

**BEFORE USE ....**

Thank you for choosing M-System. Before use, please check contents of the package you received as outlined below.

If you have any problems or questions with the product, please contact M-System's Sales Office or representatives.

**■ PACKAGE INCLUDES:**

Network module.....(1)

**■ MODEL NO.**

Confirm Model No. marking on the product to be exactly what you ordered.

**■ INSTRUCTION MANUAL**

This manual describes necessary points of caution when you use this product, including installation, connection and basic maintenance procedures.

**POINTS OF CAUTION****■ CONFORMITY WITH EU DIRECTIVES**

- The equipment must be mounted inside the instrument panel of a metal enclosure.
- The actual installation environments such as panel configurations, connected devices and connected wires may affect the protection level of this unit when it is integrated in a panel system. The user may have to review the CE requirements in regard to the whole system and employ additional protective measures to ensure CE conformity.

**■ HOT INSERTION/REMOVAL OF MODULES**

- It is possible to replace the module with the power supplied, provided that modules are of the same model number and that the same Installation Base slot is used.
- Turn off signals before replacing the card for safety. Note that replacing multiple cards at once may greatly change line voltage levels. We recommend that you replace them one by one.

**■ ENVIRONMENT**

- Indoor use.
- When heavy dust or metal particles are present in the air, install the unit inside proper housing with sufficient ventilation.
- Do not install the unit where it is subjected to continuous vibration. Do not subject the unit to physical impact.
- Environmental temperature must be within -10 to +55°C (14 to 131°F) with relative humidity within 10 to 90% RH in order to ensure adequate life span and operation.

**■ WIRING**

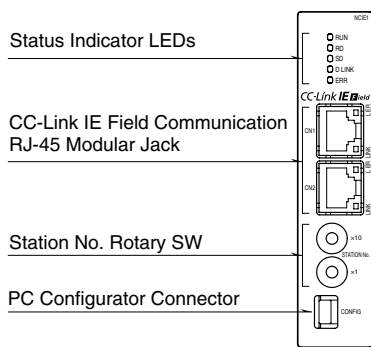
- Do not install cables close to noise sources (relay drive cable, high frequency line, etc.).
- Do not bind these cables together with those in which noises are present. Do not install them in the same duct.
- Be sure to attach the terminal cover for safety.

**■ AND ....**

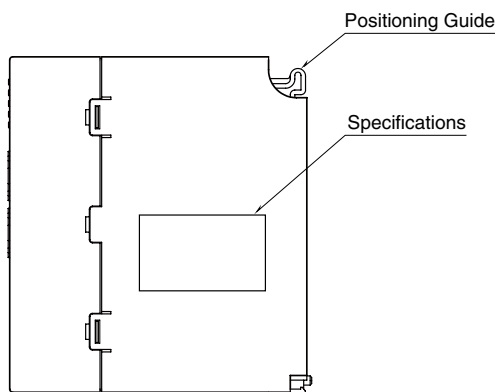
- The unit is designed to function as soon as power is supplied, however, a warm up for 10 minutes is required for satisfying complete performance described in the data sheet.

## COMPONENT IDENTIFICATION

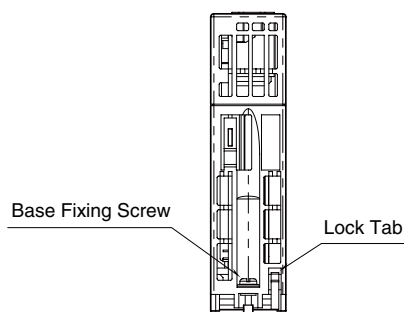
### FRONT VIEW



### SIDE VIEW



### BOTTOM VIEW

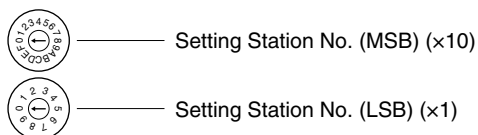


### STATUS INDICATOR LED

ITEM	ID	COLOR	FUNCTION	STATUS	DESCRIPTION
Status Indicator	RUN	Green	Device State	ON	Normal
				OFF	Indication of abnormality node
	RD	Green	Receiving Data	ON	Receiving
				OFF	Unreceived data
	SD	Green	Sending Data	ON	Sending
				OFF	Unsent
D LINK	Green	Cyclic Transmitting	ON	In action	
			OFF	Not complied with	
ERR	Red	Error	ON	Abnormality node	
			OFF	Normal	
CN1	LINK	Green	CN1 Linking Up	ON	Linking up
				OFF	Link-down
	L ER	Red	CN1 Receiving Data	ON	Abnormality receiving data
				OFF	Normality receiving data
CN2	LINK	Green	CN2 Linking Up	ON	Linking up
				OFF	Link-down
	L ER	Red	CN2 Receiving Data	ON	Abnormality receiving data
				OFF	Normal

### STATION NO. SETTING ROTARY SW

The upper side of station No. setting rotary SW set MSB, and the down side of it set LSB. (configurable range is 1 to 120)  
Confirm configurable station number in the manual of master unit (Factory setting: 01H).



e.g. Setting station No.

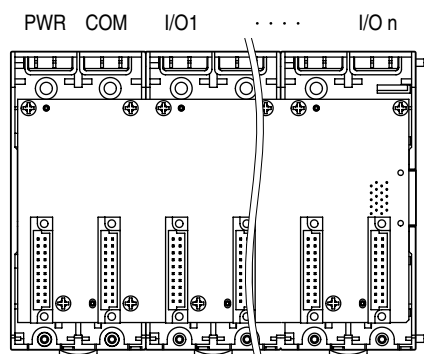
Rotary SW of setting station MSB, Indicating A: 10, B: 11, C: 12. For example, in the case of setting station No. 115, Set the Station MSB: B and LSB: 5.

