

BEFORE USE

Thank you for choosing us. 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 our sales office or representatives.

■ PACKAGE INCLUDES:

High speed pulse 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.

* For example, installation of noise filters and clamp filters for the power source, input and output connected to the unit, etc.

■ 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

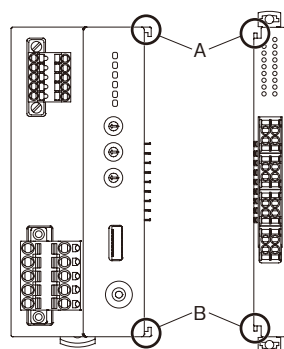
- Indoor use.
- When heavy dust or metal particles are present in the air, install the unit inside proper housing with sufficient ventilation.
- Do not install the unit where it is subjected to continuous vibration. Do not subject the unit to physical impact.
- Environmental temperature must be within -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

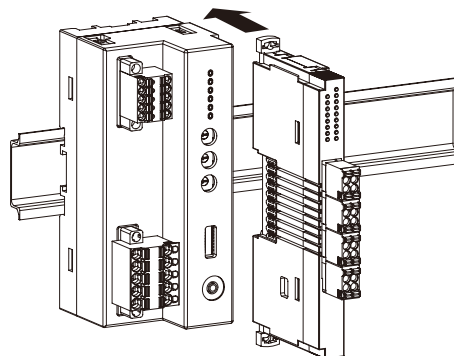
- Do not install cables close to noise sources (relay drive cable, high frequency line, etc.).
- Do not bind these cables together with those in which noises are present. Do not install them in the same duct.

■ AND

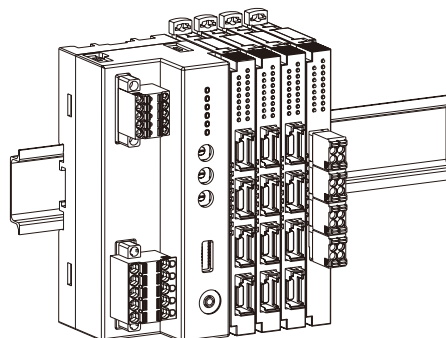
- The unit is designed to function as soon as power is supplied, however, a warm up for 10 minutes is required for satisfying complete performance described in the data sheet.

INSTALLATION**■ HOW TO MOUNT THE MODULE ON DIN RAIL****• I/O Module**

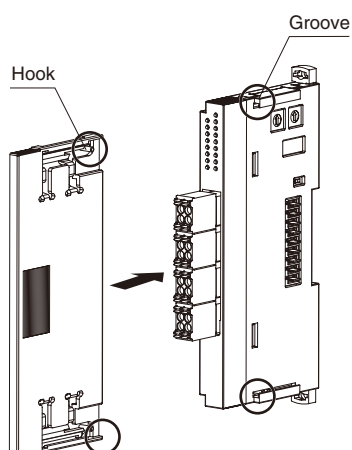
Confirm that the locking clamps of the I/O module are set. Insert the module in parallel to the next one while aligning the grooves of both modules (A & B in the above figure). Maintain it perpendicularly to the rail.



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

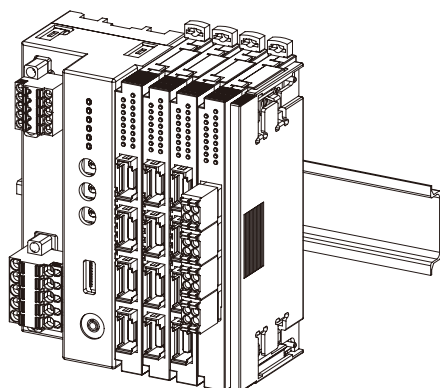


• Protective Cover

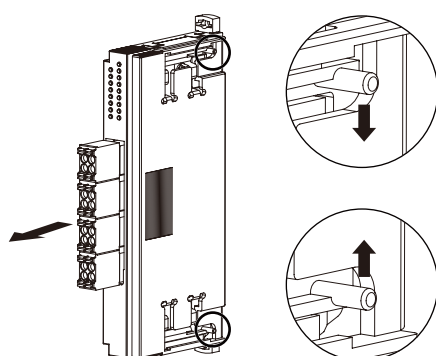


The protective cover is to be attached over the connected I/O module at the right end.

