hexadecimal	000000 to FFFFFF	○	○
Z	Index register	Decimal	0 to 16777215	○	○
G	Module access device (buffer memory)	Decimal	U(Unit No.)-G(Device) Notation example: UFF-G0 • Unit No.(hexadecimal): 00 to FF • Device (decimal): 0 to 16777215	○	○
U3E0G	CPU buffer memory	Decimal	U3E0-G(Device) Notation example: U3E0-G0 • Device (decimal): 0 to 16777215	○	○
U3E1G	CPU buffer memory	Decimal	U3E1-G(Device) Notation example: U3E1-G0 • Device (decimal): 0 to 16777215	○	○
U3E2G	CPU buffer memory	Decimal	U3E2-G(Device) Notation example: U3E2-G0 • Device (decimal): 0 to 16777215	○	○
U3E3G	CPU buffer memory	Decimal	U3E3-G(Device) Notation example: U3E3-G0 • Device (decimal): 0 to 16777215	○	○
U3E0HG	Fixed-cycle area of the CPU buffer memory (multiple CPU high speed transmission memory)	Decimal	U3E0-HG(Device) Notation example: U3E0-HG0 • Device (decimal): 0 to 16777215	○	○
U3E1HG	Fixed-cycle area of the CPU buffer memory (multiple CPU high speed transmission memory)	Decimal	U3E1-HG(Device) Notation example: U3E1-HG0 • Device (decimal): 0 to 16777215	○	○
U3E2HG	Fixed-cycle area of the CPU buffer memory (multiple CPU high speed transmission memory)	Decimal	U3E2-HG(Device) Notation example: U3E2-HG0 • Device (decimal): 0 to 16777215	○	○
U3E3HG	Fixed-cycle area of the CPU buffer memory (multiple CPU high speed transmission memory)	Decimal	U3E3-HG(Device) Notation example: U3E3-HG0 • Device (decimal): 0 to 16777215	○	○

Device name		Device No. representation	Setting range	Specifications of EG devices*1	
				Assignment to EG devices	Access using a client
JnW	Link register (link direct device)	Hexadecimal	J(Network No.)-W(Device) Notation example: J1-W000000 • Network No. (decimal): 1 to 239 • Device (hexadecimal): 000000 to FFFFFF	○	○
JnSW	Link special register (link direct device)	Hexadecimal	J(Network No.)-SW(Device) Notation example: J1-SW000000 • Network No. (decimal): 1 to 239 • Device (hexadecimal): 000000 to FFFFFF	○	○
RD	Refresh data register	Decimal	0 to 4294967295	○	○

*1 For the devices assigned to EG devices (gateway devices) and the compatible clients, refer to the following.
GT Designer3 (GOT3000) Screen Design Manual

56.1.5 Availability of writing/reading data to/from word devices ([SLMP])

The following shows the availability of writing/reading data to/from word devices by device type.

R/W: Both read and write

R/-: Read only

-/W: Write only

-/-: No read/write access

Device name	Device type			
	Word (16 bits)	Double-word (32 bits)	Quad-word (64 bits)	Bit of word data
TN	R/W	R/W	-/-	-/-
CN	R/W	R/W	-/-	-/-
STN	R/W	R/W	-/-	-/-
D*1	R/W	R/W	-/-	R/W
SD*1	R/W	R/W	-/-	R/W
W*1	R/W	R/W	-/-	R/W
SW*1	R/W	R/W	-/-	R/W
R*1	R/W	R/W	-/-	R/W
ZR*1	R/W	R/W	-/-	R/W
Z	R/W	R/W	-/-	-/-
G	R/W	R/W	-/-	R/W
U3E0G	R/W	R/W	-/-	R/W
U3E1G	R/W	R/W	-/-	R/W
U3E2G	R/W	R/W	-/-	R/W
U3E3G	R/W	R/W	-/-	R/W
U3E0HG	R/W	R/W	-/-	R/W
U3E1HG	R/W	R/W	-/-	R/W
U3E2HG	R/W	R/W	-/-	R/W
U3E3HG	R/W	R/W	-/-	R/W
JnW	R/W	R/W	-/-	R/W
JnSW	R/W	R/W	-/-	R/W
RD	R/W	R/W	-/-	R/W

*1 When bit specification of word device is performed, the GOT reads the value from a device and then write a value to the device.
Do not change the device value with a sequence program until the GOT completes writing a value to the device.

57 CC-Link IE Field Network Basic connection

☞ Page 2455 Connectable devices
☞ Page 2456 System configuration
☞ Page 2459 GOT side settings
☞ Page 2462 Master station side settings
☞ Page 2463 Troubleshooting

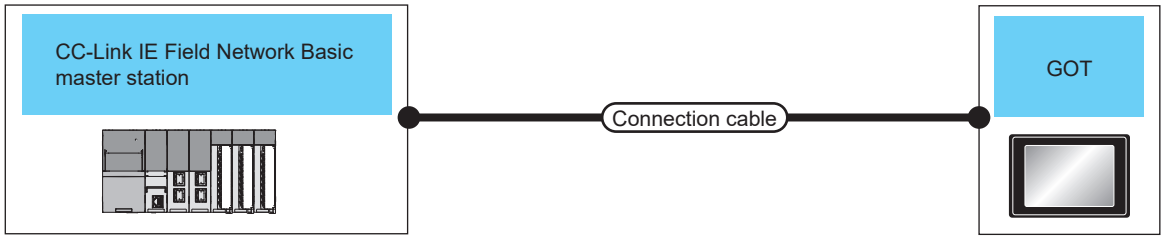
57.1 Connectable devices

The GOT3000 series products support the remote station function of the CC-Link IE Field Network Basic communication, the open FA network.
Thus, the GOT can communicate with each CC-Link IE Field Network Basic master station.
For the CC-Link IE Field Network Basic master stations validated by Mitsubishi Electric Corporation, refer to the following.
📖List of CC-Link IE Field Network Basic-compatible Equipment Validated to Operate with the GOT3000 Series (GOT-A-0237)
For Technical Bulletins, go to the Mitsubishi Electric Factory Automation Global Website.
www.MitsubishiElectric.com/fa

57.2 System configuration

☞ Page 2456 When connecting to one master station
☞ Page 2457 When multiple GOTs (remote stations) are connected to one master station

57.2.1 When connecting to one master station



For details on the connection cables and the maximum segment length, refer to the following.

☞ Page 2456 Connection cable
☞ Page 2456 Maximum segment length

For details on the maximum number of connected devices, refer to the following.

☞ Page 2457 Maximum number of connected devices

Controller	Connection cable	GOT (remote station)	
		Interface	Model
CC-Link IE Field Network Basic master station	Twisted pair cable	Built-in Ethernet interface of GOT	GT37 SoftGOT3000

Connection cable

Use a connection cable that meets the following standards.

Standard	Category
10BASE-T	Shielded twisted pair cable (STP) or unshielded twisted pair cable (UTP) of category 3 or higher
100BASE-TX	Shielded twisted pair cable (STP) or unshielded twisted pair cable (UTP) of category 5 or higher
1000BASE-T	Shielded twisted pair cable (STP) or unshielded twisted pair cable (UTP) of category 5e or higher

Use cables, connectors, and hubs that meet the IEEE802.3 10BASE-T/100BASE-TX/1000BASE-T standards.

Maximum segment length

The maximum segment length (length between a hub and a node) is 100 m.

The maximum length depends on the Ethernet equipment used.

The following shows the number of connectable hubs when a repeater hub is used.

- 10BASE-T: Up to 4 for a cascade connection (within 500 m)
- 100BASE-TX: Up to 2 for a cascade connection (within 205 m)
- 1000BASE-T: The number differs depending on the hub to be used.

When switching hubs are used, there is no theoretical limit to the number of cascade connections between switching hubs. For the limit, contact the switching hub manufacturer.

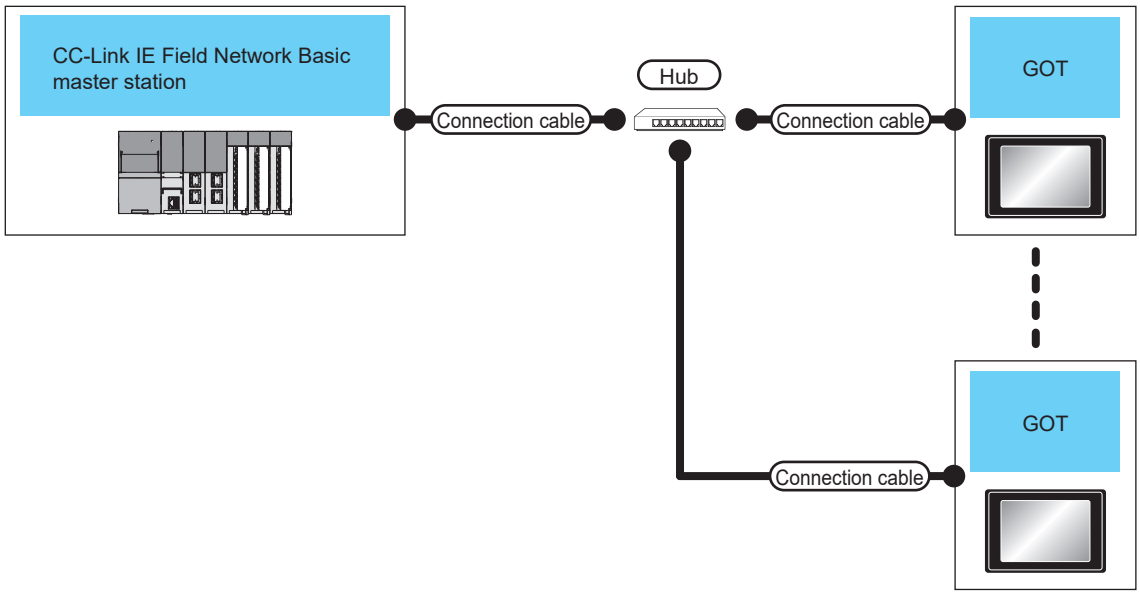
Maximum number of connected devices

Up to 128 CPU modules can be connected to channels No. 1 to No. 4 of one GOT. (16 or less recommended)

The following shows the number of connectable controllers per GOT channel and the number of GOTs connectable to one controller.

Controller		GOT	
Model	**Number of GOTs connectable to one master station**	**Model**	**Number of connectable controllers per GOT channel**
CC-Link IE Field Network Basic master station	1	GT37 SoftGOT3000	1

57.2.2 When multiple GOTs (remote stations) are connected to one master station



For details on the connection cables and the maximum segment length, refer to the following.

☞ Page 2458 Connection cable
☞ Page 2458 Maximum segment length

For details on the maximum number of connected devices, refer to the following.

☞ Page 2458 Maximum number of connected devices

Controller	Communication type	Connection cable	External device	Connection cable	GOT (remote station)	
					Interface	**Model**
CC-Link IE Field Network Basic master station	Ethernet*1	Twisted pair cable	Hub*2	Twisted pair cable	Built-in Ethernet interface of GOT	GT37 SoftGOT3000

*1 CC-Link IE Field Network Basic communication does not support connection beyond routers.

*2 Use hubs that satisfy the following conditions.
Conform to the IEEE 802.3 standard.
Include Auto MDI/MDI-X.
Include an automatic negotiation function.
Switching hub (layer 2 switch) (Do not use repeater hubs.)

Connection cable

Use a connection cable that meets the following standards.

Standard	Category
10BASE-T	Shielded twisted pair cable (STP) or unshielded twisted pair cable (UTP) of category 3 or higher
100BASE-TX	Shielded twisted pair cable (STP) or unshielded twisted pair cable (UTP) of category 5 or higher
1000BASE-T	Shielded twisted pair cable (STP) or unshielded twisted pair cable (UTP) of category 5e or higher

Connect the GOT to the CC-Link IE Field Network Basic master station via a hub.
Use cables, connectors, and hubs that meet the IEEE802.3 10BASE-T/100BASE-TX/1000BASE-T standards.
For the twisted pair cable, use a straight cable.

Maximum segment length

The maximum segment length (length between a hub and a node) is 100 m.
The maximum length depends on the Ethernet equipment used.
The following shows the number of connectable hubs when a repeater hub is used.

- 10BASE-T: Up to 4 for a cascade connection (within 500 m)
- 100BASE-TX: Up to 2 for a cascade connection (within 205 m)
- 1000BASE-T: The number differs depending on the hub to be used.

When switching hubs are used, there is no theoretical limit to the number of cascade connections between switching hubs.
For the limit, contact the switching hub manufacturer.

Maximum number of connected devices

Up to 128 CPU modules can be connected to channels No. 1 to No. 4 of one GOT. (16 or less recommended)
The following shows the number of connectable controllers per GOT channel and the number of GOTs connectable to one controller.

Controller		GOT	
Model	Number of GOTs connectable to one master station	Model	Number of connectable controllers per GOT channel
CC-Link IE Field Network Basic master station	64	GT37 SoftGOT3000	1

57.3 GOT side settings

☞ Page 2459 [GOT Ethernet Setting]
☞ Page 2460 [Controller Setting]

57.3.1 [GOT Ethernet Setting]

Set the GOT Ethernet interface in GT Designer3.

Item	Description
[GOT IP Address Setting]	Set the IP address of the GOT.
[GOT Ethernet Common Setting]	Set the default gateway and other common items for GOT Ethernet interfaces.
[IP filter Setting]	The GOT allows or blocks access from IP addresses specified in the filtering list.

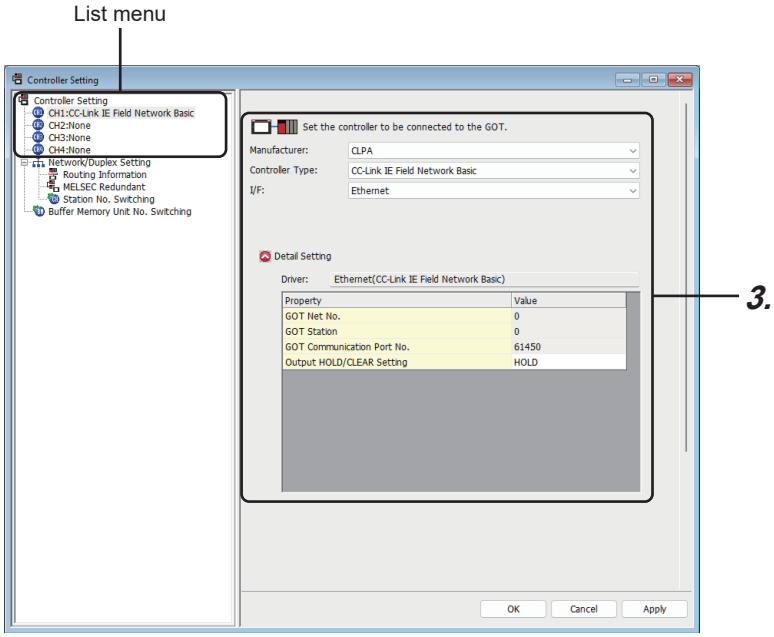
For details on the setting, refer to the following.
📖GT Designer3 (GOT3000) Screen Design Manual

Precautions

Do not use 0 and 255 at the end of an IP address.
(Numbers of *.*.*.0 and *.*.*.255 are used by the system.)
The GOT may not monitor the controller correctly with the above numbers.
Consult with the administrator of the network before setting an IP address to the GOT.

57.3.2 [Controller Setting]

Set the channel of the connected controller.



Operating procedure

1. Select [Common] → [Controller Setting] from the menu.

2. In the [Controller Setting] window, select the channel number to be used from the list menu.

3. Set the following items.

Item	Description
[Manufacturer]	[CLPA]
[Controller Type]	[CC-Link IE Field Network Basic]
[I/F]	[Ethernet]
[Detail Setting]	Configure the settings according to the usage environment. ☞ Page 2461 [Detail Setting]

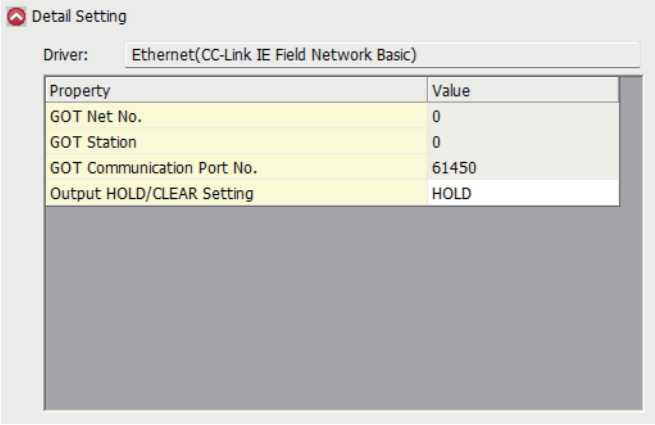
4. When you have completed the settings, click the [OK] button.

Point

The controller settings can be configured and checked in [I/F Communication Setting].
For details, refer to the following.
📖GT Designer3 (GOT3000) Screen Design Manual

[Detail Setting]

Configure the settings according to the usage environment.



Item	Description	Range
[Driver]	This item appears when communication drivers are selectable according to the settings of [Controller Type] and [I/F].	[Ethernet(CC-Link IE Field Network Basic)]
[GOT Net No.]	Not used	—
[GOT Station]	Not used	—
[GOT Communication Port No.]	Displays the port number that is used by cyclic transmission of CC-Link IE Field Network Basic for the GOT.	[61450]
[Output HOLD/CLEAR Setting]	Select whether the GOT holds or clears its device value (output data of the master and remote stations(GOT)) when the master station stops running.	[HOLD] or [CLEAR]

Point

• Controller settings using the GOT utility

The controller settings can be changed in [Communication Settings] of the GOT utility after writing [Communication Settings] of project data to GOT.

For details on the GOT utility, refer to the following manual.

📖GOT3000 Series User's Manual (Utility & Maintenance Functions)

• Priority of the settings in [Controller Setting]

When the settings are configured in GT Designer3 or in the GOT utility, the latest settings are effective.

Precautions

For CC-Link IE Field Network Basic, the port number [61451] is used as a port for device detection. When the port number [61451] is used for other communication functions, CC-Link IE Field Network Basic connection cannot be used.

57.4 Master station side settings

Refer to the following manual for the setting of the SLMP equipment.

Manuals of SLMP equipment

Precautions

The GOT carries out many object functions as well as CC-Link IE Field Network Basic connection so that the response performance for the master station may deteriorate.
If this occurs, adjust the link scan time or timeout time at the master station side.
The recommended setting value is 50 ms or more.

57.5 Troubleshooting

☞ Page 2463 GOT internal error
☞ Page 2463 Network error

57.5.1 GOT internal error

In CC-Link IE Field Network Basic connection, contents of the message display, causes, and countermeasures when an error occurs in the GOT are described below.

Error code	Contents of the message display	Cause	Countermeasures
322*1	The specified device No. is out of range. Confirm the available device range.	• A device read error occurs. • The GOT accesses the device that is out of range specified by the master station.	To take corrective actions, check the range that is allocated to the master station and range of the monitoring target device.
402*1	The specified device No. is out of range. Confirm the available device range.	When the GOT is turned on, the master station is powered off.	Start the master station, and then turn on the GOT.
496*2	Settings for the GOT is not satisfied operation conditions of the communication driver.	• Unusable IP address in CC-Link IE Field Network Basic is set. • The port number 61451 that is used in CC-Link IE Field Network Basic is used by other functions.	• Set the IP address within the range of 0.0.0.1 to 223.255.255.254. • When setting the IP address and subnet mask to each Ethernet I/F, set the network differently from each other. • Change the port number of the function that uses the port number 61451.

*1 May occur even if CC-Link IE Field Network Basic connection is not used.
*2 Occurs only when CC-Link IE Field Network Basic connection is used.

57.5.2 Network error

In CC-Link IE Field Network Basic connection, contents of the message display, causes, and countermeasures for the following network errors are described below.

Error code	Contents of the message display	Cause	Countermeasures
854*1	The master station is duplicated in the same network.	The master station is duplicated in the same network.	Correct it so that one master station is in the same network.
855*1	Parallel-off status	Waiting for the request from the master station	Confirm the status of the master station.

*1 Occurs only when CC-Link IE Field Network Basic connection is used.

58 Settable device range

This chapter describes the range of devices settable in GT Designer3.
The settable range varies with the selection for [Controller Type] in the [Controller Setting] window.
Configure the device setting according to the specifications of the controller to be used.
Device specifications differ depending on the controller model even among the controllers of the same series.
If a nonexistent device or a device number out of the range is set for an object, other objects for which correct devices are set may not be monitored.
☞ Page 2464 CLPA ([CC-Link IE Field Network Basic])

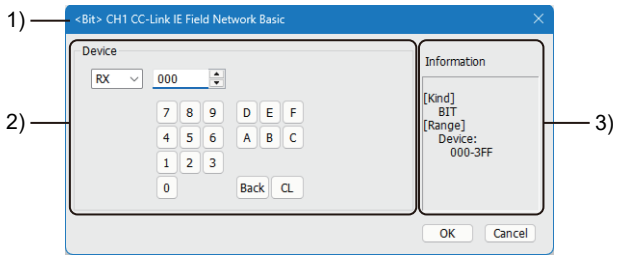
58.1 CLPA ([CC-Link IE Field Network Basic])

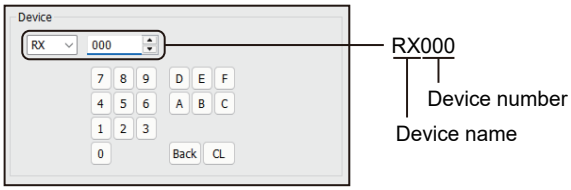
GT37 SoftGOT3000

Item	Reference
Device setting dialog	☞ Page 2464 Device setting dialog ([CC-Link IE Field Network Basic])
Specifications of bit devices	☞ Page 2465 Monitoring-supported bit devices ([CC-Link IE Field Network Basic])
	☞ Page 2465 Availability of writing/reading data to/from bit devices ([CC-Link IE Field Network Basic])
Specifications of word devices	☞ Page 2466 Monitoring-supported word devices ([CC-Link IE Field Network Basic])
	☞ Page 2466 Availability of writing/reading data to/from word devices ([CC-Link IE Field Network Basic])
Remote device setting of the GOT (remote station)	☞ Page 2467 Remote device setting of the GOT (remote station) ([CC-Link IE Field Network Basic])

58.1.1 Device setting dialog ([CC-Link IE Field Network Basic])

Set a device to be monitored.



Item		Description
1)	Title	Data type and channel number of the device to be set
2)	[Device]	Set the device name and device number. If a bit number needs to be specified, the setting item is displayed. Example) Setting of RX000 
3)	[Information]	Displays the setting range of each setting item according to the selected device.

58.1.2 Monitoring-supported bit devices ([CC-Link IE Field Network Basic])

The following table shows monitoring-supported bit devices.
The device range shown in this section indicates the maximum settable values in GT Designer3.
The range of devices that can actually be monitored depends on the number of stations occupied by remote stations that are set in the master station.
Before setting the device range, check the number of occupied stations that are assigned to the GOT.
If a nonexistent device or a device number out of the range is set for an object, other objects for which correct devices are set may not be monitored.
To check whether writing/reading data to/from each device is available, refer to the following.
☞ Page 2465 Availability of writing/reading data to/from bit devices ([CC-Link IE Field Network Basic])
For the formats of devices, refer to the following.
📖GT Designer3 (GOT3000) Screen Design Manual
○: Available
×: Not available

Device name		Device No. representation	Setting range	Specifications of EG devices*1	
				Assignment to EG devices	Access using a client
RX	Remote input	Hexadecimal	000 to 3FF	○	○
RY	Remote output	Hexadecimal	000 to 3FF	○	○

*1 For the devices assigned to EG devices (gateway devices) and the compatible clients, refer to the following.
📖GT Designer3 (GOT3000) Screen Design Manual

58.1.3 Availability of writing/reading data to/from bit devices ([CC-Link IE Field Network Basic])

The following shows the availability of writing/reading data to/from bit devices by device type.
When the device type is other than the bit type, set the device No. in multiples of 16.
R/W: Both read and write
R/-: Read only
-/W: Write only
-/-: No read/write access

Device name	Device type				
	Bit	Byte (8 bits)	Word (16 bits)	Double-word (32 bits)	Quad-word (64 bits)
RX	R/W	-/-	R/W	R/W	-/-
RY	R/W	-/-	R/W	R/W	-/-

58.1.4 Monitoring-supported word devices ([CC-Link IE Field Network Basic])

The following table shows monitoring-supported word devices.
The device range shown in this section indicates the maximum settable values in GT Designer3.
The range of devices that can actually be monitored depends on the number of stations occupied by remote stations that are set in the master station.
Before setting the device range, check the number of occupied stations that are assigned to the GOT.
If a nonexistent device or a device number out of the range is set for an object, other objects for which correct devices are set may not be monitored.
To check whether writing/reading data to/from each device is available, refer to the following.
☞ Page 2466 Availability of writing/reading data to/from word devices ([CC-Link IE Field Network Basic])
For the formats of devices, refer to the following.
📖GT Designer3 (GOT3000) Screen Design Manual
○: Available
×: Not available

Device name		Device No. representation	Setting range	Specifications of EG devices*1	
				Assignment to EG devices	Access using a client
Ww	Remote register	Hexadecimal	000 to 1FF	○	○
Wr	Remote register	Hexadecimal	000 to 1FF	○	○

*1 For the devices assigned to EG devices (gateway devices) and the compatible clients, refer to the following.
📖GT Designer3 (GOT3000) Screen Design Manual

58.1.5 Availability of writing/reading data to/from word devices ([CC-Link IE Field Network Basic])

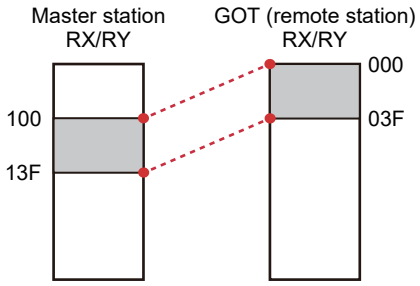
The following shows the availability of writing/reading data to/from word devices by device type.
R/W: Both read and write
R/-: Read only
-/W: Write only
-/-: No read/write access

Device name	Device type			
	Word (16 bits)	Double-word (32 bits)	Quad-word (64 bits)	Bit of word data
Ww	R/W	R/W	-/-	R/W
Wr	R/W	R/W	-/-	R/W

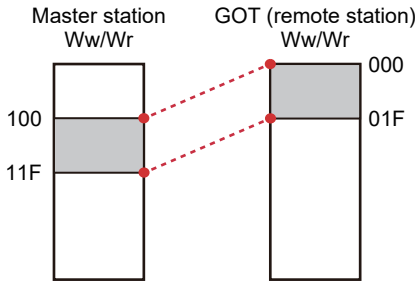
58.1.6 Remote device setting of the GOT (remote station) ([CC-Link IE Field Network Basic])

The devices assigned to the GOT in the master station are allocated in the range starting from the first number in the GOT.
The following shows the examples of device assignment in the master station and in the GOT (remote station).
In the example of remote device assignment (RX/RY 1 station occupied), the remote devices assigned to the GOT (remote station) are RX100 to RX13F and RY100 to RY13F in the master station. Note that the corresponding remote devices in the GOT are RX000 to RX03F and RY000 to RY03F.

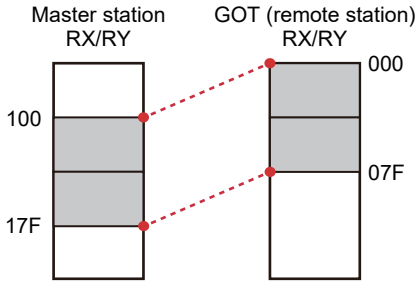
Example of remote device assignment
RX/RY 1 station occupied



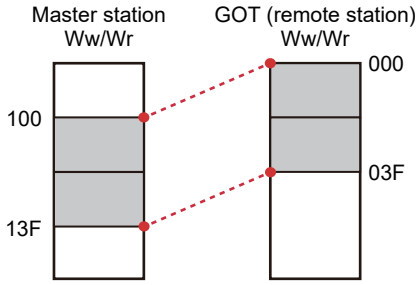
Example of remote device assignment
Ww/Wr 1 station occupied



Example of remote device assignment
RX/RY 2 station occupied



Example of remote device assignment
Ww/Wr 2 station occupied



PART 21 OPC UA

59 OPC UA client

60 OPC UA server

61 Settable device range

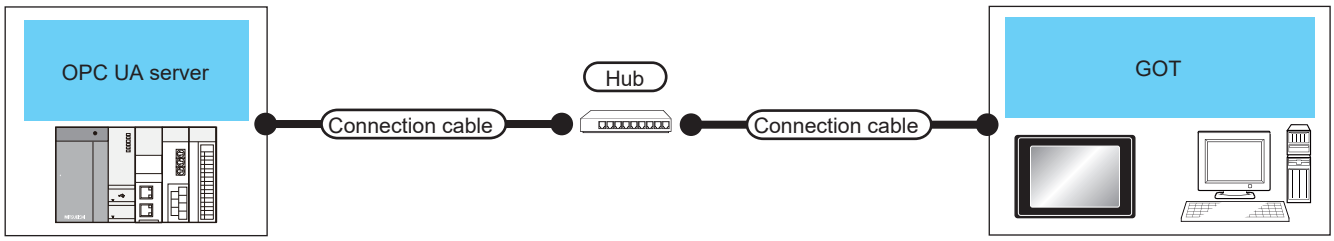
59 OPC UA client

☞ Page 2469 Connectable devices
☞ Page 2469 System configuration
☞ Page 2472 GOT side settings
☞ Page 2479 OPC UA server side settings

59.1 Connectable devices

For the connectable OPC UA servers and system equipment, refer to the following Technical Bulletin.
📖List of OPC UA Validated to Operate with the GOT3000 Series (GOT-A-0248)
For details on the Technical Bulletin, contact your local sales office.

59.2 System configuration



For details on the connection cables and the maximum segment length, refer to the following.
☞ Page 2470 Connection cable
☞ Page 2470 Maximum segment length
For details on the maximum number of connected devices, refer to the following.
☞ Page 2470 Maximum number of connected devices

Connected device	Communication type	Connection cable	GOT	
			Interface	Model
OPC UA server*1	Ethernet	Twisted pair cable	Built-in Ethernet interface of the GOT	GT37 SoftGOT3000
			Ethernet interface of personal computer	GT37 SoftGOT3000

*1 For connectable servers, refer to the following.
☞ Page 2479 Supported servers

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59.2.1 Connection cable

Use a connection cable that meets the following standards.

Standard	Category
10BASE-T	Shielded twisted pair cable (STP) or unshielded twisted pair cable (UTP) of category 3 or higher
100BASE-TX	Shielded twisted pair cable (STP) or unshielded twisted pair cable (UTP) of category 5 or higher
1000BASE-T	Shielded twisted pair cable (STP) or unshielded twisted pair cable (UTP) of category 5e or higher

The destination device connected with the twisted pair cable varies with the configuration of the Ethernet network system used.
Connect the cable to the Ethernet module, hub, or other system equipment corresponding to the applicable Ethernet network system.
Use cables, connectors, and hubs that meet the IEEE802.3 10BASE-T/100BASE-TX/1000BASE-T standards.

59.2.2 Maximum segment length

The maximum segment length (length between a hub and a node) is 100 m.
The maximum length depends on the Ethernet equipment used.
The following shows the number of connectable hubs when a repeater hub is used.

- 10BASE-T: Up to 4 for a cascade connection (within 500 m)
- 100BASE-TX: Up to 2 for a cascade connection (within 205 m)
- 1000BASE-T: The number differs depending on the hub to be used.

When switching hubs are used, there is no theoretical limit to the number of cascade connections between switching hubs.
For the limit, contact the switching hub manufacturer.

Precautions

When multiple network devices (including GOTs) are connected in the same segment, the network load increases and the transmission speed between the GOT and PLC may be reduced.
The following actions may improve the communication performance.

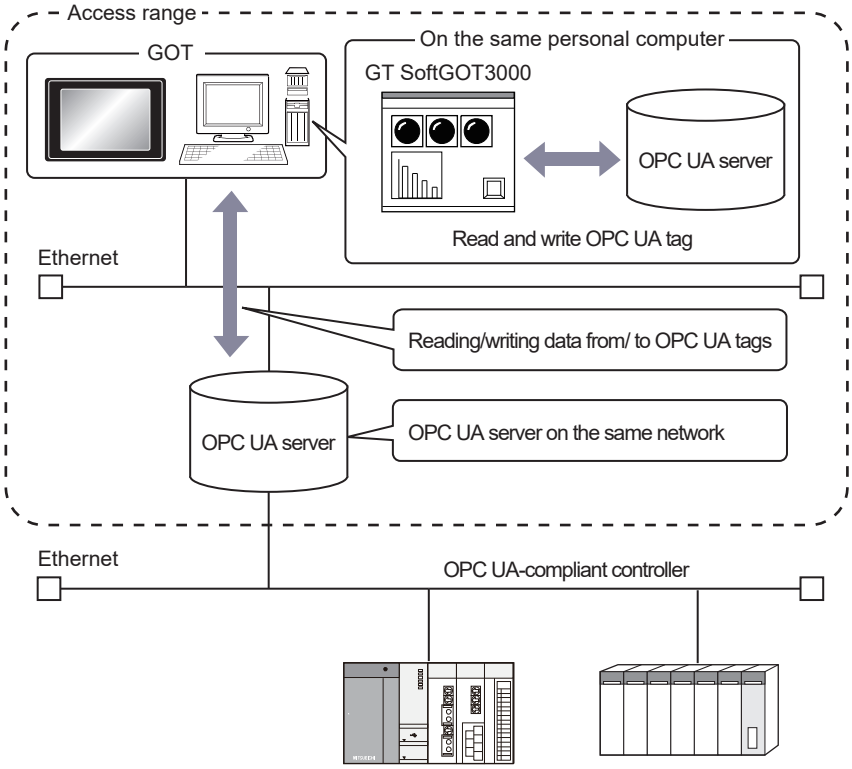
- Use a switching hub compatible with 1000BASE-T (1 Gbps) or more.
- Reduce the number of devices monitored by the GOT.

59.2.3 Maximum number of connected devices

One OPC UA server can access one GOT at a time.

59.2.4 Access range

The following shows OPC UA servers accessible by the GOT.



Point

Connection with an OPC UA server on the personal computer with GT SoftGOT3000 installed is also available.

PART 21

59.3 GOT side settings

☞ Page 2472 [GOT Ethernet Setting]
☞ Page 2473 [Controller Setting]
☞ Page 2475 OPC UA tag settings

59.3.1 [GOT Ethernet Setting]

Set the GOT Ethernet interface in GT Designer3.

Item	Description
[GOT IP Address Setting]	Set the IP address of the GOT.
[GOT Ethernet Common Setting]	Set the default gateway and other common items for GOT Ethernet interfaces.
[IP filter Setting]	The GOT allows or blocks access from IP addresses specified in the filtering list.

For details on the setting, refer to the following.

📖GT Designer3 (GOT3000) Screen Design Manual

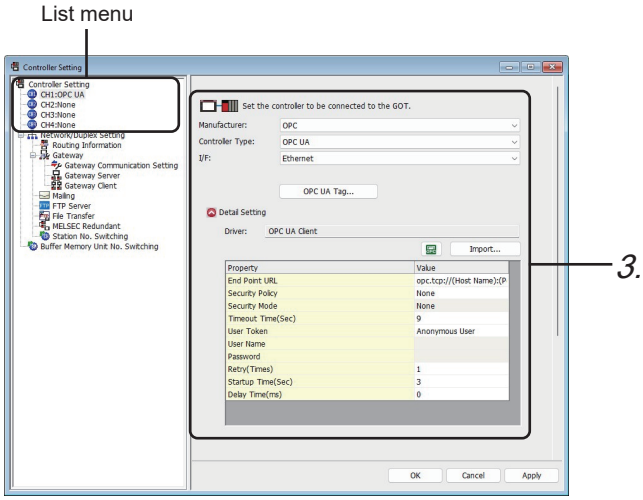
Set the GT SoftGOT3000 Ethernet interface on the personal computer.

Precautions

Do not use 0 and 255 at the end of an IP address.
(Numbers of *.*.*.0 and *.*.*.255 are used by the system)
The GOT may not monitor the controller correctly with the above numbers.
Consult with the administrator of the network before setting an IP address to the GOT.

59.3.2 [Controller Setting]

Set the channel of the connected controller.



Operating procedure

1. Select [Common] → [Controller Setting] from the menu.
2. In the [Controller Setting] window, select the channel number to be used from the list menu.
3. Set the following items.

Item	Description
[Manufacturer]	[OPC]
[Controller Type]	[OPC UA]
[I/F]	[Ethernet]
[OPC UA Tag] button	Write the tag information of the OPC UA server. ☞ Page 2477 Importing tag information
[Detail Setting]	Configure the settings according to the usage environment. ☞ Page 2474 [Detail Setting]

4. When you have completed the settings, click the [OK] button.

Point

The controller settings can be checked in [I/F Communication Setting].
For details, refer to the following.
📖GT Designer3 (GOT3000) Screen Design Manual

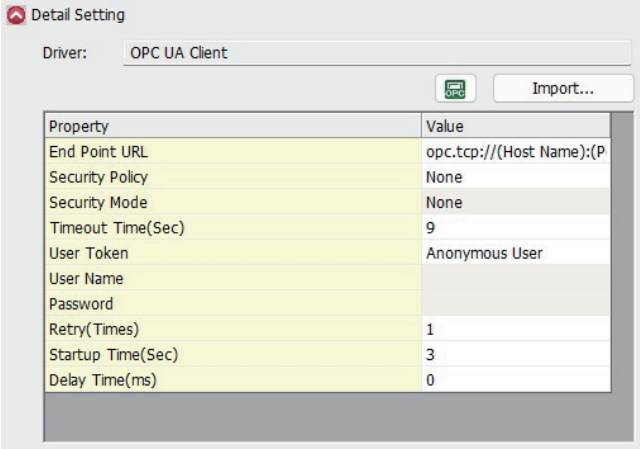
Precautions

To access an OPC UA server to read/write data from/to the OPC UA tags, install GT OPC UA Client.
☞ Page 2475 Installing GT OPC UA Client

PART 21

[Detail Setting]

Configure the settings according to the usage environment.



Item	Description	Range
[Driver]	This item appears when communication drivers are selectable according to the settings of [Controller Type] and [I/F].	[OPC UA Client]
GT OPC UA Client button	Select this button to start GT OPC UA Client. Clicking the GT OPC UA Client button starts GT OPC UA Client.	—
[Import] button	Select this button to import the data of access destination device settings saved by GT OPC UA Client. Click the [Import] button and specify the setting file (*.gtpm) of the access destination device to be imported. ☞ Page 2477 Access destination device information settings	—
[End Point URL]	Set the endpoint URL of the OPC UA server. Up to 1024 characters can be entered directly.	—
[Security Policy]	Select a security policy for communication. • [None]: No encryption. • [Basic128Rsa15]: Use basic 128-bit encryption. • [Basic256]: Use basic 256-bit encryption. • [Basic256Sha256]: Use digital signing and basic 256-bit encryption. • [Aes128-Sha256-RsaOaep]: Use digital signing and Aes 128-bit encryption. • [Aes256-Sha256-RsaPss]: Use digital signing and Aes 256-bit encryption.	[None], [Basic128Rsa15], [Basic256], [Basic256Sha256], [Aes128-Sha256-RsaOaep], [Aes256-Sha256-RsaPss]
[Security Mode]	Set whether to digitally sign or encrypt messages. • [None]: No encryption. • [Sign]: Use digital signing. • [SignAndEncrypt]: Use digital signing and communication data encryption.	[None], [Sign], [SignAndEncrypt]
[Timeout Time(Sec)]	Set a communication timeout period.	[1] second to [90] seconds
[User Token]	Select a user authentication method. • [Anonymous User]: Performs an anonymous login. • [User Name/Password]: Authenticate users with a user name and password. Select this item, and set [User Name] and [Password].	[Anonymous User], [User Name/Password]
[User Name]	Set a user name for user authentication. Up to 32 characters can be entered.	—
[Password]	Set a password for user authentication. Up to 32 characters can be entered.	—
[Retry(Times)]	Set the number of retries to be performed when a communication timeout occurs. When receiving no response after retries, the communication times out.	[0] time to [5] times
[Startup Time(Sec)]	Set the time period from the GOT startup until the start of communication with the PLC CPU.	[3] seconds to [255] seconds
[Delay Time(ms)]	Set the delay time for reducing the load of the network and destination PLC.	[0] ms to [10000] ms

Point

- Controller settings using the GT37 utility

The controller settings can be changed in [Communication Settings] of the GT37 utility after writing [Communication Settings] of project data to GT37.
For details on the GT37 utility, refer to the following manual.
GOT3000 Series User's Manual (Utility & Maintenance Functions)

- Priority of the settings in [Controller Setting]

When the settings are configured in GT Designer3 or in the GT37 utility, the latest settings are effective.

59.3.3 OPC UA tag settings

Installing GT OPC UA Client

To access an OPC UA server to read/write the tag information registered in the server, install GT OPC UA Client.
For obtaining GT OPC UA Client, contact your local sales office.
For details on the GT OPC UA Client, refer to the following.
MELSOFT GT OPC UA Client Operating Manual

GT OPC UA Client settings

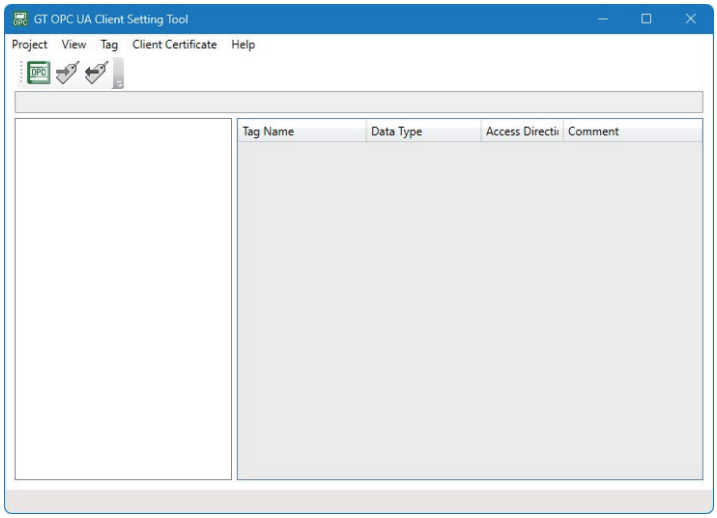
Configure the OPC UA server settings using GT OPC UA Client.

■Exporting the access destination device setting file

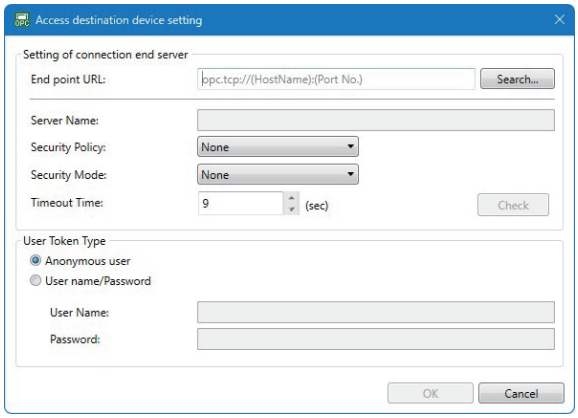
Configure the access destination device information settings of the OPC UA server, and save the access destination device setting file (*.gtpm).

Operating procedure

1. Start GT OPC UA Client, and select [Project] → [Access destination device setting] from the menu.



2. The [Access destination device setting] dialog appears.



3. Configure the settings according to the settings of the OPC UA server.

- [End Point URL]
- [Security Policy]
- [Security Mode]
- [User Token Type]

4. When you have completed the settings, click [OK].

5. Select [Project] → [Save as Access destination device setting] from the menu and save the access destination device setting file (*.gtpm).

The saved access destination device setting file (*.gtpm) will be imported to [Controller Setting] on GT Designer3.

☞ Page 2477 Access destination device information settings

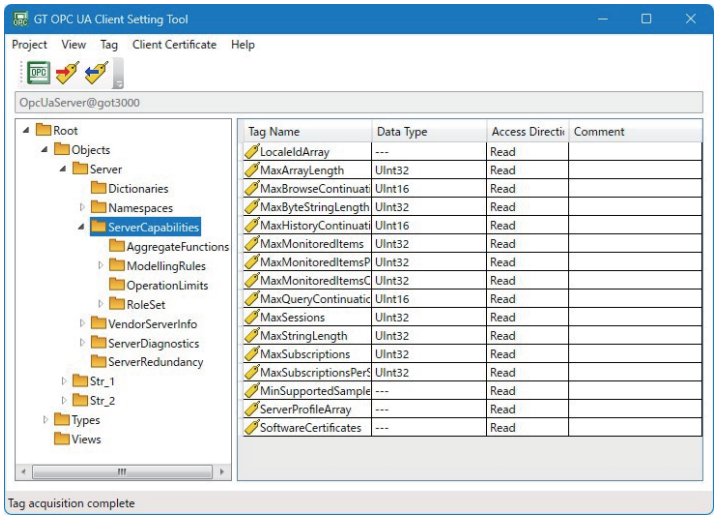
■Obtaining tag information and outputting the information

Obtain tag information from an OPC UA server and output the information in a tag information file (*.gtuc).

Operating procedure

1. After configuring the access destination device information settings in the [Access destination device setting] dialog of GT OPC UA Client, select [Tag] → [Import Tags] from the menu.

The list of tag information defined in the accessed OPC UA server is obtained.



2. Select [Tag] → [Export Tags] from the menu and output the tag information file (*.gtuc).

The output tag information file (*.gtuc) will be imported to [Controller Setting] on GT Designer3.

☞ Page 2477 Importing tag information

Settings in GT Designer3

Configure the OPC UA server settings in [Controller Setting] on GT Designer3.

For the details on [Controller Setting], refer to the following.

☞ Page 2473 [Controller Setting]

■Access destination device information settings

Set the access destination device information in [Controller Setting] on GT Designer3.

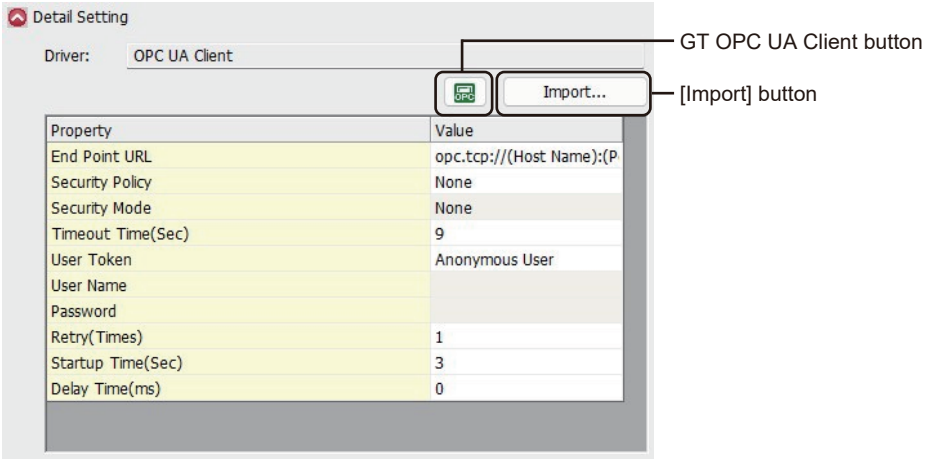
Operating procedure

1. Set the access destination device information set in GT OPC UA Client to [Controller Setting] by either of the following methods.

- Directly set the information in [Controller Setting] according to the access destination device information set in GT OPC UA Client.
- Import the access destination device setting file (*.gtpm) saved in GT OPC UA Client to [Controller Setting].

2. When directly setting to [Controller Setting], start GT OPC UA Client with the GT OPC UA Client start button, and check the access destination device information.

When importing the access destination device setting file (*.gtpm) to [Controller Setting], click the [Import] button and select the setting file (*.gtpm) to be imported.



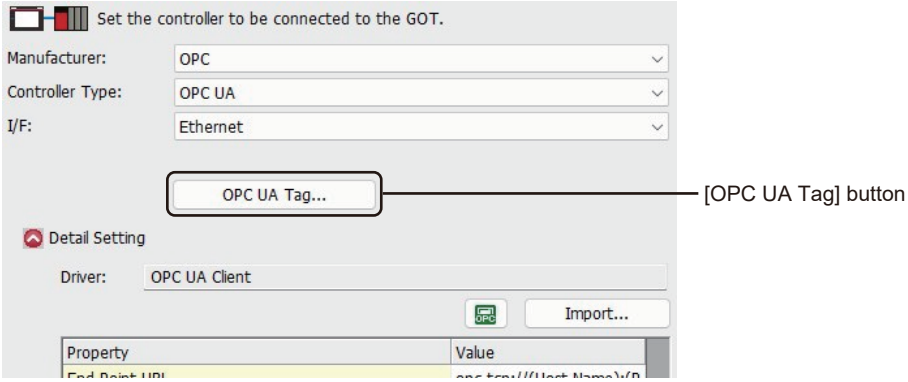
■Importing tag information

Set the tag information in [Controller Setting] on GT Designer3.

Operating procedure

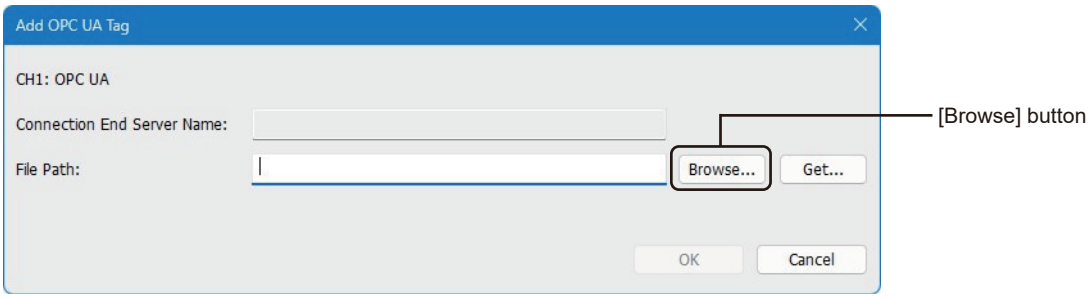
1. Set the tag information output by GT OPC UA Client to [Controller Setting].

Click the [OPC UA Tag] button to display the [Add OPC UA Tag] dialog.



2. Click [Browse] and select the tag information file (*.gtuc) to be imported.

The OPC UA tag information of the OPC UA server is imported.



59.4 OPC UA server side settings

☞ Page 2479 Supported servers
☞ Page 2479 OPC UA server settings
☞ Page 2480 Communication confirmation
☞ Page 2480 Troubleshooting when connecting to an OPC UA server

59.4.1 Supported servers

Servers must be compliant with OPC UA 1.03 or later and support the following OPC UA service sets.

- Discovery Service Set
- SecureChannel Service Set
- Session Service Set
- View Service Set
- Attribute Service Set
- Method Service Set

For recommended OPC UA servers, refer to the following Technical Bulletin.

📖List of OPC UA Validated to Operate with the GOT3000 Series (GOT-A-0248)

For details on the Technical Bulletin, contact your local sales office.

59.4.2 OPC UA server settings

Check the settings of the OPC UA server.

For the setting details, refer to the manual of the OPC UA server connected.

Item	Description
Port number	Port number of the OPC UA server.
Endpoint URL	Endpoint URL of the OPC UA server. • opc.tcp://(Host name of the OPC UA server):(port number of the OPC UA server)
Security policy	Security policy setting for communication. • None: No encryption. • Basic128Rsa15: Use basic 128-bit encryption. • Basic256: Use basic 256-bit encryption. • Basic256Sha256: Use digital signing and basic 256-bit encryption. • Aes128-Sha256-RsaOaep: Use digital signing and Aes 128-bit encryption. • Aes256-Sha256-RsaPss: Use digital signing and Aes 256-bit encryption.
Security mode	Mode of digital signing and encryption. • None: No encryption. • Sign: Use digital signing. • Sign & Encrypt: Use digital signing and communication data encryption.
User authentication	User authentication method setting for connecting an OPC UA client.
User name	Specified user name.
Password	Specified password.

59.4.3 Communication confirmation

Ping test

When ready to communicate, execute the ping command at the Windows command prompt.

- When connections are OK

C:\>Ping 192. 168. 3. 40

Reply from 192.168.3.40:bytes=32 time<1ms TTL=32

- When connections are not good

C:\>Ping 192. 168. 3. 40

Request timed out.

If the ping test fails, check the cable and module connections, Windows IP address, and other settings.

Communication test (GT SoftGOT3000)

After configuring settings to communicate with an OPC UA server in the [Communication Setup] dialog in GT SoftGOT3000, execute a communication test with the [Communication Test] button in the [Communication Setup] dialog.

For the details on the [Communication Setup] dialog, refer to the following.

📖GT SoftGOT3000 User's Manual

59.4.4 Troubleshooting when connecting to an OPC UA server

For information on the causes of errors occurring when connecting to the OPC UA server and their corrective actions, refer to the following manual.

- GOT (except GT SoftGOT3000)

📖GOT3000 Series User's Manual (Utility & Maintenance Functions)

- GT SoftGOT3000

📖GT SoftGOT3000 User's Manual

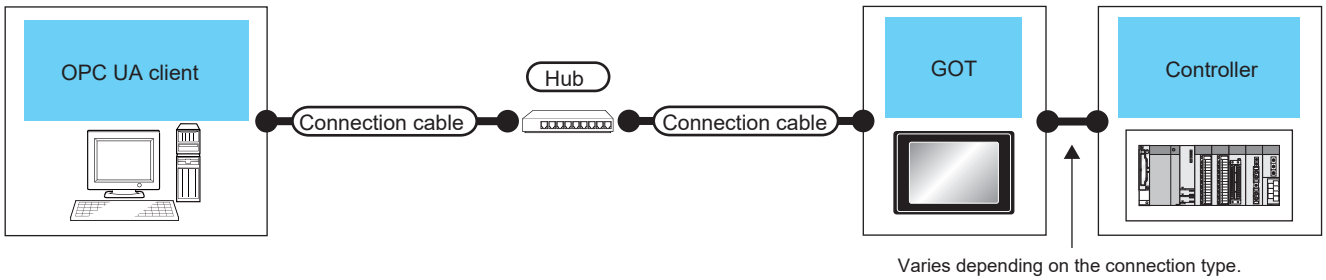
60 OPC UA server

☞ Page 2481 Connectable devices
☞ Page 2481 System configuration
☞ Page 2483 GOT side settings
☞ Page 2485 OPC UA client side settings

60.1 Connectable devices

For the connectable OPC UA clients and system equipment, refer to the following Technical Bulletin.
List of OPC UA Validated to Operate with the GOT3000 Series (GOT-A-0248)
For details on the Technical Bulletin, contact your local sales office.

60.2 System configuration



For details on the connection cables and the maximum segment length, refer to the following.
☞ Page 2482 Connection cable
☞ Page 2482 Maximum segment length
For details on the maximum number of connected devices, refer to the following.
☞ Page 2482 Maximum number of connected devices

Connected device	Communication type	Connection cable	GOT	
			Interface	Model
OPC UA client*1	Ethernet	Twisted pair cable	Built-in Ethernet interface of the GOT	GT37 SoftGOT3000

*1 Connection with a client that is compliant with OPC UA Version 1.03 is supported.

PART 21

60.2.1 Connection cable

Use a connection cable that meets the following standards.

Standard	Category
10BASE-T	Shielded twisted pair cable (STP) or unshielded twisted pair cable (UTP) of category 3 or higher
100BASE-TX	Shielded twisted pair cable (STP) or unshielded twisted pair cable (UTP) of category 5 or higher
1000BASE-T	Shielded twisted pair cable (STP) or unshielded twisted pair cable (UTP) of category 5e or higher

The destination device connected with the twisted pair cable varies with the configuration of the Ethernet network system used.
Connect the cable to the Ethernet module, hub, or other system equipment corresponding to the applicable Ethernet network system.
Use cables, connectors, and hubs that meet the IEEE802.3 10BASE-T/100BASE-TX/1000BASE-T standards.

60.2.2 Maximum segment length

The maximum segment length (length between a hub and a node) is 100 m.
The maximum length depends on the Ethernet equipment used.
The following shows the number of connectable hubs when a repeater hub is used.

- 10BASE-T: Up to 4 for a cascade connection (within 500 m)
- 100BASE-TX: Up to 2 for a cascade connection (within 205 m)
- 1000BASE-T: The number differs depending on the hub to be used.

When switching hubs are used, there is no theoretical limit to the number of cascade connections between switching hubs.
For the limit, contact the switching hub manufacturer.

Precautions

When multiple network devices (including GOTs) are connected in the same segment, the network load increases and the transmission speed between the GOT and PLC may be reduced.
The following actions may improve the communication performance.

- Use a switching hub compatible with 1000BASE-T (1 Gbps) or more.
- Reduce the number of devices monitored by the GOT.

60.2.3 Maximum number of connected devices

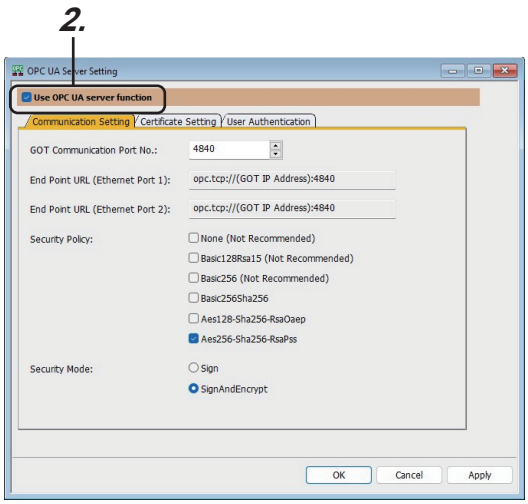
64 OPC UA clients can access one GOT at a time. (5 or less recommended)

60.3 GOT side settings

☞ Page 2483 OPC UA server function settings
☞ Page 2484 OPC UA tag settings
☞ Page 2484 [Controller Setting]
☞ Page 2484 GOT settings

60.3.1 OPC UA server function settings

Configure the settings so that the GOT operates as an OPC UA server.



Operating procedure

1. Select [Common] → [OPC UA Server Setting] → [OPC UA Server Setting] from the menu.

2. When the [OPC UA Server Setting] window is displayed, select [Use OPC UA server function] and configure the settings.

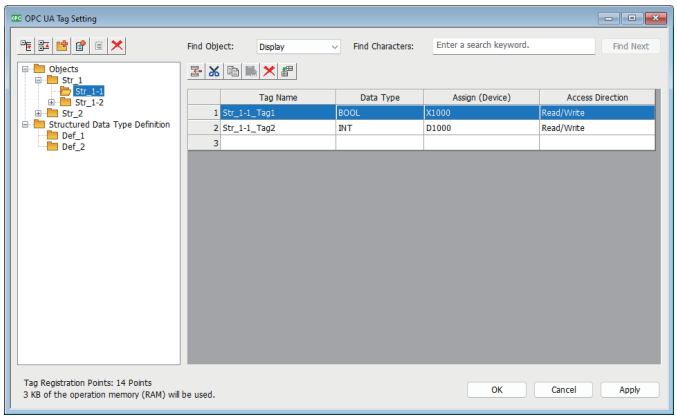
For details on the settings, refer to the following manual.

📖GT Designer3 (GOT3000) Screen Design Manual

3. When you have completed the settings, click the [OK] button.

PART 21

60.3.2 OPC UA tag settings



Operating procedure

1. Select [Common] → [OPC UA Server Setting] → [OPC UA Tag Setting] from the menu.

2. When the [OPC UA Tag Setting] window is displayed, configure the OPC UA tag settings.

For details on the settings, refer to the following manual.

📖GT Designer3 (GOT3000) Screen Design Manual

3. When you have completed the settings, click the [OK] button.

60.3.3 [Controller Setting]

The GOT side settings differ depending on the connection type.

For details on the GOT side settings, refer to [Controller Setting] for each connection type.

60.3.4 GOT settings

Prepare the certificate and configure the following settings.

- Updating the server certificate
- Importing the client certificate

For details on the settings, refer to the following manual.

📖GT Designer3 (GOT3000) Screen Design Manual

60.4 OPC UA client side settings

Configure the OPC UA client settings.

For information on settings and operations of the OPC UA client, refer to the following.

📖Manual of the OPC UA client used

60.4.1 Settings on the connected OPC UA server

Configure the following settings according to [Communication Setting] in the [OPC UA Server Setting] window in GT Designer3.

- Endpoint URL
- Security policy
- Security mode
- User authentication

For details on the settings, refer to the following manual.

📖GT Designer3 (GOT3000) Screen Design Manual

61 Settable device range

This chapter describes the range of devices settable in GT Designer3.
The settable range varies with the selection for [Controller Type] in the [Controller Setting] window.
Configure the device setting according to the specifications of the controller to be used.
Device specifications differ depending on the controller model even among the controllers of the same series.
If a nonexistent device or a device number out of the range is set for an object, other objects for which correct devices are set may not be monitored.
☞ Page 2486 OPC ([OPC UA])

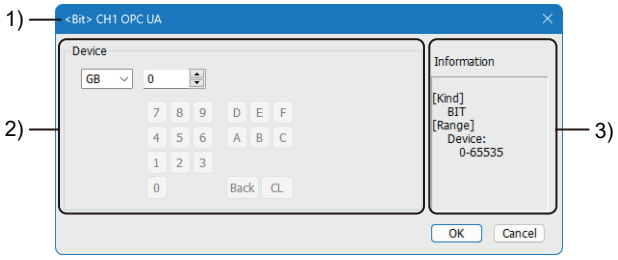
61.1 OPC ([OPC UA])

GT37 SoftGOT3000

Item	Reference
Device setting dialog	☞ Page 2486 Device setting dialog ([OPC UA])
Device specifications	☞ Page 2486 Monitoring-supported devices ([OPC UA])

61.1.1 Device setting dialog ([OPC UA])

Set a device to be monitored.
In the device setting dialog, only GOT internal devices are settable.
For information on setting OPC UA tags, refer to the following.
📖GT Designer3 (GOT3000) Screen Design Manual



Item		Description
1)	Title	Data type and channel number of the device to be set
2)	[Device]	Set the device name and device number. If a bit number needs to be specified, the setting item is displayed.
3)	[Information]	Displays the setting range of each setting item according to the selected device.

61.1.2 Monitoring-supported devices ([OPC UA])

To monitor an OPC UA server, use OPC UA tags.
For the usable OPC UA tags, refer to the following.
📖GT Designer3 (GOT3000) Screen Design Manual

PART 22 Peripherals

62 Sound output device connection

63 External I/O device connection

64 Barcode reader connection

65 Remote personal computer connection (Ethernet connection)

66 GOT Mobile connection

67 VNC server connection

68 Camera, video device, and external display connection

69 Digital image device connection

70 RFID connection

62 Sound output device connection

☞ Page 2488 Connectable devices
☞ Page 2488 System configuration
☞ Page 2489 GOT side settings

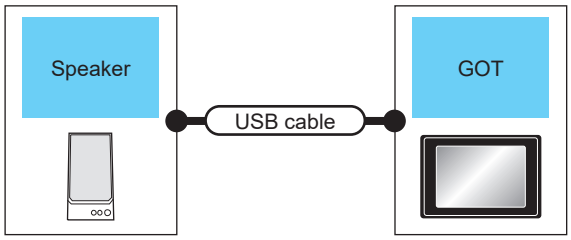
62.1 Connectable devices

For connectable speakers, refer to the following Technical Bulletin.
📖List of Valid Devices Applicable for GOT3000 Series (GOT-A-0233)
For Technical Bulletins, go to the Mitsubishi Electric Factory Automation Global Website.
www.MitsubishiElectric.com/fa

Precautions

Before connecting the sound output unit, make the sound output file setting in GT Designer3.
For details, refer to the following manual.
📖GT Designer3 (GOT3000) Screen Design Manual

62.2 System configuration



For details on the maximum number of connected devices, refer to the following.
☞ Page 2488 Maximum number of connected devices

Connected device	Connection cable	GOT	
		Interface	Model
Speakers connectable via USB For connectable speakers, refer to the following Technical Bulletin. 📖List of Valid Devices Applicable for GOT3000 Series (GOT-A-0233)	USB cable	Built-in USB interface	GT37 SoftGOT3000
		USB interface of personal computer	GT37 SoftGOT3000

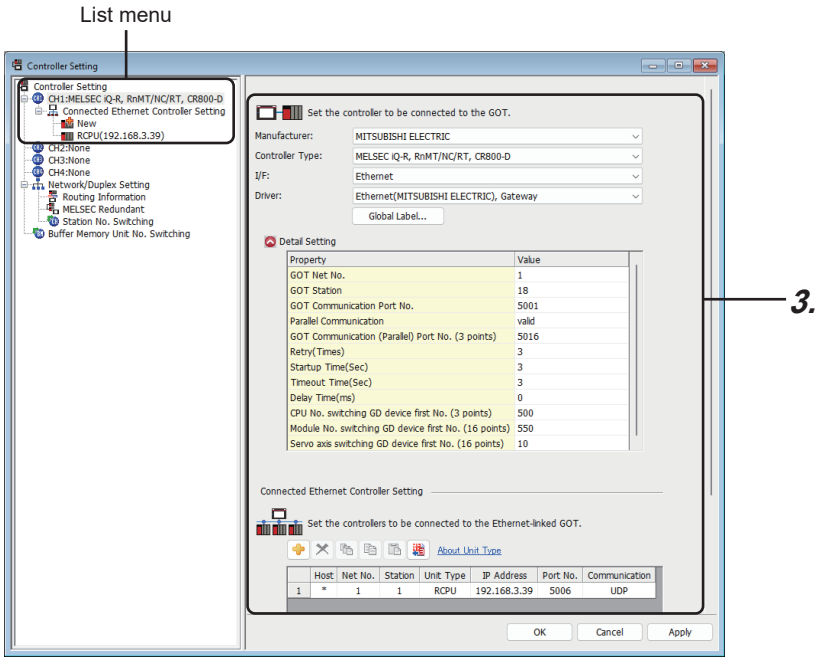
Maximum number of connected devices

Only one GOT can access one speaker at a time.

62.3 GOT side settings

62.3.1 [Controller Setting]

Set the channel of the connected controller.



Operating procedure

1. Select [Common] → [Controller Setting] from the menu.
2. In the [Controller Setting] window, select the channel number to be used from the list menu.
3. Set [Manufacturer], [Controller Type], [I/F], and [Detail Setting] according to the controller used.
4. When you have completed the settings, click the [OK] button.

Point

• Controller settings

The controller settings can be checked in [I/F Communication Setting].

For details, refer to the following.

GT Designer3 (GOT3000) Screen Design Manual

• Controller settings using the GT37 utility

The controller settings can be changed in [Communication Settings] of the GT37 utility after writing [Communication Settings] of project data to GT37.

For details on the GT37 utility, refer to the following manual.

GOT3000 Series User's Manual (Utility & Maintenance Functions)

• Priority of the settings in [Controller Setting]

When the settings are configured in GT Designer3 or in the GT37 utility, the latest settings are effective.

63 External I/O device connection

☞ Page 2490 Connectable devices
☞ Page 2491 System configuration
☞ Page 2493 Connection diagram
☞ Page 2505 GOT side settings

63.1 Connectable devices

The following table shows the connectable models.

Connected device	Clock	Connectable model
External I/O device	*1	GT37 SoftGOT3000

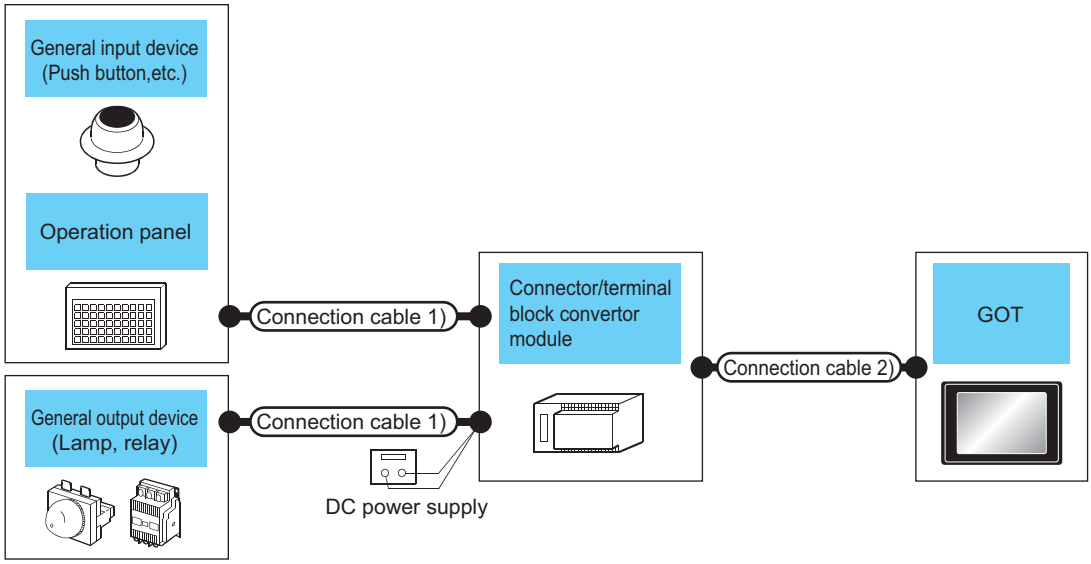
*1 Varies depending on the connected model.

63.2 System configuration

63.2.1 Connecting to external I/O devices

☞ Page 2491 Input and output operations
☞ Page 2492 Input operations only

Input and output operations



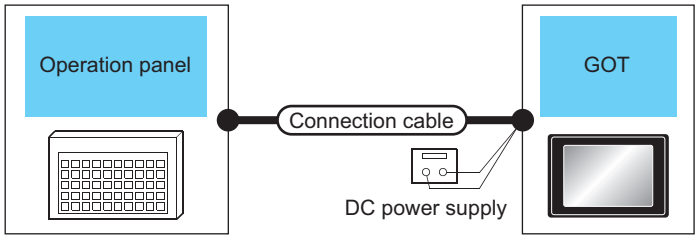
Connected device	Connection cable (1)	Connector/ terminal block converter module*1*2	Connection cable 2)	GOT*3	
				Interface	Model
General-purpose input device (such as a push button) Operation panel General-purpose output device (lamp, relay)	☞ Page 2496 Connection diagram (3)	A6TBY36-E	☞ Page 2493 Connection diagram (1)	GT37-IF2000 + GT15-DIO	GT37 SoftGOT3000
	☞ Page 2497 Connection diagram (4)	A6TBY54-E			
	☞ Page 2498 Connection diagram (5)	A6TBY36-E	☞ Page 2494 Connection diagram (2)	GT37-IF2000 + GT15-DIOR	
	☞ Page 2499 Connection diagram (6)	A6TBY54-E			

*1 The 24 V DC power must be supplied for the external I/O unit.
When the power supplied to the external I/O unit cuts off in the operation, the operation panel becomes disabled.
To use the operation panel again, supply the power to the external I/O unit and reset the GOT.

*2 When using the connector/terminal block converter module, you can input a maximum of 64 signals.

*3 To start the GOT, turn on the external power supply for the external I/O unit, and then power on the GOT.
When the external power supply is shut off, a system alarm occurs.
When a system alarm occurs, inputting and outputting are not available.
Cycle the power of the GOT or reset the GOT.
(The GOT reset switch does not function when the bus connection is used.)

Input operations only



Connected device		Connection cable*1	GOT*2	
			Interface	Model
Operation panel	☞ Page 2501 Connection diagram (8)	☞ Page 2500 Connection diagram (7)	GT37-IF2000 + GT15-DIO	GT37 SoftGOT3000
	☞ Page 2503 Connection diagram (10)	☞ Page 2502 Connection diagram (9)	GT37-IF2000 + GT15-DIOR	

*1 The 24 V DC power must be supplied for the external I/O unit.
When the power supplied to the external I/O unit cuts off in the operation, the operation panel becomes disabled.
To use the operation panel again, supply the power to the external I/O unit and reset the GOT.

*2 To start the GOT, turn on the external power supply for the external I/O unit, and then power on the GOT.
When the external power supply is shut off, a system alarm occurs.
When a system alarm occurs, signals cannot be input or output.
Cycle the power of the GOT or reset the GOT.
(The GOT reset switch does not function when the bus connection is used.)

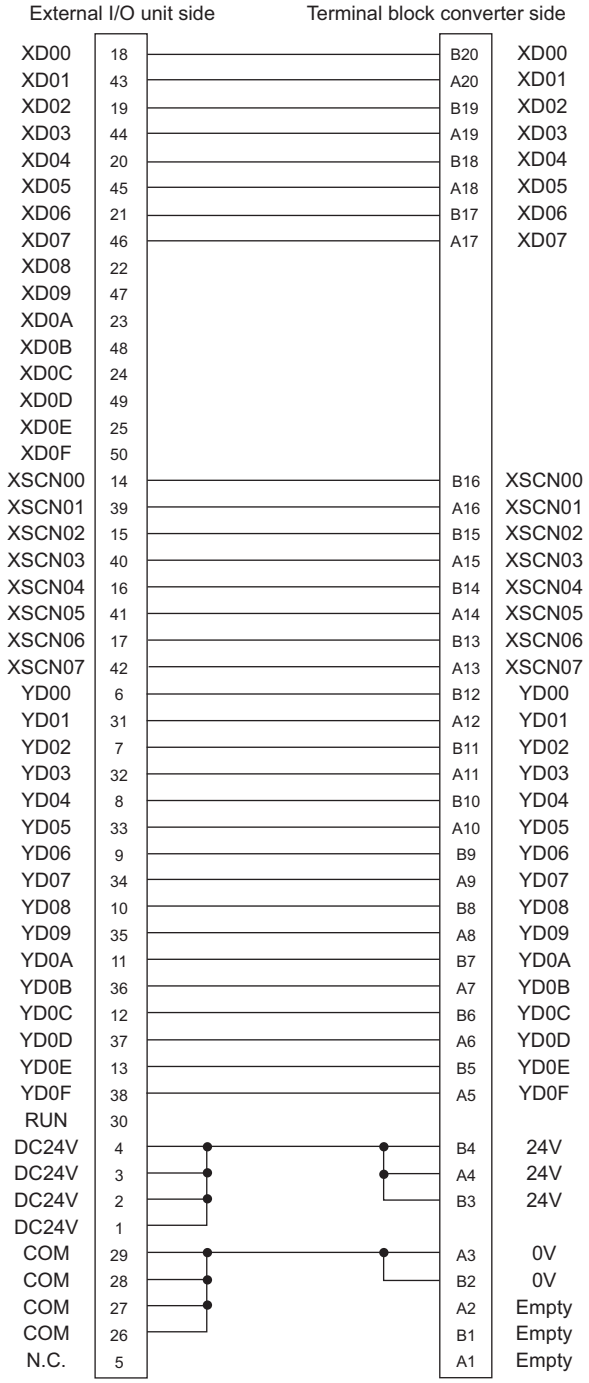
63.3 Connection diagram

63.3.1 Connection cable between external I/O unit and connector/terminal block converter module

Refer to the following and prepare the connection cables between the external I/O unit and the connector/terminal block converter module.

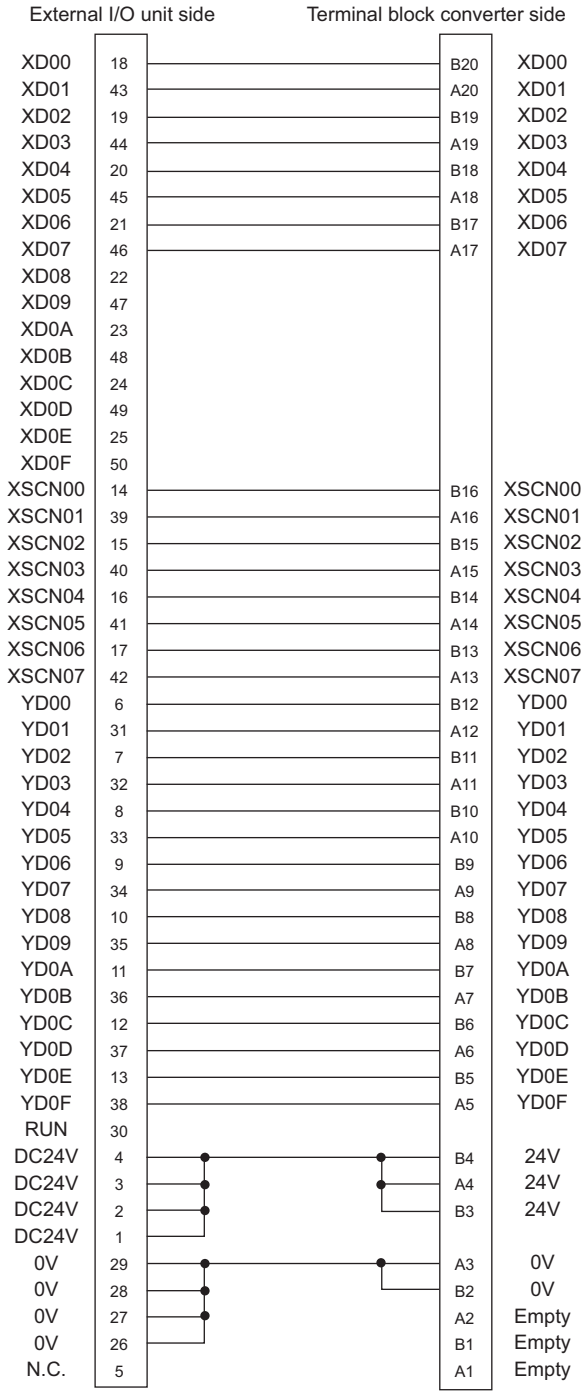
For GT15-DIO

■Connection diagram (1)

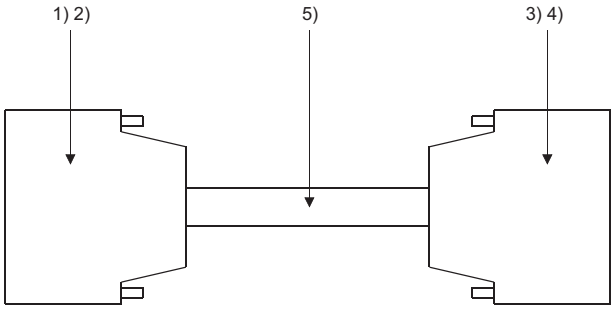


For GT15-DIOR

■Connection diagram (2)



Connector specifications



No.	Name	Model	Manufacturer
(1)	Connector	PCR-E50FS+ (For GT15-DIO) PCS-E50FS+ (For GT15-DIOR)	Honda Tsushin Kogyo Co., Ltd.
(2)	Connector cover	PCS-E50LPA+R*1	
(3) (4)	Connector (with a cover)	A6CON1	Mitsubishi Electric Corporation
(3)	Connector	FCN-361J040-AU	FUJITSU COMPONENT LIMITED
(4)	Connector cover	FCN-360C040-B	
(5)	Cable	UL 2464 AWG28 or equivalent	—

*1 The former product PCS-E50LA can also be used.

Precautions when preparing a cable

■Cable length

Maximum cable length differs depending on the external device type or the cable used.

Ensure that the cable length is within the range that meets the I/O specifications of the external I/O unit.

■GOT side connector

For the GOT side connector, refer to the following.

☞ Page 2954 GOT connector specifications

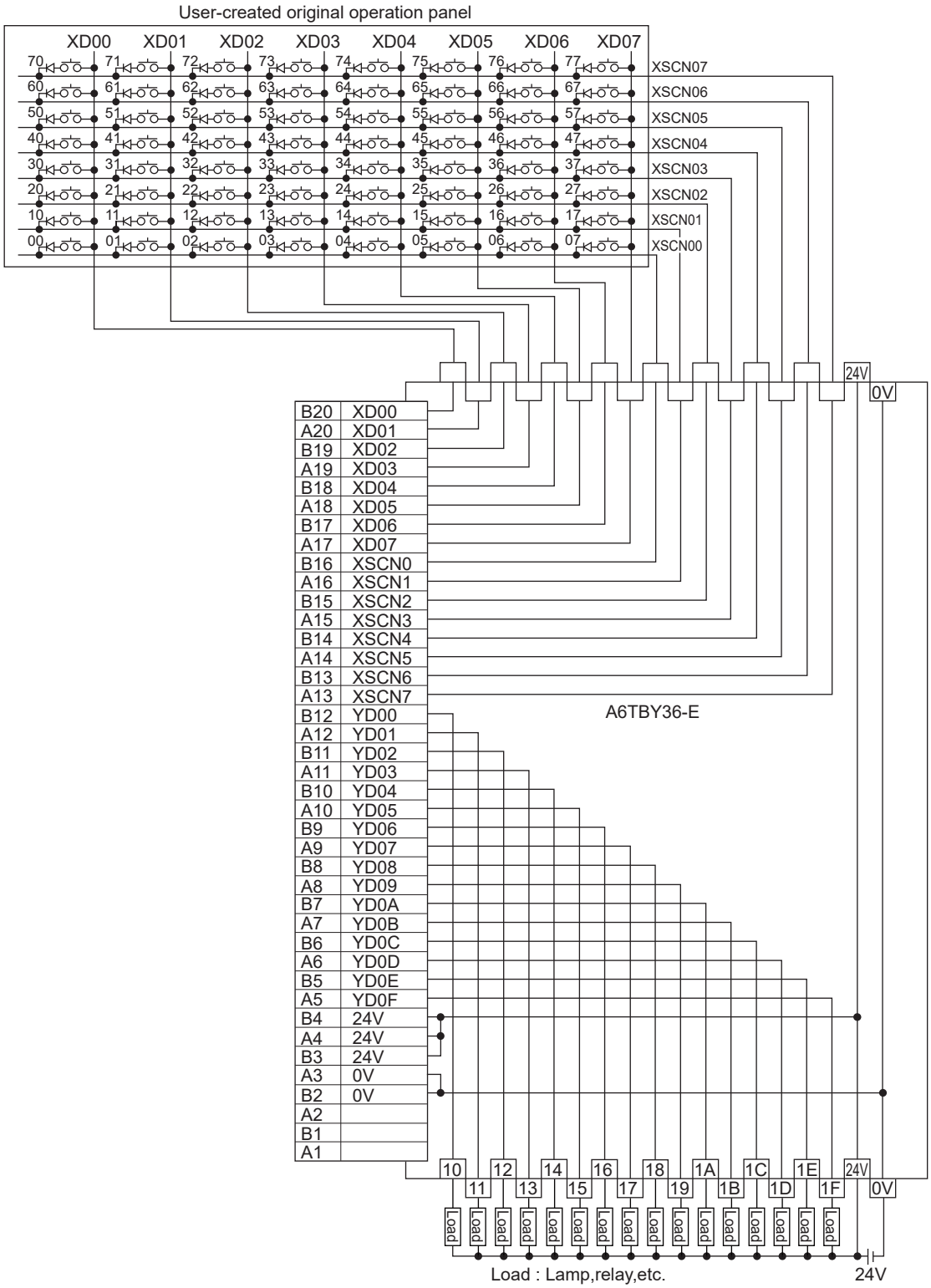
63.3.2 Connection diagram between connector/terminal block converter module and operation panel

The connection cable among the user-created original operation panel, the connector/terminal block converter module, and the general output device must be prepared by the user referring to the followings.

For GT15-DIO

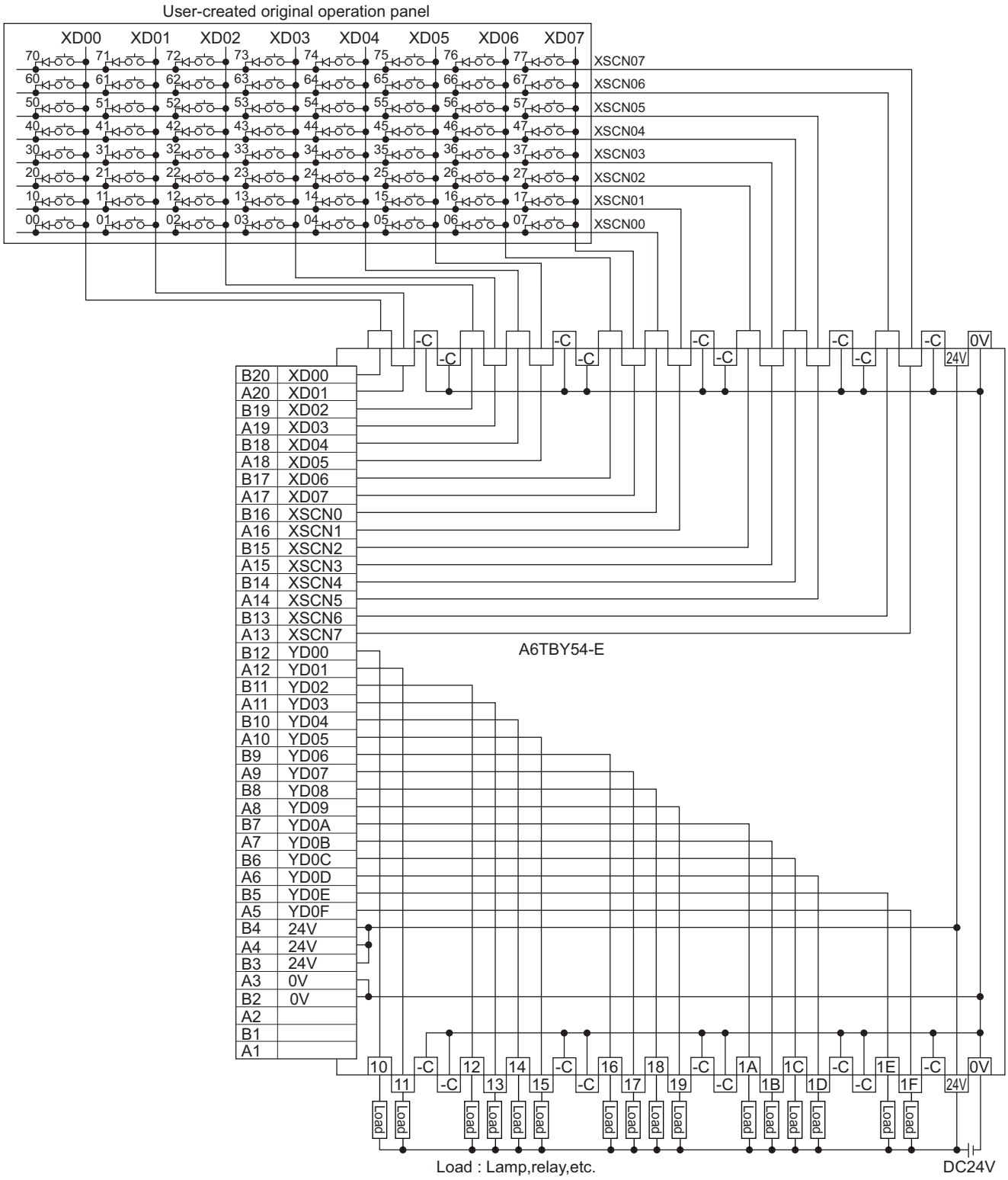
■Connection diagram (3)

When using A6TBY36-E connector/terminal block module



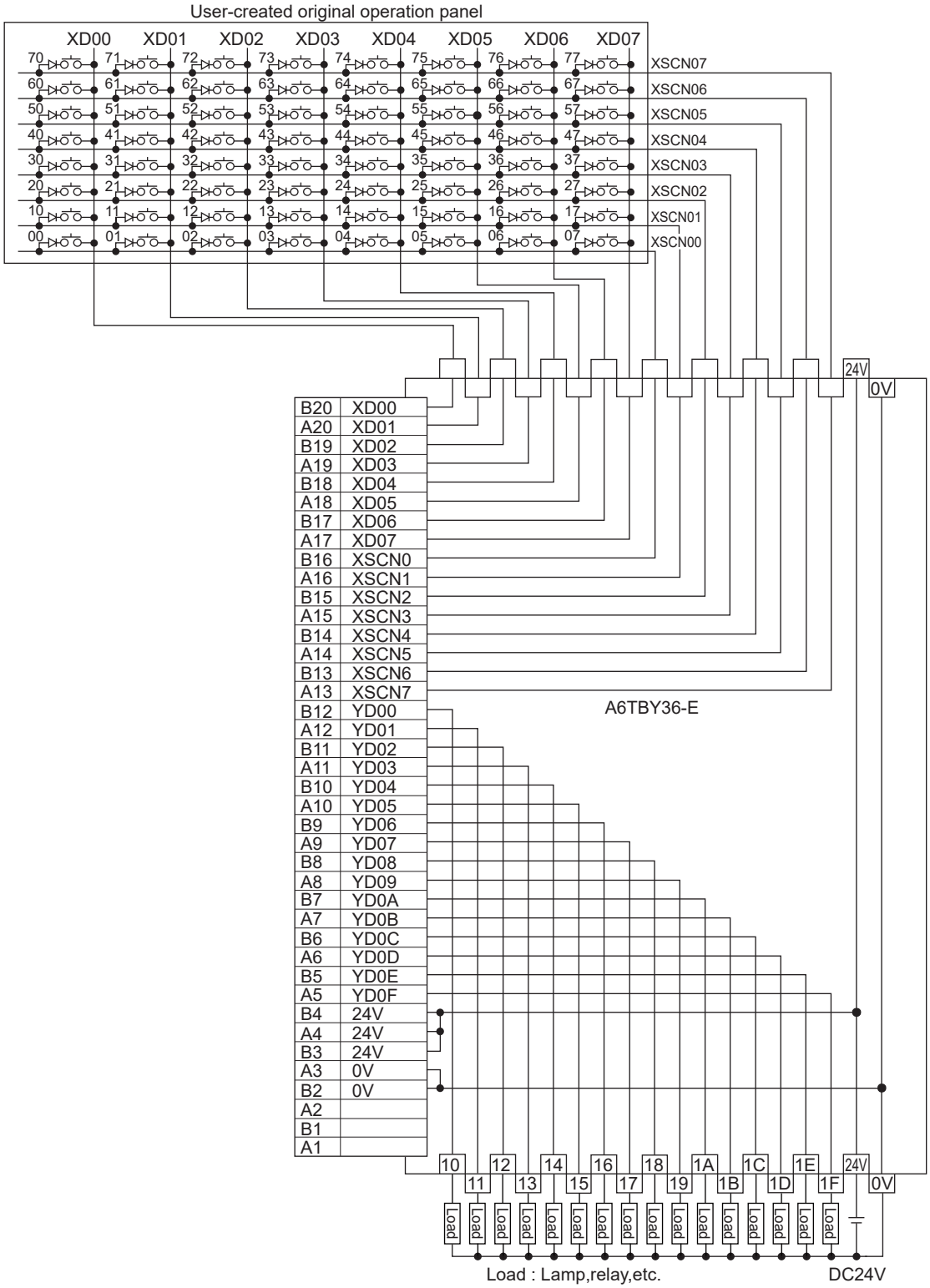
■Connection diagram (4)

When using A6TBY54-E connector/terminal block module



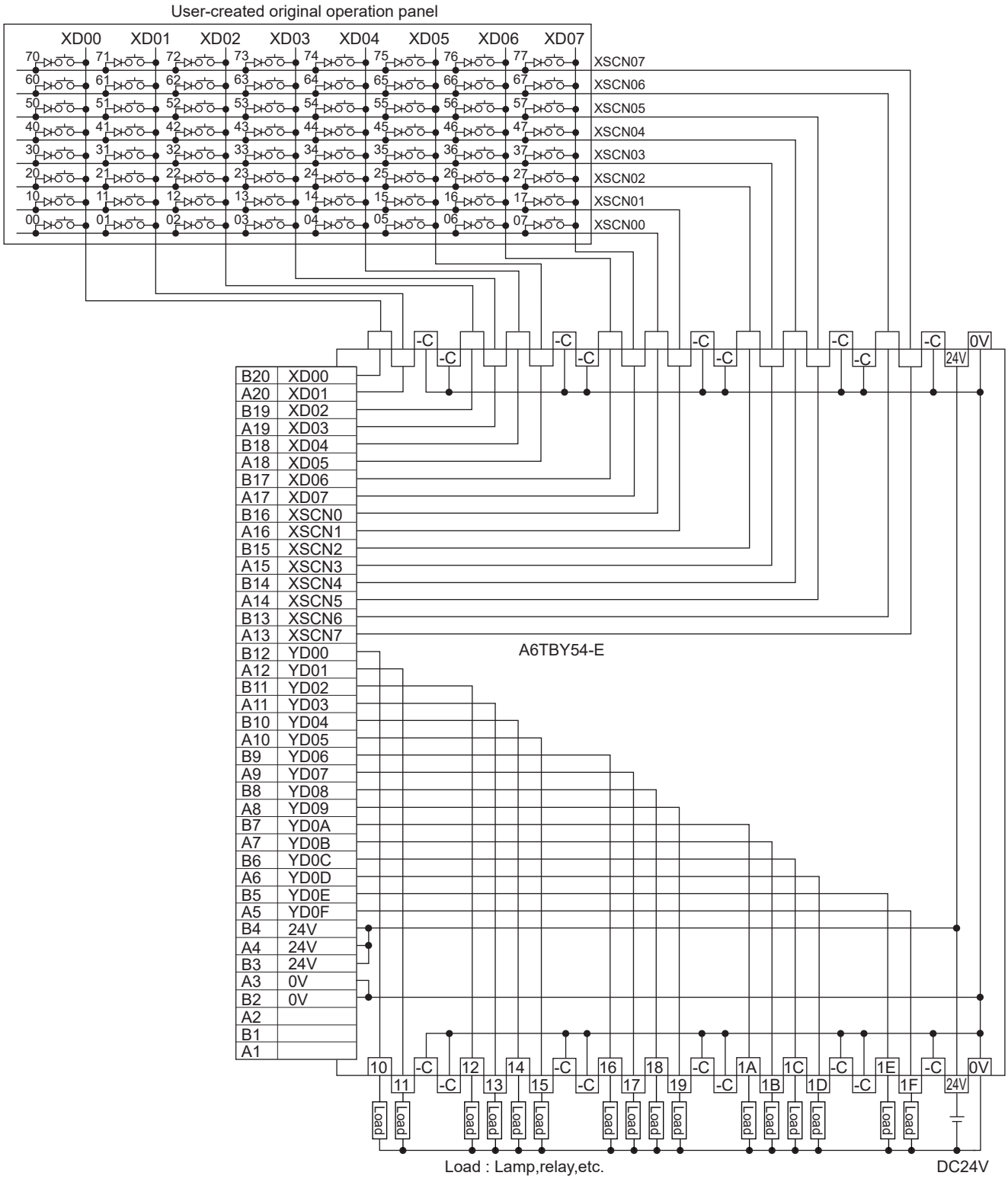
■Connection diagram (5)

When using A6TBY36-E connector/terminal block module



■Connection diagram (6)

When using A6TBY54-E connector/terminal block module

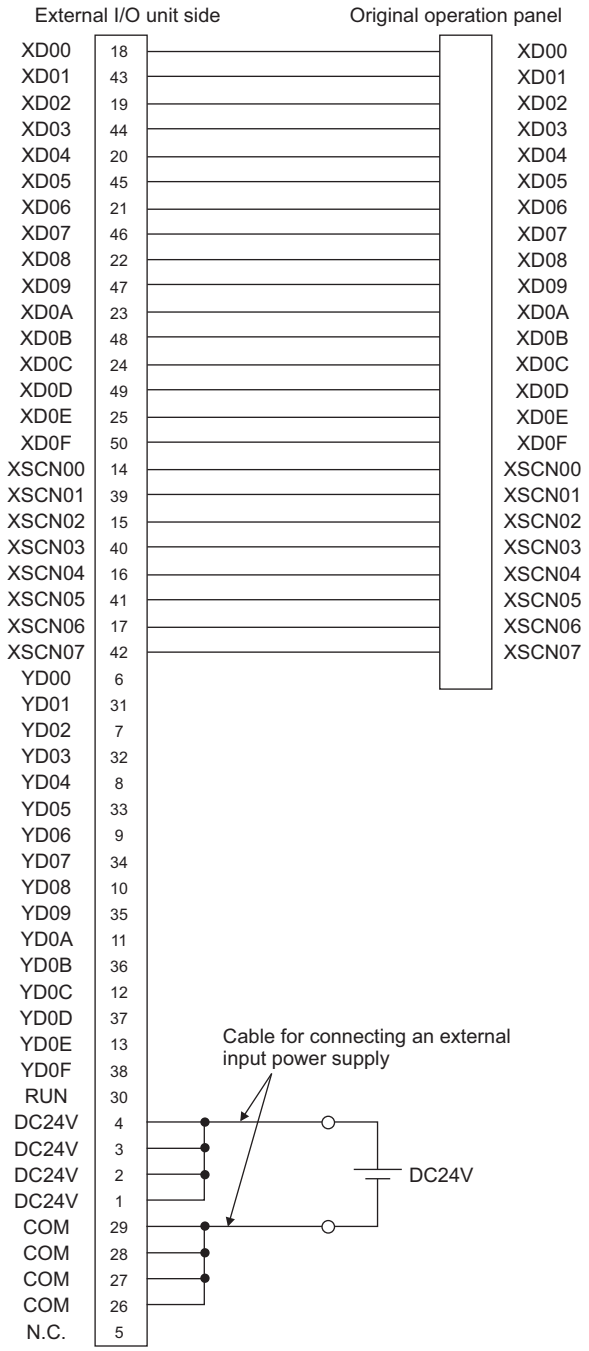


63.3.3 Connection cable between external I/O unit and operation panel

Refer to the following and prepare the connection cables between the external I/O unit and the operation panel.

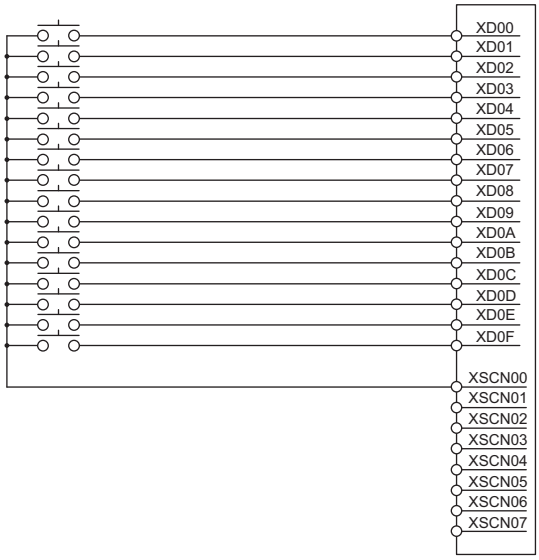
For GT15-DIO

■Connection diagram (7)

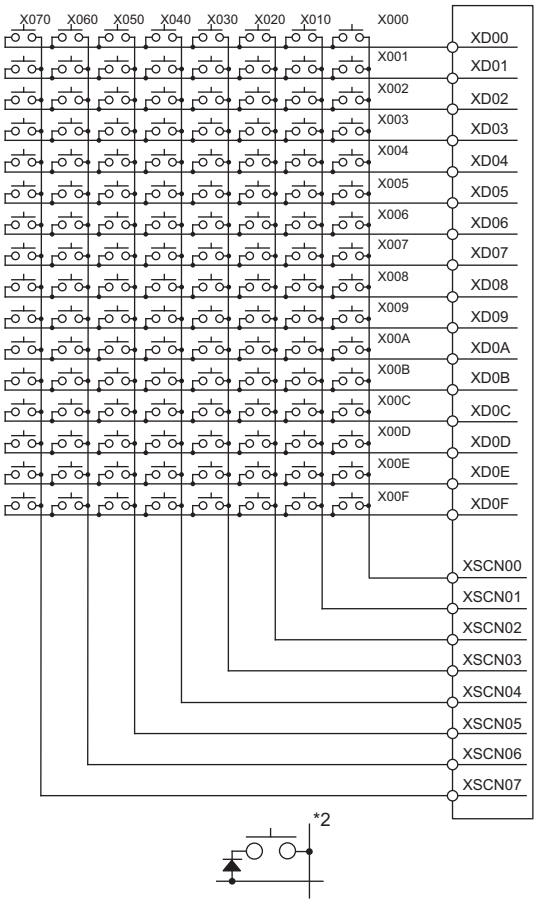


■Connection diagram (8)

For 16-point input



For 128-point input*1

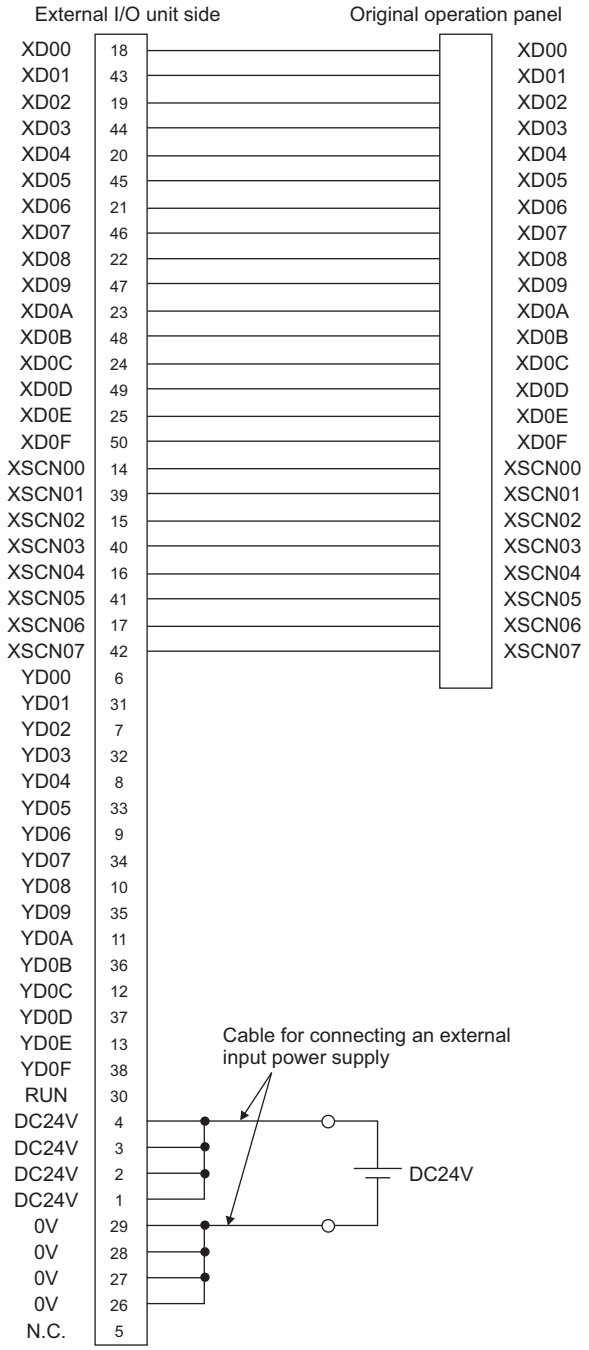


*1 The 128-point input is enabled by using a 16-point input signal (XD00 to XD0F) with an 8-point scan input signal (XSCN00 to XSCN07).

*2 When two or more switches are pressed simultaneously, make sure to insert a diode for each switch.

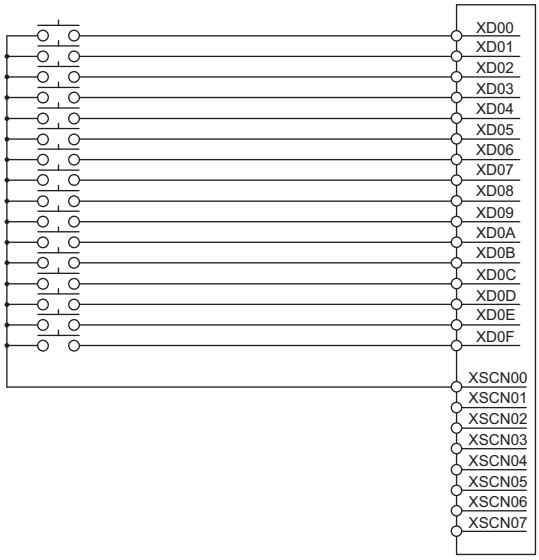
For GT15-DIOR

■Connection diagram (9)

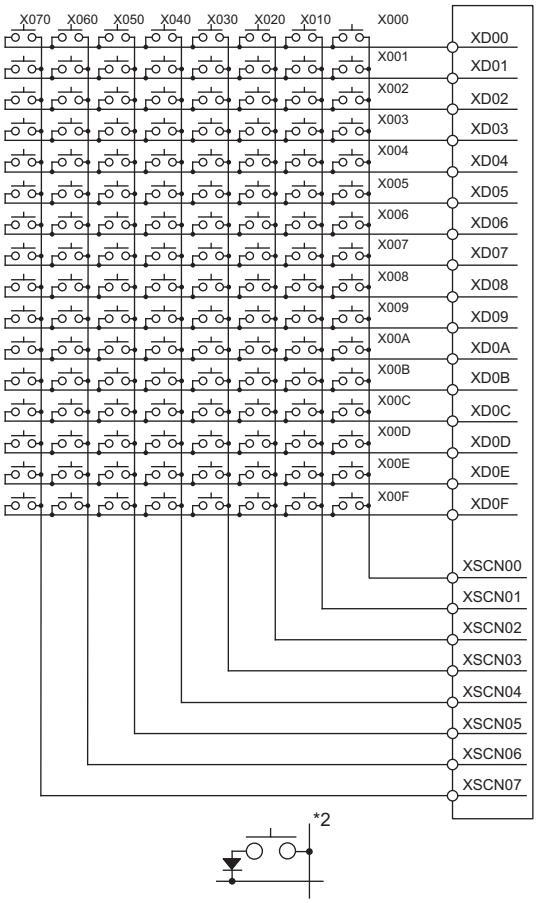


■Connection diagram (10)

For 16-point input



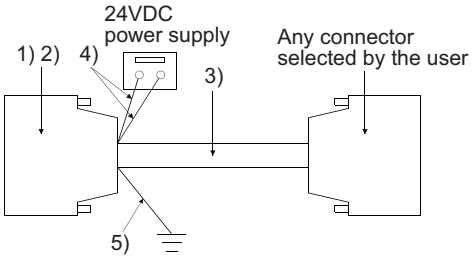
For 128-point input*1



*1 The 128-point input is enabled by using a 16-point input signal (XD00 to XD0F) with an 8-point scan input signal (XSCN00 to XSCN07).

*2 When two or more switches are pressed simultaneously, make sure to insert a diode for each switch.

Connector specifications



No.	Name	Model	Manufacturer
(1)	Connector	PCR-E50FS+ (For GT15-DIO) PCS-E50FS+ (For GT15-DIOR)	Honda Tsushin Kogyo Co., Ltd.
(2)	Connector cover	PCS-E50LPA+R*1	
(3)	Cable	UL 2464 AWG26 or equivalent	—
(4)	Cable for connecting an external input power supply	UL 1007 AWG24 or equivalent	—
(5)	FG cable	UL 1015 AWG14 or equivalent	—

*1 The former product PCS-E50LA can also be used.

Precautions when preparing a cable

■Cable length

Maximum cable length differs depending on the external device type or the cable used.

Ensure that the cable length is within the range that meets the I/O specifications of the external I/O unit.

■GOT side connector

For the GOT side connector, refer to the following.

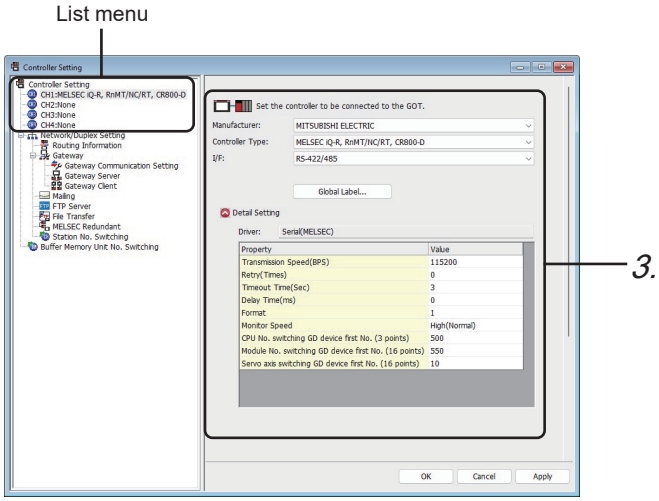
☞ Page 2954 GOT connector specifications

63.4 GOT side settings

63.4.1 Communication interface settings

[Controller Setting]

Set the channel of the equipment to be connected to the GOT.



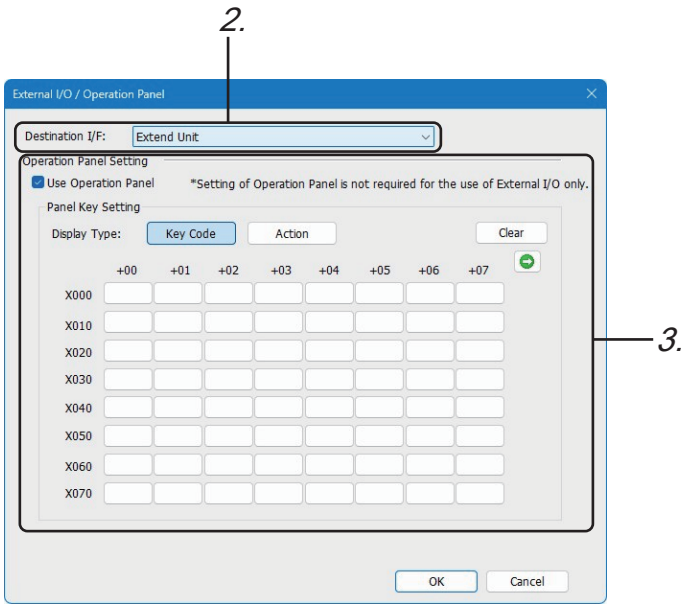
Operating procedure

1. Select [Common] → [Controller Setting] from the menu.
2. In the [Controller Setting] window, select the channel number to be used from the list menu.
3. Set [Manufacturer], [Controller Type], [I/F], and [Detail Setting] according to the controller used.
4. When you have completed the settings, click the [OK] button.

Point

The controller settings can be configured and checked in [I/F Communication Setting].
For details, refer to the following.
📖GT Designer3 (GOT3000) Screen Design Manual

[External I/O / Operation Panel]



Operating procedure

1. Select [Common] → [Peripheral Setting] → [External I/O /Operation Panel] from the menu.

2. Set the interface to which the external I/O device is connected.

3. Select [Use Operation Panel] to configure the operation panel settings.

For details on the operation panel settings, refer to the following manual.

📖GT Designer3 (GOT3000) Screen Design Manual

4. When you have completed the settings, click the [OK] button.

Point

- Controller settings using the GT37 utility

The controller settings can be changed in [Communication Settings] of the GT37 utility after writing [Communication Settings] of project data to GT37.

For details on the GT37 utility, refer to the following manual.

📖GOT3000 Series User's Manual (Utility & Maintenance Functions)

- Priority of the settings in [Controller Setting]

When the settings are configured in GT Designer3 or in the GT37 utility, the latest settings are effective.

Precautions

Before using the operation panel, configure the operation panel settings in GT Designer3.

For details, refer to the following manual.

📖GT Designer3 (GOT3000) Screen Design Manual

64 Barcode reader connection

☞ Page 2507 Connectable devices
☞ Page 2508 System configuration
☞ Page 2510 GOT side settings
☞ Page 2514 System configuration example

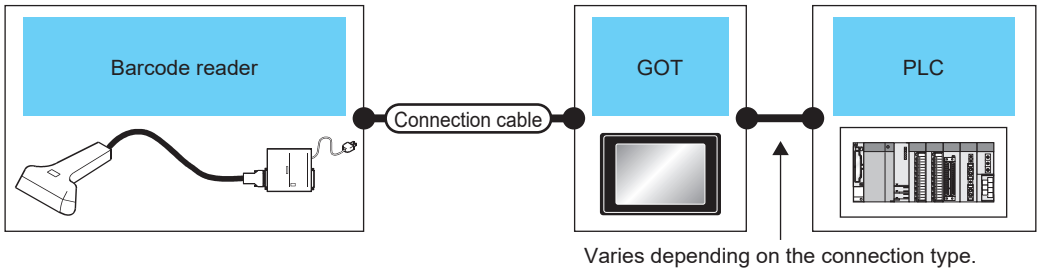
64.1 Connectable devices

For connectable barcode readers and system equipment, refer to the following Technical Bulletin.
📖List of Valid Devices Applicable for GOT3000 Series (GOT-A-0233)
For Technical Bulletins, go to the Mitsubishi Electric Factory Automation Global Website.
www.MitsubishiElectric.com/fa

Precautions

Before connecting the barcode reader, make the barcode function and system data settings in GT Designer3.
For details, refer to the following manual.
📖GT Designer3 (GOT3000) Screen Design Manual

64.2 System configuration



For details on the maximum number of connected devices, refer to the following.

☞ Page 2509 Maximum number of connected devices

Barcode reader	Communication type	Connection cable	GOT		PLC
			Interface	Model	
*1	USB	*1	Built-in USB interface	GT37 SoftGOT3000	For the system configuration between the GOT and PLC, refer to each chapter.
			USB interface of personal computer	GT37 SoftGOT3000	
	RS-232	*1	Built-in RS-232 interface	GT37 SoftGOT3000	
			RS-232 interface of personal computer	GT37 SoftGOT3000	
			GT37-IF2000 + GT15-RS2-9P	GT37 SoftGOT3000	
	RS-422/485	*1	Built-in RS-422/485 interface	GT37 SoftGOT3000	
			GT37-IF2000 + GT15-RS4-9S	GT37 SoftGOT3000	
			GT37-IF2000 + GT15-RS4-TE	GT37 SoftGOT3000	

*1 For connectable barcode readers, system equipment, available barcode types and connection cables, refer to the following Technical Bulletin.
List of Valid Devices Applicable for GOT3000 Series (GOT-A-0233)

Point

• System configuration between the GOT and PLC

For the system configuration between the GOT and PLC, refer to each chapter.

☞ System configuration in each chapter

Precautions

A USB barcode reader connected to GT SoftGOT3000 can be used only for the text input and the numerical input.

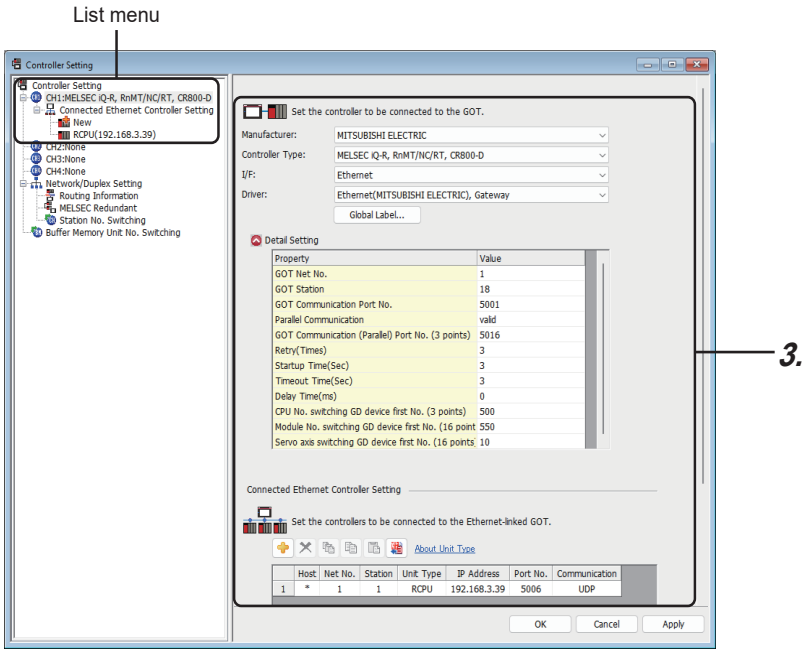
Maximum number of connected devices

Only one serial barcode reader and one USB barcode reader can access one GOT at a time.

64.3 GOT side settings

64.3.1 [Controller Setting]

Set the channel of the connected controller.



Operating procedure

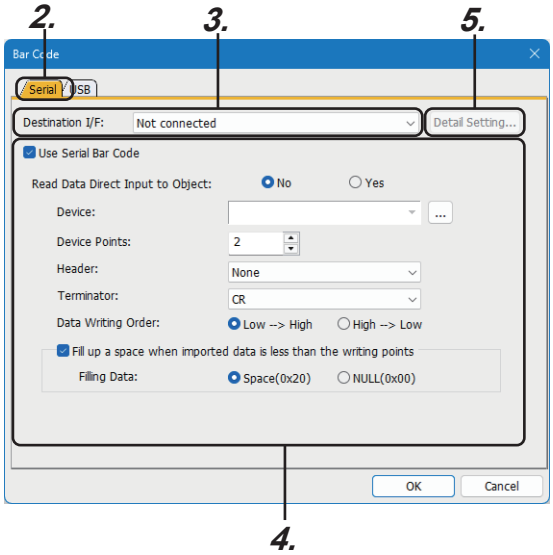
1. Select [Common] → [Controller Setting] from the menu.
2. In the [Controller Setting] window, select the channel number to be used from the list menu.
3. Set [Manufacturer], [Controller Type], [I/F], and [Detail Setting] according to the controller used.
4. When you have completed the settings, click the [OK] button.

Point

The controller settings can be checked in [I/F Communication Setting].
For details, refer to the following.
GT Designer3 (GOT3000) Screen Design Manual

64.3.2 Barcode reader settings

When using a serial barcode reader



Operating procedure

1. Select [Common] → [Peripheral Setting] → [Bar Code] from the menu.

2. Select the [Serial] tab in the [Bar Code] dialog.

3. Set the interface to which the barcode reader is connected.

4. Select [Use Serial Bar Code] to configure the function settings.

For details on the function setting, refer to the following manual.

📖GT Designer3 (GOT3000) Screen Design Manual

5. Click the [Detail Setting] button to display the [Detail Setting] dialog for each communication driver.

Make the settings according to the usage environment.

☞ Page 2513 [Detail Setting]

6. When you have completed the settings, click the [OK] button.

Point

• Communication interface setting

When Channel No. 8 is used, the following external devices, which use Channel No. 8, cannot be connected at the same time.

RFID controller that uses the external authentication

RFID controller that requires the power supply

When connecting the above-mentioned devices at the same time, set [Bar Code] to Channels No. 5 to 7.

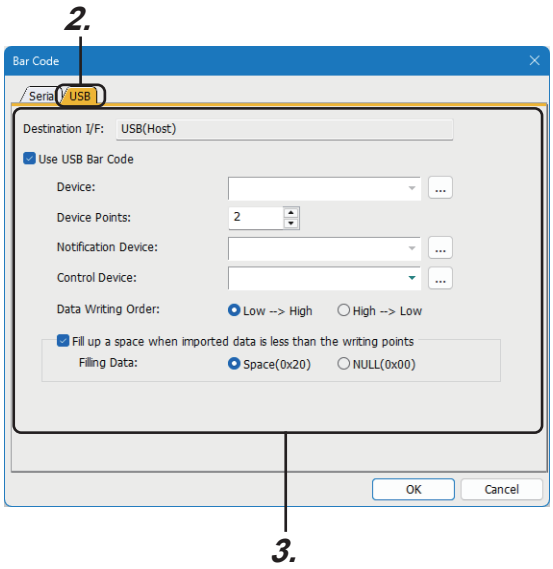
• Setting for the driver

To Channels No. 5 to 8, multiple [Bar Code] cannot be set.

• Channels of GT SoftGOT3000

Only Channel No. 5 can be set for GT SoftGOT3000.

When using a USB barcode reader



Operating procedure

1. Select [Common] → [Peripheral Setting] → [Bar Code] from the menu.

2. Select the [USB] tab in the [Bar Code] dialog.

3. Select [Use USB Bar Code] to configure the function settings.

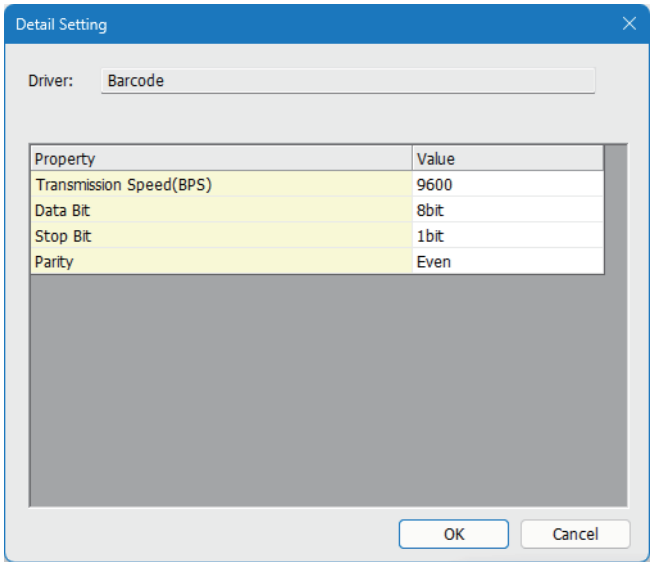
For details on the function setting, refer to the following manual.

📖GT Designer3 (GOT3000) Screen Design Manual

4. When you have completed the settings, click the [OK] button.

64.3.3 [Detail Setting]

Make the settings according to the usage environment.



Item	Description	Range
[Transmission Speed]	Set this item when change the transmission speed used for communication with the connected equipment.	• [4800bps] • [9600bps] • [19200bps] • [38400bps] • [57600bps] • [115200bps]
[Data Bit]	Set this item to change the data length used for communication with the connected equipment.	• [7bit] • [8bit]
[Stop Bit]	Specify the stop bit length for communications.	• [1bit] • [2bit]
[Parity]	Specify whether or not to perform a parity check, and how it is performed during communication.	• [None] • [Even] • [Odd]

Point

• Controller settings using the GT37 utility

The controller settings can be changed in [Communication Settings] of the GT37 utility after writing [Communication Settings] of project data to GT37.

For details on the GT37 utility, refer to the following manual.

GOT3000 Series User's Manual (Utility & Maintenance Functions)

• Priority of the settings in [Controller Setting]

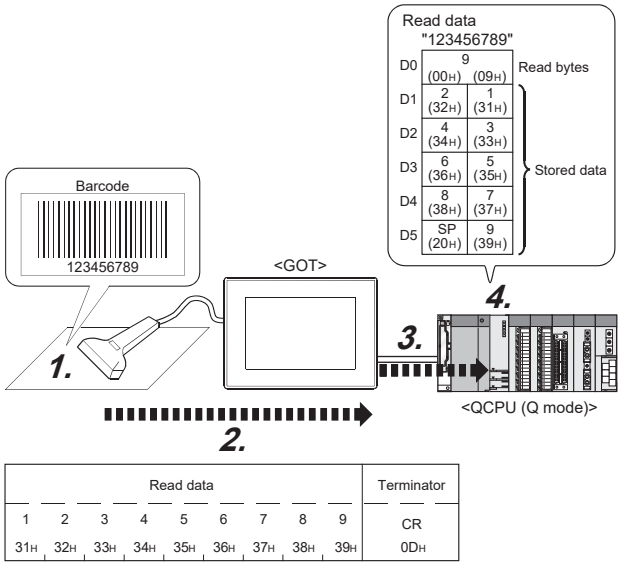
When the settings are configured in GT Designer3 or in the GT37 utility, the latest settings are effective.

64.4 System configuration example

A system configuration example for barcode reader connection is shown below.

64.4.1 When using a serial barcode reader

System configuration



Operating procedure

1. The barcode is read with the barcode reader.

☞ Page 2515 Barcode reader settings

2. The GOT receives the data sent from the barcode reader.

☞ Page 2515 Settings in the [I/F Communication Setting] window
☞ Page 2516 Settings in the [Detail Setting] dialog

3. The received data are written to the PLC CPU.

☞ Page 2517 Settings in the [Bar Code] dialog

4. The data read with the barcode reader are written into the PLC CPU devices.

☞ Page 2517 Confirmation on PLC side

Barcode reader settings

The barcode reader shall be configured as shown below.

Item	Setting value
Transmission Speed	9600bps
Data Bit	8bit
Stop Bit	1bit
Parity	Even
Header	None
Terminator	CR

Point

Barcode reader settings

For the barcode reader settings, refer to the following manual.

Manual of the barcode reader used

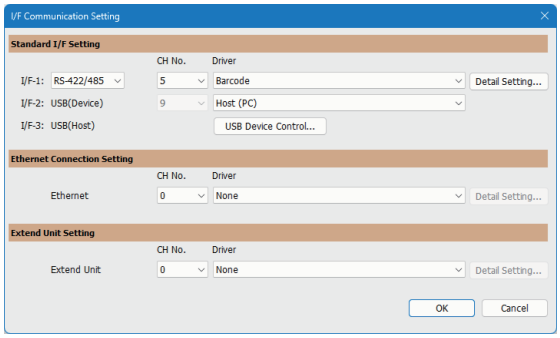
Settings in GT Designer3

■Settings in the [I/F Communication Setting] window

The controller settings can be configured and checked in [I/F Communication Setting].

For details, refer to the following.

GT Designer3 (GOT3000) Screen Design Manual

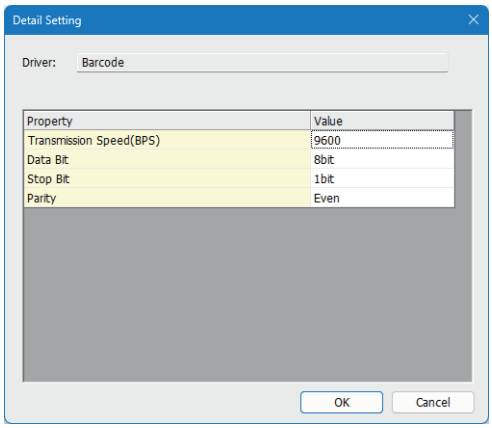


■Settings in the [Detail Setting] dialog

Operating procedure

1. In the [I/F Communication Setting] window, set the channel and communication driver for the interface to be used, and click the [Detail Setting] button.

2. Keep consistency with the barcode reader settings.



Item	Setting value (Use default value.)
[Transmission Speed]	[9600bps]
[Data Bit]	[8bit]
[Stop Bit]	[1bit]
[Parity]	[Even]

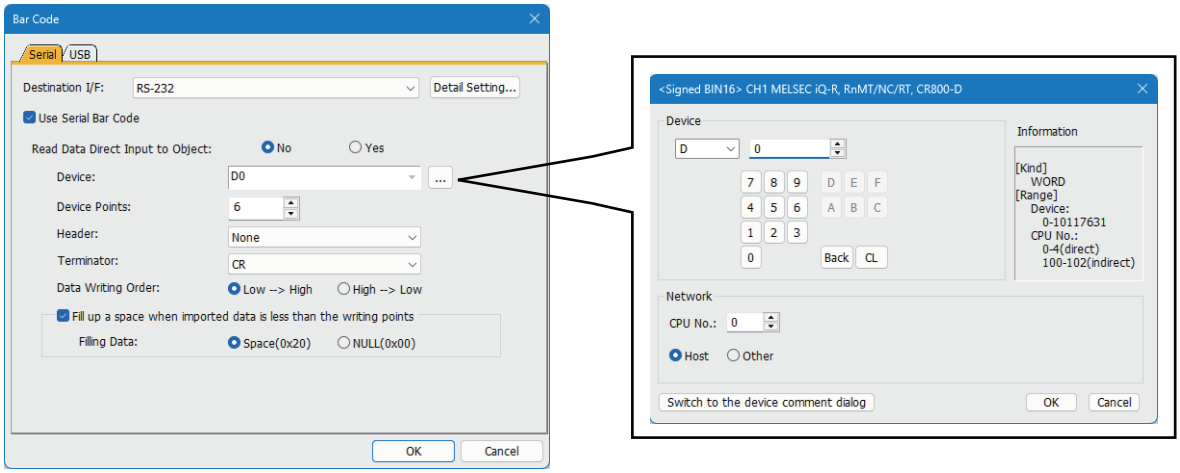
Point

[Controller Setting] in GT Designer3

For the setting method of [Controller Setting] in GT Designer3, refer to the following.

☞ Page 2510 [Controller Setting]

■Settings in the [Bar Code] dialog



Item	Setting value
[Read Data Direct Input to Object]	[No]
[Device]	[D0]
[Device Points]	[6]
[Header]*1	[None]
[Terminator]*1	[CR]
[Data Writing Order]	[Low → High]
[Fill up a space when imported data is less than the writing points]	Check (Filling Data is available)
[Filling Data]	[Space (0x20)]

*1 Keep consistency with the barcode reader settings.

Point

[Bar Code] of GT Designer3

For the [Bar Code] settings in GT Designer3, refer to the following manual.

GT Designer3 (GOT3000) Screen Design Manual

Confirmation on PLC side

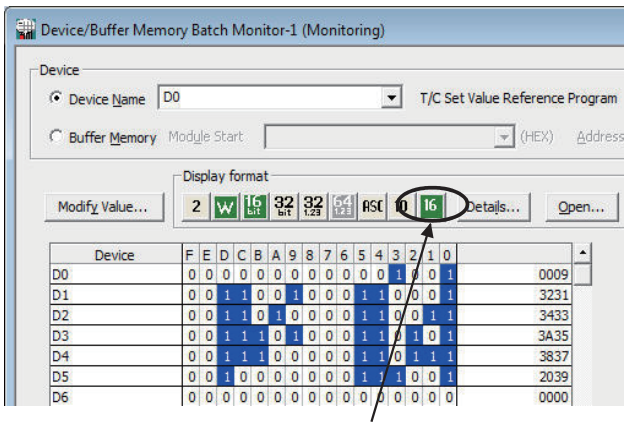
Connect GX Works2 to the QCPU (Q mode) and check if the data, which has been read with the barcode reader, are written in D0 to D5.

For the GX Works2 operation method, refer to the following manual.

GX Works2 Operating Manual

■Confirming the device values of D0 to D5 (when using GX Works2

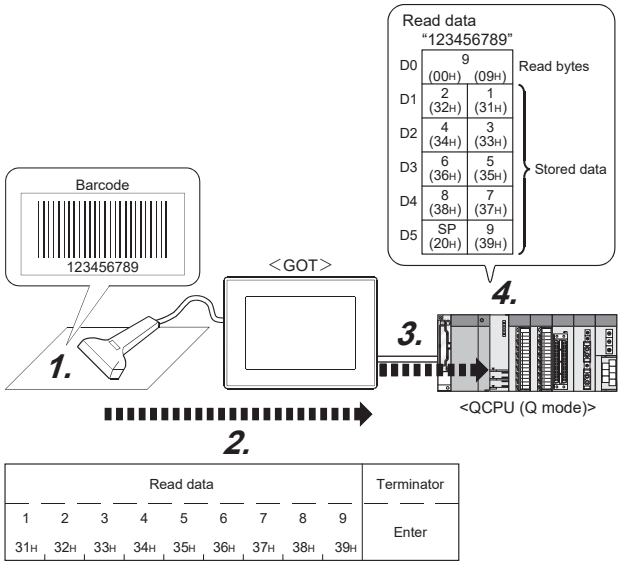
Startup procedure: GX Works2 → [Online] → [Monitor] → [Device/Buffer Memory Batch Monitor]



ASCII codes are hexadecimals.
Specify [HEX] for [Value] of the GX Works2 and confirm the read data.

64.4.2 When using a USB barcode reader

System configuration



Operating procedure

1. The barcode is read with the barcode reader.

☞ Page 2518 Barcode reader settings

2. The GOT receives the data sent from the barcode reader.

☞ Page 2519 Settings in the [GOT Setup] window

3. The received data are written to the PLC CPU.

☞ Page 2519 Settings in the [Bar Code] dialog

4. The data read with the barcode reader are written into the PLC CPU devices.

☞ Page 2519 Confirmation on PLC side

Barcode reader settings

The settings for the USB barcode reader are not necessary.

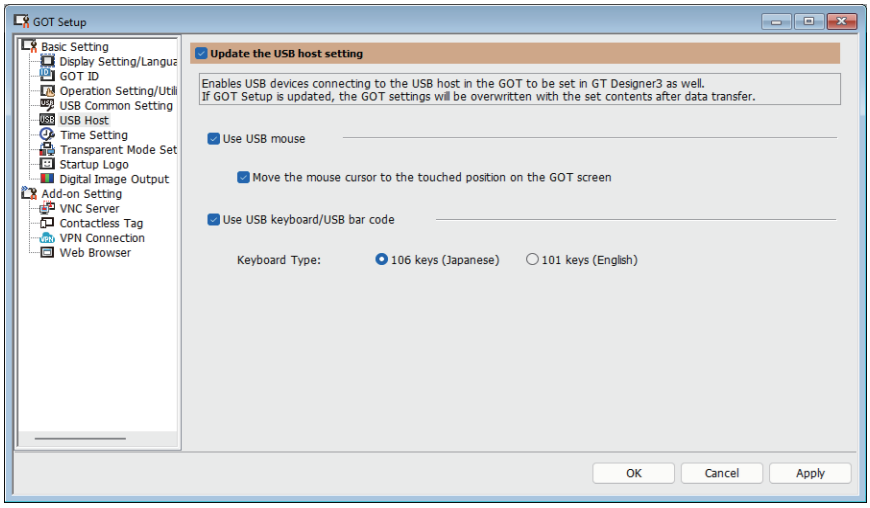
Point

When using a USB barcode reader, input values are handled as ASCII characters.

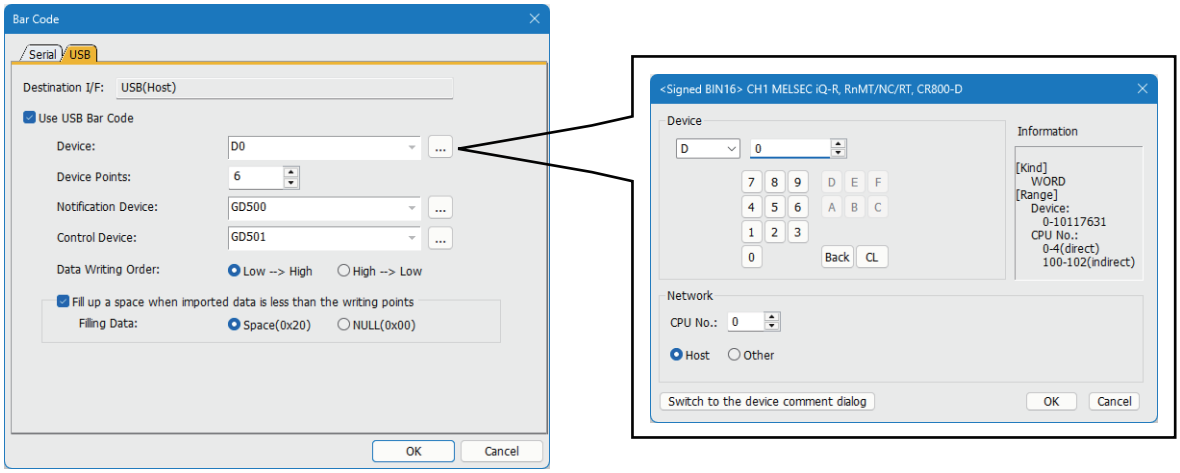
Settings in GT Designer3

■Settings in the [GOT Setup] window

In the [GOT Setup] window ([USB Host]), select [Use USB keyboard/USB bar code] and set [Keyboard Type] according to the setting of the USB barcode reader used.



