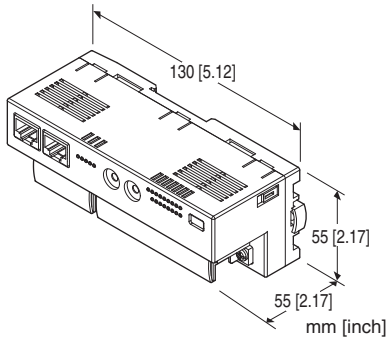
Remote I/O R7G4H Series

EtherNet/IP I/O MODULE

(NPN/PNP discrete input, 16 points, screw 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: R7G4HEIP-6-DA16-R[1]

ORDERING INFORMATION

- Code number: R7G4HEIP-6-DA16-R[1]

Specify a code from below for [1].
(e.g. R7G4HEIP-6-DA16-R/Q)

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

TERMINAL BLOCK

6: Screw terminal block for power supply
RJ-45 Modular jack for communication
Screw terminal block for I/O

I/O TYPE

DA16: NPN/PNP discrete input, 16 points

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 software (model: R7CFG)
- EDS file

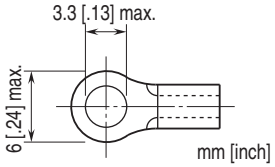
The EDS files and configurator software are downloadable at our web site.
For connecting to PC, use commercially available Mini-B type USB cable. (provided by user)

GENERAL SPECIFICATIONS

Connection

EtherNet/IP: RJ-45 modular jack
Power input, input: M3 separable screw terminal (torque 0.5 N·m)
Solderless terminal: Refer to the drawing at the end of the section.
Recommended manufacturer: J.S.T. Mfg. Co., Ltd., NICHIFU Co., Ltd.
Applicable wire size: 0.25 to 1.65 mm^2 (AWG 22 to 16)
Screw terminal: Nickel-plated steel
Housing material: Flame-resistant resin (gray)
Isolation: Input to EtherNet/IP or FE to power
Status indicator LEDs: PWR, RUN
(Refer to the instruction manual)
Discrete input status indicator LED: Green LED turns on with input ON
Read rate: Selectable with R7CFG

■Recommended solderless terminal



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

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(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) per 16 points
Maximum inputs applicable at once: No limit (at 24 V DC)
Rated input voltage: 24 V DC ±10 %; ripple 5 %p-p max.
ON voltage / current: ≥ 15 V DC (input – COM) / ≥ 3.5 mA
OFF voltage / current: ≤ 5 V DC (input – COM) / ≤ 1 mA
Input current: ≤ 5.5 mA per point at 24 V DC
Input resistance: Approx. 4.4 kΩ
ON delay: ≤ 0.2 msec.
OFF delay: ≤ 0.5 msec.

INSTALLATION

Current consumption: Approx. 45 mA
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: 200 g (0.44 lb)

PERFORMANCE

Insulation resistance: ≥ 100 MΩ with 500 V DC
Dielectric strength: 1500 V AC @ 1 minute
(input 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 SETTING
Conversion rate	1 ms, 5 ms, 10 ms, 20 ms, 50 ms, 70 ms, 100 ms, 200 ms	10 ms

■ EtherNet SETTING

PARAMETER	SETTING RANGE	DEFAULT SETTING
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
Time Out	0.0 - 3276.7 (sec.)	3.0 (sec.)
Use IP Address	DHCP / CONFIG	CONFIG

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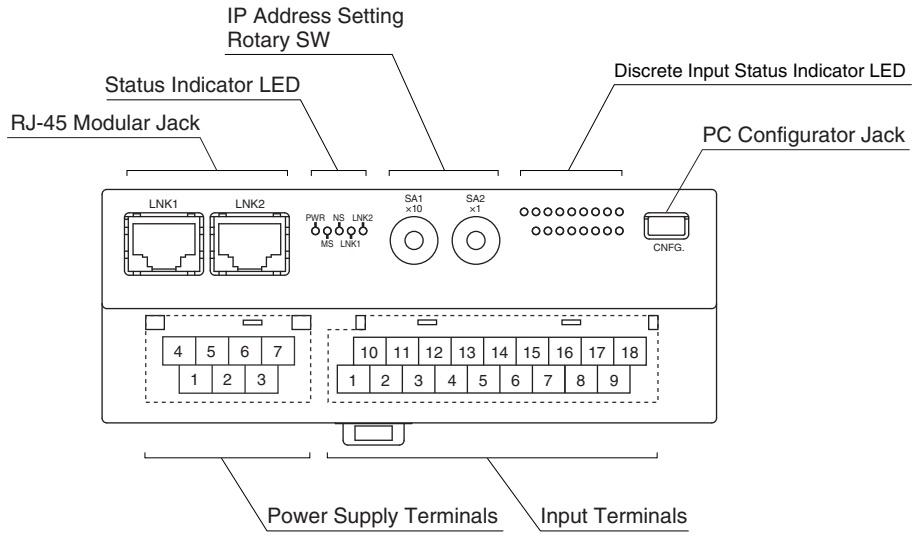
EXTERNAL VIEW



