8.0 RETURNING PRODUCTS FOR REPAIR

When returning a product to Setra Systems, the material should be carefully packaged and shipped prepaid to:

Setra Systems, Inc.
159 Swanson Road
Boxborough, MA 01719-1304
Attn: Repair Department

To assure prompt handling, please refer to return instructions on our Web site at http://www.setra.com/tra/repairs/cal_rep.htm.

9.0 WARRANTY AND LIMITATION OF LIABILITY

SETRA warrants its products to be free from defects in materials and workmanship, subject to the following terms and conditions: Without charge, SETRA will repair or replace products found to be defective in materials or workmanship within the warranty period; provided that:

a) the product has not been subjected to abuse, neglect, accident, incorrect wiring not our own, improper installation or servicing, or use in violation of instructions furnished by SETRA;

b) the product has not been repaired or altered by anyone except SETRA or its authorized service agencies;

c) the serial number or date code has not been removed, defaced, or otherwise changed; and

d) examination discloses, in the judgment of SETRA, the defect in materials or workmanship developed under normal installation, use and service;

e) SETRA is notified in advance of and the product is returned to SETRA transportation prepaid.

Unless otherwise specified in a manual or warranty card, or agreed to in writing and signed by a SETRA officer, SETRA pressure, humidity, and acceleration products shall be warranted for one year from date of sale.

The foregoing warranty is in lieu of all warranties, express, implied or statutory, including but not limited to, any implied warranty of merchantability for a particular purpose.

SETRA's liability for breach of warranty is limited to repair or replacement, or if the goods cannot be repaired or replaced, to a refund of the purchase price. In no instance shall SETRA be liable for incidental or consequential damages arising from a breach of warranty, or from the use or installation of its products. No representative or person is authorized to give any warranty other than as set out above or to assume for SETRA any other liability in connection with the sale of its products.

For all CE technical questions, contact Setra Systems, USA. EU customers may contact our EU representative Hengstler GmbH, Uhlandstr 49, 78554 Aldingen, Germany (Tel: +49-7424-890; Fax: +49-7424-89500).

Setra Model SRH
Relative Humidity Sensor Series
with Active or Passive Temperature Sensing
Installation Instructions

1.0 GENERAL INFORMATION

Every SRH humidity sensor product is tested and calibrated before shipment. Setra's Humidity Sensor family consists of a wall mount, duct mount, and outside air unit. This product line expands the solution opportunities for the HVAC/building automation market and other relative humidity monitoring applications. All models utilize a field-replaceable sensor module, NIST traceability, accuracies of ±2%, ±3%, ±5%, active or passive temperature sensing, and a durable capacitive sensor capable of full-scale 0 to 100% RH measurement.
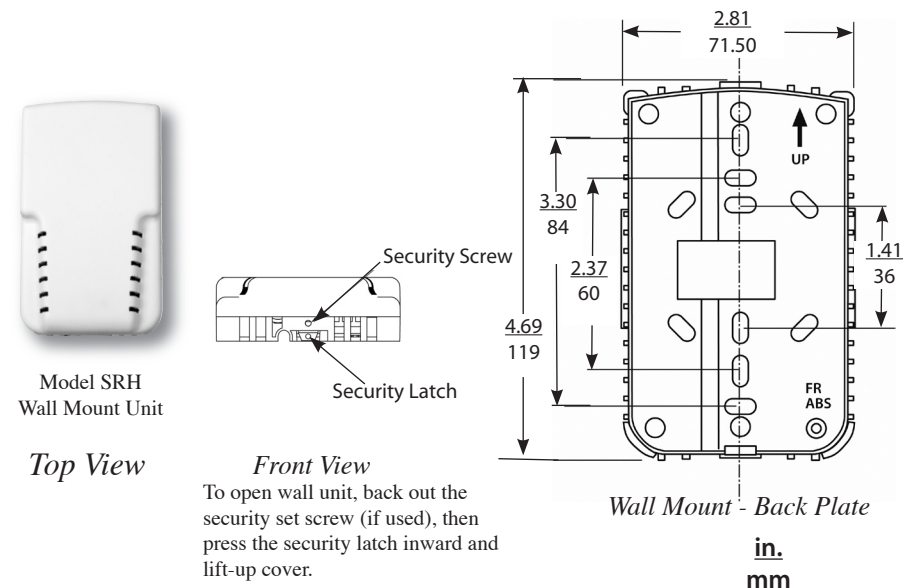
2.0 MECHANICAL INSTALLATION

