

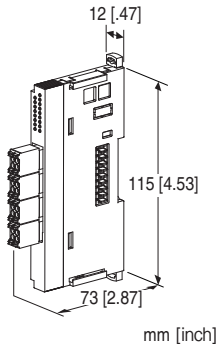
Remote I/O R8 Series

THERMOCOUPLE INPUT MODULE

(2 points, isolated)

Functions & Features

- Accepts direct input from an thermocouple
- Compact size remote I/O module
- Each channel is attachable/detachable independently with separable tension clamp terminal



MODEL: R8-TST2[1]

ORDERING INFORMATION

- Code number: R8-TST2[1]
Specify a code from below for [1].
(e.g. R8-TST2/A/Q)
- Specify the specification for option code /Q
(e.g. /C01)

[1] OPTIONS (multiple selections)

CJC Sensor

/A: External Sensor (must be specified)

Other Options

blank: none

/Q: With options (specify the specification)

SPECIFICATIONS OF OPTION: Q

COATING (For the detail, refer to our web site.)

/C01: Silicone coating

/C02: Polyurethane coating

RELATED PRODUCTS

- PC Configurator cable (model: MCN-CON or COP-US)
 - PC configurator software (model: R8CFG)
- Downloadable at our web site.

GENERAL SPECIFICATIONS

Connection

- **Input:** Separable tension clamp terminal
- **Excitation supply, internal bus:**
Connected to internal bus connector
- **Internal power:** Via bus connector

Isolation: Input 1 to input 2 to exc. supply to internal bus or internal power

Zero adjustments: -32000 - 32000 (PC programming)

Span adjustments: -32000 - 32000 (PC programming)

Configurator software can handle 100 - 200°C as numerical value of 0 - 10000

Input sensor setting: DIP switches on the side or with PC

Burnout detection: Selectable with the side DIP SW

Linearization: Standard

Cold Junction Compensation: CJC sensor attached to the input connector.

CJC can be configured per each input 1 and 2.

Module address: With rotary switch

Converted data range:

- Engineering unit value (°C, K) × 10 (integer)
- Engineering unit value (°F)

Terminating resistor: Built-in (DIP Switch, default: disable)

Configuration mode: With DIP switches on the side panel

Status indicator: Bi-color (red/green) LED; Refer to the instruction manual.

Input status indicators: Red LED; Refer to the instruction manual.

INPUT SPECIFICATIONS

Input resistance: 10kΩ minimum

Burnout sensing: 0.2 μA

T/C	USABLE RANGE (°C)	CONFORMANCE RANGE (°C)
K (CA)	-272 to +1472	-150 to +1370
E (CRC)	-272 to +1100	-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	USABLE RANGE (°F)	CONFORMANCE RANGE (°F)
K (CA)	-458 to +2682	-238 to +2498
E (CRC)	-458 to +2012	-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

Insulation resistance: ≥ 100 MΩ with 500 V DC

Dielectric strength:

1000 V AC @ 1 minute (input 1 to input 2 to exc. supply to internal bus or internal power to ground)

STANDARDS & APPROVALS

EU conformity:

EMC Directive

EMI EN 61000-6-4

EMS EN 61000-6-2

RoHS Directive

INSTALLATION

Max. current consumption: 100 mA

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: DIN rail

Weight: 80 g (2.8 oz)

PERFORMANCE

Conversion accuracy: ±1°C (±1.8°F) except ±2.0°C (±3.6°F) for B, R, S, C, PR

Conversion rate: 100 msec. per channel

Data allocation: 2

Module addresses in use: 1

Cold junction compensation error:

±3°C at 25 ±10°C

±5.4°F at 77 ±18°F

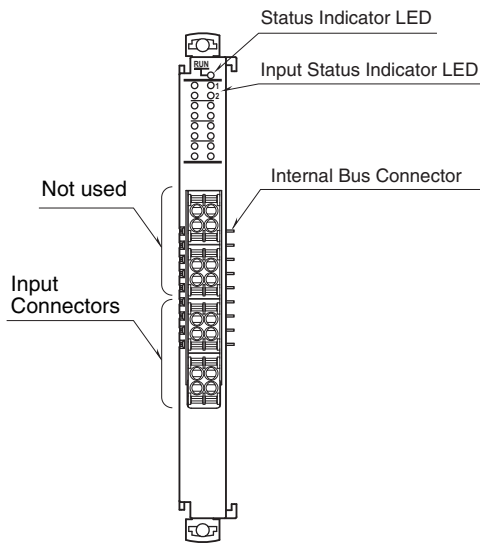
(The described accuracy may be partially not satisfied when the input temperature is below 0°C. Consult factory.)

