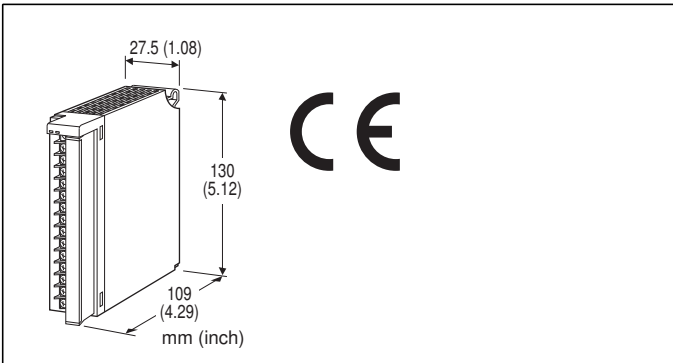


Remote I/O R3 Series

THERMOCOUPLE INPUT MODULE

(high accuracy, 8 points, isolated)



MODEL: R3-TS8A[1][2]

ORDERING INFORMATION

- Code number: R3-TS8A[1][2]
Specify a code from below for each of [1] and [2].
(e.g. R3-TS8AW/CE/Q)
- Specify the specification for option code /Q
(e.g. /C01/SET)

NO. OF CHANNELS

8A: 8 channels, high accuracy

[1] COMMUNICATION MODE

S: Single
W: Dual

[2] 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 (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-8278)

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

0°C offset: Offset is set to 0°C based on the present input status using the PC configurator software (model: R3CON).

Cold junction compensation: CJC sensor attached to the input terminals

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

Input resistance: 30 kΩ min.

Burnout sensing: 0.1 μA

Temperature range

T/C	Conformance Range °C	Burnout Values °C×100	
		Lower	Upper
K (CA)	-100 to +200	-27200	+32767
T (CC)	-100 to +200	-27200	+32767
T/C	Conformance Range °F	Burnout Values °F×10	
		Lower	Upper
K (CA)	-148 to +392	-4000	+16520
T (CC)	-148 to +392	-4000	+16520

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: 250 g (0.55 lb)

PERFORMANCE

Conversion accuracy: $\pm 0.5^{\circ}\text{C}$ ($\pm 0.9^{\circ}\text{F}$)

Conversion rate: 250 msec. or 1 sec. selectable

Data range

$^{\circ}\text{C}$: Engineering unit value $\times 100$ (integer)

$^{\circ}\text{F}$: Engineering unit value $\times 10$ (integer)

Data allocation: 8

Current consumption: 100 mA

Cold junction compensation error:

$\pm 0.5^{\circ}\text{C}$ at $25 \pm 10^{\circ}\text{C}$

$\pm 0.9^{\circ}\text{F}$ at $77 \pm 18^{\circ}\text{F}$

Temp. coefficient: $\pm 0.015\%$ / $^{\circ}\text{C}$ ($\pm 0.008\%$ / $^{\circ}\text{F}$)

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)

STANDARDS & APPROVALS

EU conformity:

EMC Directive

EMI EN 61000-6-4

EMS EN 61000-6-2

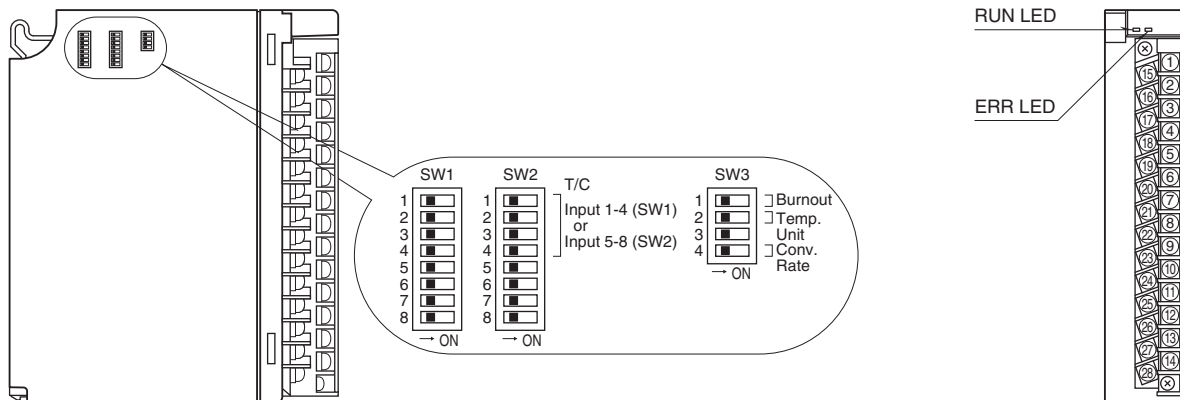
RoHS Directive

EN 50581

EXTERNAL VIEW

■ SIDE VIEW

■ FRONT VIEW



INPUT DATA DESCRIPTIONS

■ ANALOG DATA (TEMPERATURE DATA)

16-bit binary data.

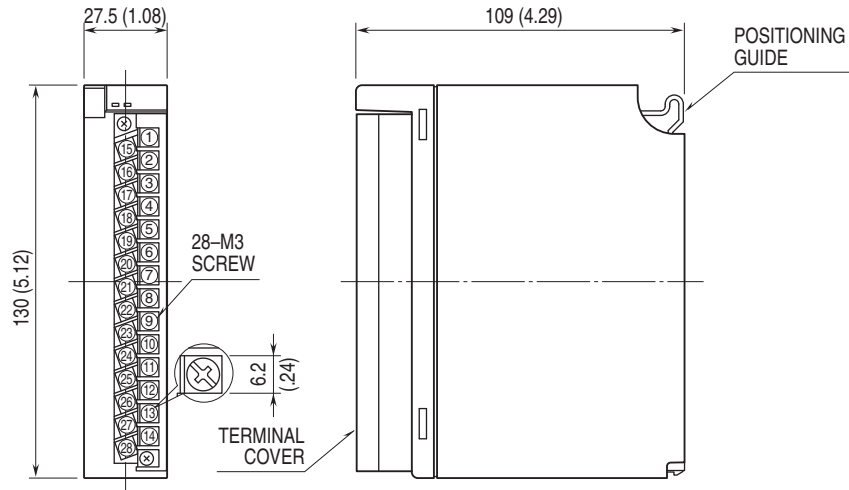
With °C temperature unit, raw data is multiplied by 100. For example, 25.5°C is converted into 2550.

