

SHO100/SHO100-T/SHO101-T5

Outdoor Humidity/Temperature Sensors



Product Description

This range of outdoor humidity/temperature sensors is designed to provide relative humidity measurement and temperature sensing outdoors or in indoor areas where a more robust design is required (e.g. warehouses, swimming pools).

Each of these devices is an active sensor, which measures the relative humidity (%RH) and converts the measurement into an electric current (4 ... 20 mA) or a voltage level (0 ... 10 V).

Models are available with humidity sensing only or humidity sensing combined with temperature sensing using NTC thermistors.

The humidity sensor comprises a sensing element fitted at the end of a short probe and an amplifier mounted in the main housing.

The SHO100-T has two different, user-selectable passive NTC temperature elements: NTC 1.8 k Ω (Vista), and NTC 10 k Ω (I/NET).

The SHO101-T5 has two different, user-selectable passive NTC temperature elements: NTC 1.8 k Ω (Vista), and NTC 10 k Ω (Continuum).

Specifications

Humidity sensor	Capacitive polymer sensor
Output	0 ... 10 Vdc / 4 ... 20 mA (jumper selectable)
Accuracy (at 20 °C)	± 2% RH
Mounting location	For outdoor use
Enclosure rating	IP65
Weight	191 g (0.421 lb)
Material	Housing: PP / PC Sensor protective filter: Bronze
Dimensions	See diagram

Specifications (cont.)

Temperature dependency	See diagram
Stability	± 1% RH @ 50% RH in 5 years
Time constant	15 s in slowly moving air at 23 °C
Temperature Thermistor	
Type	See table
Accuracy	See table
0 ... 10 Vdc Mode	
Output signal	0 to 10 V
Power input	24 Vac ±10 %, 16 ... 32 Vdc
Current consumption	32 Vdc, <4mA
Load resistance	See diagram
4 ... 20 mA Mode	
Output signal	4 ... 20 mA
Power input	16 ... 32 Vdc
Max. load resistance	See diagram
Humidity Ranges	
Measuring range	0 ... 100 % RH (0-10V or 4 ... 20mA)
Operating range	10 ... 90% RH non-condensing
Accuracy	±2% RH (20 ... 80% RH at 23 °C), ±3.5% RH in operating range
Temperature Ranges	
Measuring range	-40 ... 125 °C (-40 ... 257 °F)
Operating range	-10 ... 60 °C (14 ... 140 °F)
Accuracy	±0.2° (0 ... 70 °C), ±32.36° (32 ... 158 °F)
Storage temperature	-40 ... 60 °C (-40 ... 140 °F)
Standards	
CE	EN 61326:2013
EMC	Directive 2014/30/EU

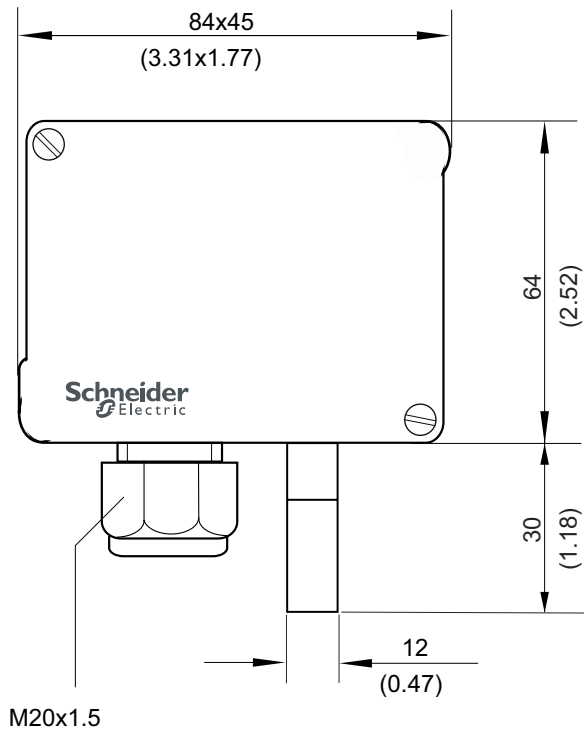
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Available Products

Part Number	Model Number	Range (% RH)	Temp. Sensor @ 25 °C (77 °F)	System
006902361	SHO100	10-90	None	General
006902371	SHO100-T		NTC 10 kΩ/1.8 kΩ	I/Net/Vista
006902401	SHO101-T5		NTC 10 kΩ/1.8 kΩ	Continuum/Vista

Dimensions mm (in.)



Thermistor Accuracy

NTC 1.8 kW for Vista Products

-25 °C (-13 °F)	±0.7 °C (±1.3 °F)
0 °C (32 °F)	±0.5 °C (±0.9 °F)
25 °C (77 °F)	±0.3 °C (±0.5 °F)
50 °C (122 °F)	±0.6 °C (±1.1 °F)
75 °C (167 °F)	±0.9 °C (±1.6 °F)
100 °C (212 °F)	±1.3 °C (±2.3 °F)

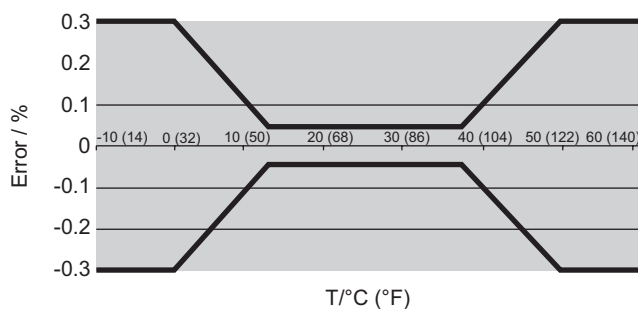
NTC 10 kW for I/NET® Products

-25 °C (-13 °F)	±0.5 °C (±0.9 °F)
0 °C (32 °F)	±0.2 °C (±0.4 °F)
25 °C (77 °F)	±0.2 °C (±0.4 °F)
50 °C (122 °F)	±0.2 °C (±0.4 °F)
70 °C (158 °F)	±0.2 °C (±0.4 °F)
100 °C (212 °F)	±0.5 °C (±0.9 °F)

NTC 10 kW for Continuum® Products

-25 °C (-13 °F)	±0.5 °C (±0.9 °F)
0 °C (32 °F)	±0.2 °C (±0.4 °F)
25 °C (77 °F)	±0.2 °C (±0.4 °F)
50 °C (122 °F)	±0.2 °C (±0.4 °F)
70 °C (158 °F)	±0.2 °C (±0.4 °F)
100 °C (212 °F)	±0.5 °C (±0.9 °F)

Temperature Dependence



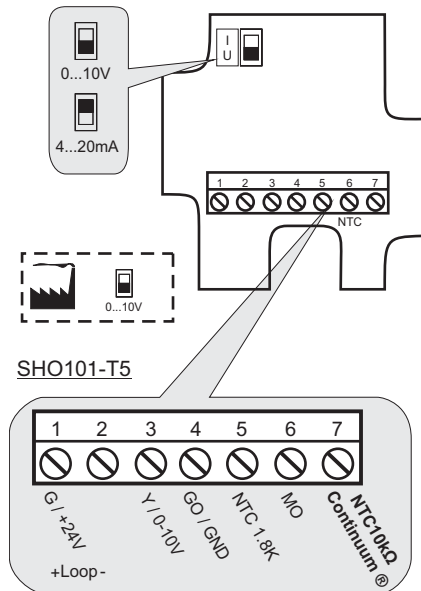
Wiring

4 ... 20 Mode



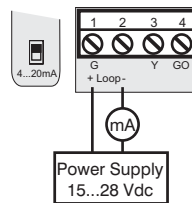
IMPORTANT: Do not touch the sensor tip. Ensure correct wiring.

4...20mA / 0...10V 0...100% RH

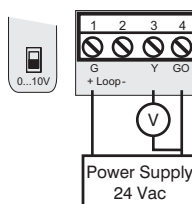


UG=15...36 VDC / 24 VAC ± 10%

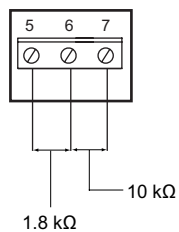
Signal 4...20mA



Signal 0...10V



Temperature Thermistor



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