

DC VOLTAGE/CURRENT INPUT MODULE
(built-in excitation/4 points, non-isolated)

MODEL **R8-FST4N**

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:

DC voltage/current input 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 a panel.
- The actual installation environments such as panel configurations, connected devices, 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 the CE conformity.

■ GENERAL PRECAUTIONS

- Before you remove or mount the unit, turn off the power supply and input signal for safety.
- Do not touch the connector while power is on. The unit may have a malfunction due to static electricity etc.
- Switches on the side of the module can be set for maintenance only while the power supply is off. Do not access them while the power is supplied.

■ 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.

■ EXCITATION SUPPLY

- Input connector: Rated current 0.5A DC per channel (rated current 3A for internal fuse (slow blow fuse i²t (A²sec.) max. 5.04); Total: 1A DC

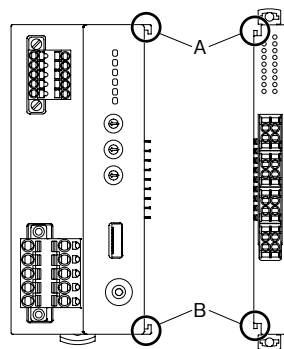
■ AND

- 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.

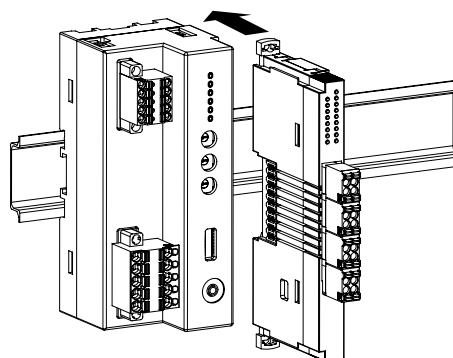
INSTALLATION

■ HOW TO MOUNT THE MODULE ON DIN RAIL

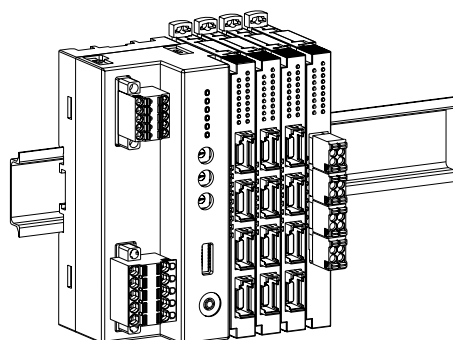
- I/O Module



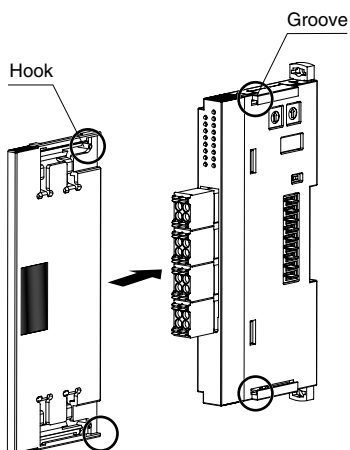
Confirm that the locking clamps of the I/O module are set. Insert the module in parallel to the next one while aligning the grooves of both modules (A & B in the above figure). Maintain it perpendicularly to the rail.



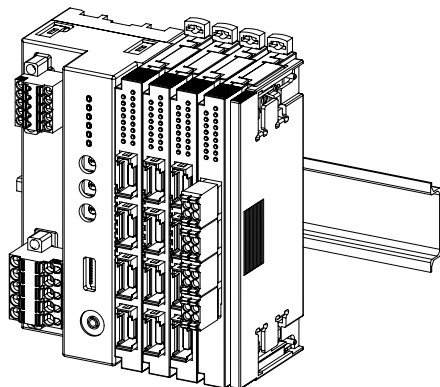
More I/O modules can be added in the same manner.



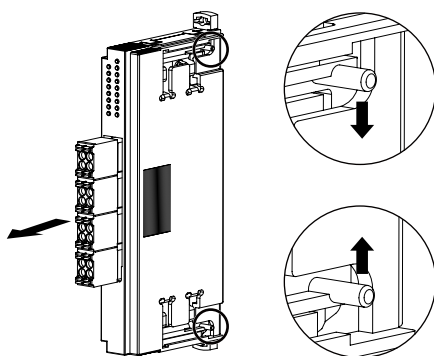
• Protective Cover



The protective cover is to be attached over the connected I/O module at the right end.
Align the hooks on the cover with the grooves of the module and slide it straight until the hooks are latched.

