Rack-mounted DCS Signal Conditioners 18-RACK

THERMOCOUPLE CONVERTER

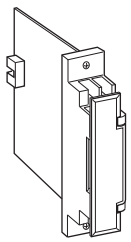
(field-programmable)

Functions & Features

• Accepting direct input from a thermocouple and providing two standard process signals
• Microprocessor based
• Field-programmable T/C type and temperature range
• Linearization
• Burnout protection
• High accuracy cold junction compensation
• Loop testing via hand-held programmer PU-2x
• Second channel output available at the front terminals and at the Standard Rack connector

Typical Applications

• Ideal for quick spare part
• High-accuracy cold junction compensation benefits narrow span measurements
• 0.1μA burnout sensing 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: 18JT–[1]66–R[2]

ORDERING INFORMATION

• Code number: 18JT-[1]66-R[2]
Specify a code from below for each of [1] and [2].
(e.g. 18JT-266-R/BL)
• Temperature range (e.g. 0 – 800°C)
Default setting will be used if not otherwise specified.
K thermocouple setting will be used if the input code is not specified.

[1] INPUT THERMOCOUPLE

1: (PR) (Usable Range 0 to 1760°C, 32 to 3200°F)
2: K (CA) (Usable range -270 to +1370°C, -454 to +2498°F)
3: E (CRC) (Usable range -270 to +1000°C, -454 to +1832°F)
4: J (IC) (Usable range -210 to +1200°C, -346 to +2192°F)
5: T (CC) (Usable range -270 to +400°C, -454 to +752°F)
6: B (RH) (Usable range 0 to 1820°C, 32 to 3308°F)
7: R (Usable range -50 to +1760°C, -58 to +3200°F)
8: S (Usable range -50 to +1760°C, -58 to +3200°F)
N: N (Usable range -270 to +1300°C, -454 to +2372°F)
0: Specify

OUTPUT 1

Voltage
6: 1 – 5 V DC (Load resistance 2000 Ω min.)

OUTPUT 2

Voltage
6: 1 – 5 V DC (Load resistance 2000 Ω min.)

POWER INPUT

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

[2] OPTIONS

Burnout
blank: Upscale burnout
/BL: Downscale burnout
/BN: No burnout

RELATED PRODUCTS

• Programming Unit (model: PU-2x)
• PC configurator software (model: JXCON)
Downloadable at our web site.
A dedicated cable is required to connect the module to the PC. Please refer to the internet software download site or the users manual for the PC configurator for applicable cable types.

GENERAL SPECIFICATIONS

Construction: Rack-mounted; terminal access via screw terminals on the front and connector on the rear; terminal cover provided
Connection
Input: M3.5 screw terminals (torque 0.8 N·m)
Output 1: Connector
Output 2: M3.5 screw terminals (torque 0.8 N·m) and connector
Power input: Supplied from connector
Screw terminal: Nickel-plated steel
Isolation: Input to output 1 to output 2 to power
Overrange output: Approx. -10 to +120 % at 1 – 5 V
Linearization: Standard
Cold junction compensation: CJC sensor attached to the

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input terminals
Adjustments: Programming Unit (model: PU-2x);
(Refer to the users manual of JXCON for the adjustments configurable with JXCON.)
• T/C type
• temp. range
• zero and span
• simulating output
• Others

INPUT SPECIFICATIONS

Minimum span: 3 mV
Offset: Max. 3 times span
Input resistance: 20 kΩ min.
Burnout sensing: 0.1 μA
Minimum span
(PR): 370°C, 670°F
K (CA): 75°C, 140°F
E (CRC): 50°C, 90°F
J (IC): 60°C, 110°F
T (CC): 75°C, 140°F
B (RH): 780°C, 1410°F
R: 360°C, 650°F
S: 380°C, 690°F
N: 110°C, 200°F
Note: The described accuracy may be partially not satisfied when the temperature ranges below 0°C. Consult factory.

