

Introduction

The high accuracy rigid, multi-point rigid duct average temperature transmitter incorporates numerous precision platinum RTD's at equal distances and 6 mm (0.236") OD, 304 series stainless steel probe and is available in various lengths. All probes provide excellent heat transfer, fast response and resist moisture penetration. A transmitter that provides a high accuracy signal with excellent long term stability, low hysteresis and fast response is available with various ranges. A weatherproof PVC enclosure with mounting tabs is provided for ease of installation.

Before Installation

Read these instructions carefully before installing and commissioning the temperature sensor. 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 duct temperature transmitter sensor installs directly into any air duct with several lengths available for a wide range of duct widths/diameters. Please Select a suitable installation area in the middle of the duct wall. To achieve the best reading, do not place in an area where air stratification may be present. **Mount the sensor at least 1.5 m (5') in either direction from elbows, dampers, filters or other duct restrictions. Avoid areas where the sensor is exposed to vibrations or rapid temperature changes.**

Once a suitable spot is selected, drill a 9.5 - 12 mm (3/8" - 1/2") hole for the probe.

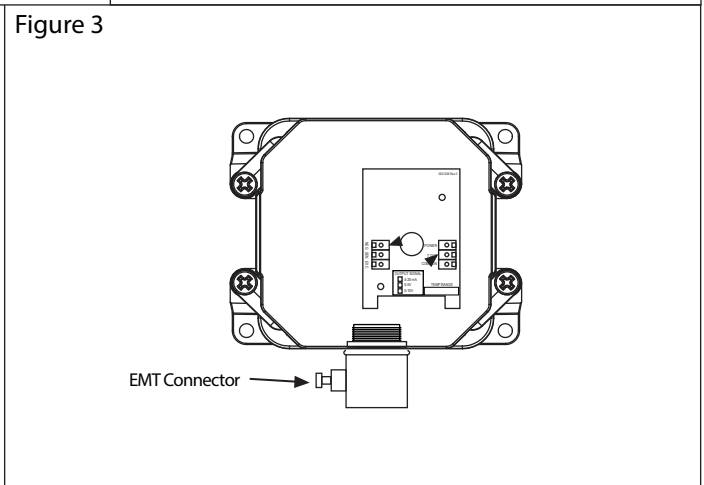
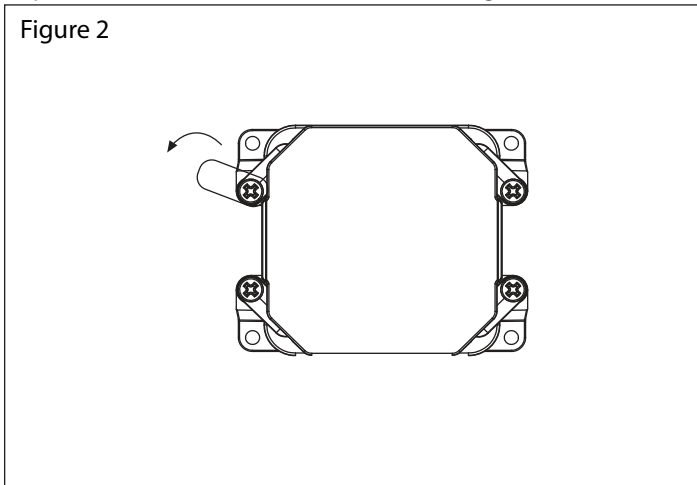
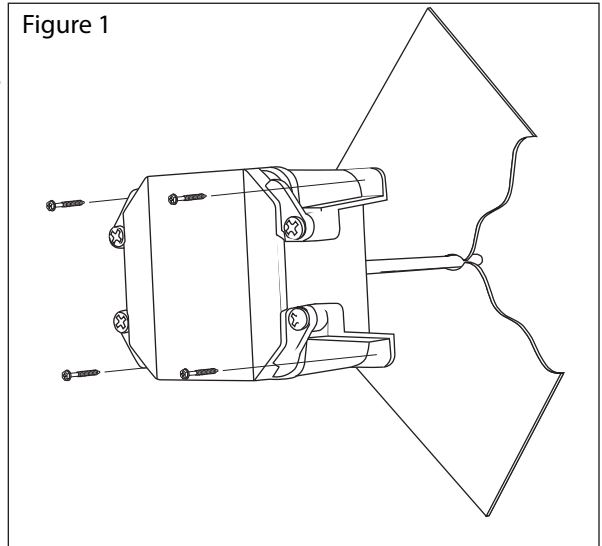
Slide the probe in the drilled hole until the enclosure is flush against the duct. The airflow direction is not important. Secure the enclosure to the duct with (4) #10 x 25 mm (1") self tapping screws (Not provided). Tighten screws until the enclosure is tight against the duct and that there is no movement of the enclosure as shown in Figure 1. A foam gasket on the back of the enclosure provides a tight seal against any air leaks.

The sensor cover is secured with 4 rotating latches. Remove the cover by rotating the latch using a Phillips screwdriver. See **Figure 2**.

Feed the conduit or cable gland fitting through the provided hole in bottom of enclosure as show in **Figure 3**. It is recommended that weatherproof conduit or cable gland fittings be used.

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

Replace cover and secure with the 4 rotating latches.