■Settings in the [Bar Code] dialog



Item	Setting value
[Device]	[D0]
[Device Points]	[6]
[Notification Device]	[GD500]
[Control Device]	[GD501]
[Data Writing Order]	[Low → High]
[Fill up a space when imported data is less than the writing points]	Check (Filling Data is available)
[Filling Data]	[Space (0x20)]

Point

[Bar Code] of GT Designer3

For the [Bar Code] settings in GT Designer3, refer to the following manual.

📖GT Designer3 (GOT3000) Screen Design Manual

Confirmation on PLC side

For the confirmation on the PLC side, refer to the following.

☞ Page 2517 Confirmation on PLC side

65 Remote personal computer connection (Ethernet connection)

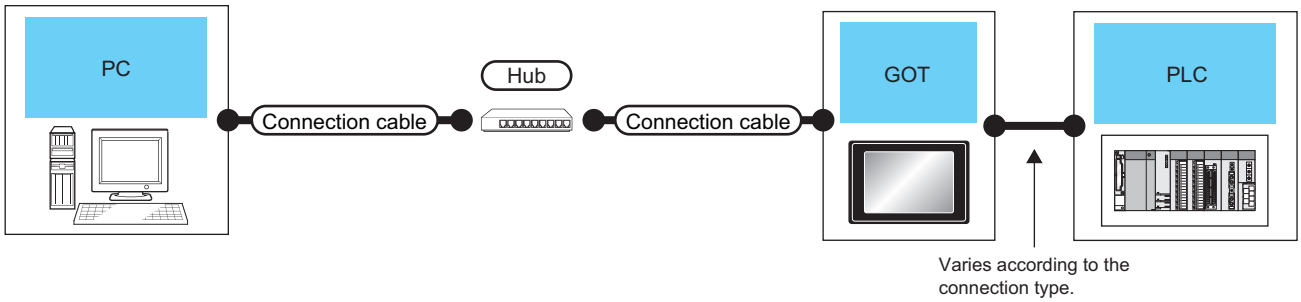
☞ Page 2520 Connectable devices
☞ Page 2521 System configuration
☞ Page 2523 GOT side settings

65.1 Connectable devices

The following table shows the GOT models that support remote personal computer connection.

Connection type	Model
Ethernet connection	GT37 SoftGOT3000

65.2 System configuration



☞ Page 2521 Connection cable

For details on the connection cables and the maximum segment length, refer to the following.

☞ Page 2522 Maximum segment length

☞ Page 2522 Maximum number of connected devices

For details on the maximum number of connected devices, refer to the following.

Personal computer	Connection cable	GOT		PLC
		Interface	Model	
To be selected by the user.	Twisted pair cable	Built-in Ethernet interface of GOT	GT37 SoftGOT3000	For the system configuration between the GOT and PLC, refer to each chapter.

Point

- System configuration between the GOT and PLC

For the system configuration between the GOT and PLC, refer to each chapter.

☞ System configuration in each chapter

Connection cable

Use a connection cable that meets the following standards.

Standard	Category
10BASE-T	Shielded twisted pair cable (STP) or unshielded twisted pair cable (UTP) of category 3 or higher
100BASE-TX	Shielded twisted pair cable (STP) or unshielded twisted pair cable (UTP) of category 5 or higher
1000BASE-T	Shielded twisted pair cable (STP) or unshielded twisted pair cable (UTP) of category 5e or higher

The destination device connected with the twisted pair cable varies with the configuration of the Ethernet network system used.

Connect the cable to the Ethernet module, hub, or other system equipment corresponding to the applicable Ethernet network system.

Use cables, connectors, and hubs that meet the IEEE802.3 10BASE-T/100BASE-TX/1000BASE-T standards.

When only one GOT is connected, the GOT can be directly connected to the device without a hub.

Maximum segment length

The maximum segment length (length between a hub and a node) is 100 m.
The maximum length depends on the Ethernet equipment used.
The following shows the number of connectable hubs when a repeater hub is used.

- 10BASE-T: Up to 4 for a cascade connection (within 500 m)
- 100BASE-TX: Up to 2 for a cascade connection (within 205 m)
- 1000BASE-T: The number differs depending on the hub to be used.

When switching hubs are used, there is no theoretical limit to the number of cascade connections between switching hubs.
For the limit, contact the switching hub manufacturer.

Precautions

When multiple network devices (including GOTs) are connected in the same segment, the network load increases and the transmission speed between the GOT and personal computer may be reduced.
The following actions may improve the communication performance.

- Use a switching hub compatible with 1000BASE-T (1 Gbps) or more.
- Reduce the number of devices monitored by the GOT.

Maximum number of connected devices

One GOT can access one personal computer at a time.

65.3 GOT side settings

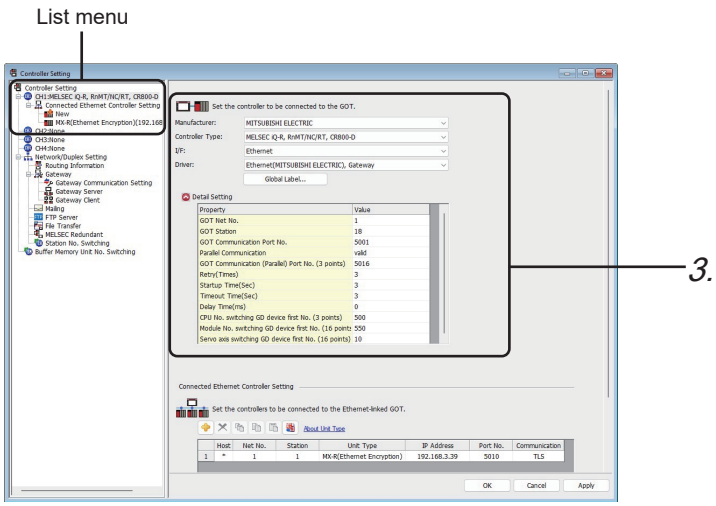
☞ Page 2523 [Controller Setting]
☞ Page 2524 [PC Remote Operation]

65.3.1 [Controller Setting]

Install Ethernet communication drivers on the GOT and configure the communication interface settings.

Precautions

To use the remote personal computer operation (Ethernet), Ethernet communication drivers must be installed on the GOT.
Configure the Ethernet communication driver settings in the settings for the connected device or the peripheral device.
For details on the setting method, refer to the following manual.
📖GT Designer3 (GOT3000) Screen Design Manual



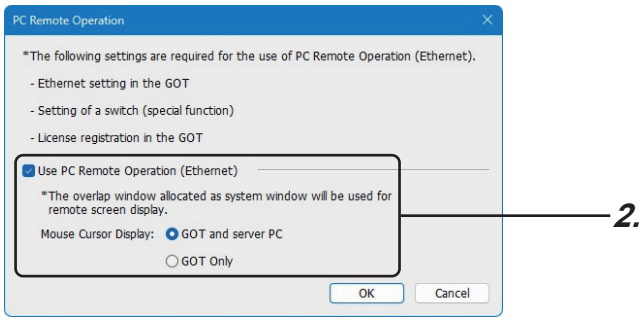
Operating procedure

1. Select [Common] → [Controller Setting] from the menu.
2. In the [Controller Setting] window, select the channel number to be used from the list menu.
3. Set [Manufacturer], [Controller Type], [I/F], and [Detail Setting] according to the controller used.
4. When you have completed the settings, click the [OK] button.

Point

The controller settings can be checked in [I/F Communication Setting].
For details, refer to the following.
📖GT Designer3 (GOT3000) Screen Design Manual

65.3.2 [PC Remote Operation]



Operating procedure

1. Select [Common] → [Peripheral Setting] → [PC Remote Operation] from the menu.

2. Select [Use PC Remote Operation (Ethernet)] of [PC Remote Operation (Ethernet)] and configure the settings.

For details on the settings, refer to the following manual.

📖GT Designer3 (GOT3000) Screen Design Manual

3. When you have completed the settings, click the [OK] button.

Point

Install and set the software required for the personal computer according to the system configuration.

For details on the setting method, refer to the following manual.

☞ GT Designer3 (GOT3000) Screen Design Manual

66 GOT Mobile connection

☞ Page 2525 Connectable devices
☞ Page 2526 System configuration
☞ Page 2528 GOT side settings

Point

For cautions or troubleshooting of the GOT Mobile function, refer to the following manual.
📖GT Designer3 (GOT3000) Screen Design Manual

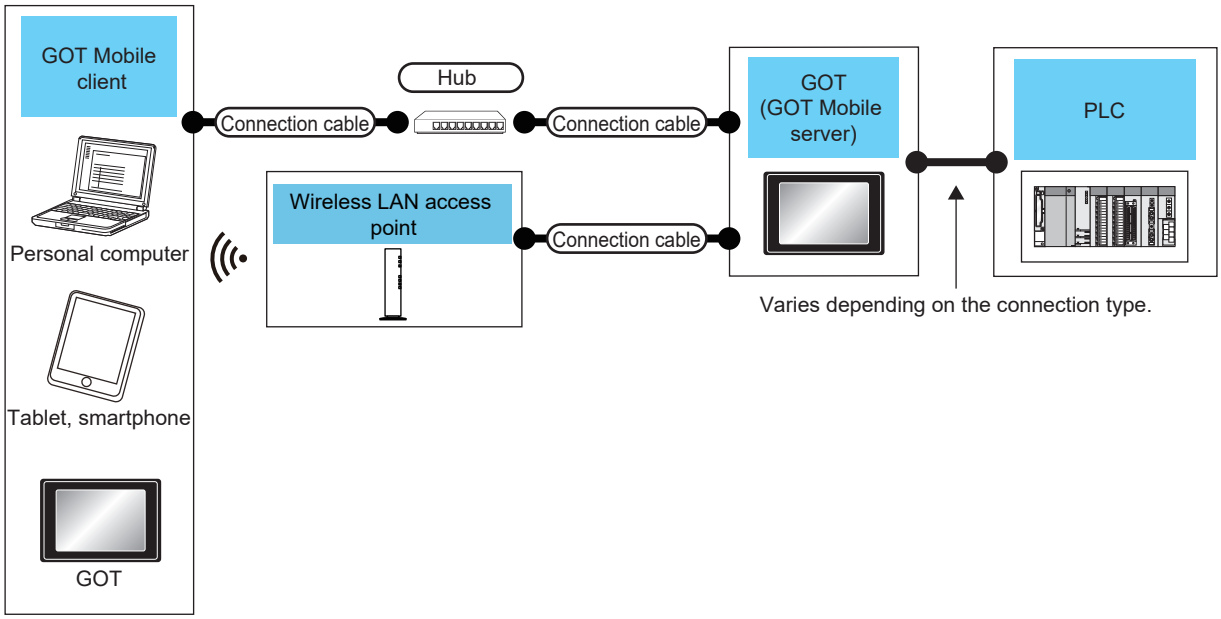
66.1 Connectable devices

For connectable devices and usable browsers as clients, refer to the following manual.
📖GT Designer3 (GOT3000) Screen Design Manual

Point

CoreOS version of the GOT
To use GOT Mobile connection, install CoreOS version L or later on the GOT.
For the procedure to check the CoreOS version and upgrade the version, refer to the following.
📖GT Designer3 (GOT3000) Screen Design Manual
📖GOT3000 Series User's Manual (Utility & Maintenance Functions)

66.2 System configuration



For details on the connection cables and the maximum segment length, refer to the following.

☞ Page 2527 Connection cable
☞ Page 2527 Maximum segment length

For details on the maximum number of connected devices, refer to the following.

☞ Page 2527 Maximum number of connected devices

Controller (GOT Mobile client)	Connection cable Wireless LAN access point	Connection cable	GOT (GOT Mobile server)		PLC
			Interface	Model	
To be selected by the user.*1	Twisted pair cable	Twisted pair cable	Built-in Ethernet interface of GOT	GT37 SoftGOT3000	For the system configuration between the GOT and PLC, refer to each chapter.
			Ethernet interface of personal computer	GT37 SoftGOT3000	
	Wireless access point: For the connectable access point and system devices, refer to the following Technical Bulletin. 📖List of Valid Devices Applicable for GOT3000 Series (GOT-A-0233)	Twisted pair cable	Built-in Ethernet interface of GOT	GT37 SoftGOT3000	
			Ethernet interface of personal computer	GT37 SoftGOT3000	

*1 Use the GOT that already has the web browser function installed.

Connection cable

Use a connection cable that meets the following standards.

Standard	Category
10BASE-T	Shielded twisted pair cable (STP) or unshielded twisted pair cable (UTP) of category 3 or higher
100BASE-TX	Shielded twisted pair cable (STP) or unshielded twisted pair cable (UTP) of category 5 or higher
1000BASE-T	Shielded twisted pair cable (STP) or unshielded twisted pair cable (UTP) of category 5e or higher

The destination device connected with the twisted pair cable varies with the configuration of the Ethernet network system used.

Connect the cable to the Ethernet module, hub, or other system equipment corresponding to the applicable Ethernet network system.

Use cables, connectors, and hubs that meet the IEEE802.3 10BASE-T/100BASE-TX/1000BASE-T standards.

When only one GOT is connected, the GOT can be directly connected to the device without a hub.

Maximum segment length

The maximum segment length (length between a hub and a node) is 100 m.

The maximum length depends on the Ethernet equipment used.

The following shows the number of connectable hubs when a repeater hub is used.

- 10BASE-T: Up to 4 for a cascade connection (within 500 m)
- 100BASE-TX: Up to 2 for a cascade connection (within 205 m)
- 1000BASE-T: The number differs depending on the hub to be used.

When switching hubs are used, there is no theoretical limit to the number of cascade connections between switching hubs.

For the limit, contact the switching hub manufacturer.

When connecting the GOT and personal computer via a hub, use a cable according to the client configuration.

Precautions

When multiple network devices (including GOTs) are connected in the same segment, the network load increases and the transmission speed between the GOT and PLC may be reduced.

The following actions may improve the communication performance.

- Use a switching hub compatible with 1000BASE-T (1 Gbps) or more.
- Reduce the number of devices monitored by the GOT.

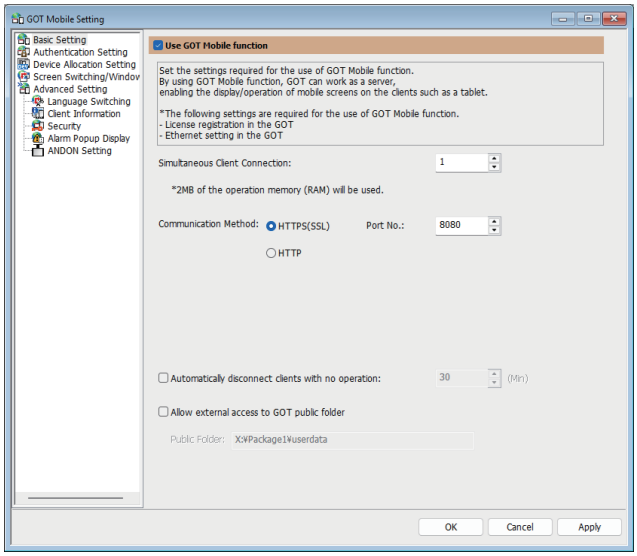
Maximum number of connected devices

The following shows the number of connectable clients per GOT channel and the number of GOTs connectable to one client.

Connected device		GOT	
Model (GOT Mobile client)	Number of GOTs connectable to one client	Model	Number of connectable clients per GOT channel
Personal computer Tablet Smartphone GOT	1	GT37 SoftGOT3000	5
	1	GT37 SoftGOT3000	15

66.3 GOT side settings

66.3.1 GOT Mobile settings



Operating procedure

1. Select [Common] → [GOT Mobile Setting] from the menu to display the setting dialog.

2. Check the [Use GOT Mobile function] of [GOT Mobile Setting] to set.

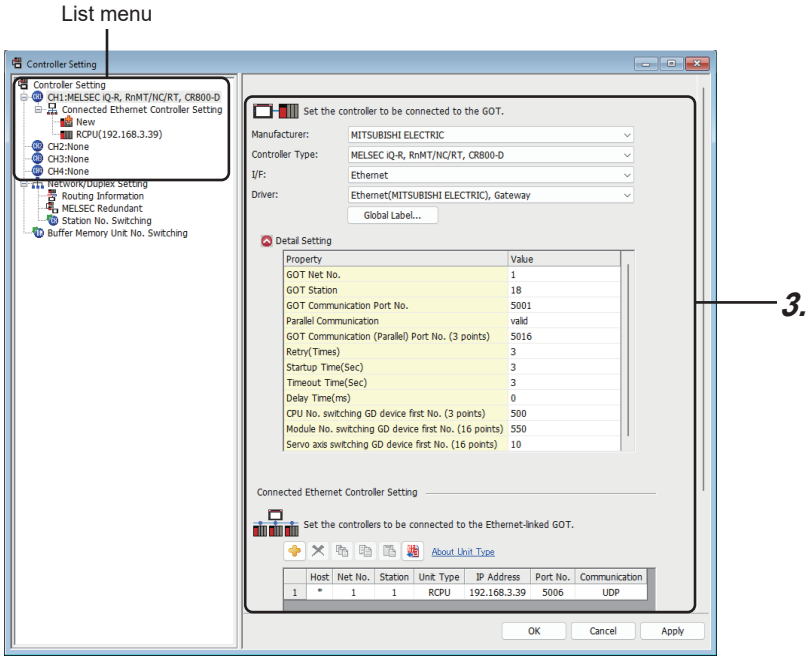
For details on the settings, refer to the following manual.

📖GT Designer3 (GOT3000) Screen Design Manual

3. When you have completed the settings, click the [OK] button.

66.3.2 [Controller Setting]

Set the channel of the connected controller.



Operating procedure

1. Select [Common] → [Controller Setting] from the menu.
2. In the [Controller Setting] window, select the channel number to be used from the list menu.
3. Set [Manufacturer], [Controller Type], [I/F], and [Detail Setting] according to the controller used.
4. When you have completed the settings, click the [OK] button.

67 VNC server connection

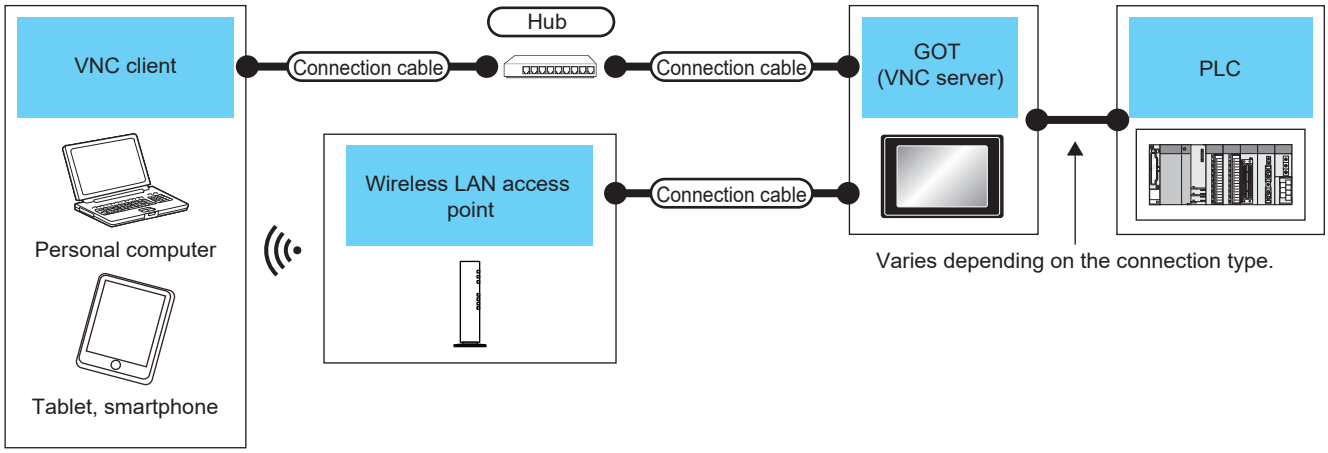
☞ Page 2530 Connectable devices
☞ Page 2531 System configuration
☞ Page 2533 GOT side settings

67.1 Connectable devices

The VNC server can be connected to the following VNC client.

Connected device	Software
Personal computer	UltraVNC
Smartphone, tablet	iOS, Android OS

67.2 System configuration



For details on the connection cables and the maximum segment length, refer to the following.

☞ Page 2531 Connection cable
☞ Page 2532 Maximum segment length

For details on the maximum number of connected devices, refer to the following.

☞ Page 2532 Maximum number of connected devices

Connected device	Connection cable Wireless LAN access point	Connection cable	GOT (VNC server)		PLC
			Interface	Model	
To be selected by the user.	Twisted pair cable Wireless access point: For the connectable access point and system devices, refer to the following Technical Bulletin. 📖List of Valid Devices Applicable for GOT3000 Series (GOT-A-0233)	Twisted pair cable	Built-in Ethernet interface of GOT	GT37 SoftGOT3000	For the system configuration between the GOT and PLC, refer to each chapter.

67.2.1 Connection cable

Use a connection cable that meets the following standards.

Standard	Category
10BASE-T	Shielded twisted pair cable (STP) or unshielded twisted pair cable (UTP) of category 3 or higher
100BASE-TX	Shielded twisted pair cable (STP) or unshielded twisted pair cable (UTP) of category 5 or higher
1000BASE-T	Shielded twisted pair cable (STP) or unshielded twisted pair cable (UTP) of category 5e or higher

The destination device connected with the twisted pair cable varies with the configuration of the Ethernet network system used.

Connect the cable to the Ethernet module, hub, or other system equipment corresponding to the applicable Ethernet network system.

Use cables, connectors, and hubs that meet the IEEE802.3 10BASE-T/100BASE-TX/1000BASE-T standards.

67.2.2 Maximum segment length

The maximum segment length (length between a hub and a node) is 100 m.
The maximum length depends on the Ethernet equipment used.
The following shows the number of connectable hubs when a repeater hub is used.

- 10BASE-T: Up to 4 for a cascade connection (within 500 m)
- 100BASE-TX: Up to 2 for a cascade connection (within 205 m)
- 1000BASE-T: The number differs depending on the hub to be used.

When switching hubs are used, there is no theoretical limit to the number of cascade connections between switching hubs.
For the limit, contact the switching hub manufacturer.

Precautions

When multiple network devices (including GOTs) are connected in the same segment, the network load increases and the transmission speed between the GOT and PLC may be reduced.
The following actions may improve the communication performance.

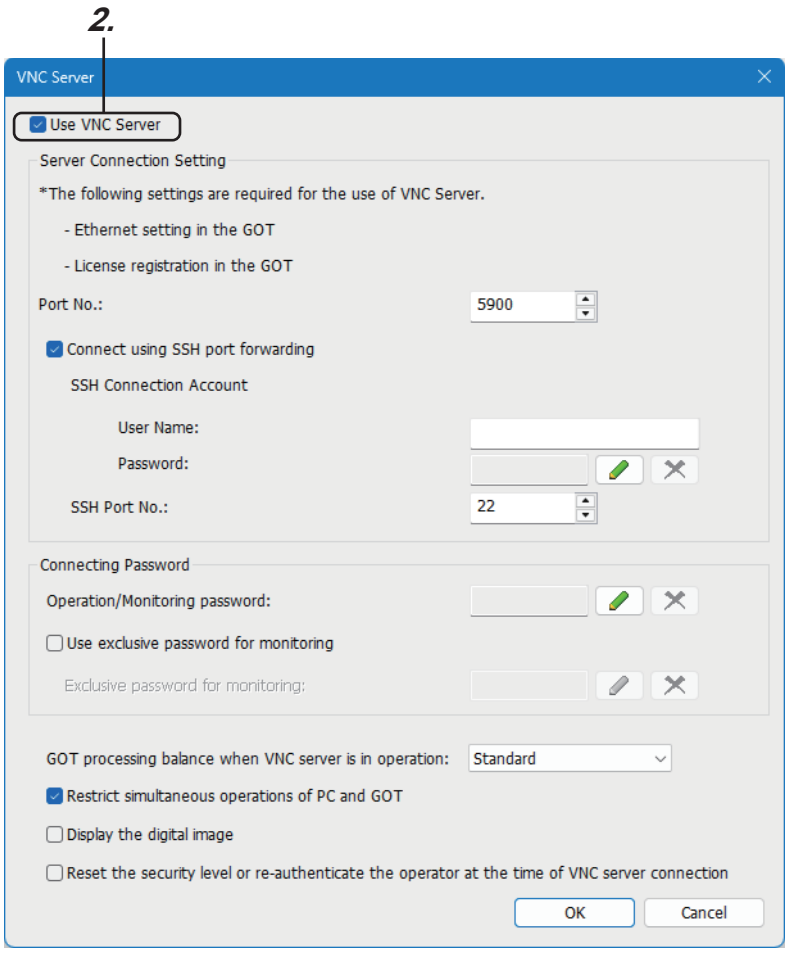
- Use a switching hub compatible with 1000BASE-T (1 Gbps) or more.
- Reduce the number of devices monitored by the GOT.

67.2.3 Maximum number of connected devices

Only one VNC client can access one GOT at a time.

67.3 GOT side settings

67.3.1 VNC server function settings



Operating procedure

1. Select [Common] → [Peripheral Setting] → [VNC Server] from the menu to display the setting dialog.

2. Check the [VNC Server] of [Use VNC Server] to set.

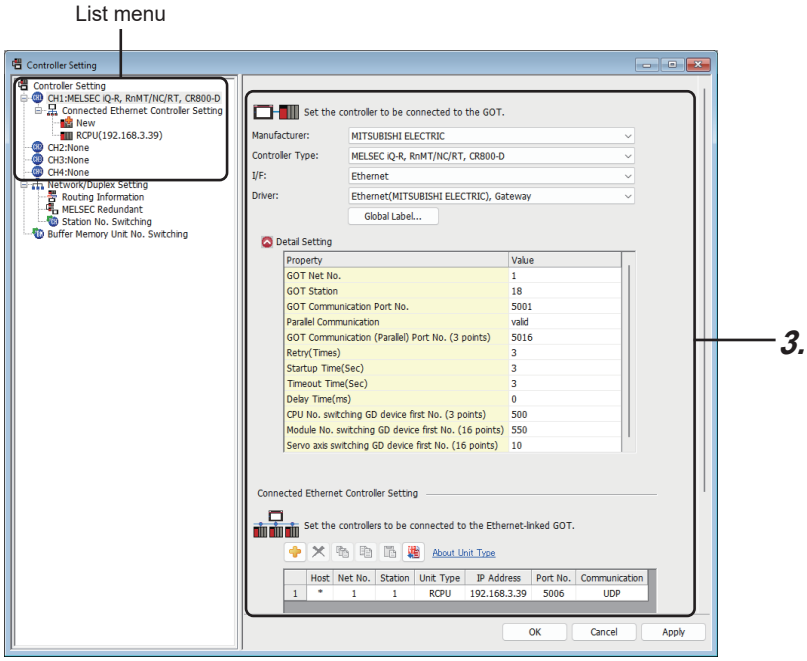
For details on the settings, refer to the following manual.

📖GT Designer3 (GOT3000) Screen Design Manual

3. When you have completed the settings, click the [OK] button.

67.3.2 [Controller Setting]

For using the VNC server, Ethernet communication drivers must be set on the GOT, and set the Communication settings.



Operating procedure

1. Select [Common] → [Controller Setting] from the menu.
2. In the [Controller Setting] window, select the channel number to be used from the list menu.
3. Set [Manufacturer], [Controller Type], [I/F], and [Detail Setting] according to the controller used.
4. When you have completed the settings, click the [OK] button.

Precautions

For connecting the VNC server to the personal computer (VNC client), it is necessary to install the VNC client software to the personal computer to be connected and set it.

Refer to the following for details of the VNC client software installation method and setting method.

📖GT Designer3 (GOT3000) Screen Design Manual

68 Camera, video device, and external display connection

☞ Page 2535 Connectable devices
☞ Page 2536 System configuration
☞ Page 2538 GOT side settings

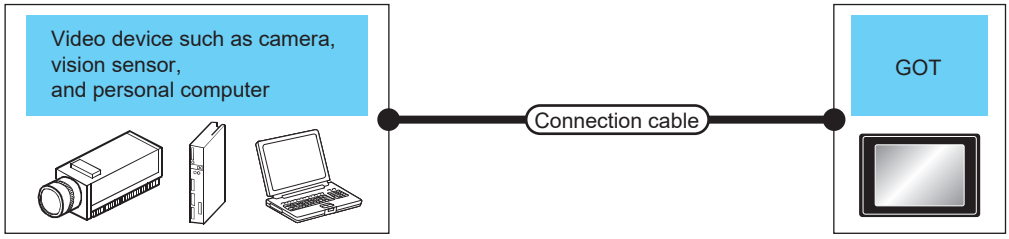
68.1 Connectable devices

GT37 SoftGOT3000

For connectable camera types, refer to the following Technical Bulletin.
📖List of Valid Devices Applicable for GOT3000 Series (GOT-A-0233)
For Technical Bulletins, go to the Mitsubishi Electric Factory Automation Global Website.
www.MitsubishiElectric.com/fa

68.2 System configuration

68.2.1 Displaying images from the camera/video device on the GOT



For details on the maximum number of connected devices, refer to the following.

☞ Page 2537 Maximum number of connected devices

Controller		Connection cable*3*6	Option	GOT	
				Interface	Model
Camera*1*5	Devices for which all the following conditions are satisfied: • UVC is supported. • JPEG is supported.	USB cable	—	Built-in USB interface	GT37 SoftGOT3000
Video device*1*2		GT15-C50VG (5 m) or HDMI-certified cable	USB converter*1*4	Built-in USB interface	GT37 SoftGOT3000

*1 For connectable types of camera/video devices or USB converters, refer to the following Technical Bulletin.
📖List of Valid Devices Applicable for GOT3000 Series (GOT-A-0233)

*2 Select the video device to be used.

*3 The cable length depends on the specifications of the video device.

*4 Use a USB converter that supports the following:
• USB 2.0 or higher
• Resolution and refresh rate of the video device
For details, refer to the following.
📖User's Manual of the USB converter used
If a USB converter that does not support is used, images may not be displayed properly.

*5 Use a device that supports USB 2.0 or higher.

*6 When using a hub, use a hub that supports USB 2.0 or higher.
When multiple devices are connected to a USB hub, images may not be displayed properly due to insufficient power supply.

Precautions

When connecting to a personal computer, ground the earth wire of the computer.

Point

• Power supply of vision sensor

If a camera is used via a vision sensor, a power supply module may be required depending on the vision sensor to be used.

• Selection of Video signal output source

Depending on the camera or the system to be used, both the power supply module and the camera can output video signals.

If video signals are output from both the camera and the power supply module, the voltage level of the signals may become lower and images may not be displayed properly.

In this case, use the output from the camera.

• Distortion of the image caused by the noise

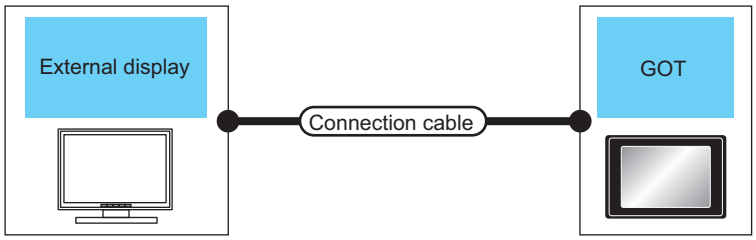
If the screen flickers due to the noise from the RGB cable, attach the following ferrite core to the input section of the RGB cable.

Recommended ferrite core: TDK ZCAT3035-1330 (or equivalent products)

Maximum number of connected devices

Only one camera or video device can be connected to one GOT at a time.

68.2.2 Displaying GOT screen on external display



For details on the maximum number of connected devices, refer to the following.

☞ Page 2537 Maximum number of connected devices

Controller	Connection cable	Maximum cable length	GOT	
			Interface	Model
HDMI-compatible display	HDMI cable	*1	Built-in digital image output interface	GT37 SoftGOT3000

*1 The maximum cable length varies depending on the specifications of the external display used.

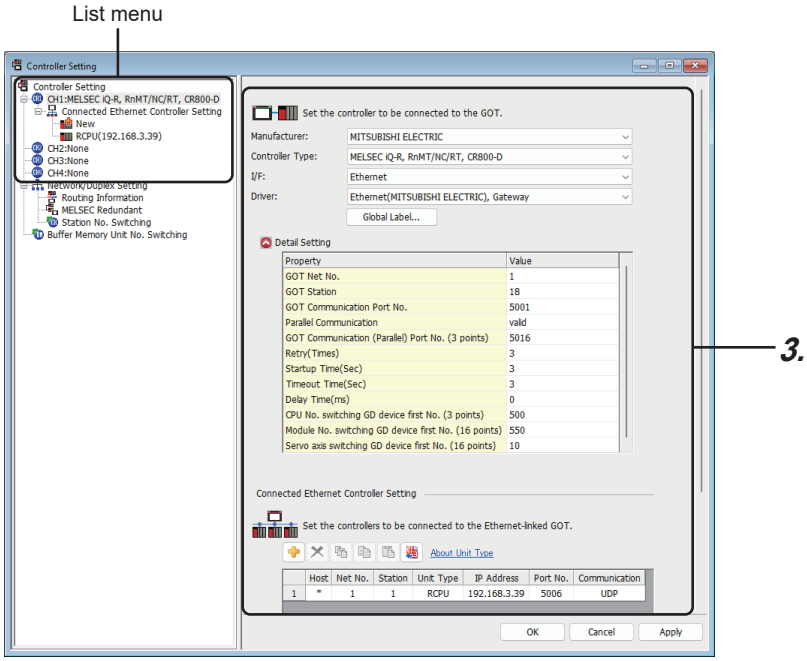
Maximum number of connected devices

Only one display can be connected to one GOT at a time.

68.3 GOT side settings

68.3.1 [Controller Setting]

Set the channel of the equipment to be connected to the GOT.



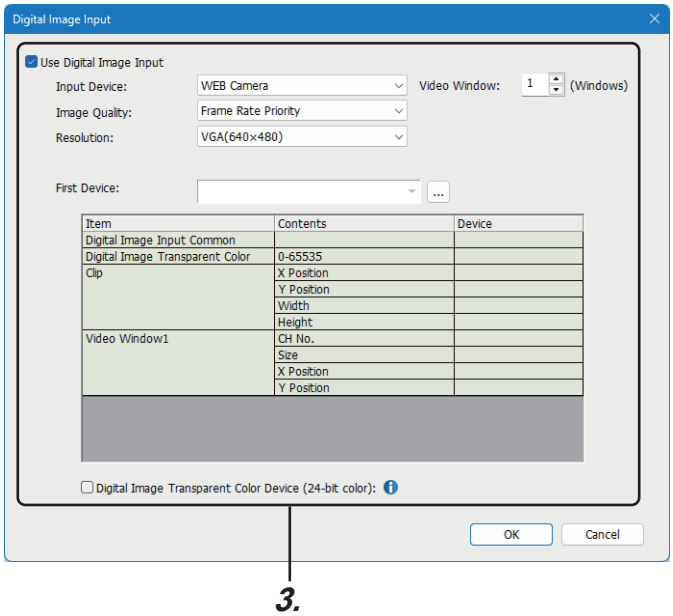
Operating procedure

1. Select [Common] → [Controller Setting] from the menu.
2. In the [Controller Setting] window, select the channel number to be used from the list menu.
3. Set [Manufacturer], [Controller Type], [I/F], and [Detail Setting] according to the controller used.
4. When you have completed the settings, click the [OK] button.

Point

The controller settings can be configured and checked in [I/F Communication Setting].
For details, refer to the following.
📖GT Designer3 (GOT3000) Screen Design Manual

68.3.2 Settings for displaying images from the camera/ video device on the GOT



Operating procedure

1. Select [Common] → [Peripheral Setting] → [Digital Image Input] from the menu.

2. Check [Use Digital Image Input] to set the function.

For details on the function setting, refer to the following manual.

📖GT Designer3 (GOT3000) Screen Design Manual

3. When you have completed the settings, click the [OK] button.

Point

- Controller settings in the utility

The controller settings can be changed on the utility's [Communication setting] after writing [Controller Setting] of project data.

For details on the utility, refer to the following manual.

📖GOT3000 Series User's Manual (Utility & Maintenance Functions)

- Priority of the settings in [Controller Setting]

When the settings are configured in GT Designer3 or in the utility, the latest settings are effective.

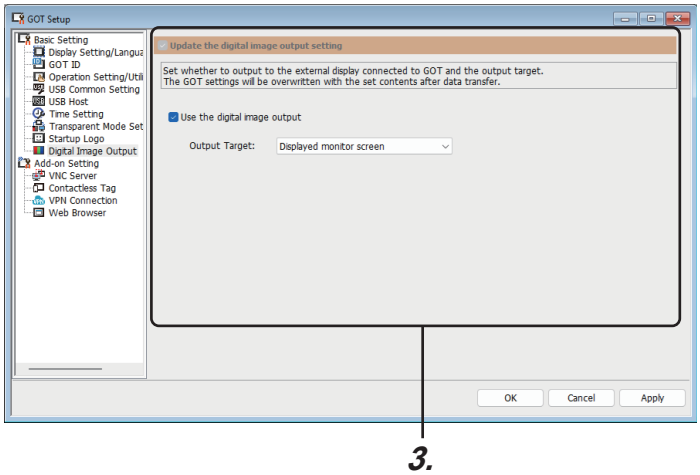
The following functions are available to display images from the camera/video device on the GOT.

- Digital video input function
- Digital video display object

For details on the functions, refer to the following.

📖GT Designer3 (GOT3000) Screen Design Manual

68.3.3 Settings for displaying the GOT screen on the external display



Operating procedure

1. Select [Common] → [GOT Setup] → [Basic Setting] → [Digital Image Output] from the menu.

2. Select [Use the digital image output], and set the output target.

For details, refer to the following manual.

📖GT Designer3 (GOT3000) Screen Design Manual

3. When you have completed the settings, click the [OK] button.

To display the GOT screen on the external display, use the video output function.

For details, refer to the following.

📖GT Designer3 (GOT3000) Screen Design Manual

69 Digital image device connection

☞ Page 2541 Connectable devices
☞ Page 2542 System configuration
☞ Page 2545 GOT side settings

69.1 Connectable devices

For connectable digital image device types, refer to the following Technical Bulletin.

☞ List of Validated Devices for the GOT3000 Series (GOT-A-0233)

For Technical Bulletins, go to the Mitsubishi Electric Factory Automation Global Website.

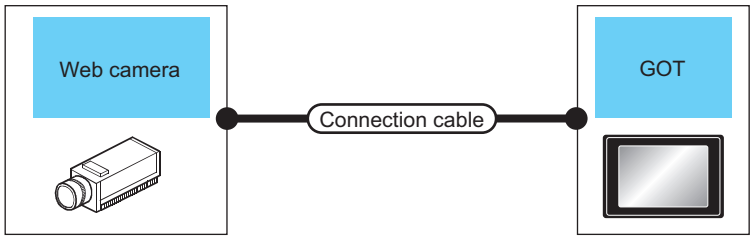
www.MitsubishiElectric.com/fa

69.2 System configuration

69.2.1 Displaying and recording camera images on the GOT

☞ Page 2542 Web camera connection
☞ Page 2543 Network camera connection

Web camera connection



For details on the maximum number of connected devices, refer to the following.

☞ Page 2542 Maximum number of connected devices

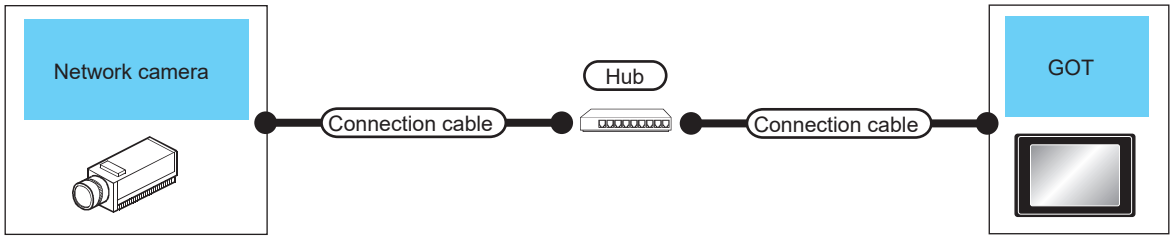
Controller		Connection cable*3*4	GOT	
			Interface	Model
Web camera	Devices that satisfy all the following conditions*1*2: • UVC is supported. • JPEG is supported.	USB cable	Built-in USB interface	GT37 SoftGOT3000

*1 For connectable web camera types, refer to the following Technical Bulletin.
☞ List of Validated Devices for the GOT3000 Series (GOT-A-0233)
*2 Select a vision sensor to be used.
*3 Use a device that supports USB 2.0 or higher.
When using a hub, use a hub that supports USB 2.0 or higher.
When multiple devices are connected to a USB hub, images may not be displayed properly due to insufficient power supply.
*4 The cable length depends on the specifications of the camera used.

■Maximum number of connected devices

One web camera can be connected to one GOT at a time.

Network camera connection



For details on the connection cables and the maximum segment length, refer to the following.

☞ Page 2544 Connection cable
☞ Page 2544 Maximum segment length

For details on the maximum number of connected devices, refer to the following.

☞ Page 2544 Maximum number of connected devices

Controller	Connection cable*2*3*4	GOT	
		Interface	Model
Network camera*1	Twisted pair cable	Built-in Ethernet interface of GOT	GT37 SoftGOT3000

*1 For connectable network camera types, refer to the following Technical Bulletin.
☞ List of Validated Devices for the GOT3000 Series (GOT-A-0233)

*2 The cable length depends on the specifications of the camera used.

*3 For details on the connection method, refer to the manual of the network camera used.

*4 When connecting multiple network cameras, connect them to the GOT via a switching hub.
Also, when connecting network cameras that support PoE power supply, use a PoE-compatible switching hub.

■Connection cable

Use a connection cable that meets the following standards.

Standard	Category
10BASE-T	Shielded twisted pair cable (STP) or unshielded twisted pair cable (UTP) of category 3 or higher
100BASE-TX	Shielded twisted pair cable (STP) or unshielded twisted pair cable (UTP) of category 5 or higher
1000BASE-T	Shielded twisted pair cable (STP) or unshielded twisted pair cable (UTP) of category 5e or higher

The destination device connected with the twisted pair cable varies with the configuration of the Ethernet network system used.

Connect the cable to the Ethernet module, hub, or other system equipment corresponding to the applicable Ethernet network system.

Use cables, connectors, and hubs that meet the IEEE802.3 10BASE-T/100BASE-TX/1000BASE-T standards.

When only one GOT is connected, the GOT can be directly connected to the device without a hub.

■Maximum segment length

The maximum segment length (length between a hub and a node) is 100 m.

The maximum length depends on the Ethernet equipment used.

The following shows the number of connectable hubs when a repeater hub is used.

- 10BASE-T: Up to 4 for a cascade connection (within 500 m)
- 100BASE-TX: Up to 2 for a cascade connection (within 205 m)
- 1000BASE-T: The number differs depending on the hub to be used.

When switching hubs are used, there is no theoretical limit to the number of cascade connections between switching hubs.

For the limit, contact the switching hub manufacturer.

Precautions

When multiple network devices (including GOTs) are connected in the same segment, the network load increases and the transmission speed between the GOT and network camera may be reduced.

The following actions may improve the communication performance.

- Use a switching hub compatible with 1000BASE-T (1 Gbps) or more.
- Reduce the number of devices monitored by the GOT.

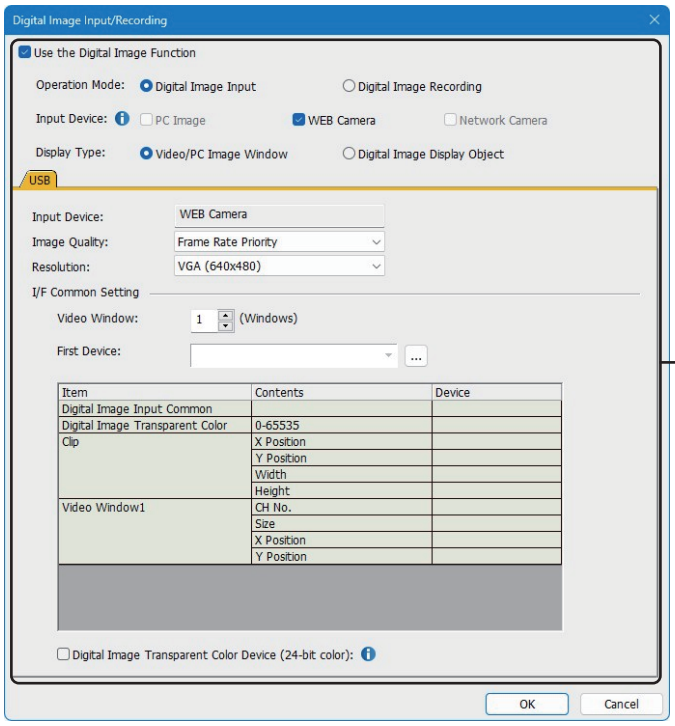
■Maximum number of connected devices

Four network cameras can be connected to one GOT at a time.

69.3 GOT side settings

☞ Page 2545 Digital image device settings
☞ Page 2545 Digital image input/recording function settings

69.3.1 Digital image device settings



2.

Operating procedure

1. Select [Common] → [Peripheral Setting] → [Digital Image Input/Recording] from the menu.

2. Select [Use the Digital Image Function] to configure the settings.

For details on the communication settings, refer to the following manual.

📖GT Designer3 (GOT3000) Screen Design Manual

3. When you have completed the settings, click the [OK] button.

69.3.2 Digital image input/recording function settings

Configure the settings for the digital image input/recording function.

For information on the digital image input/recording function settings, refer to the following manual.

📖GT Designer3 (GOT3000) Screen Design Manual

70 RFID connection

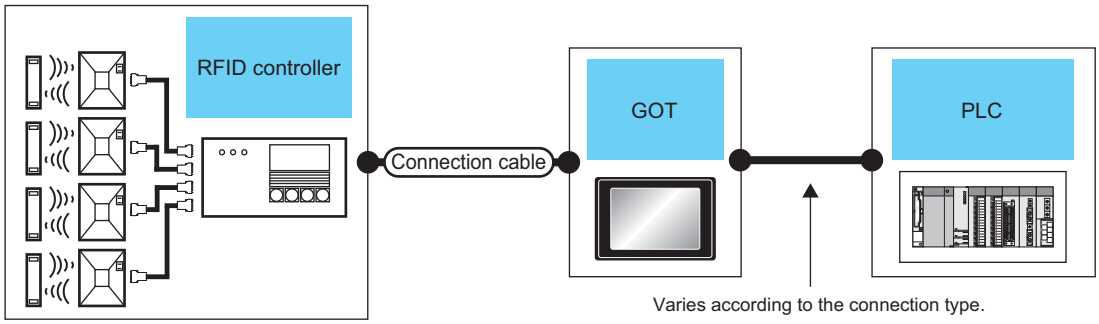
☞ Page 2546 Connectable devices
☞ Page 2547 System configuration
☞ Page 2549 GOT side settings

70.1 Connectable devices

For connectable RFID controllers and system equipment, refer to the following Technical Bulletin.
📖List of Valid Devices Applicable for GOT3000 Series (GOT-A-0233)
For Technical Bulletins, go to the Mitsubishi Electric Factory Automation Global Website.
www.MitsubishiElectric.com/fa

70.2 System configuration

70.2.1 Connecting to RFID



Controller	Communication type	Connection cable	GOT		PLC	Maximum number of connected devices
			Interface	Model		
*1	RS-232	*1	Built-in RS-232 interface	GT37 SoftGOT3000	For the system configuration between the GOT and PLC, refer to each chapter.	*1
			RS-232 interface of personal computer	GT37 SoftGOT3000		
			GT37-IF2000 + GT15-RS2-9P	GT37 SoftGOT3000		
	RS-422/485	*1	Built-in RS-422/485 interface	GT37 SoftGOT3000		
			GT37-IF2000 + GT15-RS4-9S	GT37 SoftGOT3000		
			GT37-IF2000 + GT15-RS4-TE	GT37 SoftGOT3000		

*1 For applicable RFID controller of the type/number, configuration equipment, and for connection cables, refer to the following Technical Bulletin.
List of Valid Devices Applicable for GOT3000 Series (GOT-A-0233)

Point

When using the RS-232 communication unit
Use the RS-232 communication unit of the GOT for connecting to an RFID controller.
However, when the RS-232 communication unit is used, the following operations cannot be supported.
Using the external authentication

Precautions

■Communication in multiple RFID readers/writers connection

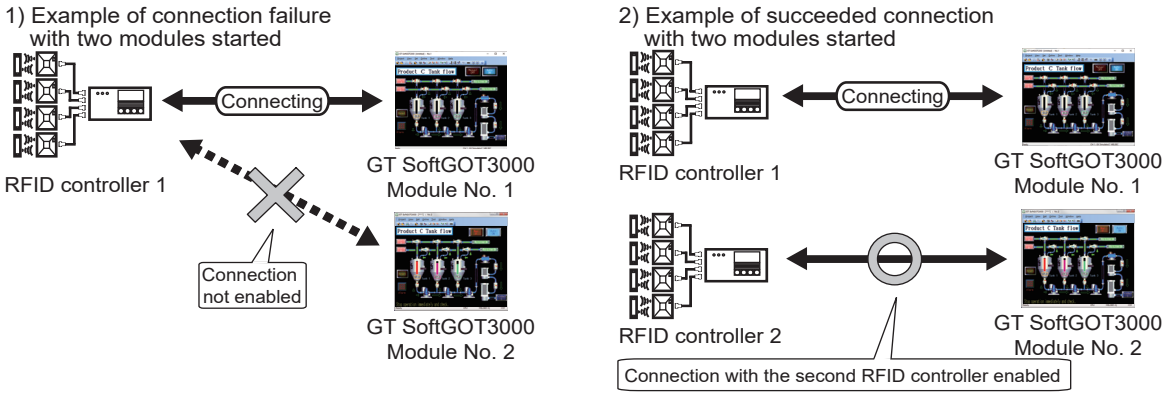
When connecting multiple RFID readers/writers, some controllers may communicate with each RFID reader/writer.

For communicating the RFID controller with the each RFID reader/writer, set an interlock so that the RFID controller does not communicate with RFID readers/writers until the executing communication is completed.

■When performing the RFID connection on multiple GT SoftGOT3000 modules

A single RFID controller cannot be used simultaneously for multiple GT SoftGOT3000 modules or other applications.

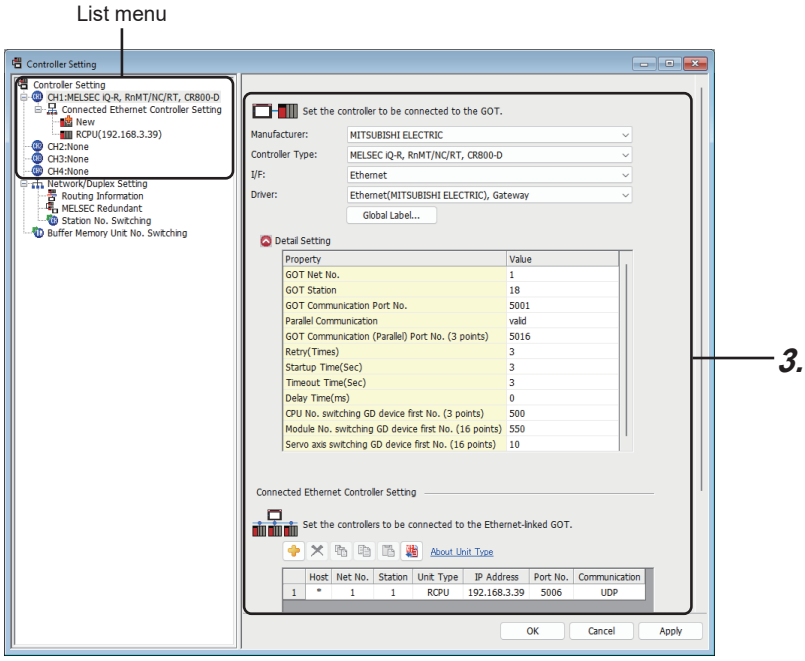
The RFID controller communicates only with the GT SoftGOT3000 module where the connection is established first.



70.3 GOT side settings

70.3.1 [Controller Setting]

Set the channel of the equipment to be connected to the GOT.



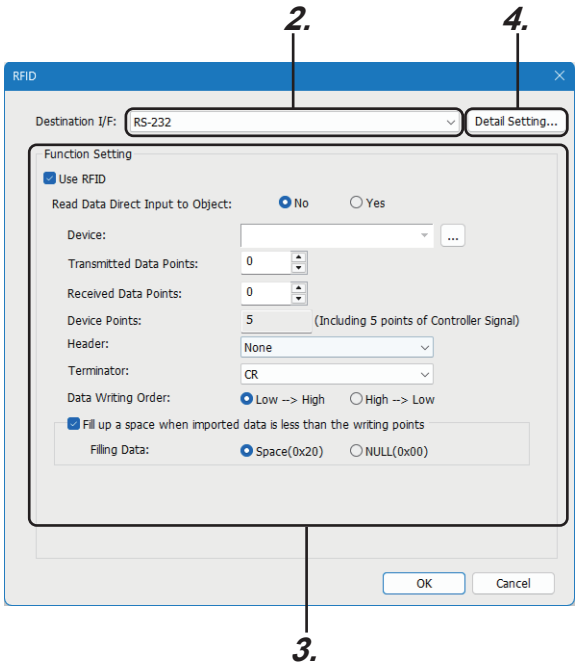
Operating procedure

1. Select [Common] → [Controller Setting] from the menu.
2. In the [Controller Setting] window, select the channel number to be used from the list menu.
3. Set [Manufacturer], [Controller Type], [I/F], and [Detail Setting] according to the controller used.
4. When you have completed the settings, click the [OK] button.

Point

The controller settings can be configured and checked in [I/F Communication Setting].
For details, refer to the following.
GT Designer3 (GOT3000) Screen Design Manual

70.3.2 RFID settings



Operating procedure

1. Select [Common] → [Peripheral Setting] → [RFID] from the menu.

2. Set the interface to which the RFID controller is connected.

3. Check the [Use RFID] to set the function.

For details on the function setting, refer to the following manual.

📖GT Designer3 (GOT3000) Screen Design Manual

4. Clicking the detail setting button displays the Communication Detail Settings dialog box for each communication driver.

Configure the settings according to the usage environment.

☞ Page 2551 [Detail Setting]

5. When you have completed the settings, click the [OK] button.

Point

Setting for the driver

To Channels No. 5 to 8, multiple [RFID] cannot be set.

- Channels of GT SoftGOT3000

Only Channel No. 5 can be set for GT SoftGOT3000.

Precautions

■RFID function setting on GT Designer3

Before connecting the RFID controller, set the RFID function and system data in GT Designer3.

For details, refer to the following manual.

📖GT Designer3 (GOT3000) Screen Design Manual

■Controller settings

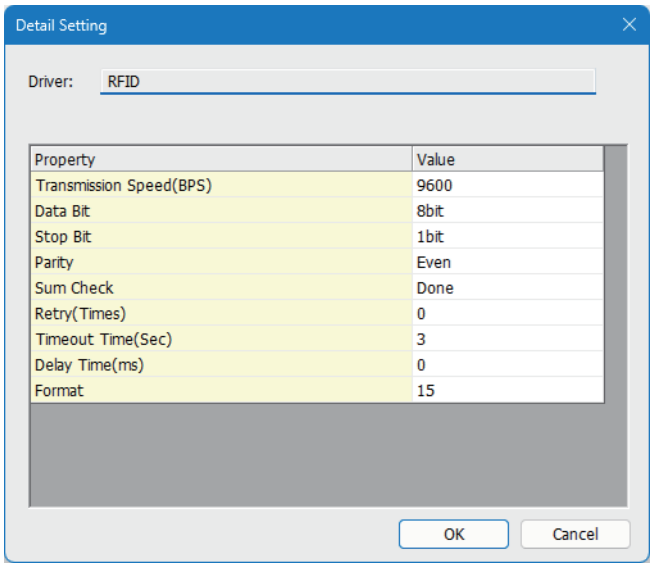
When using the external authentication on the RFID controller, set Channel No. 8 using the standard interface.

When connecting the RFID using Channels No. 5 to 7 of the extension interface, extension interface cannot be used.

For details on the external authentication, refer to the following manual.

📖GT Designer3 (GOT3000) Screen Design Manual

70.3.3 [Detail Setting]



Item	Description	Range
[Transmission Speed(BPS)]	Set this item when change the transmission speed used for communication with the connected equipment.	• [4800] bps • [9600] bps • [19200] bps • [38400] bps • [57600] bps • [115200] bps
[Data Bit]	Set this item to change the data length used for communication with the connected equipment.	• [7bit] • [8bit]
[Stop Bit]	Specify the stop bit length for communications.	• [1bit] • [2bit]
[Parity]	Specify whether or not to perform a parity check, and how it is performed during communication.	• [None] • [Even] • [Odd]
[Sum Check]	Set whether or not to perform a sum check during communication.	• [Done] • [None]
[Retry(Times)]	Set the number of retries to be performed when a communication timeout occurs. When receiving no response after retries, the communication times out.	[0] times to [5] times
[Timeout Time(Sec)]	Set the time period for a communication to time out.	[3] seconds to [30] seconds
[Delay Time(ms)]	Set this item to adjust the transmission timing of the communication request from the GOT.	[0] ms to [3000] ms
[Format]	Select the communication format. Dedicated protocol • Format 10 (LS Industrial Systems Co., Ltd. LSRF) • Format 11 (MARS TOHKEN SOLUTION CO.LTD. ICU-60S) Nonprocedural protocol • Format 15	• [10] • [11] • [15]

Point

• Controller settings using the GT37 utility

The controller settings can be changed in [Communication Settings] of the GT37 utility after writing [Communication Settings] of project data to GT37.

For details on the GT37 utility, refer to the following manual.

GOT3000 Series User's Manual (Utility & Maintenance Functions)

• Priority of the settings in [Controller Setting]

When the settings are configured in GT Designer3 or in the GT37 utility, the latest settings are effective.

PART 23 FA transparent

71 FA transparent function

72 Accessing with GX Works3

73 Accessing with CW Configurator

74 Accessing with PX Developer

75 Accessing with GX Works2

76 Accessing with GX LogViewer

77 Accessing with MT Works2

78 Accessing with MR Configurator2

79 Accessing with FR Configurator2

80 Accessing with RT ToolBox3

81 Accessing with CPU Module Logging Configuration Tool

82 Accessing with MX Component (MX Sheet)

71 FA transparent function

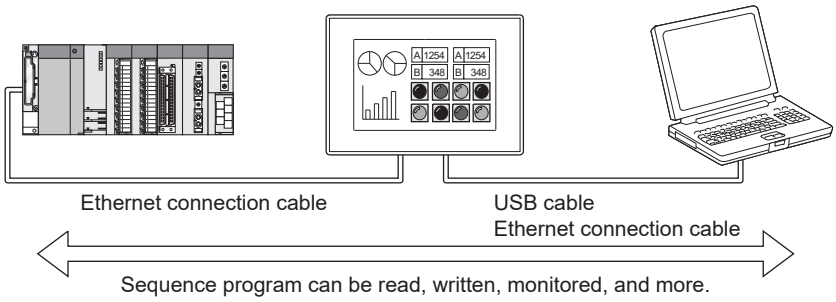
GT37 SoftGOT3000

☞ Page 2553 FA transparent function
☞ Page 2554 Compatible engineering software
☞ Page 2555 Available GOT internal devices
☞ Page 2556 Precautions

71.1 FA transparent function

The FA transparent function allows the programs of the Mitsubishi Electric PLC or other controllers to be read, written, and monitored via a GOT connected to a personal computer with the GOT and the PLC connected.

Ex.
When the sequence programs are read from, written to, and monitored from the Mitsubishi Electric PLC through a GOT



71.2 Compatible engineering software

The following shows the software compatible with the FA transparent function.

Software	Accessed device	Reference
GX Works3	MELSEC MX Controller (MX-R Model)	☞ Page 2559 MELSEC MX Controller (MX-R Model)
	MELSEC MX Controller (MX-F Model)	☞ Page 2569 MELSEC MX Controller (MX-F Model)
	PLC CPU (MELSEC iQ-R series)	☞ Page 2571 PLC CPU (MELSEC iQ-R series)
	PLC CPU (MELSEC iQ-F series)	☞ Page 2584 PLC CPU (MELSEC iQ-F series)
	CNC C80	☞ Page 2590 CNC C80
	CC-Link IE Field Network head module	☞ Page 2591 CC-Link IE Field Network head module
CW Configurator	C Controller module (MELSEC iQ-R series)	☞ Page 2639 C Controller module (MELSEC iQ-R series)
	MELSECWinCPU (MELSEC iQ-R series)	☞ Page 2647 MELSECWinCPU (MELSEC iQ-R series)
PX Developer	PLC CPU (MELSEC-Q series (Q mode))	☞ Page 2675 PLC CPU (MELSEC-Q series (Q mode))
GX Works2	PLC CPU (MELSEC-Q series (Q mode))	☞ Page 2688 PLC CPU (MELSEC-Q series (Q mode))
	C Controller module (MELSEC-Q series)	☞ Page 2711 C Controller module (MELSEC-Q series)
	PLC CPU (MELSEC-L series)	☞ Page 2717 PLC CPU (MELSEC-L series)
	Motion CPU (MELSEC-Q series)	☞ Page 2724 Motion CPU (MELSEC-Q series)
	PLC CPU (MELSEC-F series)	☞ Page 2730 PLC CPU (MELSEC-F series)
	CC-Link IE Field Network head module	☞ Page 2734 CC-Link IE Field Network head module
GX LogViewer	PLC CPU (MELSEC-Q series (Q mode))	☞ Page 2781 PLC CPU (MELSEC-Q series (Q mode))
	PLC CPU (MELSEC-L series)	☞ Page 2786 PLC CPU (MELSEC-L series)
MT Works2	Motion CPU (MELSEC iQ-R series)	☞ Page 2797 Motion CPU (MELSEC iQ-R series)
	Motion CPU (MELSEC-Q series)	☞ Page 2799 Motion CPU (MELSEC-Q series)
MR Configurator2	Servo amplifier	☞ Page 2825 Servo amplifier
FR Configurator2	Inverter	☞ Page 2833 Inverter
RT ToolBox3	Robot controller (MELSEC iQ-R series)	☞ Page 2857 Robot controller (MELSEC iQ-R series)
	Robot controller (MELSEC-Q series)	☞ Page 2858 Robot controller (MELSEC-Q series)
CPU Module Logging Configuration Tool	PLC CPU (MELSEC iQ-R series)	☞ Page 2893 PLC CPU (MELSEC iQ-R series)
	PLC CPU (MELSEC-Q series (Q mode))	☞ Page 2895 PLC CPU (MELSEC-Q series (Q mode))
	PLC CPU (MELSEC-L series)	☞ Page 2898 PLC CPU (MELSEC-L series)
MX Component(MX Sheet)	PLC CPU (MELSEC iQ-R series)	☞ Page 2907 PLC CPU (MELSEC iQ-R series)
	Motion CPU (MELSEC iQ-R series)	☞ Page 2911 Motion CPU (MELSEC iQ-R series)
	PLC CPU (MELSEC iQ-F series)	☞ Page 2914 PLC CPU (MELSEC iQ-F series)
	PLC CPU (MELSEC-Q series (Q mode))	☞ Page 2917 PLC CPU (MELSEC-Q series (Q mode))
	C Controller module (MELSEC-Q series)	☞ Page 2927 C Controller module (MELSEC-Q series)
	Motion CPU (MELSEC-Q series)	☞ Page 2932 Motion CPU (MELSEC-Q series)
	PLC CPU (MELSEC-L series)	☞ Page 2935 PLC CPU (MELSEC-L series)
	PLC CPU (MELSEC-F series)	☞ Page 2939 PLC CPU (MELSEC-F series)

Point

Use of the FA transparent function does not affect the range accessible by the software.
For details on accessible range, refer to the manual for the respective software.

71.3 Available GOT internal devices

The following shows the GOT internal devices available for the FA transparent function.

Device	Function	Description
GS256	FA Transparent Status	Notifies the status of the FA transparent function.
GS457	Pass-through Transparent Stop Control	Performs a request to stop the pass-through transparent.
GS2567	Transparent End Time	Specify the time from the last relay of communication data to the interruption of the FA transparent function. After the FA transparent function is interrupted, the GOT monitors the changed controller according to its settings.

For details on the GOT internal devices, refer to the following.

📖GT Designer3 (GOT3000) Screen Design Manual

71.4 Precautions

When GOT monitoring is faulty

The FA transparent function cannot be used in case that the GOT monitoring is faulty due to PLC CPU errors or faulty communication between the PLC CPU and GOT.
When GOT monitoring is faulty, check the following.

- Whether the PLC CPU operates normally

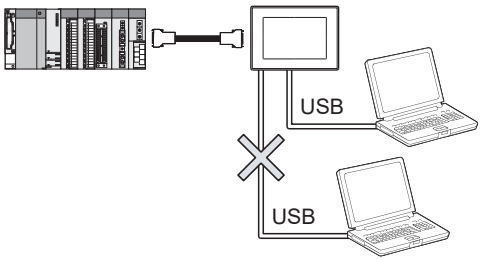
User's manual of the PLC CPU used

- Whether the PLC CPU and GOT are connected normally

☞ Page 61 Ethernet connection
☞ Page 518 Serial connection
☞ Page 682 Bus connection
☞ Page 743 CC-Link IE TSN connection
☞ Page 845 CC-Link IE Controller Network connection
☞ Page 921 CC-Link IE Field Network connection

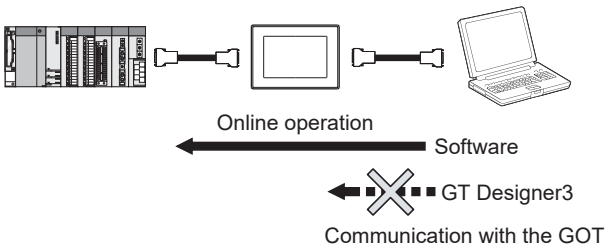
GOT interface required to use the FA transparent function

When connecting the GOT and the personal computer by USB, use the USB interface on the GOT front face.
The FA transparent function cannot be used simultaneously from multiple personal computers.



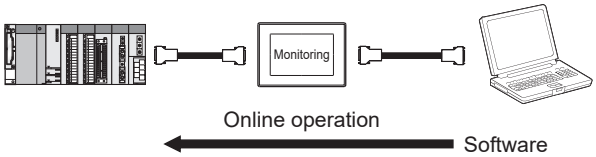
Software available for one personal computer

When multiple kinds of software are activated on one personal computer, only one of them is available for communications using the FA transparent function.
Do not concurrently perform any communications using the FA transparent function.
(Offline operation with each software is available)
Also, do not perform communications with the GOT (e.g. downloading project data) from GT Designer3 during execution of communications using the FA transparent function.



If power disconnection of the controller occurs while the FA transparent function being used

While the FA transparent function is being used, if the communication between the controller and the GOT is stopped due to power disconnection of the controller or a communication cable disconnection between the controller and the GOT, the GOT waits for timeout against the communication request from the software. It takes a few minutes to recover the monitoring between the controller and the GOT.



72 Accessing with GX Works3

The following shows the controllers that can be accessed with GX Works3 using the FA transparent function.

Controller	Reference
MELSEC MX Controller (MX-R Model)	☞ Page 2559 MELSEC MX Controller (MX-R Model)
MELSEC MX Controller (MX-F Model)	☞ Page 2569 MELSEC MX Controller (MX-F Model)
PLC CPU (MELSEC iQ-R series)	☞ Page 2571 PLC CPU (MELSEC iQ-R series)
PLC CPU (MELSEC iQ-F series)	☞ Page 2584 PLC CPU (MELSEC iQ-F series)
CNC C80	☞ Page 2590 CNC C80
CC-Link IE Field Network head module (RJ72GF15-T2)	☞ Page 2591 CC-Link IE Field Network head module

For information on the GOT side or personal computer side settings, refer to the following.

☞ Page 2598 GOT side settings
☞ Page 2601 Personal computer side settings
☞ Page 2637 Precautions for using GX Works3

Precautions

■Conditions for suspending the FA transparent function

The FA transparent function is also suspended when any of the following operations, which stop the GOT monitor, is performed.

If a screen not created by the user, such as a utility screen, is displayed, the FA transparent function is not suspended.

- Project data is written/read or the OS is written in GT Designer3.*1
- The GOT is set up.*1
- No communication request (online monitor, etc.) has been issued from the software for 30 seconds.

*1 A timeout error occurs in the software.

■Monitoring the PLC CPU from a personal computer

When monitoring the PLC CPU from a personal computer, the GOT and personal computer refresh the display slower.

■Using the FA transparent function when the GOT and the controller are connected by Ethernet

The following GX Works3 functions cannot be operated.

The message [The executed function is not supported. The following are the possible causes. Please check the manual and other documentation.] is displayed.

Unsupported functions	Remark
• [Remote Operation] RESET	—
• [Remote Operation] RUN • [Remote Operation] STOP • [Remote Operation] PAUSE • [Set Clock] Execute	Inexecutable only when Specify all stations/groups has been performed.
• Remote password function • MELSECNET diagnostics • CC-Link IE Control diagnostics • CC-Link IE TSN/CC-Link IE Field diagnostics • CC-Link IEF Basic diagnostics • Ethernet diagnostics (ping test/loopback test with the Ethernet module) • Safety module operation • Automatic restoration setting	—

72.1 MELSEC MX Controller (MX-R Model)

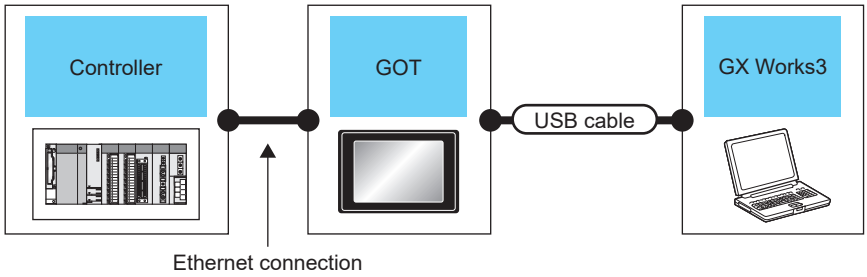
Personal computer to GOT connection	Connection between GOT and controller	Reference
USB connection	Ethernet connection	☞ Page 2559 Ethernet connection between the GOT and the controller
	Serial communication connection	☞ Page 2560 Serial communication connection between the GOT and the controller
	CC-Link IE TSN connection	☞ Page 2561 CC-Link IE TSN connection between the GOT and the controller
	CC-Link IE Controller Network connection	☞ Page 2562 CC-Link IE Controller Network connection between the GOT and the controller
	CC-Link IE Field Network connection	☞ Page 2563 CC-Link IE Field Network connection between the GOT and the controller
Ethernet connection	Ethernet connection	☞ Page 2564 Ethernet connection between the GOT and the controller
	Serial communication connection	☞ Page 2565 Serial communication connection between the GOT and the controller
	CC-Link IE TSN connection	☞ Page 2566 CC-Link IE TSN connection between the GOT and the controller
	CC-Link IE Controller Network connection	☞ Page 2567 CC-Link IE Controller Network connection between the GOT and the controller
	CC-Link IE Field Network connection	☞ Page 2568 CC-Link IE Field Network connection between the GOT and the controller

72.1.1 USB connection between the personal computer and the GOT

Ethernet connection between the GOT and the controller

For the system configuration between the GOT and the controller, refer to the following.

Controller	Reference
MELSEC MX Controller (MX-R Model) (Built-in Ethernet port connection)	☞ Page 63 System configuration
MELSEC MX Controller (MX-R Model) (Ethernet module connection)	☞ Page 95 System configuration



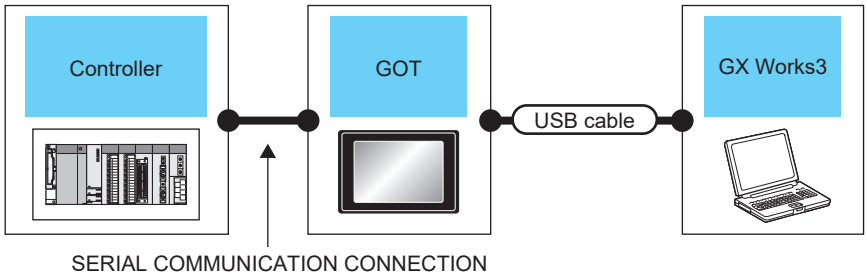
Controller	GOT		Connection cable		Personal computer	Number of connectable equipment
	Model	Interface	USB cable	Maximum length	Compatible GX Works3 version	
MXR300-16 MXR300-32 MXR300-64	GT37 SoftGOT3000	USB	*1	3 m	1.115V or later	1 personal computer for 1 GOT
MXR500-128 MXR500-256	GT37 SoftGOT3000	USB		3 m	1.115V or later	1 personal computer for 1 GOT

*1 For the USB cables validated by Mitsubishi Electric Corporation, refer to the following Technical Bulletin.
List of Valid Devices Applicable for GOT3000 Series (GOT-A-0233)

Serial communication connection between the GOT and the controller

For the system configuration between the GOT and the controller, refer to the following.

Controller	Reference
MELSEC MX Controller (MX-R Model) (serial communication connection)	☞ Page 519 System configuration



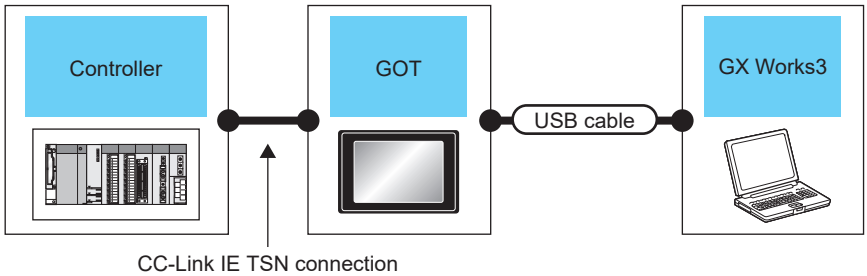
Controller	GOT		Connection cable		Personal computer	Number of connectable equipment
	Model	Interface	USB cable	Maximum length	Compatible GX Works3 version	
MXR300-16 MXR300-32 MXR300-64	GT37 SoftGOT3000	USB	*1	3 m	1.115V or later	1 personal computer for 1 GOT
MXR500-128 MXR500-256	GT37 SoftGOT3000	USB		3 m	1.115V or later	1 personal computer for 1 GOT

*1 For the USB cables validated by Mitsubishi Electric Corporation, refer to the following Technical Bulletin.
List of Valid Devices Applicable for GOT3000 Series (GOT-A-0233)

CC-Link IE TSN connection between the GOT and the controller

For the system configuration between the GOT and the controller, refer to the following.

Controller	Reference
MELSEC MX Controller (MX-R Model) (CC-Link IE TSN connection)	☞ Page 745 System configuration



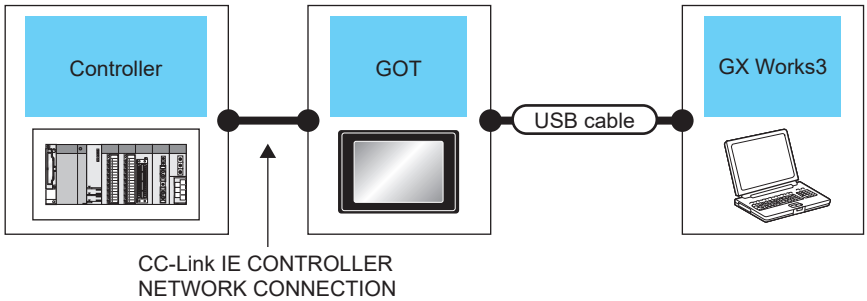
Controller	GOT		Connection cable		Personal computer	Number of connectable equipment
	Model	Interface	USB cable	Maximum length	Compatible GX Works3 version	
MXR300-16 MXR300-32 MXR300-64	GT37 SoftGOT3000	USB	*1	3 m	1.115V or later	1 personal computer for 1 GOT
MXR500-128 MXR500-256	GT37 SoftGOT3000	USB		3 m	1.115V or later	1 personal computer for 1 GOT

*1 For the USB cables validated by Mitsubishi Electric Corporation, refer to the following Technical Bulletin.
List of Valid Devices Applicable for GOT3000 Series (GOT-A-0233)

CC-Link IE Controller Network connection between the GOT and the controller

For the system configuration between the GOT and the controller, refer to the following.

Controller	Reference
MELSEC MX Controller (MX-R Model) (CC-Link IE Controller Network connection)	☞ Page 846 System configuration



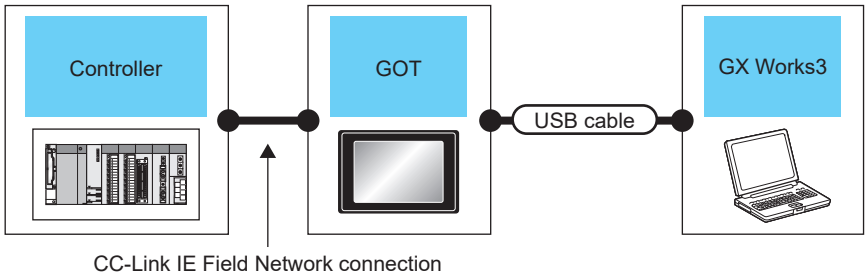
Controller	GOT		Connection cable		Personal computer	Number of connectable equipment
	Model	Interface	USB cable	Maximum length	Compatible GX Works3 version	
MXR300-16 MXR300-32 MXR300-64	GT37 SoftGOT3000	USB	*1	3 m	1.115V or later	1 personal computer for 1 GOT
MXR500-128 MXR500-256	GT37 SoftGOT3000	USB		3 m	1.115V or later	1 personal computer for 1 GOT

*1 For the USB cables validated by Mitsubishi Electric Corporation, refer to the following Technical Bulletin.
List of Valid Devices Applicable for GOT3000 Series (GOT-A-0233)

CC-Link IE Field Network connection between the GOT and the controller

For the system configuration between the GOT and the controller, refer to the following.

Controller	Reference
MELSEC MX Controller (MX-R Model) (CC-Link IE Field Network connection)	☞ Page 922 System configuration



Controller	GOT		Connection cable		Personal computer	Number of connectable equipment
	Model	Interface	USB cable	Maximum length	Compatible GX Works3 version	
MXR300-16 MXR300-32 MXR300-64	GT37 SoftGOT3000	USB	*1	3 m	1.115V or later	1 personal computer for 1 GOT
MXR500-128 MXR500-256	GT37 SoftGOT3000	USB		3 m	1.115V or later	1 personal computer for 1 GOT

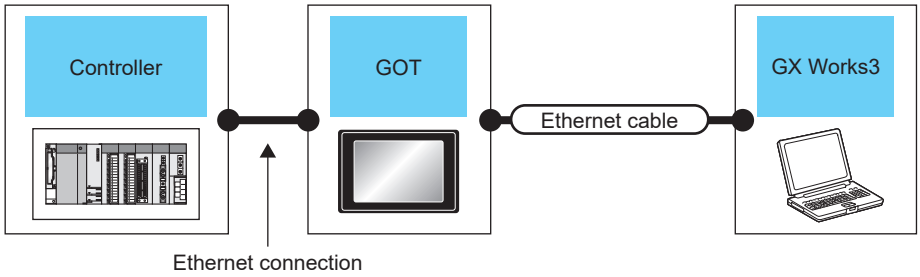
*1 For the USB cables validated by Mitsubishi Electric Corporation, refer to the following Technical Bulletin.
List of Valid Devices Applicable for GOT3000 Series (GOT-A-0233)

72.1.2 Ethernet connection between the personal computer and the GOT

Ethernet connection between the GOT and the controller

For the system configuration between the GOT and the controller, refer to the following.

Controller	Reference
MELSEC MX Controller (MX-R Model) (Built-in Ethernet port connection)	☞ Page 63 System configuration
MELSEC MX Controller (MX-R Model) (Ethernet module connection)	☞ Page 95 System configuration



Controller	GOT		Connection cable		Personal computer	Number of connectable equipment
	Model	Interface	Ethernet cable	Maximum segment length	Compatible GX Works3 version	
MXR300-16 MXR300-32 MXR300-64	GT37 SoftGOT3000	Built-in Ethernet interface of GOT	Twisted pair cable ☞ Page 2564 Connection cable	100 m	1.115V or later	1 personal computer for 1 GOT
MXR500-128 MXR500-256	GT37 SoftGOT3000	Built-in Ethernet interface of GOT		100 m	1.115V or later	1 personal computer for 1 GOT

■Connection cable

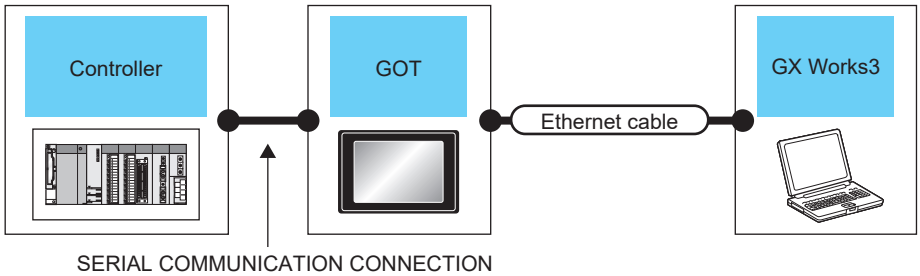
Use a connection cable that meets the following standards.

Standard	Category
10BASE-T	Shielded twisted pair cable (STP) or unshielded twisted pair cable (UTP) of category 3 or higher
100BASE-TX	Shielded twisted pair cable (STP) or unshielded twisted pair cable (UTP) of category 5 or higher
1000BASE-T	Shielded twisted pair cable (STP) or unshielded twisted pair cable (UTP) of category 5e or higher

Serial communication connection between the GOT and the controller

For the system configuration between the GOT and the controller, refer to the following.

Controller	Reference
MELSEC MX Controller (MX-R Model) (serial communication connection)	☞ Page 519 System configuration



Controller	GOT		Connection cable		Personal computer	Number of connectable equipment
	Model	Interface	Ethernet cable	Maximum segment length	Compatible GX Works3 version	
MXR300-16 MXR300-32 MXR300-64	GT37 SoftGOT3000	Built-in Ethernet interface of GOT	Twisted pair cable ☞ Page 2565 Connection cable	100 m	1.115V or later	1 personal computer for 1 GOT
MXR500-128 MXR500-256	GT37 SoftGOT3000	Built-in Ethernet interface of GOT		100 m	1.115V or later	1 personal computer for 1 GOT

■Connection cable

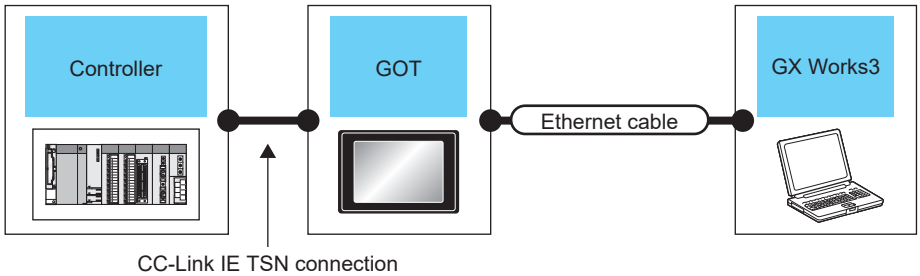
Use a connection cable that meets the following standards.

Standard	Category
10BASE-T	Shielded twisted pair cable (STP) or unshielded twisted pair cable (UTP) of category 3 or higher
100BASE-TX	Shielded twisted pair cable (STP) or unshielded twisted pair cable (UTP) of category 5 or higher
1000BASE-T	Shielded twisted pair cable (STP) or unshielded twisted pair cable (UTP) of category 5e or higher

CC-Link IE TSN connection between the GOT and the controller

For the system configuration between the GOT and the controller, refer to the following.

Controller	Reference
MELSEC MX Controller (MX-R Model) (CC-Link IE TSN connection)	☞ Page 745 System configuration



Controller	GOT		Connection cable		Personal computer	Number of connectable equipment
	Model	Interface	Ethernet cable	Maximum segment length	Compatible GX Works3 version	
MXR300-16 MXR300-32 MXR300-64	GT37 SoftGOT3000	Built-in Ethernet interface of GOT	Twisted pair cable ☞ Page 2566 Connection cable	100 m	1.115V or later	1 personal computer for 1 GOT
MXR500-128 MXR500-256	GT37 SoftGOT3000	Built-in Ethernet interface of GOT		100 m	1.115V or later	1 personal computer for 1 GOT

■Connection cable

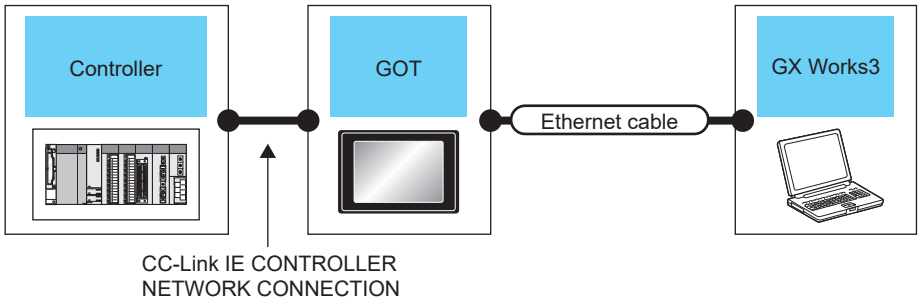
Use a connection cable that meets the following standards.

Standard	Category
10BASE-T	Shielded twisted pair cable (STP) or unshielded twisted pair cable (UTP) of category 3 or higher
100BASE-TX	Shielded twisted pair cable (STP) or unshielded twisted pair cable (UTP) of category 5 or higher
1000BASE-T	Shielded twisted pair cable (STP) or unshielded twisted pair cable (UTP) of category 5e or higher

CC-Link IE Controller Network connection between the GOT and the controller

For the system configuration between the GOT and the controller, refer to the following.

Controller	Reference
MELSEC MX Controller (MX-R Model) (CC-Link IE Controller Network connection)	☞ Page 846 System configuration



Controller	GOT		Connection cable		Personal computer	Number of connectable equipment
	Model	Interface	Ethernet cable	Maximum segment length	Compatible GX Works3 version	
MXR300-16 MXR300-32 MXR300-64	GT37 SoftGOT3000	Built-in Ethernet interface of GOT	Twisted pair cable ☞ Page 2567 Connection cable	100 m	1.115V or later	1 personal computer for 1 GOT
MXR500-128 MXR500-256	GT37 SoftGOT3000	Built-in Ethernet interface of GOT		100 m	1.115V or later	1 personal computer for 1 GOT

■Connection cable

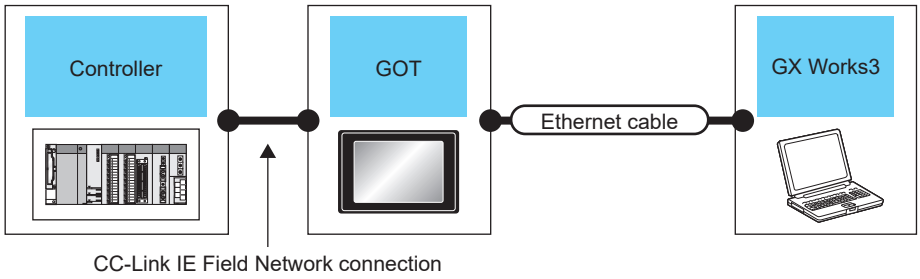
Use a connection cable that meets the following standards.

Standard	Category
10BASE-T	Shielded twisted pair cable (STP) or unshielded twisted pair cable (UTP) of category 3 or higher
100BASE-TX	Shielded twisted pair cable (STP) or unshielded twisted pair cable (UTP) of category 5 or higher
1000BASE-T	Shielded twisted pair cable (STP) or unshielded twisted pair cable (UTP) of category 5e or higher

CC-Link IE Field Network connection between the GOT and the controller

For the system configuration between the GOT and the controller, refer to the following.

Controller	Reference
MELSEC MX Controller (MX-R Model) (CC-Link IE Field Network connection)	☞ Page 922 System configuration



Controller	GOT		Connection cable		Personal computer	Number of connectable equipment
	Model	Interface	Ethernet cable	Maximum segment length	Compatible GX Works3 version	
MXR300-16 MXR300-32 MXR300-64	GT37 SoftGOT3000	Built-in Ethernet interface of GOT	Twisted pair cable ☞ Page 2568 Connection cable	100 m	1.115V or later	1 personal computer for 1 GOT
MXR500-128 MXR500-256	GT37 SoftGOT3000	Built-in Ethernet interface of GOT		100 m	1.115V or later	1 personal computer for 1 GOT

■Connection cable

Use a connection cable that meets the following standards.

Standard	Category
10BASE-T	Shielded twisted pair cable (STP) or unshielded twisted pair cable (UTP) of category 3 or higher
100BASE-TX	Shielded twisted pair cable (STP) or unshielded twisted pair cable (UTP) of category 5 or higher
1000BASE-T	Shielded twisted pair cable (STP) or unshielded twisted pair cable (UTP) of category 5e or higher

72.2 MELSEC MX Controller (MX-F Model)

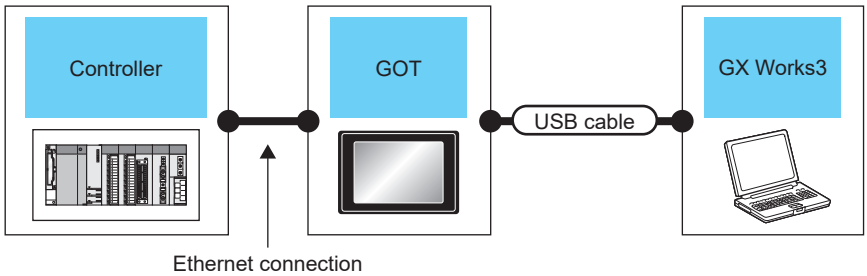
Personal computer to GOT connection	Connection between GOT and controller	Reference
USB connection	Ethernet connection	☞ Page 2569 Ethernet connection between the GOT and the controller
Ethernet connection	Ethernet connection	☞ Page 2570 Ethernet connection between the GOT and the controller

72.2.1 USB connection between the personal computer and the GOT

Ethernet connection between the GOT and the controller

For the system configuration between the GOT and the controller, refer to the following.

Controller	Reference
MELSEC MX Controller (MX-F Model) (Built-in Ethernet port connection)	☞ Page 126 System configuration
MELSEC MX Controller (MX-F Model) (Ethernet module connection)	☞ Page 159 System configuration



Controller	GOT		Connection cable		Personal computer	Number of connectable equipment
	Model	Interface	USB cable	Maximum length	Compatible GX Works3 version	
MXF100-8-N32 MXF100-8-P32 MXF100-16-N32 MXF100-16-P32	GT37 SoftGOT3000	USB	*1	3 m	1.115V or later	1 personal computer for 1 GOT

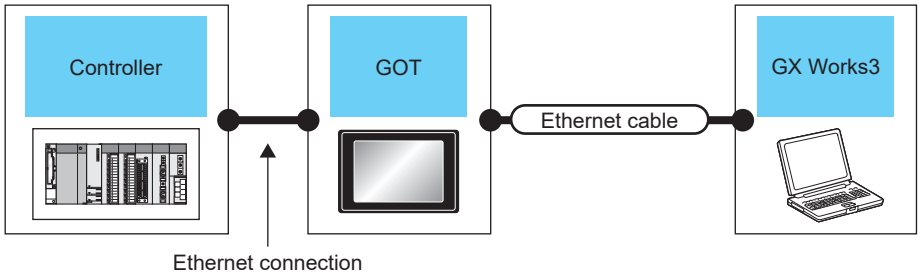
*1 For the USB cables validated by Mitsubishi Electric Corporation, refer to the following Technical Bulletin.
📖List of Valid Devices Applicable for GOT3000 Series (GOT-A-0233)

72.2.2 Ethernet connection between the personal computer and the GOT

Ethernet connection between the GOT and the controller

For the system configuration between the GOT and the controller, refer to the following.

Controller	Reference
MELSEC MX Controller (MX-F Model) (Built-in Ethernet port connection)	☞ Page 126 System configuration
MELSEC MX Controller (MX-F Model) (Ethernet module connection)	☞ Page 159 System configuration



Controller	GOT		Connection cable		Personal computer	Number of connectable equipment
	Model	Interface	Ethernet cable	Maximum segment length	Compatible GX Works3 version	
MXF100-8-N32 MXF100-8-P32 MXF100-16-N32 MXF100-16-P32	GT37 SoftGOT3000	Built-in Ethernet interface of GOT	Twisted pair cable ☞ Page 2570 Connection cable	100 m	1.115V or later	1 personal computer for 1 GOT

■Connection cable

Use a connection cable that meets the following standards.

Standard	Category
10BASE-T	Shielded twisted pair cable (STP) or unshielded twisted pair cable (UTP) of category 3 or higher
100BASE-TX	Shielded twisted pair cable (STP) or unshielded twisted pair cable (UTP) of category 5 or higher
1000BASE-T	Shielded twisted pair cable (STP) or unshielded twisted pair cable (UTP) of category 5e or higher

72.3 PLC CPU (MELSEC iQ-R series)

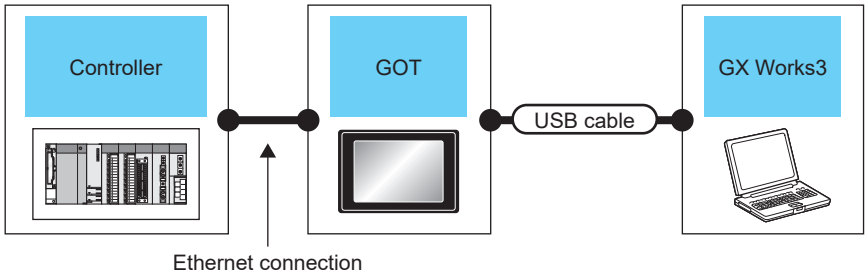
Personal computer to GOT connection	Connection between GOT and controller	Reference
USB connection	Ethernet connection	☞ Page 2572 Ethernet connection between the GOT and the controller
	Serial communication connection	☞ Page 2573 Serial communication connection between the GOT and the controller
	CC-Link IE TSN connection	☞ Page 2574 CC-Link IE TSN connection between the GOT and the controller
	CC-Link IE Controller Network connection	☞ Page 2575 CC-Link IE Controller Network connection between the GOT and the controller
	CC-Link IE Field Network connection	☞ Page 2576 CC-Link IE Field Network connection between the GOT and the controller
Ethernet connection	Ethernet connection	☞ Page 2577 Ethernet connection between the GOT and the controller
	Serial communication connection	☞ Page 2579 Serial communication connection between the GOT and the controller
	CC-Link IE TSN connection	☞ Page 2580 CC-Link IE TSN connection between the GOT and the controller
	CC-Link IE Controller Network connection	☞ Page 2581 CC-Link IE Controller Network connection between the GOT and the controller
	CC-Link IE Field Network connection	☞ Page 2583 CC-Link IE Field Network connection between the GOT and the controller

72.3.1 USB connection between the personal computer and the GOT

Ethernet connection between the GOT and the controller

For the system configuration between the GOT and the controller, refer to the following.

Controller	Reference
MELSEC iQ-R series (Built-in Ethernet port connection)	☞ Page 190 System configuration
MELSEC iQ-R series (Ethernet module connection)	☞ Page 245 System configuration



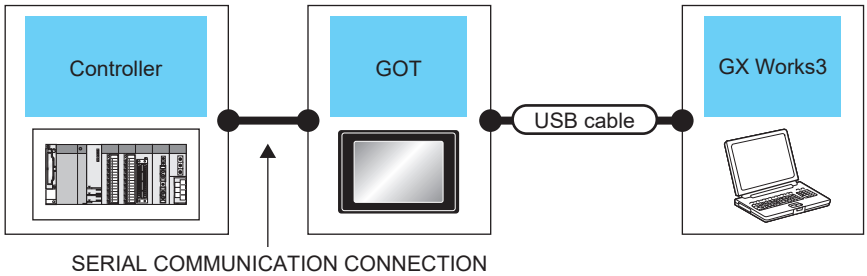
Controller	GOT		Connection cable		Personal computer	Number of connectable equipment
	Model	Interface	USB cable	Maximum length	Compatible GX Works3 version	
R00CPU R01CPU R02CPU R04CPU R08CPU R16CPU R32CPU R120CPU	GT37 SoftGOT3000	USB	*4	3 m	1.115V or later	1 personal computer for 1 GOT
R08PCPU*1 R16PCPU*1 R32PCPU*1 R120PCPU*1	GT37 SoftGOT3000	USB		3 m	1.115V or later	1 personal computer for 1 GOT
R04ENCPU R08ENCPU R16ENCPU R32ENCPU R120ENCPU	GT37 SoftGOT3000	USB		3 m	1.115V or later	1 personal computer for 1 GOT
R08SFCPU*2 R16SFCPU*2 R32SFCPU*2 R120SFCPU*2	GT37 SoftGOT3000	USB		3 m	1.115V or later	1 personal computer for 1 GOT
R08PSFCPU*1*3 R16PSFCPU*1*3 R32PSFCPU*1*3 R120PSFCPU*1*3	GT37 SoftGOT3000	USB		3 m	1.115V or later	1 personal computer for 1 GOT

*1 The redundant system auto-tracking function (system switching and path switching) of the GOT is not supported.
*2 Mount a safety function module R6SFM next to the RnSFCPU on the base unit.
The RnSFCPU and the safety function module R6SFM must have the same pair version.
If their pair versions differ, the RnSFCPU does not operate.
*3 Mount a SIL2 function module R6PSFM and a redundant function module R6RFM next to RnPSFCPU on the base unit.
*4 For the USB cables validated by Mitsubishi Electric Corporation, refer to the following Technical Bulletin.
List of Valid Devices Applicable for GOT3000 Series (GOT-A-0233)

Serial communication connection between the GOT and the controller

For the system configuration between the GOT and the controller, refer to the following.

Controller	Reference
MELSEC iQ-R series (serial communication connection)	☞ Page 532 System configuration



Controller	GOT		Connection cable		Personal computer	Number of connectable equipment
	Model	Interface	USB cable	Maximum length	Compatible GX Works3 version	
R00CPU R01CPU R02CPU	GT37 SoftGOT3000	USB	*3	3 m	1.115V or later	1 personal computer for 1 GOT
R04CPU R08CPU R16CPU R32CPU R120CPU	GT37 SoftGOT3000	USB		3 m	1.115V or later	1 personal computer for 1 GOT
R08PCPU*1 R16PCPU*1 R32PCPU*1 R120PCPU*1	GT37 SoftGOT3000	USB		3 m	1.115V or later	1 personal computer for 1 GOT
R08SFCPU*2 R16SFCPU*2 R32SFCPU*2 R120SFCPU*2	GT37 SoftGOT3000	USB		3 m	1.115V or later	1 personal computer for 1 GOT
R04ENCPU R08ENCPU R16ENCPU R32ENCPU R120ENCPU	GT37 SoftGOT3000	USB		3 m	1.115V or later	1 personal computer for 1 GOT

*1 The redundant system auto-tracking function (system switching and path switching) of the GOT is not supported.

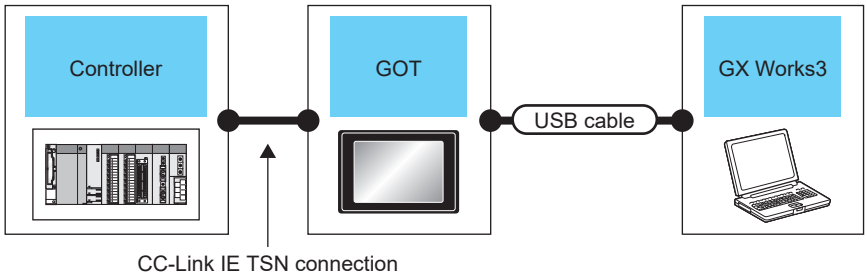
*2 Mount a safety function module R6SFM next to the RnSFCPU on the base unit.
The RnSFCPU and the safety function module R6SFM must have the same pair version.
If their pair versions differ, the RnSFCPU does not operate.

*3 For the USB cables validated by Mitsubishi Electric Corporation, refer to the following Technical Bulletin.
List of Valid Devices Applicable for GOT3000 Series (GOT-A-0233)

CC-Link IE TSN connection between the GOT and the controller

For the system configuration between the GOT and the controller, refer to the following.

Controller	Reference
MELSEC iQ-R series (CC-Link IE TSN connection)	☞ Page 798 System configuration



Controller	GOT		Connection cable		Personal computer	Number of connectable equipment
	Model	Interface	USB cable	Maximum length	Compatible GX Works3 version	
R00CPU R01CPU R02CPU	GT37 SoftGOT3000	USB	*2	3 m	1.115V or later	1 personal computer for 1 GOT
R04CPU R08CPU R16CPU R32CPU R120CPU	GT37 SoftGOT3000	USB		3 m	1.115V or later	1 personal computer for 1 GOT
R08SFCPU*1 R16SFCPU*1 R32SFCPU*1 R120SFCPU*1	GT37 SoftGOT3000	USB		3 m	1.115V or later	1 personal computer for 1 GOT
R04ENCPU R08ENCPU R16ENCPU R32ENCPU R120ENCPU	GT37 SoftGOT3000	USB		3 m	1.115V or later	1 personal computer for 1 GOT

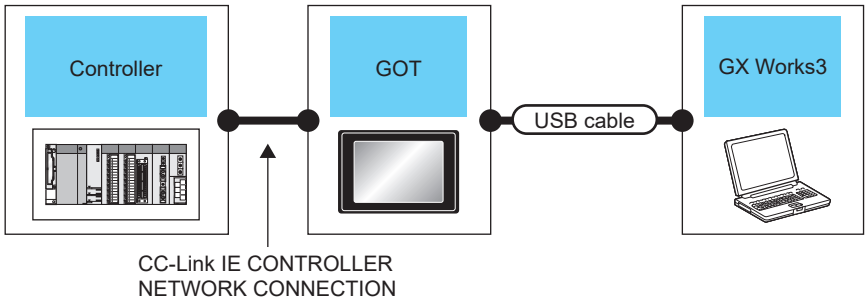
*1 Mount a safety function module R6SFM next to the RnSFCPU on the base unit.
The RnSFCPU and the safety function module R6SFM must have the same pair version.
If their pair versions differ, the RnSFCPU does not operate.

*2 For the USB cables validated by Mitsubishi Electric Corporation, refer to the following Technical Bulletin.
List of Valid Devices Applicable for GOT3000 Series (GOT-A-0233)

CC-Link IE Controller Network connection between the GOT and the controller

For the system configuration between the GOT and the controller, refer to the following.

Controller	Reference
MELSEC iQ-R series (CC-Link IE Controller Network connection)	☞ Page 863 System configuration



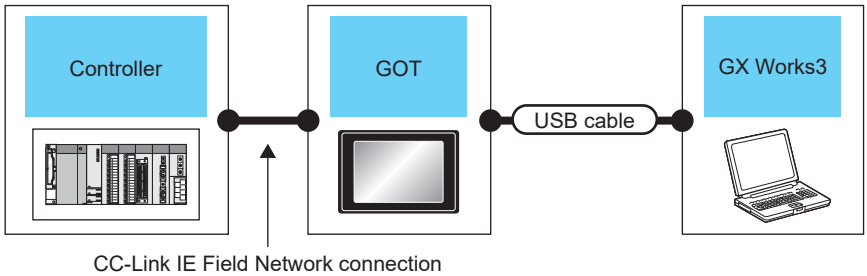
Controller	GOT		Connection cable		Personal computer	Number of connectable equipment
	Model	Interface	USB cable	Maximum length	Compatible GX Works3 version	
R00CPU R01CPU R02CPU	GT37 SoftGOT3000	USB	*4	3 m	1.115V or later	1 personal computer for 1 GOT
R04CPU R08CPU R16CPU R32CPU R120CPU	GT37 SoftGOT3000	USB		3 m	1.115V or later	1 personal computer for 1 GOT
R08PCPU*1 R16PCPU*1 R32PCPU*1 R120PCPU*1	GT37 SoftGOT3000	USB		3 m	1.115V or later	1 personal computer for 1 GOT
R08SFCPU*2 R16SFCPU*2 R32SFCPU*2 R120SFCPU*2	GT37 SoftGOT3000	USB		3 m	1.115V or later	1 personal computer for 1 GOT
R08PSFCPU*1*3 R16PSFCPU*1*3 R32PSFCPU*1*3 R120PSFCPU*1*3	GT37 SoftGOT3000	USB		3 m	1.115V or later	1 personal computer for 1 GOT
R04ENCPU R08ENCPU R16ENCPU R32ENCPU R120ENCPU	GT37 SoftGOT3000	USB		3 m	1.115V or later	1 personal computer for 1 GOT

*1 The redundant system auto-tracking function (system switching and path switching) of the GOT is not supported.
*2 Mount a safety function module R6SFM next to the RnSFCPU on the base unit.
The RnSFCPU and the safety function module R6SFM must have the same pair version.
If their pair versions differ, the RnSFCPU does not operate.
*3 Mount a SIL2 function module R6PSFM and a redundant function module R6RFM next to RnPSFCPU on the base unit.
*4 For the USB cables validated by Mitsubishi Electric Corporation, refer to the following Technical Bulletin.
List of Valid Devices Applicable for GOT3000 Series (GOT-A-0233)

CC-Link IE Field Network connection between the GOT and the controller

For the system configuration between the GOT and the controller, refer to the following.

Controller	Reference
MELSEC iQ-R series (CC-Link IE Field Network connection)	☞ Page 942 System configuration



Controller	GOT		Connection cable		Personal computer	Number of connectable equipment
	Model	Interface	USB cable	Maximum length	Compatible GX Works3 version	
R00CPU R01CPU R02CPU	GT37 SoftGOT3000	USB	*4	3 m	1.115V or later	1 personal computer for 1 GOT
R04CPU R08CPU R16CPU R32CPU R120CPU	GT37 SoftGOT3000	USB		3 m	1.115V or later	1 personal computer for 1 GOT
R08PCPU*1 R16PCPU*1 R32PCPU*1 R120PCPU*1	GT37 SoftGOT3000	USB		3 m	1.115V or later	1 personal computer for 1 GOT
R08SFCPU*2 R16SFCPU*2 R32SFCPU*2 R120SFCPU*2	GT37 SoftGOT3000	USB		3 m	1.115V or later	1 personal computer for 1 GOT
R08PSFCPU*1*3 R16PSFCPU*1*3 R32PSFCPU*1*3 R120PSFCPU*1*3	GT37 SoftGOT3000	USB		3 m	1.115V or later	1 personal computer for 1 GOT
R04ENCPU R08ENCPU R16ENCPU R32ENCPU R120ENCPU	GT37 SoftGOT3000	USB		3 m	1.115V or later	1 personal computer for 1 GOT

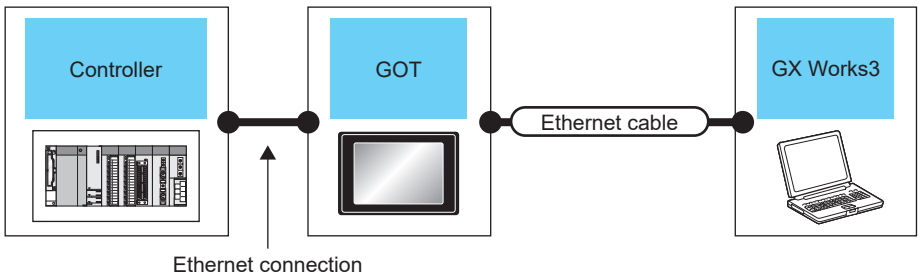
*1 The redundant system auto-tracking function (system switching and path switching) of the GOT is not supported.
*2 Mount a safety function module R6SFM next to the RnSFCPU on the base unit.
The RnSFCPU and the safety function module R6SFM must have the same pair version.
If their pair versions differ, the RnSFCPU does not operate.
*3 Mount a SIL2 function module R6PSFM and a redundant function module R6RFM next to RnPSFCPU on the base unit.
*4 For the USB cables validated by Mitsubishi Electric Corporation, refer to the following Technical Bulletin.
List of Valid Devices Applicable for GOT3000 Series (GOT-A-0233)

72.3.2 Ethernet connection between the personal computer and the GOT

Ethernet connection between the GOT and the controller

For the system configuration between the GOT and the controller, refer to the following.

Controller	Reference
MELSEC iQ-R series (Built-in Ethernet port connection)	☞ Page 190 System configuration
MELSEC iQ-R series (Ethernet module connection)	☞ Page 245 System configuration



Controller	GOT		Connection cable		Personal computer	Number of connectable equipment
	Model	Interface	Ethernet cable	Maximum segment length	Compatible GX Works3 version	
R00CPU R01CPU R02CPU	GT37 SoftGOT3000	Built-in Ethernet interface of GOT	Twisted pair cable ☞ Page 2578 Connection cable	100 m	1.115V or later	1 personal computer for 1 GOT
R04CPU R08CPU R16CPU R32CPU R120CPU	GT37 SoftGOT3000	Built-in Ethernet interface of GOT		100 m	1.115V or later	1 personal computer for 1 GOT
R08PCPU*1 R16PCPU*1 R32PCPU*1 R120PCPU*1	GT37 SoftGOT3000	Built-in Ethernet interface of GOT		100 m	1.115V or later	1 personal computer for 1 GOT
R08SFCPU*2 R16SFCPU*2 R32SFCPU*2 R120SFCPU*2	GT37 SoftGOT3000	Built-in Ethernet interface of GOT		100 m	1.115V or later	1 personal computer for 1 GOT
R08PSFCPU*1*3 R16PSFCPU*1*3 R32PSFCPU*1*3 R120PSFCPU*1*3	GT37 SoftGOT3000	Built-in Ethernet interface of GOT		100 m	1.115V or later	1 personal computer for 1 GOT
R04ENCPU R08ENCPU R16ENCPU R32ENCPU R120ENCPU	GT37 SoftGOT3000	Built-in Ethernet interface of GOT		100 m	1.115V or later	1 personal computer for 1 GOT

*1 The redundant system auto-tracking function (system switching and path switching) of the GOT is not supported.
*2 Mount a safety function module R6SFM next to the RnSFCPU on the base unit.
The RnSFCPU and the safety function module R6SFM must have the same pair version.
If their pair versions differ, the RnSFCPU does not operate.
*3 Mount a SIL2 function module R6PSFM and a redundant function module R6RFM next to RnPSFCPU on the base unit.

■Connection cable

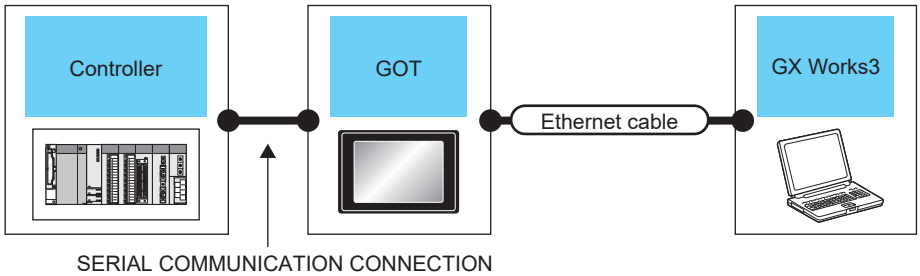
Use a connection cable that meets the following standards.

Standard	Category
10BASE-T	Shielded twisted pair cable (STP) or unshielded twisted pair cable (UTP) of category 3 or higher
100BASE-TX	Shielded twisted pair cable (STP) or unshielded twisted pair cable (UTP) of category 5 or higher
1000BASE-T	Shielded twisted pair cable (STP) or unshielded twisted pair cable (UTP) of category 5e or higher

Serial communication connection between the GOT and the controller

For the system configuration between the GOT and the controller, refer to the following.

Controller	Reference
MELSEC iQ-R series (serial communication connection)	☞ Page 532 System configuration



Controller	GOT		Connection cable		Personal computer	Number of connectable equipment
	Model	Interface	Ethernet cable	Maximum segment length	Compatible GX Works3 version	
R00CPU R01CPU R02CPU	GT37 SoftGOT3000	Built-in Ethernet interface of GOT	Twisted pair cable ☞ Page 2579 Connection cable	100 m	1.115V or later	1 personal computer for 1 GOT
R04CPU R08CPU R16CPU R32CPU R120CPU	GT37 SoftGOT3000	Built-in Ethernet interface of GOT		100 m	1.115V or later	1 personal computer for 1 GOT
R08PCPU*1 R16PCPU*1 R32PCPU*1 R120PCPU*1	GT37 SoftGOT3000	Built-in Ethernet interface of GOT		100 m	1.115V or later	1 personal computer for 1 GOT
R08SFCPU*2 R16SFCPU*2 R32SFCPU*2 R120SFCPU*2	GT37 SoftGOT3000	Built-in Ethernet interface of GOT		100 m	1.115V or later	1 personal computer for 1 GOT
R04ENCPU R08ENCPU R16ENCPU R32ENCPU R120ENCPU	GT37 SoftGOT3000	Built-in Ethernet interface of GOT		100 m	1.115V or later	1 personal computer for 1 GOT

*1 The redundant system auto-tracking function (system switching and path switching) of the GOT is not supported.

*2 Mount a safety function module R6SFM next to the RnSFCPU on the base unit.
The RnSFCPU and the safety function module R6SFM must have the same pair version.
If their pair versions differ, the RnSFCPU does not operate.

■Connection cable

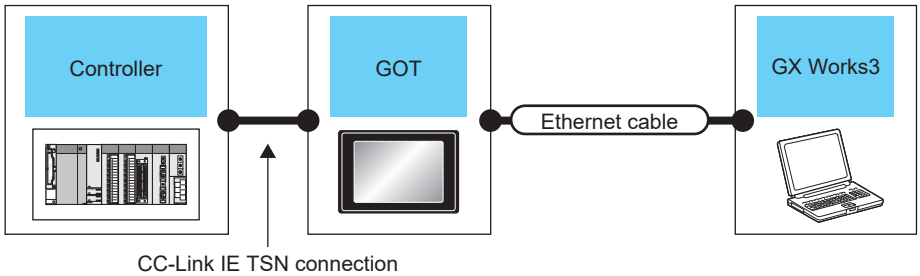
Use a connection cable that meets the following standards.

Standard	Category
10BASE-T	Shielded twisted pair cable (STP) or unshielded twisted pair cable (UTP) of category 3 or higher
100BASE-TX	Shielded twisted pair cable (STP) or unshielded twisted pair cable (UTP) of category 5 or higher
1000BASE-T	Shielded twisted pair cable (STP) or unshielded twisted pair cable (UTP) of category 5e or higher

CC-Link IE TSN connection between the GOT and the controller

For the system configuration between the GOT and the controller, refer to the following.

Controller	Reference
MELSEC iQ-R series (CC-Link IE TSN connection)	☞ Page 798 System configuration



Controller	GOT		Connection cable		Personal computer	Number of connectable equipment
	Model	Interface	Ethernet cable	Maximum segment length	Compatible GX Works3 version	
R00CPU R01CPU R02CPU	GT37 SoftGOT3000	Built-in Ethernet interface of GOT	Twisted pair cable ☞ Page 2580 Connection cable	100 m	1.115V or later	1 personal computer for 1 GOT
R04CPU R08CPU R16CPU R32CPU R120CPU	GT37 SoftGOT3000	Built-in Ethernet interface of GOT		100 m	1.115V or later	1 personal computer for 1 GOT
R08SFCPU*1 R16SFCPU*1 R32SFCPU*1 R120SFCPU*1	GT37 SoftGOT3000	Built-in Ethernet interface of GOT		100 m	1.115V or later	1 personal computer for 1 GOT
R04ENCPU R08ENCPU R16ENCPU R32ENCPU R120ENCPU	GT37 SoftGOT3000	Built-in Ethernet interface of GOT		100 m	1.115V or later	1 personal computer for 1 GOT

*1 Mount a safety function module R6SFM next to the RnSFCPU on the base unit.
The RnSFCPU and the safety function module R6SFM must have the same pair version.
If their pair versions differ, the RnSFCPU does not operate.

■Connection cable

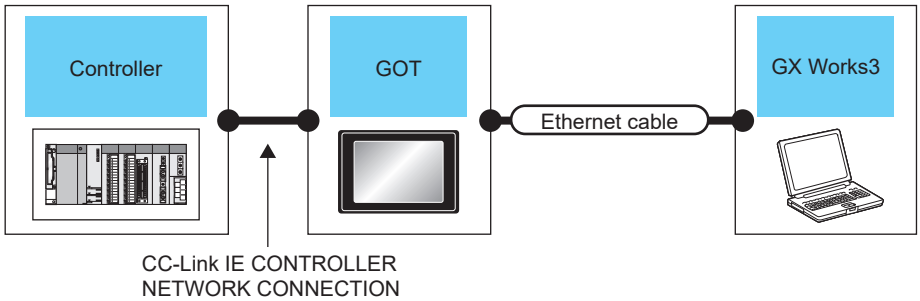
Use a connection cable that meets the following standards.

Standard	Category
10BASE-T	Shielded twisted pair cable (STP) or unshielded twisted pair cable (UTP) of category 3 or higher
100BASE-TX	Shielded twisted pair cable (STP) or unshielded twisted pair cable (UTP) of category 5 or higher
1000BASE-T	Shielded twisted pair cable (STP) or unshielded twisted pair cable (UTP) of category 5e or higher

CC-Link IE Controller Network connection between the GOT and the controller

For the system configuration between the GOT and the controller, refer to the following.

Controller	Reference
MELSEC iQ-R series (CC-Link IE Controller Network connection)	☞ Page 863 System configuration



Controller	GOT		Connection cable		Personal computer	Number of connectable equipment
	Model	Interface	Ethernet cable	Maximum segment length	Compatible GX Works3 version	
R00CPU R01CPU R02CPU	GT37 SoftGOT3000	Built-in Ethernet interface of GOT	Twisted pair cable ☞ Page 2582 Connection cable	100 m	1.115V or later	1 personal computer for 1 GOT
R04CPU R08CPU R16CPU R32CPU R120CPU	GT37 SoftGOT3000	Built-in Ethernet interface of GOT		100 m	1.115V or later	1 personal computer for 1 GOT
R08PCPU*1 R16PCPU*1 R32PCPU*1 R120PCPU*1	GT37 SoftGOT3000	Built-in Ethernet interface of GOT		100 m	1.115V or later	1 personal computer for 1 GOT
R08SFCPU*2 R16SFCPU*2 R32SFCPU*2 R120SFCPU*2	GT37 SoftGOT3000	Built-in Ethernet interface of GOT		100 m	1.115V or later	1 personal computer for 1 GOT
R08PSFCPU*1*3 R16PSFCPU*1*3 R32PSFCPU*1*3 R120PSFCPU*1*3	GT37 SoftGOT3000	Built-in Ethernet interface of GOT		100 m	1.115V or later	1 personal computer for 1 GOT
R04ENCPU R08ENCPU R16ENCPU R32ENCPU R120ENCPU	GT37 SoftGOT3000	Built-in Ethernet interface of GOT		100 m	1.115V or later	1 personal computer for 1 GOT

*1 The redundant system auto-tracking function (system switching and path switching) of the GOT is not supported.
*2 Mount a safety function module R6SFM next to the RnSFCPU on the base unit.
The RnSFCPU and the safety function module R6SFM must have the same pair version.
If their pair versions differ, the RnSFCPU does not operate.
*3 Mount a SIL2 function module R6PSFM and a redundant function module R6RFM next to RnPSFCPU on the base unit.

■Connection cable

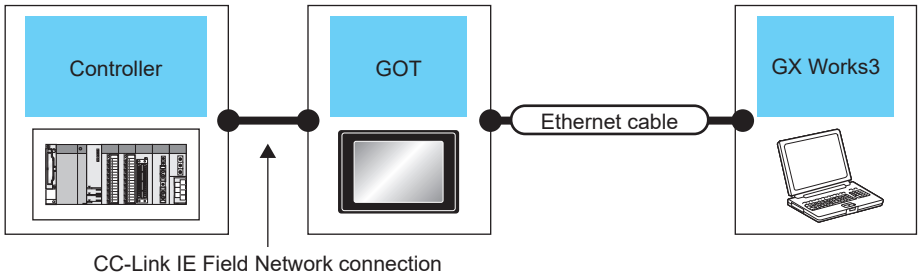
Use a connection cable that meets the following standards.

Standard	Category
10BASE-T	Shielded twisted pair cable (STP) or unshielded twisted pair cable (UTP) of category 3 or higher
100BASE-TX	Shielded twisted pair cable (STP) or unshielded twisted pair cable (UTP) of category 5 or higher
1000BASE-T	Shielded twisted pair cable (STP) or unshielded twisted pair cable (UTP) of category 5e or higher

CC-Link IE Field Network connection between the GOT and the controller

For the system configuration between the GOT and the controller, refer to the following.

Controller	Reference
MELSEC iQ-R series (CC-Link IE Field Network connection)	☞ Page 942 System configuration



Controller	GOT		Connection cable		Personal computer	Number of connectable equipment
	Model	Interface	Ethernet cable	Maximum segment length	Compatible GX Works3 version	
R00CPU R01CPU R02CPU	GT37 SoftGOT3000	Built-in Ethernet interface of GOT	Twisted pair cable ☞ Page 2583 Connection cable	100 m	1.115V or later	1 personal computer for 1 GOT
R04CPU R08CPU R16CPU R32CPU R120CPU	GT37 SoftGOT3000	Built-in Ethernet interface of GOT		100 m	1.115V or later	1 personal computer for 1 GOT
R08PCPU*1 R16PCPU*1 R32PCPU*1 R120PCPU*1	GT37 SoftGOT3000	Built-in Ethernet interface of GOT		100 m	1.115V or later	1 personal computer for 1 GOT
R08SFCPU*2 R16SFCPU*2 R32SFCPU*2 R120SFCPU*2	GT37 SoftGOT3000	Built-in Ethernet interface of GOT		100 m	1.115V or later	1 personal computer for 1 GOT
R08PSFCPU*1*3 R16PSFCPU*1*3 R32PSFCPU*1*3 R120PSFCPU*1*3	GT37 SoftGOT3000	Built-in Ethernet interface of GOT		100 m	1.115V or later	1 personal computer for 1 GOT
R04ENCPU R08ENCPU R16ENCPU R32ENCPU R120ENCPU	GT37 SoftGOT3000	Built-in Ethernet interface of GOT		100 m	1.115V or later	1 personal computer for 1 GOT

*1 The redundant system auto-tracking function (system switching and path switching) of the GOT is not supported.
*2 Mount a safety function module R6SFM next to the RnSFCPU on the base unit.
The RnSFCPU and the safety function module R6SFM must have the same pair version.
If their pair versions differ, the RnSFCPU does not operate.
*3 Mount a SIL2 function module R6PSFM and a redundant function module R6RFM next to RnPSFCPU on the base unit.

■Connection cable

Use a connection cable that meets the following standards.

Standard	Category
10BASE-T	Shielded twisted pair cable (STP) or unshielded twisted pair cable (UTP) of category 3 or higher
100BASE-TX	Shielded twisted pair cable (STP) or unshielded twisted pair cable (UTP) of category 5 or higher
1000BASE-T	Shielded twisted pair cable (STP) or unshielded twisted pair cable (UTP) of category 5e or higher

72.4 PLC CPU (MELSEC iQ-F series)

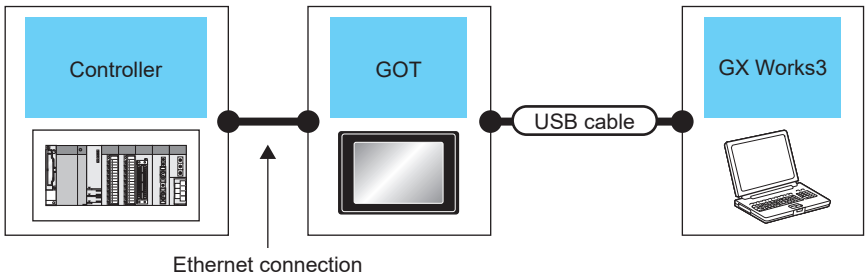
Personal computer to GOT connection	Connection between GOT and controller	Reference
USB connection	Ethernet connection	☞ Page 2584 Ethernet connection between the GOT and the controller
	Serial connection	☞ Page 2585 Serial connection between the GOT and the controller
	CC-Link IE Field Network connection	☞ Page 2586 CC-Link IE Field Network connection between the GOT and the controller
Ethernet connection	Ethernet connection	☞ Page 2587 Ethernet connection between the GOT and the controller
	Serial connection	☞ Page 2588 Serial connection between the GOT and the controller
	CC-Link IE Field Network connection	☞ Page 2589 CC-Link IE Field Network connection between the GOT and the controller

72.4.1 USB connection between the personal computer and the GOT

Ethernet connection between the GOT and the controller

For the system configuration between the GOT and the controller, refer to the following.

Controller	Reference
MELSEC iQ-F series (Built-in Ethernet port connection)	☞ Page 292 System configuration
MELSEC iQ-F series (Ethernet module connection)	☞ Page 309 System configuration



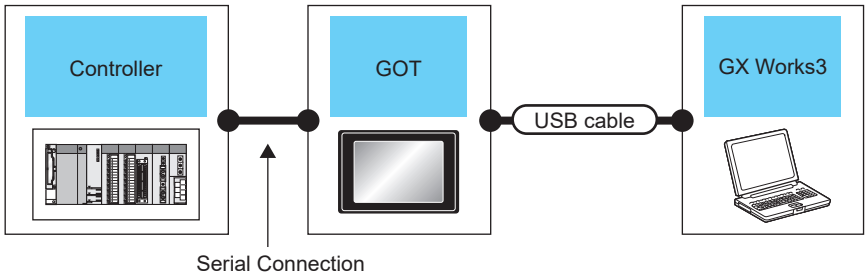
Controller	GOT		Connection cable		Personal computer	Number of connectable equipment
	Model	Interface	USB cable	Maximum length	Compatible GX Works3 version	
FX5U FX5UC	GT37 SoftGOT3000	USB	*1	3 m	1.115V or later	1 personal computer for 1 GOT
FX5UJ	GT37 SoftGOT3000	USB		3 m	1.115V or later	1 personal computer for 1 GOT
FX5S	GT37 SoftGOT3000	USB		3 m	1.115V or later	1 personal computer for 1 GOT

*1 For the USB cables validated by Mitsubishi Electric Corporation, refer to the following Technical Bulletin.
List of Valid Devices Applicable for GOT3000 Series (GOT-A-0233)

Serial connection between the GOT and the controller

For the system configuration between the GOT and the controller, refer to the following.

Controller	Reference
MELSEC iQ-F series (Built-in serial port connection)	☞ Page 550 System configuration



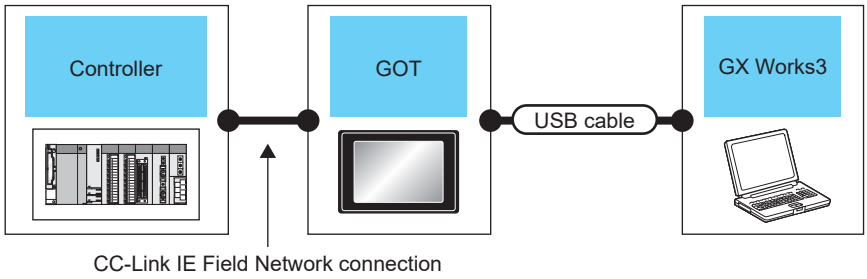
Controller	GOT		Connection cable		Personal computer	Number of connectable equipment
	Model	Interface	USB cable	Maximum length	Compatible GX Works3 version	
FX5U FX5UC	GT37 SoftGOT3000	USB	*1	3 m	1.115V or later	1 personal computer for 1 GOT
FX5UJ	GT37 SoftGOT3000	USB		3 m	1.115V or later	1 personal computer for 1 GOT
FX5S	GT37 SoftGOT3000	USB		3 m	1.115V or later	1 personal computer for 1 GOT

*1 For the USB cables validated by Mitsubishi Electric Corporation, refer to the following Technical Bulletin.
List of Valid Devices Applicable for GOT3000 Series (GOT-A-0233)

CC-Link IE Field Network connection between the GOT and the controller

For the system configuration between the GOT and the controller, refer to the following.

Controller	Reference
MELSEC iQ-F series (CC-Link IE Field Network connection)	☞ Page 969 System configuration



Controller	GOT		Connection cable		Personal computer	Number of connectable equipment
	Model	Interface	USB cable	Maximum length	Compatible GX Works3 version	
FX5U FX5UC	GT37 SoftGOT3000	USB	*1	3 m	1.115V or later	1 personal computer for 1 GOT
FX5UJ	GT37 SoftGOT3000	USB		3 m	1.115V or later	1 personal computer for 1 GOT

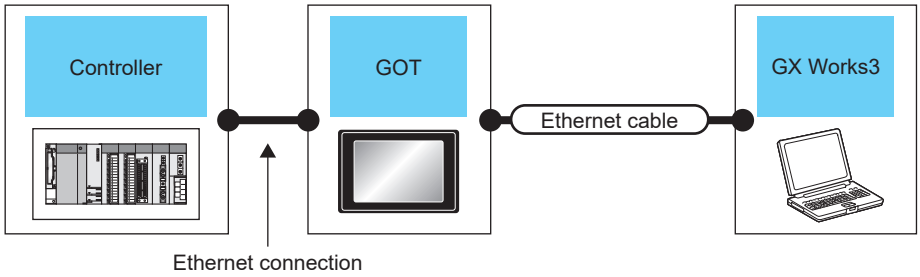
*1 For the USB cables validated by Mitsubishi Electric Corporation, refer to the following Technical Bulletin.
List of Valid Devices Applicable for GOT3000 Series (GOT-A-0233)

72.4.2 Ethernet connection between the personal computer and the GOT

Ethernet connection between the GOT and the controller

For the system configuration between the GOT and the controller, refer to the following.

Controller	Reference
MELSEC iQ-F series (Built-in Ethernet port connection)	☞ Page 292 System configuration
MELSEC iQ-F series (Ethernet module connection)	☞ Page 309 System configuration



Controller	GOT		Connection cable		Personal computer	Number of connectable equipment
	Model	Interface	Ethernet cable	Maximum segment length	Compatible GX Works3 version	
FX5U FX5UC	GT37 SoftGOT3000	Built-in Ethernet interface of GOT	Twisted pair cable ☞ Page 2587 Connection cable	100 m	1.115V or later	1 personal computer for 1 GOT
FX5UJ	GT37 SoftGOT3000	Built-in Ethernet interface of GOT		100 m	1.115V or later	1 personal computer for 1 GOT
FX5S	GT37 SoftGOT3000	Built-in Ethernet interface of GOT		100 m	1.115V or later	1 personal computer for 1 GOT

■Connection cable

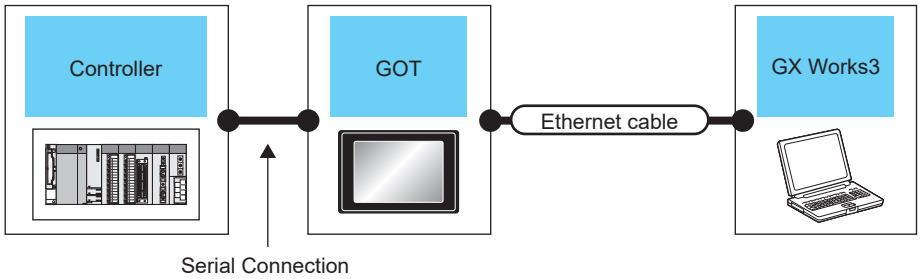
Use a connection cable that meets the following standards.

Standard	Category
10BASE-T	Shielded twisted pair cable (STP) or unshielded twisted pair cable (UTP) of category 3 or higher
100BASE-TX	Shielded twisted pair cable (STP) or unshielded twisted pair cable (UTP) of category 5 or higher
1000BASE-T	Shielded twisted pair cable (STP) or unshielded twisted pair cable (UTP) of category 5e or higher

Serial connection between the GOT and the controller

For the system configuration between the GOT and the controller, refer to the following.

Controller	Reference
MELSEC iQ-F series (Built-in serial port connection)	☞ Page 550 System configuration



Controller	GOT		Connection cable		Personal computer	Number of connectable equipment
	Model	Interface	Ethernet cable	Maximum segment length	Compatible GX Works3 version	
FX5U FX5UC	GT37 SoftGOT3000	Built-in Ethernet interface of GOT	Twisted pair cable ☞ Page 2588 Connection cable	100 m	1.115V or later	1 personal computer for 1 GOT
FX5UJ	GT37 SoftGOT3000	Built-in Ethernet interface of GOT		100 m	1.115V or later	1 personal computer for 1 GOT
FX5S	GT37 SoftGOT3000	Built-in Ethernet interface of GOT		100 m	1.115V or later	1 personal computer for 1 GOT

■Connection cable

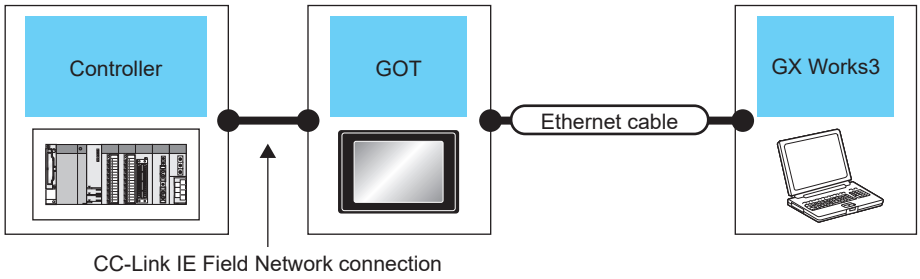
Use a connection cable that meets the following standards.

Standard	Category
10BASE-T	Shielded twisted pair cable (STP) or unshielded twisted pair cable (UTP) of category 3 or higher
100BASE-TX	Shielded twisted pair cable (STP) or unshielded twisted pair cable (UTP) of category 5 or higher
1000BASE-T	Shielded twisted pair cable (STP) or unshielded twisted pair cable (UTP) of category 5e or higher

CC-Link IE Field Network connection between the GOT and the controller

For the system configuration between the GOT and the controller, refer to the following.

Controller	Reference
MELSEC iQ-F series (CC-Link IE Field Network connection)	☞ Page 969 System configuration



Controller	GOT		Connection cable		Personal computer	Number of connectable equipment
	Model	Interface	Ethernet cable	Maximum segment length	Compatible GX Works3 version	
FX5U FX5UC	GT37 SoftGOT3000	Built-in Ethernet interface of GOT	Twisted pair cable ☞ Page 2589 Connection cable	100 m	1.115V or later	1 personal computer for 1 GOT
FX5UJ	GT37 SoftGOT3000	Built-in Ethernet interface of GOT		100 m	1.115V or later	1 personal computer for 1 GOT

■Connection cable

Use a connection cable that meets the following standards.

