

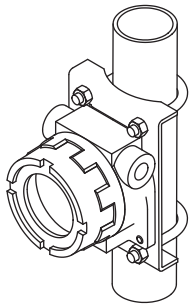
**Field-mounted Two-wire
Signal Conditioners 6B-UNIT**

THERMOCOUPLE TRANSMITTER

(field-configurable; non-linearization)

Functions & Features

- Accepts direct input from a thermocouple and providing a standard 4 - 20 mA DC signal
- Field selectable temperature range
- Burnout protection
- Cold junction compensation
- Rugged outdoor enclosure: stainless steel selectable



MODEL: 6BTS1-0[1][2][3][4][5]

ORDERING INFORMATION

- Code number: 6BTS1-0[1][2][3][4][5]
- Specify a code from below for each of [1] through [5].
(e.g. 6BTS1-020A1/BL)
- Temperature range (e.g. 0 - 800°C)

SAFETY APPROVAL

0: None

[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)
- 0: Specify

[2] WIRING CONDUIT

- 0: G 1/2
- 1: 1/2 NPT
- 2: M20 x 1.5

3: PG 13.5

[3] ENCLOSURE MATERIAL

- A: Diecast aluminum
- S: Stainless steel casting

[4] MOUNTING BRACKET

- 0: Without
- 1: With

[5] OPTIONS

Burnout

- blank: Upscale burnout
- /BL: Downscale burnout

PACKAGE INCLUDES...

- **Mounting screws**
Bolt (M8 x 15): 4
Spring washer for M8: 4
Material: Stainless steel 304
- **Mounting bracket assembly (option):**
Mounting bracket: 1
M10 U-bolt: 2
Nut for M10: 4
Spring washer for M10: 4
Material: Stainless steel 304
Applicable pipe: 1 1/2" min.; 2" max.

GENERAL SPECIFICATIONS

- Degree of protection:** NEMA 4X, IP66/IP67
- Wiring conduit:** See 'Ordering information.'
- Electrical connection:** M3 screw terminals (torque 0.6 N·m)
- Materials**
 - **Transmitter housing:** Diecast aluminum
 - **Screw terminals:** Nickel-plated steel
 - **Enclosure:** Diecast aluminum or stainless steel casting (equivalent to type 316); silver color, epoxy resin coated
- Isolation:** Input to output to outdoor enclosure
- Output limit:** Approx. 120 %
- Zero adjustment:** -3 - +15 % (behind the access cover)
- Span adjustment:** 90 to 110 % (behind the access cover)
- Linearization:** Not provided
- Cold junction compensation:** CJC sensor attached to the input terminals

INPUT SPECIFICATIONS

- Minimum span:** 3 mV
- Offset:** Max. 1.5 times span
- Input resistance:** 20 kΩ minimum

Burnout sensing: 0.1 μ A

Approx. 0.78 kg (1.72 lb)

Minimum temperature span (in $^{\circ}$ C)

- (PR): min. span 370 $^{\circ}$ C
- K (CA): min. span 75 $^{\circ}$ C
- E (CRC): min. span 50 $^{\circ}$ C
- J (IC): min. span 60 $^{\circ}$ C
- T (CC): min. span 75 $^{\circ}$ C
- B (RH): min. span 780 $^{\circ}$ C
- R: min. span 360 $^{\circ}$ C
- S: min. span 380 $^{\circ}$ C

Minimum temperature span (in $^{\circ}$ F)

- (PR): min. span 670 $^{\circ}$ F
- K (CA): min. span 140 $^{\circ}$ F
- E (CRC): min. span 90 $^{\circ}$ F
- J (IC): min. span 110 $^{\circ}$ F
- T (CC): min. span 140 $^{\circ}$ F
- B (RH): min. span 1410 $^{\circ}$ F
- R: min. span 650 $^{\circ}$ F
- S: min. span 690 $^{\circ}$ F

Note: For the temperatures that range below 0 $^{\circ}$ C, the transmitter may partially not satisfy the described accuracy. Consult factory.

