

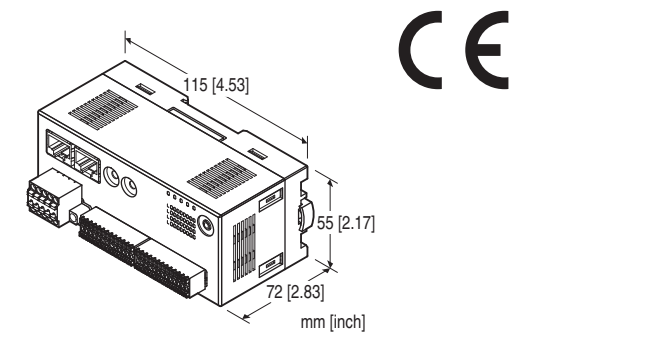
Remote I/O R7F4HEIP Series

EtherNet/IP I/O MODULE

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

Functions & Features

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



MODEL: R7F4HEIP-DA16A-4-R[1]

ORDERING INFORMATION

- Code number: R7F4HEIP-DA16A-4-R[1]
Specify a code from below for [1].
(e.g. R7F4HEIP-DA16A-4-R/Q)
- Specify the specification for option code /Q
(e.g. /C01)

I/O TYPE

DA16A: NPN discrete input, 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

COATING (For the detail, refer to our web site.)
/C01: Silicone coating
/C02: Polyurethane coating
/C03: Rubber coating

RELATED PRODUCTS

- PC configurator software (model: R7CFG)
 - EDS file
- The EDS file and configurator software are downloadable at our web site.
A dedicated cable is required to connect the module to the PC. Please refer to the internet software download site or the users manual for the PC configurator for applicable cable types.

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 common (NPN), 8 points per common
Numbers of input: 16
Maximum inputs applicable at once: No limit (at 24 V DC)
Rated input voltage: 24 V DC $\pm 10\%$; ripple 5 %p-p max.
ON voltage / current: ≥ 15 V DC (X0 to X15 input terminal - +24 V) / ≥ 3.5 mA
OFF voltage / current: ≤ 5 V DC (X0 to X15 input terminal - +24 V) / ≤ 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.

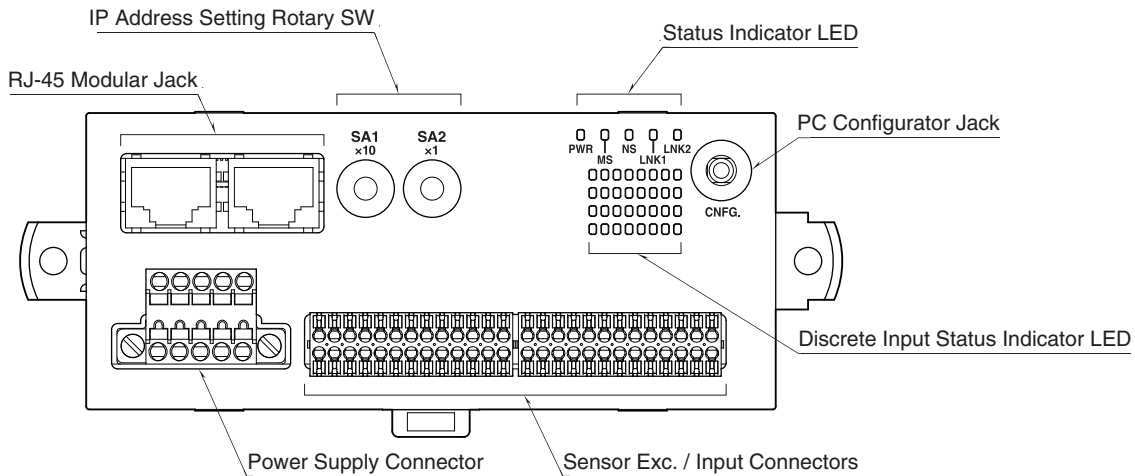
■ CHANNEL BATCH SETTING

| 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

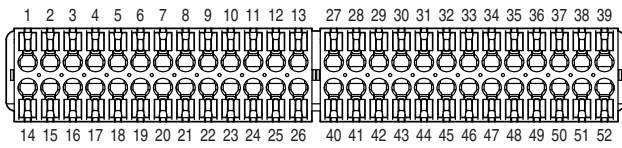
■ SENSOR EXC. / INPUT CONNECTION

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

Applicable wire size: 0.14 - 0.5mm², stripped length 7mm

Recommended solderless terminal:

- AI0,14-6GY 0.14mm² (Phoenix Contact)
- AI0,25-6YE 0.25mm² (Phoenix Contact)
- A0,34-7 0.34mm² (Phoenix Contact)



| PIN No. | ID | FUNCTION | PIN No. | ID | FUNCTION |
|---------|-------|----------|---------|-------|----------|
| 1 | +24V1 | 24V DC | 27 | +24V2 | 24V DC |
| 2 | X0 | Input 0 | 28 | X8 | Input 8 |
| 3 | +24V1 | 24V DC | 29 | +24V2 | 24V DC |
| 4 | GND1 | 0V | 30 | GND2 | 0V |
| 5 | X2 | Input 2 | 31 | X10 | Input 10 |
| 6 | +24V1 | 24V DC | 32 | +24V2 | 24V DC |
| 7 | GND1 | 0V | 33 | GND2 | 0V |
| 8 | X4 | Input 4 | 34 | X12 | Input 12 |
| 9 | +24V1 | 24V DC | 35 | +24V2 | 24V DC |
| 10 | GND1 | 0V | 36 | GND2 | 0V |
| 11 | X6 | Input 6 | 37 | X14 | Input 14 |
| 12 | +24V1 | 24V DC | 38 | +24V2 | 24V DC |
| 13 | GND1 | 0V | 39 | GND2 | 0V |
| 14 | GND1 | 0V | 40 | GND2 | 0V |
| 15 | X1 | Input 1 | 41 | X9 | Input 9 |
| 16 | +24V1 | 24V DC | 42 | +24V2 | 24V DC |
| 17 | GND1 | 0V | 43 | GND2 | 0V |
| 18 | X3 | Input 3 | 44 | X11 | Input 11 |
| 19 | +24V1 | 24V DC | 45 | +24V2 | 24V DC |
| 20 | GND1 | 0V | 46 | GND2 | 0V |
| 21 | X5 | Input 5 | 47 | X13 | Input 13 |
| 22 | +24V1 | 24V DC | 48 | +24V2 | 24V DC |
| 23 | GND1 | 0V | 49 | GND2 | 0V |
| 24 | X7 | Input 7 | 50 | X15 | Input 15 |
| 25 | +24V1 | 24V DC | 51 | +24V2 | 24V DC |
| 26 | GND1 | 0V | 52 | GND2 | 0V |

MODEL: R7F4HEIP-DA16A

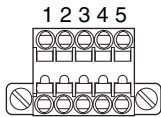
■ POWER SUPPLY TERMINAL ASSIGNMENT

Applicable connector: TFMC1,5 / 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

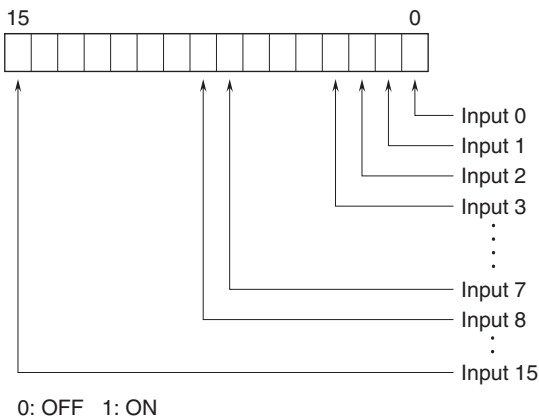
- AI0,25-10YE 0.25 mm² (Phoenix Contact)
- AI0,34-10TQ 0.34 mm² (Phoenix Contact)
- AI0,5-10WH 0.5 mm² (Phoenix Contact)
- AI0,75-10GY 0.75 mm² (Phoenix Contact)
- A1-10 1.0 mm² (Phoenix Contact)
- A1,5-10 1.5 mm² (Phoenix Contact)



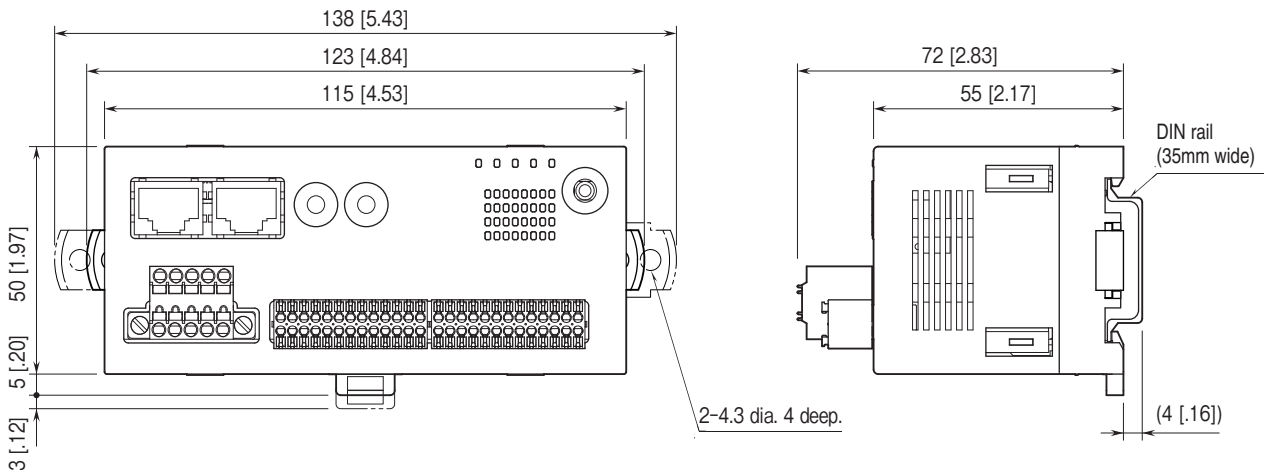
- | | |
|---------|----------------------|
| 1. FE | Functional Earth |
| 2. NC | — |
| 3. NC | — |
| 4. +24V | Power Input (24V DC) |
| 5. 0V | Power Input (0V) |

