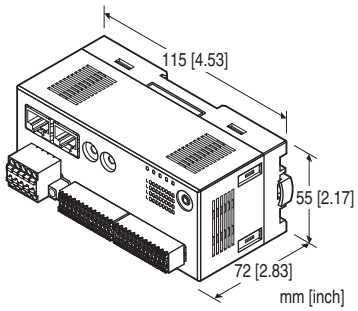
Remote I/O R7F4HEIP Series

EtherNet/IP I/O MODULE

(NPN discrete input, 32 points, tension clamp terminal block)

Functions & Features

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



MODEL: R7F4HEIP-DA32A-4-R[1]

ORDERING INFORMATION

- Code number: R7F4HEIP-DA32A-4-R[1]

Specify a code from below for [1].
(e.g. R7F4HEIP-DA32A-4-R/Q)

- Specify the specification for option code /Q
(e.g. /C01)

I/O TYPE

DA32A: NPN discrete input, 32 points

TERMINAL BLOCK

4: Tension clamp terminal block for power supply
RJ-45 Modular jack for communication
Tension clamp terminal block for I/O
(applicable wire size: 0.14 - 0.5mm^2)

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 LEDs: PWR, LNK1, LNK2
(Refer to the instruction manual)
Discrete input status indicator LED: Green LED turns on with input ON
Configurator connection: 2.5 dia. miniature jack
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: Two (2) words
Status indicator LEDs: MS, NS (Refer to the instruction manual for details)

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INPUT SPECIFICATIONS

Common: Positive common (NPN), 16 points per common
Number of input: 32 points
Maximum inputs applicable at once: No limit (at 24 V DC)
Sensor excitation: 24 V DC ±10 %; ripple 5 %p-p max., ≤ 2 A (including discrete input load charge)
ON voltage / current: ≥ 17 V DC (X0 to X31 input terminal to +24V) / ≥ 2.3 mA
OFF voltage / current: ≤ 5 V DC (X0 to X31 input terminal to +24V) / ≤ 0.75 mA
Input current: ≤ 3.5 mA per point at 24 V DC
Input resistance: Approx. 7.2 kΩ
ON delay: ≤ 0.2 msec.
OFF delay: ≤ 0.5 msec.

INSTALLATION

Current consumption
•**DC**: Approx. 75 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 MΩ 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.)

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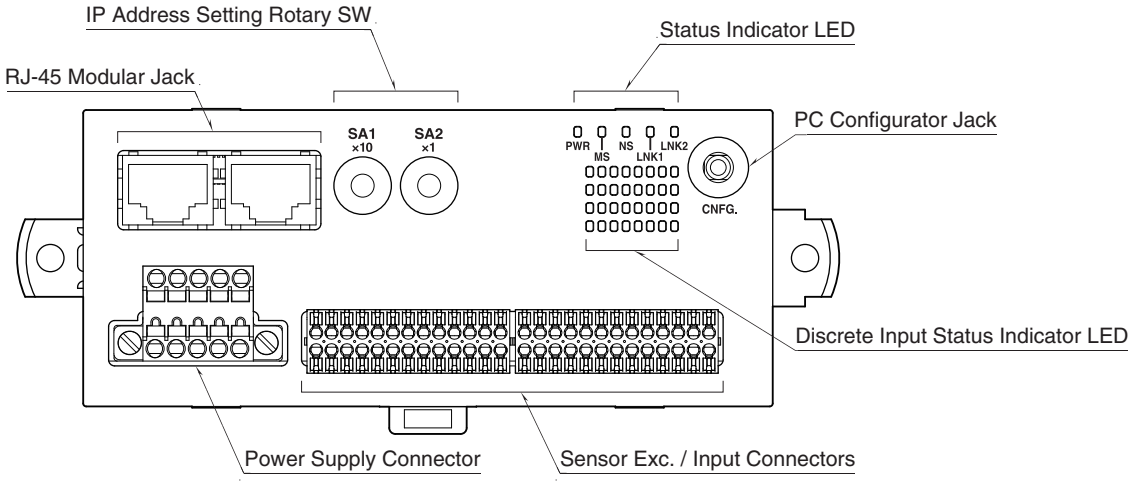
EXTERNAL VIEW



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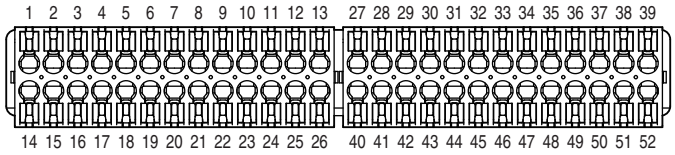
TERMINAL ASSIGNMENTS

