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Product info sheet
Condensation detector to prevent the building of condensed water
FAS 250VAC

Type Survey

Type	Order no.	Contact type
FAS 250V AC	42081012	changeover contact with silver contacts
FAS 250V AC	4208A012	changeover contact with gold contacts

Technical Data

measuring element .....
.....Polyga®-measuring element, water resistent
influence of temperature
ref. to 23 °C ..... ≤ +/- 0.2 % r.h. / K
typ. response time t_{50} at v=2m/s 1.2min
range of operation ..... 50...90%rh
lifetime ..... > 6.000 breaking cycles

microswitch with silver contacts
max. switching capacity
alternating voltage
ohmic load ..... 5A 250V AC
inductive load (power factor > 0,8) ..... 1A 250V AC
direct current (e.g.)
ohmic load ..... 3A 24V DC
inductive load (power factor > 0,8) ..... 2A 24V DC
minimum switching current ..... 100mA [1)]

optional microswitch with gold contact
max. switching capacity ..... 100mA 250V AC
minimum switching current ..... 1mA [1)]

[1)] not relevant when switching high resistance loads (>10kOhm) e.g. logic levels

Please consider the Notes on voltage

allowable ambient temperature ..... 0...60°C
maximum admissible ambient humidity 95%rh
air-speed ..... 0.2...8 m/s
installation altitude ..... ≤ 4.000m above sea level
mounting position ..... as you like
contacting ..... connecting terminals

purpose of sensing control ..... humidity sensing control
nominal cross-sectional area of the conductors.....
..... up to 2.5 mm^2 for fixed wiring conductors (single wire)
..... up to 1.5 mm^2 for flexible cord conductors (fine-stranded)
type of protective earth conductor ..... bow terminal
action 1.C.L
degree of pollution 3
rated impulse voltage 4kV
ball indentation test for temperature ..... 92°C
protective system IP20
dimensions 85x55x33mm
weight ..... approx. 92 g

Description of the detector

The PCB module with Polyga® sensing element is arranged on a base plate so the sensing element is located in close proximity to the base plate. Given the protection of the enclosure, moisture close to the dew point can form on the inside. The base plate is in contact with the cooling pipe and transmits the cooling energy to the sensing element. The switching point can be adjusted on the inside. It is necessary to adjust the switching point to suit the ambient conditions. The microswitch switches a changeover contact at zero volt. The FAS does not require a supply voltage or auxiliary energy.

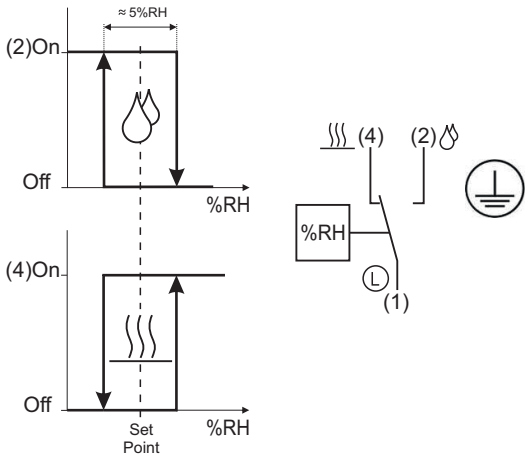
Adjusting the switching point

It is important to set the correct switching point for the system. A switching point which is set too high can cause condensation because the conditions of the measuring point are not always constant. The measuring point of the humidity controller should be selected to ensure that no condensation can form on or in the appliance.
Tests have shown that good results are achieved at a switching point of 80%rh. The switching point can be set to suit the system. To do this, open the cover and adjust the switching point.

applied directives / standards
low-voltage directive 2014/35/EU
EMC directive 2014/30/EU
DIN EN 60730-1:2012-10
DIN EN 60730-2-13:2008-09