With °F temperature unit, raw data is multiplied by 10. For example, 135.4°F is converted into 1354.

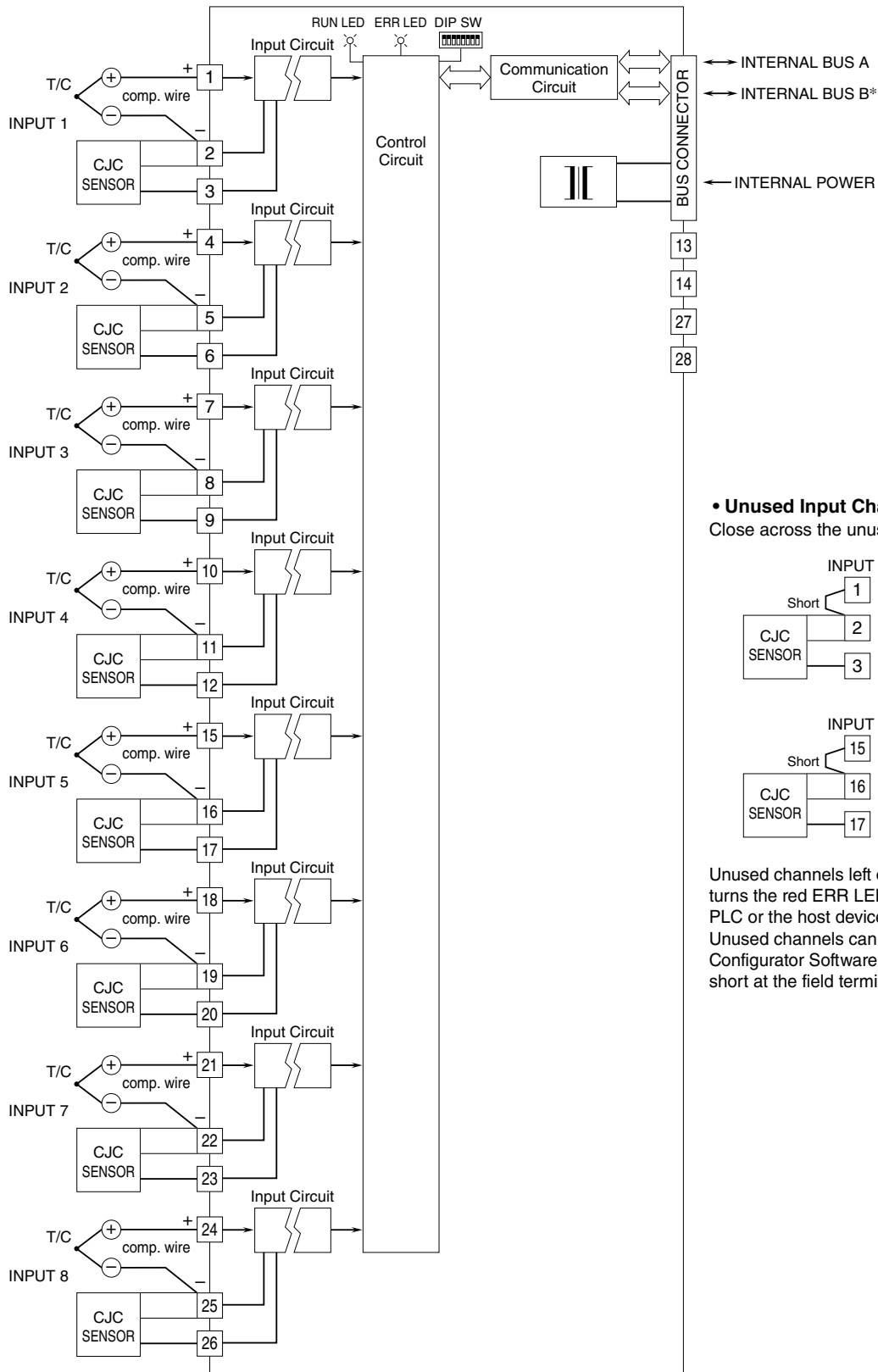
Minus temperature is converted into negative values, represented in 2's complements.



EXTERNAL DIMENSIONS & TERMINAL ASSIGNMENTS unit: mm (inch)

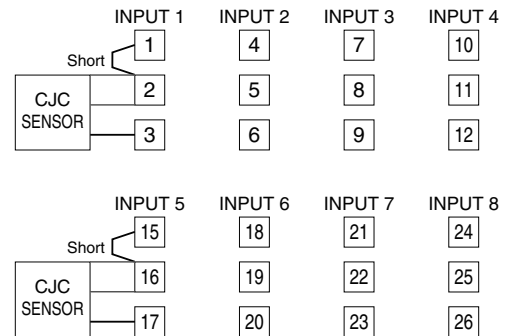


SCHEMATIC CIRCUITRY & CONNECTION DIAGRAM



• Unused Input Channels

Close across the unused input terminals as shown below.



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 short at the field terminals.

*For dual redundant communication.



Specifications are subject to change without notice.