I/O DATA DESCRIPTIONS

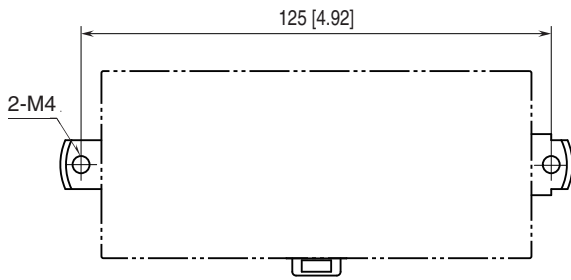
■ DISCRETE INPUT



EXTERNAL DIMENSIONS & TERMINAL ASSIGNMENTS unit: mm [inch]

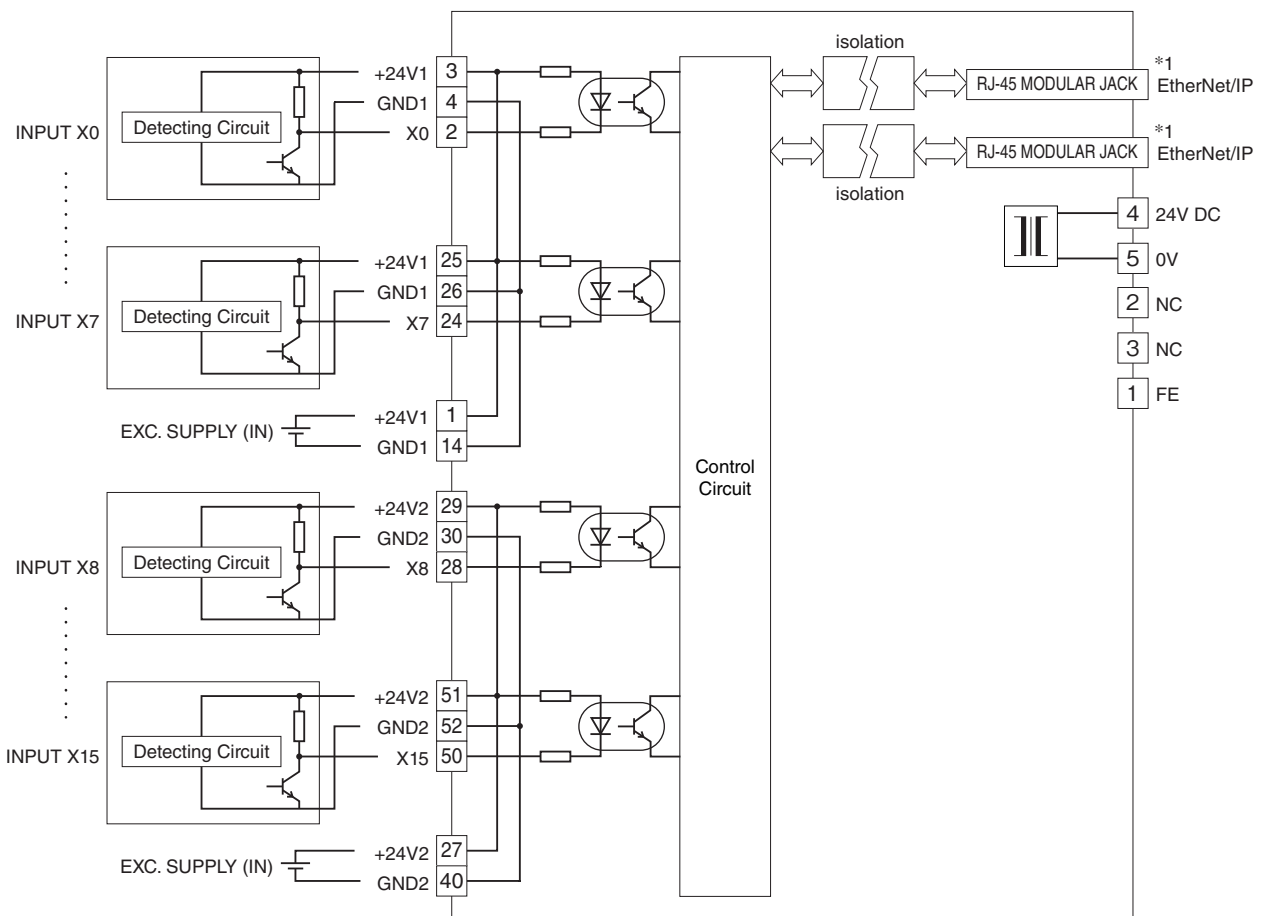


MOUNTING REQUIREMENTS unit: mm [inch]



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.



Specifications are subject to change without notice.