

SpaceLogic Sensors

Temperature and Humidity Duct Sensors

SHD100/SHD101



Product Description

This range of duct humidity/temperature sensors is designed to provide relative humidity measurement and temperature control in ventilation systems.

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 a 'T' Type thermistor or NTC thermistors.

The sensor comprises a sensing element fitted at the end of a probe, and an amplifier mounted in the main housing. A plastic bracket is supplied for mounting the unit onto a duct.

The SHD100-T has two different, user-selectable passive NTC temperature elements: NTC 1.8 k Ω (Vista), and NTC 10 k Ω (I/NET).

The SHD101-T5 has two different, user-selectable passive NTC temperature elements: NTC 1.8 k Ω (Vista), and NTC 10 k Ω (Continuum).

The SHD101-T6 incorporates the 5.02 k Ω NTC thermistor for use in Satchwell BMS systems.

All SHD100 products are intended for immersion installation and can be used for relative humidity measurement in air ducts.

Available Products

Part Number	Model Number	Range (% RH)	Temp. Sensor @ 25 °C (77 °F)	System
006902321	006902411	0 to 95%	None	General
006902331	SHD100-T	0 to 95%	NTC 10 k Ω / 1.8 k Ω	I/Net/Vista
006902381	SHD101-T5	0 to 95%	NTC 10 k Ω / 1.8 k Ω	Continuum/Vista
5127000000	SHD101-T6	0 to 95%	'T' Type 5.02 k Ω	Satchwell

Specifications

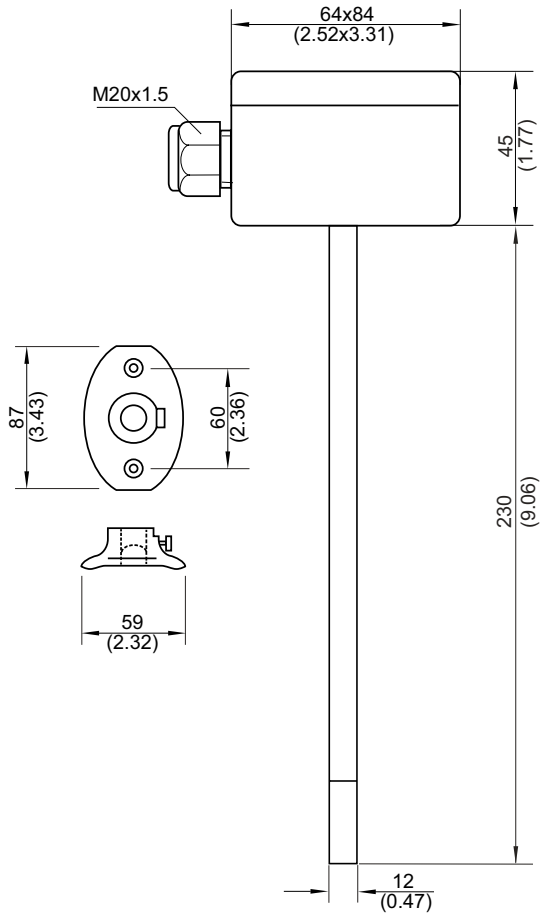
Humidity sensor	Capacitive polymer sensor
Output	0 to 10 VDC/4-20 mA (DIP switch selectable)
Accuracy (at 20 °C)	\pm 2% RH
Mounting	duct
Enclosure rating	IP 65
Weight	165 g (0.364 lb)
Material (housing)	Polyamide plastic
Material (sensor protective filter)	Bronze
Dimensions	See diagram
Temperature dependency	See diagram
Stability	\pm 1% RH @ 50 % RH in 5 yrs
EMC	EN 61326-1 and EN 61326-2-3
Temperature Thermistor	
Type	See table
Accuracy	See table
0 to 10 VDC Mode	
Output signal	0 to 10 VDC
Power input	24 VAC \pm 10 % 16 to 32 VDC
Current consumption at 24 VAC	<10 mA
Load resistance	See diagram
4 to 20 mA Mode	
Output signal	4 to 20 mA
Power input	16 to 32 VDC
Max. load resistance	See diagram
Ranges	
Humidity (operating)	0-95 % RH non-condensing
Humidity (storage)	0-90 % RH non-condensing
Temperature (operating)	-10 °C to 60 °C (14 °F to 140 °F)
Temperature (storage)	-40 °C to 60 °C (-40 °F to 140 °F)
Time constant	15 s in slowly moving air at 25 °C (77 °F)

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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)	±0.25 °C (±0.4 °F)
25 °C (77 °F)	±0.25 °C (±0.4 °F)
50 °C (122 °F)	±0.25 °C (±0.4 °F)
70 °C (158 °F)	±0.25 °C (±0.4 °F)
100 °C (212 °F)	±0.5 °C (±0.9 °F)

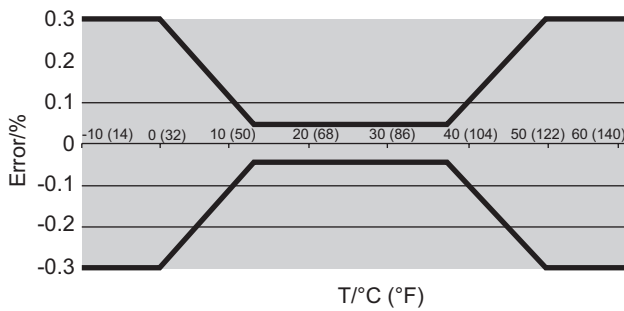
NTC 10 kW for Continuum® Products

-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)

NTC 5.02 kW for Satchwell™ Products

-25 °C (-13 °F)	±0.6 °C (±1.0 °F)
0 °C (32 °F)	±0.3 °C (±0.5 °F)
25 °C (77 °F)	±0.3 °C (±0.4 °F)
50 °C (122 °F)	±0.3 °C (±0.4 °F)
75 °C (167 °F)	±0.3 °C (±0.5 °F)
100 °C (212 °F)	±0.3 °C (±0.5 °F)

Temperature Dependence



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Wiring