2.1 Environment

The operating temperature limits of the SRH model are as follows:
Operating Temperature Range -40°F to 140°F (-40 to 60°C)
Storage Temperature -40°F to 158°F (-40 to 70°C)

2.1 Wall Mount

It is important to find a place within a room where the transmitter can be exposed to unrestricted air circulation that will represent the average humidity and temperature within that space. Try to avoid any locations that may be exposed to fumes, extreme temperatures, and high moisture content. Also, make sure the location is on an indoor wall that is about 4 to 6 feet above the floor. For ease of

Model SRH
Wall Mount Unit

Top View

Front View
To open wall unit, back out the security set screw (if used), then press the security latch inward and lift-up cover.

Security Screw
Security Latch

2.81
71.50

3.30
84

2.37
60

4.69
119

1.41
36

UP

FR
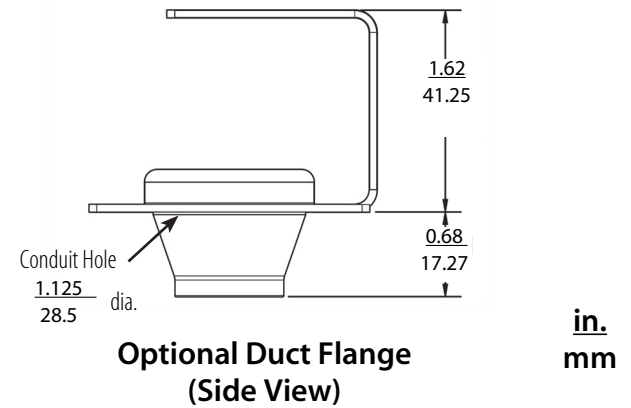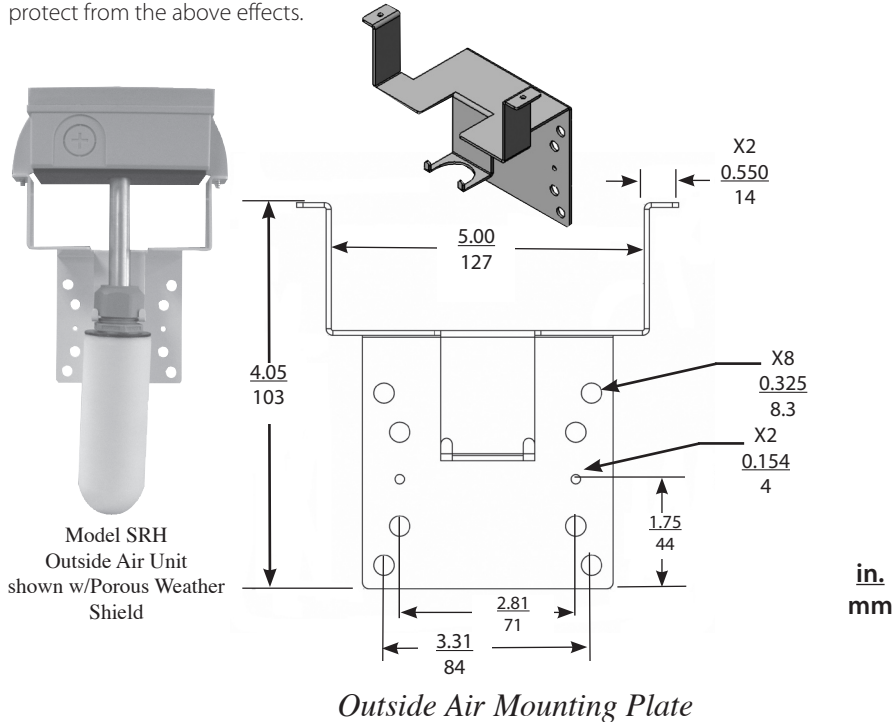ABS

Wall Mount - Back Plate

in.
mm

2.2 Duct Mount

For proper operation, it is necessary to locate the transmitter in the center of a section of duct that receives adequate air flow. Conversely, it must be free of fans, corners, heating/cooling coils, or any other equipment/ environmentals that could adversely affect relative humidity measurement.

