

Warranty

Telaire warrants equipment of its manufacture to the original buyer against defective materials or workmanship, for a period of one year.

Calibration

All Telaire RH and Temperature Products are fully tested and calibrated in accordance with the National Institute of Standards and Technology (NIST) prior to shipment. This is the highest quality calibration standard available.

Power Requirements

12–30 VDC power supply (furnished by the customer).

Specifications

Environmental Conditions

Operating Range:	–40°F to 140°F (–40°C to 60°C) 0-99% RH non-condensing.
Storage Temperature:	–67°F to +185°F (–55°C to +85°C)

Humidity

Sensing Element:	Capacitive Sensor
Accuracy* [at 71.6°F (22°C)]:	±2% Version: ±2% 10-90% RH and ±5% 0-10% & 90-99% RH ±3% Version: ±3% 10-90% RH and ±5% 0-10% & 90-99% RH 5% Version: ±5% RH @ 0-99% RH <i>*Includes hysteresis, linearity and repeatability.</i>
Long Term Stability:	Less than 1% drift per year, typical.
Temperature Effect:**	Delta %RH = (0.0014 x %RH + 0.1325) x T°C – (0.0317 x %RH + 3.0876) <i>**Not needed for Signal-Conditioned Temperature units.</i>
Repeatability:	See Accuracy.
Linearity:	See Accuracy.
Hysteresis:	< ±1.5% RH (30%RH 1h →70%RH 1h →90%RH 1h →30%RH, V _{air} = 2m/sec)
Signal Outputs:	4-20 mA, 0-5V or 0-10V (user selectable)
Supply Voltage:	12 to 30 VDC
Maximum Load:	(Current Output Only) $\Omega = \frac{\text{Supply Voltage} - 10}{0.02}$

Temperature - Thermistor

Direct Connection	
Sensing Element:	10kΩ thermistor at 77°F (25°C) 3kΩ thermistor at 77°F (25°C)
Signal Output:	Direct Connection, user selectable 3k or 10k (see Figure 3).
Accuracy:	Refer to DC95F103W(10k)&DC95F302W (3k) from Telaire.

Temperature - RTD

Signal Conditioning	
Sensing Element:	Band-Gap Sensor
Accuracy at 71.6°F (22°C):	±0.9°F (±0.5°C)
Long Term Stability:	Less than 0.2°F per year.
Sensor Interchangeability:	±0.9°F (±0.5°C)
Signal Outputs:	4-20mA, 0-5V, 0-10V (user selectable)
Supply Voltage:	12 to 30 VDC
Maximum Load:	(Current Output Only) $\Omega = \frac{\text{Supply Voltage} - 10}{0.02}$

HumiTrac products are designed to be used with power from building HVAC control systems.

Certification

CE Marked
Complies with EMC Directive 2004/108/EC and 2006/95/EC.
IP 42 rating for Duct Mount and Outside Air Transmitters.

Contact Information

To contact the factory, use the following information:
www.telaire.com

HumiTrac Information

For information specific to the HumiTrac, see the website www.humitrac.com.

Installation

For your convenience, the transmitters can be mounted using the base as a mounting template (see Figure 1 or 2).

Wall Mount

Locate the transmitter where it will be exposed to an unrestricted air circulation that is representative of the average humidity and/or temperature of the controlled space. Avoid locations where excessive moisture, corrosive fumes, vibration, or high ambient temperatures are present.

The wall mount transmitter is designed to install onto a standard electric switch box. Mount the transmitter on an indoor wall approximately 4 to 6 feet above the floor. The base assembly should be positioned with the letters FR/ABS located on the left side.

