

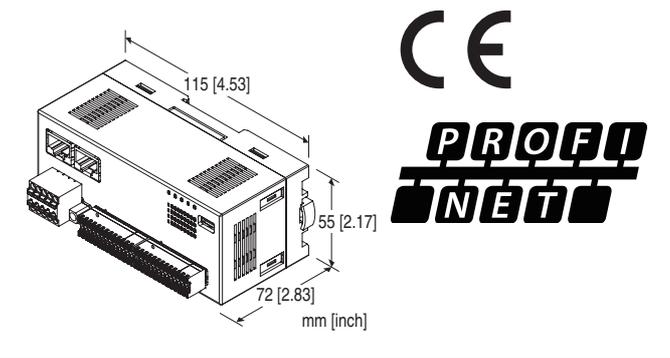
## Remote I/O R7F4H Series

### PROFINET I/O MODULE

(NPN transistor output, 16 points, tension clamp terminal block)

#### Functions & Features

- Remote I/O module to input/output digital I/O signal to field bus (PROFINET)



### MODEL: R7F4HPN-DC16A-4-R[1]

#### ORDERING INFORMATION

- Code number: R7F4HPN-DC16A-4-R[1]  
Specify a code from below for [1].  
(e.g. R7F4HPN-DC16A-4-R/Q)
- Specify the specification for option code /Q  
(e.g. /C01/SET)

#### I/O TYPE

**DC16A:** NPN transistor output, 16 points

#### TERMINAL BLOCK

- 4: Tension clamp terminal block for power supply
- RJ-45 Modular jack for communication
- Tension clamp terminal block for I/O

#### POWER INPUT

##### DC power

R: 24 V DC

(Operational voltage range:  $\pm 10\%$ ; ripple 10 %p-p max.)

#### [1] OPTIONS

blank: none

/Q: With options (specify the specification)

#### SPECIFICATIONS OF OPTION: Q (multiple selections)

##### COATING (For the detail, refer to our web site.)

/C01: Silicone coating

/C02: Polyurethane coating

/C03: Rubber coating

##### EX-FACTORY SETTING

/SET: Preset according to the Ordering Information Sheet  
(No. ESU-8010-C)

#### RELATED PRODUCTS

- PC configurator software (model: R7CFG)
- GSDML file

The configurator software and GSDML file are downloadable at our web site.

For connecting to PC, use commercially available Type-C USB cable. (provided by user)

#### GENERAL SPECIFICATIONS

##### Connection

**PROFINET:** RJ-45 Modular Jack

**Power supply, exc. supply, output:** Tension clamp terminal

**Housing material:** Flame-resistant resin (gray)

**Isolation:** Output or exc. supply to PROFINET or FE to power

**Output at the loss of communication:** Configurable via R7CFG

**Status indicator LEDs:** PWR, RUN, ERR, LNK1, LNK2  
(Refer to the instruction manual)

**Discrete output status indicator LED:** Green LED turns on with input ON

#### PROFINET COMMUNICATION

**Communication standard:** IEEE 802.3

**Transmission:** 100BASE-TX

**Baud rate:** 100 Mbps / full duplex

**Transmission media:** 100BASE-TX (STP, Category 5)

RJ-45 modular jack  $\times$  2 ports

**Network topology:** Line, star, tree and ring

**Device class:** PROFINET IO device

**Conformance class:** CC-B (PROFINET RT)

**Conformance test version:** V2.4

**Media redundancy:** MRP

#### OUTPUT SPECIFICATIONS

**Common:** Negative common (NPN), 8 points per common

**Number of output:** 16 points

**Maximum outputs applicable at once:** No limit (at 24 V DC)

**Sensor excitation:** 24 V DC  $\pm 10\%$ , ripple 5 %p-p max.

**Rated output current:** 0.1 A per point, 0.8 A per common

**Residual voltage:**  $\leq 1.2$  V

**Leakage current:**  $\leq 0.1$  mA

**ON delay:**  $\leq 0.2$  msec.

**OFF delay:**  $\leq 0.5$  msec.

**Overload current protection function:** The current value is limited when overcurrent is detected.

**Overheat protection function:** The output is turned off when overheat is detected.

(When driving an inductive load, connect a diode in parallel with the load.)

