

# Outdoor Relative Humidity/ Temperature Sensor

P/N 809-6120

Copeland specs an Outdoor Relative Humidity (RH) sensor with a 0-5 VDC output for building control and anti-sweat control application using Copeland input boards. The Outdoor RH sensor has a 10K CPC Thermistor output that can be used to read the outdoor temperature.

**NOTE:** This sensor (pictured above) is manufactured by Veris Industries and is a registered trademark of that company.



Figure 1 - Carbon Dioxide Sensor

## Specifications

The Outdoor RH sensor comes with the optional 10K CPC Thermistor.

<b>Sensing Element</b>	Digitally profiled thin-film capacitive	Analog Output	0-5VDC/0-10V: 3-wire, observe polarity
<b>Accuracy</b>	±2% RH over the range 20%-90% RH	Scaling	0-100% RH
<b>Stability</b>	±1% at 20°C (68°F) annually for two years	Input Power	12 to 24VDC/24VAC
<b>Operating Humidity Range</b>	0-100% RH	EMC Conformance	EN 50081-1, EN 50082-1, EN 61000-4-4, EN 61000-4-5, EN 61000-4-3, ENV 50204, EN 61000-4-6
<b>Temperature Coefficient</b>	±0.1% RH /°C above or below 25°C		

## Choosing a Mounting Location

1. Select an outdoor location in a sheltered area without direct sunlight.
2. Mount unit with the probe pointing down. The unit may be suspended by a conduit. Do not obstruct the vent opening.

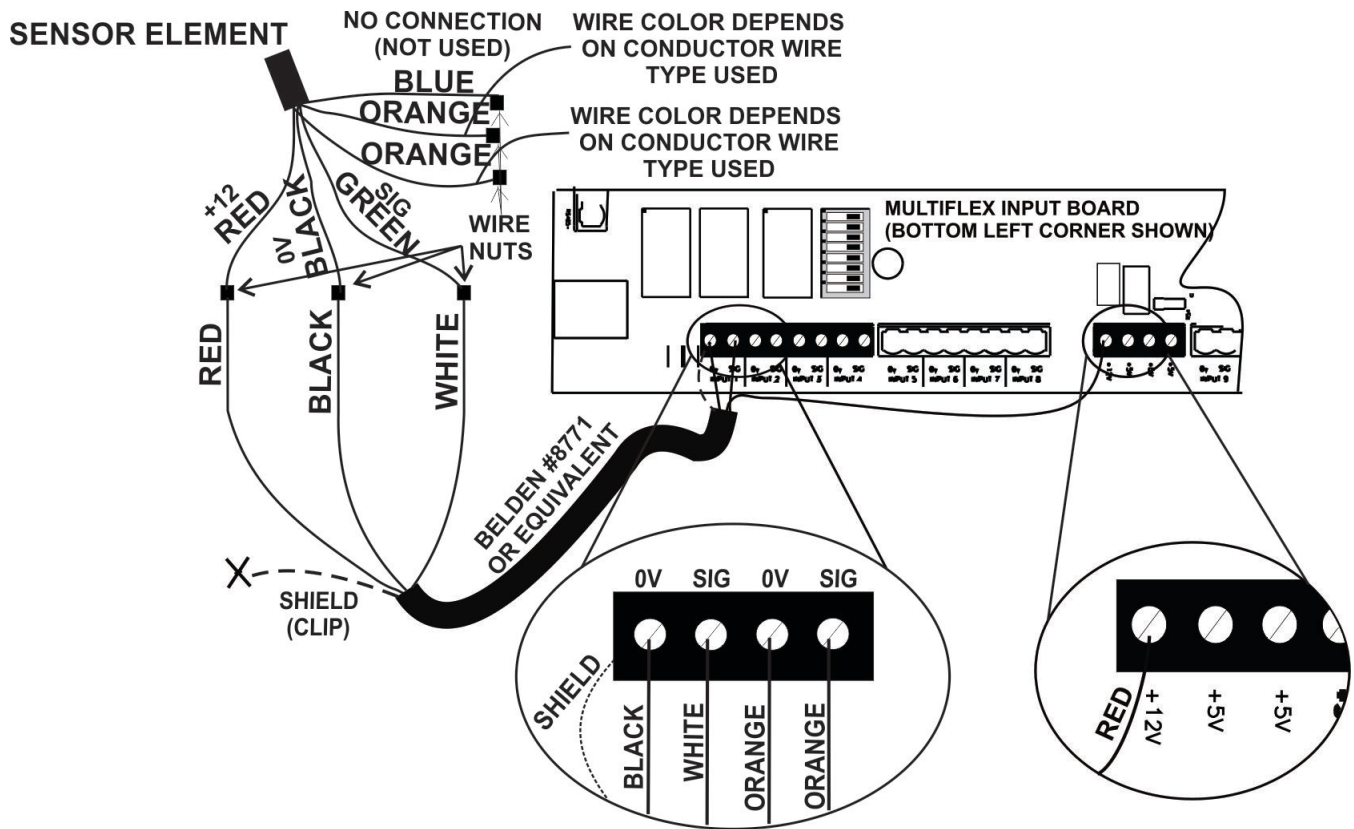


Figure 2 - Sensor and Input Board Wiring

## Wiring

**NOTE:** Do not clip or shorten the wires leading from the sensor tube. This will allow enough slack to remove the sensor element without having to unmount the enclosure.

1. Connect the **RED** wire to +12V power on the MultiFlex board. Connect the **BLACK** wire to 0V. Connect the **GREEN** wire to SIG on the MultiFlex board.

**Optional:** Connect the two **ORANGE** wires on the MultiFlex inputs. This is a temperature reading.

2. Locate the input dip switch of the sensor point and set to the OFF position (LEFT for MultiFlex, DOWN for 16A). Refer to the input board's user manual for locations of the input dip switches.

## Finishing the Installation

Once the Outdoor RH sensor is mounted and the sensor and board wiring is complete, check the gland nut that secures the sensor tube and tighten it if necessary. Attach the cover plate (with the foam gasket included) to the sensor enclosure using the screws provided. Tighten all conduit connections and cap all unused holes in the sensor enclosure.

## Calibration and Replacement

The sensing element of the Outdoor RH Sensor (P/N 809-6120) is pre-calibrated and will require no physical adjustment. If the sensor drifts over time, the sensor can be recalibrated by replacing the pluggable sensing element. Contact Copeland to order replacement elements (P/N 203-5795).



To replace a sensor element, **pull the sensor's power connection from the input board.** Remove the cover plate of the enclosure and loosen the gland nut. Slide the sensor tube out through the enclosure until the sensor element is completely out of the duct and the tip of the tube can be accessed. Unscrew the top of the sensor tube to expose the pluggable RH sensor element.

**NOTE: The orientation of the sensor element before unplugging it.** Plug the new sensor element in using the same orientation. Replace the top of the sensor when finished, reinsert the tube into the duct, tighten the gland nut, and restore power to the sensor. There is no other calibration method needed, and no adjustments are present in the unit.

### CAUTION

Do not expose sensor element to the fumes of curing RTV silicone rubber. Doing so may damage the calibration of the element.

## Setting up the Outdoor Humidity Sensor in E2 Controllers

1. Set up a MultiFlex input as an analog input.
2. Set the sensor type to **Humidity**.
3. Arrow down and select the Engineering Units (RH).
4. Press the  button.
5. Set up another input as an analog input.
6. Set the sensor type to **Temperature**.
7. Arrow down and select the Engineering Units (DF or DC).
8. Press the  button.
9. Temperatures should be displayed on the E2.



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