Standard	Category
10BASE-T	Shielded twisted pair cable (STP) or unshielded twisted pair cable (UTP) of category 3 or higher
100BASE-TX	Shielded twisted pair cable (STP) or unshielded twisted pair cable (UTP) of category 5 or higher
1000BASE-T	Shielded twisted pair cable (STP) or unshielded twisted pair cable (UTP) of category 5e or higher

72.5 CNC C80

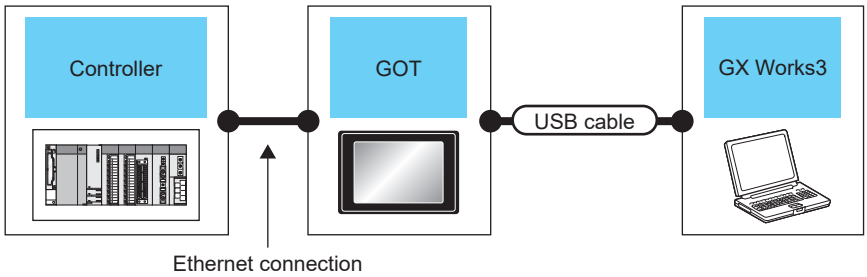
Personal computer to GOT connection	Connection between GOT and controller	Reference
USB connection	Ethernet connection	☞ Page 2590 Ethernet connection between the GOT and the controller

72.5.1 USB connection between the personal computer and the GOT

Ethernet connection between the GOT and the controller

For the system configuration between the GOT and the controller, refer to the following.

Controller	Reference
CNC C80 (Ethernet module connection)	☞ Page 245 System configuration



Controller	GOT		Connection cable		Personal computer	Number of connectable equipment
	Model	Interface	USB cable	Maximum length	Compatible GX Works3 version	
R16NCCPU-S1	GT37 SoftGOT3000	USB	*1	3 m	1.115V or later	1 personal computer for 1 GOT

*1 For the USB cables validated by Mitsubishi Electric Corporation, refer to the following Technical Bulletin.
List of Valid Devices Applicable for GOT3000 Series (GOT-A-0233)

72.6 CC-Link IE Field Network head module

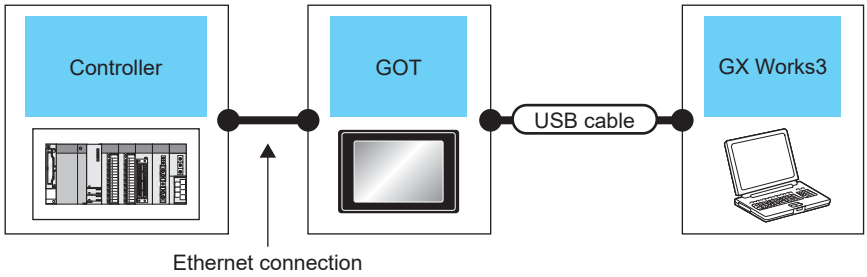
Personal computer to GOT connection	Connection between GOT and controller	Reference
USB connection	Ethernet connection	☞ Page 2591 Ethernet connection between the GOT and the controller
	Serial communication connection	☞ Page 2592 Serial communication connection between the GOT and the controller
	CC-Link IE Controller Network connection	☞ Page 2592 CC-Link IE Controller Network connection between the GOT and the controller
	CC-Link IE Field Network connection	☞ Page 2593 CC-Link IE Field Network connection between the GOT and the controller
Ethernet connection	Ethernet connection	☞ Page 2594 Ethernet connection between the GOT and the controller
	Serial communication connection	☞ Page 2595 Serial communication connection between the GOT and the controller
	CC-Link IE Controller Network connection	☞ Page 2596 CC-Link IE Controller Network connection between the GOT and the controller
	CC-Link IE Field Network connection	☞ Page 2597 CC-Link IE Field Network connection between the GOT and the controller

72.6.1 USB connection between the personal computer and the GOT

Ethernet connection between the GOT and the controller

For the system configuration between the GOT and the controller, refer to the following.

Controller	Reference
CC-Link IE Field Network head module (Ethernet module connection)	☞ Page 245 System configuration



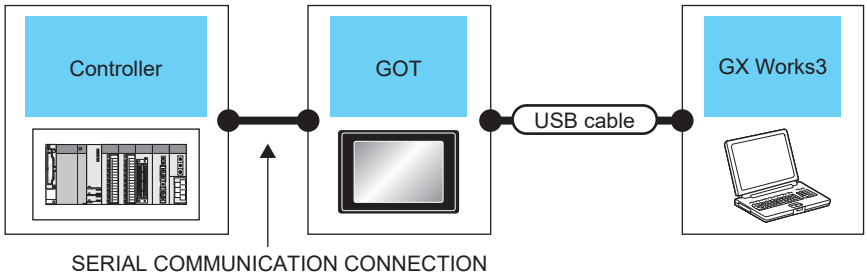
Controller	GOT		Connection cable		Personal computer	Number of connectable equipment
	Model	Interface	USB cable	Maximum length	Compatible GX Works3 version	
RJ72GF15-T2	GT37 SoftGOT3000	USB	*1	3 m	1.115V or later	1 personal computer for 1 GOT

*1 For the USB cables validated by Mitsubishi Electric Corporation, refer to the following Technical Bulletin.
List of Valid Devices Applicable for GOT3000 Series (GOT-A-0233)

Serial communication connection between the GOT and the controller

For the system configuration between the GOT and the controller, refer to the following.

Controller	Reference
CC-Link IE Field Network head module (serial communication connection)	☞ Page 532 System configuration



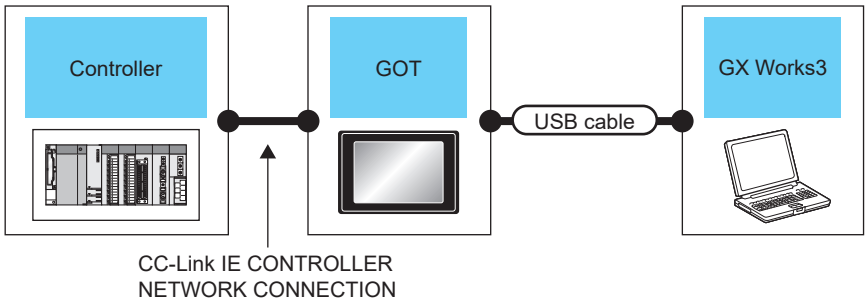
Controller	GOT		Connection cable		Personal computer	Number of connectable equipment
	Model	Interface	USB cable	Maximum length	Compatible GX Works3 version	
RJ72GF15-T2	GT37 SoftGOT3000	USB	*1	3 m	1.115V or later	1 personal computer for 1 GOT

*1 For the USB cables validated by Mitsubishi Electric Corporation, refer to the following Technical Bulletin.
List of Valid Devices Applicable for GOT3000 Series (GOT-A-0233)

CC-Link IE Controller Network connection between the GOT and the controller

For the system configuration between the GOT and the controller, refer to the following.

Controller	Reference
CC-Link IE Field Network head module (CC-Link IE Controller Network connection)	☞ Page 863 System configuration



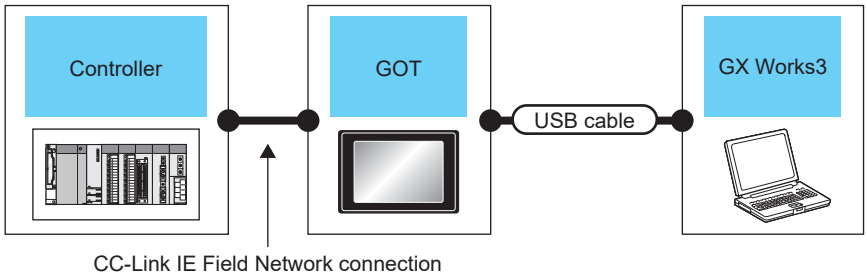
Controller	GOT		Connection cable		Personal computer	Number of connectable equipment
	Model	Interface	USB cable	Maximum length	Compatible GX Works3 version	
RJ72GF15-T2	GT37 SoftGOT3000	USB	*1	3 m	1.115V or later	1 personal computer for 1 GOT

*1 For the USB cables validated by Mitsubishi Electric Corporation, refer to the following Technical Bulletin.
List of Valid Devices Applicable for GOT3000 Series (GOT-A-0233)

CC-Link IE Field Network connection between the GOT and the controller

For the system configuration between the GOT and the controller, refer to the following.

Controller	Reference
CC-Link IE Field Network head module (CC-Link IE Field Network connection)	☞ Page 942 System configuration



Controller	GOT		Connection cable		Personal computer	Number of connectable equipment
	Model	Interface	USB cable	Maximum length	Compatible GX Works3 version	
RJ72GF15-T2	GT37 SoftGOT3000	USB	*1	3 m	1.115V or later	1 personal computer for 1 GOT

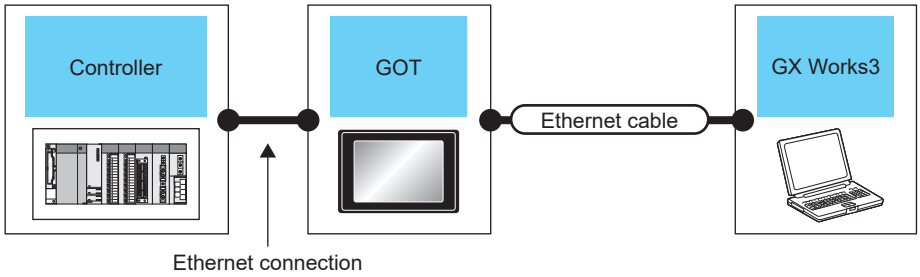
*1 For the USB cables validated by Mitsubishi Electric Corporation, refer to the following Technical Bulletin.
List of Valid Devices Applicable for GOT3000 Series (GOT-A-0233)

72.6.2 Ethernet connection between the personal computer and the GOT

Ethernet connection between the GOT and the controller

For the system configuration between the GOT and the controller, refer to the following.

Controller	Reference
CC-Link IE Field Network head module (Ethernet module connection)	☞ Page 245 System configuration



Controller	GOT		Connection cable		Personal computer	Number of connectable equipment
	Model	Interface	Ethernet cable	Maximum segment length	Compatible GX Works3 version	
RJ72GF15-T2	GT37 SoftGOT3000	Built-in Ethernet interface of GOT	Twisted pair cable ☞ Page 2594 Connection cable	100 m	1.115V or later	1 personal computer for 1 GOT

■Connection cable

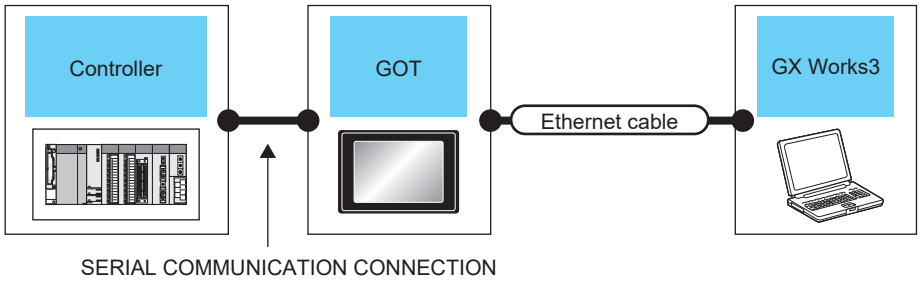
Use a connection cable that meets the following standards.

Standard	Category
10BASE-T	Shielded twisted pair cable (STP) or unshielded twisted pair cable (UTP) of category 3 or higher
100BASE-TX	Shielded twisted pair cable (STP) or unshielded twisted pair cable (UTP) of category 5 or higher
1000BASE-T	Shielded twisted pair cable (STP) or unshielded twisted pair cable (UTP) of category 5e or higher

Serial communication connection between the GOT and the controller

For the system configuration between the GOT and the controller, refer to the following.

Controller	Reference
CC-Link IE Field Network head module (serial communication connection)	☞ Page 532 System configuration



Controller	GOT		Connection cable		Personal computer	Number of connectable equipment
	Model	Interface	Ethernet cable	Maximum segment length	Compatible GX Works3 version	
RJ72GF15-T2	GT37 SoftGOT3000	Built-in Ethernet interface of GOT	Twisted pair cable ☞ Page 2595 Connection cable	100 m	1.115V or later	1 personal computer for 1 GOT

■Connection cable

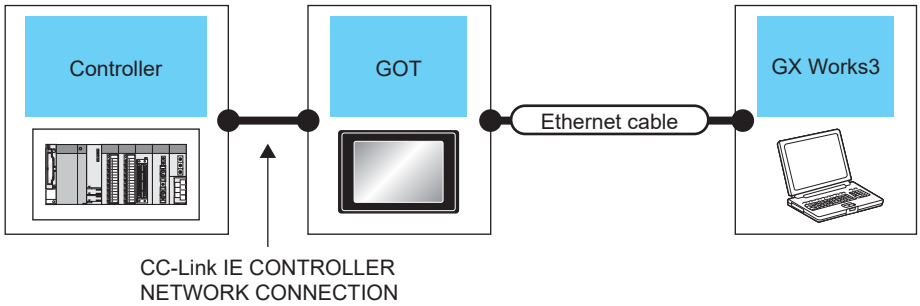
Use a connection cable that meets the following standards.

Standard	Category
10BASE-T	Shielded twisted pair cable (STP) or unshielded twisted pair cable (UTP) of category 3 or higher
100BASE-TX	Shielded twisted pair cable (STP) or unshielded twisted pair cable (UTP) of category 5 or higher
1000BASE-T	Shielded twisted pair cable (STP) or unshielded twisted pair cable (UTP) of category 5e or higher

CC-Link IE Controller Network connection between the GOT and the controller

For the system configuration between the GOT and the controller, refer to the following.

Controller	Reference
CC-Link IE Field Network head module (CC-Link IE Controller Network connection)	☞ Page 863 System configuration



Controller	GOT		Connection cable		Personal computer	Number of connectable equipment
	Model	Interface	Ethernet cable	Maximum segment length	Compatible GX Works3 version	
RJ72GF15-T2	GT37 SoftGOT3000	Built-in Ethernet interface of GOT	Twisted pair cable ☞ Page 2596 Connection cable	100 m	1.115V or later	1 personal computer for 1 GOT

■Connection cable

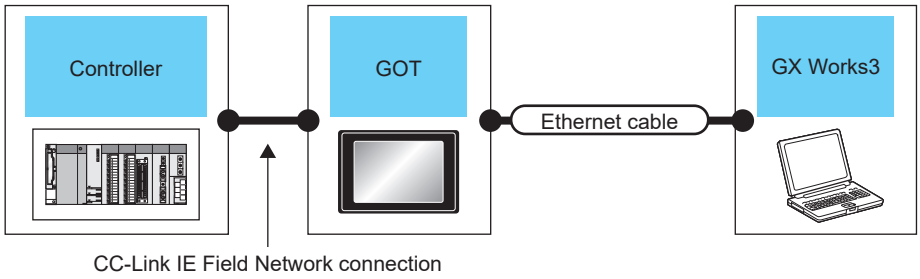
Use a connection cable that meets the following standards.

Standard	Category
10BASE-T	Shielded twisted pair cable (STP) or unshielded twisted pair cable (UTP) of category 3 or higher
100BASE-TX	Shielded twisted pair cable (STP) or unshielded twisted pair cable (UTP) of category 5 or higher
1000BASE-T	Shielded twisted pair cable (STP) or unshielded twisted pair cable (UTP) of category 5e or higher

CC-Link IE Field Network connection between the GOT and the controller

For the system configuration between the GOT and the controller, refer to the following.

Controller	Reference
CC-Link IE Field Network head module (CC-Link IE Field Network connection)	☞ Page 942 System configuration



Controller	GOT		Connection cable		Personal computer	Number of connectable equipment
	Model	Interface	Ethernet cable	Maximum segment length	Compatible GX Works3 version	
RJ72GF15-T2	GT37 SoftGOT3000	Built-in Ethernet interface of GOT	Twisted pair cable ☞ Page 2597 Connection cable	100 m	1.115V or later	1 personal computer for 1 GOT

■Connection cable

Use a connection cable that meets the following standards.

Standard	Category
10BASE-T	Shielded twisted pair cable (STP) or unshielded twisted pair cable (UTP) of category 3 or higher
100BASE-TX	Shielded twisted pair cable (STP) or unshielded twisted pair cable (UTP) of category 5 or higher
1000BASE-T	Shielded twisted pair cable (STP) or unshielded twisted pair cable (UTP) of category 5e or higher

72.7 GOT side settings

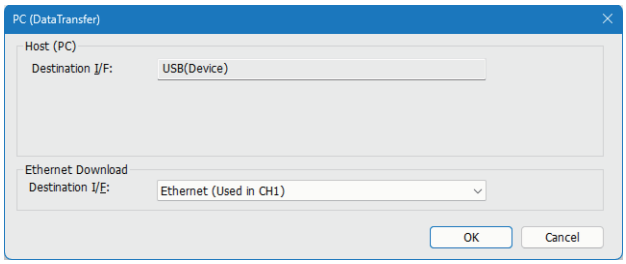
72.7.1 [Controller Setting]

The GOT side settings differ depending on the connection type between the controller and the GOT.
For details on [Controller Setting], refer to the following.

Controller	Reference
MELSEC MX Controller (MX-R Model) (Built-in Ethernet port connection)	☞ Page 67 [Controller Setting]
MELSEC MX Controller (MX-R Model) (Ethernet module connection)	☞ Page 100 [Controller Setting]
MELSEC MX Controller (MX-R Model) (serial communication connection)	☞ Page 524 [Controller Setting]
MELSEC MX Controller (MX-R Model) (CC-Link IE TSN connection)	☞ Page 749 [Controller Setting]
MELSEC MX Controller (MX-R Model) (CC-Link IE Controller Network connection)	☞ Page 849 [Controller Setting]
MELSEC MX Controller (MX-F Model) (Built-in Ethernet port connection)	☞ Page 130 [Controller Setting]
MELSEC MX Controller (MX-F Model) (Ethernet module connection)	☞ Page 164 [Controller Setting]
MELSEC iQ-R series (Built-in Ethernet port connection)	☞ Page 199 [Controller Setting]
MELSEC iQ-R series (serial communication connection)	☞ Page 537 [Controller Setting]
MELSEC iQ-R series (CC-Link IE Controller Network connection)	☞ Page 866 [Controller Setting]
MELSEC iQ-R series, CNC C80, CC-Link IE Field Network head module (Ethernet module connection)	☞ Page 253 [Controller Setting]
MELSEC iQ-R series (CC-Link IE TSN connection)	☞ Page 802 [Controller Setting]
MELSEC iQ-R series, CC-Link IE Field Network head module (CC-Link IE Field Network connection)	☞ Page 947 [Controller Setting]
MELSEC iQ-F series (Built-in Ethernet port connection)	☞ Page 295 [Controller Setting]
MELSEC iQ-F series (Ethernet module connection)	☞ Page 316 [Controller Setting]
MELSEC iQ-F series (Built-in serial port connection)	☞ Page 558 [Controller Setting]
MELSEC iQ-F series (CC-Link IE Field Network connection)	☞ Page 972 [Controller Setting]

72.7.2 Communication setting with personal computer

Set the communication setting between the GOT and the personal computer.



Operating procedure

1. Select [Common] → [Peripheral Setting] → [PC (Data Transfer)] from the menu.

2. Set the interface of the GOT to be used for communication with the personal computer in the [PC (Data Transfer)] dialog.

For details of the setting contents, refer to the following manual.

📖GT Designer3 (GOT3000) Screen Design Manual

Point

- Controller settings using the GT37 utility

The controller settings can be changed in [Communication Settings] of the GT37 utility after writing [Communication Settings] of project data to GT37.

For details on the GT37 utility, refer to the following manual.

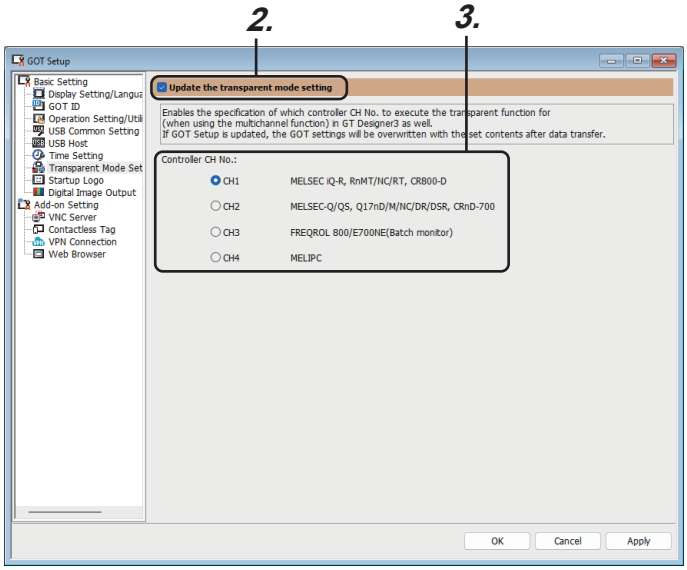
📖GOT3000 Series User's Manual (Utility & Maintenance Functions)

- Priority of the settings in [Controller Setting]

When the settings are configured in GT Designer3 or in the GT37 utility, the latest settings are effective.

72.7.3 GOT Setup

When using the multi-channel function, specify the channel number for which the FA transparent function is executed.



Operating procedure

1. Select [Common] → [GOT Setup] → [Basic Setting] → [Transparent Mode Setting] from the menu.
2. Select [Update the transparent mode setting].
3. As necessary, check one of [CH1] to [CH4].
4. When you have completed the settings, click the [OK] button.

Point

Transparent setting on the utility screen

Transparent setting can be performed by the GOT.

For details of the operating, refer to the following.

GOT3000 Series User's Manual (Utility & Maintenance Functions)

72.8 Personal computer side settings

The following shows the procedure to set the FA transparent function in GX Works3.

Personal computer to GOT connection	Connection between GOT and controller	Reference
USB connection	Ethernet connection	☞ Page 2602 Ethernet connection between the GOT and the controller
	Serial connection	☞ Page 2604 Serial connection between the GOT and the controller
	Serial communication connection	☞ Page 2606 Serial communication connection between the GOT and the controller
	CC-Link IE TSN connection	☞ Page 2608 CC-Link IE TSN connection between the GOT and the controller
	CC-Link IE Controller Network connection	☞ Page 2611 CC-Link IE Controller Network connection between the GOT and the controller
	CC-Link IE Field Network connection	☞ Page 2614 CC-Link IE Field Network connection between the GOT and the controller
Ethernet connection	Ethernet connection	☞ Page 2617 Ethernet connection between the GOT and the controller
	Serial connection	☞ Page 2624 Serial connection between the GOT and the controller
	Serial communication connection	☞ Page 2626 Serial communication connection between the GOT and the controller
	CC-Link IE TSN connection	☞ Page 2628 CC-Link IE TSN connection between the GOT and the controller
	CC-Link IE Controller Network connection	☞ Page 2631 CC-Link IE Controller Network connection between the GOT and the controller
	CC-Link IE Field Network connection	☞ Page 2634 CC-Link IE Field Network connection between the GOT and the controller

72.8.1 USB connection between the personal computer and the GOT

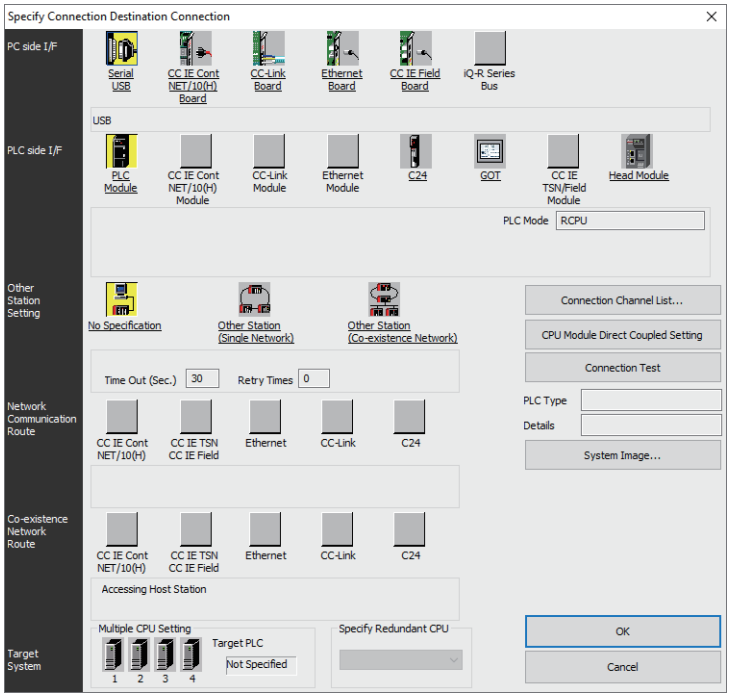
Ethernet connection between the GOT and the controller

The following shows an example for connection to MELSEC iQ-R series.

Operating procedure

1. Click [Online] → [Current Connection Destination] on GX Works3.

The [Specify Connection Destination] dialog is displayed.

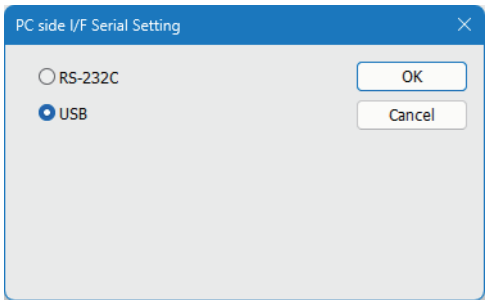


2. Set [Specify Connection Destination].

- [PC side I/F]: [Serial USB]
- [PLC side I/F]: [GOT]
- [Other Station Setting]: [No Specification]

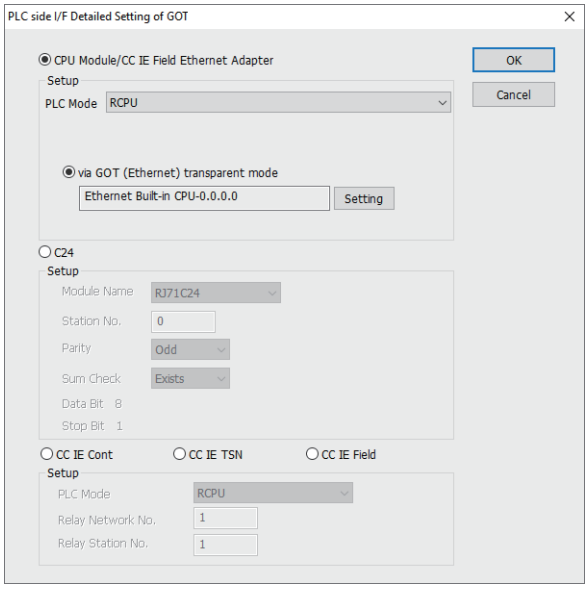
3. Double-click [Serial USB] of [PC side I/F].

4. When [PC side I/F Serial Setting] is displayed, select [USB].



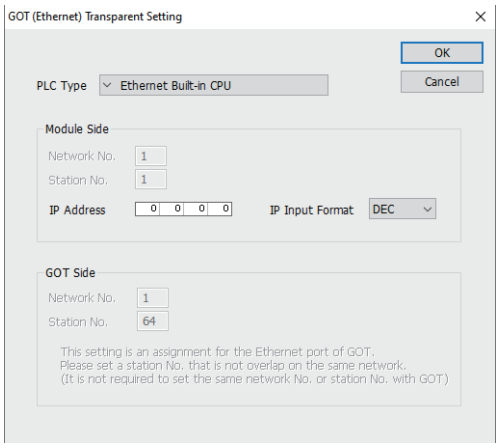
5. Double-click [GOT] of [PLC side I/F].

6. When [PLC side I/F Detailed Setting of GOT] is displayed, select [via GOT(Ethernet) transparent mode] and click [Setting].



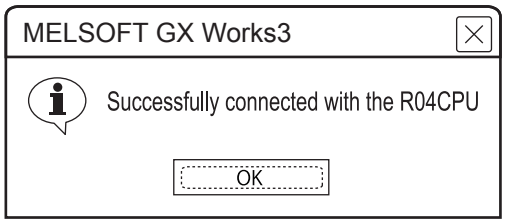
7. [GOT (Ethernet) Transparent Setting] is displayed.

Here, set the built-in Ethernet port CPU or Ethernet module, which is firstly connected via a GOT.



Item		Description
[PLC Type]		Select the controller connected to the GOT by Ethernet. • [RJ71EN71] • [Ethernet Built-in CPU]
[Module Side]	[Network No.]	When [RJ71EN71] is set for [PLC Type], specify the network number assigned to the Ethernet module.
	[Station No.]	When [RJ71EN71] is set for [PLC Type], specify the station number assigned to the Ethernet module.
	[IP Address]	Specify the IP address assigned to the Built-in Ethernet port CPU or Ethernet module.

8. Return to [Specify Connection Destination] and click [Connection Test] to check that connection to the RCPU has been established.



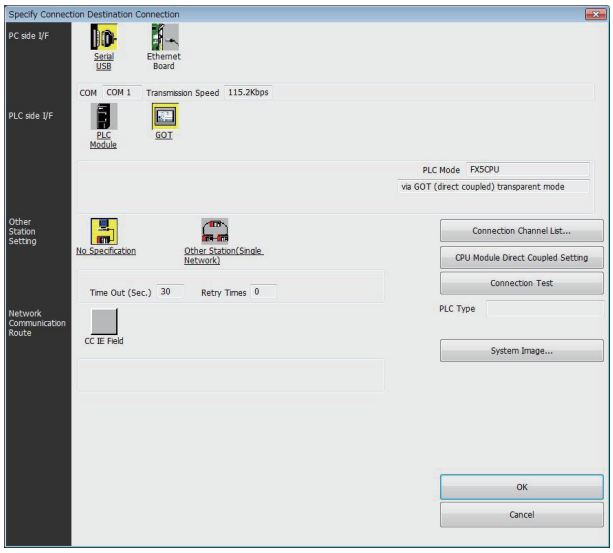
Serial connection between the GOT and the controller

The following shows an example for connection to MELSEC iQ-F series PLC CPU.

Operating procedure

1. Click [Online] → [Current Connection Destination] → [Other Connection Method] on GX Works3.

The [Specify Connection Destination] dialog is displayed.

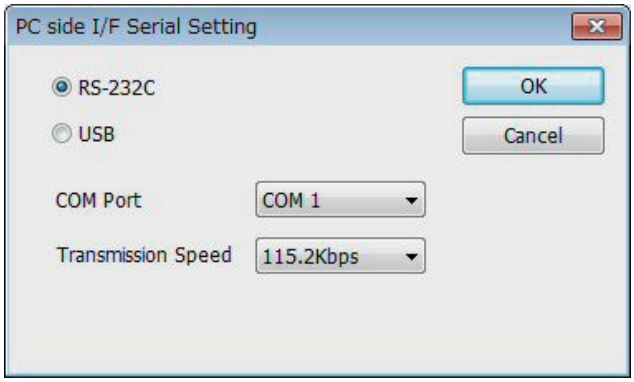


2. Set [Specify Connection Destination].

- [PC side I/F]: [Serial USB]
- [PLC side I/F]: [GOT]
- [Other Station Setting]: [No Specification]

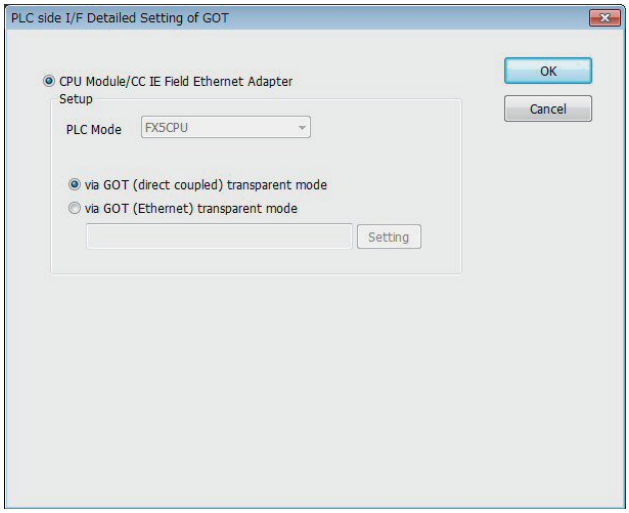
3. Double-click [Serial USB] of [PC side I/F].

4. When [PC side I/F Serial Setting] is displayed, select [USB].

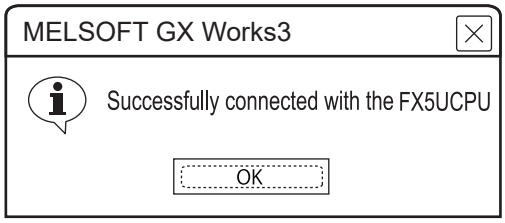


5. Double-click [GOT] of [PLC side I/F].

6. When [PLC side I/F Detailed Setting of GOT] is displayed, select [via GOT(direct coupled) transparent mode] and click [Setting].



7. Return to [Specify Connection Destination] and click [Connection Test] to check that connection to the MELSEC iQ-F series PLC CPU has been established.



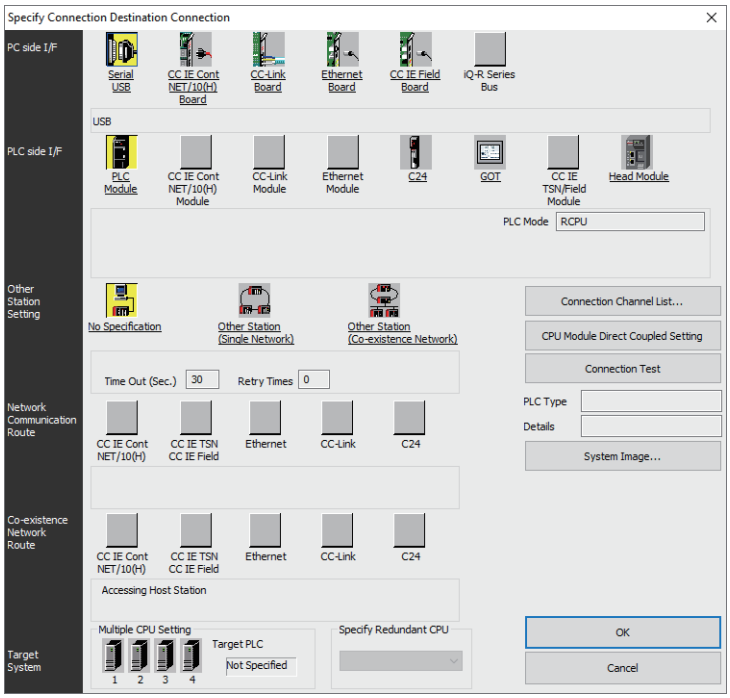
Serial communication connection between the GOT and the controller

The following shows an example for connection to the MELSEC iQ-R series serial communication module (RJ71C24).

Operating procedure

1. Click [Online] → [Current Connection Destination] on GX Works3.

The [Specify Connection Destination] dialog is displayed.

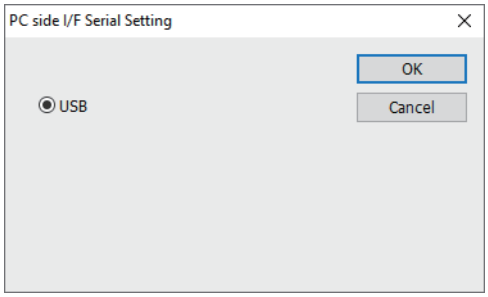


2. Set [Specify Connection Destination].

- [PC side I/F]: [Serial USB]
- [PLC side I/F]: [GOT]
- [Other Station Setting]: [No Specification]

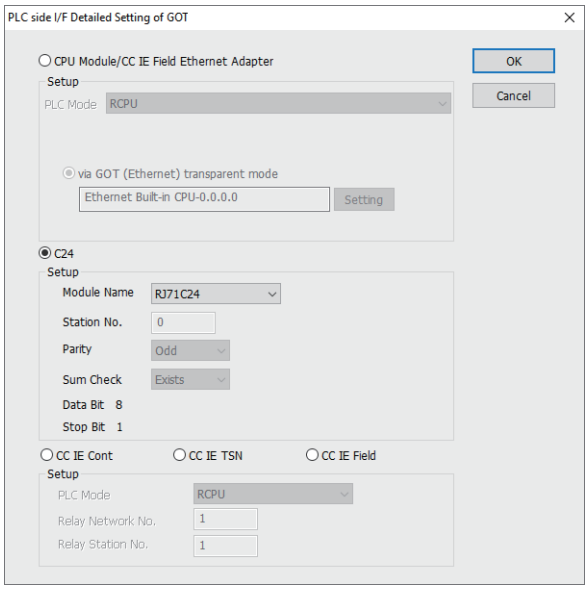
3. Double-click [Serial USB] of [PC side I/F].

4. When [PC side I/F Serial Setting] is displayed, select [USB].

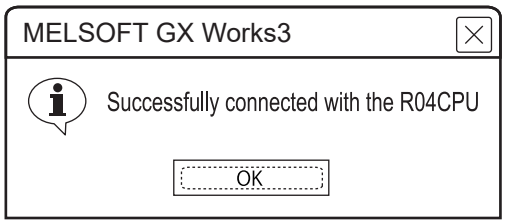


5. Double-click [GOT] of [PLC side I/F].

6. When [PLC side I/F Detailed Setting of GOT] is displayed, select [C24].



7. Return to [Specify Connection Destination] and click [Connection Test] to check that connection to the MELSEC iQ-R series PLC CPU has been established.



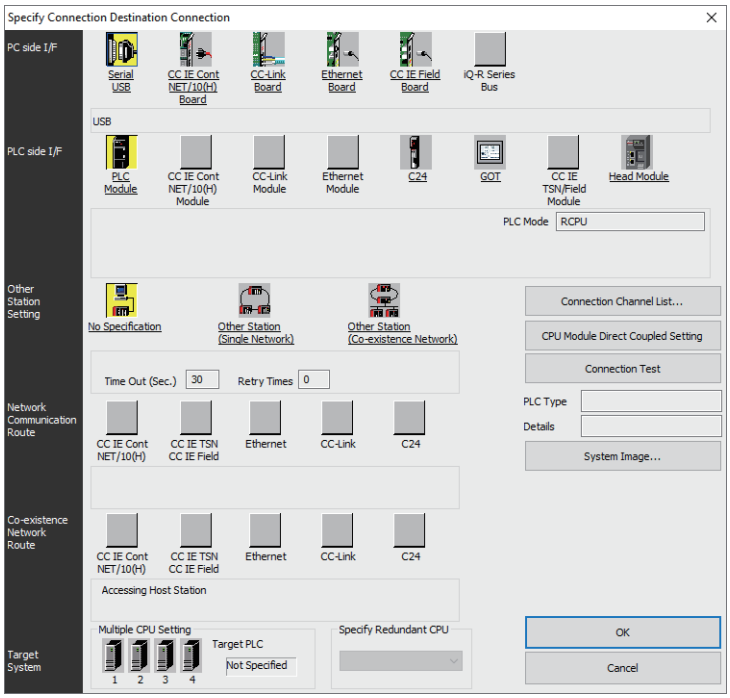
CC-Link IE TSN connection between the GOT and the controller

The following shows an example for connection to MELSEC iQ-R series.

Operating procedure

1. Click [Online] → [Current Connection Destination] on GX Works3.

The [Specify Connection Destination] dialog is displayed.

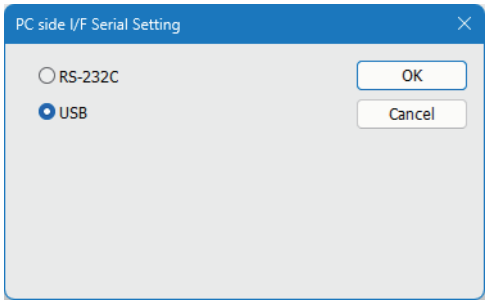


2. Set [Specify Connection Destination].

- [PC side I/F]: [Serial USB]
- [PLC side I/F]: [GOT]
- [Other Station Setting]: [No Specification]

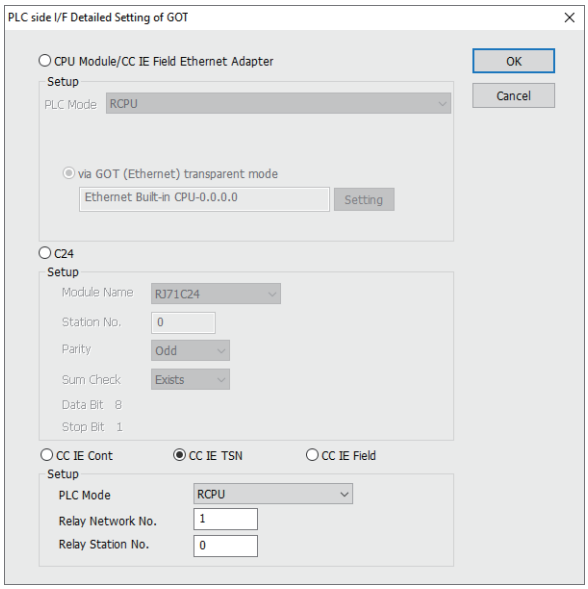
3. Double-click [Serial USB] of [PC side I/F].

4. When [PC side I/F Serial Setting] is displayed, select [USB].



5. Double-click [GOT] of [PLC side I/F].

6. When [PLC side I/F Detailed Setting of GOT] is displayed, select [CC IE TSN].



Set [Relay Station No.] as follows:

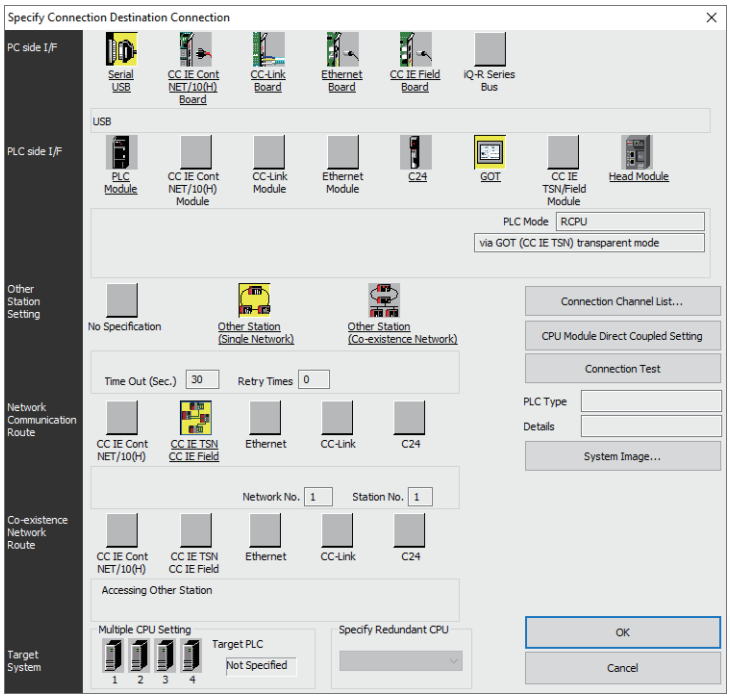
- When the target PLC has the same network number as that of the GOT

Set the number assigned to the PLC that is the target of the FA transparent function and CC-Link IE TSN master/local module.

- When the target PLC has a network number different from that of the GOT

Set the number assigned to the PLC that is used as a relay station and CC-Link IE TSN master/local module.

7. Return to [Specify Connection Destination], click [Other Station (Single Network)], and double-click [CC IE TSN CC IE Field].



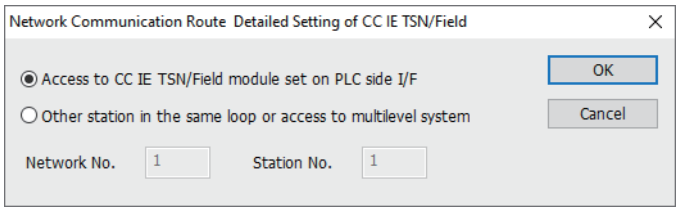
8. Set as shown below and click [OK].

• When the GOT and PLC are on the same network

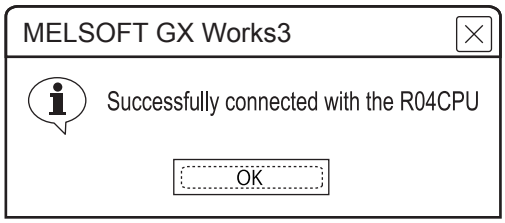
Select [Access to CC IE TSN/Field module set on PLC side I/F].

• When the GOT and PLC are on different networks

Select [Other station in the same loop or access to multilevel system] and set [Network No.] and [Station No.].



9. Return to [Specify Connection Destination] and click [Connection Test] to check that connection to the RCPU has been established.



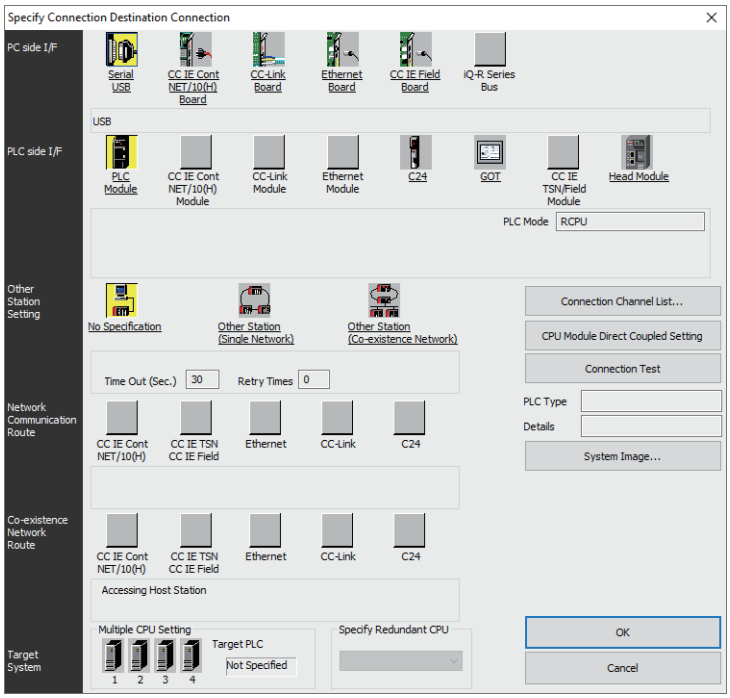
CC-Link IE Controller Network connection between the GOT and the controller

The following shows an example for connection to MELSEC iQ-R series.

Operating procedure

1. Click [Online] → [Current Connection Destination] on GX Works3.

The [Specify Connection Destination] dialog is displayed.

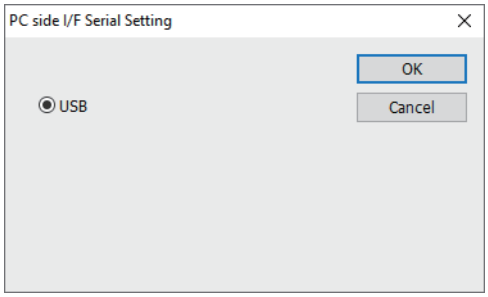


2. Set [Specify Connection Destination].

- [PC side I/F]: [Serial USB]
- [PLC side I/F]: [GOT]
- [Other Station Setting]: [No Specification]

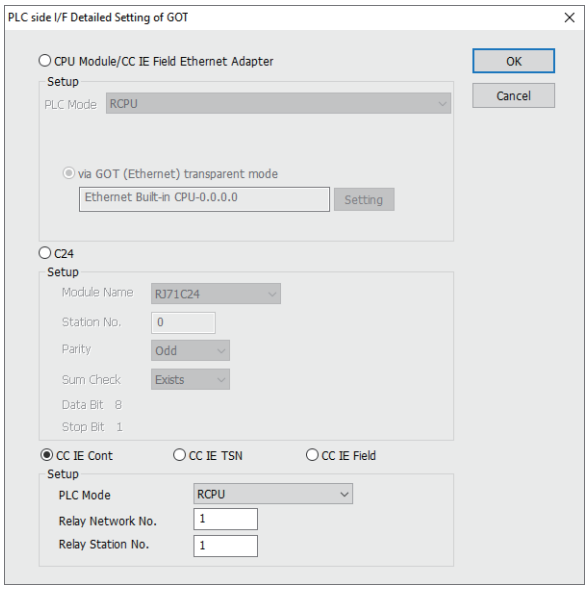
3. Double-click [Serial USB] of [PC side I/F].

4. When [PC side I/F Serial Setting] is displayed, select [USB].



5. Double-click [GOT] of [PLC side I/F].

6. When [PLC side I/F Detailed Setting of GOT] is displayed, select [CC IE Cont].



Set [Relay Station No.] as follows:

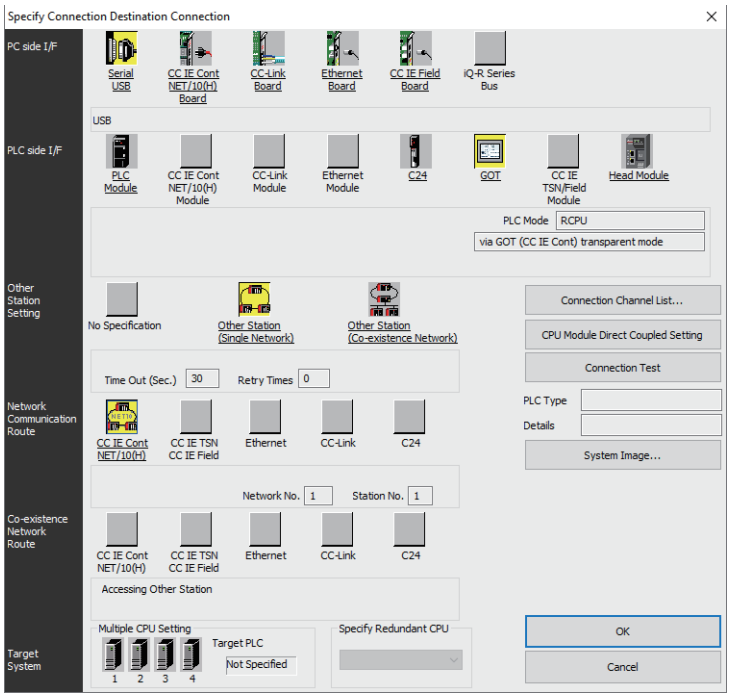
- When the target PLC has the same network number as that of the GOT

Set the number assigned to the PLC that is the target of the FA transparent function and CC-Link IE Controller Network module.

- When the target PLC has a network number different from that of the GOT

Set the number assigned to the PLC that is used as a relay station and CC-Link IE Controller Network module.

7. Return to [Specify Connection Destination], click [Other Station (Single Network)], and double-click [CC IE Cont NET/10(H)].



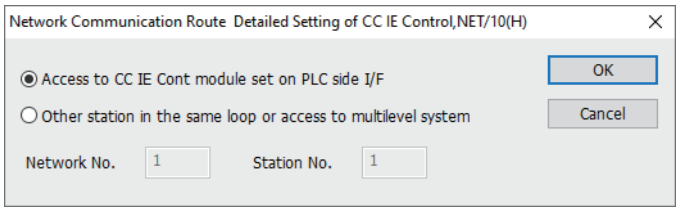
8. Set as shown below and click [OK].

• When the GOT and PLC are on the same network

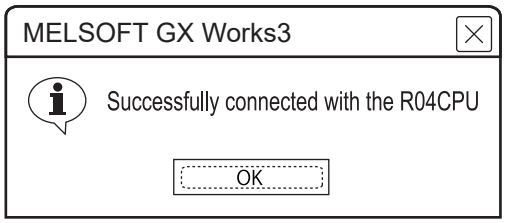
Select [Access to CC IE Cont module set on PLC side I/F].

• When the GOT and PLC are on different networks

Select [Other station in the same loop or access to multilevel system] and set [Network No.] and [Station No.].



9. Return to [Specify Connection Destination] and click [Connection Test] to check that connection to the RCPU has been established.



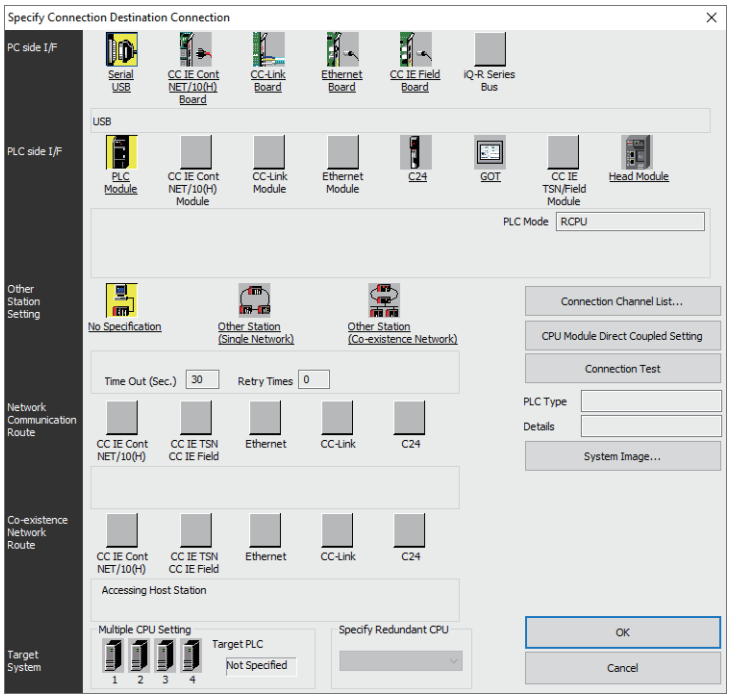
CC-Link IE Field Network connection between the GOT and the controller

The following shows an example for connection to MELSEC iQ-R series.

Operating procedure

1. Click [Online] → [Current Connection Destination] on GX Works3.

The [Specify Connection Destination] dialog is displayed.

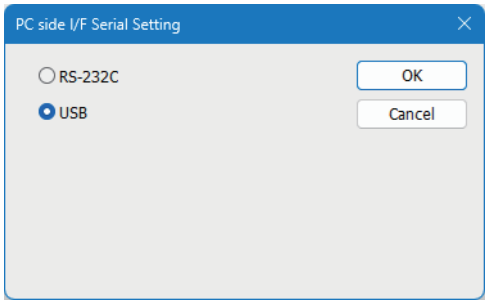


2. Set [Specify Connection Destination].

- [PC side I/F]: [Serial USB]
- [PLC side I/F]: [GOT]
- [Other Station Setting]: [No Specification]

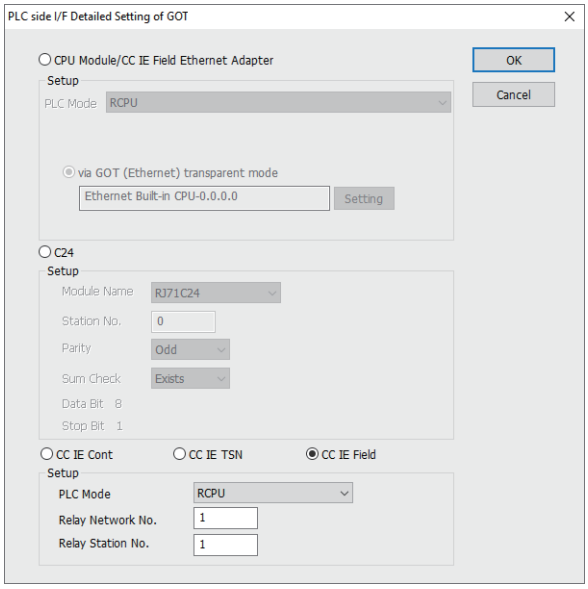
3. Double-click [Serial USB] of [PC side I/F].

4. When [PC side I/F Serial Setting] is displayed, select [USB].



5. Double-click [GOT] of [PLC side I/F].

6. When [PLC side I/F Detailed Setting of GOT] is displayed, select [CC IE Field].



Set [Relay Station No.] as follows:

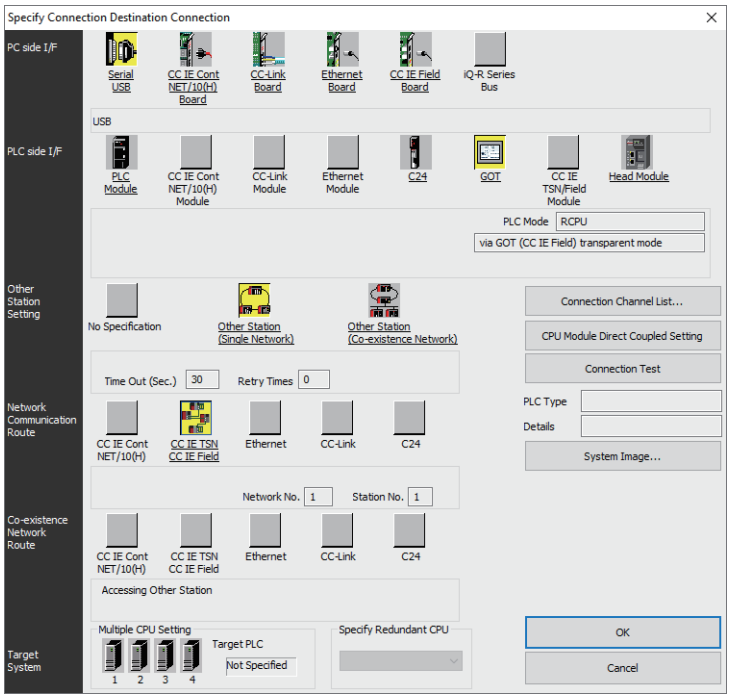
- When the target PLC has the same network number as that of the GOT

Set the number assigned to the PLC that is the target of the FA transparent function and CC-Link IE Field Network module.

- When the target PLC has a network number different from that of the GOT

Set the number assigned to the PLC that is used as a relay station and CC-Link IE Field Network module.

7. Return to [Specify Connection Destination], click [Other Station (Single Network)], and double-click [CC IE TSN CC IE Field].



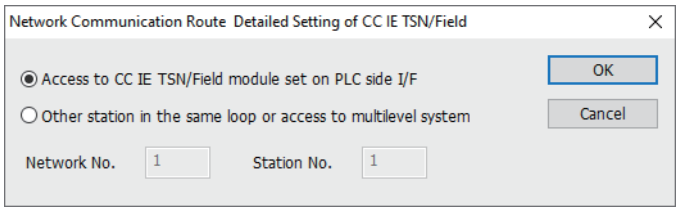
8. Set as shown below and click [OK].

• When the GOT and PLC are on the same network

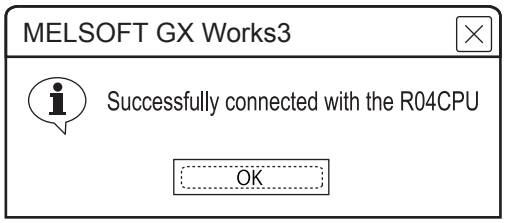
Select [Access to CC IE TSN/Field module set on PLC side I/F].

• When the GOT and PLC are on different networks

Select [Other station in the same loop or access to multilevel system] and set [Network No.] and [Station No.].



9. Return to [Specify Connection Destination] and click [Connection Test] to check that connection to the RCPU has been established.



72.8.2 Ethernet connection between the personal computer and the GOT

Precautions

■GOT station monitoring function

If the FA transparent function is used when the personal computer and the GOT are connected by Ethernet, the GOT station monitoring function cannot be operated.

Therefore, in the cases of no connection target, PLC power OFF, etc., the monitoring of the GOT delays for the timeout time.

Ethernet connection between the GOT and the controller

Configure the settings in [Connected Ethernet Controller Setting] on the GOT.

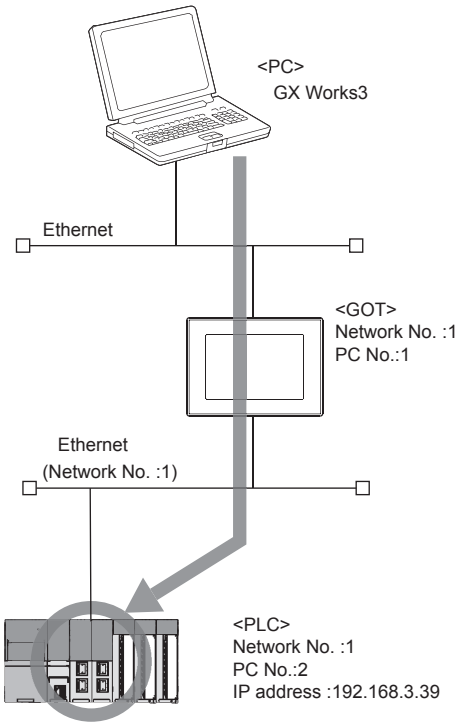
The routing setting may also be needed for the GOT side depending on the system configuration.

For details, refer to the following procedure.

The following shows an example for connection to MELSEC iQ-R series.

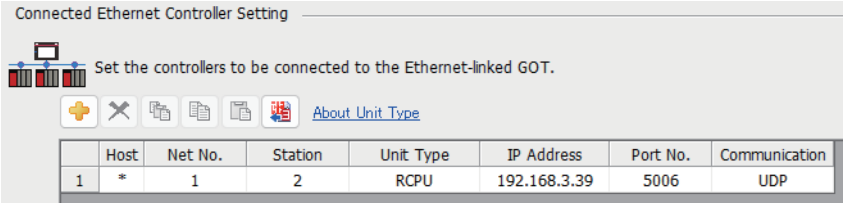
■When the routing setting is not needed for the GOT side

1) System configuration



2) [Connected Ethernet Controller Setting] of GT Designer3

Set [Net No.], [Station], [IP Address] of the PLC CPU that is the target of the FA transparent function in GT Designer3.



For details on [Connected Ethernet Controller Setting], refer to the following.

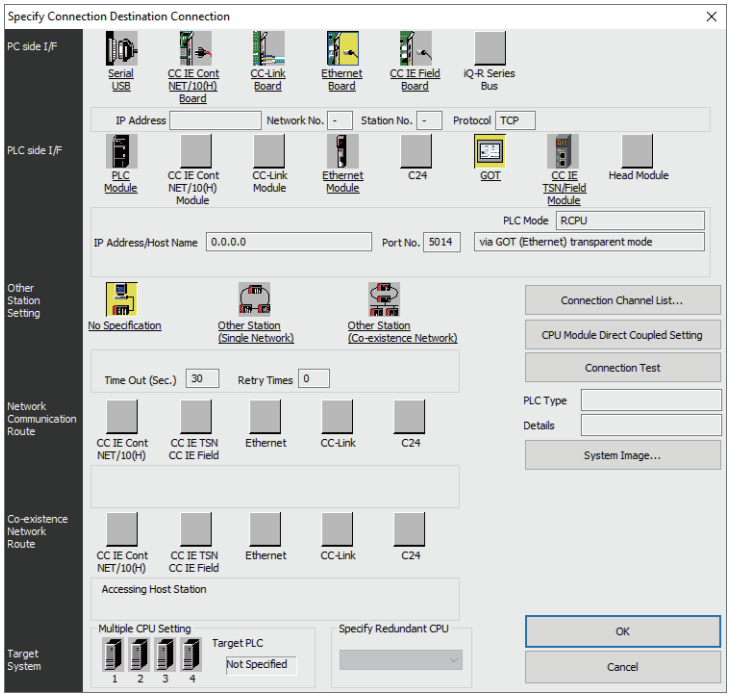
Controller	Reference
MELSEC MX Controller (MX-R Model) (Built-in Ethernet port connection)	☞ Page 73 [Connected Ethernet Controller Setting]
MELSEC MX Controller (MX-R Model) (Ethernet module connection)	☞ Page 106 [Connected Ethernet Controller Setting]
MELSEC MX Controller (MX-F Model) (Built-in Ethernet port connection)	☞ Page 136 [Connected Ethernet Controller Setting]
MELSEC iQ-R series (Built-in Ethernet port connection)	☞ Page 205 [Connected Ethernet Controller Setting]
MELSEC iQ-R series, CNC C80, CC-Link IE Field Network head module (Ethernet module connection)	☞ Page 259 [Connected Ethernet Controller Setting]
MELSEC iQ-F series (Built-in Ethernet port connection)	☞ Page 301 [Connected Ethernet Controller Setting]
MELSEC iQ-F series (Ethernet module connection)	☞ Page 322 [Connected Ethernet Controller Setting]

3) GX Works3 settings

Operating procedure

1. Click [Online] → [Current Connection Destination] on GX Works3.

The [Specify Connection Destination] dialog is displayed.



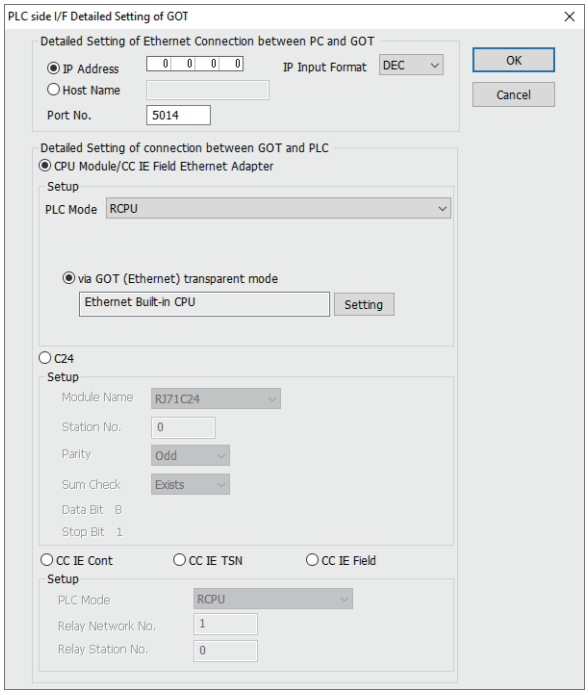
2. Set [Specify Connection Destination].

- [PC side I/F]: [Ethernet Board]
- [PLC side I/F]: [GOT]
- [Other Station Setting]: [No Specification]

3. Double-click [GOT] of [PLC side I/F].

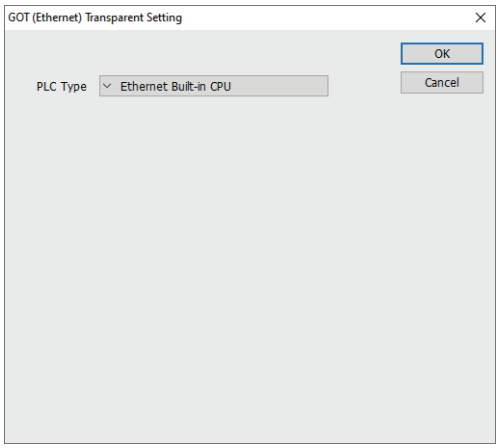
4. When [PLC side I/F Detailed Setting of GOT] is displayed, set [IP Address] and [Port No.] in [Detailed Setting of Ethernet Connection between PC and GOT].

Check the IP address and port number on the GOT side in the [GOT Ethernet Setting] window in GT Designer3.
For details, refer to the following.
GT Designer3 (GOT3000) Screen Design Manual

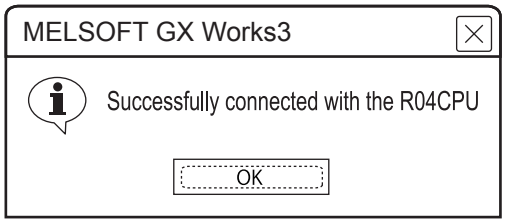


5. In [Detailed Setting of connection between GOT and PLC], set [PLC Mode] according to the connected CPU, select [via GOT(Ethernet) transparent mode], and click [Setting].

6. Specify [Ethernet Built-in CPU] or [RJ71EN71] for the connection destination of the GOT.

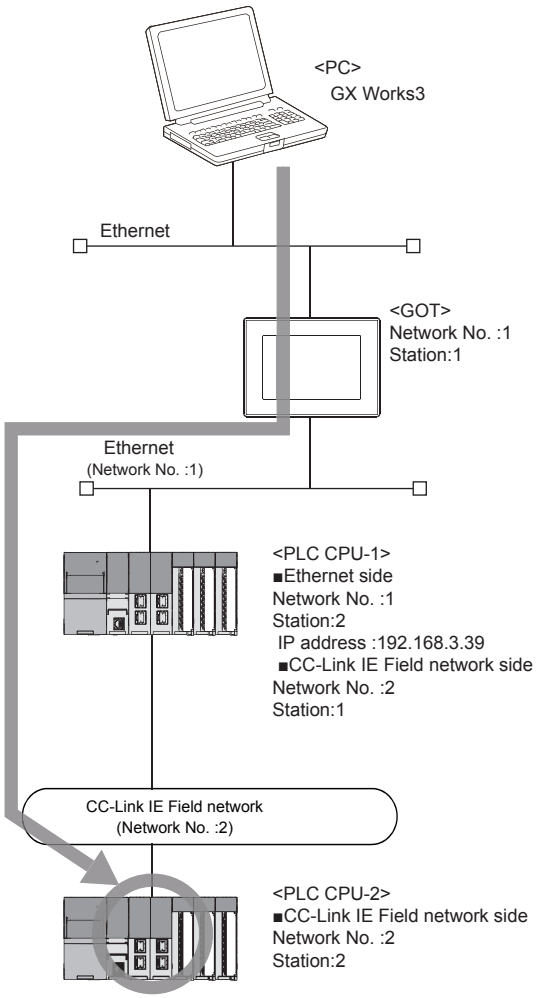


7. Click [Connection Test] to check that connection to the RCPU has been established.



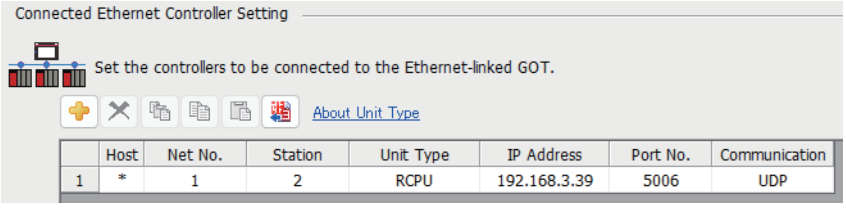
■When the routing setting is needed for the GOT side

1) System configuration



2) [Connected Ethernet Controller Setting] of GT Designer3

Set [Net No.], [Station], [IP Address] of the PLC CPU that is the target of the FA transparent function in GT Designer3.



	Host	Net No.	Station	Unit Type	IP Address	Port No.	Communication
1	*	1	2	RCPU	192.168.3.39	5006	UDP

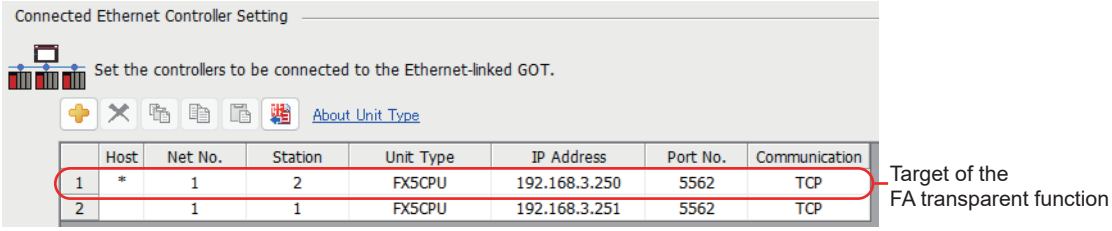
For details on [Connected Ethernet Controller Setting], refer to the following.

Controller	Reference
MELSEC MX Controller (MX-R Model) (Built-in Ethernet port connection)	☞ Page 73 [Connected Ethernet Controller Setting]
MELSEC MX Controller (MX-R Model) (Ethernet module connection)	☞ Page 106 [Connected Ethernet Controller Setting]
MELSEC MX Controller (MX-F Model) (Built-in Ethernet port connection)	☞ Page 136 [Connected Ethernet Controller Setting]
MELSEC iQ-R series (Built-in Ethernet port connection)	☞ Page 205 [Connected Ethernet Controller Setting]
MELSEC iQ-R series, CNC C80, CC-Link IE Field Network head module (Ethernet module connection)	☞ Page 259 [Connected Ethernet Controller Setting]
MELSEC iQ-F series (Built-in Ethernet port connection)	☞ Page 301 [Connected Ethernet Controller Setting]
MELSEC iQ-F series (Ethernet module connection)	☞ Page 322 [Connected Ethernet Controller Setting]

Point

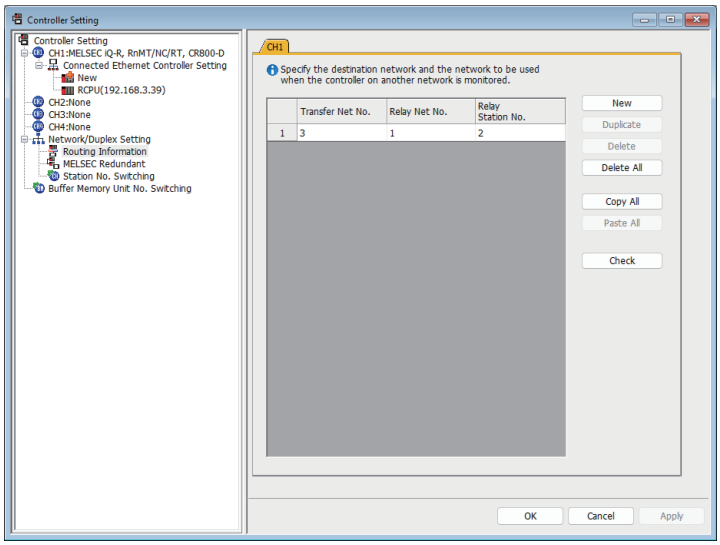
Since the MELSEC iQ-F series has no settings of the network number and station number, routing settings cannot be configured.

The programmable controller which is set as [Host] in [Connected Ethernet Controller Setting] will be the target of the FA transparent function.



3) Routing settings in GT Designer3

Be sure to set [Transfer Net No.], [Relay Net No.], and [Relay Station No.] for the PLC CPU that is the target of the FA transparent function in GT Designer3.



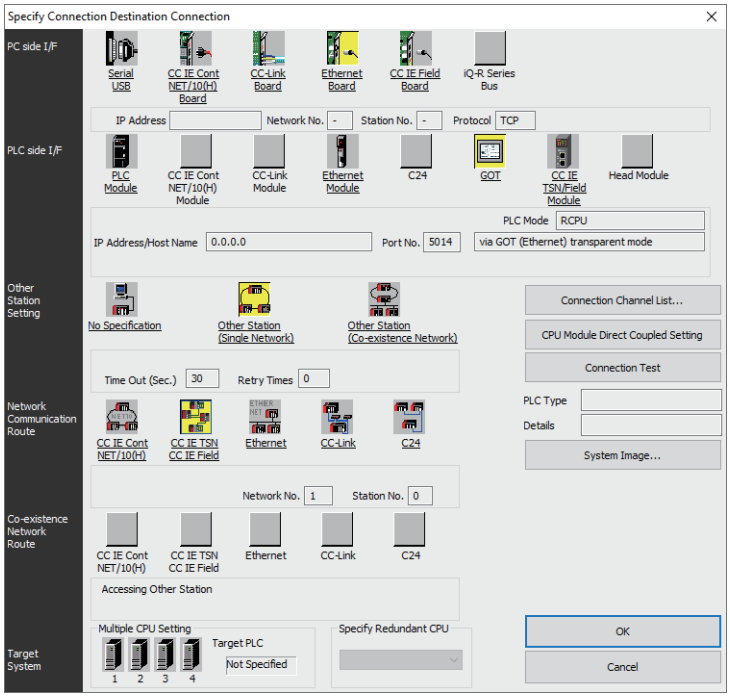
☞ Page 61 Ethernet connection

4) GX Works3 settings

Operating procedure

1. Click [Online] → [Current Connection Destination] on GX Works3.

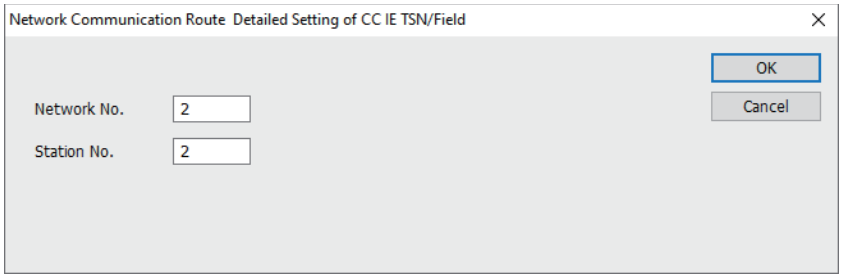
The [Specify Connection Destination] dialog is displayed.



2. Set [Specify Connection Destination].

- [PC side I/F]: [Ethernet Board]
- [PLC side I/F]: [GOT]
- [Other Station Setting]: [Other Station (Single Network)]
- [Network Communication Route]: [CC IE TSN CC IE Field]

3. Double-click [CC IE TSN CC IE Field] to set [Network No.] and [Station No.].



4. Double-click [GOT] of [PLC side I/F].

5. When [PLC side I/F Detailed Setting of GOT] is displayed, set [IP Address] and [Port No.] in [Detailed Setting of Ethernet Connection between PC and GOT].

Check the IP address and port number on the GOT side in the [GOT Ethernet Setting] window in GT Designer3.

For details, refer to the following.

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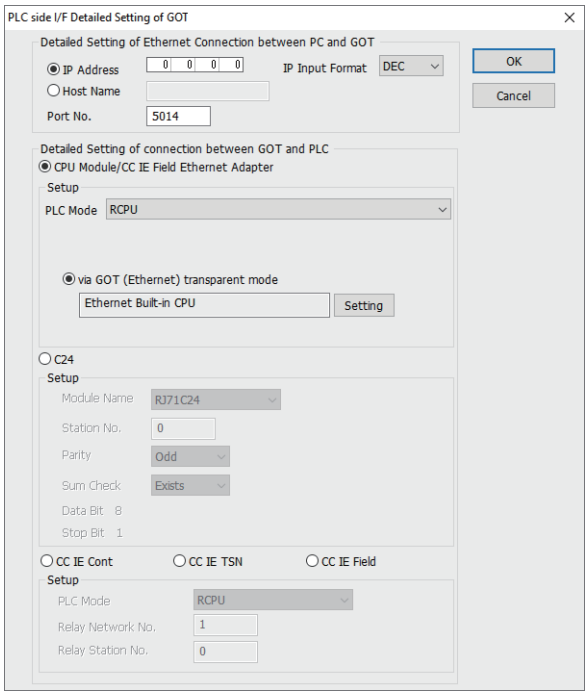
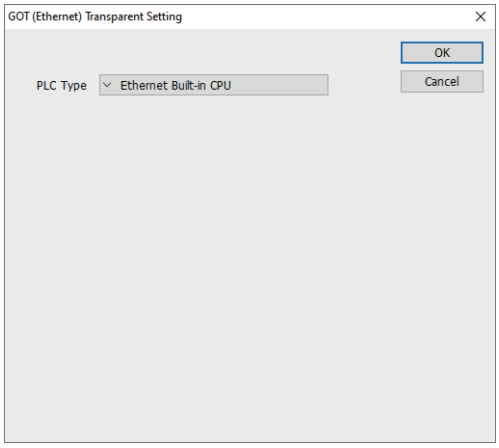
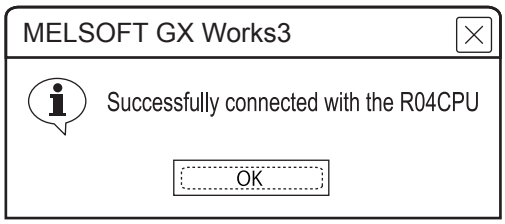


6. In [Detailed Setting of connection between GOT and PLC], set [PLC Mode] according to the connected CPU, select [via GOT(Ethernet) transparent mode], and click [Setting].

7. Specify [Ethernet Built-in CPU] or [RJ71EN71] for the connection destination of the GOT.



8. Click [Connection Test] to check that connection to the RCPU has been established.



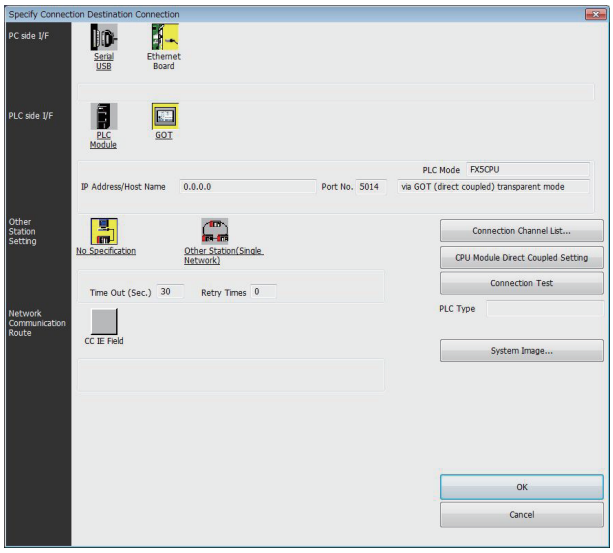
Serial connection between the GOT and the controller

The following shows an example for connection to MELSEC iQ-F series PLC CPU.

Operating procedure

1. Click [Online] → [Current Connection Destination] → [Other Connection Method] on GX Works3.

The [Specify Connection Destination] dialog is displayed.



2. Set [Specify Connection Destination].

- [PC side I/F]: [Ethernet Board]
- [PLC side I/F]: [GOT]
- [Other Station Setting]: [No Specification]

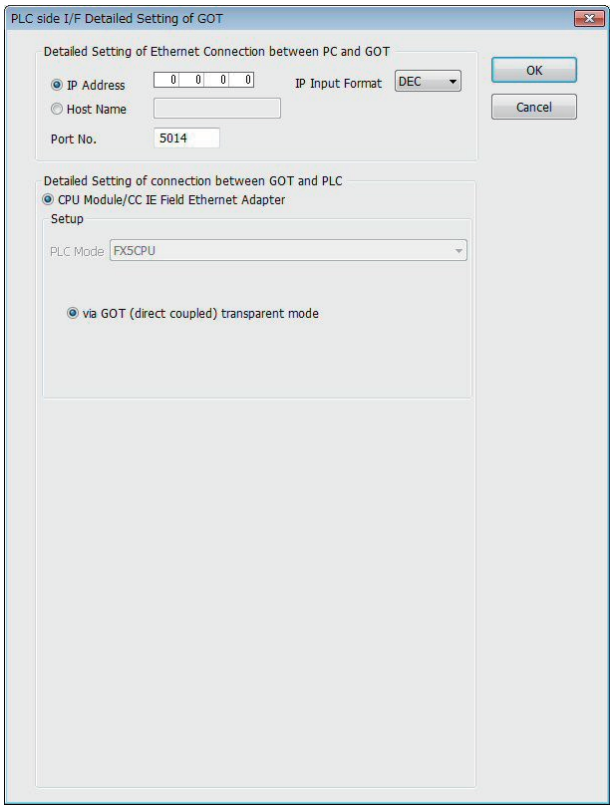
3. Double-click [GOT] of [PLC side I/F].

4. When [PLC side I/F Detailed Setting of GOT] is displayed, set [IP Address] and [Port No.] in [Detailed Setting of Ethernet Connection between PC and GOT].

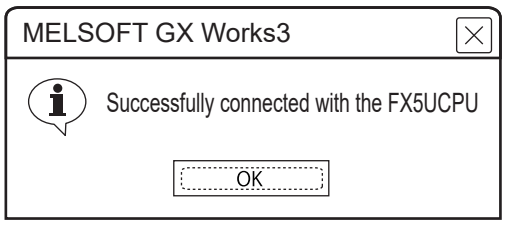
Check the IP address and port number on the GOT side in the [GOT Ethernet Setting] window in GT Designer3.

For details, refer to the following.

GT Designer3 (GOT3000) Screen Design Manual



5. Return to [Specify Connection Destination] and click [Connection Test] to check that connection to the MELSEC iQ-F series PLC CPU has been established.



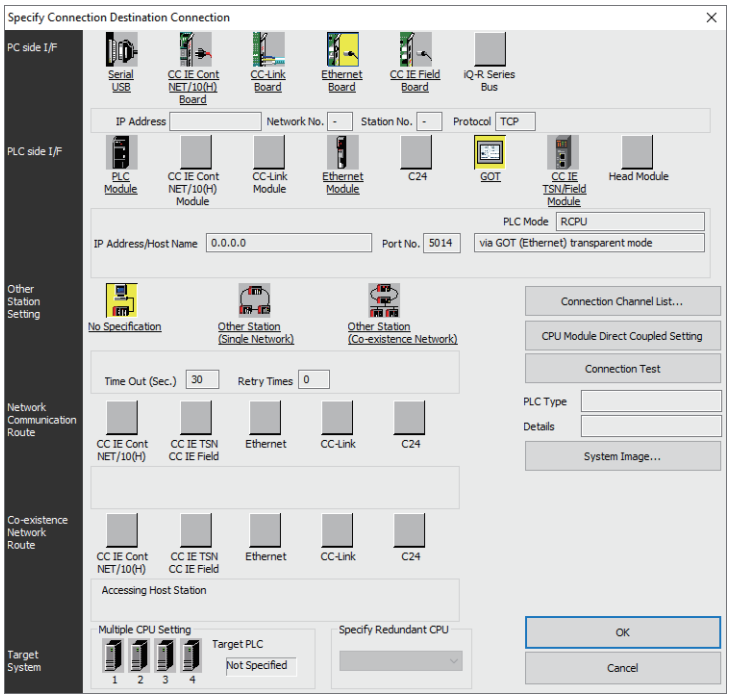
Serial communication connection between the GOT and the controller

The following shows an example for connection to the MELSEC iQ-R series serial communication module (RJ71C24).

Operating procedure

1. Click [Online] → [Current Connection Destination] on GX Works3.

The [Specify Connection Destination] dialog is displayed.



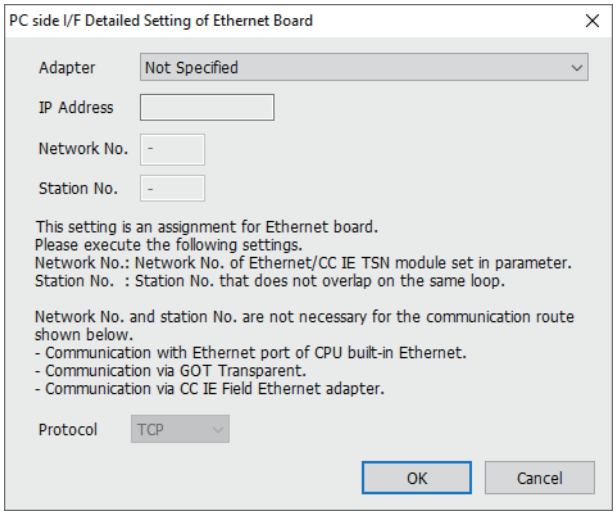
2. Set [Specify Connection Destination].

- [PC side I/F]: [Ethernet Board]
- [PLC side I/F]: [GOT]
- [Other Station Setting]: [No Specification]

3. Double-click [Ethernet Board] of [PC side I/F].

[PC side I/F Detailed Setting of Ethernet Board] is displayed.

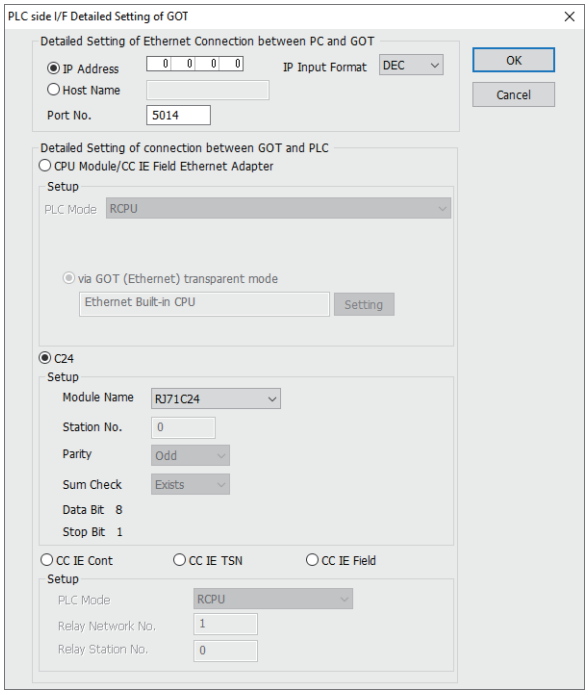
Settings are not required for [Network No.] and [Station No.] because they are not used.



4. Double-click [GOT] of [PLC side I/F].

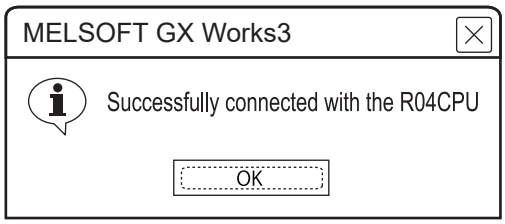
5. When [PLC side I/F Detailed Setting of GOT] is displayed, set [IP Address] and [Port No.] in [Detailed Setting of Ethernet Connection between PC and GOT].

Check the IP address and port number on the GOT side in the [GOT Ethernet Setting] window in GT Designer3.
For details, refer to the following.
GT Designer3 (GOT3000) Screen Design Manual



6. Select [C24] in [Detailed Setting of connection between GOT and PLC].

7. Return to [Specify Connection Destination] and click [Connection Test] to check that connection to the MELSEC iQ-R series PLC CPU has been established.



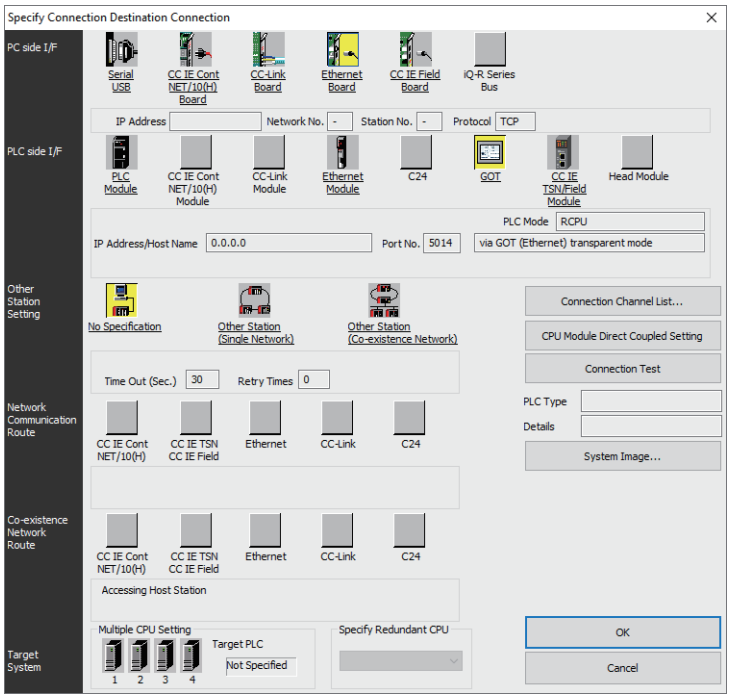
CC-Link IE TSN connection between the GOT and the controller

The following shows an example for connection to MELSEC iQ-R series.

Operating procedure

1. Click [Online] → [Current Connection Destination] on GX Works3.

The [Specify Connection Destination] dialog is displayed.



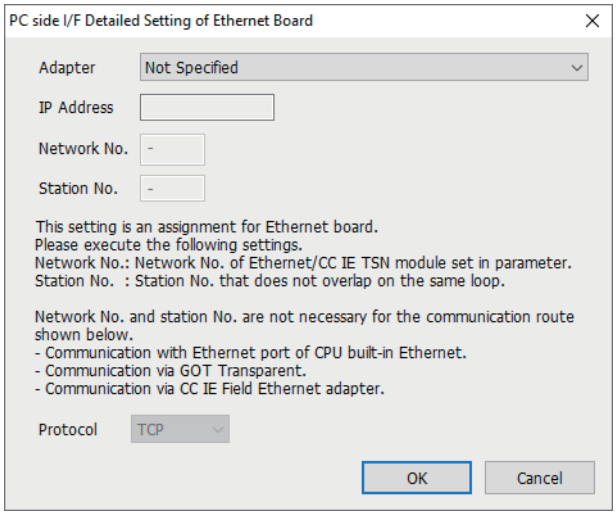
2. Set [Specify Connection Destination].

- [PC side I/F]: [Ethernet Board]
- [PLC side I/F]: [GOT]
- [Other Station Setting]: [No Specification]

3. Double-click [Ethernet Board] of [PC side I/F].

[PC side I/F Detailed Setting of Ethernet Board] is displayed.

Settings are not required for [Network No.] and [Station No.] because they are not used.



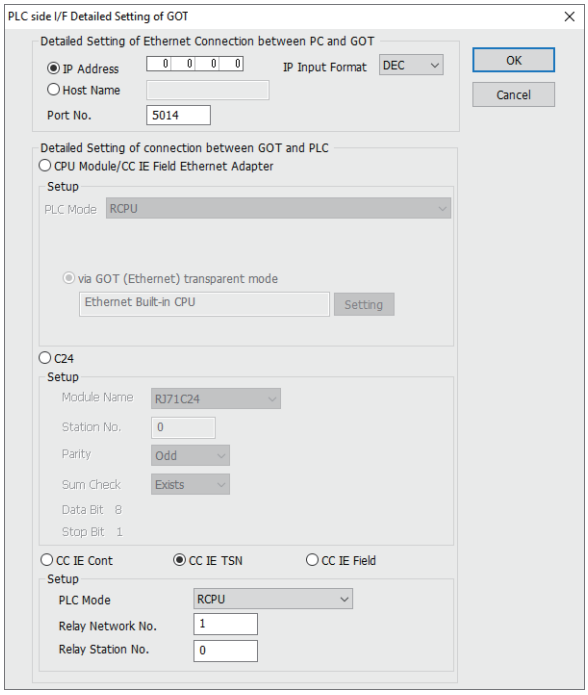
4. Double-click [GOT] of [PLC side I/F].

5. When [PLC side I/F Detailed Setting of GOT] is displayed, set [IP Address] and [Port No.] in [Detailed Setting of Ethernet Connection between PC and GOT].

Check the IP address and port number on the GOT side in the [GOT Ethernet Setting] window in GT Designer3.

For details, refer to the following.

📖GT Designer3 (GOT3000) Screen Design Manual



6. Select [CC IE TSN] in [Detailed Setting of connection between GOT and PLC].

7. Configure the settings for [Setup].

Set [Relay Station No.] as follows:

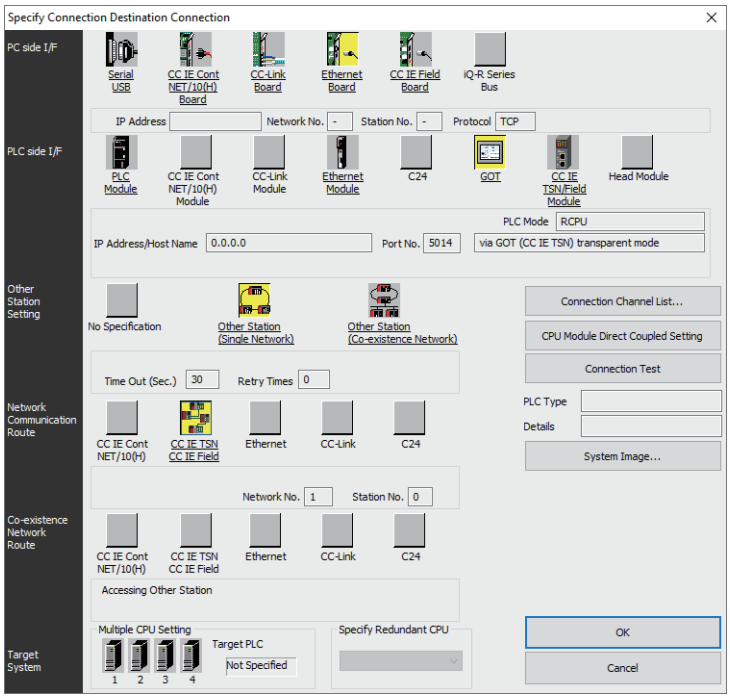
- When the target PLC has the same network number as that of the GOT

Set the number assigned to the PLC that is the target of the FA transparent function and CC-Link IE TSN master/local module.

- When the target PLC has a network number different from that of the GOT

Set the number assigned to the PLC that is used as a relay station and CC-Link IE TSN master/local module.

8. Return to [Specify Connection Destination], click [Other Station (Single Network)], and double-click [CC IE TSN CC IE Field].



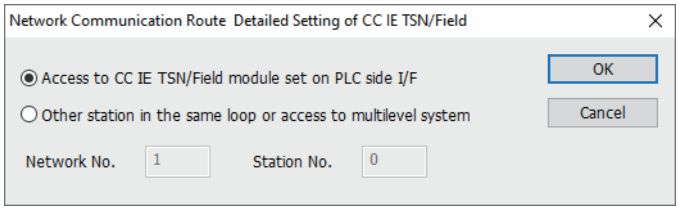
9. Set as shown below and click [OK].

- When the GOT and PLC are on the same network

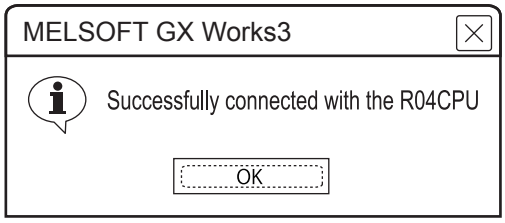
Select [Access to CC IE TSN/Field module set on PLC side I/F].

- When the GOT and PLC are on different networks

Select [Other station in the same loop or access to multilevel system] and set [Network No.] and [Station No.].



10. Return to [Specify Connection Destination] and click [Connection Test] to check that connection to the RCPU has been established.



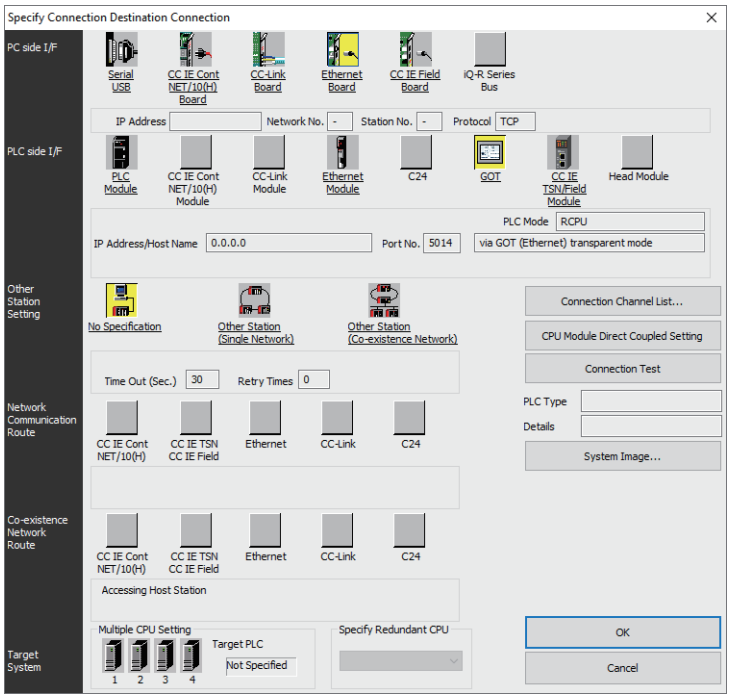
CC-Link IE Controller Network connection between the GOT and the controller

The following shows an example for connection to MELSEC iQ-R series.

Operating procedure

1. Click [Online] → [Current Connection Destination] on GX Works3.

The [Specify Connection Destination] dialog is displayed.



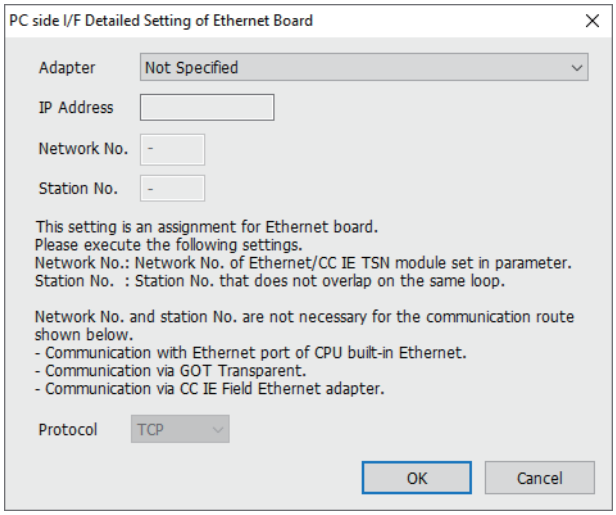
2. Set [Specify Connection Destination].

- [PC side I/F]: [Ethernet Board]
- [PLC side I/F]: [GOT]
- [Other Station Setting]: [No Specification]

3. Double-click [Ethernet Board] of [PC side I/F].

[PC side I/F Detailed Setting of Ethernet Board] is displayed.

Settings are not required for [Network No.] and [Station No.] because they are not used.



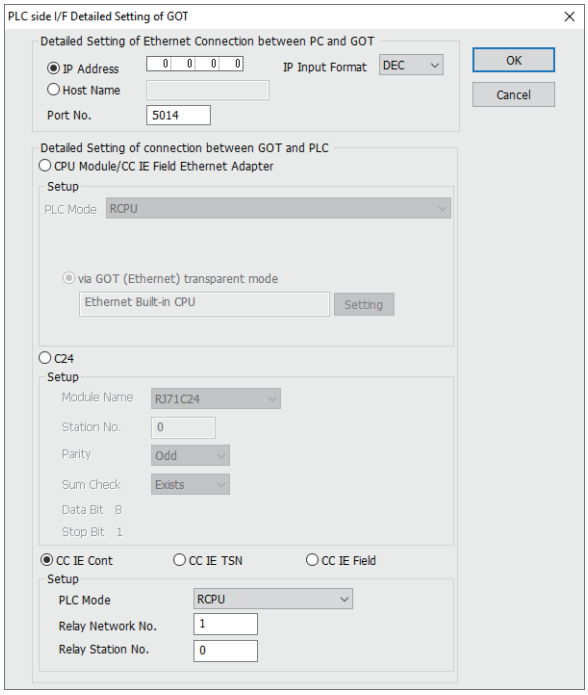
4. Double-click [GOT] of [PLC side I/F].

5. When [PLC side I/F Detailed Setting of GOT] is displayed, set [IP Address] and [Port No.] in [Detailed Setting of Ethernet Connection between PC and GOT].

Check the IP address and port number on the GOT side in the [GOT Ethernet Setting] window in GT Designer3.

For details, refer to the following.

📖GT Designer3 (GOT3000) Screen Design Manual



6. Select [CC IE Cont] in [Detailed Setting of connection between GOT and PLC].

7. Configure the settings for [Setup].

Set [Relay Station No.] as follows:

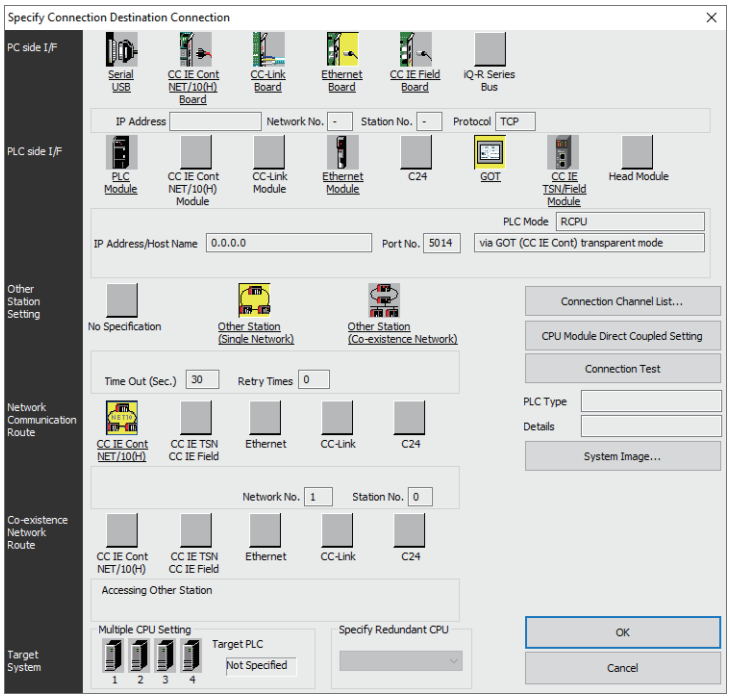
- When the target PLC has the same network number as that of the GOT

Set the number assigned to the PLC that is the target of the FA transparent function and CC-Link IE Controller Network module.

- When the target PLC has a network number different from that of the GOT

Set the number assigned to the PLC that is used as a relay station and CC-Link IE Controller Network module.

8. Return to [Specify Connection Destination], click [Other Station (Single Network)], and double-click [CC IE Cont NET/10(H)].



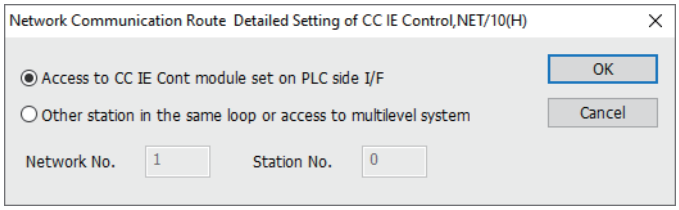
9. Set as shown below and click [OK].

- When the GOT and PLC are on the same network

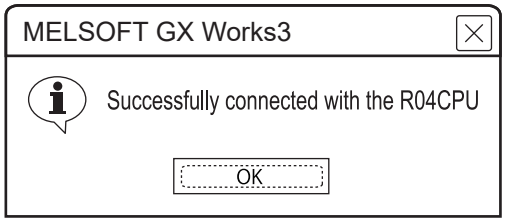
Select [Access to CC IE Cont module set on PLC side I/F].

- When the GOT and PLC are on different networks

Select [Other station in the same loop or access to multilevel system] and set [Network No.] and [Station No.].



10. Return to [Specify Connection Destination] and click [Connection Test] to check that connection to the MELSEC iQ-R series PLC CPU has been established.



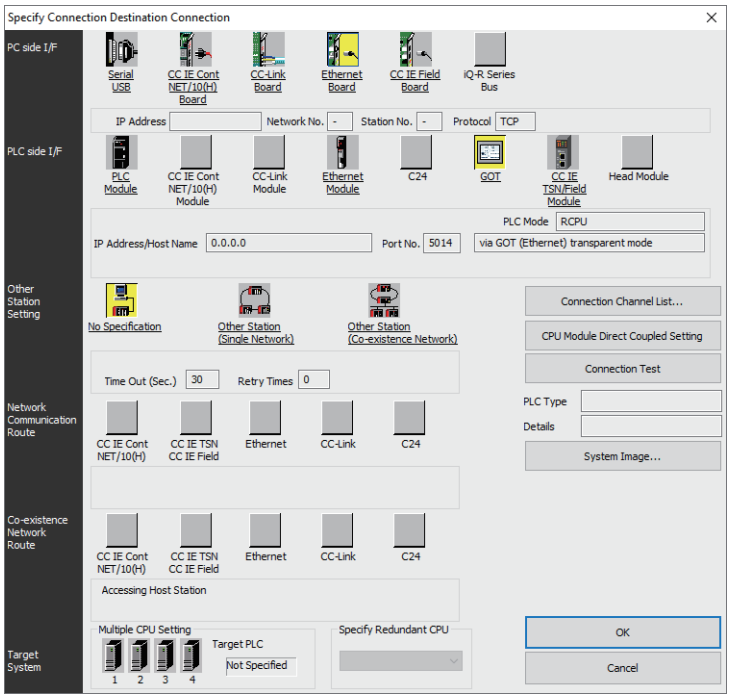
CC-Link IE Field Network connection between the GOT and the controller

The following shows an example for connection to MELSEC iQ-R series.

Operating procedure

1. Click [Online] → [Current Connection Destination] on GX Works3.

The [Specify Connection Destination] dialog is displayed.



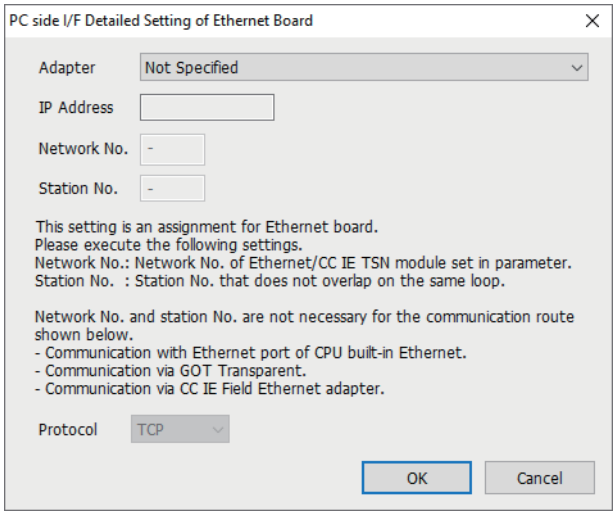
2. Set [Specify Connection Destination].

- [PC side I/F]: [Ethernet Board]
- [PLC side I/F]: [GOT]
- [Other Station Setting]: [No Specification]

3. Double-click [Ethernet Board] of [PC side I/F].

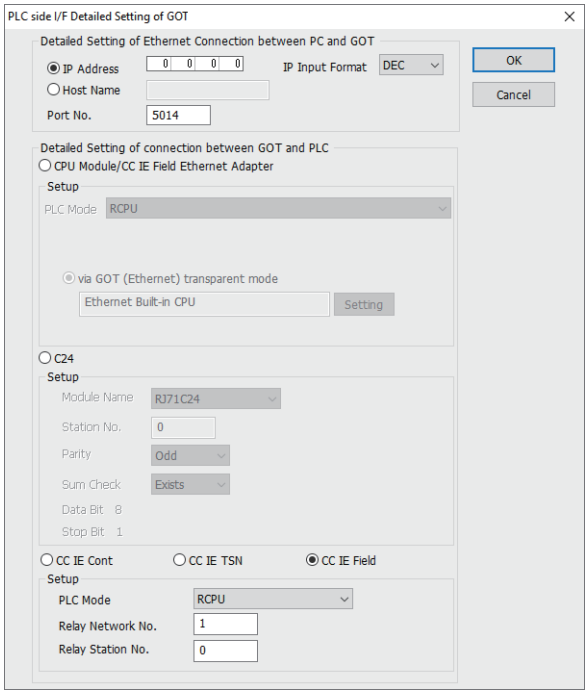
[PC side I/F Detailed Setting of Ethernet Board] is displayed.

Settings are not required for [Network No.] and [Station No.] because they are not used.



4. Double-click [GOT] of [PLC side I/F].

5. When [PLC side I/F Detailed Setting of GOT] is displayed, set [IP Address] and [Port No.] in [Detailed Setting of Ethernet Connection between PC and GOT].



6. Select [CC IE Field] in [Detailed Setting of connection between GOT and PLC].

7. Configure the settings for [Setup].

Set [Relay Station No.] as follows:

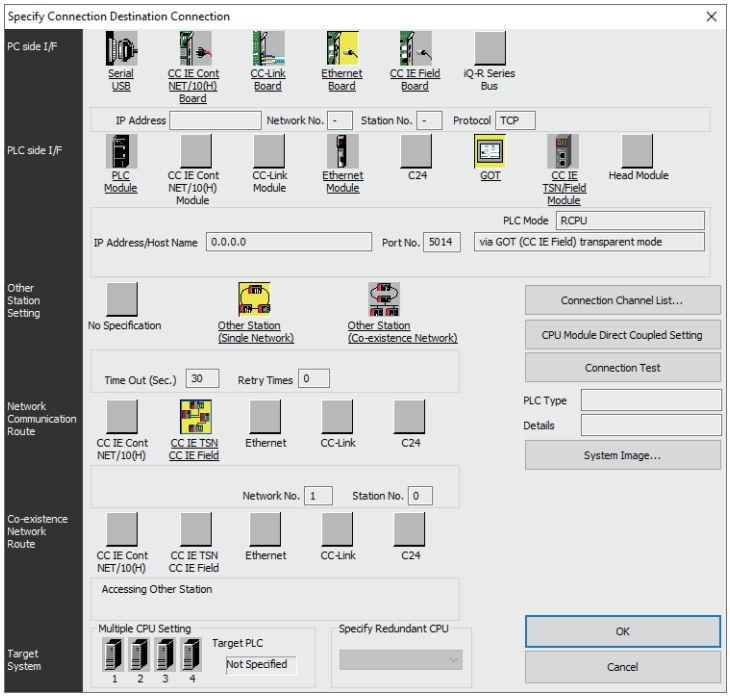
- When the target PLC has the same network number as that of the GOT

Set the number assigned to the PLC that is the target of the FA transparent function and CC-Link IE Field Network module.

- When the target PLC has a network number different from that of the GOT

Set the number assigned to the PLC that is used as a relay station and CC-Link IE Field Network module.

8. Return to [Specify Connection Destination], click [Other Station (Single Network)], and double-click [CC IE TSN CC IE Field].



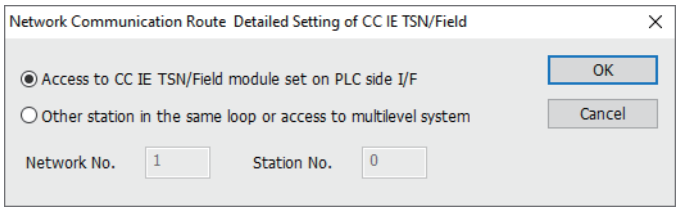
9. Set as shown below and click [OK].

• When the GOT and PLC are on the same network

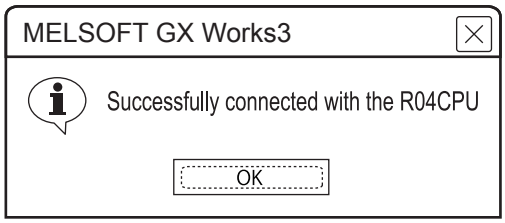
Select [Access to CC IE TSN/Field module set on PLC side I/F].

• When the GOT and PLC are on different networks

Select [Other station in the same loop or access to multilevel system] and set [Network No.] and [Station No.].



10. Return to [Specify Connection Destination] and click [Connection Test] to check that connection to the RCPU has been established.



72.9 Precautions for using GX Works3

72.9.1 When [monitor conditions] have been set in GX Works3

- Monitoring performance of the GOT is temporarily suspended.
- The GOT cannot respond to the touch switch operation and numerical/ASCII inputs.
- Writing to PLC results in a system alarm with the message, "315 Device writing error. Correct device.".
- While setting the monitor conditions, do not perform any operation which makes the GOT restart (e.g. downloading project data, changing utility data).

Doing so may display a system alarm with the message "402 Communication timeout. Confirm communication pathway or modules." when the GOT restarts.

When the monitor condition setting for the PLC CPU has not been cancelled, reconnect GX Works3 to cancel the setting. Note that an error may occur during this process.

- When the time check of GX Works3 is set to 30 seconds or more in the monitor condition settings, the message "402 Communication timeout. Confirm communication pathway or modules." may appear.

Set the time check time of GX Works3 to less than 30 seconds.

72.9.2 When exiting GX Works3

For 30 seconds after GX Works3 has been exited, the GOT continues monitoring at the same speed as when the FA transparent function is working.

72.9.3 When PLC write fails while using the FA transparent function

While writing to the PLC CPU using the FA transparent function, the writing may fail due to cable disconnection or other reasons.

When this occurs, re-execute the PLC write from the same personal computer, or reset the PLC CPU.

72.9.4 When the FA transparent function cannot be used for MX controller

When the USB connection is used between the personal computer and the GOT for encrypted communication with the built-in Ethernet port of the MX Controller, the FA transparent function cannot be used if the encrypted communication setting is incomplete.

Example of incomplete encrypted communication setting	Countermeasures
Example 1) The certificate of the connected MX controller does not exist in the GOT.	Configure the encrypted communication setting correctly. For details on the setting, refer to the following. ☞ Page 89 Encrypted communication ☞ Page 152 Encrypted communication 📖Manual of the MELSEC MX Controller
Example 2) The encrypted communication port of the connected MX controller is not open.	

72.9.5 When performing [Read to PLC], [Write to PLC], or other file operations in GX Works3

If any of the following GOT functions is executed during a file operation such as [Read to PLC] or [Write to PLC] in GX Works3, an error may occur on the GOT or in GX Works3.

In this case, take the following corrective action:

- Reading or writing device values by specifying the file register name of the recipe function

Error message on GOT	Corrective action on GOT side	Error message on GX Works3	Corrective action in GX Works3
358 PLC file access failure. Confirm PLC drive.*1	With no file operation being executed in GX Works3, turn on the trigger device of the recipe function again.	File access failure. Please retry.	Execute the file access operation again with the recipe in-process signal in GOT system information OFF.
		PLC file system error. Unable to communicate with PLC.	

*1 The numerical indicates the system alarm number.

- Reading the TC monitor set value of [Device Monitor]

Error message on GOT	Corrective action on GOT side	Error message on GX Works3	Corrective action in GX Works3
No message is displayed. (The TC set value space is blank.)	With no file operation being executed in GX Works3, re-execute the TC monitor.	File access failure. Please retry.	With no TC set value being read, re-execute the file operation.

- Reading the CPU malfunction log of the special module monitor in [Intelligent module monitor]

Error message on GOT	Corrective action on GOT side	Error message on GX Works3	Corrective action in GX Works3
Communication error	With no file operation being executed in GX Works3, re-execute the CPU malfunction log reading.	File access failure. Please retry.	With no special module monitor CPU malfunction log being read, execute the file operation.

- Backup/restore

Error message on GOT	Corrective action on GOT side	Error message on GX Works3	Corrective action in GX Works3
For backup: No message is displayed.	With no file operation being executed in GX Works3, re-execute the backup.	—	With no backup being executed, execute the file operation.
For restoration: No message is displayed.	With no file operation being executed in GX Works3, re-execute the restoration.	—	With no restore being executed, execute the file operation.

- Reading the [Sequence Program Monitor(SFC)] file

Error message on GOT	Corrective action on GOT side	Error message on GX Works3	Corrective action in GX Works3
— No message is displayed.	With no file operation being executed in GX Works3, re-execute the file reading.	—	With no file reading being executed in SFC monitor, execute the file operation.

- Reading or writing ladder edit files

Error message on GOT	Corrective action on GOT side	Error message on GX Works3	Corrective action in GX Works3
For reading: No message is displayed.	With no file operation being executed in GX Works3, re-execute the file reading.	—	With no file reading being executed on ladder edit, execute the file operation.
For writing: No message is displayed.	With no file operation being executed in GX Works3, re-execute the file writing.	—	With no file writing being executed in ladder edit, execute the file operation.

73 Accessing with CW Configurator

The following shows the controllers that can be accessed with CW Configurator using the FA transparent function.

Controller	Reference
C Controller module (MELSEC iQ-R series)	☞ Page 2639 C Controller module (MELSEC iQ-R series)
MELSECWinCPU (MELSEC iQ-R series)	☞ Page 2647 MELSECWinCPU (MELSEC iQ-R series)

For information on the GOT side or personal computer side settings, refer to the following.

☞ Page 2652 GOT side settings

☞ Page 2654 Personal computer side settings

73.1 C Controller module (MELSEC iQ-R series)

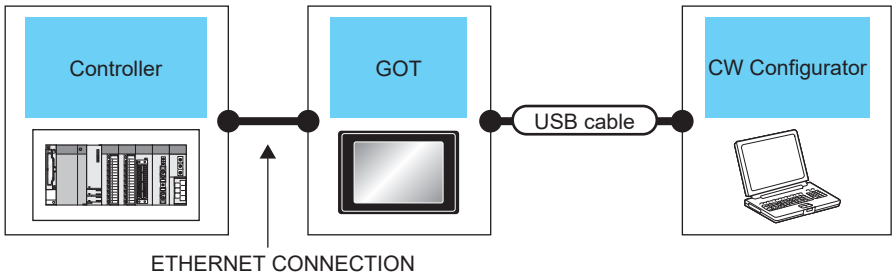
Personal computer to GOT connection	GOT to controller connection	Reference
USB connection	Ethernet connection	☞ Page 2640 GOT to controller Ethernet connection
	Serial communication connection	☞ Page 2641 Serial communication connection between the GOT and the controller
	CC-Link IE Controller Network connection	☞ Page 2641 CC-Link IE Controller Network connection between the GOT and the controller
	CC-Link IE Field Network connection	☞ Page 2642 CC-Link IE Field Network connection between the GOT and the controller
Ethernet connection	Ethernet connection	☞ Page 2643 GOT to controller Ethernet connection
	Serial communication connection	☞ Page 2644 Serial communication connection between the GOT and the controller
	CC-Link IE Controller Network connection	☞ Page 2645 CC-Link IE Controller Network connection between the GOT and the controller
	CC-Link IE Field Network connection	☞ Page 2646 CC-Link IE Field Network connection between the GOT and the controller

73.1.1 Personal computer to GOT USB connection

GOT to controller Ethernet connection

For the system configuration between the GOT and the controller, refer to the following.

Controller	Reference
MELSEC iQ-R series (Built-in Ethernet port connection)	☞ Page 190 System configuration
MELSEC iQ-R series (connection to the Ethernet module)	☞ Page 245 System configuration



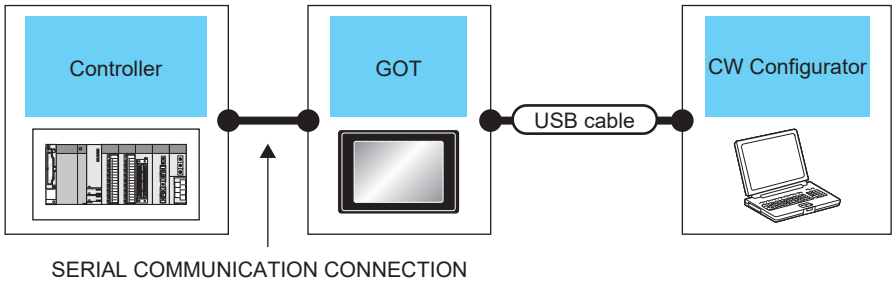
Controller	GOT		Connection cable		Personal computer	Number of connectable devices
	Model	Interface	USB cable	Maximum length	Compatible CW Configurator version	
R12CCPU-V	GT37 SoftGOT3000	USB	*1	3 m	1.021X or later	1 personal computer for 1 GOT

*1 For the USB cables validated by Mitsubishi Electric Corporation, refer to the following Technical Bulletin.
List of Validated Devices for the GOT3000 Series (GOT-A-0233)

Serial communication connection between the GOT and the controller

For the system configuration between the GOT and the controller, refer to the following.

Controller	Reference
MELSEC iQ-R series (serial communication connection)	☞ Page 532 System configuration



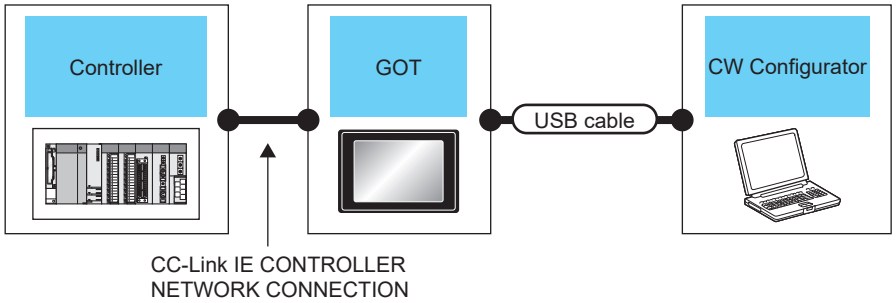
Controller	GOT		Connection cable		Personal computer	Number of connectable devices
	Model	Interface	USB cable	Maximum length	Compatible CW Configurator version	
R12CCPU-V	GT37 SoftGOT3000	USB	*1	3 m	1.021X or later	1 personal computer for 1 GOT

*1 For the USB cables validated by Mitsubishi Electric Corporation, refer to the following Technical Bulletin.
List of Validated Devices for the GOT3000 Series (GOT-A-0233)

CC-Link IE Controller Network connection between the GOT and the controller

For the system configuration between the GOT and the controller, refer to the following.

Controller	Reference
MELSEC iQ-R series (CC-Link IE Controller Network connection)	☞ Page 863 System configuration



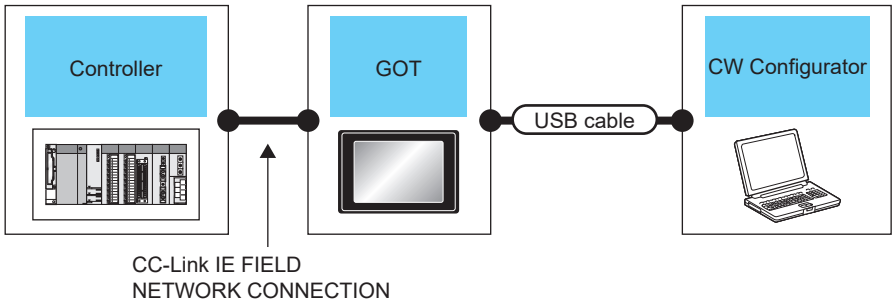
Controller	GOT		Connection cable		Personal computer	Number of connectable devices
	Model	Interface	USB cable	Maximum length	Compatible CW Configurator version	
R12CCPU-V	GT37 SoftGOT3000	USB	*1	3 m	1.021X or later	1 personal computer for 1 GOT

*1 For the USB cables validated by Mitsubishi Electric Corporation, refer to the following Technical Bulletin.
List of Validated Devices for the GOT3000 Series (GOT-A-0233)

CC-Link IE Field Network connection between the GOT and the controller

For the system configuration between the GOT and the controller, refer to the following.

Controller	Reference
MELSEC iQ-R series (CC-Link IE Field Network connection)	☞ Page 942 System configuration



Controller	GOT		Connection cable		Personal computer	Number of connectable devices
	Model	Interface	USB cable	Maximum length	Compatible CW Configurator version	
R12CCPU-V	GT37 SoftGOT3000	USB	*1	3 m	1.021X or later	1 personal computer for 1 GOT

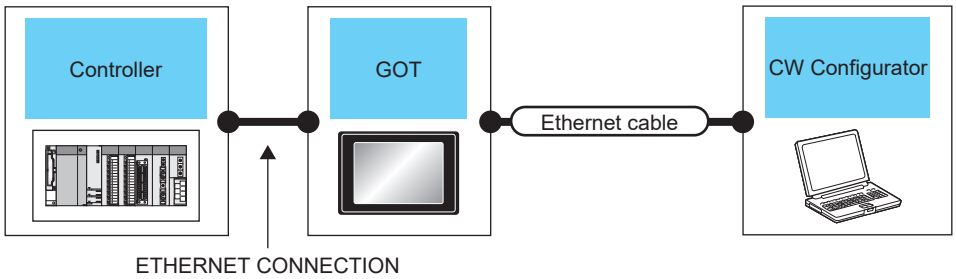
*1 For the USB cables validated by Mitsubishi Electric Corporation, refer to the following Technical Bulletin.
List of Validated Devices for the GOT3000 Series (GOT-A-0233)

73.1.2 Personal computer to GOT Ethernet connection

GOT to controller Ethernet connection

For the system configuration between the GOT and the controller, refer to the following.

Controller	Reference
MELSEC iQ-R series (Built-in Ethernet port connection)	☞ Page 190 System configuration
MELSEC iQ-R series (connection to the Ethernet module)	☞ Page 245 System configuration



Controller	GOT		Connection cable		Personal computer	Number of connectable devices
	Model	Interface	Ethernet cable	Maximum segment length	Compatible CW Configurator version	
R12CCPU-V	GT37 SoftGOT3000	Built-in Ethernet interface of the GOT	Twisted pair cable ☞ Page 2643 Connection cable	100 m	1.021X or later	1 personal computer for 1 GOT

■Connection cable

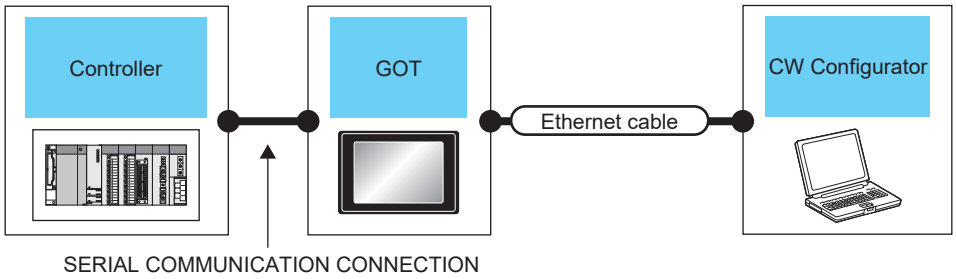
Use a connection cable that meets the following standards.

Standard	Category
10BASE-T	Shielded twisted pair cable (STP) or unshielded twisted pair cable (UTP) of category 3 or higher
100BASE-TX	Shielded twisted pair cable (STP) or unshielded twisted pair cable (UTP) of category 5 or higher
1000BASE-T	Shielded twisted pair cable (STP) or unshielded twisted pair cable (UTP) of category 5e or higher

Serial communication connection between the GOT and the controller

For the system configuration between the GOT and the controller, refer to the following.

Controller	Reference
MELSEC iQ-R series (serial communication connection)	☞ Page 532 System configuration



Controller	GOT		Connection cable		Personal computer	Number of connectable devices
	Model	Interface	Ethernet cable	Maximum segment length	Compatible CW Configurator version	
R12CCPU-V	GT37 SoftGOT3000	Built-in Ethernet interface of the GOT	Twisted pair cable ☞ Page 2644 Connection cable	100 m	1.021X or later	1 personal computer for 1 GOT

■Connection cable

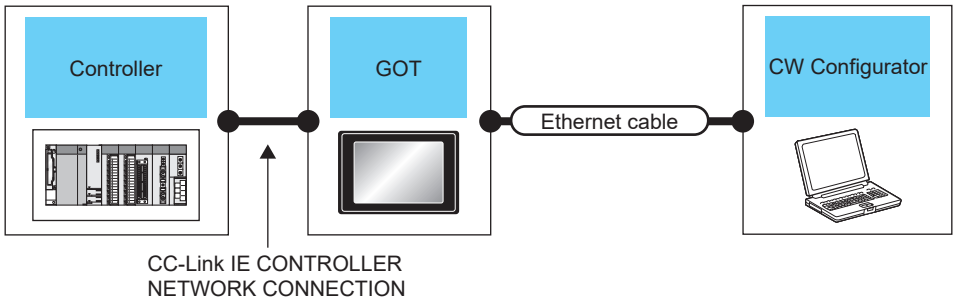
Use a connection cable that meets the following standards.

Standard	Category
10BASE-T	Shielded twisted pair cable (STP) or unshielded twisted pair cable (UTP) of category 3 or higher
100BASE-TX	Shielded twisted pair cable (STP) or unshielded twisted pair cable (UTP) of category 5 or higher
1000BASE-T	Shielded twisted pair cable (STP) or unshielded twisted pair cable (UTP) of category 5e or higher

CC-Link IE Controller Network connection between the GOT and the controller

For the system configuration between the GOT and the controller, refer to the following.

Controller	Reference
MELSEC iQ-R series (CC-Link IE Controller Network connection)	☞ Page 863 System configuration



Controller	GOT		Connection cable		Personal computer	Number of connectable devices
	Model	Interface	Ethernet cable	Maximum segment length	Compatible CW Configurator version	
R12CCPU-V	GT37 SoftGOT3000	Built-in Ethernet interface of the GOT	Twisted pair cable ☞ Page 2645 Connection cable	100 m	1.021X or later	1 personal computer for 1 GOT

■Connection cable

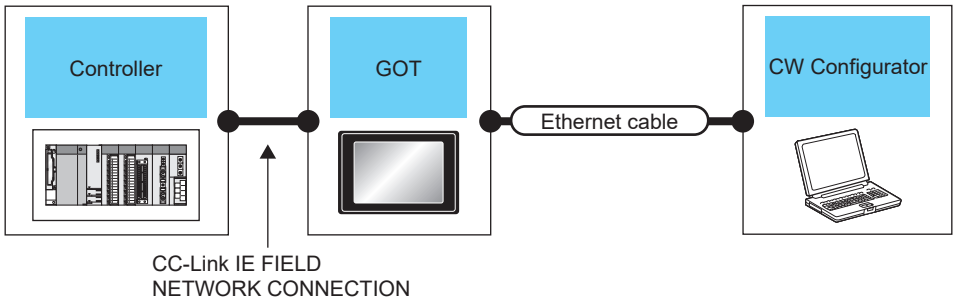
Use a connection cable that meets the following standards.

Standard	Category
10BASE-T	Shielded twisted pair cable (STP) or unshielded twisted pair cable (UTP) of category 3 or higher
100BASE-TX	Shielded twisted pair cable (STP) or unshielded twisted pair cable (UTP) of category 5 or higher
1000BASE-T	Shielded twisted pair cable (STP) or unshielded twisted pair cable (UTP) of category 5e or higher

CC-Link IE Field Network connection between the GOT and the controller

For the system configuration between the GOT and the controller, refer to the following.

Controller	Reference
MELSEC iQ-R series (CC-Link IE Field Network connection)	☞ Page 942 System configuration



Controller	GOT		Connection cable		Personal computer	Number of connectable devices
	Model	Interface	Ethernet cable	Maximum segment length	Compatible CW Configurator version	
R12CCPU-V	GT37 SoftGOT3000	Built-in Ethernet interface of the GOT	Twisted pair cable ☞ Page 2646 Connection cable	100 m	1.021X or later	1 personal computer for 1 GOT

■Connection cable

Use a connection cable that meets the following standards.

Standard	Category
10BASE-T	Shielded twisted pair cable (STP) or unshielded twisted pair cable (UTP) of category 3 or higher
100BASE-TX	Shielded twisted pair cable (STP) or unshielded twisted pair cable (UTP) of category 5 or higher
1000BASE-T	Shielded twisted pair cable (STP) or unshielded twisted pair cable (UTP) of category 5e or higher

73.2 MELSECWinCPU (MELSEC iQ-R series)

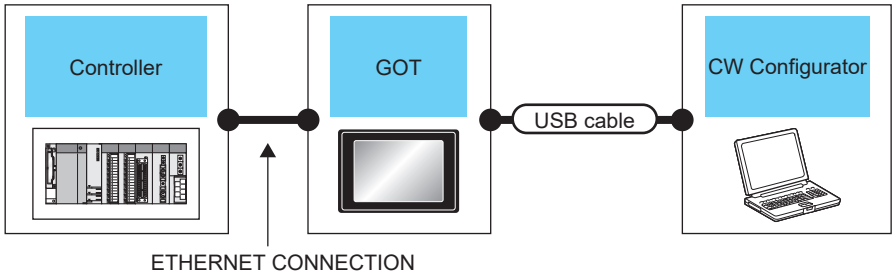
Personal computer to GOT connection	GOT to controller connection	Reference
USB connection	Ethernet connection	☞ Page 2647 GOT to controller Ethernet connection
	Serial communication connection	☞ Page 2648 Serial communication connection between the GOT and the controller
	CC-Link IE Controller Network connection	☞ Page 2648 CC-Link IE Controller Network connection between the GOT and the controller
Ethernet connection	Ethernet connection	☞ Page 2649 GOT to controller Ethernet connection
	Serial communication connection	☞ Page 2650 Serial communication connection between the GOT and the controller
	CC-Link IE Controller Network connection	☞ Page 2651 CC-Link IE Controller Network connection between the GOT and the controller

73.2.1 Personal computer to GOT USB connection

GOT to controller Ethernet connection

For the system configuration between the GOT and the controller, refer to the following.

