

T-Link INTERFACE MODULE (Fuji Electric T-Link use)	MODEL R5-NF1
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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 interface 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

■ HOT INSERTION/REMOVAL OF MODULES

- It is possible to replace the module with the power is supplied. Be sure to replace it when the module is not communicating with a host, as it is possible to affect the system. However, replacing multiple modules at once may greatly change line voltage levels. We recommend that you replace them one by one.

■ GENERAL PRECAUTIONS

- Do not set the DIP switch on the side panel while the power is supplied. The DIP switch is selectable for maintenance without the power.

■ 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 30 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.

■ 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.

INSTALLATION

Use the Installation Base (model: R5-BS).

Before mounting the Network Interface Module onto the Base, be sure to configure the module as explained below.

■ DATA ALLOCATION MODE

The setting determines the data area size assigned to each I/O module mounted on the base.

The data sent/received via T-Link is mapped according to this setting.

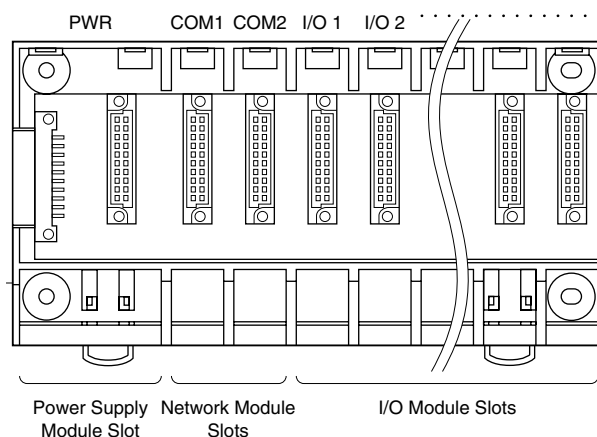
When one or more of the analog I/O modules are 2-channel types, select the Mode 2. (The 2nd channel cannot be sent/received in the Mode 1.)

See "DATA DESCRIPTION".

■ STATION ADDRESS

See "COMPONENT IDENTIFICATION".

■ NETWORK SLOTS ON THE BASE



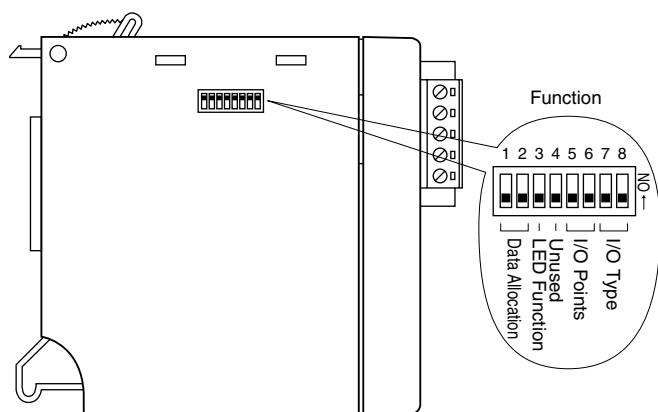
The Network Interface Module must be mounted on the COM1/COM2 on the Base.

The COM2 is not used.

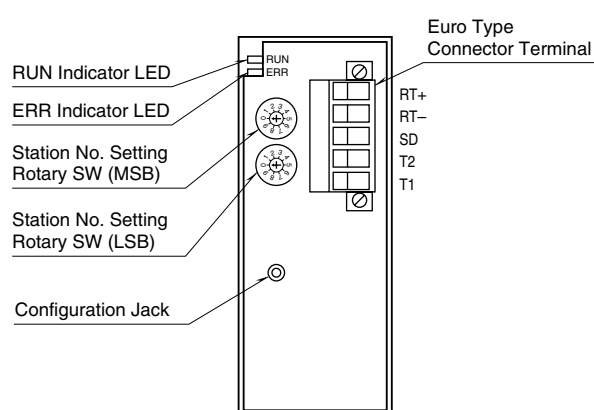
The bases for single communication mode (model: R5-BS05, R5-BS09) cannot be used.

COMPONENT IDENTIFICATION

■ SIDE VIEW



■ FRONT VIEW



■ SIDE DIP SW

(*) Factory setting

• Data Allocation Mode: SW1, SW2

SW	DATA ALLOCATION MODE	
	2	1
1	OFF (*)	ON
2	OFF (*)	OFF

• LED Function: SW3

SW3	LED FUNCTION	
	RUN	ERR
OFF (*)	Green when normal	Green when abnormal
ON	Red when receiving	Red when transmitting

• I/O Points: SW5, SW6

SW	I/O POINTS			
	64 points (64 words)	16 points (16 words)	8 points (8 words)	4 points (4 words)
5	OFF (*)	ON	OFF	ON
6	OFF (*)	OFF	ON	ON

• I/O Type: SW7, SW8

SW	I/O TYPE		
	Input/Output Mixed	Output Only	Input Only
7	OFF (*)	ON	OFF
8	OFF (*)	OFF	ON

Note: Be sure to set unused SW4 to OFF.