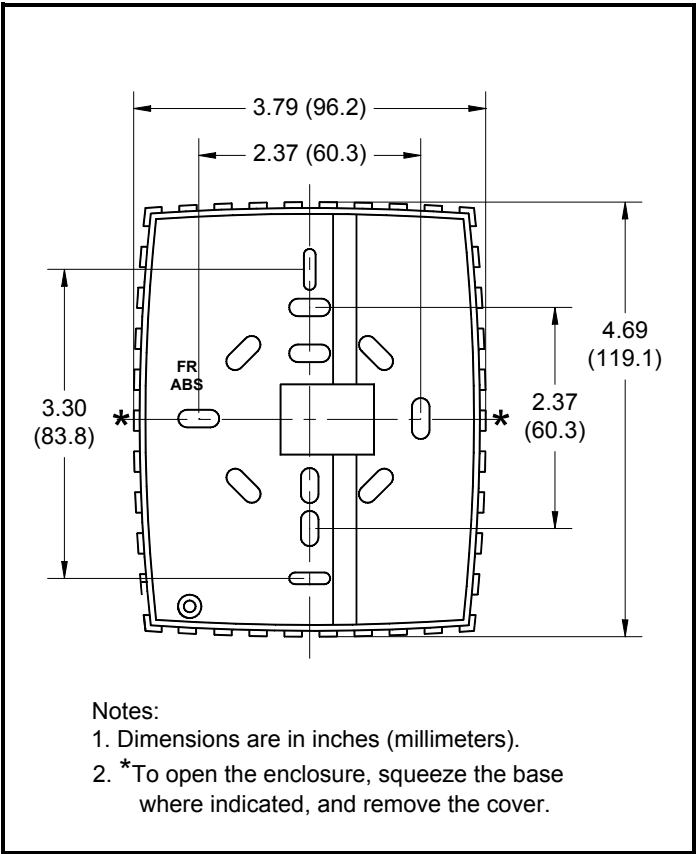


Figure 1: Wall Mount - Mounting Dimensions

Duct Mount

The transmitter should be mounted away from fans, corners, heating and cooling coils, and other equipment that will affect the measurement of relative humidity. It should be mounted in a location that receives adequate air flow for proper operation. The duct mount transmitter should be mounted so that the sensor probe is in the center of the duct.

Outside Air Mount

The transmitter should be mounted in a sheltered area that is protected from rain. Ideally, the transmitter should be located on the north side of the building (under an eave) to prevent sun-heated air from rising up the building's wall and affecting the relative humidity of the sensor.

The outside air mount transmitter should be mounted with the sensor pointing down to prevent water collection in the sensor cavity.

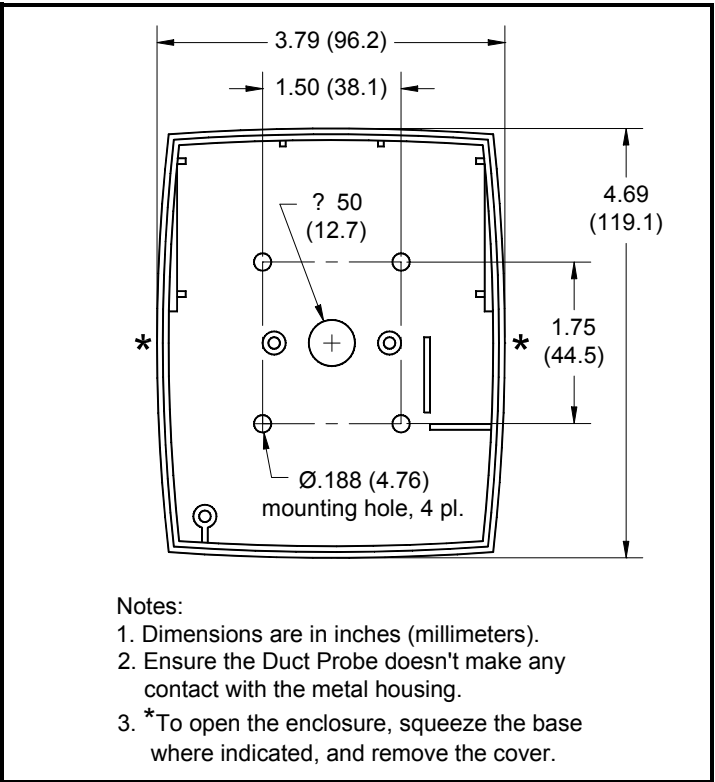


Figure 2: Duct / Outside Air - Mounting Dimensions

Wiring

Match your transmitter with the corresponding diagrams (Figure 4 through Figure 11), set the switches and wire accordingly. (See Figure 3 below for switch and terminal block locations.) Ensure that all the installation and wiring is in compliance with all national and local codes.

Note: All Voltage Outputs are measured with respect to the POWER SUPPLY / CONTROLLER GROUND.

Wiring for the transmitter should be in a single shielded twisted pair cable or multiple pairs if needed. Use only copper conductors. Do not run transmitter wires and AC power wires together in the same conduit or wire bundle.

