Space-saving Two-wire Signal Conditioners *B-UNIT*

THERMOCOUPLE TRANSMITTER (isolated)

MODEL **BTS**

MODEL & SUFFIX CODE SELECTION

BTS–❑❑

MODEL

INPUT THERMOCOUPLE

1 : (PR)
2 : K (CA)
3 : E (CRC)
4 : J (IC)
5 : T (CC)
6 : B (RH)
7 : R
8 : S
0 : Specify

OUTPUT

4 – 20mA DC

SUPPLY VOLTAGE

14 – 60V DC

OPTIONS

/BL : Downscale burnout

ORDERING INFORMATION

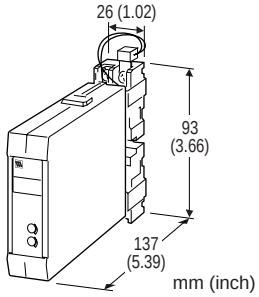
Specify code number and variables.

- **Code number** (e.g. BTS-2/BL)
- **Temperature range** (e.g. 0 – 800°C)

GENERAL SPECIFICATIONS

Construction: plug-in
Connection: M3.5 screw terminals (nickel-plated steel; torque ≤0.8 N·m)
Housing material: flame-resistant resin (black)
Isolation: input to output
Front adjustments: -1.5 – +10% for zero; ±5% for span
Output limit: approx. 120%
Burnout protection: upscale standard; downscale optional
Linearization: standard
Cold junction compensation: CJC sensor attached to the input terminals

ISOLATION



Functions & Features

• Accepting direct input from a thermocouple and providing a standard 4 – 20mA DC signal • Linearization • Burnout protection • High-accuracy cold junction compensation • Monitor terminals • High-density mounting

Typical Applications

• High-accuracy cold junction compensation benefits narrow span measurements • 0.1μA burnout sensing enables long distance transmission with minimum offset drifts • Electric furnace (isolation)

INPUT & OUTPUT

■**INPUT**: thermocouples
Minimum span: 3mV
Zero suppression/elevation: max. 1.5 times span
Input resistance: 20kΩ minimum
Burnout sensing: 0.1μA
Temperature range

T/C	USABLE RANGE		MIN. SPAN	
	°C	°F	°C	°F
(PR)	0 to 1760	32 to 3200	370	670
K (CA)	-270 to +1370	-450 to +2500	75	140
E (CRC)	-270 to +1000	-450 to +1830	50	100
J (IC)	-210 to +1200	-350 to +2190	60	110
T (CC)	-270 to +400	-450 to +750	75	140
B (RH)	0 to 1820	32 to 3300	780	1440
R	-50 to +1760	-50 to +3200	360	680
S	-50 to +1760	-50 to +3200	380	700

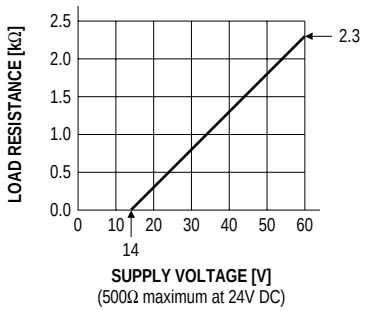
Remark: For the temperatures that range below 0°C, the transmitter may partially not satisfy the described accuracy. Consult factory.

■**OUTPUT**: 4 – 20mA DC

Load resistance vs. supply voltage:

$$\text{Load Resistance } (\Omega) = \frac{\text{Supply Voltage (V)} - 14\text{ (V)}}{0.02\text{ (A)}}$$

(including leadwire resistance)



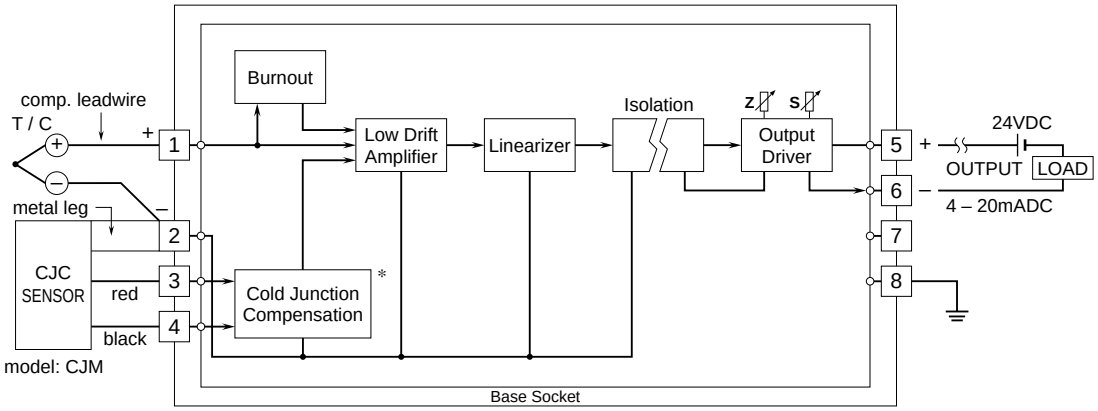
INSTALLATION

Supply voltage: 14 – 60V DC
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
Dimensions: W26×H107×D137 mm (1.02"×4.21"×5.39")
See General Spec. Sheet Figure A.
Weight: 150 g (0.33 lbs)
Terminal assignment: See General Spec. Sheet Figure B-3.

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 maximum
S, R & PR: ±1°C or ±1.8°F maximum
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)
Response time: ≤0.5 seconds (0 – 90%)
Burnout response: ≤10 seconds
Insulation resistance: ≥100MΩ with 500V DC
Dielectric strength: 500V AC @1 minute
(input to output)
1500V AC @1 minute
(input or output to ground)

SCHEMATIC CIRCUITRY & CONNECTION DIAGRAM



*Deleted with B thermocouple

Specifications subject to change without notice.