Controller	Reference
MELSEC iQ-R series (Built-in Ethernet port connection)	☞ Page 190 System configuration
MELSEC iQ-R series (connection to the Ethernet module)	☞ Page 245 System configuration



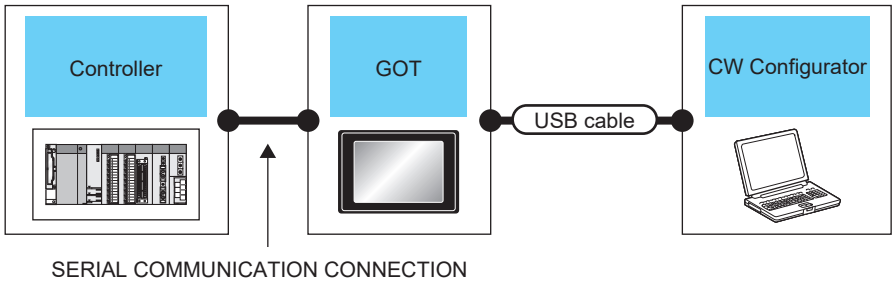
Controller	GOT		Connection cable		Personal computer	Number of connectable devices
	Model	Interface	USB cable	Maximum length	Compatible CW Configurator version	
R102WCPU-W	GT37 SoftGOT3000	USB	*1	3 m	1.021X or later	1 personal computer for 1 GOT

*1 For the USB cables validated by Mitsubishi Electric Corporation, refer to the following Technical Bulletin.
List of Validated Devices for the GOT3000 Series (GOT-A-0233)

Serial communication connection between the GOT and the controller

For the system configuration between the GOT and the controller, refer to the following.

Controller	Reference
MELSEC iQ-R series (serial communication connection)	☞ Page 532 System configuration



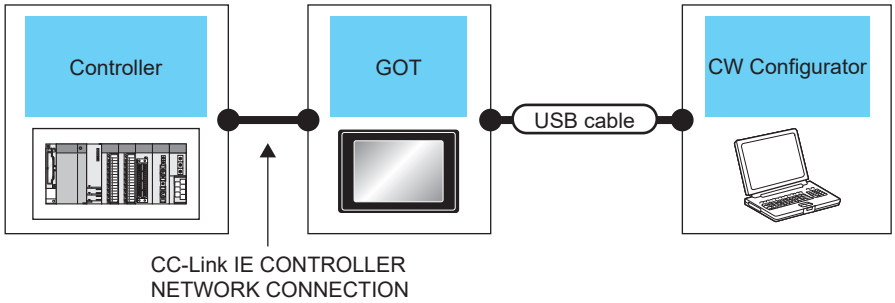
Controller	GOT		Connection cable		Personal computer	Number of connectable devices
	Model	Interface	USB cable	Maximum length	Compatible CW Configurator version	
R102WCPU-W	GT37 SoftGOT3000	USB	*1	3 m	1.021X or later	1 personal computer for 1 GOT

*1 For the USB cables validated by Mitsubishi Electric Corporation, refer to the following Technical Bulletin.
List of Validated Devices for the GOT3000 Series (GOT-A-0233)

CC-Link IE Controller Network connection between the GOT and the controller

For the system configuration between the GOT and the controller, refer to the following.

Controller	Reference
MELSEC iQ-R series (CC-Link IE Controller Network connection)	☞ Page 863 System configuration



Controller	GOT		Connection cable		Personal computer	Number of connectable devices
	Model	Interface	USB cable	Maximum length	Compatible CW Configurator version	
R102WCPU-W	GT37 SoftGOT3000	USB	*1	3 m	1.021X or later	1 personal computer for 1 GOT

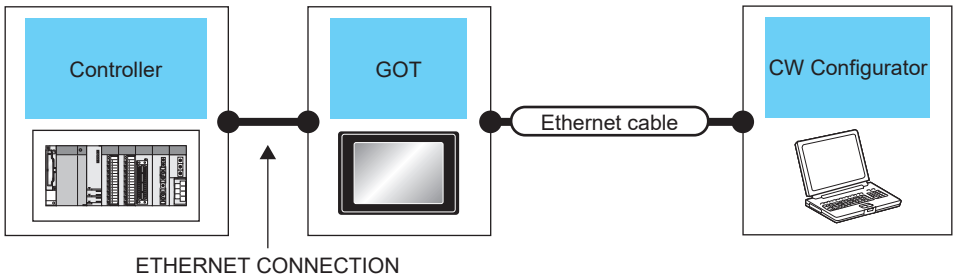
*1 For the USB cables validated by Mitsubishi Electric Corporation, refer to the following Technical Bulletin.
List of Validated Devices for the GOT3000 Series (GOT-A-0233)

73.2.2 Personal computer to GOT Ethernet connection

GOT to controller Ethernet connection

For the system configuration between the GOT and the controller, refer to the following.

Controller	Reference
MELSEC iQ-R series (Built-in Ethernet port connection)	☞ Page 190 System configuration
MELSEC iQ-R series (connection to the Ethernet module)	☞ Page 245 System configuration



Controller	GOT		Connection cable		Personal computer	Number of connectable devices
	Model	Interface	Ethernet cable	Maximum segment length	Compatible CW Configurator version	
R102WCPU-W	GT37 SoftGOT3000	Built-in Ethernet interface of the GOT	Twisted pair cable ☞ Page 2649 Connection cable	100 m	1.021X or later	1 personal computer for 1 GOT

■Connection cable

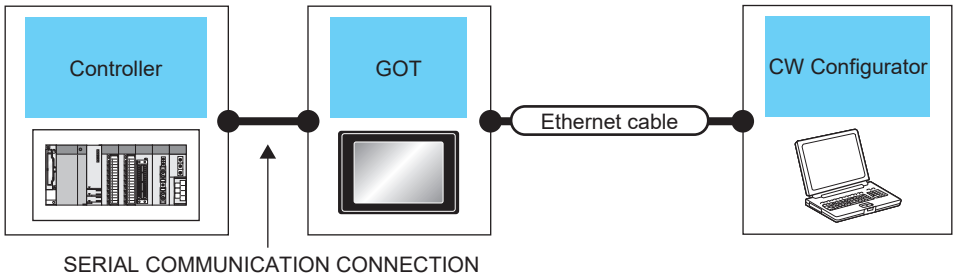
Use a connection cable that meets the following standards.

Standard	Category
10BASE-T	Shielded twisted pair cable (STP) or unshielded twisted pair cable (UTP) of category 3 or higher
100BASE-TX	Shielded twisted pair cable (STP) or unshielded twisted pair cable (UTP) of category 5 or higher
1000BASE-T	Shielded twisted pair cable (STP) or unshielded twisted pair cable (UTP) of category 5e or higher

Serial communication connection between the GOT and the controller

For the system configuration between the GOT and the controller, refer to the following.

Controller	Reference
MELSEC iQ-R series (serial communication connection)	☞ Page 532 System configuration



Controller	GOT		Connection cable		Personal computer	Number of connectable devices
	Model	Interface	Ethernet cable	Maximum segment length	Compatible CW Configurator version	
R102WCPU-W	GT37 SoftGOT3000	Built-in Ethernet interface of the GOT	Twisted pair cable ☞ Page 2650 Connection cable	100 m	1.021X or later	1 personal computer for 1 GOT

■Connection cable

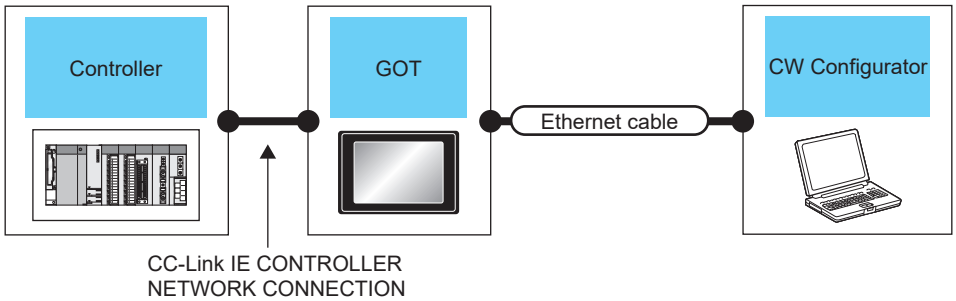
Use a connection cable that meets the following standards.

Standard	Category
10BASE-T	Shielded twisted pair cable (STP) or unshielded twisted pair cable (UTP) of category 3 or higher
100BASE-TX	Shielded twisted pair cable (STP) or unshielded twisted pair cable (UTP) of category 5 or higher
1000BASE-T	Shielded twisted pair cable (STP) or unshielded twisted pair cable (UTP) of category 5e or higher

CC-Link IE Controller Network connection between the GOT and the controller

For the system configuration between the GOT and the controller, refer to the following.

Controller	Reference
MELSEC iQ-R series (CC-Link IE Controller Network connection)	☞ Page 863 System configuration



Controller	GOT		Connection cable		Personal computer	Number of connectable devices
	Model	Interface	Ethernet cable	Maximum segment length	Compatible CW Configurator version	
R102WCPU-W	GT37 SoftGOT3000	Built-in Ethernet interface of the GOT	Twisted pair cable ☞ Page 2651 Connection cable	100 m	1.021X or later	1 personal computer for 1 GOT

■Connection cable

Use a connection cable that meets the following standards.

Standard	Category
10BASE-T	Shielded twisted pair cable (STP) or unshielded twisted pair cable (UTP) of category 3 or higher
100BASE-TX	Shielded twisted pair cable (STP) or unshielded twisted pair cable (UTP) of category 5 or higher
1000BASE-T	Shielded twisted pair cable (STP) or unshielded twisted pair cable (UTP) of category 5e or higher

73.3 GOT side settings

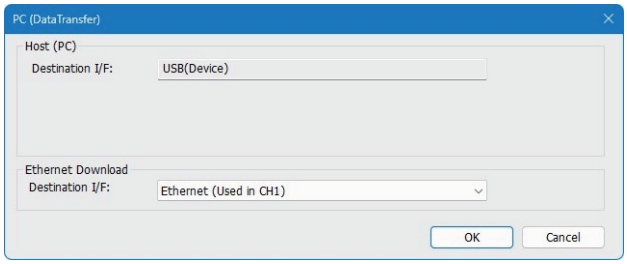
73.3.1 [Controller Setting]

The GOT side settings differ depending on the connection type between the controller and the GOT.
For details on [Controller Setting], refer to the following.

Controller	Reference
C Controller module (MELSEC iQ-R series), MELSECWinCPU (MELSEC iQ-R series) (Built-in Ethernet port connection)	☞ Page 199 [Controller Setting]
C Controller module (MELSEC iQ-R series), MELSECWinCPU (MELSEC iQ-R series) (Ethernet module connection)	☞ Page 253 [Controller Setting]
C Controller module (MELSEC iQ-R series), MELSECWinCPU (MELSEC iQ-R series) (serial communication connection)	☞ Page 537 [Controller Setting]
C Controller module (MELSEC iQ-R series), MELSECWinCPU (MELSEC iQ-R series) (CC-Link IE Controller Network connection)	☞ Page 866 [Controller Setting]
C Controller module (MELSEC iQ-R series) (CC-Link IE Field Network connection)	☞ Page 947 [Controller Setting]

73.3.2 Communication setting with personal computer

Set the communication setting between the GOT and the personal computer.



Operating procedure

1. Select [Common] → [Peripheral Setting] → [PC (Data Transfer)] from the menu.

2. Set the interface of the GOT to be used for communication with the personal computer in the [PC (Data Transfer)] dialog.

For details of the setting contents, refer to the following manual.
📖GT Designer3 (GOT3000) Screen Design Manual

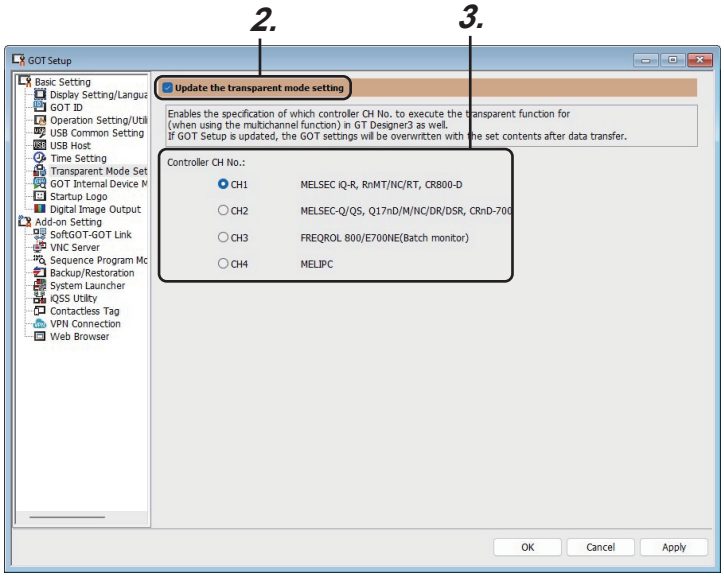
Point

• Controller settings using the GT37 utility
The controller settings can be changed in [Communication Settings] of the GT37 utility after writing [Communication Settings] of project data to GT37.
For details on the GT37 utility, refer to the following manual.
📖GOT3000 Series User's Manual (Utility & Maintenance Functions)

• Priority of the settings in [Controller Setting]
When the settings are configured in GT Designer3 or in the GT37 utility, the latest settings are effective.

73.3.3 GOT Setup

When using the multi-channel function, specify the channel number for which the FA transparent function is executed.



Operating procedure

1. Select [Common] → [GOT Setup] → [Basic Setting] → [Transparent Mode Setting] from the menu.
2. Select [Update the transparent mode setting].
3. As necessary, check one of [CH1] to [CH4].
4. Click the [OK] button when settings are completed.

Point

Transparent setting on the utility screen

Transparent setting can be performed by the GOT.

For details of the operating, refer to the following.

GOT3000 Series User's Manual (Utility & Maintenance Functions)

73.4 Personal computer side settings

The following shows the procedure to set the FA transparent function in CW Configurator.

Personal computer to GOT connection	GOT to controller connection	Reference
USB connection	Ethernet connection	☞ Page 2655 GOT to controller Ethernet connection
	Serial communication connection	☞ Page 2657 Serial communication connection between the GOT and the controller
	CC-Link IE Controller Network connection	☞ Page 2659 CC-Link IE Controller Network connection between the GOT and the controller
	CC-Link IE Field Network connection	☞ Page 2662 CC-Link IE Field Network connection between the GOT and the controller
Ethernet connection	Ethernet connection	☞ Page 2665 GOT to controller Ethernet connection
	Serial communication connection	☞ Page 2667 Serial communication connection between the GOT and the controller
	CC-Link IE Controller Network connection	☞ Page 2669 CC-Link IE Controller Network connection between the GOT and the controller
	CC-Link IE Field Network connection	☞ Page 2672 CC-Link IE Field Network connection between the GOT and the controller

73.4.1 Personal computer to GOT USB connection

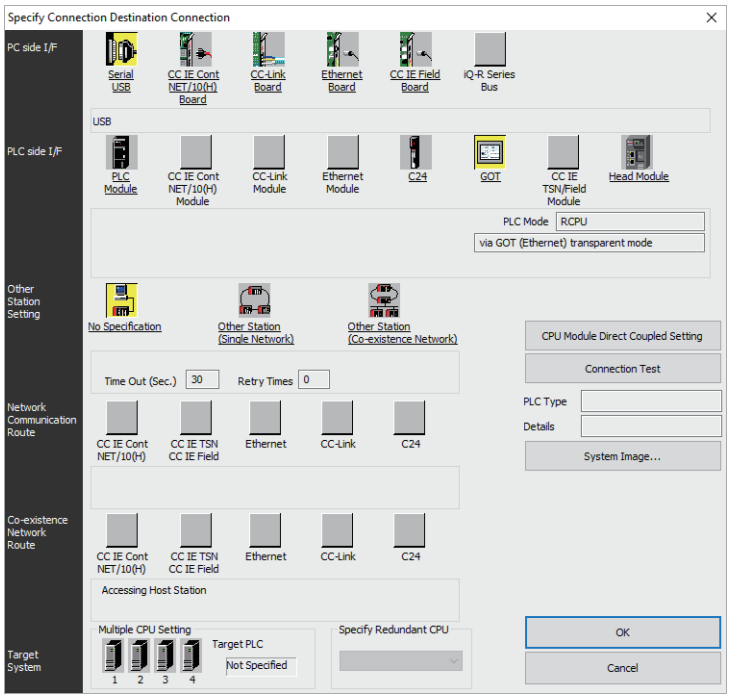
GOT to controller Ethernet connection

The following shows an example for connection to C Controller module (MELSEC iQ-R series).

Operating procedure

1. Click [Online] → [Current Connection Destination] on CW Configurator.

The [Specify Connection Destination] dialog is displayed.

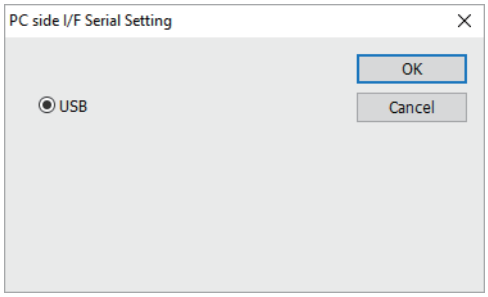


2. Set [Specify Connection Destination] as follows:

- [PC side I/F]: [Serial USB]
- [PLC side I/F]: [GOT]
- [Other Station Setting]: [No Specification]

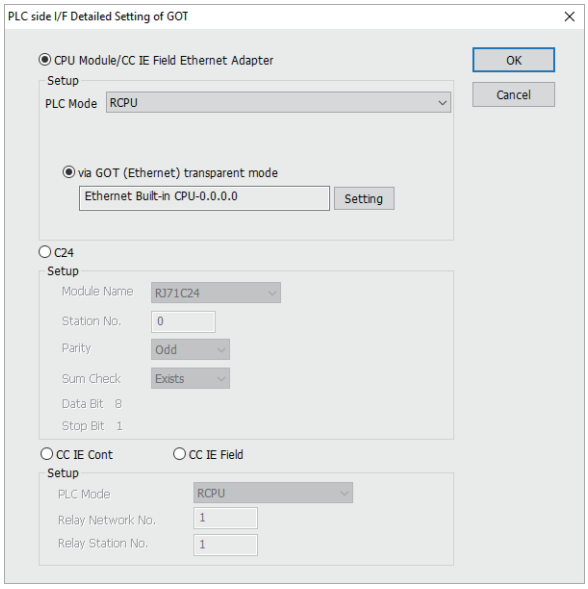
3. Double-click [Serial USB] of [PC side I/F].

4. When [PC side I/F Serial Setting] is displayed, select [USB].



5. Double-click [GOT] of [PLC side I/F].

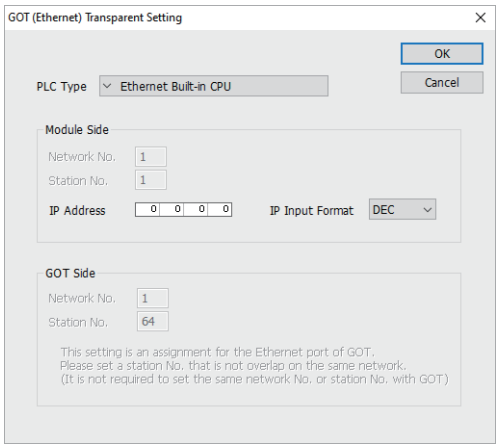
6. When [PLC side I/F Detailed Setting of GOT] is displayed, select [via GOT(Ethernet) transparent mode] and click [Setting].



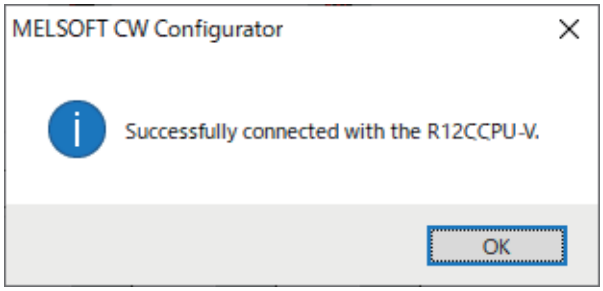
7. [GOT (Ethernet) Transparent Setting] is displayed.

Here, set the built-in Ethernet port CPU, which is firstly connected via a GOT.

- [PLC Type]: Select [Ethernet Built-in CPU].
- [IP Address]: Specify the IP address assigned to the Built-in Ethernet port CPU.



8. Return to [Specify Connection Destination], click [Connection Test] to check that connection to the C Controller module (MELSEC iQ-R series) has been established.



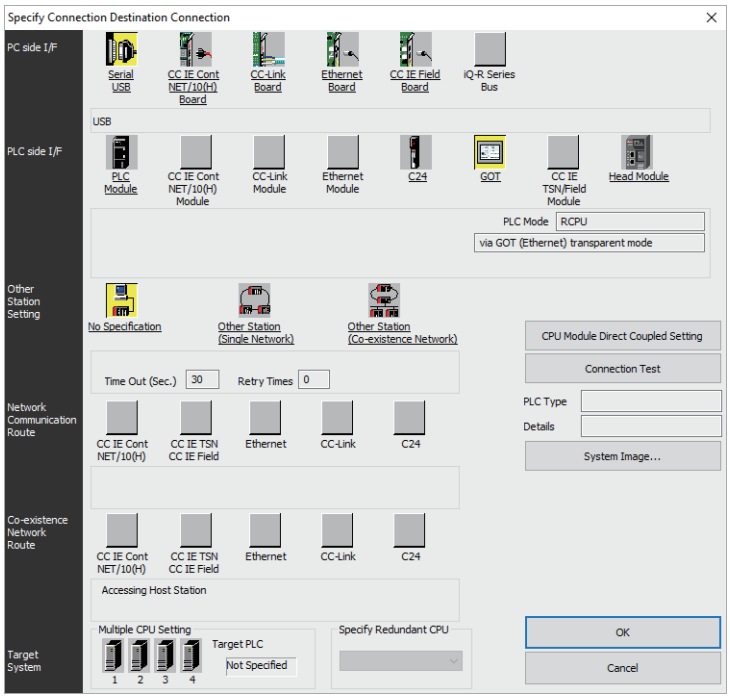
Serial communication connection between the GOT and the controller

The following shows an example for connection to the MELSEC iQ-R series serial communication module (RJ71C24).

Operating procedure

1. Click [Online] → [Current Connection Destination] on CW Configurator.

The [Specify Connection Destination] dialog is displayed.

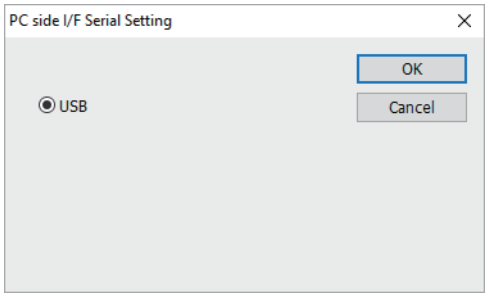


2. Set [Specify Connection Destination] as follows:

- [PC side I/F]: [Serial USB]
- [PLC side I/F]: [GOT]
- [Other Station Setting]: [No Specification]

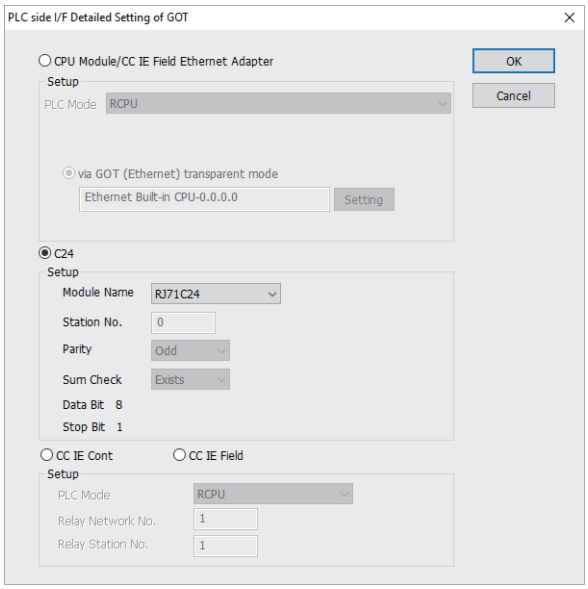
3. Double-click [Serial USB] of [PC side I/F].

4. When [PC side I/F Serial Setting] is displayed, select [USB].

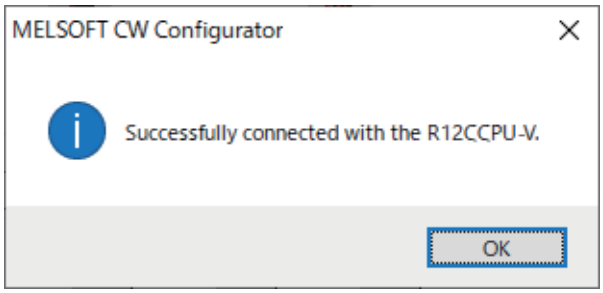


5. Double-click [GOT] of [PLC side I/F].

6. When [PLC side I/F Detailed Setting of GOT] is displayed, select [C24].



7. Return to [Specify Connection Destination], click [Connection Test] to check that connection to the C Controller module (MELSEC iQ-R series) has been established.



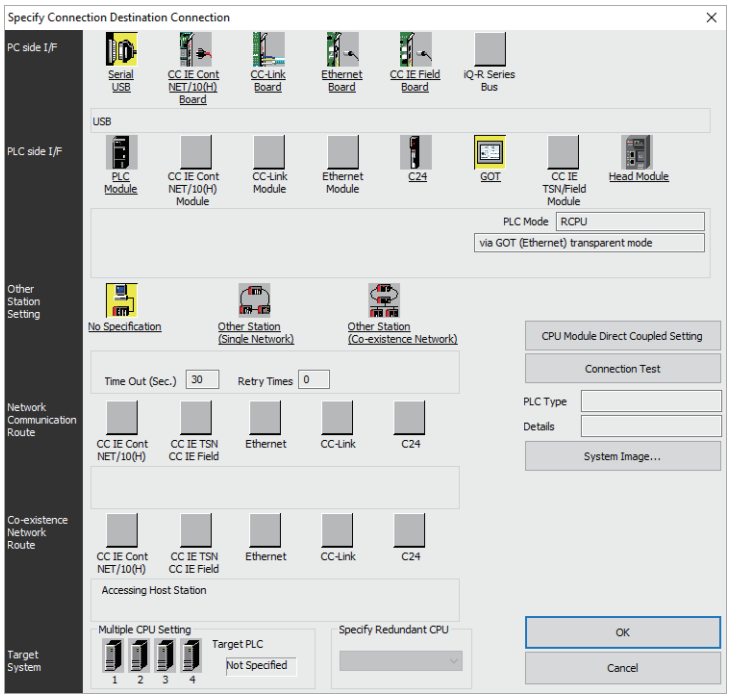
CC-Link IE Controller Network connection between the GOT and the controller

The following shows an example for connection to C Controller module (MELSEC iQ-R series).

Operating procedure

1. Click [Online] → [Current Connection Destination] on CW Configurator.

The [Specify Connection Destination] dialog is displayed.

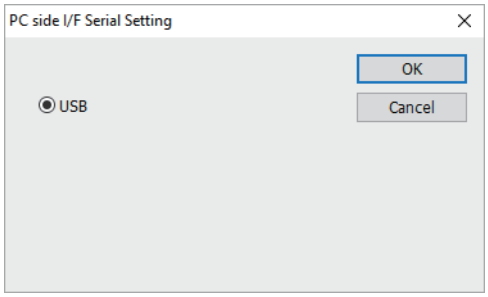


2. Set [Specify Connection Destination] as follows:

- [PC side I/F]: [Serial USB]
- [PLC side I/F]: [GOT]
- [Other Station Setting]: [No Specification]

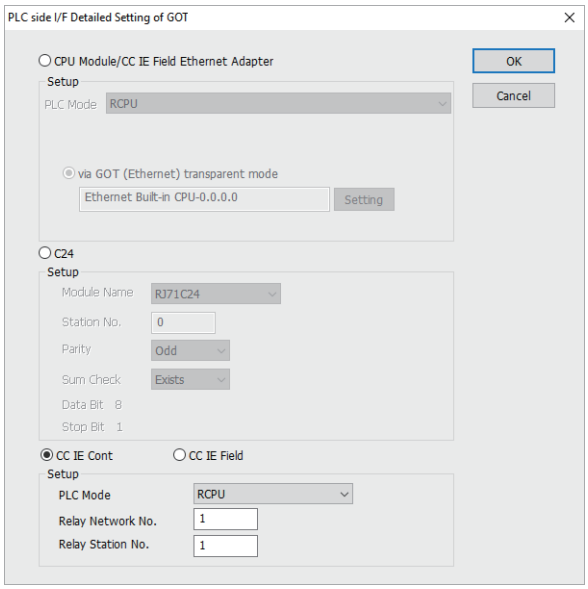
3. Double-click [Serial USB] of [PC side I/F].

4. When [PC side I/F Serial Setting] is displayed, select [USB].



5. Double-click [GOT] of [PLC side I/F].

6. When [PLC side I/F Detailed Setting of GOT] is displayed, select [CC IE Cont].



7. Set [Detail Setting].

Set [Relay Station No.] as follows:

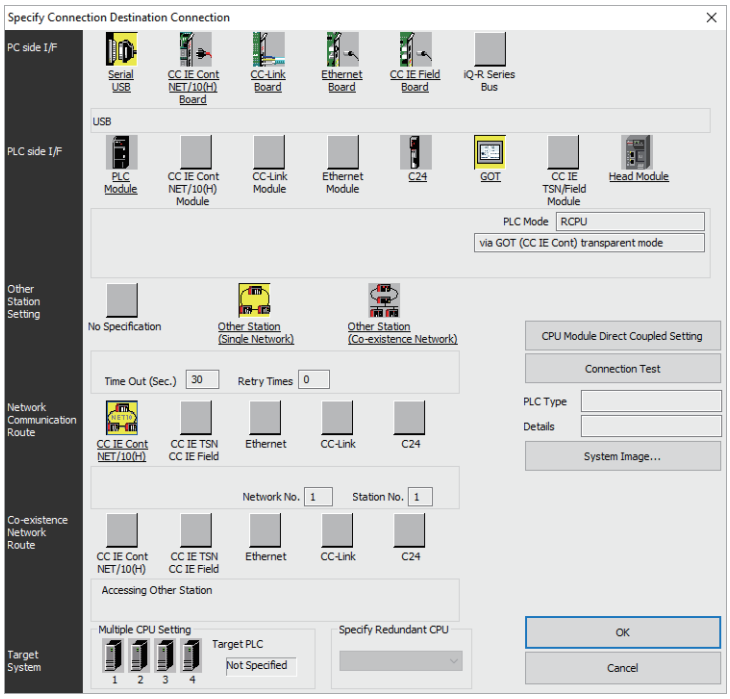
- When the target PLC has the same network number as that of the GOT

Set the number assigned to the PLC that is the target of the FA transparent function and CC-Link IE Controller Network module.

- When the target PLC has a network number different from that of the GOT

Set the number assigned to the PLC that is used as a relay station and CC-Link IE Controller Network module.

8. Return to [Specify Connection Destination], click [Other Station (Single Network)], and double-click [CC IE Cont NET/10(H)].



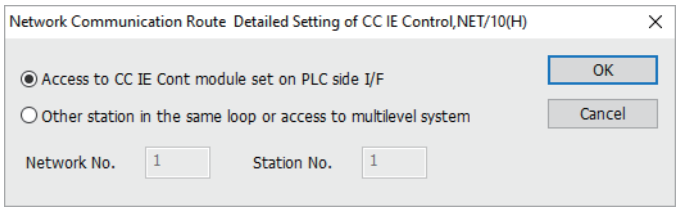
9. Set as shown below and click [OK].

• When the GOT and PLC are on the same network

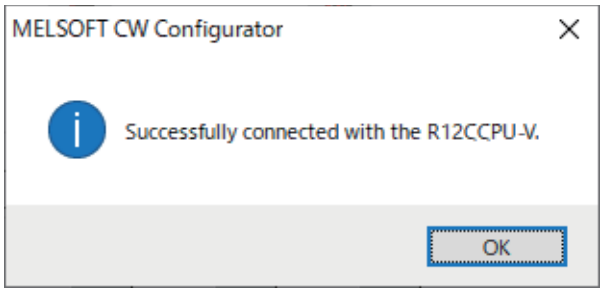
Select [Access to CC IE Cont module set on PLC side I/F].

• When the GOT and PLC are on different networks

Select [Other station in the same loop or access to multilevel system] and set [Network No.] and [Station No.].



10. Return to [Specify Connection Destination], click [Connection Test] to check that connection to the C Controller module (MELSEC iQ-R series) has been established.

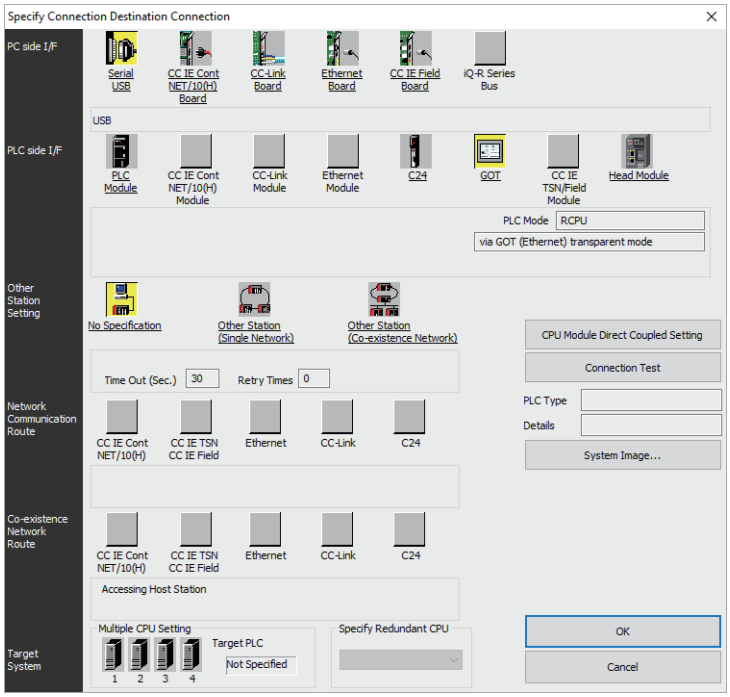


CC-Link IE Field Network connection between the GOT and the controller

Operating procedure

1. Click [Online] → [Current Connection Destination] on CW Configurator.

The [Specify Connection Destination] dialog is displayed.

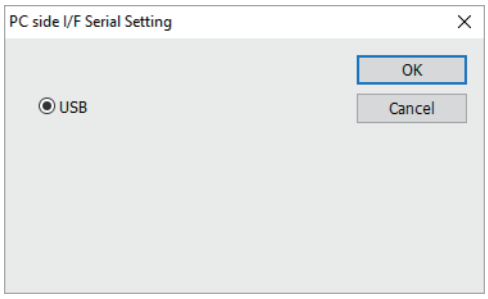


2. Set [Specify Connection Destination] as follows:

- [PC side I/F]: [Serial USB]
- [PLC side I/F]: [GOT]
- [Other Station Setting]: [No Specification]

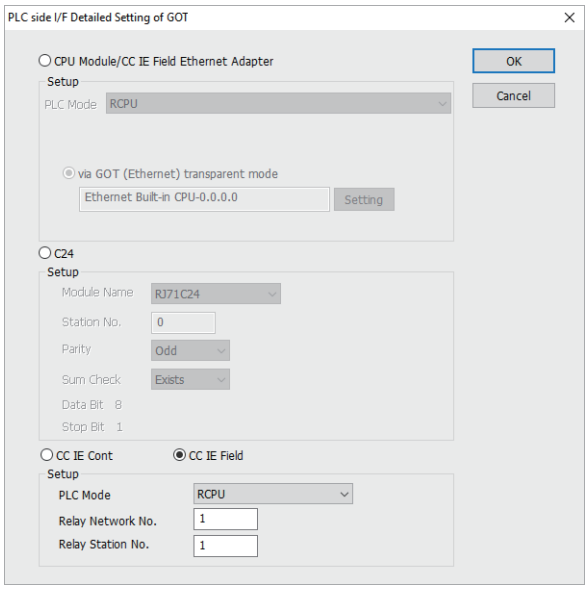
3. Double-click [Serial USB] of [PC side I/F].

4. When [PC side I/F Serial Setting] is displayed, select [USB].



5. Double-click [GOT] of [PLC side I/F].

6. When [PLC side I/F Detailed Setting of GOT] is displayed, select [CC IE Field].



7. Set [Detail Setting].

Set [Relay Station No.] as follows:

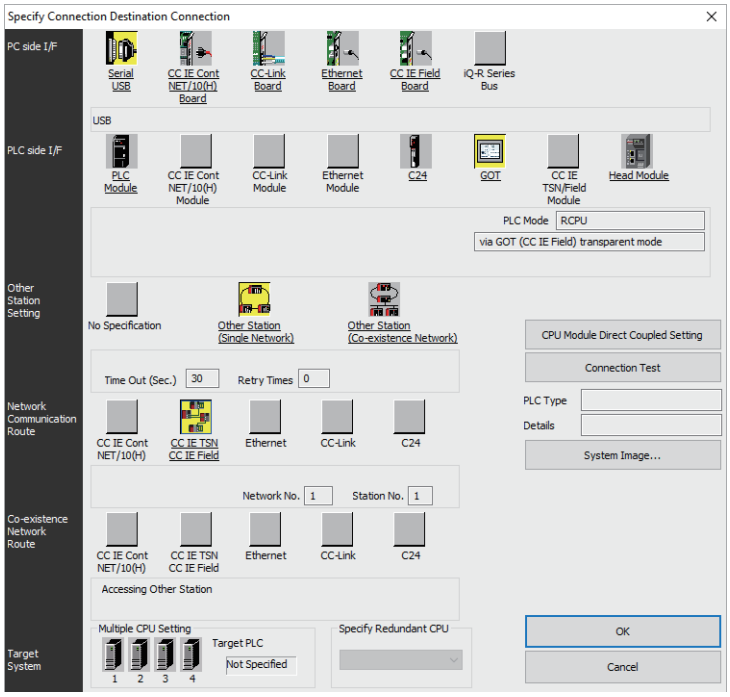
- When the target PLC has the same network number as that of the GOT

Set the number assigned to the PLC that is the target of the FA transparent function and CC-Link IE Field Network module.

- When the target PLC has a network number different from that of the GOT

Set the number assigned to the PLC that is used as a relay station and CC-Link IE Field Network module.

8. Return to [Specify Connection Destination], click [Other Station (Single Network)], and double-click [CC IE TSN CC IE Field].



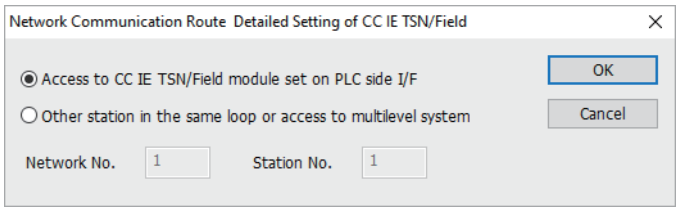
9. Set as shown below and click [OK].

• When the GOT and PLC are on the same network

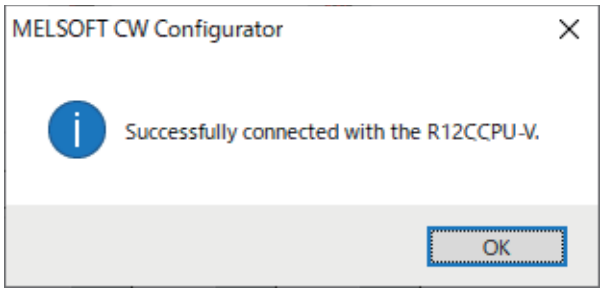
Select [Access to CC IE TSN/Field module set on PLC side I/F].

• When the GOT and PLC are on different networks

Select [Other station in the same loop or access to multilevel system] and set [Network No.] and [Station No.].



10. Return to [Specify Connection Destination], click [Connection Test] to check that connection to the C Controller module (MELSEC iQ-R series) has been established.



73.4.2 Personal computer to GOT Ethernet connection

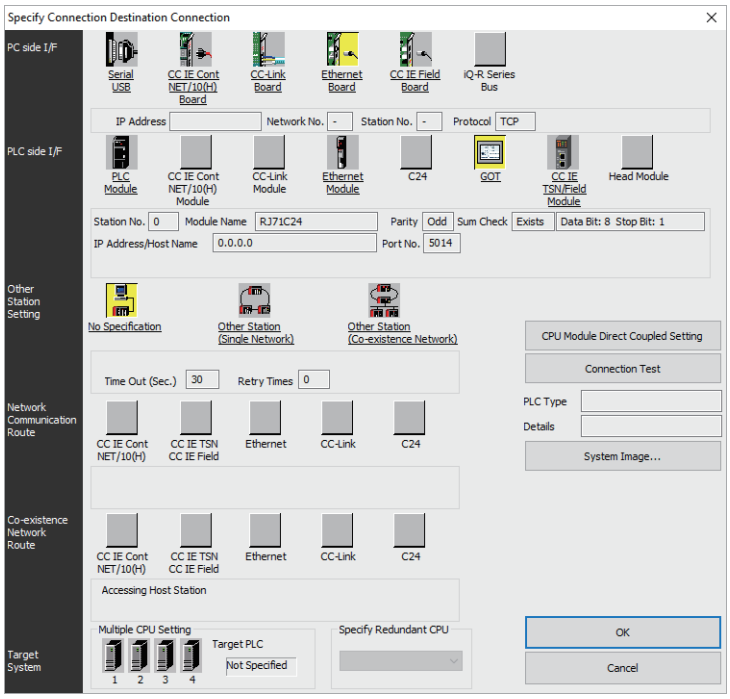
GOT to controller Ethernet connection

The following shows an example for connection to C Controller module (MELSEC iQ-R series).

Operating procedure

1. Click [Online] → [Current Connection Destination] on CW Configurator.

The [Specify Connection Destination] dialog is displayed.



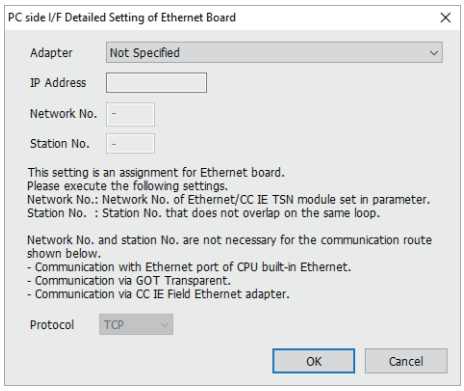
2. Set [Specify Connection Destination] as follows:

- [PC side I/F]: [Ethernet Board]
- [PLC side I/F]: [GOT]
- [Other Station Setting]: [No Specification]

3. Double-click [Ethernet Board] of [PC side I/F].

4. When [PC side I/F Detailed Setting of Ethernet Board] is displayed, select [Adapter].

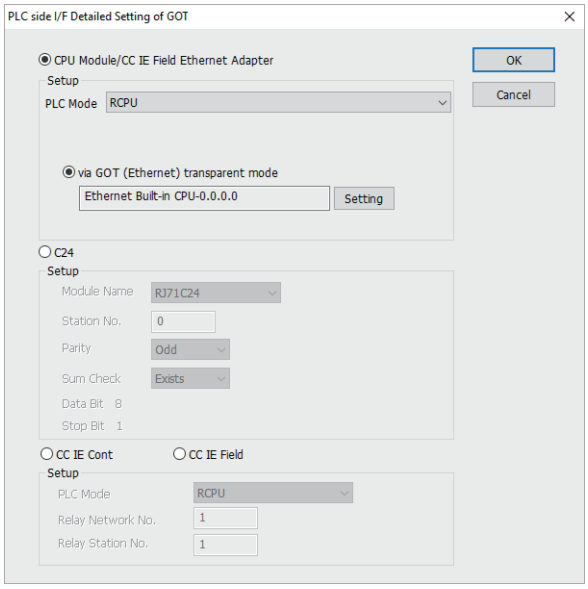
Settings are not required for [Network No.] and [Station No.] because they are not used.



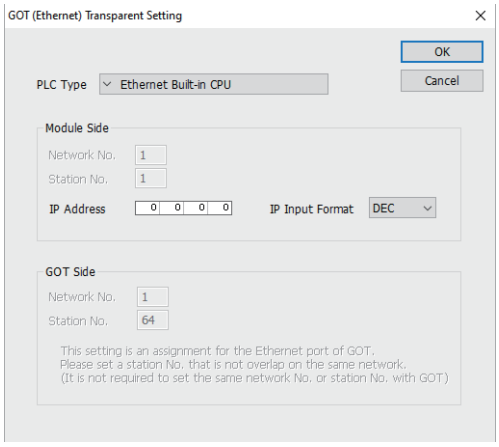
5. Double-click [GOT] of [PLC side I/F].

6. When [PLC side I/F Detailed Setting of GOT] is displayed, set [IP Address] and [Port No.] in [Detailed Setting of Ethernet Connection between PC and GOT].

Check the IP address and port number on the GOT side in the [GOT Ethernet Setting] window in GT Designer3.
For details, refer to the following.
📖GT Designer3 (GOT3000) Screen Design Manual



7. In [Detailed Setting of connection between GOT and PLC], select [via GOT(Ethernet) transparent mode] and click [Setting].

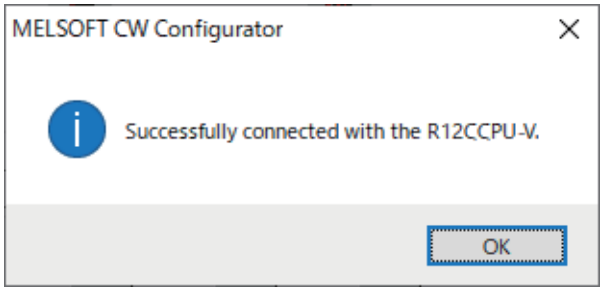


8. [GOT (Ethernet) Transparent Setting] is displayed.

Here, set the built-in Ethernet port CPU, which is firstly connected via a GOT.

- [PLC Type]: Select [Ethernet Built-in CPU].
- [IP Address]: Specify the IP address assigned to the Built-in Ethernet port CPU.

9. Return to [Specify Connection Destination], click [Connection Test] to check that connection to the C Controller module (MELSEC iQ-R series) has been established.



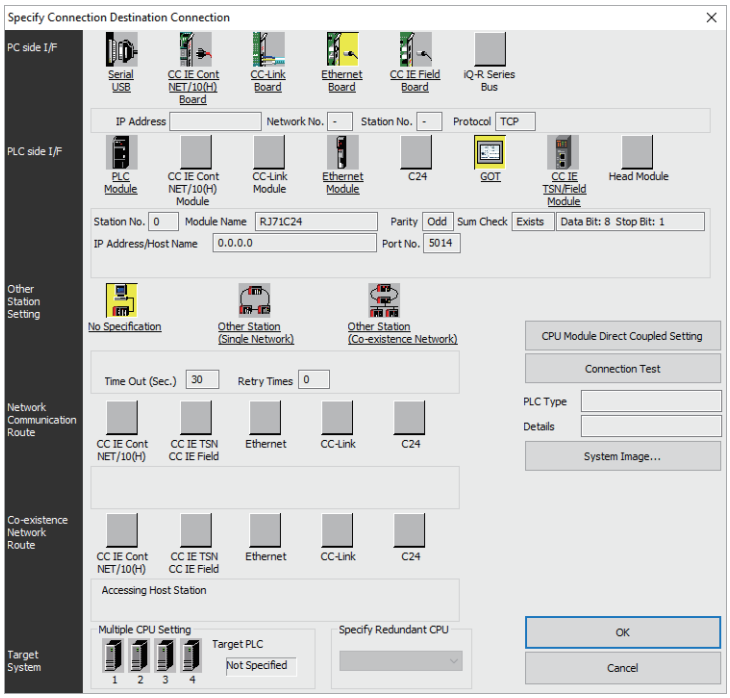
Serial communication connection between the GOT and the controller

The following shows an example for connection to the MELSEC iQ-R series serial communication module (RJ71C24).

Operating procedure

1. Click [Online] → [Current Connection Destination] on CW Configurator.

The [Specify Connection Destination] dialog is displayed.



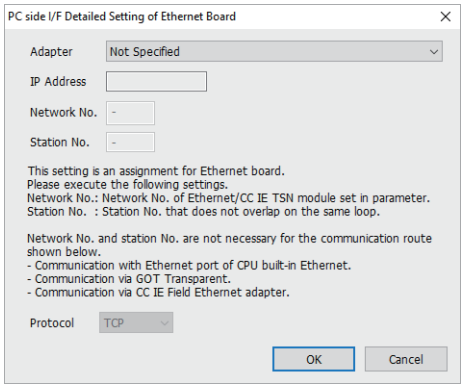
2. Set [Specify Connection Destination] as follows:

- [PC side I/F]: [Ethernet Board]
- [PLC side I/F]: [GOT]
- [Other Station Setting]: [No Specification]

3. Double-click [Ethernet Board] of [PC side I/F].

4. When [PC side I/F Detailed Setting of Ethernet Board] is displayed, select [Adapter].

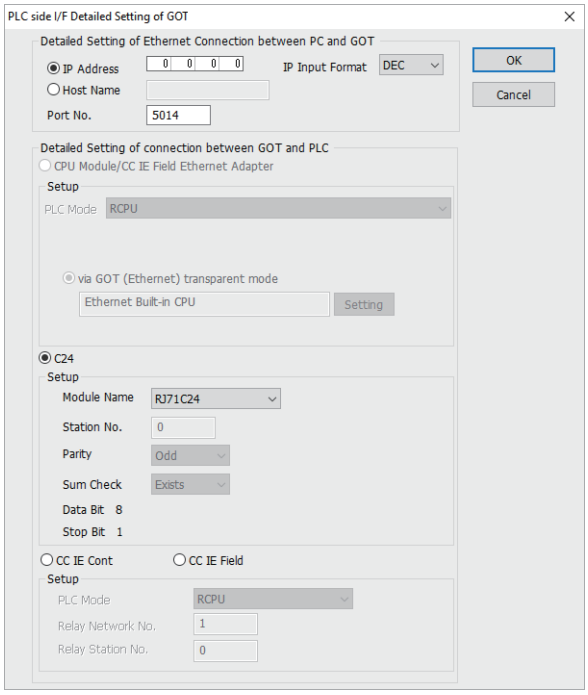
Settings are not required for [Network No.] and [Station No.] because they are not used.



5. Double-click [GOT] of [PLC side I/F].

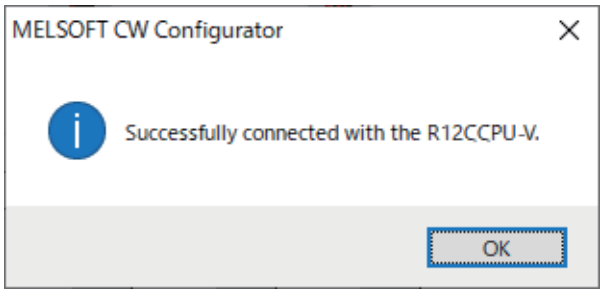
6. When [PLC side I/F Detailed Setting of GOT] is displayed, set [IP Address] and [Port No.] in [Detailed Setting of Ethernet Connection between PC and GOT].

Check the IP address and port number on the GOT side in the [GOT Ethernet Setting] window in GT Designer3.
For details, refer to the following.
📖GT Designer3 (GOT3000) Screen Design Manual



7. In [Detailed Setting of connection between GOT and PLC], select [C24].

8. Return to [Specify Connection Destination], click [Connection Test] to check that connection to the C Controller module (MELSEC iQ-R series) has been established.



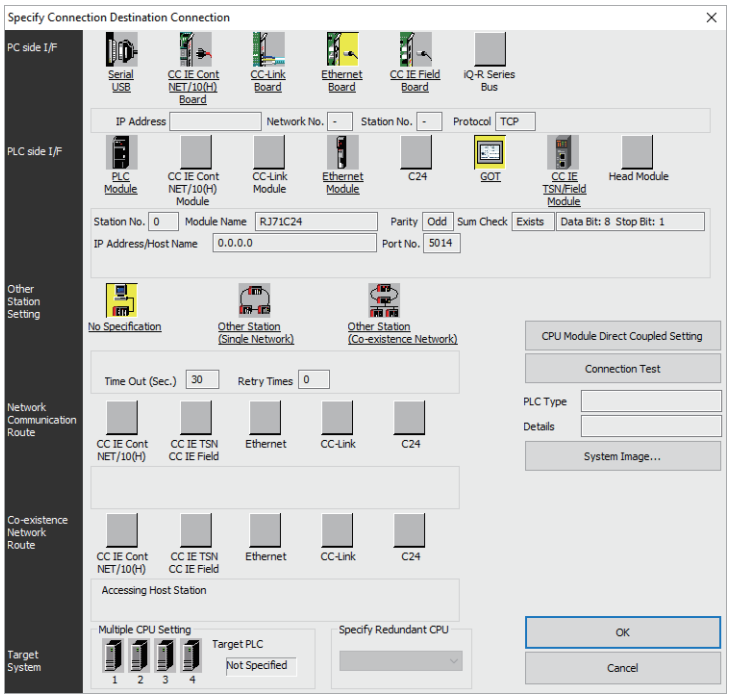
CC-Link IE Controller Network connection between the GOT and the controller

The following shows an example for connection to C Controller module (MELSEC iQ-R series).

Operating procedure

1. Click [Online] → [Current Connection Destination] on CW Configurator.

The [Specify Connection Destination] dialog is displayed.



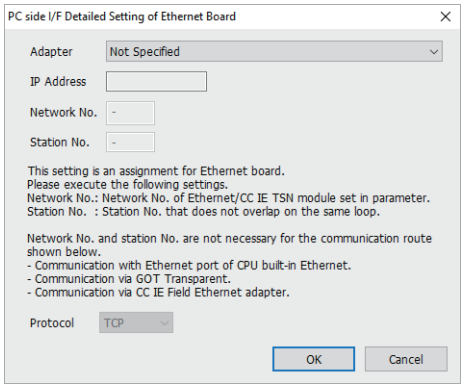
2. Set [Specify Connection Destination] as follows:

- [PC side I/F]: [Ethernet Board]
- [PLC side I/F]: [GOT]
- [Other Station Setting]: [No Specification]

3. Double-click [Ethernet Board] of [PC side I/F].

4. When [PC side I/F Detailed Setting of Ethernet Board] is displayed, select [Adapter].

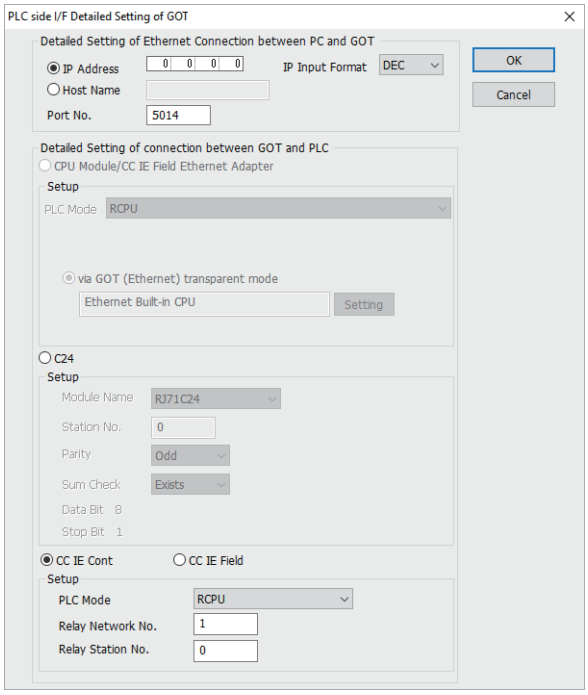
Settings are not required for [Network No.] and [Station No.] because they are not used.



5. Double-click [GOT] of [PLC side I/F].

6. When [PLC side I/F Detailed Setting of GOT] is displayed, set [IP Address] and [Port No.] in [Detailed Setting of Ethernet Connection between PC and GOT].

Check the IP address and port number on the GOT side in the [GOT Ethernet Setting] window in GT Designer3.
For details, refer to the following.
📖GT Designer3 (GOT3000) Screen Design Manual



7. In [Detailed Setting of connection between GOT and PLC], select [CC IE Cont].

8. Set [Detail Setting].

Set [Relay Station No.] as follows:

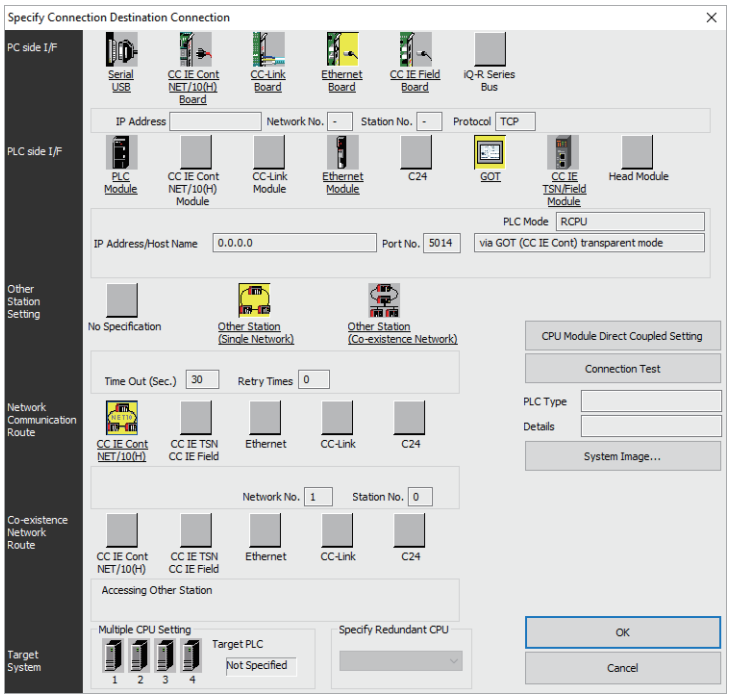
- When the target PLC has the same network number as that of the GOT

Set the number assigned to the PLC that is the target of the FA transparent function and CC-Link IE Controller Network module.

- When the target PLC has a network number different from that of the GOT

Set the number assigned to the PLC that is used as a relay station and CC-Link IE Controller Network module.

9. Return to [Specify Connection Destination], click [Other Station (Single Network)], and double-click [CC IE Cont NET/10(H)].



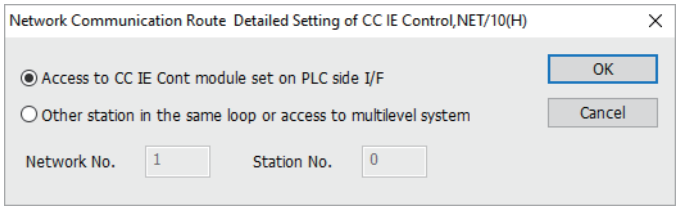
10. Set as shown below and click [OK].

- When the GOT and PLC are on the same network

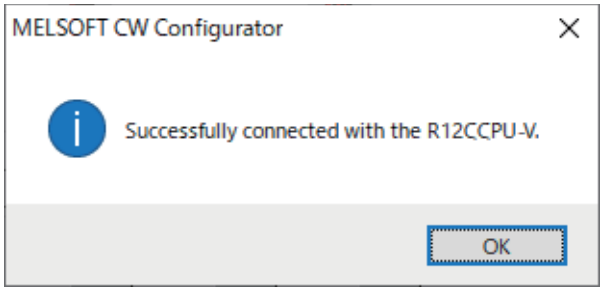
Select [Access to CC IE Cont module set on PLC side I/F].

- When the GOT and PLC are on different networks

Select [Other station in the same loop or access to multilevel system] and set [Network No.] and [Station No.].



11. Return to [Specify Connection Destination], click [Connection Test] to check that connection to the C Controller module (MELSEC iQ-R series) has been established.

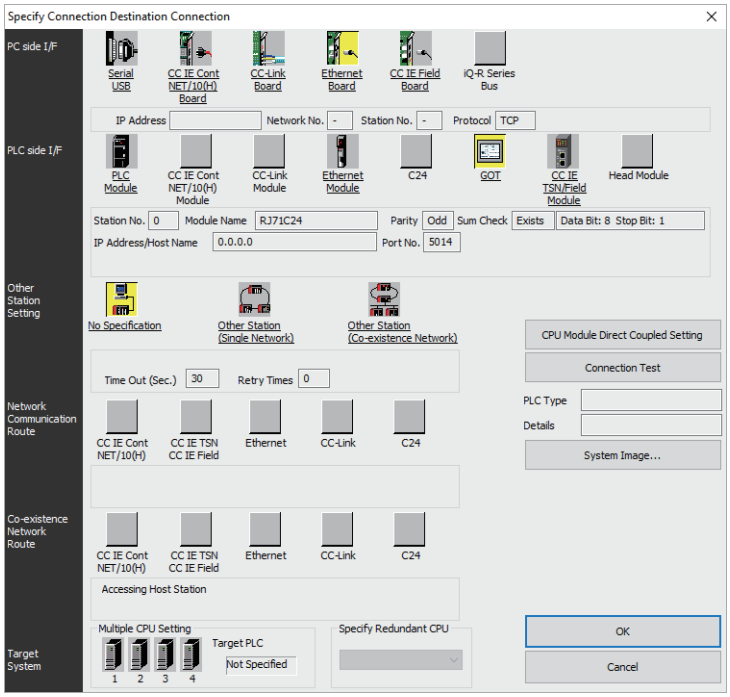


CC-Link IE Field Network connection between the GOT and the controller

Operating procedure

1. Click [Online] → [Current Connection Destination] on CW Configurator.

The [Specify Connection Destination] dialog is displayed.



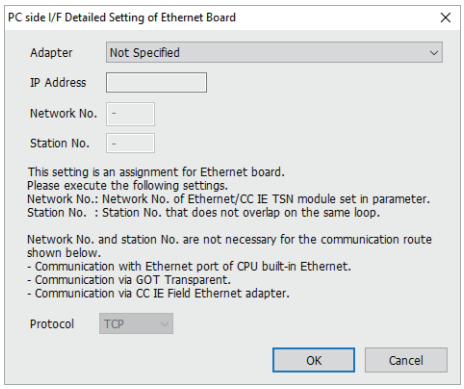
2. Set [Specify Connection Destination] as follows:

- [PC side I/F]: [Ethernet Board]
- [PLC side I/F]: [GOT]
- [Other Station Setting]: [No Specification]

3. Double-click [Ethernet Board] of [PC side I/F].

4. When [PC side I/F Detailed Setting of Ethernet Board] is displayed, select [Adapter].

Settings are not required for [Network No.] and [Station No.] because they are not used.



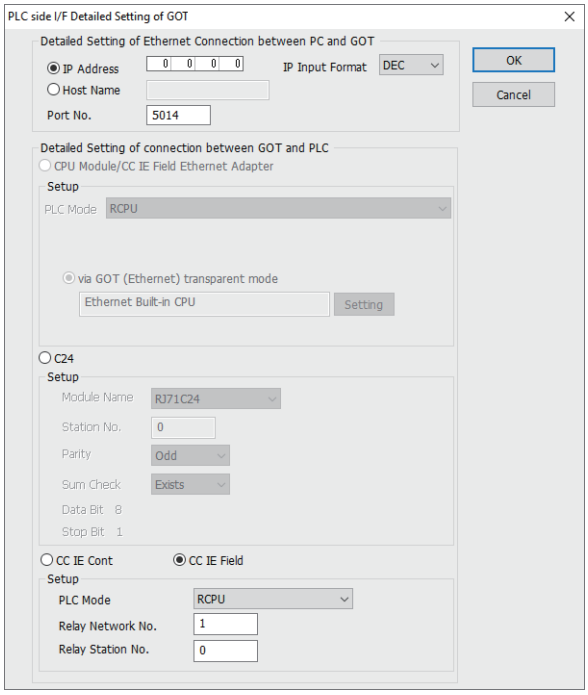
5. Double-click [GOT] of [PLC side I/F].

6. When [PLC side I/F Detailed Setting of GOT] is displayed, set [IP Address] and [Port No.] in [Detailed Setting of Ethernet Connection between PC and GOT].

Check the IP address and port number on the GOT side in the [GOT Ethernet Setting] window in GT Designer3.

For details, refer to the following.

📖GT Designer3 (GOT3000) Screen Design Manual



7. In [Detailed Setting of connection between GOT and PLC], select [CC IE Field].

8. Set [Detail Setting].

Set [Relay Station No.] as follows:

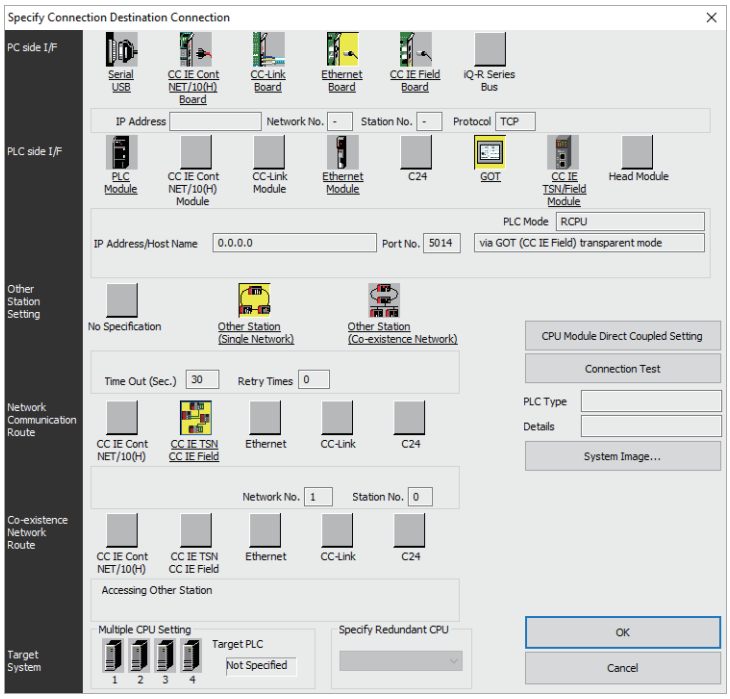
- When the target PLC has the same network number as that of the GOT

Set the number assigned to the PLC that is the target of the FA transparent function and CC-Link IE Field Network module.

- When the target PLC has a network number different from that of the GOT

Set the number assigned to the PLC that is used as a relay station and CC-Link IE Field Network module.

9. Return to [Specify Connection Destination], click [Other Station (Single Network)], and double-click [CC IE TSN CC IE Field].



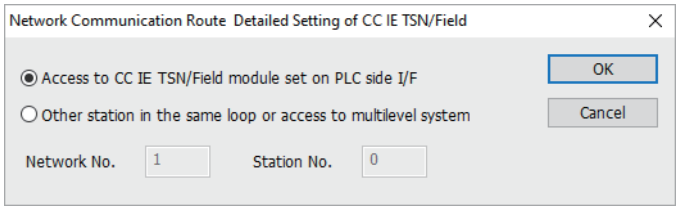
10. Set as shown below and click [OK].

- When the GOT and PLC are on the same network

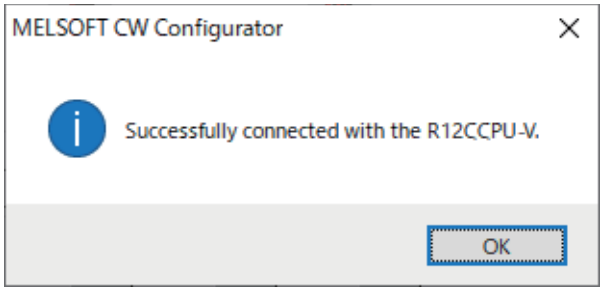
Select [Access to CC IE TSN/Field module set on PLC side I/F].

- When the GOT and PLC are on different networks

Select [Other station in the same loop or access to multilevel system] and set [Network No.] and [Station No.].



11. Return to [Specify Connection Destination], click [Connection Test] to check that connection to the C Controller module (MELSEC iQ-R series) has been established.



74 Accessing with PX Developer

The following shows the controllers that can be accessed with PX Developer using the FA transparent function.

Controller	Reference
PLC CPU (MELSEC-Q series (Q mode))	☞ Page 2675 PLC CPU (MELSEC-Q series (Q mode))

For information on the GOT side or personal computer side settings, refer to the following.

☞ Page 2679 GOT side settings
☞ Page 2681 Personal computer side settings

74.1 PLC CPU (MELSEC-Q series (Q mode))

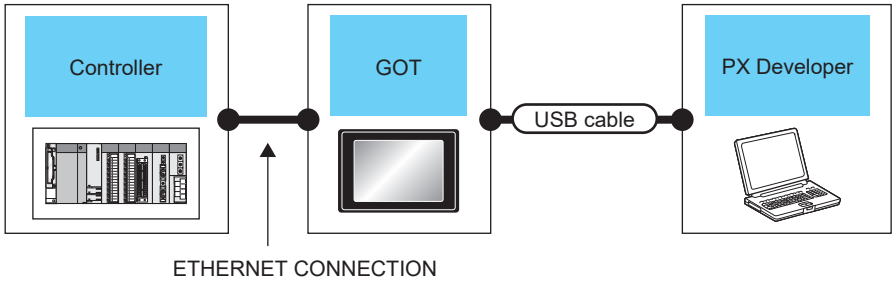
Personal computer to GOT connection	GOT to controller connection	Reference
USB connection	Ethernet connection	☞ Page 2675 GOT to controller Ethernet connection
	Serial connection	☞ Page 2676 Serial connection between the GOT and the controller
	Serial communication connection	☞ Page 2677 Serial communication connection between the GOT and the controller
	Bus connection	☞ Page 2678 Bus connection between the GOT and the controller

74.1.1 Personal computer to GOT USB connection

GOT to controller Ethernet connection

For the system configuration between the GOT and the controller, refer to the following.

Controller	Reference
MELSEC-Q series (Built-in Ethernet port connection)	☞ Page 342 System configuration
MELSEC-Q series (Ethernet module connection)	☞ Page 394 System configuration



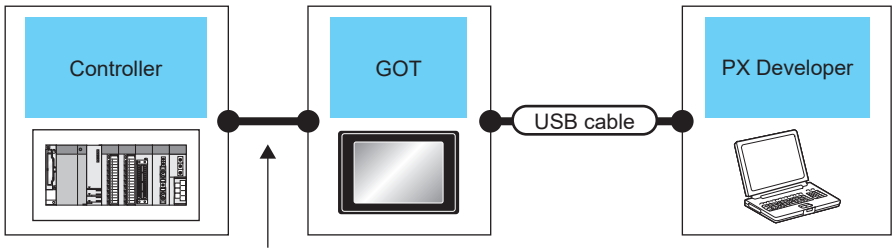
Controller	GOT		Connection cable		Personal computer	Number of connectable devices
	Model	Interface	USB cable	Maximum length	Compatible PX Developer version	
Q02PHCPU Q06PHCPU Q12PHCPU Q25PHCPU	GT37 SoftGOT3000	USB	*1	3 m	1.59M or later	1 personal computer for 1 GOT
Q12PRHCPU (main base) Q25PRHCPU (main base)	GT37 SoftGOT3000	USB	*1	3 m	1.59M or later	1 personal computer for 1 GOT
Q12PRHCPU (remote extension base) Q25PRHCPU (remote extension base)	GT37 SoftGOT3000	USB	*1	3 m	1.59M or later	1 personal computer for 1 GOT

*1 For the USB cables validated by Mitsubishi Electric Corporation, refer to the following Technical Bulletin.
List of Valid Devices Applicable for GOT3000 Series (GOT-A-0233)

Serial connection between the GOT and the controller

For the system configuration between the GOT and the controller, refer to the following.

Controller	Reference
MELSEC-Q series (Built-in serial port connection)	Page 566 System configuration



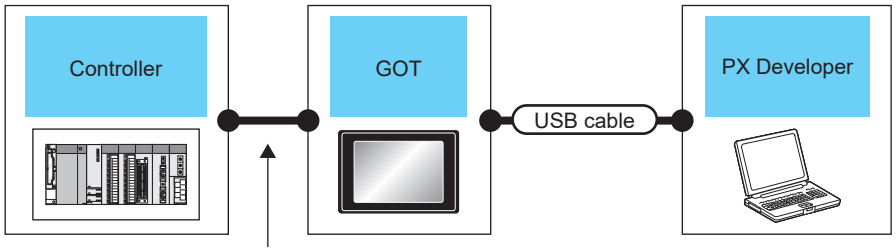
Controller	GOT		Connection cable		Personal computer	Number of connectable devices
	Model	Interface	USB cable	Maximum length	Compatible PX Developer version	
Q02PHCPU Q06PHCPU Q12PHCPU Q25PHCPU	GT37 SoftGOT3000	USB	*1	3 m	1.59M or later	1 personal computer for 1 GOT
Q12PRHCPU (main base) Q25PRHCPU (main base)	GT37 SoftGOT3000	USB	*1	3 m	1.59M or later	1 personal computer for 1 GOT
Q12PRHCPU (remote extension base) Q25PRHCPU (remote extension base)	GT37 SoftGOT3000	USB	*1	3 m	1.59M or later	1 personal computer for 1 GOT

*1 For the USB cables validated by Mitsubishi Electric Corporation, refer to the following Technical Bulletin.
List of Valid Devices Applicable for GOT3000 Series (GOT-A-0233)

Serial communication connection between the GOT and the controller

For the system configuration between the GOT and the controller, refer to the following.

Controller	Reference
MELSEC-Q series (serial communication connection)	☞ Page 587 System configuration



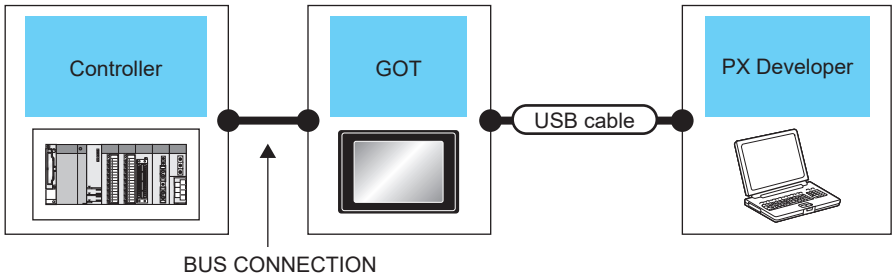
Controller	GOT		Connection cable		Personal computer	Number of connectable devices
	Model	Interface	USB cable	Maximum length	Compatible PX Developer version	
Q02PHCPU Q06PHCPU Q12PHCPU Q25PHCPU	GT37 SoftGOT3000	USB	*1	3 m	1.59M or later	1 personal computer for 1 GOT
Q12PRHCPU (remote extension base) Q25PRHCPU (remote extension base)	GT37 SoftGOT3000	USB	*1	3 m	1.59M or later	1 personal computer for 1 GOT
Q12PRHCPU (extension base) Q25PRHCPU (extension base)	GT37 SoftGOT3000	USB	*1	3 m	1.59M or later	1 personal computer for 1 GOT

*1 For the USB cables validated by Mitsubishi Electric Corporation, refer to the following Technical Bulletin.
List of Valid Devices Applicable for GOT3000 Series (GOT-A-0233)

Bus connection between the GOT and the controller

For the system configuration between the GOT and the controller, refer to the following.

Controller	Reference
MELSEC-Q series (bus connection)	☞ Page 685 System configuration



Controller	GOT		Connection cable		Personal computer	Number of connectable devices
	Model	Interface	USB cable	Maximum length	Compatible PX Developer version	
Q02PHCPU Q06PHCPU Q12PHCPU Q25PHCPU	GT37 SoftGOT3000	USB	*1	3 m	1.59M or later	1 personal computer for 1 GOT
Q12PRHCPU (main base) Q25PRHCPU (main base)	GT37 SoftGOT3000	USB	*1	3 m	1.59M or later	1 personal computer for 1 GOT
Q12PRHCPU (remote extension base) Q25PRHCPU (remote extension base)	GT37 SoftGOT3000	USB	*1	3 m	1.59M or later	1 personal computer for 1 GOT

*1 For the USB cables validated by Mitsubishi Electric Corporation, refer to the following Technical Bulletin.
List of Valid Devices Applicable for GOT3000 Series (GOT-A-0233)

74.2 GOT side settings

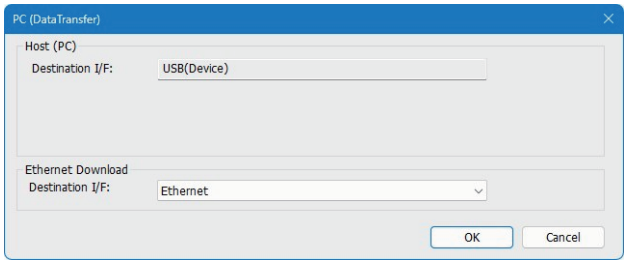
74.2.1 [Controller Setting]

The GOT side settings differ depending on the connection type between the controller and the GOT.
For details on [Controller Setting], refer to the following.

Controller	Reference
MELSEC-Q series (Built-in Ethernet port connection)	☞ Page 350 [Controller Setting]
MELSEC-Q series (Ethernet module connection)	☞ Page 400 [Controller Setting]
MELSEC-Q series (Built-in serial port connection)	☞ Page 568 [Controller Setting]
MELSEC-Q series (serial communication connection)	☞ Page 592 [Controller Setting]
MELSEC-Q series (bus connection)	☞ Page 688 [Controller Setting]

74.2.2 Communication setting with personal computer

Set the communication setting between the GOT and the personal computer.



Operating procedure

1. Select [Common] → [Peripheral Setting] → [PC (Data Transfer)] from the menu.

2. Set the interface of the GOT to be used for communication with the personal computer in the [PC (Data Transfer)] dialog.

For details of the setting contents, refer to the following manual.
📖GT Designer3 (GOT3000) Screen Design Manual

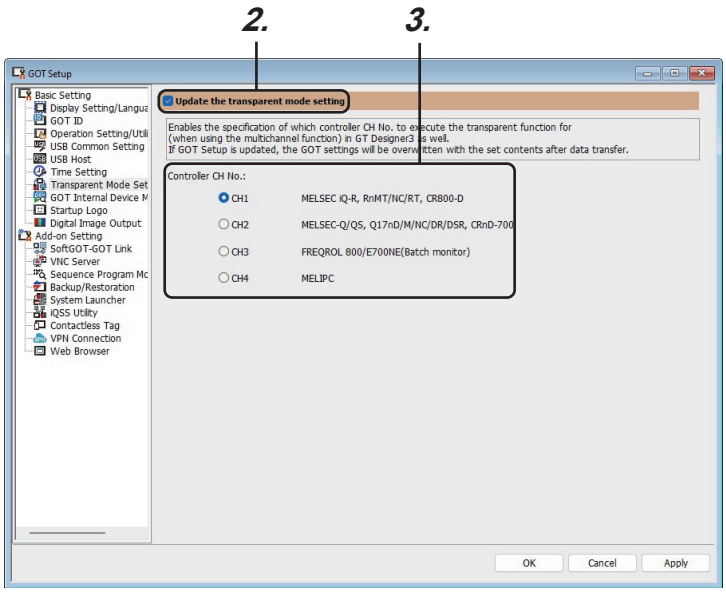
Point

• Controller settings using the GT37 utility
The controller settings can be changed in [Communication Settings] of the GT37 utility after writing [Communication Settings] of project data to GT37.
For details on the GT37 utility, refer to the following manual.
📖GOT3000 Series User's Manual (Utility & Maintenance Functions)

• Priority of the settings in [Controller Setting]
When the settings are configured in GT Designer3 or in the GT37 utility, the latest settings are effective.

74.2.3 GOT Setup

When using the multi-channel function, specify the channel number for which the FA transparent function is executed.



Operating procedure

1. Select [Common] → [GOT Setup] → [Basic Setting] → [Transparent Mode Setting] from the menu.
2. Select [Update the transparent mode setting].
3. As necessary, check one of [CH1] to [CH4].
4. When you have completed the settings, click the [OK] button.

Point

Transparent setting on the utility screen

Transparent setting can be performed by the GOT.

For details of the operating, refer to the following.

GOT3000 Series User's Manual (Utility & Maintenance Functions)

74.3 Personal computer side settings

The following shows the procedure to set the FA transparent function in PX Developer.

Personal computer to GOT connection	GOT to controller connection	Reference
USB connection	Ethernet connection	☞ Page 2681 GOT to controller Ethernet connection
	Serial connection	☞ Page 2683 Serial connection between the GOT and the controller
	Serial communication connection	☞ Page 2685 Serial communication connection between the GOT and the controller
	Bus connection	☞ Page 2687 Bus connection between the GOT and the controller

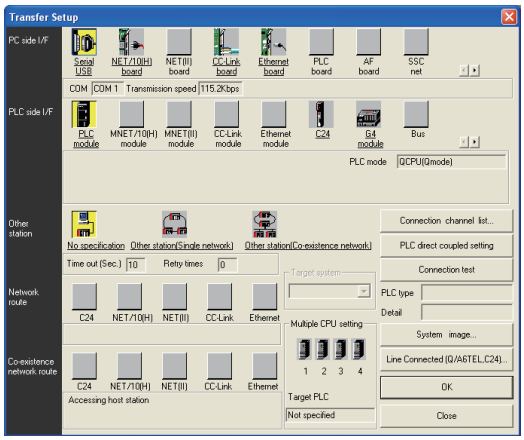
74.3.1 Personal computer to GOT USB connection

GOT to controller Ethernet connection

Operating procedure

1. Click [Online] → [Transfer setup] on PX Developer.

[Transfer Setup] is displayed.

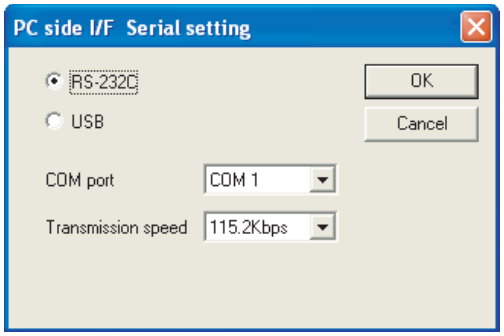


2. Set [Transfer Setup] as follows:

- [PC side I/F]: [Serial USB (COM)]
- [PLC side I/F]: [PLC module]
- [Other Station Setting]: [No Specification]

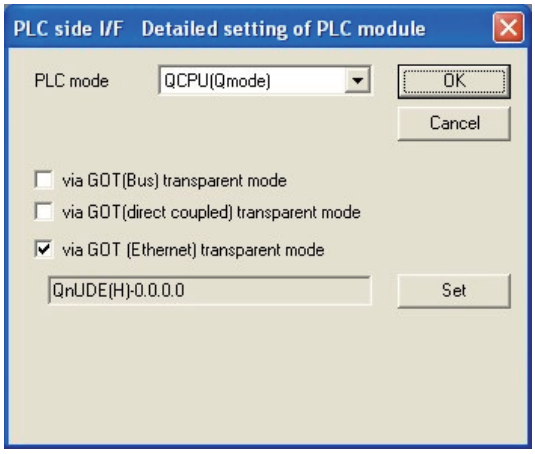
3. Double-click [Serial USB] of [PC side I/F].

4. When [PC side I/F Serial Setting] is displayed, select [USB].



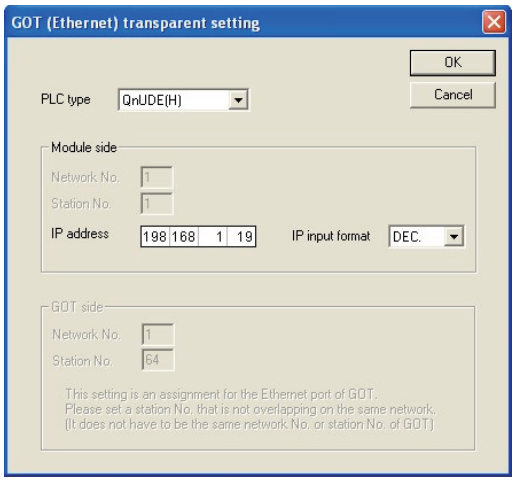
5. Double-click [PLC module] of [PLC side I/F].

6. When [PLC side I/F Detailed setting of PLC module] is displayed, select [via GOT (Ethernet) transparent mode].



7. Click [Set] to display [GOT (Ethernet) transparent setting].

Here, set the Ethernet module, which is firstly connected via a GOT.



8. Set [QJ71E71] for [PLC type].

9. Specify the numbers assigned to the Ethernet module for [Network No.] and [Station No.].

10. Specify the IP address assigned to the Ethernet module for [IP address].

11. The screen returns to [Transfer Setup]. Click [Connection Test] to check that connection to the QCPU (Q mode) has been established.

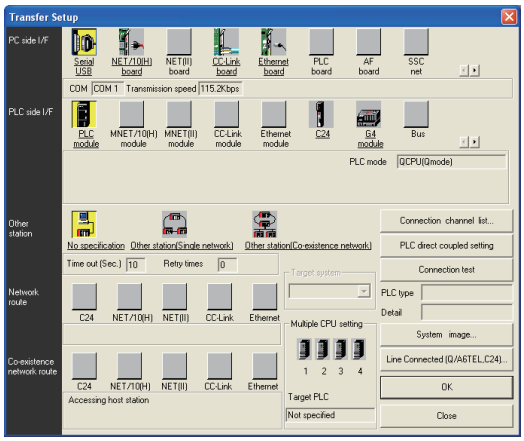
Serial connection between the GOT and the controller

The following shows an example for connection to MELSEC-Q series PLC CPU (Q mode).

Operating procedure

1. Click [Online] → [Transfer setup] on PX Developer.

[Transfer Setup] is displayed.

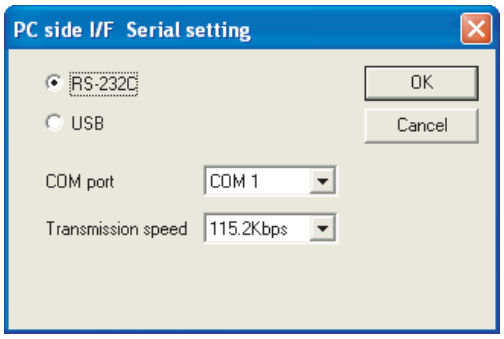


2. Set [Transfer Setup] as follows:

- [PC side I/F]: [Serial USB (COM)]
- [PLC side I/F]: [PLC module]
- [Other Station Setting]: [No Specification]

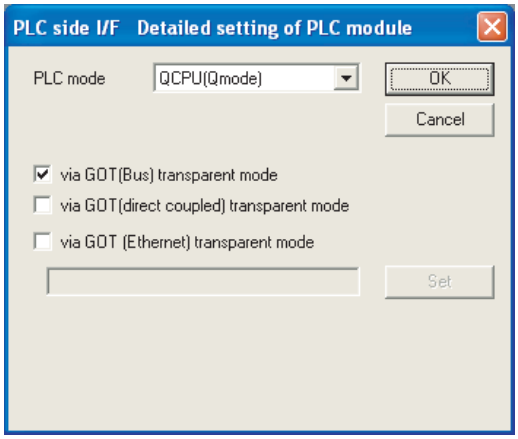
3. Double-click [Serial USB] of [PC side I/F].

4. When [PC side I/F Serial Setting] is displayed, select [USB].



5. Double-click [PLC module] of [PLC side I/F].

6. When [PLC side I/F Detailed setting of PLC module] is displayed, select [via GOT (direct coupled) transparent mode].



7. The screen returns to [Transfer Setup]. Click [Connection Test] to check that connection to the QCPU (Q mode) has been established.

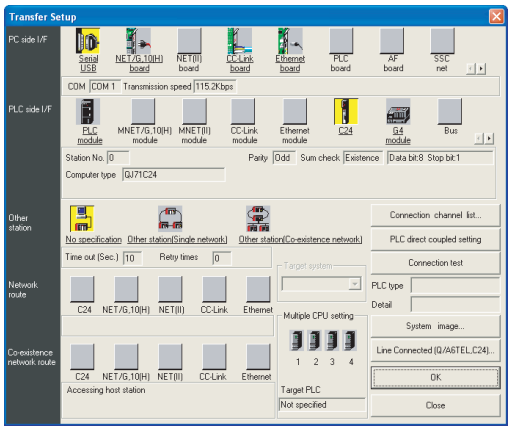
Serial communication connection between the GOT and the controller

The following shows an example for connection to the MELSEC-Q series serial communication module (QJ71C24(N)).

Operating procedure

1. Click [Online] → [Transfer setup] on PX Developer.

[Transfer Setup] is displayed.

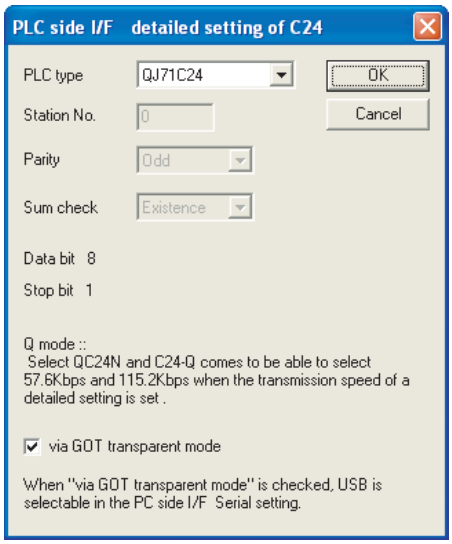


2. Set [Transfer Setup] as follows:

- [PC side I/F]: [Serial USB]
- [PLC side I/F]: [C24]
- [Other Station Setting]: [No Specification]

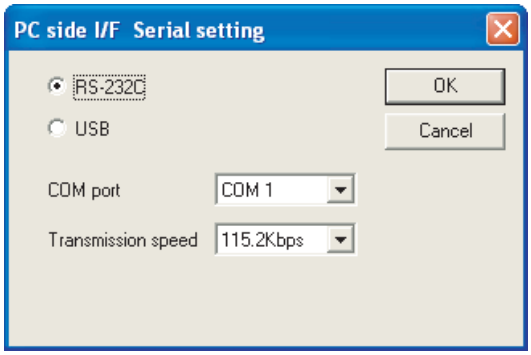
3. Double-click [C24] of [PLC side I/F].

4. When [PLC side I/F detailed setting of C24] is displayed, select [via GOT transparent mode].



5. Double-click [Serial USB] of [PC side I/F].

6. When [PC side I/F Serial Setting] is displayed, select [USB].



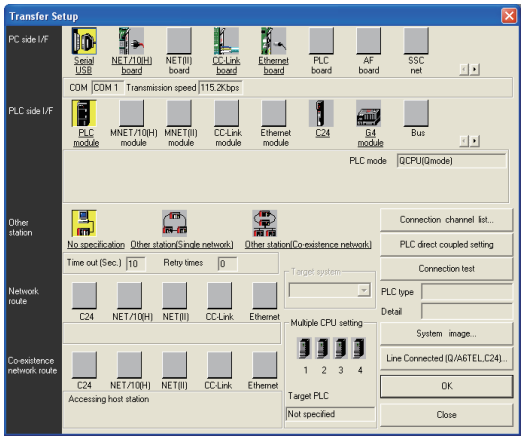
7. The screen returns to [Transfer Setup]. Click [Connection Test] to check that connection to the QCPU (Q mode) has been established.

Bus connection between the GOT and the controller

Operating procedure

1. Click [Online] → [Transfer setup] on PX Developer.

[Transfer Setup] is displayed.

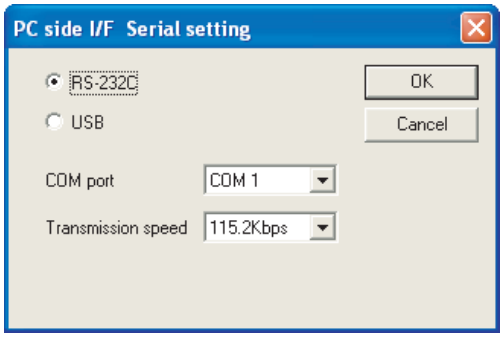


2. Set [Transfer Setup] as follows:

- [PC side I/F]: [Serial USB (COM)]
- [PLC side I/F]: [PLC module]
- [Other Station Setting]: [No Specification]

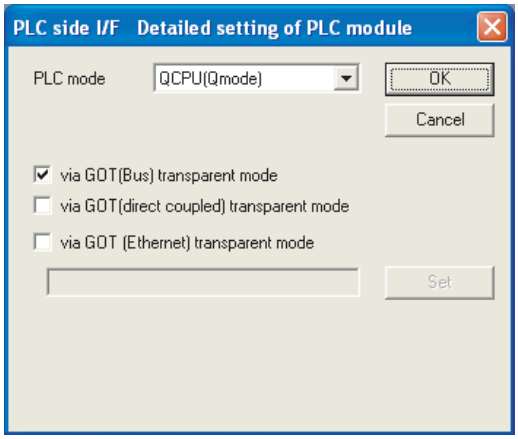
3. Double-click [Serial USB] of [PC side I/F].

4. When [PC side I/F Serial Setting] is displayed, select [USB].



5. Double-click [PLC module] of [PLC side I/F].

6. When [PLC side I/F Detailed setting of PLC module] is displayed, select [via GOT (Bus) transparent mode].



7. The screen returns to [Transfer Setup]. Click [Connection Test] to check that connection to the QCPU (Q mode) has been established.

75 Accessing with GX Works2

The following shows the controllers that can be accessed with GX Works2 using the FA transparent function.

Controller	Reference
PLC CPU (MELSEC-Q series (Q mode))	☞ Page 2688 PLC CPU (MELSEC-Q series (Q mode))
C Controller module (MELSEC-Q series)	☞ Page 2711 C Controller module (MELSEC-Q series)
PLC CPU (MELSEC-L series)	☞ Page 2717 PLC CPU (MELSEC-L series)
Motion CPU (MELSEC-Q series)	☞ Page 2724 Motion CPU (MELSEC-Q series)
PLC CPU (MELSEC-F series)	☞ Page 2730 PLC CPU (MELSEC-F series)
CC-Link IE Field Network head module	☞ Page 2734 CC-Link IE Field Network head module

For information on the GOT side or personal computer side settings, refer to the following.

☞ Page 2735 GOT side settings
☞ Page 2737 Personal computer side settings
☞ Page 2777 Precautions for using GX Works2

75.1 PLC CPU (MELSEC-Q series (Q mode))

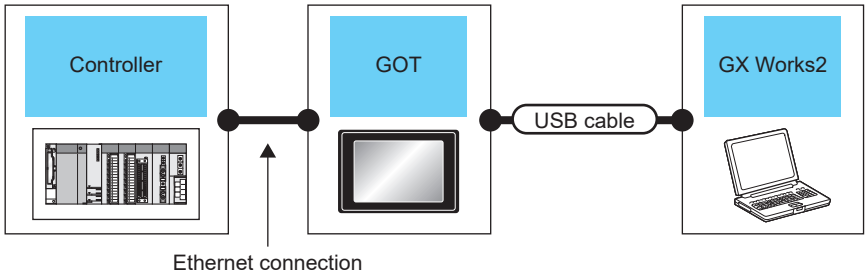
Personal computer to GOT connection	Connection between GOT and controller	Reference
USB connection	Ethernet connection	☞ Page 2689 Ethernet connection between the GOT and the controller
	Serial connection	☞ Page 2691 Serial connection between the GOT and the controller
	Serial communication connection	☞ Page 2693 Serial communication connection between the GOT and the controller
	Bus connection	☞ Page 2695 Bus connection between the GOT and the controller
	CC-Link IE Controller Network connection	☞ Page 2697 CC-Link IE Controller Network connection between the GOT and the controller
	CC-Link IE Field Network connection	☞ Page 2699 CC-Link IE Field Network connection between the GOT and the controller
Ethernet connection	Ethernet connection	☞ Page 2700 Ethernet connection between the GOT and the controller
	Serial connection	☞ Page 2702 Serial connection between the GOT and the controller
	Serial communication connection	☞ Page 2704 Serial communication connection between the GOT and the controller
	Bus connection	☞ Page 2706 Bus connection between the GOT and the controller
	CC-Link IE Controller Network connection	☞ Page 2708 CC-Link IE Controller Network connection between the GOT and the controller
	CC-Link IE Field Network connection	☞ Page 2710 CC-Link IE Field Network connection between the GOT and the controller

75.1.1 USB connection between the personal computer and the GOT

Ethernet connection between the GOT and the controller

For the system configuration between the GOT and the controller, refer to the following.

Controller	Reference
MELSEC-Q series (Built-in Ethernet port connection)	☞ Page 342 System configuration
MELSEC-Q series (Ethernet module connection)	☞ Page 394 System configuration



Controller	GOT		Connection cable		Personal computer	Number of connectable equipment
	Model	Interface	USB cable	Maximum length	Compatible GX Works2 version	
Q00JCPU Q00CPU Q01CPU Q02CPU	GT37 SoftGOT3000	USB	*1	3 m	1.625B or later	1 personal computer for 1 GOT
Q02HCPU Q06HCPU Q12HCPU Q25HCPU	GT37 SoftGOT3000	USB	*1	3 m	1.625B or later	1 personal computer for 1 GOT
Q02PHCPU Q06PHCPU Q12PHCPU Q25PHCPU	GT37 SoftGOT3000	USB	*1	3 m	1.625B or later	1 personal computer for 1 GOT
Q12PRHCPU (main base) Q25PRHCPU (main base)	GT37 SoftGOT3000	USB	*1	3 m	1.625B or later	1 personal computer for 1 GOT
Q00UJCPU Q00UJCPU-S8	GT37 SoftGOT3000	USB	*1	3 m	1.625B or later	1 personal computer for 1 GOT
Q00UCPU Q01UCPU Q02UCPU Q03UDCPU	GT37 SoftGOT3000	USB	*1	3 m	1.625B or later	1 personal computer for 1 GOT
Q04UDHCPU Q06UDHCPU Q10UDHCPU Q13UDHCPU Q20UDHCPU Q26UDHCPU	GT37 SoftGOT3000	USB	*1	3 m	1.625B or later	1 personal computer for 1 GOT

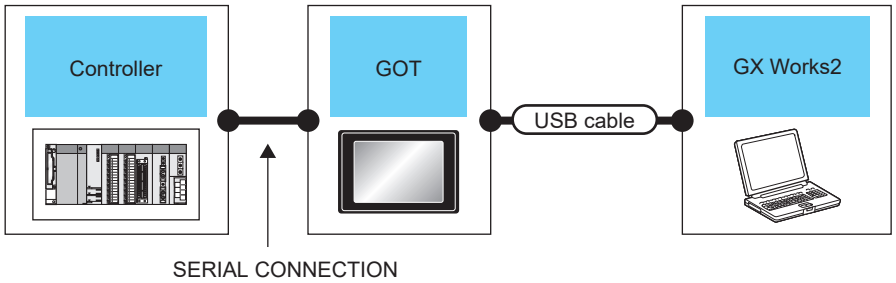
Controller	GOT		Connection cable		Personal computer	Number of connectable equipment
	Model	Interface	USB cable	Maximum length	Compatible GX Works2 version	
Q03UDECPU Q04UDEHCPU Q06UDEHCPU Q10UDEHCPU Q13UDEHCPU Q20UDEHCPU Q26UDEHCPU Q50UDEHCPU Q100UDEHCPU	GT37 SoftGOT3000	USB	*1	3 m	1.625B or later	1 personal computer for 1 GOT
Q03UDVCPU Q04UDVCPU Q06UDVCPU Q13UDVCPU Q26UDVCPU	GT37 SoftGOT3000	USB	*1	3 m	1.625B or later	1 personal computer for 1 GOT

*1 For the USB cables validated by Mitsubishi Electric Corporation, refer to the following Technical Bulletin.
List of Valid Devices Applicable for GOT3000 Series (GOT-A-0233)

Serial connection between the GOT and the controller

For the system configuration between the GOT and the controller, refer to the following.

Controller	Reference
MELSEC-Q series (Built-in serial port connection)	☞ Page 566 System configuration



Controller	GOT		Connection cable		Personal computer	Number of connectable equipment
	Model	Interface	USB cable	Maximum length	Compatible GX Works2 version	
Q00JCPU Q00CPU Q01CPU Q02CPU	GT37 SoftGOT3000	USB	*1	3 m	1.625B or later	1 personal computer for 1 GOT
Q02HCPU Q06HCPU Q12HCPU Q25HCPU	GT37 SoftGOT3000	USB	*1	3 m	1.625B or later	1 personal computer for 1 GOT
Q02PHCPU Q06PHCPU Q12PHCPU Q25PHCPU	GT37 SoftGOT3000	USB	*1	3 m	1.625B or later	1 personal computer for 1 GOT
Q12PRHCPU (main base) Q25PRHCPU (main base)	GT37 SoftGOT3000	USB	*1	3 m	1.625B or later	1 personal computer for 1 GOT
Q00UJCPU Q00UJCPU-S8	GT37 SoftGOT3000	USB	*1	3 m	1.625B or later	1 personal computer for 1 GOT
Q00UCPU Q01UCPU Q02UCPU Q03UDCPU	GT37 SoftGOT3000	USB	*1	3 m	1.625B or later	1 personal computer for 1 GOT
Q04UDHCPU Q06UDHCPU Q10UDHCPU Q13UDHCPU Q20UDHCPU Q26UDHCPU	GT37 SoftGOT3000	USB	*1	3 m	1.625B or later	1 personal computer for 1 GOT
Q03UDECPU Q04UDEHCPU Q06UDEHCPU Q10UDEHCPU Q13UDEHCPU Q20UDEHCPU Q26UDEHCPU Q50UDEHCPU Q100UDEHCPU	GT37 SoftGOT3000	USB	*1	3 m	1.625B or later	1 personal computer for 1 GOT

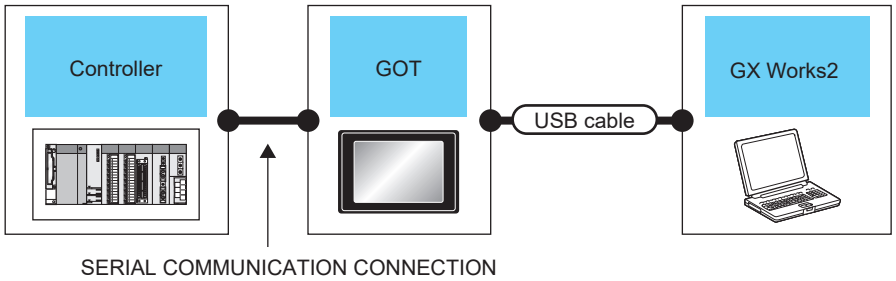
Controller	GOT		Connection cable		Personal computer	Number of connectable equipment
	Model	Interface	USB cable	Maximum length	Compatible GX Works2 version	
Q03UDVCPU Q04UDVCPU Q06UDVCPU Q13UDVCPU Q26UDVCPU	GT37 SoftGOT3000	USB	*1	3 m	1.625B or later	1 personal computer for 1 GOT

*1 For the USB cables validated by Mitsubishi Electric Corporation, refer to the following Technical Bulletin.
List of Validated Devices for the GOT3000 Series (GOT-A-0233)

Serial communication connection between the GOT and the controller

For the system configuration between the GOT and the controller, refer to the following.

Controller	Reference
MELSEC-Q series (serial communication connection)	☞ Page 587 System configuration



Controller	GOT		Connection cable		Personal computer	Number of connectable equipment
	Model	Interface	USB cable	Maximum length	Compatible GX Works2 version	
Q00JCPU Q00CPU Q01CPU Q02CPU	GT37 SoftGOT3000	USB	*1	3 m	1.625B or later	1 personal computer for 1 GOT
Q02HCPU Q06HCPU Q12HCPU Q25HCPU	GT37 SoftGOT3000	USB	*1	3 m	1.625B or later	1 personal computer for 1 GOT
Q02PHCPU Q06PHCPU Q12PHCPU Q25PHCPU	GT37 SoftGOT3000	USB	*1	3 m	1.625B or later	1 personal computer for 1 GOT
Q12PRHCPU (extension base) Q25PRHCPU (extension base)	GT37 SoftGOT3000	USB	*1	3 m	1.625B or later	1 personal computer for 1 GOT
Q00UJCPU Q00UJCPU-S8	GT37 SoftGOT3000	USB	*1	3 m	1.625B or later	1 personal computer for 1 GOT
Q00UCPU Q01UCPU Q02UCPU Q03UDCPU	GT37 SoftGOT3000	USB	*1	3 m	1.625B or later	1 personal computer for 1 GOT
Q04UDHCPU Q06UDHCPU Q10UDHCPU Q13UDHCPU Q20UDHCPU Q26UDHCPU	GT37 SoftGOT3000	USB	*1	3 m	1.625B or later	1 personal computer for 1 GOT

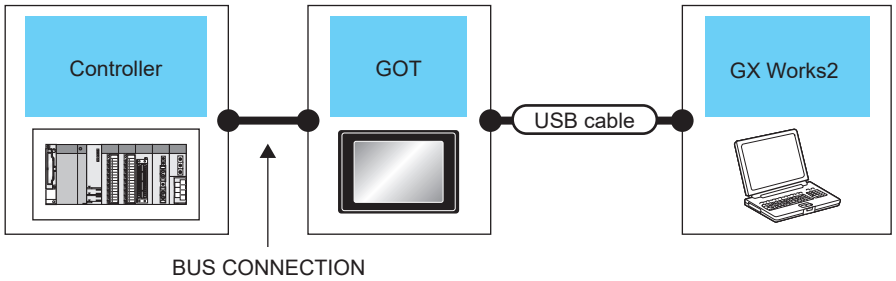
Controller	GOT		Connection cable		Personal computer	Number of connectable equipment
	Model	Interface	USB cable	Maximum length	Compatible GX Works2 version	
Q03UDECPU Q04UDEHCPU Q06UDEHCPU Q10UDEHCPU Q13UDEHCPU Q20UDEHCPU Q26UDEHCPU Q50UDEHCPU Q100UDEHCPU	GT37 SoftGOT3000	USB	*1	3 m	1.625B or later	1 personal computer for 1 GOT
Q03UDVCPU Q04UDVCPU Q06UDVCPU Q13UDVCPU Q26UDVCPU	GT37 SoftGOT3000	USB	*1	3 m	1.625B or later	1 personal computer for 1 GOT

*1 For the USB cables validated by Mitsubishi Electric Corporation, refer to the following Technical Bulletin.
List of Validated Devices for the GOT3000 Series (GOT-A-0233)

Bus connection between the GOT and the controller

For the system configuration between the GOT and the controller, refer to the following.

Controller	Reference
MELSEC-Q series (bus connection)	☞ Page 685 System configuration



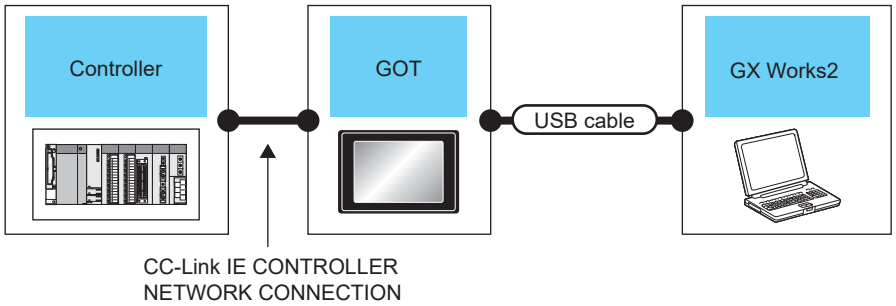
Controller	GOT		Connection cable		Personal computer	Number of connectable equipment
	Model	Interface	USB cable	Maximum length	Compatible GX Works2 version	
Q00JCPU Q00CPU Q01CPU Q02CPU	GT37 SoftGOT3000	USB	*1	3 m	1.625B or later	1 personal computer for 1 GOT
Q02HCPU Q06HCPU Q12HCPU Q25HCPU	GT37 SoftGOT3000	USB	*1	3 m	1.625B or later	1 personal computer for 1 GOT
Q02PHCPU Q06PHCPU Q12PHCPU Q25PHCPU	GT37 SoftGOT3000	USB	*1	3 m	1.625B or later	1 personal computer for 1 GOT
Q00UJCPU Q00UJCPU-S8	GT37 SoftGOT3000	USB	*1	3 m	1.625B or later	1 personal computer for 1 GOT
Q00UCPU Q01UCPU Q02UCPU Q03UDCPU	GT37 SoftGOT3000	USB	*1	3 m	1.625B or later	1 personal computer for 1 GOT
Q04UDHCPU Q06UDHCPU Q10UDHCPU Q13UDHCPU Q20UDHCPU Q26UDHCPU	GT37 SoftGOT3000	USB	*1	3 m	1.625B or later	1 personal computer for 1 GOT
Q03UDECPU Q04UDEHCPU Q06UDEHCPU Q10UDEHCPU Q13UDEHCPU Q20UDEHCPU Q26UDEHCPU Q50UDEHCPU Q100UDEHCPU	GT37 SoftGOT3000	USB	*1	3 m	1.625B or later	1 personal computer for 1 GOT
Q03UDVCPU Q04UDVCPU Q06UDVCPU Q13UDVCPU Q26UDVCPU	GT37 SoftGOT3000	USB	*1	3 m	1.625B or later	1 personal computer for 1 GOT

*1 For the USB cables validated by Mitsubishi Electric Corporation, refer to the following Technical Bulletin.
List of Validated Devices for the GOT3000 Series (GOT-A-0233)

CC-Link IE Controller Network connection between the GOT and the controller

For the system configuration between the GOT and the controller, refer to the following.

Controller	Reference
MELSEC-Q series (CC-Link IE Controller Network connection)	☞ Page 896 System configuration



Controller	GOT		Connection cable		Personal computer	Number of connectable equipment
	Model	Interface	USB cable	Maximum length	Compatible GX Works2 version	
Q00JCPU Q00CPU Q01CPU Q02CPU	GT37 SoftGOT3000	USB	*1	3 m	1.625B or later	1 personal computer for 1 GOT
Q02HCPU Q06HCPU Q12HCPU Q25HCPU	GT37 SoftGOT3000	USB	*1	3 m	1.625B or later	1 personal computer for 1 GOT
Q02PHCPU Q06PHCPU Q12PHCPU Q25PHCPU	GT37 SoftGOT3000	USB	*1	3 m	1.625B or later	1 personal computer for 1 GOT
Q12PRHCPU (main base) Q25PRHCPU (main base)	GT37 SoftGOT3000	USB	*1	3 m	1.625B or later	1 personal computer for 1 GOT
Q00UJCPU Q00UJCPU-S8	GT37 SoftGOT3000	USB	*1	3 m	1.625B or later	1 personal computer for 1 GOT
Q00UCPU Q01UCPU Q02UCPU Q03UDCPU	GT37 SoftGOT3000	USB	*1	3 m	1.625B or later	1 personal computer for 1 GOT
Q04UDHCPU Q06UDHCPU Q10UDHCPU Q13UDHCPU Q20UDHCPU Q26UDHCPU	GT37 SoftGOT3000	USB	*1	3 m	1.625B or later	1 personal computer for 1 GOT

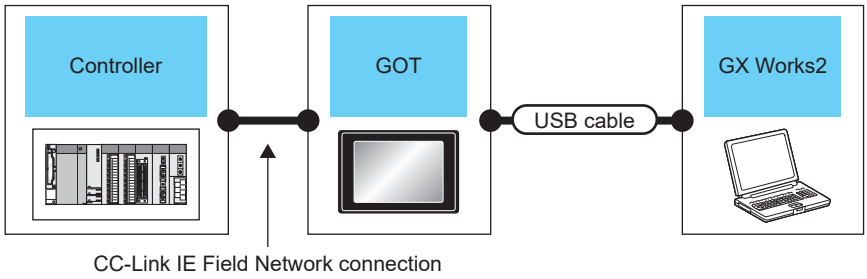
Controller	GOT		Connection cable		Personal computer	Number of connectable equipment
	Model	Interface	USB cable	Maximum length	Compatible GX Works2 version	
Q03UDECPU Q04UDEHCPU Q06UDEHCPU Q10UDEHCPU Q13UDEHCPU Q20UDEHCPU Q26UDEHCPU Q50UDEHCPU Q100UDEHCPU	GT37 SoftGOT3000	USB	*1	3 m	1.625B or later	1 personal computer for 1 GOT
Q03UDVCPU Q04UDVCPU Q06UDVCPU Q13UDVCPU Q26UDVCPU	GT37 SoftGOT3000	USB	*1	3 m	1.625B or later	1 personal computer for 1 GOT

*1 For the USB cables validated by Mitsubishi Electric Corporation, refer to the following Technical Bulletin.
List of Validated Devices for the GOT3000 Series (GOT-A-0233)

CC-Link IE Field Network connection between the GOT and the controller

For the system configuration between the GOT and the controller, refer to the following.

Controller	Reference
MELSEC-Q series (CC-Link IE Field Network connection)	☞ Page 983 System configuration



Controller	GOT		Connection cable		Personal computer	Number of connectable equipment
	Model	Interface	USB cable	Maximum length	Compatible GX Works2 version	
Q00UJCPU Q00UJCPU-S8	GT37 SoftGOT3000	USB	*1	3 m	1.625B or later	1 personal computer for 1 GOT
Q00UCPU Q01UCPU Q02UCPU Q03UDCPU	GT37 SoftGOT3000	USB	*1	3 m	1.625B or later	1 personal computer for 1 GOT
Q04UDHCPU Q06UDHCPU Q10UDHCPU Q13UDHCPU Q20UDHCPU Q26UDHCPU	GT37 SoftGOT3000	USB	*1	3 m	1.625B or later	1 personal computer for 1 GOT
Q03UDECPU Q04UDEHCPU Q06UDEHCPU Q10UDEHCPU Q13UDEHCPU Q20UDEHCPU Q26UDEHCPU Q50UDEHCPU Q100UDEHCPU	GT37 SoftGOT3000	USB	*1	3 m	1.625B or later	1 personal computer for 1 GOT
Q03UDVCPU Q04UDVCPU Q06UDVCPU Q13UDVCPU Q26UDVCPU	GT37 SoftGOT3000	USB	*1	3 m	1.625B or later	1 personal computer for 1 GOT

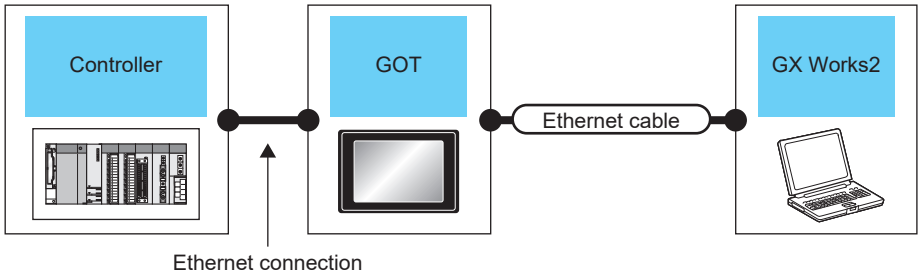
*1 For the USB cables validated by Mitsubishi Electric Corporation, refer to the following Technical Bulletin.
List of Valid Devices Applicable for GOT3000 Series (GOT-A-0233)

75.1.2 Ethernet connection between the personal computer and the GOT

Ethernet connection between the GOT and the controller

For the system configuration between the GOT and the controller, refer to the following.

Controller	Reference
MELSEC-Q series (Built-in Ethernet port connection)	☞ Page 342 System configuration
MELSEC-Q series (Ethernet module connection)	☞ Page 394 System configuration



Controller	GOT		Connection cable		Personal computer	Number of connectable equipment
	Model	Interface	Ethernet cable	Maximum segment length	Compatible GX Works2 version	
Q00JCPU Q00CPU Q01CPU Q02CPU	GT37 SoftGOT3000	Built-in Ethernet interface of GOT	Twisted pair cable ☞ Page 2701 Connection cable	100 m	1.625B or later	1 personal computer for 1 GOT
Q02HCPU Q06HCPU Q12HCPU Q25HCPU	GT37 SoftGOT3000	Built-in Ethernet interface of GOT	Twisted pair cable ☞ Page 2701 Connection cable	100 m	1.625B or later	1 personal computer for 1 GOT
Q02PHCPU Q06PHCPU Q12PHCPU Q25PHCPU	GT37 SoftGOT3000	Built-in Ethernet interface of GOT	Twisted pair cable ☞ Page 2701 Connection cable	100 m	1.625B or later	1 personal computer for 1 GOT
Q12PRHCPU (main base) Q25PRHCPU (main base) Q12PRHCPU (extension base) Q25PRHCPU (extension base)	GT37 SoftGOT3000	Built-in Ethernet interface of GOT	Twisted pair cable ☞ Page 2701 Connection cable	100 m	1.625B or later	1 personal computer for 1 GOT
Q00UJCPU Q00UJCPU-S8	GT37 SoftGOT3000	Built-in Ethernet interface of GOT	Twisted pair cable ☞ Page 2701 Connection cable	100 m	1.625B or later	1 personal computer for 1 GOT
Q00UCPU Q01UCPU Q02UCPU Q03UDCPU	GT37 SoftGOT3000	Built-in Ethernet interface of GOT	Twisted pair cable ☞ Page 2701 Connection cable	100 m	1.625B or later	1 personal computer for 1 GOT

Controller	GOT		Connection cable		Personal computer	Number of connectable equipment
	Model	Interface	Ethernet cable	Maximum segment length	Compatible GX Works2 version	
Q04UDHCPU Q06UDHCPU Q10UDHCPU Q13UDHCPU Q20UDHCPU Q26UDHCPU	GT37 SoftGOT3000	Built-in Ethernet interface of GOT	Twisted pair cable ☞ Page 2701 Connection cable	100 m	1.625B or later	1 personal computer for 1 GOT
Q03UDECPU Q04UDEHCPU Q06UDEHCPU Q10UDEHCPU Q13UDEHCPU Q20UDEHCPU Q26UDEHCPU Q50UDEHCPU Q100UDEHCPU	GT37 SoftGOT3000	Built-in Ethernet interface of GOT	Twisted pair cable ☞ Page 2701 Connection cable	100 m	1.625B or later	1 personal computer for 1 GOT
Q03UDVCPU Q04UDVCPU Q06UDVCPU Q13UDVCPU Q26UDVCPU	GT37 SoftGOT3000	Built-in Ethernet interface of GOT	Twisted pair cable ☞ Page 2701 Connection cable	100 m	1.625B or later	1 personal computer for 1 GOT

■Connection cable

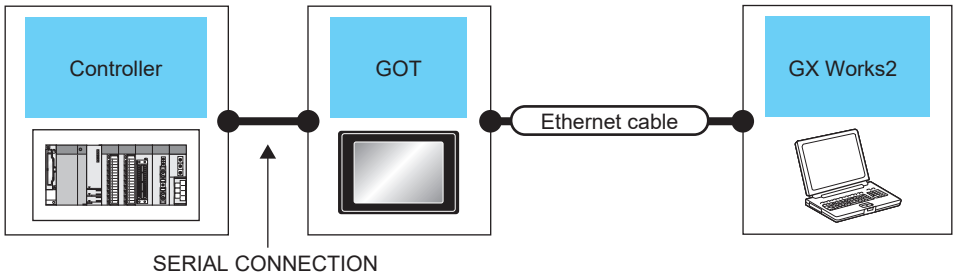
Use a connection cable that meets the following standards.

Standard	Category
10BASE-T	Shielded twisted pair cable (STP) or unshielded twisted pair cable (UTP) of category 3 or higher
100BASE-TX	Shielded twisted pair cable (STP) or unshielded twisted pair cable (UTP) of category 5 or higher
1000BASE-T	Shielded twisted pair cable (STP) or unshielded twisted pair cable (UTP) of category 5e or higher

Serial connection between the GOT and the controller

For the system configuration between the GOT and the controller, refer to the following.

Controller	Reference
MELSEC-Q series (Built-in serial port connection)	☞ Page 566 System configuration



Controller	GOT		Connection cable		Personal computer	Number of connectable equipment
	Model	Interface	Ethernet cable	Maximum segment length	Compatible GX Works2 version	
Q00JCPU Q00CPU Q01CPU Q02CPU	GT37 SoftGOT3000	Built-in Ethernet interface of GOT	Twisted pair cable ☞ Page 2703 Connection cable	100 m	1.625B or later	1 personal computer for 1 GOT
Q02HCPU Q06HCPU Q12HCPU Q25HCPU	GT37 SoftGOT3000	Built-in Ethernet interface of GOT	Twisted pair cable ☞ Page 2703 Connection cable	100 m	1.625B or later	1 personal computer for 1 GOT
Q02PHCPU Q06PHCPU Q12PHCPU Q25PHCPU	GT37 SoftGOT3000	Built-in Ethernet interface of GOT	Twisted pair cable ☞ Page 2703 Connection cable	100 m	1.625B or later	1 personal computer for 1 GOT
Q12PRHCPU (main base) Q25PRHCPU (main base)	GT37 SoftGOT3000	Built-in Ethernet interface of GOT	Twisted pair cable ☞ Page 2703 Connection cable	100 m	1.625B or later	1 personal computer for 1 GOT
Q00UJCPU Q00UJCPU-S8	GT37 SoftGOT3000	Built-in Ethernet interface of GOT	Twisted pair cable ☞ Page 2703 Connection cable	100 m	1.625B or later	1 personal computer for 1 GOT
Q00UCPU Q01UCPU Q02UCPU Q03UDCPU	GT37 SoftGOT3000	Built-in Ethernet interface of GOT	Twisted pair cable ☞ Page 2703 Connection cable	100 m	1.625B or later	1 personal computer for 1 GOT
Q04UDHCPU Q06UDHCPU Q10UDHCPU Q13UDHCPU Q20UDHCPU Q26UDHCPU	GT37 SoftGOT3000	Built-in Ethernet interface of GOT	Twisted pair cable ☞ Page 2703 Connection cable	100 m	1.625B or later	1 personal computer for 1 GOT

Controller	GOT		Connection cable		Personal computer	Number of connectable equipment
	Model	Interface	Ethernet cable	Maximum segment length	Compatible GX Works2 version	
Q03UDECPU Q04UDEHCPU Q06UDEHCPU Q10UDEHCPU Q13UDEHCPU Q20UDEHCPU Q26UDEHCPU Q50UDEHCPU Q100UDEHCPU	GT37 SoftGOT3000	Built-in Ethernet interface of GOT	Twisted pair cable ☞ Page 2703 Connection cable	100 m	1.625B or later	1 personal computer for 1 GOT
Q03UDVCPU Q04UDVCPU Q06UDVCPU Q13UDVCPU Q26UDVCPU	GT37 SoftGOT3000	Built-in Ethernet interface of GOT	Twisted pair cable ☞ Page 2703 Connection cable	100 m	1.625B or later	1 personal computer for 1 GOT

■Connection cable

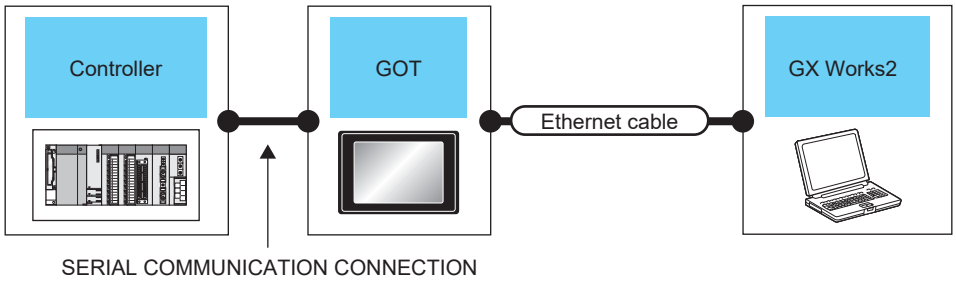
Use a connection cable that meets the following standards.

Standard	Category
10BASE-T	Shielded twisted pair cable (STP) or unshielded twisted pair cable (UTP) of category 3 or higher
100BASE-TX	Shielded twisted pair cable (STP) or unshielded twisted pair cable (UTP) of category 5 or higher
1000BASE-T	Shielded twisted pair cable (STP) or unshielded twisted pair cable (UTP) of category 5e or higher

Serial communication connection between the GOT and the controller

For the system configuration between the GOT and the controller, refer to the following.

Controller	Reference
MELSEC-Q series (serial communication connection)	☞ Page 587 System configuration



Controller	GOT		Connection cable		Personal computer	Number of connectable equipment
	Model	Interface	Ethernet cable	Maximum segment length	Compatible GX Works2 version	
Q00JCPU Q00CPU Q01CPU Q02CPU	GT37 SoftGOT3000	Built-in Ethernet interface of GOT	Twisted pair cable ☞ Page 2705 Connection cable	100 m	1.625B or later	1 personal computer for 1 GOT
Q02HCPU Q06HCPU Q12HCPU Q25HCPU	GT37 SoftGOT3000	Built-in Ethernet interface of GOT	Twisted pair cable ☞ Page 2705 Connection cable	100 m	1.625B or later	1 personal computer for 1 GOT
Q02PHCPU Q06PHCPU Q12PHCPU Q25PHCPU	GT37 SoftGOT3000	Built-in Ethernet interface of GOT	Twisted pair cable ☞ Page 2705 Connection cable	100 m	1.625B or later	1 personal computer for 1 GOT
Q12PRHCPU (extension base) Q25PRHCPU (extension base)	GT37 SoftGOT3000	Built-in Ethernet interface of GOT	Twisted pair cable ☞ Page 2705 Connection cable	100 m	1.625B or later	1 personal computer for 1 GOT
Q00UJCPU Q00UJCPU-S8	GT37 SoftGOT3000	Built-in Ethernet interface of GOT	Twisted pair cable ☞ Page 2705 Connection cable	100 m	1.625B or later	1 personal computer for 1 GOT
Q00UCPU Q01UCPU Q02UCPU Q03UDCPU	GT37 SoftGOT3000	Built-in Ethernet interface of GOT	Twisted pair cable ☞ Page 2705 Connection cable	100 m	1.625B or later	1 personal computer for 1 GOT
Q04UDHCPU Q06UDHCPU Q10UDHCPU Q13UDHCPU Q20UDHCPU Q26UDHCPU	GT37 SoftGOT3000	Built-in Ethernet interface of GOT	Twisted pair cable ☞ Page 2705 Connection cable	100 m	1.625B or later	1 personal computer for 1 GOT

Controller	GOT		Connection cable		Personal computer	Number of connectable equipment
	Model	Interface	Ethernet cable	Maximum segment length	Compatible GX Works2 version	
Q03UDECPU Q04UDEHCPU Q06UDEHCPU Q10UDEHCPU Q13UDEHCPU Q20UDEHCPU Q26UDEHCPU Q50UDEHCPU Q100UDEHCPU	GT37 SoftGOT3000	Built-in Ethernet interface of GOT	Twisted pair cable ☞ Page 2705 Connection cable	100 m	1.625B or later	1 personal computer for 1 GOT
Q03UDVCPU Q04UDVCPU Q06UDVCPU Q13UDVCPU Q26UDVCPU	GT37 SoftGOT3000	Built-in Ethernet interface of GOT	Twisted pair cable ☞ Page 2705 Connection cable	100 m	1.625B or later	1 personal computer for 1 GOT

■Connection cable

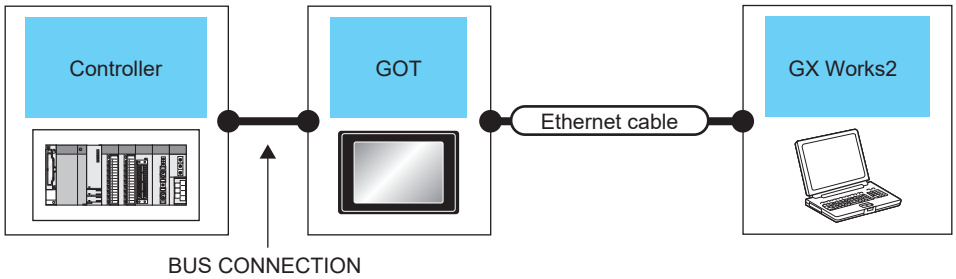
Use a connection cable that meets the following standards.

Standard	Category
10BASE-T	Shielded twisted pair cable (STP) or unshielded twisted pair cable (UTP) of category 3 or higher
100BASE-TX	Shielded twisted pair cable (STP) or unshielded twisted pair cable (UTP) of category 5 or higher
1000BASE-T	Shielded twisted pair cable (STP) or unshielded twisted pair cable (UTP) of category 5e or higher

Bus connection between the GOT and the controller

For the system configuration between the GOT and the controller, refer to the following.

Controller	Reference
MELSEC-Q series (bus connection)	☞ Page 685 System configuration



Controller	GOT		Connection cable		Personal computer	Number of connectable equipment
	Model	Interface	Ethernet cable	Maximum segment length	Compatible GX Works2 version	
Q00JCPU Q00CPU Q01CPU Q02CPU	GT37 SoftGOT3000	Built-in Ethernet interface of GOT	Twisted pair cable ☞ Page 2707 Connection cable	100 m	1.625B or later	1 personal computer for 1 GOT
Q02HCPU Q06HCPU Q12HCPU Q25HCPU	GT37 SoftGOT3000	Built-in Ethernet interface of GOT	Twisted pair cable ☞ Page 2707 Connection cable	100 m	1.625B or later	1 personal computer for 1 GOT
Q02PHCPU Q06PHCPU Q12PHCPU Q25PHCPU	GT37 SoftGOT3000	Built-in Ethernet interface of GOT	Twisted pair cable ☞ Page 2707 Connection cable	100 m	1.625B or later	1 personal computer for 1 GOT
Q00UJCPU Q00UJCPU-S8	GT37 SoftGOT3000	Built-in Ethernet interface of GOT	Twisted pair cable ☞ Page 2707 Connection cable	100 m	1.625B or later	1 personal computer for 1 GOT
Q00UCPU Q01UCPU Q02UCPU Q03UDCPU	GT37 SoftGOT3000	Built-in Ethernet interface of GOT	Twisted pair cable ☞ Page 2707 Connection cable	100 m	1.625B or later	1 personal computer for 1 GOT
Q04UDHCPU Q06UDHCPU Q10UDHCPU Q13UDHCPU Q20UDHCPU Q26UDHCPU	GT37 SoftGOT3000	Built-in Ethernet interface of GOT	Twisted pair cable ☞ Page 2707 Connection cable	100 m	1.625B or later	1 personal computer for 1 GOT
Q03UDECPU Q04UDEHCPU Q06UDEHCPU Q10UDEHCPU Q13UDEHCPU Q20UDEHCPU Q26UDEHCPU Q50UDEHCPU Q100UDEHCPU	GT37 SoftGOT3000	Built-in Ethernet interface of GOT	Twisted pair cable ☞ Page 2707 Connection cable	100 m	1.625B or later	1 personal computer for 1 GOT

Controller	GOT		Connection cable		Personal computer	Number of connectable equipment
	Model	Interface	Ethernet cable	Maximum segment length	Compatible GX Works2 version	
Q03UDVCPU Q04UDVCPU Q06UDVCPU Q13UDVCPU Q26UDVCPU	GT37 SoftGOT3000	Built-in Ethernet interface of GOT	Twisted pair cable ☞ Page 2707 Connection cable	100 m	1.625B or later	1 personal computer for 1 GOT

■Connection cable

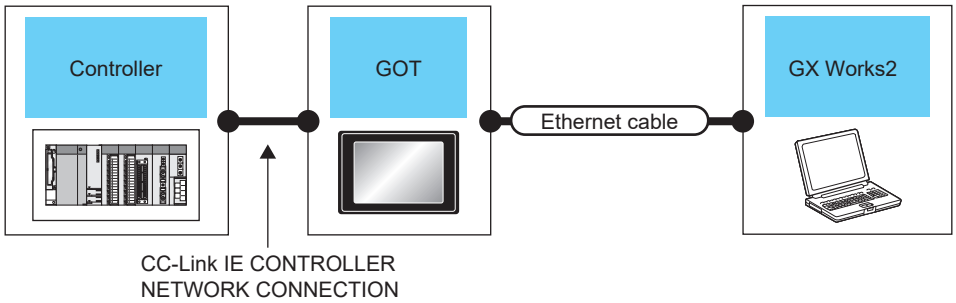
Use a connection cable that meets the following standards.

Standard	Category
10BASE-T	Shielded twisted pair cable (STP) or unshielded twisted pair cable (UTP) of category 3 or higher
100BASE-TX	Shielded twisted pair cable (STP) or unshielded twisted pair cable (UTP) of category 5 or higher
1000BASE-T	Shielded twisted pair cable (STP) or unshielded twisted pair cable (UTP) of category 5e or higher

CC-Link IE Controller Network connection between the GOT and the controller

For the system configuration between the GOT and the controller, refer to the following.

