OPERATION MANUAL

Dew point controller

Description

Characteristic features

- Relayoutput up to 24 V AC
- Optical dew formation display by LED
- Operating temperature from 0 to 60 °C
- Operating voltage 24 V AC/DC ± 10%
- Defined behaviour during dew formation or condensation
- Damp proof sensor with dust filter
- Over voltage protection
- Electronics enclosure IP65
- Minimum assembly expenses easy mounting

Technical data

Sensor details	
Switch point	90 % RH, ±4 % factory adjusted
Operating range	0 % RH to 100 % RH
Switching hysteresis	4 % RH approx.
Operating temperature	0...+60 °C
Dew formation	Allowed
Condensation	Allowed for short time
Measuring medium	Atmospheric air without additives
Response time	Approx. 30 sec. for a rise of 75 % RH on dew formation
Dust guard filter	Polyethylene sinter material
Power supply	
Operating voltage	24 V AC ± 10 %, 50 Hz or 24 V DC ± 10 %
Operating current	Typ. 5 mA, max. 7 mA
Function control	Green power LED indication during operation
Output stage	
Switch characteristics	Potential free switching output (relay) 24 V AC Normally open / closed selectable
Actuator	Switch relay
Contact voltage	24 V AC
Protection	Normally open via varistor VZ05 / 390 V
Contact current	Max. 15 mA AC/DC
Contact resistance	Closed: 100 mΩ open: >1 M Ω
Switching indication	LED lights up red (condensation) LED does not light up (dry) LED lights up green (power)

Other data	
Dimensions L x B x H (mm)	Approx. 65 mm x 60 mm x 42 mm (without mounting and cable)
Electronics enclosure	IP 65
CE-conformance	2014/30/EU
EMV-Noise emission	EN 61000 -6 -3:2011
EMV-Noise immunity	EN 61000 -6 -1:2007
Mounting position	User defined
Scope of supply	Switch electronics with attached sensor and casing with glad PG11
Guarantee	24 Month

Equipment	
Power supply 24 V DC	NG-24V-300MA
Cable with free ends, 4 wires, 5 m	0230 0008-01 SHOP 0230 0008-5M
Thermal compounds, 20 g	0554 0034

B+B Thermo-Technik GmbH | Heinrich-Hertz-Straße 4 | D-78166 Donaueschingen
Fon +49 771 83160 | Fax +49 771 8316-50 | info@bb-sensors.com | bb-sensors.com

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Areas of application

Apart from cool ceilings, following are the typical areas of application for the regulating device:

- In the glass panels of indoor swimming halls or display windows for keeping it frost free and ice free with optimum energy input.
- In water treatment plants or industrial installations for detecting „sweating“ of cold pipeline network.
- To prevent condensate formation in the outside walls or steel doors of halls and stockrooms and to protect the brick work.
- During any repair of cement flooring or flat roofs, it is used at the end of the drying process to detect any type of building leakage.
- For detecting condensate formation in the sensitive electronic components of switchgear panels or machines.
- For moisture and leakage monitors: The potential free static switch contact is compatible with all common commercial alarm equipment and signalling systems.

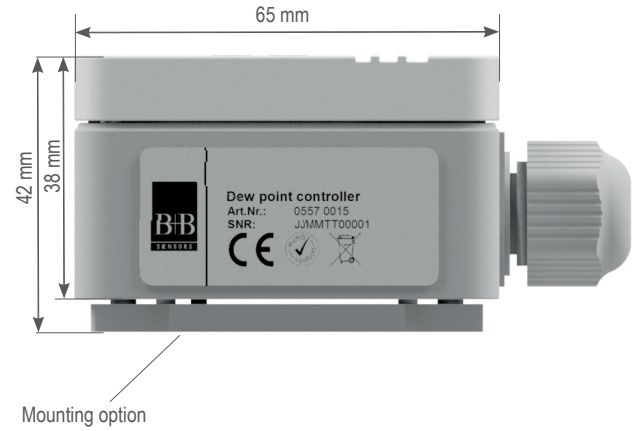
Functional description

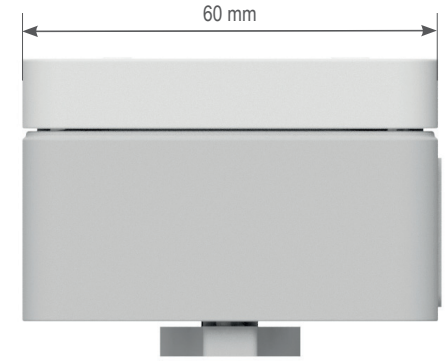
The dew point controller is an electronic hygrostat which is meant to sense dew formation or beginning of water condensation on objects. As soon as the measured value of surface humidity exceeds a certain limit (approx. 94 % RH), the relay switches. For example, this signal can be used for switching on a heater. Condensation is then indicated optically by the red LED with the drop symbol (circuit board: DEW).

