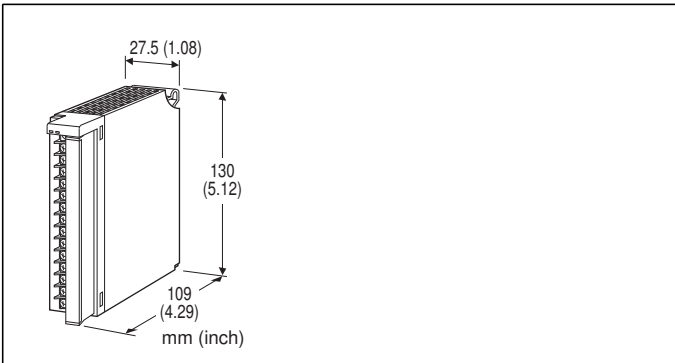


## Remote I/O R3 Series

### RTD INPUT MODULE

(high accuracy, 8 points, isolated)



### MODEL: R3-RS8B[1][2]

#### ORDERING INFORMATION

- Code number: R3-RS8B[1][2]
- Specify a code from below for each of [1] and [2].  
(e.g. R3-RS8BW/Q)
- Specify the specification for option code /Q  
(e.g. /C01/SET)

#### NO. OF CHANNELS

**8B:** 8 channels, high accuracy

#### [1] COMMUNICATION MODE

**S:** Single  
**W:** Dual

#### [2] OPTIONS

**blank:** none  
**/Q:** With options (specify the specification)

#### SPECIFICATIONS OF OPTION: Q (multiple selections)

**COATING (For the detail, refer to M-System's web site.)**

- /C01: Silicone coating
- /C02: Polyurethane coating
- /C03: Rubber coating

#### EX-FACTORY SETTING

**/SET:** Preset according to the Ordering Information Sheet  
(No. ESU-8341)

#### GENERAL SPECIFICATIONS

##### Connection

**Internal bus:** Via the Installation Base (model: R3-BSx)  
**Input:** M3 separable screw terminal (torque 0.5 N·m)

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

**Screw terminal:** Nickel-plated steel

**Isolation:** Input 1 to input 2 to input 3 to input 4 to input 5 to input 6 to input 7 to input 8 to internal bus or internal power

**Sensor type:** Selectable with the side DIP SW

(Independent types selectable per group of 4 channels.)

**Temperature unit:** °C or °F selectable with the side DIP SW

**Conversion rate:** Selectable with the side DIP SW

**Burnout detection:** Upscale or downscale selectable with the side DIP SW

**Linearization:** Standard

**RUN indicator:** Bi-color (red/green) LED;

Red when the bus A operates normally;

Green when the bus B operates normally;

Amber when both buses operate normally.

**ERR indicator:** Bi-color (red/green) LED;

Red with burnout; Green in normal operating conditions.

#### INPUT SPECIFICATIONS

**Maximum leadwire resistance:** 10 Ω per wire

**Sensing current:** Approx. 0.5 mA

##### Temperature range

RTD	Conformance Range °C	Burnout Values °C×100
Pt 100 (JIS'97, IEC)	-20 to +100	-24000, +32767
Pt 100 (JIS'89)	-20 to +100	-24000, +32767
JPt 100 (JIS'89)	-20 to +100	-23600, +32767
RTD	Conformance Range °F	Burnout Values °F×10
Pt 100 (JIS'97, IEC)	-4 to +212	-4000, +16520
Pt 100 (JIS'89)	-4 to +212	-4000, +16520
JPt 100 (JIS'89)	-4 to +212	-3298, +10400

#### INSTALLATION

**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

**Conversion accuracy:** Refer to the table at the end of this section.

**Conversion rate:** 160 / 80 / 40 / 20 msec. selectable

##### Data range

°C: Engineering unit value × 100 (integer)

°F: Engineering unit value × 10 (integer)

**Data allocation:** 8

**Current consumption:** 120 mA

**Temp. coefficient:** ±0.015 %/°C (±0.008 %/°F)

**Resolution:** 0.01°C

**Burnout response time:** ≤ 2 sec.

**Insulation resistance:**  $\geq 100 \text{ M}\Omega$  with 500 V DC  
**Dielectric strength:** 1500 V AC @ 1 minute (input 1 to input 2 to input 3 to input 4 to input 5 to input 6 to input 7 to input 8 to internal bus or internal power)  
 2000 V AC @ 1 minute (power input to FG; isolated on the power supply module)