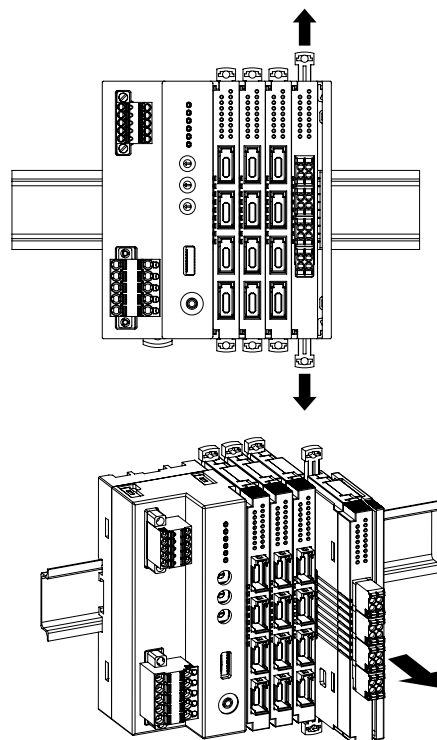


When removing the cover, pull it out while squeezing the hooks inward.

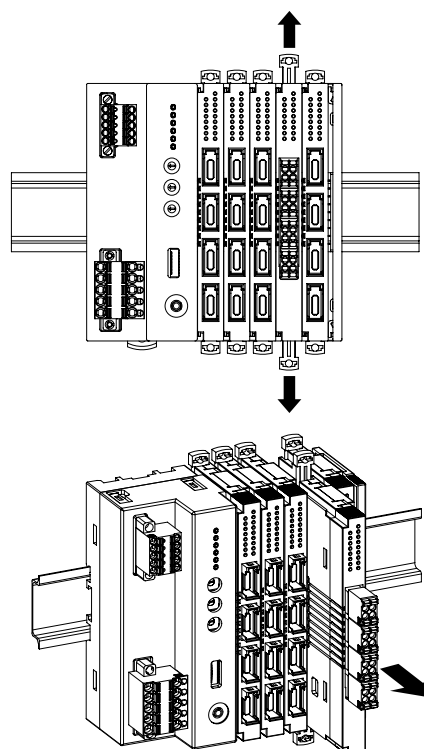


■ HOW TO UNMOUNT THE MODULE ON DIN RAIL

Release the locking clamps and pull out straight the module.



• Removing an intermediate module



Caution !

- 1) Be careful not to hurt your hand by pointed edges of the internal bus connector.
- 2) I/O modules cannot hold tightly on the DIN rail by themselves without power/network module.

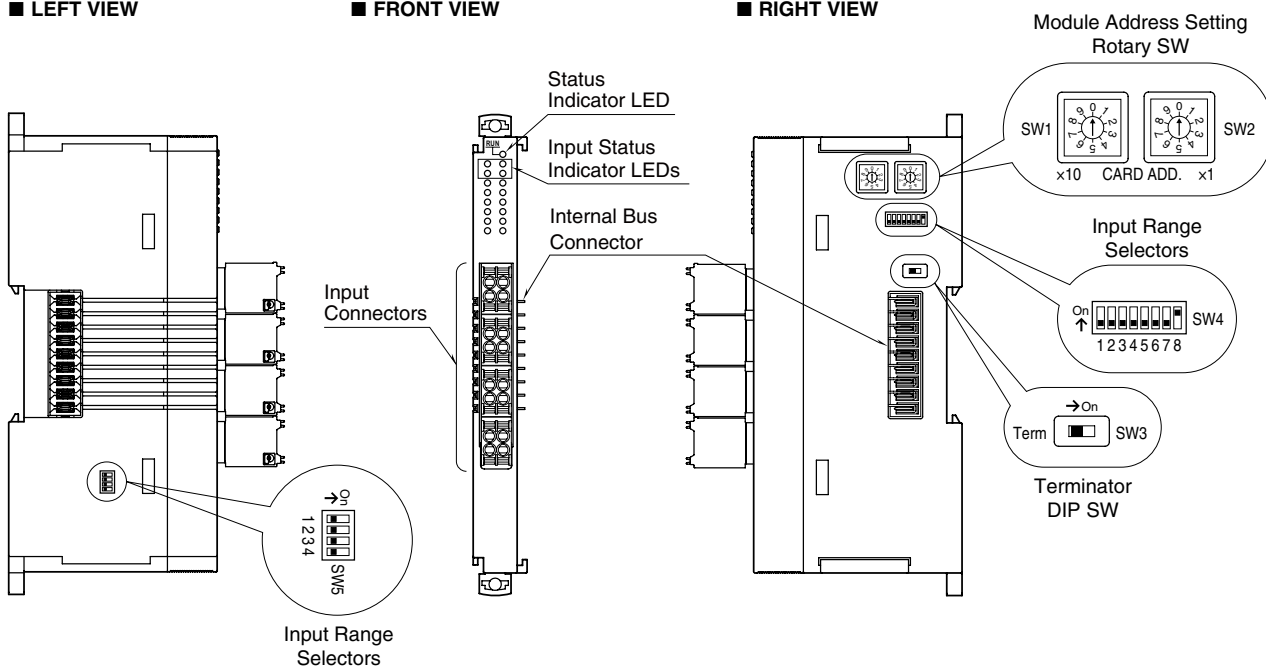
Secure them to the position if necessary by using DIN rail end plates.

