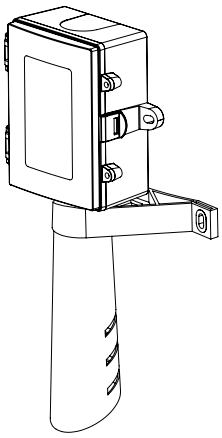
High Accuracy Outside Humidity / Temperature Transmitter with Sun and Windshield

HAHTOB Series - Installation Instructions



INTRODUCTION

The outside humidity/temperature transmitter series uses a highly accurate and reliable Thermoset Polymer based capacitance humidity sensor and Platinum RTD temperature sensor together with state-of-the-art digital linearization and temperature compensated circuitry to monitor humidity levels. A hinged, gasketed weatherproof Polycarbonate enclosure provides ease of installation and protection from the elements.

BEFORE INSTALLATION

Read these instructions carefully before installing and commissioning the humidity/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.**

MOUNTING

Select a suitable mounting spot on an exterior wall where the sensor is best protected from direct exposure to sunlight, wind, etc. preferably on a north facing wall. 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 humidity/temperature transmitter enclosure 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.

The humidity/temperature transmitter installs directly on an exterior wall using the two integrated mounting holes provided on the enclosure. Select the best mounting technique based on the exterior wall material. The two 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 a latch. Open the 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 the back of enclosure and secure with a lock nut as shown 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, two screws are provided that may be installed in the integrated screw tabs. See Figure 4.

Figure 1

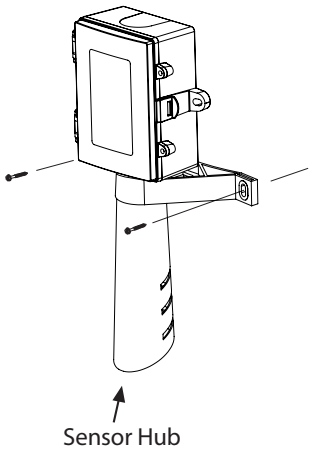


Figure 2

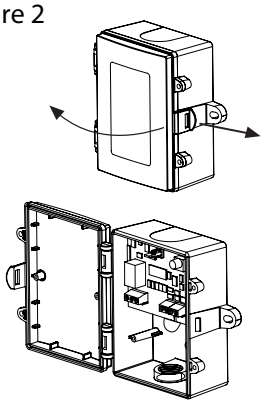


Figure 3

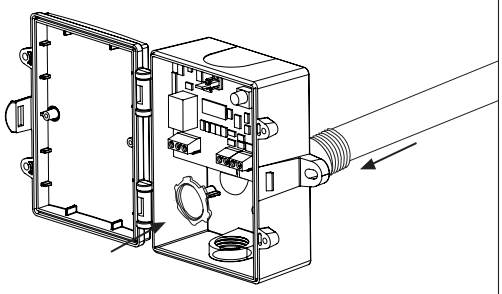
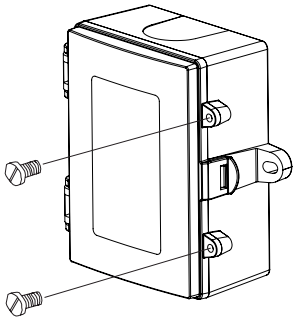


Figure 4



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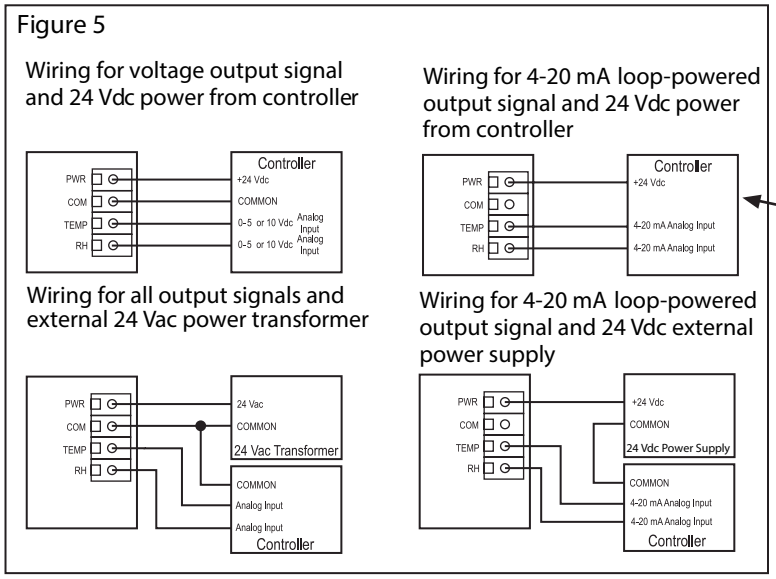
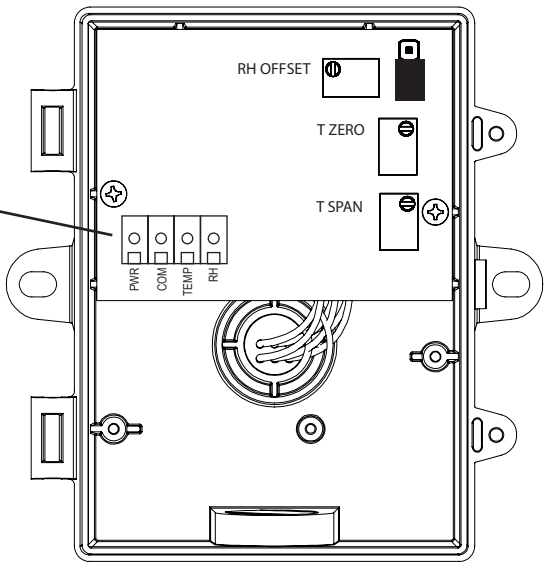
WIRING

