

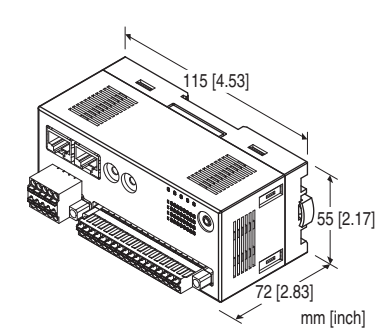
Remote I/O R7F4HEIP Series

EtherNet/IP I/O MODULE

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

Functions & Features

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



MODEL: R7F4HEIP-DC16A-M-R[1]

ORDERING INFORMATION

- Code number: R7F4HEIP-DC16A-M-R[1]
Specify a code from below for [1].
(e.g. R7F4HEIP-DC16A-M-R/Q)
- Specify the specification for option code /Q
(e.g. /C01)

I/O TYPE

DC16A: NPN transistor output, 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: $\pm 10\%$; 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, output: Tension clamp terminal

Housing material: Flame-resistant resin (gray)

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

Output at the loss of communication: Configurable via R7CFG

Status indicator LED: PWR, LNK1, LNK2

(Refer to the instruction manual)

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

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)

OUTPUT SPECIFICATIONS

Common: Negative common (NPN) per 16 points
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.,
 ≤ 2 A (including discrete output load charge)
Rated output current: 0.1 A per point, 1.6 A per common
Residual voltage: ≤ 1.2 V
Leakage current: ≤ 0.1 mA
ON delay: ≤ 0.2 msec.
OFF delay: ≤ 0.5 msec.
Overload current protection function: Limits the current value when overcurrent is detected
Overheat protection function: Turns OFF the outputs when overheat is detected
(When driving an inductive load, connect a diode in parallel with the load.)

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
(output 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.

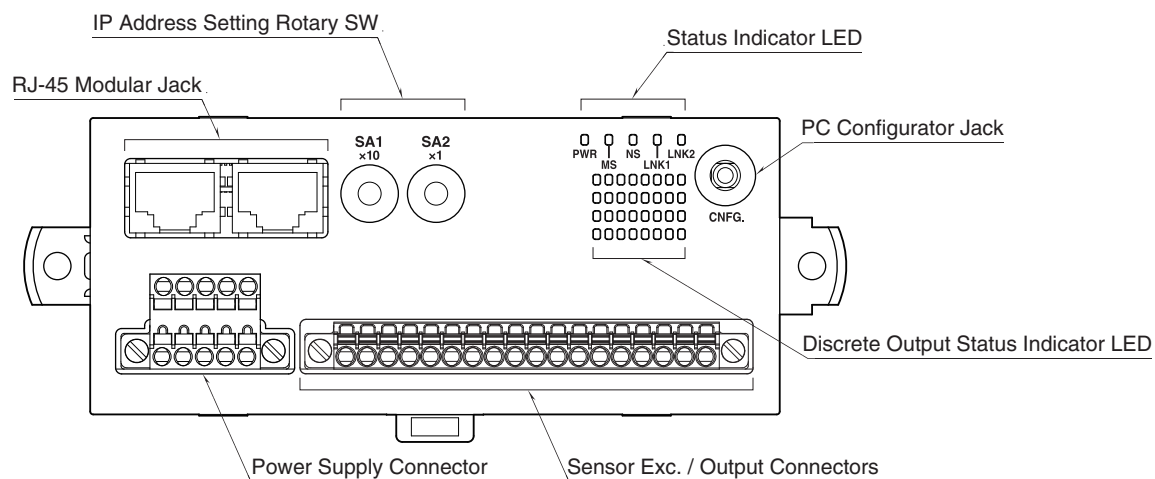
■ CHANNEL BATCH SETTING

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

■ 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

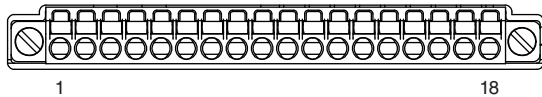
■ SENSOR EXC. / OUTPUT CONNECTION

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	Y0	Output 0
2	Y1	Output 1
3	Y2	Output 2
4	Y3	Output 3
5	Y4	Output 4
6	Y5	Output 5
7	Y6	Output 6
8	Y7	Output 7
9	Y8	Output 8
10	Y9	Output 9
11	Y10	Output 10
12	Y11	Output 11
13	Y12	Output 12
14	Y13	Output 13
15	Y14	Output 14
16	Y15	Output 15
17	+24V	24 V DC
18	GND	0 V