NOT allowed to Set D, E, F they are unused.

## INSTALLATION

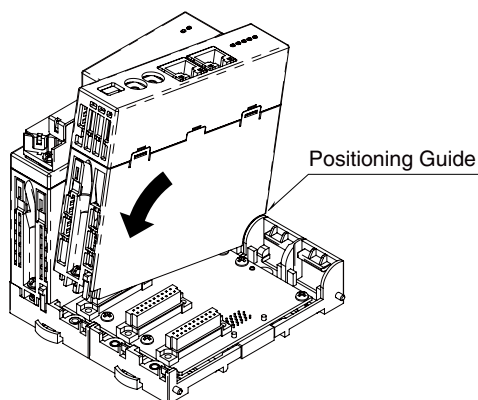
### ■ INSTALLATION TO THE BASE

Use the Installation Base (model: R30BS).  
The mounting slot for the network card is fixed to COM.  
Do not mount the network card to any other slot.

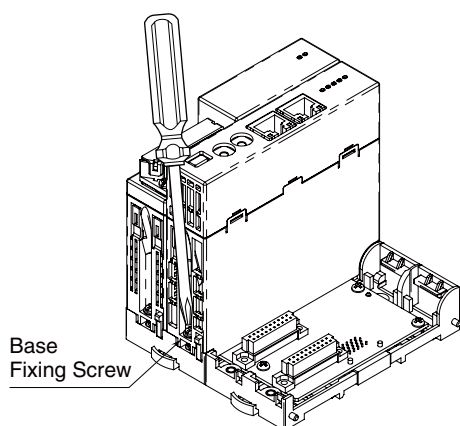


### ■ HOW TO MOUNT THE MODULE

- 1) Engage the positioning guide of the module with the Installation Base.
- 2) Pivot the module on the positioning guide and press it down until the lock tab sits into place.

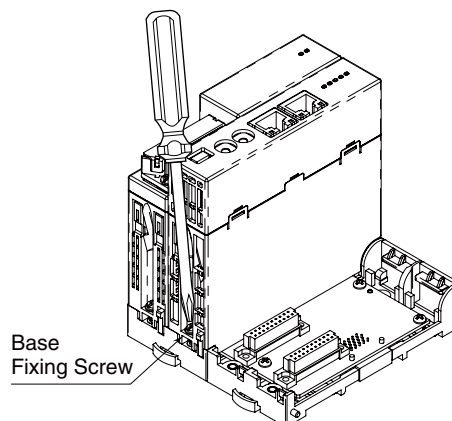


- 3) Tighten the base fixing screw using a screwdriver (stem length: 70 mm/2.76" or more) (torque 0.5 N·m).

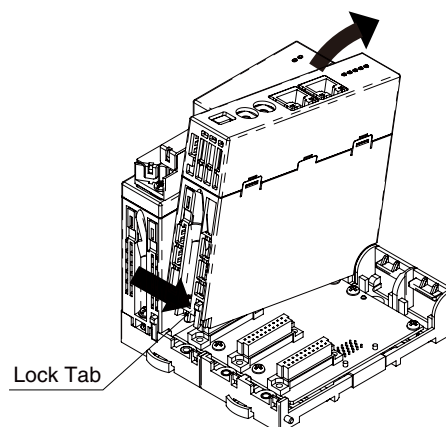


### ■ HOW TO REMOVE THE MODULE

- 1) Loosen the base fixing screw using a screwdriver (stem length: 70 mm/2.76" or more).



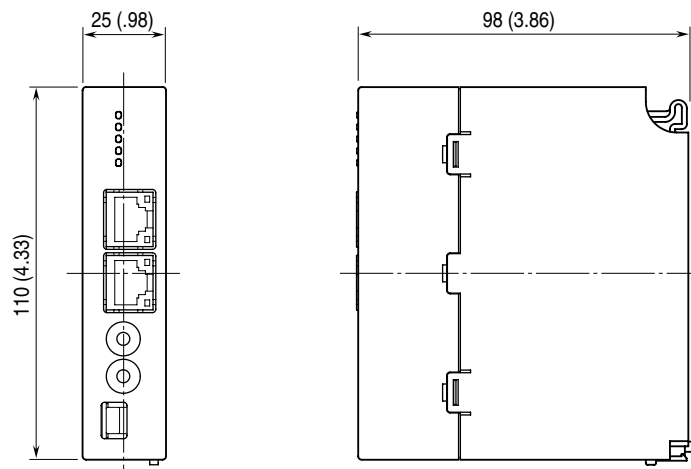
- 2) While pressing the projection on the lock tab, push the module upward.
- 3) Detach the positioning guide of the module from the Installation Base.



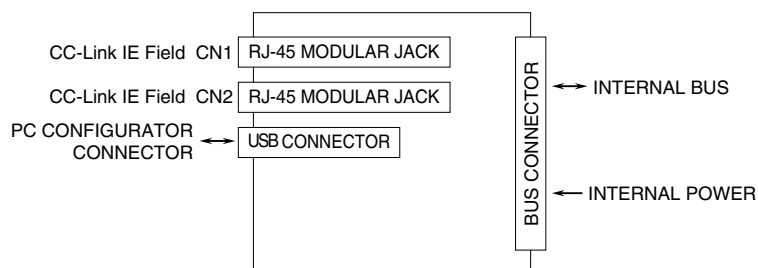
## TERMINAL CONNECTIONS

Connect the unit as in the diagram below.

