

OPERATION MANUAL

Room sensor humidity/temperature of the GLT and IND series

Description



Characteristic features

- Inconspicuous wall mounted housing
- standard signal 0...10 V or 4...20 mA
- Linearised and temperature compensated measurements
- High long-term stability, innovative technology
- Integrated sensors
- Optionally with display

Areas of application

- Indoor humidity and temperature measurement
- Building technology
- Industrial measurement and control technology
- Climatic record
- Home automation

Technical data

Humidity measure	
Measuring range	0...100 % RH, non-condensing
Accuracy	±2 % RH (from 0...90% RH)
Response time t_{90}	Approx. 25 sec.
Outputs	0...100 % RH
Temperature measure	
Measure range	-40...+125 °C
Accuracy	±0,3 °C (from 0...+90 °C)
Outputs	Selectable, DIP switch
General	
CE-conformance	2014/30/EU
EMV noise emission	EN 61000-6-3:2011
EMV noise immunity	EN 61000-6-1:2007
Housing material	ABS
Connection cable (-EXT)	Screw terminal 0,75 mm ²
Power supply	Typ - 10V: 15...24 V AC/DC
	Typ - 20mA: 16...24 V DC
Overvoltage protection	TVS diode
Dimensions (LxWxH)	71x71x27 mm

Application range

In the area of building instrumentation, there is a requirement for reasonably priced measuring probes which are suitable for continuous operation and protected against over voltage and transients. Further aspects are DC/AC supply, high long term stability as well as a good measuring accuracy in the application. The B+B probes of GLT-series are developed for these requirements and are specially suitable for application in this area due to the modern sensor technology and innovative construction.

A multifunctional digital sensor is used, which electively measures temperature or temperature and humidity. The measurement of relative humidity is done with a precise and long term stable capacitive polymer sensor element with industrial rating. The processing of measured value is linearised and temperature compensated. The voltage supply for the 0 ... 10 V model can be done alternatively with AC or DC supply. The 4... 20 mA model is meant for only DC supply. Because of the large connecting area inside the housing and the documented connecting clamps, a fast connection is guaranteed.

Attention: Do not use the humidity-/ temperature probes in an environment of aggressive or corrosive gases or steams.

Connection

For the connection, only shielded cable should be used. It should be noted, especially in EMI noisy environment. The shielding must be grounded. Before you connect, check if the supply voltage agrees with the data in the specified operating voltage.

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Power supply

The humidity and temperature measurement system may alternatively be powered with DC or AC voltage or with unfiltered rectified voltage. With AC power, the base of the transformer and to signal ground are made of the connection of additional sensors must necessarily in phase. When fed with unfiltered rectified voltage must be negative to the reference mass and Plus + to be switched DC / AC 24 V. Incorrect connection leads to malfunction or damage the electronics!

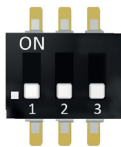
Adjustment

The sensors are long term stable and are maintenance free in a clean environment. Hence, a re-calibration is not required as per practice. For the three outputs, always buttons are provided on the motherboard which can be use for readjusted, if required. For this purpose, ADJ+ for the temperature output or ADJ- for the humidity output is pressed for four seconds. After that the LED on the board flashes and the chosen output can be readjusted with ADJ+ and ADJ-. For the humidity channel, use of our humidity reference cells is recommended as a calibration standard. The adjustment of temperature channel is done with a reference thermometer. The calibration requires a specific knowledge and is only recommended by experienced personnel.



Output scaling

The output scaling of the temperature can be set using the DIP switch on the circuit board. Depending on the position of the 3 switches, the output will be set to different temperature ranges. The sensor is factory-set to -20 ... +80 °C.



S1	S2	S3	scaling
Off	Off	Off	-20 ... +80 °C (state of delivery)
Off	Off	On	-30 ... +70 °C
Off	On	Off	-40 ... +60 °C
Off	On	On	-40 ... +125 °C
On	Off	Off	0 ... +50 °C
On	Off	On	0 ... +75 °C
On	On	Off	0 ... +100 °C
On	On	On	0 ... +125 °C

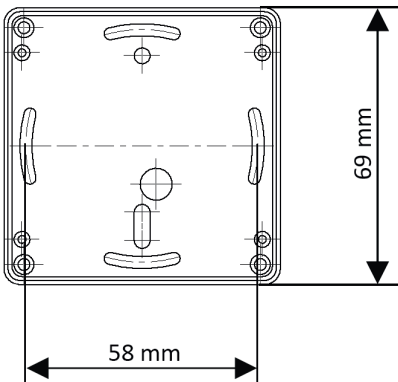
Measuring the signal voltage

To avoid measurement errors due to lead resistance and the supply current over the grounding line is at the 0...10 V
Provide a separate execution ground line for the signal voltage.

Calibration

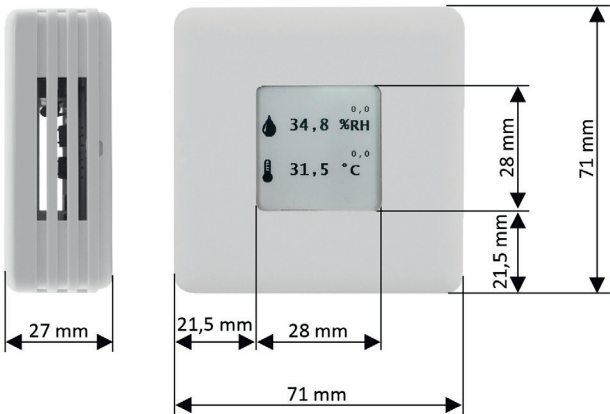
The measuring sensors are calibrated with reproducibility of PTB National standard. Calibration certificate as per ISO 9000 standard is also available with some extra charges.
For re-confirming measuring accuracy by the end user, reference cells are available for specific humidity values. For conformance to specifications, we recommend check-up at regular intervals.

