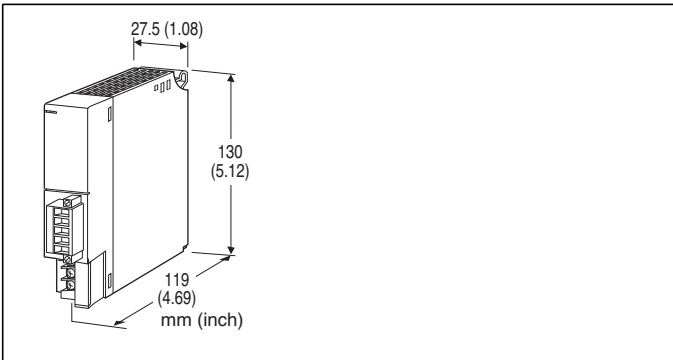


## Remote I/O R3 Series

### T-Link INTERFACE MODULE

(Fuji Electric T-Link interface module equivalent)



### MODEL: R3-NF2-[1][2]

#### ORDERING INFORMATION

- Code number: R3-NF2-[1][2]
- Specify a code from below for each [1] and [2].  
(e.g. R3-NF2-R/Q)
- Specify the specification for option code /Q  
(e.g. /C01)

#### [1] POWER INPUT

**N:** No power supply

##### AC Power

**K3:** 100 - 120 V AC

(Operational voltage range 85 - 132 V, 47 - 66 Hz) \*

**L3:** 200 - 240 V AC

(Operational voltage range 170 - 264 V, 47 - 66 Hz) \*

##### DC Power

**R:** 24 V DC

(Operational voltage 24 V  $\pm$ 10 %, ripple 10 %p-p max.) \*

\* Not selectable for use with independent power modules or network modules with the internal power input options.

#### [2] 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

#### GENERAL SPECIFICATIONS

##### Connection

**T-Link:** Euro type connector terminal

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

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

**Power input, RUN contact output:** M3 separable screw terminal

(torque 0.5 N·m)

**Screw terminal:** Nickel-plated steel

**Isolation:** T-Link to internal bus or internal power to power input to RUN contact output to FG

**Main/Sub setting:** Set with the side DIP switch

**RUN indicator:** Bi-color (green/red) LED; Green ON in normal communication; the red blinks when receiving data (Function selected with DIP SW)

**ERR indicator:** Bi-color (green/red) LED; Green ON in communication errors or minor failure, blinks at errors in the internal circuits; Red blinks when transmitting data (Function selected with DIP SW)

##### ■ RUN CONTACT OUTPUT

**Rated load:** 250 V AC @ 0.5 A (cos  $\phi$  = 1)

30 V DC @ 0.5 A (resistive load)

**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:**  $2 \times 10^7$  cycles (rate 300 cycles/min.) When driving an inductive load, external contact protection and noise quenching recommended.

