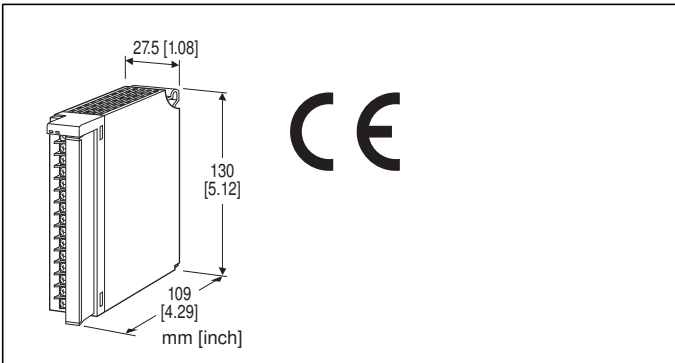


## Remote I/O R3 Series

### THERMOCOUPLE INPUT MODULE

(8 points, isolated)



### MODEL: R3-TS8[1][2]

#### ORDERING INFORMATION

- Code number: R3-TS8[1][2]  
Specify a code from below for each of [1] and [2].  
(e.g. R3-TS8W/CE/Q)
- Specify the specification for option code /Q  
(e.g. /C01/SET)

#### NO. OF CHANNELS

8: 8

#### [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-8363)

#### 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, °F or absolute temperature 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

**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	°C	
	USABLE RANGE	CONFORMANCE RANGE
K (CA)	-272 to +1472	-150 to +1370
E (CRC)	-272 to +1120	-170 to +1000
J (IC)	-260 to +1300	-180 to +1200
T (CC)	-272 to +500	-170 to +400
B (RH)	24 to 1920	400 to 1760
R	-100 to +1860	200 to 1760
S	-100 to +1860	0 to 1760
C (WRe 5-26)	-52 to +2416	0 to 2315
N	-272 to +1400	-130 to +1300
U	-252 to +700	-200 to +600
L	-252 to +1000	-200 to +900
P (Platinel II)	-52 to +1496	0 to 1395
(PR)	-52 to +1860	0 to 1760

T/C	°F	
	USABLE RANGE	CONFORMANCE RANGE
K (CA)	-458 to +2682	-238 to +2498
E (CRC)	-458 to +2048	-274 to +1832
J (IC)	-436 to +2372	-292 to +2192
T (CC)	-458 to +932	-274 to +752
B (RH)	75 to 3488	752 to 3200
R	-148 to +3380	392 to 3200
S	-148 to +3380	32 to 3200
C (WRe 5-26)	-62 to +4381	32 to 4199
N	-458 to +2552	-202 to +2372
U	-422 to +1292	-328 to +1112
L	-422 to +1832	-328 to +1652
P (Platinel II)	-62 to +2725	32 to 2543
(PR)	-62 to +3380	32 to 3200

Max. (upscale) or min. (downscale) value of the usable range when a burnout is detected.

**Cold junction compensation error:**

±1.0°C max. (at 25°C ±10°C)

±1.8°F max. (at 77°F ±18°F)

(±1.5°C or ±2.7°F for R, S, PR)

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

**Burnout response time:** ≤ 2 sec.

**Insulation resistance:** ≥ 100 MΩ with 500 V DC

**Dielectric strength:** 1000 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

## 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:** ±1.0°C (±1.8°F) except ±2.0°C (±3.6°F) for B, R, S, C, PR

**Conversion rate:** 250 msec. or 1 sec. selectable

**Data range**

°C, **absolute temperature:** Engineering unit value × 10 (integer)