■ FRONT ROTARY SW

• Station Address

Station Address is set in decimal.
(Setpoint adjustment: 00 – 99)

PC CONFIGURATOR

With configurator software, settings shown below are available.
Refer to the software manual of R5CON for detailed operation.

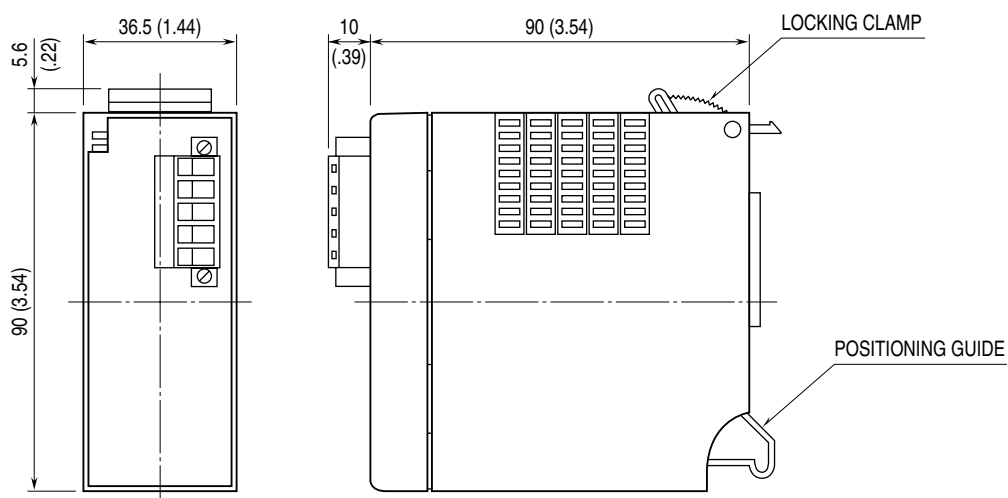
■ NETWORK MODULE SETTING

PARAMETER	AVAILABLE RANGE	DEFAULT SETTING
Communication Timeout	0.0 – 3276.7 (sec.)	3.0 (sec.)

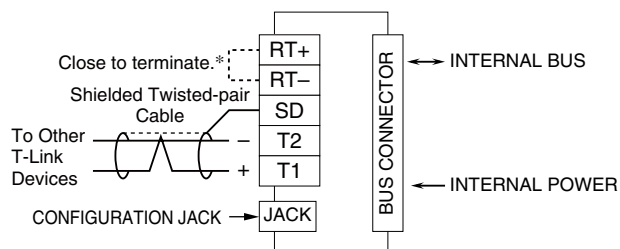
TERMINAL CONNECTIONS

Connect the unit as in the diagram below.

EXTERNAL DIMENSIONS unit: mm (inch)



CONNECTION DIAGRAM



* When the module is at an end of the transmission line via twisted-pair cable (= when there is no cross wiring), close across the RT+ and RT- terminals with the jumper included in the product package. Remove the jumper for all other locations.

WIRING INSTRUCTIONS

EURO TYPE CONNECTOR TERMINAL (T-Link)

Applicable wire size: 0.2 to 2.5 mm² (AWG24 to 12)

