Features

• **Humidity and Temperature outputs in same unit**

• **Humidity output 0-10 Vdc or 4-20 mA**

• **Temperature output 0-10 Vdc or 4-20 mA**

• **As option passive direct temperature output PT1000, PT100, NTC, NI1000 etc**

• **With or without display**

• **Humidity accuracy ± 2% at 20 to 80% rH**

• **Temperature accuracy ± 0,3K (+5°C to 60°C) + 1.5% f.s.**

• **IP65 protection**

DIP switch on pcb to select:

Relative Humidity,

Absolute Humidity,

Dew Point or

Enthalpy

Ordering

Type no.	Humidity Output	Temperature Output	Display	Passive Temp. Output
OHT 010 010	0-10 Vdc	0-10 Vdc	No	No
OHT 010 010 D	0-10 Vdc	0-10 Vdc	Yes	No
OHT 420 420	4-20 mA	4-20 mA	No	No
OHT 420 420 D	4-20 mA	4-20 mA	Yes	No
OHT 010 010 XXX	0-10 Vdc	xxx (see below)	No	Yes
OHT 010 010 XXX D	0-10 Vdc	xxx (see below)	Yes	Yes
OHT 420 420 XXX	4-20 mA	xxx (see below)	No	Yes
OHT 420 420 XXX D	4-20 mA	xxx (see below)	Yes	Yes

XXX = Passive sensor
PT100, PT100 1/3 DIN,
PT1000, PT1000 1/3 DIN,
NI1000, NI1000/TK5000,
NTC 1.8K, NTC 5K, NTC 10K, NTC 20K, KTY81-210

Example:
Humidity output 0-10 Vdc,
Temperature Output 0-10 Vdc,
PT1000 temperature direct sensor output and
Display,
type is : **OHT 010 010 PT1000 D**

Technical data

Humidity output:	0-10 Vdc or 4-20 mA (3-wire)
Temperature output for active versions:	0-10 Vdc or 4-20 mA (3-wire)
Temperature output passive sensor:	PT1000, PT100, NTC, NI1000 etc.
Power supply with 0-10 Vdc output:	12-24 Vac or 16-36 Vdc
Power supply with 4-20 mA output:	16-36 Vdc
Sensor element (humidity):	Capacitive sensor
Sensor element (temperature):	Capacitive sensor
Sensor element with passive temperature output:	At customer's selection PT1000, PT100, NTC, NI1000 etc.
Humidity (relative) accuracy:	± 2% at 20 to 80% rH
Temperature operating:	-30°C to +70°C
Temperature accuracy:	± 0,3K (+5°C to 60°C) + 1.5% f.s
Load for analogue 0-10 Vdc output:	10 to100 kOhm
Load for analogue 4-20 mA output:	50 to 500 Ohm
Operating temperature:	-30°C to +50°C
Operating range:	0 to 98% rH
Power consumption:	24 to 44 mA
Sensor set up time:	60 min.
Response time for rH:	8 Secs. (63% at condensation)
Connection:	Screw clamps 1,5 mm²
Hosing:	Material ABS, Colour RAL 9010
Dimensions Housing (L x W x H):	75 x 69 x 44 mm
Protection class housing:	IP65
Probe lenght:	220 mm
Probe diameter	12 mm
Relative humidity measuring range:	see configuration page 4
Absolut humidity measuring range:	see configuration page 4
Dew point measuring range :	see configuration page 4
Enthalpy:	see configuration page 4

Description

The duct humidity and temperature sensor DHT measures the humidity and temperature of air.

The duct humidity and temperature sensor DHT converts the measurements humidity and temperature into standard signals of 0-10 Vdc or 4-20 mA, temperature passive sensor PT1000, PT100, NTC, NI1000 also available as direct temperature output.

The DHT duct humidity and temperature sensor can be ordered with or without display.

DIP switch on pcb to select relative humidity, absolute humidity or dew point measurement.

The built-in display on room humidity and temperature sensor DHT show actual humidity and actual temperature.

Probe lenght for duct humidity and temperature sensor DHT is 220 mm.

Mounting flange is included in the scope of delivery for DHT room humidity and temperature sensor.

E-paper Display

The display versions for DHT duct humidity and temperature sensor is an E-Paper display that reflect light just as regular paper, therefore the display is a passive (non-luminating) display.

Thin, light, flexible, good contrast, low energy consumption and no light reflections.

