

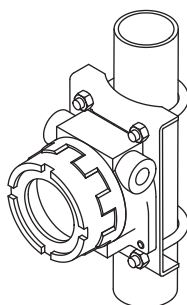
Field-mounted Two-wire Signal Conditioners 6B-UNIT

THERMOCOUPLE TRANSMITTER

(linearization)

Functions & Features

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



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

ORDERING INFORMATION

- Code number: 6BTS-0[1][2][3][4][5]

Specify a code from below for each of [1] through [5].

- (e.g. 6BTS-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 × 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: Approx. -0.5 – +5 % (behind the access cover)
- Span adjustment: Approx. 95 to 105 % (behind the access cover)
- Linearization: Standard
- 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 μA**Minimum temperature span (in °C)**

(PR): min. span 370°C

K (CA): min. span 75°C

E (CRC): min. span 50°C

J (IC): min. span 60°C

T (CC): min. span 75°C

B (RH): min. span 780°C

R: min. span 360°C

S: min. span 380°C

Minimum temperature span (in °F)

(PR): min. span 670°F

K (CA): min. span 140°F

E (CRC): min. span 90°F

J (IC): min. span 110°F

T (CC): min. span 140°F

B (RH): min. span 1410°F

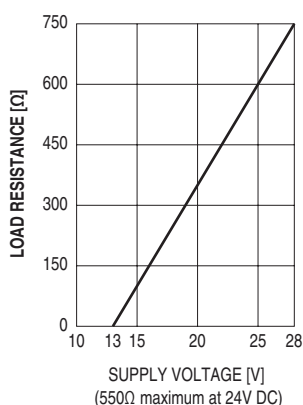
R: min. span 650°F

S: min. span 690°F

Note: For the temperatures that range below 0°C, the transmitter may partially not satisfy the described accuracy. Consult factory.

OUTPUT SPECIFICATIONS**Output:** 4 – 20 mA DC

Load resistance vs. supply voltage: Load Resistance (Ω) =
 (Supply Voltage (V) – 13 (V)) ÷ 0.02 (A)
 (including leadwire resistance)

**INSTALLATION****Supply voltage:** 13 – 28 V DC**Operating temperature:** -5 to +70°C (23 to 158°F)**Weight:**

• Unit

Approx. 1.5 kg (2.9 lb), aluminium

Approx. 4.2 kg (8.8 lb), stainless steel

• Mounting bracket assembly (option)

Approx. 0.78 kg (1.72 lb)

PERFORMANCE in percentage of span

Accuracy: ±0.4 % (at over 400°C or 750°F for R, S and PR; over 770°C or 1420°F for B)

Cold junction compensation error

(at 25°C ±10°C or 77°F ±18°F)

K, E, J & T: ±0.5°C or ±0.9°F**S, R & PR:** ±1°C or ±1.8°F**Temp. coefficient:** ±0.015 %/°C (±0.008 %/°F)

