

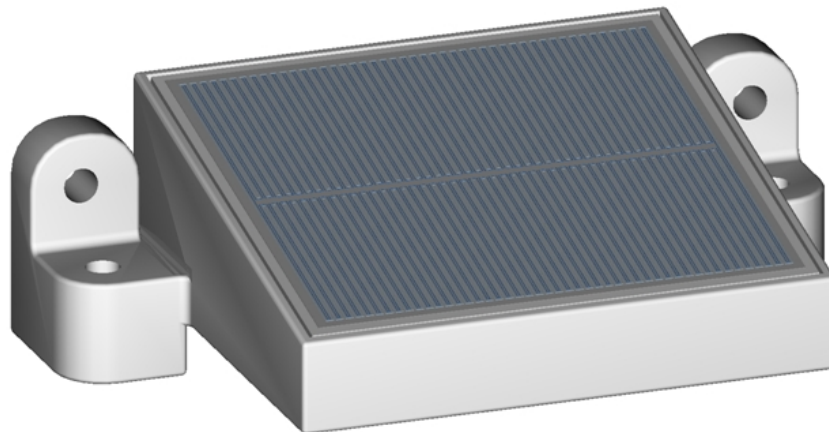


FuehlerSysteme eNET International
Die Marke für Sensorik

Instruction for use

Rain Sensor

NW/O



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1 Model

| Article - No. | Measuring value | Output | Operating-Voltage | Configuration |
|---------------|-------------------------------|--|------------------------------------|-------------------------------------|
| NW/O | Precipitation status (yes/no) | Semiconductor relay: Type: Changeover | 11...28 V AC or 10...32 V DC | - 3 m cable, 5 pol. - fixing kit |

Scope of delivery:

- rain monitor
- fixing kit (see Model)
- operating instructions

2 Application

The rain monitor is designed to act as a sensor detecting the start and end of precipitation. It is used as a status indicator or sensor for controlling downstream safety devices (control units) protecting windows, ventilation flaps, sunblinds, awnings, etc. The sensor area takes the form of a capacitor on glass-coated ceramic. Glass passivation ensures that the rain monitor is extremely environment-resistant as well as robust while offering good long-term stability and resistance to aggressive media.

3 Mode of Operation

Whenever precipitation strikes the rain monitor and wets the sensor surface, this changes the capacitance of the surface, so triggering a switching signal, i.e. wetting of the sensor surface signals the precipitation status "yes".

To protect the sensor surface from bedewing and icing-up, it is heated to an overtemperature of approx. 2 K.

When the sensor surface is wetted, it is adjusted to approx. 10 K above the ambient temperature, so ensuring fast faster drying. Once it has dried, the device switches to the precipitation status "no".

Definition for precipitation status / output:

- Precipitation "yes" = contact 3-4 open
- Precipitation "no" = contact 3-4 closed
- Power failure (sensor "off") = contact 3-4 open

- In case of interrupted or missing operating voltage (sensor "off") precipitation "yes" is signalized; thus, even in this state the object to be protected is safeguarded.

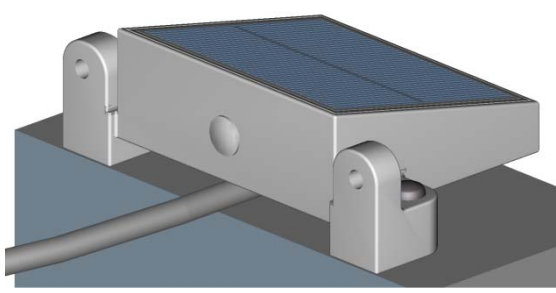
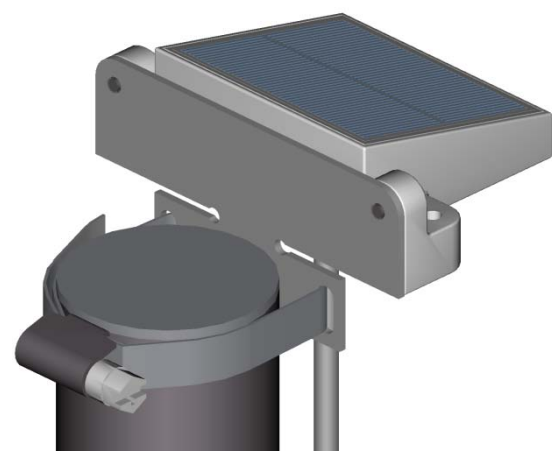
4 Installation

Please Note:

The electrical connection is to be carried out by experts only.

4.1 Mechanical Mounting

The device should be installed at a location that will result in representative readings and protected from the wind as far as possible. During installation make sure that precipitation can strike the sensor surface unimpeded. For dimensions, see section 8.

| | |
|---|---|
| <p>Instrument without fixing kit</p> <p>Mounting is possible at an even vertical or horizontal surface.</p> |  A 3D rendering of a rectangular instrument with a blue sensor surface. It is mounted on a flat, light blue surface. Two silver-colored mounting brackets are attached to the sides of the instrument, and a grey cable is connected to the bottom left. |
| <p>Instrument with fixing kit</p> <p>Mounting can be carried out at the end of a mast tube (Ø 35-50mm).</p> |  A 3D rendering of the same instrument mounted on a dark grey mast tube. The instrument is held in place by a silver-colored mounting bracket that fits around the tube. A grey cable is connected to the bottom left of the instrument. |

4.2 Electrical Mounting

Either AC or DC can be used as the power supply, with protection from polarity reversal. The output is an isolated electronic relay. A non-detachable cable is used for connection: see connecting diagram, section 4.2.1.