COMPONENT IDENTIFICATION

■ LEFT VIEW

■ FRONT VIEW

■ RIGHT VIEW



■ INDICATOR LED

ID	OPERATION	FUNCTION
Status	OFF	Stopping
	Green ON	Valid host communication
	Green Blinking	Reading/writing configuration
	Red ON	Setting error
Input Status	Red Blinking	Parameter error
	OFF	Input data in the range
	Red Blinking	Input data out of range

■ PC CONFIGURATOR

The following parameters can be set with using PC Configurator Software (model: R8CFG):

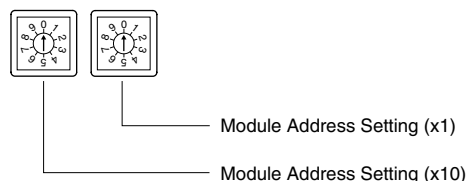
- Input setting by channels (setting value, scaling, zero/gain adjustments, selecting current/voltage)
- Common setting (loss of internal bus communication detection time)

Programming by the PC Configurator is available via the Power/Network Module.

Refer to the users manual for the R8CFG for detailed operation of the software program.

■ MODULE ADDRESS: SW1, 2

The left switch determines the tenth place digit, while the right one does the ones place digit of the module address. Address is selected between 0 to 30. (Factory setting: 0)



■ OPERATING MODE

(*) Factory setting

• Input Setting: SW4, 5

INPUT SETTING		INPUT 1		INPUT 2		INPUT 3		INPUT 4		MODE
		SW4-1	SW5-1	SW4-2	SW5-2	SW4-3	SW5-3	SW4-4	SW5-4	SW4-8
Configuration mode	Voltage input (*)	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	ON
	Current input	OFF	ON	OFF	ON	OFF	ON	OFF	ON	ON
Fixed input mode	Voltage input 0 – 10V DC	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF
	Current input 4 – 20mA DC	ON	ON	ON	ON	ON	ON	ON	ON	OFF

Note: Be sure to set unused SW4-5 through 4-7 to OFF.