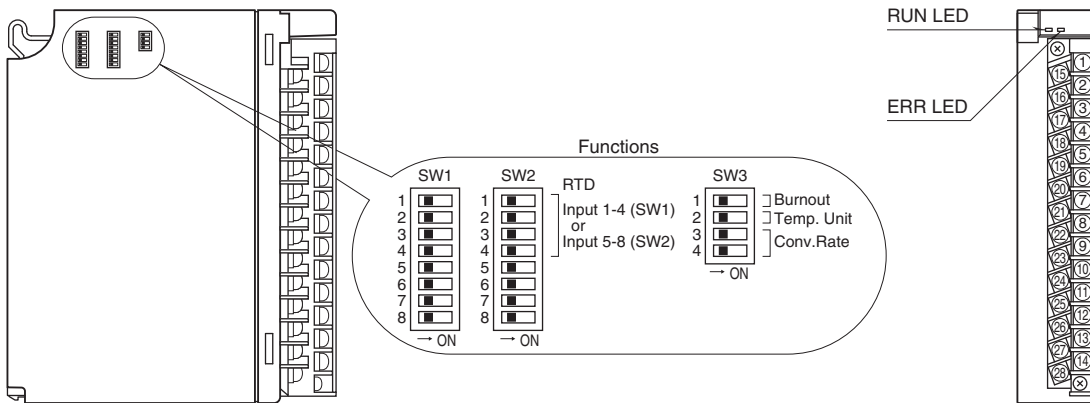
**Conversion accuracy**

RANGE \ RATE	160 msec.	80 msec.	40 msec.	20 msec.
All ranges	$\pm 0.1^\circ\text{C}$	$\pm 0.2^\circ\text{C}$	$\pm 0.4^\circ\text{C}$	$\pm 0.8^\circ\text{C}$

## EXTERNAL VIEW

■ SIDE VIEW

■ FRONT VIEW



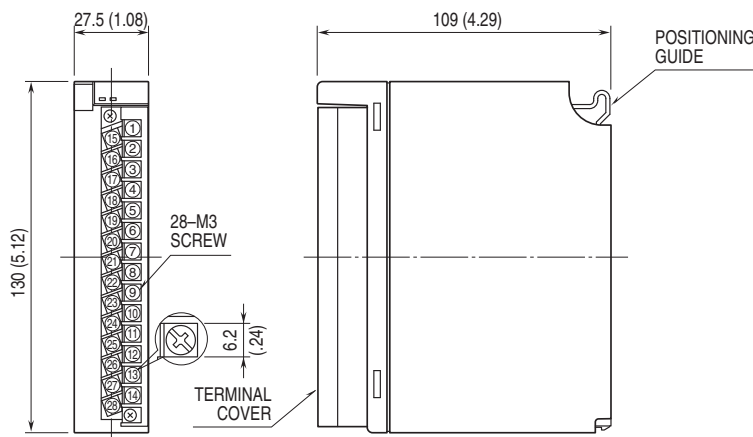
## INPUT DATA DESCRIPTIONS

■ ANALOG DATA (TEMPERATURE DATA)

