

E+E

your partner
in sensor
technology.



Datasheet EE046

Condensation Monitor



EE046

Condensation Monitor

The EE046 condensation monitor helps to prevent condensation on critical cold spots. Using its relative humidity (RH) sensing element, it reliably detects the risk of condensation just before it occurs.

Mounting Options

The EE046 is available in two variants. The wall/ pipe mount type is appropriate for installation on flat surfaces and on pipes with a maximum diameter of 50 mm (2"). It can be mounted on cooling ceilings, on cooling or cold water piping, cooled surfaces and chilled beams. The snap-on type can be mounted on plastic or aluminium composite pipes with a diameter of 16 mm (0.6") or 20 mm (0.8"). It's typical applications include cooling and heating by concrete core activation.

Reliable Anti-Condensation Safe Guard

Condensation occurs on a surface when the relative humidity of the air close to the surface reaches 100 %RH. Due to its excellent thermal coupling with the surface, the EE046 measures the RH of the air directly at surface temperature. These properties make it the ideal choice for applications where control guards are required to prevent dripping or mould growth.

Early Detection of Condensation Risk

The relay output provides an early warning before condensation actually happens. This may also indicate a power supply failure or a broken cable. A status LED indicates normal operation, an alarm or a power supply failure. The E+E proprietary coating protects the humidity sensor against dust and dirt.



EE046 wall/pipe mount

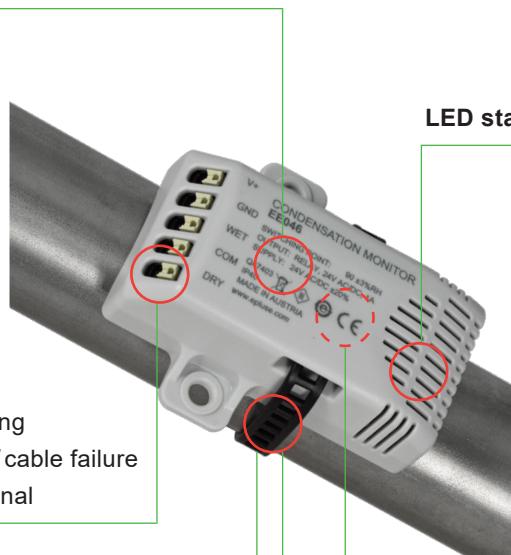


EE046 snap-on mount

Features

Performance

- Wide RH/T working range
- Fast response time
- Sensing element protection
- Protected electronics board



Output and connection

- Relay output for early warning
- Indication for power supply/cable failure
- 5 poles push-in spring terminal

LED status indication

Enclosure

- IP40 protection rating
- Polycarbonate, UL94 V-2 approved

Mounting

- Compact design and easy mounting
- Versatile mounting options

Wall/pipe mount

Snap-on mount

- For pipe diameter N16 and N20



Features

Protective Sensor Coating

The E+E proprietary sensor coating is a protective layer applied to the active surface of the sensing element. The coating substantially extends sensor lifetime and ensures optimal measurement performance in corrosive environment (salts, off-shore applications). Additionally, it improves the sensors' long term stability in dusty, dirty or oily applications by preventing stray impedance caused by deposits on the active sensor surface.

Accredited Traceable Calibration Certificate



Internationally recognised certificates for the calibration of measuring instruments from accredited laboratories document the traceability of the measurements to the International System of Units (SI). The E+E Elektronik calibration laboratory offers two levels of traceable calibrations.

- As a Designated Institute (DI) of the Republic of Austria, the E+E calibration laboratory maintains Austria's national measurement standards for humidity, dew point temperature, air velocity and CO₂. This authorises the E+E calibration laboratory to issue calibration certificates at the level of a National Metrological Institute (NMI).
- The E+E calibration laboratory is accredited by Akkreditierung Austria in accordance with DIN EN ISO/IEC 17025 with the identification number 0608. This allows the laboratory to issue ISO 17025 certificates for the measurands humidity, temperature, dew point temperature, air velocity, flow, pressure and CO₂.

