

# Model SRH

## Relative Humidity Sensor



### DESCRIPTION

The Model SRH Humidity Series include wall mount, duct mount and outside air configurations in 2%, 3%, and 5% RH accuracy. The SRH Series offers optional active temperature with choice of 4 to 20 mA or user-selectable 0 to 5 and 0 to 10 VDC output, and passive temperature with choice of thermistor or RDT output. Humidity transmitters configured with active temperature option feature jumper selectable Tspan ranges of 40°C, 50°C, and 60°C. All models feature a removable sensor tip, NIST traceability, and a durable capacitive sensor capable of full scale 0 to 100% RH measurement. All models can withstand 100% saturation without losing performance.

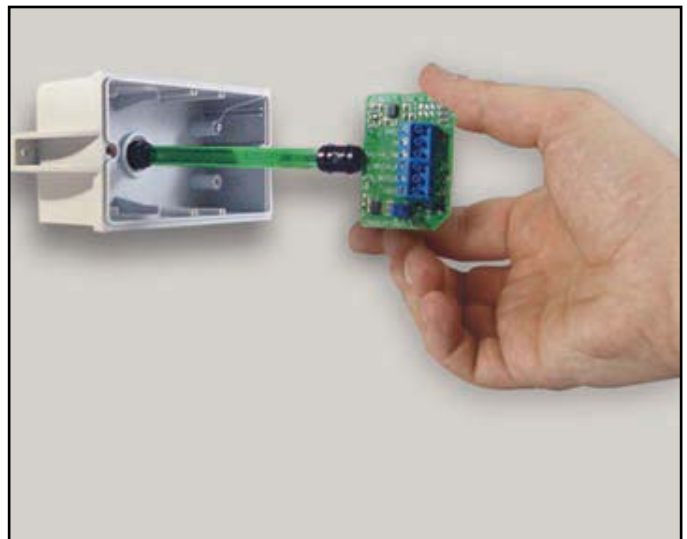
Replacing the removable sensor tip requires no special training and can be easily replaced by the end user. No calibration is needed because each new sensor module is factory calibrated before shipping, reducing downtime during service intervals. As an example, the duct mount probe is easily accessed by taking off the front cover, pulling out the probe and replacing the sensor tip. This same procedure can be performed on the wall mount and outside air models. An additional benefit for duct and outside air applications is the sensor module can be replaced without having to remove the unit and disconnect the wiring conduit.

### FEATURES

- Available in Wall, Duct Mount or Outdoor Air
- Key Component of Comprehensive HVAC/R System
- Active Temperature with Jumper Selectable
- Tspan Ranges of 40°C, 50°C, and 60°C
- Excellent Reliability through ASIC Technology
- Robust Capacitive Sensor Design
- Low Cost of Ownership
- Three Accuracy Options: 2%, 3%, & 5%
- Replaceable Sensor Tip
- Quick Mount, 2 Screw Install with Plug-In Terminal Wiring
- 5 Year Warranty on Electronics
- 2 Year Warranty on Sensor Module
- CE and RoHS Compliant

### APPLICATIONS

- HVAC/R Control
- Indoor Air Quality (IAQ)
- Laboratories
- Antiquities Preservation

