INSTRUCTION MANUAL

PROFINET I/O MODULE
(NPN discrete input, PNP transistor output, 8 points each, tension clamp terminal block)

MODEL **R7F4HPN-DAC16B-4**

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:

Discrete I/O module ....(1)
DIN rail mounter slider ....(2)

■ 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.

■ GSDML FILE

GSDML files are downloadable at our web site.

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, connected wires, may affect the protection level of this module 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 module, etc.

■ POWER INPUT RATING & OPERATIONAL RANGE

• Locate the power input rating marked on the product and confirm its operational range as indicated below:
  24V DC rating: 24V ±10%, ≤ 55mA

■ GENERAL PRECAUTIONS

• Before you remove the module or mount it, turn off the power supply and I/O signal for safety.
• Before you remove the terminal block or mount it, make sure to turn off the power supply and I/O signal for safety.

■ ENVIRONMENT

• Indoor use.
• When heavy dust or metal particles are present in the air, install the module inside proper housing with sufficient ventilation.
• Do not install the module where it is subjected to continuous vibration. Do not subject the module 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.
• Observe at the minimum of 10 mm left and right the modules for heat dissipation when mounting vertically.

■ 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 module 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
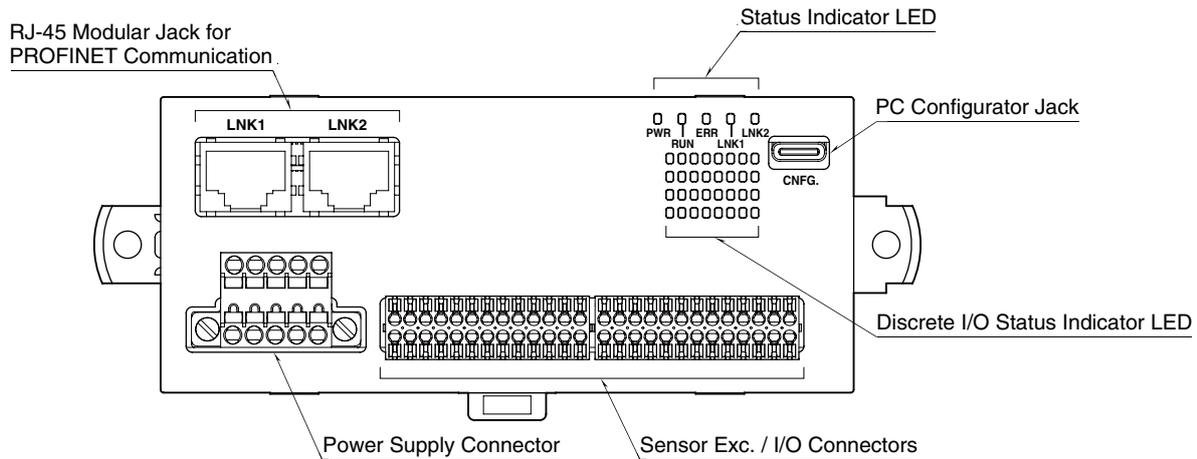
■ STATUS INDICATOR LED

ID	STATUS	COLOR	FUNCTION
PWR	ON	Green	The internal power is supplied normally.
RUN	ON	Green	PROFINET communication is normal.
ERR	Blinking	Red	Communication abnormality occurs after PROFINET communication is established.
LNK1	ON	Green	LNK1 is established
LNK2	ON	Green	LNK2 is established

■ DISCRETE I/O STATUS INDICATOR LED

LED green indicators shows the signal status.
   ON　: LED ON
   OFF : LED OFF

■ POWER SUPPLY TERMINAL ASSIGNMENT

Module side connector: MC1,5/5-GF-3,5 (Phoenix Contact)
Cable side connector: TFMC1,5/5-STF-3,5 (Phoenix Contact)
Applicable wire size: 0.2 – 1.5 mm²
Stripped length: 10 mm
Recommended solderless terminal
• AI0,25-10YE 0.25mm² (Phoenix Contact)
• AI0,34-10TQ 0.34mm² (Phoenix Contact)
• AI0,5-10WH 0.5mm² (Phoenix Contact)
• AI0,75-10GY 0.75mm² (Phoenix Contact)
• A1-10 1.0mm² (Phoenix Contact)
• A1,5-10 1.5mm² (Phoenix Contact)
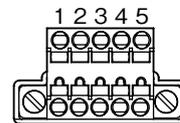
PIN NO.	ID	FUNCTION
1	FE	Functional Earth
2	NC	No Connection
3	NC	No Connection
4	+24V	Power Input (24V DC)
5	0V	Power Input (0V)

Note:The numbers marked on the connector have no relationship to the pin number of the module. Wire according to the instruction manual of the module.

