

Dual Output Plug-in Signal Conditioners W-UNIT

greater load.

THERMOCOUPLE TRANSMITTER

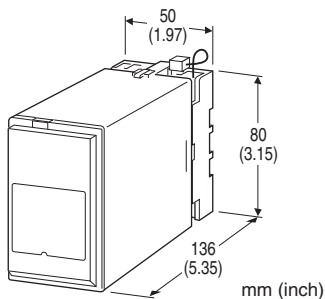
(field-programmable)

Functions & Features

- Accepting direct input from a thermocouple and providing standard process signal
- Micro-processor based
- Field-programmable T/C type and temperature range
- Linearization
- Burnout protection
- High accuracy cold junction compensation
- Isolation up to 2000 V AC
- Loop testing via handheld programmer PU-2x
- High-density mounting

Typical Applications

- Ideal for quick spare part
- High-accuracy cold junction compensation benefits narrow span measurements
- 0.1 μ A 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: WJT-[1][2][3]-[4][5]

ORDERING INFORMATION

- Code number: WJT-[1][2][3]-[4][5]
 - Specify a code from below for each [1] through [5].
(e.g. WJT-2AA-B/BL/Q)
 - Temperature range (e.g. 0 - 800°C)
 - Special output ranges (For codes Z & 0)
 - If the input code is not specified, K thermocouple setting will be used (2:K 0 - 1000°C.)
 - Specify the specification for option code /Q
(e.g. /C01/S01)
- When the user requires a current and a voltage output, specify the current to be the Output 1 which allows a

[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)
- 9: WRe 5-26 (Usable range 0 to 2320°C, 32 to 4200°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 600 Ω max.)
- B: 2 - 10 mA DC (Load resistance 1200 Ω max.)
- C: 1 - 5 mA DC (Load resistance 2400 Ω max.)
- D: 0 - 20 mA DC (Load resistance 600 Ω max.)
- E: 0 - 16 mA DC (Load resistance 750 Ω max.)
- F: 0 - 10 mA DC (Load resistance 1200 Ω max.)
- G: 0 - 1 mA DC (Load resistance 12 k Ω max.)
- Z: Specify current (See OUTPUT SPECIFICATIONS)

Voltage

- 1: 0 - 10 mV DC (Load resistance 10 k Ω min.)
- 2: 0 - 100 mV DC (Load resistance 100 k Ω min.)
- 3: 0 - 1 V DC (Load resistance 1000 Ω min.)
- 4: 0 - 10 V DC (Load resistance 10 k Ω min.)
- 5: 0 - 5 V DC (Load resistance 5000 Ω min.)
- 6: 1 - 5 V DC (Load resistance 5000 Ω min.)
- 0: Specify voltage (See OUTPUT SPECIFICATIONS)

[3] OUTPUT 2

Current

- A: 4 - 20 mA DC (Load resistance 350 Ω max.)
- B: 2 - 10 mA DC (Load resistance 700 Ω max.)
- C: 1 - 5 mA DC (Load resistance 1400 Ω max.)
- D: 0 - 20 mA DC (Load resistance 350 Ω max.)
- E: 0 - 16 mA DC (Load resistance 430 Ω max.)
- F: 0 - 10 mA DC (Load resistance 700 Ω max.)
- G: 0 - 1 mA DC (Load resistance 7000 Ω max.)
- Z: Specify current (See OUTPUT SPECIFICATIONS)

Voltage

Same range availability as Output 1

[4] POWER INPUT

AC Power

- B: 100 V AC



C: 110 V AC
 D: 115 V AC
 F: 120 V AC
 G: 200 V AC
 H: 220 V AC
 J: 240 V AC
DC Power
 S: 12 V DC
 R: 24 V DC
 V: 48 V DC

- zero and span
- simulating output
- Others

[5] 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 (multiple selections)

COATING (For the detail, refer to M-System's web site.)

/C01: Silicone coating
 /C02: Polyurethane coating
 /C03: Rubber coating

TERMINAL SCREW MATERIAL

/S01: Stainless steel

RELATED PRODUCTS

- JX configurator connection kit (model: JXCON)
- Programming Unit (model: PU-2x)

GENERAL SPECIFICATIONS

Construction: Plug-in
Connection: M3.5 screw terminals
Screw terminal: Chromated steel (standard) or stainless steel
Isolation: Input to output 1 to output 2 to power
Housing material: Flame-resistant resin (black)
Overrange output: Approx. -10 to +120 % at 1 - 5 V
Zero adjustment: -5 to +5 % (front)
Span adjustment: 95 to 105 % (front)
Linearization: Standard
Cold junction compensation: CJC sensor attached to the 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

INPUT SPECIFICATIONS

Minimum span: 3 mV
Offset: Max. 3 times span
Input resistance: 20 kΩ min.
Burnout sensing: 0.1 μA
Minimum span in °C and °F
 (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
WRe5-26: 200°C, 360°F
 N: 110°C, 200°F

Remark: 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
WRe5-26: 0 to 2000°C
 N: 0 to 1000°C

OUTPUT SPECIFICATIONS

■ **DC Current:** 0 - 20 mA DC
Minimum span: 1 mA
Offset: Max. 1.5 times span
Load resistance: Output drive 12 V max. for Output 1; 7 V max. for Output 2
 ■ **DC Voltage:** -10 - +10 V DC
Minimum span: 5 mV
Offset: Max. 1.5 times span
Load resistance: Output drive 1 mA max.; at ≥ 0.5 V