Duct Mount Base

Model SRH
Duct Unit
shown w/sensing probe

in.
mm
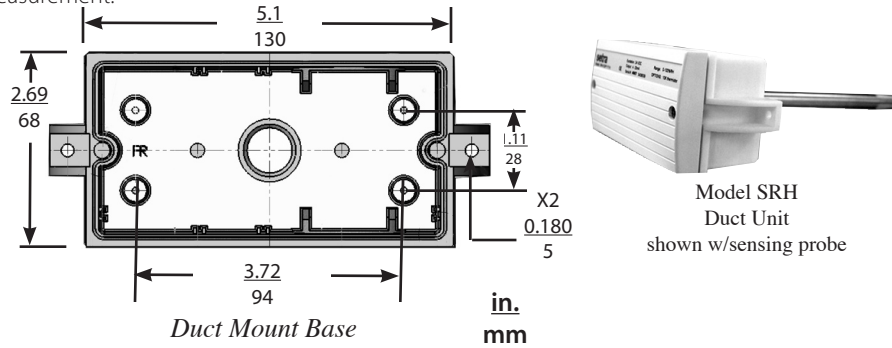
Insert sensing probe through hole (5/8" dia. minimum) and attach full assembly via the two mounting holes on each side.

2.3 Outside Air Mount

The outside air configuration is supplied with a mounting bracket and two 10-16 x 1/2' hex head screws. Locate a position on the building that is clear of exhaust ducts, high exposure to the sun, direct rain, or other outdoor factors that could adversely affect the operation of the unit. Ideally, a sheltered area (under an eave) on the north side of the building is best to protect from the above effects.

Model SRH
Outside Air Unit
shown w/Porous Weather
Shield

in.
mm

Outside Air Mounting Plate

Conduit Hole
1.125
28.5 dia.
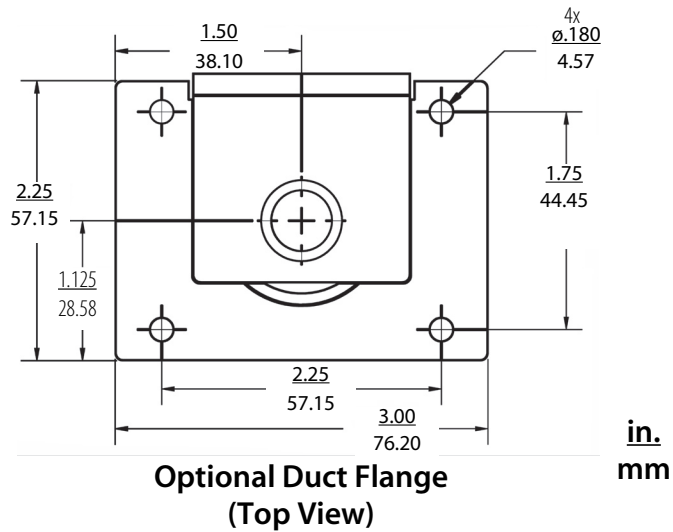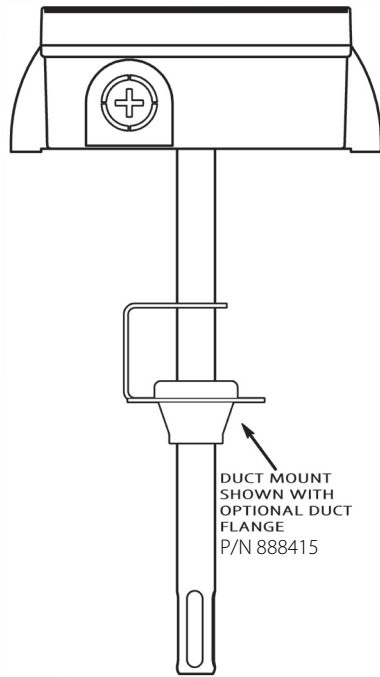
**Optional Duct Flange
(Side View)**

in.
mm

Mounting the transmitter using the optional duct flange.