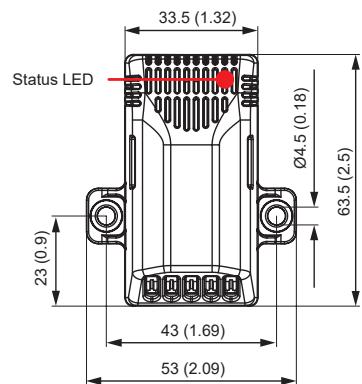
Visit www.eplusecal.com for detailed information on calibration and to enquire a certificate of accredited traceable calibration for the EE046 from the Designated Institute.

Dimensions

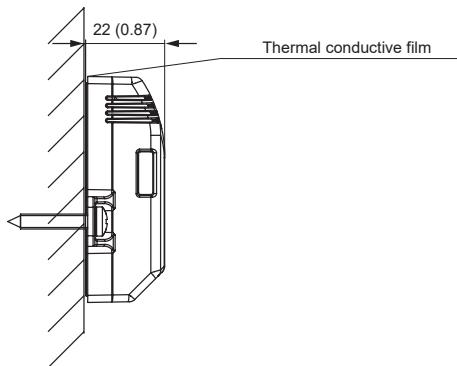
Values in mm (inch)

Wall/ Pipe mount

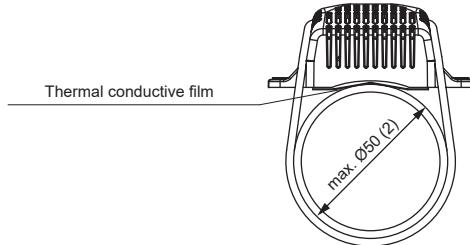
Front view



Wall mount



Pipe mount

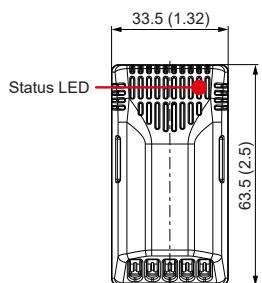


Dimensions

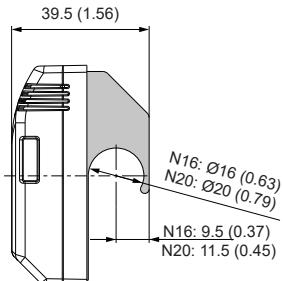
Values in mm (inch)

Snap-on mount

Front view

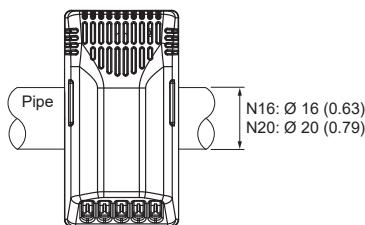


Side view



Snap-on mount

On Pipe



Technical Data

Measurands

Relative Humidity (RH)

Working range	10...100 %RH, non condensing
Threshold @ 24 V AC/DC, 20 °C (68 °F)	90 ±3 %RH
Hysteresis	
Response time t_{90} , change of the relative humidity (RH) change of the surface temperature	<25 s <3 min

Technical Data

Output

Relay	Changeover contact, potential free	
Switching capacity, max.	24 V AC/DC, 1 A	
Contact functions	WET DRY	Contact for RH > threshold, Power off (NC) Contact for RH < threshold, Power on (NO)

General

Power supply class III 	24 V AC/DC ±20 %	
USA & Canada: Class 2 supply necessary		
Current consumption	@ 24 V DC	<6 mA
	@ 24 V AC	<10 mA _{rms}
Electrical connection		5 pole push-in terminal, max. 1.5 mm ² (AWG 16)
Protection	Sensing Element Electronics	E+E proprietary coating Varnish
Relay status indication		LED, red
Temperature range	Operation Storage	0...50 °C (32...122 °F) -20...+70 °C (-4...+158 °F)
Weight, typ.	Wall/pipe mount version	60 g
	Snap-on mount version	80 g
Enclosure	Material Protection rating	PC (Polycarbonate), UL94 V-2 approved IP40
Electromagnetic compatibility		EN 61326-1 FCC Part15 Class B ICES-003 Class B
Conformity		 