### EXTERNAL DIMENSIONS unit: mm (inch)



### CONNECTION DIAGRAM



Regarding CN1 and CN2 of RJ-45 connector for CC-Link IE Field network, there is no restriction for connection order.

## TRANSMISSION DATA DESCRIPTIONS

This unit recognize type of I/O module (number of occupied station) configured the same base, and assign it to I/O Modules data with slot order automatically. However, I/O module assignment is performed only when power is turned on, in the case of changing configuration of I/O module, please turn on power again. Keep number of station occupied of I/O module under 64, because max. number of occupied station is 64 per a node.

When the I/O module has space, data is transmitted close to HOST PC/PLC.

**Station type:** Remote device station

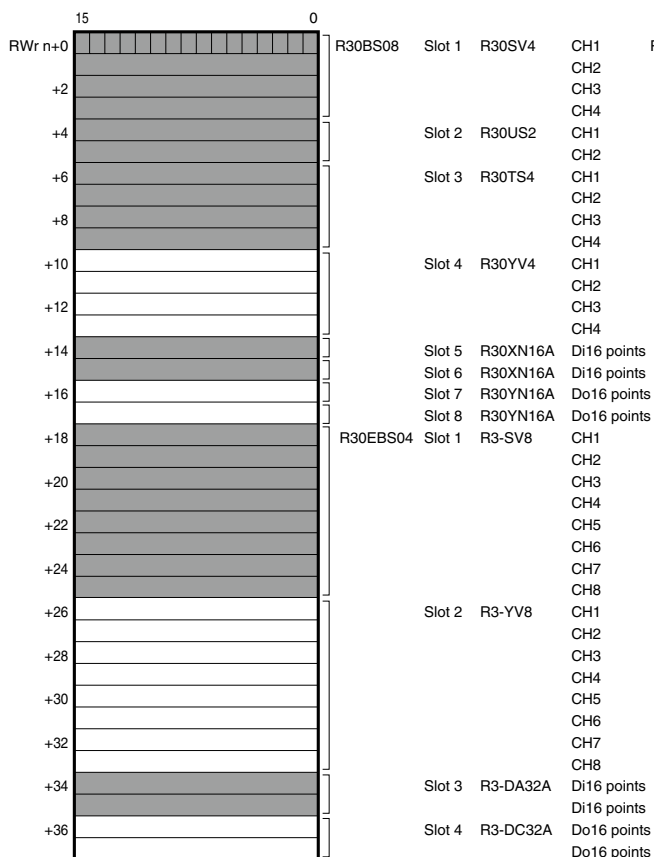
**Link device:** RX/Ry 112 points, RWw/RWr 64 points (points are total of R30 series and R3 series module)

For example, the configuration is as below, data areas are assigned as shown below.

BASE	SLOT NUMBER	MODEL	NUMBER OF OCCUPIED STATION
R30BS08	PWR	R30PS1	—
	COM	R30NCIE1	—
	1	R30SV4	4
	2	R30US2	2
	3	R30TS4	4
	4	R30YV4	4
	5	R30XN16A	1
	6	R30XN16A	1
	7	R30YN16A	1
8	R30YN16A	1	
R30EBS04	1	R3-SV8	8
	2	R3-YV8	8
	3	R3-DA32A	2
	4	R3-DC32A	2