1. Drill a 1.125" (28.5 mm) diameter hole into the duct

2. Insert the tapered bushing side into the conduit hole.

3. Press in and all around the outer exposed edge of bushing so the bushing groove captures the inside edge of the conduit.

4. Secure flange using #10-16 x 1/2" self-drilling screws (recommended)

5. Insert duct probe to desired length plus 1/2". Pull back unit approximately 1/2" to create seal.

Note: To remove, simply twist duct housing side to side while pulling outward.

7.0 DUCT MOUNT INSTALLATION

DUCT MOUNT
SHOWN WITH
OPTIONAL DUCT
FLANGE
P/N 888415

1.50
38.10

4x
ø.180
4.57

1.75
44.45

2.25
57.15

1.125
28.58

2.25
57.15

3.00
76.20

in.
mm

Optional Duct Flange
(Top View)

3.0 ELECTRICAL INSTALLATION

3.1 Wiring
Match your transmitter with the corresponding diagrams and set the jumpers and wire accordingly. Ensure that all of the installation and wiring is in compliance with all national and local codes. Use 18-22 AWG shielded, twisted pair, copper conductors.
Caution: Do not bundle transmitter wires with AC power wires. Shield must be connected to earth ground for CE compliance.
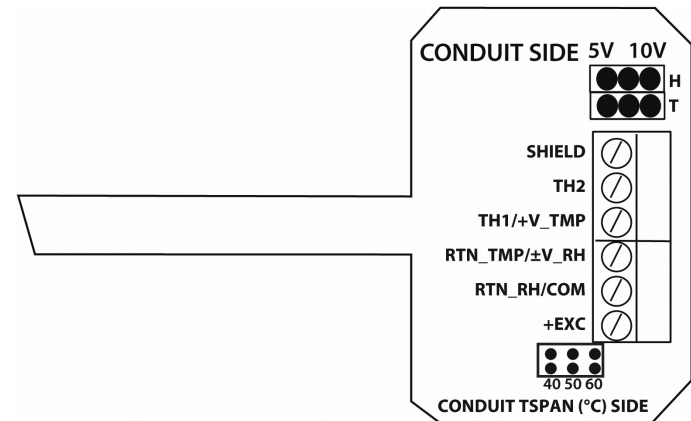
Wall Mount
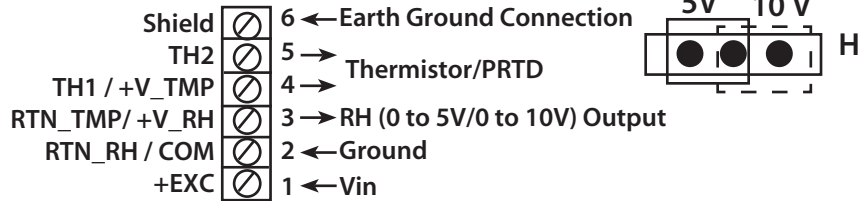**Connector/Jumper Locations - Inside cover**
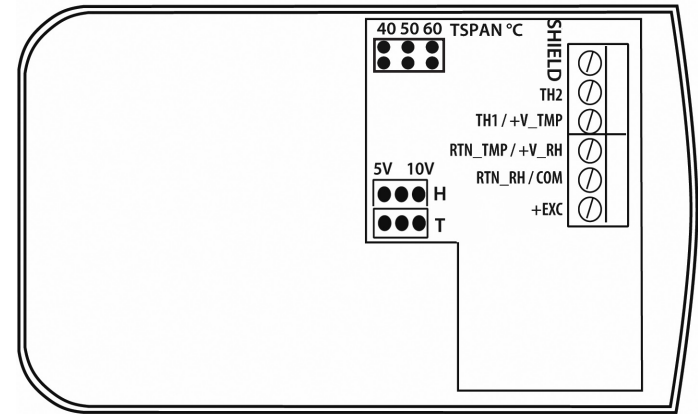
Duct and Outside Mount
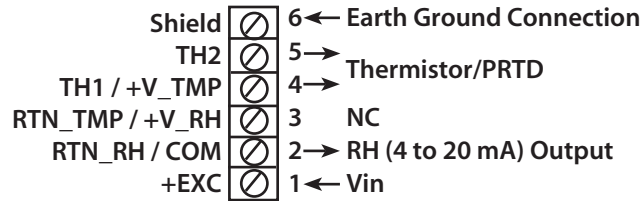**Connector/Jumper Locations - Board Assembly/Duct Probe**