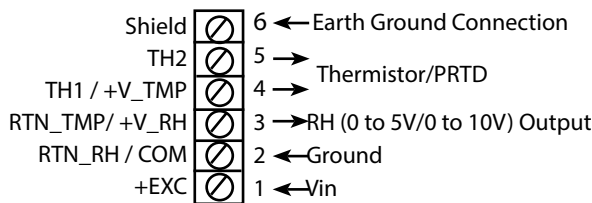


### SPECIFICATIONS

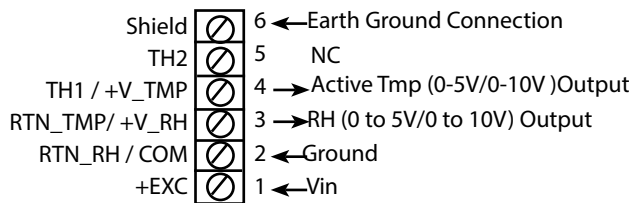
| RH Performance Data               |   | Temperature Sensing Options (Passive)  |  | Physical Description          |                                   |
|-----------------------------------|---|--|--|-------------------------------|-----------------------------------|
| Sensing Element                   | Capacitive Polymer  | T1: Thermistor   | NTC 10K $\Omega$ 77°F/25°C (Direct Connect) Type II                        | Enclosure Materials           |                                   |
| Humidity Operating Range          | 0 to 99% RH (non-condensing)  | T2: RTD Output   | 1000 $\Omega$ 32°F/0°C (Direct Connect)                                    | Wall Mount                    | VA 94-V0                          |
| Accuracy @ 68°F (20°C)            | 2%, 3%, 5% <sup>1</sup>   | T6: Thermistor   | NTC 10K $\Omega$ 77°F/25°C Type III  | Duct & Outside Air            | Polycarbonate 94-V0               |
| Non-Repeatability                 | 0.05% FS  | Temperature Sensing Options (Active)   |  | Probe (Duct & Outside Air)    | Aluminum                          |
| Long Term Stability               | <1%/Year @ 68°F (20°C), 50% RH  | T3: Ranges °F (°C)<br>Accuracy @ 68°F (20°C)   | -58 to +140 (-50 to +60)<br>Typ @ 50% $\pm 1.1$ ( $\pm 0.6$ ) <sup>2</sup> | Weather Shield                | Porous Polyethylene               |
| Electrical Data                   |   | T5: °F (°C)<br>Accuracy @ 68°F (20°C)  | +14 to +140 (-10 to +60)<br>Typ @ 50% $\pm 0.7$ ( $\pm 0.4$ ) <sup>2</sup> | Sensor Tip Filter             | 70 Micron Polypropylene           |
| Signal Outputs                    |   | Signal Output Options (includes humidity output)   |  | Dimensions                    | See Dimensions Drawings           |
| Current (2-Wire)                  | 4 to 20mA   | Current  | 4 to 20mA  | Environmental Data            |                                   |
| Field-Selectable Voltage (3-Wire) | 0 to 5 VDC, 0 to 10 VDC   | Field-Selectable Voltage   | 0 to 5 VDC, 0 to 10 VDC  | Operating Temperature °F (°C) | -40 to 140 (-40 to 60)            |
| Excitation                        | 13.5 to 30 VDC (10 VDC Output)<br>12 to 30 VDC (4 to 20 Ma, 5 VDC Output) | <sup>1</sup> 5% units available only with passive temperature option.<br><sup>2</sup> Excitation 24 VDC $\pm 10\%$<br>Specifications subject to change without notice. |  | Storage Temperature °F (°C)   | -40 to 158 (-40 to 70)            |
| Maximum Load (Current Only)       | =(Supply - 10) - 0.02   |  |  | Moisture Resistance           | IP65, NEMA-4 (Duct & Outside Air) |
| Electrical Termination            | Pluggable Terminal Block (5mm Pitch)                                      |  |  | Solar                         | UV Resistant ( Outside Air)       |
| Wiring Protection                 | Reverse Excitation  |  |  | Flammability Rating           | 94-V0                             |
| CE Compliance                     | EMC Directive 2004/108/EC   |  |  | Compliance                    | RoHS Compliant, CE Compliant      |

### WIRING

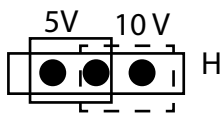
#### Wiring 0-5 V/0-10 V Output Units (3-wire / T0, T1, T2 & T6)



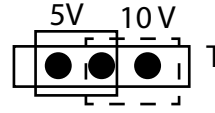
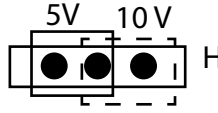
#### Wiring 0-5 V/0-10 V Output Units (4-wire / T3 & T5)