■ TERMINATOR DIP SW: SW3

TERMINATOR SWITCH	SW3
Without (*)	OFF
With	ON

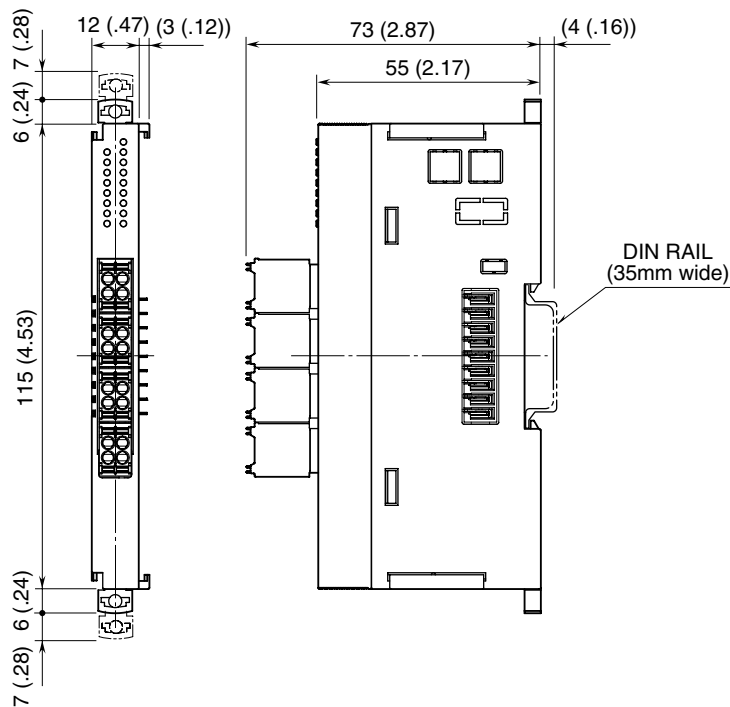
■ INPUT CONNECTOR ASSIGNMENT

		PIN No.	ID	FUNCTION							
<table border="1"> <tr><td>1</td><td>2</td></tr> <tr><td>Ai 1</td><td>AG</td></tr> <tr><td>3</td><td>4</td></tr> <tr><td>24V</td><td>0V</td></tr> </table>	1	2	Ai 1	AG	3	4	24V	0V	1	Ai 1	Input 1 (+)
	1	2									
	Ai 1	AG									
	3	4									
24V	0V										
	2	AG	Input 1 (-)								
	3	24V	Excitation supply (+)								
	4	0V	Excitation supply (-)								
<table border="1"> <tr><td>5</td><td>6</td></tr> <tr><td>Ai 2</td><td>AG</td></tr> <tr><td>7</td><td>8</td></tr> <tr><td>24V</td><td>0V</td></tr> </table>	5	6	Ai 2	AG	7	8	24V	0V	5	Ai 2	Input 2 (+)
	5	6									
	Ai 2	AG									
	7	8									
24V	0V										
	6	AG	Input 2 (-)								
	7	24V	Excitation supply (+)								
	8	0V	Excitation supply (-)								
<table border="1"> <tr><td>9</td><td>10</td></tr> <tr><td>Ai 3</td><td>AG</td></tr> <tr><td>11</td><td>12</td></tr> <tr><td>24V</td><td>0V</td></tr> </table>	9	10	Ai 3	AG	11	12	24V	0V	9	Ai 3	Input 3 (+)
	9	10									
	Ai 3	AG									
	11	12									
24V	0V										
	10	AG	Input 3 (-)								
	11	24V	Excitation supply (+)								
	12	0V	Excitation supply (-)								
<table border="1"> <tr><td>13</td><td>14</td></tr> <tr><td>Ai 4</td><td>AG</td></tr> <tr><td>15</td><td>16</td></tr> <tr><td>24V</td><td>0V</td></tr> </table>	13	14	Ai 4	AG	15	16	24V	0V	13	Ai 4	Input 4 (+)
	13	14									
	Ai 4	AG									
	15	16									
24V	0V										
	14	AG	Input 4 (-)								
	15	24V	Excitation supply (+)								
	16	0V	Excitation supply (-)								

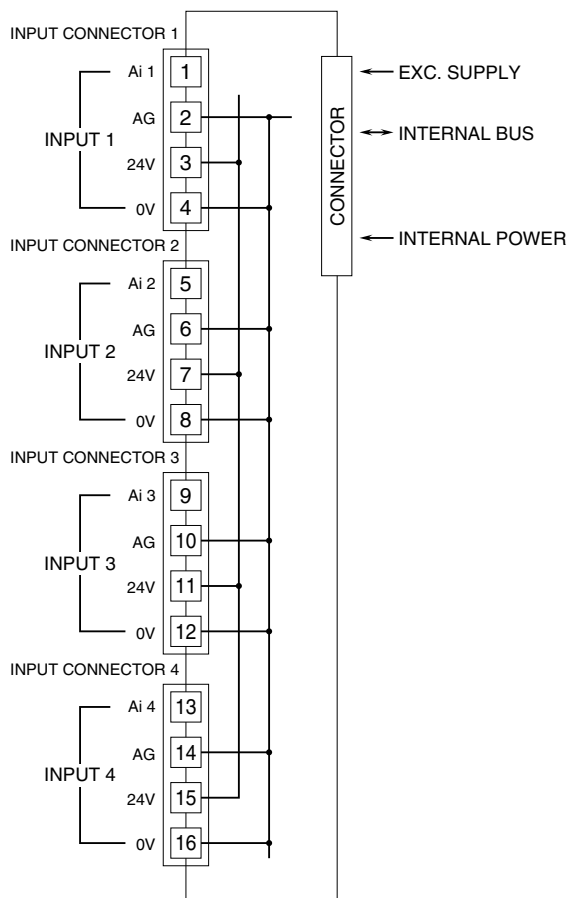
TERMINAL CONNECTIONS

Connect the unit as in the diagram below.

EXTERNAL DIMENSIONS unit: mm (inch)



CONNECTION DIAGRAM



WIRING INSTRUCTIONS

■ TENSION CLAMP TERMINAL BLOCK

Unit side connector: M-System's product

Cable side connector: DFMC1,5/2-ST-3,5
(Phoenix Contact)

Applicable wire size: 0.2 – 1.5 mm²

Stripped length: 10 mm

Recommended solderless terminal

- AI0,25-10YE 0.25 mm² (Phoenix Contact)
- AI0,34-10TQ 0.34 mm² (Phoenix Contact)
- AI0,5-10WH 0.5 mm² (Phoenix Contact)
- AI0,75-10GY 0.75 mm² (Phoenix Contact)
- A1-10 1.0 mm² (Phoenix Contact)
- A1,5-10 1.5 mm² (Phoenix Contact)