TERMINAL ASSIGNMENTS

■ INPUT TERMINAL ASSIGNMENT

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

NO.	ID	FUNCTION	NO.	ID	FUNCTION
1	COM	Common	10	COM	Common
2	X0	Input 0	11	X1	Input 1
3	X2	Input 2	12	X3	Input 3
4	X4	Input 4	13	X5	Input 5
5	X6	Input 6	14	X7	Input 7
6	X8	Input 8	15	X9	Input 9
7	X10	Input 10	16	X11	Input 11
8	X12	Input 12	17	X13	Input 13
9	X14	Input 14	18	X15	Input 15

■ POWER SUPPLY TERMINAL ASSIGNMENT

4	5	6	7
NC	NC	+24V	0V
1	2	3	
NC	NC	FE	

1. NC –
2. NC –
3. FE Functional earth
4. NC –
5. NC –
6. +24V Power supply (24V DC)
7. 0V Power supply (0V)

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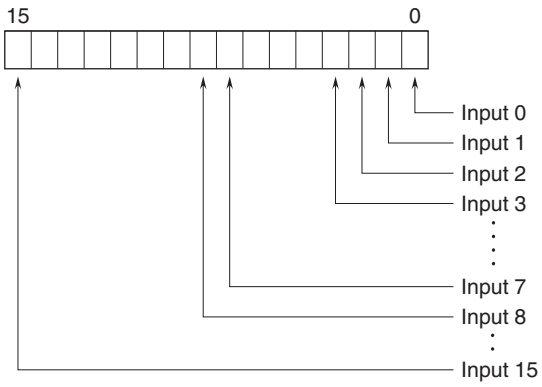
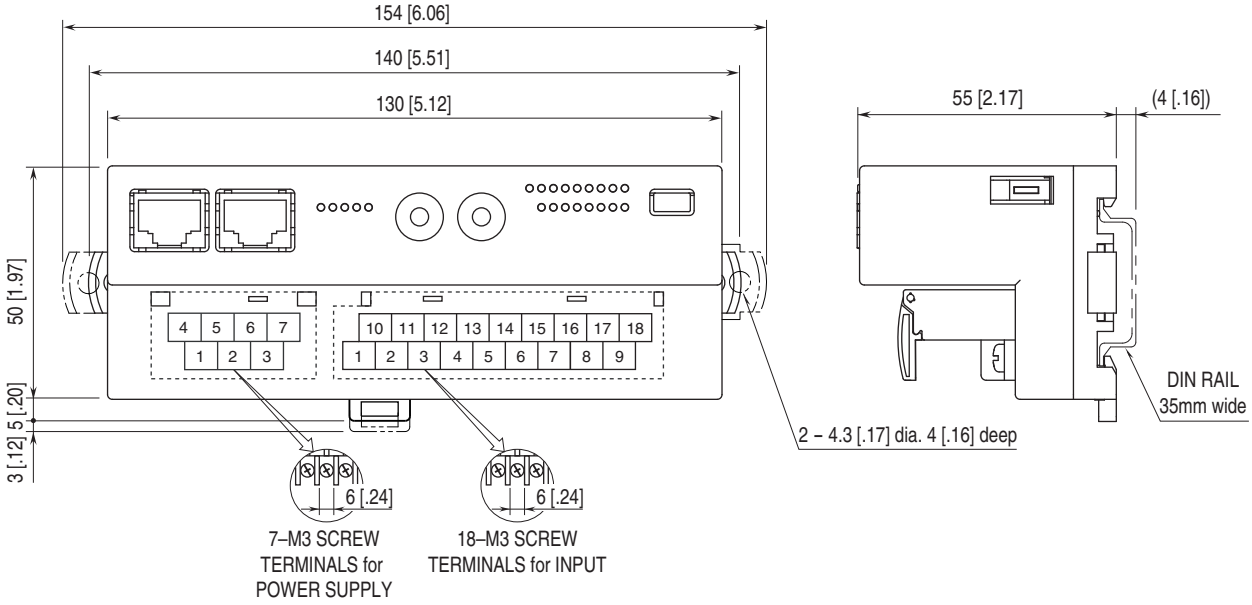
I/O DATA DESCRIPTIONS