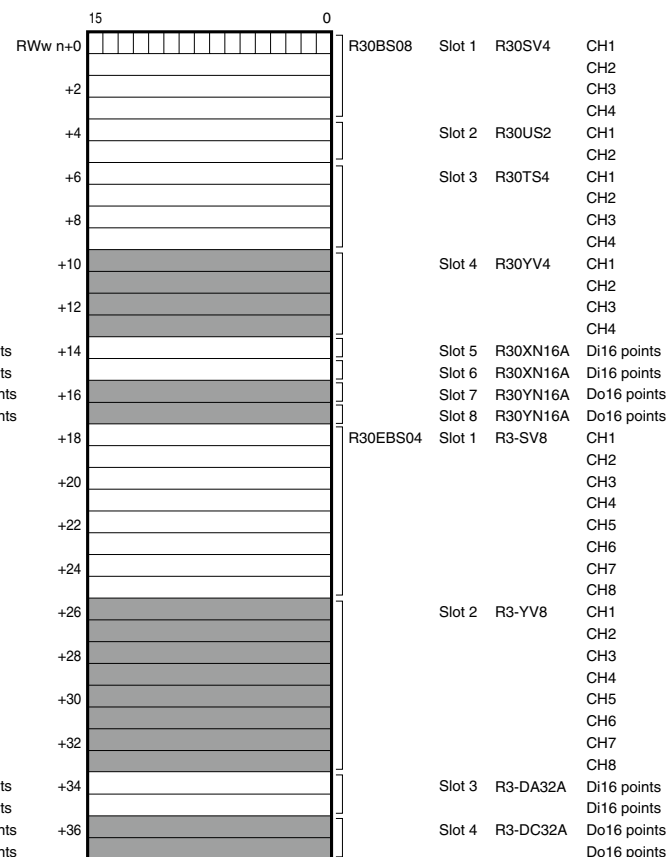
### INPUT DATA

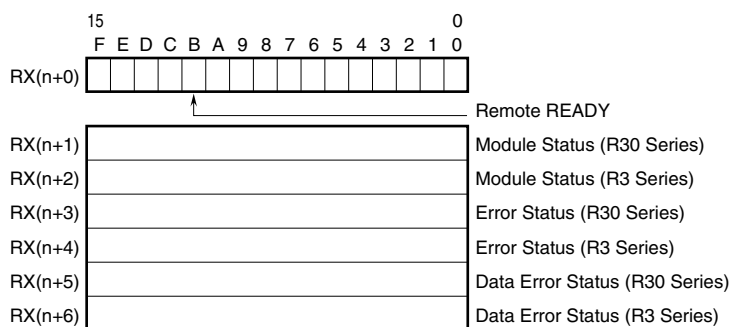
The figure below shows the data sent from the device to the master.



### OUTPUT DATA

The figure below shows the data received from the master.





• RX(n+0)0 to 7 is reservation area, RX(n+0) is used as Ready signal, the bit is “1” when this module is in normal. RX(n+0)8 to A, RX(n+0)C to F are not used.

• **Module Status**

RX(n+1)0 to RX(n+1)F indicate whether individual I/O module of R30 series are mounted or not .  
 RX(n+2)0 to RX(n+2)F indicate whether individual I/O module of R3 series are mounted or not.  
 The bit corresponding to the mounted slots turns to “1”, and the unmounted slots to “0”.

• **Error Status**

RX(n+3)0 to RX(n+3)F indicate error status for each module of R30 series.  
 The bit corresponding to such modules turn to “1”, as described below.  
 R30X16(under development) input power in error or disconnected.  
 R30Y16(under development) output current in error (e.g. load unconnected)  
 RX(n+4)0 to RX(n+4)F indicate error status for each module of R3 series.  
 The bit corresponding to such modules turn to “1”, as described below.  
 R3-TSx, R3-RSx, R3-US4 input burnout  
 R3-DA16A input power in error or disconnected  
 R3-YSx output current error (e.g load unconnected)

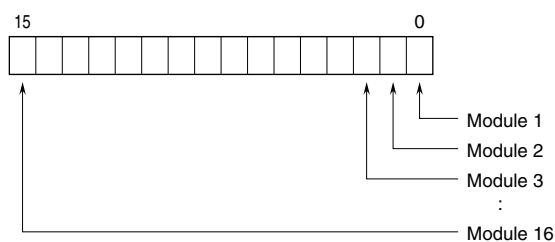
• **Data Error Status**

RX(n+5)0 to RX(n+5)F indicate data error status for each module of R30 series.  
 The bit corresponding to such modules turn to “1”, as described below.  
 Input value is out of -15% to 115%  
 R30TS4, R30RS4, R30USx input burnout  
 RX(n+6)0 to RX(n+6)F indicate error status for each module of R3 series.  
 The bit corresponding to such modules turn to “1”, as described below.  
 Input value is out of -15% to 115%  
 In the case of R3-US4 (voltage input) input level out of -10% to 110%.

RX(n+1)0, RX(n+3)0, RX(n+5)0	R30 series slot 1
RX(n+1)1, RX(n+3)1, RX(n+5)1	R30 series slot 2
RX(n+1)2, RX(n+3)2, RX(n+5)2	R30 series slot 3
:	
RX(n+1)F, RX(n+3)F, RX(n+5)F	R30 series slot 16
RX(n+2)0, RX(n+4)0, RX(n+6)0	R3 series extension slot 1
RX(n+2)1, RX(n+4)1, RX(n+6)1	R3 series extension slot 2
RX(n+2)2, RX(n+4)2, RX(n+6)2	R3 series extension slot 3
:	
RX(n+2)F, RX(n+4)F, RX(n+6)F	R3 series extension slot 16

## MODULE STATUS, ERROR STATUS, DATA ERROR STATUS

Shows each module's availability and error status.



## I/O DATA DESCRIPTIONS

### ■ OPERATION IN CASE OF A COMMUNICATION ERROR WITH I/O MODULES

When the communication between the network module and the I/O modules is lost due to an error in an input module, the last process values are held until the communication is re-established.

### ■ ANALOG DATA (16-bit data, models: R30SV4, R30SV2, R30YV4, R30YS4, R30US4, etc.)

16-bit binary data.

Basically, 0 to 100% of the selected I/O range is converted into 0 to 10000 (binary).

Negative percentage is represented in 2's complements.



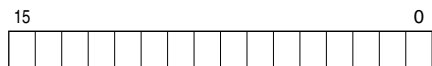
### ■ ANALOG DATA (16-bit data, models: R30RS4, R30TS4, R30US4, etc.)

16-bit binary data.

With °C temperature unit, raw data is multiplied by 10. For example, 25.5°C is converted into 255.

With °F temperature unit, the integer section of raw data is directly converted into the data. For example, 135.4°F is converted into 135.

Minus temperature is converted into negative values, represented in 2's complements.



### ■ ANALOG DATA (16-bit data, models: R30CT4E etc.)

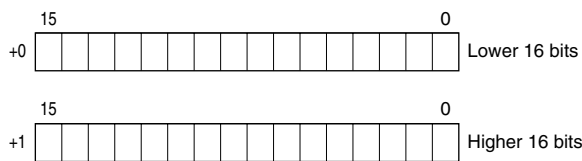
16-bit binary data.

Integer that engineering unit value (A) multiplied by 100 (for CLSE-R5, integer that engineering unit value (A) multiplied by 1000).