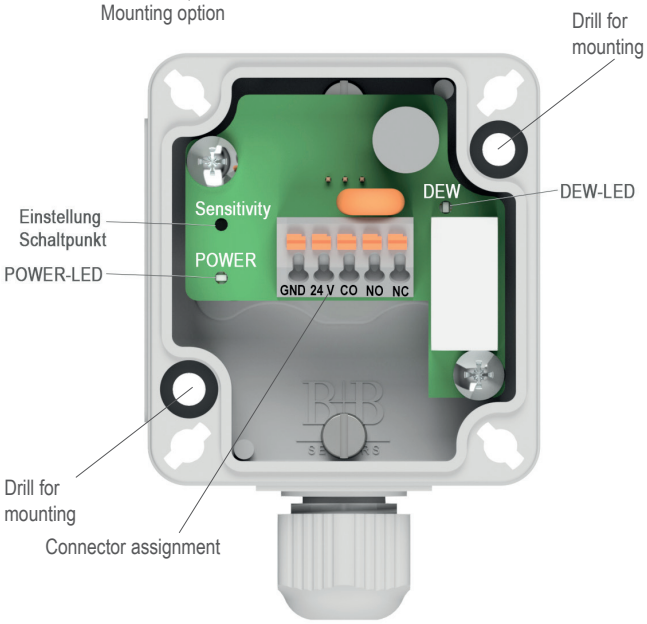
The switching point can be set between 75 % RH and 100 % RH using the potentiometer labeled with sensitivity. The green LED labeled POWER indicates that the sensor is ready for operation.

With the new measurement philosophy and application of a special sensor with logarithmic characteristics, it is now possible to regulate very close to the dew start point. With the help of this technology, now the maximum cooling performance of the ceilings can be achieved, without the risk of condensate formation.
The circuit is protected against overvoltage. A sinter filter over the sensor element protects it from accumulated dust and ensures many years of operation without cleaning or maintenance

Dimensional drawing







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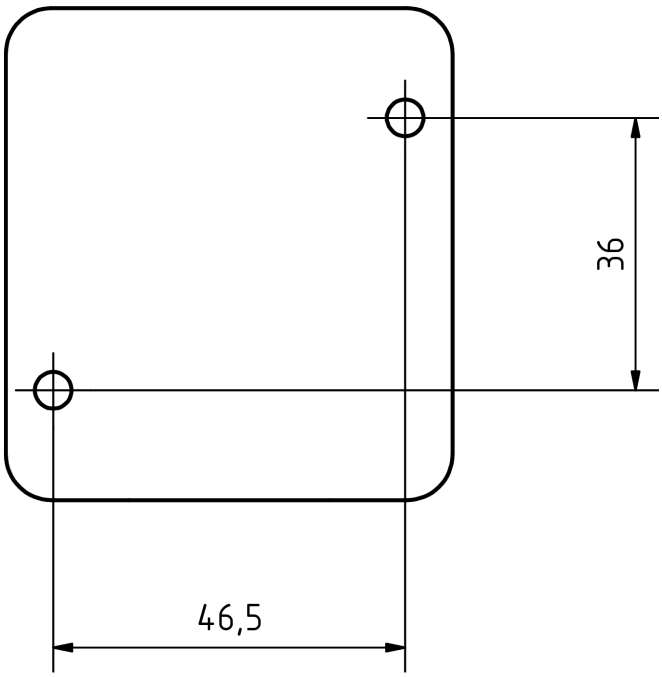
Drilling template



Termination of various models

Article	Article number
Dew point controller for surface	0557 0015
Dew point controller for tube Ø 16 - 19 mm	0557 0015-02
Dew point controller for tube Ø 20 - 22 mm	0557 0015-03
Dew point controller for tube Ø 25 - 27 mm	0557 0015-04
Dew point controller for tube Ø 28 - 35 mm	0557 0015-05
Dew point controller for tube Ø 50 - 150 mm	0557 0015-06

Clamp or larger pipe diameters on request!

Connector configuration

Core	Function
GND	GND
12/24 V AC/DC	24 V AC/DC ± 10%
REL CO	Switch contact COM
REL NO	Switch contact open
REL NC	Switch contact closed

Electrical connection

The electrical connection should be carried out by only expert personnel who are familiar with relevant safety regulations.
A 2-wire flexible cable is required to supply the sensor. For the generation of the 24 V AC / DC it is recommended to use a galvanically isolated power supply.

Assembly

The version with attached pipe clips (Art.no 0557 0015-XX) can be attached directly to pipes with minimal assembly effort. To detect the formation of condensate, the sensor must be mounted at the coldest point in the medium. A representative indoor climate must prevail at the measuring location. Air currents or heat sources can interfere with the function.

While assembling, it should be ensured that the sensor part is in direct thermal contact with the tube or the object. Perfect functioning is guaranteed only if there is no air-gap between the tube and aluminum profile of the sensor. Therefore, a sensor is suitable only for a specific cross section of the tube. Improvised assembly leads to inevitable malfunctioning!

The mechanical fitment is carried out through a cable strap provided with the device or by mounting with screws. To improve thermal conduction, some thermal compound should be applied in the sensor area between the aluminum profile and the tube. Only silicon free Thermal compounds should be used and only a thin coat should be applied!

It is recommended to check the functioning of condensation monitor after assembly at site in order to bring out any possible assembly errors and prevent subsequent damages.
To check this, the cool ceilings must be undercooled below the dew point level for a short period. During water condensate formation, the dew formation monitor must respond and the static power circuit should get tripped.

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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