4.2.1 Pin Assignment and Precipitation Status

| | Supply | Output | Output |
|---------------------------|--------|-------------|-------------|
| | 1-2 | Contact 3-4 | Contact 4-5 |
| Sensor surface wet | Yes | open | closed |
| Sensor surface dry | Yes | closed | open |
| Sensor surface wet or dry | no | open | closed |

| | |
|---|--|
| Figure state: - instrument power-off or - sensor surface wet | |
|---|--|

The diagram shows a cable with five pins. Pins 1 and 2 are for power supply (Heizung/Heating and Elektronik/Electronic). Pins 3 and 4 are for the Rain sensor (Niederschlag/Rain), with a switch position for 'ja/yes' (closed) and 'nein/no' (open). Pin 5 is also connected to the Rain sensor. Technical specifications are provided for each pin group.

| | | | | |
|----------------|---|------------------------|---|---|
| 1 | 2 | 3 | 4 | 5 |
| 11 ... 28 V AC | | 26V AC / 36V DC | | |
| 11 ... 32 V DC | | Max. 0,5 A | | |
| Max. 0,75 A | | Halbleiter - Relais | | |
| Versorgung | | Schaltausgang | | |
| Power Supply | | Semi - conductor Relay | | |
| | | Switching output | | |

5 Taking into Operation

The operating voltage can be switched on once the electrical connection has been made.

6 Maintenance

The device is maintenance free.

Cleaning:

Depending on the installation location and the associated type/degree of soiling occurring there, we recommend checking the sensor surface of the device at suitable intervals and cleaning it as required.

For cleaning a damp cloth without chemical cleaning agents should be used.

7 Technical Data

| | |
|------------------------|---|
| Measuring value | Precipitation (yes / no) |
| Signal output | Semiconductor relay, Potential-free / electrically isolated / metallically separated |
| Relay- contact voltage | Max. 26 V AC / 36 V DC, Max. 0.5 A (cos φ > 0.9), 0.2A (cos φ = 0.4) |
| Switch-on delay | < 0.5 s Signal- Output 15 s Heating |

| | |
|---------------------|--|
| Operating voltage | 11...28 VAC or 11...32 VDC (max. 0,75A) Protected against polarity reversal |
| Current consumption | Heating off: < 12 mA |
| | Heating on: max. 0.35 A (@ 11...12 VAC operating voltage) max. 0.75 A (@ 12...27 VAC operating voltage) max. 0.3 A (@ 27...32 VAC operating voltage) |
| Sensor area | 18 cm ² |
| Sensitivity | Approx. 0.2 mm/h |
| Ambient temperature | -30...+60°C |
| Protection | IP 66 acc. to DIN 40050 |
| Dimension | See dimension diagram (section 9) |
| Weight | 160 g with fixing kit 100 g without fixing kit |
| Material | Housing: Polycarbonate (PC), UV-stabilised, white (RAL 9010) Sensor: Ceramic (aluminum oxide AL ₂ O ₃), glass-coated Fixing kit: Stainless steel 1.4301 |
| Connection | Cable, non-detachable, type: LiYY 5 x 0.14mm ² , 3m long |

8 Dimension diagram

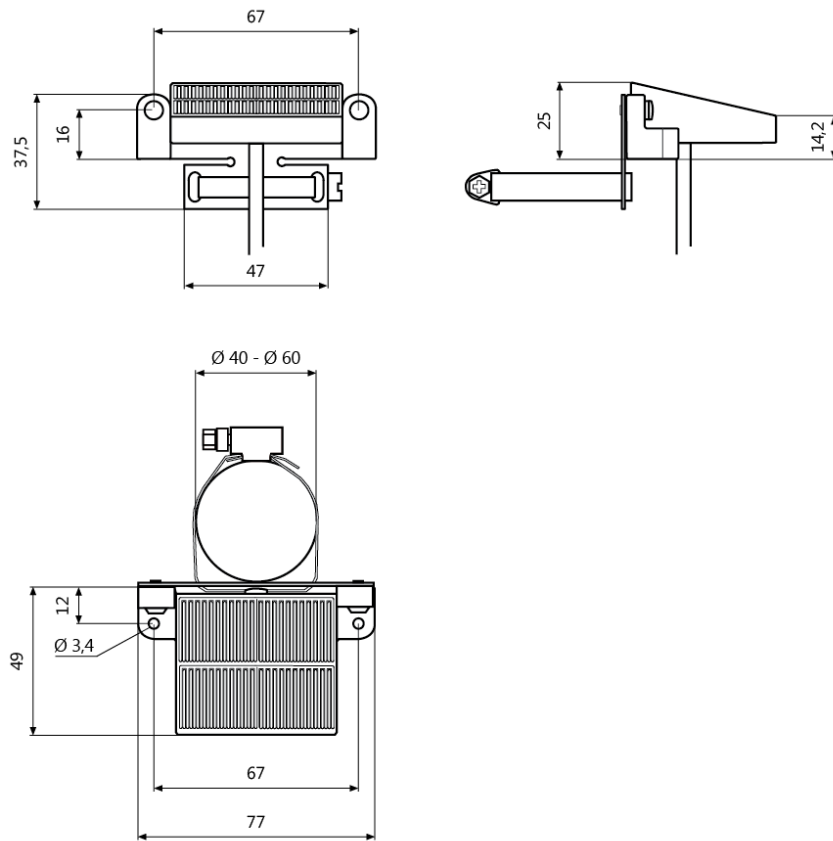


Figure 1: Rain monitor with fixing kit



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- Subject to technical modifications -