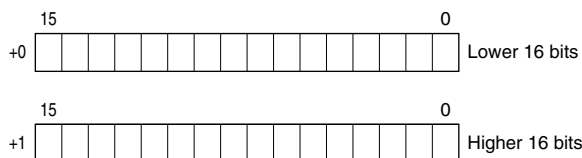
■ ANALOG DATA (32-bit data, models: R3-PA2, PA4A, WT1, WT4, etc.)

32-bit binary data is used for accumulated counts, encoder positions and active energy.  
 Lower 16 bits are allocated from the lowest address to higher ones, higher 16 bits in turn.

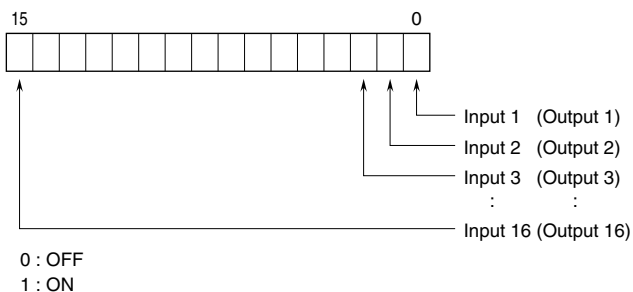


■ ANALOG DATA (32-bit data, models: R3-BA32A, BC32A, etc.)

32-bit binary data is used for BCD.  
 Lower 16 bits are allocated from the lowest address to higher ones, higher 16 bits in turn.



■ DISCRETE DATA (models: R30XN16A, R30YN16x, etc.)





## SETTING

### ■ SUMMARY

Explaining the setting of this unit to assume use of GX Works2 made by Mitsubishi Electric. (the following GX Works2)

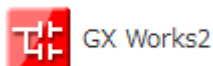
### ■ REGISTRATION FOR PROFILE

The unit support CC-Link Family system profile (CSP+).

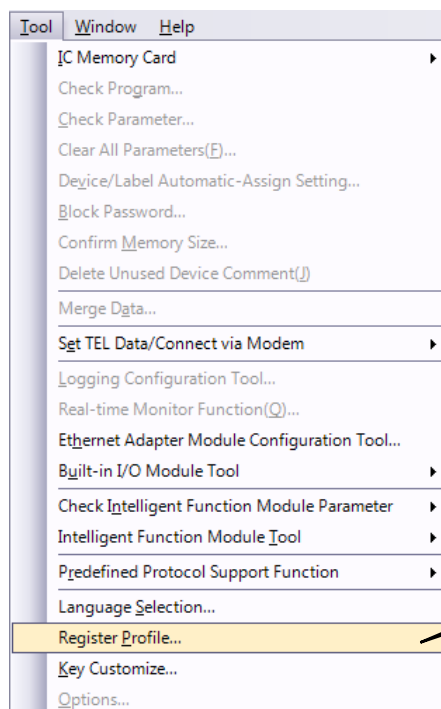
It is available of CSP+; download from CC-Link Association Home Page [www.cc-link.org](http://www.cc-link.org).

\* It is not necessary to register of CSP+. In the case of not registration, start from [Construction of System].

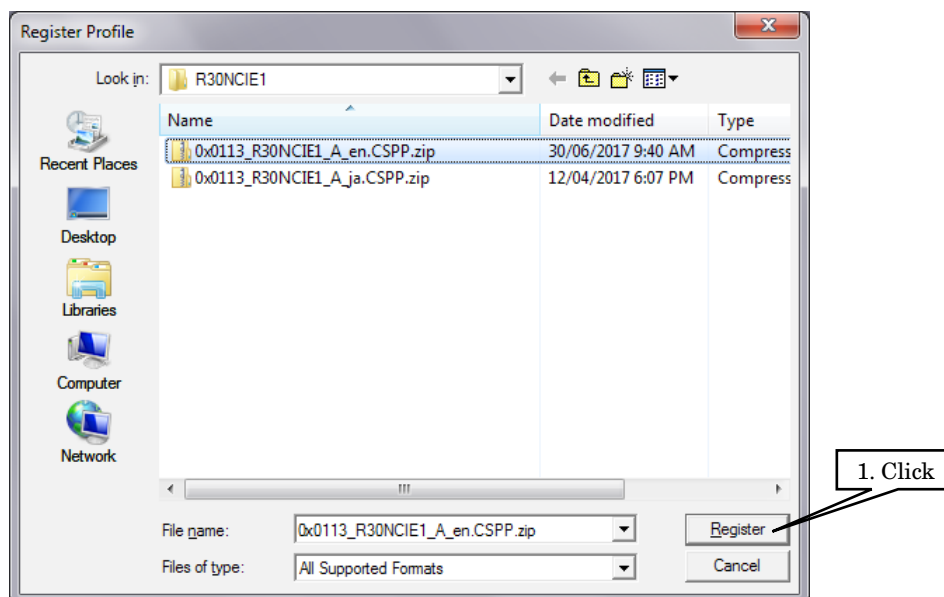
1) Start GX Works2.



2) Click menu of [Tool] → [Register Profile].

