

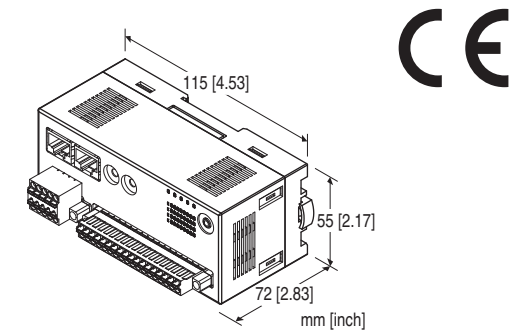
Remote I/O R7F4HEIP Series

EtherNet/IP I/O MODULE

(NPN/PNP discrete input, 16 points, tension clamp terminal block)

Functions & Features

- 16 points NPN/PNP discrete input module for EtherNet/IP
- Supports DLR (Device Level Ring) to form a ring topology



MODEL: R7F4HEIP-DA16-M-R[1]

ORDERING INFORMATION

- Code number: R7F4HEIP-DA16-M-R[1]
Specify a code from below for [1].
(e.g. R7F4HEIP-DA16-M-R/Q)
- Specify the specification for option code /Q
(e.g. /C01)

I/O TYPE

DA16: NPN/PNP discrete input, 16 points

TERMINAL BLOCK

- M:** Tension clamp terminal block for power supply
RJ-45 Modular jack for communication
Tension clamp terminal block for I/O
(applicable wire size: 0.2 - 1.5mm²)

POWER INPUT

DC power

R: 24 V DC

(Operational voltage range: ± 10 %; ripple 10 %p-p max.)

[1] OPTIONS

blank: none

/Q: With options (specify the specification)

SPECIFICATIONS OF OPTION: Q

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

/C01: Silicone coating

/C02: Polyurethane coating

/C03: Rubber coating

RELATED PRODUCTS

- PC Configurator cable (model: MCN-CON or COP-US)
- PC configurator software (model: R7CFG)
- EDS file

The EDS files and configurator software are downloadable at our web site.

GENERAL SPECIFICATIONS

Connection

EtherNet/IP: RJ-45 Modular Jack

Power supply, exc. supply, input: Tension clamp terminal

Housing material: Flame-resistant resin (gray)

Isolation: Input or exc. supply to EtherNet/IP or FE to power

Status indicator LED: PWR, LNK1, LNK2

(Refer to the instruction manual)

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

Read rate: Selectable with R7CFG

EtherNet/IP COMMUNICATION

Communication Standard: IEEE 802.3u

Transmission: 10BASE-T, 100BASE-TX

Baud rate: 10/100 Mbps (Auto Negotiation function)

Protocol: EtherNet/IP

Max. number of socket connections: 3

Connection type: Exclusive owner / Listen only / Input only

Transmission media: 10BASE-T (STP, Category 5), 100BASE-TX (STP, Category 5e)

Network topology: Line, star and ring

Max. length of fieldbus segment: 100 meters

IP address: 192.168.0.250 (factory setting);

Only host address in IP address is configurable via rotary switches, the other items via PC configurator software (model: R7CFG)

DLR supported

Port No.: 2222, 44818

I/O data size: One (1) word

Status indicator LEDs: MS, NS (Refer to the instruction manual for details)

INPUT SPECIFICATIONS

Common: Positive or negative common (NPN/PNP),
16 points per common

Numbers of input: 16

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

Sensor excitation: 24 V DC $\pm 10\%$; ripple 5 %p-p max.,
 ≤ 2 A (including discrete input load charge)

ON voltage / current: ≥ 15 V DC (X0 to X15 input terminal to COM) / ≥ 3.5 mA

OFF voltage / current: ≤ 5 V DC (X0 to X15 input terminal to COM) / ≤ 1.0 mA

Input current: ≤ 5.5 mA per point at 24 V DC

Input resistance: Approx. 4.4 k Ω

ON delay: ≤ 0.2 msec.

