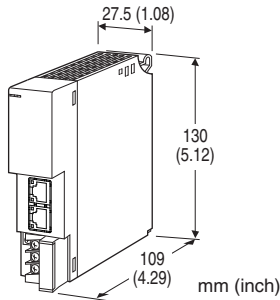


Remote I/O R3 Series

NETWORK INTERFACE MODULE

(EtherCAT)

EtherCAT® is a registered trademark and patented technology, licensed by Beckhoff Automation GmbH, Germany.



MODEL: R3-NECT1[1]

ORDERING INFORMATION

- Code number: R3-NECT1[1]
Specify a code from below for [1].
(e.g. R3-NECT1/CE/Q)
- Specify the specification for option code /Q
(e.g. /C01)

[1] OPTIONS (multiple selections)

Standards & Approvals

blank: Without CE

/CE: CE marking

Other Options

blank: none

/Q: Option other than the above (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: R3CON)
- ESI file

The configurator software and ESI files are downloadable at M-System's web site.

Use a commercially available Mini-B USB cable to connect the unit to a PC.

GENERAL SPECIFICATIONS

Connection

EtherCAT: RJ-45 Modular Jack

Internal bus: Via the Installation Base (model: R3-BSx)

Internal power: Via the Installation Base (model: R3-BSx)

RUN contact output: M3 separable screw terminal (torque 0.5 N·m)

Screw terminal: Nickel-plated steel

Isolation: EtherCAT to internal bus or internal power to RUN contact output

Input error data setting: Input value setting at input module error with side DIP SW

Dual communication setting: Set with the side DIP switch

Status indicators: RUN, ERR, L/A IN, L/A OUT
(Refer to the instruction manual.)

■ RUN CONTACT OUTPUT

RUN contact: Turns ON while the green RUN LED is ON (ON in normal operation).

Rated load: 250 V AC @ 0.5 A (cos ϕ = 1)

30 V DC @ 0.5 A (resistive load)

(Less than 50 V AC to conform with EU Directive)

Maximum switching voltage: 250 V AC or 30 V DC

Maximum switching power: 250 VA or 150 W

Minimum load: 1 V DC @ 1 mA

Mechanical life: 2×10^7 cycles (300 cycles/min.)

When driving an inductive load, external contact protection and noise quenching recommended.

EtherCAT COMMUNICATION

Standard: IEEE 802.3u

Transmission type: 100BASE-TX

Transmission speed: Full-duplex 100 Mbps

Transmission media: 100BASE-TX (STP cable; Category 5e)

Maximum segment length: 100 meters

Fixed address: Set with rotary switches

(The master must support MDP.)

INSTALLATION

Current consumption: 100 mA

Operating temperature: -10 to +55°C (14 to 131°F)

Operating humidity: 30 to 90 %RH (non-condensing)

Atmosphere: No corrosive gas or heavy dust

Mounting: Installation Base (model: R3-BSx)

Weight: 170 g (0.37 lb)

PERFORMANCE

Insulation resistance: $\geq 100 \text{ M}\Omega$ with 500 V DC

Dielectric strength: 1500 V AC @ 1 minute (EtherCAT to internal bus or internal power to RUN contact output)

1500 V AC @ 1 minute (power input to FG; isolated on the power supply module)

STANDARDS & APPROVALS

EU conformity:

EMC Directive

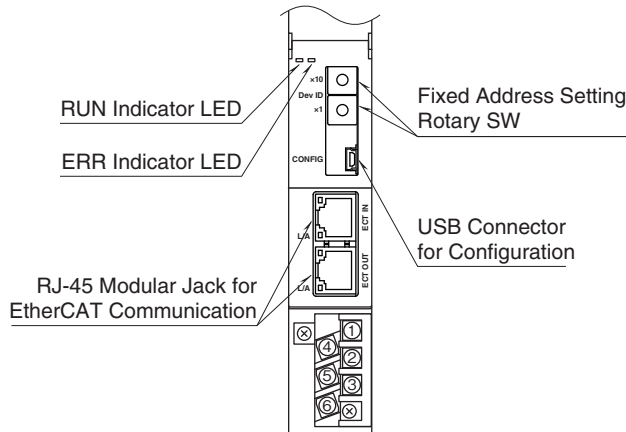
EMI EN 61000-6-4

EMS EN 61000-6-2

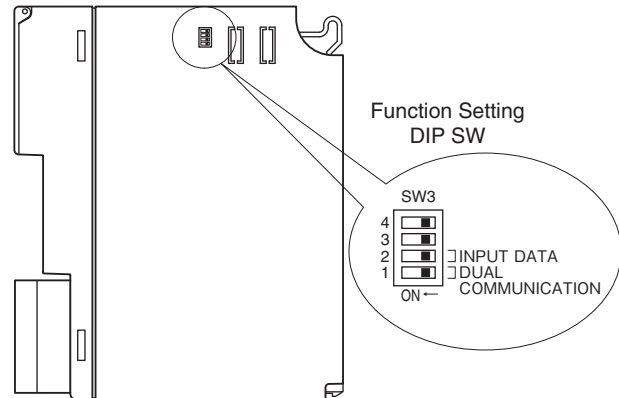
RoHS Directive

EXTERNAL VIEW

FRONT VIEW



SIDE VIEW



I/O DATA DESCRIPTIONS

The data allocations for typical I/O modules are shown below.

Refer to the manual for each module for detailed data allocations.

OPERATION IN CASE OF A COMMUNICATION ERROR WITH I/O MODULES

When the communication between the network module and the I/O modules is lost due to an error in an input module, the last process values are held until the communication is re-established.

ANALOG DATA (16-bit data, models: R3-SV4, YV4, DS4, YS4, US4, etc.)

16-bit binary data.

Basically, 0 to 100% of the selected I/O range is converted into 0 to 10000 (binary).

-15 to 0 % is a negative range represented in 2's complement.

In case of R3-US4, -10 to 0% is a negative range represented in 2's complement.



TEMPERATURE DATA (16-bit data, models: R3-RS4, TS4, US4, etc.)

16-bit binary data.

With °C temperature unit, raw data is multiplied by 10. For example, 25.5°C is converted into 255.

With °F temperature unit, the integer section of raw data is directly converted into the data.

For example, 135.4°F is converted into 135.

Minus temperature is converted into negative values, represented in 2's complements.



ANALOG DATA (16-bit data, models: R3-CT4A, CT4B, etc.)

16-bit binary data.

Integer obtained by multiplying unit value (A) by 100.

In case of CLSE-R5, integer obtained by multiplying unit value (A) by 1000.



■ ACCUMULATED COUNT DATA (32-bit data, models: R3-PA2, PA4A, WT1, WT4, etc.)

32-bit binary data is used for accumulated counts and encoder positions.

Lower 16 bits are allocated from the lowest address to higher ones, higher 16 bits in turn.



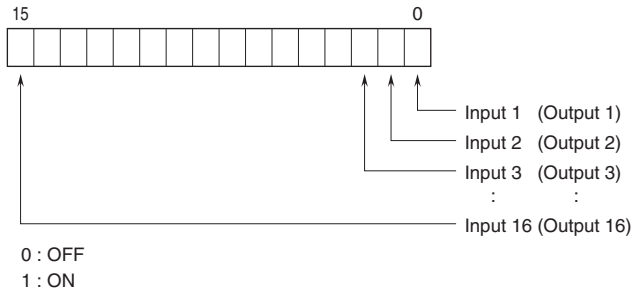
■ BCD DATA (32-bit data, models: R3-BA32A, BC32A, etc.)

32-bit binary data is used for BCD.