■**SENSOR EXC. AND I/O TERMINAL ASSIGNMENTS**

**Applicable connector**: DFMC0,5/13-ST-2,54 (Phoenix Contact) (included in the package)

Applicable wire size: 0.14 - 0.5 mm²

Stripped length: 7 mm

Recommended solderless terminal:
- AI0,14-6GY 0.14mm² (Phoenix Contact)
- AI0,14-8GY 0.14mm² (Phoenix Contact)
- AI0,25-6YE 0.25mm² (Phoenix Contact))
- AI0,25-8YE 0.25mm² (Phoenix Contact)
- AI0,25-7 0.25mm² (Phoenix Contact)
- AI0,34-7 0.34mm² (Phoenix Contact)

Note: If the stripped length does not match the length of recommended solderless terminal, adjust to the stripped length of 7mm by cutting the terminal if it is too long, or by extending the wire if the terminal is too short.
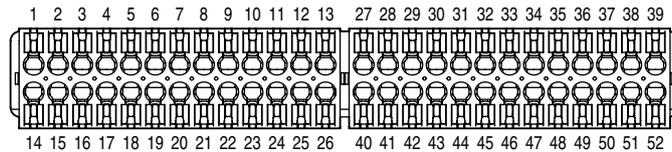
PIN NO.	ID	FUNCTION	PIN NO.	ID	FUNCTION
1	+24V1	24V DC	27	+24V2	24V DC
2	X0	Input 0	28	Y0	Output 0
3	+24V1	24V DC	29	+24V2	24V DC
4	GND1	0V	30	GND2	0V
5	X2	Input 2	31	Y2	Output 2
6	+24V1	24V DC	32	+24V2	24V DC
7	GND1	0V	33	GND2	0V
8	X4	Input 4	34	Y4	Output 4
9	+24V1	24V DC	35	+24V2	24V DC
10	GND1	0V	36	GND2	0V
11	X6	Input 6	37	Y6	Output 6
12	+24V1	24V DC	38	+24V2	24V DC
13	GND1	0V	39	GND2	0V

PIN NO.	ID	FUNCTION	PIN NO.	ID	FUNCTION
14	GND1	0V	40	GND2	0V
15	X1	Input 1	41	Y1	Output 1
16	+24V1	24V DC	42	+24V2	24V DC
17	GND1	0V	43	GND2	0V
18	X3	Input 3	44	Y3	Output 3
19	+24V1	24V DC	45	+24V2	24V DC
20	GND1	0V	46	GND2	0V
21	X5	Input 5	47	Y5	Output 5
22	+24V1	24V DC	48	+24V2	24V DC
23	GND1	0V	49	GND2	0V
24	X7	Input 7	50	Y7	Output 7
25	+24V1	24V DC	51	+24V2	24V DC
26	GND1	0V	52	GND2	0V

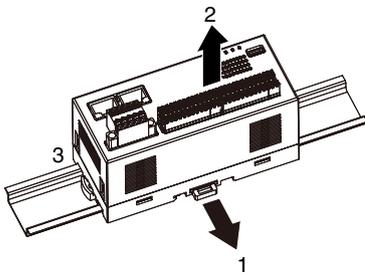# MOUNTING INSTRUCTIONS

■ **DIN RAIL MOUNTING (PARALLEL)**

 • **Mounting**

1) Set the upper hook at the rear side of the module on the DIN rail.
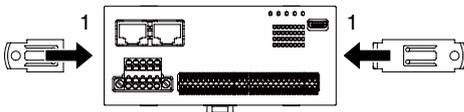2) Push the lower part in.
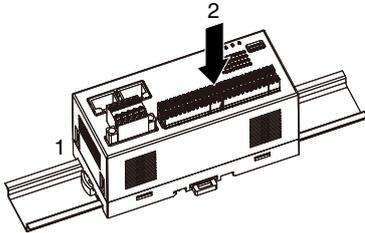
 • **Dismounting**

1) Push down the DIN rail mounter slider with the tip of a flat-blade screwdriver.
2) Pull the lower part of the module.
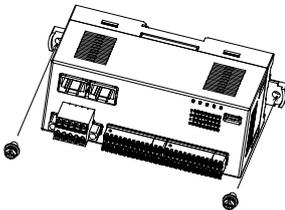3) Remove the upper hook of the module from the DIN rail.