PERFORMANCE in percentage of span

Accuracy: ± 0.1 %

Cold junction compensation error

(at 25 $^{\circ}$ C $\pm 10^{\circ}$ C or 77 $^{\circ}$ F $\pm 18^{\circ}$ F)

K, E, J & T: $\pm 0.5^{\circ}$ C or $\pm 0.9^{\circ}$ F

S, R & PR: $\pm 1^{\circ}$ C or $\pm 1.8^{\circ}$ F

Temp. coefficient: ± 0.015 %/ $^{\circ}$ C (± 0.008 %/ $^{\circ}$ F)

± 0.02 %/ $^{\circ}$ C (± 0.01 %/ $^{\circ}$ F) at spans ≤ 10 mV

Response time: ≤ 0.5 sec. (0 - 90 %)

Burnout response: ≤ 10 sec.

Insulation resistance: ≥ 100 M Ω with 500 V DC

Dielectric strength: 500 V AC @ 1 minute

(input to output)

1500 V AC @ 1 minute (input or output to outdoor enclosure)

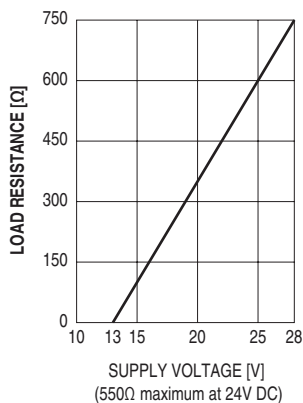
OUTPUT SPECIFICATIONS

Output: 4 - 20 mA DC

Load resistance vs. supply voltage: Load Resistance (Ω) =

(Supply Voltage (V) - 13 (V)) \div 0.02 (A)

(including leadwire resistance)