Align the hooks on the cover with the grooves of the module and slide it straight until the hooks are latched.

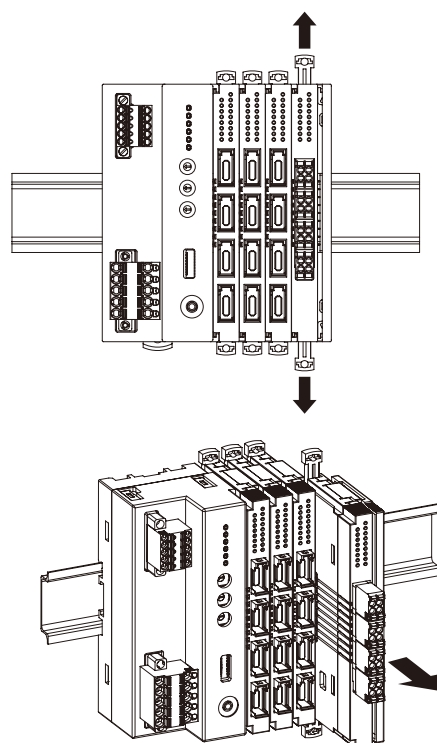


When removing the cover, pull it out while squeezing the hooks inward.

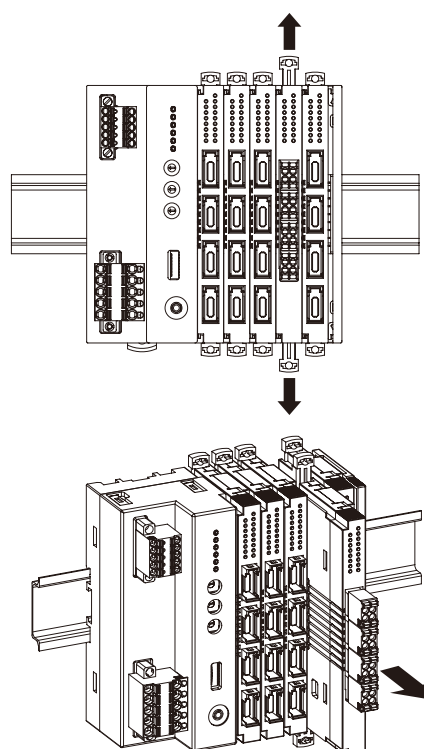


■ HOW TO UNMOUNT THE MODULE ON DIN RAIL

Release the locking clamps and pull out straight the module.



• Removing an intermediate module



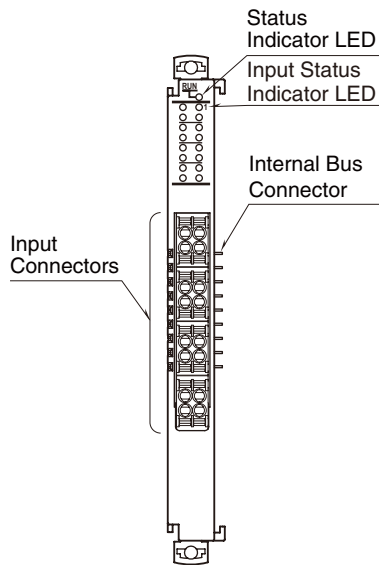
Caution !

- 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.

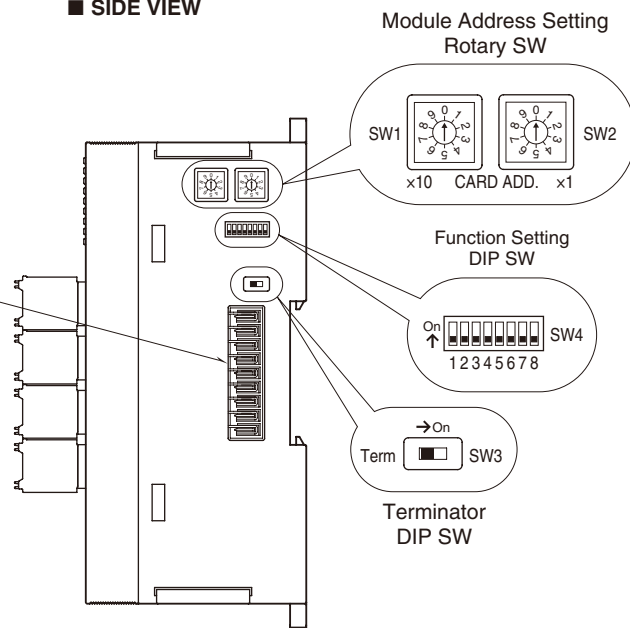
Secure them to the position if necessary by using DIN rail end plates.

