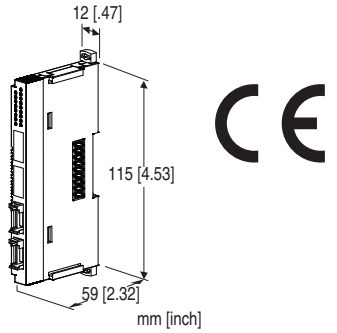
Remote I/O R8 Series

THERMOCOUPLE INPUT MODULE

(2 points, isolated)

Functions & Features

• Accepts direct input from an thermocouple and provides an isolated, linearized DC signal compact size remote I/O module



MODEL: R8–TS2[1]

ORDERING INFORMATION

• Code number: R8-TS2[1]
Specify a code from below for [1].
(e.g. R8-TS2/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**: 4-pin e-CON connector
Unit side connector XN2D-1474-S002 (Omron)
Recommended cable side connector XN2A-1470 (Omron)
Applicable wire size: 0.08 - 0.5 mm^2 (AWG28 - 20)
Outer sheath diameter: max. 1.5 dia
(The cable connector is not included in the package.
Refer to the specifications of the product.)
•**Excitation supply, internal bus**:
Connected to internal bus connector
•**Internal power**: Supplied from internal 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℃ 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

INSTALLATION

Max. current consumption: 100 mA
Operating temperature: -10 to +55°C (14 to 131°F)

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Operating humidity: 30 to 90 %RH (non-condensing)
Atmosphere: No corrosive gas or heavy dust
Mounting: DIN rail
Weight: 60 g (2.12 oz)

PERFORMANCE

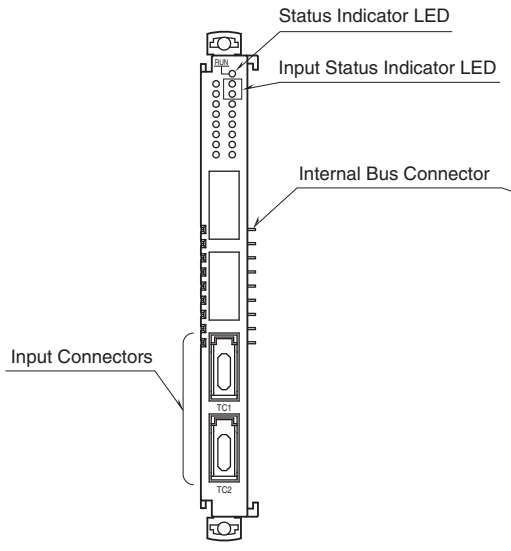
Conversion accuracy: ±1°C (±1.8°F) except ±2.0°C (±3.6°F) for B, R, S, C, PR
Conversion rate: 100 msec. per channel
Data allocation: 2
Module addresses in use: 1
Cold junction compensation error:
±3°C at 25 ±10°C
±5.4°F at 77 ±18°F
(The described accuracy may be partially not satisfied when the input temperature is below 0°C. Consult factory.)
Temp. coefficient: ±0.03 %/°C (±0.02 %/°F)
Burnout response time: ≤ 1 sec.
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

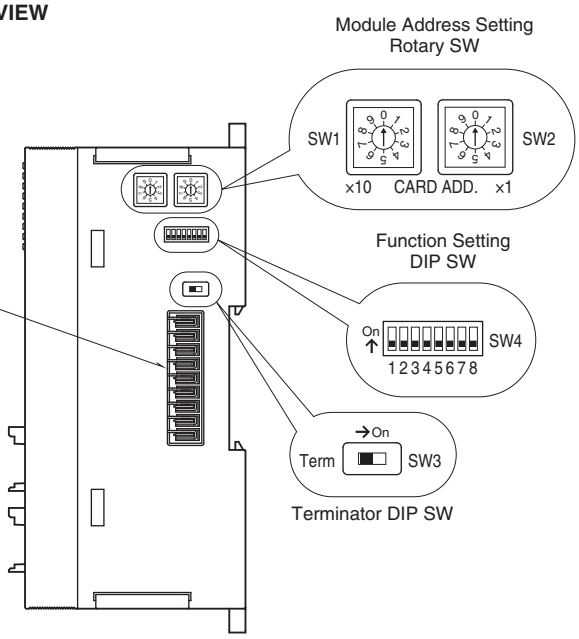
EU conformity:
EMC Directive
EMI EN 61000-6-4
EMS EN 61000-6-2
RoHS Directive

EXTERNAL VIEW

■ **FRONT VIEW**



■ **SIDE VIEW**



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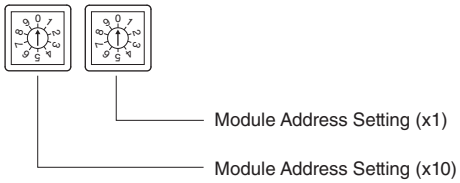
OPERATING MODE SETTING

(*) 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 SW	SW3
Without (*)	OFF
With	ON

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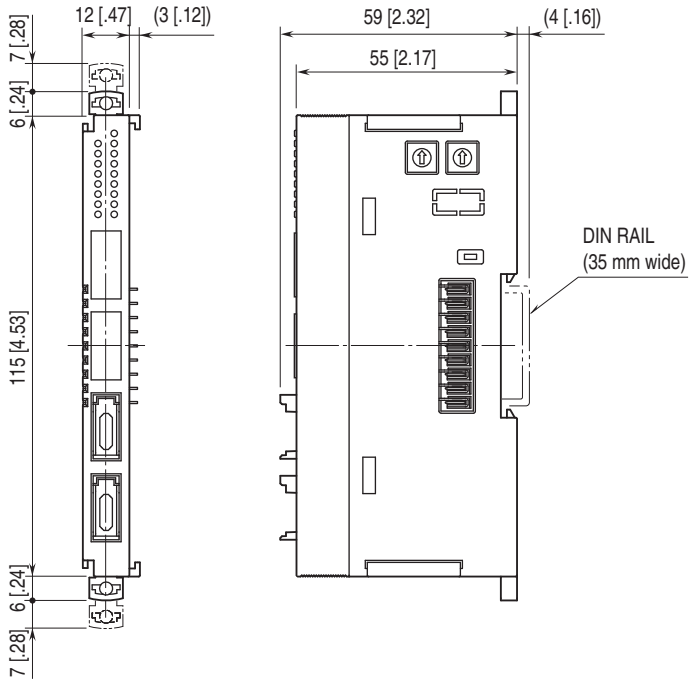
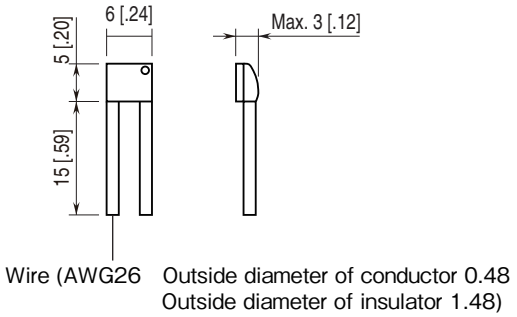
EXTERNAL DIMENSIONS unit: mm [inch]

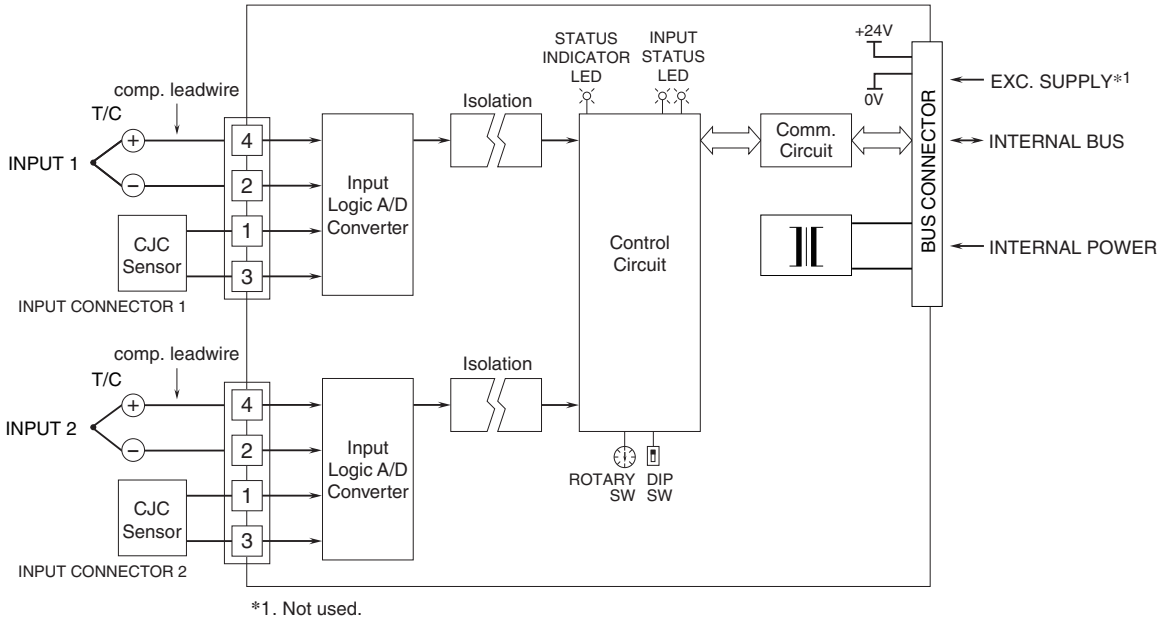
■ BODY



■ CJC SENSOR (CJM 2 pieces)



SCHEMATIC CIRCUITRY & CONNECTION DIAGRAM



*1. Not used.

⚠ Specifications are subject to change without notice.

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