Controller	Reference
MELSEC-Q series (CC-Link IE Controller Network connection)	☞ Page 896 System configuration



Controller	GOT		Connection cable		Personal computer	Number of connectable equipment
	Model	Interface	Ethernet cable	Maximum segment length	Compatible GX Works2 version	
Q00JCPU Q00CPU Q01CPU Q02CPU	GT37 SoftGOT3000	Built-in Ethernet interface of GOT	Twisted pair cable ☞ Page 2709 Connection cable	100 m	1.625B or later	1 personal computer for 1 GOT
Q02HCPU Q06HCPU Q12HCPU Q25HCPU	GT37 SoftGOT3000	Built-in Ethernet interface of GOT	Twisted pair cable ☞ Page 2709 Connection cable	100 m	1.625B or later	1 personal computer for 1 GOT
Q02PHCPU Q06PHCPU Q12PHCPU Q25PHCPU	GT37 SoftGOT3000	Built-in Ethernet interface of GOT	Twisted pair cable ☞ Page 2709 Connection cable	100 m	1.625B or later	1 personal computer for 1 GOT
Q12PRHCPU (main base) Q25PRHCPU (main base)	GT37 SoftGOT3000	Built-in Ethernet interface of GOT	Twisted pair cable ☞ Page 2709 Connection cable	100 m	1.625B or later	1 personal computer for 1 GOT
Q00UJCPU Q00UJCPU-S8	GT37 SoftGOT3000	Built-in Ethernet interface of GOT	Twisted pair cable ☞ Page 2709 Connection cable	100 m	1.625B or later	1 personal computer for 1 GOT
Q00UCPU Q01UCPU Q02UCPU Q03UDCPU	GT37 SoftGOT3000	Built-in Ethernet interface of GOT	Twisted pair cable ☞ Page 2709 Connection cable	100 m	1.625B or later	1 personal computer for 1 GOT
Q04UDHCPU Q06UDHCPU Q10UDHCPU Q13UDHCPU Q20UDHCPU Q26UDHCPU	GT37 SoftGOT3000	Built-in Ethernet interface of GOT	Twisted pair cable ☞ Page 2709 Connection cable	100 m	1.625B or later	1 personal computer for 1 GOT

Controller	GOT		Connection cable		Personal computer	Number of connectable equipment
	Model	Interface	Ethernet cable	Maximum segment length	Compatible GX Works2 version	
Q03UDECPU Q04UDEHCPU Q06UDEHCPU Q10UDEHCPU Q13UDEHCPU Q20UDEHCPU Q26UDEHCPU Q50UDEHCPU Q100UDEHCPU	GT37 SoftGOT3000	Built-in Ethernet interface of GOT	Twisted pair cable ☞ Page 2709 Connection cable	100 m	1.625B or later	1 personal computer for 1 GOT
Q03UDVCPU Q04UDVCPU Q06UDVCPU Q13UDVCPU Q26UDVCPU	GT37 SoftGOT3000	Built-in Ethernet interface of GOT	Twisted pair cable ☞ Page 2709 Connection cable	100 m	1.625B or later	1 personal computer for 1 GOT

■Connection cable

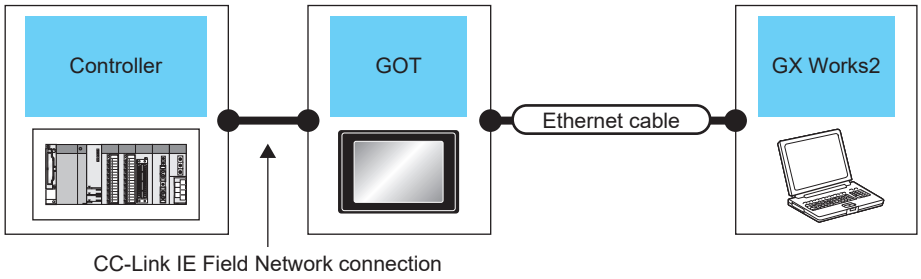
Use a connection cable that meets the following standards.

Standard	Category
10BASE-T	Shielded twisted pair cable (STP) or unshielded twisted pair cable (UTP) of category 3 or higher
100BASE-TX	Shielded twisted pair cable (STP) or unshielded twisted pair cable (UTP) of category 5 or higher
1000BASE-T	Shielded twisted pair cable (STP) or unshielded twisted pair cable (UTP) of category 5e or higher

CC-Link IE Field Network connection between the GOT and the controller

For the system configuration between the GOT and the controller, refer to the following.

Controller	Reference
MELSEC-Q series (CC-Link IE Field Network connection)	☞ Page 983 System configuration



Controller	GOT		Connection cable		Personal computer	Number of connectable equipment
	Model	Interface	Ethernet cable	Maximum segment length	Compatible GX Works2 version	
Q00UJCPU Q00UJCPU-S8	GT37 SoftGOT3000	Built-in Ethernet interface of GOT	Twisted pair cable ☞ Page 2710 Connection cable	100 m	1.625B or later	1 personal computer for 1 GOT
Q00UCPU Q01UCPU Q02UCPU Q03UDCPU	GT37 SoftGOT3000	Built-in Ethernet interface of GOT	Twisted pair cable ☞ Page 2710 Connection cable	100 m	1.625B or later	1 personal computer for 1 GOT
Q04UDHCPU Q06UDHCPU Q10UDHCPU Q13UDHCPU Q20UDHCPU Q26UDHCPU	GT37 SoftGOT3000	Built-in Ethernet interface of GOT	Twisted pair cable ☞ Page 2710 Connection cable	100 m	1.625B or later	1 personal computer for 1 GOT
Q03UDECPU Q04UDEHCPU Q06UDEHCPU Q10UDEHCPU Q13UDEHCPU Q20UDEHCPU Q26UDEHCPU Q50UDEHCPU Q100UDEHCPU	GT37 SoftGOT3000	Built-in Ethernet interface of GOT	Twisted pair cable ☞ Page 2710 Connection cable	100 m	1.625B or later	1 personal computer for 1 GOT
Q03UDVCPU Q04UDVCPU Q06UDVCPU Q13UDVCPU Q26UDVCPU	GT37 SoftGOT3000	Built-in Ethernet interface of GOT	Twisted pair cable ☞ Page 2710 Connection cable	100 m	1.625B or later	1 personal computer for 1 GOT

■Connection cable

Use a connection cable that meets the following standards.

Standard	Category
10BASE-T	Shielded twisted pair cable (STP) or unshielded twisted pair cable (UTP) of category 3 or higher
100BASE-TX	Shielded twisted pair cable (STP) or unshielded twisted pair cable (UTP) of category 5 or higher
1000BASE-T	Shielded twisted pair cable (STP) or unshielded twisted pair cable (UTP) of category 5e or higher

75.2 C Controller module (MELSEC-Q series)

Personal computer to GOT connection	Connection between GOT and controller	Reference
USB connection	Ethernet connection	☞ Page 2712 Ethernet connection between the GOT and the controller
	Bus connection	☞ Page 2712 Bus connection between the GOT and the controller
	CC-Link IE Controller Network connection	☞ Page 2713 CC-Link IE Controller Network connection between the GOT and the controller
	CC-Link IE Field Network connection	☞ Page 2713 CC-Link IE Field Network connection between the GOT and the controller
Ethernet connection	Bus connection	☞ Page 2714 Bus connection between the GOT and the controller
	CC-Link IE Controller Network connection	☞ Page 2715 CC-Link IE Controller Network connection between the GOT and the controller
	CC-Link IE Field Network connection	☞ Page 2716 CC-Link IE Field Network connection between the GOT and the controller

Point

In the multiple CPU system, when the GOT is connected to the PLC CPU (MELSEC-Q series) that is installed to the same base unit as the C Controller module (MELSEC-Q series), the GOT can access the C Controller module (MELSEC-Q series) using the FA transparent function.
For details, refer to the following.

- USB connection between the personal computer and the GOT

☞ Page 2691 Serial connection between the GOT and the controller

- Ethernet connection between the personal computer and the GOT

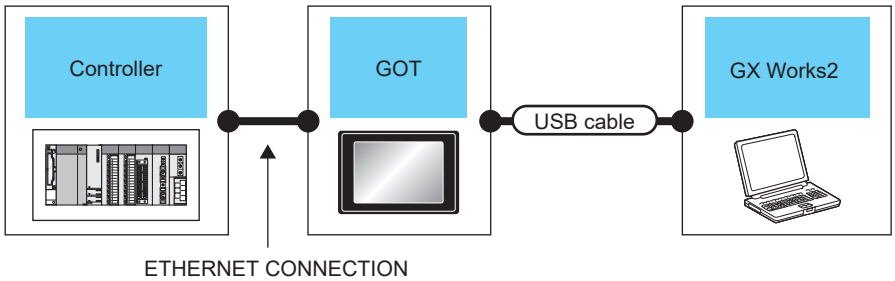
☞ Page 2702 Serial connection between the GOT and the controller

75.2.1 Personal computer to GOT USB connection

Ethernet connection between the GOT and the controller

For the system configuration between the GOT and the controller, refer to the following.

Controller	Reference
C Controller module (MELSEC-Q series) (Built-in Ethernet port connection)	☞ Page 342 System configuration
C Controller module (MELSEC-Q series) (Ethernet module connection)	☞ Page 394 System configuration



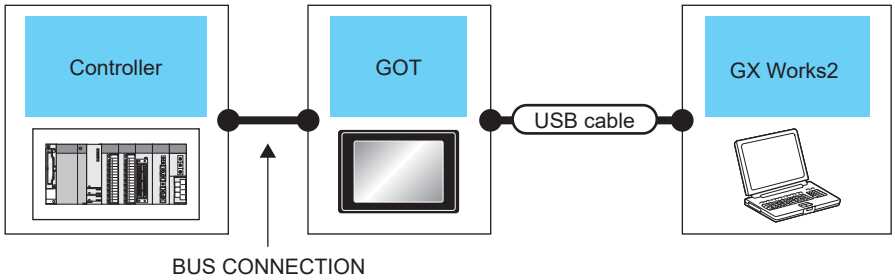
Controller	GOT		Connection cable		Personal computer	Number of connectable equipment
	Model	Interface	USB cable	Maximum length	Compatible GX Works2 version	
Q24DHCCPU-V Q24DHCCPU-VG Q24DHCCPU-LS Q26DHCCPU-LS	GT37 SoftGOT3000	USB	*1	3 m	1.625B or later	1 personal computer for 1 GOT

*1 For the USB cables validated by Mitsubishi Electric Corporation, refer to the following Technical Bulletin.
List of Valid Devices Applicable for GOT3000 Series (GOT-A-0233)

Bus connection between the GOT and the controller

For the system configuration between the GOT and the controller, refer to the following.

Controller	Reference
C Controller module (MELSEC-Q series) (bus connection)	☞ Page 685 System configuration



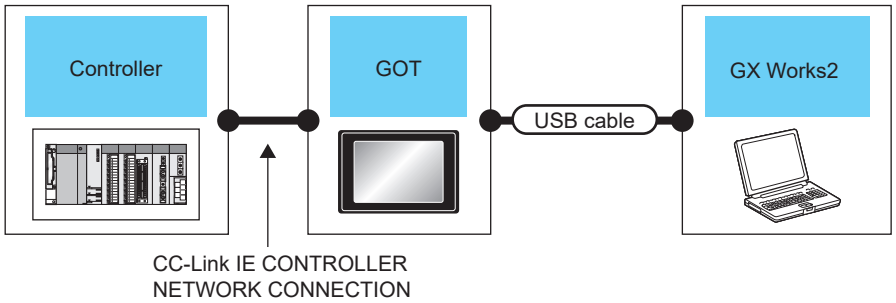
Controller	GOT		Connection cable		Personal computer	Number of connectable equipment
	Model	Interface	USB cable	Maximum length	Compatible GX Works2 version	
Q24DHCCPU-V Q24DHCCPU-VG Q24DHCCPU-LS Q26DHCCPU-LS	GT37 SoftGOT3000	USB	*1	3 m	1.625B or later	1 personal computer for 1 GOT

*1 For the USB cables validated by Mitsubishi Electric Corporation, refer to the following Technical Bulletin.
List of Valid Devices Applicable for GOT3000 Series (GOT-A-0233)

CC-Link IE Controller Network connection between the GOT and the controller

For the system configuration between the GOT and the controller, refer to the following.

Controller	Reference
C Controller module (MELSEC-Q series) (CC-Link IE Controller Network connection)	☞ Page 896 System configuration



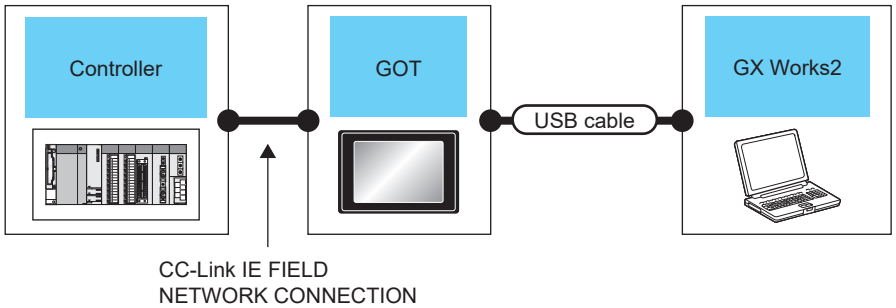
Controller	GOT		Connection cable		Personal computer	Number of connectable equipment
	Model	Interface	USB cable	Maximum length	Compatible GX Works2 version	
Q12DCCPU-V Q24DHCCPU-V Q24DHCCPU-VG Q24DHCCPU-LS Q26DHCCPU-LS	GT37 SoftGOT3000	USB	*1	3 m	1.625B or later	1 personal computer for 1 GOT

*1 For the USB cables validated by Mitsubishi Electric Corporation, refer to the following Technical Bulletin.
List of Valid Devices Applicable for GOT3000 Series (GOT-A-0233)

CC-Link IE Field Network connection between the GOT and the controller

For the system configuration between the GOT and the controller, refer to the following.

Controller	Reference
C Controller module (MELSEC-Q series) (CC-Link IE Field Network connection)	☞ Page 983 System configuration



Controller	GOT		Connection cable		Personal computer	Number of connectable equipment
	Model	Interface	USB cable	Maximum length	Compatible GX Works2 version	
Q12DCCPU-V Q24DHCCPU-V Q24DHCCPU-VG Q24DHCCPU-LS Q26DHCCPU-LS	GT37 SoftGOT3000	USB	*1	3 m	1.625B or later	1 personal computer for 1 GOT

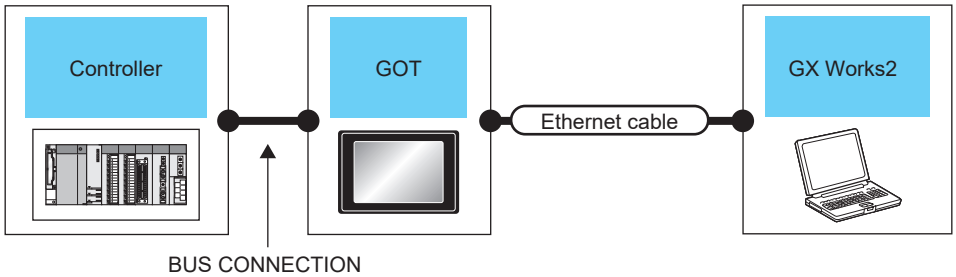
*1 For the USB cables validated by Mitsubishi Electric Corporation, refer to the following Technical Bulletin.
List of Valid Devices Applicable for GOT3000 Series (GOT-A-0233)

75.2.2 Ethernet connection between the personal computer and the GOT

Bus connection between the GOT and the controller

For the system configuration between the GOT and the controller, refer to the following.

Controller	Reference
C Controller module (MELSEC-Q series) (bus connection)	☞ Page 685 System configuration



Controller	GOT		Connection cable		Personal computer	Number of connectable equipment
	Model	Interface	Ethernet cable	Maximum segment length	Compatible GX Works2 version	
Q24DHCCPU-V Q24DHCCPU-VG Q24DHCCPU-LS Q26DHCCPU-LS	GT37 SoftGOT3000	Built-in Ethernet interface of GOT	Twisted pair cable ☞ Page 2714 Connection cable	100 m	1.625B or later	1 personal computer for 1 GOT

■Connection cable

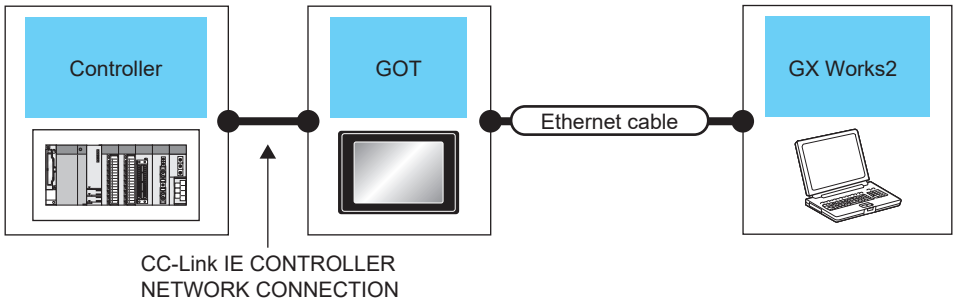
Use a connection cable that meets the following standards.

Standard	Category
10BASE-T	Shielded twisted pair cable (STP) or unshielded twisted pair cable (UTP) of category 3 or higher
100BASE-TX	Shielded twisted pair cable (STP) or unshielded twisted pair cable (UTP) of category 5 or higher
1000BASE-T	Shielded twisted pair cable (STP) or unshielded twisted pair cable (UTP) of category 5e or higher

CC-Link IE Controller Network connection between the GOT and the controller

For the system configuration between the GOT and the controller, refer to the following.

Controller	Reference
C Controller module (MELSEC-Q series) (CC-Link IE Controller Network connection)	☞ Page 896 System configuration



Controller	GOT		Connection cable		Personal computer	Number of connectable equipment
	Model	Interface	Ethernet cable	Maximum segment length	Compatible GX Works2 version	
Q12DCCPU-V Q24DHCCPU-V Q24DHCCPU-VG Q24DHCCPU-LS Q26DHCCPU-LS	GT37 SoftGOT3000	Built-in Ethernet interface of GOT	Twisted pair cable ☞ Page 2715 Connection cable	100 m	1.625B or later	1 personal computer for 1 GOT

■Connection cable

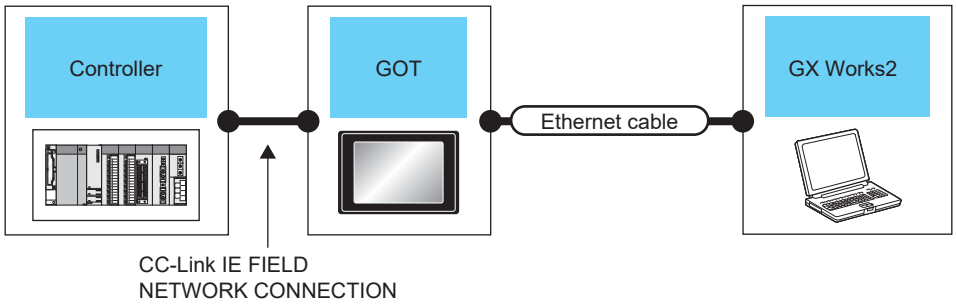
Use a connection cable that meets the following standards.

Standard	Category
10BASE-T	Shielded twisted pair cable (STP) or unshielded twisted pair cable (UTP) of category 3 or higher
100BASE-TX	Shielded twisted pair cable (STP) or unshielded twisted pair cable (UTP) of category 5 or higher
1000BASE-T	Shielded twisted pair cable (STP) or unshielded twisted pair cable (UTP) of category 5e or higher

CC-Link IE Field Network connection between the GOT and the controller

For the system configuration between the GOT and the controller, refer to the following.

Controller	Reference
C Controller module (MELSEC-Q series) (CC-Link IE Field Network connection)	☞ Page 983 System configuration



Controller	GOT		Connection cable		Personal computer	Number of connectable equipment
	Model	Interface	Ethernet cable	Maximum segment length	Compatible GX Works2 version	
Q12DCCPU-V Q24DHCCPU-V Q24DHCCPU-VG Q24DHCCPU-LS Q26DHCCPU-LS	GT37 SoftGOT3000	Built-in Ethernet interface of GOT	Twisted pair cable ☞ Page 2716 Connection cable	100 m	1.625B or later	1 personal computer for 1 GOT

■Connection cable

Use a connection cable that meets the following standards.

Standard	Category
10BASE-T	Shielded twisted pair cable (STP) or unshielded twisted pair cable (UTP) of category 3 or higher
100BASE-TX	Shielded twisted pair cable (STP) or unshielded twisted pair cable (UTP) of category 5 or higher
1000BASE-T	Shielded twisted pair cable (STP) or unshielded twisted pair cable (UTP) of category 5e or higher

75.3 PLC CPU (MELSEC-L series)

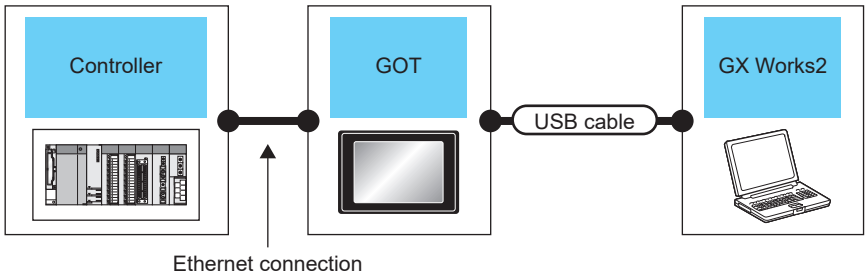
Personal computer to GOT connection	Connection between GOT and controller	Reference
USB connection	Ethernet connection	☞ Page 2717 Ethernet connection between the GOT and the controller
	Serial connection	☞ Page 2718 Serial connection between the GOT and the controller
	Serial communication connection	☞ Page 2718 Serial communication connection between the GOT and the controller
	CC-Link IE Field Network connection	☞ Page 2719 CC-Link IE Field Network connection between the GOT and the controller
Ethernet connection	Ethernet connection	☞ Page 2720 Ethernet connection between the GOT and the controller
	Serial connection	☞ Page 2721 Serial connection between the GOT and the controller
	Serial communication connection	☞ Page 2722 Serial communication connection between the GOT and the controller
	CC-Link IE Field Network connection	☞ Page 2723 CC-Link IE Field Network connection between the GOT and the controller

75.3.1 USB connection between the personal computer and the GOT

Ethernet connection between the GOT and the controller

For the system configuration between the GOT and the controller, refer to the following.

Controller	Reference
MELSEC-L series (Built-in Ethernet port connection)	☞ Page 437 System configuration
MELSEC-L series (Ethernet module connection)	☞ Page 462 System configuration



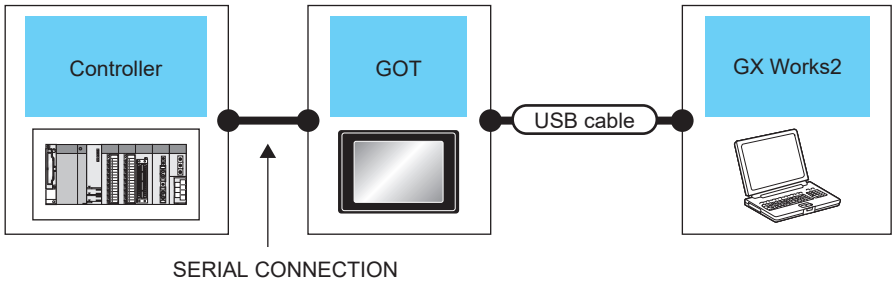
Controller	GOT		Connection cable		Personal computer	Number of connectable equipment
	Model	Interface	USB cable	Maximum length	Compatible GX Works2 version	
L02CPU L06CPU L26CPU L26CPU-BT L06CPU-P L26CPU-P L02CPU-P L26CPU-PBT L02SCPU L02SCPU-P	GT37 SoftGOT3000	USB	*1	3 m	1.625B or later	1 personal computer for 1 GOT

*1 For the USB cables validated by Mitsubishi Electric Corporation, refer to the following Technical Bulletin.
📖List of Valid Devices Applicable for GOT3000 Series (GOT-A-0233)

Serial connection between the GOT and the controller

For the system configuration between the GOT and the controller, refer to the following.

Controller	Reference
MELSEC-L series (Built-in serial port connection)	☞ Page 605 System configuration



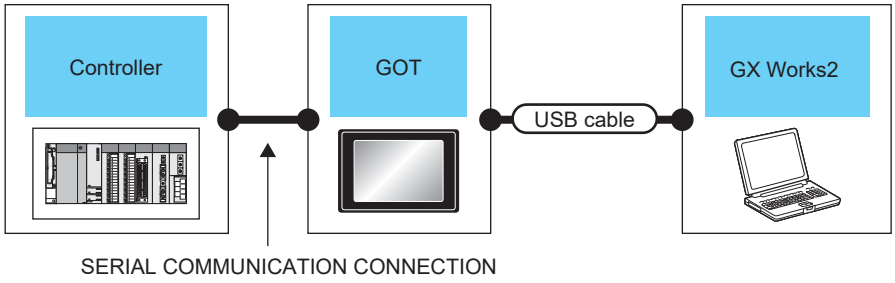
Controller	GOT		Connection cable		Personal computer	Number of connectable equipment
	Model	Interface	USB cable	Maximum length	Compatible GX Works2 version	
L02CPU L06CPU L26CPU L26CPU-BT L06CPU-P L26CPU-P L02CPU-P L26CPU-PBT L02SCPU L02SCPU-P	GT37 SoftGOT3000	USB	*1	3 m	1.625B or later	1 personal computer for 1 GOT

*1 For the USB cables validated by Mitsubishi Electric Corporation, refer to the following Technical Bulletin.
List of Validated Devices for the GOT3000 Series (GOT-A-0233)

Serial communication connection between the GOT and the controller

For the system configuration between the GOT and the controller, refer to the following.

Controller	Reference
MELSEC-L series (serial communication connection)	☞ Page 619 System configuration



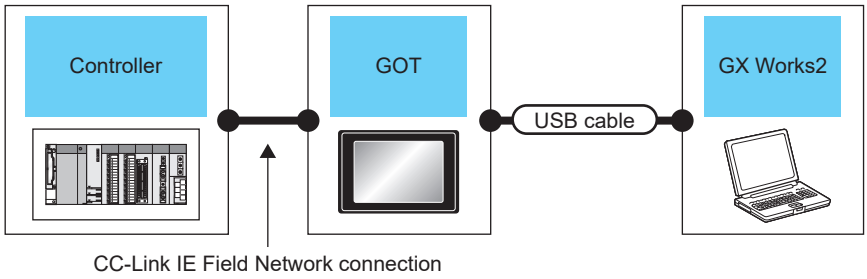
Controller	GOT		Connection cable		Personal computer	Number of connectable equipment
	Model	Interface	USB cable	Maximum length	Compatible GX Works2 version	
L02CPU L06CPU L26CPU L26CPU-BT L06CPU-P L26CPU-P L02CPU-P L26CPU-PBT L02SCPU L02SCPU-P	GT37 SoftGOT3000	USB	*1	3 m	1.625B or later	1 personal computer for 1 GOT

*1 For the USB cables validated by Mitsubishi Electric Corporation, refer to the following Technical Bulletin.
List of Validated Devices for the GOT3000 Series (GOT-A-0233)

CC-Link IE Field Network connection between the GOT and the controller

For the system configuration between the GOT and the controller, refer to the following.

Controller	Reference
MELSEC-L series (CC-Link IE Field Network connection)	☞ Page 1002 System configuration



Controller	GOT		Connection cable		Personal computer	Number of connectable equipment
	Model	Interface	USB cable	Maximum length	Compatible GX Works2 version	
L02CPU L06CPU L26CPU L26CPU-BT L06CPU-P L26CPU-P L02CPU-P L26CPU-PBT L02SCPU L02SCPU-P	GT37 SoftGOT3000	USB	*1	3 m	1.625B or later	1 personal computer for 1 GOT

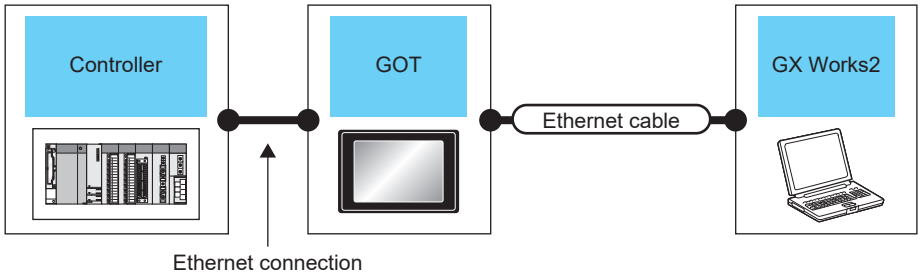
*1 For the USB cables validated by Mitsubishi Electric Corporation, refer to the following Technical Bulletin.
List of Valid Devices Applicable for GOT3000 Series (GOT-A-0233)

75.3.2 Ethernet connection between the personal computer and the GOT

Ethernet connection between the GOT and the controller

For the system configuration between the GOT and the controller, refer to the following.

Controller	Reference
MELSEC-L series (Built-in Ethernet port connection)	☞ Page 437 System configuration
MELSEC-L series (Ethernet module connection)	☞ Page 462 System configuration



Controller	GOT		Connection cable		Personal computer	Number of connectable equipment
	Model	Interface	Ethernet cable	Maximum segment length	Compatible GX Works2 version	
L02CPU L06CPU L26CPU L26CPU-BT L02CPU-P L06CPU-P L26CPU-P L26CPU-PBT L02SCPU L02SCPU-P	GT37 SoftGOT3000	Built-in Ethernet interface of GOT	Twisted pair cable ☞ Page 2720 Connection cable	100 m	1.625B or later	1 personal computer for 1 GOT

■Connection cable

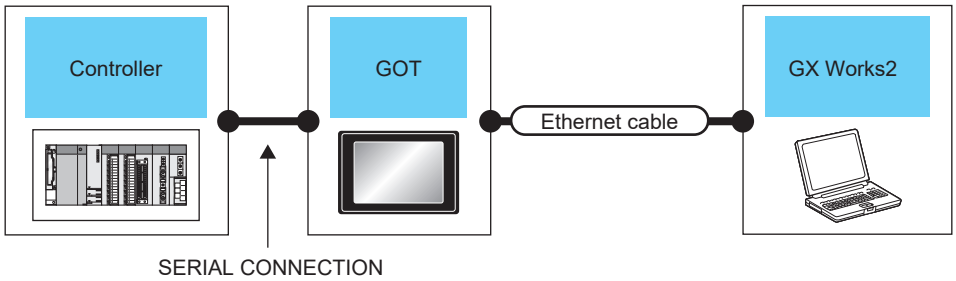
Use a connection cable that meets the following standards.

Standard	Category
10BASE-T	Shielded twisted pair cable (STP) or unshielded twisted pair cable (UTP) of category 3 or higher
100BASE-TX	Shielded twisted pair cable (STP) or unshielded twisted pair cable (UTP) of category 5 or higher
1000BASE-T	Shielded twisted pair cable (STP) or unshielded twisted pair cable (UTP) of category 5e or higher

Serial connection between the GOT and the controller

For the system configuration between the GOT and the controller, refer to the following.

Controller	Reference
MELSEC-L series (Built-in serial port connection)	☞ Page 605 System configuration



Controller	GOT		Connection cable		Personal computer	Number of connectable equipment
	Model	Interface	Ethernet cable	Maximum segment length	Compatible GX Works2 version	
L02CPU L06CPU L26CPU L26CPU-BT L02CPU-P L06CPU-P L26CPU-P L26CPU-PBT L02SCPU L02SCPU-P	GT37 SoftGOT3000	Built-in Ethernet interface of GOT	Twisted pair cable ☞ Page 2721 Connection cable	100 m	1.625B or later	1 personal computer for 1 GOT

■Connection cable

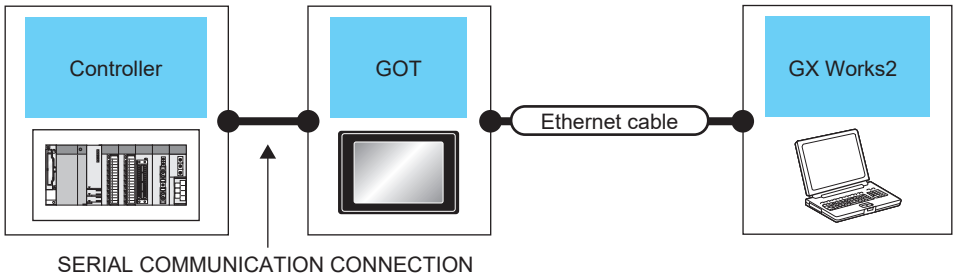
Use a connection cable that meets the following standards.

Standard	Category
10BASE-T	Shielded twisted pair cable (STP) or unshielded twisted pair cable (UTP) of category 3 or higher
100BASE-TX	Shielded twisted pair cable (STP) or unshielded twisted pair cable (UTP) of category 5 or higher
1000BASE-T	Shielded twisted pair cable (STP) or unshielded twisted pair cable (UTP) of category 5e or higher

Serial communication connection between the GOT and the controller

For the system configuration between the GOT and the controller, refer to the following.

Controller	Reference
MELSEC-L series (serial communication connection)	☞ Page 619 System configuration



Controller	GOT		Connection cable		Personal computer	Number of connectable equipment
	Model	Interface	Ethernet cable	Maximum segment length	Compatible GX Works2 version	
L02CPU L06CPU L26CPU L26CPU-BT L02CPU-P L06CPU-P L26CPU-P L26CPU-PBT L02SCPU L02SCPU-P	GT37 SoftGOT3000	Built-in Ethernet interface of GOT	Twisted pair cable ☞ Page 2722 Connection cable	100 m	1.625B or later	1 personal computer for 1 GOT

■Connection cable

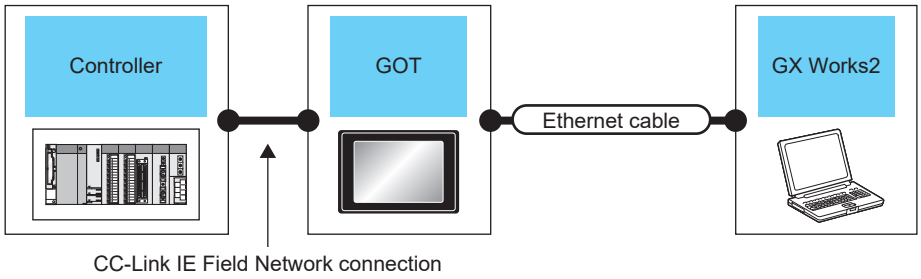
Use a connection cable that meets the following standards.

Standard	Category
10BASE-T	Shielded twisted pair cable (STP) or unshielded twisted pair cable (UTP) of category 3 or higher
100BASE-TX	Shielded twisted pair cable (STP) or unshielded twisted pair cable (UTP) of category 5 or higher
1000BASE-T	Shielded twisted pair cable (STP) or unshielded twisted pair cable (UTP) of category 5e or higher

CC-Link IE Field Network connection between the GOT and the controller

For the system configuration between the GOT and the controller, refer to the following.

Controller	Reference
MELSEC-L series (CC-Link IE Field Network connection)	☞ Page 1002 System configuration



Controller	GOT		Connection cable		Personal computer	Number of connectable equipment
	Model	Interface	Ethernet cable	Maximum segment length	Compatible GX Works2 version	
L02CPU L06CPU L26CPU L26CPU-BT L02CPU-P L06CPU-P L26CPU-P L26CPU-PBT L02SCPU L02SCPU-P	GT37 SoftGOT3000	Built-in Ethernet interface of GOT	Twisted pair cable ☞ Page 2710 Connection cable	100 m	1.625B or later	1 personal computer for 1 GOT

■Connection cable

Use a connection cable that meets the following standards.

Standard	Category
10BASE-T	Shielded twisted pair cable (STP) or unshielded twisted pair cable (UTP) of category 3 or higher
100BASE-TX	Shielded twisted pair cable (STP) or unshielded twisted pair cable (UTP) of category 5 or higher
1000BASE-T	Shielded twisted pair cable (STP) or unshielded twisted pair cable (UTP) of category 5e or higher

75.4 Motion CPU (MELSEC-Q series)

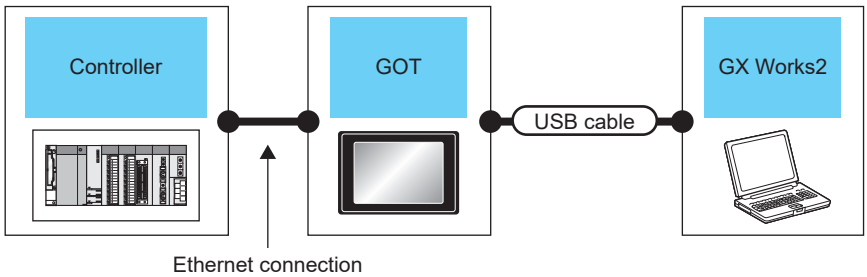
Personal computer to GOT connection	Connection between GOT and controller	Reference
USB connection	Ethernet connection	☞ Page 2724 Ethernet connection between the GOT and the controller
	Serial connection	☞ Page 2725 Serial connection between the GOT and the controller
	Bus connection	☞ Page 2725 Bus connection between the GOT and the controller
	CC-Link IE Field Network connection	☞ Page 2726 CC-Link IE Field Network connection between the GOT and the controller
Ethernet connection	Serial connection	☞ Page 2727 Serial connection between the GOT and the controller
	Bus connection	☞ Page 2728 Bus connection between the GOT and the controller
	CC-Link IE Field Network connection	☞ Page 2729 CC-Link IE Field Network connection between the GOT and the controller

75.4.1 USB connection between the personal computer and the GOT

Ethernet connection between the GOT and the controller

For the system configuration between the GOT and the controller, refer to the following.

Connection between GOT and controller	Reference
Motion CPU (MELSEC-Q series) (Ethernet module connection)	☞ Page 394 System configuration



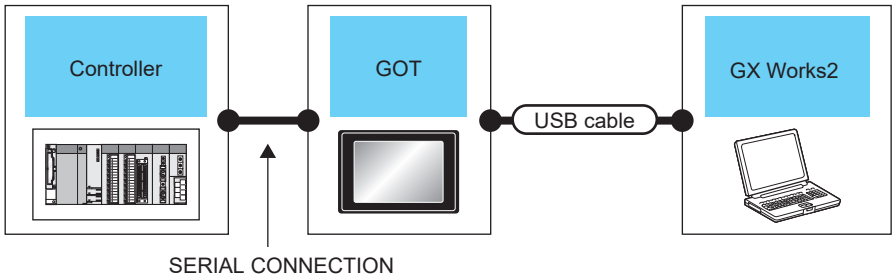
Controller	GOT		Connection cable		Personal computer	Number of connectable equipment
	Model	Interface	USB cable	Maximum length	Compatible GX Works2 version	
Q170MCPU Q170MSCPU Q170MSCPU-S1	GT37 SoftGOT3000	USB	*1	3 m	1.625B or later	1 personal computer for 1 GOT

*1 For the USB cables validated by Mitsubishi Electric Corporation, refer to the following Technical Bulletin.
List of Valid Devices Applicable for GOT3000 Series (GOT-A-0233)

Serial connection between the GOT and the controller

For the system configuration between the GOT and the controller, refer to the following.

Connection between GOT and controller	Reference
Motion CPU (MELSEC-Q series) (Built-in serial port connection)	☞ Page 566 System configuration



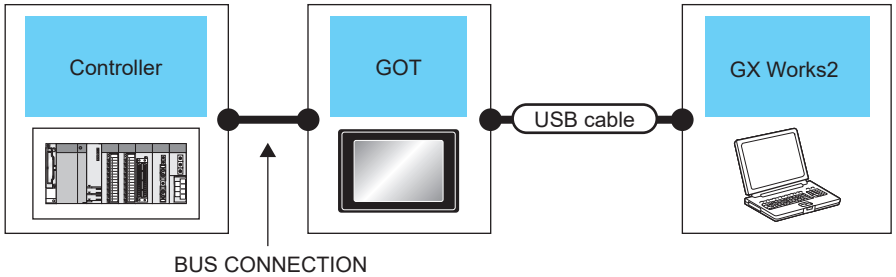
Controller	GOT		Connection cable		Personal computer	Number of connectable equipment
	Model	Interface	USB cable	Maximum length	Compatible GX Works2 version	
Q170MCPU Q170MSCPU Q170MSCPU-S1	GT37 SoftGOT3000	USB	*1	3 m	1.625B or later	1 personal computer for 1 GOT

*1 For the USB cables validated by Mitsubishi Electric Corporation, refer to the following Technical Bulletin.
List of Valid Devices Applicable for GOT3000 Series (GOT-A-0233)

Bus connection between the GOT and the controller

For the system configuration between the GOT and the controller, refer to the following.

Connection between GOT and controller	Reference
Motion CPU (MELSEC-Q series) (bus connection)	☞ Page 685 System configuration



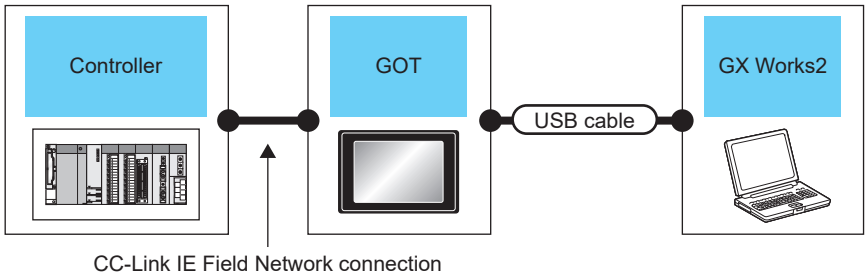
Controller	GOT		Connection cable		Personal computer	Number of connectable equipment
	Model	Interface	USB cable	Maximum length	Compatible GX Works2 version	
Q170MCPU Q170MSCPU Q170MSCPU-S1	GT37 SoftGOT3000	USB	*1	3 m	1.625B or later	1 personal computer for 1 GOT

*1 For the USB cables validated by Mitsubishi Electric Corporation, refer to the following Technical Bulletin.
List of Valid Devices Applicable for GOT3000 Series (GOT-A-0233)

CC-Link IE Field Network connection between the GOT and the controller

For the system configuration between the GOT and the controller, refer to the following.

Connection between GOT and controller	Reference
Motion CPU (MELSEC-Q series) (CC-Link IE Field Network connection)	☞ Page 983 System configuration



Controller	GOT		Connection cable		Personal computer	Number of connectable equipment
	Model	Interface	USB cable	Maximum length	Compatible GX Works2 version	
Q170MCPU Q170MSCPU Q170MSCPU-S1	GT37 SoftGOT3000	USB	*1	3 m	1.625B or later	1 personal computer for 1 GOT

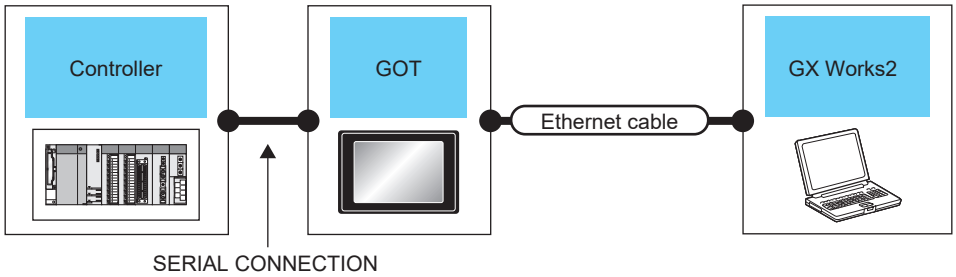
*1 For the USB cables validated by Mitsubishi Electric Corporation, refer to the following Technical Bulletin.
List of Valid Devices Applicable for GOT3000 Series (GOT-A-0233)

75.4.2 Ethernet connection between the personal computer and the GOT

Serial connection between the GOT and the controller

For the system configuration between the GOT and the controller, refer to the following.

Connection between GOT and controller	Reference
Motion CPU (MELSEC-Q series) (Built-in serial port connection)	☞ Page 566 System configuration



Controller	GOT		Connection cable		Personal computer	Number of connectable equipment
	Model	Interface	Ethernet cable	Maximum segment length	Compatible GX Works2 version	
Q170MCPU Q170MSCPU Q170MSCPU-S1	GT37 SoftGOT3000	Built-in Ethernet interface of GOT	Twisted pair cable ☞ Page 2727 Connection cable	100 m	1.625B or later	1 personal computer for 1 GOT

■Connection cable

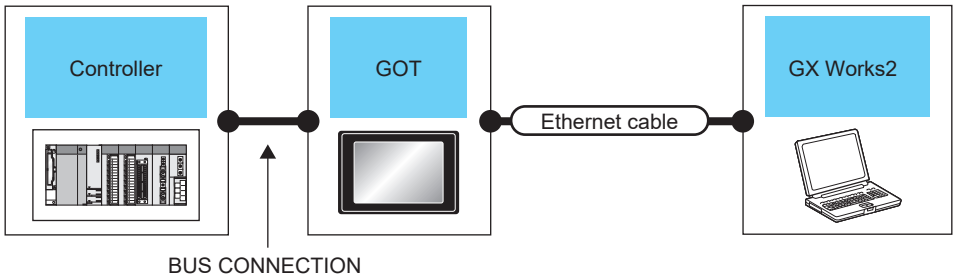
Use a connection cable that meets the following standards.

Standard	Category
10BASE-T	Shielded twisted pair cable (STP) or unshielded twisted pair cable (UTP) of category 3 or higher
100BASE-TX	Shielded twisted pair cable (STP) or unshielded twisted pair cable (UTP) of category 5 or higher
1000BASE-T	Shielded twisted pair cable (STP) or unshielded twisted pair cable (UTP) of category 5e or higher

Bus connection between the GOT and the controller

For the system configuration between the GOT and the controller, refer to the following.

Connection between GOT and controller	Reference
Motion CPU (MELSEC-Q series) (bus connection)	☞ Page 685 System configuration



Controller	GOT		Connection cable		Personal computer	Number of connectable equipment
	Model	Interface	Ethernet cable	Maximum segment length	Compatible GX Works2 version	
Q170MCPU Q170MSCPU Q170MSCPU-S1	GT37 SoftGOT3000	Built-in Ethernet interface of GOT	Twisted pair cable ☞ Page 2728 Connection cable	100 m	1.625B or later	1 personal computer for 1 GOT

■Connection cable

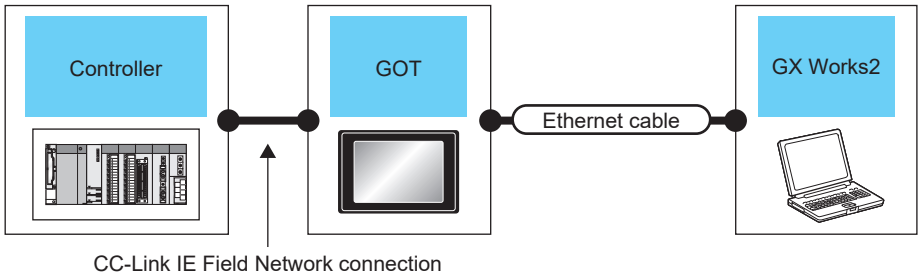
Use a connection cable that meets the following standards.

Standard	Category
10BASE-T	Shielded twisted pair cable (STP) or unshielded twisted pair cable (UTP) of category 3 or higher
100BASE-TX	Shielded twisted pair cable (STP) or unshielded twisted pair cable (UTP) of category 5 or higher
1000BASE-T	Shielded twisted pair cable (STP) or unshielded twisted pair cable (UTP) of category 5e or higher

CC-Link IE Field Network connection between the GOT and the controller

For the system configuration between the GOT and the controller, refer to the following.

Connection between GOT and controller	Reference
Motion CPU (MELSEC-Q series) (CC-Link IE Field Network connection)	☞ Page 983 System configuration



Controller	GOT		Connection cable		Personal computer	Number of connectable equipment
	Model	Interface	Ethernet cable	Maximum segment length	Compatible GX Works2 version	
Q170MCPU Q170MSCPU Q170MSCPU-S1	GT37 SoftGOT3000	Built-in Ethernet interface of GOT	Twisted pair cable ☞ Page 2729 Connection cable	100 m	1.625B or later	1 personal computer for 1 GOT

■Connection cable

Use a connection cable that meets the following standards.

Standard	Category
10BASE-T	Shielded twisted pair cable (STP) or unshielded twisted pair cable (UTP) of category 3 or higher
100BASE-TX	Shielded twisted pair cable (STP) or unshielded twisted pair cable (UTP) of category 5 or higher
1000BASE-T	Shielded twisted pair cable (STP) or unshielded twisted pair cable (UTP) of category 5e or higher

75.5 PLC CPU (MELSEC-F series)

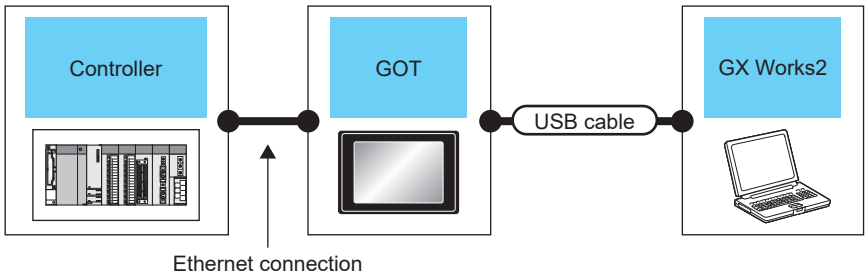
Personal computer to GOT connection	Connection between GOT and controller	Reference
USB connection	Ethernet connection	☞ Page 2730 Ethernet connection between the GOT and the controller
	Serial connection	☞ Page 2731 Serial connection between the GOT and the controller
Ethernet connection	Ethernet connection	☞ Page 2732 Ethernet connection between the GOT and the controller
	Serial connection	☞ Page 2733 Serial connection between the GOT and the controller

75.5.1 Personal computer to GOT USB connection

Ethernet connection between the GOT and the controller

For the system configuration between the GOT and the controller, refer to the following.

Controller	Reference
MELSEC-F series (Ethernet module connection)	☞ Page 501 System configuration



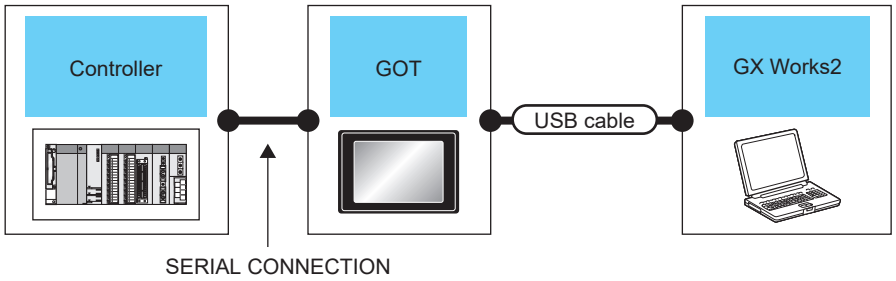
Controller	GOT		Connection cable		Personal computer	Number of connectable equipment
	Model	Interface	USB cable	Maximum length	Compatible GX Works2 version	
FX3G(C) FX3S FX3GE FX3U(C)*1	GT37 SoftGOT3000	USB	*2	3 m	1.625B or later	1 personal computer for 1 GOT

*1 For FX3U-ENET-L, use a module with version 1.12 or later and serial number 1340001 or later.
*2 For the USB cables validated by Mitsubishi Electric Corporation, refer to the following Technical Bulletin.
List of Valid Devices Applicable for GOT3000 Series (GOT-A-0233)

Serial connection between the GOT and the controller

For the system configuration between the GOT and the controller, refer to the following.

Controller	Reference
MELSEC-F series (Built-in serial port connection)	☞ Page 641 System configuration



Controller	GOT		Connection cable		Personal computer	Number of connectable equipment
	Model	Interface	USB cable	Maximum length	Compatible GX Works2 version	
FX3G(C) FX3S FX3GE FX3U(C)	GT37 SoftGOT3000	USB	*1	3 m	1.625B or later	1 personal computer for 1 GOT

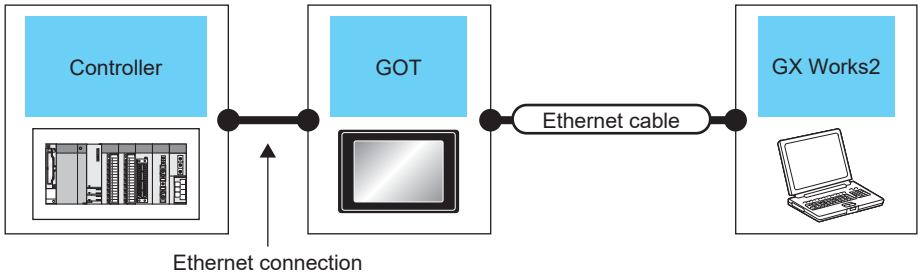
*1 For the USB cables validated by Mitsubishi Electric Corporation, refer to the following Technical Bulletin.
List of Valid Devices Applicable for GOT3000 Series (GOT-A-0233)

75.5.2 Ethernet connection between the personal computer and the GOT

Ethernet connection between the GOT and the controller

For the system configuration between the GOT and the controller, refer to the following.

Controller	Reference
MELSEC-F series (Ethernet module connection)	☞ Page 501 System configuration



Controller	GOT		Connection cable		Personal computer	Number of connectable equipment
	Model	Interface	Ethernet cable	Maximum segment length	Compatible GX Works2 version	
FX3G(C) FX3S FX3GE FX3U(C)*1	GT37 SoftGOT3000	Built-in Ethernet interface of GOT	Twisted pair cable ☞ Page 2732 Connection cable	100 m	1.625B or later	1 personal computer for 1 GOT

*1 For FX3U-ENET-L, use a module with version 1.12 or later and serial number 1340001 or later.

■Connection cable

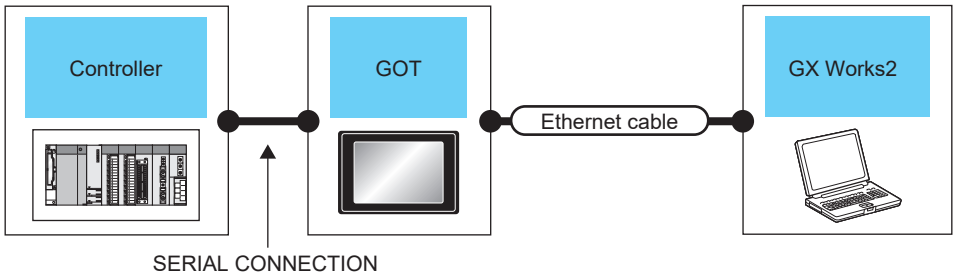
Use a connection cable that meets the following standards.

Standard	Category
10BASE-T	Shielded twisted pair cable (STP) or unshielded twisted pair cable (UTP) of category 3 or higher
100BASE-TX	Shielded twisted pair cable (STP) or unshielded twisted pair cable (UTP) of category 5 or higher
1000BASE-T	Shielded twisted pair cable (STP) or unshielded twisted pair cable (UTP) of category 5e or higher

Serial connection between the GOT and the controller

For the system configuration between the GOT and the controller, refer to the following.

Controller	Reference
MELSEC-F series (Built-in serial port connection)	☞ Page 641 System configuration



Controller	GOT		Connection cable		Personal computer	Number of connectable equipment
	Model	Interface	Ethernet cable	Maximum segment length	Compatible GX Works2 version	
FX3G(C) FX3S FX3GE FX3U(C)	GT37 SoftGOT3000	Built-in Ethernet interface of GOT	Twisted pair cable ☞ Page 2733 Connection cable	100 m	1.625B or later	1 personal computer for 1 GOT

■Connection cable

Use a connection cable that meets the following standards.

Standard	Category
10BASE-T	Shielded twisted pair cable (STP) or unshielded twisted pair cable (UTP) of category 3 or higher
100BASE-TX	Shielded twisted pair cable (STP) or unshielded twisted pair cable (UTP) of category 5 or higher
1000BASE-T	Shielded twisted pair cable (STP) or unshielded twisted pair cable (UTP) of category 5e or higher

75.6 CC-Link IE Field Network head module

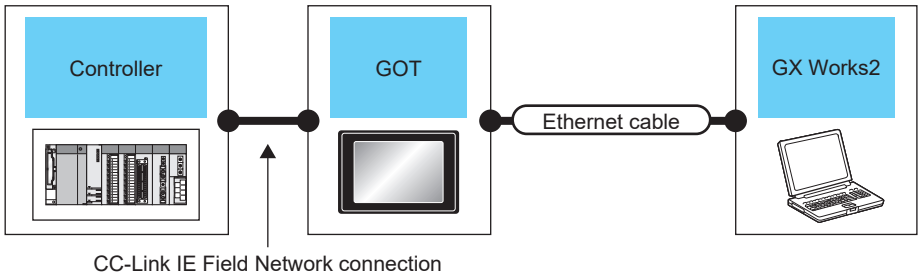
Personal computer to GOT connection	Connection between GOT and controller	Reference
Ethernet connection	CC-Link IE Field Network connection	☞ Page 2734 CC-Link IE Field Network connection between the GOT and the controller

75.6.1 Ethernet connection between the personal computer and the GOT

CC-Link IE Field Network connection between the GOT and the controller

For the system configuration between the GOT and the controller, refer to the following.

Controller	Reference
CC-Link IE Field Network head module (CC-Link IE Field Network connection)	☞ Page 1002 System configuration



Controller	GOT		Connection cable		Personal computer	Number of connectable equipment
	Model	Interface	Ethernet cable	Maximum segment length	Compatible GX Works2 version	
LJ72GF15-T2	GT37 SoftGOT3000	Built-in Ethernet interface of GOT	Twisted pair cable ☞ Page 2734 Connection cable	100 m	1.625B or later	1 personal computer for 1 GOT

■Connection cable

Use a connection cable that meets the following standards.

Standard	Category
10BASE-T	Shielded twisted pair cable (STP) or unshielded twisted pair cable (UTP) of category 3 or higher
100BASE-TX	Shielded twisted pair cable (STP) or unshielded twisted pair cable (UTP) of category 5 or higher
1000BASE-T	Shielded twisted pair cable (STP) or unshielded twisted pair cable (UTP) of category 5e or higher

75.7 GOT side settings

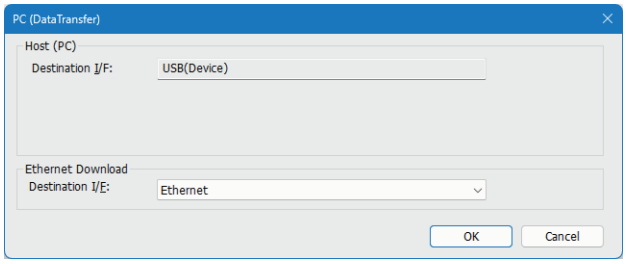
75.7.1 [Controller Setting]

The GOT side settings differ depending on the connection type between the controller and the GOT.
For details on [Controller Setting], refer to the following.

Controller	Reference
MELSEC-Q series (Built-in Ethernet port connection)	☞ Page 350 [Controller Setting]
MELSEC-Q series (Ethernet module connection)	☞ Page 400 [Controller Setting]
MELSEC-Q series (Built-in serial port connection)	☞ Page 568 [Controller Setting]
MELSEC-Q series (serial communication connection)	☞ Page 592 [Controller Setting]
MELSEC-Q series (bus connection)	☞ Page 688 [Controller Setting]
MELSEC-Q series (CC-Link IE Controller Network connection)	☞ Page 900 [Controller Setting]
MELSEC-Q series (CC-Link IE Field Network connection)	☞ Page 988 [Controller Setting]
MELSEC-L series (Built-in Ethernet port connection)	☞ Page 441 [Controller Setting]
MELSEC-L series (Ethernet module connection)	☞ Page 465 [Controller Setting]
MELSEC-L series (Built-in serial port connection)	☞ Page 609 [Controller Setting]
MELSEC-L series (serial communication connection)	☞ Page 624 [Controller Setting]
MELSEC-L series (CC-Link IE Field Network connection)	☞ Page 1006 [Controller Setting]
MELSEC-F series (Ethernet module connection)	☞ Page 506 [Controller Setting]
MELSEC-F series (Built-in serial port connection)	☞ Page 648 [Controller Setting]

75.7.2 Communication setting with personal computer

Set the communication setting between the GOT and the personal computer.



Operating procedure

1. Select [Common] → [Peripheral Setting] → [PC (Data Transfer)] from the menu.

2. Set the interface of the GOT to be used for communication with the personal computer in the [PC (Data Transfer)] dialog.

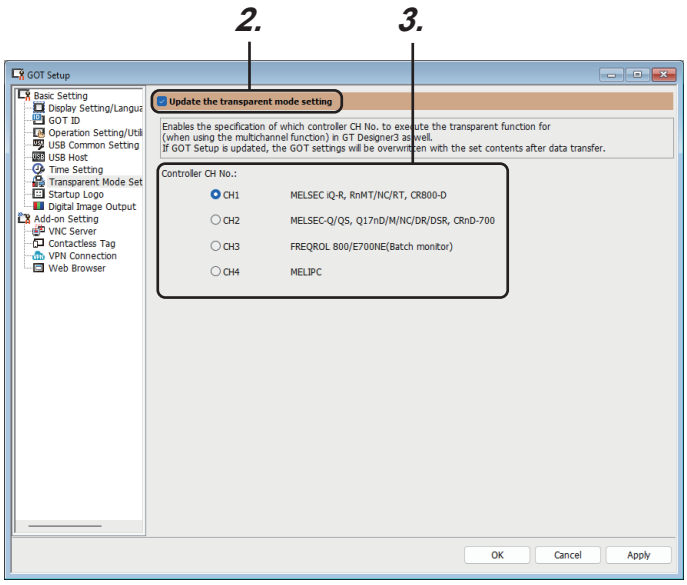
For details of the setting contents, refer to the following manual.
📖GT Designer3 (GOT3000) Screen Design Manual

Point

• GX Works2 transparent function settings
When connecting the GOT and the personal computer by Ethernet, match the GOT IP address and the port number for the FA transparent function with those in [PLC side I/F Detailed Setting of GOT] of GX Works2.
☞ Page 2757 Ethernet connection between the personal computer and the GOT
• Controller settings using the GT37 utility
The controller settings can be changed in [Communication Settings] of the GT37 utility after writing [Communication Settings] of project data to GT37.
For details on the GT37 utility, refer to the following manual.
📖GOT3000 Series User's Manual (Utility & Maintenance Functions)
• Priority of the settings in [Controller Setting]
When the settings are configured in GT Designer3 or in the GT37 utility, the latest settings are effective.

75.7.3 GOT Setup

When using the multi-channel function, specify the channel number for which the FA transparent function is executed.



Operating procedure

1. Select [Common] → [GOT Setup] → [Basic Setting] → [Transparent Mode Setting] from the menu.
2. Select [Update the transparent mode setting].
3. As necessary, check one of [CH1] to [CH4].
4. When you have completed the settings, click the [OK] button.

Point

Transparent setting on the utility screen

Transparent setting can be performed by the GOT.

For details of the operating, refer to the following.

GOT3000 Series User's Manual (Utility & Maintenance Functions)

75.8 Personal computer side settings

The following shows the procedure to set the FA transparent function in GX Works2.

Personal computer to GOT connection	Connection between GOT and controller	Reference
USB connection	Ethernet connection	☞ Page 2738 Ethernet connection between the GOT and the controller
	Serial connection	☞ Page 2746 Serial connection between the GOT and the controller
	Serial communication connection	☞ Page 2748 Serial communication connection between the GOT and the controller
	Bus connection	☞ Page 2750 Bus connection between the GOT and the controller
	CC-Link IE Controller Network connection	☞ Page 2752 CC-Link IE Controller Network connection between the GOT and the controller
	CC-Link IE Field Network connection	☞ Page 2755 CC-Link IE Field Network connection between the GOT and the controller
Ethernet connection	Ethernet connection	☞ Page 2758 Ethernet connection between the GOT and the controller
	Serial connection	☞ Page 2765 Serial connection between the GOT and the controller
	Serial communication connection	☞ Page 2767 Serial communication connection between the GOT and the controller
	Bus connection	☞ Page 2769 Bus connection between the GOT and the controller
	CC-Link IE Controller Network connection	☞ Page 2771 CC-Link IE Controller Network connection between the GOT and the controller
	CC-Link IE Field Network connection	☞ Page 2774 CC-Link IE Field Network connection between the GOT and the controller

75.8.1 USB connection between the personal computer and the GOT

Ethernet connection between the GOT and the controller

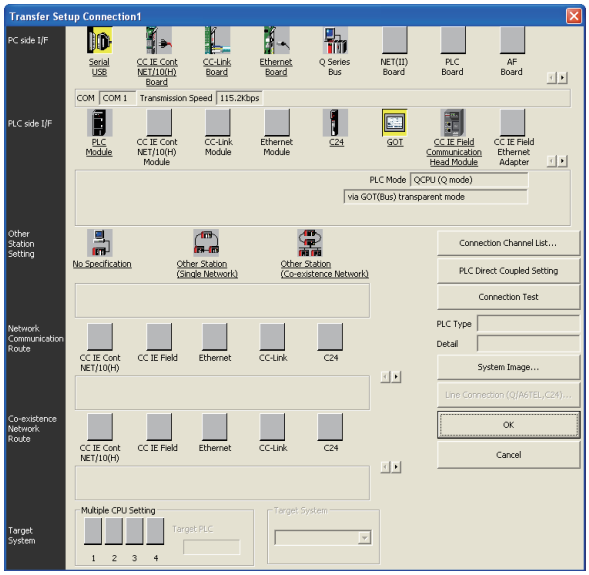
☞ Page 2738 Connecting to QCPU (Q mode)
☞ Page 2740 Connection to FXCPU
☞ Page 2742 Connecting the GOT and Ethernet adapter (NZ2GF-ETB) in Ethernet connection, and connecting it to a PLC in the CC-Link IE Field Network.

■Connecting to QCPU (Q mode)

Operating procedure

1. Click the Connection Destination view → [Connection Destination] → [(Connection target data name)] in the Navigation window of GX Works2.

The [Transfer Setup] dialog is displayed.

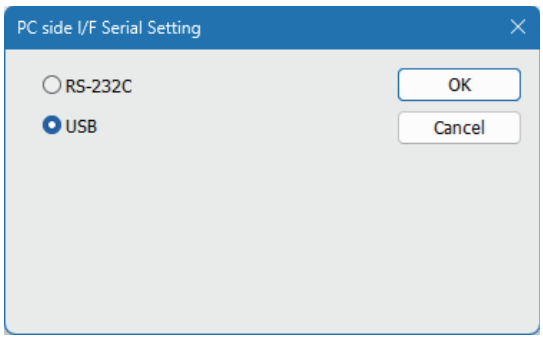


2. Set [Transfer Setup] as follows:

- [PC side I/F]: [Serial USB]
- [PLC side I/F]: [GOT]
- [Other Station Setting]: [No Specification]

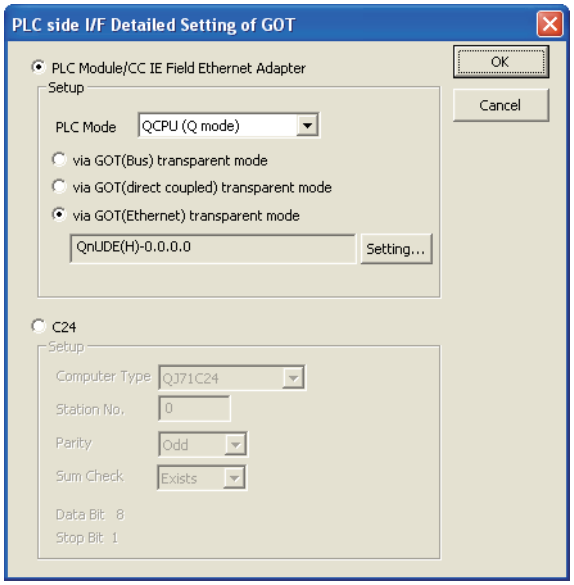
3. Double-click [Serial USB] of [PC side I/F].

4. When [PC side I/F Serial Setting] is displayed, select [USB].



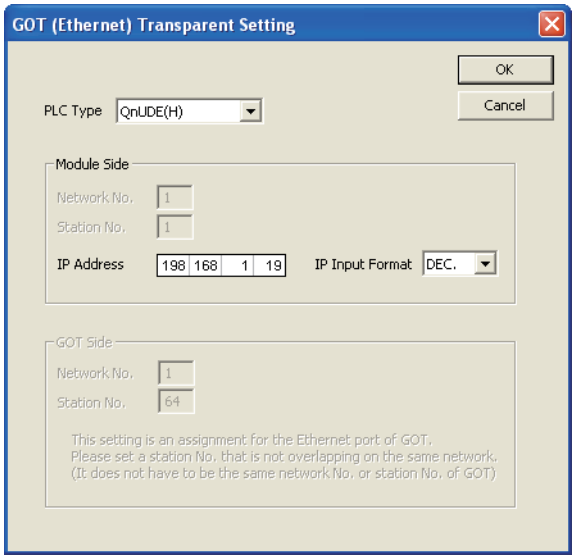
5. Double-click [GOT] of [PLC side I/F].

6. When [PLC side I/F Detailed Setting of GOT] is displayed, select [via GOT(Ethernet) transparent mode] and click [Setting].



7. [GOT (Ethernet) Transparent Setting] is displayed.

Here, set the Built-in Ethernet port QCPU or Ethernet module, which is firstly connected via a GOT.



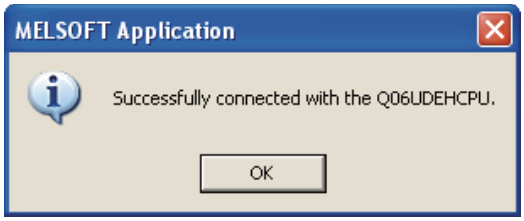
8. Set [QnUDE(H)] or [QJ71E71] for [Type name].

9. Specify the numbers assigned to the Ethernet module for [Network No.] and [Station No.].

When [QnUDE(H)] is set for [Type name], the setting is not required.

10. Specify the IP address for [IP address] same as the IP address assigned to the built-in Ethernet port QCPU or Ethernet module.

11. Return to [Transfer Setup] and click [Connection Test] to check that connection to the QCPU (Q mode) has been established.

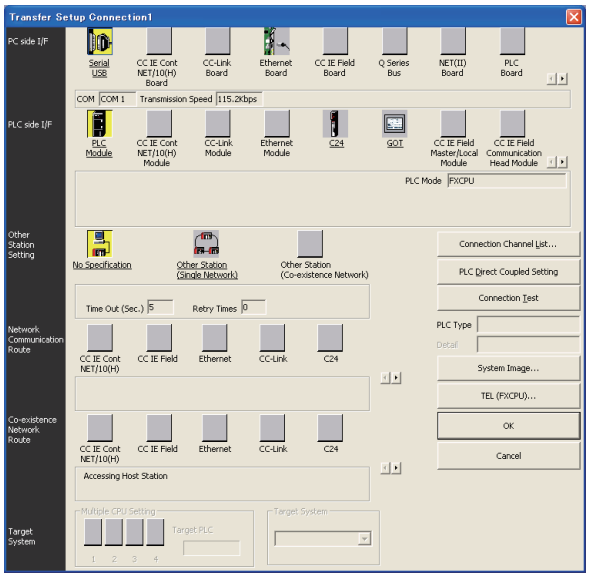


■Connection to FXCPU

Operating procedure

1. Click the Connection Destination view → [Connection Destination] → [(Connection target data name)] in the Navigation window of GX Works2.

2. The [Transfer Setup] dialog is displayed.

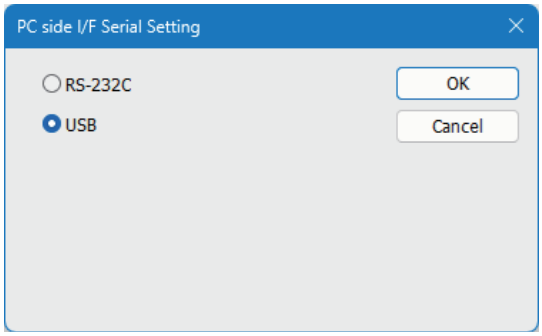


3. Set [Transfer Setup] as follows:

- [PC side I/F]: [Serial USB]
- [PLC side I/F]: [GOT]
- [Other Station Setting]: [No Specification]

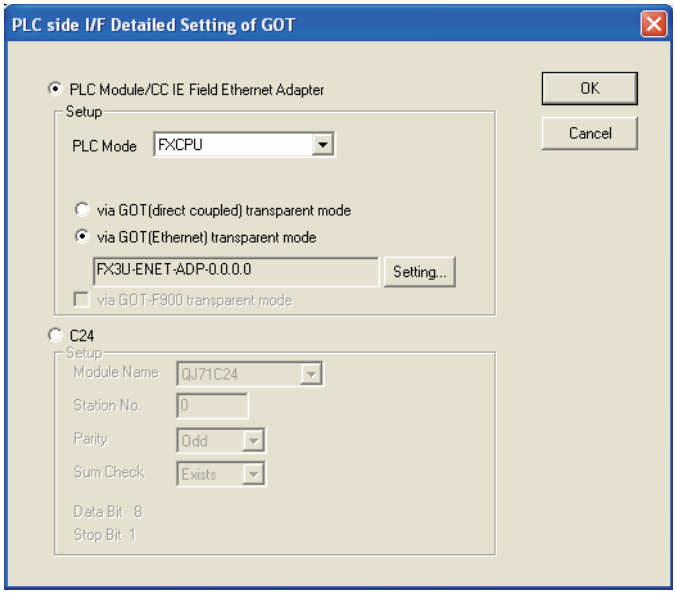
4. Double-click [Serial USB] of [PC side I/F].

5. When [PC side I/F Serial Setting] is displayed, select [USB].



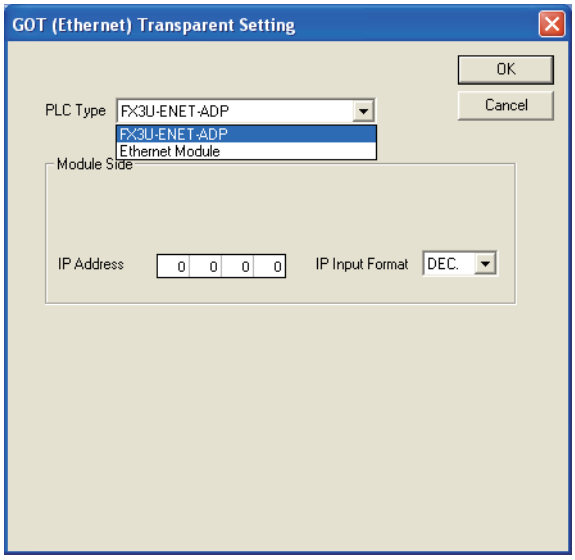
6. Double-click [GOT] of [PLC side I/F].

7. When [PLC side I/F Detailed Setting of GOT] is displayed, select [via GOT(Ethernet) transparent mode] and click [Setting].



8. [GOT (Ethernet) Transparent Setting] is displayed.

Here, set the [FX3U-ENET-ADP] or [Ethernet Module], which is connected via a GOT.



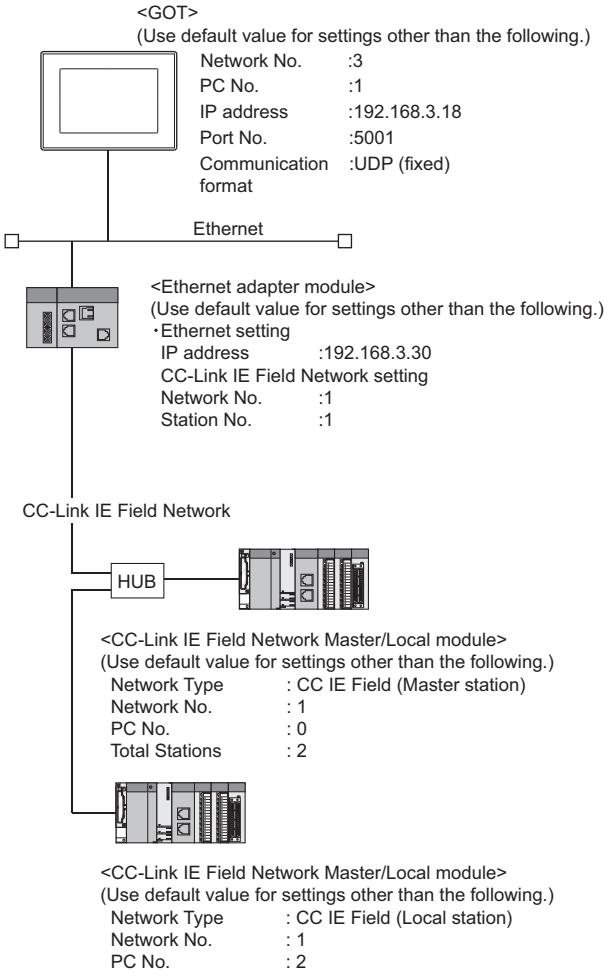
9. Set [FX3U-ENET-ADP] or [Ethernet Module] for [PLC Type].

10. Specify the IP address for [IP address] same as the IP address assigned to the [FX3U-ENET-ADP] or [Ethernet Module].

11. Return to [Transfer Setup] and click [Connection Test] to check that connection to the FXCPU has been established.

■Connecting the GOT and Ethernet adapter (NZ2GF-ETB) in Ethernet connection, and connecting it to a PLC in the CC-Link IE Field Network.

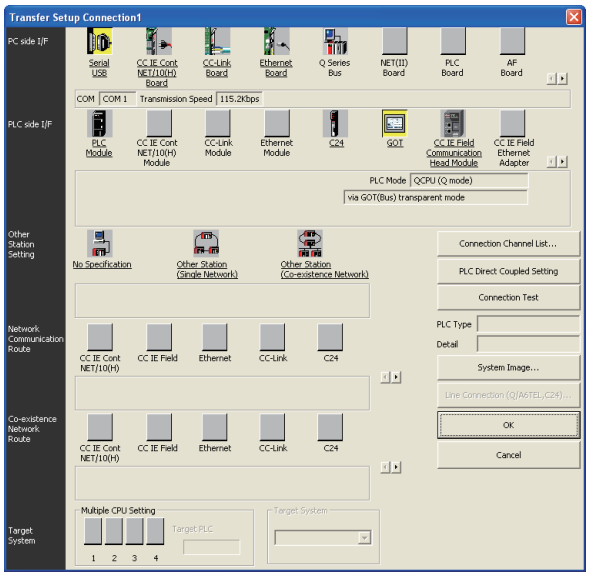
This section describes the settings of the GX Works2 in the following case of system configuration.



Operating procedure

1. Click the Connection Destination view → [Connection Destination] → [(Connection target data name)] in the Navigation window of GX Works2.

2. The [Transfer Setup] dialog is displayed.

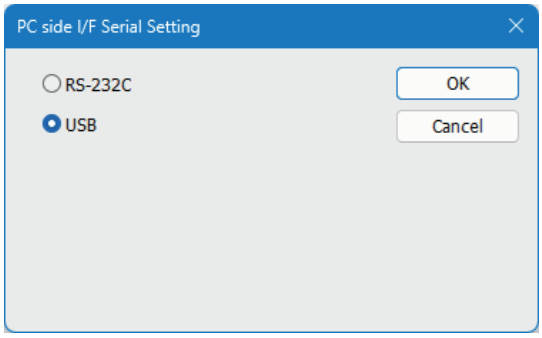


3. Set [Transfer Setup] as follows:

- [PC side I/F]: [Serial USB]
- [PLC side I/F]: [GOT]

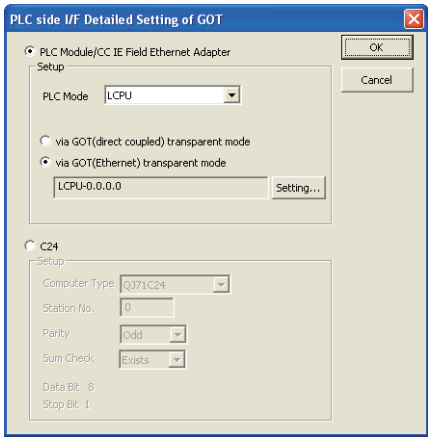
4. Double-click [Serial USB] of [PC side I/F].

5. When [PC side I/F Serial Setting] is displayed, select [USB].

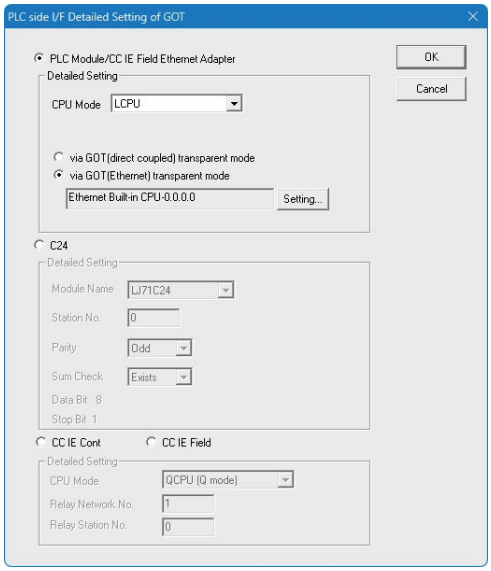


6. Double-click [GOT] of [PLC side I/F].

7. When [PLC side I/F Detailed Setting of GOT] is displayed, select [LCPU] for [PLC Mode] in [Setup].



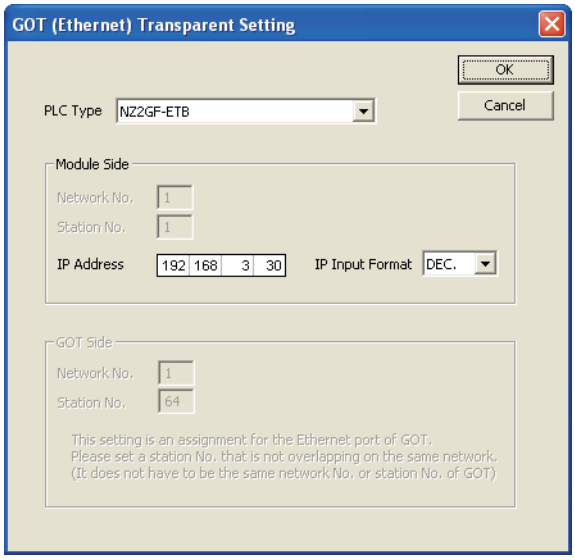
8. Select [via GOT(Ethernet) transparent mode] and click [Setting].



9. [GOT (Ethernet) Transparent Setting] is displayed.

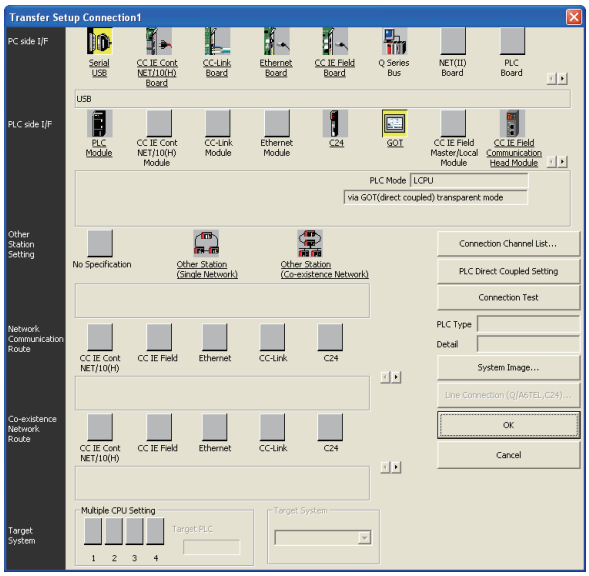
Here, set the Ethernet module, which is firstly connected via a GOT.

- [PLC Type]: [NZ2GF-ETB]
- [IP Address]: Specify the IP address assigned to NZ2GF-ETB.

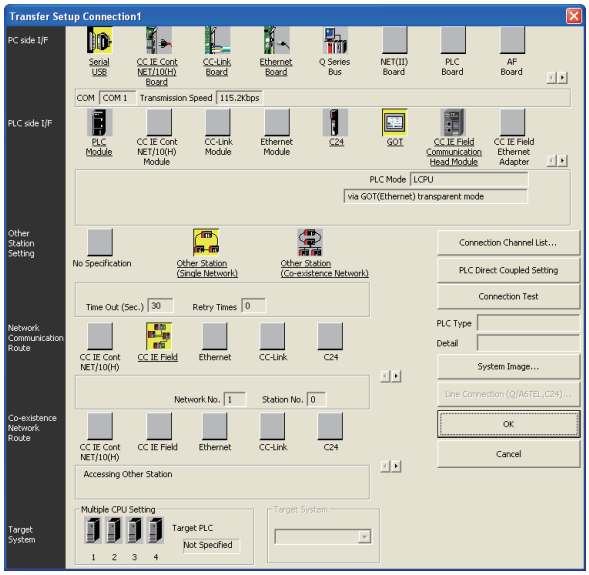


10. Return to [PLC side I/F Detailed Setting of GOT], and click [OK].

The [Transfer Setup] dialog is displayed.

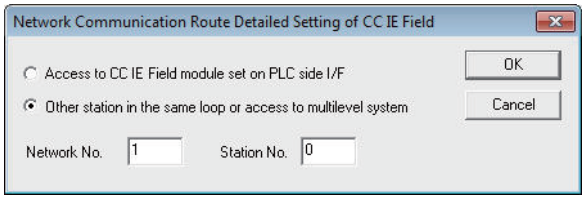


11. Click [Other station (Single network)].



12. Double-click [CC IE Field].

13. [Network Communication Route Detailed Setting of CC IE Field] is displayed.

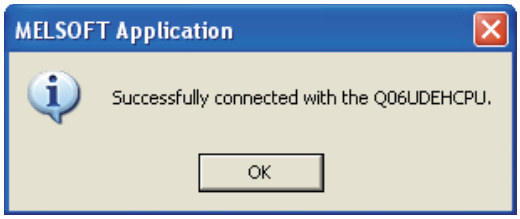


14. Set [Network No.] and [Station No.] assigned to the CPU, and click [OK].

When connecting to CC-Link IE Field Network Master/Local module of the system configuration example, the setting is as follows.

- [Network No.]: 1
- [Station No.]: 0

15. Return to [Transfer Setup] and click [Connection Test] to check that connection to the QCPU (Q mode) has been established.



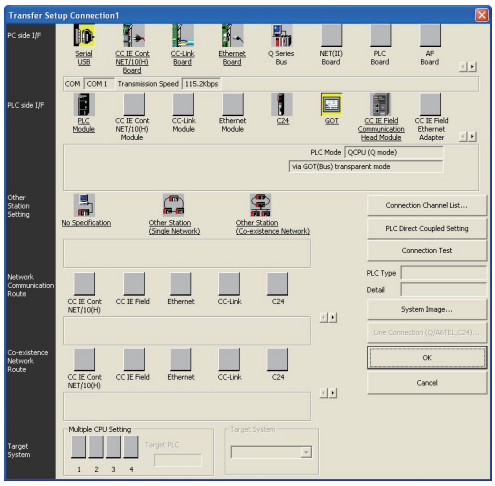
Serial connection between the GOT and the controller

The following shows an example for connection to MELSEC-Q series PLC CPU (Q mode).

Operating procedure

1. Click the Connection Destination view → [Connection Destination] → [(Connection target data name)] in the Navigation window of GX Works2.

[Transfer Setup] is displayed.

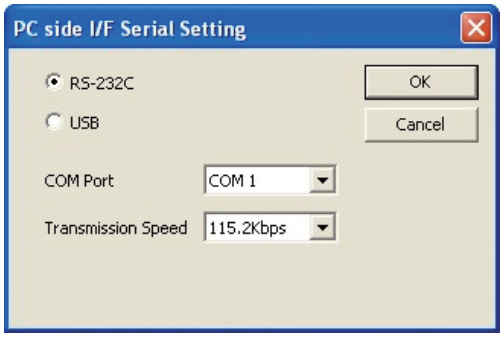


2. Configure the [Transfer Setup] settings.

- [PC side I/F]: [Serial USB]
- [PLC side I/F]: [GOT]
- [Other Station Setting]: [No Specification]

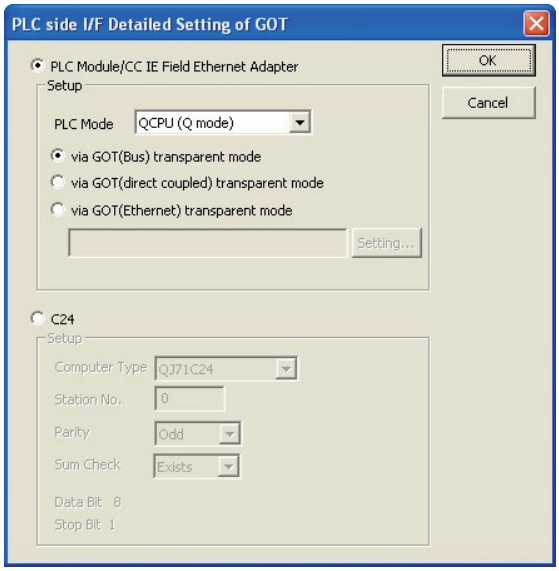
3. Double-click [Serial USB] of [PC side I/F].

4. When [PC side I/F Serial Setting] is displayed, select [USB].

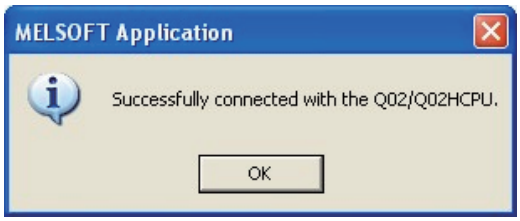


5. Double-click [GOT] of [PLC side I/F].

6. When [PLC side I/F Detailed Setting of GOT] is displayed, select [via GOT(direct coupled) transparent mode] and click [Setting].



7. Return to [Transfer Setup] and click [Connection Test] to check that connection to the QCPU (Q mode) has been established.



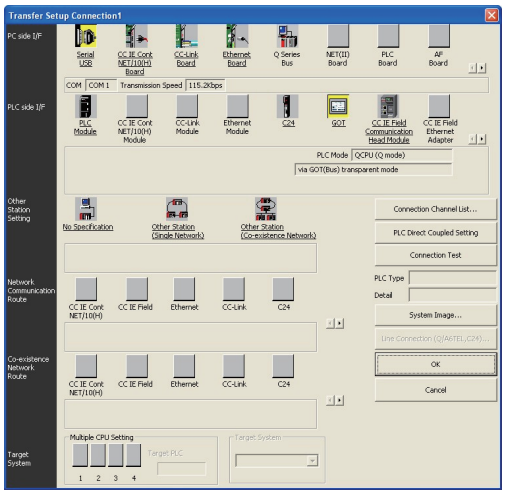
Serial communication connection between the GOT and the controller

The following shows an example for connection to the MELSEC-Q series serial communication module (QJ71C24(N)).

Operating procedure

1. Click the Connection Destination view → [Connection Destination] → [(Connection target data name)] in the Navigation window of GX Works2.

[Transfer Setup] is displayed.

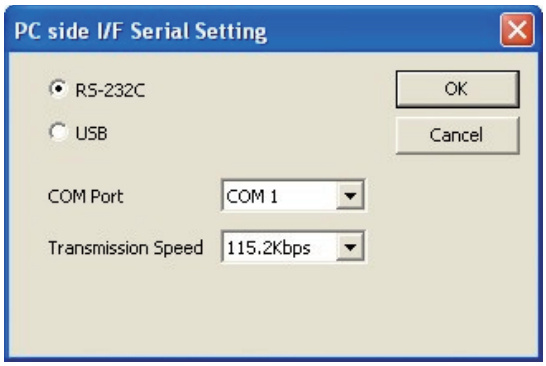


2. Configure the [Transfer Setup] settings.

- [PC side I/F]: [Serial USB]
- [PLC side I/F]: [GOT]
- [Other Station Setting]: [No Specification]

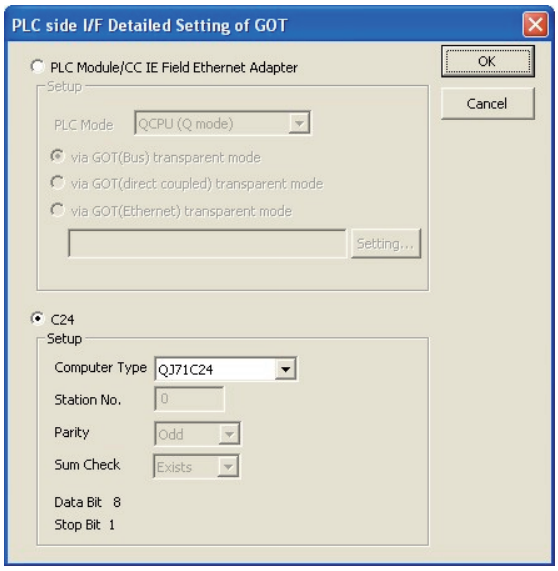
3. Double-click [Serial USB] of [PC side I/F].

4. When [PC side I/F Serial Setting] is displayed, select [USB].

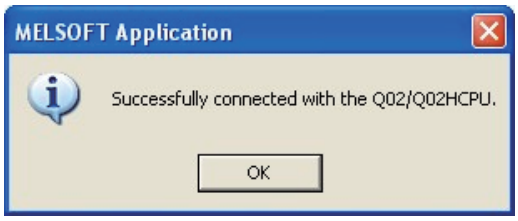


5. Double-click [GOT] of [PLC side I/F].

6. When [PLC side I/F Detailed Setting of GOT] is displayed, select [C24].



7. Return to [Transfer Setup] and click [Connection Test] to check that connection to the QCPU (Q mode) has been established.



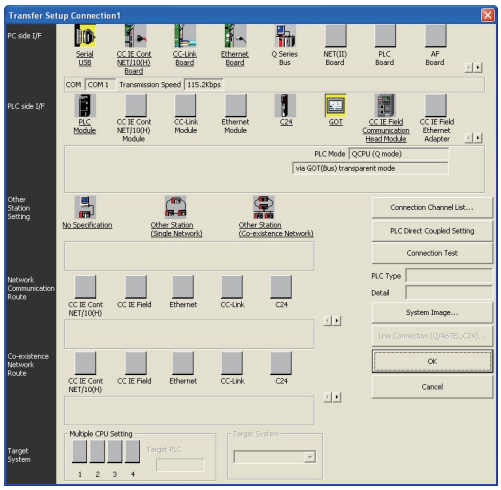
Bus connection between the GOT and the controller

The following shows an example for connection to MELSEC-Q series PLC CPU (Q mode).

Operating procedure

1. Click the Connection Destination view → [Connection Destination] → [(Connection target data name)] in the Navigation window of GX Works2.

[Transfer Setup] is displayed.

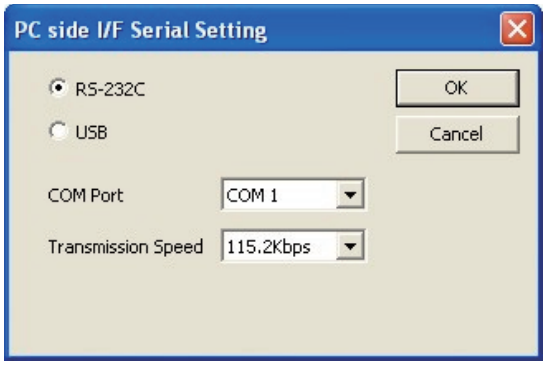


2. Configure the [Transfer Setup] settings.

- [PC side I/F]: [Serial USB]
- [PLC side I/F]: [GOT]
- [Other Station Setting]: [No Specification]

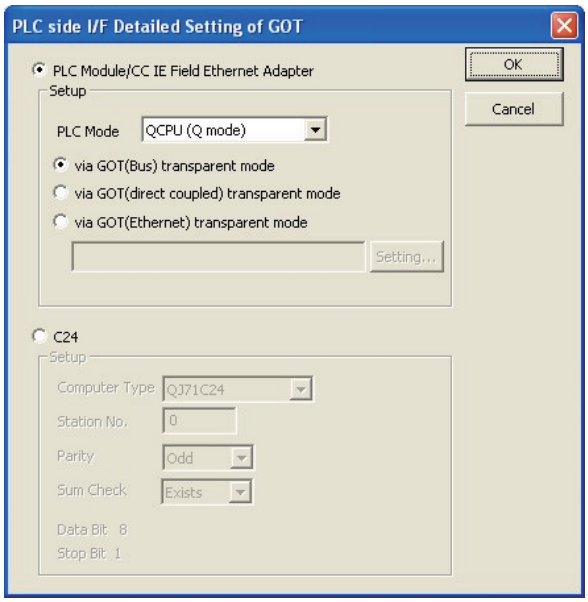
3. Double-click [Serial USB] of [PC side I/F].

4. When [PC side I/F Serial Setting] is displayed, select [USB].

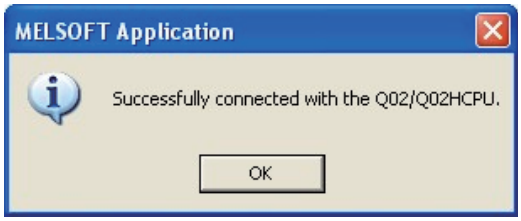


5. Double-click [GOT] of [PLC side I/F].

6. When [PLC side I/F Detailed Setting of GOT] is displayed, select [via GOT(direct coupled) transparent mode].



7. Return to [Transfer Setup] and click [Connection Test] to check that connection to the QCPU (Q mode) has been established.



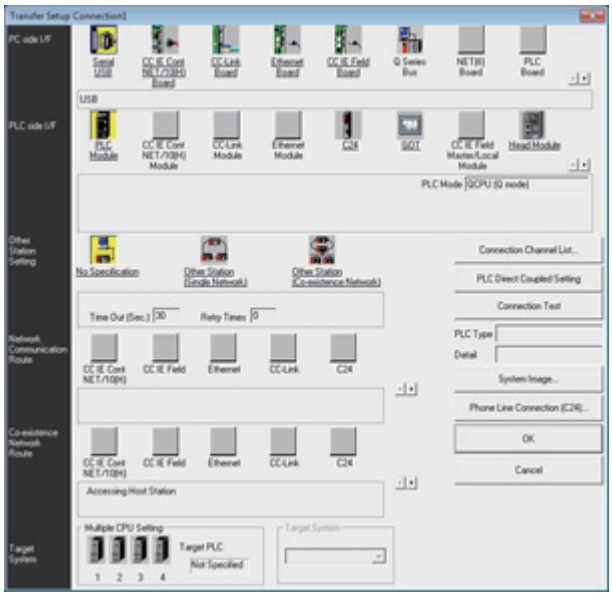
CC-Link IE Controller Network connection between the GOT and the controller

The following shows an example for connection to MELSEC-Q series PLC CPU (Q mode).

Operating procedure

1. Click the Connection Destination view → [Connection Destination] → [(Connection target data name)] in the Navigation window of GX Works2.

[Transfer Setup] is displayed.

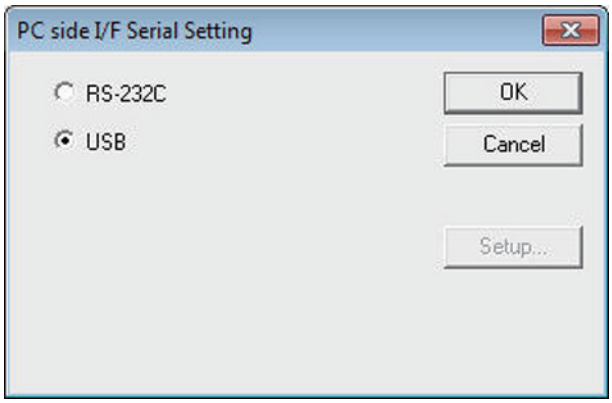


2. Configure the [Transfer Setup] settings.

- [PC side I/F]: [Serial USB]
- [PLC side I/F]: [GOT]
- [Other Station Setting]: [No Specification]

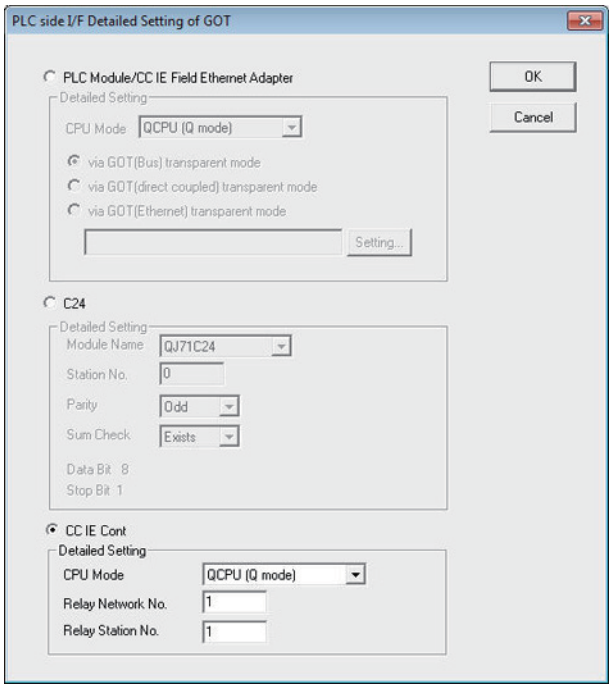
3. Double-click [Serial USB] of [PC side I/F].

4. When [PC side I/F Serial Setting] is displayed, select [USB].



5. Double-click [GOT] of [PLC side I/F].

6. When [PLC side I/F Detailed Setting of GOT] is displayed, select [CC IE Cont].



7. Set [Relay Station No.] as follows:

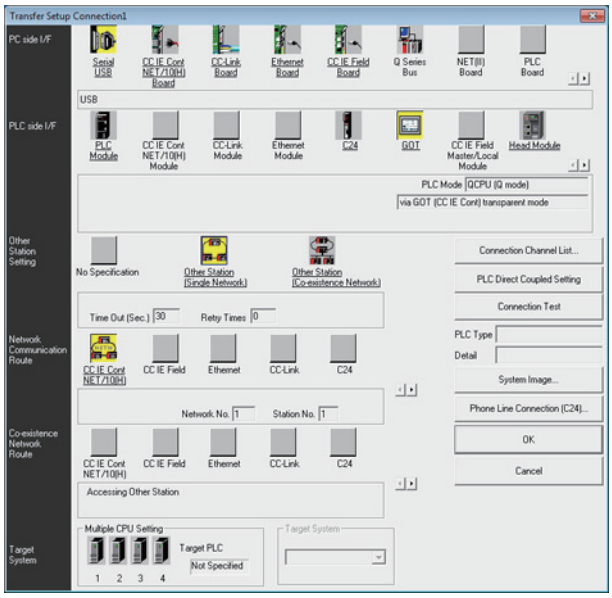
- When the target PLC has the same network number as that of the GOT

Set the number assigned to the PLC that is the target of the FA transparent function and CC-Link IE Controller Network module.

- When the target PLC has a network number different from that of the GOT

Set the number assigned to the PLC that is used as a relay station and CC-Link IE Controller Network module.

8. Return to [Transfer Setup], click [Other Station (Single Network)], and double-click [CC IE Cont NET/10(H)].



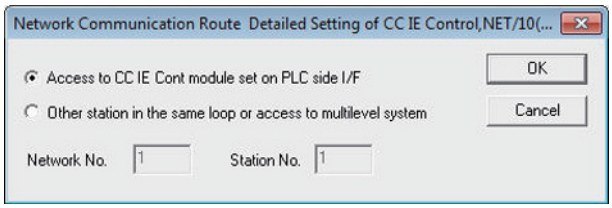
9. Set as shown below and click [OK].

• When the GOT and PLC are on the same network

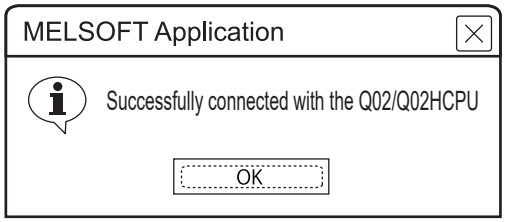
Select [Access to CC IE Cont module set on PLC side I/F].

• When the GOT and PLC are on different networks

Select [Other station in the same loop or access to multilevel system] and set [Network No.] and [Station No.].



10. Return to [Transfer Setup] and click [Connection Test] to check that connection to the QCPU (Q mode) has been established.

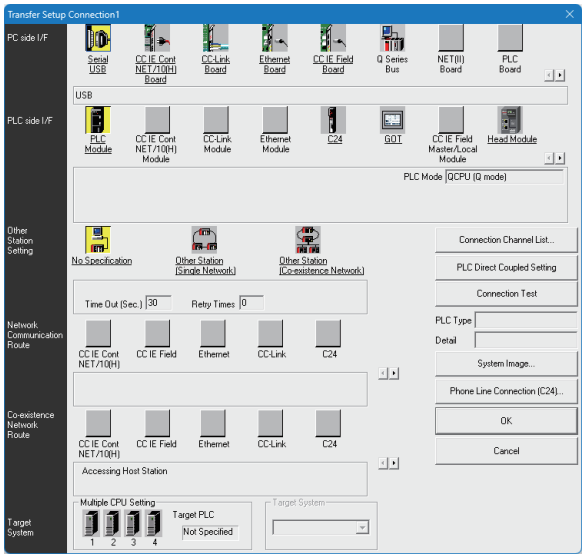


CC-Link IE Field Network connection between the GOT and the controller

Operating procedure

1. Click the Connection Destination view → [Connection Destination] → [(Connection target data name)] in the Navigation window of GX Works2.

The [Transfer Setup] dialog is displayed.

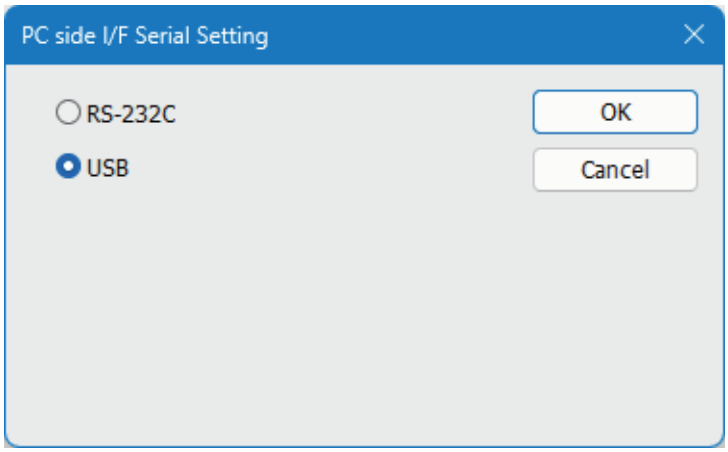


2. Set [Transfer Setup] as follows:

- [PC side I/F]: [Serial USB]
- [PLC side I/F]: [GOT]
- [Other Station Setting]: [No Specification]

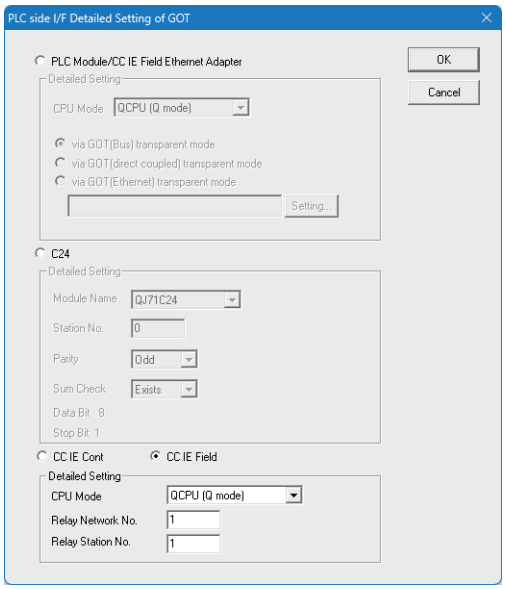
3. Double-click [Serial USB] of [PC side I/F].

4. When [PC side I/F Serial Setting] is displayed, select [USB].

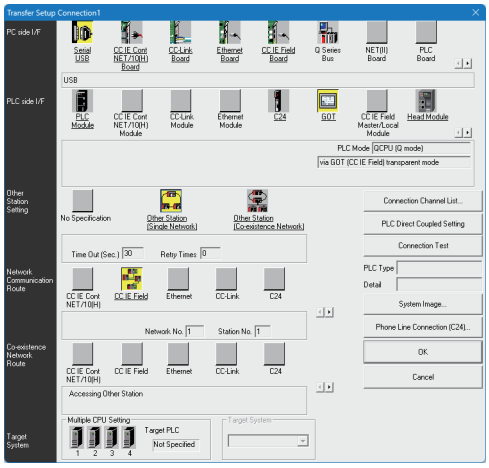


5. Double-click [GOT] of [PLC side I/F].

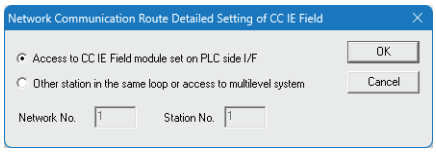
6. When [PLC side I/F Detailed Setting of GOT] is displayed, select [CC IE Field].



7. Return to [Transfer Setup], click [Other Station (Single Network)], and double-click [CC IE Field].



8. [Network Communication Route Detailed Setting of CC IE Field] is displayed.

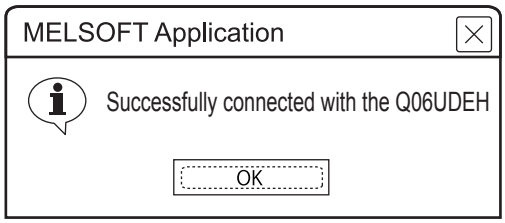


9. Set [Network No.] and [Station No.] assigned to the CPU, and click [OK].

For connection to the CC-Link IE Field Network master/local module, the setting is as follows.

- [Network No.]: 1
- [Station No.]: 0

10. Click [Connection Test] to check that connection to the QCPU (Q mode) has been established.



75.8.2 Ethernet connection between the personal computer and the GOT

Precautions

■GOT station monitoring function

When the FA transparent function is used in an Ethernet connection, GOT station monitoring function cannot be operated. Therefore, in the cases of [no connection target], [PLC power OFF], etc., the monitoring of the GOT delays for the timeout time.

■Connection to FXCPU

When connecting the GOT and FXCPU in Ethernet communication, and using the FA transparent function, a timeout may occur.

When a timeout occurs, set [Delay Time] in the communication detail settings according to the circumstance of the system.

☞ Page 507 [Detail Setting]

Ethernet connection between the GOT and the controller

Configure the settings in [Connected Ethernet Controller Setting] on the GOT.

The routing setting may also be needed for the GOT side depending on the system configuration.

For details, refer to the following procedure.

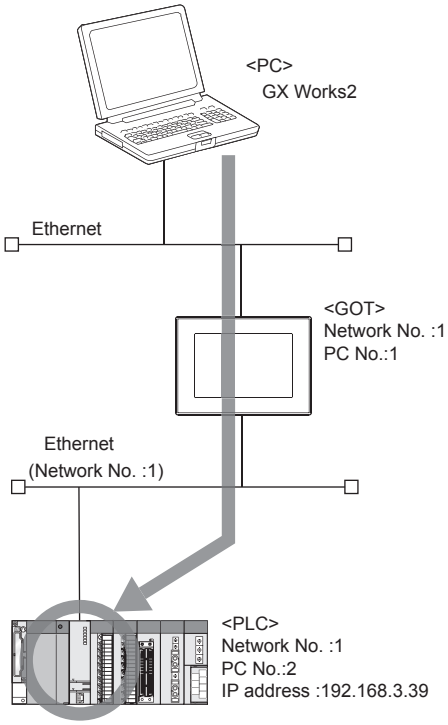
The following shows an example for connection to QCPU (Q mode).

☞ Page 2758 When the routing setting is not needed for the GOT side

☞ Page 2761 When the routing setting is needed for the GOT side

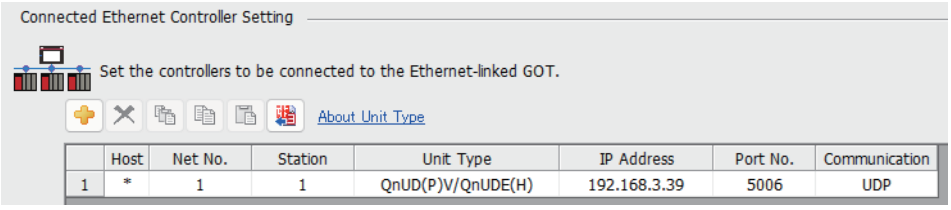
■When the routing setting is not needed for the GOT side

1) System configuration



2) [Connected Ethernet Controller Setting] of GT Designer3

Set the network number, PLC number, and IP address of the PLC CPU that is the target of the FA transparent function in GT Designer3.



	Host	Net No.	Station	Unit Type	IP Address	Port No.	Communication
1	*	1	1	QnUD(P)V/QnUDE(H)	192.168.3.39	5006	UDP

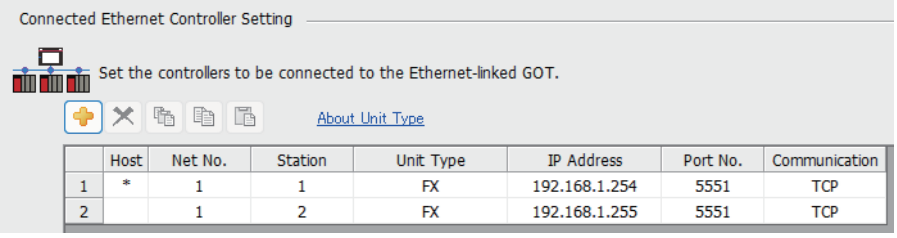
For details on [Connected Ethernet Controller Setting], refer to the following.

Controller	Reference
MELSEC-Q series, C Controller module (MELSEC-Q series) (Built-in Ethernet port connection)	☞ Page 356 [Connected Ethernet Controller Setting]
MELSEC-Q series (Ethernet module connection)	☞ Page 407 [Connected Ethernet Controller Setting]
MELSEC-L series (Built-in Ethernet port connection)	☞ Page 448 [Connected Ethernet Controller Setting]
MELSEC-L series (Ethernet module connection)	☞ Page 471 [Connected Ethernet Controller Setting]
MELSEC-F series (Ethernet module connection)	☞ Page 509 [Connected Ethernet Controller Setting]

Point

For FXCPU

FA transparent function is applied to only FXCPU which sets a host station.



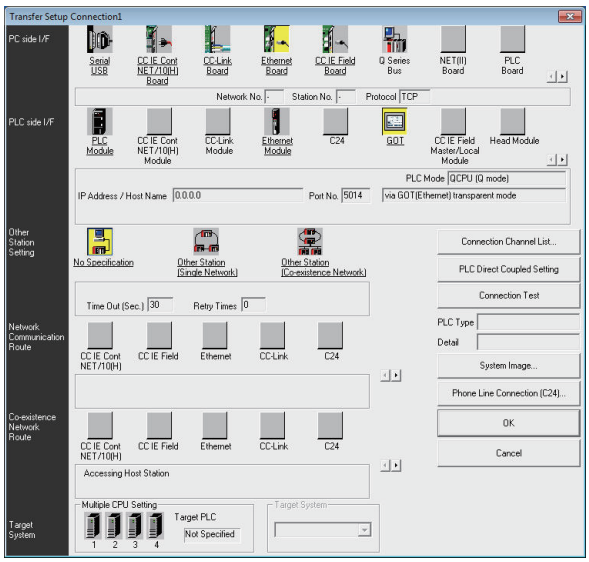
	Host	Net No.	Station	Unit Type	IP Address	Port No.	Communication
1	*	1	1	FX	192.168.1.254	5551	TCP
2		1	2	FX	192.168.1.255	5551	TCP

3) GX Works2 settings

Operating procedure

1. Click the Connection Destination view → [Connection Destination] → [(Connection target data name)] in the Navigation window of GX Works2.

The [Transfer Setup] dialog is displayed.



2. Set [Transfer Setup] as follows:

- [PC side I/F]: [Ethernet Board]
- [PLC side I/F]: [GOT]
- [Other Station Setting]: [No Specification]

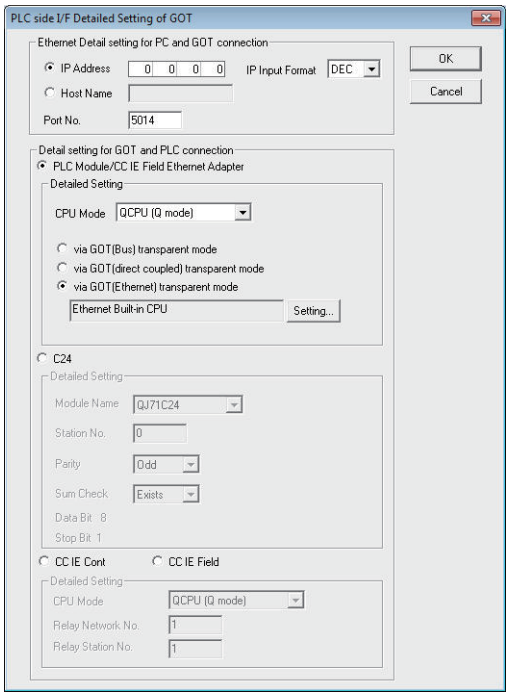
3. Double-click [GOT] of [PLC side I/F].

4. When [PLC side I/F Detailed Setting of GOT] is displayed, set [IP Address] and [Port No.] in [Ethernet detail setting for PC and GOT connection].

Check the IP address and port number on the GOT side in the [GOT Ethernet Setting] window in GT Designer3.

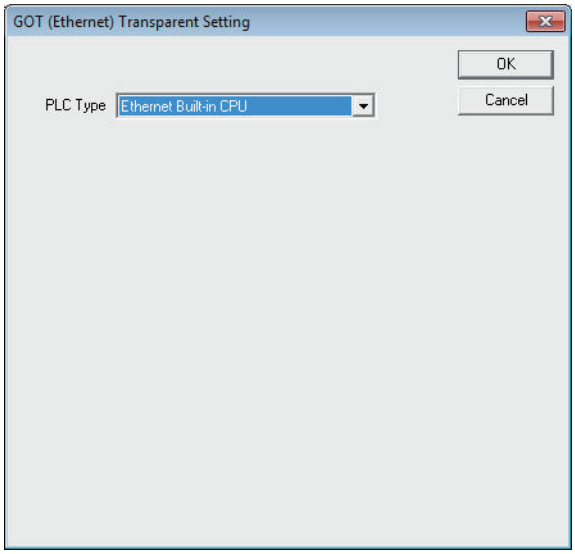
For details, refer to the following.

GT Designer3 (GOT3000) Screen Design Manual

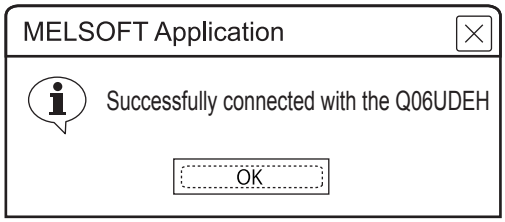


5. In [Detail setting for GOT and PLC connection], select [via GOT(Ethernet) transparent mode] and click [Setting].

6. Specify [Ethernet Built-in CPU] for the connection destination of the GOT.

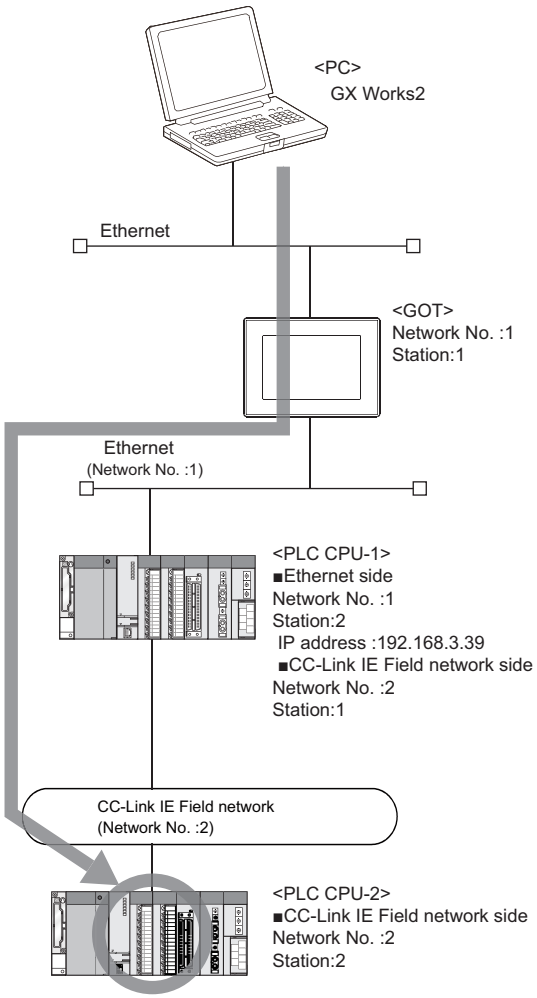


7. Click [Connection Test] to check that connection to the QCPU (Q mode) has been established.



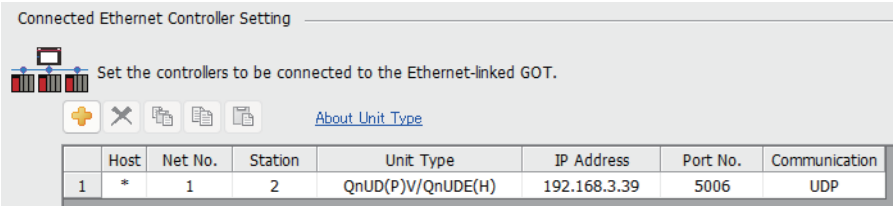
■When the routing setting is needed for the GOT side

1) System configuration



2) [Connected Ethernet Controller Setting] of GT Designer3

Set the network number, PLC number, and IP address of the PLC CPU that is the target of the FA transparent function in GT Designer3.



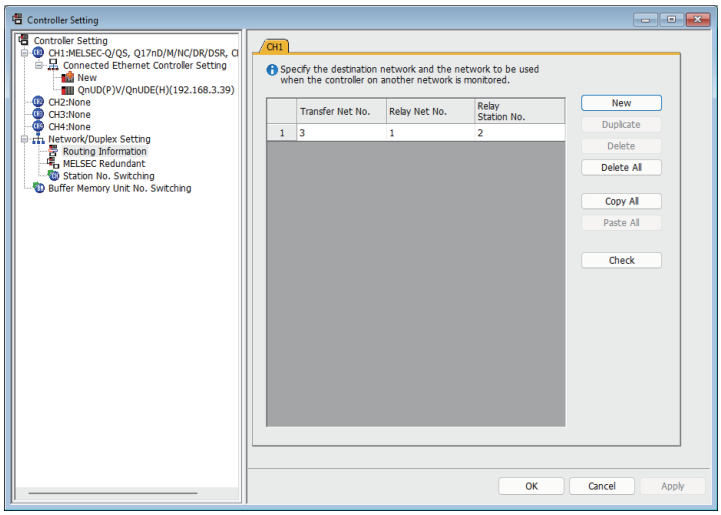
	Host	Net No.	Station	Unit Type	IP Address	Port No.	Communication
1	*	1	2	QnUD(P)V/QnUDE(H)	192.168.3.39	5006	UDP

For details on [Connected Ethernet Controller Setting], refer to the following.

Controller	Reference
MELSEC-Q series (Built-in Ethernet port connection)	☞ Page 356 [Connected Ethernet Controller Setting]
MELSEC-Q series (Ethernet module connection)	☞ Page 407 [Connected Ethernet Controller Setting]
MELSEC-L series (Built-in Ethernet port connection)	☞ Page 448 [Connected Ethernet Controller Setting]
MELSEC-L series (Ethernet module connection)	☞ Page 471 [Connected Ethernet Controller Setting]
CC-Link IE Field Network head module (Ethernet module connection)	☞ Page 259 [Connected Ethernet Controller Setting]

3) Routing settings in GT Designer3

Be sure to set [Transfer Net No.], [Relay Net No.], and [Relay Station No.] for the PLC CPU that is the target of the FA transparent function in GT Designer3.



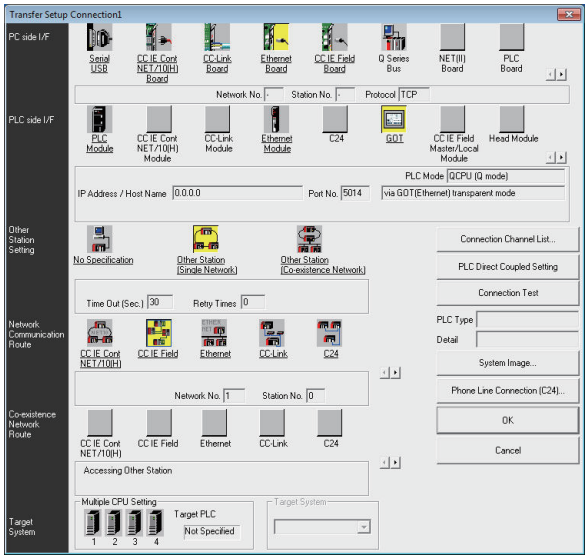
☞ Page 61 Ethernet connection

4) GX Works2 settings

Operating procedure

1. Click the Connection Destination view → [Connection Destination] → [(Connection target data name)] in the Navigation window of GX Works2.

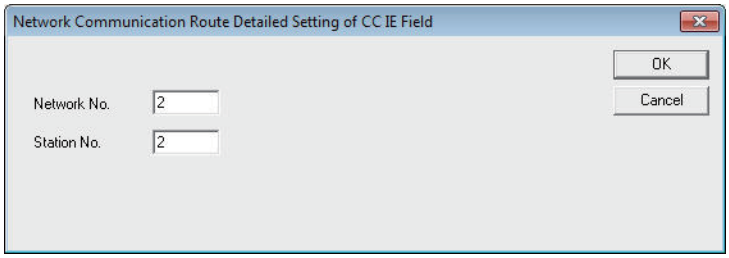
The [Transfer Setup] dialog is displayed.



2. Set [Transfer Setup] as follows:

- [PC side I/F]: [Ethernet Board]
- [PLC side I/F]: [GOT]
- [Other Station Setting]: [Other Station (Single Network)]
- [Network Communication Route]: [CC IE Field]

3. Double-click [CC IE Field] and set [Network No.] and [Station No.].

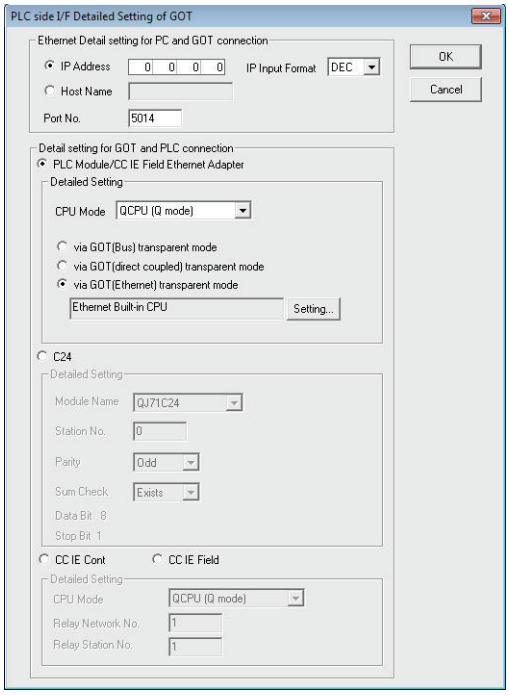


4. Double-click [GOT] of [PLC side I/F].

5. When [PLC side I/F Detailed Setting of GOT] is displayed, set [IP Address] and [Port No.] in [Ethernet detail setting for PC and GOT connection].

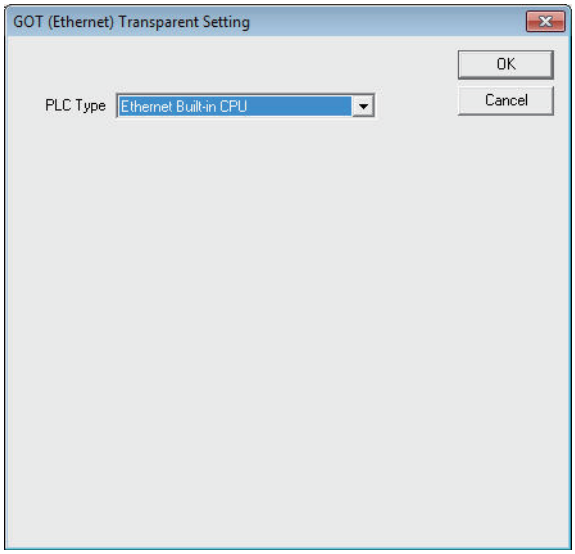
Check the IP address and port number on the GOT side in the [GOT Ethernet Setting] window in GT Designer3.
For details, refer to the following.

GT Designer3 (GOT3000) Screen Design Manual

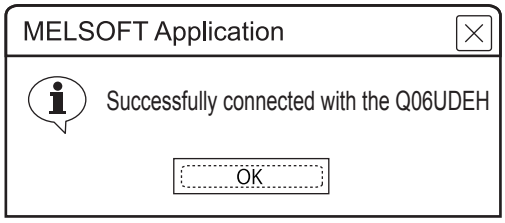


6. In [Detail setting for GOT and PLC connection], select [via GOT(Ethernet) transparent mode] and click [Setting].

7. Specify [Ethernet Built-in CPU] or [QJ71E71] for the connection destination of the GOT.



8. Click [Connection Test] to check that connection to the QCPU (Q mode) has been established.



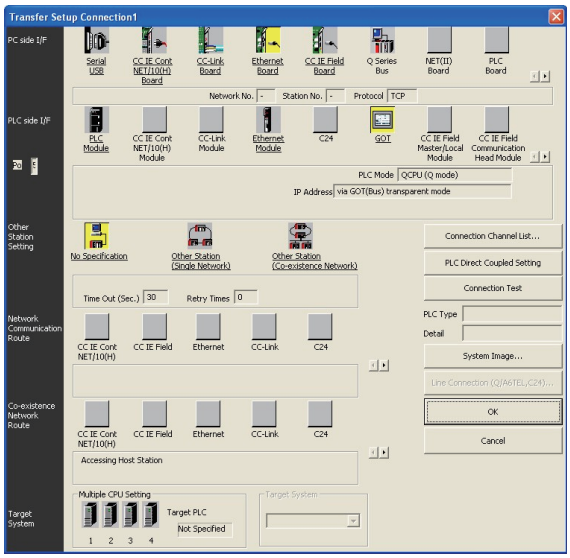
Serial connection between the GOT and the controller

The following shows an example for connection to MELSEC-Q series PLC CPU (Q mode).

Operating procedure

1. Click the Connection Destination view → [Connection Destination] → [(Connection target data name)] in the Navigation window of GX Works2.

[Transfer Setup] is displayed.



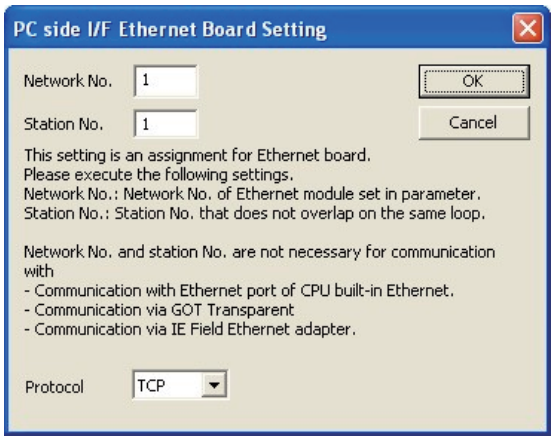
2. Set [Transfer Setup] as follows:

- [PC side I/F]: [Ethernet Board]
- [PLC side I/F]: [GOT]
- [Other Station Setting]: [No Specification]

3. Double-click [Ethernet Board] of [PC side I/F].

4. When [PC side I/F Ethernet Board Setting] is displayed, select [TCP] for [Protocol].

Settings are not required for [Network No.] and [Station No.] because they are not used.

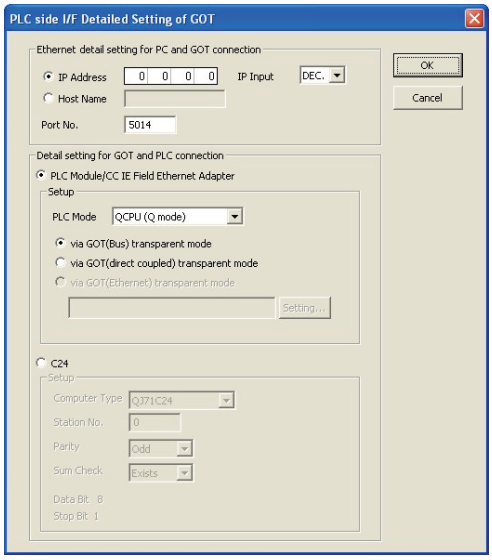


5. Double-click [GOT] of [PLC side I/F].

6. When [PLC side I/F Detailed Setting of GOT] is displayed, set [IP Address] and [Port No.] in [Ethernet detail setting for PC and GOT connection].

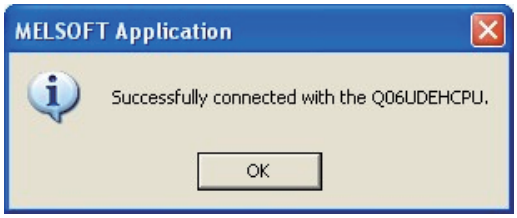
Check the IP address and port number on the GOT side in the [GOT Ethernet Setting] window in GT Designer3.
For details, refer to the following.

📖GT Designer3 (GOT3000) Screen Design Manual



7. In [Detail setting for GOT and PLC connection], select [via GOT(direct coupled) transparent mode].

8. Return to [Transfer Setup] and click [Connection Test] to check that connection to the QCPU (Q mode) has been established.



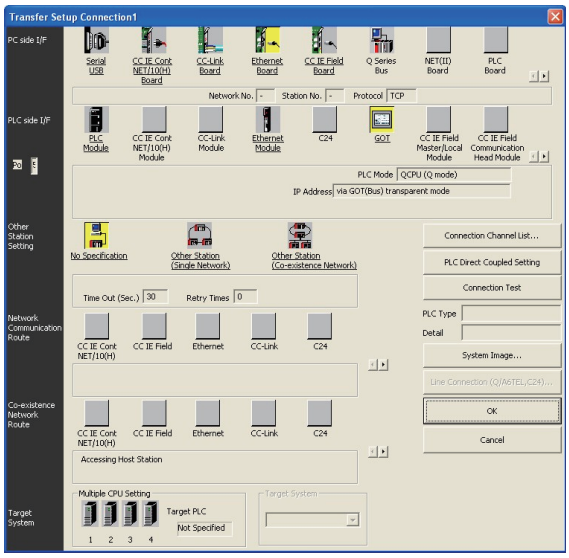
Serial communication connection between the GOT and the controller

The following shows an example for connection to the MELSEC-Q series serial communication module (QJ71C24(N)).

Operating procedure

1. Click the Connection Destination view → [Connection Destination] → [(Connection target data name)] in the Navigation window of GX Works2.

[Transfer Setup] is displayed.



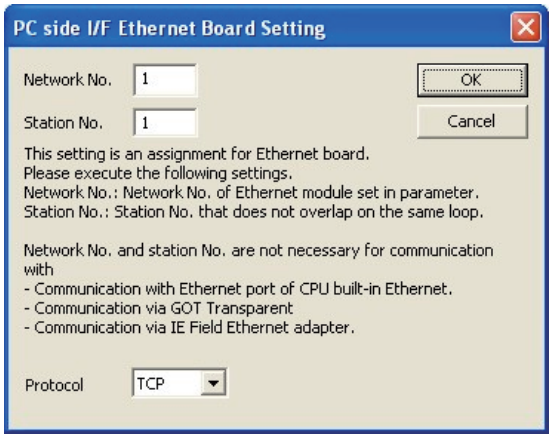
2. Set [Transfer Setup] as follows:

- [PC side I/F]: [Ethernet Board]
- [PLC side I/F]: [GOT]
- [Other Station Setting]: [No Specification]

3. Double-click [Ethernet Board] of [PC side I/F].

4. When [PC side I/F Ethernet Board Setting] is displayed, select [TCP] for [Protocol].

Settings are not required for [Network No.] and [Station No.] because they are not used.