■ **SURFACE MOUNTING**

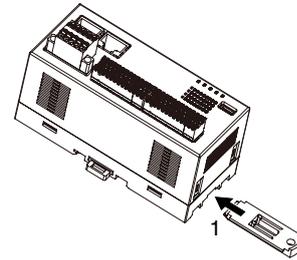1) Insert the two DIN rail mounter sliders until it clicks once, as shown below.

2) Mount the module with M4 screws referring to the External Dimensions. (Torque: 1.4 N·m)

■ **DIN RAIL MOUNTING (RIGHT ANGLE)**

 • **Mounting**

1) Insert the longer DIN rail mounter slider until it clicks twice, as shown below.

2) Set the upper hook at the rear side of the module on the DIN rail.
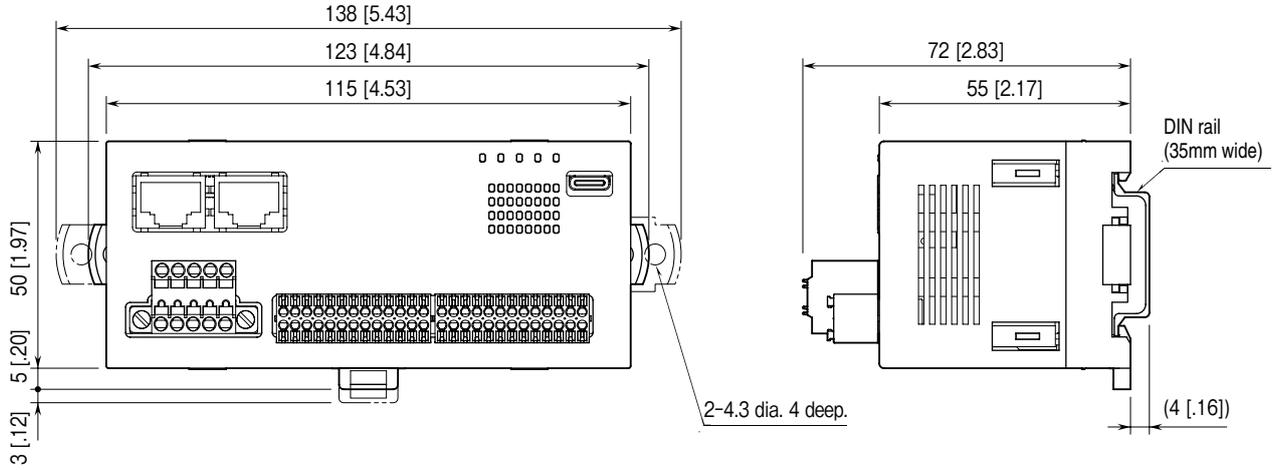3) Push the lower part in.
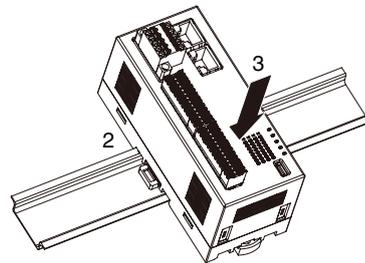
 • **Dismounting**

