

## Space-saving Plug-in Signal Conditioners H-UNIT

### THERMOCOUPLE TRANSMITTER

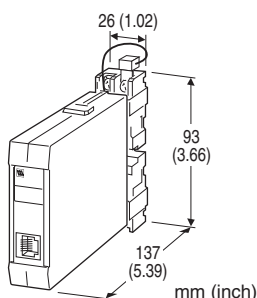
(field-programmable)

#### Functions & Features

- Accepting direct input from a thermocouple and providing a standard process signal
- Micro-processor 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
- High-density mounting

#### Typical Applications

- Ideal for quick spare part
- High-accuracy cold junction compensation benefits narrow span measurements
- 0.1  $\mu$ 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 recorder



## MODEL: HJT-[1][2]-R[3]

### ORDERING INFORMATION

- Code number: HJT-[1][2]-R[3]
- Specify a code from below for each [1] through [3].  
(e.g. HJT-3A-R/BL/Q)
- Specify the specification for option code /Q  
(e.g. /C01/S01)

Default setting will be used if not otherwise specified. K thermocouple setting will be used if the input code is not specified.

- Temperature range (e.g. 0 - 800°C)

### [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

#### Current

A: 4 - 20 mA DC (Load resistance 600  $\Omega$  max.)

#### Voltage

6: 1 - 5 V DC (Load resistance 500  $\Omega$  min.)

### POWER INPUT

#### DC Power

R: 24 V DC

(Operational voltage range 24 V  $\pm$ 10 %, ripple 10 %p-p max.)

### [3] 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 (torque 0.8 N·m)  
**Screw terminal:** Nickel-plated steel  
**Housing material:** Flame-resistant resin (black)  
**Isolation:** Input to output to power  
**Overrange output:** Approx. -10 to +120 % at 1 - 5 V  
**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
- 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 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

## INSTALLATION

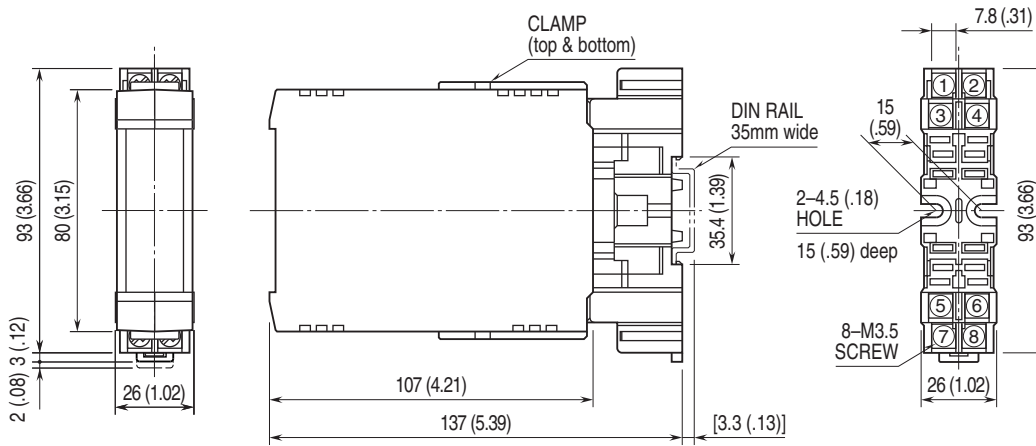
**Current consumption:** Approx. 90 mA  
**Operating temperature:** -5 to +55°C (23 to 131°F)  
**Operating humidity:** 30 to 90 %RH (non-condensing)  
**Mounting:** Surface or DIN rail; Standard Rack Mounting  
 Frame BX-16H available  
**Weight:** 220 g (0.49 lbs)

## 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:** 500 V AC @ 1 minute (input to output to power)  
 1500 V AC @ 1 minute (input or output or power to ground)

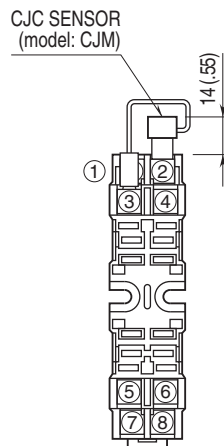


## DIMENSIONS unit: mm (inch)

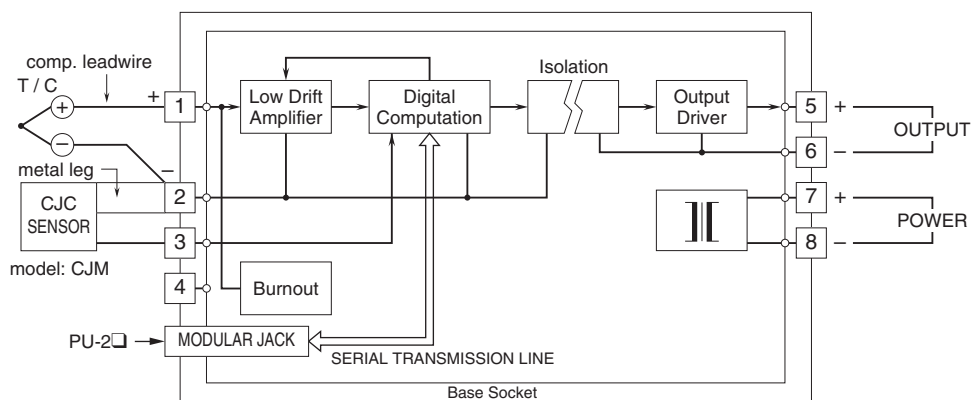


•When mounting, no extra space is needed between units.

## TERMINAL ASSIGNMENTS unit: mm (inch)



## SCHEMATIC CIRCUITRY & CONNECTION DIAGRAM



Specifications are subject to change without notice.