■ **DISCRETE INPUT**

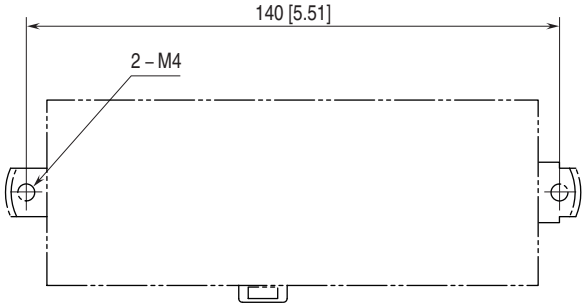


0: OFF 1: ON

EXTERNAL DIMENSIONS & TERMINAL ASSIGNMENTS unit: mm [inch]



MOUNTING REQUIREMENTS unit: mm [inch]



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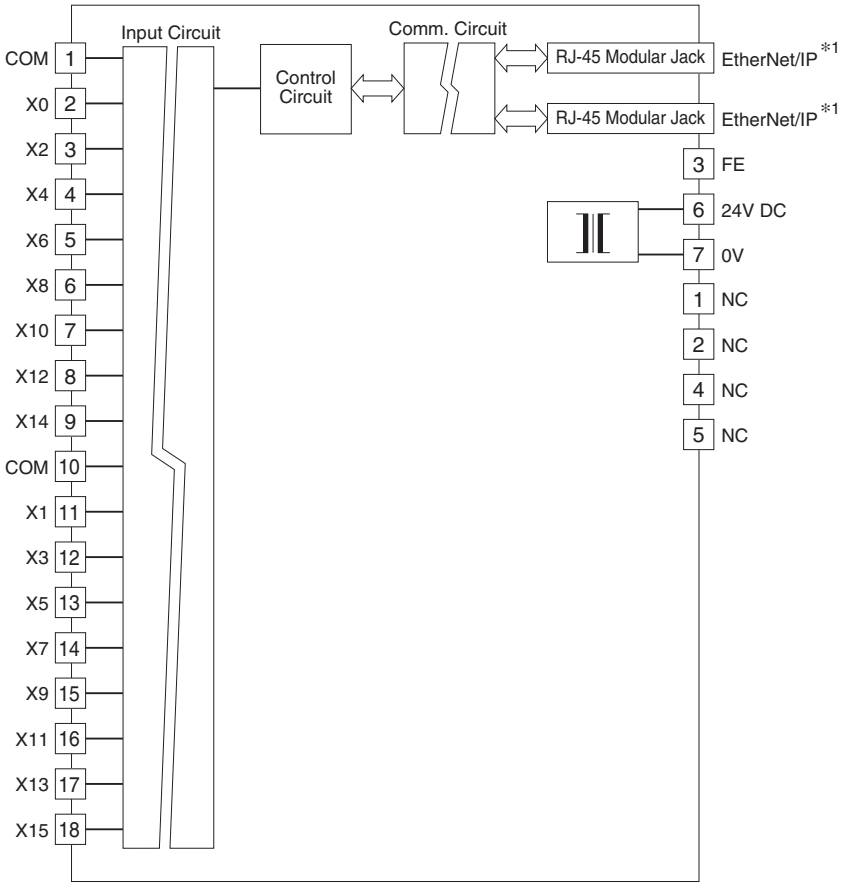
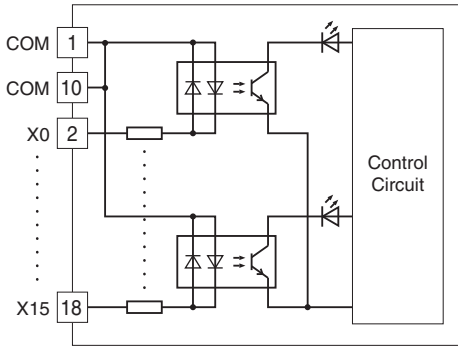
SCHEMATIC CIRCUITRY & CONNECTION DIAGRAM

Note: In order to improve EMC performance, bond the FE terminal to ground.
Caution: FE terminal is NOT a protective conductor terminal.

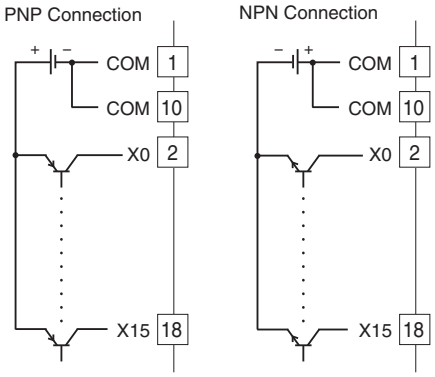


*1. The network cable can be connected to either one.

■ **Input Circuit**



■ **Input Connection Examples**



⚠ Specifications are subject to change without notice.

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