## INSTALLATION

### Current consumption

•DC (@ 24 V DC):  $\leq 55$  mA

(contact I/O load charge is not included)

**Operating temperature:** -10 to +55°C (14 to 131°F)

**Storage temperature:** -20 to +65°C (-4 to +149°F)

**Operating humidity:** 30 to 90 %RH (non-condensing)

**Atmosphere:** No corrosive gas or heavy dust

**Mounting:** Surface or DIN rail (35 mm rail)

**Weight:** 160 g (0.35 lb)

## PERFORMANCE

**Insulation resistance:**  $\geq 100$  M $\Omega$  with 500 V DC

**Dielectric strength:** 1500 V AC @ 1 minute

(output or exc. supply to PROFINET or FE to power)

## STANDARDS & APPROVALS

### EU conformity:

EMC Directive

EMI EN 61000-6-4

EMS EN 61000-6-2

RoHS Directive

## PC CONFIGURATOR

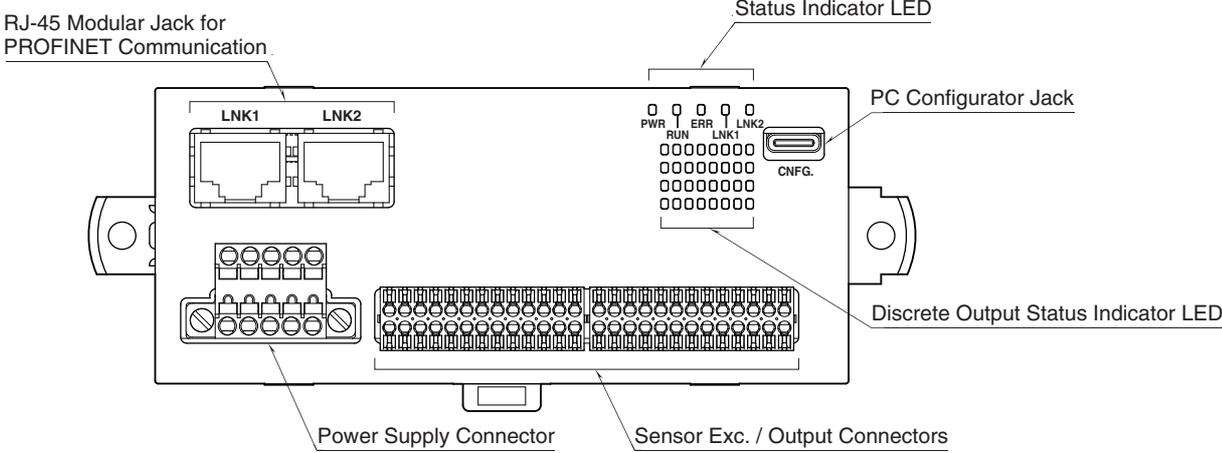
The following parameters can be set with using PC Configurator Software (model: R7CFG)

Refer to the users manual for the R7CFG for detailed operation of the software program.

### ■ CHANNEL BATCH SETTING

PARAMETER	SETTING RANGE	DEFAULT SETTING
Output Hold / Clear	Hold / Clear	Hold

**EXTERNAL VIEW**



## TERMINAL ASSIGNMENTS

### ■SENSOR EXC. / OUTPUT CONNECTION

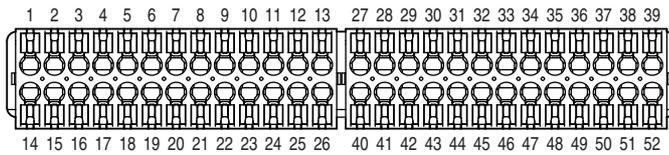
Applicable connector: DFMC0,5/13-ST-2,54 (Phoenix Contact) (included in the package)

Applicable wire size: 0.14 - 0.5mm<sup>2</sup>, stripped length 7mm

Recommended solderless terminal:

- AI0,14-6GY 0.14mm<sup>2</sup> (Phoenix Contact)
- AI0,14-8GY 0.14mm<sup>2</sup> (Phoenix Contact)
- AI0,25-6YE 0.25mm<sup>2</sup> (Phoenix Contact)
- AI0,25-8YE 0.25mm<sup>2</sup> (Phoenix Contact)
- A0,25-7 0.25mm<sup>2</sup> (Phoenix Contact)
- A0,34-7 0.34mm<sup>2</sup> (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.