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

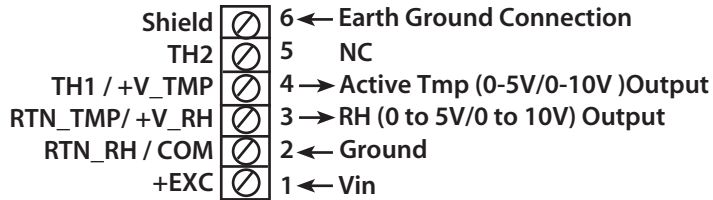|		
Shield	6	← Earth Ground Connection
TH2	5	→
TH1 / +V_TMP	4	→ Thermistor/PRTD
RTN_TMP/ +V_RH	3	→ RH (0 to 5V/0 to 10V) Output
RTN_RH / COM	2	← Ground
+EXC	1	← Vin

Selectable Outputs

5V 10 V

H

Note: Unit shipped in 0 to 5V Mode. Move jumper to right for 0 to 10V Operation
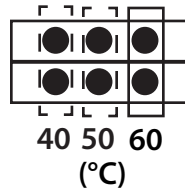
Wiring 4 to 20 mA Output Units (2-wire / T0, T1 & T2)

Shield	6	← Earth Ground Connection
TH2	5	→
TH1 / +V_TMP	4	→ Thermistor/PRTD
RTN_TMP / +V_RH	3	NC
RTN_RH / COM	2	→ RH (4 to 20 mA) Output
+EXC	1	← Vin

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

Shield	6	← Earth Ground Connection
TH2	5	NC
TH1 / +V_TMP	4	→ Active Tmp (0-5V/0-10V)Output
RTN_TMP/ +V_RH	3	→ RH (0 to 5V/0 to 10V) Output
RTN_RH / COM	2	← Ground
+EXC	1	← Vin

Selectable Outputs

5V 10 V   5V 10 V

H   T

Selectable Tspan

40 50 60
(°C)
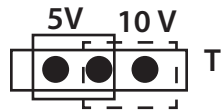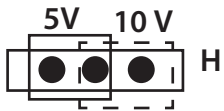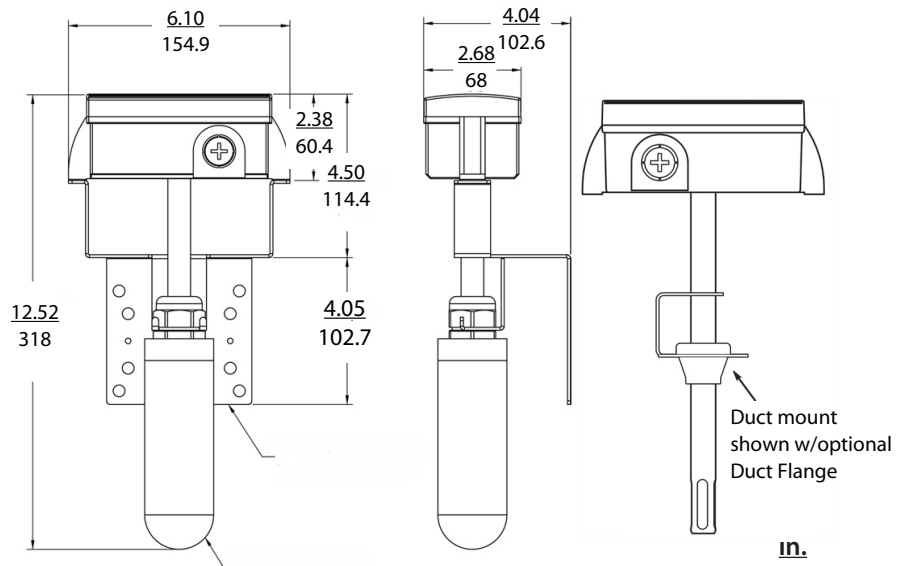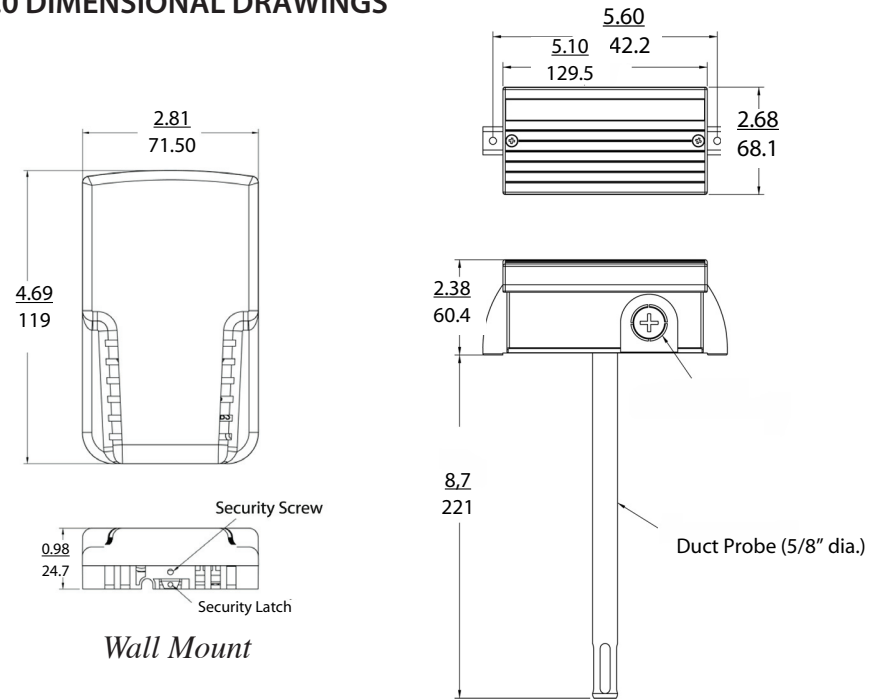
Note: Unit shipped in 0 to 5V mode with Tspan set to 60°C. Move Tspan jumper to select optional ranges.

