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 kΩ (Vista), and NTC 10 kΩ (I/NET).

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

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

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 kΩ/ 1.8 kΩ	I/Net/Vista
006902381	SHD101-T5	0 to 95%	NTC 10 kΩ/ 1.8 kΩ	Continu-um/Vista
006902411	SHD101-T6	0 to 95%	'T' Type 5.02 kΩ	Satchwell

Specifications

Humidity sensor	Capacitive polymer sensor
Output	0 to 10 VDC/4-20 mA (DIP switch selectable)
Accuracy (at 20 °C)	± 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	± 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±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 ºC to 60 ºC (14 ºF to 140 ºF)
Temperature (storage)	-40 ºC to 60 ºC (-40 ºF to 140 ºF)
Time constant	15 s in slowly moving air at 25 °C (77 ºF)

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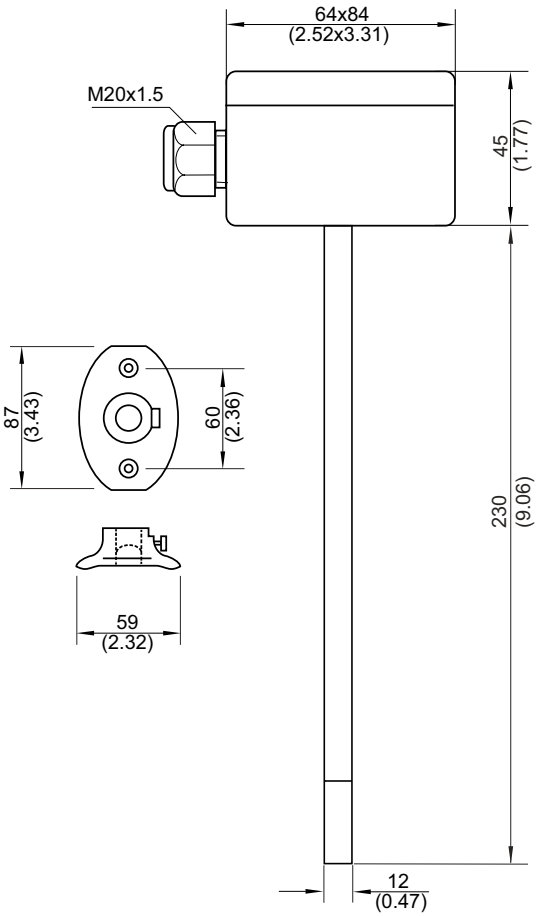
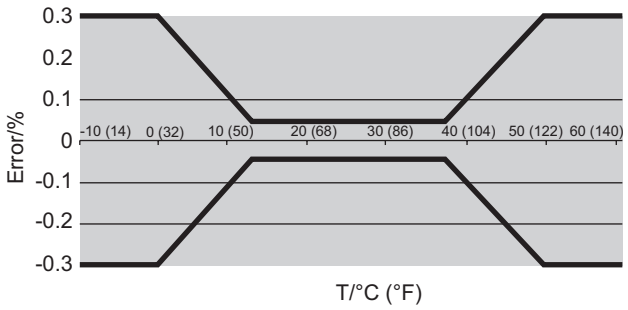
Dimensions mm (in.)



Temperature Dependence



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)

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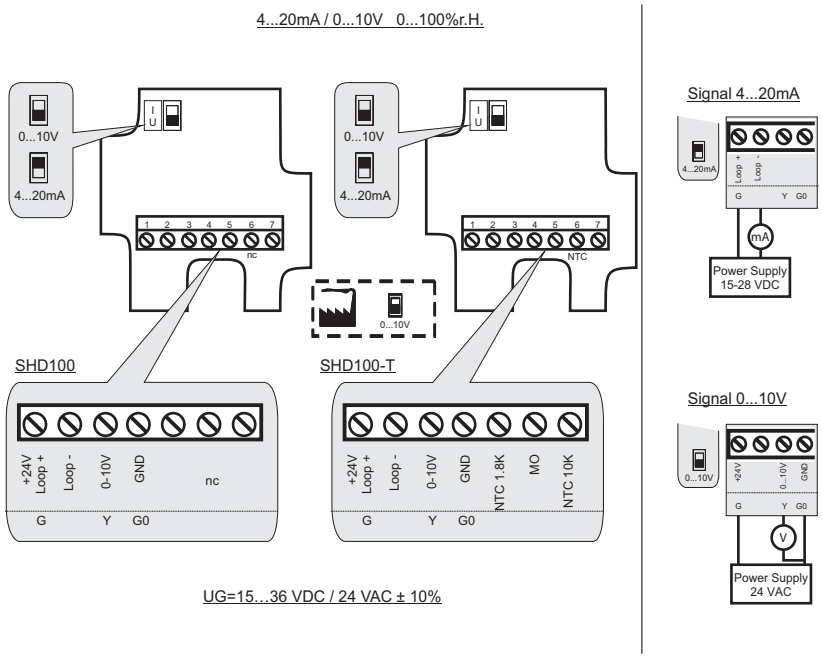
Wiring



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