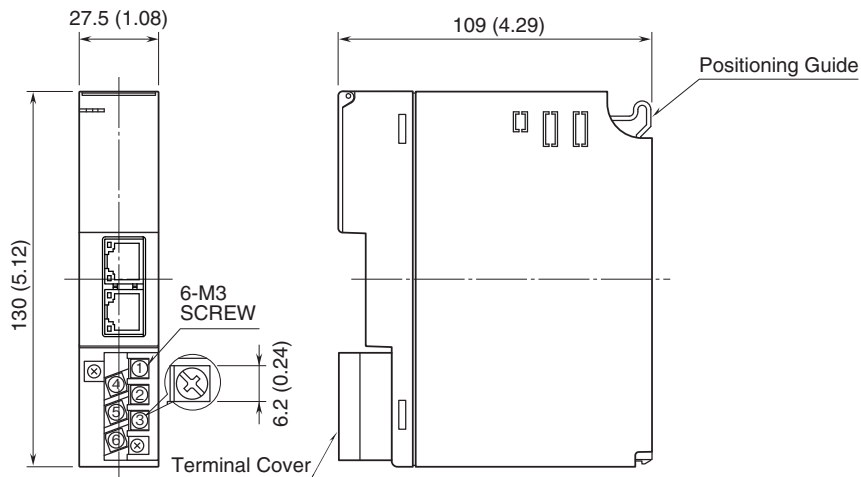
Lower 16 bits are allocated from the lowest address to higher ones, higher 16 bits in turn.



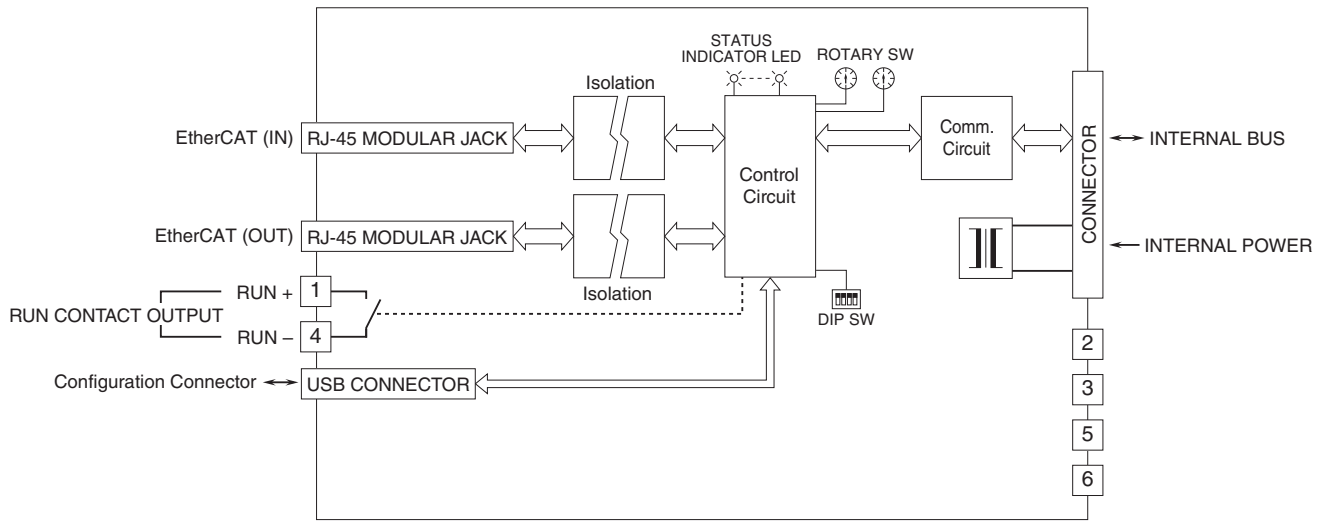
■ 16-POINT DISCRETE DATA (models: R3-DA16, DC16, etc.)



EXTERNAL DIMENSIONS & TERMINAL ASSIGNMENTS unit: mm (inch)



SCHEMATIC CIRCUITRY & CONNECTION DIAGRAM



Specifications are subject to change without notice.