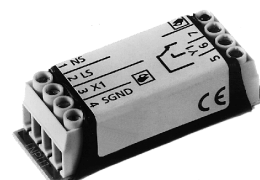


Dewpoint sensor Signal converter

FA-H3 FU-IH3



FA-H3



FU-IH3

The FA-H3 dewpoint sensor is used to detect condensation on chilled ceilings.

- For direct connection to the PRONTO PRT-H3 individual room controller
- For connection to other controllers with the FU-IH3 signal converter

Use

The FA-H3 dewpoint sensor is used to prevent condensation forming on the surfaces of chilled ceiling installations. At the onset of condensation, the sensor operates as a high-limit device providing an override signal via the controller to switch off the chilled water supply.

Important : Dewpoint control of the central plant is recommended in addition to the local control provided by the FA-H3 sensor.

For optimum performance of the chilled ceiling system, dewpoint control of the central plant is recommended in addition to local control. In this way, the flow temperature for the entire building or for a section of the building will be controlled in accordance with the dewpoint temperature in a reference room, or in the return or outside air.

Functions

The FA-H3 dewpoint sensor incorporates a sensor element whose electrical resistance is affected by humidity. This element changes markedly when exposed to condensation. The PRT-H3 controller evaluates the change in resistance directly.

If other controllers are used, the FU-IH3 signal converter is necessary.

Ordering

The FA-H3 dewpoint sensor and the FU-IH3 signal converter, if required, must be ordered separately. A cable tie is supplied with the sensor. When placing an order, please specify the quantity, product description and type code.

Example:

1 dewpoint sensor FA-H3 and 1 signal converter FU-IH3

Equipment combinations

The FU-IH3 signal converter should be used for PRONTO IRC controller types PRRA, PRRB, PRU..., PRFB-A or PRFB-V, and PRT/F or for other controllers.

The FU-IH3 signal converter converts the change in resistance into an ON/OFF signal before transmitting it to the controller.

Mechanical design

The FA-H3 dewpoint sensor comprises the following parts:

- Plastic housing with built-in sensor element and connecting cable
- Cable tie for fixing the sensor to a pipe.

Fixing lugs allowing screw-mounting on chilled-ceiling surfaces.

Accessories

FU-IH3 Signal converter

If the FA-H3 dewpoint sensor is used with PRONTO IRC controller types PRRA, PRRB, PRU..., PRFB-A or PRFB-V, and PRT/F, or with other controllers, the FU-IH3 signal converter should be used.

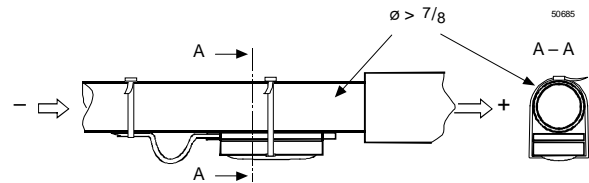
Mounting notes

Mounting instructions (Ref. 35672) are enclosed with the sensor.

The dewpoint sensor should be fitted to the chilled ceiling at the coldest point, i.e. directly at the water inlet. Care should be taken to ensure good thermal contact between the metal surface on the base of the sensor and the chilled ceiling or the inlet pipe.

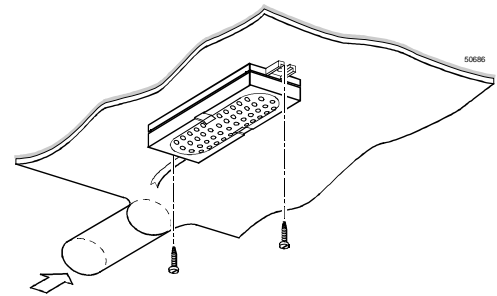
Mounting on the inlet pipe

The sensor should be firmly secured to the pipe from below with the cable tie supplied.



Mounting on the underside of the chilled ceiling

Fixing lugs are provided, allowing the sensor to be fitted to the underside of the chilled ceiling using 2 x ϕ 3 mm screws.



Maintenance notes

The dewpoint sensor requires no regular maintenance. The performance of the sensor should be checked at least once per year in "normal" air conditions, and more frequently if the air is polluted.

Performance test

When checking performance, it is essential to ensure that no water enters the sensor housing. To check an installed dewpoint sensor, a sponge or cloth moistened with hot water can be held against the front (the perforated cover) of the sensor. The temperature of the sponge or cloth must be at least 20 °C higher than that of the sensor. With this test, the sensor is shown to be operating correctly if it responds within 3 minutes.

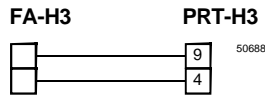
Should this test method be used to check unmounted sensors, ensure that the back of the sensor remains at room temperature and is not warmed during the test.

