

# OPERATION MANUAL



## Humidity probe for universal sensor switching module with two point regulator

### Description



### Characteristic features

- Humidity probe for relative air humidity
- Ideal for indoor applications in building instrumentation
- With hydrophobic protection filter
- Compact size

### Areas of application

- Building instrumentation
- Monitoring of store rooms
- Evaluation of drying material

### Technical data

Humidity probe	
Sensor element	Electrolytic humidity sensor on ceramic substrate
Humidity measuring range	20...95% RH (0...+60 °C)
Application temperature	10...40 °C
Accuracy	± 5 % RH
General	
Probe dimensions	Approx. 12 x 80 mm
Probe material	PVC/Polyethylene
Protection filter material	Polyethylene, hydrophobic
Cable material	PVC
Connection	RJ12-plug, 6-pole
Cable gland	M16x1,5
Cable length	1000 mm
Guarantee	24 months
Scope of supply	Measuring probe with documentation
CE-conformance	2014/30/EU
EMV-noise emission	EN 61000-6-3:2011
EMV-noise withstanding	EN 61000-6-1:2007
Article-No.:	SENSW-RFF

### Application areas

This probe is suitable for monitoring or regulation of relative humidity of atmosphere, for example in green houses, winter gardens, store rooms, terraces or in EDV-rooms. The measuring range of the used probe element is from 20..95% RH. The switching point can be adjusted with a potentiometer in the evaluation electronics (sensor switching module). The sensor element is protected against dust and direct water contact with a hydrophobic sinter cap of polyethylene. The electronics, integrated in the probe housing, linearises the measuring element and improves temperature behaviour.

The measuring probe is intended for simple applications e.g. in the field of building instrumentation. Hence, the measuring probe is not temperature compensated.

The humidity probe is suitable for connecting to the universal sensor switching modules SENSW-GEH230V, SENSW-MOD12V and SENSW-MOD24V, which perform the evaluation and provide it as a switching output through a potential free relay.

### Attention

Please avoid extreme mechanical and inappropriate exposure.

The device/product is not suitable for potential explosive areas and medical-technical applications.



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### Application instructions

The measuring element must be installed at a place which is representative of the room climate. Air flow, radiation or other heat sources deteriorate the measuring accuracy.

The used sensor element is suitable for humidity values up to 90 % RH and is not allowed in dew conditions.

Pollutants in the atmosphere, organic solvents or aggressive gases like ammonia permanently damage the measuring element. For special applications, the suitability of the probe should be checked before installation.

### RJ12-plug connector

The humidity sensor is connected between Pin 2 and 4. Pin 1, 3, 5 and 6 are not occupied in case of measuring probe.

For Universal sensor-switching module, Pin 4 is connected to AC Signal (output) and Pin 2 is the input to measuring amplifiers.



View of contacts at the plug

Pin	Function	Description
1,3,5,6		Not occupied
2	OUT	AC output
4	IN	Signal (input)

### Connection for Universal sensor switching module (SENSW-GEH230V, SENSW-MOD12V, SENSW-MOD24V)

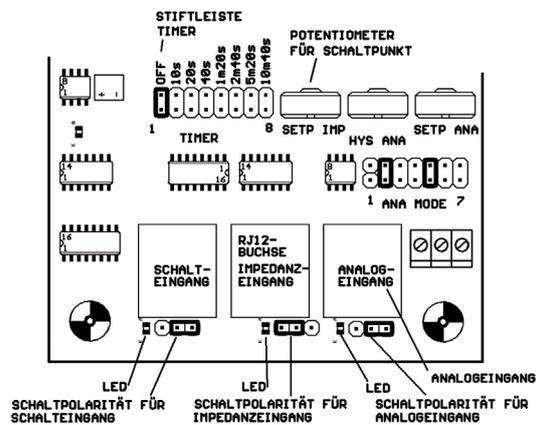
 The applicable safety regulations should be followed! Connection and mounting operation should be carried out by only trained personnel after switching off the voltage supply.

The RJ12-plug connector is meant for direct connection to the sensor-switching module. The plug connector is brought out through the hole in the housing and properly secured through cable gland. The plug connector of the probe is inserted at the middle RJ12 socket „IMPEDANCE INPUT“ (see sketch).

### Configuration of jumpers

 Since the three inputs of the module are „OR“ connected, the jumper connections „Switching polarity“ of two other unused inputs must be kept in unwired inactive position (see sketch). The associated LEDs below the input socket may not glow. If this is not ensured, the relay will be always in ON condition!

The other two right potentiometers and jumpers of the pin strip „ANA-MODE“ will not have any influence on the functioning of humidity probe. The switching behaviour of the device is decided by the jumper connections below the input socket: In the right position, as shown in sketch, the relay switches ON if the humidity value is below the adjusted limiting value. In the left position, the switching behaviour is reversed, i.e. the relay switches ON if the humidity value is above the adjusted limiting value. The switching behaviour of the device can be observed at the light emitting diode (LED). In active condition (= relay closed) the LED glows.



### Adjustment of switching point

The adjustment of switching point for impedance input is done by a trim potentiometer „SETP IMP“. Close to the left end position (i.e. anticlockwise), the set value is approx. 90 % RH. In right end position, the set value is approx. 35 % RH.

In the simplest case, the calibration is done at a specific switching point by means of a comparison instrument. As soon as the desired, measured switching point is available in the atmosphere, the potentiometer is adjusted accordingly.

Humidity reference cells are also available as accessories, which can provide a specific humidity reference value. The reference cells are available in 9 different values between 11 % and 97 % RH.

For checking the high switching point, the probe is covered with palm. Due to perspiration, the humidity increases and the electronics must switch corresponding to „humidity“ setting.

Our publication „Humidity measuring systems“ is available on request.

### Adjustment of time delay

Finally, adjustment of time delay is carried out by placing the jumper connection of the pin strip „TIMER“ at the desired position. With this, the configuration is complete and the device is ready for use.

For further information, visit our website:  
www.bb-sensors.com