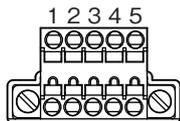
PIN No.	ID	FUNCTION	PIN No.	ID	FUNCTION
1	+24V1	24V DC	27	+24V2	24V DC
2	Y0	Output 0	28	Y8	Output 8
3	+24V1	24V DC	29	+24V2	24V DC
4	GND1	0V	30	GND2	0V
5	Y2	Output 2	31	Y10	Output 10
6	+24V1	24V DC	32	+24V2	24V DC
7	GND1	0V	33	GND2	0V
8	Y4	Output 4	34	Y12	Output 12
9	+24V1	24V DC	35	+24V2	24V DC
10	GND1	0V	36	GND2	0V
11	Y6	Output 6	37	Y14	Output 14
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	Y1	Output 1	41	Y9	Output 9
16	+24V1	24V DC	42	+24V2	24V DC
17	GND1	0V	43	GND2	0V
18	Y3	Output 3	44	Y11	Output 11
19	+24V1	24V DC	45	+24V2	24V DC
20	GND1	0V	46	GND2	0V
21	Y5	Output 5	47	Y13	Output 13
22	+24V1	24V DC	48	+24V2	24V DC
23	GND1	0V	49	GND2	0V
24	Y7	Output 7	50	Y15	Output 15
25	+24V1	24V DC	51	+24V2	24V DC
26	GND1	0V	52	GND2	0V

## ■ 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 mm<sup>2</sup>  
**Stripped length:** 10 mm

Recommended solderless terminal

- AI0,25-10YE 0.25mm<sup>2</sup> (Phoenix Contact)
- AI0,34-10TQ 0.34mm<sup>2</sup> (Phoenix Contact)
- AI0,5-10WH 0.5mm<sup>2</sup> (Phoenix Contact)
- AI0,75-10GY 0.75mm<sup>2</sup> (Phoenix Contact)
- A1-10 1.0mm<sup>2</sup> (Phoenix Contact)
- A1,5-10 1.5mm<sup>2</sup> (Phoenix Contact)

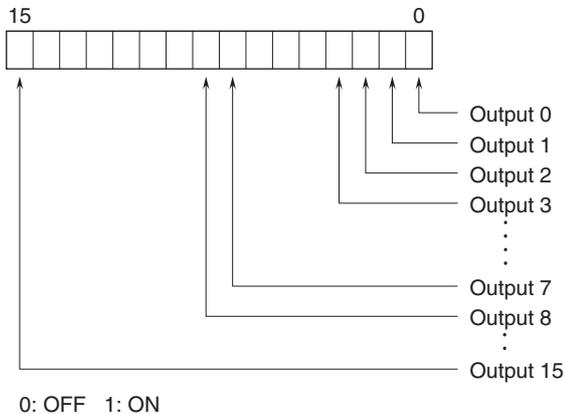


PIN NO.	ID	FUNCTION
1	FE	Functional Earth
2	NC	No Connection
3	NC	No Connection
4	+24V	Power Input (24V DC)
5	0V	Power Input (0V)

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.