#### T-LINK SPECIFICATIONS

**Configuration:** Multi-drop

**Communication:** Half-duplex

**Baud rate:** 500 kbps

**Max. transmission data capacity:** 117 words for input, 125 words for output

**Node address:** Rotary switch; 00 - 99

**Transmission media/distance:**

KPEV-SB, 0.75 mm<sup>2</sup>  $\times$  1 pair, 700 m

T-KPEV-SB, 1.25 mm<sup>2</sup>  $\times$  1 pair, 1000 m

#### INSTALLATION

##### Power consumption

•AC: Approx. 20 VA

•DC: Approx. 12 W

**Current consumption (no power supply):** 120 mA

**Output current (power supply):** 230 mA continuous at 20 V DC; 380 mA for 10 minutes

**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: 200 g (0.44 lb)

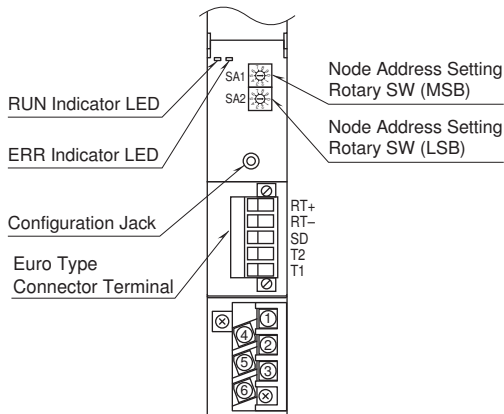
## PERFORMANCE

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

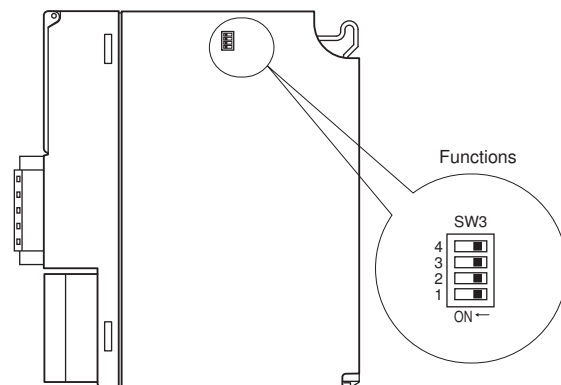
Dielectric strength: 1500 V AC @ 1 minute (T-Link to internal bus or internal power to power input to RUN contact output to FG)

## EXTERNAL VIEW

### FRONT VIEW



### SIDE VIEW



## TRANSMISSION DATA DESCRIPTIONS

This module allocates T-link addresses in order from slot 1. Set the begin address to the module's node address (T-Link address.) For example; if the formation of the I/O modules is: slot 1: R3-SV4, slot 2: R3-YV4, slot 3: R3-DA16 and slot 4: R3-DC16, the I/O data is assigned as detailed on the table below. Set "10" to the module address. Discrete I/O data can be also represented with bit address. Ch.1 through 16 are assigned to 0 thr. F.

SLOT	MODULE	ADDRESS	WORD ADDRESS	CONTENTS
1	R3-SV4	10	0	CH1 input data
			1	CH2 input data
			2	CH3 input data
			3	CH4 input data
2	R3-YV4	11	0	CH1 output data
			1	CH2 output data
			2	CH3 output data
			3	CH4 output data
3	R3-DA16	12	0	Input data
4	R3-DC16	13	0	Output data



## I/O DATA DESCRIPTIONS

### ■ ANALOG 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). Negative percentage is represented in 2's complements.



### ■ TEMPERATURE 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.



### ■ 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.

32-bit data cannot be accessed using floating addresses.

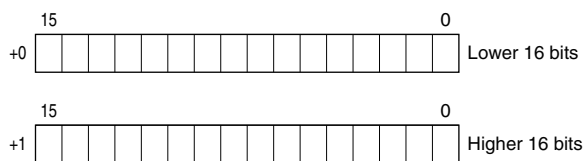


### ■ BCD DATA (32-bit data, models: R3-BA32A, BC32A, etc.)

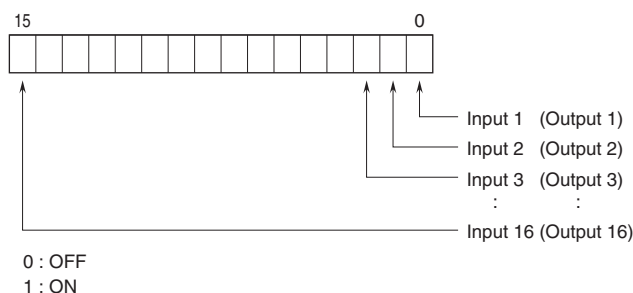
32-bit binary data is used for BCD.

