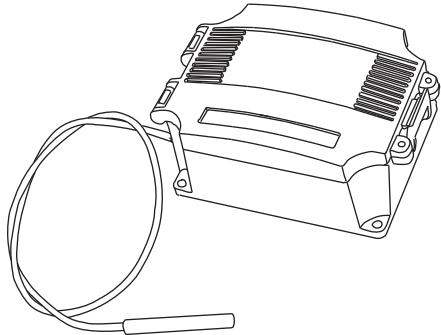


Flying Lead Temperature Sensor TE511/512FL Series Installation Instructions



Introduction

The single point flying lead temperature transmitter utilizes a precision sensor that is encapsulated in 50 mm (2") long x 6.35 mm (0.25") diameter OD, 304 series stainless steel probe and is provide with 1.83 m (6') of plenum rated FT6 cable. All probes provide excellent heat transfer, fast response and resistance to moisture penetration.

A state-of-the-art high accuracy transmitter is provided in a rugged moisture resistant enclosure to monitor temperature levels while providing an LCD for on-site monitoring.

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.

Probe Mounting

The flying lead sensor can be used in a several different types of applications where single point temperature monitoring is required.

The flying lead sensor can be installed directly into any air duct. Select a suitable installation area in the middle of the duct. To achieve the best reading, do not place in an area where air stratification may be present. **Avoid areas where the sensor is exposed to vibrations or rapid temperature changes.**

Once a suitable spot is selected, drill a 3/8" hole in the top of the duct and slide the probe in , mount a length of flexible duct hanger from top to bottom of the duct. Mount the probe to the duct hanger using a tube clamp or wire tie. **See Figure 1.**

The flying lead could also be used to measure pipe temperature. Select a suitable spot along the pipe, remove a small section of insulation if present and set aside. It is recommended that thermal compound be used to improve heat transfer. Spread a liberal amount on the pipe. Lay probe in thermal compound and secure sensor to pipe using a worm gear clamp (not included). For added protection it is recommended to wrap probe cable around pipe 1-2 times. Re-install insulation if present, allowing sensor cable to protrude. **See Figure 2.**

Enclosure Mounting

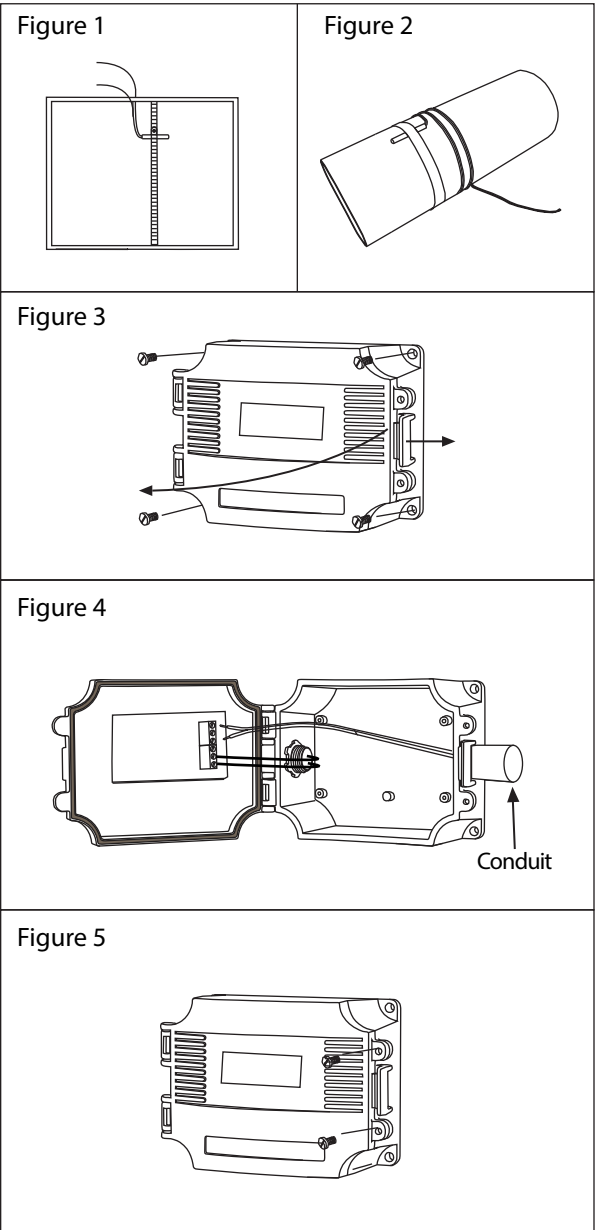
The enclosure installs directly on an interior wall using the four integrated mounting holes are provided on the enclosure. Select the best mounting technique based on the wall material. The 4 mounting holes will facilitate a #10 size screw (Not supplied). The sensor fitting must be pointing down. **See Figure 3.**

The enclosure has a hinged cover with latch. Open cover by pulling slightly on the latch on the right side of the enclosure. At the same time pulling on the cover, as illustrated in **Figure 3.**

Feed conduit through the provided hole in bottom of enclosure and secure with a lock nut as show in **Figure 4.** It is recommended that weatherproof conduit or cable gland fittings be used.

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

Swing door closed until securely latched. For added security, 2 screws are provided that may be installed in the integrated screw tabs. **See Figure 5.**



Wiring

Use shielded twisted pair wiring of at least 22 AWG for all connections and do not run the signal or power wires in the same conduit with wiring used to supply inductive loads such as motors. Disconnect the power supply before making any connections to prevent electrical shock or equipment damage. Make all connections in accordance with national and local electrical codes.

The transmitter is available with either 4-20 mA, 0-5 Vdc or 0-10 Vdc output signals. Follow the example wiring diagrams to determine the correct wiring for the product as shown in **Figure 6**. All models have the same terminal functions. For 4-20 mA loop powered operation, only POWER and OUTPUT are required. The COMMON terminal is only used for voltage output types or for AC power.

Ensure the controller Analog Input (AI) matches the transmitter output signal type before power is applied. The device is reverse voltage protected and will not operate if connected backwards. The voltage output signal has a minimum load that it is able to drive and the current signal has a maximum load. Follow the ratings in the Specification section or inaccurate readings may result.

Operation

The product should be allowed to warm-up for several minutes before attempting to verify accuracy. Allow the transmitter to operate for 20 minutes before any calibration is performed.

Operation can be verified by measuring the output signal. For voltage output models, measure the voltage between the OUTPUT and COMMON terminals. The voltmeter should read between 0-5 or 0-10 Vdc depending on the model. For current output models, insert a mA meter in series with the OUTPUT terminal and it should read between 4 and 20 mA. The LCD will indicate the same temperature value as the output signal.

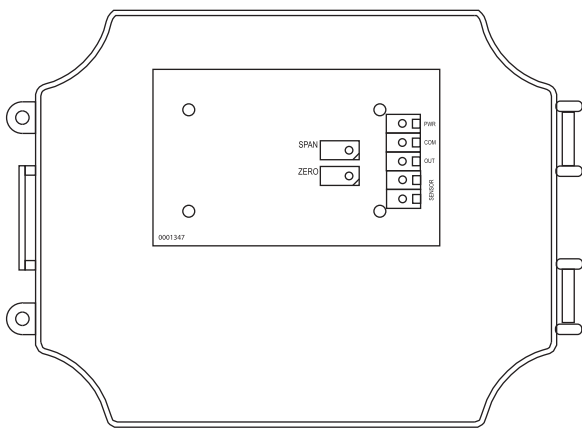
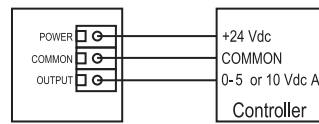
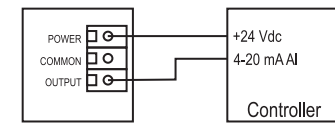


Figure 6

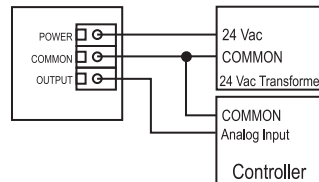
Wiring for voltage output signal and 24 Vdc power from controller



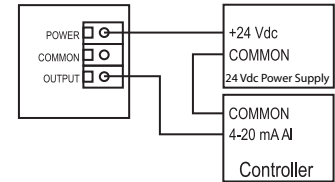
Wiring for 4-20 mA loop-powered output and external 24 Vdc power from controller



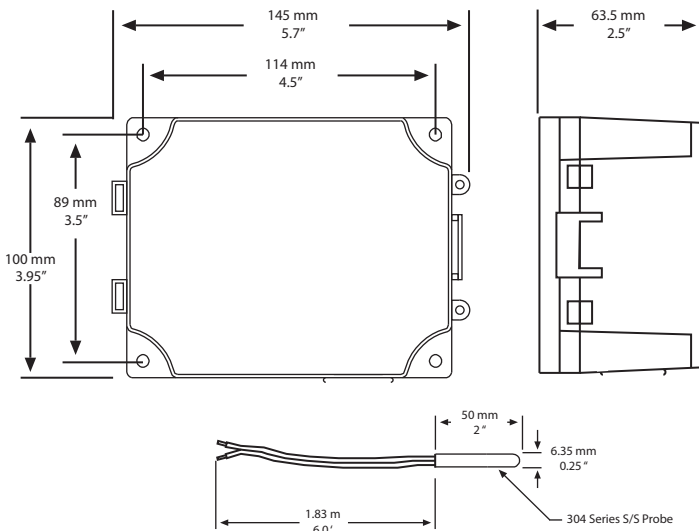
Wiring for all output signals and external 24 Vac power transformer



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



Dimensions:



Specification:

Sensor Type:.....1000 ohm Platinum RTD
 Accuracy :.....± 0.3 °C (± 0.54 °F) @ 0 °C (32 °F)
 Operating Temperature:.....0° to 50°C (32° to 122°F)
 Operating Humidity:.....5 to 95% RH non-condensing
 Power Supply:.....15 to 30 Vdc, 12 to 28 Vac
 Output Signal:.....4-20 mA current loop, 0-5 or 0-10 Vdc (Factory Configured)
 Consumption (max):.....20 mA for current, 11 mA for voltage
 Output Drive at 24 Vdc:.....700 ohms max for current output
 20K ohms min for voltage output
 Protection Circuitry:.....Reverse voltage protected and output limited
 LCD Units:.....°C or °F (Factory Configured)
 Display Range:.....3 digit for -88.8 or 888 as required
 Display Size:.....38 mm W x 16.5 mm H (1.5" x 0.65")
 Display Height:.....11.4 mm (0.45") plus °C/°F symbol
 Wiring Connections:.....Screw terminal block (14 to 22 AWG)
 Enclosure:.....ABS, IP65 (Nema 4X), 145 x 125.4 x 63.5mm (5.7" w x 4.95" h x 2.5" d)