1) Push down the DIN rail mounter slider with the tip of a flat-blade screwdriver.
2) Pull the lower part of the module.
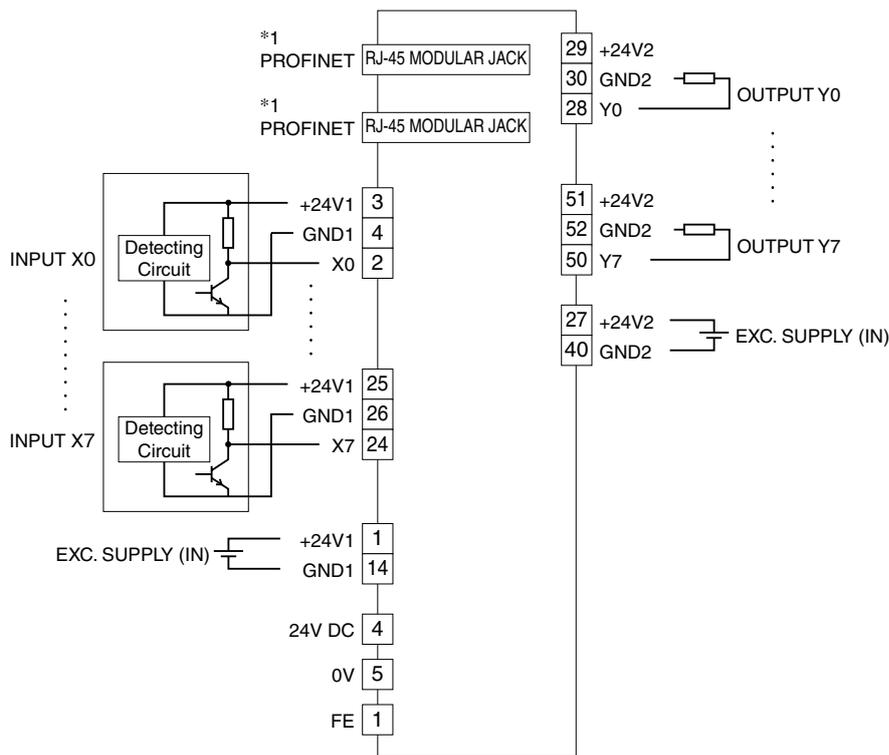3) Remove the upper hook of the module from the DIN rail.
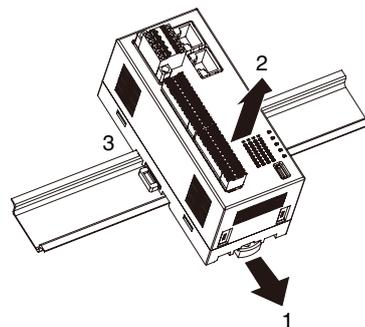
TERMINAL CONNECTIONS

Connect the module as in the diagram below.

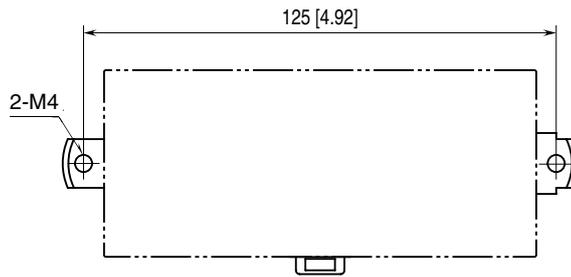### ■ EXTERNAL DIMENSIONS unit: mm [inch]

■ CONNECTION DIAGRAM

Note: In order to improve EMC performance, bond the FE terminal to ground.
Caution: FE terminal is NOT a protective conductor terminal.

*1. The network cable can be connected to either one.

MOUNTING REQUIREMENTS unit: mm [inch]

125 [4.92]
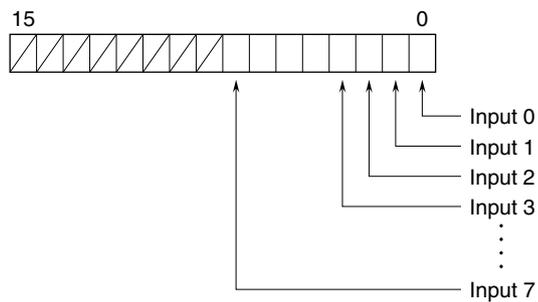
2-M4

PC CONFIGURATOR

The following parameter items can be configured with the PC configurator software (model: R7CFG).
Refer to the users manual of the software for detailed operations.

■ **CHANNEL BATCH SETTING**

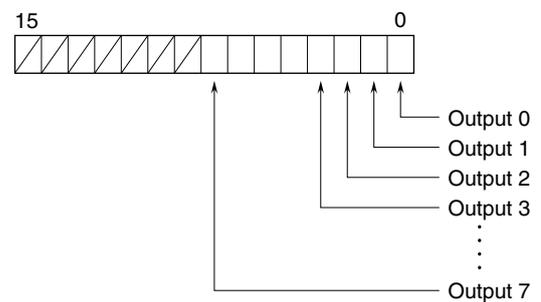| PARAMETER	SETTING RANGE	DEFAULT SETTING
Conversion rate	1 msec., 5 msec., 10 msec., 20 msec., 50 msec., 70 msec., 100 msec., 200 msec.	10 msec.
Output Hold / Clear	Hold / Clear	Hold

I/O DATA DESCRIPTION

■ **DISCRETE INPUT**

15   0

Input 0
Input 1
Input 2
Input 3
⋮
Input 7

0: OFF 1: ON

■ **DISCRETE OUTPUT**

15   0

Output 0
Output 1
Output 2
Output 3
⋮
Output 7

0: OFF 1: ON