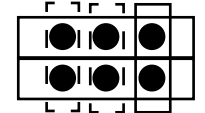
#### Selectable Outputs



#### Selectable Outputs

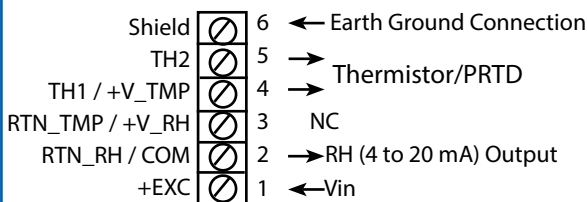


#### Selectable Tspan

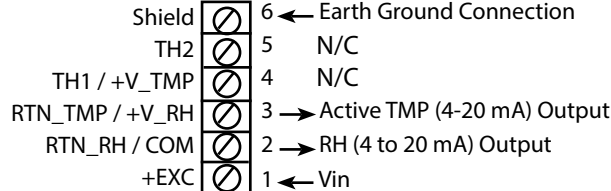


40 50 60 (°C)

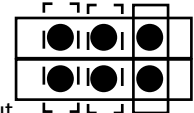
#### Wiring 4 to 20 mA Output Units (2-wire / T0, T1 & T2)



#### Wiring 4 to 20 mA Output Units (3-wire / T3, T5)



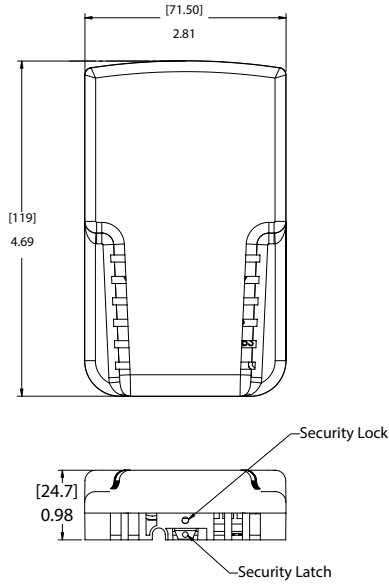
#### Selectable Tspan



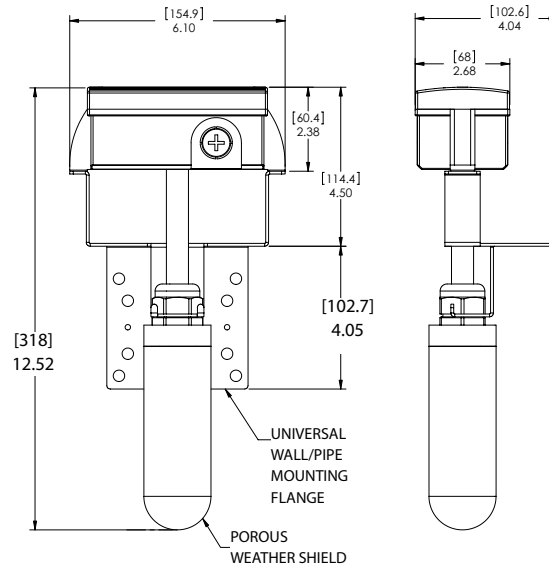
40 50 60 (°C)