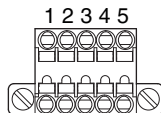
■ POWER SUPPLY TERMINAL ASSIGNMENT

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

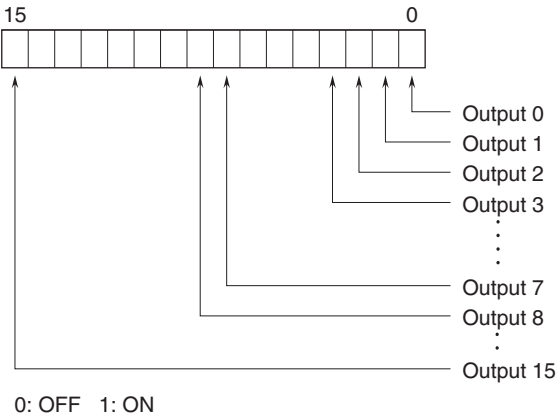
- AI0,25-10YE 0.25 mm² (Phoenix Contact)
- AI0,34-10TQ 0.34 mm² (Phoenix Contact)
- AI0,5-10WH 0.5 mm² (Phoenix Contact)
- AI0,75-10GY 0.75 mm² (Phoenix Contact)
- A1-10 1.0 mm² (Phoenix Contact)
- A1,5-10 1.5 mm² (Phoenix Contact)



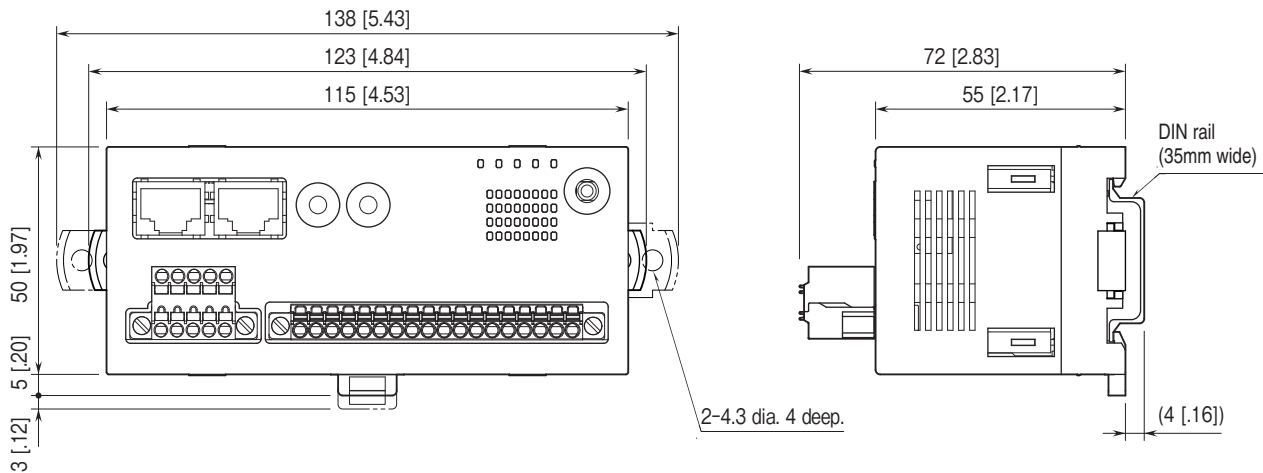
- | | |
|---------|----------------------|
| 1. FE | Functional Earth |
| 2. NC | — |
| 3. NC | — |
| 4. +24V | Power Input (24V DC) |
| 5. 0V | Power Input (0V) |