OFF delay: ≤ 0.5 msec.

INSTALLATION

Current consumption

- DC: Approx. 70 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: 170 g (0.37 lb)

PERFORMANCE

Insulation resistance: ≥ 100 M Ω with 500 V DC

Dielectric strength: 1500 V AC @ 1 minute
(input or exc. supply to EtherNet/IP 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.

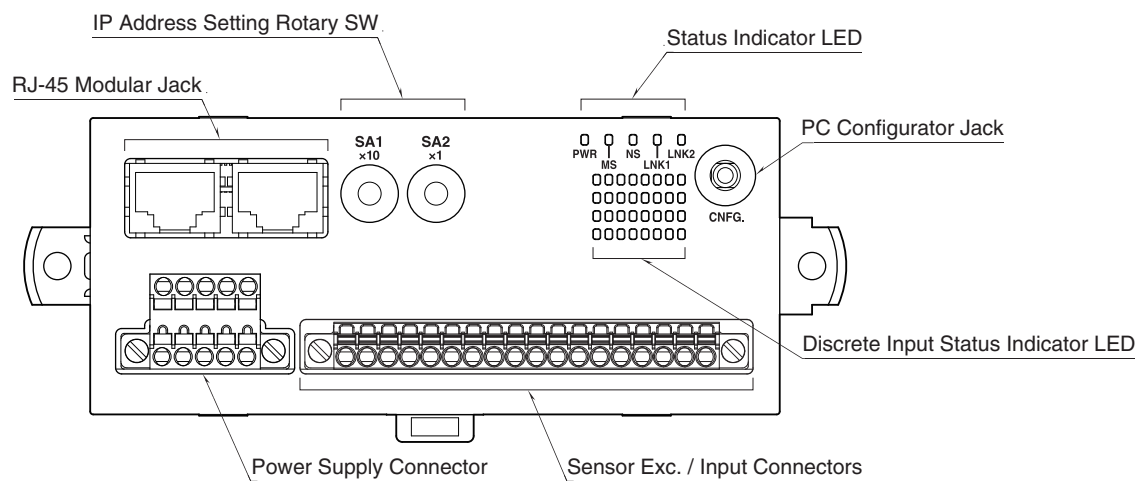
■ CHANNEL BATCH SETTING

PARAMETER	SETTING RANGE	DEFAULT
Conversion rate	1ms, 5ms, 10ms, 20ms, 50ms, 70ms, 100ms, 200ms	10ms

■ ETHERNET SETTING

PARAMETER	SETTING RANGE	DEFAULT
IP Address	0.0.0.0 - 255.255.255.255	192.168.0.250
Subnet Mask	0.0.0.0 - 255.255.255.255	255.255.255.0
Default Gateway	0.0.0.0 - 255.255.255.255	192.168.0.1
TimeOut	0 - 32767 (0.1 sec.)	30 (0.1 sec.)

EXTERNAL VIEW



TERMINAL ASSIGNMENTS

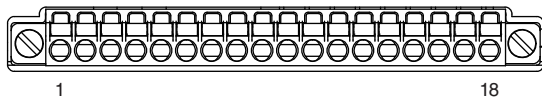
■ SENSOR EXC. / INPUT CONNECTION

Applicable connector: FMC1,5/18-STF-3,5 (Phoenix Contact) (included in the package)

Applicable wire size: 0.2 - 1.5mm², stripped length 10mm

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	X0	Input 0
2	X1	Input 1
3	X2	Input 2
4	X3	Input 3
5	X4	Input 4
6	X5	Input 5
7	X6	Input 6
8	X7	Input 7
9	X8	Input 8
10	X9	Input 9
11	X10	Input 10
12	X11	Input 11
13	X12	Input 12
14	X13	Input 13
15	X14	Input 14
16	X15	Input 15
17	COM	Common (exc. supply)
18	COM	Common (exc. supply)