Stripped length: 7 mm

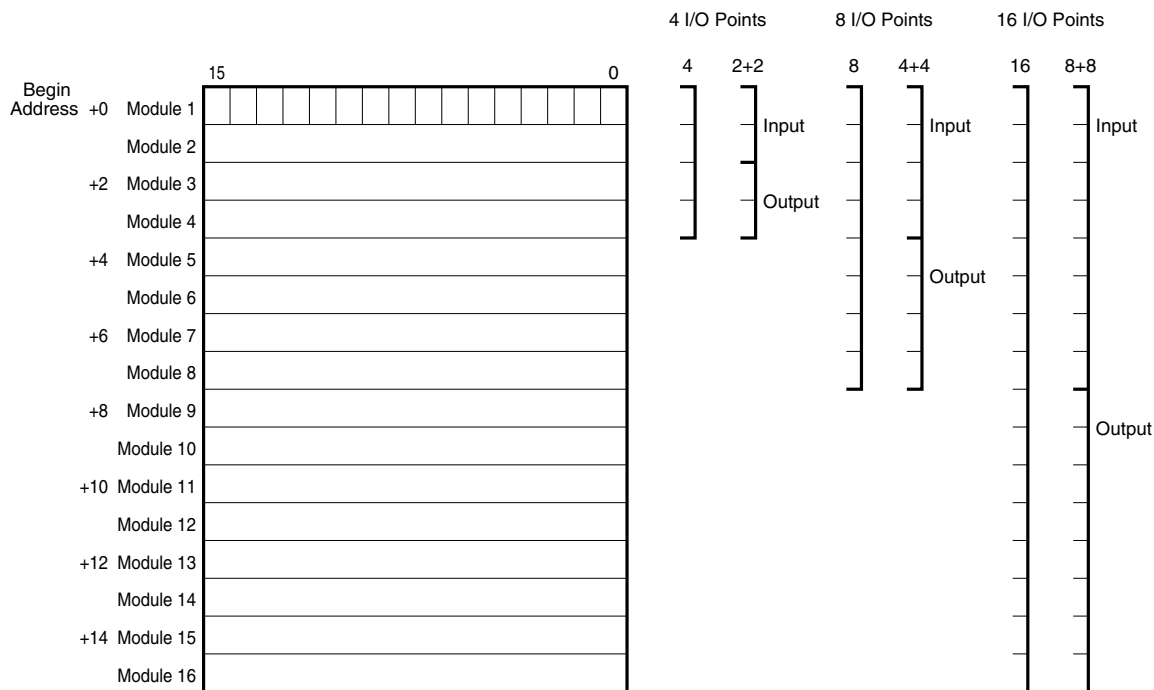
DATA DESCRIPTIONS

The DIP SW located at the side of the module switches the unit's data allocation mode.

The Data Allocation Mode 1 is used when all analog I/O modules are single-channel types. In this mode, one (1) word is assigned for one I/O module. The second channel on the dual-channel modules cannot be used.

The Data Allocation Mode 2 is used when one or more analog I/O modules are dual-channel types. In this mode, two (2) words are assigned for one I/O module regardless of whether the second word area is required or not. For example, discrete I/O modules require only one (1) word, but two (2) words are automatically assigned to these modules.

