

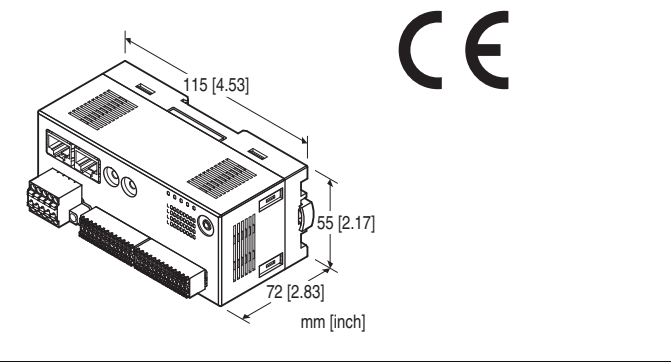
Remote I/O R7F4HEIP Series

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-4-R[1]

ORDERING INFORMATION

- Code number: R7F4HEIP-DC16A-4-R[1]
Specify a code from below for [1].
(e.g. R7F4HEIP-DC16A-4-R/Q)
- Specify the specification for option code /Q
(e.g. /C01)

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

COATING (For the detail, refer to M-System's 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 M-System's 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, 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 8 points
Number of output: 16 points
Maximum outputs applicable at once: No limit (at 24 V DC)
Rated load voltage: 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: ≤ 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.

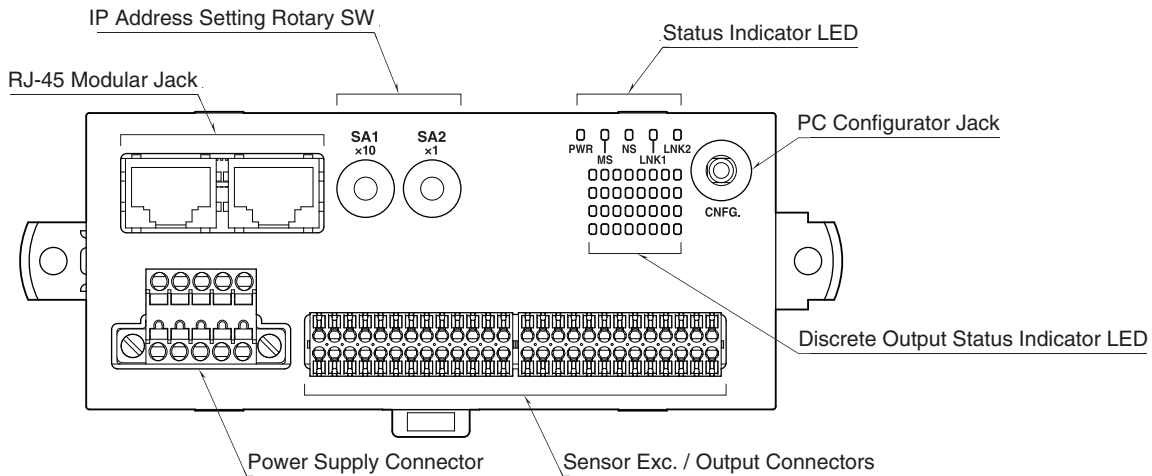
■ CHANNEL BATCH SETTING

| 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

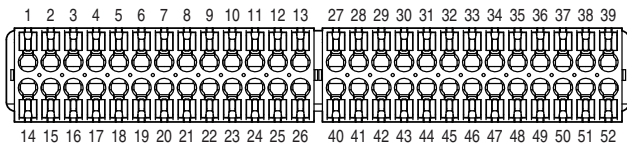
■ SENSOR EXC. / OUTPUT CONNECTION

Applicable connector: 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)
- AO,34-7 0.34mm² (Phoenix Contact)



| 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 |
| 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 |

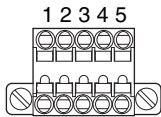
POWER SUPPLY TERMINAL ASSIGNMENT

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

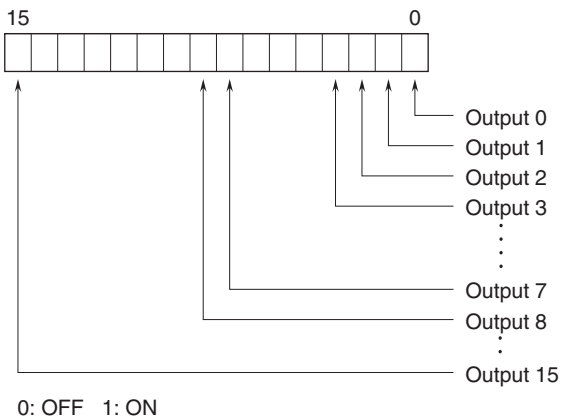
- AI0,25-10YE 0.25 mm² (Phoenix Contact)
- AI0,34-10TQ 0.34 mm² (Phoenix Contact)
- AI0,5-10WH 0.5 mm² (Phoenix Contact)
- AI0,75-10GY 0.75 mm² (Phoenix Contact)
- A1-10 1.0 mm² (Phoenix Contact)
- A1,5-10 1.5 mm² (Phoenix Contact)



