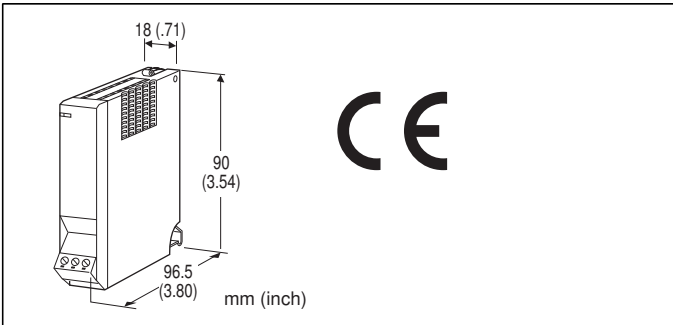


## Remote I/O R5 Series

### THERMOCOUPLE INPUT MODULE



### MODEL: R5-TS[1][2][3]

#### ORDERING INFORMATION

- Code number: R5-TS[1][2][3]
- Specify a code from below for each [1] through [3]. (e.g. R5-TS2W/Q)
- Specify the specification for option code /Q (e.g. /C01)

#### [1] NO. OF CHANNELS

- 1: 1 channel
- 2: 2 channels

#### [2] COMMUNICATION MODE

- S: Single
- W: Dual

#### [3] OPTIONS

##### 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

#### GENERAL SPECIFICATIONS

##### Connection

- Internal bus:** Via the Installation Base (model: R5-BS)
- Input:** Euro type connector terminal  
Wire size AWG24-12 (0.2 - 2.5 mm<sup>2</sup>), stripped length 7 mm
- Internal power:** Via the base (model: R5-BS)

- Isolation:** Input 1 to input 2 to internal bus or power
- Sensor type:** Selectable with the side DIP SW
- Temperature unit:** °C, °F or absolute temperature 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.

#### 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

\*Accuracy degrades at temperatures close to the lower limit of the usable range.

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



## 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: R5-BS)  
**Weight:** 100 g (3.53 oz)

## PERFORMANCE

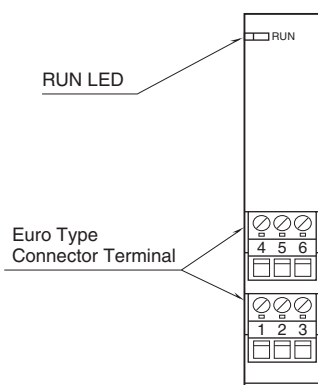
**Conversion accuracy:**  $\pm 0.4^{\circ}\text{C}$  ( $\pm 1^{\circ}\text{F}$ )  
**Data range**  
**°C, absolute temperature:** Engineering unit value  $\times 10$  (integer)  
**°F:** Engineering unit value (integer)  
**Data allocation:** 1 (2 for 2-channel type)  
**Cold junction compensation error:**  $\pm 0.5^{\circ}\text{C}$  or  $\pm 0.9^{\circ}\text{F}$  (at  $20^{\circ}\text{C} \pm 10^{\circ}\text{C}$  or  $68^{\circ}\text{F} \pm 18^{\circ}\text{F}$ )  
**Temp. coefficient:**  $\pm 0.015\%$ / $^{\circ}\text{C}$  ( $\pm 0.008\%$ / $^{\circ}\text{F}$ )  
**Response time:**  $\leq 0.2$  sec. (0 - 90 %)  
**Burnout response time:**  $\leq 2$  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 internal bus or internal power)  
 2000 V AC @ 1 minute (power input to FG; isolated on the power supply module)

## STANDARDS & APPROVALS

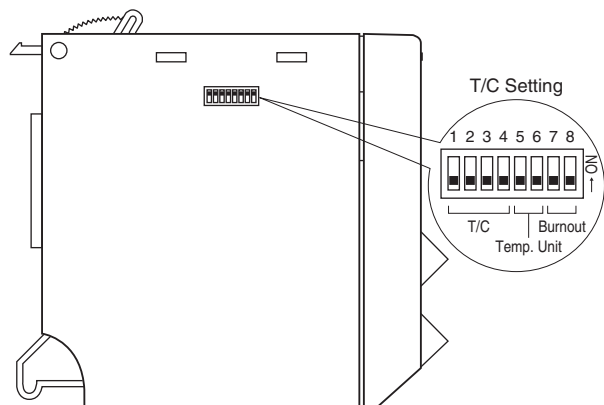
**CE conformity:**  
 EMC Directive (2004/108/EC)  
 EMI EN 61000-6-4: 2007  
 EMS EN 61000-6-2: 2005