- 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 5.
- 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 5.

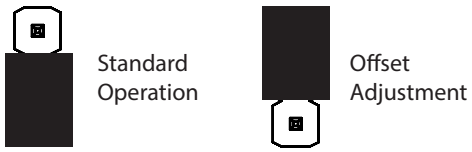
Figure 5





RH OFFSET:

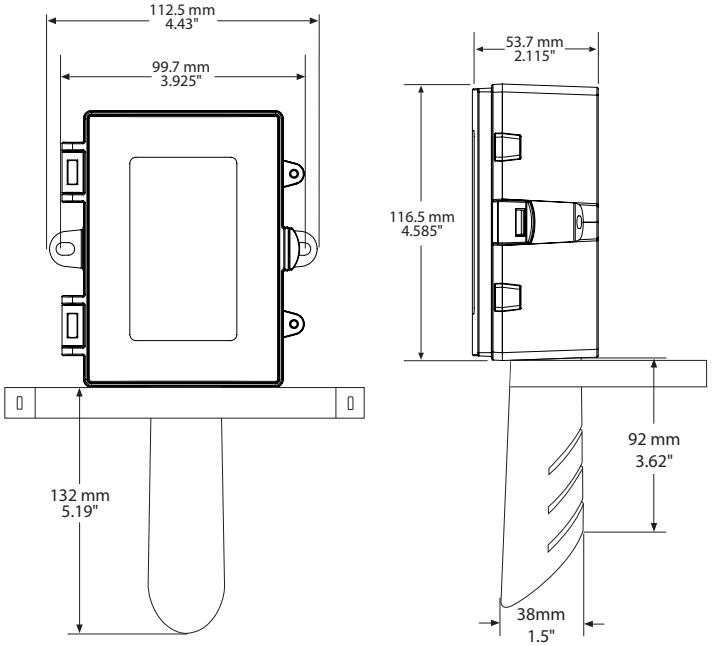
To adjust RH reading jumper should be placed in OFFSET position (top two pins of JP1). Adjust POT P3 to adjust RH output. When done with adjustment, place jumper on bottom two pins of JP1.



SPECIFICATIONS:

Humidity Sensor Type	Thermoset Polymer-based Capacitance Sensor Chip
Accuracy	±1 (20% to 70%) or 2% RH, (5% to 95% RH) @ 25˚C
Measurement Range	0 to 100% RH
Hysteresis	±0.8% RH maximum
Repeatability	±0.5% RH typical
Sensor Response Time	8 seconds typical
Temp Sensor Type	1000Ω Platinum, IEC 751, 385 Alpha, thin film
	RTD Class A: ±0.15˚C (±0.27˚F) @ 0˚C (32˚F)
	RTD Class 1/3 DIN: ±0.1˚C (±0.18˚F) @ 0˚C (32˚F)
	RTD Class 1/10 DIN: ±0.03˚C (±0.054˚F) @ 0˚C (32˚F)
Temperature Accuracy	±0.1% of span
Operating Temperature	-40˚ to 60˚C (-40˚ to 140˚F)
Operating Humidity	0 to 95% RH non-condensing
Power Supply	24Vac/Vdc, ±10%
Consumption	22 mA maximum
Input Voltage Effect	Negligible over specified operating range
Protection Circuitry	Reverse voltage protected & output limited
Output Signals	4-20 mA, 0-5 or 0-10 Vdc (factory configured)
Output Drive at 24 Vdc	**Current:** 550 Ω
	Voltage:10,000 Ω
Internal Adjustments	Temperature: ZERO and SPAN pots
	Humidity: Offset Pot -10% to +10%
Wiring Connections	Screw terminal block (14 to 22 AWG)
Enclosure	Grey polycarbonate with gasket, UL94-V0 IP65 (NEMA 4X)
	102 W x 117 H x 53 D mm (4.0" x 4.6" x 2.1")
Probe	12.7 mm (0.5") stainless steel with porous filter
Sun and Windshield	White nylon, vented
Weight	220g (7.8 oz) including Probe
Country of Origin	Canada

DIMENSIONS



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