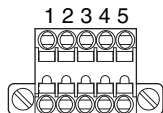
■ POWER SUPPLY TERMINAL ASSIGNMENT

Applicable connector: TFMCI,5 / 5-STF-3,5(Phoenix Contact)
(included in the package)

Applicable wire size: 0.2 - 1.5 mm²; stripped length 10 mm

Recommended solderless terminal

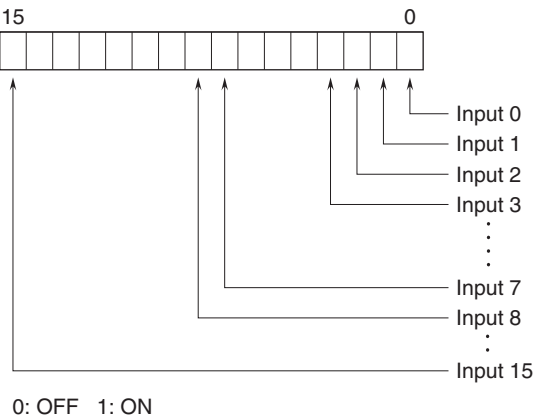
- AI0,25-10YE 0.25 mm² (Phoenix Contact)
- AI0,34-10TQ 0.34 mm² (Phoenix Contact)
- AI0,5-10WH 0.5 mm² (Phoenix Contact)
- AI0,75-10GY 0.75 mm² (Phoenix Contact)
- A1-10 1.0 mm² (Phoenix Contact)
- A1,5-10 1.5 mm² (Phoenix Contact)



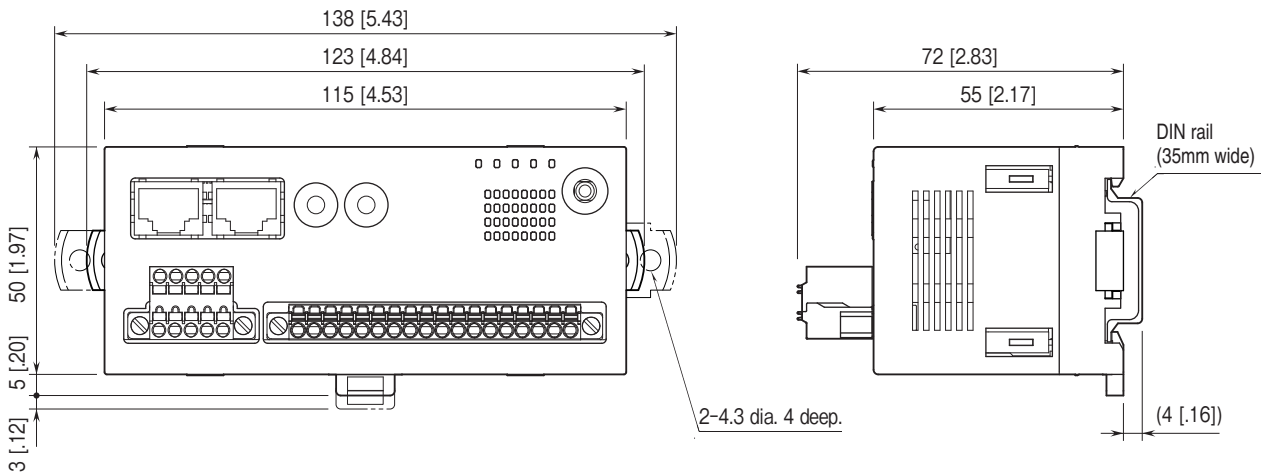
- | | |
|---------|----------------------|
| 1. FE | Functional Earth |
| 2. NC | — |
| 3. NC | — |
| 4. +24V | Power Input (24V DC) |
| 5. 0V | Power Input (0V) |

I/O DATA DESCRIPTIONS

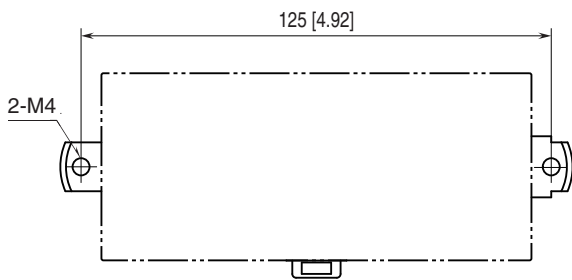
■ DISCRETE INPUT



EXTERNAL DIMENSIONS unit: mm [inch]