I/O DATA DESCRIPTIONS

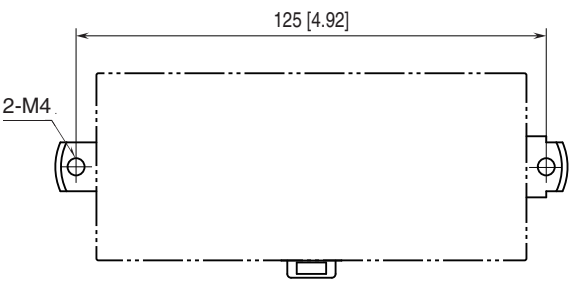
■ DISCRETE OUTPUT



EXTERNAL DIMENSIONS unit: mm [inch]



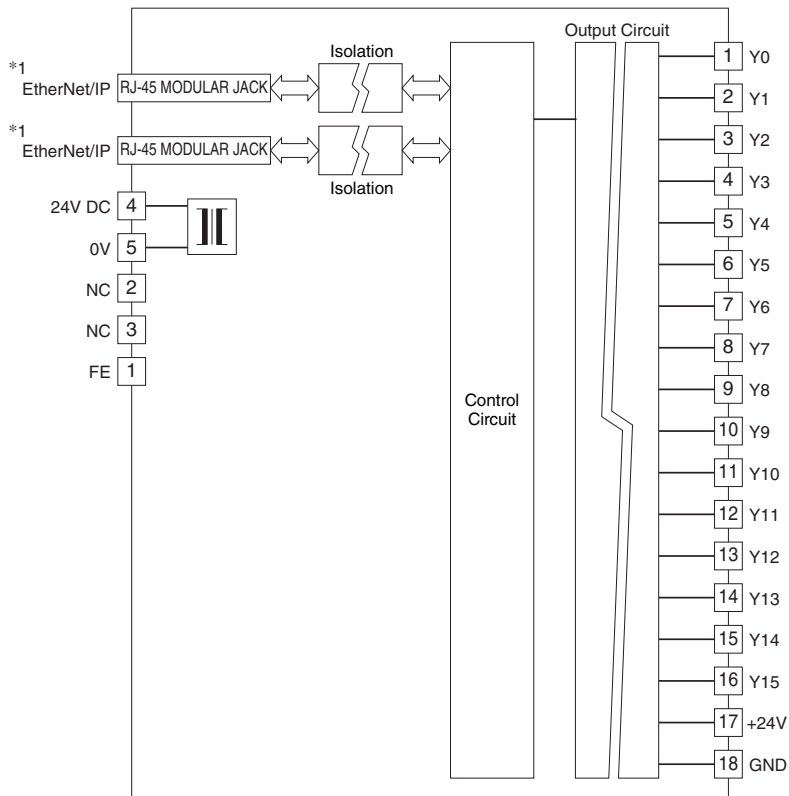
MOUNTING REQUIREMENTS unit: mm [inch]



SCHEMATIC CIRCUITRY & CONNECTION DIAGRAM

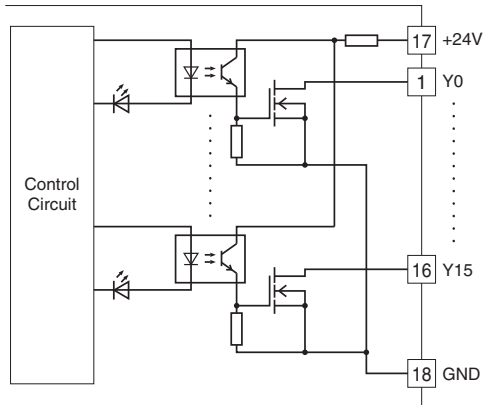
Note: In order to improve EMC performance, bond the FE terminal to ground.

Caution: FE terminal is NOT a protective conductor terminal.

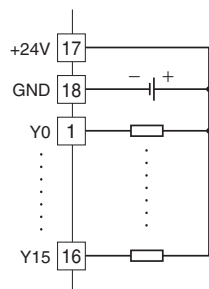


*1. The network cable can be connected to either one

■ Output Circuit



■ Output Connection Examples





Specifications are subject to change without notice.