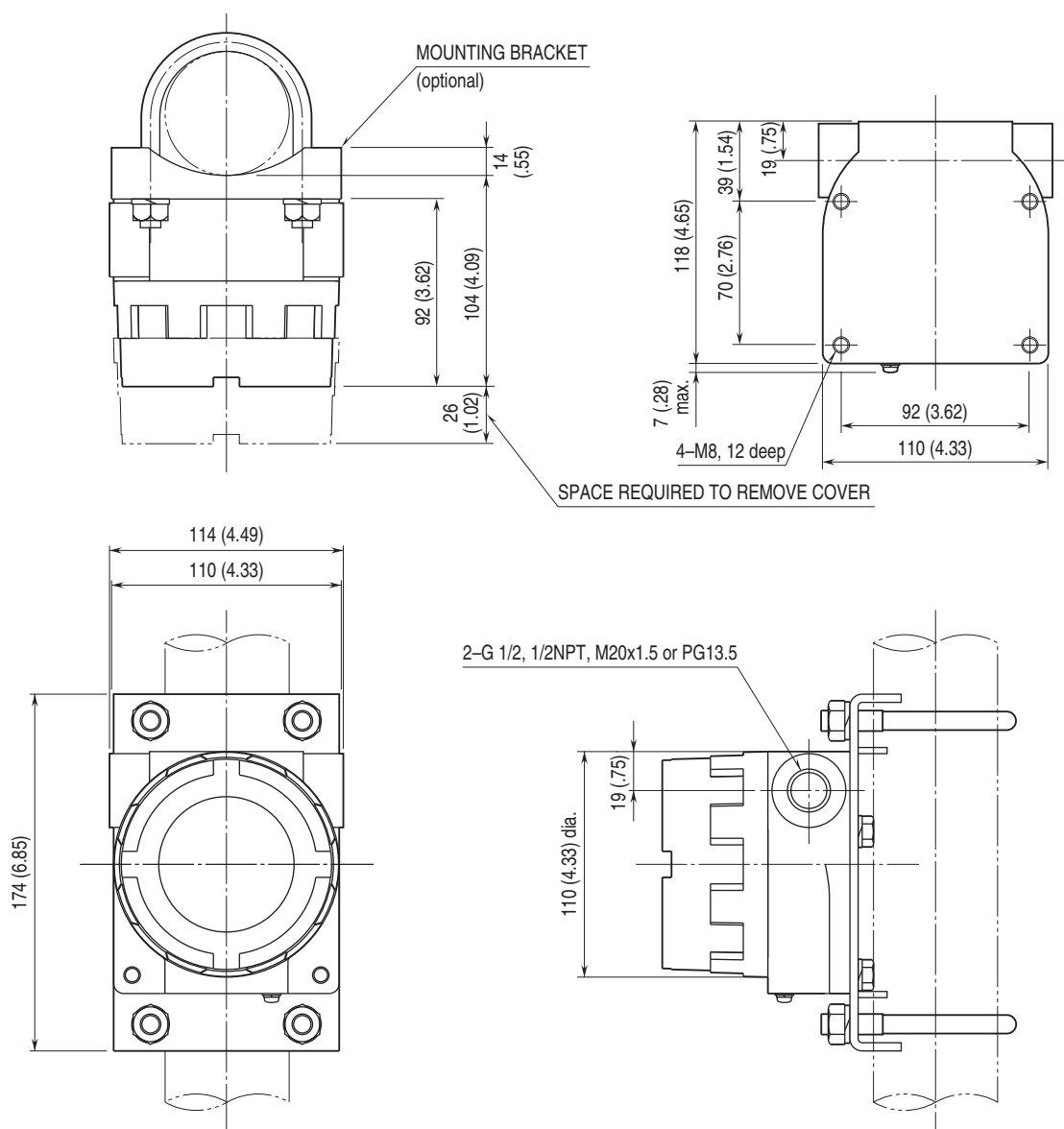
(at over 400°C or 750°F for R, S and PR; over 770°C or 1420°F for B)

Burnout response: ≤ 10 sec.**Insulation resistance:** ≥ 100 MΩ with 500 V DC**Dielectric strength:** 500 V AC @ 1 minute

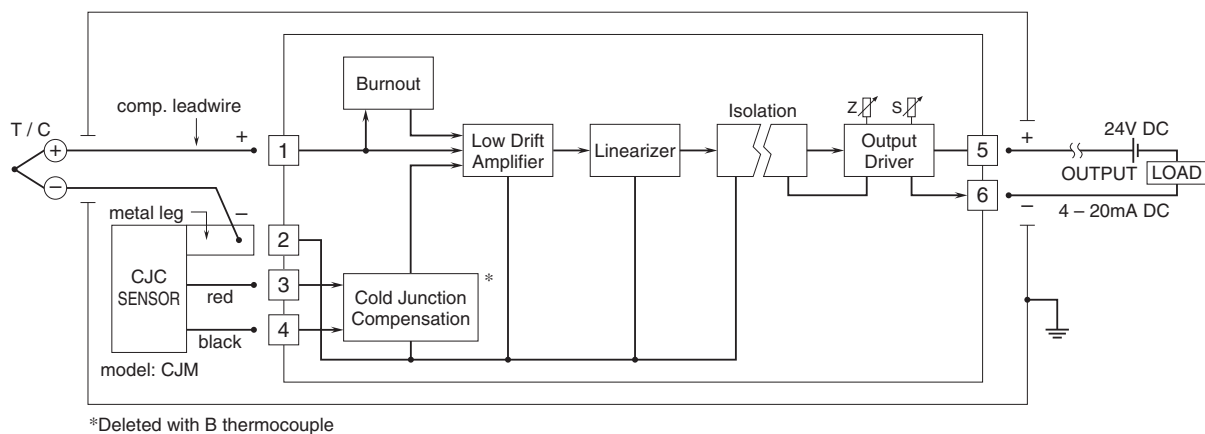
(input to output)

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

EXTERNAL DIMENSIONS unit: mm (inch)



SCHEMATIC CIRCUITRY & CONNECTION DIAGRAM





Specifications are subject to change without notice.