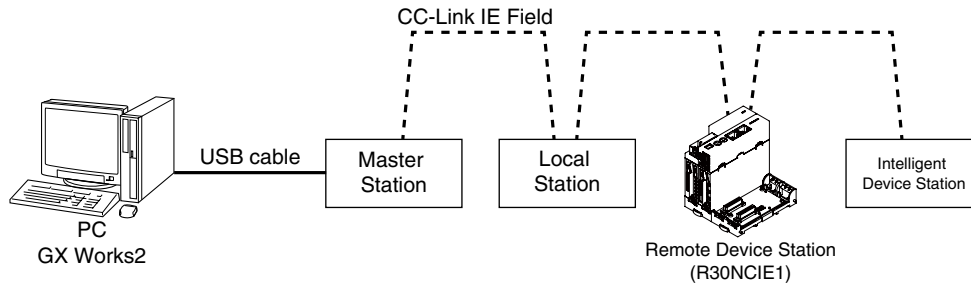


3) Select at the CSP+ file downloaded, and click [Register] to finish Register.



## ■ CONSTRUCTION OF SYSTEM

An example is configuration of line connection as shown below.



1) Master station, Local Station, Remote Device Station (R30NCIE1) and Intelligent device station are connected by Ethernet Cable. CC-Link IE Field Network RJ-45 Modular Jack CN1 and CN2 have no limit of wiring connection order.

At the time of wiring, turn off the power of each unit.

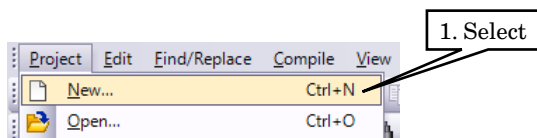
2) After finishing to wire, turn on power of each unit.

## ■ CREATION PROJECT

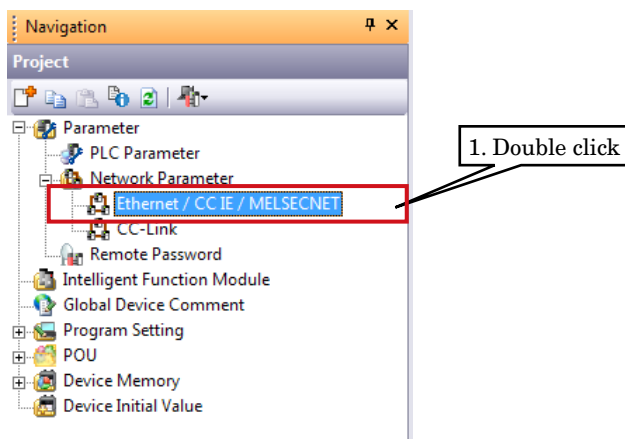
Connect the PC and the master station, and create a project of the master station by GX Works2 installed in the PC.

1) Start GX Works2.

2) Click [Project] → [New] to create new project

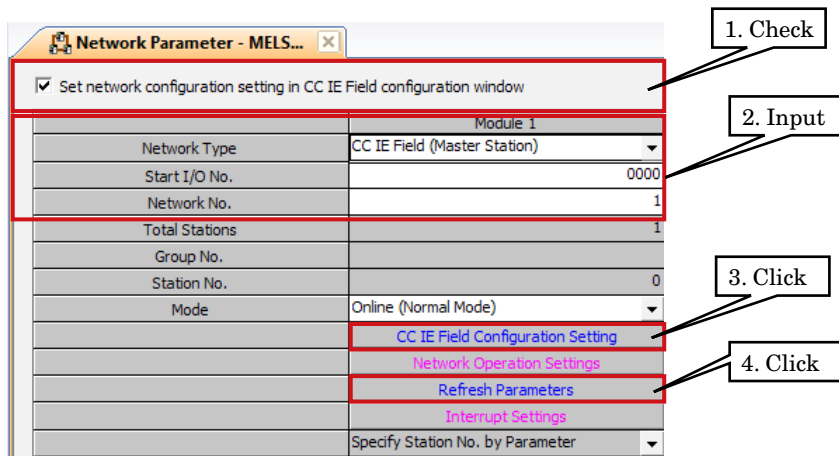


3) Select tree of project, and double click [Parameter] → [Network Parameter] → [Ethernet/CC IE/MELSECNET] to open the window [Network Parameter Ethernet/CC IE/MELSECNET].