## EXTERNAL VIEW

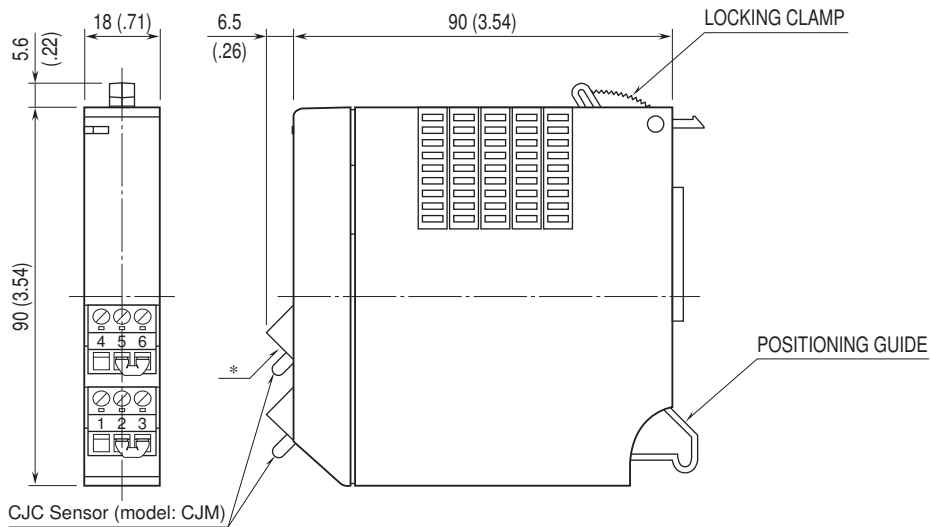
### ■ SIDE VIEW



### ■ FRONT VIEW

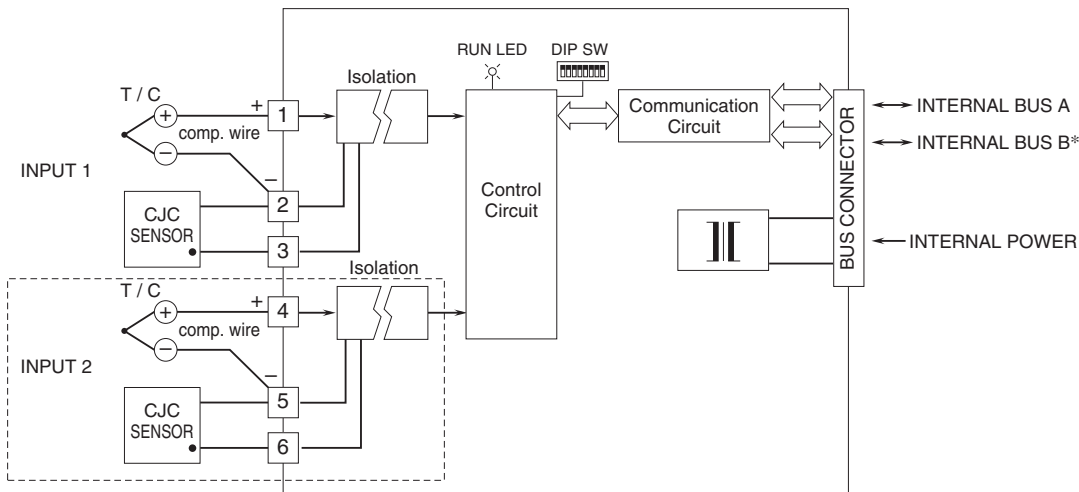


## EXTERNAL DIMENSIONS & TERMINAL ASSIGNMENTS unit: mm (inch)



\*Euro Type Connectors (Terminals 4, 5 and 6) provided only with 2-ch. option.

## SCHEMATIC CIRCUITRY & CONNECTION DIAGRAM



\*For dual redundant communication.

NOTE: The section enclosed by broken line is with 2-ch. option.



Specifications are subject to change without notice.