



SHO100/SHO101(-T5)

D-60-48

Outdoor humidity transmitter
0–10 V/4–20 mA

25 Apr 2005

SHO100 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.

The transmitter is delivered as a complete unit, comprising a protective filter for the protruding sensor element, and an amplifier mounted in the housing.

SHO100-T is equipped with passive temperature elements selectable NTC 1.8 / 10 kohm.
The NTC 10 kohm is for I/NET® products.

SHO101-T5 is equipped with passive temperature elements selectable NTC 1.8 / 10 kohm.
The NTC 10 kohm is for Continuum® products.
SHO101-T5 has an M16/M20 adapter for conduits.

SHO100 is intended for out door installation and for indoor areas where a more robust design is needed, as warehouse.



The sensor has negligible hysteresis and it is insensitive to dust as well as most chemicals.

TECHNICAL DATA

Part number:

SHO100	0-069-0236-0
SHO100-T	0-069-0237-0
SHO101-T5	0-069-0240-0
Time constant	<15 s (depending on air circulation)

Accuracy	± 2% RH
Temp.dep, -10 °C to 60 °C (fig next page)	< ±0.3% RH (worst case, at 90%RH; D %RH will be less at lower %RH)
Max. inaccuracy after 5 years	< ± 3% RH
Operating range	0–95% RH
Operating temperature	-10 °C to 60 °C (14 to 140 °F)
Storage temperature	-40 °C to 60 °C (-40 to 140 °F)

Only SHD100-T

Sensor element	NTC, 1.8 kohm at 25 °C (77 °F)
Sensor element	1) NTC, 10 kohm at 25 °C (77 °F)

Only SHD101-T5

Sensor element	NTC, 1.8 kohm at 25 °C (77 °F)
Sensor element	2) NTC, 10 kohm at 25 °C (77 °F)

Materials:

Housing	polyamide plastic
Protective filter for sensor	bronze
Enclosure rating	IP 65
Weight	130 g (0.287 lb)

Standards:

EMC	EN 50081-1, EN 50082-1
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- 1) The NTC 10 kohm element is for I/NET®
- 2) The NTC 10 kohm element is for Continuum®

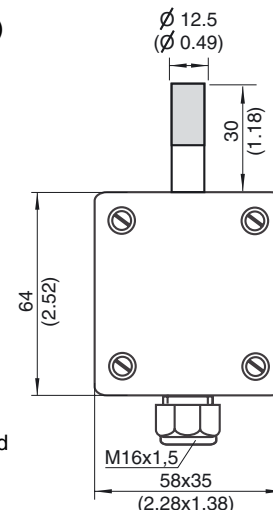
4–20 mA

Current output 0–100% RH	4–20 mA
Voltage across sensor	U_G max. 28 (36) V DC, U_G min. 15 V DC
At a 36 V DC supply accuracy decr. with about 1 % RH.	
Maximum load (ohm)	$R = (U_M - 15)/0.02$

0–10 V

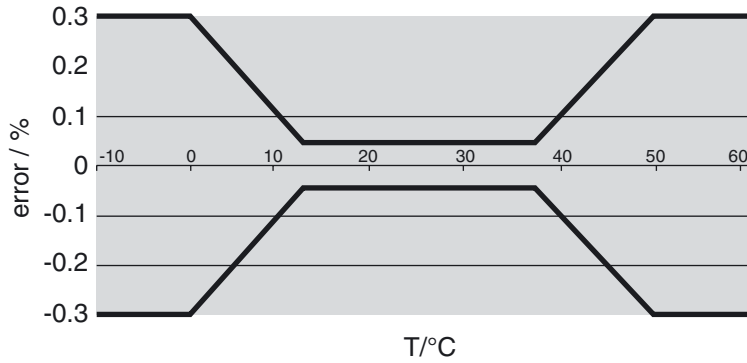
Voltage output 0–100% RH	0–10 V
Power supply:	
Output 0–10 V	15–35 V DC alternatively 24±10% V AC
Current consumption, typical	10 mA
Load resistance	>20 kohm

Dimensions in mm (in.)



SHO101-T5 has an M16x1.5 cable gland and an M16/M20 adapter.