6.0 DIMENSIONAL DRAWINGS

Wall Mount

Duct Mount

Outside air

in.
mm

5.0 SPECIFICATIONS

RH Performance Data

Sensing Element	Capacitive Polymer
Humidity Operating Range	0 to 99% RH (non-condensing)
Accuracy at 68°F (20°C)	2%, 3%, 5%
Hysteresis	<1.5%
Repeatability	<0.5%
Long Term Stability	<1%/year @ 68°F (20°C), 50% RH

Electrical Data

Signal Outputs
Current (2-wire ckt.)	4 to 20 mA
Field Selectable Voltage (3-wire ckt.)	0 to 5 VDC, 0 to 10 VDC

Excitation
0 to 10 VDC	13.5 to 30 VDC
0 to 5 VDC, 4 to 20 mA	12 to 30 VDC
Maximum Load (Current only)	Ω = (Supply - 10) / 0.02
Electrical Termination	Pluggable Terminal Block (5mm Pitch)
Wiring Protection	Reverse Excitation
CE Compliance	EMC Directive 2004/108/EC

Temperature Sensing Options (Passive)

T1 Thermistor Output	NTC 10K Ω @ 77°F/25°C (Direct Connect)
	Type II
T2 RTD Output	1000 Ω @ 32°F/0°C (Direct Connect)
	385 Platinum Curve

Temperature Sensing Options (Active)

Signal Ouput Options (includes humidity output):
Current	4 to 20 mA
Field Selectable Voltage	0 to 5 VDC, 0 to 10 VDC
Available Ranges:	Accuracy:
T3 (-50°C to 60°C)	±0.6°C (20°C @ 50%)
T5 (-10°C to 60°C)	±0.4°C (20°C @ 50%)

Environmental Data

|	
Operating Temperature °F (°C)	-40 to 140 (-40 to 60)
Storage Temperature °F (°C)	-40 to 158 (-40 to 70)
Moisture Resistance	IP65, NEMA-4 (Duct & Outside Air)
Solar	UV Resistance (Outside Air)
Flammability Rating	94-V0
Compliance	RoHS and CE Compliant

Physical Description

Enclosure
Wall Mount	ABS 94-V0
Duct & Outside Air	Poly Carbonate 94-V0
Probe (Duct & Outside Air)	Aluminum
Weather Shield (Outside Air)	Porous Polyethylene

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

Shield	6 ← Earth Ground Connection
TH2	5 N/C
TH1 / +V_TMP	4 N/C
RTN_TMP / +V_RH	3 → Active TMP (4-20 mA) Output
RTN_RH / COM	2 → RH (4 to 20 mA) Output
+EXC	1 ← Vin

40 50 60 (°C)
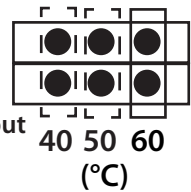
Note: Unit shipped with Tspan set to 60°C. Move Tspan jumper to select optional ranges.

4.0 CALIBRATION

*A*ll relative humidity products are fully tested and calibrated prior to shipment in accordance with the National Institute of Standards and Technology (NIST), the highest quality standard available.

Once installed in the field, no calibration of the units is required. Instead, this product suite features field-replaceable sensor modules that allow the end user to replace the sensors on-site. This eliminates time consuming and costly factory calibration, while reducing downtime during service intervals. Additionally, the duct mount probe is easily accessed by taking off the front cover, removing the sensor board assembly, and replacing the sensor module on the tip of the sensor board. This further contributes to a more user-friendly, lower cost product line that is focused on customer needs and ease of use.
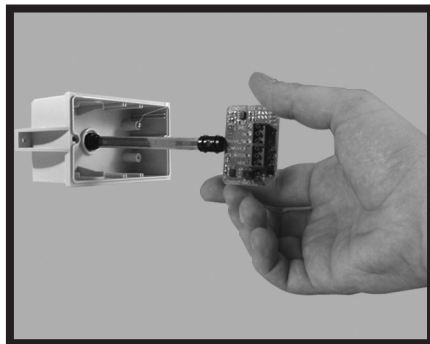
4.1 Remove/Install the Sensor Tip

Note: Power Must be removed from the main PCBA prior to replacing the sensor tip module. Failure to comply could possibly damage the sensor tip module
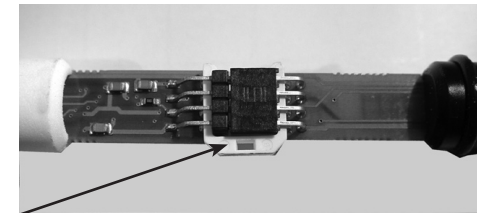
Wall Mount

White
Retaining Clip
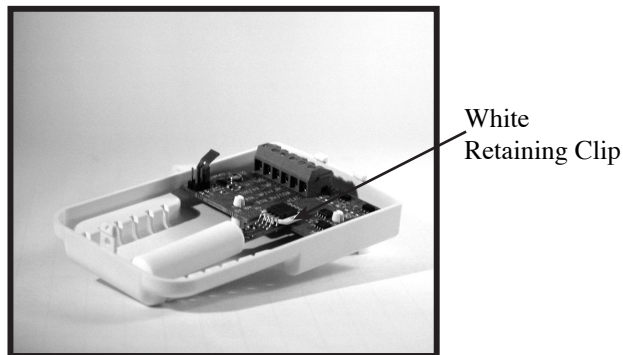
Outdoor and Duct Mount

Replaceable Sensor with Sintered Filter

White
Retaining Clip

Top View

Side View
(PCB to PCB)

Remove the white retaining clip (shown above and on page 6). Remove the sensor tip module by holdng the sides of the sintered filter along the pcb edges. Then gently pull the sensor tip module out of the mating connector. Gently push the replacement sensor tip module into the mating connector (as shown) and replace the retaining clip to secure the connection.

4.2 Ordering Information - Replacement Sensor Assembly*

Example: Order Part No. SRH3-2P-T0 = Sensor Assembly with 2% accuracy, RH only.

S	R	H	3					

Model	Accuracy	Temperature Outputs
SRH3 = SRH	**2P** = 2%	**T0** = None (RH only)
	3P = 3%	**T1** = 10KΩ NTC (passive)
	5P = 5%**	**T2** = 1000Ω RTD (passive)
		T3 = -50°C to 60°C (active)
		T5 = -10°C to 60°C (active)

*SRH1 units originally ordered with either a T3 or T5 temperature option MUST be replaced with the same T(x) version.

**Not available with T3 or T5 option.