

### Features

- Prevents “indoor rain“ condensation
- Enables optimal efficiency for chilled beam applications
- Early detection of condensation danger
- Switching output
- High accuracy and long term stability
- Compact design
- Fast response time
- Easy mounting and connecting
- LED status indication

### Application

- Chilled ceilings
- Heating-, ventilation- and air conditioning systems
- Switching and electronics cabinets
- In swimming pools or on shop windows around the glazing fogging with optimized use of energy or to keep free of ice.
- In water treatment plants or industrial plants to “sweating” of cold pipeline networks to detect.
- In hangars and storage rooms to prevent condensation on cold outside walls or steel doors and to protect the masonry.
- In control cabinets or machines in order to detect condensation on sensitive electronic components.

### Ordering

Type no.	Description
WCS 24S	Condensation sensor
WCS 24C	Condensation sensor with external cable

## Technical data

**Switching point:**

Adjustable between 80 and 100%

**Hysteresis:**

approx 5% rH

**Range:**

0 to 100% rH

**Operating temperature:**

-30° to + 70°C

**Condensation:**

allowed

**Condensate:**

briefly allowed

**Measuring medium:**

ambient air without admixtures

**Response time:**

120 sec with a jump of 75% rH on condensation

**Operating Voltage:**

16-24 Vdc or 24 Vac

**Operating current (at 24 Vdc):**

relay energized 30 mA max.

**Relay:**

15 mA max dropped.

**Functional check:**

green LED for operation

**LED:**

red when relay output stage

**Switching characteristics:**

Potential free relay with changeover contact, in normal operation (condensate free) dropped. If there is no operating voltage, the relay is de-energized, In case of condensation, it attracts

**Contact voltage:**

max. 60 Vss

**Switching current:**

Max 1 A ac / dc.

**Switching display:**

LED green (supply ON) Red LED (relay energized)

**Switching capacity relay:**

60V / 1A

## Description

The condensation sensor WCS 24 is an electronic sensor which is intended to detect condensation or incipient condensation on chilled ceilings.

And the measurement of surface moisture exceeds a certain limit (about 94% RH), the relay contact (changeover) drops (safety function).

The signal can for example be used to switch off the refrigeration cycle.

The **new** measuring principle and the use of a special sensor with linear characteristic, it is possible to control very close to the dew formation threshold.

Thus, the maximum cooling capacity of the panel is used without the risk of condensation.

Reliable operation was the most important criterion in product development.

The circuit is protected against overvoltage, reverse polarity and incorrect connection.

In addition to the humidity sensor element, that responds to critical humidity values below the condensation threshold, a safety circuit is present, which recognizes already occurred dew and the closed circuit interrupts independently.

The electronics are mounted in a housing and has an attached prism assembly for installation on pipelines.

The device can be mounted with minimal installation effort directly to the inlet for the cooling panels.

For this, the sensor is placed with the aluminum profile on the tube and fixed with the accompanying assembly lines.

It is recommended to check the function of the condensation monitor after field installation to detect any assembly errors and prevent consequential damage.

For this, the object to be protected must be super cooled to below the dew formation threshold briefly.

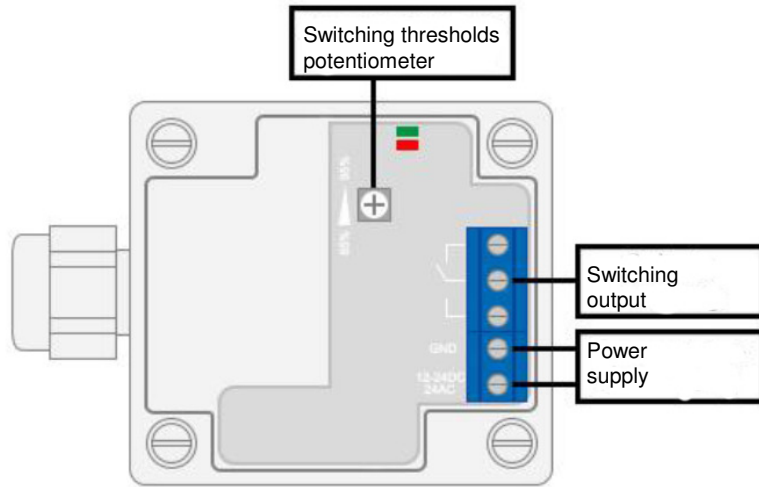
At the onset of a dew condensation needs to address and attract the relay.