COMPONENT IDENTIFICATION

■ FRONT VIEW



■ SIDE VIEW



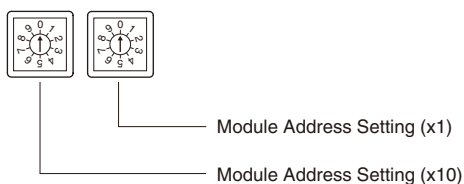
■ INDICATOR LED

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

■ 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 31.

(Factory setting: 0)



■ OPERATING MODE

(*) Factory setting

• Input Range: SW4-1, 4-2, 4-3

INPUT RANGE	SW4-1	SW4-2	SW4-3
0 – 100kHz (*)	OFF	OFF	OFF
0 – 10kHz	ON	OFF	OFF
0 – 1kHz	OFF	ON	OFF
0 – 100Hz	ON	ON	OFF
0 – 10Hz	OFF	OFF	ON
0 – 1Hz	ON	OFF	ON
0 – 100mHz	OFF	ON	ON

• Gain: SW4-4

GAIN	SW4-4
1 (*)	OFF
2	ON

• Configuration Mode: SW4-8

CONFIGURATION MODE	SW4-8
DIP switch setting (*)	OFF
PC Configurator and communication	ON

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

■ TERMINATOR: SW3

TERMINATOR	SW3
Without (*)	OFF
With	ON

■ INPUT CONNECTOR ASSIGNMENT

1 NC	2 NC
3 NC	4 NC

5 NC	6 NC
7 NC	8 NC

9 12V	10 12V
11 PI1	12 COM

13 PI2	14 COM
15 PI3	16 COM

PIN NO.	ID	FUNCTION
1	NC	Unused
2	NC	Unused
3	NC	Unused
4	NC	Unused
5	NC	Unused
6	NC	Unused
7	NC	Unused
8	NC	Unused
9	12V	Exc. supply (+)
10	12V	Exc. supply (+)
11	PI1	Input 1
12	COM	Common
13	PI2	Input 2
14	COM	Common
15	PI3	Input 3
16	COM	Common

PC CONFIGURATOR

The following parameter items can be set with using PC Configurator Software (model: R8CFG).
Refer to the users manual for the R8CFG for detailed operation of the software program.

■ CHANNEL INDIVIDUAL SETTING

PARAMETER	SETTING RANGE	DEFAULT SETTING
Input range	0 – 100kHz 0 – 10kHz 0 – 1kHz 0 – 100Hz 0 – 10Hz 0 – 1Hz 0 – 100mHz	0 – 100kHz
Zero input value	0.0 – 100.0 (kHz) 0.00 – 10.00 (kHz) 0.000 – 1.000 (kHz) 0.0 – 100.0 (Hz) 0.00 – 10.00 (Hz) 0.000 – 1.000 (Hz) 0.0 – 100.0 (mHz)	0.0 (kHz)
Full input value	0.0 – 100.0 (kHz) 0.00 – 10.00 (kHz) 0.000 – 1.000 (kHz) 0.0 – 100.0 (Hz) 0.00 – 10.00 (Hz) 0.000 – 1.000 (Hz) 0.0 – 100.0 (mHz)	100.0 (kHz)
Zero scaling value	-32000 – +32000	0
Full scaling value	-32000 – +32000	10000
Low-end cutout frequency (% of max. input range)	0.1 – 50.0 (%)	0.1 (%)
Average Number of Pulse	1 – 100	1
Gain	Gain 1 Gain 2	Gain 1
Detecting level	15.0 – 100.0 (%)	50.0 (%)
Detecting edge	Rising edge Falling edge	Rising edge

