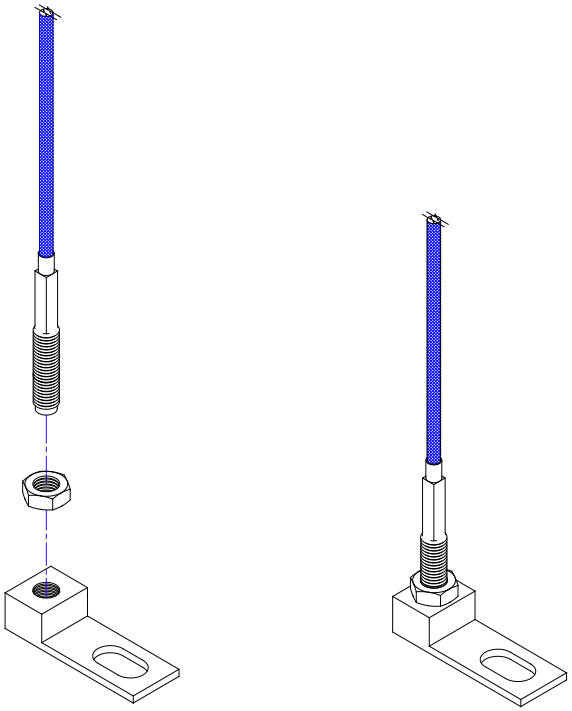
200125 Thermocouple Installation Guide

Bently Nevada* Asset Condition Monitoring



imagination at work

Specifications

Operation outside of the specified limits can result in false or inaccurate readings.

Electrical

Calibration

Type K

Accuracy

±1.1 °C (±2 °F), per ANSI MC96.1 Special Limits

Resistance

1.92 Ω per Double Metre @ 20 °C

(0.585 Ω per Double Foot @ 68 °F)

Isolation

600 Vrms, less than 1 mA current

Polarity (USA, ANSI MC96.1)

Positive = Yellow

Negative = Red

Environmental

Operating Temperature

-55 °C to +200 °C (-67 °F to +392 °F), sensing end

Storage Temperature

-55 °C to +110 °C (-67 °F to +230 °F), entire unit is limited by tag and shrink tubing

Humidity

Up to 100% relative humidity, condensing

Vibration

Up to 50 m/s^2 pk (5.1 g pk) continuous, 500 m/s^2 (51 g pk) short duration

Shock:

Will survive a 1-metre (3.3-foot) drop to a concrete floor

Physical

Case material

304 stainless steel

Insulation/ Sheathing

Teflon®, Neoflon® PFA duplex insulation, 304 stainless steel overbraid

Cable Size

20 AWG solid

Mechanical

23 kg_f (50 lbf) static pull parallel

12 kg_f (25 lbf) static pull perpendicular

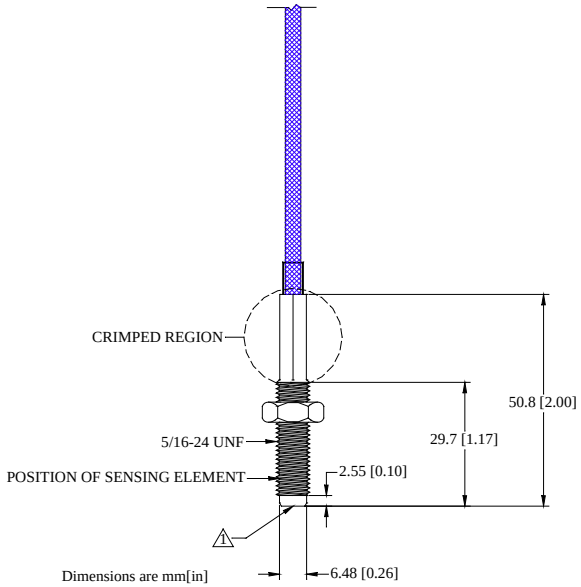


Figure 1: Thermocouple Case Dimensions

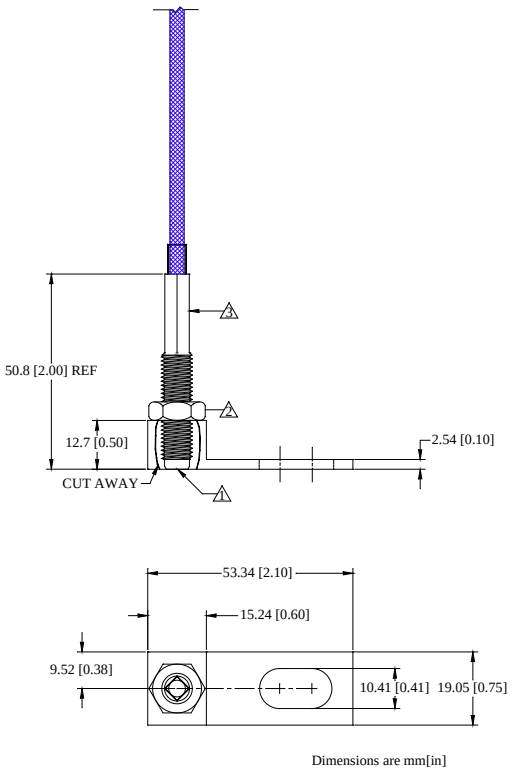


Figure 2: Thermocouple and Optional Right Angle Mounting Adaptor

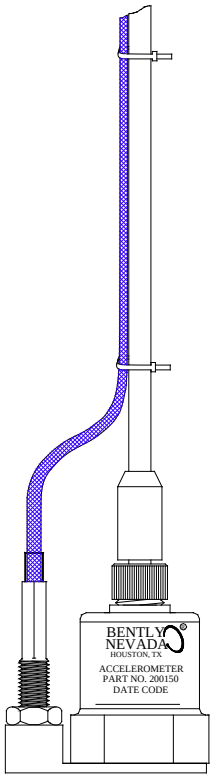


Figure 3: Vibration Transducer and Thermocouple

Field Installation

You can install the 200125 Trendmaster* thermocouple in various configurations. The installation techniques and practices used can impact performance. To maximize sensor performance note the following:

1. Install the thermocouple shown in Figure 1 with the tip △1 in contact with the surface to be measured. If you use a mounting adapter such as that shown in Figure 2, adjust adapter and threaded case to establish contact with the surface to be measured at point △1.
2. Tighten the thermocouple jam nut △2 from 11.3 to 16.9 N*m (100 to 150 in-lb). The jam nut prevents the thermocouple loosening whether installed as shown in Figure 1 or as shown using the adapter in Figure 2.

NOTES

1. Do not apply more than 5.6 N*m (50 in-lb) torque to the crimped region △3 on the thermocouple shown in figure 1. Damage to the thermocouple may result.
2. Use an appropriate thread-locking compound on the jam nut and thermocouple threads.

DANGER

Routing wires near high voltage lines can present a shock hazard. Contact with exposed high voltage wires can cause injury or death. Route thermocouple wires away from high voltage lines.

3. Route the thermocouple cable away from excessive heat, sharp edges, and high voltages. Maintain a bend radius of 25.4 mm (1 in) or greater.
4. Tie the thermocouple cable at a point no more than 153 mm (6 inches) from the threaded steel sensor case. Secure remaining cable at regular intervals. Proper securing of the cable will minimize cable fatigue failure caused by excessive cable motion. See Figure 3.

Electrical Connection

The 200125 Trendmaster* Thermocouple connects to type k interfaces. Standard ANSI color coding (USA, ANSI MC96-1-82) is used on the thermocouple wire.

- Outer Jacket – Brown
- Positive – Yellow
- Negative – Red

Refer to the appropriate interface instructions for further details.

1631 Bently Parkway South, Minden, Nevada USA 89423
Phone: 775.782.3611 Fax: 775.215.2873
www.ge-mcs.com/bently