■ SENSOR EXC. / INPUT CONNECTION

Applicable connector: DFMC0,5/13-ST-2,54 (Phoenix Contact) (included in the package)
Applicable wire size: 0.14 – 0.5mm^2, stripped length 7mm
Recommended solderless terminal:
· AI0,14-6GY 0.14mm^2 (Phoenix Contact)
· AI0,14-8GY 0.14mm^2 (Phoenix Contact)
· AI0,25-6YE 0.25mm^2 (Phoenix Contact))
· AI0,25-8YE 0.25mm^2 (Phoenix Contact)
· A0,25-7 0.25mm^2 (Phoenix Contact)
· A0,34-7 0.34mm^2 (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	X0	Input 0	28	X16	Input 16
3	X2	Input 2	29	X18	Input 18
4	+24V1	24V DC	30	+24V2	24V DC
5	X4	Input 4	31	X20	Input 20
6	X6	Input 6	32	X22	Input 22
7	+24V1	24V DC	33	+24V2	24V DC
8	X8	Input 8	34	X24	Input 24
9	X10	Input 10	35	X26	Input 26
10	+24V1	24V DC	36	+24V2	24V DC
11	X12	Input 12	37	X28	Input 28
12	X14	Input 14	38	X30	Input 30
13	+24V1	24V DC	39	+24V2	24V DC

PIN NO.	ID	FUNCTION	PIN NO.	ID	FUNCTION
14	GND1	0V	40	GND2	0V
15	X1	Input 1	41	X17	Input 17
16	X3	Input 3	42	X19	Input 19
17	GND1	0V	43	GND2	0V
18	X5	Input 5	44	X21	Input 21
19	X7	Input 7	45	X23	Input 23
20	GND1	0V	46	GND2	0V
21	X9	Input 9	47	X25	Input 25
22	X11	Input 11	48	X27	Input 27
23	GND1	0V	49	GND2	0V
24	X13	Input 13	50	X29	Input 29
25	X15	Input 15	51	X31	Input 31
26	GND1	0V	52	GND2	0V

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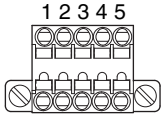
■ POWER SUPPLY TERMINAL ASSIGNMENT

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

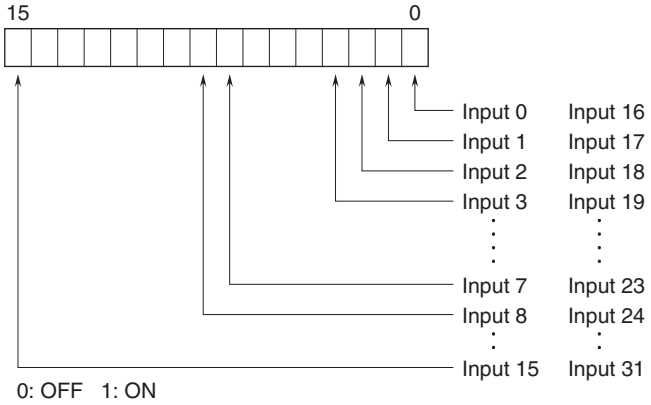
- AI0,25-10YE 0.25 mm² (Phoenix Contact)
- AI0,34-10TQ 0.34 mm² (Phoenix Contact)
- AI0,5-10WH 0.5 mm² (Phoenix Contact)
- AI0,75-10GY 0.75 mm² (Phoenix Contact)
- A1-10 1.0 mm² (Phoenix Contact)
- A1,5-10 1.5 mm² (Phoenix Contact)



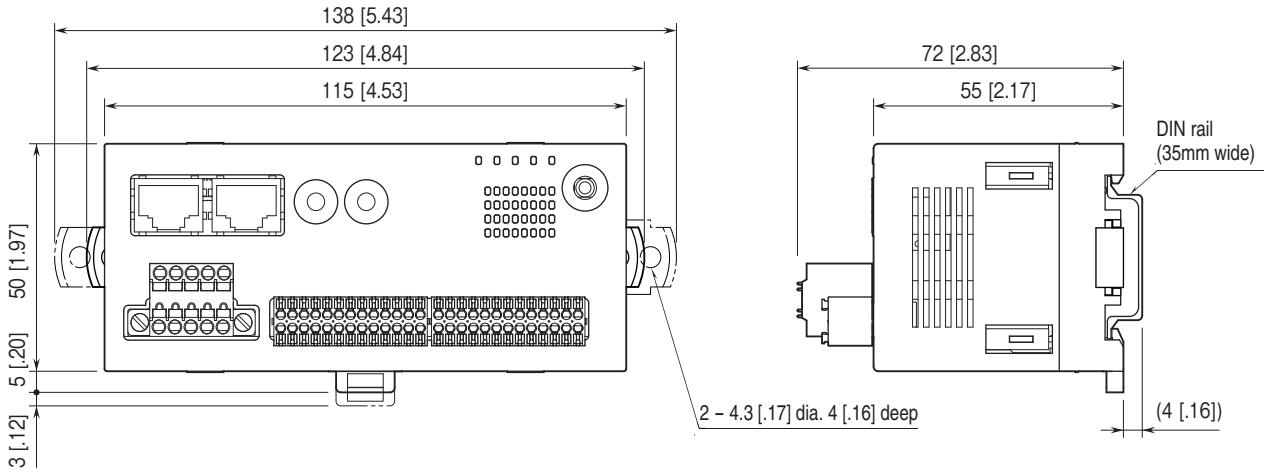
1. FE	Functional Earth
2. NC	—
3. NC	—
4. +24V	Power Input (24V DC)
5. 0V	Power Input (0V)

