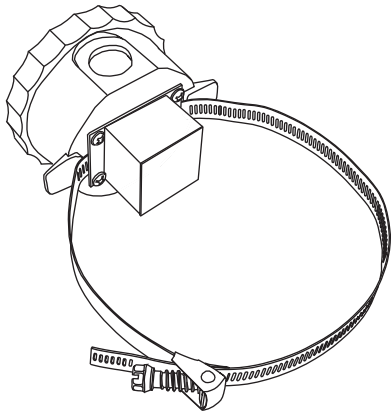


High Accuracy Strap-on Temperature Sensor HATSSO Series Installation Instructions



Introduction

The single point strap-on temperature sensor incorporates a precision thermistor temperature sensor that is attached to a 38 mm x 38 mm (1.5" x 1.5") aluminum plate and adhered to a 38 mm x 25.4 mm (1.5 x 1") compressible foam. A 254 mm (10") S/S Pipe clamp is provided to secure the assembly to various sizes of pipe.

Before Installation

Read these instructions carefully before installing and commissioning the temperature thermostat. Failure to follow these instructions may result in product damage. Do not use in an explosive or hazardous environment, with combustible or flammable gases, as a safety or emergency stop device or in any other application where failure of the product could result in personal injury. **Take electrostatic discharge precautions during installation and do not exceed the device ratings.**

Mounting

The strap-on sensor installs directly onto any pipe where an immersion sensor with thermowell can't be installed.

Once a suitable spot is selected, remove a small block of insulation if present. It is recommended that thermal compound be used to improve heat transfer. Spread on the pipe where sensor plate will be located.

Open the worm gear clamp by swiveling the worm gear away from the clamp and pull the clamp apart, as shown in Figure 1.

Place the sensor plate on the selected mounting area and wrap clamp around the pipe. Re-insert clamp under the worm gear and pull until snug. Lock in place by swiveling the worm gear towards the clamp. Tighten worm gear clamp by using a standard screw driver or hex nut driver as shown in Figure 2.

Remove cover by grasping firmly with hand and twisting approximately a quarter turn counter-clockwise. A lanyard is attached between the cover and the box to allow the cover to hang during wiring and set up as shown in Figure 3.

A 21 mm (13/16") hole is provided for connection of either a 12.77mm (0.5") EMT connector or a cable gland style connector as shown in Figure 4. Insert the EMT or cable gland connector through the hole and securely fasten using a locknut. See Figure 5.

Make wire connections as per the "Wiring" illustrations on Page 2.

Once wiring is complete, re-install cover and tighten by twisting clockwise.

