

Dual Channel Input/Output Isolators 15-RACK

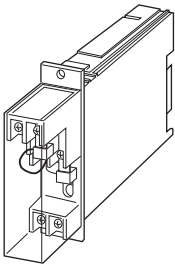
THERMOCOUPLE CONVERTER

Functions & Features

- Accepting direct input from a thermocouple and providing a standard process signal
- Linearization
- Burnout protection
- High-accuracy cold junction compensation
- 2 channels available; accomplishing economical and space-saving multi-input processing

Typical Applications

- High-accuracy cold junction compensation benefits narrow span measurements
- 0.1 μ A burnoutsensing enables long distance transmission with minimum offset drifts
- Electric furnace (isolation)
- No burnout type can connect to a single T/C in parallel with a recorder



MODEL: 15TS-[1]6-R[2]

ORDERING INFORMATION

- Code number: 15TS-[1]6-R[2]
- Specify a code from below for each of [1] and [2]. (e.g. 15TS-26-R/BL/Q)
- Temperature range (e.g. 0 - 800°C)
- Specify the specification for option code /Q (e.g. /C01)

[1] INPUT THERMOCOUPLE

- 1: (PR)
- 2: K (CA)
- 3: E (CRC)
- 4: J (IC)
- 5: T (CC)
- 6: B (RH)
- Consult us for B thermocouple
- 7: R

- 8: S
- 0: Specify

OUTPUT

Voltage
6: 1 - 5 V DC (Load resistance 5000 Ω min.)

POWER INPUT

DC Power
R: 24 V DC
(Operational voltage range 24 V \pm 10 %, ripple 10 %p-p max.)

[2] OPTIONS (multiple selections)

Burnout
blank: Upscale burnout
/BL: Downscale burnout
/BN: No burnout
Other Options
blank: none
/Q: Option other than the above (specify the specification)

SPECIFICATIONS OF OPTION: Q

COATING (For the detail, refer to our web site.)
/C01: Silicone coating
/C02: Polyurethane coating
/C03: Rubber coating

RELATED PRODUCTS

- Extender card (model:10EC)
- Necessary to adjust span.

GENERAL SPECIFICATIONS

Construction: Rack-mounted; terminal access via screw terminals at the front and via card-edge connector at the rear; terminal cover provided
Connection:
 Input: M3.5 screw terminals (torque 0.8 N·m)
 Output: Card-edge connector
 Power input: Supplied from card edge connector
Screw terminal: Nickel-plated steel
Housing material: Flame-resistant resin (black)
Isolation: Input to output or power; ch.1 input to ch.2 input
Overrange output: Approx. -10 to +120 %
Zero adjustment: -5 to +5 % (front)
Span adjustment: 95 to 105 % (top)
At burnout: Downscale \leq -10 %, Upscale \geq 110 %
Linearization: Standard
Cold junction compensation: CJC sensor attached to the input terminals (B thermocouple is without CJC as standard)

INPUT SPECIFICATIONS

Input: Thermocouples
Input resistance: 10kΩ minimum
Burnout sensing: 0.1 μA

Temperature range

T/C	TEMPERATURE RANGE (°C)	ACCURACY
R, S (PR)	0 – 600 (300 – 600)	±0.5%
	0 – 700 (300 – 700)	
	0 – 800 (300 – 800)	
	0 – 1000 (400 – 1000)	
	0 – 1200 (500 – 1200)	
	0 – 1400 (600 – 1400)	
	0 – 1600 (600 – 1600)	
	400 – 1000 400 – 1400	±0.5%
	500 – 1500 600 – 1600	
	700 – 1400 800 – 1600	
	900 – 1400	

T/C	TEMPERATURE RANGE (°C)	ACCURACY	T/C	TEMPERATURE RANGE (°C)	ACCURACY
K (CA)	0 – 100	±0.3%	E (CRC)	0 – 100	±0.5%
	0 – 150			0 – 150	
	0 – 200			0 – 200	
	0 – 300			0 – 250	
	0 – 400			0 – 300	
	0 – 500			0 – 350	
	0 – 600			0 – 400	
	0 – 800			0 – 500	
	0 – 1000			0 – 600	
	0 – 1100			0 – 700	
	100 – 300		0 – 800		
	100 – 500		100 – 300		
	200 – 500		100 – 500		
	200 – 700		200 – 400		
	200 – 1000		200 – 500		
	300 – 600		300 – 500		
	300 – 800		300 – 600		
	400 – 800		300 – 700		
	400 – 1000				
	500 – 800				
500 – 1000					
500 – 1200					
600 – 1000					
600 – 1200					
700 – 1000					
700 – 1200					
T (CC)	-50 – +150	±0.6%	J (IC)	0 – 100	±0.2%
	0 – 100			50 – 200	
	0 – 200			100 – 300	
	0 – 250			100 – 500	
	0 – 300			200 – 400	
	50 – 150			200 – 500	
	100 – 200			300 – 500	
	100 – 300			300 – 600	
				300 – 700	

Note 1: For R & S thermocouple, the accuracy described in the table is assured only within the ranges in parentheses. The accuracy is otherwise approx. 3%.