## DIMENSIONS

Wall Mount

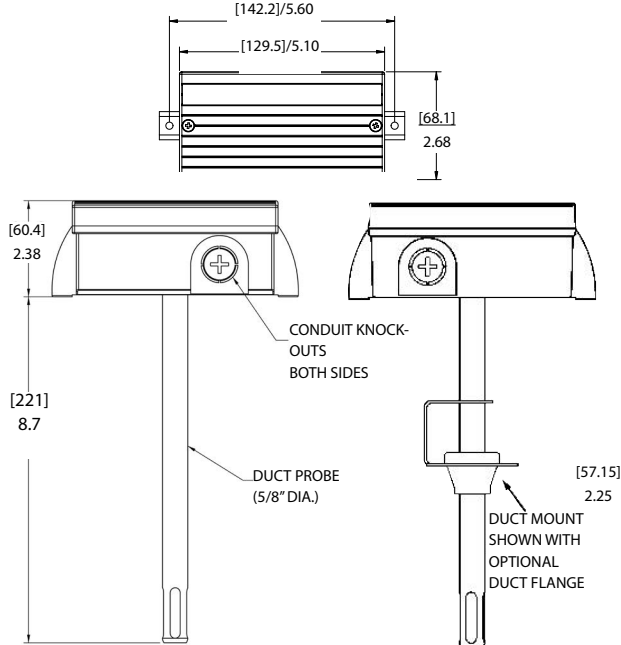


Outside Air

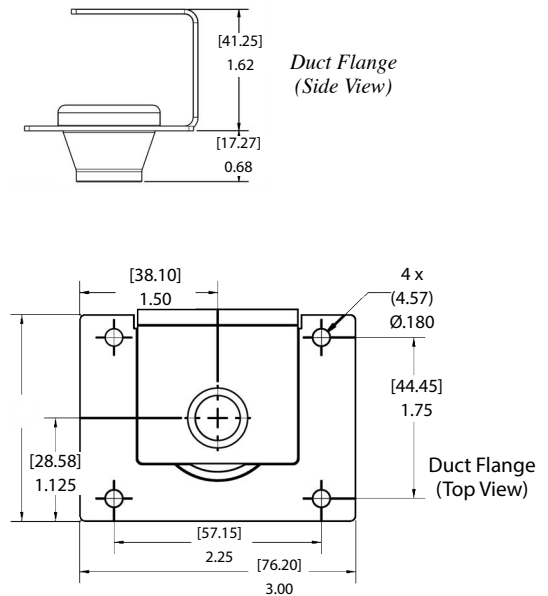


[mm]  
in.

Duct Mount



Optional Duct Flange  
Mates with Duct Mount Unit



### ORDERING INFORMATION

S
R
H
1
-
 
 
-
 
-
 
 
-
 
 
-
N
-
 

| Model      | Accuracy |    | Configuration |             | Outputs   |   | Temperature Outputs |                                    | Display              |  | Options   |                                     |      |   |                                 |
|------------|----------|----|---------------|-------------|-----------|---|---------------------|------------------------------------|----------------------|--|---|-------------------------------------|------|---|---------------------------------|
|            | 2P       | 3P | W             | D           | 11        | 2C  | T0                  | T1                                 | T2                   | T3   | T5  | T6                                  | N    | C |                                 |
| SRH1 = SRH | 2%       | 3% | Wall          | Duct        | 4 - 20 mA | 0 - 5 or 0-10 VDC <sup>1</sup><br>(user-selectable) | None (RH only)      | 10K Ω Type II Thermistor (Passive) | 1000 Ω RTD (Passive) | -58 to 140°F (-50 to 60°C [Active]) <sup>2,3</sup> | +14 to 140°F<br>(-10 to 60°C [Active]) <sup>2,3</sup> | 10K Ω Type III Thermistor [Passive] | None | C | NIST Certificate of Performance |
|            | 5%       | 5% | 0             | Outside Air |           |   |                     |                                    |                      |  |   |                                     |      |   |                                 |

Ordering Example: SRH12PW11T0NC = Model SRH, 2% Accuracy, Wall Mount, 4 to 20 mA Output, RH only, No Display, NIST Certificate of Conformance

S
R
H
3
-
 
 
-
 
 

| Model      | Accuracy |    | Temperature Outputs |  |
|------------|----------|----|---------------------|--|
| SRH3 = SRH | 2P       | 2% | T0                  | None (RH only)                                   |
|            | 3P       | 3% | T1                  | 10K Ω Type II Thermistor (Passive)               |
|            | 5P       | 5% | T2                  | 1000 Ω RTD (Passive)                             |
|            |          |    | T3                  | -58 to 140°F (-50 to 60°C [Active]) <sup>3</sup> |
|            |          |    | T5                  | +14 to 140°F (-10 to 60°C [Active]) <sup>3</sup> |
|            |          |    | T6                  | 10K Ω Type III Thermistor [Passive]              |

Replacement Sensor Assembly:            Ordering Example: SRH32PT0 = 2% Accuracy, RH only.

**Notes:**

1. Voltage outputs (2C) are factory configured for 0 to 5 VDC operation. User-selectable jumper for 0 to 10 VDC operation.
2. Tspan jumper factory configured for 60°C. User-selectable Tspan for 40°C and 50°C option provided.
3. SRH1 units originally ordered with either a T3 or 5T temperature option Must be replaced with the same T(x) version.