Figure 1

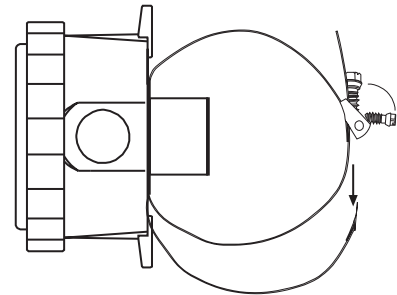


Figure 2

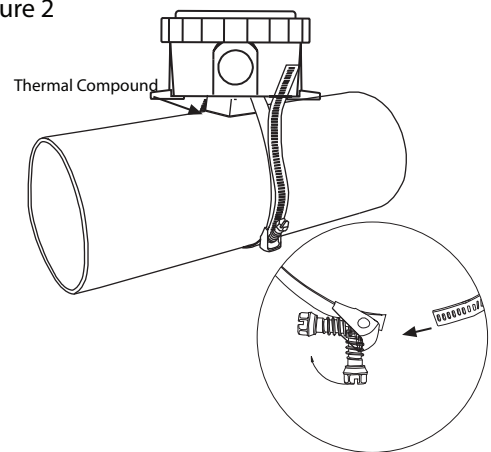


Figure 3

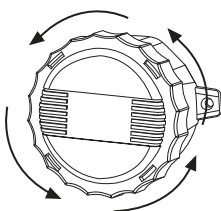


Figure 4

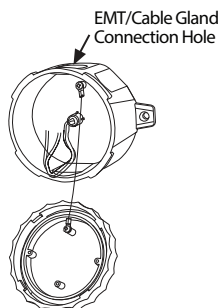
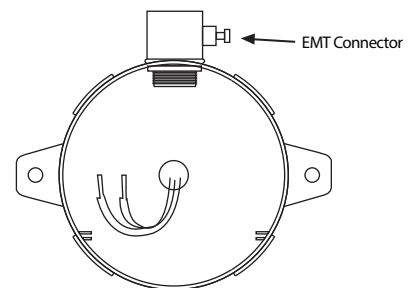
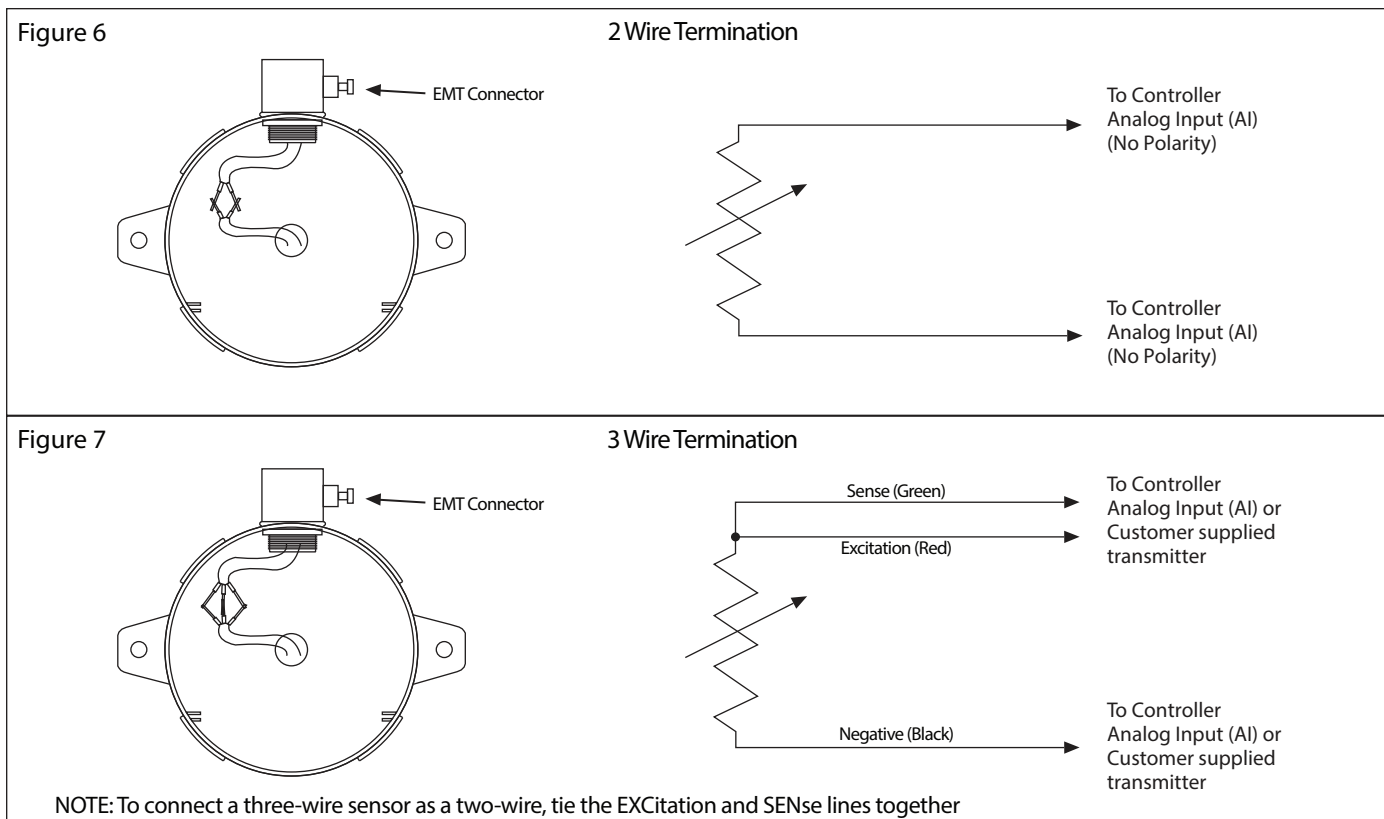


Figure 5



Wiring

- Use 18-24 AWG shielded wiring for all connections. **Do not locate the device wires in the same conduit with wiring used to supply inductive loads such as motors.** Make all connections in accordance with national and local codes.
- Pull at least six inches of wire into the enclosure, then complete the wiring connection according to the wiring diagrams below.
- All thermistors and most RTD's are a 2 wire hook up and are not polarity sensitive. See Figure 6.
- For 3 wire RTD's wire device as shown in Figure 7.
- **All connections should be made using either butt-splices or soldering. The use of wire nuts is not recommended.**



Specification:

Sensor Type:.....Various thermistors or RTD
 Accuracy **RTD Class A:** $\pm 0.15^{\circ}\text{C}$ @ 0°C
 RTD 1/3 DIN: $\pm 0.1^{\circ}\text{C}$ @ 0°C
 RTD 1/10 DIN: $\pm 0.03^{\circ}\text{C}$ @ 0°C
 NTC Thermistor Type 39 : $\pm 0.05^{\circ}\text{C}$, 0-70 $^{\circ}\text{C}$
 NTC Thermistor Type 55: $\pm 0.03^{\circ}\text{C}$, 0-70 $^{\circ}\text{C}$
 NTC Thermistor Type 40/46 : $\pm 0.1^{\circ}\text{C}$, 0-70 $^{\circ}\text{C}$

Temperature Range:..-20 to 105 $^{\circ}\text{C}$ (-4 to 221 $^{\circ}\text{F}$)
 Wire Material:.....2 wire: PVC insulated, parallel bonded
 3 wire: FT-4
 Probe MaterialAluminum plate
 w/ compressible foam backing
 Probe Diameter.....38 mm (1.5") square
 Enclosure:.....ABS - UL94-V0 - IP65 (NEMA4X)

Typical Wire Resistance Values

When using low resistance sensors, long wire runs can add significant error to the readings. Use the following chart to determine errors due to wire resistance or consider using a transmitter for better accuracy. Locate the type of wire being used. Multiply the total length of the wire (distance from the controller to the sensor and back) by the number found in the chart below for total resistance.

GAUGE WIRE TYPE	18 AWG	22 AWG	24 AWG
STRANDED (OHMS/FOOT)	5.85 m Ω	14.75 m Ω	23.29 m Ω
SOLID (OHMS/FOOT)	6.4 m Ω	15.85 m Ω	25.72 m Ω

Dimensions:

