

# Heavy Duty Space Temperature Transmitter

## Installation Instructions

### Introduction

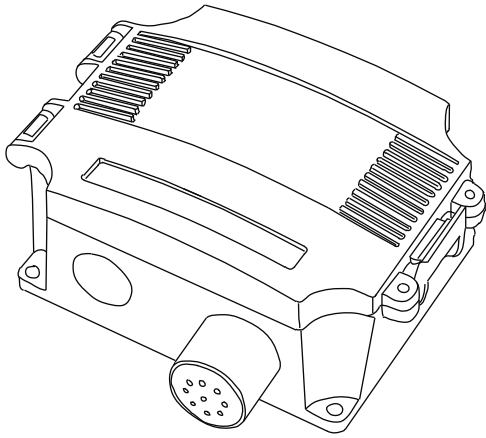
The 511/512 series uses a highly accurate and reliable 1000 ohm Platinum RTD sensor and state-of-the-art high accuracy circuitry in an rugged moisture resistant enclosure to monitor temperature levels while providing an LCD display for on-site monitoring. Sensors are mounted in a sheltered pod for accurate monitoring while protecting the transmitter and sensor from water spray.

### Before Installation

Read these instructions carefully before installing and commissioning the temperature transmitter. 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.

Select a suitable mounting spot on an interior wall about 5 feet from the floor. Do not mount the sensor near opening windows, supply/exhaust air louvres or other known air disturbances. Avoid areas where the sensor is exposed to vibrations or rapid temperature changes.

The unit provides a connection hole for 1/2" Conduit. Run a length of conduit through exterior wall and seal. 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.



### Mounting

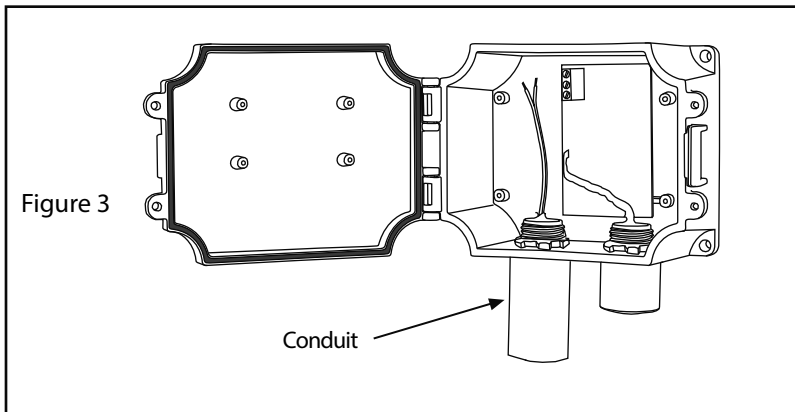
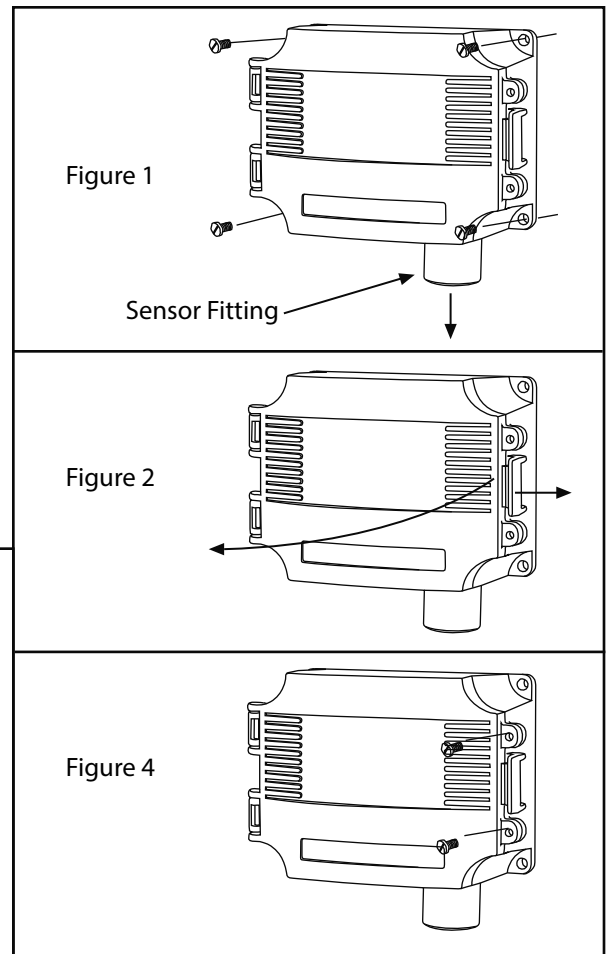
The enclosure installs directly on an interior wall using the four integrated mounting holes are provided on the enclosure. Select the best mounting technic based on the exterior wall material. The 4 mounting holes will facilitate a #10 size screw (Not supplied). The sensor fitting must be pointing down. See Figure 1.

