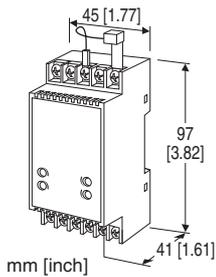


Terminal Block Dual Output Signal Conditioners W5-UNIT

THERMOCOUPLE TRANSMITTER

Functions & Features

- Accepts direct input from a thermocouple
- Two independent output ranges
- Linearization and burnout
- Cold junction compensation
- Fast response type available
- High-density mounting



MODEL: W5TS-[1][2][3]-[4][5]

ORDERING INFORMATION

- Code number: W5TS-[1][2][3]-[4][5]
- Specify a code from below for each of [1] through [5].
(e.g. W5TS-2A6-R/K/BL/Q)
- Temperature range (e.g. 0 - 800°C)
- Special output ranges (For codes Z & 0)
- Specify the specification for option code /Q
(e.g. /C01/V01/S01)

[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

[2] OUTPUT 1

Current

- A: 4 - 20 mA DC (Load resistance 550 Ω max.)
- B: 2 - 10 mA DC (Load resistance 1100 Ω max.)
- C: 1 - 5 mA DC (Load resistance 2200 Ω max.)
- D: 0 - 20 mA DC (Load resistance 550 Ω max.)
- E: 0 - 16 mA DC (Load resistance 685 Ω max.)

- F: 0 - 10 mA DC (Load resistance 1100 Ω max.)
- G: 0 - 1 mA DC (Load resistance 11 kΩ max.)
- Z: Specify current (See OUTPUT SPECIFICATIONS)
- Voltage
- 1: 0 - 10 mV DC (Load resistance 10 kΩ min.)
- 2: 0 - 100 mV DC (Load resistance 100 kΩ min.)
- 3: 0 - 1 V DC (Load resistance 100 Ω min.)
- 4: 0 - 10 V DC (Load resistance 1000 Ω min.)
- 5: 0 - 5 V DC (Load resistance 500 Ω min.)
- 6: 1 - 5 V DC (Load resistance 500 Ω min.)
- 0: Specify voltage (See OUTPUT SPECIFICATIONS)

[3] OUTPUT 2

- Same range availability as Output 1
- Y: None

[4] POWER INPUT

AC Power

- M: 85 - 264 V AC (Operational voltage range 85 - 264 V, 47 - 66 Hz)
- (CE not available)

DC Power

- R: 24 V DC
(Operational voltage range 24 V ±10 %, ripple 10 %p-p max.)
- R2: 11 - 27 V DC
(Operational voltage range 11 - 27 V, ripple 10 %p-p max.)
- (CE not available)
- P: 110 V DC
(Operational voltage range 85 - 150 V, ripple 10 %p-p max.)
- (CE not available)

[5] OPTIONS (multiple selections)

Response Time (0 - 90 %)

- blank: Standard (≤ 0.5 sec.)
- /K: Fast Response (Approx. 25 msec.)

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 (multiple selections)

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

- /C01: Silicone coating
 - /C02: Polyurethane coating
 - /C03: Rubber coating
- ADJUSTMENT
- /V01: Multi-turn fine adjustment