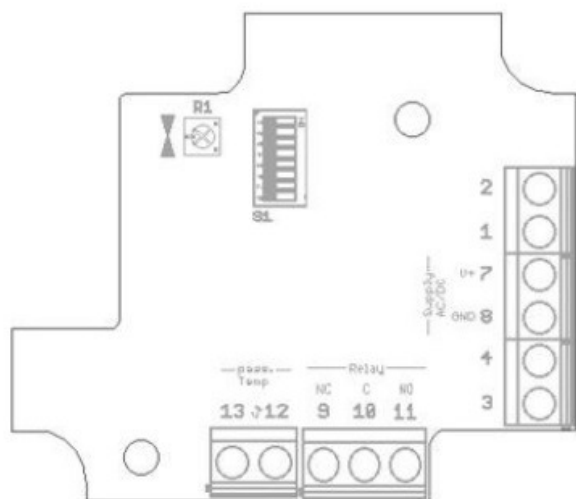Easy reading even with high insolation and ambient brightness.

E-Paper displays only need energy when the display contents change.

Optics and readability are significantly better than with monochrome LCD´s or other bi-stable systems.

High readability independent of the reader's perspective.

Electrical Connection

<table>
<tr><td rowspan="16" style="writing-mode:vertical">Electrical connenction</td></tr>
</table>

Pin	(0...10 V)	(4...20 mA)
1	temp	-
2	r.h.	-
3	poti act (opt)	temp
4	-	r.h.
5	poti pas. (opt)	
6	poti pas. (opt)	
7	V+	
8	GND	
9	relay NC (opt)	
10	relay C (opt)	
11	relay NO (opt)	
12	sensor °C pas. (opt)	
13	sensor °C pas. (opt)	
R1	temp. adjustment	

Configuration

Temperature-ranges

Range	1	2
0°C … +50°C	ON	ON
0°C … +100°C	OFF	ON
-20°C … +80°C	ON	OFF
-30°C … +70°C	OFF	OFF

Humidity-Ranges

Range	3	4	5	6	7	8
Relative humidity						
0 % … 100%	OFF	OFF	OFF	OFF	N/A	N/A
Absolute humidity						
0 g/m³ … 30g/m³	ON	OFF	OFF	OFF	N/A	N/A
0 g/m³ … 50g/m³	ON	ON	OFF	OFF	N/A	N/A
0 g/m³ … 80g/m³	ON	ON	ON	OFF	N/A	N/A
Mix ratio						
0 g/kg … 30g/kg	OFF	OFF	OFF	ON	N/A	N/A
0 g/kg … 50g/kg	OFF	OFF	ON	ON	N/A	N/A
0 g/kg … 80g/kg	OFF	ON	ON	ON	N/A	N/A
Dew point						
0°C … +50°C	OFF	ON	ON	OFF	N/A	N/A
-50°C … +100°C	ON	OFF	OFF	ON	N/A	N/A
-20°C … +80°C	OFF	ON	OFF	ON	N/A	N/A
Enthalpy						
0 kj/kg … 85kj/kg	ON	ON	ON	ON	N/A	N/A

Dimensions
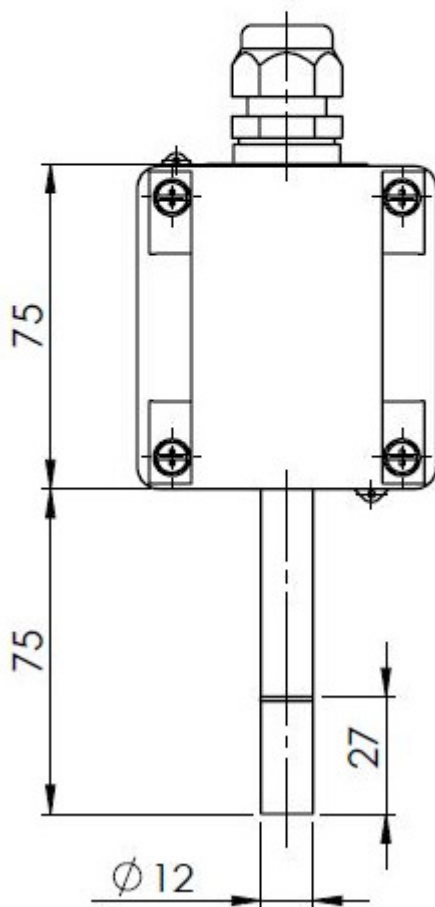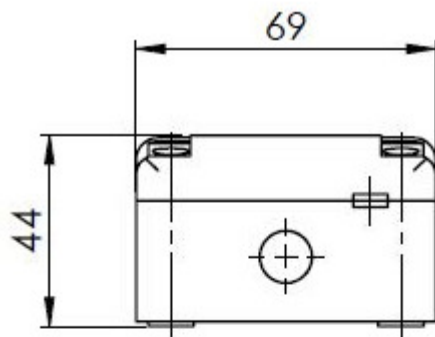
Important

In-phase connection is necessary for parallel operation with 24 VAC in order to avoid short circuits.

The devices are built for safety extra-low voltage operation. The technical data from the data sheet apply when connecting the devices.

These instruments must be installed by authorised specialists only! Devices shall only be used for their intended purpose. The customer has to ensure adherence to the building and safety regulations and has to avoid all dangers of any kind.

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1300 768 887

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