■ CHANNEL BATCH SETTING

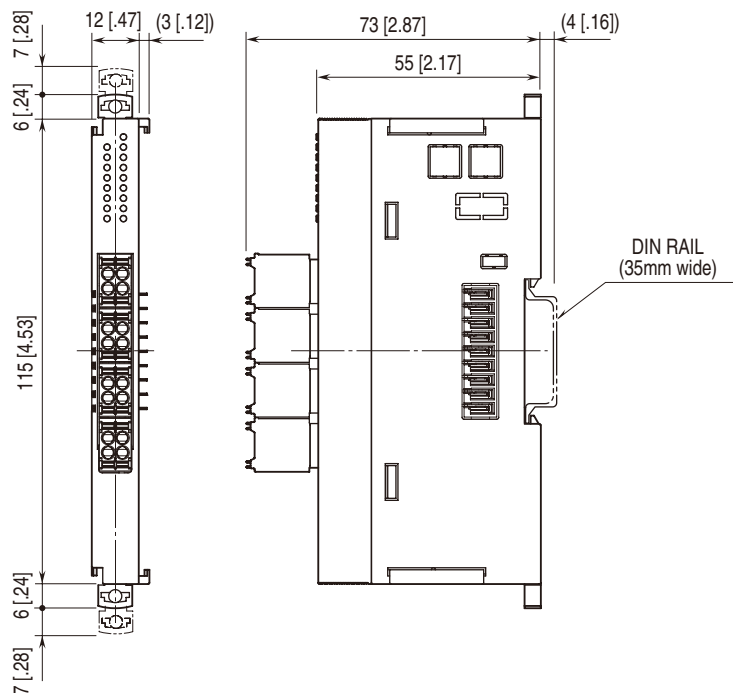
PARAMETER	SETTING RANGE	DEFAULT SETTING
Loss of internal bus communication detection time	0.0 to 99.9 (sec.)	1.0 (sec.)

Note: Settings are programmed by the PC Configurator via the Power/Network Module.

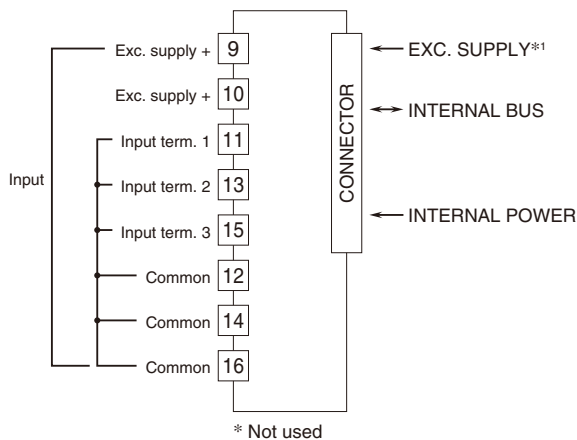
TERMINAL CONNECTIONS

Connect the unit as in the diagram below.

EXTERNAL DIMENSIONS unit: mm [inch]

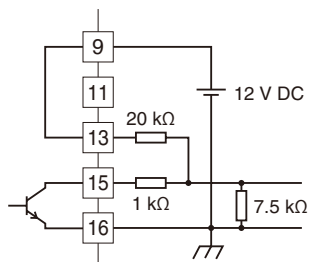


CONNECTION DIAGRAM



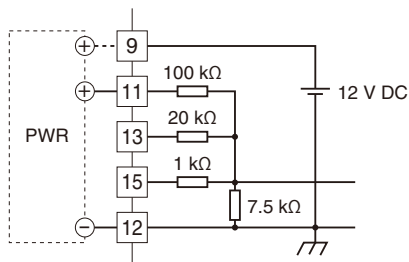
Input Connection Examples

Open Collector

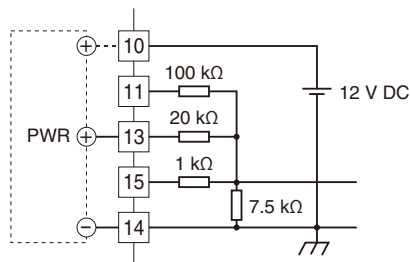


Voltage Pulse

- Operational voltage across the terminals: 0 – 50 V, 0 – 25 V



- Operational voltage across the terminals: 0 – 12 V, 0 – 6 V



WIRING INSTRUCTIONS

■ TENSION CLAMP TERMINAL BLOCK

Unit side connector: In-house made

Cable side connector: DFMC1,5/2-ST-3,5

(Phoenix Contact)

(included in the package)

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)