TERMINAL SCREW MATERIAL

/S01: Stainless steel

GENERAL SPECIFICATIONS**Construction:** Terminal block**Connection****Input:** M3.5 screw terminals (torque 0.8 N·m)**Output & power:** M3 screw terminals (torque 0.8 N·m)**Standard terminal:** Nickel-plated steel (standard) or stainless steel**Housing material:** Flame-resistant resin (black)**Isolation:** Input to output 1 to output 2 to power**Overrange output:** Approx. -10 to +120 % at 1 - 5 V**Zero adjustment:** -2 to +2 % (front)**Span adjustment:** 98 to 102 % (front)**At burnout:** Downscale \leq -10 %, Upscale \geq 110 %,For output code 4W, Downscale \leq -3%, Upscale \geq 103%**Linearization:** Standard**Cold junction compensation:** CJC sensor attached to the input terminals**INPUT SPECIFICATIONS****Minimum span:** 3 mV**Input resistance:** 20 k Ω min.**Burnout sensing:** 0.1 μ A**Lower temperature range & span (in °C)****(PR):** Lower range 0 to 880°C; min. span 370°C**K (CA):** Lower range -270 to +1200°C; min. span 75°C**E (CRC):** Lower range -270 to +750°C; min. span 50°C**J (IC):** Lower range -210 to +800°C; min. span 60°C**T (CC):** Lower range -270 to +325°C; min. span 75°C**B (RH):** Lower range 0 to 750°C; min. span 780°C**R:** Lower range -50 to +550°C; min. span 360°C**S:** Lower range -50 to +550°C; min. span 380°C**N:** Lower range -270 to +1100°C; min. span 110°C**Lower temperature range & span (in °F)****(PR):** Lower range 32 to 1616°F; min. span 670°F**K (CA):** Lower range -454 to +2192°F; min. span 140°F**E (CRC):** Lower range -454 to +1382°F; min. span 90°F**J (IC):** Lower range -346 to +1472°F; min. span 110°F**T (CC):** Lower range -454 to +617°F; min. span 140°F**B (RH):** Lower range 32 to 1382°F; min. span 1450°F**R:** Lower range -58 to +1022°F; min. span 680°F**S:** Lower range -58 to +1022°F; min. span 700°F**N:** Lower range -454 to +2012°F; min. span 200°F**Remark:** The described accuracy may be partially not satisfied when the temperature ranges below 0°C. Consult factory.**OUTPUT SPECIFICATIONS****DC Current:** 0 - 20 mA DC**Minimum span:** 1 mA**Offset:** Max. 1.5 times span**Load resistance:** Output drive 11 V max.**DC Voltage:** -10 - +12 V DC**Spans:** Min. 5 mV, max. 20 V**Offset:** Max. 1.5 times span**Load resistance:** Output drive 10 mA max.; 5 mA for negative voltage output; at \geq 0.5 V**INSTALLATION****Power Consumption****•AC:**

Approx. 4 VA at 100 V

Approx. 5 VA at 200 V

Approx. 6 VA at 264 V

•DC: Approx. 3 W**Operating temperature:** -5 to +55°C (23 to 131°F)**Operating humidity:** 0 to 90 %RH (non-condensing)**Mounting:** DIN rail**Weight:** 130 g (0.29 lb)**PERFORMANCE in percentage of span****Accuracy** (whichever is greater)**K, E, J:** \pm 0.1 % of FS or \pm 0.2°C (\pm 0.36°F)**T, N:** \pm 0.2 % of FS or \pm 0.2°C (\pm 0.36°F)**PR, B, R, S:** \pm 0.3 % of FS

(at over 400°C for R, S and PR; over 770°C for B)

Cold junction compensation error(at 20°C \pm 10°C or 68°F \pm 18°F)**K, E, J, T, N:** \pm 0.5°C or \pm 0.9°F**S, R, PR:** \pm 1°C or \pm 1.8°F**Temp. coefficient:** \pm 0.015 %/°C (\pm 0.008 %/°F)

(at over 400°C or 750°F for R, S and PR; over 770°C or 1420°F for B)

Burnout response: \leq 10 sec.**Line voltage effect:** \pm 0.1 % over voltage range**Insulation resistance:** \geq 100 M Ω with 500 V DC**Dielectric strength:**

2000 V AC @1 minute (input to output 1 or output 2 to power to ground)

1000 V AC @1 minute (output 1 to output 2)

STANDARDS & APPROVALS

EU conformity:

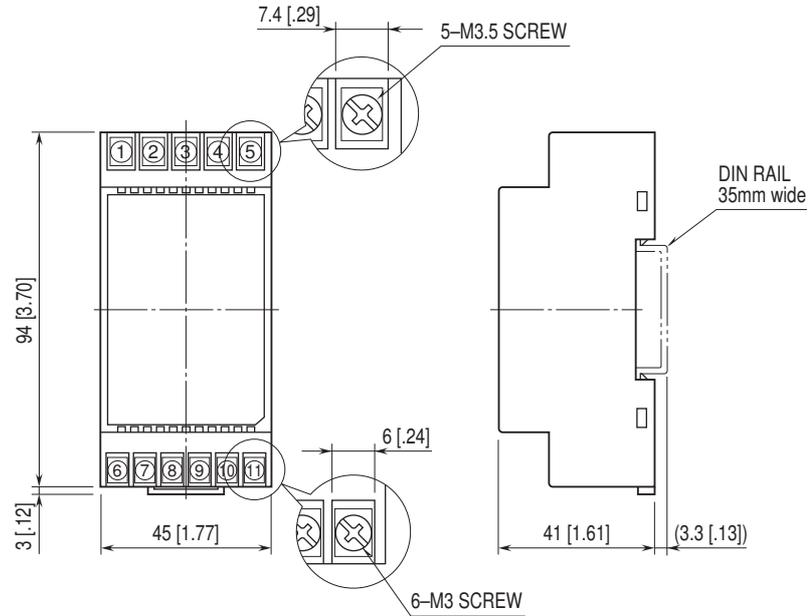
EMC Directive

EMI EN 61000-6-4

EMS EN 61000-6-2

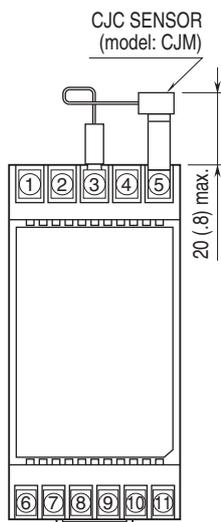
RoHS Directive

EXTERNAL DIMENSIONS unit: mm [inch]

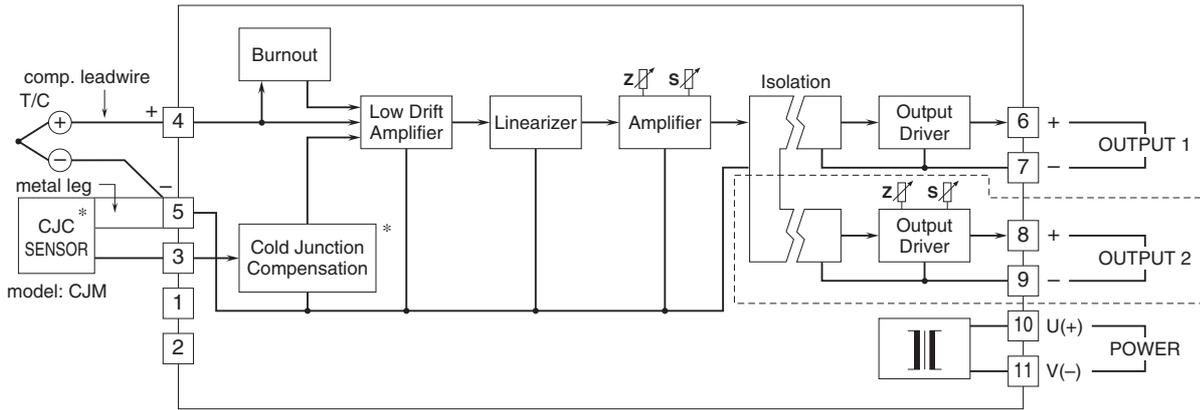


• When mounting, no extra space is needed between units.

TERMINAL ASSIGNMENTS unit: mm [inch]



SCHEMATIC CIRCUITRY & CONNECTION DIAGRAM



*Deleted with B thermocouple

Note 1: The section enclosed by broken line is only with 2nd output option.

Note 2: DO NOT connect to the terminals 1 – 2.



Specifications are subject to change without notice.