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 2.

Feed conduit through the provided hole in bottom of enclosure and secure with a lock nut 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.

Swing door closed until securely latched. For added security, 2 screws are provided that may be installed in the integrated screw tabs. See Figure 4.



## 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. 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.

## Calibration

The unit can be calibrated in the field using precision resistance values equal to the zero and span of the temperature range. Simply replace the attached probe with the resistor, then adjust the ZERO and SPAN pots accordingly to obtain the correct output signal and display value. Repeat the adjustments until both values are correct.

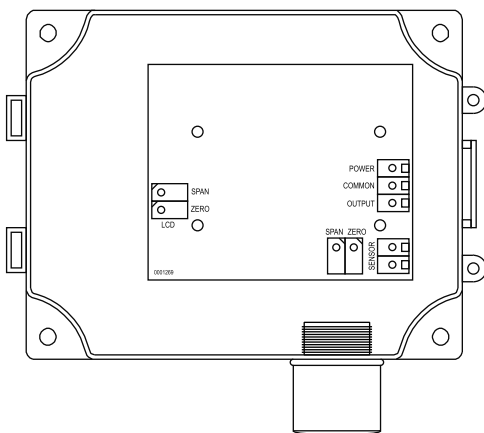
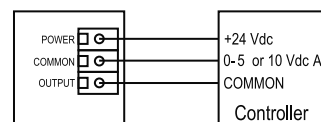
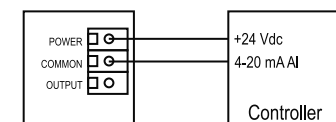


Figure 5

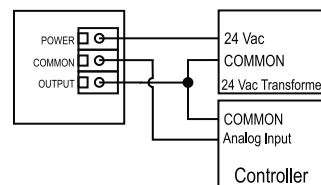
Wiring for voltage output signal and 24 Vdc power from controller



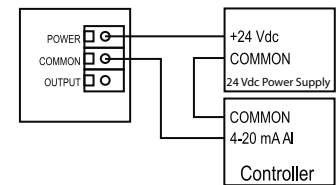
Wiring for 4-20 mA loop-powered output and external 24 Vdc power from controller



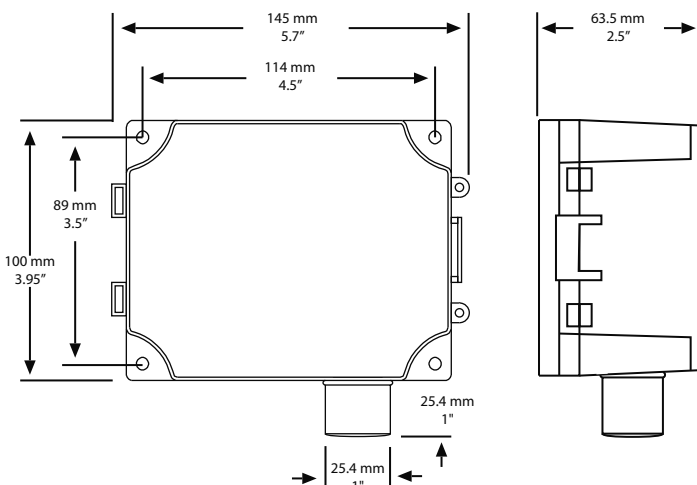
Wiring for all output signals and external 24 Vac power transformer



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



## Dimensions:



## Specification:

Sensor Type:	1000 ohm Platinum RTD
Accuracy at 25°C:	0.1% FS
Operating Temperature:	0° to 70°C (32° to 158°F)
Operating Humidity:	0 to 95% RH non-condensing
Power Supply:	18 to 35 Vdc, 15 to 26 Vac
Consumption:	22 mA maximum
Input Voltage Effect:	Negligible over specified operating range
Protection Circuitry:	Reverse voltage protected and output limited
Output Signal:	4-20 mA current loop, 0-5 or 0-10 Vdc
Output Drive at 24 Vdc:	400 ohms max for current output 5K ohms min for voltage output
Internal Adjustments:	Clearly marked ZERO and SPAN pots
LCD Display	3 digit for 88.8 or 888 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)