If not specified, the input range is shown below.
(PR): 0 to 1600°C
K (CA): 0 to 1000°C
E (CRC): 0 to 500°C
J (IC): 0 to 500°C
T (CC): 0 to 300°C
B (RH): 0 to 1800°C
R: 0 to 1600°C
S: 0 to 1600°C
N: 0 to 1000°C

INSTALLATION

Current consumption: Approx. 60 mA
Operating temperature: -5 to +55°C (23 to 131°F)
Operating humidity: 30 to 90 %RH (non-condensing)
Mounting: Standard Rack 18BXx or 18KBXx
Weight: 150 g (0.33 lb)

PERFORMANCE in percentage of span

Accuracy: ±0.1 %
Linearization accuracy: ±0.05 %
Cold junction compensation error: ±0.5°C or ±0.9°F
(at 20°C ±10°C or 68°F ±18°F)
Temp. coefficient: ±0.015 %/°C (±0.008 %/°F)
Response time: ≤ 0.8 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: 1500 V AC @ 1 minute
(input to output 1 or output 2 or power)
500 V AC @ 1 minute
(output 1 to output 2 to power)
1500 V AC @ 1 minute
(input or output or power to ground)

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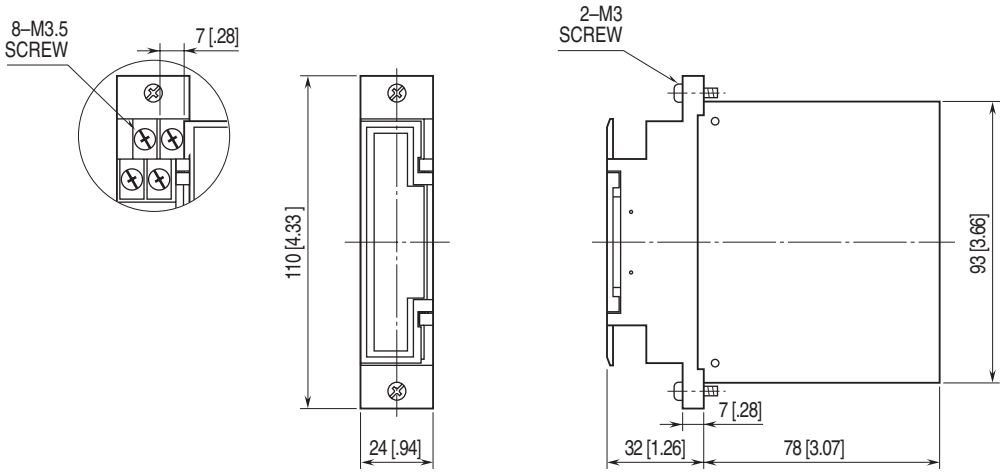
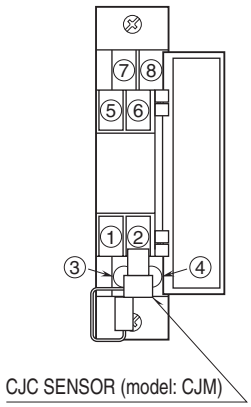
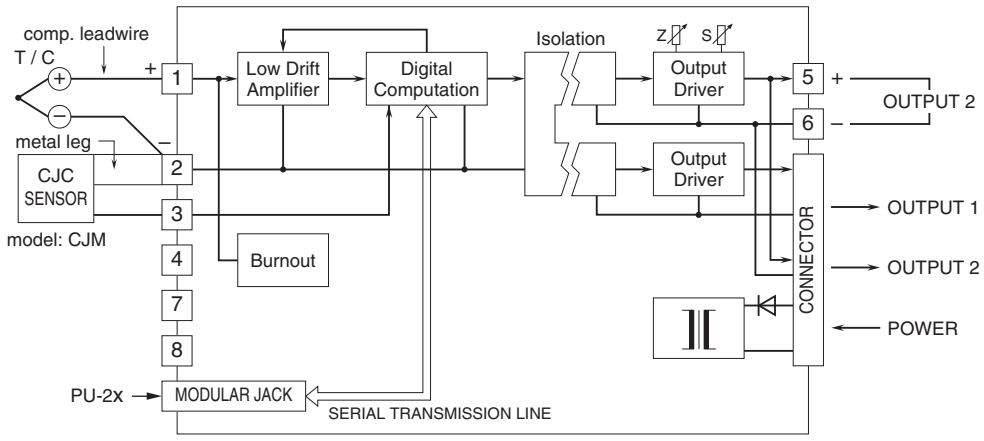
EXTERNAL DIMENSIONS unit: mm [inch]



TERMINAL ASSIGNMENTS



SCHEMATIC CIRCUITRY & CONNECTION DIAGRAM



⚠ Specifications are subject to change without notice.

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