

# Setra Relative Humidity Sensor Line



Bleed, cut on dotted line  
Drop out dotted line

Setra's Humidity Sensor (SRH) family consists of a wall display, duct mount, and outside air unit. This product line is designed to complement Setra's pressure and current products while expanding the solution opportunities for the HVAC/building automation market and other relative humidity monitoring applications. All models feature removable sensor tips, NIST traceability, and a durable capacitive sensor capable of full-scale 0 to 100% RH measurement.

The SRH product line is available in accuracies of  $\pm 2\%$ ,  $\pm 3\%$ , and  $\pm 5\%$ . This product suite utilizes field-replaceable sensor tips that allow the end user to replace the sensors on-site. This essentially eliminates time consuming and costly factory calibration, while 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 further contributes to a more user-friendly, lower cost product line that is focused on customer needs and ease of use.

Setra's humidity sensors are the ultimate product for any HVAC installation and, combined with our pressure and current products, allow us to support a one-stop, single source for any customer. The SRH line is a natural progression that grew out of our high quality line of pressure transducers that also use the same unique ASIC coupled with a highly reliable capacitive sensor technology. This product line marks the capstone in fulfilling a complete HVAC solution and boasts the same quality, delivery, and innovation demanded of all Setra products.

## Features

### **Key component of comprehensive HVAC/R solution**

The Setra humidity/temperature solution is an important part of our overall HVAC/R solution which also includes pressure and current. This bundle of products has established Setra as a premiere HVAC manufacturer and a full-solution player for HVAC customers.

### **Robust, proven capacitive sensor**

The unique pairing of Setra's proven capacitance measurement technology with its custom ASIC (used in thousands of pressure devices) ensures reliable measure of RH levels from 0 to 100%. As a result, customers will experience better resistance to contamination, longer stability, and minimal drift.

### **Attractive/ low profile enclosures**

Design and aesthetics have always been considered an important ingredient in any new Setra product. The humidity family consists of three configurations: wall, duct, and outside air models. Great attention was given to the look of the wall mount, ensuring that it complements the décor of any building. It is a space conscious unit that takes up no more space than an electrical outlet. The duct and outside air models utilize a design that ensures ease of both assembly and probe removal for recalibration.

### **Three levels of RH accuracy - 2%, 3%, and 5%**

There are three levels of accuracy available for Setra humidity sensors: 2%, 3%, and 5%. The sensors should not drift more than 1% annually but it is recommended that the sensor be checked each year to ensure high accuracy and dependability.

## Field Serviceability

### Replaceable sensor board = no calibration and greater accuracy

Depending on the environment in which it is being used, a transducer may drift over time and need to be either recalibrated or replaced. Costs associated with recalibration are often overlooked when selecting an RH transmitter. However, these costs can easily outweigh the original purchase price if not considered on the front end.

The Setra SRH series uses a highly accurate, reliable, and durable sensor. However, if replacement is needed, the interchangeable RH sensor module can be easily removed. These computer-calibrated sensor assemblies are cost effective and do not require skilled technicians to perform field servicing. No calibration is needed because each new sensor module is factory-calibrated before shipping. Another benefit for duct and outside air applications is that the sensor module can be replaced without having to remove the unit and disconnect the wiring conduit.

### Low cost of ownership

As mentioned above, the replaceable sensor assembly eliminates high labor costs associated with field calibration. These products were designed with the customer in mind by combining accuracy, dependability and accessibility into an overall cost effective solution.



## Simple Installation

### Easy as 1-2-3

1) Mount the wall plate in desired position on wall (two screws).



2) Connect circuit board to wall plate.



3) Snap cover over assembly .



*The assembly for the duct and outside air mounts is similar and outlined in easy-to-follow steps in the installation instructions.*

## Applications

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

## Features

- Key part of comprehensive HVAC solution package (i.e. humidity, pressure and current)
- Three levels of RH accuracy: 2%, 3%, and 5%
- Excellent reliability via unique, proven, and established ASIC technology
- Robust, proven capacitive sensor technology
- Easy field-serviceability
- Low cost of ownership
- High aesthetic/ low profile wall-mount enclosure
- Quick-mount, 2-screw install w/ plug-in terminal wiring
- 1 year warranty on sensor; 3 year warranty on rest of unit.
- CE Compliant
- RoHS Compliant

When it comes to a product to rely on - choose the SRH.

When it comes to a company to trust - choose Setra.



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# setra

800-257-3872

# Specifications

## RH Performance Data

Sensing Element	Capacitive Polymer
Humidity Operating Range	0 to 100% RH
Accuracy (@ 23°C)	2%, 3%, 5%
Hysteresis	<1.5%
Repeatability	<0.5%
Long Term Stability	<1% /Year @ 23°C, 50%RH

## Environmental Data

Operating Temperature	-40 to 60° C
Storage Temperature	-40 to 85° C
Moisture Resistance	IP65, NEMA-4 (Duct & Outside Air)
Solar	UV Resistant (Outside Air)
Flamability Rating	94-V0
Compliance	RoHS Compliant, CE Compliant

## Physical Description

Enclosure Materials:	
Wall Mount	ABS 94-V0
Duct & Outside Air	Poly Carbonate 94-V0
Probe (Duct & Outside Air)	Aluminum
Weather Shield	Porous Polyethylene
Dimensions	See Dimension Drawings