TEMPERATURE DEPENDENCE



INSTALLATION

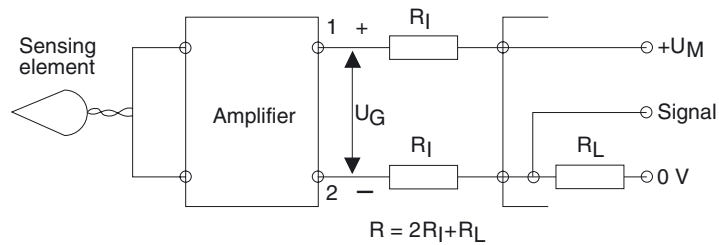
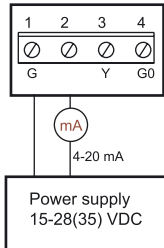
Note! The wires must be connected in the correct way.

The sensor must not be touched, since it is sensitive to mechanical damage and to grease etc. from the fingers.

4–20 mA

The transmitter is connected with a 2-wire cable. The current is proportional to the measured humidity and it is measured over an external load resistance R_L .

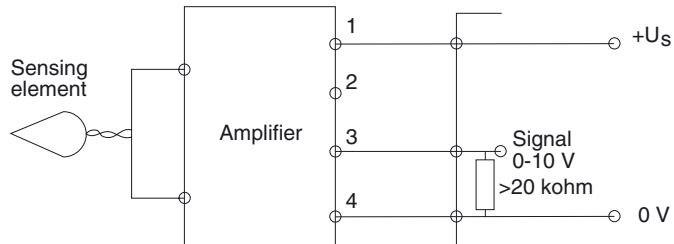
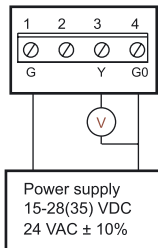
The supply voltage U_M is a function of the voltage across the room transmitter U_G and the voltage drop across the load resistor and the wire resistances.



0–10 V

The transmitter is connected with a 3-wire cable.

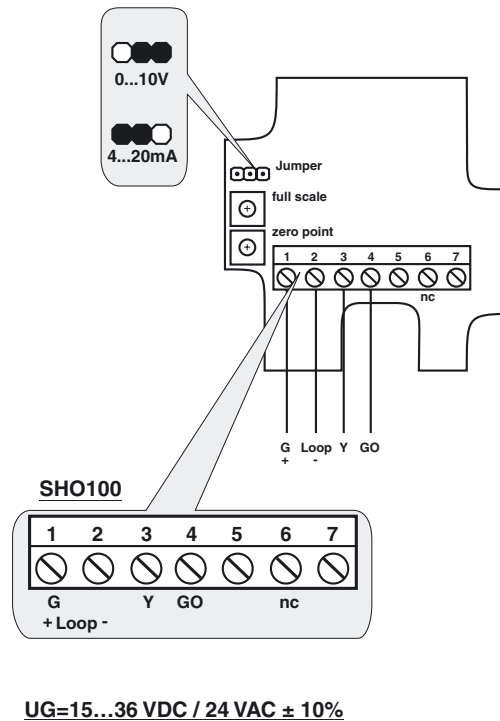
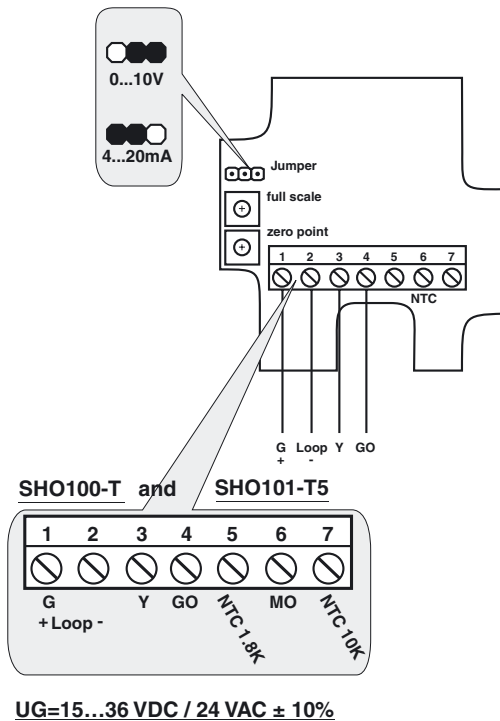
If another load is to be connected close to the sensor, this should be made with a separate G_0 , so that the measuring signal will not be affected.



WIRING

4...20mA / 0...10V 0...100%r.H.

4...20mA / 0...10V 0...100%r.H.



ACCURACY

NTC 1.8 kohm

-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 kohm 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 kohm 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

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