Technical data

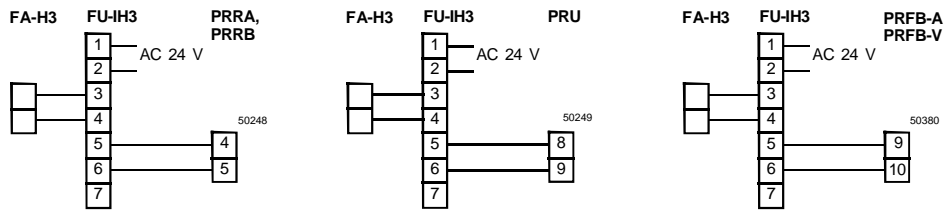
FA-H3

Measuring point	100 %rh
Measuring element	Condensation-dependent resistance
Resistance:	At < 90 %rh < 30 k ohms With condensation > 300 k ohms
Measured medium	Indoor air
Response time	<10 mins after start of condensation
Connection cable	Multiple-stranded, white, 1.5 m, 2 x 0.25 mm ²
Protection standard	IP32 to IEC529
Operating conditions	
Dewpoint temperature	>10 °C
Ambient temperature	10 ... 40 °C
Weight (including packaging)	0.06 kg
Housing colour	NCS 0003-R20B
Maintenance	None required
Performance test	At least every 12 months, but more frequently in polluted environments (see page 2)
Service life	Approx. 10 years
Conformity	Meets the requirements for CE marking

Connection diagrams

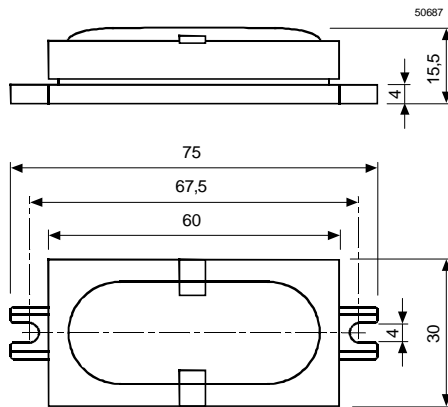


FA-H3 with FU-IH3



Dimensions FA-H3

All dimensions in mm



The FU-IH3 Signal converter

The FU-IH3 signal converter is typically used for the FA-H3 dewpoint sensor in combination with PRONTO IRC controller types PRRA, PRRB, PRU..., PRFB-A, PRFB-V or PRT/F.

The FU-IH3 signal converter is connected to the energy hold-off input of controller types PRRA, PRRB, PRU..., PRFB-A, PRFB-V or PRT/F, for example. If condensation is detected by the FA-H3 dewpoint sensor, an LED (adjacent to terminal 7) on the FU-IH3 lights up and the built-in relay switches the controller to energy hold-off mode.

The plastic housing accommodates the printed circuit board with the electronic components, the connection terminals and an LED to indicate condensation.

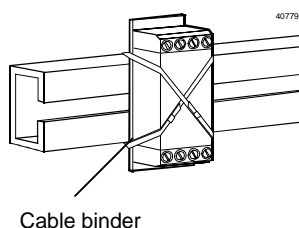
Mounting notes

The FU-IH3 can be mounted in a surface or flush-mounting box, or located in the control panel. Care should be taken to select a dry environment. The compact design of the FU-IH3 signal converter makes it suitable for mounting in almost any location.

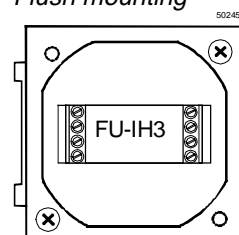
For example:

- in surface or flush mounting boxes
- inside the control panel on DIN rails or in wiring ducts
- in sill-line trunking
- in ceiling voids.

Mounting on DIN rails



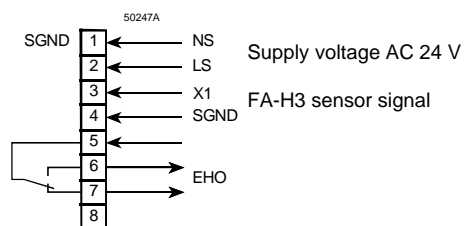
Flush mounting



Technical data FU-IH3

Supply voltage (input)	AC 24 V, 50 Hz (SELV, PELV)
Voltage tolerance	±15%
Power consumption	1 VA
On/off output	Volt-free change-over contact DC 24 V, 1 A
Input signal	FA-H3 sensor signal
Indication of condensation	LED
Connection terminals	Screw terminals for 2.5 mm ² wire
Protection class	III
Protection standard	IP50 to IEC529
General ambient conditions:	To DIN-IEC 68-2-1/2
Operating temperature	0 ... 70 °C
Storage and transport	- 25 ... 70 °C
Weight	0.03 kg
Dimensions	56 x 22 x 18 mm
Conformity	Meets the requirements for CE marking

Connection terminals FU-IH3



Dimensions FU-IH3

All dimensions in mm