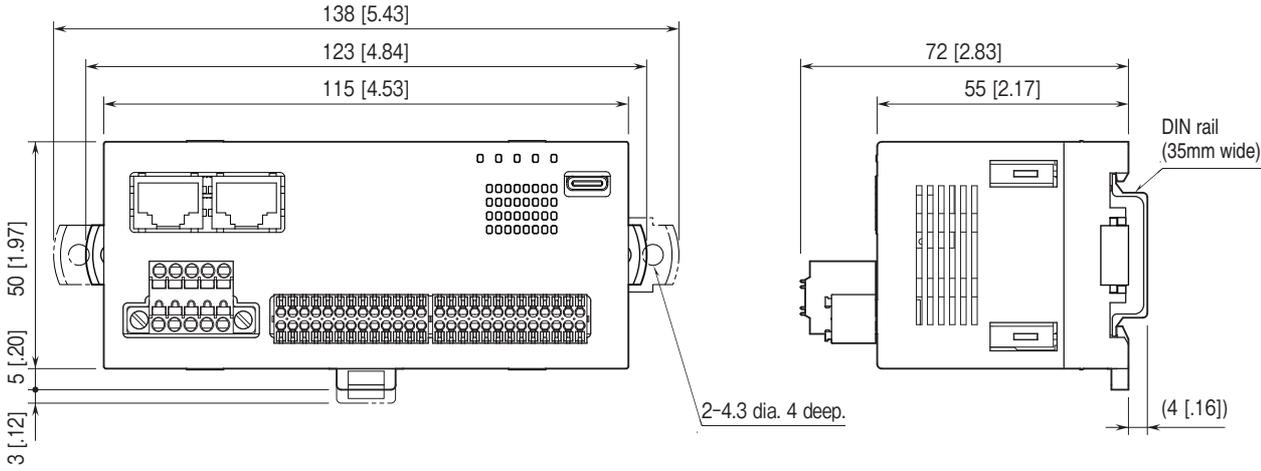
## I/O DATA DESCRIPTIONS

### ■ DISCRETE OUTPUT

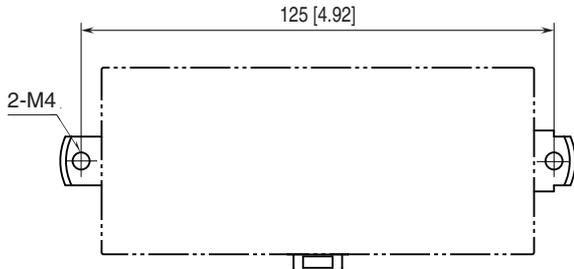


# MODEL: R7F4HPN-DC16A-4

## EXTERNAL DIMENSIONS unit: mm [inch]



## MOUNTING REQUIREMENTS unit: mm [inch]

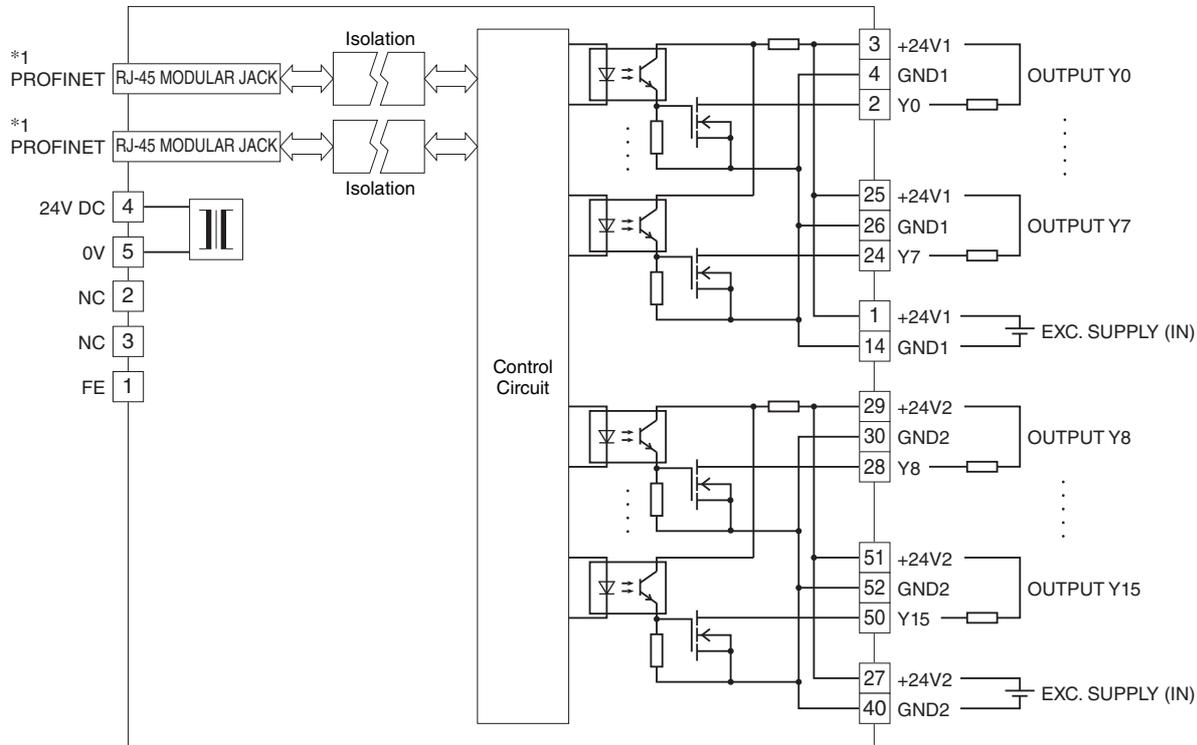


# MODEL: R7F4HPN-DC16A-4

## SCHEMATIC CIRCUITRY & 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



Specifications are subject to change without notice.