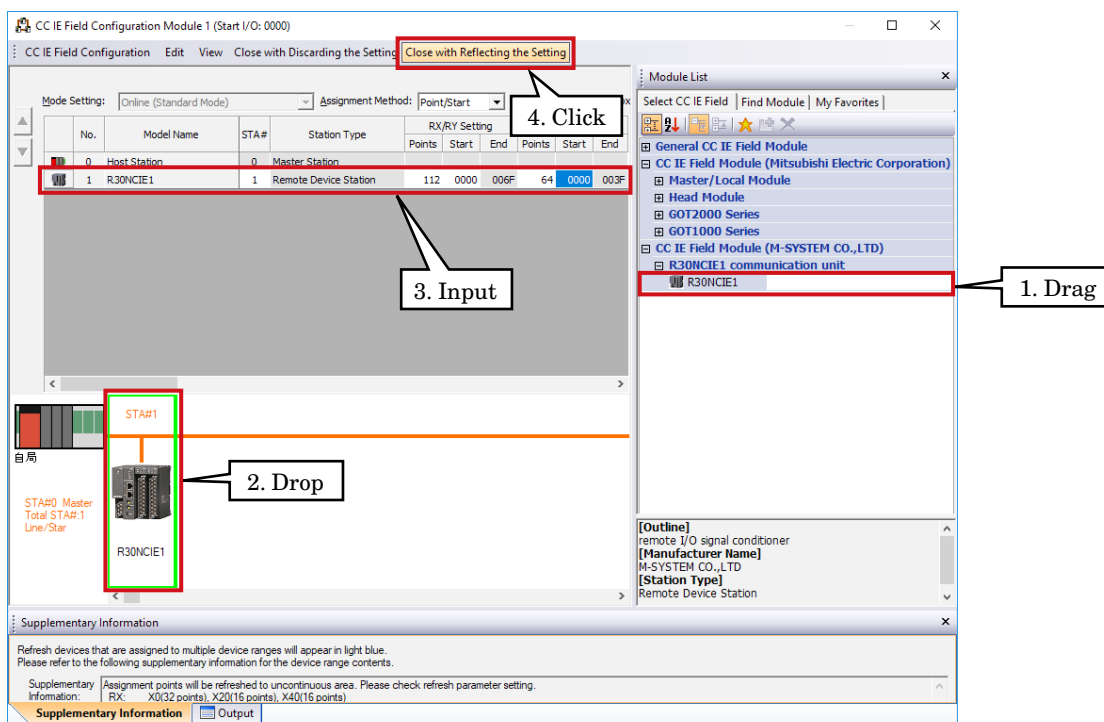


4) Check [Set network configuration setting in CC IE Field configuration window], and set as below.

SETTING ITEM	DESCRIPTION
Network type	CC IE Field
Start I/O No.	0000
Network No.	1

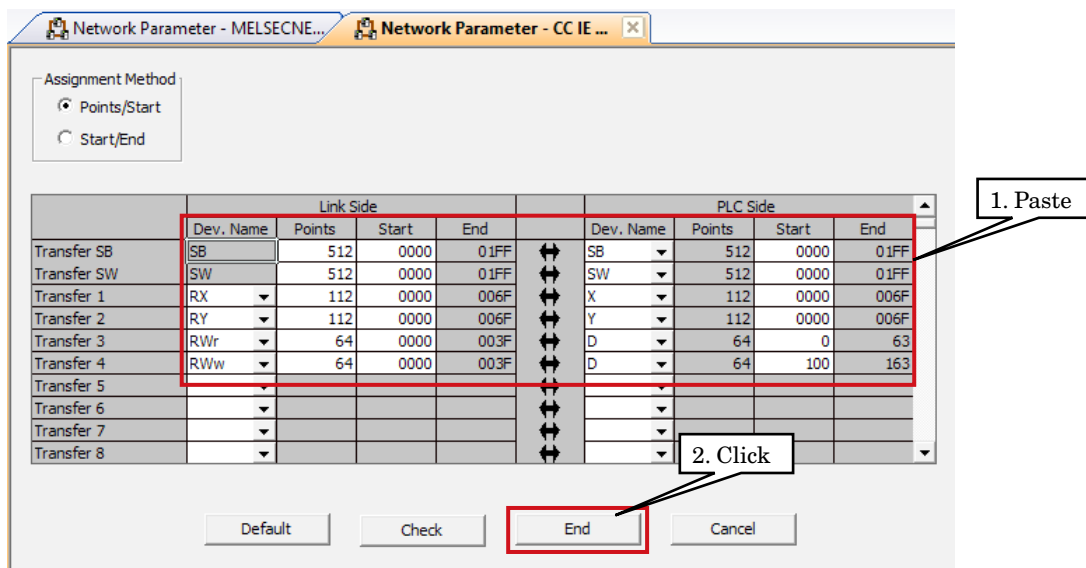


5) Click [CC IE Field Configuration Setting] to open the window of configuration setting. According to the real system configuration, select the device from unit list of each configuration window, and drag and drop it to diagram of device. Input station number, RX/Ry setting (112 points), RWw/RW<sub>r</sub> setting (64 points), and click [Close with Reflecting Setting].

