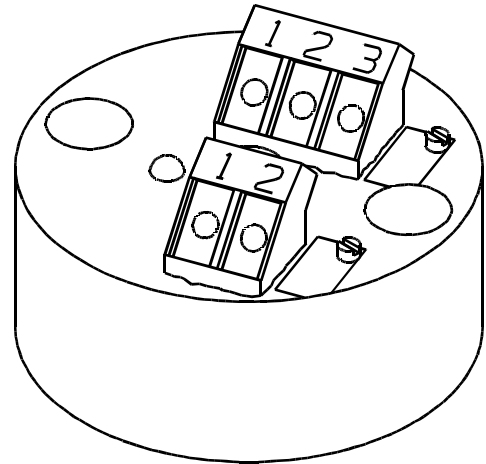


TT176 RTD TEMPERATURE TRANSMITTER



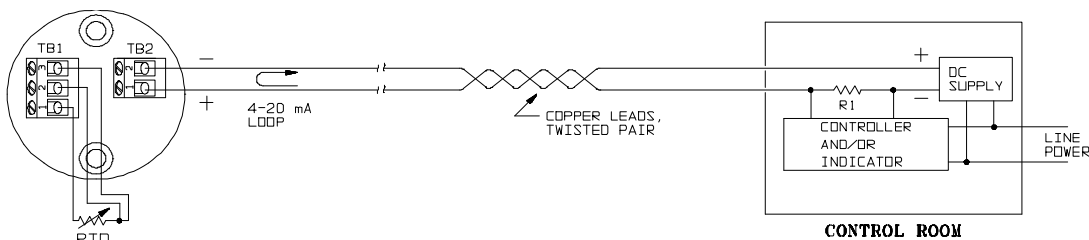
- **FM Approved as Intrinsically Safe**
- **Accurate, Stable 4 to 20 mA Signal**
- **Fits MINCO "DIN SIZE" connection heads**
- **Non-interacting zero and span**
- **Optional Calibration to Minco RTD's for improved accuracy**
- **Rugged Construction**

The Model TT176 is a 2-wire temperature transmitter for 2, or 3-lead 100 ohm platinum or 3-lead 10 ohm copper RTD's. The transmitter converts the RTD's temperature into a linearized 4 to 20 mA DC current signal. Because this current signal is immune to leadwire and electrical noise, the TT176 lets you obtain accurate temperature readings from RTD's thousands of feet away. An ordinary twisted pair of wires carries both the temperature signal and power for the transmitter's electronics.

The TT176 compensates for leadwire resistances of up to 25 ohms in each leg of a 3-wire RTD. The transmitter exhibits extremely low ambient temperature drift characteristics, and operates over a -40 to 85 C temperature range. All electronics are encapsulated in epoxy which makes the transmitter extremely rugged and provides long-term stability.

The TT176 is FM approved for use in Class I, Divisions 1 or 2, Groups A, B, C, and D hazardous locations.

Wiring Diagram



An LED conveniently indicates the status of the control loop. The brightness is directly proportional to the loop current. The LED indicates a shorted or open sensor by being very dim or bright.

The TT176 fits in ordinary electrical "handy boxes" as well as connection heads. Accessories are available for mounting the transmitter to DIN rails

Special Calibration Option

Because Minco manufactures both RTD's and transmitters, we can calibrate them together in matched sets. This special calibration cancels the error from sensor tolerance and eliminates the need for time-consuming field

adjustment. Total guaranteed accuracy of calibrated RTD/Tempran™ sets depends on the selected temperature range and the type of RTD used.

TT176 RTD Temperature Transmitter

Specifications

Input: 2-, or 3-wire 100 ohm platinum or 3-wire 10 ohm copper RTD's.

Output: 4 to 20 mA DC over specified range.

Accuracy: +/- 0.1% of span.

Linearity: +/- 0.1% of span.

Adjustments: Zero and Span; +/- 5% of span, non-interacting.

Ambient Temperature:

Operating: -40 to 85 °C (-40 to 185 °F).

Storage: -55 to 100 °C (-67 to 212 °F).

Ambient Temperature Effects:

+/- 0.005% of span/°F (+/- 0.009% of span/°C).

Double specification for spans < 10 ohms.

Warmup Drift: +/- 0.1% of span max., assuming Vsupply = 24 VDC and Rloop = 250 ohms. Stable within 15 minutes.

Supply Voltage: 10 to 35 volts DC with no load.

Reverse polarity protected.

Voltage effect: +/- 0.001% of span per volt.

Lead Wire Compensation (3-wire RTD): +/- 0.05% of span per ohm, up to 25 ohms in each leg.

Maximum Load Resistance: The maximum allowable resistance of the signal-carrying loop is given by this formula: $R_{loop\ max} = (V_{supply} - 10) / .02\ amps.$

Minimum Output current: 2.2 mA.

Maximum Output Current: 28 mA.

Connections: Terminal blocks accept wires from AWG 22 to AWG 14.

Physical: Epoxy potted for moisture resistance.

Weight: 2.0 oz. (56,8 grams).

How to Order:

TT176 PD 1 C ... Sample part number

Temperature Range: Use same range code as used for all MINCO Temptrans.

Note: A range that is available for a particular Temptran model is not automatically available for the TT176. Consult factory for a current list of available ranges.

Output: 1 = 4 to 20 mA DC.

Calibrated to match RTD Element Code:

CA = .00427 TCR (10 ohms at 25 °C)

PA = .00392 TCR

PB = .00391 TCR

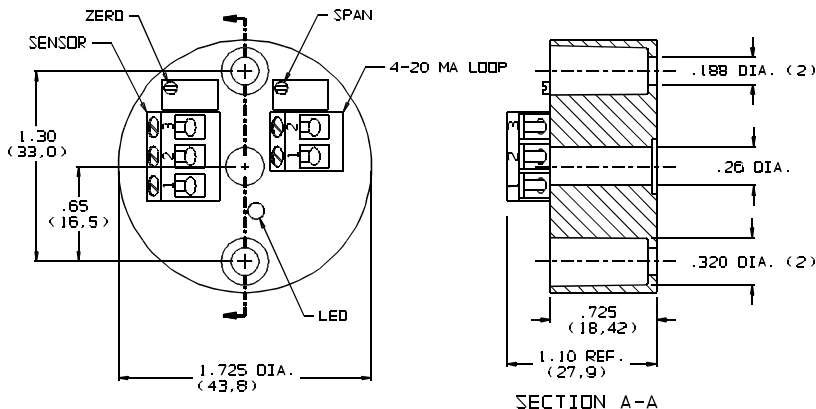
PD = .00385 TCR (meets DIN 43760, Class B)

PE = .00385 TCR

Model Number: TT176, RTD Temptran.

TT676, Special calibration

Dimensions: All dimensions are in inches (millimeters)



When quality and performance are as important as price, call...

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FAX:(763) 571-0927

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