■ DATA ALLOCATION MODE 1

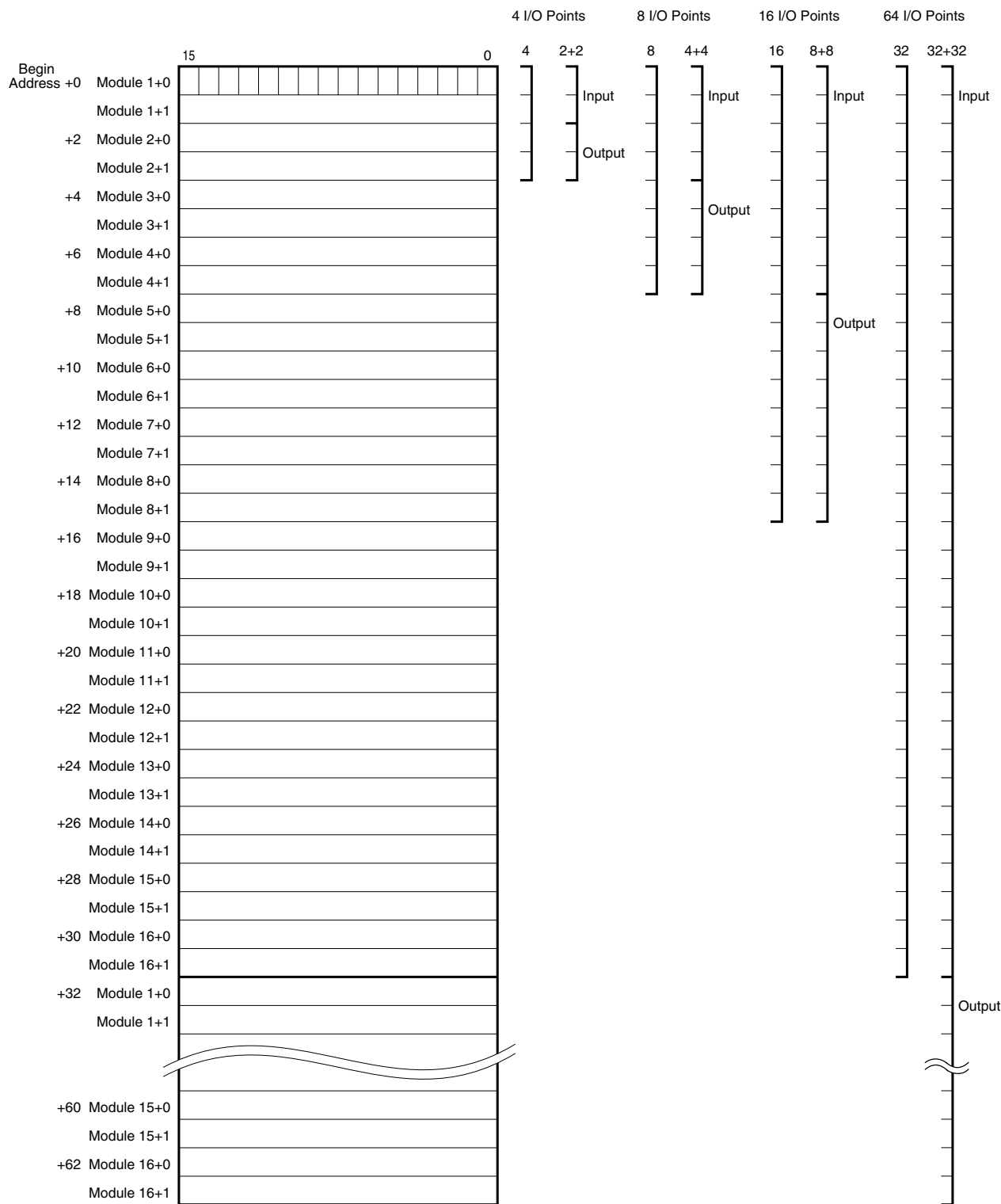


Total number of modules equal the assigned I/O points with Data Allocation Mode 1. I/O modules can be allocated from I/O Module Slot No. 1.

When I/O signals are to be mixed, the former half slots are assigned to the inputs and the latter half are to the outputs. For example, if you have selected '8' I/O points and 'mixed' I/O type, the inputs must be located among I/O Module Slot No. 1 through 4, and the output among No. 5 through 8.

Assigned I/O Points	No. of Modules	Input Modules Only	Output Modules Only	I/O Modules Mixed
4	4	4	4	2 + 2
8	8	8	8	4 + 4
16	16	16	16	8 + 8
64	Not selectable			

■ DATA ALLOCATION MODE 2



Total number of I/O modules are half the assigned I/O points with Data Allocation Mode 2. I/O modules can be allocated from I/O Module Slot No. 1.

When I/O signals are to be mixed, the former half slots are assigned to the inputs and the latter half are to the outputs. For example, if you have selected '8' I/O points and 'mixed' I/O type, the inputs must be located among I/O Module Slot No. 1 through 2, and the output among No. 3 through 4.

With 64 I/O points assigned, the latter half (32 points) is not used with 'Input Modules Only' or 'Output Modules Only' type, even though these areas are reserved in the PLC's data area.

With '64 I/O points' assigned and 'I/O Modules Mixed' type, the former 32 points (32 words) are assigned to the input and the latter 32 points (32 words) are to the outputs. Only with this setting, I/O modules can be mixed and located in any slots.

Assigned I/O Points	No. of Modules	Input Modules Only	Output Modules Only	I/O Modules Mixed
4	2	4	4	2 + 2
8	4	8	8	4 + 4
16	8	16	16	8 + 8
64	16	32	32	32 + 32

I/O DATA DESCRIPTIONS

The data allocations for typical I/O modules are shown below.
Refer to the manual for each module for detailed data allocations.

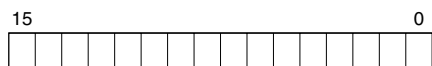
■ 16-BIT ANALOG DATA (models: R5-SV, YV, DS, YS, RS, TS, etc.)

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

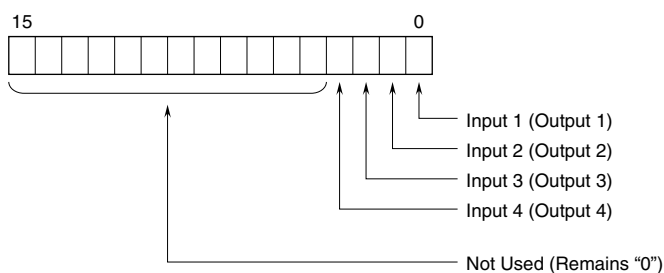
With °C or Kelvin temperature unit, raw data is multiplied by 10. For example, 25.5°C is converted into 255.

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.

Negative values are represented in 2's complements.

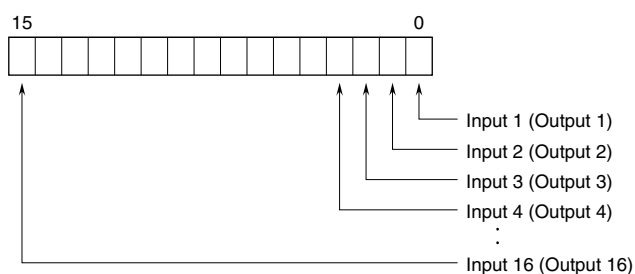


■ 4-POINT DISCRETE DATA (models: R5-DA4, DC4, etc.)



0 : OFF
1 : ON

■ 16-POINT DISCRETE DATA (models: R5-DA16, DC16, etc.)



0 : OFF
1 : ON