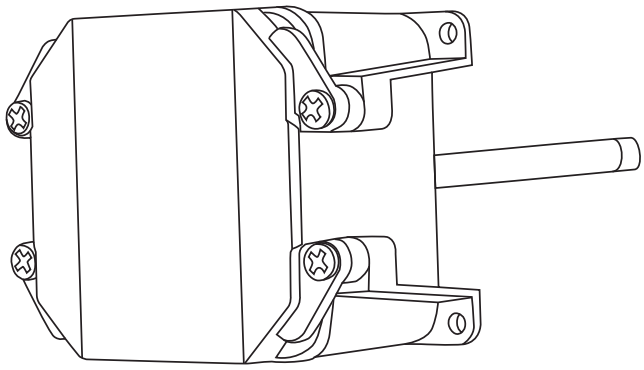
High Accuracy Duct Humidity Transmitter

HAHTDC Series - Installation Instructions



INTRODUCTION

The duct humidity/temperature transmitter uses highly accurate and reliable Thermoset Polymer based capacitance humidity sensor and a Platinum RTD temperature sensor together with state-of-the-art digital linearization and temperature compensated circuitry to monitor humidity levels. The sensors are encapsulated in a 228.60 mm (9") long by 12.7 mm (0.5") diameter S/S probe. A 60 micron HDPE filter protects the sensor for contaminants. A weatherproof PVC enclosure is provided for electrical connections.

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 transmitter installs directly into any air duct with a minimum width/diameter of 25.5 cm (10"). 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 transmitter is exposed to vibrations or rapid temperature changes.**

Once a suitable spot is selected, drill a 15 -20 mm (0.6" - .75") 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 are used.

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

Replace cover and secure with the 4 rotating latches.

Figure 1

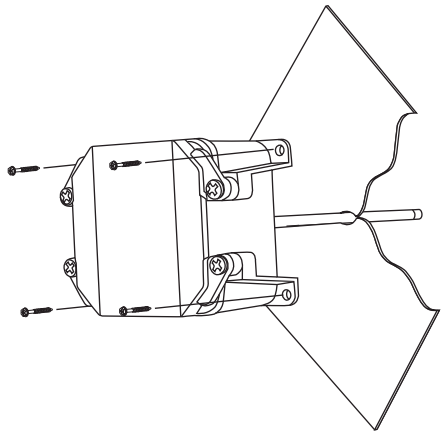


Figure 2

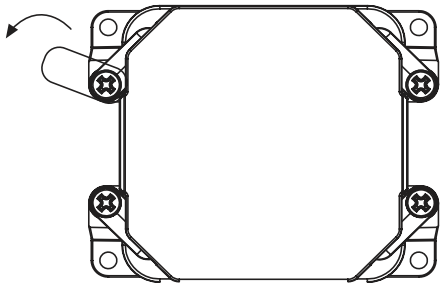
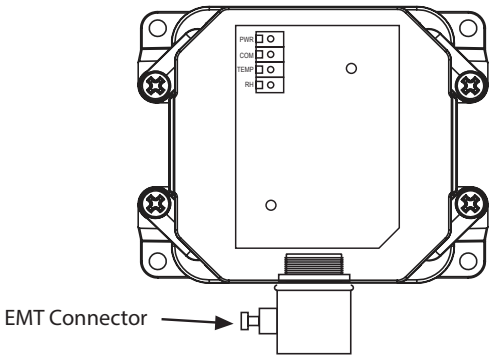


Figure 3



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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.
- Pull at least six inches of wire into the enclosure, then complete the wiring connection according to the wiring diagram for the applicable power supply and output signal type.
- Connect the plus DC 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 4.
- The analog outputs are designated as TEMP and RH by each terminal. Check the controller Analog Input to determine the proper connection before applying power. See Figure 4.

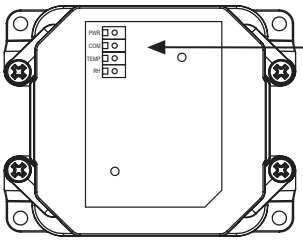
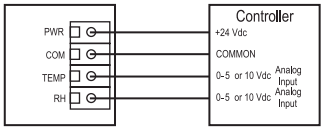
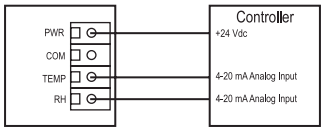


Figure 4

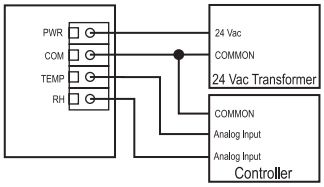
Wiring for voltage output signal and 24 Vdc power from controller



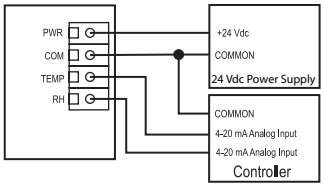
Wiring for 4-20 mA loop-powered output signal and 24 Vdc power from controller



Wiring for all output signals and external 24 Vac power transformer



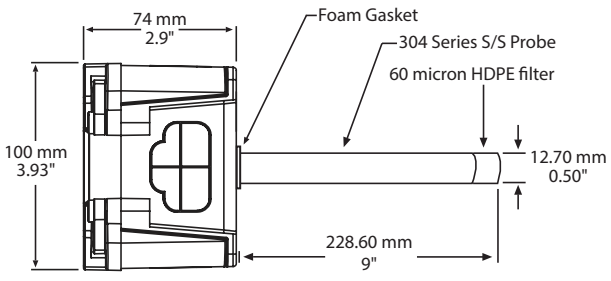
Wiring for 4-20 mA loop-powered output signal and 24 Vdc external power supply

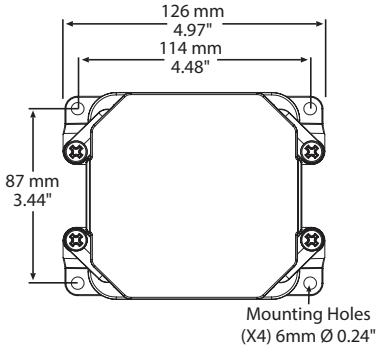


SPECIFICATION:

Humidity Sensor Type:	Thermoset polymer based capacitive
Accuracy at 25˚C:	±1% RH (20 to 80% RH)
	±2% RH (5% to 95% RH)
Measurement Range:	0 to 100% RH
Hysteresis:	±1.5% RH maximum
Stability:	±1% RH typical at 50% RH in 5 yrs.
Sensor Response Time:	15 seconds typical
Temperature Sensor Type:	1000 Ω Platinum IEC751, 385 Alpha
Temp. Sensor Accuracy:	18 - Class A: ±0.15˚C @ 0˚C
	48 - 1/3 DIN: ±0.1˚C @ 0˚C
	22 - 1/10 DIN: ±0.03˚C @ 0˚C
Temperature Accuracy:	±0.25% of span
Operating Temperature:	-40˚ to 85˚C (-40˚ to 185˚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
	(factory configured)
Output Drive at 24 Vdc:	550 ohms max for current output
	10K ohms min for voltage output
Wiring Connections:	Screw terminal block (14 to 22 AWG)
Enclosure:	PVC, IP65 (NEMA 4X)

DIMENSIONS





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