Note 2: Contact factory or M-System representatives for other thermocouples and ranges including °F description.

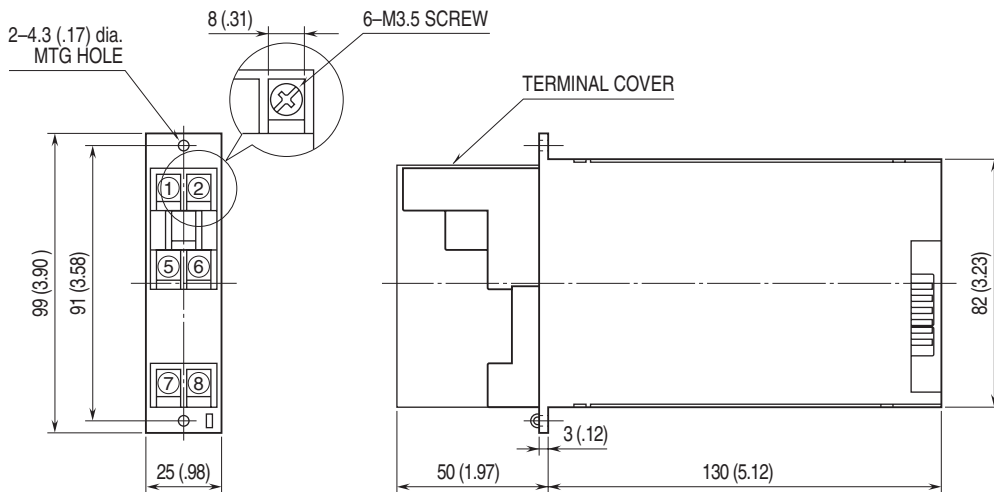
INSTALLATION

Current consumption: Approx. 50 mA
Operating temperature: -5 to +55°C (23 to 131°F)
Operating humidity: 30 to 90 %RH (non-condensing)
Mounting: Standard Rack 15BX
Weight: 180 g (0.40 lb)

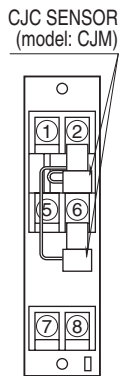
PERFORMANCE in percentage of span

Accuracy: Refer to "Temperature range" table
Cold junction compensation error: (at 20°C ±10°C or 68°F ±18°F)
 K, E, J & T: ±0.5°C or ±0.9°F
 S, R & PR: ±1°C or ±1.8°F
Temp. coefficient: ±0.02 %/°C (±0.01 %/°F)
 (at over 400°C or 750°F for R, S and PR)
Response time: ≤ 0.5 sec. (0 – 90 %)
Burnout response: ≤ 10 sec.
Line voltage effect: ±0.1 % over voltage range
Insulation resistance: ≥ 100 MΩ with 500 V DC
Dielectric strength: 500 V AC @ 1 minute (input to output or power)
 500 V AC @ 1 minute (ch.1 to ch.2 input)

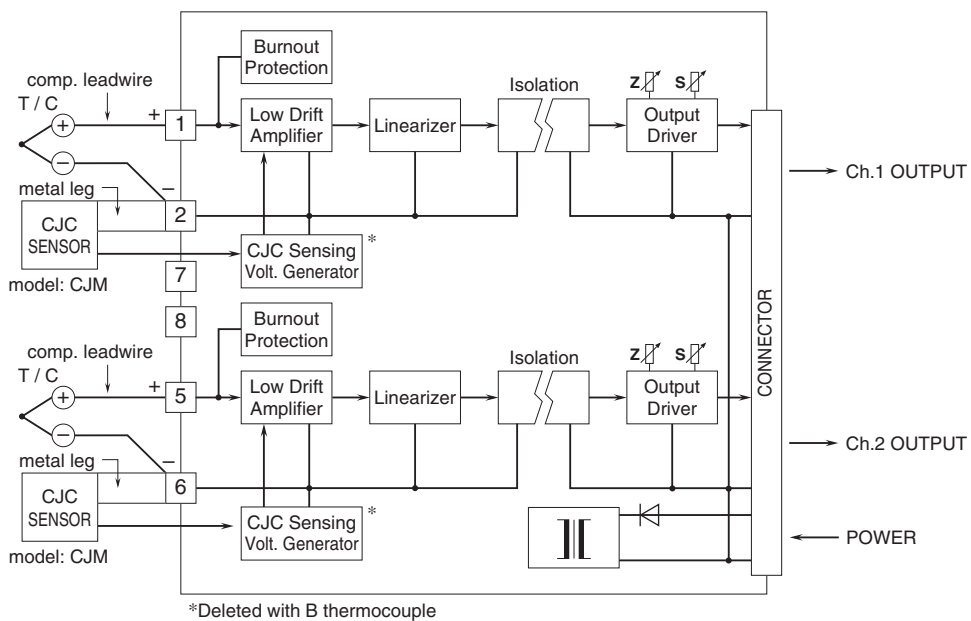
DIMENSIONS unit: mm (inch)



TERMINAL ASSIGNMENTS



SCHEMATIC CIRCUITRY & CONNECTION DIAGRAM





Specifications are subject to change without notice.