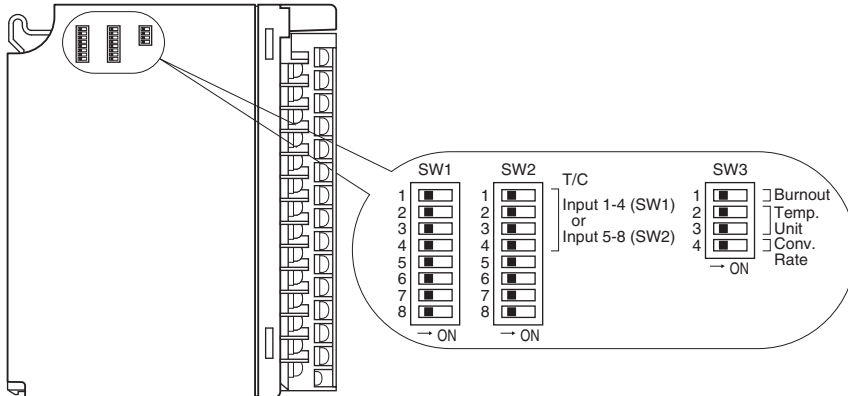
°F: Engineering unit value (integer)

**Data allocation:** 8

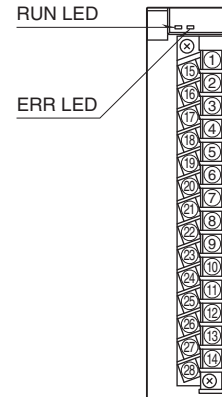
**Current consumption:** 100 mA

## EXTERNAL VIEW

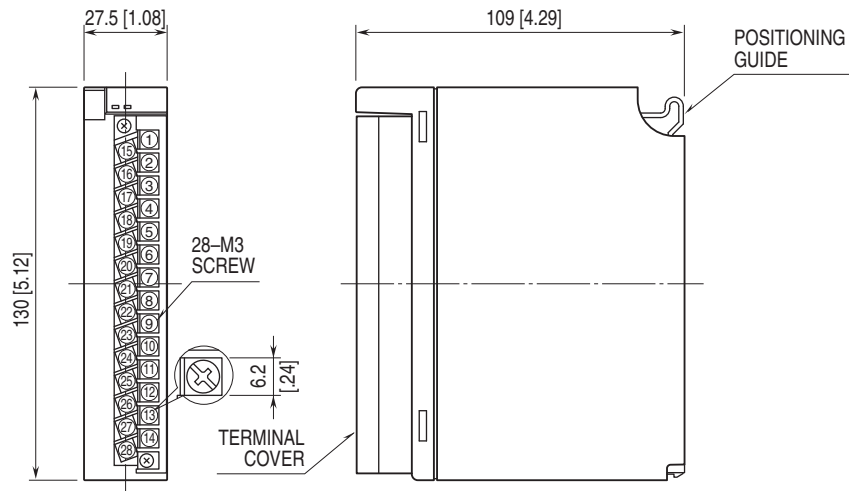
### ■ SIDE VIEW



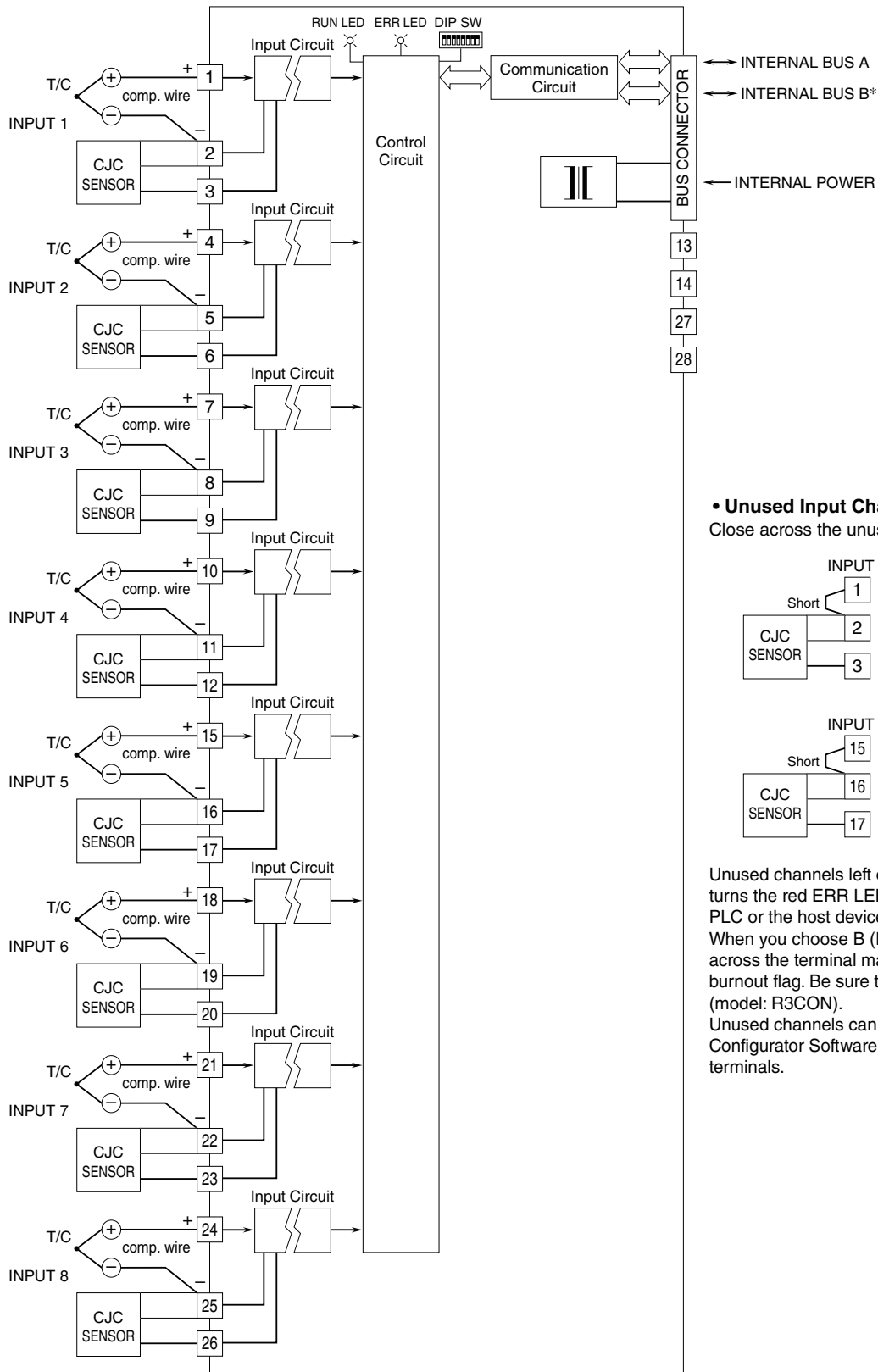
### ■ FRONT VIEW



## EXTERNAL DIMENSIONS & TERMINAL ASSIGNMENTS unit: mm [inch]



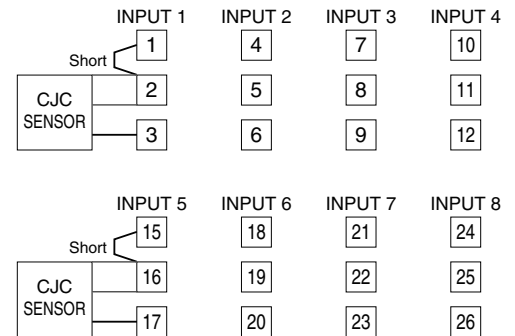
## SCHEMATIC CIRCUITRY & CONNECTION DIAGRAM



\*For dual redundant communication.

### • 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.

When you choose B (RH) thermocouple, shortcircuiting across the terminal may not be effective to cancel the burnout flag. Be sure to use the PC Configurator Software (model: R3CON).

Unused channels can be specified and set so on the PC Configurator Software without needing to short at the field terminals.



Specifications are subject to change without notice.