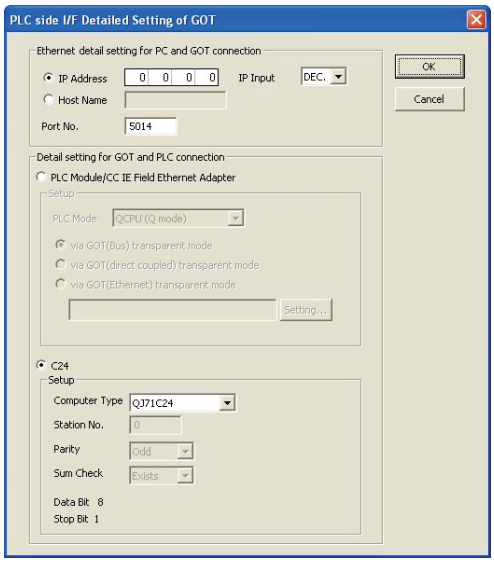
5. Double-click [GOT] of [PLC side I/F].

6. When [PLC side I/F Detailed Setting of GOT] is displayed, set [IP Address] and [Port No.] in [Ethernet detail setting for PC and GOT connection].

Check the IP address and port number on the GOT side in the [GOT Ethernet Setting] window in GT Designer3.

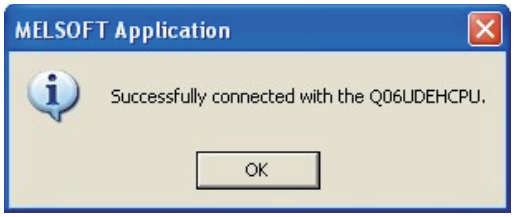
For details, refer to the following.

GT Designer3 (GOT3000) Screen Design Manual



7. In [Detail setting for GOT and PLC connection], select [C24]

8. Return to [Transfer Setup] and click [Connection Test] to check that connection to the QCPU (Q mode) has been established.



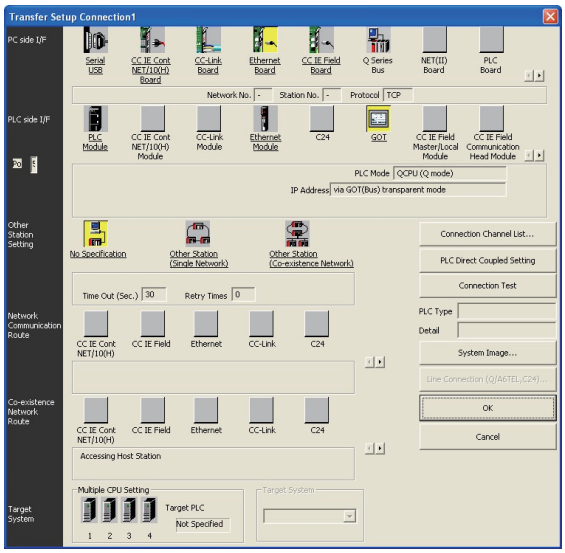
Bus connection between the GOT and the controller

The following shows an example for connection to MELSEC-Q series PLC CPU (Q mode).

Operating procedure

1. Click the Connection Destination view → [Connection Destination] → [(Connection target data name)] in the Navigation window of GX Works2.

[Transfer Setup] is displayed.



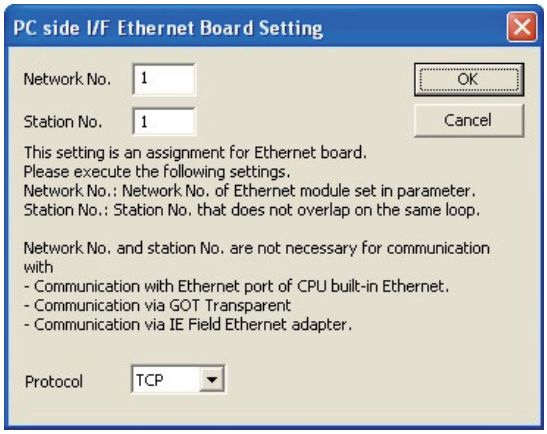
2. Set [Transfer Setup] as follows:

- [PC side I/F]: [Ethernet Board]
- [PLC side I/F]: [GOT]
- [Other Station Setting]: [No Specification]

3. Double-click [Ethernet Board] of [PC side I/F].

4. When [PC side I/F Ethernet Board Setting] is displayed, select [TCP] for [Protocol].

Settings are not required for [Network No.] and [Station No.] because they are not used.



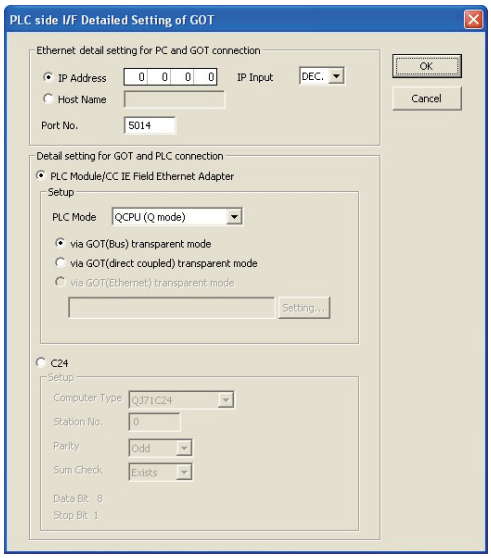
5. Double-click [GOT] of [PLC side I/F].

6. When [PLC side I/F Detailed Setting of GOT] is displayed, set [IP Address] and [Port No.] in [Ethernet detail setting for PC and GOT connection].

Check the IP address and port number on the GOT side in the [GOT Ethernet Setting] window in GT Designer3.

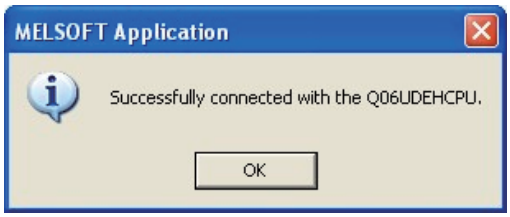
For details, refer to the following.

📖GT Designer3 (GOT3000) Screen Design Manual



7. In [Detail setting for GOT and PLC connection], select [via GOT(Bus) transparent mode].

8. Return to [Transfer Setup] and click [Connection Test] to check that connection to the QCPU (Q mode) has been established.



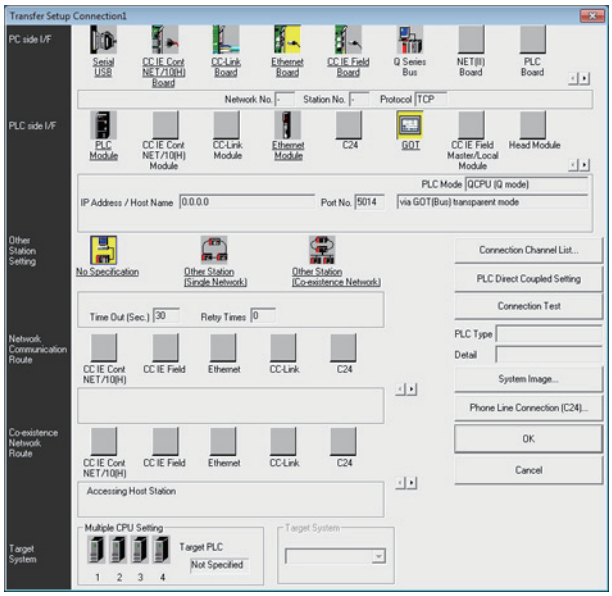
CC-Link IE Controller Network connection between the GOT and the controller

The following shows an example for connection to MELSEC-Q series PLC CPU (Q mode).

Operating procedure

1. Click the Connection Destination view → [Connection Destination] → [(Connection target data name)] in the Navigation window of GX Works2.

[Transfer Setup] is displayed.



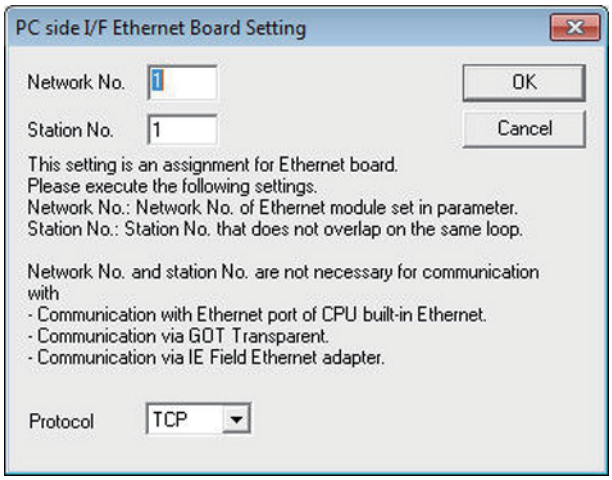
2. Set [Transfer Setup] as follows:

- [PC side I/F]: [Ethernet Board]
- [PLC side I/F]: [GOT]
- [Other Station Setting]: [No Specification]

3. Double-click [Ethernet Board] of [PC side I/F].

4. When [PC side I/F Ethernet Board Setting] is displayed, select [TCP] for [Protocol].

Settings are not required for [Network No.] and [Station No.] because they are not used.



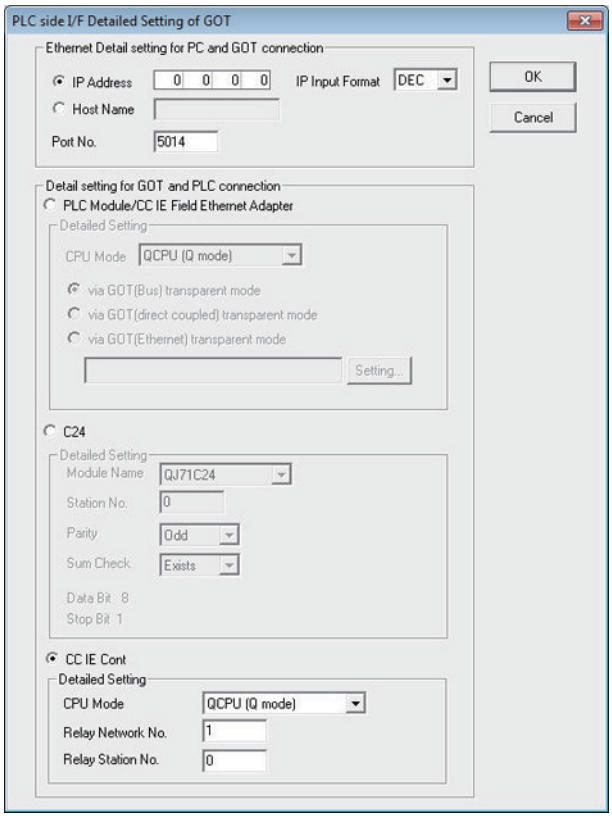
5. Double-click [GOT] of [PLC side I/F] to display [PLC side I/F Detailed Setting of GOT].

6. When [PLC side I/F Detailed Setting of GOT] is displayed, set [IP Address] and [Port No.] in [Ethernet detail setting for PC and GOT connection].

Check the IP address and port number on the GOT side in the [GOT Ethernet Setting] window in GT Designer3.

For details, refer to the following.

GT Designer3 (GOT3000) Screen Design Manual



7. In [Detail setting for GOT and PLC connection], select [CC IE Cont] and configure the settings in [Detailed Setting].

Set [Relay Station No.] as follows:

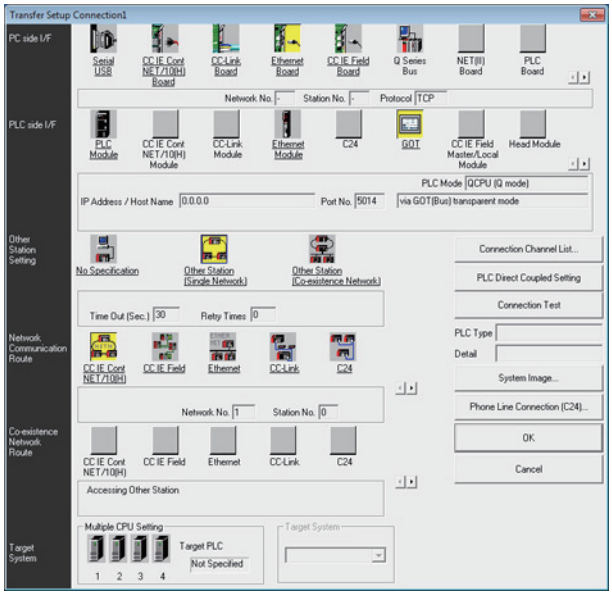
- When the target PLC has the same network number as that of the GOT

Set the number assigned to the PLC that is the target of the FA transparent function and CC-Link IE Controller Network module.

- When the target PLC has a network number different from that of the GOT

Set the number assigned to the PLC that is used as a relay station and CC-Link IE Controller Network module.

8. Return to [Transfer Setup], click [Other Station (Single Network)], and double-click [CC IE Cont NET/10(H)].



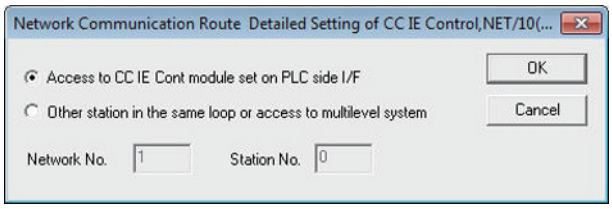
9. Set as shown below and click [OK].

- When the GOT and PLC are on the same network

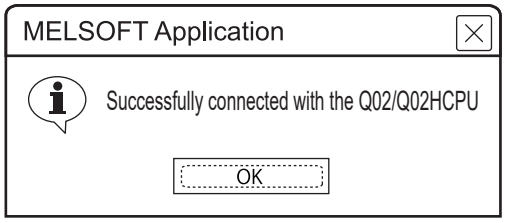
Select [Access to CC IE Cont module set on PLC side I/F].

- When the GOT and PLC are on different networks

Select [Other station in the same loop or access to multilevel system] and set [Network No.] and [Station No.].



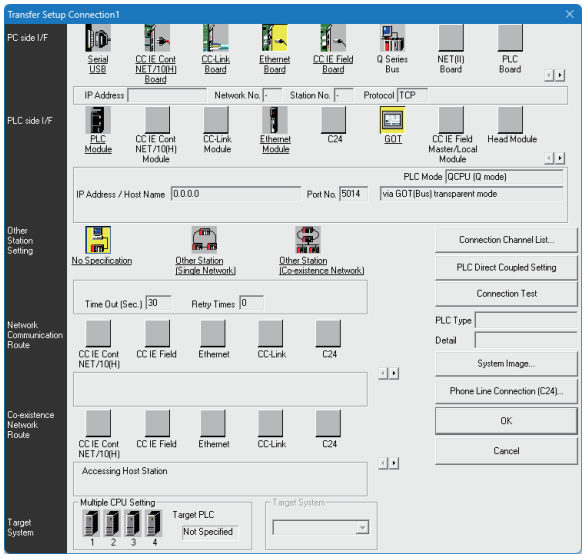
10. Return to [Transfer Setup] and click [Connection Test] to check that connection to the QCPU (Q mode) has been established.



CC-Link IE Field Network connection between the GOT and the controller

1. Click the Connection Destination view → [Connection Destination] → [(Connection target data name)] in the Navigation window of GX Works2.

The [Transfer Setup] dialog is displayed.



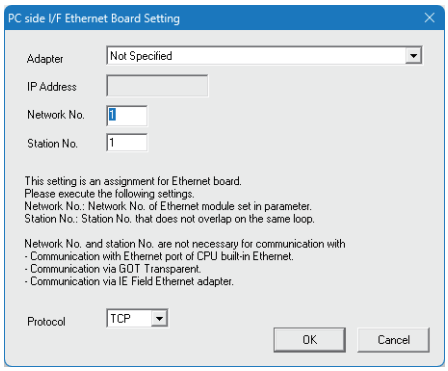
2. Set [Transfer Setup] as follows:

- [PC side I/F]: [Ethernet Board]
- [PLC side I/F]: [GOT]
- [Other Station Setting]: [No Specification]

3. Double-click [Ethernet Board] of [PC side I/F].

4. When [PC side I/F Ethernet Board Setting] is displayed, select [TCP] for [Protocol].

Settings are not required for [Network No.] and [Station No.] because they are not used.

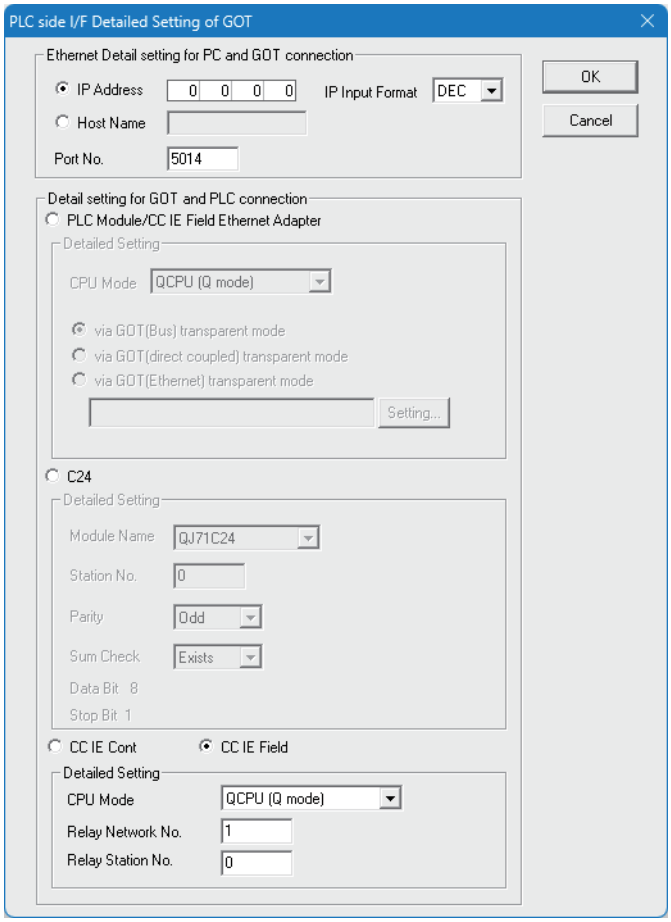


5. Double-click [GOT] of [PLC side I/F].

6. When [PLC side I/F Detailed Setting of GOT] is displayed, set [IP Address] and [Port No.] in [Ethernet detail setting for PC and GOT connection].

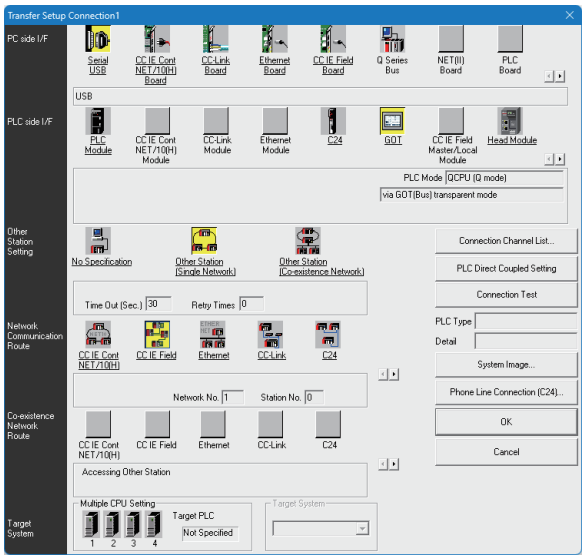
Check the IP address and port number on the GOT side in the [GOT Ethernet Setting] window in GT Designer3.
For details, refer to the following.

📖GT Designer3 (GOT3000) Screen Design Manual

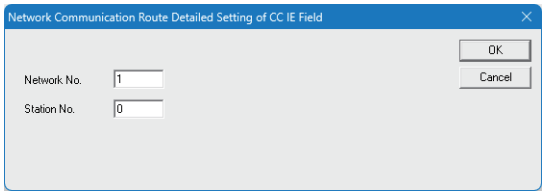


7. In [Detail setting for GOT and PLC connection], select [CC IE Field].

8. Return to [Transfer Setup], click [Other Station (Single Network)], and double-click [CC IE Field].



9. [Network Communication Route Detailed Setting of CC IE Field] is displayed.

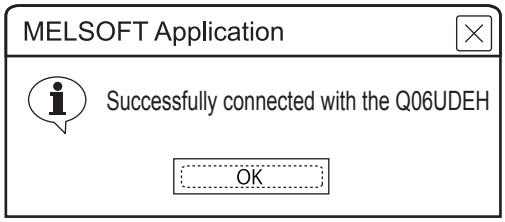


10. Set [Network No.] and [Station No.] assigned to the CPU, and click [OK].

For connection to the CC-Link IE Field Network master/local module, the setting is as follows.

- [Network No.]: 1
- [Station No.]: 0

11. Click [Connection Test] to check that connection to the QCPU (Q mode) has been established.



75.9 Precautions for using GX Works2

75.9.1 When [monitor conditions] have been set in GX Works2

- Monitoring performance of the GOT is temporarily suspended.
- The GOT cannot respond to the touch switch operation and numerical/ASCII inputs.
- Writing to PLC results in a system alarm with the message, "315 Device writing error. Correct device.".
- While setting the monitor conditions, do not perform any operation which makes the GOT restart (e.g. downloading project data, changing utility data).

Doing so may display a system alarm with the message "402 Communication timeout. Confirm communication pathway or modules." when the GOT restarts.

When the monitor condition setting for the PLC CPU has not been cancelled, reconnect GX Works2 to cancel the setting. Note that an error may occur during this process.

- When the time check of GX Works2 is set to 30 seconds or more in the monitor condition settings, the message "402 Communication timeout. Confirm communication pathway or modules." may appear.

Set the time check time of GX Works2 to less than 30 seconds.

75.9.2 Using the FA transparent function when the GOT and the controller are connected by Ethernet

The following GX Works2 functions cannot be operated.

The message [The executed function is not supported. Please check the manual and other documentation.] is displayed.

Unsupported functions	Remark
• Remote Reset • Remote system reset	—
• Remote RUN • Remote STOP • Remote PAUSE • Remote STEP-RUN • Remote latch clear • Write clock data • Clear malfunction log	Inexecutable only when Specify all stations/groups has been performed.
• Remote password function • MELSECNET diagnostics • CC IE Control diagnostics • CC IE Field diagnostics • Ethernet diagnostics (ping test/loopback test with the Ethernet module)	—

75.9.3 When PLC write fails while using the FA transparent function

While writing to the PLC CPU using the FA transparent function, the writing may fail due to cable disconnection or other reasons.
When this occurs, re-execute the PLC write from the same personal computer, or reset the PLC CPU.

75.9.4 Restrictions on GX Works2 during backup/restoration

- When PLC read, PLC write, monitoring, or other operation is executed from GX Works2 using the FA transparent function during backup/restoration of the GOT, the backup/restoration stops.

Check that PLC read, PLC write, monitoring, or other operation is not executed from GX Works2 using the FA transparent function. Then, execute backup/restoration of the GOT again.

- When backup/restoration is executed from the GOT using the FA transparent function during PLC read, PLC write, monitoring, or other operation with GX Works2, an error occurs in GX Works2.

Backup/restoration of the GOT is correctly executed.

75.9.5 Monitoring the PLC CPU from a personal computer

When monitoring the PLC CPU from a personal computer, the GOT and personal computer refresh the display slower.

75.9.6 When performing [Read to PLC], [Write to PLC], or other file operations in GX Works2

If any of the following GOT functions is executed during a file operation such as [Read to PLC] or [Write to PLC] in GX Works2, an error may occur on the GOT or in GX Works2.

In this case, take the following corrective action:

- Reading a file with the MELSEC-Q ladder monitor function

Error message on GOT	Corrective action on GOT side	Error messages on GX Works2	Corrective action in GX Works2
The file is not found.	With no file operation being executed in GX Works2, re-execute the file reading.	File access failure. Please retry.	With no file being read with the MELSEC-Q ladder monitor function, re-execute the file operation.

- Reading or writing device values by specifying the file register name of the recipe function

Error message on GOT	Corrective action on GOT side	Error messages on GX Works2	Corrective action in GX Works2
358 PLC file access failure. Confirm PLC drive.*1	With no file operation being executed in GX Works2, turn on the trigger device of the recipe function again.	File access failure. Please retry.	Execute the file access operation again with the recipe in-process signal in GOT system information OFF.
		PLC file system error. Unable to communicate with PLC.	

*1 The numerical indicates the system alarm number.

- Reading the TC monitor set value with the system monitor function

Error message on GOT	Corrective action on GOT side	Error messages on GX Works2	Corrective action in GX Works2
No message is displayed. (The TC set value space is blank.)	With no file operation being executed in GX Works2, re-execute the TC monitor.	File access failure. Please retry.	With no TC set value being read, re-execute the file operation.

- Reading the CPU malfunction log of the special module monitor

Error message on GOT	Corrective action on GOT side	Error messages on GX Works2	Corrective action in GX Works2
Communication error	With no file operation being executed in GX Works2, re-execute the CPU malfunction log reading.	File access failure. Please retry.	With no special module monitor CPU malfunction log being read, execute the file operation.

- Backup/restore

Error message on GOT	Corrective action on GOT side	Error messages on GX Works2	Corrective action in GX Works2
Backup	With no file operation being executed in GX Works2, re-execute the backup.	—	With no backup being executed, execute the file operation.
Restore	With no file operation being executed in GX Works2, re-execute the restoration.	—	With no restore being executed, execute the file operation.

- Reading the SFC monitor file

Error message on GOT	Corrective action on GOT side	Error messages on GX Works2	Corrective action in GX Works2
—	With no file operation being executed in GX Works2, re-execute the file reading.	—	With no SFC monitor CPU malfunction log being read, execute the file operation.

• Reading or writing ladder edit files

Error message on GOT	Corrective action on GOT side	Error messages on GX Works2	Corrective action in GX Works2
Read	With no file operation being executed in GX Works2, re-execute the file reading.	—	With no file reading being executed on ladder edit, execute the file operation.
Write	With no file operation being executed in GX Works2, re-execute the file writing.	—	With no file writing being executed in ladder edit, execute the file operation.

75.9.7 When exiting GX Works2

For 30 seconds after GX Works2 has been exited, the GOT continues monitoring at the same speed as when the FA transparent function is working.

76 Accessing with GX LogViewer

The following shows the controllers that can be accessed with GX LogViewer using the FA transparent function.

Controller	Reference
PLC CPU (MELSEC-Q series (Q mode))	☞ Page 2781 PLC CPU (MELSEC-Q series (Q mode))
PLC CPU (MELSEC-L series)	☞ Page 2786 PLC CPU (MELSEC-L series)

For information on the GOT side or personal computer side settings, refer to the following.

☞ Page 2788 GOT side settings
☞ Page 2791 Personal computer side settings

76.1 PLC CPU (MELSEC-Q series (Q mode))

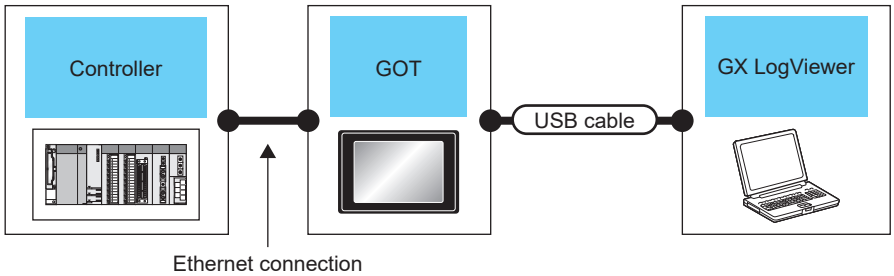
Personal computer to GOT connection	Connection between GOT and controller	Reference
USB connection	Ethernet connection	☞ Page 2781 Ethernet connection between the GOT and the controller
	Serial connection	☞ Page 2783 Serial connection between the GOT and the controller
	Serial communication connection	☞ Page 2784 Serial communication connection between the GOT and the controller
	Bus connection	☞ Page 2785 Bus connection between the GOT and the controller

76.1.1 USB connection between the personal computer and the GOT

Ethernet connection between the GOT and the controller

For the system configuration between the GOT and the controller, refer to the following.

Controller	Reference
MELSEC-Q series (Built-in Ethernet port connection)	☞ Page 342 System configuration
MELSEC-Q series (Ethernet module connection)	☞ Page 394 System configuration



Controller	GOT		Connection cable		Personal computer	Number of connectable equipment
	Model	Interface	USB cable	Maximum length	Compatible GX LogViewer version	
Q00JCPU Q00CPU Q01CPU Q02CPU	GT37 SoftGOT3000	USB	*1	3 m	1.160S or later	1 personal computer for 1 GOT
Q02HCPU Q06HCPU Q12HCPU Q25HCPU	GT37 SoftGOT3000	USB	*1	3 m	1.160S or later	1 personal computer for 1 GOT

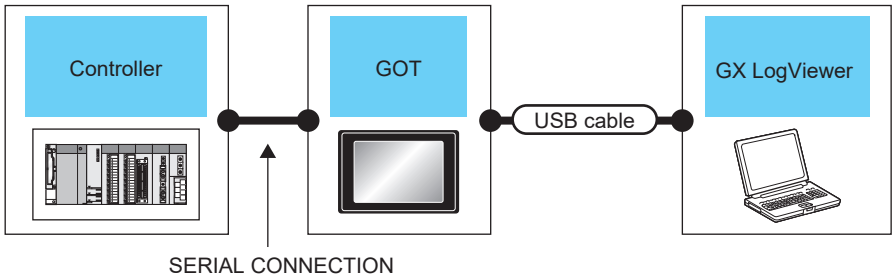
Controller	GOT		Connection cable		Personal computer	Number of connectable equipment
	Model	Interface	USB cable	Maximum length	Compatible GX LogViewer version	
Q00UJCPU Q00UJCPU-S8	GT37 SoftGOT3000	USB	*1	3 m	1.160S or later	1 personal computer for 1 GOT
Q00UCPU Q01UCPU Q02UCPU Q03UDCPU	GT37 SoftGOT3000	USB	*1	3 m	1.160S or later	1 personal computer for 1 GOT
Q04UDHCPU Q06UDHCPU Q10UDHCPU Q13UDHCPU Q20UDHCPU Q26UDHCPU	GT37 SoftGOT3000	USB	*1	3 m	1.160S or later	1 personal computer for 1 GOT
Q03UDECPU Q04UDEHCPU Q06UDEHCPU Q10UDEHCPU Q13UDEHCPU Q20UDEHCPU Q26UDEHCPU Q50UDEHCPU Q100UDEHCPU	GT37 SoftGOT3000	USB	*1	3 m	1.160S or later	1 personal computer for 1 GOT
Q03UDVCPU Q04UDVCPU Q06UDVCPU Q13UDVCPU Q26UDVCPU	GT37 SoftGOT3000	USB	*1	3 m	1.160S or later	1 personal computer for 1 GOT

*1 For the USB cables validated by Mitsubishi Electric Corporation, refer to the following Technical Bulletin.
List of Valid Devices Applicable for GOT3000 Series (GOT-A-0233)

Serial connection between the GOT and the controller

For the system configuration between the GOT and the controller, refer to the following.

Controller	Reference
MELSEC-Q series (Built-in serial port connection)	☞ Page 566 System configuration



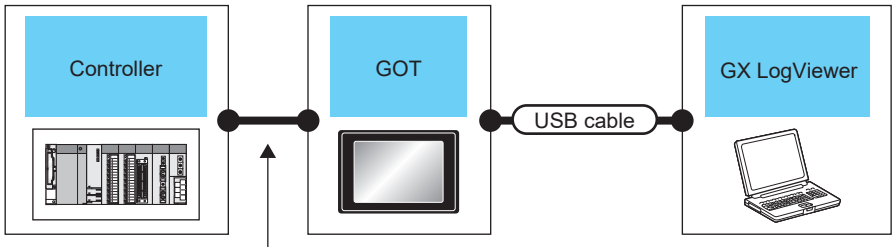
Controller	GOT		Connection cable		Personal computer	Number of connectable equipment
	Model	Interface	USB cable	Maximum length	Compatible GX LogViewer version	
Q00JCPU Q00CPU Q01CPU Q02CPU	GT37 SoftGOT3000	USB	*1	3 m	1.160S or later	1 personal computer for 1 GOT
Q02HCPU Q06HCPU Q12HCPU Q25HCPU	GT37 SoftGOT3000	USB	*1	3 m	1.160S or later	1 personal computer for 1 GOT
Q00UJCPU Q00UJCPU-S8	GT37 SoftGOT3000	USB	*1	3 m	1.160S or later	1 personal computer for 1 GOT
Q00UCPU Q01UCPU Q02UCPU Q03UDCPU	GT37 SoftGOT3000	USB	*1	3 m	1.160S or later	1 personal computer for 1 GOT
Q04UDHCPU Q06UDHCPU Q10UDHCPU Q13UDHCPU Q20UDHCPU Q26UDHCPU	GT37 SoftGOT3000	USB	*1	3 m	1.160S or later	1 personal computer for 1 GOT
Q03UDECPU Q04UDEHCPU Q06UDEHCPU Q10UDEHCPU Q13UDEHCPU Q20UDEHCPU Q26UDEHCPU Q50UDEHCPU Q100UDEHCPU	GT37 SoftGOT3000	USB	*1	3 m	1.160S or later	1 personal computer for 1 GOT
Q03UDVCPU Q04UDVCPU Q06UDVCPU Q13UDVCPU Q26UDVCPU	GT37 SoftGOT3000	USB	*1	3 m	1.160S or later	1 personal computer for 1 GOT

*1 For the USB cables validated by Mitsubishi Electric Corporation, refer to the following Technical Bulletin.
List of Valid Devices Applicable for GOT3000 Series (GOT-A-0233)

Serial communication connection between the GOT and the controller

For the system configuration between the GOT and the controller, refer to the following.

Controller	Reference
MELSEC-Q series (serial communication connection)	☞ Page 587 System configuration



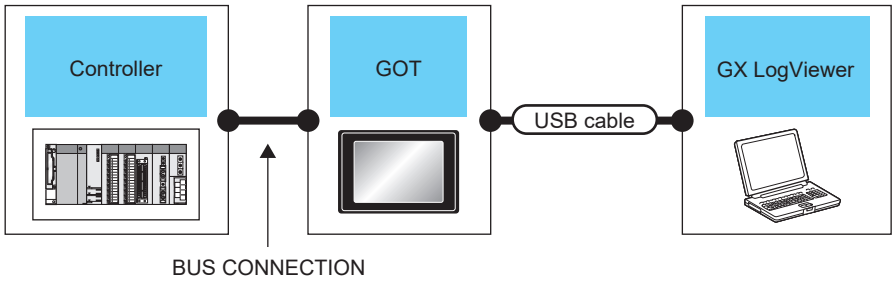
Controller	GOT		Connection cable		Personal computer	Number of connectable equipment
	Model	Interface	USB cable	Maximum length	Compatible GX LogViewer version	
Q00JCPU Q00CPU Q01CPU Q02CPU	GT37 SoftGOT3000	USB	*1	3 m	1.160S or later	1 personal computer for 1 GOT
Q02HCPU Q06HCPU Q12HCPU Q25HCPU	GT37 SoftGOT3000	USB	*1	3 m	1.160S or later	1 personal computer for 1 GOT
Q00UJCPU Q00UJCPU-S8	GT37 SoftGOT3000	USB	*1	3 m	1.160S or later	1 personal computer for 1 GOT
Q00UCPU Q01UCPU Q02UCPU Q03UDCPU	GT37 SoftGOT3000	USB	*1	3 m	1.160S or later	1 personal computer for 1 GOT
Q04UDHCPU Q06UDHCPU Q10UDHCPU Q13UDHCPU Q20UDHCPU Q26UDHCPU	GT37 SoftGOT3000	USB	*1	3 m	1.160S or later	1 personal computer for 1 GOT
Q03UDECPU Q04UDEHCPU Q06UDEHCPU Q10UDEHCPU Q13UDEHCPU Q20UDEHCPU Q26UDEHCPU Q50UDEHCPU Q100UDEHCPU	GT37 SoftGOT3000	USB	*1	3 m	1.160S or later	1 personal computer for 1 GOT
Q03UDVCPU Q04UDVCPU Q06UDVCPU Q13UDVCPU Q26UDVCPU	GT37 SoftGOT3000	USB	*1	3 m	1.160S or later	1 personal computer for 1 GOT

*1 For the USB cables validated by Mitsubishi Electric Corporation, refer to the following Technical Bulletin.
List of Valid Devices Applicable for GOT3000 Series (GOT-A-0233)

Bus connection between the GOT and the controller

For the system configuration between the GOT and the controller, refer to the following.

Controller	Reference
MELSEC-Q series (bus connection)	☞ Page 685 System configuration



Controller	GOT		Connection cable		Personal computer	Number of connectable equipment
	Model	Interface	USB cable	Maximum length	Compatible GX LogViewer version	
Q00JCPU Q00CPU Q01CPU Q02CPU	GT37 SoftGOT3000	USB	*1	3 m	1.160S or later	1 personal computer for 1 GOT
Q02HCPU Q06HCPU Q12HCPU Q25HCPU	GT37 SoftGOT3000	USB	*1	3 m	1.160S or later	1 personal computer for 1 GOT
Q00UJCPU Q00UJCPU-S8	GT37 SoftGOT3000	USB	*1	3 m	1.160S or later	1 personal computer for 1 GOT
Q00UCPU Q01UCPU Q02UCPU Q03UDCPU	GT37 SoftGOT3000	USB	*1	3 m	1.160S or later	1 personal computer for 1 GOT
Q04UDHCPU Q06UDHCPU Q10UDHCPU Q13UDHCPU Q20UDHCPU Q26UDHCPU	GT37 SoftGOT3000	USB	*1	3 m	1.160S or later	1 personal computer for 1 GOT
Q03UDECPU Q04UDEHCPU Q06UDEHCPU Q10UDEHCPU Q13UDEHCPU Q20UDEHCPU Q26UDEHCPU Q50UDEHCPU Q100UDEHCPU	GT37 SoftGOT3000	USB	*1	3 m	1.160S or later	1 personal computer for 1 GOT
Q03UDVCPU Q04UDVCPU Q06UDVCPU Q13UDVCPU Q26UDVCPU	GT37 SoftGOT3000	USB	*1	3 m	1.160S or later	1 personal computer for 1 GOT

*1 For the USB cables validated by Mitsubishi Electric Corporation, refer to the following Technical Bulletin.
List of Valid Devices Applicable for GOT3000 Series (GOT-A-0233)

76.2 PLC CPU (MELSEC-L series)

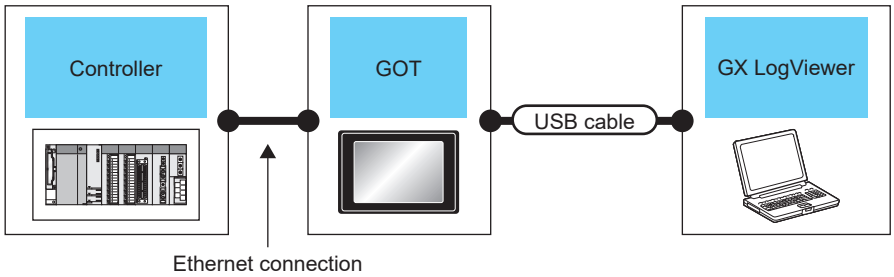
Personal computer to GOT connection	Connection between GOT and controller	Reference
USB connection	Ethernet connection	☞ Page 2786 Ethernet connection between the GOT and the controller
	Serial connection	☞ Page 2787 Serial connection between the GOT and the controller
	Serial communication connection	☞ Page 2787 Serial communication connection between the GOT and the controller

76.2.1 Personal computer to GOT USB connection

Ethernet connection between the GOT and the controller

For the system configuration between the GOT and the controller, refer to the following.

Controller	Reference
MELSEC-L series (Built-in Ethernet port connection)	☞ Page 437 System configuration
MELSEC-L series (Ethernet module connection)	☞ Page 462 System configuration



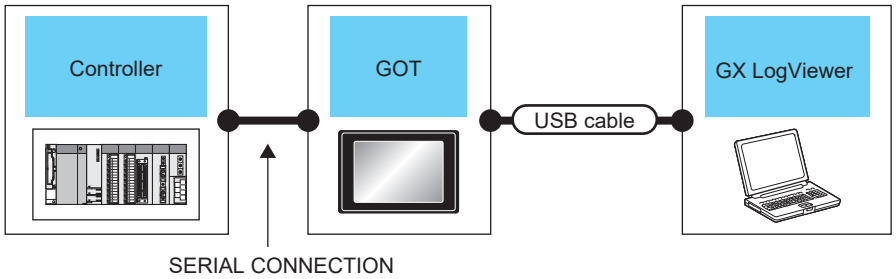
Controller	GOT		Connection cable		Personal computer	Number of connectable equipment
	Model	Interface	USB cable	Maximum length	Compatible GX LogViewer version	
L02CPU L06CPU L26CPU L26CPU-BT L06CPU-P L26CPU-P L02CPU-P L26CPU-PBT L02SCPU L02SCPU-P	GT37 SoftGOT3000	USB	*1	3 m	1.160S or later	1 personal computer for 1 GOT

*1 For the USB cables validated by Mitsubishi Electric Corporation, refer to the following Technical Bulletin.
List of Valid Devices Applicable for GOT3000 Series (GOT-A-0233)

Serial connection between the GOT and the controller

For the system configuration between the GOT and the controller, refer to the following.

Controller	Reference
MELSEC-L series (Built-in serial port connection)	☞ Page 605 System configuration



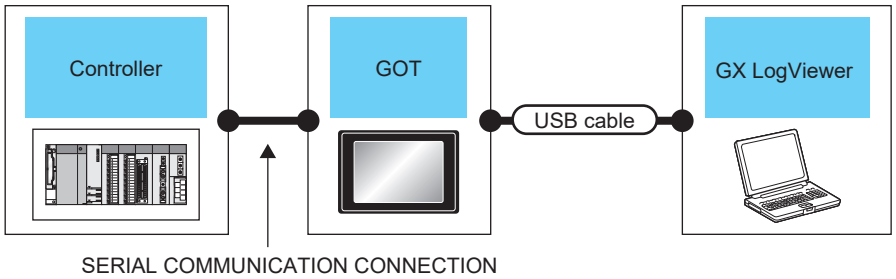
Controller	GOT		Connection cable		Personal computer	Number of connectable equipment
	Model	Interface	USB cable	Maximum length	Compatible GX LogViewer version	
L02CPU L06CPU L26CPU L26CPU-BT L06CPU-P L26CPU-P L02CPU-P L26CPU-PBT L02SCPU L02SCPU-P	GT37 SoftGOT3000	USB	*1	3 m	1.160S or later	1 personal computer for 1 GOT

*1 For the USB cables validated by Mitsubishi Electric Corporation, refer to the following Technical Bulletin.
List of Valid Devices Applicable for GOT3000 Series (GOT-A-0233)

Serial communication connection between the GOT and the controller

For the system configuration between the GOT and the controller, refer to the following.

Controller	Reference
MELSEC-L series (serial communication connection)	☞ Page 619 System configuration



Controller	GOT		Connection cable		Personal computer	Number of connectable equipment
	Model	Interface	USB cable	Maximum length	Compatible GX LogViewer version	
L02CPU L06CPU L26CPU L26CPU-BT L06CPU-P L26CPU-P L02CPU-P L26CPU-PBT L02SCPU L02SCPU-P	GT37 SoftGOT3000	USB	*1	3 m	1.160S or later	1 personal computer for 1 GOT

*1 For the USB cables validated by Mitsubishi Electric Corporation, refer to the following Technical Bulletin.
List of Valid Devices Applicable for GOT3000 Series (GOT-A-0233)

76.3 GOT side settings

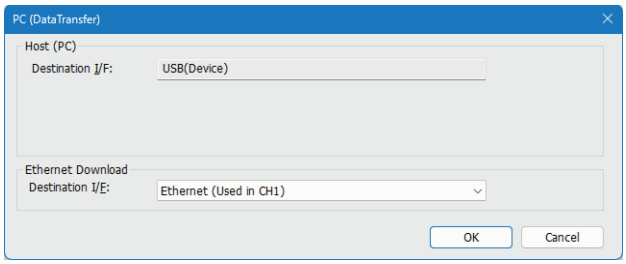
76.3.1 [Controller Setting]

The GOT side settings differ depending on the connection type between the controller and the GOT.
For details on [Controller Setting], refer to the following.

Controller	Reference
MELSEC-Q series (Built-in Ethernet port connection)	☞ Page 350 [Controller Setting]
MELSEC-Q series (Ethernet module connection)	☞ Page 400 [Controller Setting]
MELSEC-Q series (Built-in serial port connection)	☞ Page 568 [Controller Setting]
MELSEC-Q series (serial communication connection)	☞ Page 592 [Controller Setting]
MELSEC-Q series (bus connection)	☞ Page 688 [Controller Setting]
MELSEC-L series (Built-in Ethernet port connection)	☞ Page 441 [Controller Setting]
MELSEC-L series (Ethernet module connection)	☞ Page 465 [Controller Setting]
MELSEC-L series (Built-in serial port connection)	☞ Page 609 [Controller Setting]
MELSEC-L series (serial communication connection)	☞ Page 624 [Controller Setting]

76.3.2 Communication setting with personal computer

Set the communication setting between the GOT and the personal computer.



Operating procedure

1. Select [Common] → [Peripheral Setting] → [PC (Data Transfer)] from the menu.

2. Set the interface of the GOT to be used for communication with the personal computer in the [PC (Data Transfer)] dialog.

For details of the setting contents, refer to the following manual.

📖GT Designer3 (GOT3000) Screen Design Manual

Point

- Controller settings using the GT37 utility

The controller settings can be changed in [Communication Settings] of the GT37 utility after writing [Communication Settings] of project data to GT37.

For details on the GT37 utility, refer to the following manual.

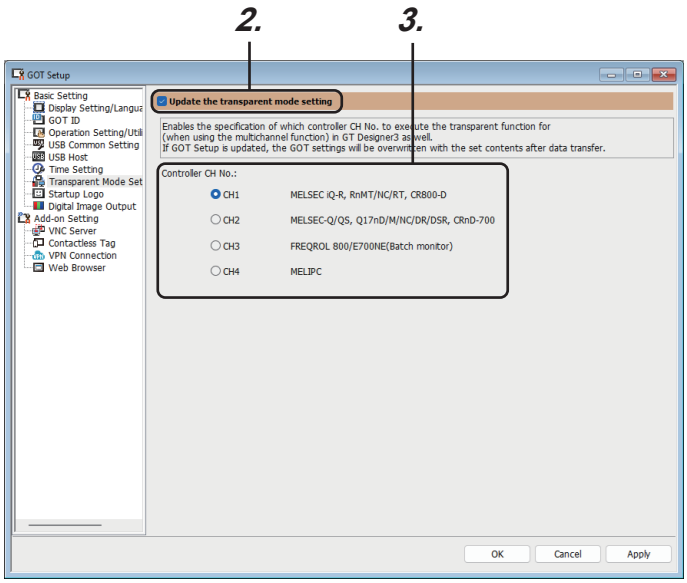
📖GOT3000 Series User's Manual (Utility & Maintenance Functions)

- Priority of the settings in [Controller Setting]

When the settings are configured in GT Designer3 or in the GT37 utility, the latest settings are effective.

76.3.3 GOT Setup

When using the multi-channel function, specify the channel number for which the FA transparent function is executed.



Operating procedure

1. Select [Common] → [GOT Setup] → [Basic Setting] → [Transparent Mode Setting] from the menu.
2. Select [Update the transparent mode setting].
3. As necessary, check one of [CH1] to [CH4].
4. When you have completed the settings, click the [OK] button.

Point

Transparent setting on the utility screen

Transparent setting can be performed by the GOT.

For details of the operating, refer to the following.

GOT3000 Series User's Manual (Utility & Maintenance Functions)

76.4 Personal computer side settings

The following shows the procedure to set the FA transparent function in GX LogViewer.

Personal computer to GOT connection	Connection between GOT and controller	Reference
USB connection	Ethernet connection	☞ Page 2791 Ethernet connection between the GOT and the controller
	Serial connection	☞ Page 2793 Serial connection between the GOT and the controller
	Serial communication connection	☞ Page 2794 Serial communication connection between the GOT and the controller
	Bus connection	☞ Page 2795 Bus connection between the GOT and the controller

76.4.1 Personal computer to GOT USB connection

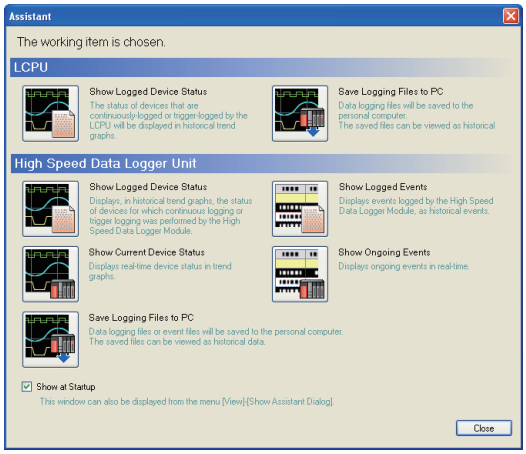
Ethernet connection between the GOT and the controller

The following shows an example for connection to MELSEC-L series PLC CPU.

Operating procedure

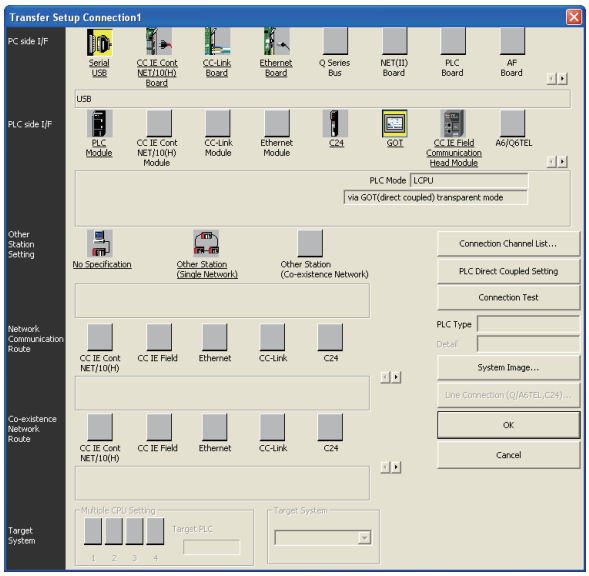
1. Click [Show Assistant Dialog] for [View] on GX LogViewer.

The [Assistant] dialog is displayed.



2. Click [LCPU] → [Show Logged Device Status] in the [Assistant] dialog.

The [Transfer Setup] dialog is displayed.



3. Set [Transfer Setup] as follows:

- [PC side I/F]: [Serial USB]
- [PLC side I/F]: [GOT]
- [Other Station Setting]: (Selected from the system configuration)

4. Double-click [Serial USB] of [PC side I/F].

5. When [PC side I/F Serial Setting] is displayed, select [USB].

6. Double-click [GOT] of [PLC side I/F].

7. When [PLC side I/F Detailed Setting of GOT] is displayed, select [via GOT(direct coupled) transparent mode] and click [Setting].

[GOT (direct coupled) Transparent Setting] is displayed.

Here, set the Built-in Ethernet port LCPU or Ethernet module, which is firstly connected via a GOT.

Item		Description
[PLC Type]		Select the controller connected to the GOT by Ethernet. • Ethernet module • Built-in Ethernet port LCPU
[Module Side]	[Network No.]	When the Ethernet module is selected for [PLC Type], specify the network number assigned to the Ethernet module.
	[Station No.]	When the Ethernet module is selected for [PLC Type], specify the station number assigned to the Ethernet module.
	[IP address]	Specify the IP address assigned to the built-in Ethernet port LCPU or Ethernet module.

8. Return to [Transfer Setup] and click [Connection Test] to check that connection to the PLC CPU has been established.

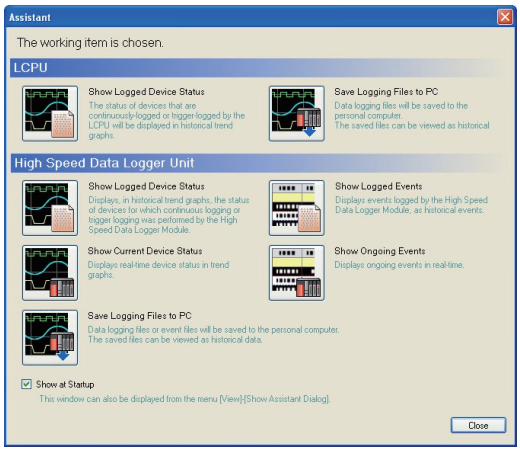
Serial connection between the GOT and the controller

The following shows an example for connection to MELSEC-L series PLC CPU.

Operating procedure

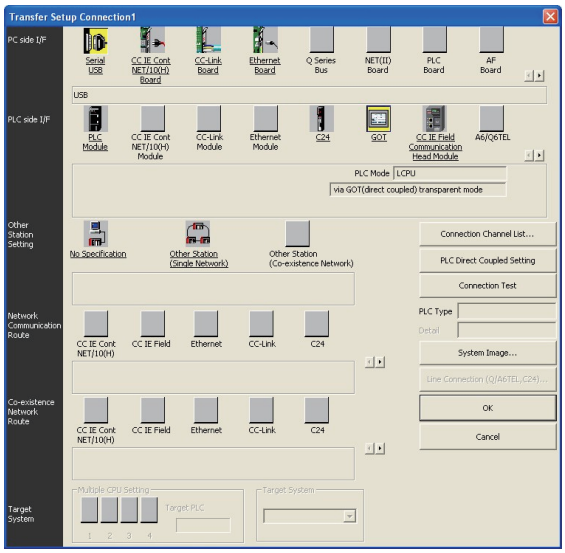
1. Click [Show Assistant Dialog] for [View] on GX LogViewer.

The [Assistant] dialog is displayed.



2. Click [LCPU] → [Show Logged Device Status] in the [Assistant] dialog.

The [Transfer Setup] dialog is displayed.



3. Set [Transfer Setup] as follows:

- [PC side I/F]: [Serial USB]
- [PLC side I/F]: [GOT]
- [Other Station Setting]: (Selected from the system configuration)

4. Double-click [Serial USB] of [PC side I/F].

5. When [PC side I/F Serial Setting] is displayed, select [USB].

6. Double-click [GOT] of [PLC side I/F].

7. When [PLC side I/F Detailed Setting of GOT] is displayed, select [via GOT(direct coupled) transparent mode].

8. Return to [Transfer Setup] and click [Connection Test] to check that connection to the PLC CPU has been established.

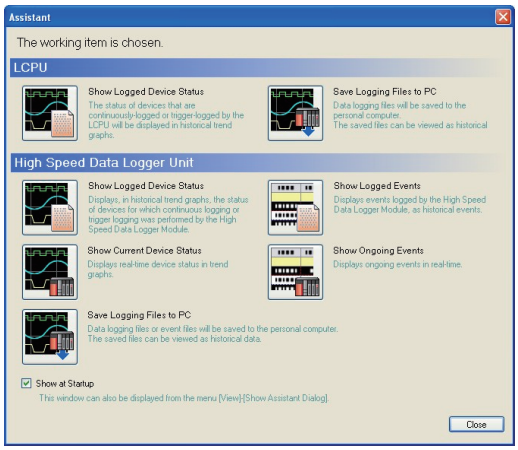
Serial communication connection between the GOT and the controller

The following shows an example for connection to MELSEC-L series serial communication module.

Operating procedure

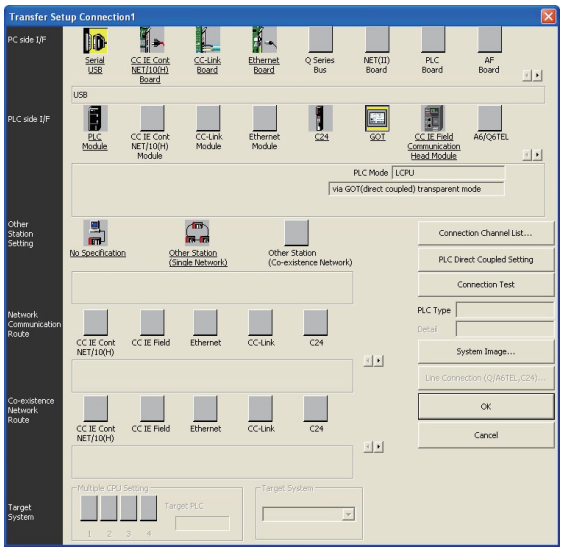
1. Click [Show Assistant Dialog] for [View] on GX LogViewer.

The [Assistant] dialog is displayed.



2. Click [LCPU] → [Show Logged Device Status] in the [Assistant] dialog.

The [Transfer Setup] dialog is displayed.



3. Set [Transfer Setup] as follows:

- [PC side I/F]: [Serial USB]
- [PLC side I/F]: [GOT]
- [Other Station Setting]: (Selected from the system configuration)

4. Double-click [Serial USB] of [PC side I/F].

5. When [PC side I/F Serial Setting] is displayed, select [USB].

6. Double-click [GOT] of [PLC side I/F].

7. When [PLC side I/F Detailed Setting of GOT] is displayed, select [C24].

8. Return to [Transfer Setup] and click [Connection Test] to check that connection to the PLC CPU has been established.

Bus connection between the GOT and the controller

Operating procedure

1. Click [Show Assistant Dialog] for [View] on GX LogViewer.

The [Assistant] dialog is displayed.

2. Click [QCPU] → [Show Logged Device Status] in the [Assistant] dialog.

3. The [Transfer Setup] dialog is displayed.

4. Set [Transfer Setup] as follows:

- [PC side I/F]: [Serial USB]
- [PLC side I/F]: [GOT]
- [Other Station Setting]: (Selected from the system configuration)

5. Double-click [Serial USB] of [PC side I/F].

6. When [PC side I/F Serial Setting] is displayed, select [USB].

7. Double-click [GOT] of [PLC side I/F].

8. When [PLC side I/F Detailed Setting of GOT] is displayed, select [via GOT(direct coupled) transparent mode].

9. Return to [Transfer Setup] and click [Connection Test] to check that connection to the PLC CPU has been established.

77 Accessing with MT Works2

The following shows the controllers that can be accessed with MT Works2 using the FA transparent function.

Controller	Reference
Motion CPU (MELSEC iQ-R series)	☞ Page 2797 Motion CPU (MELSEC iQ-R series)
Motion CPU (MELSEC-Q series)	☞ Page 2799 Motion CPU (MELSEC-Q series)

For information on the GOT side or personal computer side settings, refer to the following.

☞ Page 2804 GOT side settings
☞ Page 2806 Personal computer side settings

Precautions

■When exiting MT Works2

For 45 seconds after MT Works2 has been exited, the GOT continues monitoring at the same speed as when the FA transparent function is working.

■When PLC write fails

While writing to the Motion CPU using the FA transparent function, the writing may fail due to cable disconnection or other reasons.
When this occurs, re-execute the PLC write from the same personal computer, or reset the Motion CPU.

■When a cable disconnection has occurred

When the cable between the GOT and the Motion CPU is disconnected while the FA transparent function is used, it takes time until a timeout error occurs in MT Works2.

77.1 Motion CPU (MELSEC iQ-R series)

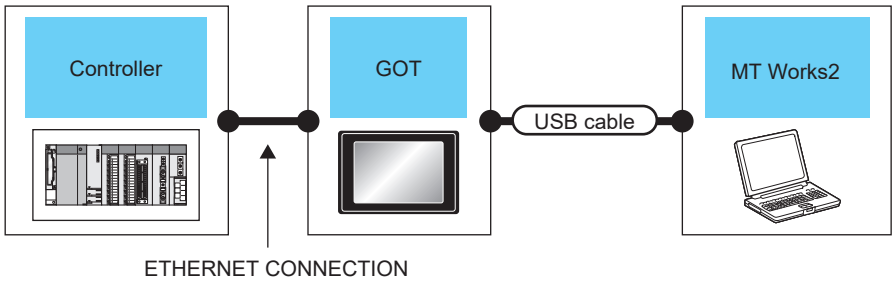
Personal computer to GOT connection	GOT to controller connection	Reference
USB connection	Ethernet connection	☞ Page 2798 GOT to controller Ethernet connection
Ethernet connection	Ethernet connection	☞ Page 2798 GOT to controller Ethernet connection

77.1.1 Personal computer to GOT USB connection

GOT to controller Ethernet connection

For the system configuration between the GOT and the controller, refer to the following.

Controller	Reference
Motion CPU (MELSEC iQ-R series) (Built-in Ethernet port connection)	☞ Page 190 System configuration
Motion CPU (MELSEC iQ-R series) (Ethernet module connection)	☞ Page 245 System configuration



Controller	GOT		Connection cable		Personal computer	Number of connectable devices
	Model	Interface	USB cable	Maximum length	Compatible MT Works2 version	
R16MTCPU R32MTCPU R64MTCPU	GT37 SoftGOT3000	USB	*1	3 m	1.205P or later	1 personal computer for 1 GOT

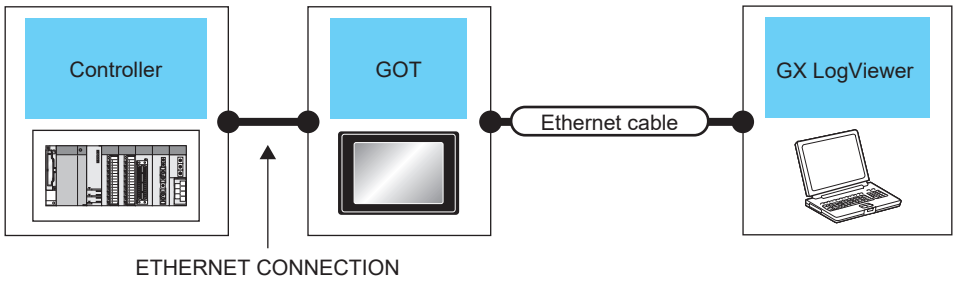
*1 For the USB cables validated by Mitsubishi Electric Corporation, refer to the following Technical Bulletin.
List of Valid Devices Applicable for GOT3000 Series (GOT-A-0233)

77.1.2 Personal computer to GOT Ethernet connection

GOT to controller Ethernet connection

For the system configuration between the GOT and the controller, refer to the following.

Controller	Reference
Motion CPU (MELSEC iQ-R series) (Built-in Ethernet port connection)	☞ Page 190 System configuration
Motion CPU (MELSEC iQ-R series) (Ethernet module connection)	☞ Page 245 System configuration



Controller	GOT		Connection cable		Personal computer	Number of connectable devices
	Model	Interface	Ethernet cable	Maximum segment length	Compatible MT Works2 version	
R16MTCPU R32MTCPU R64MTCPU	GT37 SoftGOT3000	Built-in Ethernet interface of the GOT	Twisted pair cable ☞ Page 2798 Connection cable	100 m	1.205P or later	1 personal computer for 1 GOT

■Connection cable

Use a connection cable that meets the following standards.

Standard	Category
10BASE-T	Shielded twisted pair cable (STP) or unshielded twisted pair cable (UTP) of category 3 or higher
100BASE-TX	Shielded twisted pair cable (STP) or unshielded twisted pair cable (UTP) of category 5 or higher
1000BASE-T	Shielded twisted pair cable (STP) or unshielded twisted pair cable (UTP) of category 5e or higher

77.2 Motion CPU (MELSEC-Q series)

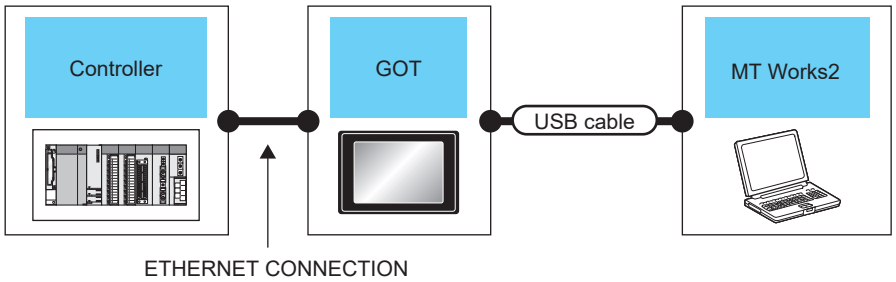
Personal computer to GOT connection	GOT to controller connection	Reference
USB connection	Ethernet connection	☞ Page 2799 GOT to controller Ethernet connection
	Serial connection	☞ Page 2800 Serial connection between the GOT and the controller
	Bus connection	☞ Page 2801 Bus connection between the GOT and the controller
Ethernet connection	Serial connection	☞ Page 2802 Serial connection between the GOT and the controller
	Bus connection	☞ Page 2803 Bus connection between the GOT and the controller

77.2.1 Personal computer to GOT USB connection

GOT to controller Ethernet connection

For the system configuration between the GOT and the controller, refer to the following.

Controller	Reference
Motion CPU (MELSEC-Q series) (Built-in Ethernet port connection)	☞ Page 342 System configuration
Motion CPU (MELSEC-Q series) (Ethernet module connection)	☞ Page 394 System configuration



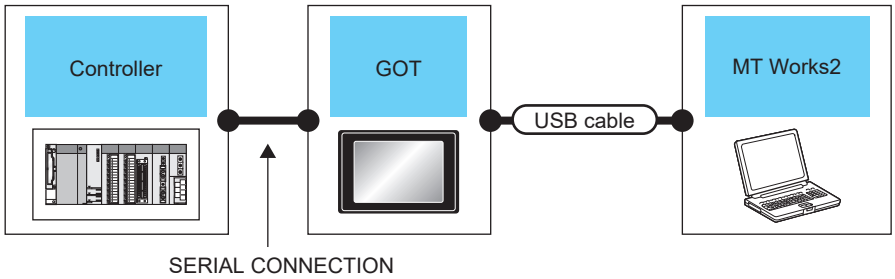
Controller	GOT		Connection cable		Personal computer	Number of connectable devices
	Model	Interface	USB cable	Maximum length	Compatible MT Works2 version	
Q172DCPU Q173DCPU Q172DCPU-S1 Q173DCPU-S1 Q172DSCPU Q173DSCPU	GT37 SoftGOT3000	USB	*1	3 m	1.205P or later	1 personal computer for 1 GOT
Q170MCPU Q170MSCPU Q170MSCPU-S1	GT37 SoftGOT3000	USB	*1	3 m	1.205P or later	1 personal computer for 1 GOT

*1 For the USB cables validated by Mitsubishi Electric Corporation, refer to the following Technical Bulletin.
List of Valid Devices Applicable for GOT3000 Series (GOT-A-0233)

Serial connection between the GOT and the controller

For the system configuration between the GOT and the controller, refer to the following.

Controller	Reference
Motion CPU (MELSEC-Q series) (Built-in serial port connection)	☞ Page 566 System configuration



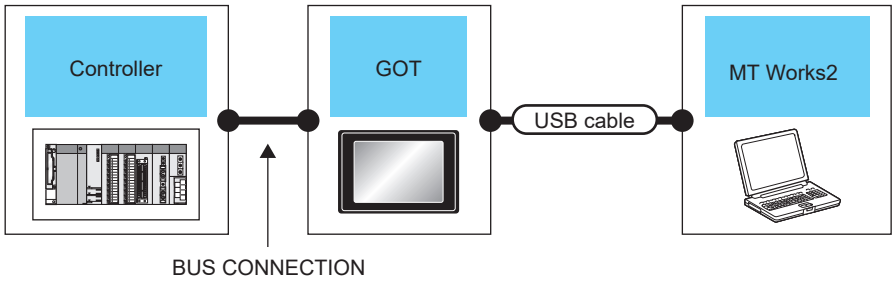
Controller	GOT		Connection cable		Personal computer	Number of connectable devices
	Model	Interface	USB cable	Maximum length	Compatible MT Works2 version	
Q172DCPU Q173DCPU Q172DCPU-S1 Q173DCPU-S1 Q172DSCPU Q173DSCPU	GT37 SoftGOT3000	USB	*1	3 m	1.205P or later	1 personal computer for 1 GOT
Q170MCPU Q170MSCPU Q170MSCPU-S1	GT37 SoftGOT3000	USB	*1	3 m	1.205P or later	1 personal computer for 1 GOT

*1 For the USB cables validated by Mitsubishi Electric Corporation, refer to the following Technical Bulletin.
List of Valid Devices Applicable for GOT3000 Series (GOT-A-0233)

Bus connection between the GOT and the controller

For the system configuration between the GOT and the controller, refer to the following.

Controller	Reference
Motion CPU (MELSEC-Q series) (bus connection)	☞ Page 685 System configuration



Controller	GOT		Connection cable		Personal computer	Number of connectable devices
	Model	Interface	USB cable	Maximum length	Compatible MT Works2 version	
Q172DCPU Q173DCPU Q172DCPU-S1 Q173DCPU-S1 Q172DSCPU Q173DSCPU	GT37 SoftGOT3000	USB	*1	3 m	1.205P or later	1 personal computer for 1 GOT
Q170MCPU Q170MSCPU Q170MSCPU-S1	GT37 SoftGOT3000	USB	*1	3 m	1.205P or later	1 personal computer for 1 GOT

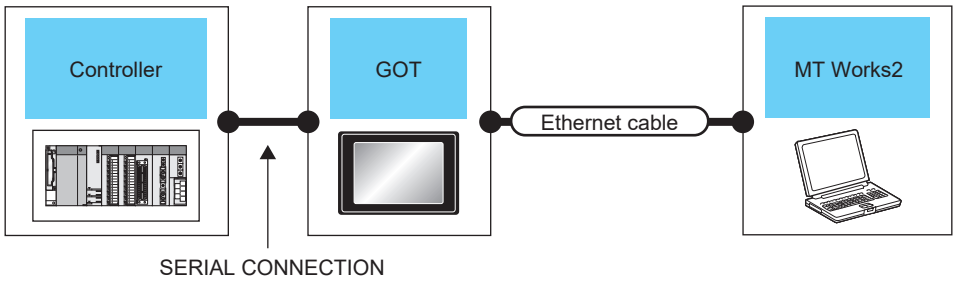
*1 For the USB cables validated by Mitsubishi Electric Corporation, refer to the following Technical Bulletin.
List of Valid Devices Applicable for GOT3000 Series (GOT-A-0233)

77.2.2 Personal computer to GOT Ethernet connection

Serial connection between the GOT and the controller

For the system configuration between the GOT and the controller, refer to the following.

Controller	Reference
Motion CPU (MELSEC-Q series) (Built-in serial port connection)	☞ Page 566 System configuration



Controller	GOT		Connection cable		Personal computer	Number of connectable devices
	Model	Interface	Ethernet cable	Maximum segment length	Compatible MT Works2 version	
Q172DCPU Q173DCPU Q172DCPU-S1 Q173DCPU-S1 Q172DSCPU Q173DSCPU	GT37 SoftGOT3000	Built-in Ethernet interface of the GOT	Twisted pair cable ☞ Page 2802 Connection cable	100 m	1.205P or later	1 personal computer for 1 GOT
Q170MCPU Q170MSCPU Q170MSCPU-S1	GT37 SoftGOT3000	Built-in Ethernet interface of the GOT	Twisted pair cable ☞ Page 2802 Connection cable	100 m	1.205P or later	1 personal computer for 1 GOT

■Connection cable

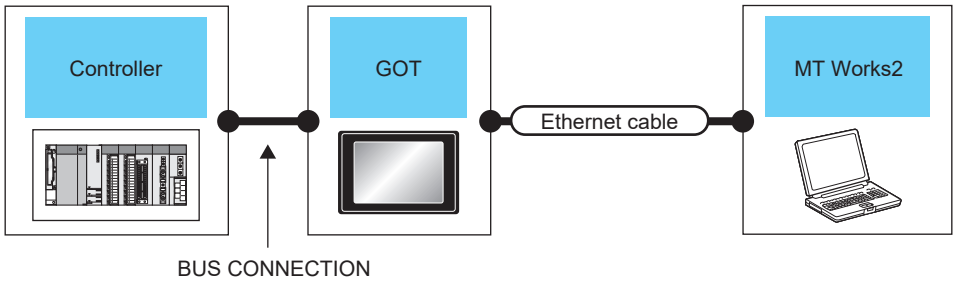
Use a connection cable that meets the following standards.

Standard	Category
10BASE-T	Shielded twisted pair cable (STP) or unshielded twisted pair cable (UTP) of category 3 or higher
100BASE-TX	Shielded twisted pair cable (STP) or unshielded twisted pair cable (UTP) of category 5 or higher
1000BASE-T	Shielded twisted pair cable (STP) or unshielded twisted pair cable (UTP) of category 5e or higher

Bus connection between the GOT and the controller

For the system configuration between the GOT and the controller, refer to the following.

Controller	Reference
Motion CPU (MELSEC-Q series) (bus connection)	☞ Page 685 System configuration



Controller	GOT		Connection cable		Personal computer	Number of connectable devices
	Model	Interface	Ethernet cable	Maximum segment length	Compatible MT Works2 version	
Q172DCPU Q173DCPU Q172DCPU-S1 Q173DCPU-S1 Q172DSCPU Q173DSCPU	GT37 SoftGOT3000	Built-in Ethernet interface of the GOT	Twisted pair cable ☞ Page 2803 Connection cable	100 m	1.205P or later	1 personal computer for 1 GOT
Q170MCPU Q170MSCPU Q170MSCPU-S1	GT37 SoftGOT3000	Built-in Ethernet interface of the GOT	Twisted pair cable ☞ Page 2803 Connection cable	100 m	1.205P or later	1 personal computer for 1 GOT

■Connection cable

Use a connection cable that meets the following standards.

Standard	Category
10BASE-T	Shielded twisted pair cable (STP) or unshielded twisted pair cable (UTP) of category 3 or higher
100BASE-TX	Shielded twisted pair cable (STP) or unshielded twisted pair cable (UTP) of category 5 or higher
1000BASE-T	Shielded twisted pair cable (STP) or unshielded twisted pair cable (UTP) of category 5e or higher

77.3 GOT side settings

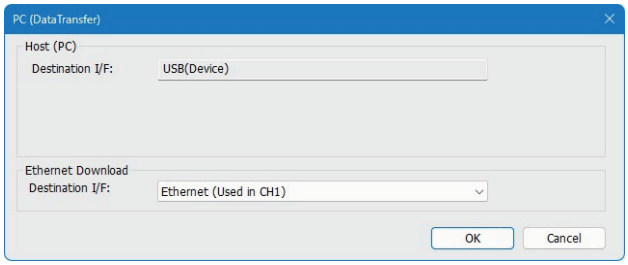
77.3.1 [Controller Setting]

The GOT side settings differ depending on the connection type between the controller and the GOT.
For details on [Controller Setting], refer to the following.

Controller	Reference
Motion CPU (MELSEC iQ-R series) (Built-in Ethernet port connection)	☞ Page 199 [Controller Setting]
Motion CPU (MELSEC iQ-R series) (Ethernet module connection)	☞ Page 253 [Controller Setting]
Motion CPU (MELSEC-Q series) (Built-in Ethernet port connection)	☞ Page 350 [Controller Setting]
Motion CPU (MELSEC-Q series) (Ethernet module connection)	☞ Page 400 [Controller Setting]
Motion CPU (MELSEC-Q series) (Built-in serial port connection)	☞ Page 568 [Controller Setting]
Motion CPU (MELSEC-Q series) (bus connection)	☞ Page 688 [Controller Setting]

77.3.2 Communication setting with personal computer

Set the communication setting between the GOT and the personal computer.



Operating procedure

1. Select [Common] → [Peripheral Setting] → [PC (Data Transfer)] from the menu.

2. Set the interface of the GOT to be used for communication with the personal computer in the [PC (Data Transfer)] dialog.

For details of the setting contents, refer to the following manual.
📖GT Designer3 (GOT3000) Screen Design Manual

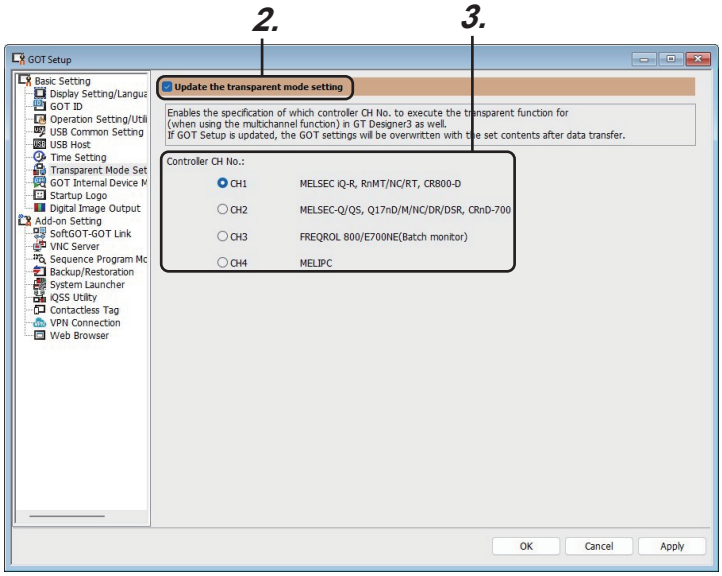
Point

• Controller settings using the GT37 utility
The controller settings can be changed in [Communication Settings] of the GT37 utility after writing [Communication Settings] of project data to GT37.
For details on the GT37 utility, refer to the following manual.
📖GOT3000 Series User's Manual (Utility & Maintenance Functions)

• Priority of the settings in [Controller Setting]
When the settings are configured in GT Designer3 or in the GT37 utility, the latest settings are effective.

77.3.3 GOT Setup

When using the multi-channel function, specify the channel number for which the FA transparent function is executed.



Operating procedure

1. Select [Common] → [GOT Setup] → [Basic Setting] → [Transparent Mode Setting] from the menu.
2. Select [Update the transparent mode setting].
3. As necessary, check one of [CH1] to [CH4].
4. When you have completed the settings, click the [OK] button.

Point

Transparent setting on the utility screen

Transparent setting can be performed by the GOT.

For details of the operating, refer to the following.

📖GOT3000 Series User's Manual (Utility & Maintenance Functions)

77.4 Personal computer side settings

The following shows the procedure to set the FA transparent function in MT Works2.

Personal computer to GOT connection	GOT to controller connection	Reference
USB connection	Ethernet connection	☞ Page 2806 GOT to controller Ethernet connection
	Serial connection	☞ Page 2809 Serial connection between the GOT and the controller
	Bus connection	☞ Page 2811 Bus connection between the GOT and the controller
Ethernet connection	Ethernet connection	☞ Page 2813 GOT to controller Ethernet connection
	Serial connection	☞ Page 2820 Serial connection between the GOT and the controller
	Bus connection	☞ Page 2822 Bus connection between the GOT and the controller

77.4.1 Personal computer to GOT USB connection

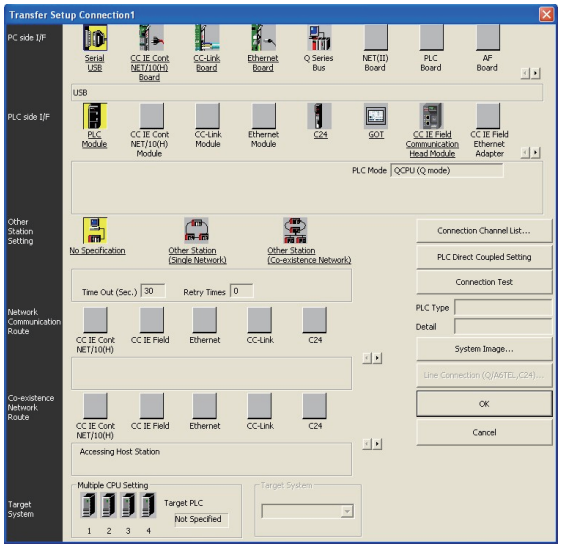
GOT to controller Ethernet connection

The following shows an example for connection to Motion CPU (Q series).

Operating procedure

1. Click the Connection Destination view → [Connection Destination] → [(Connection target data name)] in the Navigation window of MT Works2.

[Transfer Setup] is displayed.

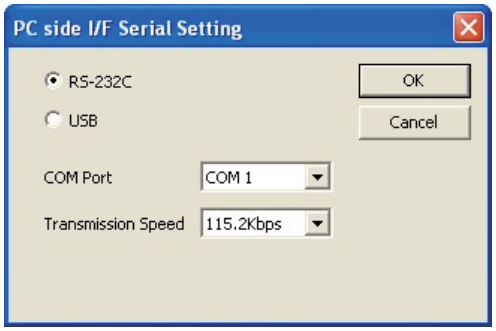


2. Set [Transfer Setup] as follows:

- [PC side I/F]: [Serial USB]
- [PLC side I/F]: [GOT]
- [Other Station Setting]: [No Specification]

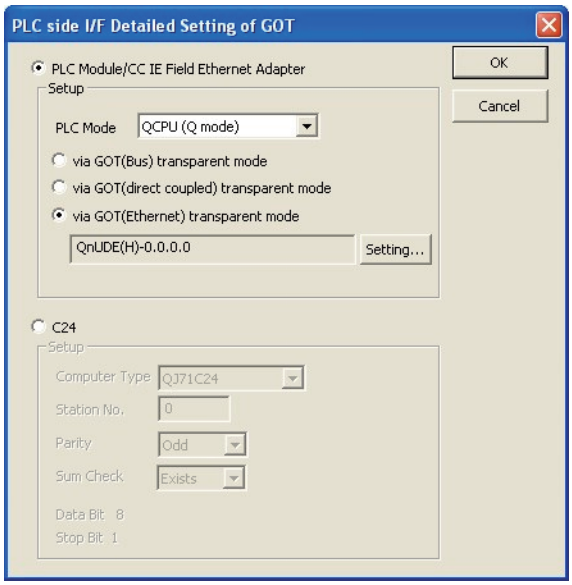
3. Double-click [Serial USB] of [PC side I/F].

4. When [PC side I/F Serial Setting] is displayed, select [USB].



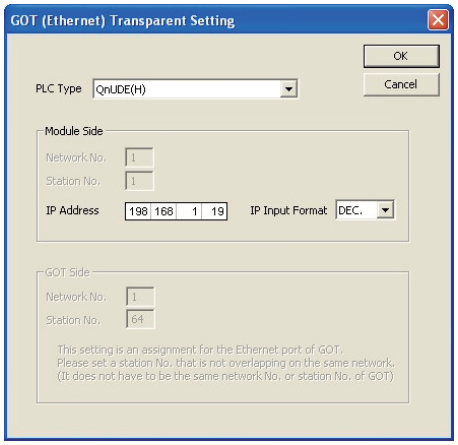
5. Double-click [GOT] of [PLC side I/F].

6. When [PLC side I/F Detailed Setting of GOT] is displayed, select [via GOT(Ethernet) transparent mode] and click [Setting].



7. [GOT (Ethernet) Transparent Setting] is displayed.

Here, set the Built-in Ethernet port QCPU or Ethernet module, which is firstly connected via a GOT.



8. Set [QnUDE(H)] or [QJ71E71] for [PLC Type].

9. Specify the numbers assigned to the Ethernet module for [Network No.] and [Station No.].

When [QnUDE(H)] is set for [PLC type], the setting is not required.

10. Specify the IP address for [IP address] same as the IP address assigned to the built-in Ethernet port QCPU or Ethernet module.

11. The screen returns to [Transfer Setup]. Click [Connection Test] to check that connection to the Motion CPU (Q mode) has been established.

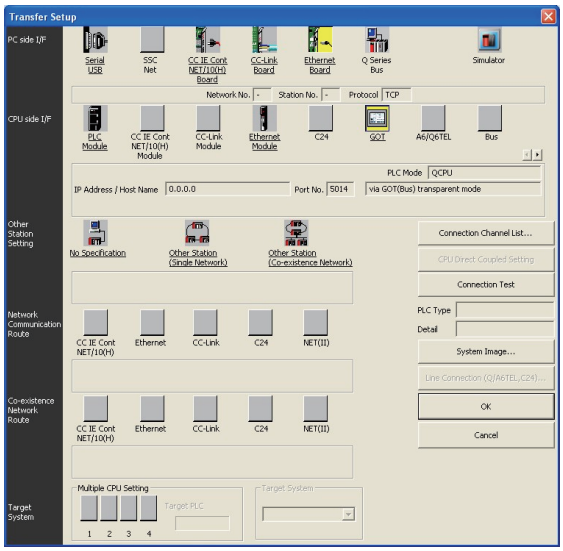
Serial connection between the GOT and the controller

The following shows an example for connection to Motion CPU (Q series).

Operating procedure

1. Click [Online] → [Transfer setup].

[Transfer Setup] is displayed.

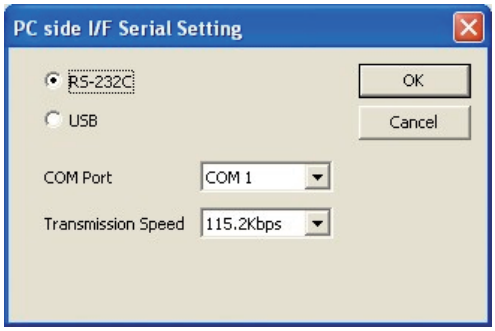


2. Set [Transfer Setup] as follows:

- [PC side I/F]: [Serial USB]
- [CPU side I/F]: [GOT]
- [Other Station Setting]: [No Specification]

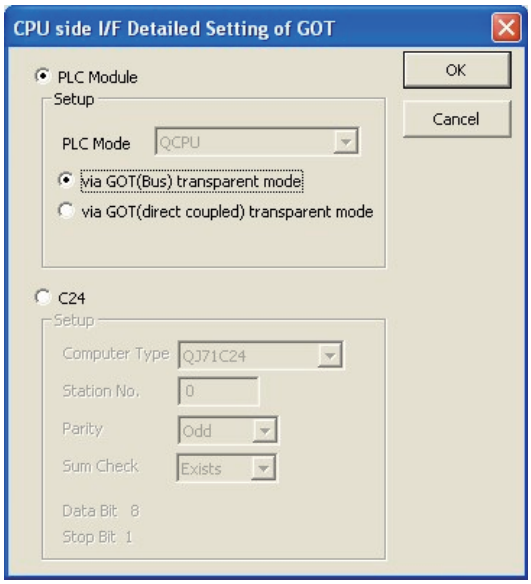
3. Double-click [Serial USB] of [PC side I/F].

4. When [PC side I/F Serial Setting] is displayed, select [USB].

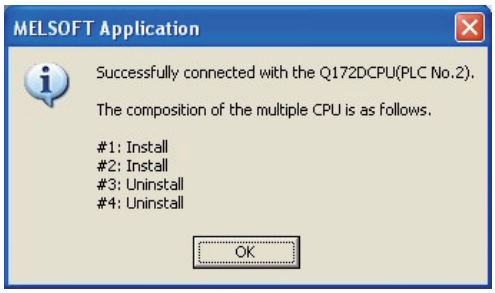


5. Double-click [GOT] of [CPU side I/F].

6. When [CPU side I/F Detailed Setting of GOT] is displayed, select [via GOT(direct coupled) transparent mode] and click [OK].



7. The screen returns to [Transfer Setup]. Click [Connection Test] to check that connection to the Motion CPU (Q mode) has been established.



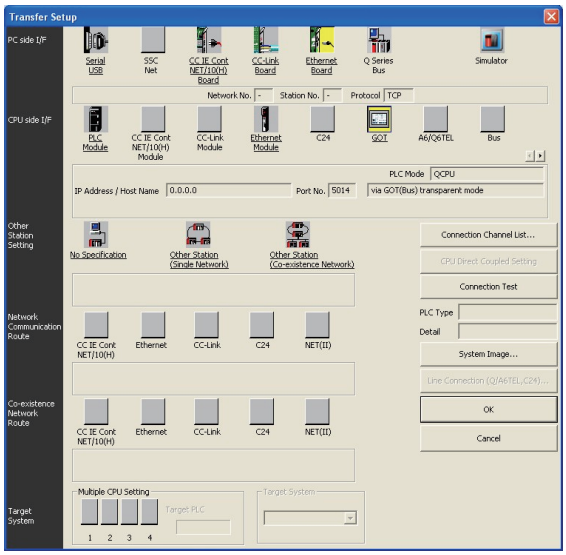
Bus connection between the GOT and the controller

The following shows an example for connection to Motion CPU (Q series).

Operating procedure

1. Click [Online] → [Transfer setup].

[Transfer Setup] is displayed.

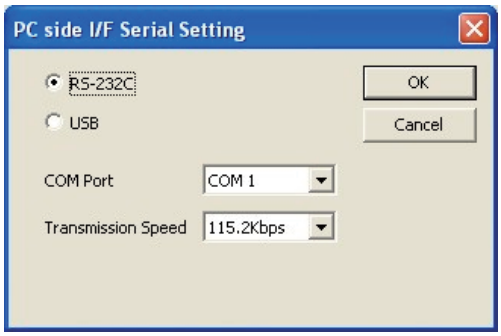


2. Set [Transfer Setup] as follows:

- [PC side I/F]: [Serial USB]
- [CPU side I/F]: [GOT]
- [Other Station Setting]: [No Specification]

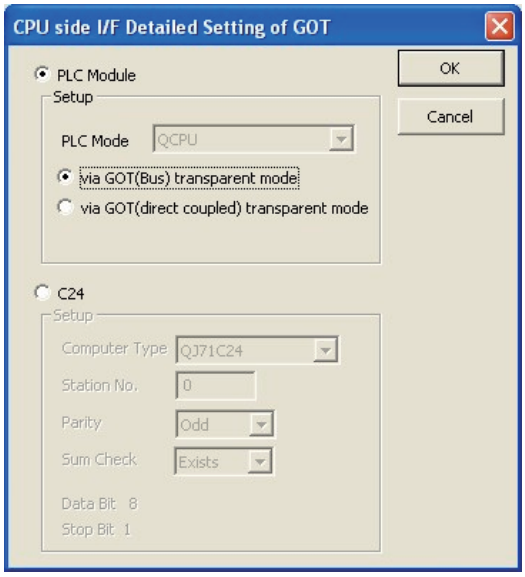
3. Double-click [Serial USB] of [PC side I/F].

4. When [PC side I/F Serial Setting] is displayed, select [USB].



5. Double-click [GOT] of [CPU side I/F].

6. When [CPU side I/F Detailed Setting of GOT] is displayed, select [via GOT(Bus) transparent mode] and click [OK].



7. The screen returns to [Transfer Setup]. Click [Connection Test] to check that connection to the Motion CPU (Q mode) has been established.

77.4.2 Personal computer to GOT Ethernet connection

GOT to controller Ethernet connection

Configure the settings in [Connected Ethernet Controller Setting] on the GOT.

The routing setting may also be needed for the GOT side depending on the system configuration.

For details, refer to the following procedure.

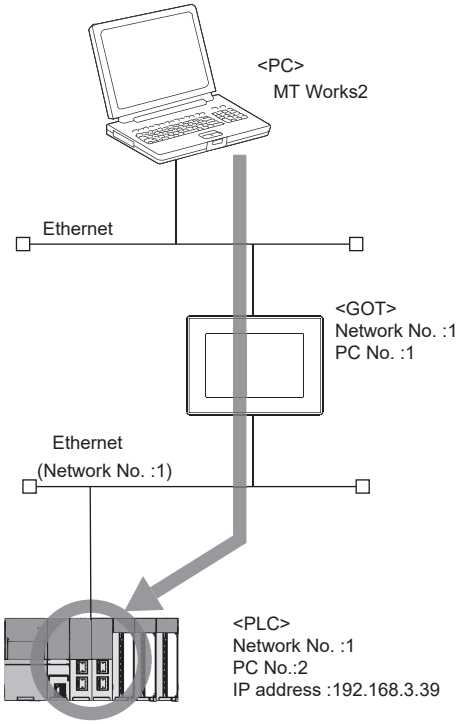
The following shows an example for connection to Motion CPU (MELSEC iQ-R series).

☞ Page 2813 When the routing setting is not needed for the GOT side

☞ Page 2816 When the routing setting is needed for the GOT side

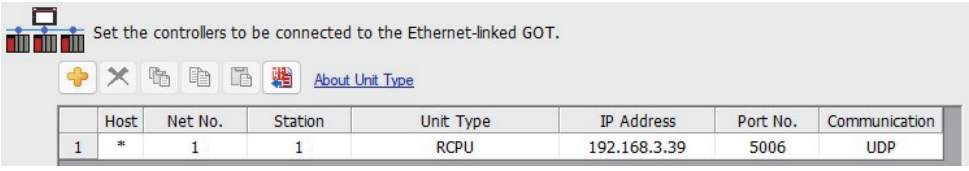
■When the routing setting is not needed for the GOT side

1) System configuration



2) [Connected Ethernet Controller Setting] of GT Designer3

Set the network number, PLC number, and IP address of the PLC CPU that is the target of the FA transparent function in GT Designer3.



	Host	Net No.	Station	Unit Type	IP Address	Port No.	Communication
1	*	1	1	RCPU	192.168.3.39	5006	UDP

For details on [Connected Ethernet Controller Setting], refer to the following.

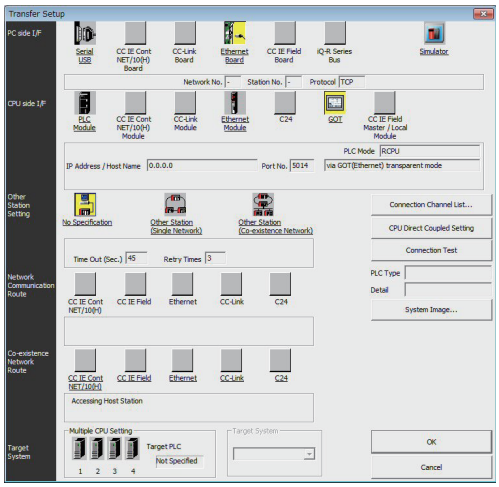
Controller	Reference
Motion CPU (MELSEC iQ-R series) (Built-in Ethernet port connection)	☞ Page 199 [Controller Setting]
Motion CPU (MELSEC iQ-R series) (Ethernet module connection)	☞ Page 253 [Controller Setting]
Motion CPU (MELSEC-Q series) (Built-in Ethernet port connection)	☞ Page 350 [Controller Setting]
Motion CPU (MELSEC-Q series) (Ethernet module connection)	☞ Page 400 [Controller Setting]

3) MT Works2 settings

Operating procedure

1. Click [Online] → [Transfer Setup] on MT Works2.

[Transfer Setup] is displayed.



2. Set [Transfer Setup] as follows:

- [PC side I/F]: [Ethernet Board]
- [CPU side I/F]: [GOT]
- [Other Station Setting]: [No Specification]

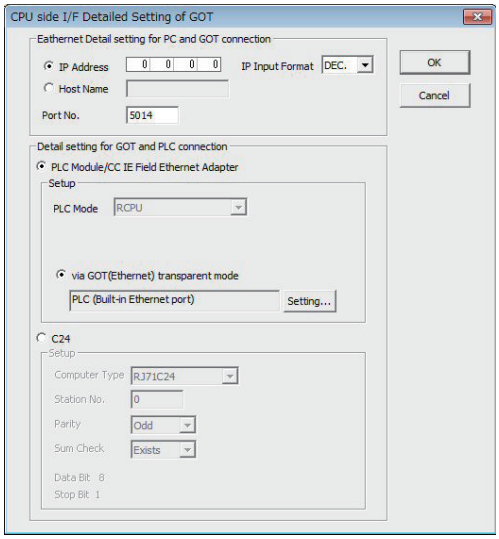
3. Double-click [GOT] of [CPU side I/F].

4. When [CPU side I/F Detailed Setting of GOT] is displayed, set [IP Address] and [Port No.] in [Ethernet Detail setting for PC and GOT connection].

Check the IP address and port number on the GOT side in the [GOT Ethernet Setting] window in GT Designer3.

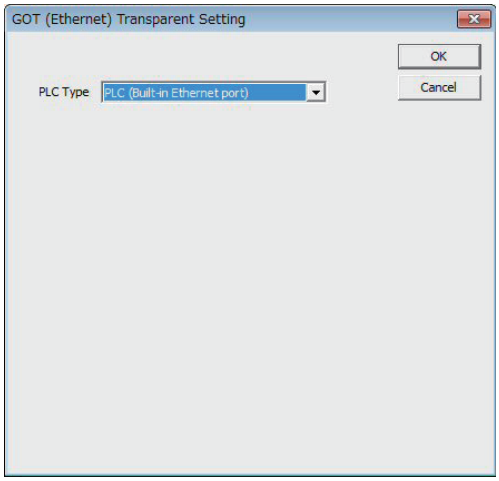
For details, refer to the following.

📖GT Designer3 (GOT3000) Screen Design Manual

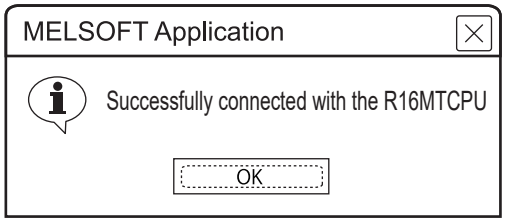


5. In [Detail setting for GOT and PLC connection], select [via GOT(Ethernet) transparent mode] and click [Setting].

6. Specify [PLC (Built-in Ethernet port)] for the connection destination of the GOT.

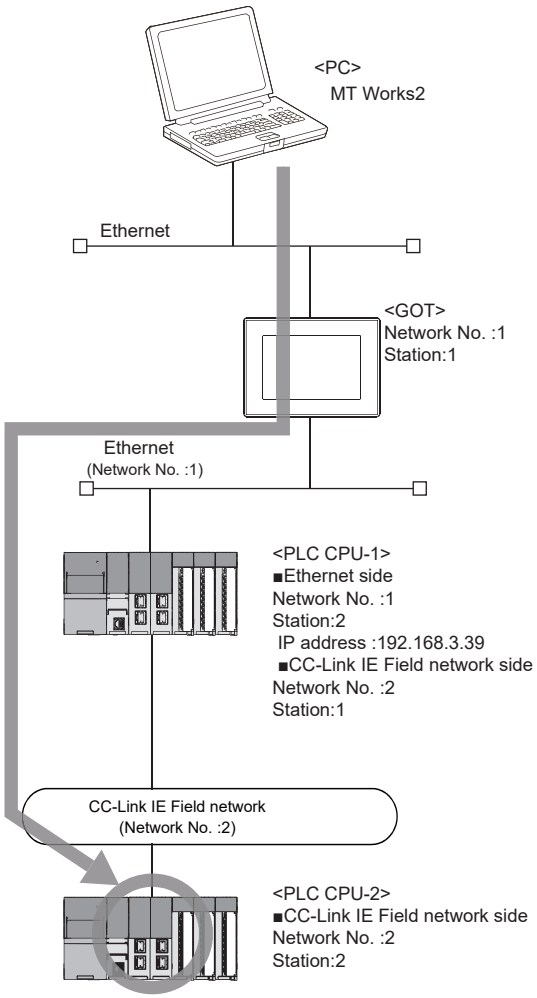


7. The screen returns to [Transfer Setup]. Click [Connection Test] to check that connection to the Motion CPU (MELSEC iQ-R series) has been established.



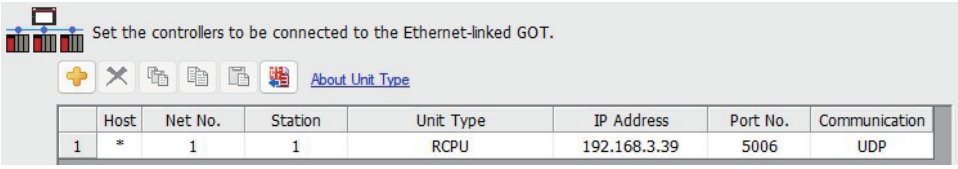
■When the routing setting is needed for the GOT side

1) System configuration



2) [Connected Ethernet Controller Setting] of GT Designer3

Set the network number, PLC number, and IP address of the PLC CPU that is the target of the FA transparent function in GT Designer3.



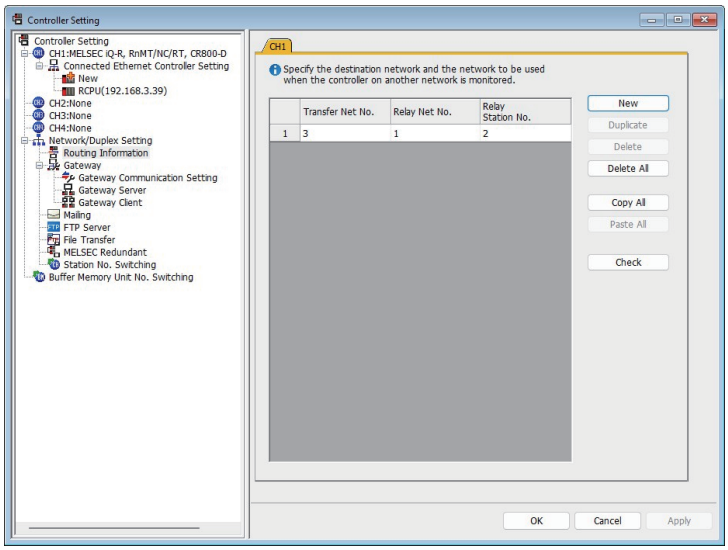
	Host	Net No.	Station	Unit Type	IP Address	Port No.	Communication
1	*	1	1	RCPU	192.168.3.39	5006	UDP

For details on [Connected Ethernet Controller Setting], refer to the following.

Controller	Reference
Motion CPU (MELSEC iQ-R series) (Built-in Ethernet port connection)	☞ Page 199 [Controller Setting]
Motion CPU (MELSEC iQ-R series) (Ethernet module connection)	☞ Page 253 [Controller Setting]
Motion CPU (MELSEC-Q series) (Built-in Ethernet port connection)	☞ Page 350 [Controller Setting]
Motion CPU (MELSEC-Q series) (Ethernet module connection)	☞ Page 400 [Controller Setting]

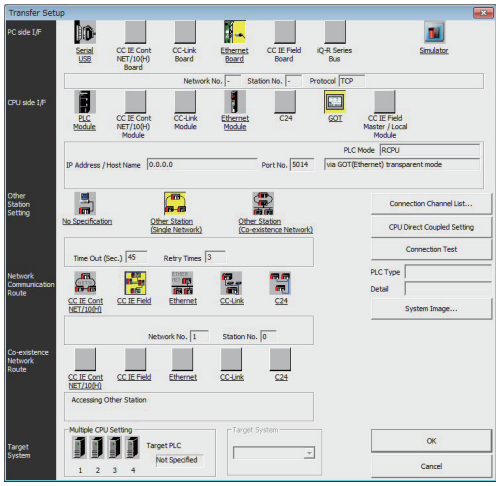
3) Routing settings in GT Designer3

Be sure to set the transfer network number, relay network number, and relay station number for the PLC CPU that is the target of the FA transparent function in GT Designer3.



☞ Page 1375 Ethernet connection

4) MT Works2 settings



Operating procedure

1. Click [Online] → [Transfer Setup] on MT Works2.

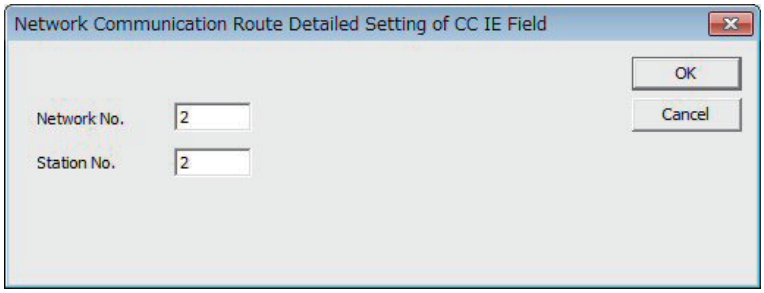
[Transfer Setup] is displayed.

2. Set [Transfer Setup] as follows:

- [PC side I/F]: [Ethernet Board]
- [CPU side I/F]: [GOT]
- [Other Station Setting]: [Other Station (Single Network)]
- [Network Communication Route]: [CC IE Field]

3. Double-click [CC IE Field].

4. In [Network Communication Route Detailed Setting of CC IE Field], set [Network No.] and [Station No.].



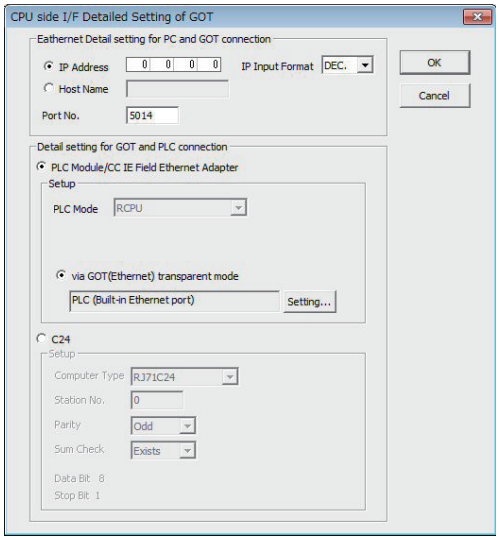
5. Double-click [GOT] of [CPU side I/F].

6. When [CPU side I/F Detailed Setting of GOT] is displayed, set [IP Address] and [Port No.] in [Ethernet Detail setting for PC and GOT connection].

Check the IP address and port number on the GOT side in the [GOT Ethernet Setting] window in GT Designer3.

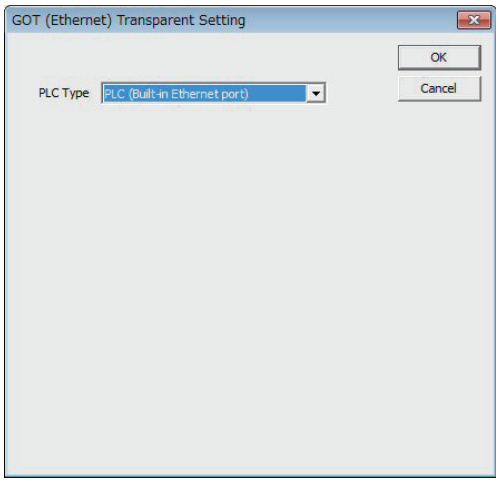
For details, refer to the following.

📖GT Designer3 (GOT3000) Screen Design Manual

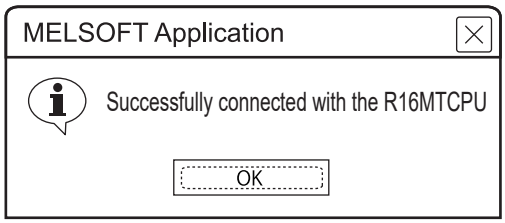


7. In [Detail setting for GOT and PLC connection], select [via GOT(Ethernet) transparent mode] and click [Setting].

8. Specify [PLC (Built-in Ethernet port)] or [RJ71EN71] for the connection destination of the GOT.



9. The screen returns to [Transfer Setup]. Click [Connection Test] to check that connection to the Motion CPU (MELSEC iQ-R series) has been established.



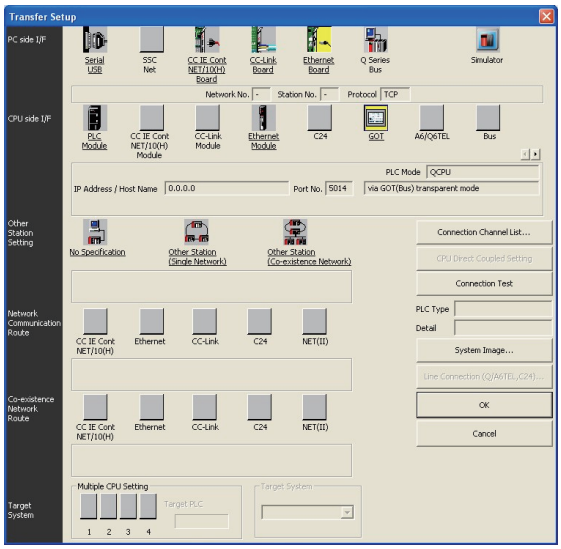
Serial connection between the GOT and the controller

The following shows an example for connection to Motion CPU (Q series).

Operating procedure

1. Click the Connection Destination view → [Connection Destination] → [(Connection target data name)] in the Navigation window of MT Works2.

[Transfer Setup] is displayed.



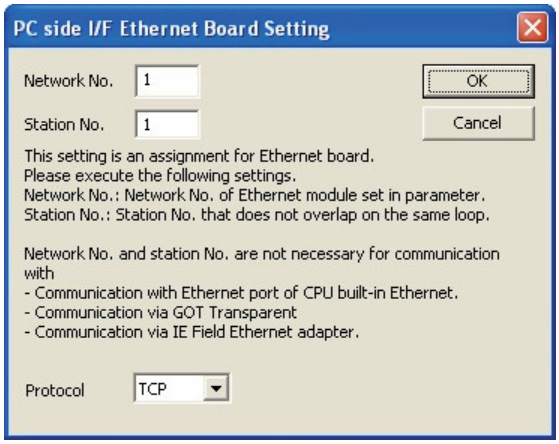
2. Set [Transfer Setup] as follows:

- [PC side I/F]: [Ethernet Board]
- [CPU side I/F]: [GOT]
- [Other Station Setting]: [No Specification]

3. Double-click [Ethernet Board] of [PC side I/F].

4. When [PC side I/F Ethernet Board Setting] is displayed, select [TCP] for [Protocol].

Settings are not required for [Network No.] and [Station No.] because they are not used.



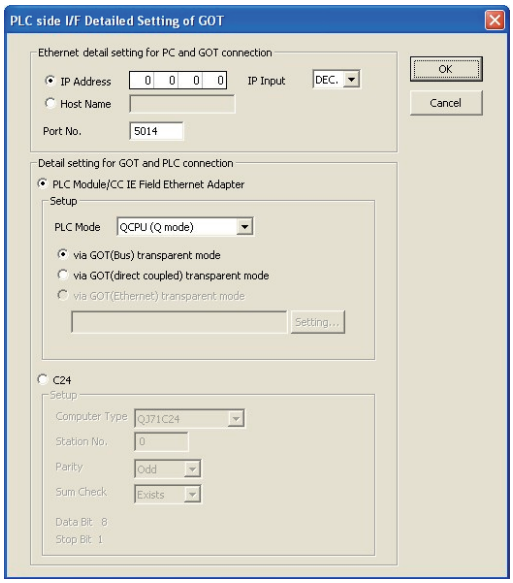
5. Double-click [GOT] of [CPU side I/F].

6. When [CPU side I/F Detailed Setting of GOT] is displayed, set [IP Address] and [Port No.] in [Ethernet Detail setting for PC and GOT connection].

Check the IP address and port number on the GOT side in the [GOT Ethernet Setting] window in GT Designer3.

For details, refer to the following.

GT Designer3 (GOT3000) Screen Design Manual



7. In [Detail setting for GOT and PLC connection], select [via GOT(direct coupled) transparent mode] and click [Setting].

8. The screen returns to [Transfer Setup]. Click [Connection Test] to check that connection to the Motion CPU (Q mode) has been established.

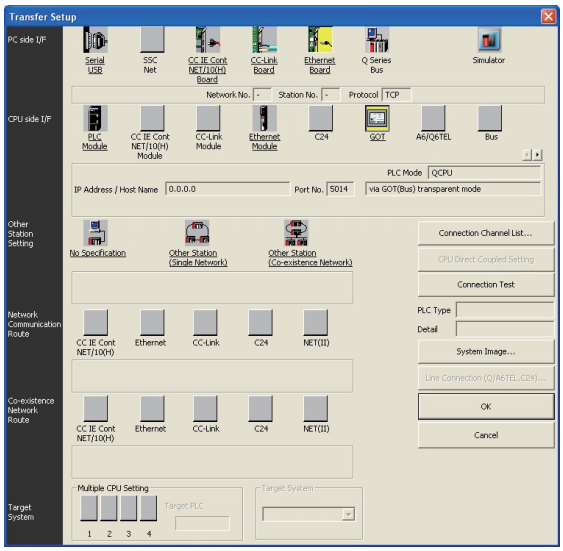
Bus connection between the GOT and the controller

The following shows an example for connection to Motion CPU (Q series).

Operating procedure

1. Click the Connection Destination view → [Connection Destination] → [(Connection target data name)] in the Navigation window of MT Works2.

[Transfer Setup] is displayed.



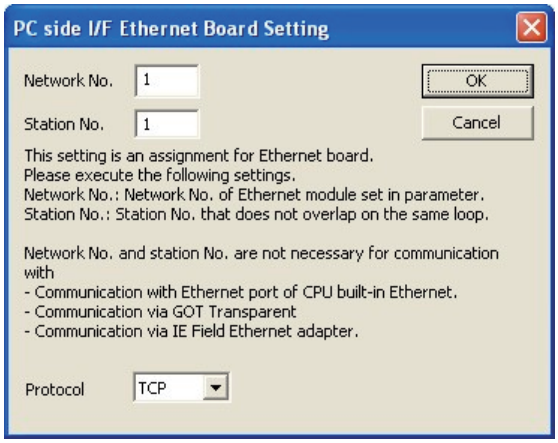
2. Set [Transfer Setup] as follows:

- [PC side I/F]: [Ethernet Board]
- [CPU side I/F]: [GOT]
- [Other Station Setting]: [No Specification]

3. Double-click [Ethernet Board] of [PC side I/F].

4. When [PC side I/F Ethernet Board Setting] is displayed, select [TCP] for [Protocol].

Settings are not required for [Network No.] and [Station No.] because they are not used.



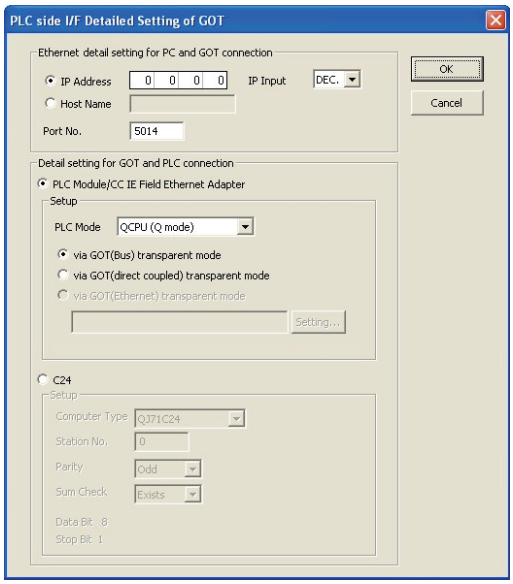
5. Double-click [GOT] of [CPU side I/F].

6. When [CPU side I/F Detailed Setting of GOT] is displayed, set [IP Address] and [Port No.] in [Ethernet Detail setting for PC and GOT connection].

Check the IP address and port number on the GOT side in the [GOT Ethernet Setting] window in GT Designer3.

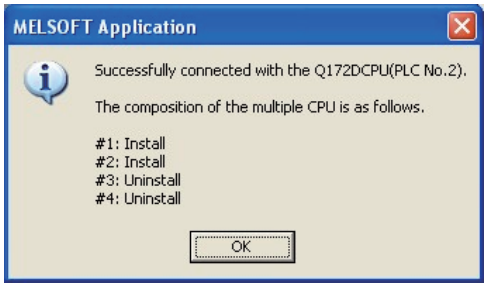
For details, refer to the following.

GT Designer3 (GOT3000) Screen Design Manual



7. In [Detail setting for GOT and PLC connection], select [via GOT(Bus) transparent mode] and click [Setting].

8. The screen returns to [Transfer Setup]. Click [Connection Test] to check that connection to the Motion CPU (Q mode) has been established.



78 Accessing with MR Configurator2

The following shows the controllers that can be accessed with MR Configurator2 using the FA transparent function.

Controller	Reference
Servo amplifier (MR-J4(W)-□B(-RJ))	☞ Page 2825 Servo amplifier

For information on the GOT side or personal computer side settings, refer to the following.

☞ Page 2829 GOT side settings

☞ Page 2831 Personal computer side settings

Precautions

■Unavailable functions and restrictions

For the use via the Motion CPU, there are unavailable functions and restrictions.

For details on the restrictions, refer to the help screen of MR Configurator.

■Monitor speed of GOT

When the FA transparent function is used via the Motion CPU, the monitor speed of GOT decreases.

78.1 Servo amplifier

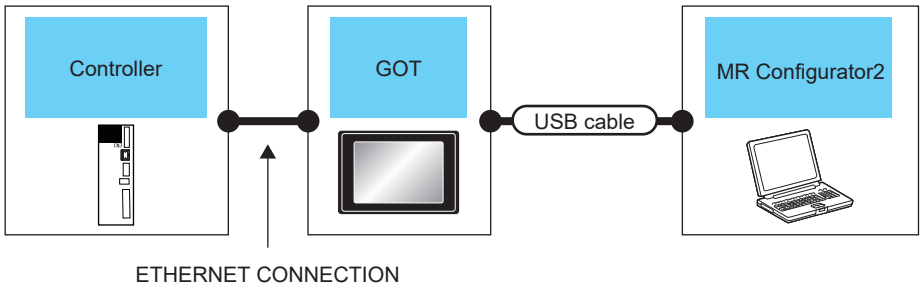
Personal computer to GOT connection	GOT to controller connection	Reference
USB connection	Ethernet connection	☞ Page 2825 GOT to controller Ethernet connection
	Serial connection	☞ Page 2826 Serial connection between the GOT and the controller
Ethernet connection	Serial connection	☞ Page 2827 Serial connection between the GOT and the controller
	Bus connection	☞ Page 2828 Bus connection between the GOT and the controller

78.1.1 Personal computer to GOT USB connection

GOT to controller Ethernet connection

For the system configuration between the GOT and the controller, refer to the following.

Controller	Reference
MELSERVO-J4 series (connection through a PLC)	☞ Page 1775 System configuration



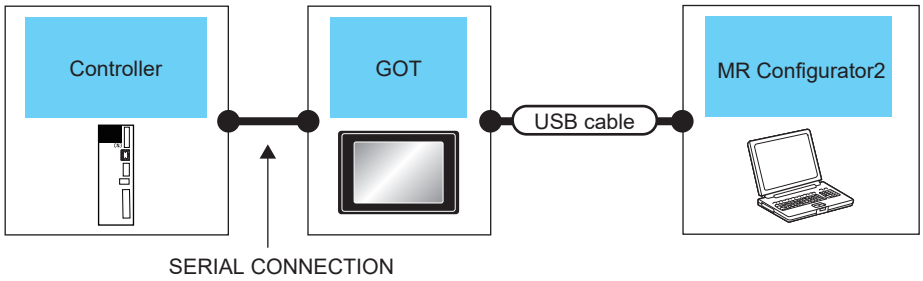
Controller	GOT		Connection cable		Personal computer	Number of connectable devices
	Model	Interface	USB cable	Maximum length	Compatible MR Configurator2 version	
MR-J4(W)-□B(-RJ)	GT37 SoftGOT3000	USB	*1	3 m	1.165X or later	1 personal computer for 1 GOT

*1 For the USB cables validated by Mitsubishi Electric Corporation, refer to the following Technical Bulletin.
List of Valid Devices Applicable for GOT3000 Series (GOT-A-0233)

Serial connection between the GOT and the controller

For the system configuration between the GOT and the controller, refer to the following.

Controller	Reference
MELSERVO-J4 series (connection through a PLC)	☞ Page 1775 System configuration



Controller	GOT		Connection cable		Personal computer	Number of connectable devices
	Model	Interface	USB cable	Maximum length	Compatible MR Configurator2 version	
MR-J4(W)-□B(-RJ)	GT37 SoftGOT3000	USB	*1	3 m	1.165X or later	1 personal computer for 1 GOT

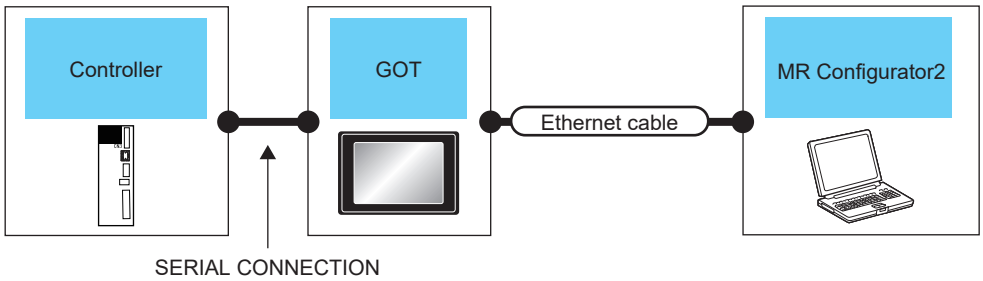
*1 For the USB cables validated by Mitsubishi Electric Corporation, refer to the following Technical Bulletin.
List of Validated Devices for the GOT3000 Series (GOT-A-0233)

78.1.2 Personal computer to GOT Ethernet connection

Serial connection between the GOT and the controller

For the system configuration between the GOT and the controller, refer to the following.

Controller	Reference
MELSERVO-J4 series (connection through a PLC)	☞ Page 1775 System configuration



Controller	GOT		Connection cable		Personal computer	Number of connectable devices
	Model	Interface	Ethernet cable	Maximum segment length	Compatible MR Configurator2 version	
MR-J4(W)-□B(-RJ)	GT37 SoftGOT3000	Built-in Ethernet interface of the GOT	Twisted pair cable ☞ Page 2827 Connection cable	100 m	1.165X or later	1 personal computer for 1 GOT

■Connection cable

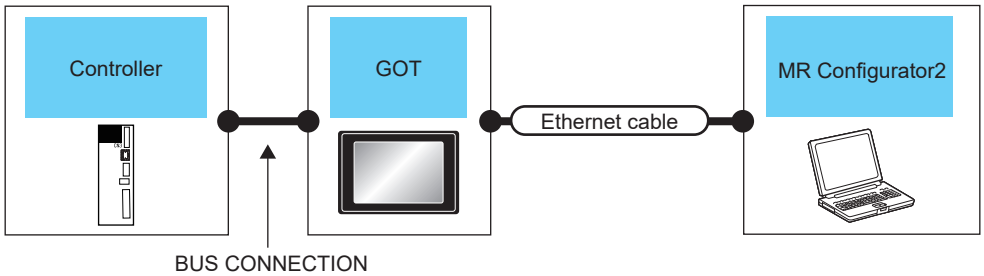
Use a connection cable that meets the following standards.

Standard	Category
10BASE-T	Shielded twisted pair cable (STP) or unshielded twisted pair cable (UTP) of category 3 or higher
100BASE-TX	Shielded twisted pair cable (STP) or unshielded twisted pair cable (UTP) of category 5 or higher
1000BASE-T	Shielded twisted pair cable (STP) or unshielded twisted pair cable (UTP) of category 5e or higher

Bus connection between the GOT and the controller

For the system configuration between the GOT and the controller, refer to the following.

Controller	Reference
MELSERVO-J4 series (connection through a PLC)	☞ Page 1775 System configuration



Controller	GOT		Connection cable		Personal computer	Number of connectable devices
	Model	Interface	Ethernet cable	Maximum segment length	Compatible MR Configurator2 version	
MR-J4(W)-□B(-RJ)	GT37 SoftGOT3000	Built-in Ethernet interface of the GOT	Twisted pair cable ☞ Page 2828 Connection cable	100 m	1.165X or later	1 personal computer for 1 GOT

■Connection cable

Use a connection cable that meets the following standards.

Standard	Category
10BASE-T	Shielded twisted pair cable (STP) or unshielded twisted pair cable (UTP) of category 3 or higher
100BASE-TX	Shielded twisted pair cable (STP) or unshielded twisted pair cable (UTP) of category 5 or higher
1000BASE-T	Shielded twisted pair cable (STP) or unshielded twisted pair cable (UTP) of category 5e or higher

78.2 GOT side settings

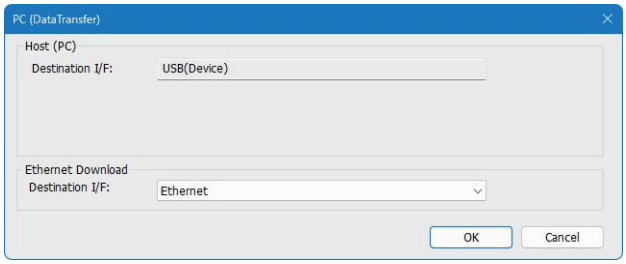
78.2.1 [Controller Setting]

The GOT side settings differ depending on the connection type between the controller and the GOT.
For details on [Controller Setting], refer to the following.

Controller	Reference
MELSERVO-J4 series (connection through a PLC)	☞ Page 1778 GOT side settings

78.2.2 Communication setting with personal computer

Set the communication setting between the GOT and the personal computer.



Operating procedure

1. Select [Common] → [Peripheral Setting] → [PC (Data Transfer)] from the menu.

2. Set the interface of the GOT to be used for communication with the personal computer in the [PC (Data Transfer)] dialog.

For details of the setting contents, refer to the following manual.
📖GT Designer3 (GOT3000) Screen Design Manual

Point

- Controller settings using the GT37 utility

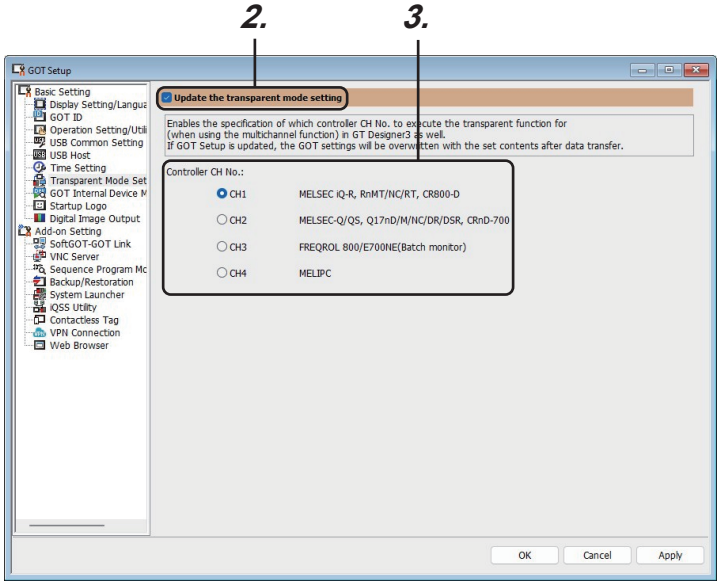
The controller settings can be changed in [Communication Settings] of the GT37 utility after writing [Communication Settings] of project data to GT37.
For details on the GT37 utility, refer to the following manual.
📖GOT3000 Series User's Manual (Utility & Maintenance Functions)

- Priority of the settings in [Controller Setting]

When the settings are configured in GT Designer3 or in the GT37 utility, the latest settings are effective.

78.2.3 GOT Setup

When using the multi-channel function, specify the channel number for which the FA transparent function is executed.



Operating procedure

1. Select [Common] → [GOT Setup] → [Basic Setting] → [Transparent Mode Setting] from the menu.
2. Select [Update the transparent mode setting].
3. As necessary, check one of [CH1] to [CH4].
4. When you have completed the settings, click the [OK] button.

Point

Transparent setting on the utility screen

Transparent setting can be performed by the GOT.

For details of the operating, refer to the following.

GOT3000 Series User's Manual (Utility & Maintenance Functions)

78.3 Personal computer side settings

When accessing with MR Configurator2, configure the FA transparent function settings with MT Works2.
For details on MT Works2, refer to the following.

Personal computer to GOT connection	GOT to controller connection	Reference
USB connection	Ethernet connection	☞ Page 2806 GOT to controller Ethernet connection
	Serial connection	☞ Page 2809 Serial connection between the GOT and the controller
Ethernet connection	Serial connection	☞ Page 2820 Serial connection between the GOT and the controller
	Bus connection	☞ Page 2822 Bus connection between the GOT and the controller

79 Accessing with FR Configurator2

The following shows the controllers that can be accessed with FR Configurator2 using the FA transparent function.

Controller		Reference
FR-E700 series	FR-E7□0-NE	☞ Page 2833 Inverter
FR-A800 series	FR-A8□0 FR-A8□2 FR-A8□6	☞ Page 2833 Inverter
	FR-A8□0-E FR-A8□2-E FR-A8□6-E	
	FR-A8□0-GF FR-A8□2-GF	
FR-A800 Plus series	FR-A8□0-CRN FR-A8□2-CRN	☞ Page 2833 Inverter
	FR-A8□0-E-CRN FR-A8□2-E-CRN	
	FR-A8□0-R2R FR-A8□2-R2R	
	FR-A8□0-E-R2R FR-A8□2-E-R2R	
	FR-A8□0-LC	
	FR-A8□0-E-LC	
FR-F800 series	FR-F8□0 FR-F8□2 FR-F8□6	☞ Page 2833 Inverter
	FR-F8□0-E FR-F8□2-E	
FR-E800 series	FR-E8□0	☞ Page 2833 Inverter
	FR-E8□0-E	
FR-D800 series	FR-D8□0	☞ Page 2833 Inverter
	FR-D8□0-E	

For information on the GOT side or personal computer side settings, refer to the following.

☞ Page 2843 GOT side settings
☞ Page 2846 Personal computer side settings

79.1 Inverter

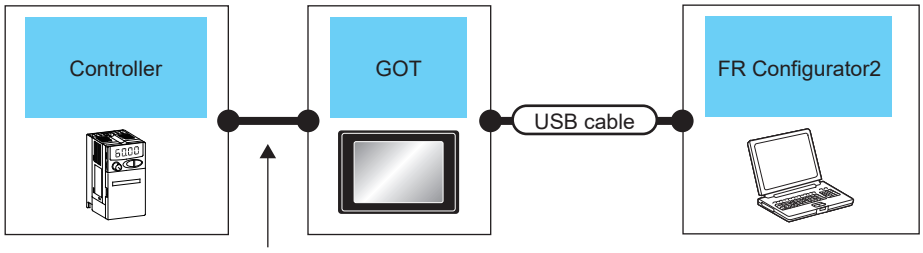
Personal computer to GOT connection	GOT to controller connection	Reference
USB connection	Ethernet connection	☞ Page 2834 GOT to controller Ethernet connection
	Serial connection	☞ Page 2835 Serial connection between the GOT and the controller
	Through a PLC	☞ Page 2836 Connection through a PLC between the GOT and the controller
Ethernet connection	Ethernet connection	☞ Page 2837 GOT to controller Ethernet connection
	Serial connection	☞ Page 2839 Serial connection between the GOT and the controller
	Through a PLC	☞ Page 2841 Connection through a PLC between the GOT and the controller

79.1.1 Personal computer to GOT USB connection

GOT to controller Ethernet connection

For the system configuration between the GOT and the controller, refer to the following.

Controller	Reference
FR-E700 (built-in Ethernet port connection)	☞ Page 1404 System configuration
FR-A800 (built-in Ethernet port connection)	☞ Page 1412 System configuration
FR-A800 Plus (built-in Ethernet port connection)	☞ Page 1419 System configuration
FR-F800 (built-in Ethernet port connection)	☞ Page 1430 System configuration
FR-E800 (built-in Ethernet port connection)	☞ Page 1437 System configuration
FR-D800 (built-in Ethernet port connection)	☞ Page 1444 System configuration



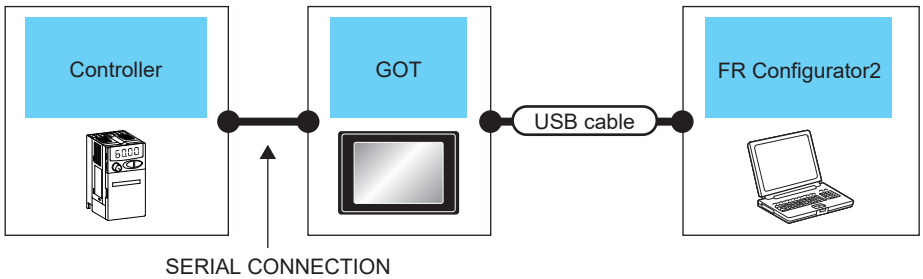
Controller	GOT		Connection cable		Personal computer	Number of connectable devices
	Model	Interface	USB cable	Maximum length	Compatible FR Configurator2 version	
FR-E7□0-NE	GT37 SoftGOT3000	USB	*1	3 m	1.35 or later	1 personal computer for 1 GOT
FR-A8□0-E FR-A8□2-E FR-A8□6-E	GT37 SoftGOT3000	USB	*1	3 m	1.35 or later	1 personal computer for 1 GOT
FR-A8□0-E-CRN FR-A8□2-E-CRN FR-A8□0-E-R2R FR-A8□2-E-R2R FR-A8□0-E-LC	GT37 SoftGOT3000	USB	*1	3 m	1.35 or later	1 personal computer for 1 GOT
FR-F8□0-E FR-F8□2-E	GT37 SoftGOT3000	USB	*1	3 m	1.35 or later	1 personal computer for 1 GOT
FR-E8□0-E	GT37 SoftGOT3000	USB	*1	3 m	1.35 or later	1 personal computer for 1 GOT
FR-D8□0-E	GT37 SoftGOT3000	USB	*1	3 m	1.35 or later	1 personal computer for 1 GOT

*1 For the USB cables validated by Mitsubishi Electric Corporation, refer to the following Technical Bulletin.
📖List of Valid Devices Applicable for GOT3000 Series (GOT-A-0233)

Serial connection between the GOT and the controller

For the system configuration between the GOT and the controller, refer to the following.

Controller	Reference
FR-A800 (serial connection)	☞ Page 1522 System configuration
FR-A800 Plus (serial connection)	☞ Page 1537 System configuration
FR-F800 (serial connection)	☞ Page 1555 System configuration
FR-E800 (serial connection)	☞ Page 1570 System configuration
FR-D800 (serial connection)	☞ Page 1583 System configuration



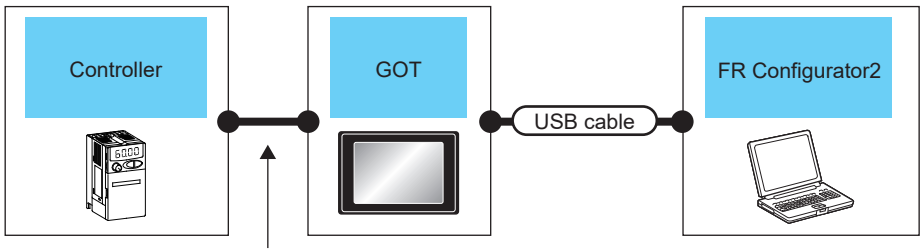
Controller	GOT		Connection cable		Personal computer	Number of connectable devices
	Model	Interface	USB cable	Maximum length	Compatible FR Configurator2 version	
FR-A8□0 FR-A8□2 FR-A8□6 FR-A8□0-E FR-A8□2-E FR-A8□6-E FR-A8□0-GF FR-A8□2-GF	GT37 SoftGOT3000	USB	*1	3 m	1.35 or later	1 personal computer for 1 GOT
FR-A8□0-CRN FR-A8□2-CRN FR-A8□0-E-CRN FR-A8□2-E-CRN FR-A8□0-R2R FR-A8□2-R2R FR-A8□0-E-R2R FR-A8□2-E-R2R FR-A8□0-LC FR-A8□0-E-LC	GT37 SoftGOT3000	USB	*1	3 m	1.35 or later	1 personal computer for 1 GOT
FR-F8□0 FR-F8□2 FR-F8□6	GT37 SoftGOT3000	USB	*1	3 m	1.35 or later	1 personal computer for 1 GOT
FR-E8□0	GT37 SoftGOT3000	USB	*1	3 m	1.35 or later	1 personal computer for 1 GOT
FR-D8□0	GT37 SoftGOT3000	USB	*1	3 m	1.35 or later	1 personal computer for 1 GOT

*1 For the USB cables validated by Mitsubishi Electric Corporation, refer to the following Technical Bulletin.
📖List of Validated Devices for the GOT3000 Series (GOT-A-0233)

Connection through a PLC between the GOT and the controller

For the system configuration between the GOT and the controller, refer to the following.