I/O DATA DESCRIPTIONS

■ DISCRETE INPUT



EXTERNAL DIMENSIONS unit: mm [inch]



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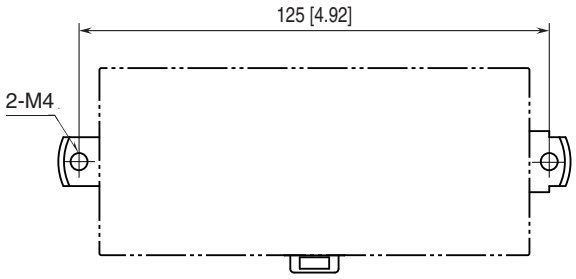
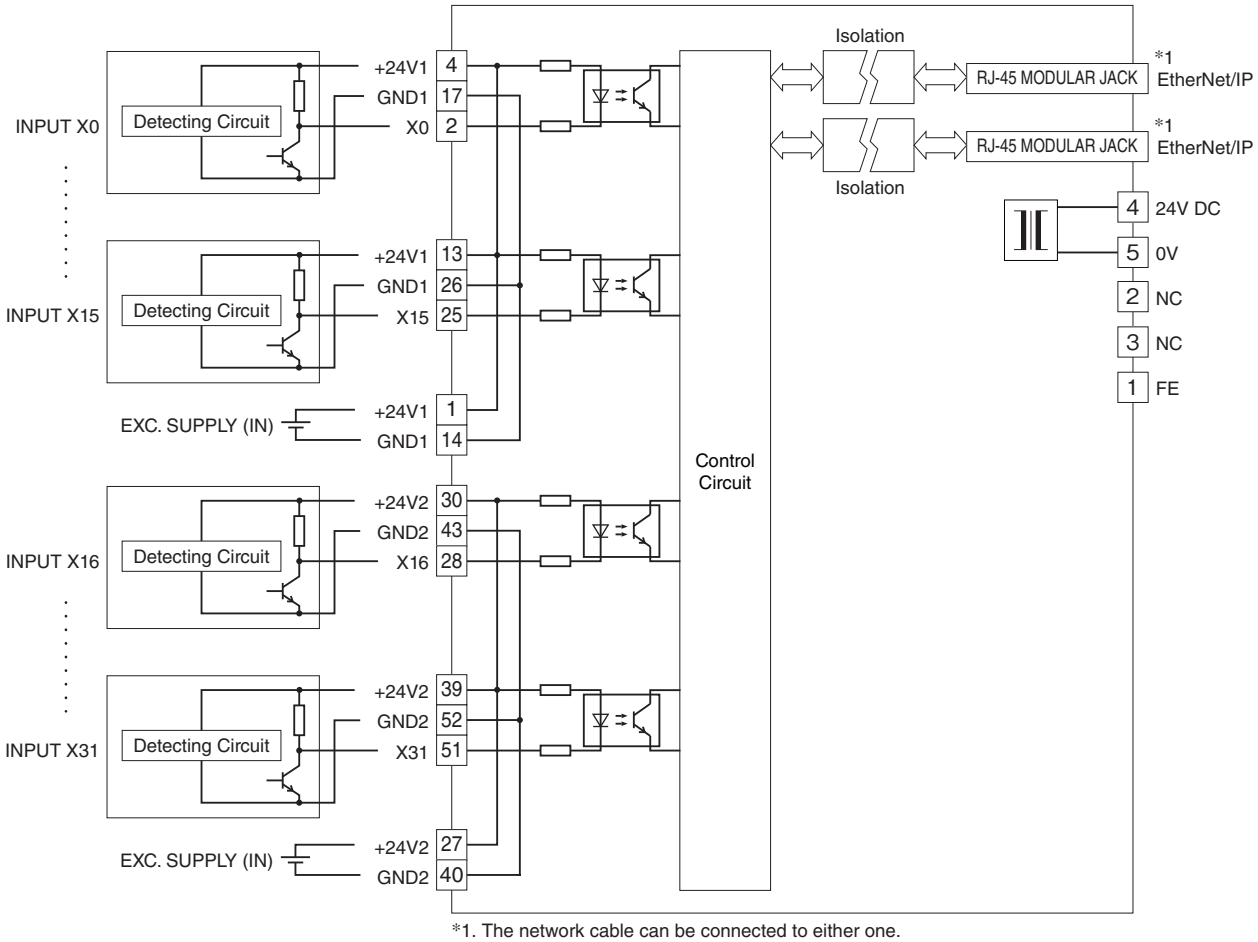
MOUNTING REQUIREMENTS unit: mm [inch]



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.

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