Wiring

- Deactivate the 24 Vac/dc power supply until all connections are made to the device to prevent electrical shock or equipment damage.
- Use 14-22 AWG shielded wiring for all connections and 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.
- The temperature transmitter comes with the temperature sensor pre-wired to the transmitter board. If removal is required for installation then it may be re-wired as shown in **Figure 4**.
- Pull at least six inches of control wire into the enclosure, then complete the wiring connection according to the wire diagram for the applicable power supply and output signal type as shown in **Figure 5**.
- Connect the DC positive or the AC voltage hot side to the PWR terminal. For voltage output or AC power, the supply Common is connected to the COM terminal. The device is reverse voltage protected and will not operate if connected backwards. It has a half-wave power supply so the supply Common is the same as the signal Common. See **Figure 5**.
- The analog output is available on the OUT terminal. Check the controller Analog Input to determine the proper connection before applying power as shown in **Figure 5**.
- Once all connections are made and checked, power can be applied.

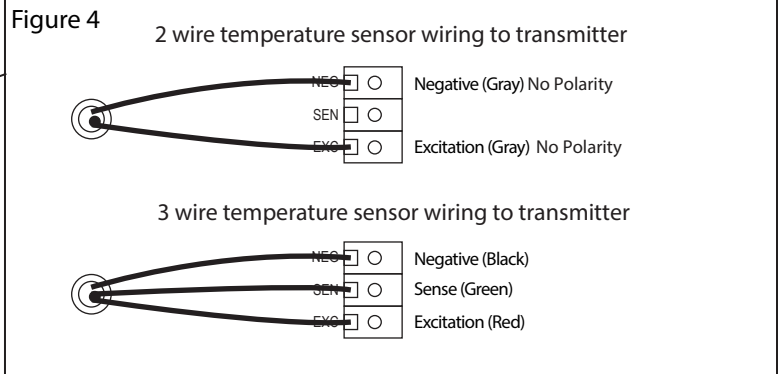
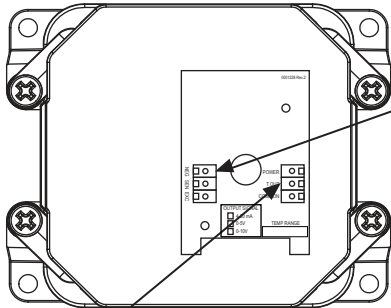
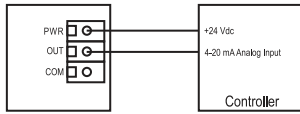


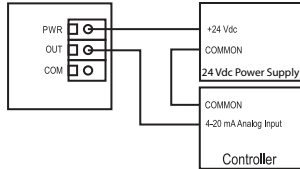
Figure 5

Transmitter Wiring to Controller

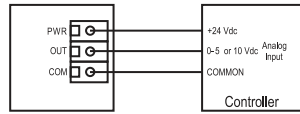
Wiring for 4-20 mA loop-powered output and 24 Vdc power from controller



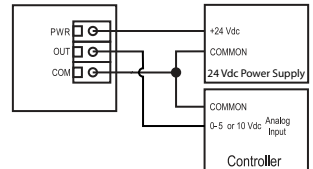
Wiring for 4-20 mA loop-powered output and external 24 Vdc power supply



Wiring for 0-5 or 0-10 Vdc output signal and 24 Vdc power from controller



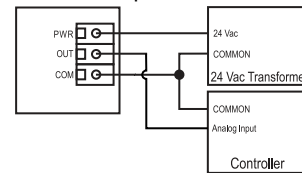
Wiring for 0-5 or 0-10 Vdc output signal and with external 24 Vdc power supply



Specification:

Sensor.....	1000 ohm Platinum RTD
Accuracy.....	Class A: $\pm 0.15^{\circ}\text{C}$ @ 0°C 1/3 DIN: $\pm 0.1^{\circ}\text{C}$ @ 0°C 1/10 DIN: $\pm 0.03^{\circ}\text{C}$ @ 0°C
Probe Sensing Range	-20 to 105°C (-4 to 221°F)
Wire Material	PVC insulated, parallel bonded
Probe Material	304 Series Stainless Steel
Probe Diameter	6.35 mm (0.25") Diameter
Probe Length	450, 600, 900 mm (18", 24", 36")
Output Signal	4-20mA current loop, 0-5 vdc, or 0-10 Vdc (factory configured)
Transmitter Accuracy	$\pm 0.125\%$ of span, including linearity
4-20 mA loop power Supply ...	15-35 Vdc or 22-32 Vac
Minimum Current Loop	2 mA nominal (occurs with shorted sensor)
Maximum loop Current	22.5 mA nominal (occurs with open sensor)
Maximum Loop Load	>600 ohms
0-5 Vdc Power Supply	10-35 vdc or 10-32 Vac
0-10 Vdc Power Supply	15-35 Vdc or 15-32 Vac
Maximum Current (Voltage) ...	5 mA nominal
Maximum Output (Voltage) ...	Limited to <5.5 Vdc for 0-5 Vdc, <10.5 Vdc for 0-10 Vdc
Input Voltage Effect	Negligible over specified operating range
RFI rejection	Good RFI rejection of normal frequencies
Protection Circuitry	Reverse voltage protected and output limited
Ambient Operating Range	-40 - 85°C (-40 - 185°F), 0-95% RH non-condensing
Enclosure	PVC, IP65 (NEMA 4X)
Wiring Connections	Screw terminal block (14 to 22 AWG)

Wiring for all output signals with external 24 Vac power transformer



Dimensions:

