Model SRH
Relative Humidity Transmitters

setra

FEATURES

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

APPLICATIONS

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

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 model can withstand 100% saturation without losing performance.
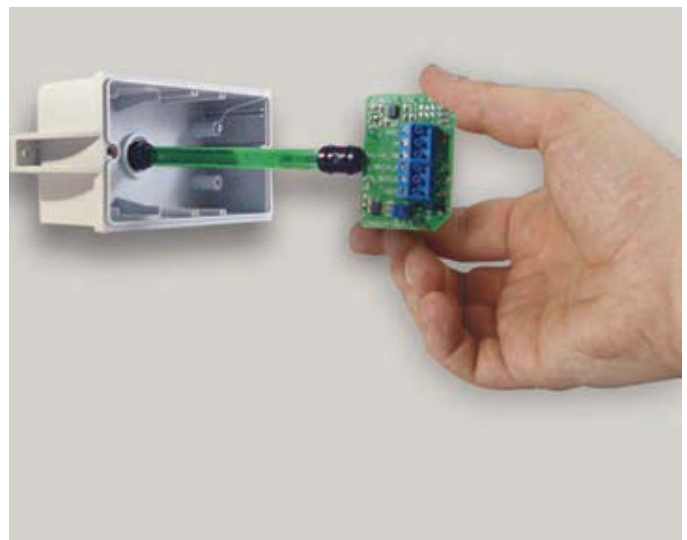
Replacing the removable sensor tip requires no special training and can be easily replaced by the end user. No calibration is needed because each new sensor module is factory calibrated before shipping. This essentially reduces downtime during service intervals. As an example, the duct mount probe is 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.

Phone: 800-257-3872 • Fax: 978-264-0292 • **www.setra.com**

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SPECIFICATIONS

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

WIRING

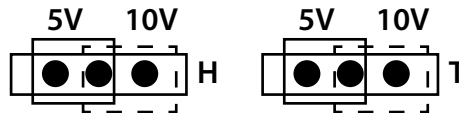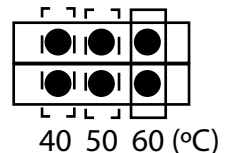**Wiring 0-5 V/0-10 V Output Units (3-wire / T0, T1, T2 & T6)**

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

Selectable Outputs

5V   10V   H

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

Shield	6	←	Earth Ground Connection
TH2	5	→	Thermistor/PRTD
TH1 / +V_TMP	4	→	
RTN_TMP / +V_RH	3		N/C
RTN_RH / COM	2	→	RH (4 to 20 mA) Output
+EXC	1	←	Vin
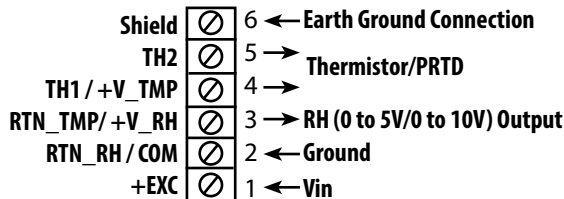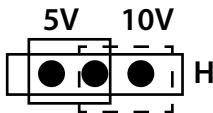
Wiring 0-5 V/0-10 V Output Units (4-wire / T3 & T5)

Shield	6	←	Earth Ground Connection
TH2	5		N/C
TH1 / +V_TMP	4	→	Active Temp (0 to 5 VDC/0 to 10VDC) Output
RTN_TMP/ +V_RH	3	→	RH (0 to 5 VDC/0 to 10VDC) Output
RTN_RH / COM	2	←	Ground
+EXC	1	←	Vin

Selectable Outputs

5V   10V   H   5V   10V   T

Selectable Tspan

40 50 60 (°C)
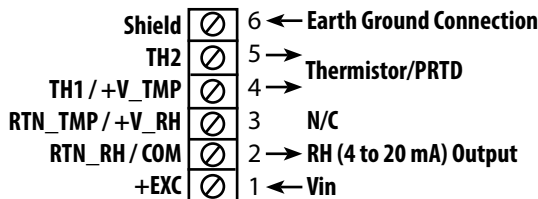
Wiring 4 to 20 mA Output Units (3-wire / T3, T5)

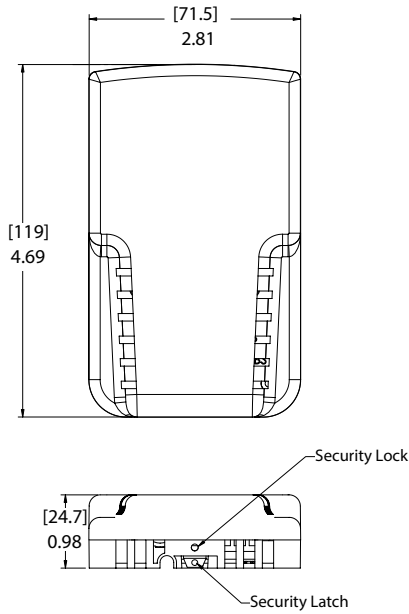|			
Shield	6	←	Earth Ground Connection
TH2	5		N/C
TH1 / +V_TMP	4		N/C
RTN_TMP / +V_RH	3	→	Active TMP (4-20 mA) Output
RTN_RH / COM	2	→	RH (4 to 20 mA) Output
+EXC	1	←	Vin

Selectable Tspan

40 50 60 (°C)
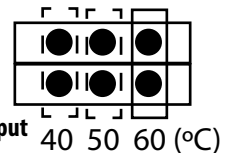
Model SRH
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DIMENSIONS

Wall Mount

[71.5]
2.81

[119]
4.69

[24.7]
0.98

Security Lock

Security Latch

Outside Air

[154.9]
6.10

[60.4]
2.38

[114.4]
4.50

[102.7]
4.05

[318]
12.52

[102.6]
4.04

[68]
2.68

UNIVERSAL WALL/
PIPE
MOUNTING
FLANGE

POROUS
WEATHER SHIELD

[in]
mm

Duct Mount

[142.2]/5.60

[129.5]/5.10

[68.1]
2.68

[60.4]
2.38

CONDUIT KNOCKOUTS
BOTH SIDES

[221]
8.7

DUCT PROBE
(5/8" DIA.)

DUCT MOUNT
SHOWN WITH
OPTIONAL DUCT
FLANGE
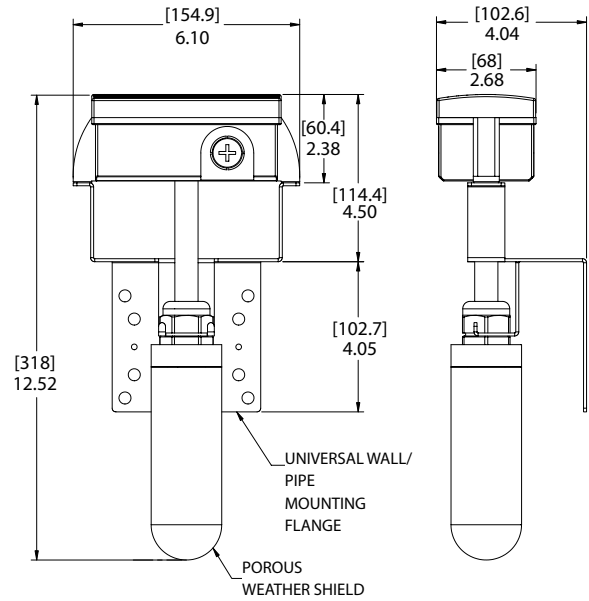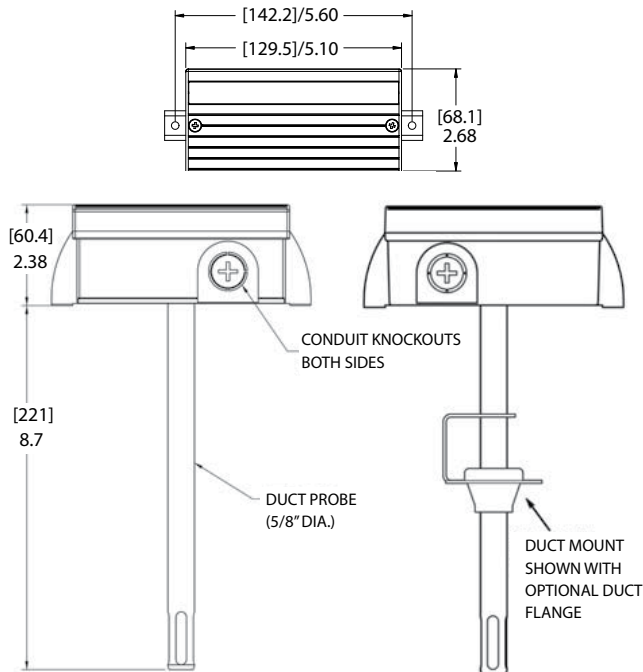
Optional Duct Flange
Mates with Duct Mount Unit

[41.25]
1.62

Duct Flange
(Side View)

[17.27]
0.68

Duct Flange
(Top View)

[38.10]
1.50

4 x
(4.57)
Ø.18

[57.15]
2.25

[44.45]
1.75

[28.58]
1.125

[57.15]
2.25

[76.20]
3.00
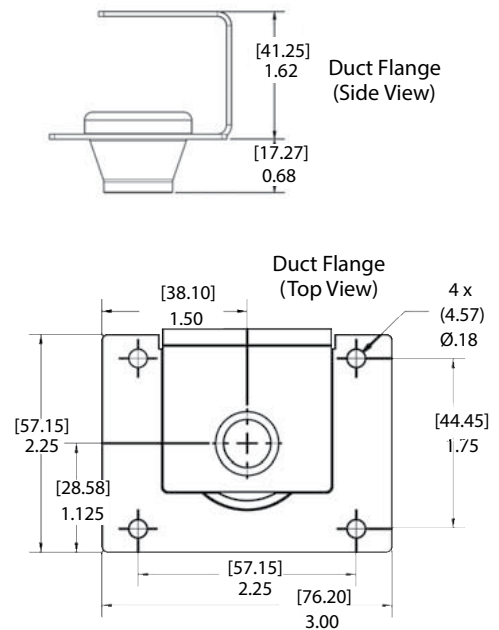
ORDERING INFORMATION

| S | R | H | 1 | – | ☐☐ | – | ☐ | – | ☐☐ | – | ☐☐ | – | N | – | ☐ |

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

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

Replacement Sensor Assembly

| 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 +140ºF (-50 to +60ºC) [Active][4]
				T5	+14 to 140 ºF(-10 to +60ºC) [Active][4]
				T6	10K Ω Type III Thermistor [Passive]

Ordering Example: SRH32PT0 = Model SRH Sensor Assembly, 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 60ºC. User selectable Tspan for 40ºC and 50ºC option provided.
3. Display option ONLY available in wall mount configuration.
4. SRH1 units originally ordered with either a T3 or T5 temperature option MUST be replaced with the same T(x) version.