## Electrical Data

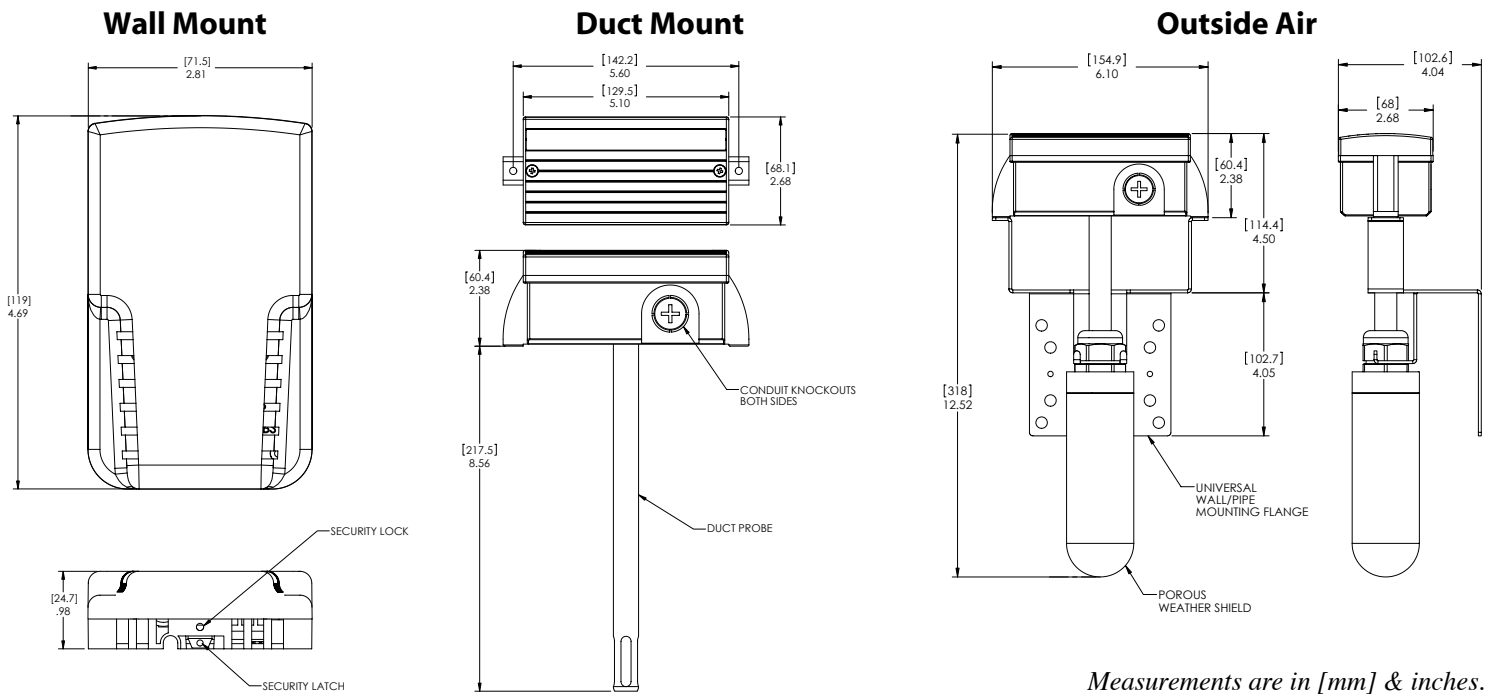
Signal Outputs	4 to 20 mA, 2-wire ckt. Field-Selectable 0 to 5 VDC, 0 to 10 VDC, 3-wire ckt.
Excitation	13.5 to 30 VDC (10VDC Output) 12 to 30 VDC (4-20mA, 5VDC Output)
Maximum Load (Current Only)	$\Omega = (\text{Supply} - 10) \div 0.02$
Electrical Terminations	Pluggable Terminal Block
Wiring Protection	Reverse Excitation
CE Compliance	EN 61236:1998

## Temperature Sensing Options

Passive Thermistor Option	NTC 10K $\Omega$ (Direct Connect) B Valve 3380 (k)
Passive RTD Option	1000 $\Omega$ (Direct Connect) 335 Platinum Curve
Signal Output Options	4 to 20 mA, 2-wire ckt. Field-Selectable 0 to 5 VDC, 0 to 10 VDC, 3-wire ckt.

Specifications subject to change without notice.

## Dimension Drawings



Measurements are in [mm] & inches.

## Ordering Information (Code all blocks in table)

Example: Part No. SRH1-2P-W-11-RH-D-C-L = Wall-mount, 2% RH accuracy, 4-20 mA output, RH only, LCD display, NIST Calibration Certificate & Setra label.

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<b>Model</b> SRH1 = SRH	<b>Accuracy</b> 2P = 2% 3P = 3% 5P = 5%	<b>Configuration</b> W = Wall D = Duct O = Outside Air	<b>Outputs</b> 11 = 4-20 mA 2C = 0-5 or 0-10 VDC <sup>1</sup> (user-selectable)	<b>Temperature Outputs</b> T0 = None (RH only) T1 = 10K $\Omega$ Thermistor (passive) T2 = 1000 $\Omega$ RTD (passive)	<b>Display</b> N = None	<b>Options</b> C = NIST Calibration Certificate
<sup>1</sup> All voltage transmitters are shipped in the 0-5 VDC configuration. Jumper used to switch to 0-10 VDC.						
<b>Replacement Sensor Assembly:</b>						
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<b>Model</b> SRH3 = SRH	<b>Accuracy</b> 2P = 2% 3P = 3%			<b>Temperature Outputs</b> T0 = None (RH only) T1 = 10K $\Omega$ Thermistor (passive) T2 = 1000 $\Omega$ RTD (passive & analog)		<b>Options</b> C = NIST Calibration Certificate