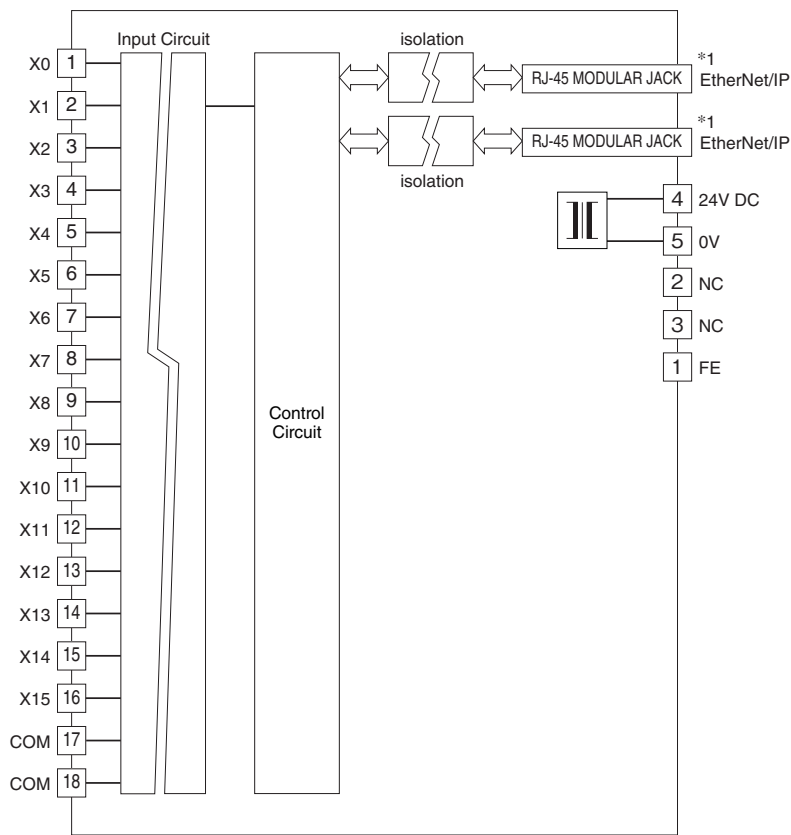
MOUNTING REQUIREMENTS unit: mm [inch]



SCHEMATIC CIRCUITRY & CONNECTION DIAGRAM

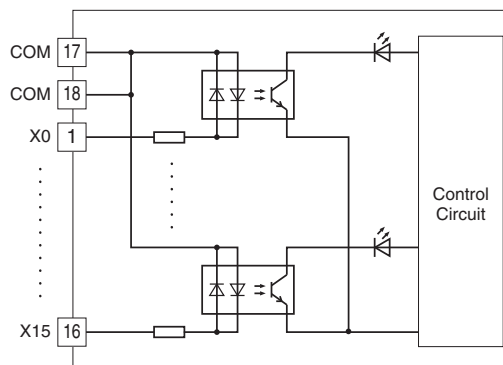
Note: In order to improve EMC performance, bond the FE terminal to ground.

Caution: FE terminal is NOT a protective conductor terminal.

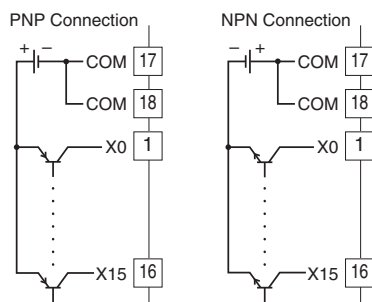


*1. The network cable can be connected to either one.

■ Input Circuit



■ Input Connection Examples





Specifications are subject to change without notice.