INSTALLATION

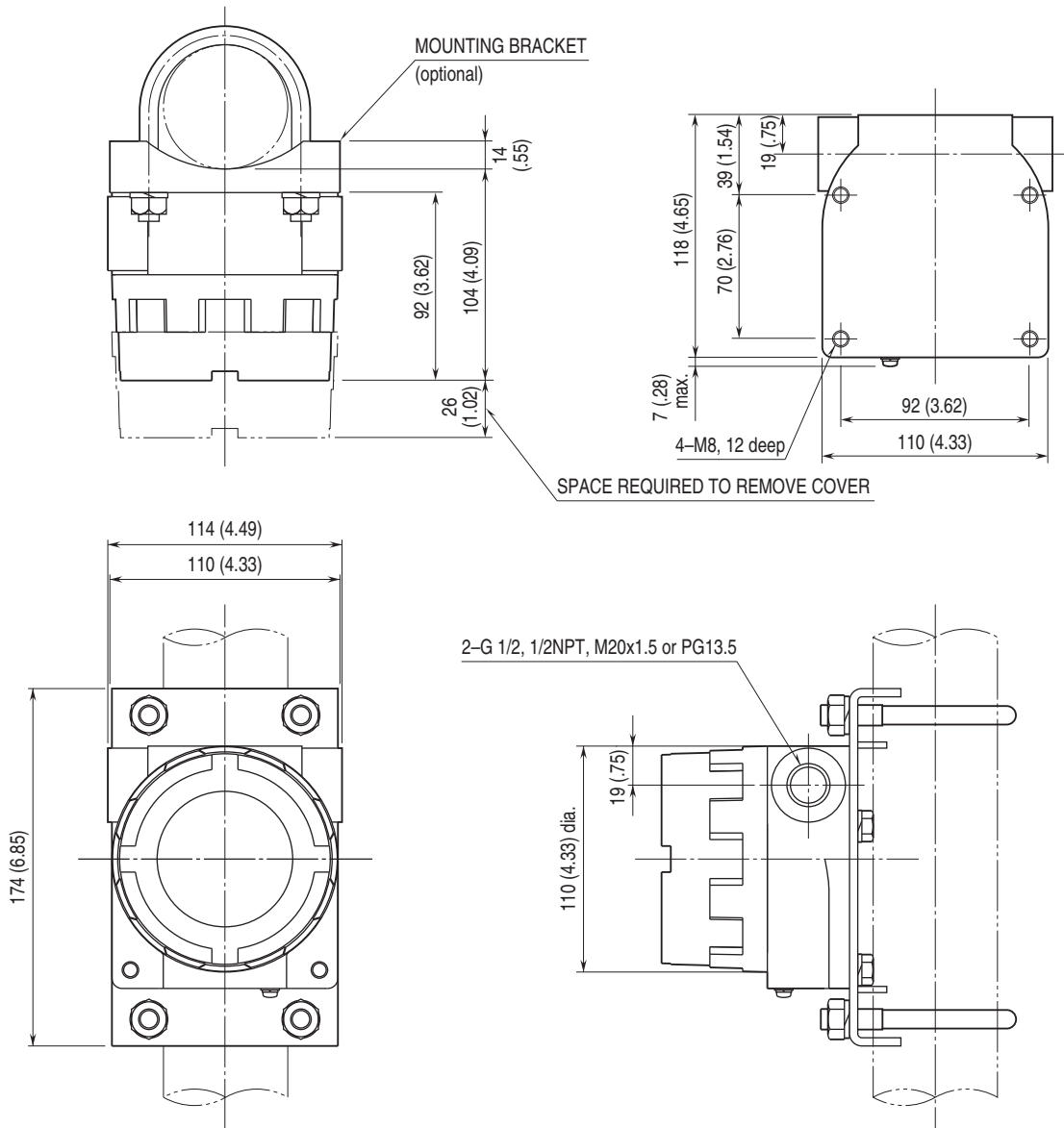
Supply voltage: 13 - 28 V DC

Operating temperature: -5 to +70 $^{\circ}$ C (23 to 158 $^{\circ}$ F)

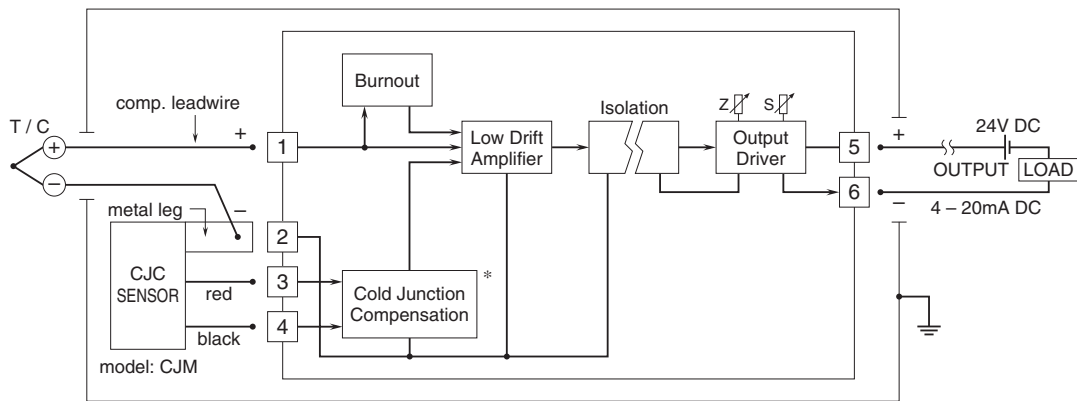
Weight:

- Unit
 - Approx. 1.5 kg (2.9 lb), aluminium
 - Approx. 4.2 kg (8.8 lb), stainless steel
- Mounting bracket assembly (option)

EXTERNAL DIMENSIONS unit: mm (inch)



SCHEMATIC CIRCUITRY & CONNECTION DIAGRAM



*Deleted with B thermocouple



Specifications are subject to change without notice.