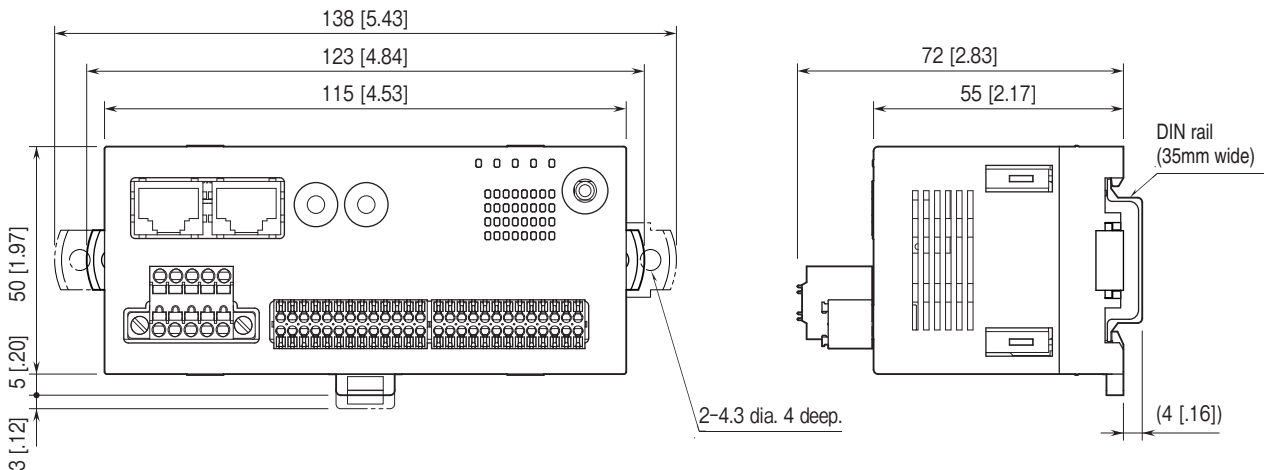
- | | |
|---------|----------------------|
| 1. FE | Functional Earth |
| 2. NC | — |
| 3. NC | — |
| 4. +24V | Power Input (24V DC) |
| 5. 0V | Power Input (0V) |

I/O DATA DESCRIPTIONS

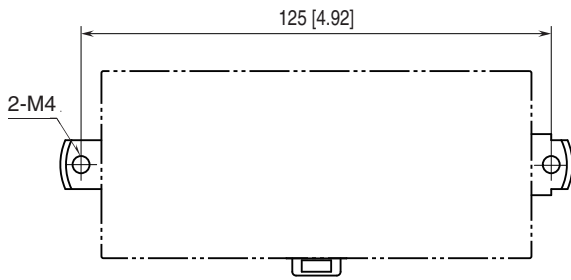
DISCRETE OUTPUT



EXTERNAL DIMENSIONS & TERMINAL ASSIGNMENTS unit: mm



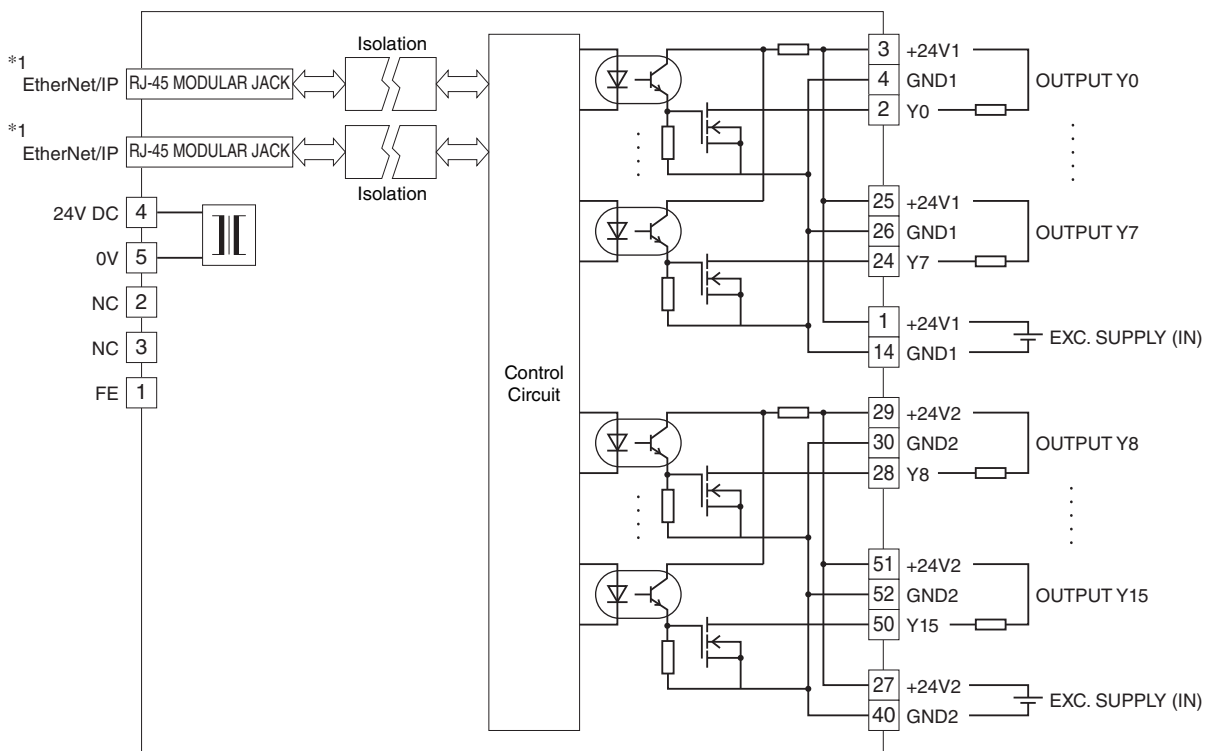
MOUNTING REQUIREMENTS unit: mm [inch]



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.