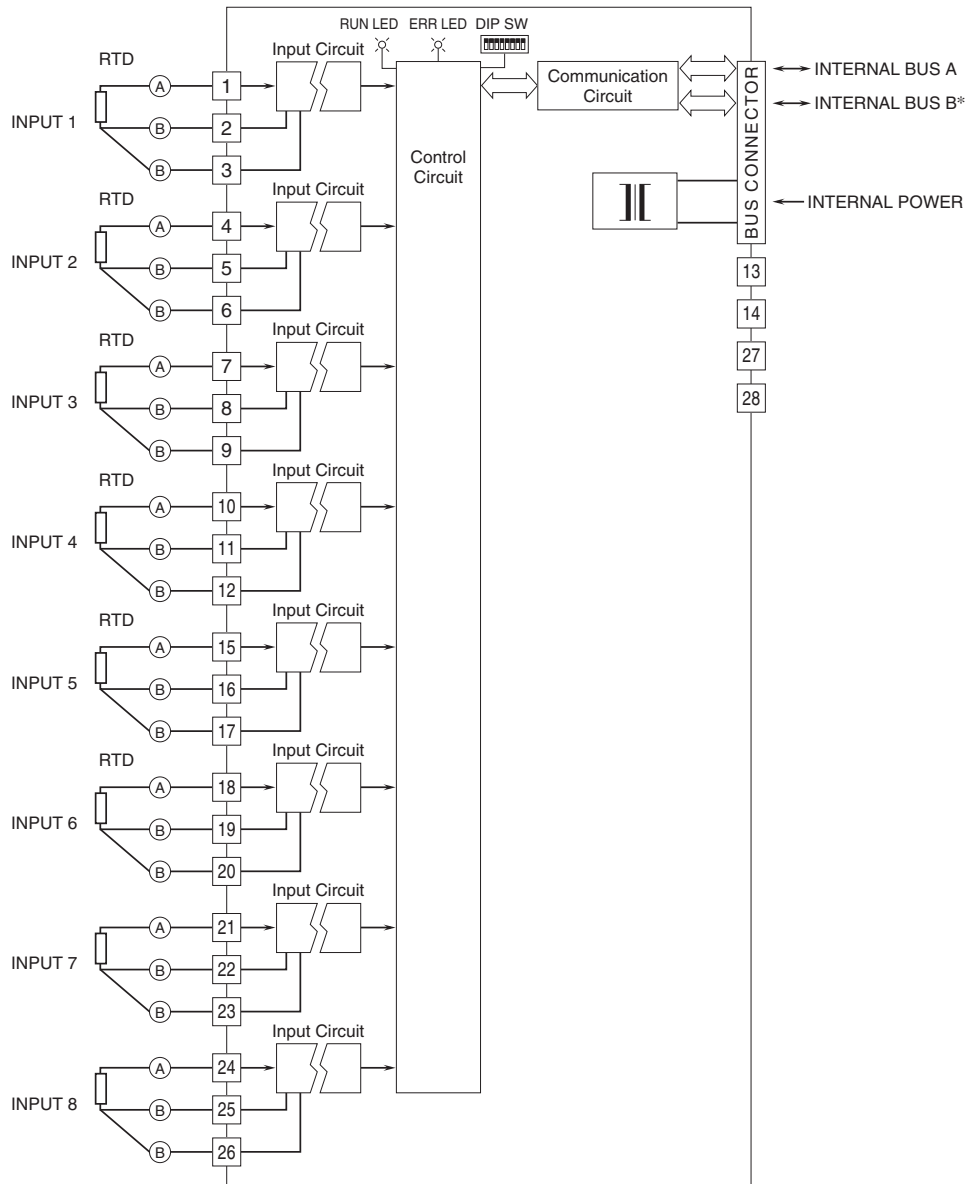
16-bit binary data.  
 With  $^\circ\text{C}$  temperature unit, raw data is multiplied by 100. For example,  $25.5^\circ\text{C}$  is converted into 2550.  
 With  $^\circ\text{F}$  temperature unit, raw data is multiplied by 10. For example,  $135.4^\circ\text{F}$  is converted into 1354.  
 Minus temperature is converted into negative values, represented in 2's complements.



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



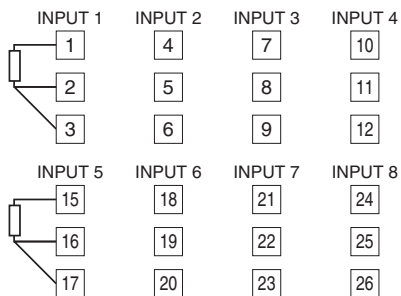
## SCHEMATIC CIRCUITRY & CONNECTION DIAGRAM



\*For dual redundant communication.

### • Unused Input Channels

Close across the unused input terminals with a resistor as shown below and set the DIP switch for an RTD. The resistance value must match the RTD type (100Ω for Pt 100).



Unused channels left open are equal to the burnout, which turns the red ERR LED on and sets a burnout flag at the PLC or the host device.

Unused channels can be specified and set so on the PC Configurator Software (model: R3CON) without needing to connect resistors at the field terminals.



Specifications are subject to change without notice.