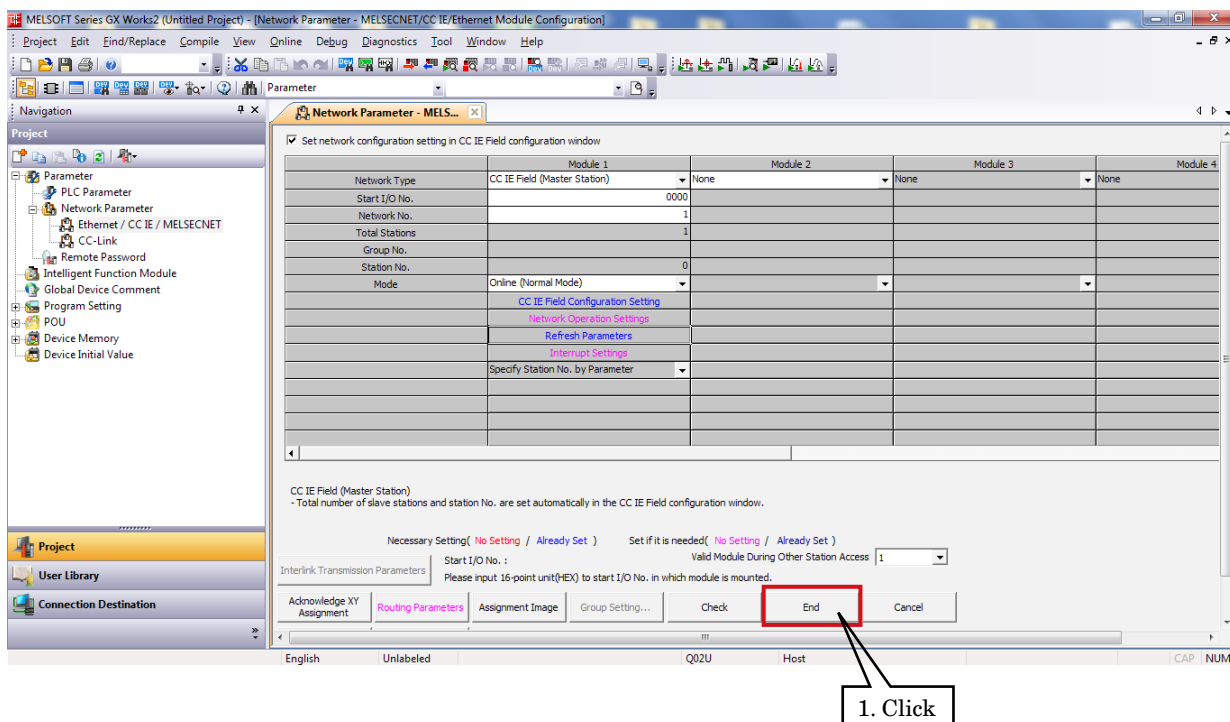


Not registration CSP+ of the unit, select [General CC IE Field Module].

6) Click [Refresh Parameter], open the [Refresh Parameter Setting]. After assignment of link device RX/Ry/RWw/RWr to CPU unit, click [End].



7) Click [End] of the window of MELSECNET/CC IE Ethernet Module Configuration.

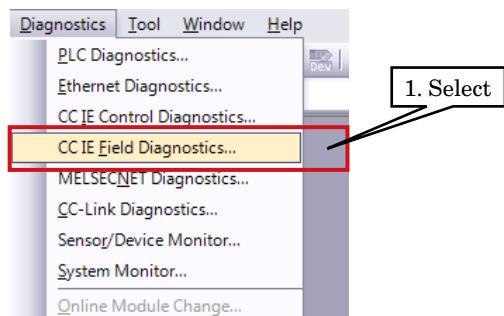


8) After having programmed as necessary, write parameter and program on CPU unit.

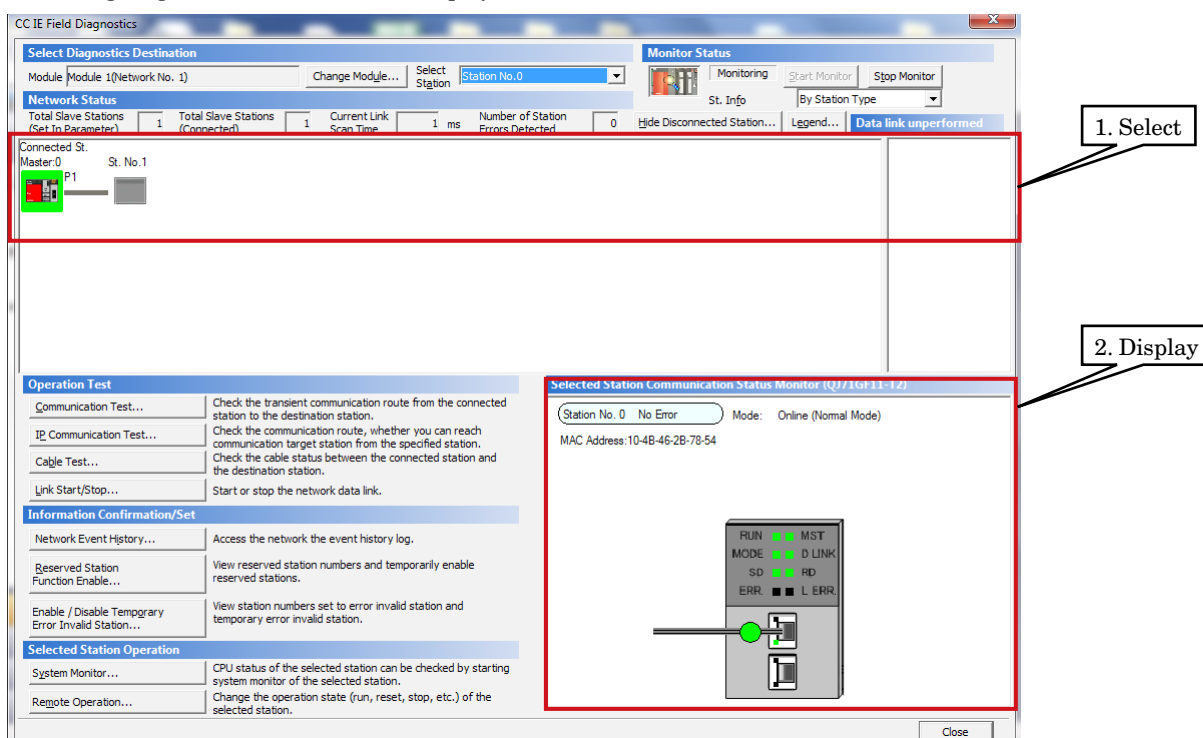
**NETWORK DIAGNOSTICS**

Diagnostics of GX Works2 CC-Link IE Field Network enable to confirm status of total network in one glance. Enabling to confirm error point, cause of error, event history, and monitor other station.

1) Select [Diagnostics] → [CC IE Field Diagnostics], display [CC IE Field Diagnostics].



2) Clicking diagnostic station enable to display the status station on [Selected Station Communication Status Monitor].



3) In the case of error, the button of [Module Error] is displayed, click it, and troubleshoot, according to the contents displayed.