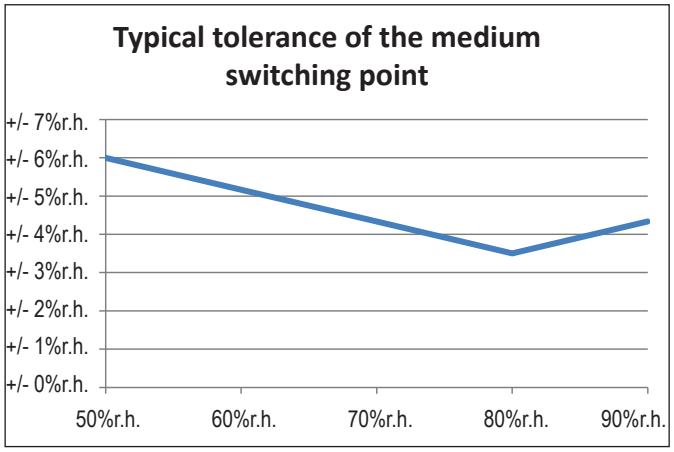
Notes on voltage
The measurement location of the humidity controller should be selected such that there is no build-up of condensate on or in the device. There is a risk of voltage arcing in the event of water condensation on the microswitch or connecting terminals which might destroy the controller. In the event of water condensation. Particularly operating with a voltage higher than 48V may endanger people. The humidity controller should be used up to a maximum of 95%rh.

Connection diagram



The electrical connection must only be carried out by properly qualified personnel.
It is essential to ensure that the device is earthed via an accordingly marked earthing screw.

If the rel. humidity (actual value) falls below the setpoint value, contact 1/4 opens and contact 1/2 closes.



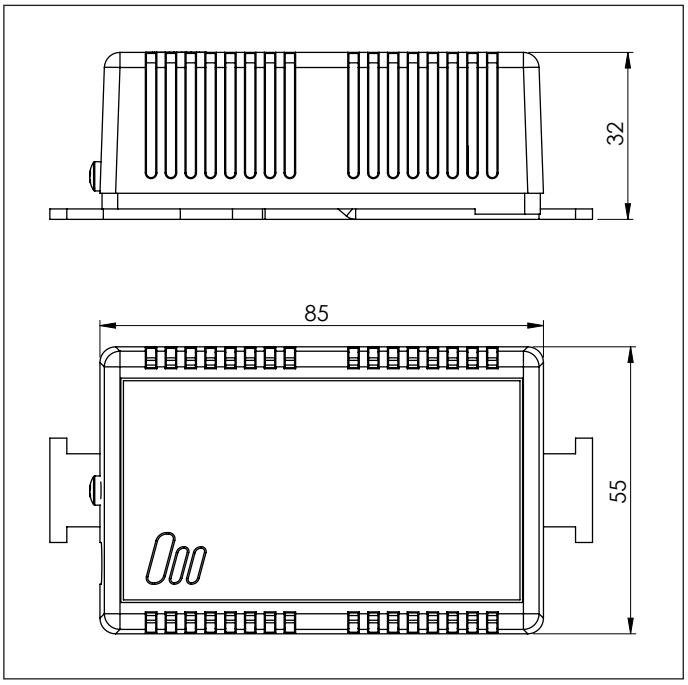
1-point-adjustment at 80 % r.h. / 23 °C
Long-term drift: ≤ ±1%r.h. p.a.

Typical switching differential with typical tolerance

Setpoint value humidity	Switching differential	Tolerance
50 % r.h.	5 % r.h.	+/- 1,5 % r.h.
60 % r.h.	4 % r.h.	+/- 1,5 % r.h.
70 % r.h.	4 % r.h.	+/- 1,5 % r.h.
80 % r.h.	3 % r.h.	+/- 1 % r.h.
90 % r.h.	3 % r.h.	+/- 1 % r.h.

Contact with the measuring mechanics of the device nullifies the warranty.

Dimensions diagram



Installation information

If condensation formation is to be monitored in a room, the dampest position must first be identified. The coldest position will not necessarily be the dampest (see hx diagram). It should also be taken into account that changes in the room could result in another place becoming the dampest. The FAS 250VAC condensation detector must be installed so that good thermal contact with the chosen position is achieved. Care should also be taken to ensure that any condensation which may form is not able to get into the enclosure. The detector is secured using the ties provided which are suitable for pipes up to 50 mm Ø. The enclosure must not be exposed to any external heat source, as this could result in incorrect measurements.
An installation location should be selected where a representative humidity measurement is guaranteed. This means the ambient air must be able to flow freely to the sensing element inside the enclosure via the vents. The air flow around the FAS 250VAC should be at least 0.2 m/second.

Maintenance

The measuring element is maintenance-free in pure ambient air. Aggressive media containing solvent can cause measuring errors depending on the type and concentration. Deposits which eventually form a water-repellent film over the measuring element are harmful (such as resin aerosols, lacquer aerosols, smoke deposits etc.).

The warranty does not apply to defects or damage resulting from inappropriate use or if internal components have been tampered with.