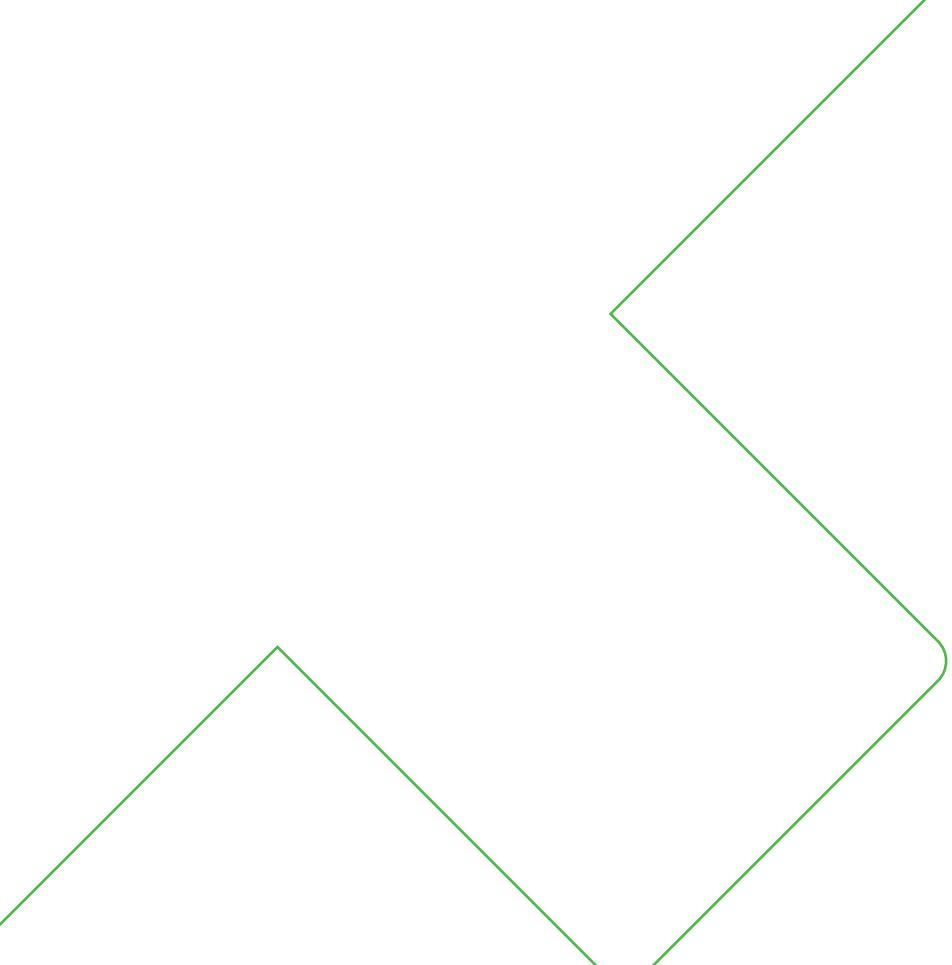
Ordering Guide

	Feature	Description	Code
Hardware			EE046-
Type	Wall/pipe mount		T11
	Snap-on mount		T25
Pipe diameter	16 mm (0.63")		N16
	20 mm (0.79")		N20
Accredited Traceable Calibration Certificate in accordance with DIN EN ISO/IEC 17025			see www.eplusecal.com

Order Example

EE046-T25N16

Feature	Code	Description
Type	T25	Snap-on mount
Pipe diameter	N16	16 mm (0.63")



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