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

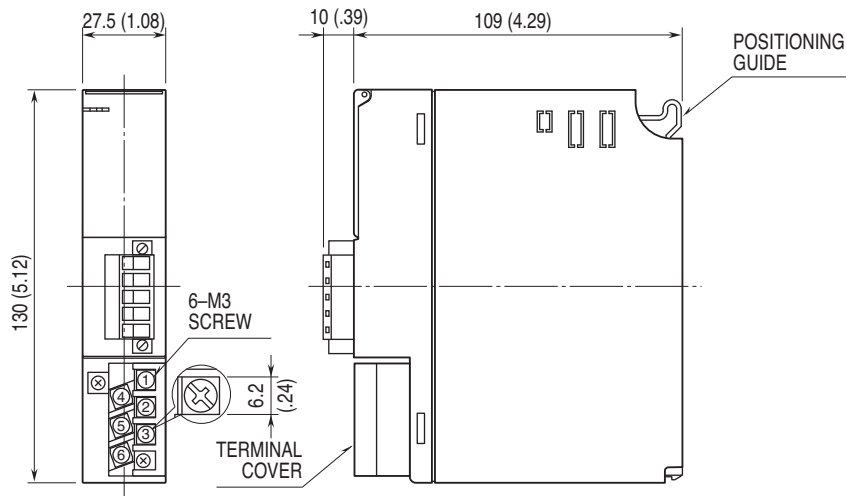
32-bit data cannot be accessed using floating addresses.



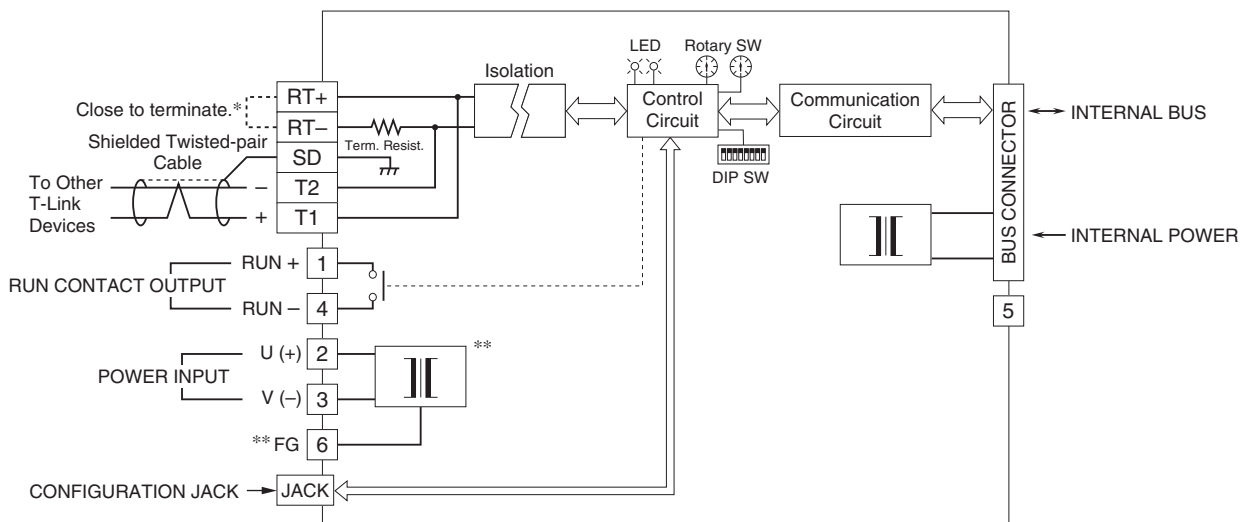
### ■ 16-POINT DISCRETE DATA (models: R3-DA16, DC16, etc.)



**EXTERNAL DIMENSIONS & TERMINAL ASSIGNMENTS unit: mm (inch)**



**SCHEMATIC CIRCUITRY & CONNECTION DIAGRAM**



\* When the module is at an end of the transmission line via twisted-pair cable (= when there is no cross wiring), close across the RT+ and RT- terminals with the jumper included in the product package. Remove the jumper for all other locations.  
 \*\*Not provided with 'No Power Supply' type module.



Specifications are subject to change without notice.