Controller	Reference
FR-E700 (connection through a PLC)	☞ Page 1655 System configuration
FR-A800 (connection through a PLC)	☞ Page 1659 System configuration
FR-A800 Plus (connection through a PLC)	☞ Page 1667 System configuration
FR-F800 (connection through a PLC)	☞ Page 1675 System configuration
FR-E800 (connection through a PLC)	☞ Page 1683 System configuration
FR-D800 (connection through a PLC)	☞ Page 1689 System configuration



Controller	GOT		Connection cable		Personal computer	Number of connectable devices
	Model	Interface	USB cable	Maximum length	Compatible FR Configurator2 version	
FR-E7□0-NE	GT37 SoftGOT3000	USB	*1	3 m	1.35 or later	1 personal computer for 1 GOT
FR-A8□0 FR-A8□2 FR-A8□6 FR-A8□0-E FR-A8□2-E FR-A8□6-E FR-A8□0-GF FR-A8□2-GF	GT37 SoftGOT3000	USB	*1	3 m	1.35 or later	1 personal computer for 1 GOT
FR-A8□0-E-CRN FR-A8□2-E-CRN FR-A8□0-E-R2R FR-A8□2-E-R2R FR-A8□0-E-LC	GT37 SoftGOT3000	USB	*1	3 m	1.35 or later	1 personal computer for 1 GOT
FR-F8□0 FR-F8□2 FR-F8□6 FR-F8□0-E FR-F8□2-E	GT37 SoftGOT3000	USB	*1	3 m	1.35 or later	1 personal computer for 1 GOT
FR-E8□0-E	GT37 SoftGOT3000	USB	*1	3 m	1.35 or later	1 personal computer for 1 GOT
FR-D8□0-E	GT37 SoftGOT3000	USB	*1	3 m	1.35 or later	1 personal computer for 1 GOT

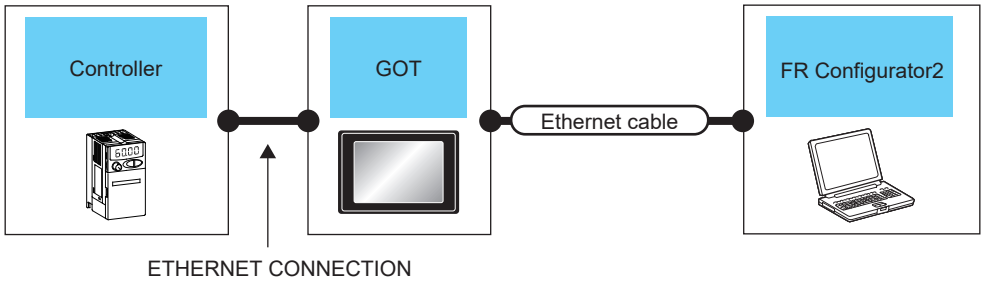
*1 For the USB cables validated by Mitsubishi Electric Corporation, refer to the following Technical Bulletin.
📖List of Validated Devices for the GOT3000 Series (GOT-A-0233)

79.1.2 Personal computer to GOT Ethernet connection

GOT to controller Ethernet connection

For the system configuration between the GOT and the controller, refer to the following.

Controller	Reference
FR-E700 (built-in Ethernet port connection)	☞ Page 1404 System configuration
FR-A800 (built-in Ethernet port connection)	☞ Page 1412 System configuration
FR-A800 Plus (built-in Ethernet port connection)	☞ Page 1419 System configuration
FR-F800 (built-in Ethernet port connection)	☞ Page 1430 System configuration
FR-E800 (built-in Ethernet port connection)	☞ Page 1437 System configuration
FR-D800 (built-in Ethernet port connection)	☞ Page 1444 System configuration



Controller	GOT		Connection cable		Personal computer	Number of connectable devices
	Model	Interface	Ethernet cable	Maximum segment length	Compatible FR Configurator2 version	
FR-E7□0-NE	GT37 SoftGOT3000	Built-in Ethernet interface of the GOT	Twisted pair cable ☞ Page 2838 Connection cable	100 m	1.35 or later	1 personal computer for 1 GOT
FR-A8□0-E FR-A8□2-E FR-A8□6-E	GT37 SoftGOT3000	Built-in Ethernet interface of the GOT	Twisted pair cable ☞ Page 2838 Connection cable	100 m	1.35 or later	1 personal computer for 1 GOT
FR-A8□0-E-CRN FR-A8□2-E-CRN FR-A8□0-E-R2R FR-A8□2-E-R2R FR-A8□0-E-LC	GT37 SoftGOT3000	Built-in Ethernet interface of the GOT	Twisted pair cable ☞ Page 2838 Connection cable	100 m	1.35 or later	1 personal computer for 1 GOT
FR-F8□0-E FR-F8□2-E	GT37 SoftGOT3000	Built-in Ethernet interface of the GOT	Twisted pair cable ☞ Page 2838 Connection cable	100 m	1.35 or later	1 personal computer for 1 GOT
FR-E8□0-E	GT37 SoftGOT3000	Built-in Ethernet interface of the GOT	Twisted pair cable ☞ Page 2838 Connection cable	100 m	1.35 or later	1 personal computer for 1 GOT
FR-D8□0-E	GT37 SoftGOT3000	Built-in Ethernet interface of the GOT	Twisted pair cable ☞ Page 2838 Connection cable	100 m	1.35 or later	1 personal computer for 1 GOT

■Connection cable

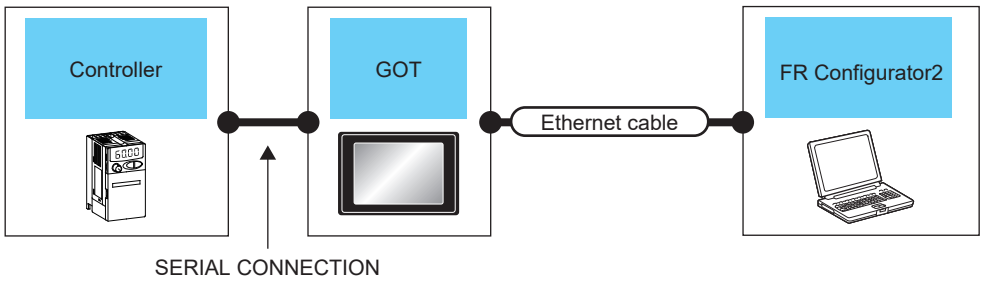
Use a connection cable that meets the following standards.

Standard	Category
10BASE-T	Shielded twisted pair cable (STP) or unshielded twisted pair cable (UTP) of category 3 or higher
100BASE-TX	Shielded twisted pair cable (STP) or unshielded twisted pair cable (UTP) of category 5 or higher
1000BASE-T	Shielded twisted pair cable (STP) or unshielded twisted pair cable (UTP) of category 5e or higher

Serial connection between the GOT and the controller

For the system configuration between the GOT and the controller, refer to the following.

Controller	Reference
FR-A800 (serial connection)	☞ Page 1522 System configuration
FR-A800 Plus (serial connection)	☞ Page 1537 System configuration
FR-F800 (serial connection)	☞ Page 1555 System configuration
FR-E800 (serial connection)	☞ Page 1570 System configuration
FR-D800 (serial connection)	☞ Page 1583 System configuration



Controller	GOT		Connection cable		Personal computer	Number of connectable devices
	Model	Interface	Ethernet cable	Maximum segment length	Compatible FR Configurator2 version	
FR-A8□0 FR-A8□2 FR-A8□6 FR-A8□0-E FR-A8□2-E FR-A8□6-E FR-A8□0-GF FR-A8□2-GF	GT37 SoftGOT3000	Built-in Ethernet interface of the GOT	Twisted pair cable ☞ Page 2840 Connection cable	100 m	1.35 or later	1 personal computer for 1 GOT
FR-A8□0-CRN FR-A8□2-CRN FR-A8□0-E-CRN FR-A8□2-E-CRN FR-A8□0-R2R FR-A8□2-R2R FR-A8□0-E-R2R FR-A8□2-E-R2R FR-A8□0-LC FR-A8□0-E-LC	GT37 SoftGOT3000	Built-in Ethernet interface of the GOT	Twisted pair cable ☞ Page 2840 Connection cable	100 m	1.35 or later	1 personal computer for 1 GOT
FR-F8□0 FR-F8□2 FR-F8□6	GT37 SoftGOT3000	Built-in Ethernet interface of the GOT	Twisted pair cable ☞ Page 2840 Connection cable	100 m	1.35 or later	1 personal computer for 1 GOT
FR-E8□0	GT37 SoftGOT3000	Built-in Ethernet interface of the GOT	Twisted pair cable ☞ Page 2840 Connection cable	100 m	1.35 or later	1 personal computer for 1 GOT
FR-D8□0	GT37 SoftGOT3000	Built-in Ethernet interface of the GOT	Twisted pair cable ☞ Page 2840 Connection cable	100 m	1.35 or later	1 personal computer for 1 GOT

■Connection cable

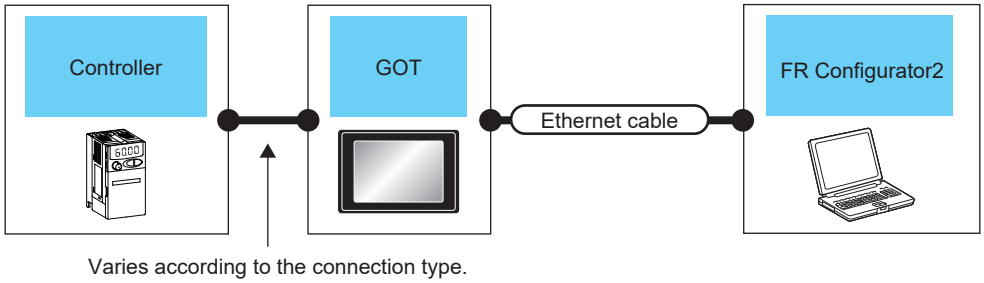
Use a connection cable that meets the following standards.

Standard	Category
10BASE-T	Shielded twisted pair cable (STP) or unshielded twisted pair cable (UTP) of category 3 or higher
100BASE-TX	Shielded twisted pair cable (STP) or unshielded twisted pair cable (UTP) of category 5 or higher
1000BASE-T	Shielded twisted pair cable (STP) or unshielded twisted pair cable (UTP) of category 5e or higher

Connection through a PLC between the GOT and the controller

For the system configuration between the GOT and the controller, refer to the following.

Controller	Reference
FR-E700 (connection through a PLC)	☞ Page 1655 System configuration
FR-A800 (connection through a PLC)	☞ Page 1659 System configuration
FR-A800 Plus (connection through a PLC)	☞ Page 1667 System configuration
FR-F800 (connection through a PLC)	☞ Page 1675 System configuration
FR-E800 (connection through a PLC)	☞ Page 1683 System configuration
FR-D800 (connection through a PLC)	☞ Page 1689 System configuration



Controller	GOT		Connection cable		Personal computer	Number of connectable devices
	Model	Interface	Ethernet cable	Maximum segment length	Compatible FR Configurator2 version	
FR-E7□0-NE	GT37 SoftGOT3000	Built-in Ethernet interface of the GOT	Twisted pair cable ☞ Page 2842 Connection cable	100 m	1.35 or later	1 personal computer for 1 GOT
FR-A8□0 FR-A8□2 FR-A8□6 FR-A8□0-E FR-A8□2-E FR-A8□6-E FR-A8□0-GF FR-A8□2-GF	GT37 SoftGOT3000	Built-in Ethernet interface of the GOT	Twisted pair cable ☞ Page 2842 Connection cable	100 m	1.35 or later	1 personal computer for 1 GOT
FR-A8□0-E-CRN FR-A8□2-E-CRN FR-A8□0-E-R2R FR-A8□2-E-R2R FR-A8□0-E-LC	GT37 SoftGOT3000	Built-in Ethernet interface of the GOT	Twisted pair cable ☞ Page 2842 Connection cable	100 m	1.35 or later	1 personal computer for 1 GOT
FR-F8□0 FR-F8□2 FR-F8□6 FR-F8□0-E FR-F8□2-E	GT37 SoftGOT3000	Built-in Ethernet interface of the GOT	Twisted pair cable ☞ Page 2842 Connection cable	100 m	1.35 or later	1 personal computer for 1 GOT
FR-E8□0-E	GT37 SoftGOT3000	Built-in Ethernet interface of the GOT	Twisted pair cable ☞ Page 2842 Connection cable	100 m	1.35 or later	1 personal computer for 1 GOT
FR-D8□0-E	GT37 SoftGOT3000	Built-in Ethernet interface of the GOT	Twisted pair cable ☞ Page 2842 Connection cable	100 m	1.35 or later	1 personal computer for 1 GOT

■Connection cable

Use a connection cable that meets the following standards.

Standard	Category
10BASE-T	Shielded twisted pair cable (STP) or unshielded twisted pair cable (UTP) of category 3 or higher
100BASE-TX	Shielded twisted pair cable (STP) or unshielded twisted pair cable (UTP) of category 5 or higher
1000BASE-T	Shielded twisted pair cable (STP) or unshielded twisted pair cable (UTP) of category 5e or higher

79.2 GOT side settings

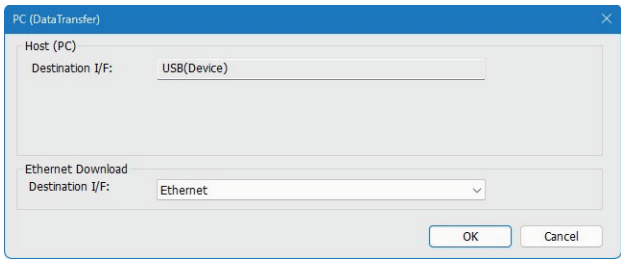
79.2.1 [Controller Setting]

The GOT side settings differ depending on the connection type between the controller and the GOT.
For details on [Controller Setting], refer to the following.

Controller	Reference
FR-E700 (built-in Ethernet port connection)	☞ Page 1406 [Controller Setting]
FR-E700 (connection through a PLC)	☞ Page 1655 GOT side settings
FR-A800 (built-in Ethernet port connection)	☞ Page 1414 [Controller Setting]
FR-A800 (serial connection)	☞ Page 1528 [Controller Setting]
FR-A800 (connection through a PLC)	☞ Page 1660 GOT side settings
FR-A800 Plus (built-in Ethernet port connection)	☞ Page 1421 [Controller Setting]
FR-A800 Plus (serial connection)	☞ Page 1543 [Controller Setting]
FR-A800 Plus (connection through a PLC)	☞ Page 1668 GOT side settings
FR-F800 (built-in Ethernet port connection)	☞ Page 1432 [Controller Setting]
FR-F800 (serial connection)	☞ Page 1561 [Controller Setting]
FR-F800 (connection through a PLC)	☞ Page 1676 GOT side settings
FR-E800 (built-in Ethernet port connection)	☞ Page 1439 [Controller Setting]
FR-E800 (serial connection)	☞ Page 1574 [Controller Setting]
FR-E800 (connection through a PLC)	☞ Page 1683 GOT side settings
FR-D800 (built-in Ethernet port connection)	☞ Page 1446 [Controller Setting]
FR-D800 (serial connection)	☞ Page 1589 [Controller Setting]
FR-D800 (connection through a PLC)	☞ Page 1689 GOT side settings

79.2.2 Communication setting with personal computer

Set the communication setting between the GOT and the personal computer.



Operating procedure

1. Select [Common] → [Peripheral Setting] → [PC (Data Transfer)] from the menu.

2. Set the interface of the GOT to be used for communication with the personal computer in the [PC (Data Transfer)] dialog.

For details of the setting contents, refer to the following manual.

📖GT Designer3 (GOT3000) Screen Design Manual

Point

• Controller settings using the GT37 utility

The controller settings can be changed in [Communication Settings] of the GT37 utility after writing [Communication Settings] of project data to GT37.

For details on the GT37 utility, refer to the following manual.

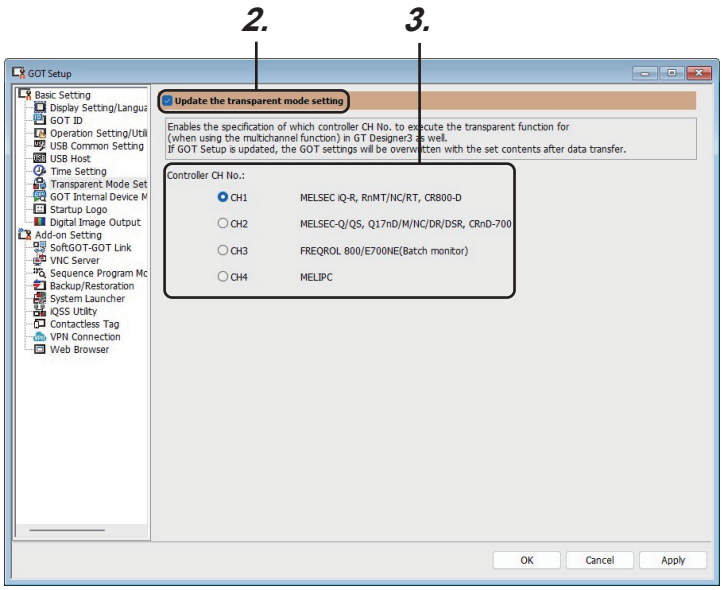
📖GOT3000 Series User's Manual (Utility & Maintenance Functions)

• Priority of the settings in [Controller Setting]

When the settings are configured in GT Designer3 or in the GT37 utility, the latest settings are effective.

79.2.3 GOT Setup

When using the multi-channel function, specify the channel number for which the FA transparent function is executed.



Operating procedure

1. Select [Common] → [GOT Setup] → [Basic Setting] → [Transparent Mode Setting] from the menu.
2. Select [Update the transparent mode setting].
3. As necessary, check one of [CH1] to [CH4].
4. When you have completed the settings, click the [OK] button.

Point

Transparent setting on the utility screen

Transparent setting can be performed by the GOT.

For details of the operating, refer to the following.

GOT3000 Series User's Manual (Utility & Maintenance Functions)

79.3 Personal computer side settings

The following shows the procedure to set the FA transparent function in FR Configurator2.

Personal computer to GOT connection	GOT to controller connection	Reference
USB connection	Ethernet connection	☞ Page 2846 GOT to controller Ethernet connection
	Serial connection	☞ Page 2848 Serial connection between the GOT and the controller
	Through a PLC	☞ Page 2849 Connection through a PLC between the GOT and the controller
Ethernet connection	Ethernet connection	☞ Page 2851 GOT to controller Ethernet connection
	Serial connection	☞ Page 2853 Serial connection between the GOT and the controller
	Through a PLC	☞ Page 2854 Connection through a PLC between the GOT and the controller

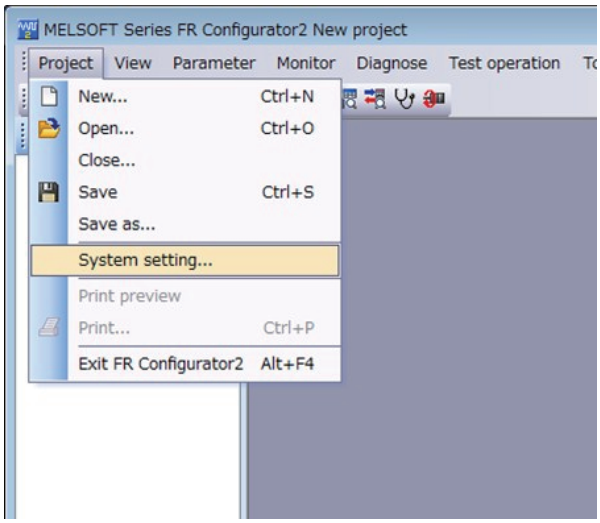
79.3.1 Personal computer to GOT USB connection

GOT to controller Ethernet connection

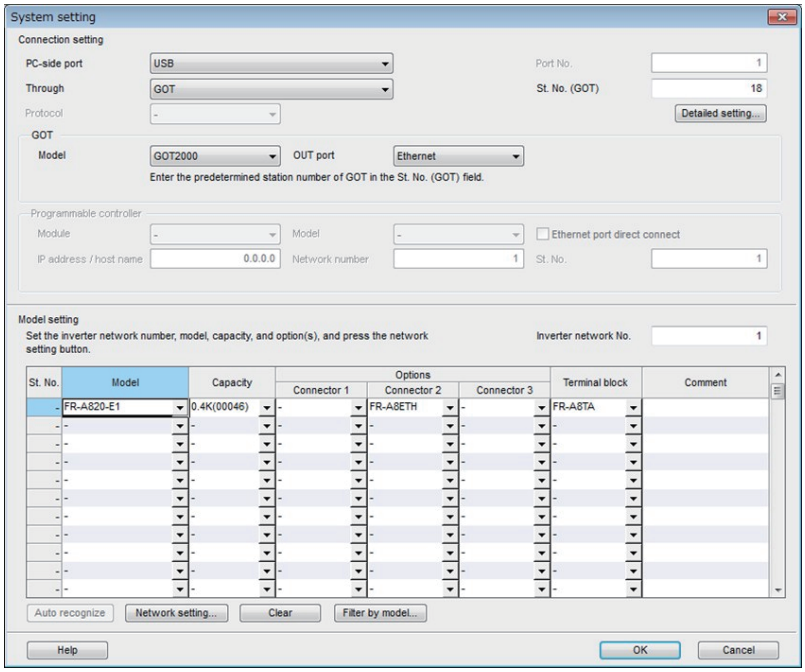
Operating procedure

1. Click [Project] → [System setting] on FR Configurator2.

The [System setting] dialog is displayed.



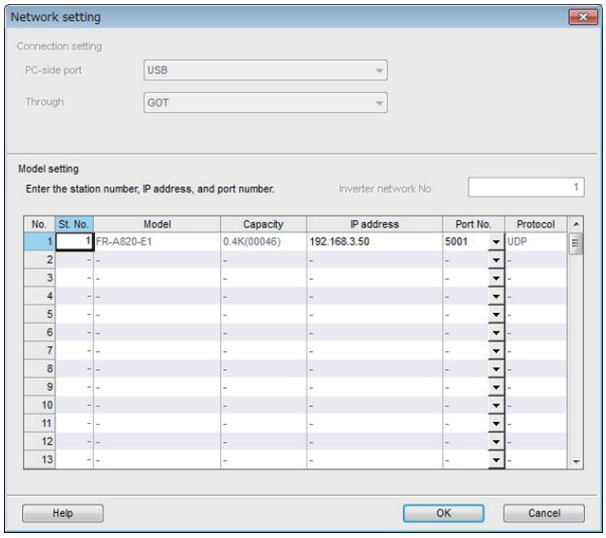
2. Configure the settings in the [System setting] dialog as follows.



Item		Description
[Connection setting]	[PC-side port]	[USB]
	[Through]	[GOT]
	[St. No. (GOT)]	Station number of the GOT to be used
[GOT]	[Model]	[GOT3000]
	[OUT port]	[Ethernet]
[Model setting]	[Inverter network No.]	Network number of the inverter to be connected
	[Model]	Model name of the inverter to be connected

3. Click the [Network setting] button.

The [Network setting] dialog is displayed.



4. In the [Network setting] dialog, configure the settings in [Model setting] and click [OK].

- [St. No.]: Station number of the inverter to be connected
- [IP address]: IP address of the inverter to be connected
- [Port No.]: Port number of the inverter to be connected

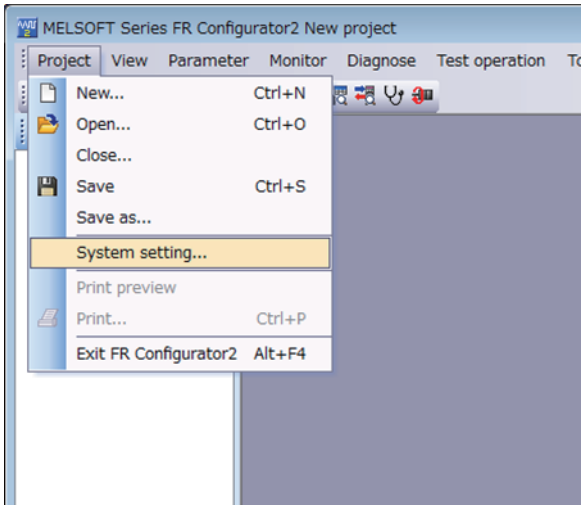
5. Click [OK] in the [System setting] dialog to complete the settings.

Serial connection between the GOT and the controller

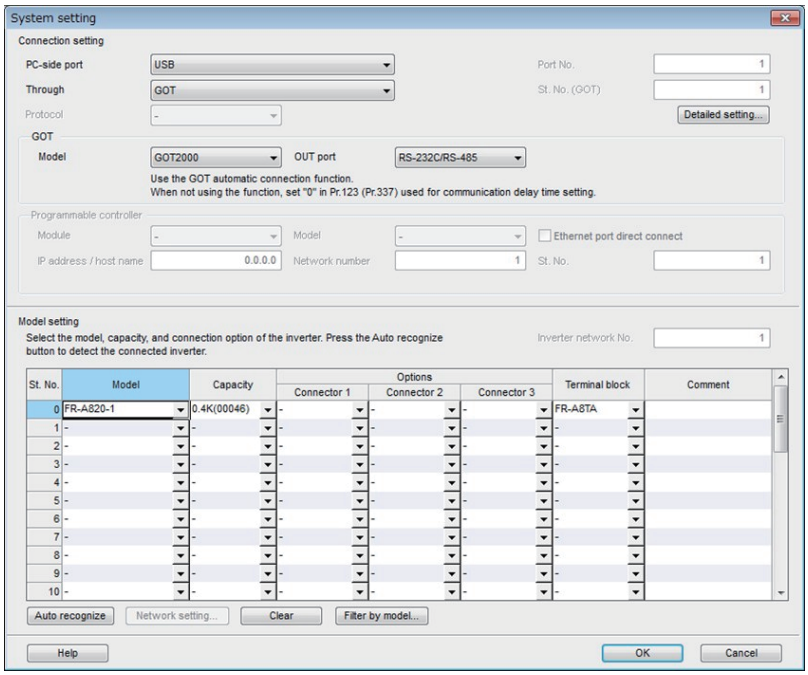
Displayed items

1. Click [Project] → [System setting] on FR Configurator2.

The [System setting] dialog is displayed.



2. Configure the settings in the [System setting] dialog as follows.



Item		Description
[Connection setting]	[PC-side port]	[USB]
	[Through]	[GOT]
[GOT Setting]	[Model]	[GOT3000]
	[OUT port]	[RS-232C/RS-485]
[Model setting]	[Model]	Model name of the inverter to be connected

3. Click [OK] to complete the settings.

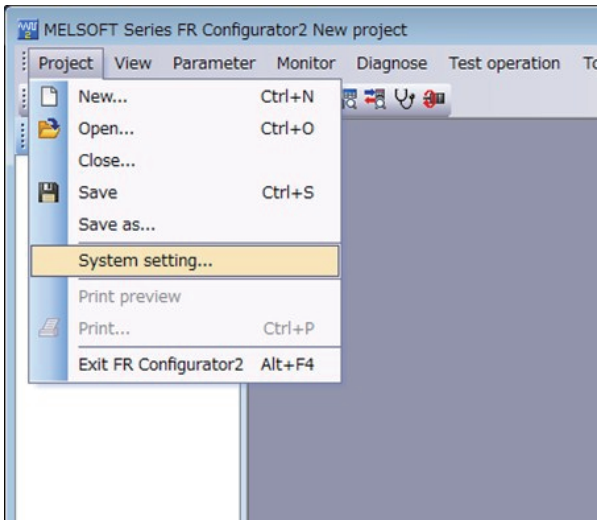
Connection through a PLC between the GOT and the controller

The following shows the procedure for connecting the GOT to an inverter through a PLC.

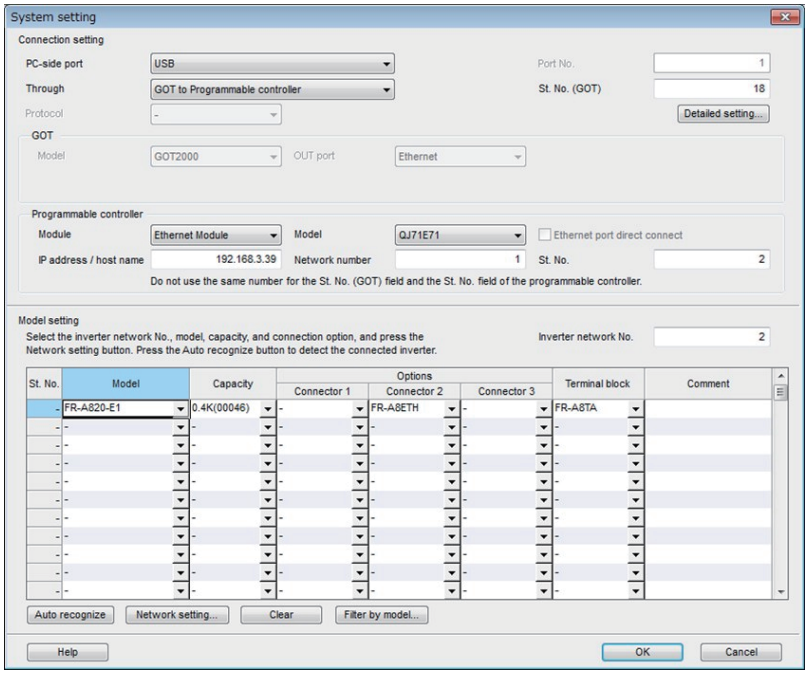
Operating procedure

1. Click [Project] → [System setting] on FR Configurator2.

The [System setting] dialog is displayed.



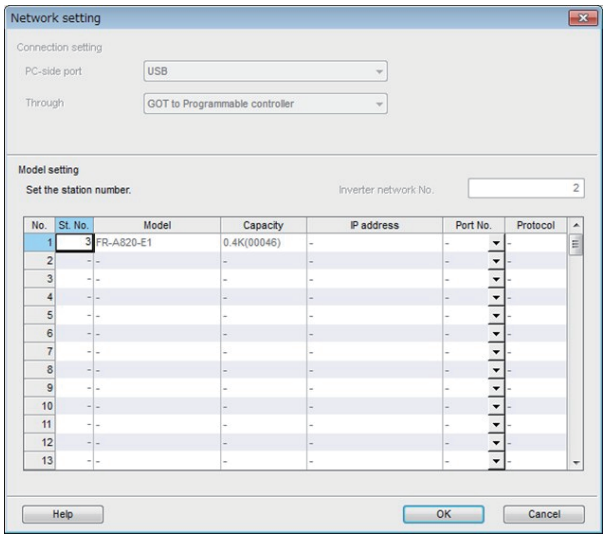
2. Configure the settings in the [System setting] dialog as follows.



Item		Description
[Connection setting]	[PC-side port]	[USB]
	[Through]	[GOT to Programmable controller]
	[St. No. (GOT)]	Station number of the GOT to be used
[Programmable controller]	[Module]	Type of the relaying PLC module
	[Model]	Model name of the relaying PLC module
	[IP address / host name]	IP address/host name of the relaying PLC module
	[Network number]	Network number of the relaying PLC module
	[St. No.]	Station number of the relaying PLC module
[Model setting]	[Inverter network No.]	Network number of the inverter to be connected
	[Model]	Model name of the inverter to be connected

3. Click the [Network setting] button.

The [Network setting] dialog is displayed.



4. In the [Network setting] dialog, configure the settings in [Model setting] and click [OK].

- [St. No.]: Station number of the inverter to be connected

5. Click [OK] in the [System setting] dialog to complete the settings.

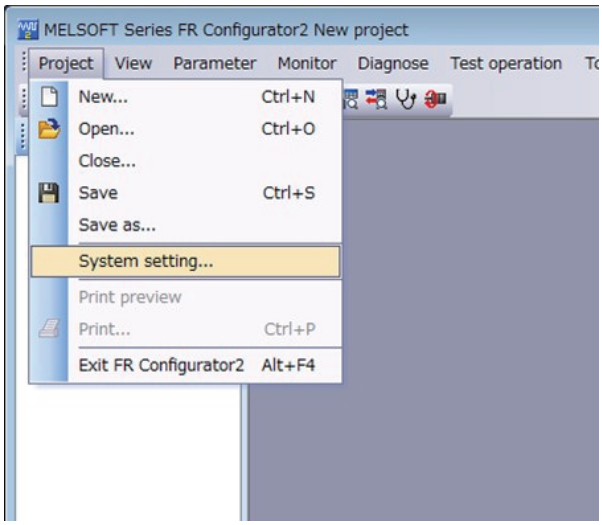
79.3.2 Personal computer to GOT Ethernet connection

GOT to controller Ethernet connection

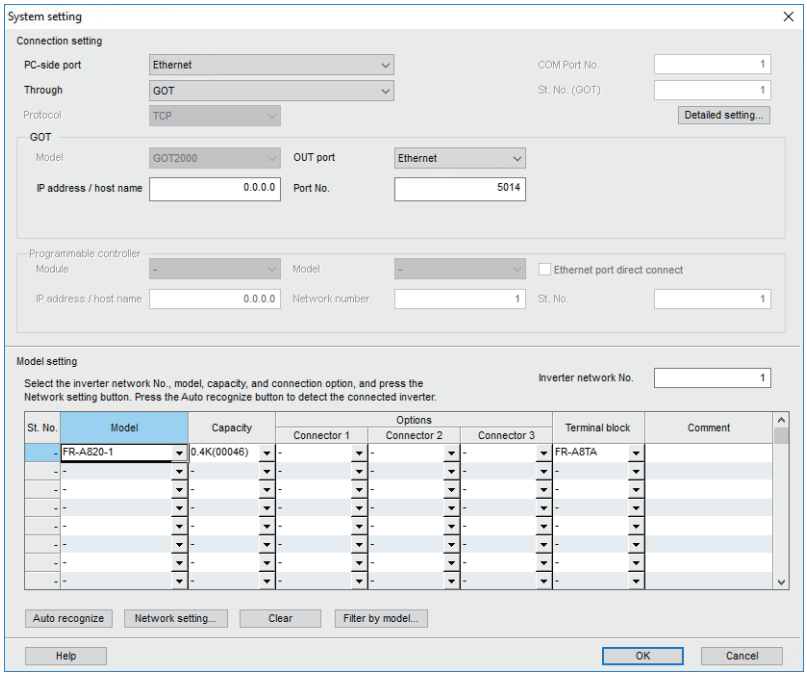
Operating procedure

1. Click [Project] → [System setting] on FR Configurator2.

The [System setting] dialog is displayed.



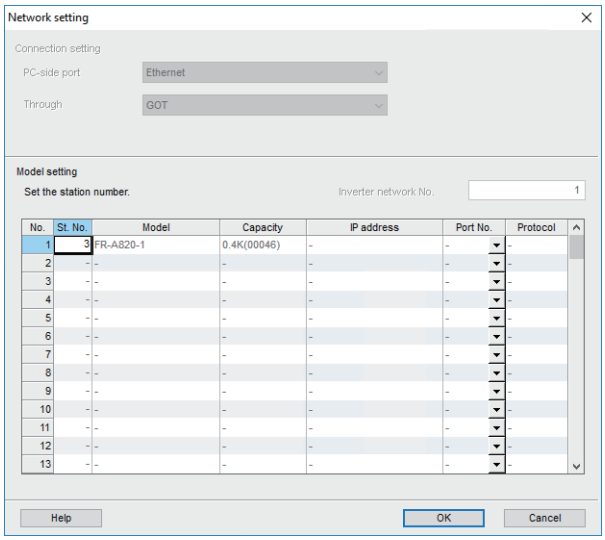
2. Configure the settings in the [System setting] dialog as follows.



Item		Description
[Connection setting]	[PC-side port]	[Ethernet]
	[Through]	[GOT]
	[St. No. (GOT)]	Station number of the GOT to be used
[GOT Setting]	[IP address / host name]	IP address assigned to the GOT
	[Port No.]	[5014]
[Model setting]	[Inverter network No.]	Network number of the inverter to be connected
	[Model]	Model name of the inverter to be connected

3. Click the [Network setting] button.

The [Network setting] dialog is displayed.



4. In the [Network setting] dialog, configure the settings in [Model setting] and click [OK].

- [St. No.]: Station number of the inverter to be connected

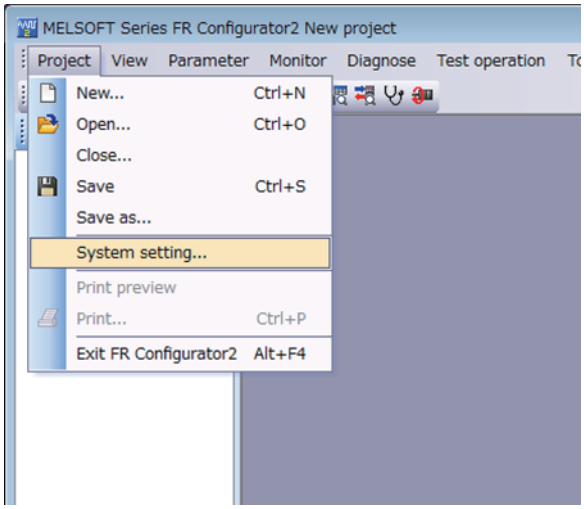
5. Click [OK] in the [System setting] dialog to complete the settings.

Serial connection between the GOT and the controller

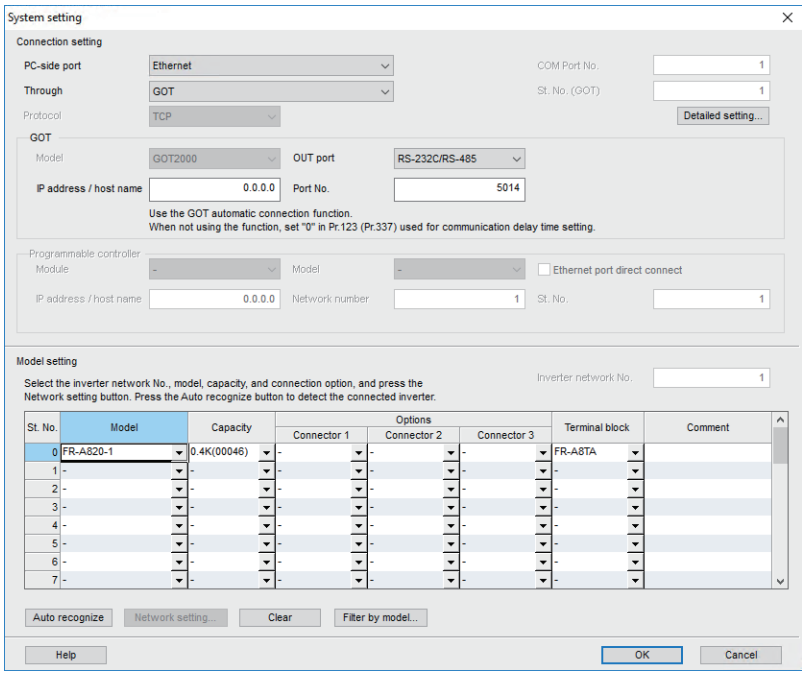
Operating procedure

1. Click [Project] → [System setting] on FR Configurator2.

The [System setting] dialog is displayed.



2. Configure the settings in the [System setting] dialog as follows.



Item		Description
[Connection setting]	[PC-side port]	[Ethernet]
	[Through]	[GOT]
[GOT Setting]	[OUT port]	[RS-232C/RS-485]
	[IP address / host name]	IP address assigned to the GOT
	[Port No.]	[5014]
[Model setting]	[Model]	Model name of the inverter to be connected

3. Click [OK] to complete the settings.

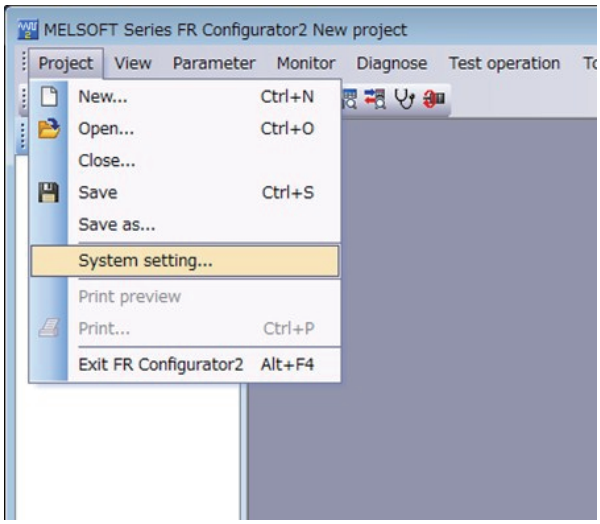
Connection through a PLC between the GOT and the controller

The following shows the procedure for connecting the GOT to an inverter through a PLC.

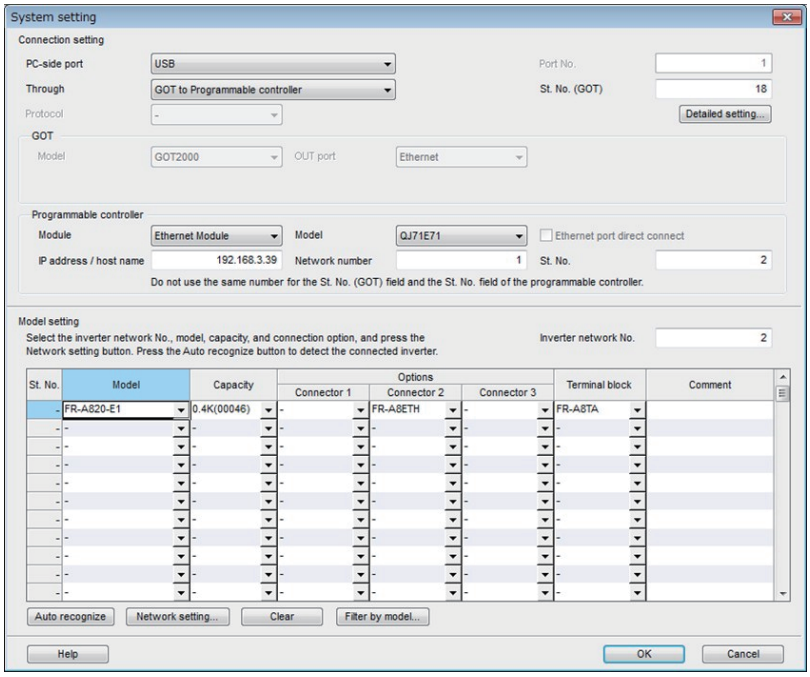
Operating procedure

1. Click [Project] → [System setting] on FR Configurator2.

The [System setting] dialog is displayed.



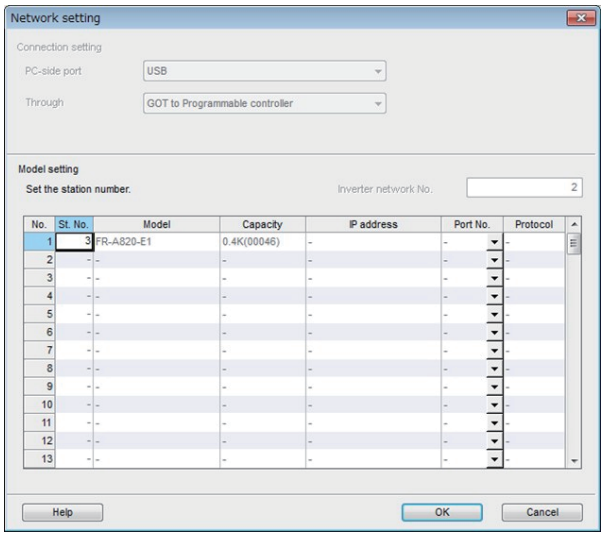
2. Configure the settings in the [System setting] dialog as follows.



Item		Description
[Connection setting]	[PC-side port]	[Ethernet]
	[Through]	[GOT to Programmable controller]
	[St. No. (GOT)]	Station number of the GOT to be used
[Programmable controller]	[Module]	Type of the relaying PLC module
	[Model]	Model name of the relaying PLC module
	[IP address / host name]	IP address/host name of the relaying PLC module
	[Network number]	Network number of the relaying PLC module
	[St. No.]	Station number of the relaying PLC module
[Model setting]	[Inverter network No.]	Network number of the inverter to be connected
	[Model]	Model name of the inverter to be connected

3. Click the [Network setting] button.

The [Network setting] dialog is displayed.



4. In the [Network setting] dialog, configure the settings in [Model setting] and click [OK].

- [St. No.]: Station number of the inverter to be connected

5. Click [OK] in the [System setting] dialog to complete the settings.

80 Accessing with RT ToolBox3

The following shows the controllers that can be accessed with RT ToolBox3 using the FA transparent function.

Controller	Reference
Robot controller (MELSEC iQ-R series)	☞ Page 2857 Robot controller (MELSEC iQ-R series)
Robot controller (MELSEC-Q series)	☞ Page 2858 Robot controller (MELSEC-Q series)

For information on the GOT side or personal computer side settings, refer to the following.

☞ Page 2861 GOT side settings

☞ Page 2864 Personal computer side settings

80.1 Robot controller (MELSEC iQ-R series)

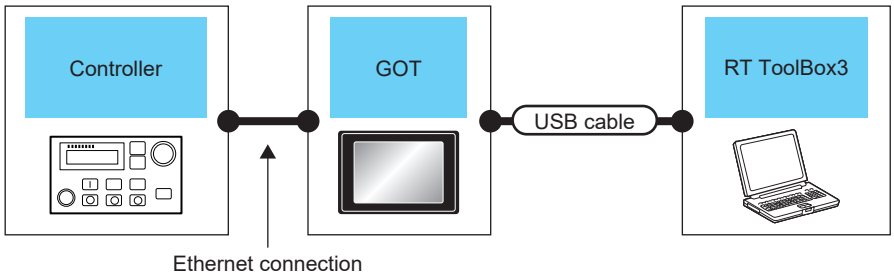
Personal computer to GOT connection	Connection between GOT and controller	Reference
USB connection	Ethernet connection	☞ Page 2857 Ethernet connection between the GOT and the controller

80.1.1 USB connection between the personal computer and the GOT

Ethernet connection between the GOT and the controller

For the system configuration between the GOT and the controller, refer to the following.

Controller	Reference
MELSEC iQ-R series (Built-in Ethernet port connection)	☞ Page 190 System configuration
MELSEC iQ-R series (Ethernet module connection)	☞ Page 245 System configuration
CR800-D (Built-in Ethernet port connection)	☞ Page 1607 System configuration



Controller	GOT		Connection cable		Personal computer	Number of connectable equipment
	Model	Interface	USB cable	Maximum length	Compatible RT ToolBox3 version	
CR800-R (R16RTCPU)	GT37 SoftGOT3000	USB	*1	3 m	2.50C or later	1 personal computer for 1 GOT
CR800-D	GT37 SoftGOT3000	USB	*1	3 m	2.50C or later	1 personal computer for 1 GOT

*1 For the USB cables validated by Mitsubishi Electric Corporation, refer to the following Technical Bulletin.
List of Valid Devices Applicable for GOT3000 Series (GOT-A-0233)

80.2 Robot controller (MELSEC-Q series)

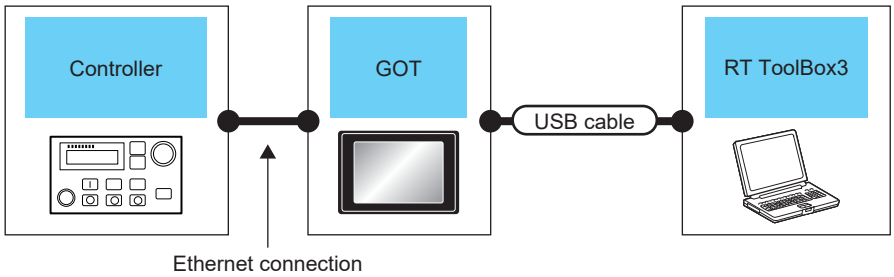
Personal computer to GOT connection	Connection between GOT and controller	Reference
USB connection	Ethernet connection	☞ Page 2858 Ethernet connection between the GOT and the controller
	Serial connection	☞ Page 2859 Serial connection between the GOT and the controller
	Bus connection	☞ Page 2860 Bus connection between the GOT and the controller

80.2.1 Personal computer to GOT USB connection

Ethernet connection between the GOT and the controller

For the system configuration between the GOT and the controller, refer to the following.

Controller	Reference
MELSEC-Q series (Built-in Ethernet port connection)	☞ Page 342 System configuration
MELSEC-Q series (Ethernet module connection)	☞ Page 394 System configuration
CRnD-700 (Built-in Ethernet port connection)	☞ Page 1931 System configuration



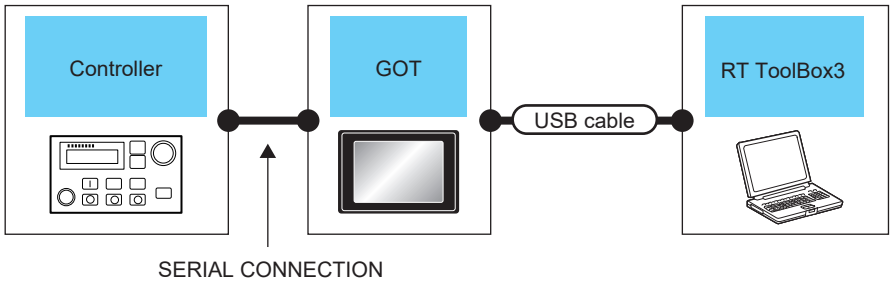
Controller	GOT		Connection cable		Personal computer	Number of connectable equipment
	Model	Interface	USB cable	Maximum length	Compatible RT ToolBox3 version	
CRnQ-700 (Q172DRCPU) CR750-Q (Q172DRCPU) CR751-Q (Q172DRCPU)	GT37 SoftGOT3000	USB	*1	3 m	2.50C or later	1 personal computer for 1 GOT
CR800-Q (Q172DSRCPU)	GT37 SoftGOT3000	USB	*1	3 m	2.50C or later	1 personal computer for 1 GOT
CRnD-700 CR750-D CR751-D	GT37 SoftGOT3000	USB	*1	3 m	2.50C or later	1 personal computer for 1 GOT

*1 For the USB cables validated by Mitsubishi Electric Corporation, refer to the following Technical Bulletin.
📖List of Valid Devices Applicable for GOT3000 Series (GOT-A-0233)

Serial connection between the GOT and the controller

For the system configuration between the GOT and the controller, refer to the following.

Controller	Reference
MELSEC-Q series (Built-in serial port connection)	☞ Page 566 System configuration
MELSEC-Q series (serial communication connection)	☞ Page 587 System configuration



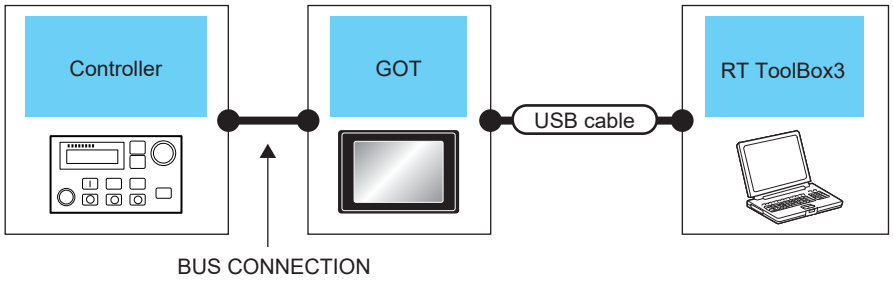
Controller	GOT		Connection cable		Personal computer	Number of connectable equipment
	Model	Interface	USB cable	Maximum length	Compatible RT ToolBox3 version	
CRnQ-700 (Q172DRCPU) CR750-Q (Q172DRCPU) CR751-Q (Q172DRCPU)	GT37 SoftGOT3000	USB	*1	3 m	2.50C or later	1 personal computer for 1 GOT
CR800-Q (Q172DSRCPU)	GT37 SoftGOT3000	USB	*1	3 m	2.50C or later	1 personal computer for 1 GOT

*1 For the USB cables validated by Mitsubishi Electric Corporation, refer to the following Technical Bulletin.
List of Valid Devices Applicable for GOT3000 Series (GOT-A-0233)

Bus connection between the GOT and the controller

For the system configuration between the GOT and the controller, refer to the following.

Controller	Reference
MELSEC-Q series (bus connection)	☞ Page 685 System configuration



Controller	GOT		Connection cable		Personal computer	Number of connectable equipment
	Model	Interface	USB cable	Maximum length	Compatible RT ToolBox3 version	
CRnQ-700 (Q172DRCPU) CR750-Q (Q172DRCPU) CR751-Q (Q172DRCPU)	GT37 SoftGOT3000	USB	*1	3 m	2.50C or later	1 personal computer for 1 GOT
CR800-Q (Q172DSRCPU)	GT37 SoftGOT3000	USB	*1	3 m	2.50C or later	1 personal computer for 1 GOT

*1 For the USB cables validated by Mitsubishi Electric Corporation, refer to the following Technical Bulletin.
List of Valid Devices Applicable for GOT3000 Series (GOT-A-0233)

80.3 GOT side settings

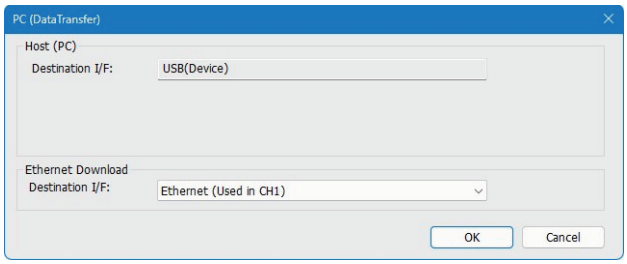
80.3.1 [Controller Setting]

The GOT side settings differ depending on the connection type between the controller and the GOT.
For details on [Controller Setting], refer to the following.

Controller	Reference
MELSEC iQ-R series (Built-in Ethernet port connection)	☞ Page 199 [Controller Setting]
MELSEC iQ-R series (Ethernet module connection)	☞ Page 253 [Controller Setting]
CR800-D (Built-in Ethernet port connection)	☞ Page 1923 [Controller Setting]
MELSEC-Q series (Built-in Ethernet port connection)	☞ Page 350 [Controller Setting]
MELSEC-Q series (Ethernet module connection)	☞ Page 400 [Controller Setting]
CRnD-700 (Built-in Ethernet port connection)	☞ Page 1933 [Controller Setting]
MELSEC-Q series (Built-in serial port connection)	☞ Page 568 [Controller Setting]
MELSEC-Q series (serial communication connection)	☞ Page 592 [Controller Setting]
MELSEC-Q series (bus connection)	☞ Page 688 [Controller Setting]

80.3.2 Communication setting with personal computer

Set the communication setting between the GOT and the personal computer.



Operating procedure

1. Select [Common] → [Peripheral Setting] → [PC (Data Transfer)] from the menu.

2. Set the interface of the GOT to be used for communication with the personal computer in the [PC (Data Transfer)] dialog.

For details of the setting contents, refer to the following manual.

📖GT Designer3 (GOT3000) Screen Design Manual

Point

• Controller settings using the GT37 utility

The controller settings can be changed in [Communication Settings] of the GT37 utility after writing [Communication Settings] of project data to GT37.

For details on the GT37 utility, refer to the following manual.

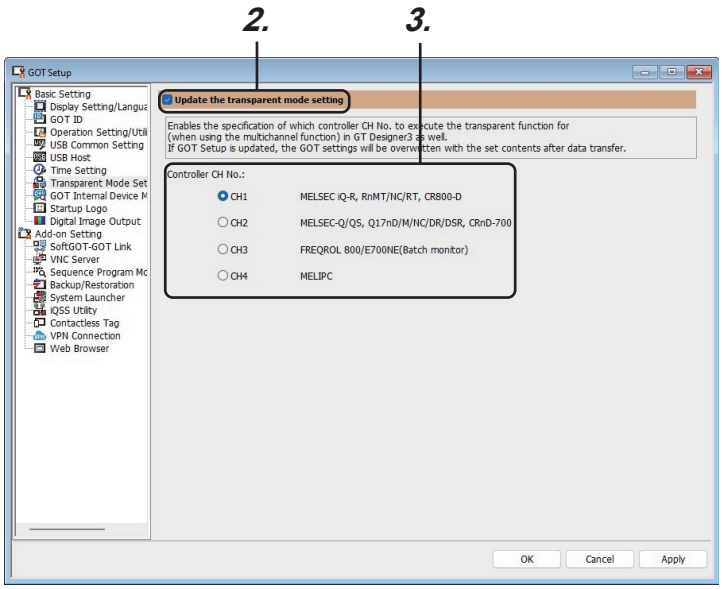
📖GOT3000 Series User's Manual (Utility & Maintenance Functions)

• Priority of the settings in [Controller Setting]

When the settings are configured in GT Designer3 or in the GT37 utility, the latest settings are effective.

80.3.3 GOT Setup

When using the multi-channel function, specify the channel number for which the FA transparent function is executed.



Operating procedure

1. Select [Common] → [GOT Setup] → [Basic Setting] → [Transparent Mode Setting] from the menu.
2. Select [Update the transparent mode setting].
3. As necessary, check one of [CH1] to [CH4].
4. When you have completed the settings, click the [OK] button.

Point

Transparent setting on the utility screen

Transparent setting can be performed by the GOT.

For details of the operating, refer to the following.

📖GOT3000 Series User's Manual (Utility & Maintenance Functions)

80.4 Personal computer side settings

The following shows the procedure to set the FA transparent function in RT ToolBox3.

Personal computer to GOT connection	Connection between GOT and controller	Reference
USB connection	Ethernet connection	☞ Page 2864 Ethernet connection between the GOT and the controller
	Serial connection	☞ Page 2880 Serial connection between the GOT and the controller
	Bus connection	☞ Page 2886 Bus connection between the GOT and the controller

80.4.1 Personal computer to GOT USB connection

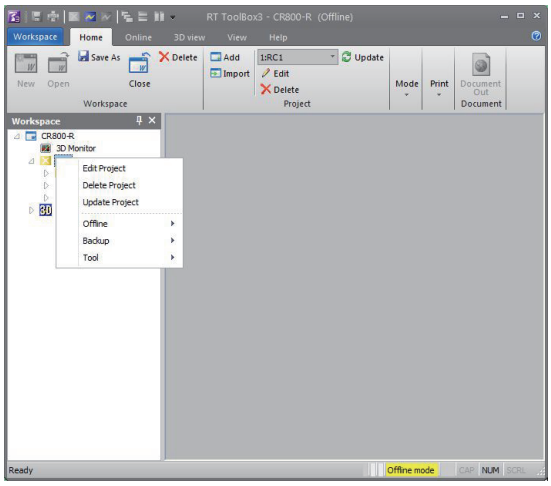
Ethernet connection between the GOT and the controller

☞ Page 2864 CR800-R Series
☞ Page 2868 CR800-D Series
☞ Page 2870 CRnQ-700 Series
☞ Page 2874 CRnD-700 Series
☞ Page 2876 CR800-Q Series

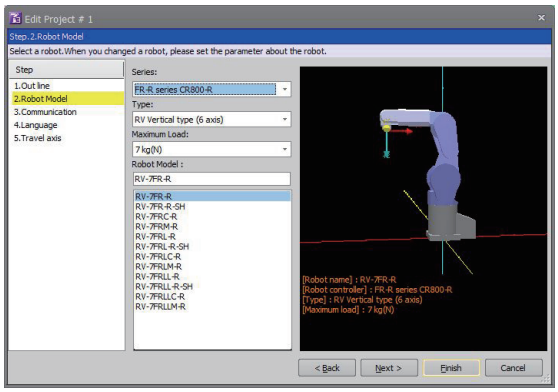
■CR800-R Series

Operating procedure

1. Right-click the target project name on the workspace of RT ToolBox3, and click [Edit Project].

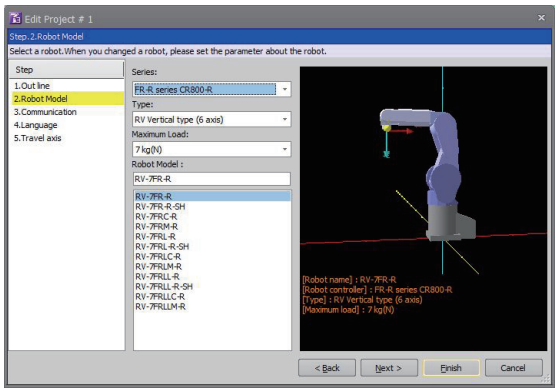


2. When the [Edit Project] dialog is displayed, click the [Next] button.



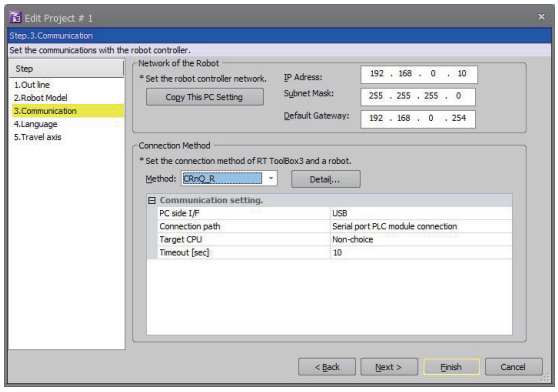
3. Set the following item, and click the [Next] button.

- [Series]: [FR-R series CR800-R]



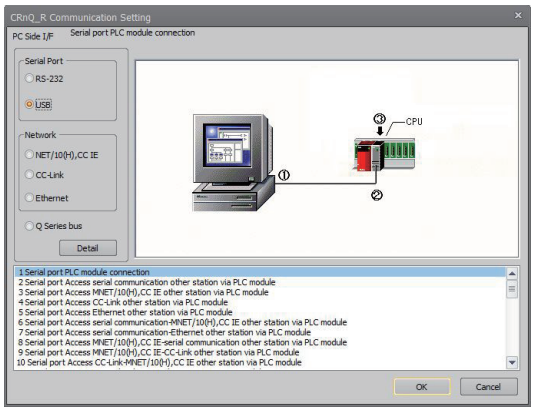
4. Set the following item, and click the [Detail] button.

- [Method]: [CRnQ_R]



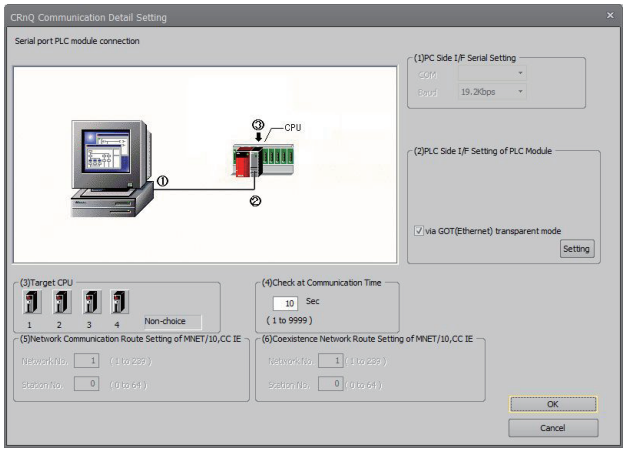
5. When the [CRnQ_R Communication Setting] dialog is displayed, set the following item and click the [Detail] button.

- [Serial Port]: [USB]



6. When the [CRnQ_R Communication Detail Setting] dialog is displayed, select [via GOT(Ethernet) transparent mode] in [(2)PLC Side I/F Setting of PLC Module].

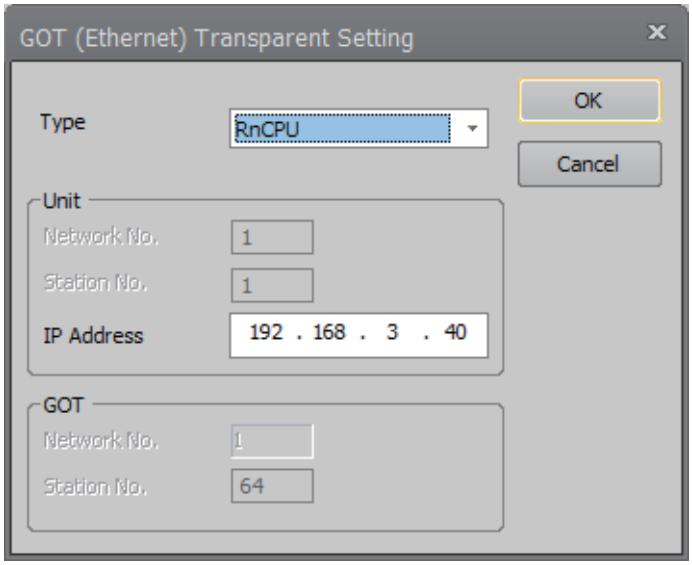
In [(3)Target CPU], select the controller that is the target of the FA transparent function as necessary.



7. Click the [Setting] button to display the [GOT (Ethernet) Transparent Setting] dialog.

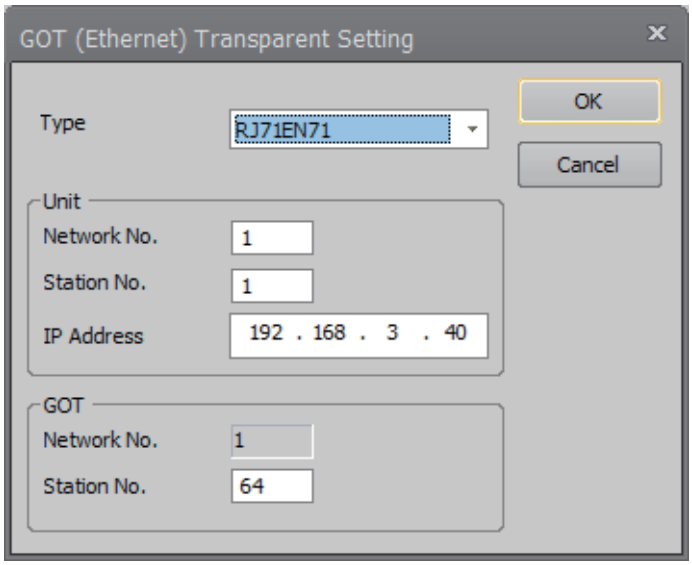
8. Set the following according to the interface of the controller.

- When connecting with an Ethernet port built in a PLC CPU



Item		Setting
[Type]		[RnCPU]
[Module Side]	[IP Address]	IP address assigned to RnCPU

• Connection to the Ethernet module



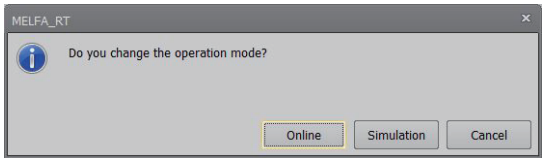
Item		Setting
[Type]		[RJ71EN71]
[Module Side]	[Network No.]	Specify the network number assigned to the Ethernet module.
	[Station No.]	Specify the station number assigned to the Ethernet module.
	[IP Address]	Specify the IP address assigned to the Ethernet module.
[GOT]	[Station No.]	Specify the station number assigned to the GOT.

9. Click the [OK] button of each dialog in steps 5 to 8 to complete the settings.

10. Click the [Finish] button in the [Edit Project] dialog to complete the settings.

After completing the settings, change the operation mode to [Online].

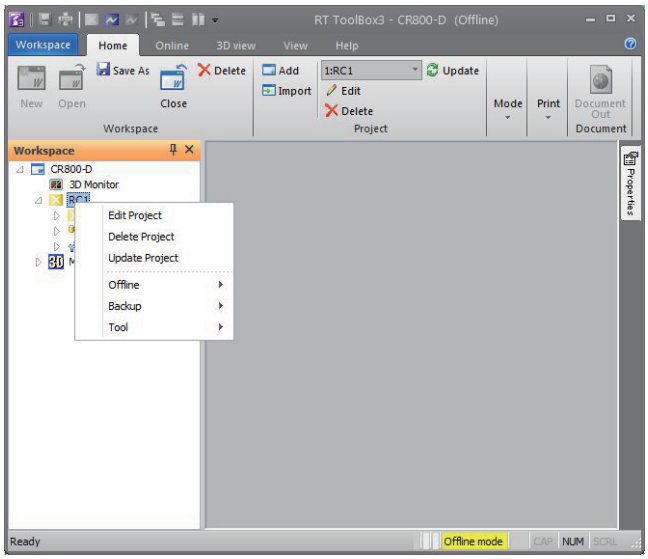
Change the operation mode with the GOT and robot controller connected.



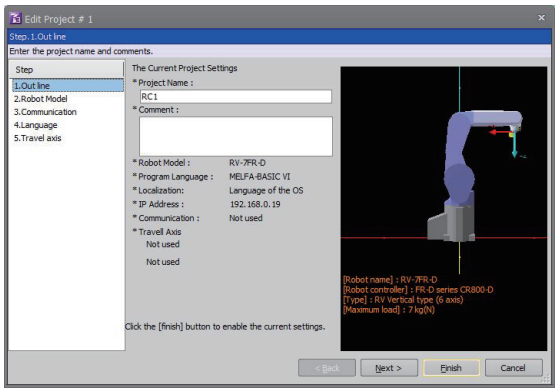
■CR800-D Series

Operating procedure

1. Right-click the target project name on the workspace of RT ToolBox3, and click [Edit Project].

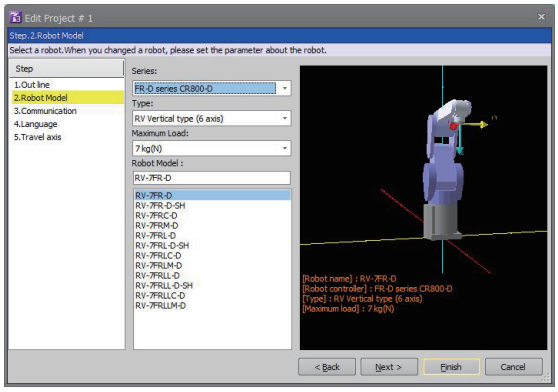


2. When the [Edit Project] dialog is displayed, click the [Next] button.

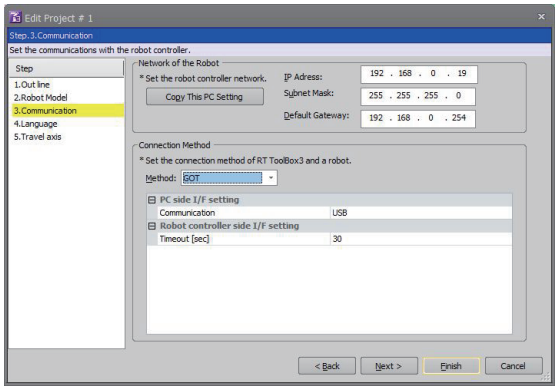


3. Set the following item, and click the [Next] button.

- [Series]: [FR-D series CR800-D]



4. Set the following items.

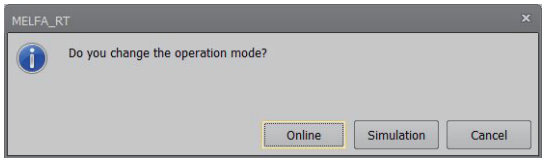


Item		Setting
[Method]		[GOT]
[PC side I/F setting]	[Communication]	[USB]
[Robot controller side I/F setting]	[Timeout [sec]]	Set this item as necessary.

5. Click the [Finish] button in the [Edit Project] dialog to complete the settings.

After completing the settings, change the operation mode to [Online].

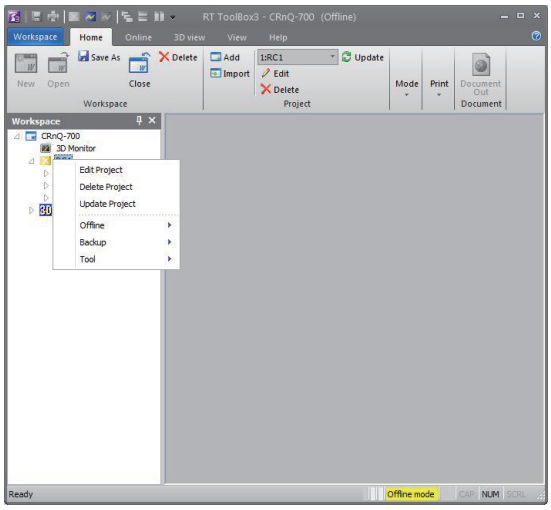
Change the operation mode with the GOT and robot controller connected.



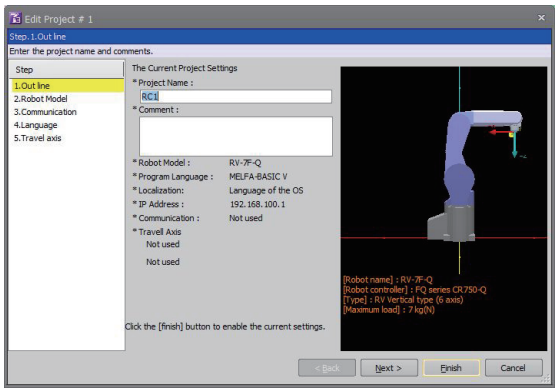
■CRnQ-700 Series

Operating procedure

1. Right-click the target project name on the workspace of RT ToolBox3, and click [Edit Project].

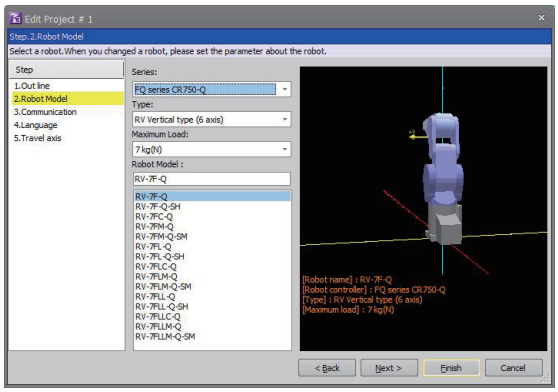


2. When the [Edit Project] dialog is displayed, click the [Next] button.



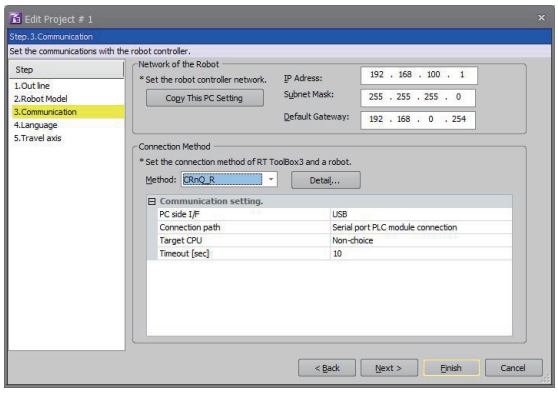
3. Set the following item, and click the [Next] button.

- [Series]: [FQ series CR750-Q]



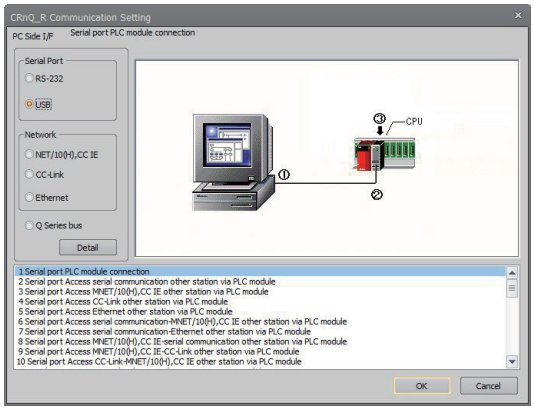
4. Set the following item, and click the [Detail] button.

- [Method]: [CRnQ_R]



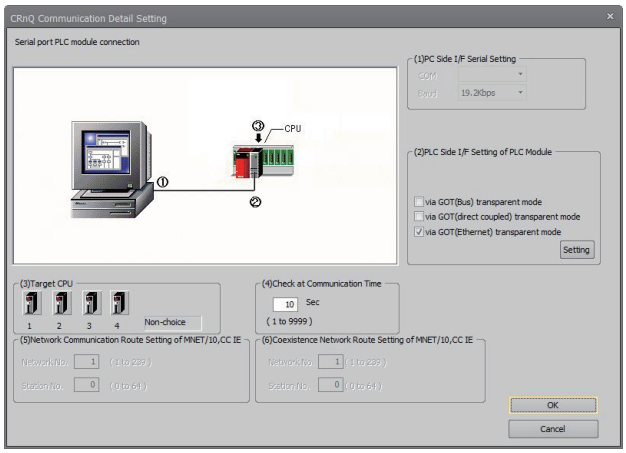
5. When the [CRnQ_R Communication Setting] dialog is displayed, set the following item and click the [Detail] button.

- [Serial Port]: [USB]



6. When the [CRnQ_R Communication Detail Setting] dialog is displayed, select [via GOT(Ethernet) transparent mode] in [(2)PLC Side I/F Setting of PLC Module].

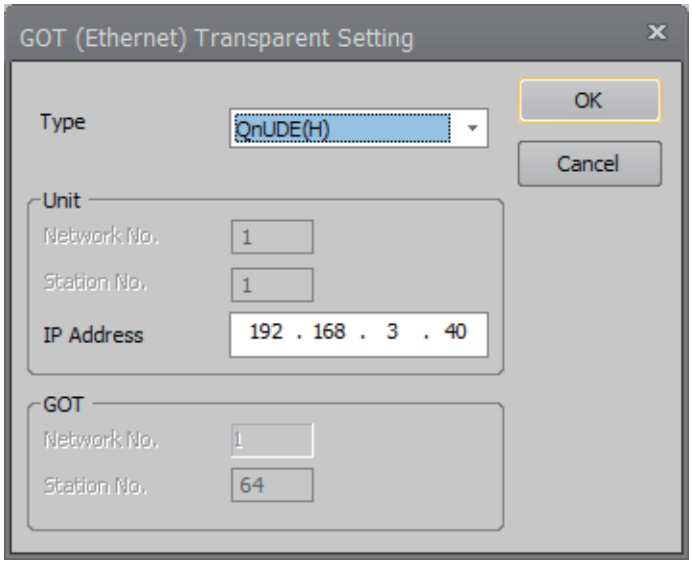
In [(3)Target CPU], select the controller that is the target of the FA transparent function as necessary.



7. Click the [Setting] button to display the [GOT (Ethernet) Transparent Setting] dialog.

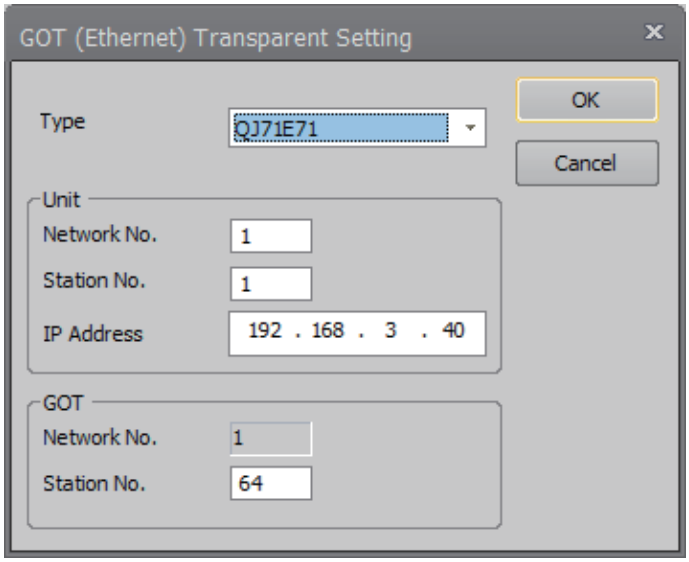
8. Set the following according to the interface of the controller.

- When connecting with an Ethernet port built in a PLC CPU



Item		Setting
[Type]		[QnUDE(H)]
[Module Side]	[IP Address]	Specify the IP address assigned to QnUDE(H).

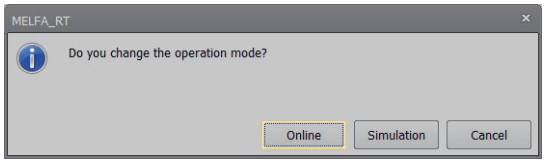
- Connection to the Ethernet module



Item		Setting
[Type]		[QJ71E71]
[Module Side]	[Network No.]	Specify the network number assigned to the Ethernet module.
	[Station No.]	Specify the station number assigned to the Ethernet module.
	[IP Address]	Specify the IP address assigned to the Ethernet module.
[GOT]	[Station No.]	Specify the station number assigned to the GOT.

9. Click the [OK] button of each dialog in steps 5 to 8 to complete the settings.

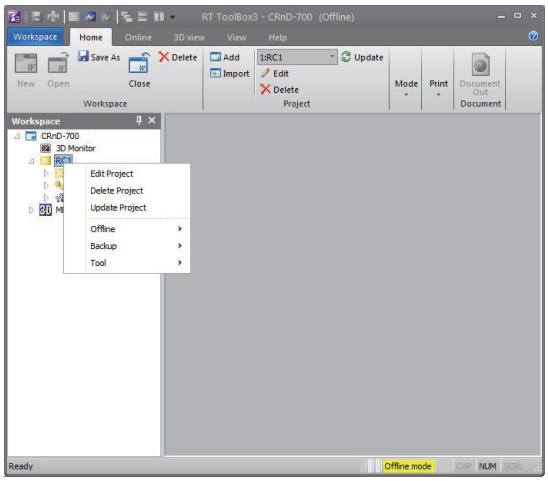
10. Click the [Finish] button in the [Edit Project] dialog to complete the settings.
After completing the settings, change the operation mode to [Online].
Change the operation mode with the GOT and robot controller connected.



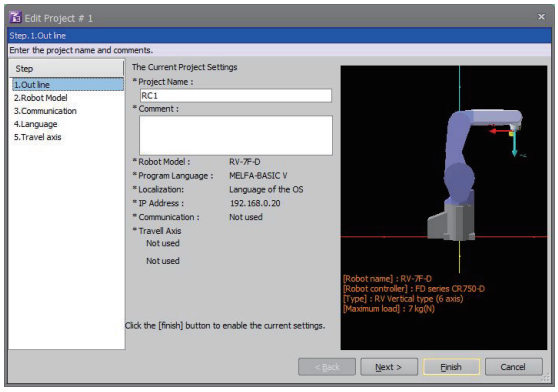
■CRnD-700 Series

Operating procedure

1. Right-click the target project name on the workspace of RT ToolBox3, and click [Edit Project].

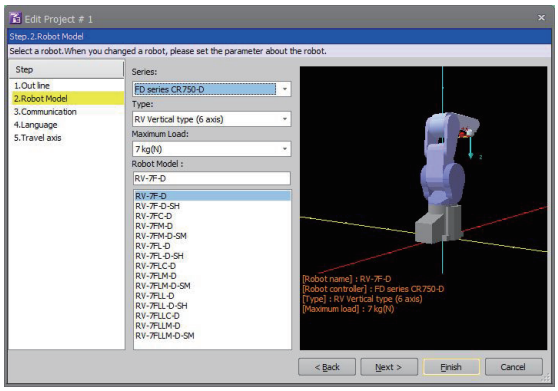


2. When the [Edit Project] dialog is displayed, click the [Next] button.

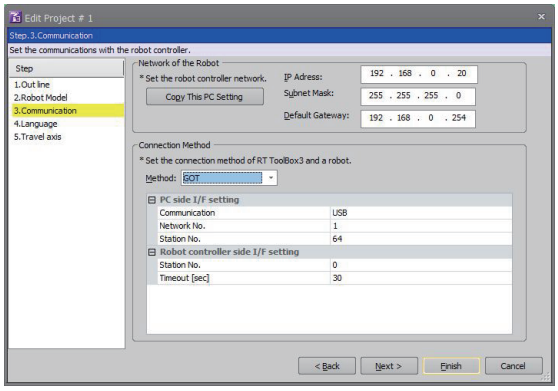


3. Set the following item, and click the [Next] button.

- [Series]: [FD series CR750-D]



4. Set the following items.

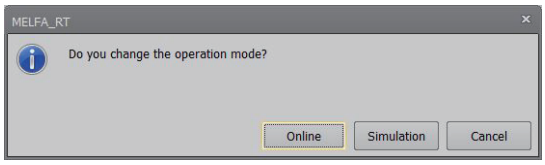


Item		Setting
[Method]		[GOT]
[PC side I/F setting]	[Communication]	[USB]
	[Network No.]	Specify the network number assigned to the GOT.
	[Station No.]	Specify the station number assigned to the GOT.
[Robot controller side I/F setting]	[Station No.]	Specify the station number assigned to the robot controller.
	[Timeout [sec]]	Set this item as required.

5. Click the [Finish] button in the [Edit Project] dialog to complete the settings.

After completing the settings, change the operation mode to [Online].

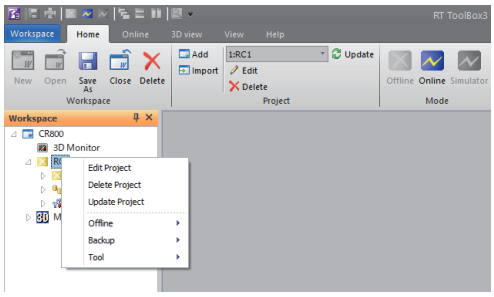
Change the operation mode with the GOT and robot controller connected.



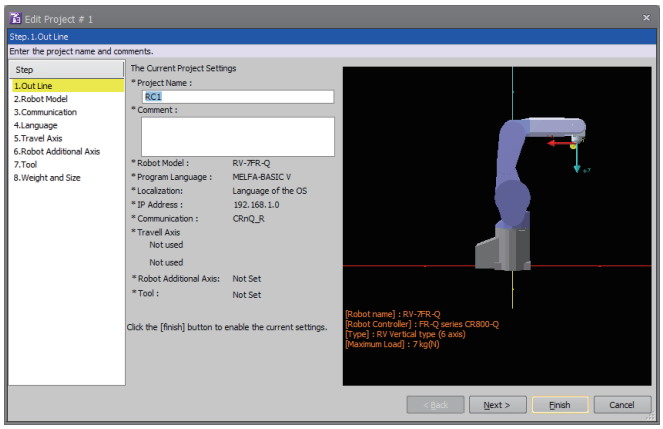
■CR800-Q Series

Operating procedure

1. Right-click the target project name on the workspace of RT ToolBox3, and click [Edit Project].

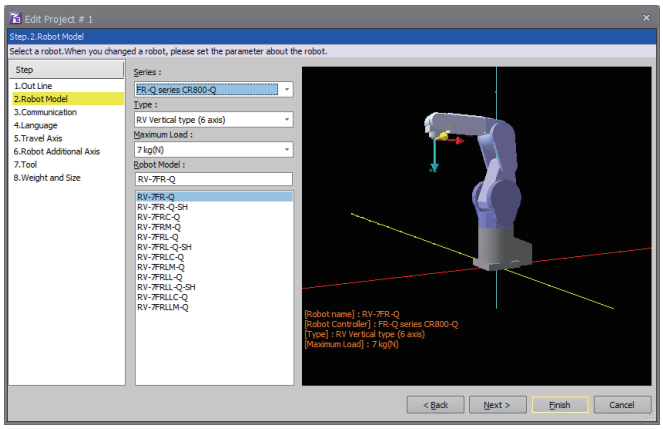


2. When the [Edit Project] dialog is displayed, click the [Next] button.



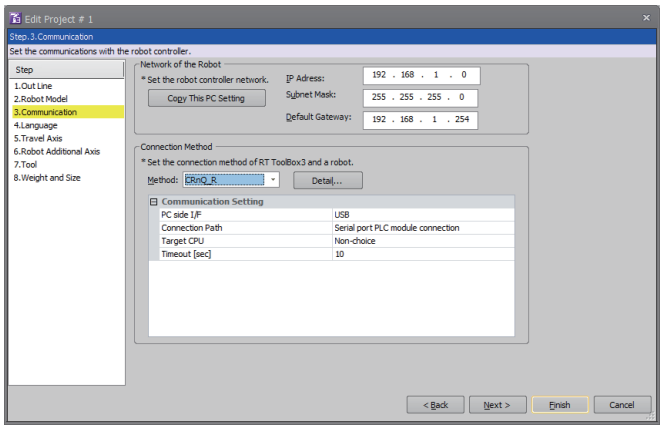
3. Set the following item, and click the [Next] button.

- [Series]: [FR-Q series CR800-Q]



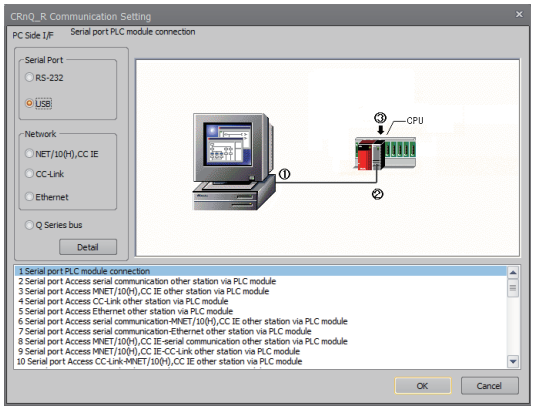
4. Set the following item, and click the [Detail] button.

- [Method]: [CRnQ_R]



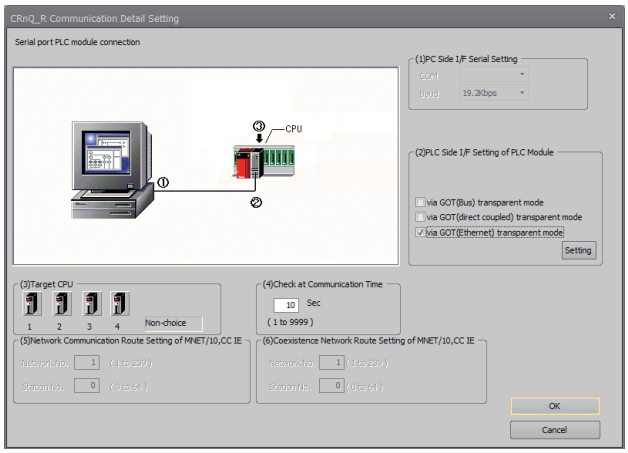
5. When the [CRnQ_R Communication Setting] dialog is displayed, set the following item and click the [Detail] button.

- [Serial Port]: [USB]



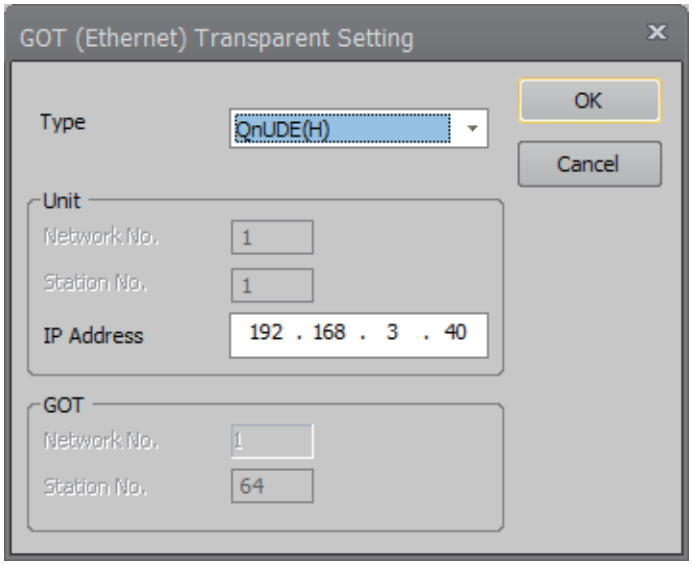
6. When the [CRnQ_R Communication Detail Setting] dialog is displayed, select [via GOT(Ethernet) transparent mode] in [(2)PLC Side I/F Setting of PLC Module].

In [(3)Target CPU], select the controller that is the target of the FA transparent function as necessary.



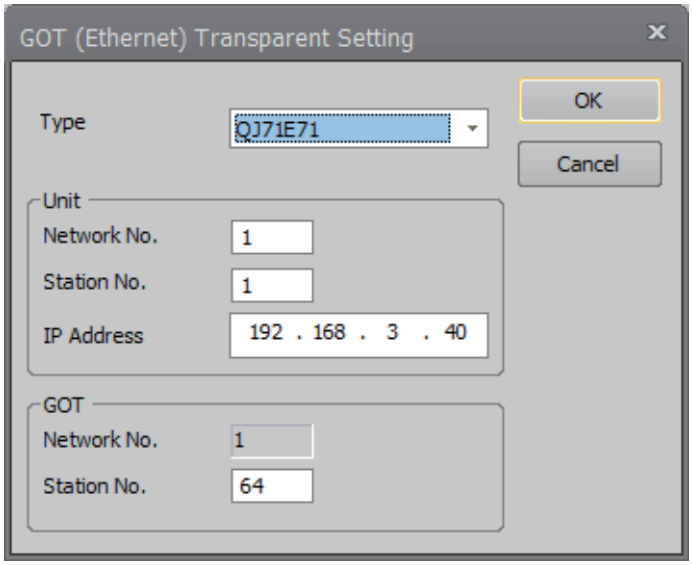
7. Click the [Setting] button to display the [GOT (Ethernet) Transparent Setting] dialog. Set the following according to the interface of the controller.

- When connecting with an Ethernet port built in a PLC CPU



Item		Setting
[Type]		[QnUDE(H)]
[Module Side]	[IP Address]	Specify the IP address assigned to QnUDE(H).

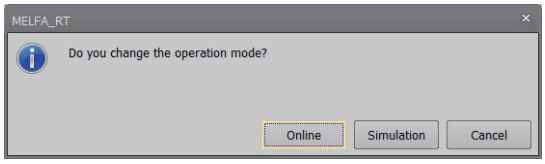
- When connecting with a PERIPHERAL I/F of CR800-Q (Q172DSRCPU) or Ethernet module



Item		Setting
[Type]		[QJ71E71]
[Module Side]	[Network No.]	Set a network number.
	[Station No.]	Set a station number.
	[IP Address]	Specify the IP address assigned to the Ethernet module.
[GOT]	[Station No.]	Specify the station number assigned to the GOT.

8. Click the [OK] button of each dialog in steps 5 to 7 to complete the settings.

9. Click the [Finish] button in the [Edit Project] dialog to complete the settings.
After completing the settings, change the operation mode to [Online].
Change the operation mode with the GOT and robot controller connected.



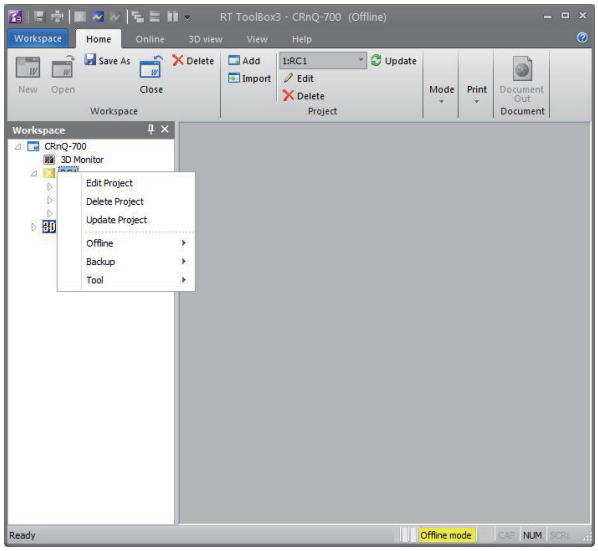
Serial connection between the GOT and the controller

☞ Page 2880 CRnQ-700 Series
☞ Page 2883 CR800-Q Series

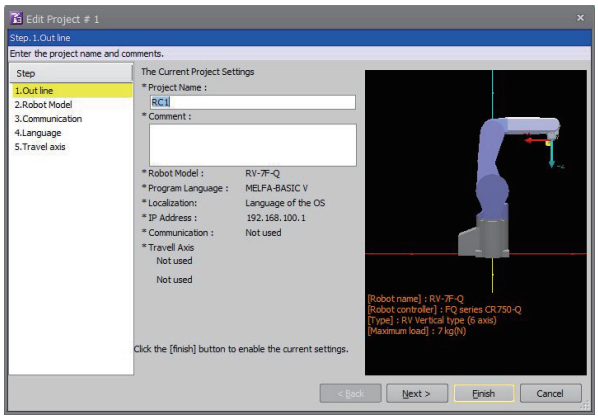
■CRnQ-700 Series

Operating procedure

1. Right-click the target project name on the workspace of RT ToolBox3, and click [Edit Project].

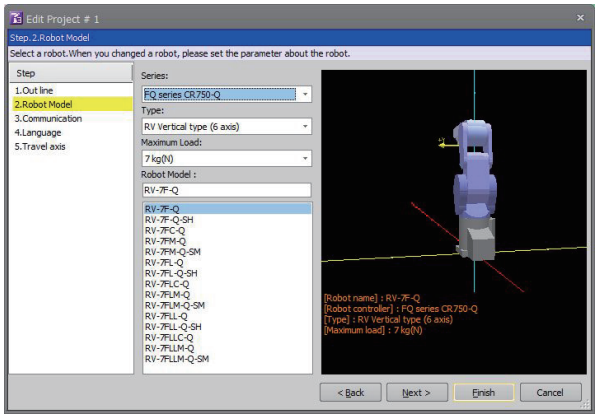


2. When the [Edit Project] dialog is displayed, click the [Next] button.



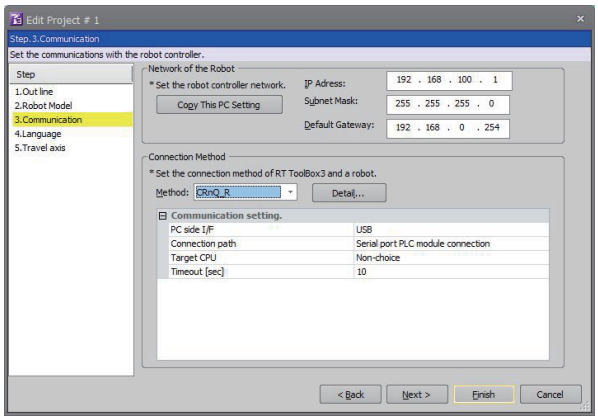
3. Set the following item, and click the [Next] button.

- [Series]: [FQ series CR750-Q]



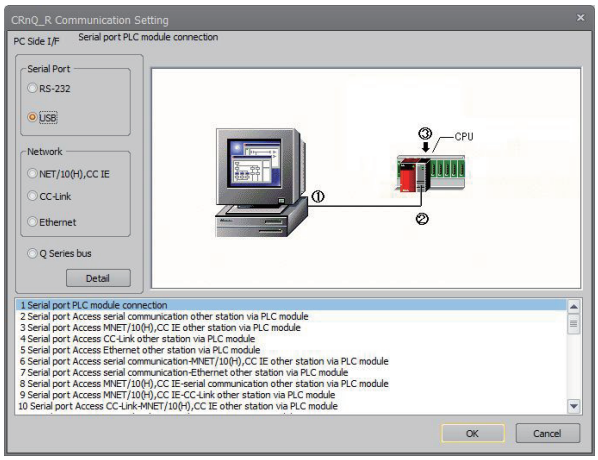
4. Set the following item, and click the [Detail] button.

- [Method]: [CRnQ_R]



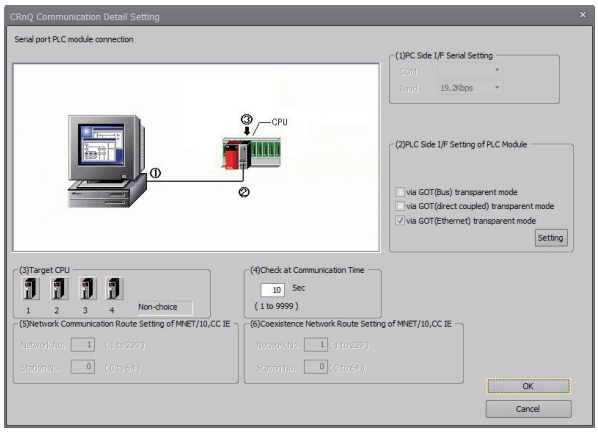
5. When the [CRnQ_R Communication Setting] dialog is displayed, set the following item and click the [Detail] button.

- [Serial Port]: [USB]



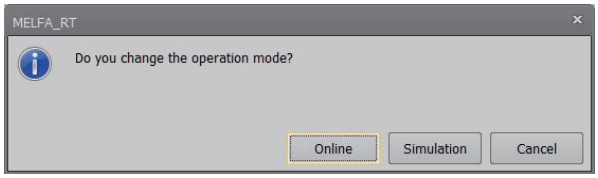
6. When the [CRnQ_R Communication Detail Setting] dialog is displayed, select [via GOT(direct coupled) transparent mode] in [(2)PLC Side I/F Setting of PLC Module].

In [(3)Target CPU], select the controller that is the target of the FA transparent function as necessary.



7. Click the [OK] button in the [CRnQ_R Communication Detail Setting] dialog and the [CRnQ_R Communication Setting] dialog to complete the settings.

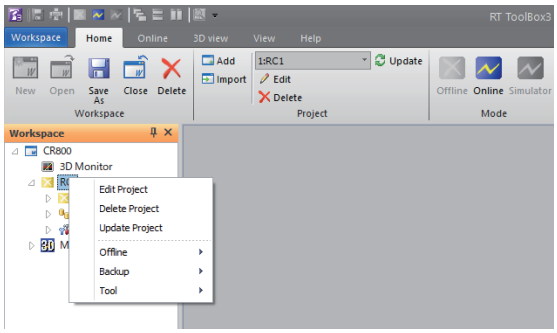
8. Click the [Finish] button in the [Edit Project] dialog to complete the settings.
After completing the settings, change the operation mode to [Online].
Change the operation mode with the GOT and robot controller connected.



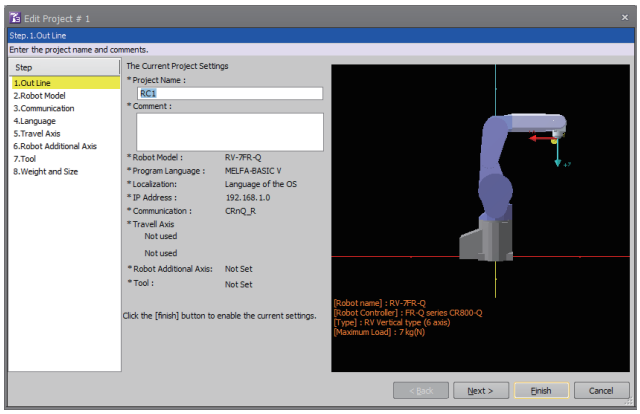
■CR800-Q Series

Operating procedure

1. Right-click the target project name on the workspace of RT ToolBox3, and click [Edit Project].

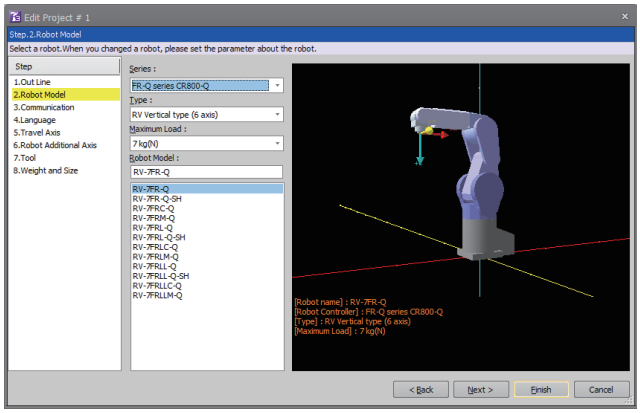


2. When the [Edit Project] dialog is displayed, click the [Next] button.



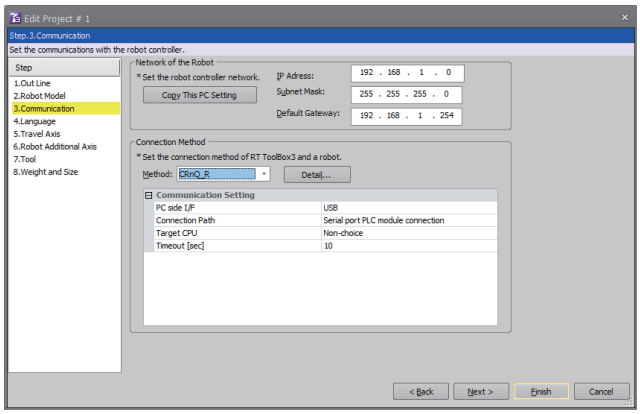
3. Set the following item, and click the [Next] button.

- [Series]: [FR-Q series CR800-Q]



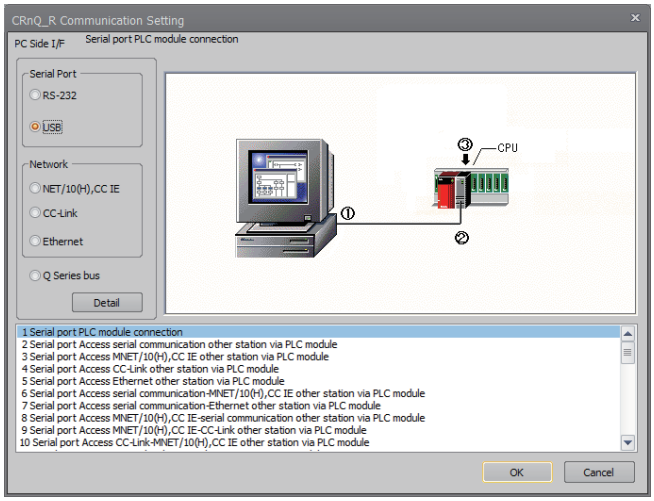
4. Set the following item, and click the [Detail] button.

- [Method]: [CRnQ_R]



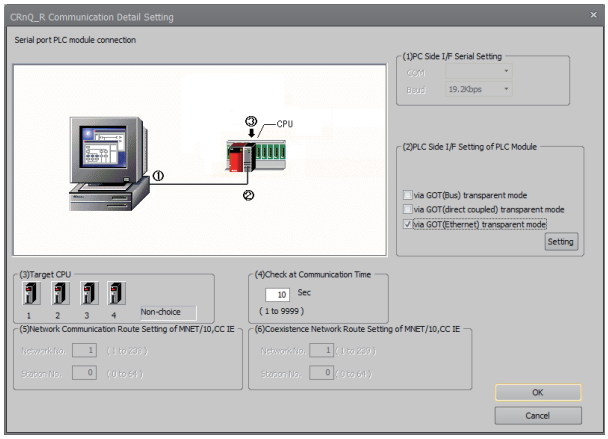
5. When the [CRnQ_R Communication Setting] dialog is displayed, set the following item and click the [Detail] button.

- [Serial Port]: [USB]



6. When the [CRnQ_R Communication Detail Setting] dialog is displayed, select [via GOT(direct coupled) transparent mode] in [(2)PLC Side I/F Setting of PLC Module].

In [(3)Target CPU], select the controller that is the target of the FA transparent function as necessary.

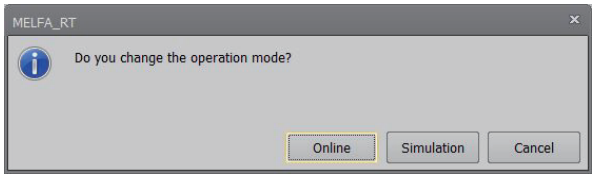


7. Click the [OK] button in the [CRnQ_R Communication Detail Setting] dialog and the [CRnQ_R Communication Setting] dialog to complete the settings.

8. Click the [Finish] button in the [Edit Project] dialog to complete the settings.

After completing the settings, change the operation mode to [Online].

Change the operation mode with the GOT and robot controller connected.



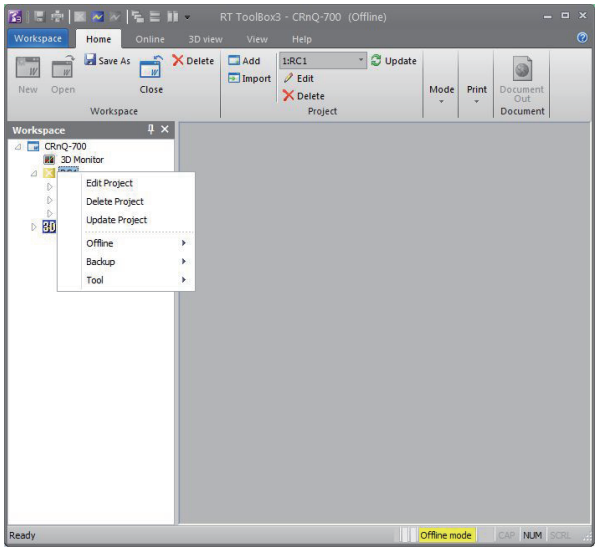
Bus connection between the GOT and the controller

☞ Page 2886 CRnQ-700 Series
☞ Page 2889 CR800-Q Series

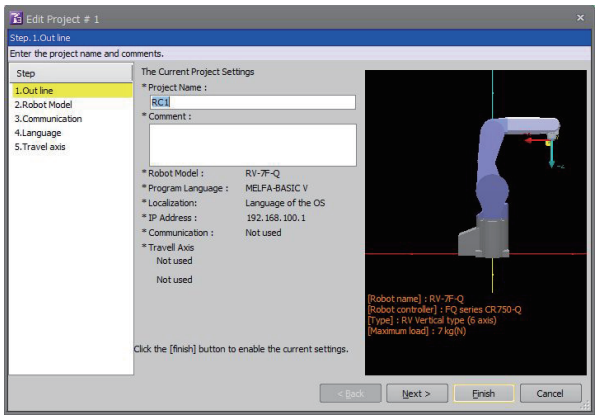
■CRnQ-700 Series

Operating procedure

1. Right-click the target project name on the workspace of RT ToolBox3, and click [Edit Project].

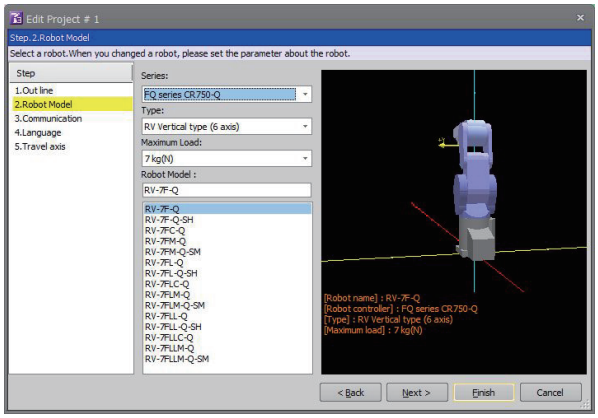


2. When the [Edit Project] dialog is displayed, click the [Next] button.



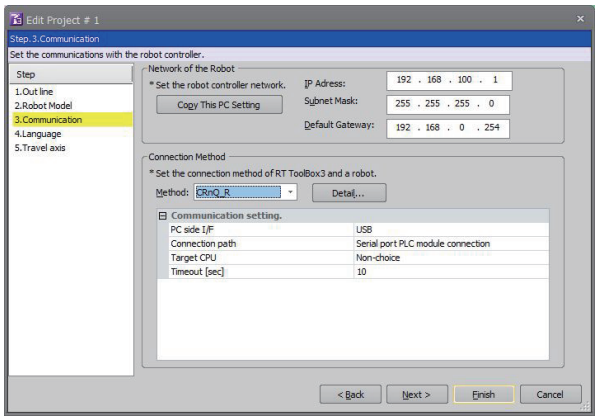
3. Set the following item, and click the [Next] button.

- [Series]: [FQ series CR750-Q]



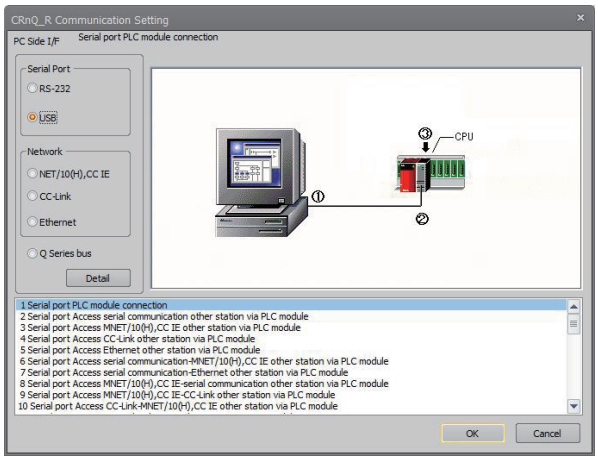
4. Set the following item, and click the [Detail] button.

- [Method]: [CRnQ_R]



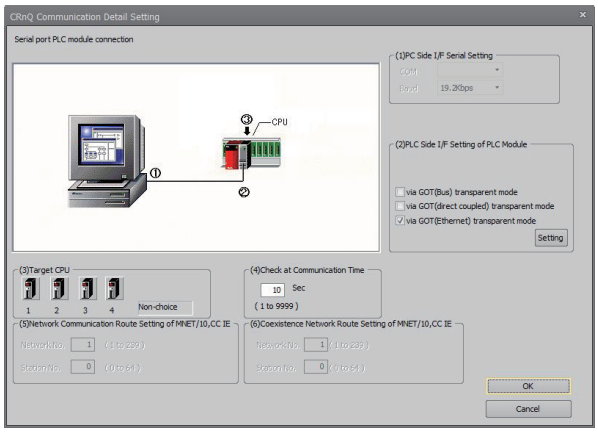
5. When the [CRnQ_R Communication Setting] dialog is displayed, set the following item and click the [Detail] button.

- [Serial Port]: [USB]



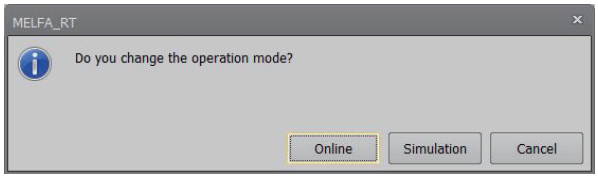
6. When the [CRnQ_R Communication Detail Setting] dialog is displayed, select [via GOT(Bus) transparent mode] in [(2)PLC Side I/F Setting of PLC Module].

In [(3)Target CPU], select the controller that is the target of the FA transparent function as necessary.



7. Click the [OK] button in the [CRnQ_R Communication Detail Setting] dialog and the [CRnQ_R Communication Setting] dialog to complete the settings.

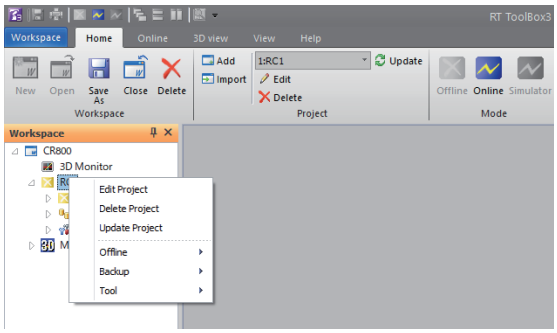
8. Click the [Finish] button in the [Edit Project] dialog to complete the settings.
After completing the settings, change the operation mode to [Online].
Change the operation mode with the GOT and robot controller connected.



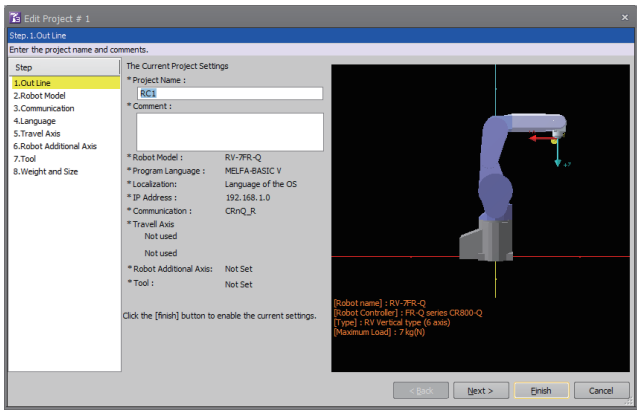
■CR800-Q Series

Operating procedure

1. Right-click the target project name on the workspace of RT ToolBox3, and click [Edit Project].

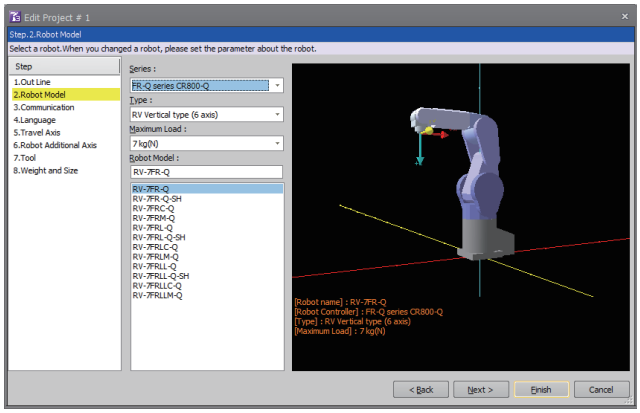


2. When the [Edit Project] dialog is displayed, click the [Next] button.



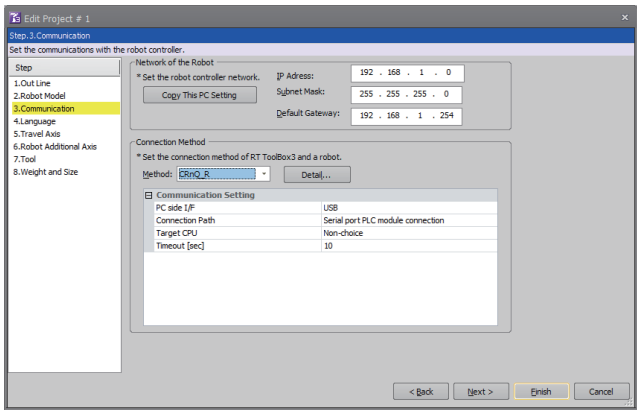
3. Set the following item, and click the [Next] button.

- [Series]: [FR-Q series CR800-Q]



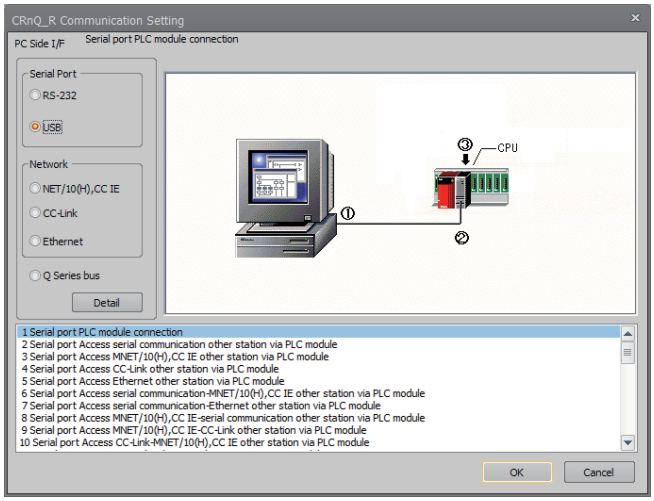
4. Set the following item, and click the [Detail] button.

- [Method]: [CRnQ_R]



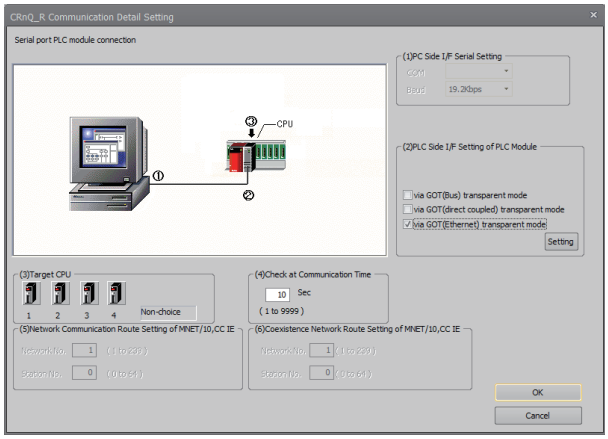
5. When the [CRnQ_R Communication Setting] dialog is displayed, set the following item and click the [Detail] button.

- [Serial Port]: [USB]



6. When the [CRnQ_R Communication Detail Setting] dialog is displayed, select [via GOT(Bus) transparent mode] in [(2)PLC Side I/F Setting of PLC Module].

In [(3)Target CPU], select the controller that is the target of the FA transparent function as necessary.

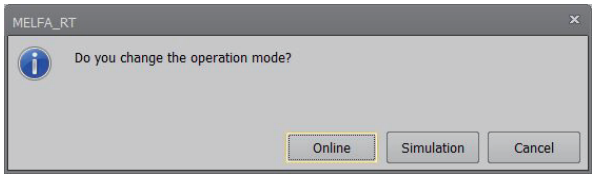


7. Click the [OK] button in the [CRnQ_R Communication Detail Setting] dialog and the [CRnQ_R Communication Setting] dialog to complete the settings.

8. Click the [Finish] button in the [Edit Project] dialog to complete the settings.

After completing the settings, change the operation mode to [Online].

Change the operation mode with the GOT and robot controller connected.



81 Accessing with CPU Module Logging Configuration Tool

The following shows the controllers that can be accessed with CPU Module Logging Configuration Tool using the FA transparent function.

Controller	Reference
PLC CPU (MELSEC iQ-R series)	☞ Page 2893 PLC CPU (MELSEC iQ-R series)
PLC CPU (MELSEC-Q series (Q mode))	☞ Page 2895 PLC CPU (MELSEC-Q series (Q mode))
PLC CPU (MELSEC-L series)	☞ Page 2898 PLC CPU (MELSEC-L series)

For information on the GOT side or personal computer side settings, refer to the following.

☞ Page 2901 GOT side settings
☞ Page 2903 Personal computer side settings

81.1 PLC CPU (MELSEC iQ-R series)

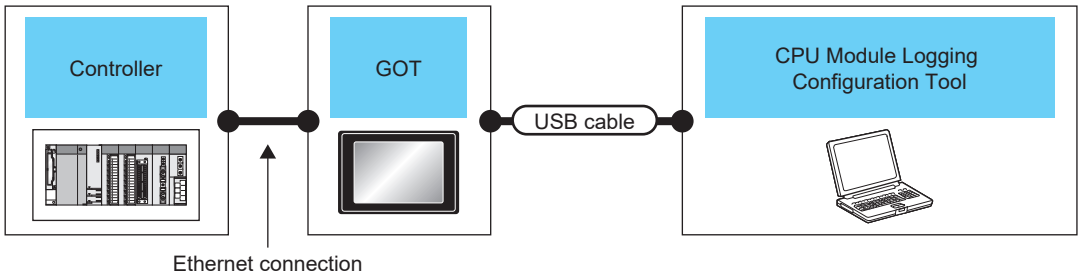
Personal computer to GOT connection	Connection between GOT and controller	Reference
USB connection	Ethernet connection	☞ Page 2893 Ethernet connection between the GOT and the controller
Ethernet connection	Ethernet connection	☞ Page 2894 Ethernet connection between the GOT and the controller

81.1.1 USB connection between the personal computer and the GOT

Ethernet connection between the GOT and the controller

For the system configuration between the GOT and the controller, refer to the following.

Controller	Reference
MELSEC iQ-R series (Built-in Ethernet port connection)	☞ Page 190 System configuration
MELSEC iQ-R series (Ethernet module connection)	☞ Page 245 System configuration



Controller	GOT		Connection cable		Personal computer	Number of connectable equipment
	Model	Interface	USB cable	Maximum length	Compatible CPU Module Logging Configuration Tool version	
R00CPU R01CPU R02CPU R04CPU R08CPU R16CPU R32CPU R120CPU	GT37 SoftGOT3000	USB	*1	3 m	1.160S or later	1 personal computer for 1 GOT
R08PCPU R16PCPU R32PCPU R120PCPU	GT37 SoftGOT3000	USB	*1	3 m	1.160S or later	1 personal computer for 1 GOT
R04ENCPU R08ENCPU R16ENCPU R32ENCPU R120ENCPU	GT37 SoftGOT3000	USB	*1	3 m	1.160S or later	1 personal computer for 1 GOT
R08SFCPU R16SFCPU R32SFCPU R120SFCPU	GT37 SoftGOT3000	USB	*1	3 m	1.160S or later	1 personal computer for 1 GOT

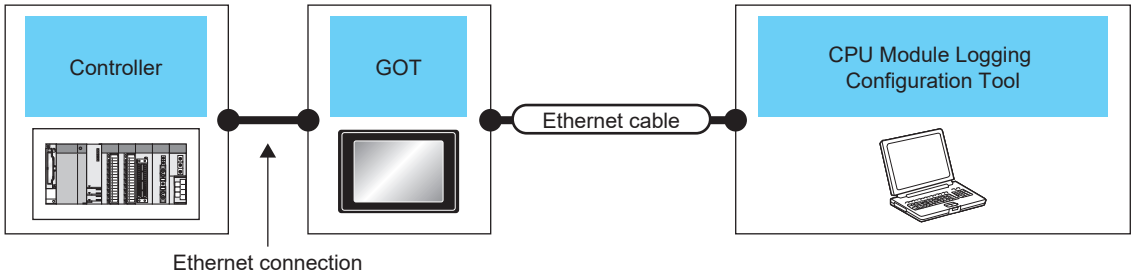
*1 For the USB cables validated by Mitsubishi Electric Corporation, refer to the following Technical Bulletin.
📖List of Valid Devices Applicable for GOT3000 Series (GOT-A-0233)

81.1.2 Ethernet connection between the personal computer and the GOT

Ethernet connection between the GOT and the controller

For the system configuration between the GOT and the controller, refer to the following.

Controller	Reference
MELSEC iQ-R series (Built-in Ethernet port connection)	☞ Page 190 System configuration
MELSEC iQ-R series (Ethernet module connection)	☞ Page 245 System configuration



Controller	GOT		Connection cable		Personal computer	Number of connectable equipment
	Model	Interface	Ethernet cable	Maximum segment length	Compatible CPU Module Logging Configuration Tool version	
R00CPU R01CPU R02CPU R04CPU R08CPU R16CPU R32CPU R120CPU	GT37 SoftGOT3000	Built-in Ethernet interface of GOT	Twisted pair cable ☞ Page 2894 Connection cable	100 m	1.160S or later	1 personal computer for 1 GOT
R08PCPU R16PCPU R32PCPU R120PCPU	GT37 SoftGOT3000	Built-in Ethernet interface of GOT	Twisted pair cable ☞ Page 2894 Connection cable	100 m	1.160S or later	1 personal computer for 1 GOT
R04ENCPU R08ENCPU R16ENCPU R32ENCPU R120ENCPU	GT37 SoftGOT3000	Built-in Ethernet interface of GOT	Twisted pair cable ☞ Page 2894 Connection cable	100 m	1.160S or later	1 personal computer for 1 GOT
R08SFCPU R16SFCPU R32SFCPU R120SFCPU	GT37 SoftGOT3000	Built-in Ethernet interface of GOT	Twisted pair cable ☞ Page 2894 Connection cable	100 m	1.160S or later	1 personal computer for 1 GOT

■Connection cable

Use a connection cable that meets the following standards.

Standard	Category
10BASE-T	Shielded twisted pair cable (STP) or unshielded twisted pair cable (UTP) of category 3 or higher
100BASE-TX	Shielded twisted pair cable (STP) or unshielded twisted pair cable (UTP) of category 5 or higher
1000BASE-T	Shielded twisted pair cable (STP) or unshielded twisted pair cable (UTP) of category 5e or higher

81.2 PLC CPU (MELSEC-Q series (Q mode))

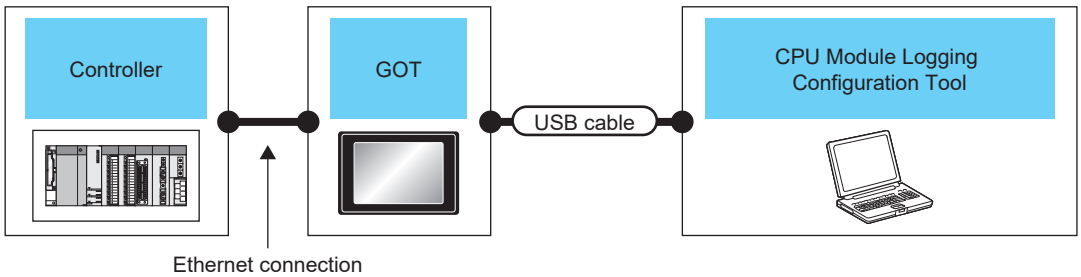
Personal computer to GOT connection	Connection between GOT and controller	Reference
USB connection	Ethernet connection	☞ Page 2895 Ethernet connection between the GOT and the controller
	Serial connection	☞ Page 2896 Serial connection between the GOT and the controller
	Serial communication connection	☞ Page 2896 Serial communication connection between the GOT and the controller
	Bus connection	☞ Page 2897 Bus connection between the GOT and the controller

81.2.1 USB connection between the personal computer and the GOT

Ethernet connection between the GOT and the controller

For the system configuration between the GOT and the controller, refer to the following.

Controller	Reference
MELSEC-Q series (Built-in Ethernet port connection)	☞ Page 342 System configuration
MELSEC-Q series (Ethernet module connection)	☞ Page 394 System configuration



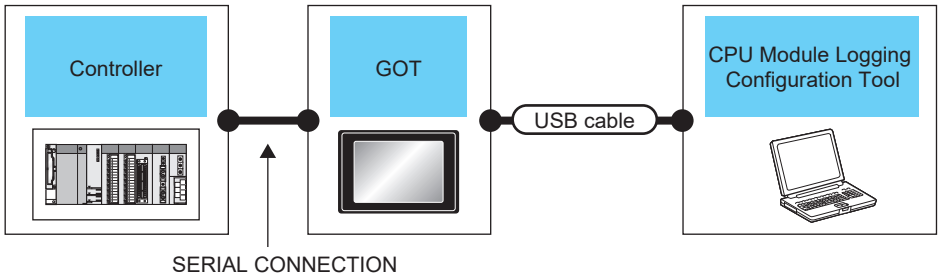
Controller	GOT		Connection cable		Personal computer	Number of connectable equipment
	Model	Interface	USB cable	Maximum length	Compatible CPU Module Logging Configuration Tool version	
Q03UDVCPU Q04UDVCPU Q06UDVCPU Q13UDVCPU Q26UDVCPU	GT37 SoftGOT3000	USB	*1	3 m	1.160S or later	1 personal computer for 1 GOT

*1 For the USB cables validated by Mitsubishi Electric Corporation, refer to the following Technical Bulletin.
📖List of Valid Devices Applicable for GOT3000 Series (GOT-A-0233)

Serial connection between the GOT and the controller

For the system configuration between the GOT and the controller, refer to the following.

Controller	Reference
MELSEC-Q series (Built-in serial port connection)	☞ Page 566 System configuration



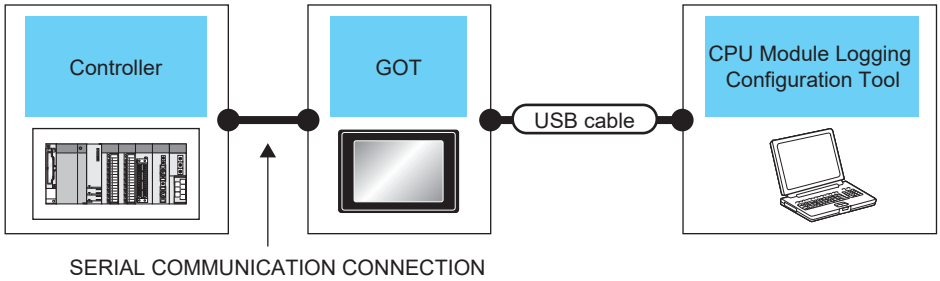
Controller	GOT		Connection cable		Personal computer	Number of connectable equipment
	Model	Interface	USB cable	Maximum length	Compatible CPU Module Logging Configuration Tool version	
Q03UDVCPU Q04UDVCPU Q06UDVCPU Q13UDVCPU Q26UDVCPU	GT37 SoftGOT3000	USB	*1	3 m	1.160S or later	1 personal computer for 1 GOT

*1 For the USB cables validated by Mitsubishi Electric Corporation, refer to the following Technical Bulletin.
List of Valid Devices Applicable for GOT3000 Series (GOT-A-0233)

Serial communication connection between the GOT and the controller

For the system configuration between the GOT and the controller, refer to the following.

Controller	Reference
MELSEC-Q series (serial communication connection)	☞ Page 587 System configuration



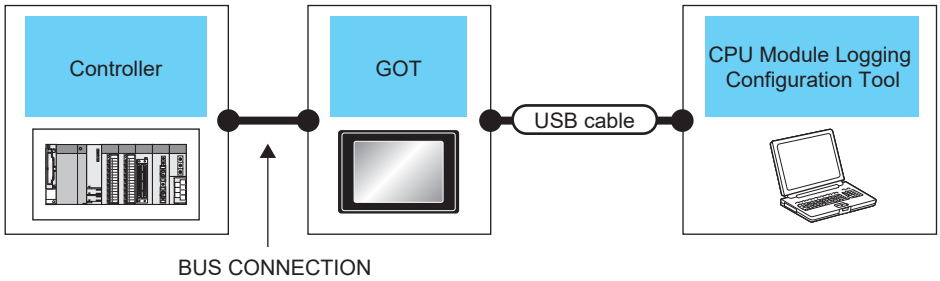
Controller	GOT		Connection cable		Personal computer	Number of connectable equipment
	Model	Interface	USB cable	Maximum length	Compatible CPU Module Logging Configuration Tool version	
Q03UDVCPU Q04UDVCPU Q06UDVCPU Q13UDVCPU Q26UDVCPU	GT37 SoftGOT3000	USB	*1	3 m	1.160S or later	1 personal computer for 1 GOT

*1 For the USB cables validated by Mitsubishi Electric Corporation, refer to the following Technical Bulletin.
List of Valid Devices Applicable for GOT3000 Series (GOT-A-0233)

Bus connection between the GOT and the controller

For the system configuration between the GOT and the controller, refer to the following.

Controller	Reference
MELSEC-Q series (bus connection)	☞ Page 685 System configuration



Controller	GOT		Connection cable		Personal computer	Number of connectable equipment
	Model	Interface	USB cable	Maximum length	Compatible CPU Module Logging Configuration Tool version	
Q03UDVCPU Q04UDVCPU Q06UDVCPU Q13UDVCPU Q26UDVCPU	GT37 SoftGOT3000	USB	*1	3 m	1.160S or later	1 personal computer for 1 GOT

*1 For the USB cables validated by Mitsubishi Electric Corporation, refer to the following Technical Bulletin.
List of Valid Devices Applicable for GOT3000 Series (GOT-A-0233)

81.3 PLC CPU (MELSEC-L series)

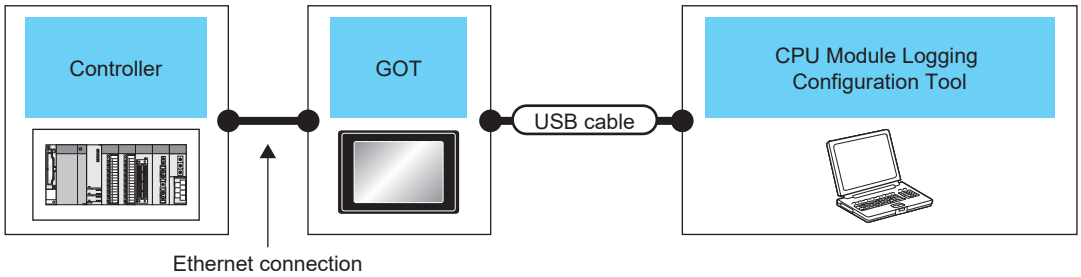
Personal computer to GOT connection	Connection between GOT and controller	Reference
USB connection	Ethernet connection	☞ Page 2898 Ethernet connection between the GOT and the controller
	Serial connection	☞ Page 2899 Serial connection between the GOT and the controller
	Serial communication connection	☞ Page 2900 Serial communication connection between the GOT and the controller

81.3.1 Personal computer to GOT USB connection

Ethernet connection between the GOT and the controller

For the system configuration between the GOT and the controller, refer to the following.

