

Humidity & Temperature Probe

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Features

- Maintenance-free digital microchip
- rH accuracy standard 3%rH or optional 2%rH
- Operating voltage AC 24 V or DC 14...35 V
- Analog output types: 0...10 Vdc, 0...5 Vdc, 2-10V, 1-5V and 4-20 mA
- Modbus RS485 communication
- Simple and fast mounting
- IP65 transmitter protection

Applications

- HVAC supply or extract air measuring
- Humidifiers or dehumidifiers controls
- Dew point measuring
- Pool, greenhouse or hencoop applications
- Air quality applications: measuring and controlling humidity ratio of clean rooms

Standard Products

<i>code</i>	<i>accuracy</i>	<i>humidity out</i>	<i>temperature out</i>	<i>modbus/rs485</i>
SHP.351	±3 %rH, 0.5 °C	4-20mA and 0-10V	no	no
SHP.311	±3 %rH, 0.5 °C	0-10V	0-10V	no
SHP.355	±3 %rH, 0.5 °C	4-20mA	4-20mA	no
SHP.351.M	±3 %rH, 0.5 °C	4-20mA and 0-10V	no	yes
SHP.311.M	±3 %rH, 0.5 °C	0-10V	0-10V	yes
SHP.355.M	±3 %rH, 0.5 °C	4-20mA	4-20mA	yes
SHP.300.M	±3 %rH, 0.5 °C	no	No	yes

Ordering

sample order code: **SHP.311**

accuracy 3 %rH, out1: 0...10 Vdc, out2: 0...10 Vdc
SENSE Humidity transmitter, Probe type

<i>model</i>	<i>mounting</i>	<i>accuracy</i>	<i>out 1 ⁽¹⁾</i>	<i>out 2 ^(2,3)</i>	<i>Option</i>
SH	P probe	2 %2rH 3 %3rH	1 0...10 Vdc 2 2...10 Vdc 3 0...5 Vdc 4 1...5 Vdc 5 4...20 mA	0 no output 1 0...10 Vdc 2 2...10 Vdc 3 0...5 Vdc 4 1...5 Vdc 5 4...20 mA	M modbus/rs485

1. Out 1 is always Humidity output
2. Please inform Out2 type as Humidity or Temperature
3. Please inform range for temperature outputs

General Notes

1. Observe maximum permissible cable lengths.
2. If cable runs parallel to the mains cable: Use shielded cables.
3. The cable entry always should have to be pointing downwards.
4. The data indicated under 'Technical Data' apply only to vertically mounted transmitters.
5. Duct mounted transmitters should be far away from humidifiers, min. 2 meters.

Technical Data

Electrical	Power Supply	AC 24V ($\pm$ 5%), 50-60 Hz DC 14...35 V
	Power Consumption	< 1.5 W
Outputs	Current Output	4...20 mA, maximum 500 Ω
	Voltage Output	0...10 Vdc, minimum 1.000 Ω 0...5 Vdc, minimum 1.000 Ω
Accuracy	Humidity	$\pm$ 2 %rH or $\pm$ 3 %rH
	Temperature	0.5 °C
General Data	Sensing Element	Digital micro chip
	Media	Air or non-aggressive gasses
	Operating Temperature	-25 ...70 °C
	Storage Temperature	-30 ...85 °C
Ranges	Humidity	0...100 %rH
	Temperature	-40 ...100 °C max. define while ordering, can be updated over Modbus
Material	Body & Probe	ABS plastic
Connections	Cable	4x0.34 mm ² or 6x0.25 mm ²
Protection	enclosure	IP65 or NEMA 4
	probe	IP65 or NEMA 4
Standards	EMC Directive	EN 61326-1
	CE Conformity	CE1702
Dimensions	270 x 13 mm	
Weight Packed	133 gr	

Electrical Connections

Cable Color	SHP.351	SHP.311 SHP.355	SHP.311.M SHP.355.M	SHP.300.M
Brown	Power	Power	Power	Power
White	GND	GND	GND	GND
Green	HUM. out	HUM. out	HUM. out	Modbus A
Yellow	HUM. out	TEMP. out	TEMP. out	Modbus B
Pink	n/a	n/a	Modbus A	n/a
Gray	n/a	n/a	Modbus B	n/a

Modbus RS485 Protocol

Default Settings: Modbus ID:1, 9600, 8bit, None, 1. Register Table starts from Base 1. ID254 is a general call.

Use Function 3 for Reading and Function 6 for Writing Holding Registers. Whenever writing to any Modbus Parameter, a new parameter is activated instantly and you should have to configure the master device according to the new parameters. Unlisted registers are for system parameters. Please do not change unlisted registers.

Register	R/W	Range	Description
1	R & W	1...254	Modbus Address
2	R & W	0...1	Baudrate, 0: 9.600, 1: 19.200
3	R & W	0...3	Bit_Parity_Stop, 0: 8bit_None_1, 1: 8bit_None_2, 2: 8bit_Even_1, 3: 8bit_Odd_1
4	R		Humidity as %rH x10, divide by 10 for exact value
5	R		Temperature as C x10, divide by 10 for exact value
33	R		Temperature as F x10, divide by 10 for exact value
39	R & W	1...30	Response, 1: 1sec ... 30: 30 sec
40	R & W	1...4	Range for Temp. out, 1: 0...50C, 2: 0...100C, 3: -30...+70C, 4: -40...+60C

Drawings