The mechanical mounting is done with the supplied temperature-resistant cable ties or screw mounts.

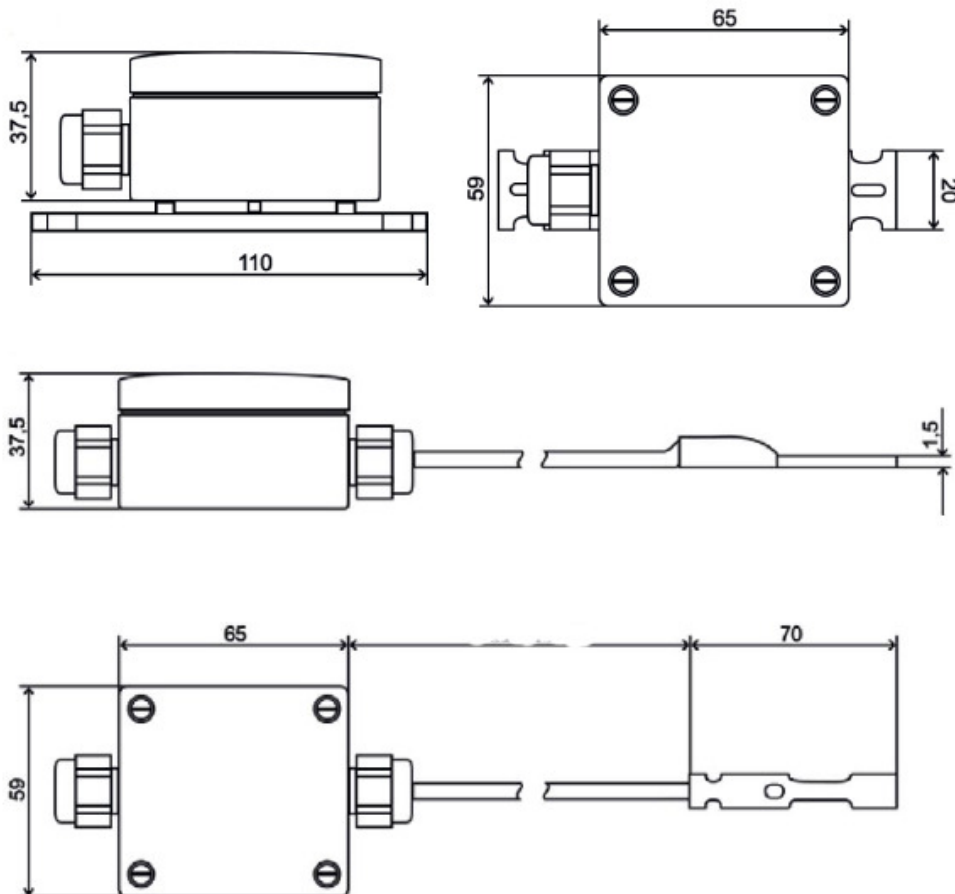
To increase the heat conduction thermal grease between the aluminum profile and pipe surface should be applied in the area of the sensor element.

Use only silicone-free thermal compound and only as much as for the temperature transfer necessary!

**Wiring connection**



**Dimensions**



## Installation instructions

The condensation sensor WCS 24 has a landing prism and can be fixed with minimal installation effort directly on pipes.

For this, the sensor is placed with the aluminum profile on the tube and fixed with the two supplied mounting straps.

The electrical connection is made via screw terminals with max. 1.5 mm<sup>2</sup>.

When used as condensation monitor the probe must be installed at the coldest point.

At the measuring point, a representative indoor climate must exist.

Air flows or heat sources can interfere with the function.

When assembling, make sure that the sensor-part direct thermal contact with the tube or the object.

Proper functioning is ensured only when remains no air gap between the mounting surface and the aluminum profile of the probe.

The sensor is therefore only suitable for the intended pipe cross section or for flat surfaces.

Improvised assembly leads inevitably to malfunctions!

All connections to BEMS controllers, data recorders etc. should be made using screened cable.

Normally, the screen should be earthed at one end only (usually the controller end) to avoid earth hum loops which can create noise.

Low voltage signal and supply cables should be routed separately from high voltage or mains cabling.

Separate conduit or cable tray should be used.

Where possible, the controller's earth should be connected to a FUNCTIONAL EARTH, rather than the mains safety earth.

This will provide better immunity to high frequency noise.

Most modern buildings have a separate earth for this purpose

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