INSTALLATION

Power input
 • **AC:** Operational voltage range: rating ±10 %, 50/60 ±2 Hz, approx. 3.5 VA

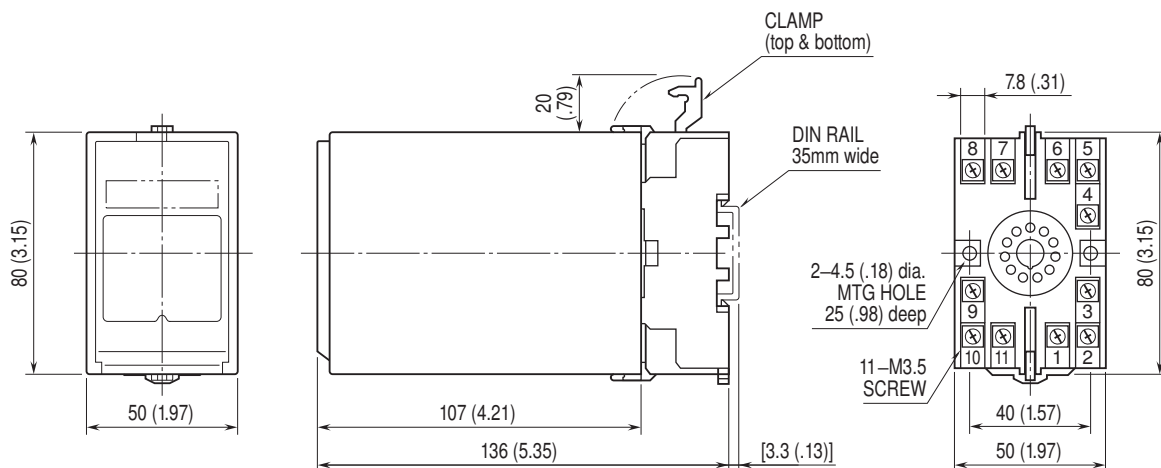


- DC: Operational voltage range: rating $\pm 10\%$ ripple 10 %p-p max., approx. 2.6 W (110 mA at 24 V)
- Operating temperature:** -5 to +55°C (23 to 131°F)
- Operating humidity:** 30 to 90 %RH (non-condensing)
- Mounting:** Surface or DIN rail
- Weight:** 400 g (0.88 lb)

PERFORMANCE in percentage of span

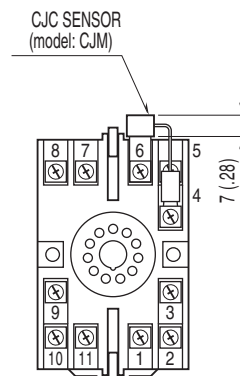
- Accuracy:** $\pm 0.1\%$
- Linearization accuracy:** $\pm 0.05\%$
- Cold junction compensation error:** $\pm 0.5^\circ\text{C}$ or $\pm 0.9^\circ\text{F}$ (at $20^\circ\text{C} \pm 10^\circ\text{C}$ or $68^\circ\text{F} \pm 18^\circ\text{F}$)
- Temp. coefficient:** $\pm 0.015\%/^\circ\text{C}$ ($\pm 0.008\%/^\circ\text{F}$)
- Response time:** ≤ 0.8 sec. (0 - 90 %)
- Burnout response:** ≤ 10 sec.
- Line voltage effect:** $\pm 0.1\%$ over voltage range
- Insulation resistance:** $\geq 100\ \text{M}\Omega$ with 500 V DC
- Dielectric strength:** 2000 V AC @1 minute (input to output to power to ground)
- 1000 V AC @ 1 minute (output 1 to output 2)

DIMENSIONS unit: mm (inch)

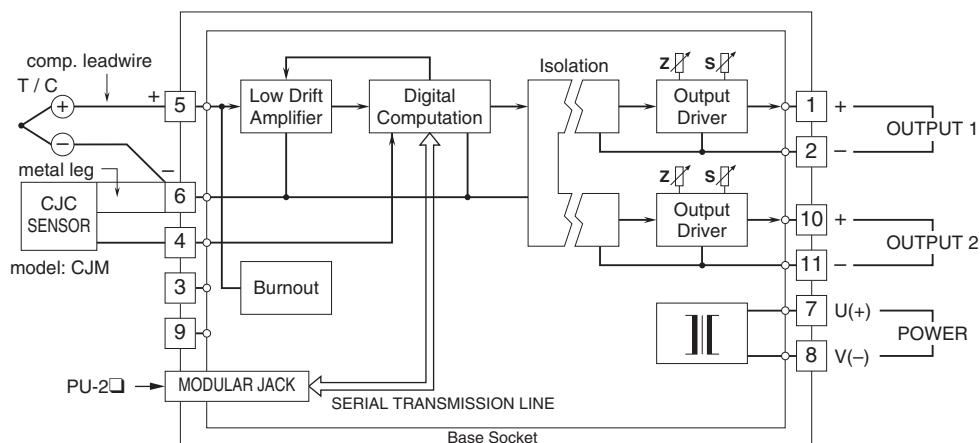


• When mounting, no extra space is needed between units.

TERMINAL ASSIGNMENTS unit: mm (inch)



SCHEMATIC CIRCUITRY & CONNECTION DIAGRAM



Specifications are subject to change without notice.