Caution!

Running transmitter wires and AC power wires, including earth ground, in the same conduit or wire bundle may cause malfunction due to electrical noise.

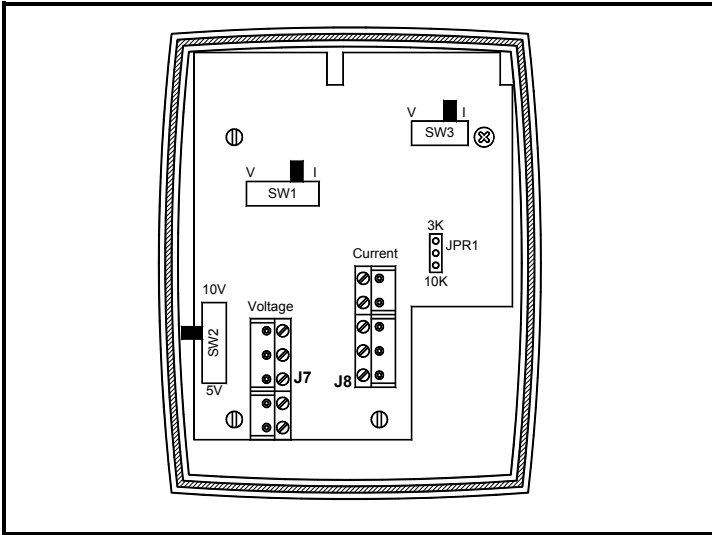


Figure 3: Connector/Switch Locations - Inside Cover



Figure 4: Switch Positions for Voltage Mode

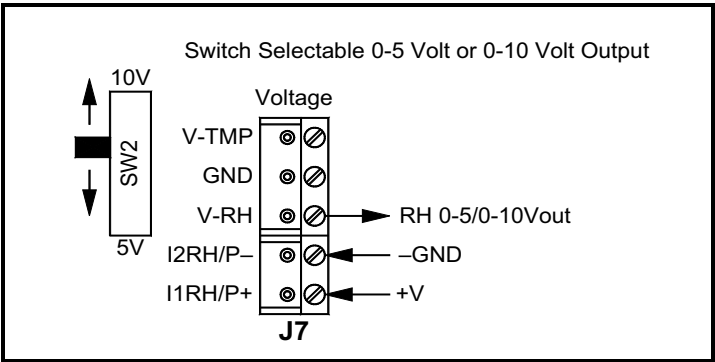


Figure 5: RH Only - Voltage

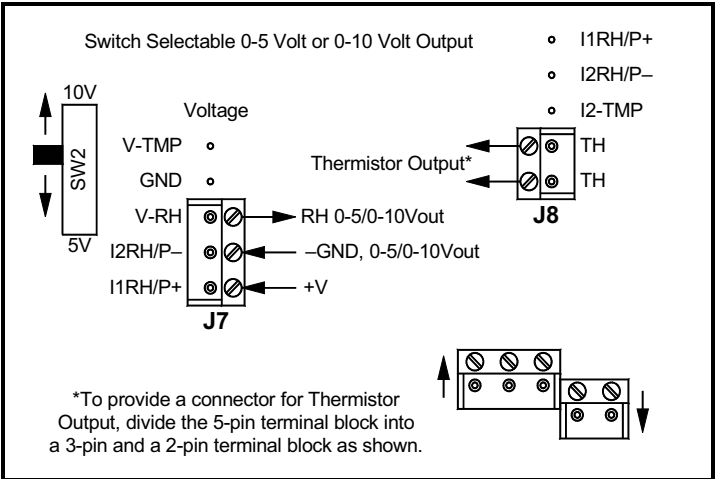


Figure 6: RH and Temp. (Direct Connection) - Voltage

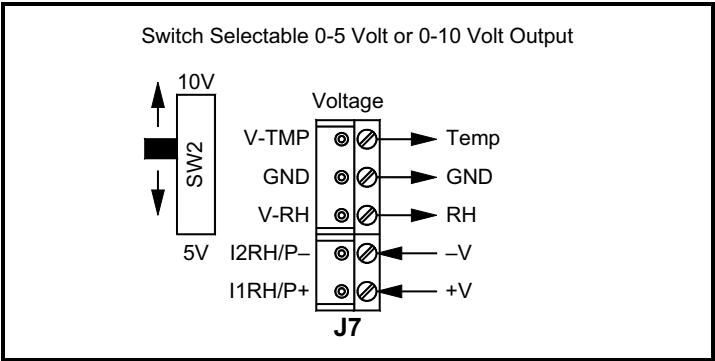


Figure 7: RH and Temp. (Signal Condition) - Voltage



Figure 8: Switch Positions for Current Mode

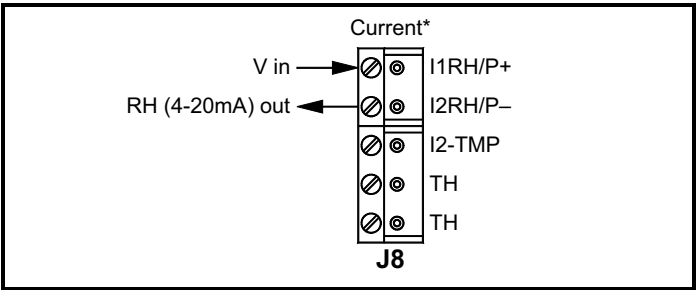


Figure 9: RH Only - Current

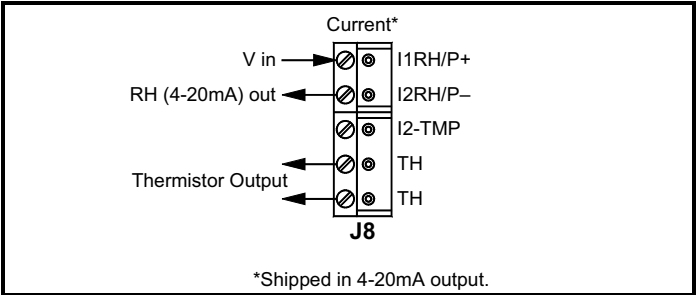


Figure 10: RH and Temp. (Direct Connection) - Current

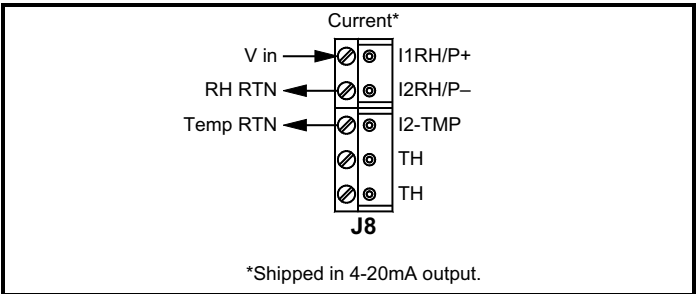


Figure 11: RH and Temp. (Signal Condition) - Current

CE COMPLIANCE

1. Ensure that the probe earth ground wire (for Duct and Outside Air units only), the shield wire and the PCB earth ground wire are connected to the mounting screw or the NEAREST (<1.5m) earth ground.