Temp. coefficient: ±0.03 %/°C (±0.02 %/°F)

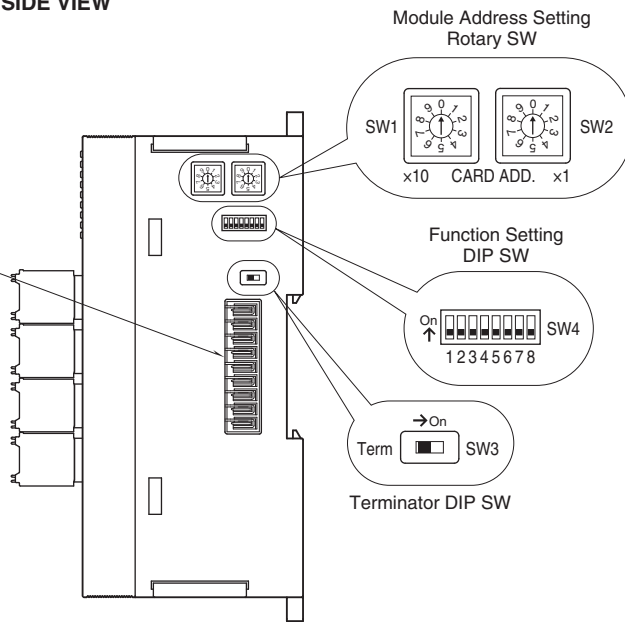
Burnout response time: ≤ 1 sec.

EXTERNAL VIEW

■ FRONT VIEW



■ SIDE VIEW



WIRING

■ SEPARABLE TENSION CLAMP TERMINAL

Unit side connector: MG's product

Cable side connector: DFM1,5/2-ST-3,5 (Phoenix Contact)
(included in the package)

Applicable wire size: 0.2 - 1.5 mm²

Stripped length: 10 mm

Recommended solderless terminal

- AI0,25-10YE 0.25 mm² (Phoenix Contact)
- AI0,34-10TQ 0.34 mm² (Phoenix Contact)
- AI0,5-10WH 0.5 mm² (Phoenix Contact)
- AI0,75-10GY 0.75 mm² (Phoenix Contact)
- A1-10 1.0 mm² (Phoenix Contact)
- A1,5-10 1.5 mm² (Phoenix Contact)

PIN No.	ID	FUNCTION
1 NC	2 NC	1 NC Unused
3 NC	4 NC	2 NC Unused
5 NC	6 NC	3 NC Unused
7 NC	8 NC	4 NC Unused
9 Ai 1	10 AG 1	5 NC Unused
11 C JM	12 C JM	6 NC Unused
13 Ai 2	14 AG 2	7 NC Unused
15 C JM	16 C JM	8 NC Unused
		9 Ai 1 Input 1 (+)
		10 AG 1 Input 1 (-)
		11 C JM CJC Sensor
		12 C JM CJC Sensor
		13 Ai 2 Input 2 (+)
		14 AG 2 Input 2 (-)
		15 C JM CJC Sensor
		16 C JM CJC Sensor

OPERATING MODE SETTING

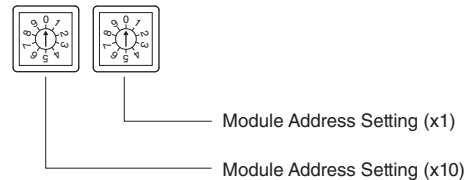
(*) Factory setting

Caution ! - SW4-4 through 4-6 are unused. Be sure to turn off unused ones.

■ Module Address

The left switch determines the tenth place digit, while the right switch does the ones place digit of the address.
Address is selected between 0 to 31.

(Factory setting: 0)



■ THERMOCOUPLE TYPE

Same setting for all channels. Use PC Configurator to set independent settings per channel.

T/C	SW4		
	1	2	3
K (CA) (*)	OFF	OFF	OFF
E (CRC)	ON	OFF	OFF
J (IC)	OFF	ON	OFF
T (CC)	ON	ON	OFF
B (RH)	OFF	OFF	ON
R	ON	OFF	ON
S	OFF	ON	ON
C (WRe 5-26)	ON	ON	ON

Use PC Configurator Software (model: R8CFG) to set N, U, L, P (Platinel II) and PR thermocouples.

■ Burnout

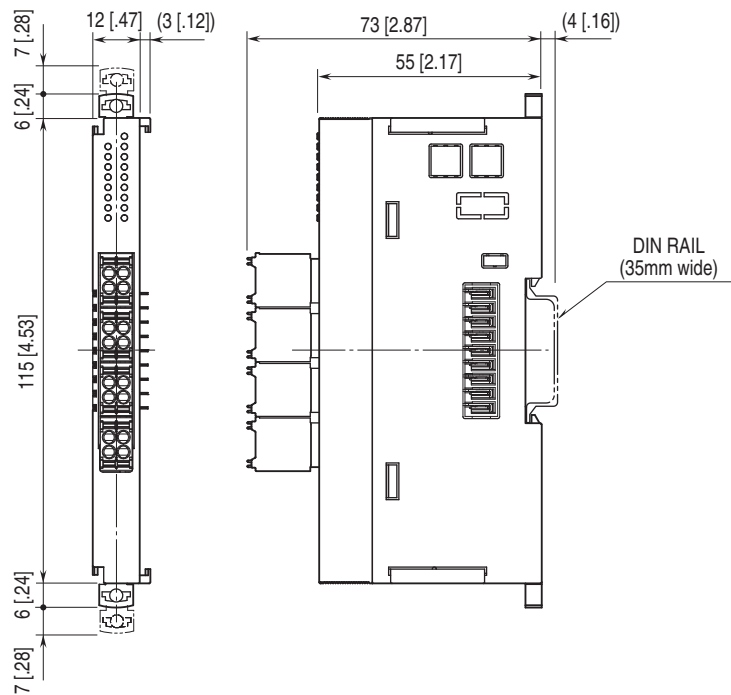
BURNOUT	SW4
	7
Upscale (*)	OFF
Downscale	ON

■ Configuration Mode

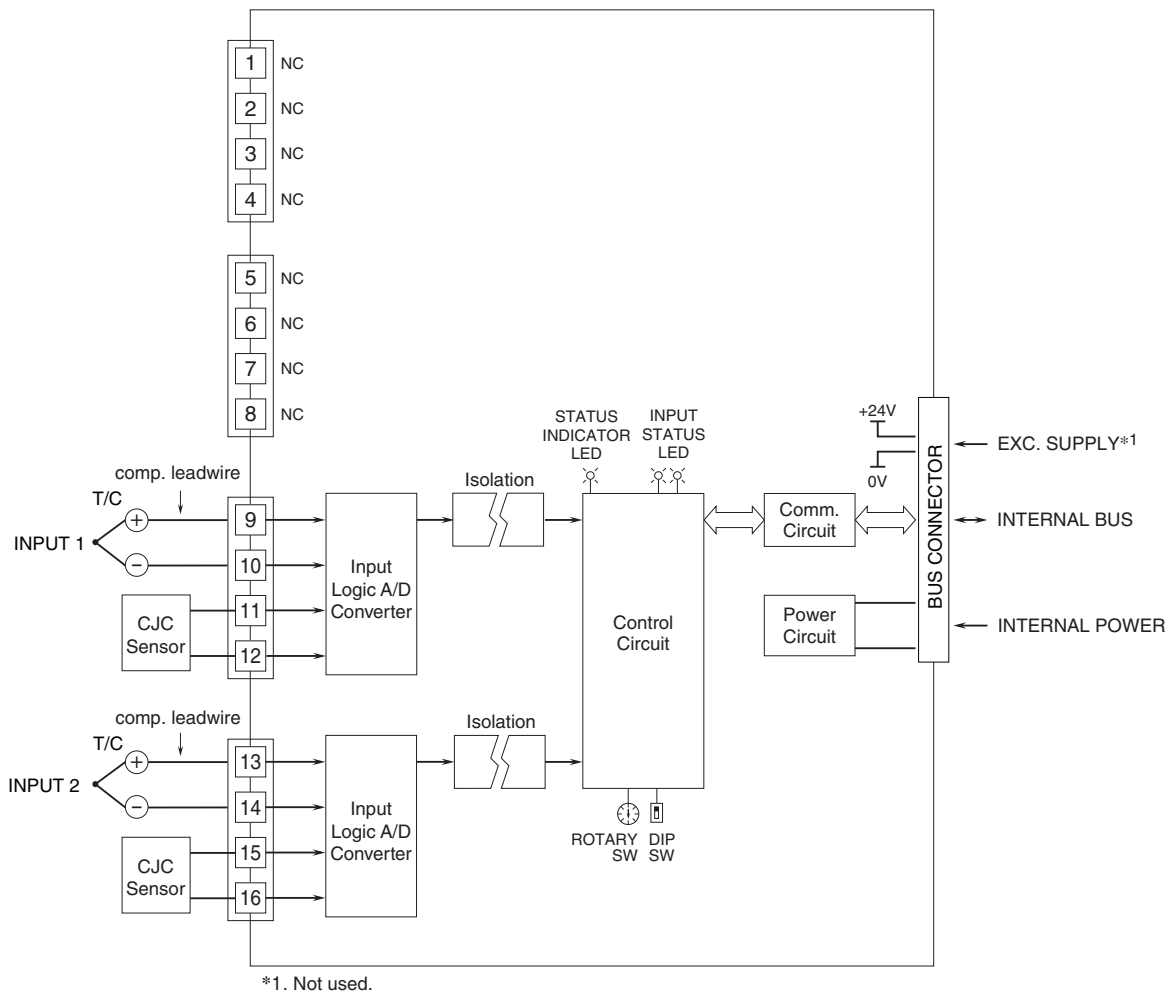
CONFIGURATION MODE	SW4
	8
DIP switch setting (*)	OFF
PC Configurator and communication	ON

■ Terminator DIP SW

TERMINATOR DIP SW	SW3
Without (*)	OFF
With	ON

EXTERNAL DIMENSIONS unit: mm [inch]

SCHEMATIC CIRCUITRY & CONNECTION DIAGRAM



Specifications are subject to change without notice.