

TT190 Thermocouple Transmitter

“Hockey puck” style industrial transmitter



TT190 Thermocouple Transmitter

Overview

Model TT190 interfaces with thermocouples for use in process control and other industrial applications. It has a built-in LED indicator to help troubleshoot signal loops. A dark LED signals loss of current loop power or an open thermocouple.

- 4 to 20 mA current signal
- Thermocouple input
- Factory Mutual (FM) approved intrinsically safe, nonincendive for hazardous locations
- Fits DIN “B” style connection heads

Specifications

Output: 4 to 20 mA over specified range.

Accuracy: $\pm 0.2\%$ of span.

Linearity: Voltage linear.

Adjustments: Zero and span, $\pm 5\%$ of span, non-interacting. Factory set.

Warmup drift: $\pm 0.2\%$ of span max., with

$V_{supply} = 24$ VDC and $R_{loop} = 250 \Omega$.

Stable within 15 minutes.

Supply voltage: 10 to 35 VDC. Voltage effect $\pm 0.001\%$ of span per volt. Reverse polarity protected.

Maximum load resistance: The maximum allowable resistance of the signal carrying loop is:

$$R_{loop\ max} = \frac{V_{supply} - 10}{0.020\ amps}$$

Example: With supply voltage 24 VDC, maximum loop resistance is 700 Ω .

Minimum output current: 1.5 mA.

Maximum output current: 28 mA.

Burnout: Downscale burnout standard; upscale optional.

Hazardous atmospheres: This model may be used with Minco explosionproof connection heads. Model TT190 is Factory Mutual (FM) approved nonincendive for use in Class I, Division 2 areas and intrinsically safe for Class I, Division 1 areas (requires approved barrier). Transmitter entity parameters: $V_{max} = 35$ volts; $I_{max} = 150$ mA; $C_i = 0 \mu F$ and $L_i = 0$ mH.

Connections: Terminal block for wires AWG 22 to AWG 14.

Physical: Polycarbonate case, epoxy potted for moisture resistance.

Weight: 2.0 oz. (57 g).

Ambient temperature:

Operating: -40 to $85^\circ C$ (-40 to $185^\circ F$).

Storage: -55 to $100^\circ C$ (-67 to $212^\circ F$).

Ambient temperature effects:

$\pm 0.018\%$ of span per $^\circ C$.

Cold junction compensation drift:

$\pm 0.03^\circ C$ per $^\circ C$, -25 to $70^\circ C$.

$\pm 0.06^\circ C$ per $^\circ C$, -40 to $-25^\circ C$ and 70 to $85^\circ C$.

Minimum span: $100^\circ C$ ($180^\circ F$).

Hazardous area requirements

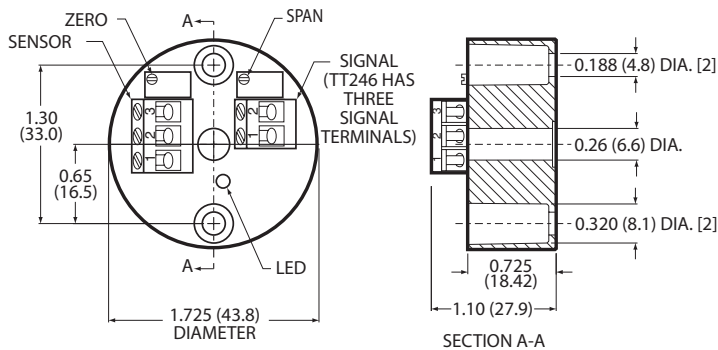
Contact Minco at 763.571.3121 for information on how to classify a hazardous area, methods of protection, and the various standards and agencies (including FM, CSA, CENELEC and ATEX).

TT190 Thermocouple Transmitter

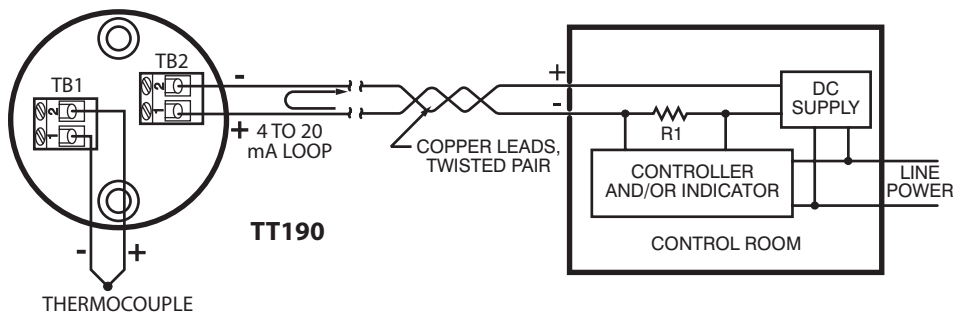
Specification options

TT190	Model number TT190
J	TC junction type: E = Chromel-Constantan J = Iron-Constantan K = Chromel-Alumel T = Copper-Constantan
U	U = Ungrounded junction (required)
1	Output: 4 to 20 mA DC
GX	Temperature range code from www.minco.com/rangecode/ [Ex: GX = 93.3 to 760°C (200 to 1400°F)]
TT190JU1GX = Sample part number	

Dimensions in inches (mm)



Wiring Diagram



Specifications subject to change.

Worldwide Headquarters
7300 Commerce Lane
Minneapolis, MN 55432 USA
Tel: 1.763.571.3121
Fax: 1.763.571.0927
sales@minco.com
www.minco.com

European Headquarters
Usine et Service
Commercial, Z.I.
09310 Aston, France
Tel: (33) 5 61 03 24 01
Fax: (33) 5 61 03 24 09

Asia Pacific Headquarters
20 Science Park Road
#02-31 Teletech Park
Singapore Science Park II
Singapore 117674
Tel: (65) 6511 3388
Fax: (65) 6511 3399

ISO 9001:2000 / AS9100B
ITT04051906R1
© Minco 2006

MINCO
A critical component of your success™

Flex Circuits
Thermofoil™ Heaters
Sensors
Instruments