2. The other end of the shield wire MUST be connected to the power supply /controller earth ground ONLY.

CE

HumiTrac Ordering Information

Model		Accuracy			
		5%	3%	2%	2% with NIST Certificate
Space (Wall) Mount	RH Only	P40250121	P40250181	P40250109	P40250139
	RH & 3/10K Ω Thermistor	P40250122	P40250182	P40250110	P40250141
	RH & Band gap Temp sensor (0 to 50°C)	P40250123	P40250183	P40250111	P40250142
	RH & Band gap Temp sensor (-40 to 60°C)*	P40250125	P40250184	P40250112	P40250143
Duct Mount	RH Only	P40250129	P40250190	P40250117	P40250147
	RH & 3/10K Ω Thermistor	P40250130	P40250191	P40250118	P40250149
	RH & Band gap Temp sensor (0 to 50°C)	P40250131	P40250192	P40250119	P40250150
	RH & Band gap Temp sensor (-40 to 60°C)*	P40250133	P40250193	P40250120	P40250151
Outside Air	RH Only	P40250126	P40250185	P40250113	P40250144
	RH & 3/10K Ω Thermistor	P40250127	P40250186	P40250114	P40250145
	RH & Band gap Temp sensor (-40 to 60°C)*	P40250128	P40250189	P40250115	P40250146
Sensor Tip		P40254276		P40254275	3 PT CERT

*Signal conditioned temperature output corresponding to 4-20mA, 0-5V or 0-10V (user selectable)