Drilling template



To avoid soiling the appliance, please mount it so that the ventilation slots are on the side.

Dimensions



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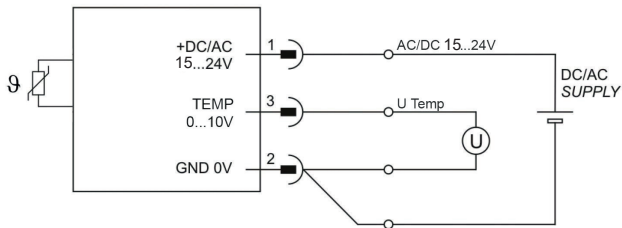
B+B

SENSORS

Room sensor humidity/temperature
of the GLT and IND series

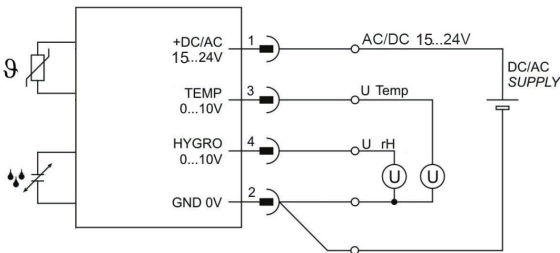
Plug configuration

Temperature measurement 0 ... 10 V



Terminal	Function	Description
1	+DC/AC 15 ... 24 V	Operating voltage
2	GND 0 V	Reference potential
3	TEMP 0 ... 10 V	Temperature-Signal 0 ... 10 V

Humidity measurement 0 ... 10 V and Temperature measurement
0 ... 10 V



Terminal	Function	Description
1	+DC/AC 15 ... 24 V	Operating voltage
2	GND 0 V	Reference potential
3	TEMP 0 ... 10 V	Temperature-Signal 0 ... 10 V
4	HYGRO 0 ... 10 V	Humidity-Signal 0 ... 10 V



The measurement of the output signal should be done with separate signal ground, in order to avoid measuring error due to voltage drop at the supply ground.



Temperature and humidity is always with reference to GND, operating voltage +DC/AC 15 ... 24 V is common for both transmitters.
The measurement of the output signal should be done with separate signal ground, in order to avoid measuring error due to voltage drop at the supply ground.

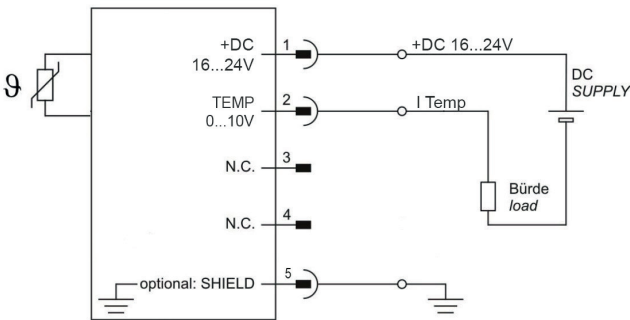
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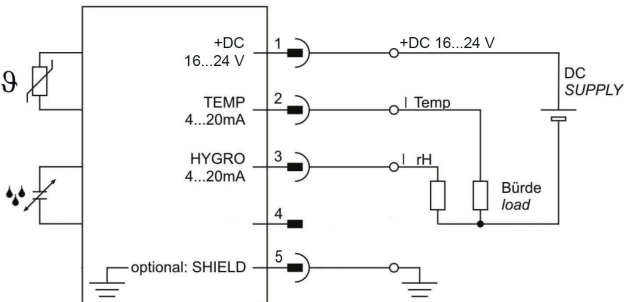
SENSORS

Room sensor humidity/temperature of the GLT and IND series

Temperature measurement 4 ... 20 mA



Humidity measurement 4 ... 20 mA and Temperature measurement 4 ... 20 mA



Terminal	Function	Description
1	+DC 16 ... 24 V	Operating voltage
2	TEMP 4 ... 20 mA	Temperature-Signal 4 ... 20 mA
3	---	Unoccupied
4	---	Unoccupied
5	SHIELD	Shielding

Terminal	Function	Description
1	+DC 16 ... 24 V	Operating voltage
2	TEMP 4 ... 20 mA	Temperature-Signal 4 ... 20 mA
3	HYGRO 4 ... 20 mA	Humidity-Signal 4 ... 20 mA
4	---	Unoccupied
5	SHIELD	Shielding



The shielding (SHIELD) is to be optionally covered. Connection through shielded lines is recommended.

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Operating voltage +DC 16 ... 24 V is common for both the instrument transformers.

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Product key

Product key for humidity- temperature probe

example: 0551 3 2 0 1

0551

Sensor		Display	
1	Temperature digital (STS)	0	Without display
3	Humidity- Temperature digital (SHT)	1	With display
Output signal calibration		Design	
1	0...10 V Standard	0	B+B Plastic housing room sensor
2	4...20 mA Standard	1	B+B Plastic housing outdoor sensor
3	0...10 V Measuring range Customized	2	B+B Plastic housing duct sensor
4	4...20 mA Measuring range Customized	3	B+B Plastic housing pendulum sensor
		4	B+B Plastic housing compact sensor

Guarantee

On our high quality measuring probes, you get a guarantee of 24 months. Mechanically damaged sensors or tampering into electronics makes the sensors devoid of guarantee claims. Calibration services are not covered in the guarantee.

Attention

Please avoid extreme mechanical and inappropriate exposure. The device/product is not suitable for potential explosive areas and medical-technical applications.