Controller	Reference
MELSEC-L series (Built-in Ethernet port connection)	☞ Page 437 System configuration
MELSEC-L series (Ethernet module connection)	☞ Page 462 System configuration



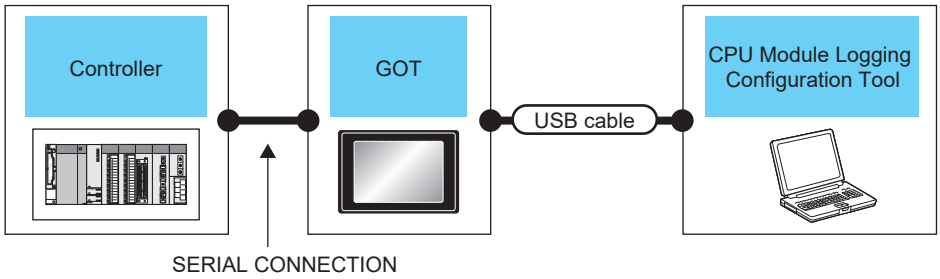
Controller	GOT		Connection cable		Personal computer	Number of connectable equipment
	Model	Interface	USB cable	Maximum length	Compatible CPU Module Logging Configuration Tool version	
L02CPU L06CPU L26CPU L26CPU-BT L06CPU-P L26CPU-P L02CPU-P L26CPU-PBT L02SCPU L02SCPU-P	GT37 SoftGOT3000	USB	*1	3 m	1.160S or later	1 personal computer for 1 GOT

*1 For the USB cables validated by Mitsubishi Electric Corporation, refer to the following Technical Bulletin.
List of Valid Devices Applicable for GOT3000 Series (GOT-A-0233)

Serial connection between the GOT and the controller

For the system configuration between the GOT and the controller, refer to the following.

Controller	Reference
MELSEC-L series (Built-in serial port connection)	☞ Page 605 System configuration



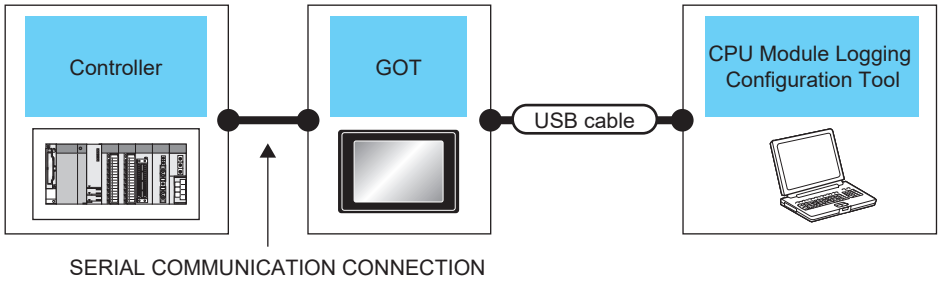
Controller	GOT		Connection cable		Personal computer	Number of connectable equipment
	Model	Interface	USB cable	Maximum length	Compatible CPU Module Logging Configuration Tool version	
L02CPU L06CPU L26CPU L26CPU-BT L06CPU-P L26CPU-P L02CPU-P L26CPU-PBT L02SCPU L02SCPU-P	GT37 SoftGOT3000	USB	*1	3 m	1.160S or later	1 personal computer for 1 GOT

*1 For the USB cables validated by Mitsubishi Electric Corporation, refer to the following Technical Bulletin.
List of Valid Devices Applicable for GOT3000 Series (GOT-A-0233)

Serial communication connection between the GOT and the controller

For the system configuration between the GOT and the controller, refer to the following.

Controller	Reference
MELSEC-L series (serial communication connection)	☞ Page 619 System configuration



Controller	GOT		Connection cable		Personal computer	Number of connectable equipment
	Model	Interface	USB cable	Maximum length	Compatible CPU Module Logging Configuration Tool version	
L02CPU L06CPU L26CPU L26CPU-BT L06CPU-P L26CPU-P L02CPU-P L26CPU-PBT L02SCPU L02SCPU-P	GT37 SoftGOT3000	USB	*1	3 m	1.160S or later	1 personal computer for 1 GOT

*1 For the USB cables validated by Mitsubishi Electric Corporation, refer to the following Technical Bulletin.
List of Valid Devices Applicable for GOT3000 Series (GOT-A-0233)

81.4 GOT side settings

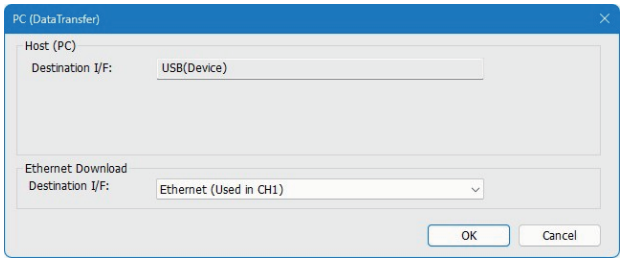
81.4.1 [Controller Setting]

The GOT side settings differ depending on the connection type between the controller and the GOT.
For details on [Controller Setting], refer to the following.

Controller	Reference
MELSEC iQ-R series (Built-in Ethernet port connection)	☞ Page 199 [Controller Setting]
MELSEC iQ-R series (Ethernet module connection)	☞ Page 253 [Controller Setting]
MELSEC-Q series (Built-in Ethernet port connection)	☞ Page 350 [Controller Setting]
MELSEC-Q series (Ethernet module connection)	☞ Page 400 [Controller Setting]
MELSEC-Q series (Built-in serial port connection)	☞ Page 568 [Controller Setting]
MELSEC-Q series (serial communication connection)	☞ Page 592 [Controller Setting]
MELSEC-Q series (bus connection)	☞ Page 688 [Controller Setting]
MELSEC-L series (Built-in Ethernet port connection)	☞ Page 441 [Controller Setting]
MELSEC-L series (Ethernet module connection)	☞ Page 465 [Controller Setting]
MELSEC-L series (Built-in serial port connection)	☞ Page 609 [Controller Setting]
MELSEC-L series (serial communication connection)	☞ Page 624 [Controller Setting]

81.4.2 Communication setting with personal computer

Set the communication setting between the GOT and the personal computer.



Operating procedure

1. Select [Common] → [Peripheral Setting] → [PC (Data Transfer)] from the menu.

2. Set the interface of the GOT to be used for communication with the personal computer in the [PC (Data Transfer)] dialog.

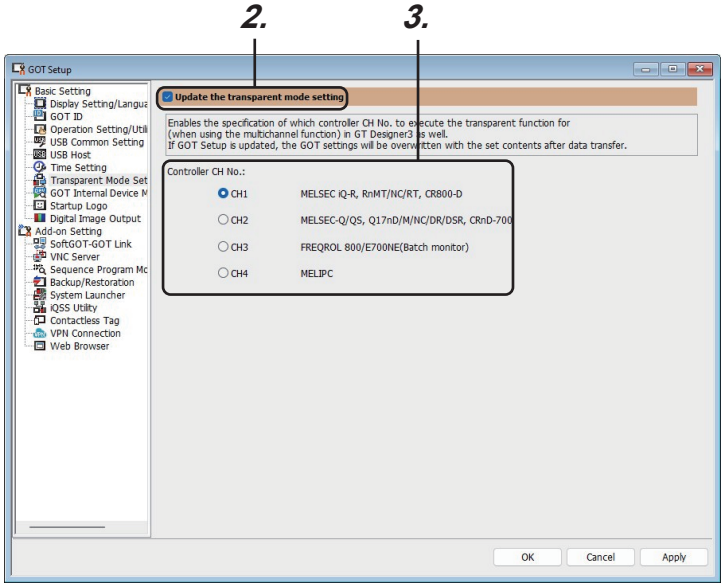
For details of the setting contents, refer to the following manual.
📖GT Designer3 (GOT3000) Screen Design Manual

Point

• Controller settings using the GT37 utility
The controller settings can be changed in [Communication Settings] of the GT37 utility after writing [Communication Settings] of project data to GT37.
For details on the GT37 utility, refer to the following manual.
📖GOT3000 Series User's Manual (Utility & Maintenance Functions)
• Priority of the settings in [Controller Setting]
When the settings are configured in GT Designer3 or in the GT37 utility, the latest settings are effective.

81.4.3 GOT Setup

When using the multi-channel function, specify the channel number for which the FA transparent function is executed.



Operating procedure

1. Select [Common] → [GOT Setup] → [Basic Setting] → [Transparent Mode Setting] from the menu.
2. Select [Update the transparent mode setting].
3. As necessary, check one of [CH1] to [CH4].
4. Click the [OK] button when settings are completed.

Point

Transparent setting on the utility screen

Transparent setting can be performed by the GOT.

For details of the operating, refer to the following.

GOT3000 Series User's Manual (Utility & Maintenance Functions)

81.5 Personal computer side settings

The following shows the procedure to set the FA transparent function in CPU Module Logging Configuration Tool.

Personal computer to GOT connection	Connection between GOT and controller	Reference
USB connection	Ethernet connection	☞ Page 2904 Ethernet connection between the GOT and the controller
	Serial connection	☞ Page 2904 Ethernet connection between the GOT and the controller
	Serial communication connection	☞ Page 2904 Ethernet connection between the GOT and the controller
	Bus connection	☞ Page 2904 Ethernet connection between the GOT and the controller
Ethernet connection	Ethernet connection	☞ Page 2906 Ethernet connection between the GOT and the controller

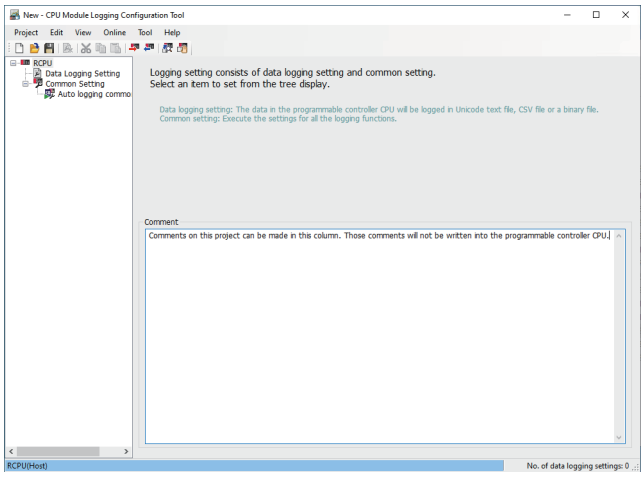
81.5.1 USB connection between the personal computer and the GOT

Ethernet connection between the GOT and the controller

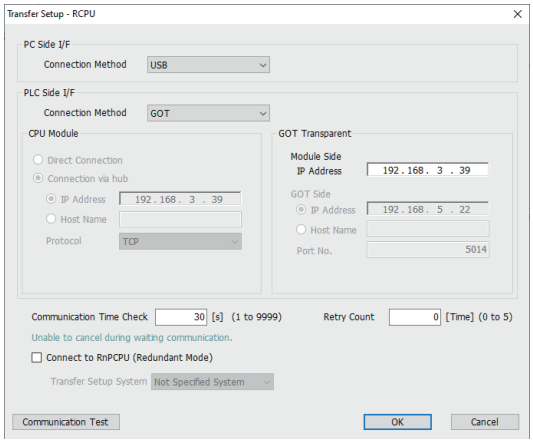
■Connection to RCPU

Operating procedure

1. Click [Online] → [Transfer Setup] on CPU Module Logging Configuration Tool.



2. Configure the following settings in the [Transfer Setup] dialog.



- [PC side I/F]: [USB]
- [PLC side I/F]: [GOT]

3. Set [IP Address] in [Module Side] in [GOT Transparent].

- [IP Address]: IP address of the PLC

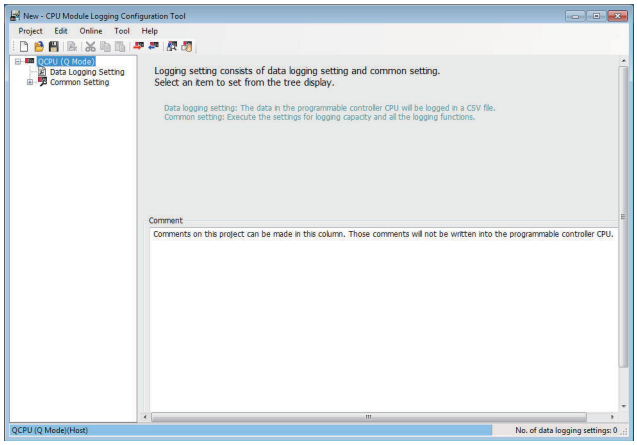
4. Click [OK] to complete the settings.

■Connection to QCPU (Q mode) or LCPU

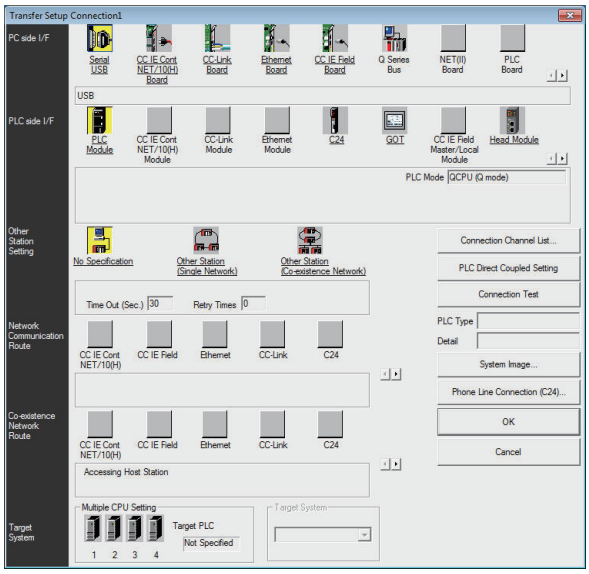
Operating procedure

1. Click [Online] → [Transfer Setup] on CPU Module Logging Configuration Tool.

The [Transfer Setup] dialog is displayed.



2. Configure the following settings in the [Transfer Setup] dialog.



- [PC side I/F]: [Serial USB]
- [PLC side I/F]: [GOT]
- [Other Station Setting]: Selected from the system configuration

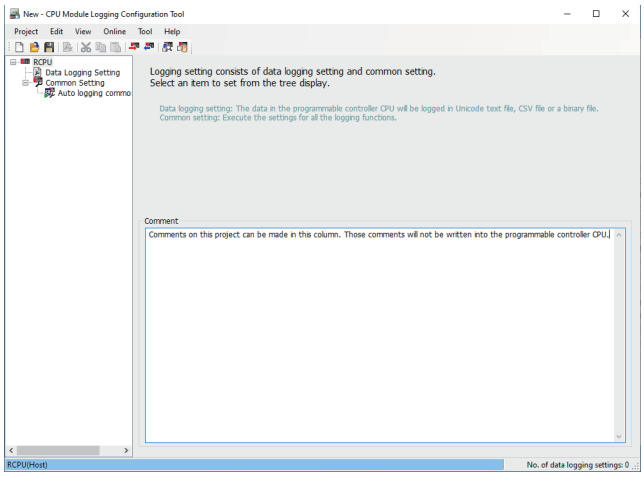
3. Refer to the following and set [PC side I/F Serial Setting] and [PLC side I/F Detailed Setting of GOT].

☞ Page 2737 Personal computer side settings

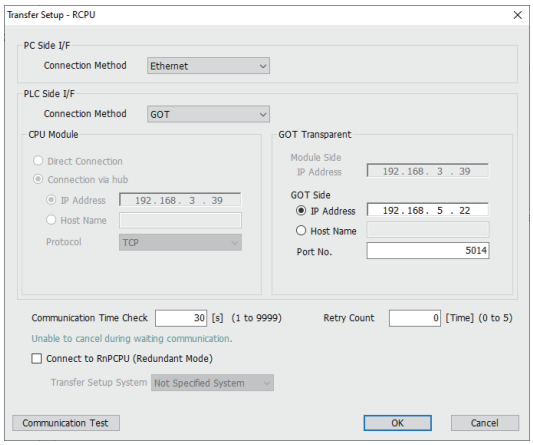
81.5.2 Ethernet connection between the personal computer and the GOT

Ethernet connection between the GOT and the controller

■Connection to RCPU



1. Click [Online] → [Transfer Setup] on CPU Module Logging Configuration Tool.



2. Configure the following settings in the [Transfer Setup] dialog.

- [PC side I/F]: [Ethernet]
- [PLC side I/F]: [GOT]

3. Set as follows for [GOT Side] of [GOT Transparent].

Select and set either [IP Address] or [Host Name].

Item		Setting
[GOT Side]	[IP Address]	Specify the IP address assigned to the GOT.
	[Host Name]	Specify the host name assigned to the GOT.
	[Port No.]	Specify the port number for the FA transparent function of the GOT.

4. Click [OK] to complete the settings.

82 Accessing with MX Component (MX Sheet)

The following shows the controllers that can be accessed with MX Component (MX Sheet) using the FA transparent function.

Controller	Reference
PLC CPU (MELSEC iQ-R series)	☞ Page 2907 PLC CPU (MELSEC iQ-R series)
Motion CPU (MELSEC iQ-R series)	☞ Page 2911 Motion CPU (MELSEC iQ-R series)
PLC CPU (MELSEC iQ-F series)	☞ Page 2914 PLC CPU (MELSEC iQ-F series)
PLC CPU (MELSEC-Q series (Q mode))	☞ Page 2917 PLC CPU (MELSEC-Q series (Q mode))
C Controller module (MELSEC-Q series)	☞ Page 2927 C Controller module (MELSEC-Q series)
Motion CPU (MELSEC-Q series)	☞ Page 2932 Motion CPU (MELSEC-Q series)
PLC CPU (MELSEC-L series)	☞ Page 2935 PLC CPU (MELSEC-L series)
PLC CPU (MELSEC-F series)	☞ Page 2939 PLC CPU (MELSEC-F series)

For information on the GOT side or personal computer side settings, refer to the following.

☞ Page 2942 GOT side settings
☞ Page 2945 Personal computer side settings

82.1 PLC CPU (MELSEC iQ-R series)

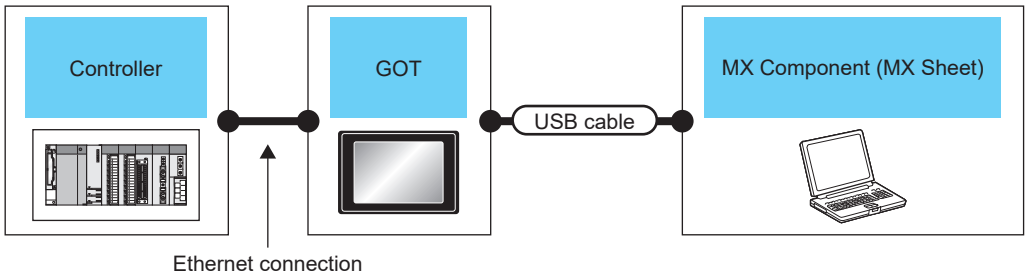
Personal computer to GOT connection	Connection between GOT and controller	Reference
USB connection	Ethernet connection	☞ Page 2908 Ethernet connection between the GOT and the controller
	Serial communication connection	☞ Page 2909 Serial communication connection between the GOT and the controller
Ethernet connection	Serial communication connection	☞ Page 2910 Serial communication connection between the GOT and the controller

82.1.1 Personal computer to GOT USB connection

Ethernet connection between the GOT and the controller

For the system configuration between the GOT and the controller, refer to the following.

Controller	Reference
MELSEC iQ-R series (Built-in Ethernet port connection)	☞ Page 190 System configuration
MELSEC iQ-R series (Ethernet module connection)	☞ Page 245 System configuration



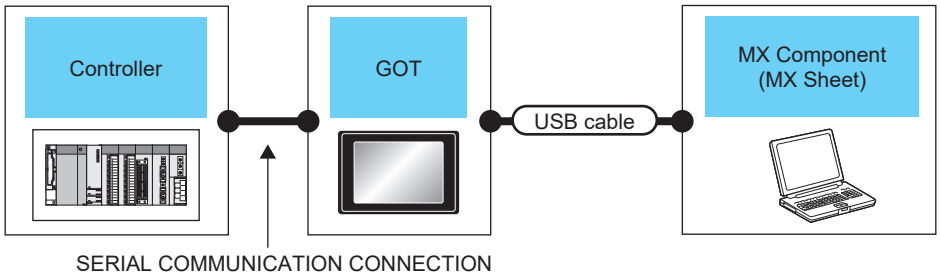
Controller	GOT		Connection cable		Personal computer	Number of connectable equipment
	Model	Interface	USB cable	Maximum length	Compatible MX Component (MX Sheet) version	
R00CPU R01CPU R02CPU R04CPU R08CPU R16CPU R32CPU R120CPU	GT37 SoftGOT3000	USB	*1	3 m	• MX Component: 5.009K or later • MX Sheet: 3.009K or later	1 personal computer for 1 GOT
R08PCPU R16PCPU R32PCPU R120PCPU	GT37 SoftGOT3000	USB	*1	3 m	• MX Component: 5.009K or later • MX Sheet: 3.009K or later	1 personal computer for 1 GOT
R08PCPU (main base) R16PCPU (main base) R32PCPU (main base) R120PCPU (main base)	GT37 SoftGOT3000	USB	*1	3 m	• MX Component: 5.009K or later • MX Sheet: 3.009K or later	1 personal computer for 1 GOT
R04ENCPU R08ENCPU R16ENCPU R32ENCPU R120ENCPU	GT37 SoftGOT3000	USB	*1	3 m	• MX Component: 5.009K or later • MX Sheet: 3.009K or later	1 personal computer for 1 GOT
R08SFCPU R16SFCPU R32SFCPU R120SFCPU	GT37 SoftGOT3000	USB	*1	3 m	• MX Component: 5.009K or later • MX Sheet: 3.009K or later	1 personal computer for 1 GOT

*1 For the USB cables validated by Mitsubishi Electric Corporation, refer to the following Technical Bulletin.
📖List of Valid Devices Applicable for GOT3000 Series (GOT-A-0233)

Serial communication connection between the GOT and the controller

For the system configuration between the GOT and the controller, refer to the following.

Controller	Reference
MELSEC iQ-R series (serial communication connection)	☞ Page 532 System configuration



Controller	GOT		Connection cable		Personal computer	Number of connectable equipment
	Model	Interface	USB cable	Maximum length	Compatible MX Component (MX Sheet) version	
R00CPU R01CPU R02CPU R04CPU R08CPU R16CPU R32CPU R120CPU	GT37 SoftGOT3000	USB	*1	3 m	• MX Component: 5.009K or later • MX Sheet: 3.009K or later	1 personal computer for 1 GOT
R08PCPU R16PCPU R32PCPU R120PCPU	GT37 SoftGOT3000	USB	*1	3 m	• MX Component: 5.009K or later • MX Sheet: 3.009K or later	1 personal computer for 1 GOT
R08PCPU (main base) R16PCPU (main base) R32PCPU (main base) R120PCPU (main base)	GT37 SoftGOT3000	USB	*1	3 m	• MX Component: 5.009K or later • MX Sheet: 3.009K or later	1 personal computer for 1 GOT
R04ENCPU R08ENCPU R16ENCPU R32ENCPU R120ENCPU	GT37 SoftGOT3000	USB	*1	3 m	• MX Component: 5.009K or later • MX Sheet: 3.009K or later	1 personal computer for 1 GOT
R08SFCPU R16SFCPU R32SFCPU R120SFCPU	GT37 SoftGOT3000	USB	*1	3 m	• MX Component: 5.009K or later • MX Sheet: 3.009K or later	1 personal computer for 1 GOT

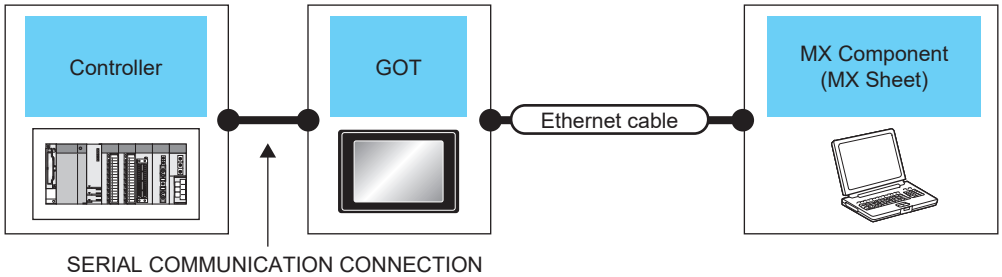
*1 For the USB cables validated by Mitsubishi Electric Corporation, refer to the following Technical Bulletin.
📖List of Valid Devices Applicable for GOT3000 Series (GOT-A-0233)

82.1.2 Ethernet connection between the personal computer and the GOT

Serial communication connection between the GOT and the controller

For the system configuration between the GOT and the controller, refer to the following.

Controller	Reference
MELSEC iQ-R series (serial communication connection)	☞ Page 532 System configuration



Controller	GOT		Connection cable		Personal computer	Number of connectable equipment
	Model	Interface	Ethernet cable	Maximum segment length	Compatible MX Component (MX Sheet) version	
R00CPU R01CPU R02CPU R04CPU R08CPU R16CPU R32CPU R120CPU	GT37 SoftGOT3000	Built-in Ethernet interface of the GOT	Twisted pair cable ☞ Page 2910 Connection cable	100 m	• MX Component: 5.009K or later • MX Sheet: 3.009K or later	1 personal computer for 1 GOT
R08PCPU R16PCPU R32PCPU R120PCPU	GT37 SoftGOT3000	Built-in Ethernet interface of the GOT	Twisted pair cable ☞ Page 2910 Connection cable	100 m	• MX Component: 5.009K or later • MX Sheet: 3.009K or later	1 personal computer for 1 GOT
R08PCPU (main base) R16PCPU (main base) R32PCPU (main base) R120PCPU (main base)	GT37 SoftGOT3000	Built-in Ethernet interface of the GOT	Twisted pair cable ☞ Page 2910 Connection cable	100 m	• MX Component: 5.009K or later • MX Sheet: 3.009K or later	1 personal computer for 1 GOT
R04ENCPU R08ENCPU R16ENCPU R32ENCPU R120ENCPU	GT37 SoftGOT3000	Built-in Ethernet interface of the GOT	Twisted pair cable ☞ Page 2910 Connection cable	100 m	• MX Component: 5.009K or later • MX Sheet: 3.009K or later	1 personal computer for 1 GOT
R08SFCPU R16SFCPU R32SFCPU R120SFCPU	GT37 SoftGOT3000	Built-in Ethernet interface of the GOT	Twisted pair cable ☞ Page 2910 Connection cable	100 m	• MX Component: 5.009K or later • MX Sheet: 3.009K or later	1 personal computer for 1 GOT

■Connection cable

Use a connection cable that meets the following standards.

Standard	Category
10BASE-T	Shielded twisted pair cable (STP) or unshielded twisted pair cable (UTP) of category 3 or higher
100BASE-TX	Shielded twisted pair cable (STP) or unshielded twisted pair cable (UTP) of category 5 or higher
1000BASE-T	Shielded twisted pair cable (STP) or unshielded twisted pair cable (UTP) of category 5e or higher

82.2 Motion CPU (MELSEC iQ-R series)

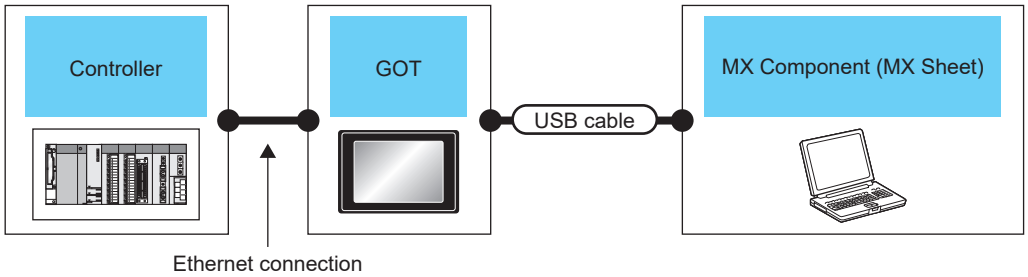
Personal computer to GOT connection	Connection between GOT and controller	Reference
USB connection	Ethernet connection	☞ Page 2911 Ethernet connection between the GOT and the controller
	Serial communication connection	☞ Page 2912 Serial communication connection between the GOT and the controller
Ethernet connection	Serial communication connection	☞ Page 2913 Serial communication connection between the GOT and the controller

82.2.1 Personal computer to GOT USB connection

Ethernet connection between the GOT and the controller

For the system configuration between the GOT and the controller, refer to the following.

Controller	Reference
Motion CPU (MELSEC iQ-R series) (Built-in Ethernet port connection)	☞ Page 190 System configuration
Motion CPU (MELSEC iQ-R series) (Ethernet module connection)	☞ Page 245 System configuration



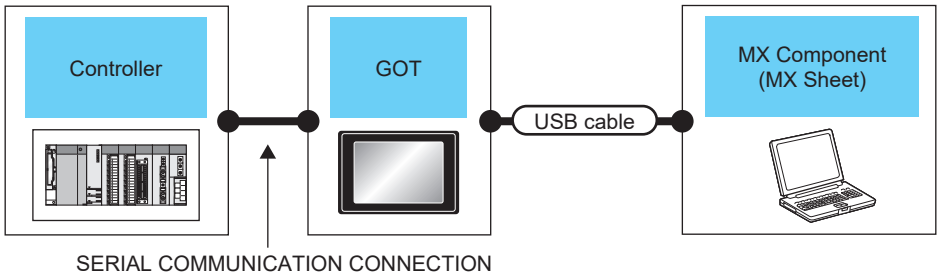
Controller	GOT		Connection cable		Personal computer	Number of connectable equipment
	Model	Interface	USB cable	Maximum length	Compatible MX Component (MX Sheet) version	
R16MTCPU R32MTCPU R64MTCPU	GT37 SoftGOT3000	USB	*1	3 m	• MX Component: 5.009K or later • MX Sheet: 3.009K or later	1 personal computer for 1 GOT

*1 For the USB cables validated by Mitsubishi Electric Corporation, refer to the following Technical Bulletin.
List of Valid Devices Applicable for GOT3000 Series (GOT-A-0233)

Serial communication connection between the GOT and the controller

For the system configuration between the GOT and the controller, refer to the following.

Controller	Reference
Motion CPU (MELSEC iQ-R series) (serial communication connection)	☞ Page 532 System configuration



Controller	GOT		Connection cable		Personal computer	Number of connectable equipment
	Model	Interface	USB cable	Maximum length	Compatible MX Component (MX Sheet) version	
R16MTCPU R32MTCPU R64MTCPU	GT37 SoftGOT3000	USB	*1	3 m	• MX Component: 5.009K or later • MX Sheet: 3.009K or later	1 personal computer for 1 GOT

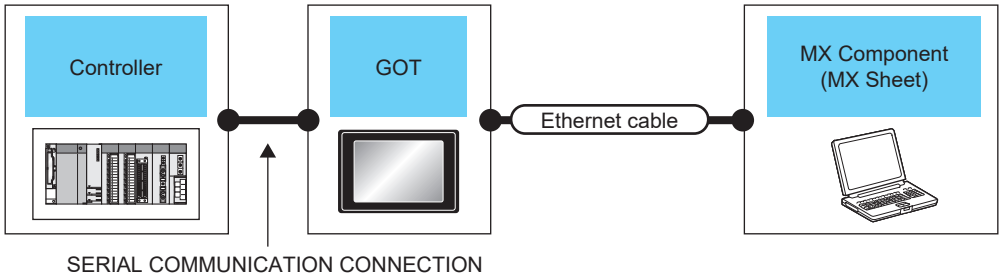
*1 For the USB cables validated by Mitsubishi Electric Corporation, refer to the following Technical Bulletin.
List of Valid Devices Applicable for GOT3000 Series (GOT-A-0233)

82.2.2 Ethernet connection between the personal computer and the GOT

Serial communication connection between the GOT and the controller

For the system configuration between the GOT and the controller, refer to the following.

Controller	Reference
Motion CPU (MELSEC iQ-R series) (serial communication connection)	☞ Page 532 System configuration



Controller	GOT		Connection cable		Personal computer	Number of connectable equipment
	Model	Interface	Ethernet cable	Maximum segment length	Compatible MX Component (MX Sheet) version	
R16MTCPU R32MTCPU R64MTCPU	GT37 SoftGOT3000	Built-in Ethernet interface of the GOT	Twisted pair cable ☞ Page 2913 Connection cable	100 m	• MX Component: 5.009K or later • MX Sheet: 3.009K or later	1 personal computer for 1 GOT

■Connection cable

Use a connection cable that meets the following standards.

Standard	Category
10BASE-T	Shielded twisted pair cable (STP) or unshielded twisted pair cable (UTP) of category 3 or higher
100BASE-TX	Shielded twisted pair cable (STP) or unshielded twisted pair cable (UTP) of category 5 or higher
1000BASE-T	Shielded twisted pair cable (STP) or unshielded twisted pair cable (UTP) of category 5e or higher

82.3 PLC CPU (MELSEC iQ-F series)

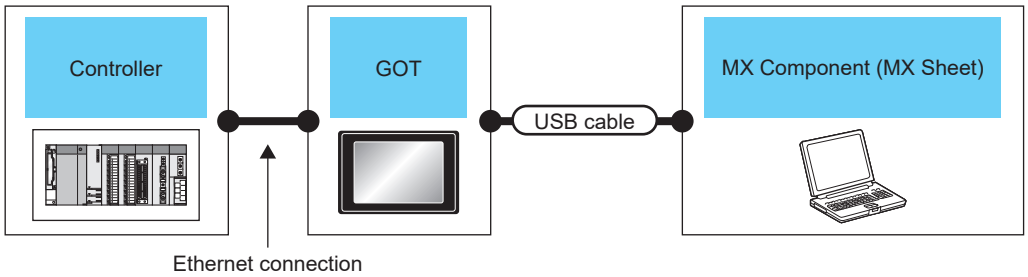
Personal computer to GOT connection	Connection between GOT and controller	Reference
USB connection	Ethernet connection	☞ Page 2914 Ethernet connection between the GOT and the controller
	Serial connection	☞ Page 2915 Serial connection between the GOT and the controller
Ethernet connection	Serial connection	☞ Page 2916 Serial connection between the GOT and the controller

82.3.1 Personal computer to GOT USB connection

Ethernet connection between the GOT and the controller

For the system configuration between the GOT and the controller, refer to the following.

Controller	Reference
MELSEC iQ-F series (Built-in Ethernet port connection)	☞ Page 292 System configuration
MELSEC iQ-F series (Ethernet module connection)	☞ Page 309 System configuration



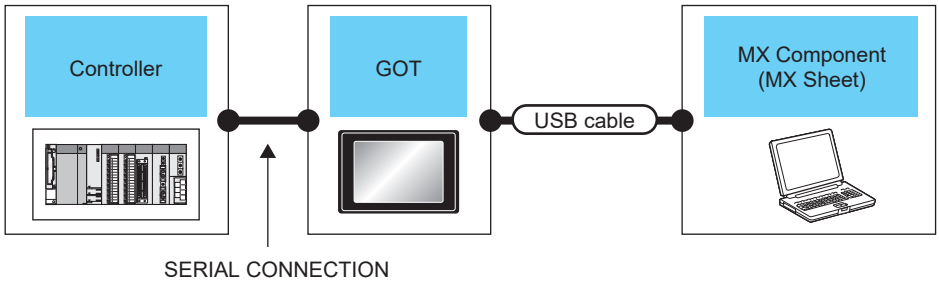
Controller	GOT		Connection cable		Personal computer	Number of connectable equipment
	Model	Interface	USB cable	Maximum length	Compatible MX Component (MX Sheet) version	
FX5U FX5UC	GT37 SoftGOT3000	USB	*1	3 m	• MX Component: 5.009K or later • MX Sheet: 3.009K or later	1 personal computer for 1 GOT

*1 For the USB cables validated by Mitsubishi Electric Corporation, refer to the following Technical Bulletin.
📖List of Valid Devices Applicable for GOT3000 Series (GOT-A-0233)

Serial connection between the GOT and the controller

For the system configuration between the GOT and the controller, refer to the following.

Controller	Reference
MELSEC iQ-F series (Built-in serial port connection)	☞ Page 550 System configuration



Controller	GOT		Connection cable		Personal computer	Number of connectable equipment
	Model	Interface	USB cable	Maximum length	Compatible MX Component (MX Sheet) version	
FX5U FX5UC	GT37 SoftGOT3000	USB	*1	3 m	• MX Component: 5.009K or later • MX Sheet: 3.009K or later	1 personal computer for 1 GOT

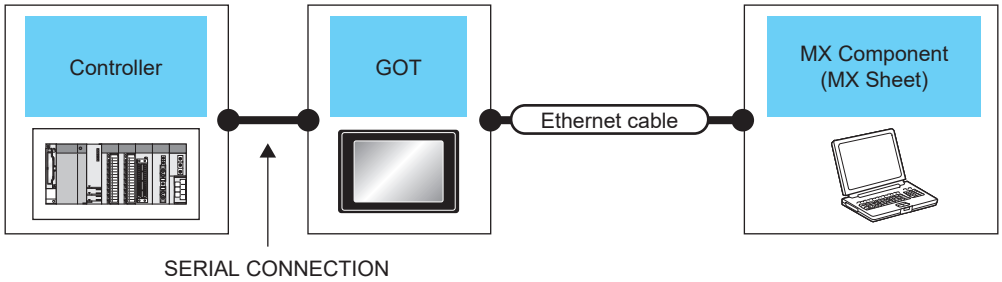
*1 For the USB cables validated by Mitsubishi Electric Corporation, refer to the following Technical Bulletin.
List of Valid Devices Applicable for GOT3000 Series (GOT-A-0233)

82.3.2 Ethernet connection between the personal computer and the GOT

Serial connection between the GOT and the controller

For the system configuration between the GOT and the controller, refer to the following.

Controller	Reference
MELSEC iQ-F series (Built-in serial port connection)	☞ Page 550 System configuration



Controller	GOT		Connection cable		Personal computer	Number of connectable equipment
	Model	Interface	Ethernet cable	Maximum segment length	Compatible MX Component (MX Sheet) version	
FX5U FX5UC	GT37 SoftGOT3000	Built-in Ethernet interface of the GOT	Twisted pair cable ☞ Page 2916 Connection cable	3 m	• MX Component: 5.009K or later • MX Sheet: 3.009K or later	1 personal computer for 1 GOT

■Connection cable

Use a connection cable that meets the following standards.

Standard	Category
10BASE-T	Shielded twisted pair cable (STP) or unshielded twisted pair cable (UTP) of category 3 or higher
100BASE-TX	Shielded twisted pair cable (STP) or unshielded twisted pair cable (UTP) of category 5 or higher
1000BASE-T	Shielded twisted pair cable (STP) or unshielded twisted pair cable (UTP) of category 5e or higher

82.4 PLC CPU (MELSEC-Q series (Q mode))

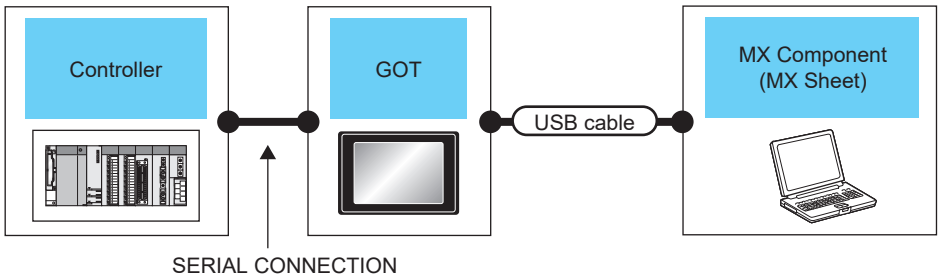
Personal computer to GOT connection	Connection between GOT and controller	Reference
USB connection	Serial connection	☞ Page 2918 Serial connection between the GOT and the controller
	Serial communication connection	☞ Page 2919 Serial communication connection between the GOT and the controller
	Bus connection	☞ Page 2920 Bus connection between the GOT and the controller
Ethernet connection	Ethernet connection	☞ Page 2921 Ethernet connection between the GOT and the controller
	Serial connection	☞ Page 2923 Serial connection between the GOT and the controller
	Serial communication connection	☞ Page 2924 Serial communication connection between the GOT and the controller
	Bus connection	☞ Page 2926 Bus connection between the GOT and the controller

82.4.1 Personal computer to GOT USB connection

Serial connection between the GOT and the controller

For the system configuration between the GOT and the controller, refer to the following.

Controller	Reference
MELSEC-Q series (Built-in serial port connection)	☞ Page 566 System configuration



Controller	GOT		Connection cable		Personal computer	Number of connectable equipment
	Model	Interface	USB cable	Maximum length	Compatible MX Component (MX Sheet) version	
Q00UJCPU Q00UJCPU-S8	GT37 SoftGOT3000	USB	*1	3 m	• MX Component: 5.009K or later • MX Sheet: 3.009K or later	1 personal computer for 1 GOT
Q00UCPU Q01UCPU Q02UCPU Q03UDCPU	GT37 SoftGOT3000	USB	*1	3 m	• MX Component: 5.009K or later • MX Sheet: 3.009K or later	1 personal computer for 1 GOT
Q04UDHCPU Q06UDHCPU Q10UDHCPU Q13UDHCPU Q20UDHCPU Q26UDHCPU	GT37 SoftGOT3000	USB	*1	3 m	• MX Component: 5.009K or later • MX Sheet: 3.009K or later	1 personal computer for 1 GOT
Q03UDECPU*2 Q04UDEHCPU*2 Q06UDEHCPU*2 Q10UDEHCPU*2 Q13UDEHCPU*2 Q20UDEHCPU*2 Q26UDEHCPU*2 Q50UDEHCPU*2 Q100UDEHCPU*2	GT37 SoftGOT3000	USB	*1	3 m	• MX Component: 5.009K or later • MX Sheet: 3.009K or later	1 personal computer for 1 GOT
Q03UDVCPU*2 Q04UDVCPU*2 Q06UDVCPU*2 Q13UDVCPU*2 Q26UDVCPU*2	GT37 SoftGOT3000	USB	*1	3 m	• MX Component: 5.009K or later • MX Sheet: 3.009K or later	1 personal computer for 1 GOT

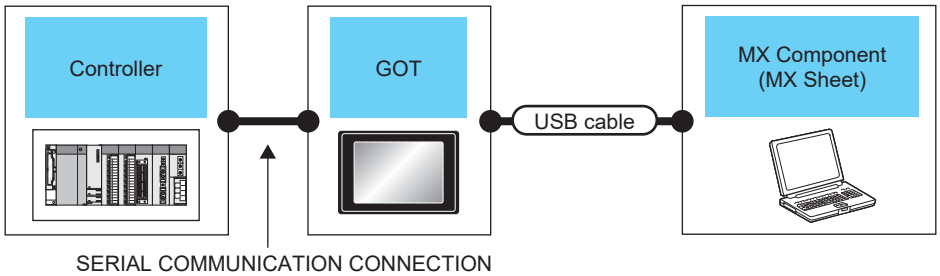
*1 For the USB cables validated by Mitsubishi Electric Corporation, refer to the following Technical Bulletin.
📖List of Valid Devices Applicable for GOT3000 Series (GOT-A-0233)

*2 Use the serial port of QCPU in the multiple CPU system.

Serial communication connection between the GOT and the controller

For the system configuration between the GOT and the controller, refer to the following.

Controller	Reference
MELSEC-Q series (serial communication connection)	☞ Page 587 System configuration



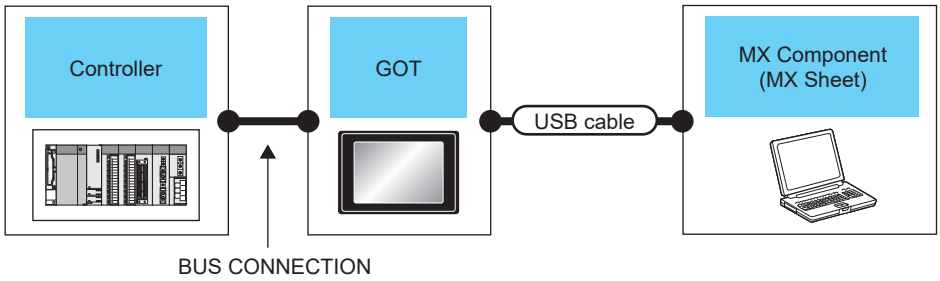
Controller	GOT		Connection cable		Personal computer	Number of connectable equipment
	Model	Interface	USB cable	Maximum length	Compatible MX Component (MX Sheet) version	
Q00JCPU Q00CPU Q01CPU Q02CPU	GT37 SoftGOT3000	USB	*1	3 m	• MX Component: 5.009K or later • MX Sheet: 3.009K or later	1 personal computer for 1 GOT
Q02HCPU Q06HCPU Q12HCPU Q25HCPU	GT37 SoftGOT3000	USB	*1	3 m	• MX Component: 5.009K or later • MX Sheet: 3.009K or later	1 personal computer for 1 GOT
Q00UJCPU Q00UJCPU-S8	GT37 SoftGOT3000	USB	*1	3 m	• MX Component: 5.009K or later • MX Sheet: 3.009K or later	1 personal computer for 1 GOT
Q00UCPU Q01UCPU Q02UCPU Q03UDCPU	GT37 SoftGOT3000	USB	*1	3 m	• MX Component: 5.009K or later • MX Sheet: 3.009K or later	1 personal computer for 1 GOT
Q04UDHCPU Q06UDHCPU Q10UDHCPU Q13UDHCPU Q20UDHCPU Q26UDHCPU	GT37 SoftGOT3000	USB	*1	3 m	• MX Component: 5.009K or later • MX Sheet: 3.009K or later	1 personal computer for 1 GOT
Q03UDECPU Q04UDEHCPU Q06UDEHCPU Q10UDEHCPU Q13UDEHCPU Q20UDEHCPU Q26UDEHCPU Q50UDEHCPU Q100UDEHCPU	GT37 SoftGOT3000	USB	*1	3 m	• MX Component: 5.009K or later • MX Sheet: 3.009K or later	1 personal computer for 1 GOT
Q03UDVCPU Q04UDVCPU Q06UDVCPU Q13UDVCPU Q26UDVCPU	GT37 SoftGOT3000	USB	*1	3 m	• MX Component: 5.009K or later • MX Sheet: 3.009K or later	1 personal computer for 1 GOT

*1 For the USB cables validated by Mitsubishi Electric Corporation, refer to the following Technical Bulletin.
List of Valid Devices Applicable for GOT3000 Series (GOT-A-0233)

Bus connection between the GOT and the controller

For the system configuration between the GOT and the controller, refer to the following.

Controller	Reference
MELSEC-Q series (bus connection)	☞ Page 685 System configuration



Controller	GOT		Connection cable		Personal computer	Number of connectable equipment
	Model	Interface	USB cable	Maximum length	Compatible MX Component (MX Sheet) version	
Q00UJCPU Q00UJCPU-S8	GT37 SoftGOT3000	USB	*1	3 m	• MX Component: 5.009K or later • MX Sheet: 3.009K or later	1 personal computer for 1 GOT
Q00UCPU Q01UCPU Q02UCPU Q03UDCPU	GT37 SoftGOT3000	USB	*1	3 m	• MX Component: 5.009K or later • MX Sheet: 3.009K or later	1 personal computer for 1 GOT
Q04UDHCPU Q06UDHCPU Q10UDHCPU Q13UDHCPU Q20UDHCPU Q26UDHCPU	GT37 SoftGOT3000	USB	*1	3 m	• MX Component: 5.009K or later • MX Sheet: 3.009K or later	1 personal computer for 1 GOT
Q03UDECPU Q04UDEHCPU Q06UDEHCPU Q10UDEHCPU Q13UDEHCPU Q20UDEHCPU Q26UDEHCPU Q50UDEHCPU Q100UDEHCPU	GT37 SoftGOT3000	USB	*1	3 m	• MX Component: 5.009K or later • MX Sheet: 3.009K or later	1 personal computer for 1 GOT
Q03UDVCPU Q04UDVCPU Q06UDVCPU Q13UDVCPU Q26UDVCPU	GT37 SoftGOT3000	USB	*1	3 m	• MX Component: 5.009K or later • MX Sheet: 3.009K or later	1 personal computer for 1 GOT

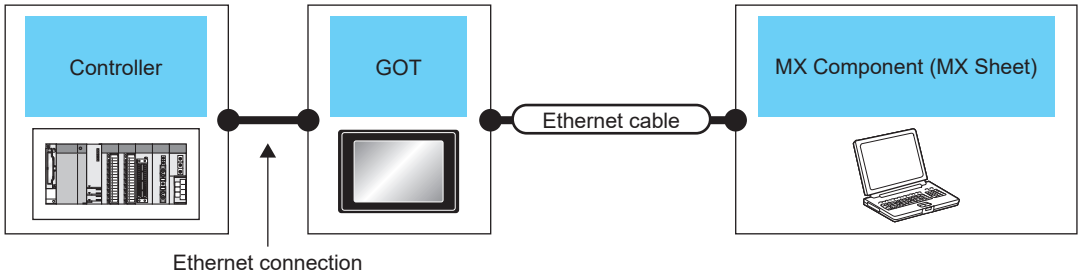
*1 For the USB cables validated by Mitsubishi Electric Corporation, refer to the following Technical Bulletin.
List of Valid Devices Applicable for GOT3000 Series (GOT-A-0233)

82.4.2 Ethernet connection between the personal computer and the GOT

Ethernet connection between the GOT and the controller

For the system configuration between the GOT and the controller, refer to the following.

Controller	Reference
MELSEC-Q series (Built-in Ethernet port connection)	☞ Page 342 System configuration
MELSEC-Q series (Ethernet module connection)	☞ Page 394 System configuration



Controller	GOT		Connection cable		Personal computer	Number of connectable equipment
	Model	Interface	Ethernet cable	Maximum segment length	Compatible MX Component (MX Sheet) version	
Q02PHCPU Q06PHCPU Q12PHCPU Q25PHCPU	GT37 SoftGOT3000	Built-in Ethernet interface of GOT	Twisted pair cable ☞ Page 2922 Connection cable	100 m	• MX Component: 5.009K or later • MX Sheet: 3.009K or later	1 personal computer for 1 GOT
Q12PRHCPU (main base) Q25PRHCPU (main base) Q12PRHCPU (via remote head module) Q25PRHCPU (via remote head module) Q12PRHCPU (extension base) Q25PRHCPU (extension base)	GT37 SoftGOT3000	Built-in Ethernet interface of the GOT	Twisted pair cable ☞ Page 2922 Connection cable	100 m	• MX Component: 5.009K or later • MX Sheet: 3.009K or later	1 personal computer for 1 GOT
Q00UJCPU Q00UJCPU-S8	GT37 SoftGOT3000	Built-in Ethernet interface of GOT	Twisted pair cable ☞ Page 2922 Connection cable	100 m	• MX Component: 5.009K or later • MX Sheet: 3.009K or later	1 personal computer for 1 GOT
Q00UCPU Q01UCPU Q02UCPU Q03UDCPU	GT37 SoftGOT3000	Built-in Ethernet interface of GOT	Twisted pair cable ☞ Page 2922 Connection cable	100 m	• MX Component: 5.009K or later • MX Sheet: 3.009K or later	1 personal computer for 1 GOT
Q04UDHCPU Q06UDHCPU Q10UDHCPU Q13UDHCPU Q20UDHCPU Q26UDHCPU	GT37 SoftGOT3000	Built-in Ethernet interface of GOT	Twisted pair cable ☞ Page 2922 Connection cable	100 m	• MX Component: 5.009K or later • MX Sheet: 3.009K or later	1 personal computer for 1 GOT

Controller	GOT		Connection cable		Personal computer	Number of connectable equipment
	Model	Interface	Ethernet cable	Maximum segment length	Compatible MX Component (MX Sheet) version	
Q03UDECPU Q04UDEHCPU Q06UDEHCPU Q10UDEHCPU Q13UDEHCPU Q20UDEHCPU Q26UDEHCPU Q50UDEHCPU Q100UDEHCPU	GT37 SoftGOT3000	Built-in Ethernet interface of GOT	Twisted pair cable ☞ Page 2922 Connection cable	100 m	• MX Component: 5.009K or later • MX Sheet: 3.009K or later	1 personal computer for 1 GOT
Q03UDVCPU Q04UDVCPU Q06UDVCPU Q13UDVCPU Q26UDVCPU	GT37 SoftGOT3000	Built-in Ethernet interface of GOT	Twisted pair cable ☞ Page 2922 Connection cable	100 m	• MX Component: 5.009K or later • MX Sheet: 3.009K or later	1 personal computer for 1 GOT

■Connection cable

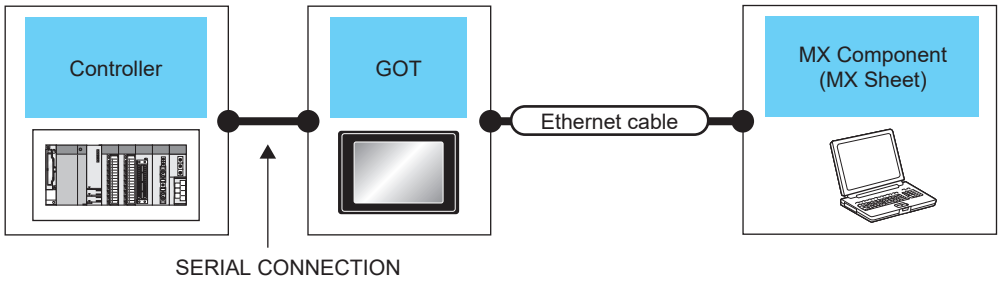
Use a connection cable that meets the following standards.

Standard	Category
10BASE-T	Shielded twisted pair cable (STP) or unshielded twisted pair cable (UTP) of category 3 or higher
100BASE-TX	Shielded twisted pair cable (STP) or unshielded twisted pair cable (UTP) of category 5 or higher
1000BASE-T	Shielded twisted pair cable (STP) or unshielded twisted pair cable (UTP) of category 5e or higher

Serial connection between the GOT and the controller

For the system configuration between the GOT and the controller, refer to the following.

Controller	Reference
MELSEC-Q series (Built-in serial port connection)	☞ Page 566 System configuration



Controller	GOT		Connection cable		Personal computer	Number of connectable equipment
	Model	Interface	Ethernet cable	Maximum segment length	Compatible MX Component (MX Sheet) version	
Q00UJCPU Q00UJCPU-S8	GT37 SoftGOT3000	Built-in Ethernet interface of GOT	Twisted pair cable ☞ Page 2923 Connection cable	100 m	• MX Component: 5.009K or later • MX Sheet: 3.009K or later	1 personal computer for 1 GOT
Q00UCPU Q01UCPU Q02UCPU Q03UDCPU	GT37 SoftGOT3000	Built-in Ethernet interface of GOT	Twisted pair cable ☞ Page 2923 Connection cable	100 m	• MX Component: 5.009K or later • MX Sheet: 3.009K or later	1 personal computer for 1 GOT
Q04UDHCPU Q06UDHCPU Q10UDHCPU Q13UDHCPU Q20UDHCPU Q26UDHCPU	GT37 SoftGOT3000	Built-in Ethernet interface of GOT	Twisted pair cable ☞ Page 2923 Connection cable	100 m	• MX Component: 5.009K or later • MX Sheet: 3.009K or later	1 personal computer for 1 GOT
Q03UDECPU*1 Q04UDEHCPU*1 Q06UDEHCPU*1 Q10UDEHCPU*1 Q13UDEHCPU*1 Q20UDEHCPU*1 Q26UDEHCPU*1 Q50UDEHCPU*1 Q100UDEHCPU*1	GT37 SoftGOT3000	Built-in Ethernet interface of GOT	Twisted pair cable ☞ Page 2923 Connection cable	100 m	• MX Component: 5.009K or later • MX Sheet: 3.009K or later	1 personal computer for 1 GOT
Q03UDVCPU*1 Q04UDVCPU*1 Q06UDVCPU*1 Q13UDVCPU*1 Q26UDVCPU*1	GT37 SoftGOT3000	Built-in Ethernet interface of GOT	Twisted pair cable ☞ Page 2923 Connection cable	100 m	• MX Component: 5.009K or later • MX Sheet: 3.009K or later	1 personal computer for 1 GOT

*1 Use the serial port of QCPU in the multiple CPU system.

■Connection cable

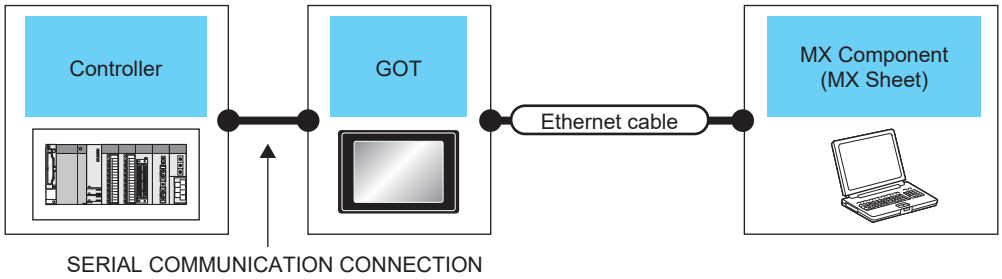
Use a connection cable that meets the following standards.

Standard	Category
10BASE-T	Shielded twisted pair cable (STP) or unshielded twisted pair cable (UTP) of category 3 or higher
100BASE-TX	Shielded twisted pair cable (STP) or unshielded twisted pair cable (UTP) of category 5 or higher
1000BASE-T	Shielded twisted pair cable (STP) or unshielded twisted pair cable (UTP) of category 5e or higher

Serial communication connection between the GOT and the controller

For the system configuration between the GOT and the controller, refer to the following.

Controller	Reference
MELSEC-Q series (serial communication connection)	☞ Page 587 System configuration



Controller	GOT		Connection cable		Personal computer	Number of connectable equipment
	Model	Interface	Ethernet cable	Maximum segment length	Compatible MX Component (MX Sheet) version	
Q00JCPU Q00CPU Q01CPU Q02CPU	GT37 SoftGOT3000	Built-in Ethernet interface of GOT	Twisted pair cable ☞ Page 2925 Connection cable	100 m	• MX Component: 5.009K or later • MX Sheet: 3.009K or later	1 personal computer for 1 GOT
Q02HCPU Q06HCPU Q12HCPU Q25HCPU	GT37 SoftGOT3000	Built-in Ethernet interface of GOT	Twisted pair cable ☞ Page 2925 Connection cable	100 m	• MX Component: 5.009K or later • MX Sheet: 3.009K or later	1 personal computer for 1 GOT
Q00UJCPU Q00UJCPU-S8	GT37 SoftGOT3000	Built-in Ethernet interface of GOT	Twisted pair cable ☞ Page 2925 Connection cable	100 m	• MX Component: 5.009K or later • MX Sheet: 3.009K or later	1 personal computer for 1 GOT
Q00UCPU Q01UCPU Q02UCPU Q03UDCPU	GT37 SoftGOT3000	Built-in Ethernet interface of GOT	Twisted pair cable ☞ Page 2925 Connection cable	100 m	• MX Component: 5.009K or later • MX Sheet: 3.009K or later	1 personal computer for 1 GOT
Q04UDHCPU Q06UDHCPU Q10UDHCPU Q13UDHCPU Q20UDHCPU Q26UDHCPU	GT37 SoftGOT3000	Built-in Ethernet interface of GOT	Twisted pair cable ☞ Page 2925 Connection cable	100 m	• MX Component: 5.009K or later • MX Sheet: 3.009K or later	1 personal computer for 1 GOT
Q03UDECPU Q04UDEHCPU Q06UDEHCPU Q10UDEHCPU Q13UDEHCPU Q20UDEHCPU Q26UDEHCPU Q50UDEHCPU Q100UDEHCPU	GT37 SoftGOT3000	Built-in Ethernet interface of GOT	Twisted pair cable ☞ Page 2925 Connection cable	100 m	• MX Component: 5.009K or later • MX Sheet: 3.009K or later	1 personal computer for 1 GOT
Q03UDVCPU Q04UDVCPU Q06UDVCPU Q13UDVCPU Q26UDVCPU	GT37 SoftGOT3000	Built-in Ethernet interface of GOT	Twisted pair cable ☞ Page 2925 Connection cable	100 m	• MX Component: 5.009K or later • MX Sheet: 3.009K or later	1 personal computer for 1 GOT

■Connection cable

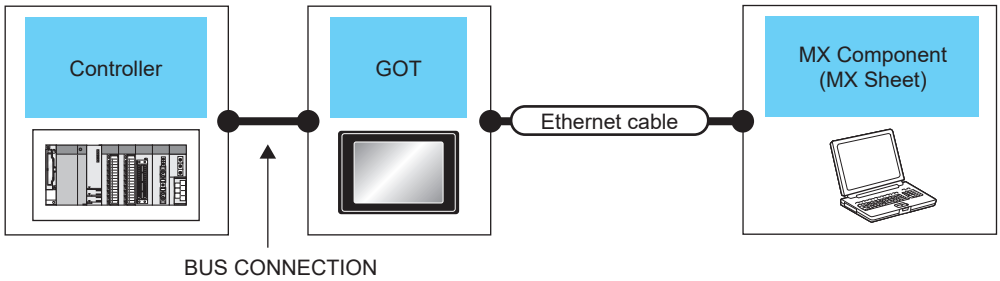
Use a connection cable that meets the following standards.

Standard	Category
10BASE-T	Shielded twisted pair cable (STP) or unshielded twisted pair cable (UTP) of category 3 or higher
100BASE-TX	Shielded twisted pair cable (STP) or unshielded twisted pair cable (UTP) of category 5 or higher
1000BASE-T	Shielded twisted pair cable (STP) or unshielded twisted pair cable (UTP) of category 5e or higher

Bus connection between the GOT and the controller

For the system configuration between the GOT and the controller, refer to the following.

Controller	Reference
MELSEC-Q series (bus connection)	☞ Page 685 System configuration



Controller	GOT		Connection cable		Personal computer	Number of connectable equipment
	Model	Interface	Ethernet cable	Maximum segment length	Compatible MX Component (MX Sheet) version	
Q00UJCPU Q00UJCPU-S8	GT37 SoftGOT3000	Built-in Ethernet interface of GOT	Twisted pair cable ☞ Page 2926 Connection cable	100 m	• MX Component: 5.009K or later • MX Sheet: 3.009K or later	1 personal computer for 1 GOT
Q00UCPU Q01UCPU Q02UCPU Q03UDCPU	GT37 SoftGOT3000	Built-in Ethernet interface of GOT	Twisted pair cable ☞ Page 2926 Connection cable	100 m	• MX Component: 5.009K or later • MX Sheet: 3.009K or later	1 personal computer for 1 GOT
Q04UDHCPU Q06UDHCPU Q10UDHCPU Q13UDHCPU Q20UDHCPU Q26UDHCPU	GT37 SoftGOT3000	Built-in Ethernet interface of GOT	Twisted pair cable ☞ Page 2926 Connection cable	100 m	• MX Component: 5.009K or later • MX Sheet: 3.009K or later	1 personal computer for 1 GOT
Q03UDECPU Q04UDEHCPU Q06UDEHCPU Q10UDEHCPU Q13UDEHCPU Q20UDEHCPU Q26UDEHCPU Q50UDEHCPU Q100UDEHCPU	GT37 SoftGOT3000	Built-in Ethernet interface of GOT	Twisted pair cable ☞ Page 2926 Connection cable	100 m	• MX Component: 5.009K or later • MX Sheet: 3.009K or later	1 personal computer for 1 GOT
Q03UDVCPU Q04UDVCPU Q06UDVCPU Q13UDVCPU Q26UDVCPU	GT37 SoftGOT3000	Built-in Ethernet interface of GOT	Twisted pair cable ☞ Page 2926 Connection cable	100 m	• MX Component: 5.009K or later • MX Sheet: 3.009K or later	1 personal computer for 1 GOT

■Connection cable

Use a connection cable that meets the following standards.

Standard	Category
10BASE-T	Shielded twisted pair cable (STP) or unshielded twisted pair cable (UTP) of category 3 or higher
100BASE-TX	Shielded twisted pair cable (STP) or unshielded twisted pair cable (UTP) of category 5 or higher
1000BASE-T	Shielded twisted pair cable (STP) or unshielded twisted pair cable (UTP) of category 5e or higher

82.5 C Controller module (MELSEC-Q series)

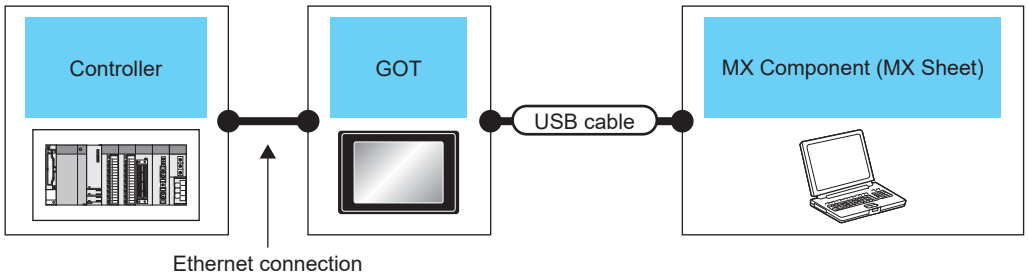
Personal computer to GOT connection	Connection between GOT and controller	Reference
USB connection	Ethernet connection	☞ Page 2927 Ethernet connection between the GOT and the controller
	Serial connection	☞ Page 2928 Serial connection between the GOT and the controller
	Bus connection	☞ Page 2929 Bus connection between the GOT and the controller
Ethernet connection	Serial connection	☞ Page 2930 Serial connection between the GOT and the controller
	Bus connection	☞ Page 2931 Bus connection between the GOT and the controller

82.5.1 Personal computer to GOT USB connection

Ethernet connection between the GOT and the controller

For the system configuration between the GOT and the controller, refer to the following.

Controller	Reference
MELSEC-Q series (Ethernet module connection)	☞ Page 394 System configuration



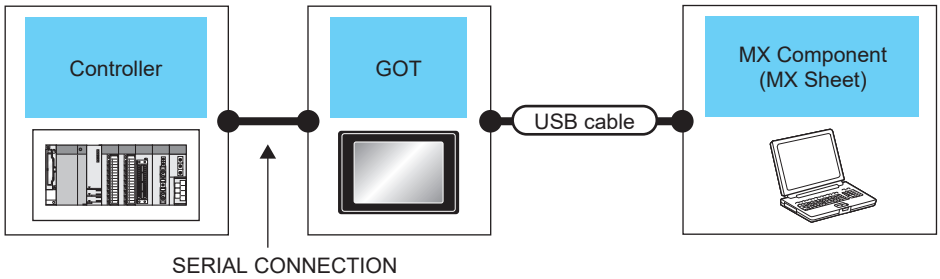
Controller	GOT		Connection cable		Personal computer	Number of connectable equipment
	Model	Interface	USB cable	Maximum length	Compatible MX Component (MX Sheet) version	
Q12DCCPU-V	GT37 SoftGOT3000	USB	*1	3 m	MX Component: 5.009K or later	1 personal computer for 1 GOT
Q24DHCCPU-V/VG Q24DHCCPU-LS Q26DHCCPU-LS	GT37 SoftGOT3000	USB	*1	3 m	• MX Component: 5.009K or later • MX Sheet: 3.009K or later	1 personal computer for 1 GOT

*1 For the USB cables validated by Mitsubishi Electric Corporation, refer to the following Technical Bulletin.
List of Valid Devices Applicable for GOT3000 Series (GOT-A-0233)

Serial connection between the GOT and the controller

For the system configuration between the GOT and the controller, refer to the following.

Controller	Reference
MELSEC-Q series (Built-in serial port connection)	☞ Page 566 System configuration



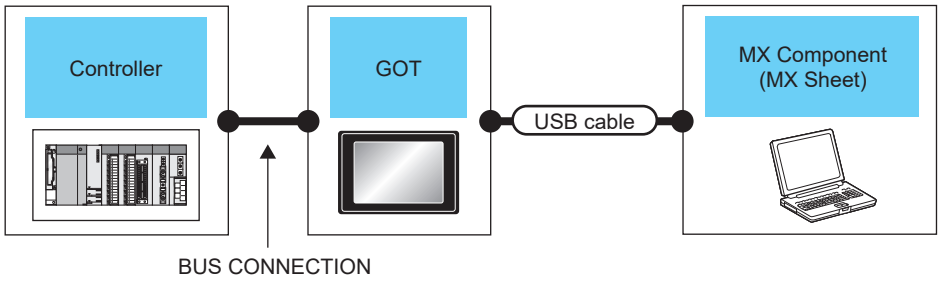
Controller	GOT		Connection cable		Personal computer	Number of connectable equipment
	Model	Interface	USB cable	Maximum length	Compatible MX Component (MX Sheet) version	
Q12DCCPU-V	GT37 SoftGOT3000	USB	*1	3 m	• MX Component: 5.009K or later • MX Sheet: 3.009K or later	1 personal computer for 1 GOT
Q24DHCCPU-V/VG Q24DHCCPU-LS Q26DHCCPU-LS	GT37 SoftGOT3000	USB	*1	3 m	• MX Component: 5.009K or later • MX Sheet: 3.009K or later	1 personal computer for 1 GOT

*1 For the USB cables validated by Mitsubishi Electric Corporation, refer to the following Technical Bulletin.
List of Valid Devices Applicable for GOT3000 Series (GOT-A-0233)

Bus connection between the GOT and the controller

For the system configuration between the GOT and the controller, refer to the following.

Controller	Reference
MELSEC-Q series (bus connection)	☞ Page 685 System configuration



Controller	GOT		Connection cable		Personal computer	Number of connectable equipment
	Model	Interface	USB cable	Maximum length	Compatible MX Component (MX Sheet) version	
Q12DCCPU-V	GT37 SoftGOT3000	USB	*1	3 m	MX Component: 5.009K or later	1 personal computer for 1 GOT
Q24DHCCPU-V/VG Q24DHCCPU-LS Q26DHCCPU-LS	GT37 SoftGOT3000	USB	*1	3 m	• MX Component: 5.009K or later • MX Sheet: 3.009K or later	1 personal computer for 1 GOT

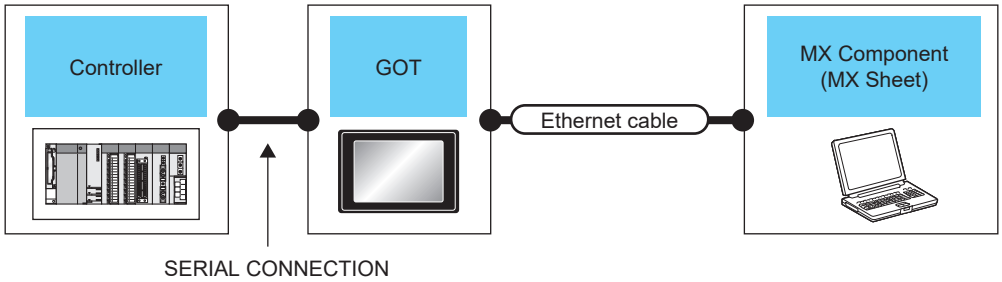
*1 For the USB cables validated by Mitsubishi Electric Corporation, refer to the following Technical Bulletin.
List of Valid Devices Applicable for GOT3000 Series (GOT-A-0233)

82.5.2 Ethernet connection between the personal computer and the GOT

Serial connection between the GOT and the controller

For the system configuration between the GOT and the controller, refer to the following.

Controller	Reference
MELSEC-Q series (Built-in serial port connection)	☞ Page 566 System configuration



Controller	GOT		Connection cable		Personal computer	Number of connectable equipment
	Model	Interface	Ethernet cable	Maximum segment length	Compatible MX Component (MX Sheet) version	
Q12DCCPU-V	GT37 SoftGOT3000	Built-in Ethernet interface of the GOT	Twisted pair cable ☞ Page 2930 Connection cable	100 m	• MX Component: 5.009K or later • MX Sheet: 3.009K or later	1 personal computer for 1 GOT
Q24DHCCPU-V/VG Q24DHCCPU-LS Q26DHCCPU-LS	GT37 SoftGOT3000	Built-in Ethernet interface of the GOT	Twisted pair cable ☞ Page 2930 Connection cable	100 m	• MX Component: 5.009K or later • MX Sheet: 3.009K or later	1 personal computer for 1 GOT

■Connection cable

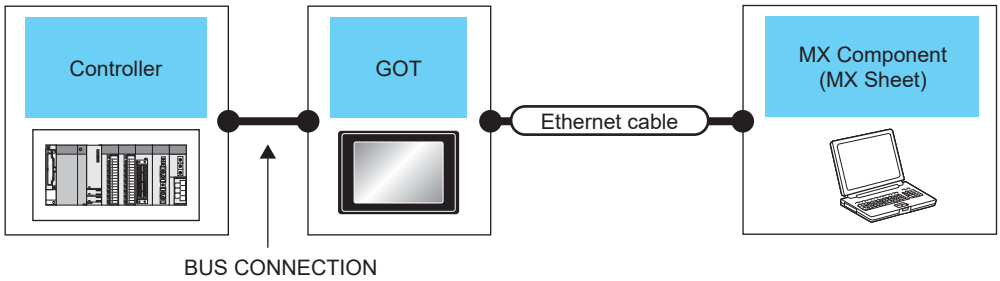
Use a connection cable that meets the following standards.

Standard	Category
10BASE-T	Shielded twisted pair cable (STP) or unshielded twisted pair cable (UTP) of category 3 or higher
100BASE-TX	Shielded twisted pair cable (STP) or unshielded twisted pair cable (UTP) of category 5 or higher
1000BASE-T	Shielded twisted pair cable (STP) or unshielded twisted pair cable (UTP) of category 5e or higher

Bus connection between the GOT and the controller

For the system configuration between the GOT and the controller, refer to the following.

Controller	Reference
MELSEC-Q series (bus connection)	☞ Page 685 System configuration



Controller	GOT		Connection cable		Personal computer	Number of connectable equipment
	Model	Interface	Ethernet cable	Maximum segment length	Compatible MX Component (MX Sheet) version	
Q12DCCPU-V	GT37 SoftGOT3000	Built-in Ethernet interface of the GOT	Twisted pair cable ☞ Page 2931 Connection cable	100 m	MX Component: 5.009K or later	1 personal computer for 1 GOT
Q24DHCCPU-V/VG Q24DHCCPU-LS Q26DHCCPU-LS	GT37 SoftGOT3000	Built-in Ethernet interface of the GOT	Twisted pair cable ☞ Page 2931 Connection cable	100 m	• MX Component: 5.009K or later • MX Sheet: 3.009K or later	1 personal computer for 1 GOT

■Connection cable

Use a connection cable that meets the following standards.

Standard	Category
10BASE-T	Shielded twisted pair cable (STP) or unshielded twisted pair cable (UTP) of category 3 or higher
100BASE-TX	Shielded twisted pair cable (STP) or unshielded twisted pair cable (UTP) of category 5 or higher
1000BASE-T	Shielded twisted pair cable (STP) or unshielded twisted pair cable (UTP) of category 5e or higher

82.6 Motion CPU (MELSEC-Q series)

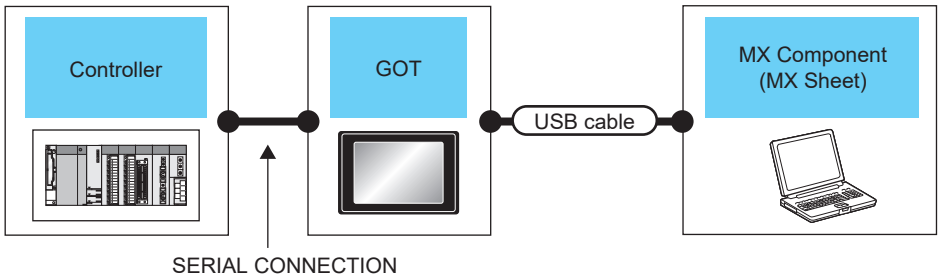
Personal computer to GOT connection	Connection between GOT and controller	Reference
USB connection	Serial connection	☞ Page 2932 Serial connection between the GOT and the controller
	Serial communication connection	☞ Page 2933 Serial communication connection between the GOT and the controller
	Bus connection	☞ Page 2934 Bus connection between the GOT and the controller

82.6.1 Personal computer to GOT USB connection

Serial connection between the GOT and the controller

For the system configuration between the GOT and the controller, refer to the following.

Controller	Reference
MELSEC-Q series (Built-in serial port connection)	☞ Page 566 System configuration



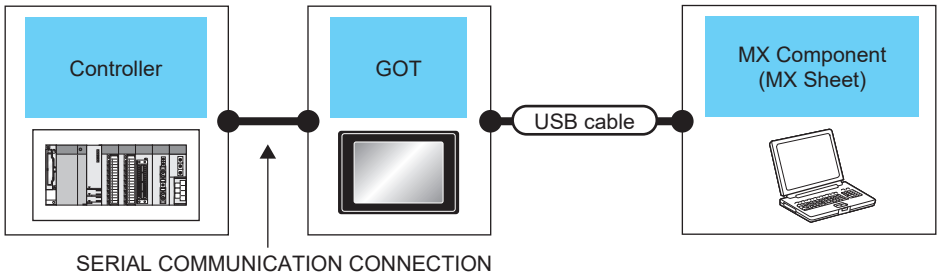
Controller	GOT		Connection cable		Personal computer	Number of connectable equipment
	Model	Interface	USB cable	Maximum length	Compatible MX Component (MX Sheet) version	
Q172DCPU Q173DCPU Q172DCPU-S1 Q173DCPU-S1 Q172DSCPU Q173DSCPU Q170MCPU Q170MSCPU Q170MSCPU-S1	GT37 SoftGOT3000	USB	*1	3 m	• MX Component: 5.009K or later • MX Sheet: 3.009K or later	1 personal computer for 1 GOT

*1 For the USB cables validated by Mitsubishi Electric Corporation, refer to the following Technical Bulletin.
List of Valid Devices Applicable for GOT3000 Series (GOT-A-0233)

Serial communication connection between the GOT and the controller

For the system configuration between the GOT and the controller, refer to the following.

Controller	Reference
MELSEC-Q series (serial communication connection)	☞ Page 587 System configuration



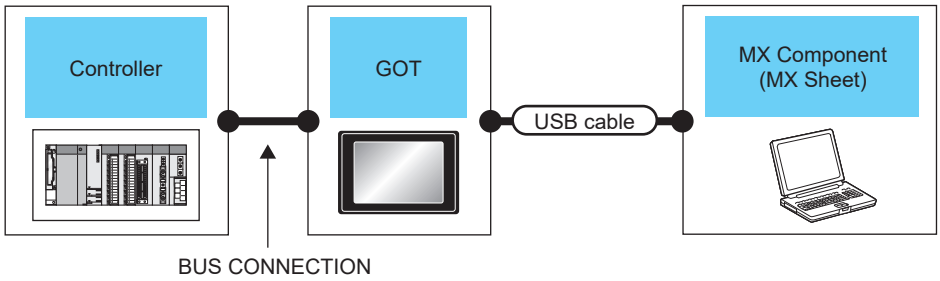
Controller	GOT		Connection cable		Personal computer	Number of connectable equipment
	Model	Interface	USB cable	Maximum length	Compatible MX Component (MX Sheet) version	
Q172DCPU Q173DCPU Q172DCPU-S1 Q173DCPU-S1 Q172DSCPU Q173DSCPU Q170MCPU Q170MSCPU Q170MSCPU-S1	GT37 SoftGOT3000	USB	*1	3 m	• MX Component: 5.009K or later • MX Sheet: 3.009K or later	1 personal computer for 1 GOT

*1 For the USB cables validated by Mitsubishi Electric Corporation, refer to the following Technical Bulletin.
List of Valid Devices Applicable for GOT3000 Series (GOT-A-0233)

Bus connection between the GOT and the controller

For the system configuration between the GOT and the controller, refer to the following.

Controller	Reference
MELSEC-Q series (bus connection)	☞ Page 688 GOT side settings



Controller	GOT		Connection cable		Personal computer	Number of connectable equipment
	Model	Interface	USB cable	Maximum length	Compatible MX Component (MX Sheet) version	
Q172DCPU Q173DCPU Q172DCPU-S1 Q173DCPU-S1 Q172DSCPU Q173DSCPU Q170MCPU Q170MSCPU Q170MSCPU-S1	GT37 SoftGOT3000	USB	*1	3 m	• MX Component: 5.009K or later • MX Sheet: 3.009K or later	1 personal computer for 1 GOT

*1 For the USB cables validated by Mitsubishi Electric Corporation, refer to the following Technical Bulletin.
List of Valid Devices Applicable for GOT3000 Series (GOT-A-0233)

82.7 PLC CPU (MELSEC-L series)

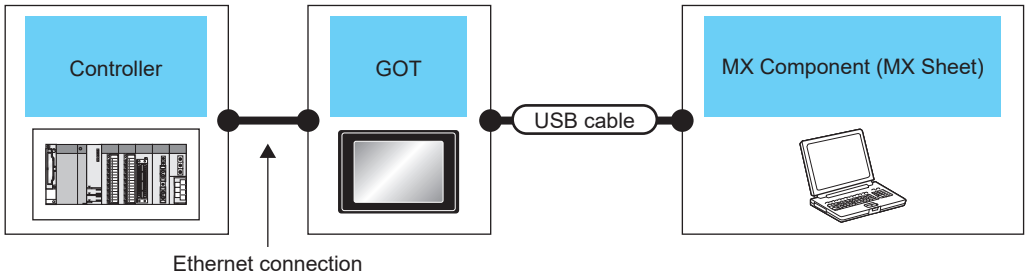
Personal computer to GOT connection	Connection between GOT and controller	Reference
USB connection	Ethernet connection	☞ Page 2935 Ethernet connection between the GOT and the controller
	Serial connection	☞ Page 2936 Serial connection between the GOT and the controller
	Serial communication connection	☞ Page 2936 Serial communication connection between the GOT and the controller
Ethernet connection	Serial connection	☞ Page 2937 Serial connection between the GOT and the controller
	Serial communication connection	☞ Page 2938 Serial communication connection between the GOT and the controller

82.7.1 Personal computer to GOT USB connection

Ethernet connection between the GOT and the controller

For the system configuration between the GOT and the controller, refer to the following.

Controller	Reference
MELSEC-L series (Built-in Ethernet port connection)	☞ Page 437 System configuration
MELSEC-L series (Ethernet module connection)	☞ Page 462 System configuration



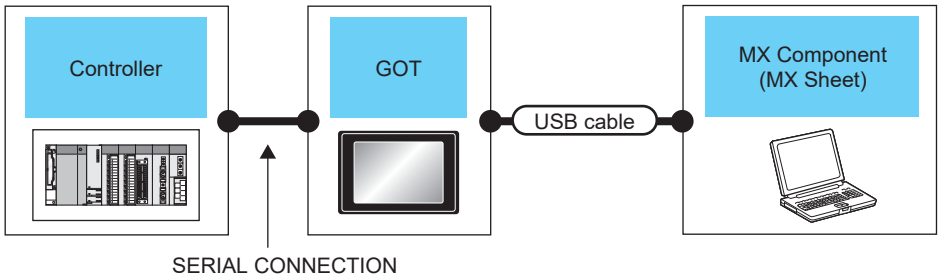
Controller	GOT		Connection cable		Personal computer	Number of connectable equipment
	Model	Interface	USB cable	Maximum length	Compatible MX Component (MX Sheet) version	
L02CPU L06CPU L26CPU L26CPU-BT L02SCPU	GT37 SoftGOT3000	USB	*1	3 m	• MX Component: 5.009K or later • MX Sheet: 3.009K or later	1 personal computer for 1 GOT

*1 For the USB cables validated by Mitsubishi Electric Corporation, refer to the following Technical Bulletin.
List of Valid Devices Applicable for GOT3000 Series (GOT-A-0233)

Serial connection between the GOT and the controller

For the system configuration between the GOT and the controller, refer to the following.

Controller	Reference
MELSEC-L series (Built-in serial port connection)	☞ Page 605 System configuration



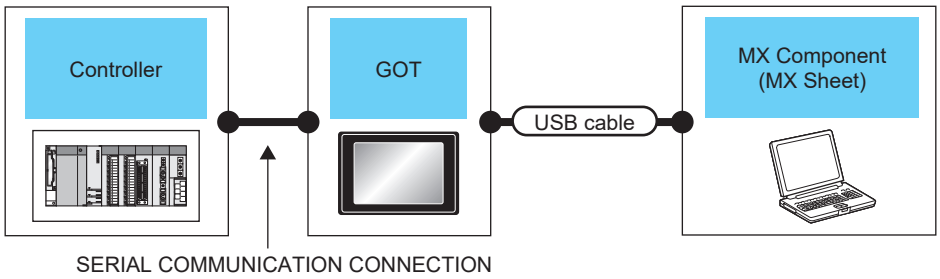
Controller	GOT		Connection cable		Personal computer	Number of connectable equipment
	Model	Interface	USB cable	Maximum length	Compatible MX Component (MX Sheet) version	
L02CPU L06CPU L26CPU L26CPU-BT L02SCPU	GT37 SoftGOT3000	USB	*1	3 m	• MX Component: 5.009K or later • MX Sheet: 3.009K or later	1 personal computer for 1 GOT

*1 For the USB cables validated by Mitsubishi Electric Corporation, refer to the following Technical Bulletin.
List of Valid Devices Applicable for GOT3000 Series (GOT-A-0233)

Serial communication connection between the GOT and the controller

For the system configuration between the GOT and the controller, refer to the following.

Controller	Reference
MELSEC-L series (serial communication connection)	☞ Page 619 System configuration



Controller	GOT		Connection cable		Personal computer	Number of connectable equipment
	Model	Interface	USB cable	Maximum length	Compatible MX Component (MX Sheet) version	
L02CPU L06CPU L26CPU L26CPU-BT L02SCPU	GT37 SoftGOT3000	USB	*1	3 m	• MX Component: 5.009K or later • MX Sheet: 3.009K or later	1 personal computer for 1 GOT

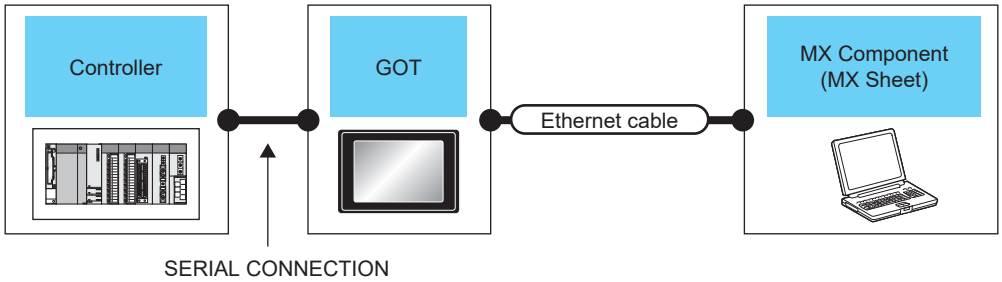
*1 For the USB cables validated by Mitsubishi Electric Corporation, refer to the following Technical Bulletin.
List of Valid Devices Applicable for GOT3000 Series (GOT-A-0233)

82.7.2 Ethernet connection between the personal computer and the GOT

Serial connection between the GOT and the controller

For the system configuration between the GOT and the controller, refer to the following.

Controller	Reference
MELSEC-L series (Built-in serial port connection)	☞ Page 605 System configuration



Controller	GOT		Connection cable		Personal computer	Number of connectable equipment
	Model	Interface	Ethernet cable	Maximum segment length	Compatible MX Component (MX Sheet) version	
L02CPU L06CPU L26CPU L26CPU-BT L02SCPU	GT37 SoftGOT3000	Built-in Ethernet interface of the GOT	Twisted pair cable ☞ Page 2937 Connection cable	100 m	• MX Component: 5.009K or later • MX Sheet: 3.009K or later	1 personal computer for 1 GOT

■Connection cable

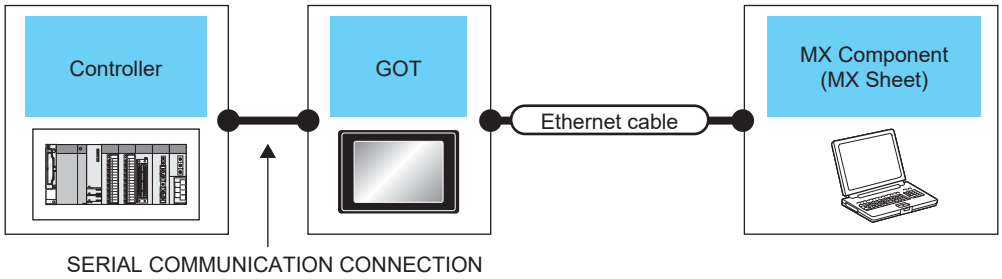
Use a connection cable that meets the following standards.

Standard	Category
10BASE-T	Shielded twisted pair cable (STP) or unshielded twisted pair cable (UTP) of category 3 or higher
100BASE-TX	Shielded twisted pair cable (STP) or unshielded twisted pair cable (UTP) of category 5 or higher
1000BASE-T	Shielded twisted pair cable (STP) or unshielded twisted pair cable (UTP) of category 5e or higher

Serial communication connection between the GOT and the controller

For the system configuration between the GOT and the controller, refer to the following.

Controller	Reference
MELSEC-L series (serial communication connection)	☞ Page 619 System configuration



Controller	GOT		Connection cable		Personal computer	Number of connectable equipment
	Model	Interface	Ethernet cable	Maximum segment length	Compatible MX Component (MX Sheet) version	
L02CPU L06CPU L26CPU L26CPU-BT L02SCPU	GT37 SoftGOT3000	Built-in Ethernet interface of the GOT	Twisted pair cable ☞ Page 2938 Connection cable	100 m	• MX Component: 5.009K or later • MX Sheet: 3.009K or later	1 personal computer for 1 GOT

■Connection cable

Use a connection cable that meets the following standards.

Standard	Category
10BASE-T	Shielded twisted pair cable (STP) or unshielded twisted pair cable (UTP) of category 3 or higher
100BASE-TX	Shielded twisted pair cable (STP) or unshielded twisted pair cable (UTP) of category 5 or higher
1000BASE-T	Shielded twisted pair cable (STP) or unshielded twisted pair cable (UTP) of category 5e or higher

82.8 PLC CPU (MELSEC-F series)

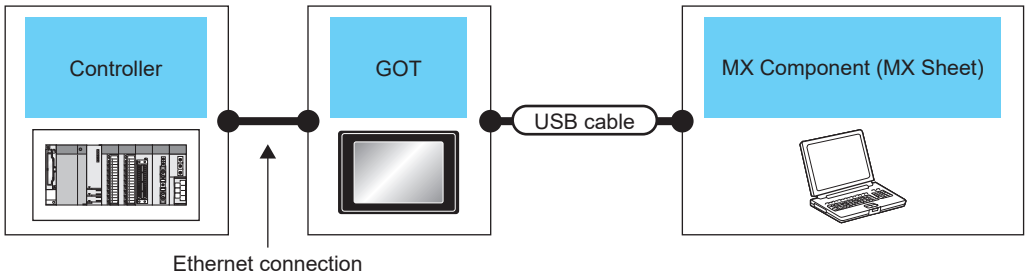
Personal computer to GOT connection	Connection between GOT and controller	Reference
USB connection	Ethernet connection	☞ Page 2939 Ethernet connection between the GOT and the controller
	Serial connection	☞ Page 2940 Serial connection between the GOT and the controller
Ethernet connection	Serial connection	☞ Page 2941 Serial connection between the GOT and the controller

82.8.1 Personal computer to GOT USB connection

Ethernet connection between the GOT and the controller

For the system configuration between the GOT and the controller, refer to the following.

Controller	Reference
MELSEC-F series (Ethernet module connection)	☞ Page 501 System configuration



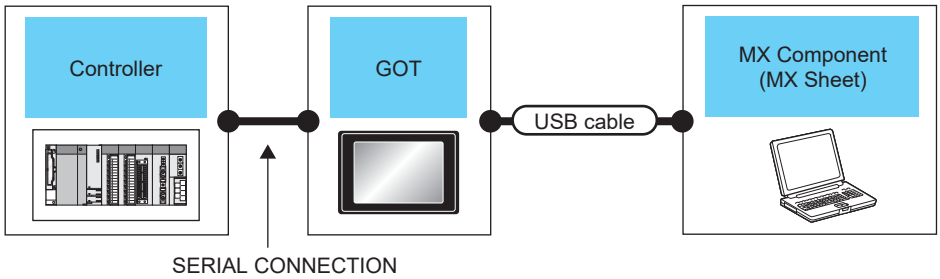
Controller	GOT		Connection cable		Personal computer	Number of connectable equipment
	Model	Interface	USB cable	Maximum length	Compatible MX Component (MX Sheet) version	
FX3G(C) FX3S FX3GE FX3U(C)	GT37 SoftGOT3000	USB	*1	3 m	• MX Component: 5.009K or later • MX Sheet: 3.009K or later	1 personal computer for 1 GOT

*1 For the USB cables validated by Mitsubishi Electric Corporation, refer to the following Technical Bulletin.
List of Valid Devices Applicable for GOT3000 Series (GOT-A-0233)

Serial connection between the GOT and the controller

For the system configuration between the GOT and the controller, refer to the following.

Controller	Reference
MELSEC-F series (Built-in serial port connection)	☞ Page 641 System configuration



Controller	GOT		Connection cable		Personal computer	Number of connectable equipment
	Model	Interface	USB cable	Maximum length	Compatible MX Component (MX Sheet) version	
FX1S FX1N(C) FX2N(C) FX3G(C) FX3S FX3GE FX3U(C)	GT37 SoftGOT3000	USB	*1	3 m	• MX Component: 5.009K or later • MX Sheet: 3.009K or later	1 personal computer for 1 GOT

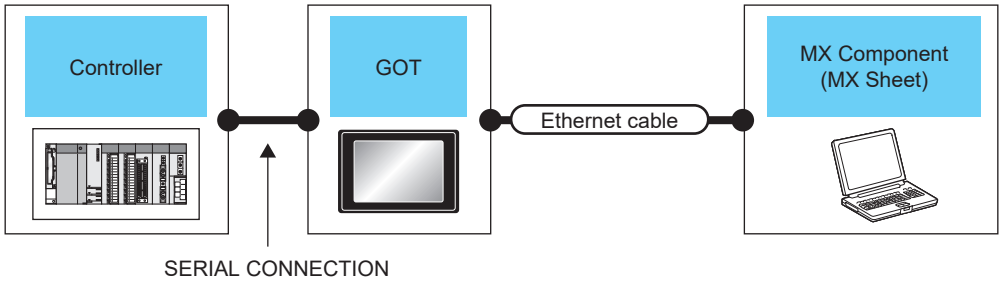
*1 For the USB cables validated by Mitsubishi Electric Corporation, refer to the following Technical Bulletin.
List of Valid Devices Applicable for GOT3000 Series (GOT-A-0233)

82.8.2 Ethernet connection between the personal computer and the GOT

Serial connection between the GOT and the controller

For the system configuration between the GOT and the controller, refer to the following.

Controller	Reference
MELSEC-F series (Built-in serial port connection)	☞ Page 641 System configuration



Controller	GOT		Connection cable		Personal computer	Number of connectable equipment
	Model	Interface	Ethernet cable	Maximum segment length	Compatible MX Component (MX Sheet) version	
FX1S FX1N(C) FX2N(C) FX3G(C) FX3S FX3GE FX3U(C)	GT37 SoftGOT3000	Built-in Ethernet interface of the GOT	Twisted pair cable ☞ Page 2941 Connection cable	100 m	• MX Component: 5.009K or later • MX Sheet: 3.009K or later	1 personal computer for 1 GOT

■Connection cable

Use a connection cable that meets the following standards.

Standard	Category
10BASE-T	Shielded twisted pair cable (STP) or unshielded twisted pair cable (UTP) of category 3 or higher
100BASE-TX	Shielded twisted pair cable (STP) or unshielded twisted pair cable (UTP) of category 5 or higher
1000BASE-T	Shielded twisted pair cable (STP) or unshielded twisted pair cable (UTP) of category 5e or higher

82.9 GOT side settings

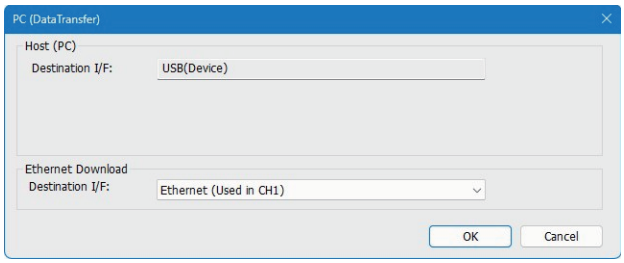
82.9.1 [Controller Setting]

The GOT side settings differ depending on the connection type between the controller and the GOT.
For details on [Controller Setting], refer to the following.

Controller	Reference
MELSEC iQ-R series (Built-in Ethernet port connection)	☞ Page 199 [Controller Setting]
MELSEC iQ-R series (Ethernet module connection)	☞ Page 253 [Controller Setting]
MELSEC iQ-R series (serial communication connection)	☞ Page 537 [Controller Setting]
Motion CPU (MELSEC iQ-R series) (Built-in Ethernet port connection)	☞ Page 199 [Controller Setting]
Motion CPU (MELSEC iQ-R series) (Ethernet module connection)	☞ Page 253 [Controller Setting]
Motion CPU (MELSEC iQ-R series) (serial communication connection)	☞ Page 537 [Controller Setting]
MELSEC iQ-F series (Built-in Ethernet port connection)	☞ Page 295 [Controller Setting]
MELSEC iQ-F series (Ethernet module connection)	☞ Page 316 [Controller Setting]
MELSEC iQ-F series (Built-in serial port connection)	☞ Page 558 [Controller Setting]
MELSEC-Q series (Built-in Ethernet port connection)	☞ Page 350 [Controller Setting]
MELSEC-Q series (Ethernet module connection)	☞ Page 400 [Controller Setting]
MELSEC-Q series (Built-in serial port connection)	☞ Page 568 [Controller Setting]
MELSEC-Q series (serial communication connection)	☞ Page 592 [Controller Setting]
MELSEC-Q series (bus connection)	☞ Page 688 [Controller Setting]
C Controller module (MELSEC-Q series) (Built-in Ethernet port connection)	☞ Page 350 [Controller Setting]
C Controller module (MELSEC-Q series) (Ethernet module connection)	☞ Page 400 [Controller Setting]
C Controller module (MELSEC-Q series) (Built-in serial port connection)	☞ Page 568 [Controller Setting]
C Controller module (MELSEC-Q series) (bus connection)	☞ Page 688 [Controller Setting]
Motion CPU (MELSEC-Q series) (Built-in serial port connection)	☞ Page 568 [Controller Setting]
Motion CPU (MELSEC-Q series) (serial communication connection)	☞ Page 592 [Controller Setting]
Motion CPU (MELSEC-Q series) (bus connection)	☞ Page 688 [Controller Setting]
MELSEC-L series (Built-in Ethernet port connection)	☞ Page 441 [Controller Setting]
MELSEC-L series (Ethernet module connection)	☞ Page 465 [Controller Setting]
MELSEC-L series (Built-in serial port connection)	☞ Page 609 [Controller Setting]
MELSEC-L series (serial communication connection)	☞ Page 624 [Controller Setting]
MELSEC-F series (Ethernet module connection)	☞ Page 506 [Controller Setting]
MELSEC-F series (Built-in serial port connection)	☞ Page 648 [Controller Setting]

82.9.2 Communication setting with personal computer

Set the communication setting between the GOT and the personal computer.



Operating procedure

1. Select [Common] → [Peripheral Setting] → [PC (Data Transfer)] from the menu.

2. Set the interface of the GOT to be used for communication with the personal computer in the [PC (Data Transfer)] dialog.

For details of the setting contents, refer to the following manual.

📖GT Designer3 (GOT3000) Screen Design Manual

Point

- Controller settings using the GT37 utility

The controller settings can be changed in [Communication Settings] of the GT37 utility after writing [Communication Settings] of project data to GT37.

For details on the GT37 utility, refer to the following manual.

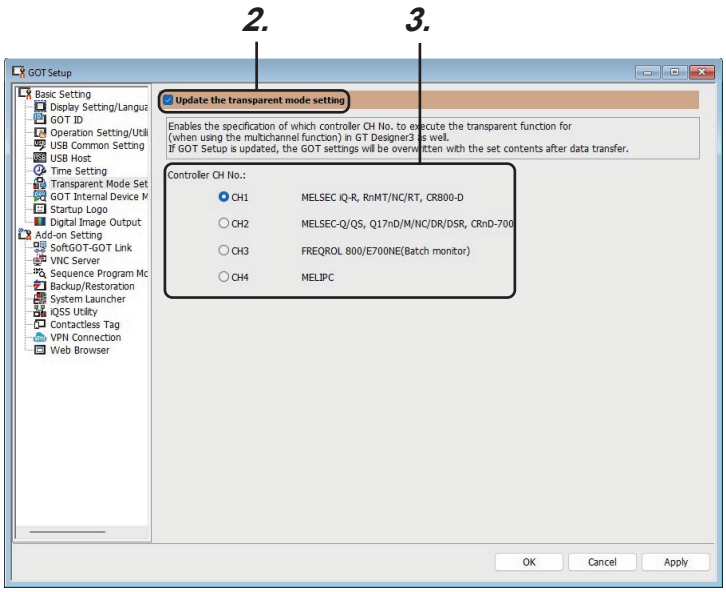
📖GOT3000 Series User's Manual (Utility & Maintenance Functions)

- Priority of the settings in [Controller Setting]

When the settings are configured in GT Designer3 or in the GT37 utility, the latest settings are effective.

82.9.3 GOT Setup

When using the multi-channel function, specify the channel number for which the FA transparent function is executed.



Operating procedure

1. Select [Common] → [GOT Setup] → [Basic Setting] → [Transparent Mode Setting] from the menu.
2. Select [Update the transparent mode setting].
3. As necessary, check one of [CH1] to [CH4].
4. Click the [OK] button when settings are completed.

Point

Transparent setting on the utility screen

Transparent setting can be performed by the GOT.

For details of the operating, refer to the following.

📖GOT3000 Series User's Manual (Utility & Maintenance Functions)

82.10 Personal computer side settings

The following shows the procedure to set the FA transparent function in MX Component (MX Sheet).

Personal computer to GOT connection	Connection between GOT and controller	Reference
USB connection	Ethernet connection	☞ Page 2946 USB connection between the personal computer and the GOT
	Serial connection	☞ Page 2946 USB connection between the personal computer and the GOT
	Serial communication connection	☞ Page 2946 USB connection between the personal computer and the GOT
	Bus connection	☞ Page 2946 USB connection between the personal computer and the GOT
Ethernet connection	Ethernet connection	☞ Page 2950 Personal computer to GOT Ethernet connection
	Serial connection	☞ Page 2950 Personal computer to GOT Ethernet connection
	Serial communication connection	☞ Page 2950 Personal computer to GOT Ethernet connection
	Bus connection	☞ Page 2950 Personal computer to GOT Ethernet connection

Point

• MX Component(MX Sheet) manuals

For details of the MX Component(MX Sheet), refer to the following manual.

📖MX Sheet Version 3 Operating Manual

📖MX Component Version 5 Reference Manual

• When MX Component is used alone

Start [Communication Setting Utility] and start the communication setting from the following step 3.

Personal computer to GOT USB connection

☞ Page 2946 USB connection between the personal computer and the GOT

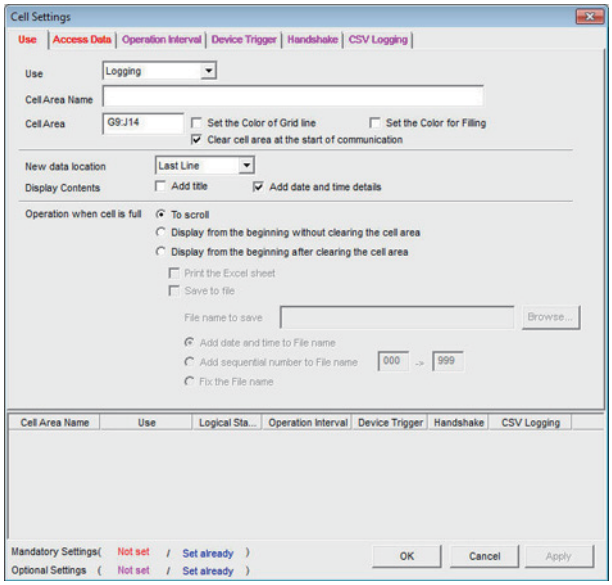
Ethernet connection between the personal computer and the GOT

☞ Page 2950 Personal computer to GOT Ethernet connection

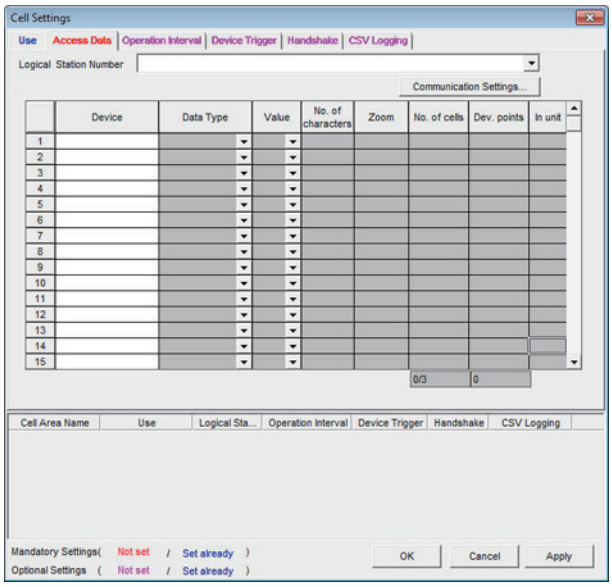
82.10.1 USB connection between the personal computer and the GOT

Operating procedure

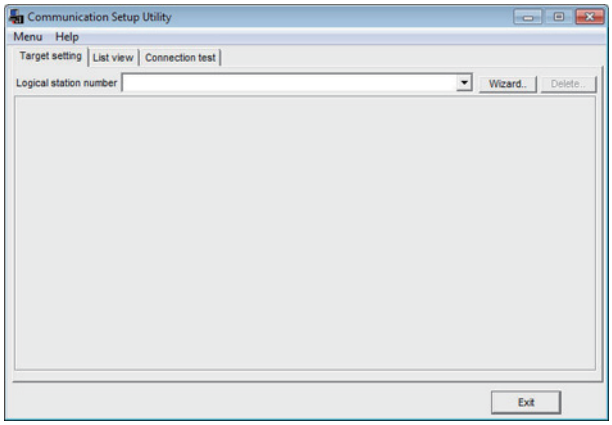
1. Click [MX Sheet] of Microsoft Excel → [Cell Settings].
2. When the [Cell Settings] dialog is displayed, configure settings in the [Use] tab.



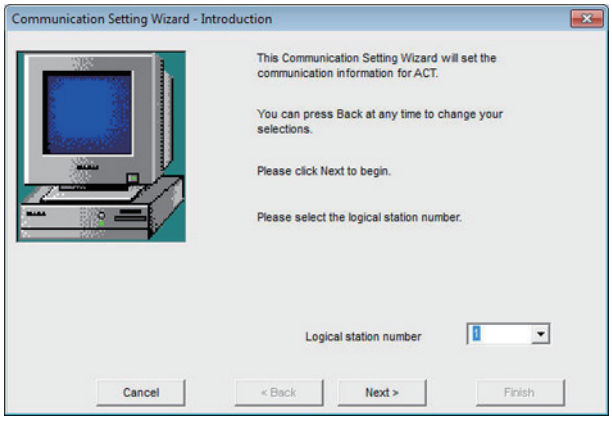
3. Select the [Access Data] tab and click the [Communication Settings] button.



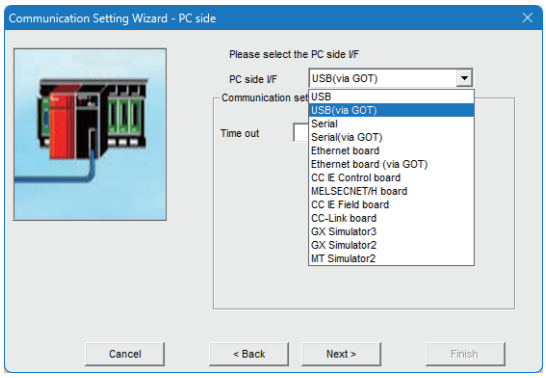
4. When the [Target setting] tab of the [Communication Setup Utility] dialog is displayed, click the [Wizard] button.



5. When [Communication Setting Wizard] is displayed, set a value for [Logical station number] and click [Next].

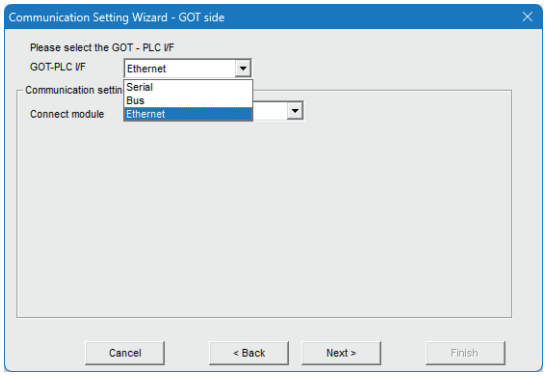


6. Select [USB(via GOT)] for [PC side I/F] and click [Next].



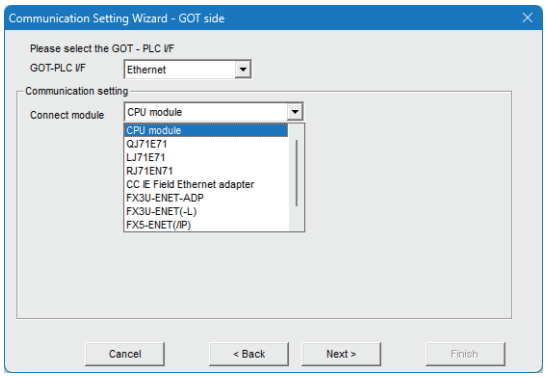
7. Select a connection type between the GOT and PLC for [GOT-PLC I/F].

In this example, select [Ethernet].

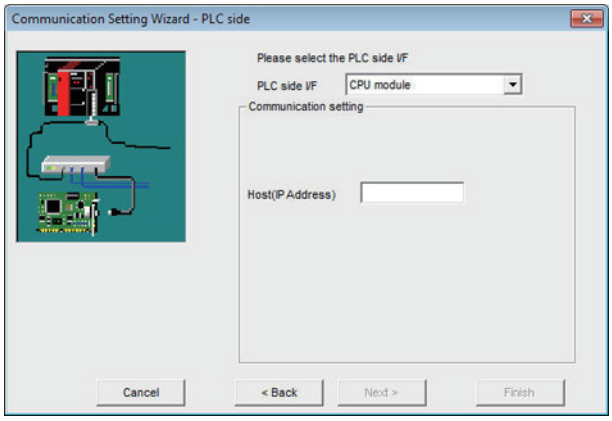


8. Select [Connect module] in [Communication setting] and click [Next].

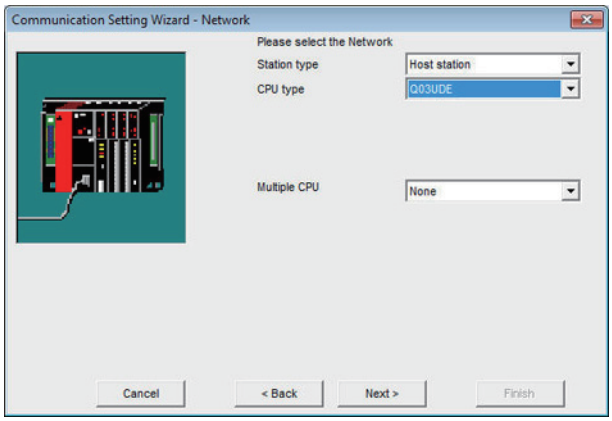
In this example, select [CPU module].



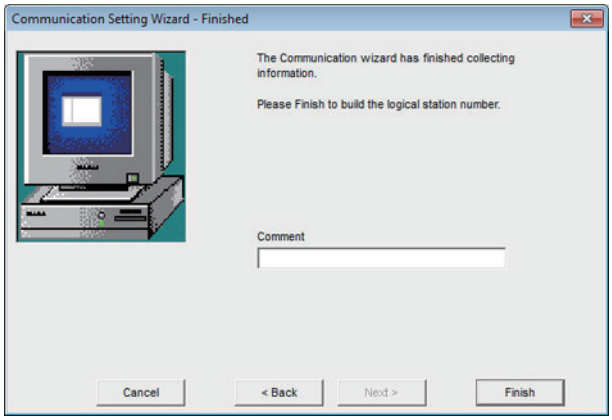
9. Set [Host(IP Address)], and click [Next].



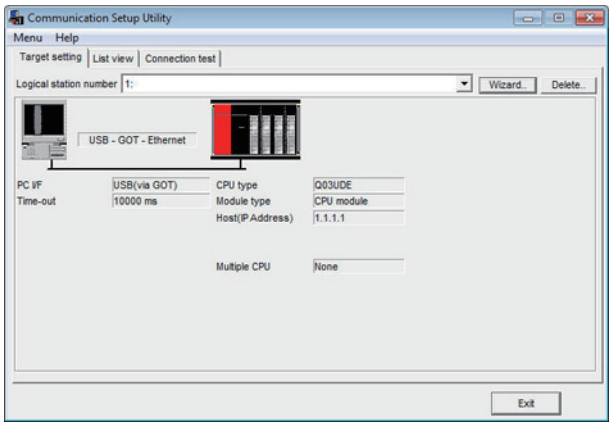
10. Set [Station type], [CPU type], and [Multiple CPU], and click [Next].



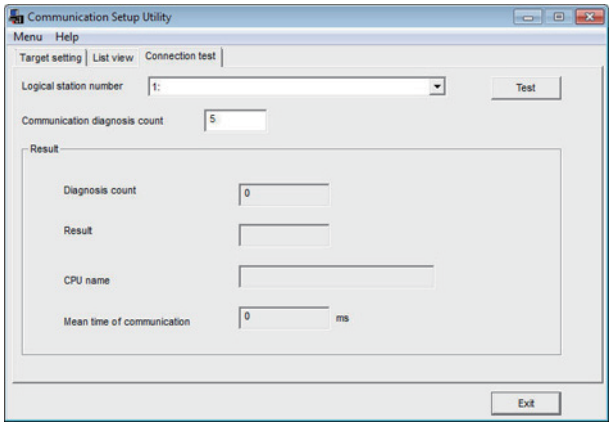
11. Set [Comment] as necessary, and click [Finish].



12. When the [Target setting] tab of the [Communication Setup Utility] dialog is displayed again, click the [Connection test] tab.



13. Click the [Test] button and check that normal communication is performed.

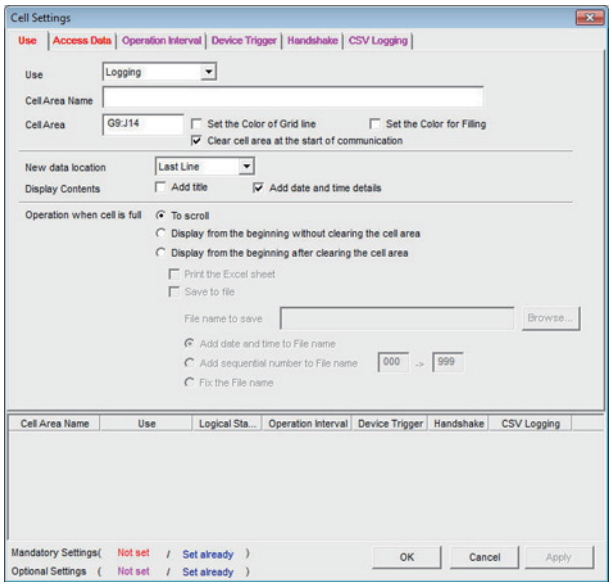


82.10.2 Personal computer to GOT Ethernet connection

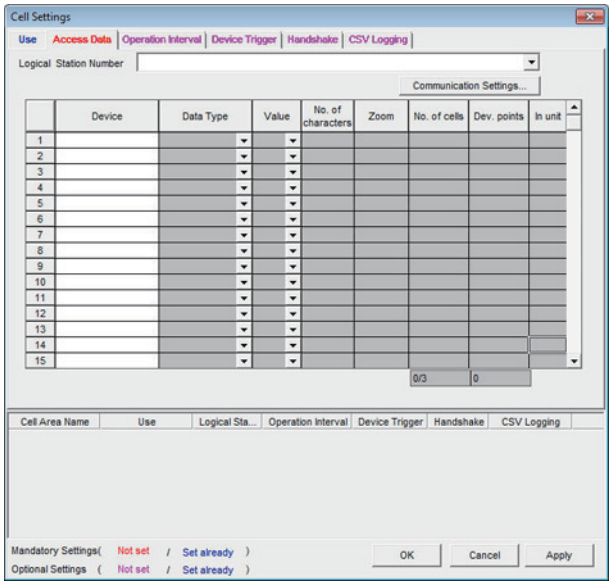
Operating procedure

1. Click [MX Sheet] of Microsoft Excel → [Cell Settings].

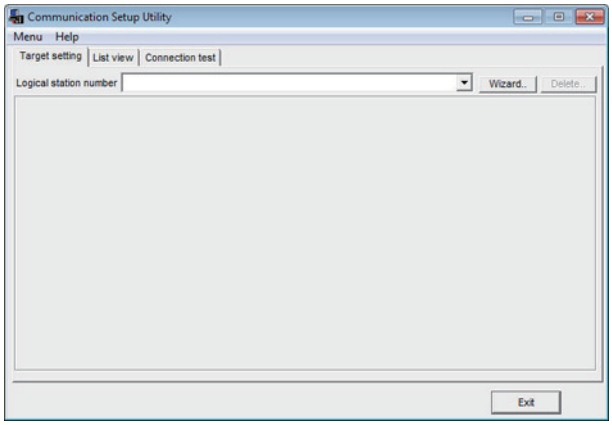
2. When the [Cell Settings] dialog is displayed, configure settings in the [Use] tab.



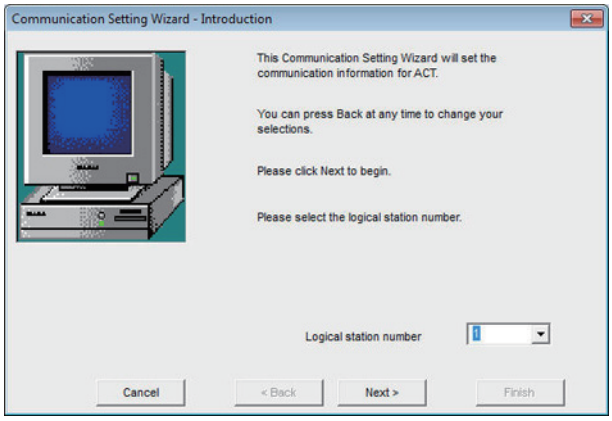
3. Select the [Access Data] tab and click the [Communication Settings] button.



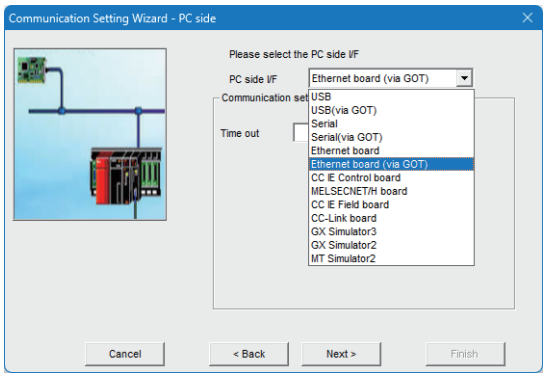
4. When the [Target setting] tab of the [Communication Setup Utility] dialog is displayed, click the [Wizard] button.



5. When [Communication Setting Wizard] is displayed, set a value for [Logical station number] and click [Next].

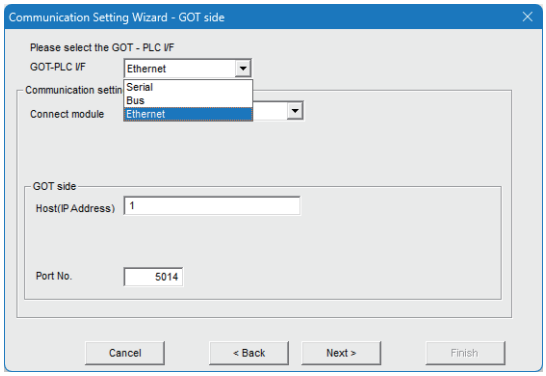


6. Select [Ethernet board (via GOT)] for [PC side I/F] and click [Next].



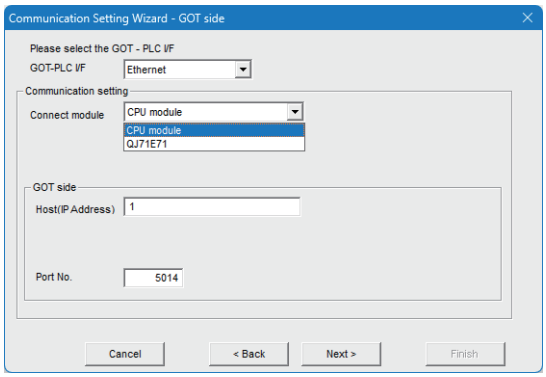
7. Select a connection type between the GOT and PLC for [GOT-PLC I/F].

In this example, select [Ethernet].

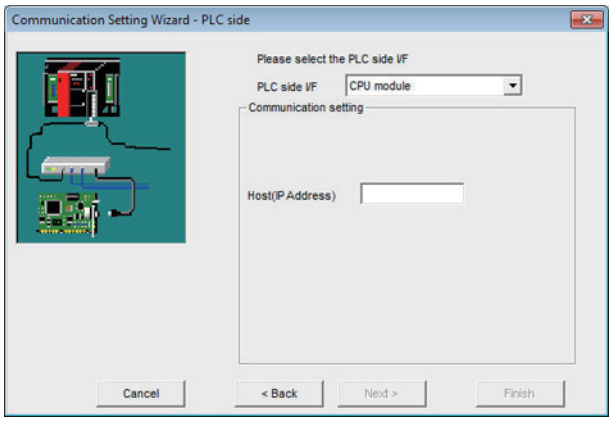


8. Select [Connect module] in [Communication setting] and click [Next].

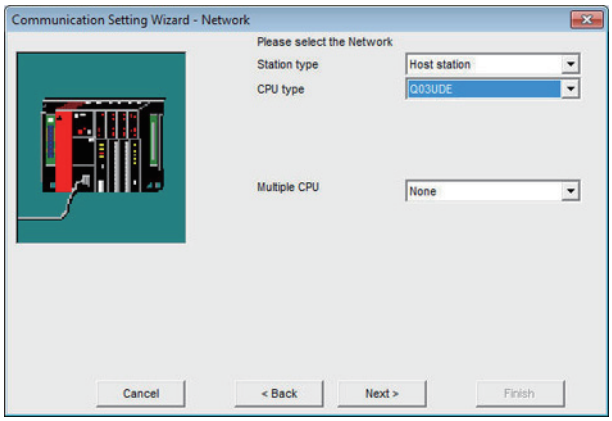
In this example, select [CPU module].



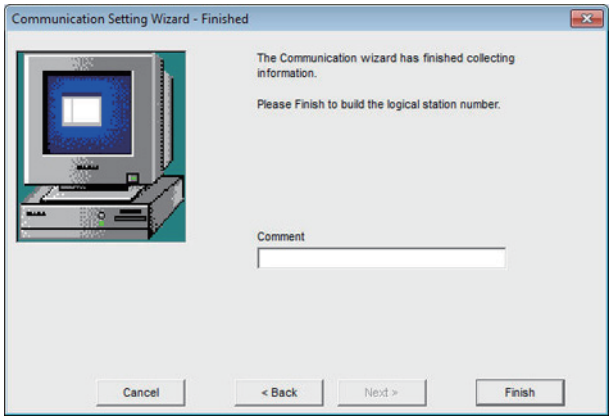
9. Set [Host(IP Address)], and click [Next].



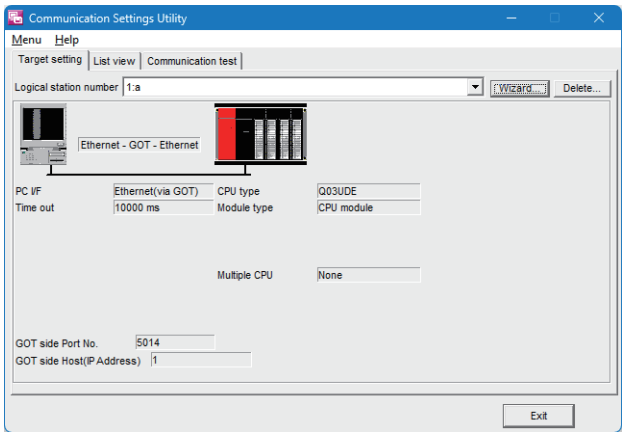
10. Set [Station type], [CPU type], and [Multiple CPU], and click [Next].



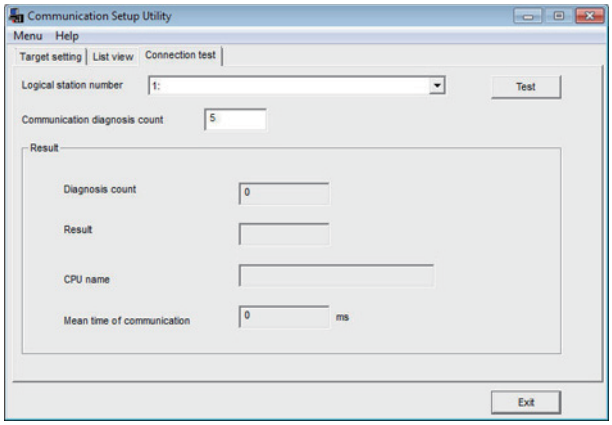
11. Set [Comment] as necessary, and click [Finish].



12. When the [Target setting] tab of the [Communication Setup Utility] dialog is displayed again, click the [Connection test] tab.



13. Click the [Test] button and check that normal communication is performed.



Appendices

Appendix 1 GOT connector specifications

The following describes the RS-232/422/485 interface of the GOT and connectors of the RS-232 communication unit and the RS-422/485 communication unit.
For the GOT side of the connection cable, use a connector and connector cover applicable to the GOT connector.

Appendix 1.1 RS-232/422/485 interface

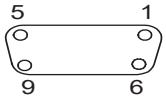
Connector specifications

GOT	Connector type
GT37*1	9-pin D-sub (socket) M2.6 metric screw thread

*1 When using RS-422/485 communication, set the terminating resistor with the terminating resistor setting switch.
When using RS-232 communication, set the terminating resistor setting switch to OPEN.

Connector pin arrangement

Viewed from the front of the GOT connector



9-pin D-sub (socket)

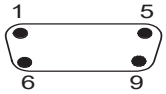
Appendix 1.2 RS-232 communication unit

Connector specifications

Communication unit	Connector type
GT15-RS2-9P	9-pin D-sub (plug) #4-40UNC inch screw thread

Connector pin arrangement

Viewed from the front of the GOT connector



9-pin D-sub (plug)

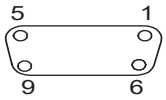
Appendix 1.3 RS-422/485 communication unit

Connector specifications

Communication unit	Connector type
GT15-RS4-9S	9-pin D-sub (socket) M2.6 metric screw thread
GT15-RS4-TE	—

Connector pin arrangement

Viewed from the front of the GOT connector



9-pin D-sub (socket)

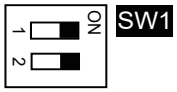
A

Appendix 2 Terminating resistors of GOT

The following shows the terminating resistor specifications on the GOT side.
When setting the terminating resistor in each connection type, refer to the following.

Appendix 2.1 RS-422/485 communication unit

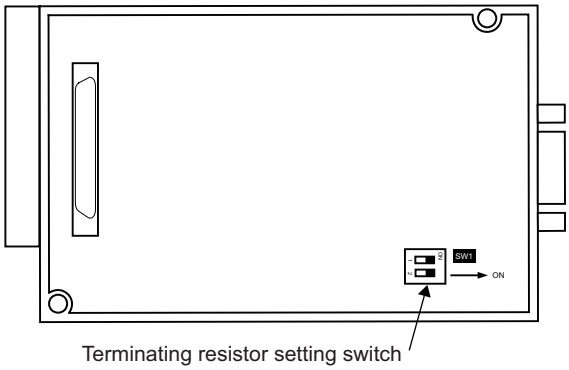
Set the terminating resistor using the terminating resistor setting switch.



Terminating resistor*1	Switch number	
	1	2
Enabled	ON	ON
Disabled	OFF	OFF

*1 The default setting is "Disabled".

- For RS-422/485 communication unit

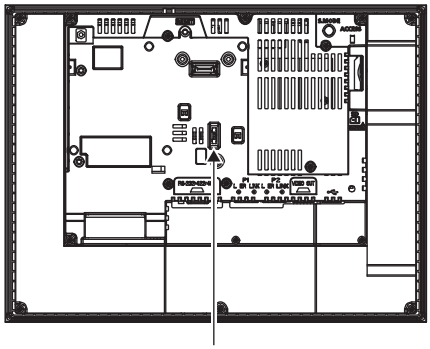


Rear view of RS-422/485 communication unit.

Appendix 2.2 GT37

Set the terminating resistor using the terminating resistor setting switch.

- For GT3712-X



Terminating resistor*1		
330Ω	100Ω	Not used

*1 The default setting is "Not used".

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Revisions

*The manual number is given on the bottom left of the back cover.

Revision date	*Manual number	Revision
April 2025	SH(NA)-082593ENG-A	First edition
December 2025	SH(NA)-082593ENG-B	Compatible with GT Works3 Version 1.410C • Serial connection is supported. • Bus connection is supported. • MELSECNET/H connection is supported. • CC-Link IE Controller Network connection is supported. • CC-Link connection (intelligent device station) is supported. • Connection is supported for non-Mitsubishi Electric products (AZBIL equipment, OMRON equipment, KEYENCE equipment, FUJI equipment, YASKAWA equipment, YOKOGAWA equipment, ALLEN-BRADLEY equipment (AB MicroLogix, AB Control/CompactLogix), and LS ELECTRIC equipment). • Microcomputer connection (serial) is supported. • Server connections (MODBUS/TCP connection and MODBUS/RTU connection) are supported. • OPC UA server and OPC UA client are supported. • External I/O device connection is supported. • Remote personal computer connection (Ethernet connection) is supported. • Multimedia connection is supported. • FA transparent (serial connection) is supported.
April 2026	SH(NA)-082593ENG-C	Compatible with GT Works3 Version 1.412E • Connection is supported for the MELSEC iQ-F Ethernet module (FX5-EIP). • Support for KEYENCE PLC models (KV-X series) has been added.

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Warranty

Please check the following product warranty details before using this product.

■1. Gratis Warranty Term and Gratis Warranty Range

If any faults or defects (hereinafter "Failure") found to be the responsibility of Mitsubishi occurs during use of the product within the gratis warranty term, the product shall be repaired at no cost via the sales representative or Mitsubishi Service Company.
However, if repairs are required onsite at domestic or overseas location, expenses to send an engineer will be solely at the customer's discretion.
Mitsubishi shall not be held responsible for any re-commissioning, maintenance, or testing on-site that involves replacement of the failed module.

(1) Gratis Warranty Term

The gratis warranty term of the product shall be for thirty-six (36) months after the date of purchase or delivery to a designated place.
Note that after manufacture and shipment from Mitsubishi, the maximum distribution period shall be six (6) months, and the longest gratis warranty term after manufacturing shall be forty-two (42) months.
The gratis warranty term of repair parts shall not exceed the gratis warranty term before repairs.

(2) Gratis Warranty Range

(a) The customer shall be responsible for the primary failure diagnosis unless otherwise specified.
If requested by the customer, Mitsubishi Electric Corporation or its representative firm may carry out the primary failure diagnosis at the customer's expense.
The primary failure diagnosis will, however, be free of charge should the cause of failure be attributable to Mitsubishi Electric Corporation.

(b) The range shall be limited to normal use within the usage state, usage methods, and usage environment, etc., which follow the conditions and precautions, etc., given in the instruction manual, user's manual and caution labels on the product.

(c) Even within the gratis warranty term, repairs shall be charged in the following cases.

- Failure occurring from inappropriate storage or handling, carelessness or negligence by the user.
  Failure caused by the user's hardware or software design.
- Failure caused by unapproved modifications, etc., to the product by the user.
- When the Mitsubishi product is assembled into a user's device, Failure that could have been avoided if functions or structures, judged as necessary in the legal safety measures the user's device is subject to or as necessary by industry standards, had been provided.
- Failure that could have been avoided if consumable parts designated in the instruction manual had been correctly serviced or replaced.
- Replacing consumable parts such as a battery
- Failure caused by external irresistible forces such as fires or abnormal voltages, and Failure caused by force majeure such as earthquakes, lightning, wind and water damage.
- Failure caused by reasons that could not be predicted by scientific technology standards at the time of shipment from Mitsubishi.
- Any other failure found not to be the responsibility of Mitsubishi or that admitted not to be so by the user.

■2. Onerous repair term after discontinuation of production

(1) Mitsubishi shall accept onerous product repairs for seven (7) years after production of the product is discontinued.
Discontinuation of production shall be notified with Mitsubishi Technical Bulletins, etc.

(2) Mitsubishi shall not accept a request for product supply (including spare parts) after production is discontinued.

■3. Overseas service

Overseas, repairs shall be accepted by Mitsubishi's local overseas FA Center.
Note that the repair conditions at each FA Center may differ.

■4. Exclusion of loss in opportunity and secondary loss from warranty liability

Regardless of the gratis warranty term, Mitsubishi shall not be liable for compensation to:

(1) Damages caused by any cause found not to be the responsibility of Mitsubishi.

(2) Loss in opportunity, lost profits incurred to the user by Failures of Mitsubishi products.

(3) Special damages and secondary damages whether foreseeable or not, compensation for accidents, and compensation for damages to products other than Mitsubishi products.

(4) Replacement by the user, maintenance of on-site equipment, start-up test run and other tasks.

■5. Changes in product specifications

The specifications given in the catalogs, manuals, or technical documents are subject to change without prior notice.

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