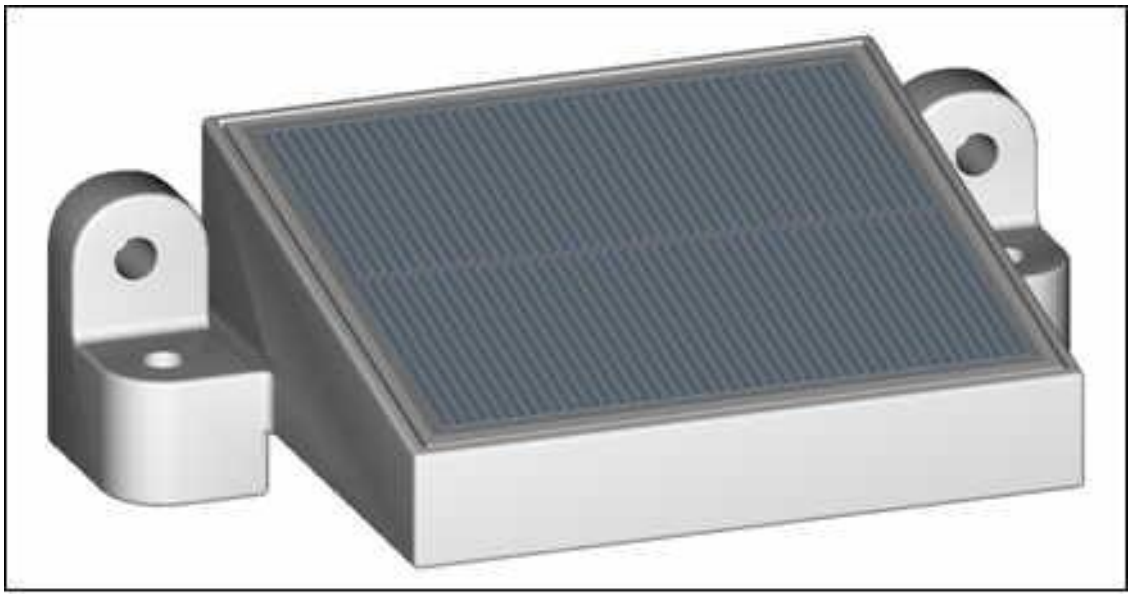
Fischer® Product data sheet	**Rain Monitor**	**No 441502** Edition: 2 / Date: 06/14



1 Model

Article - No.	Measuring value	Output	Operating-Voltage	Configuration
5.4106.00.000	Precipitation status (yes/no)	Semiconductor relay; Type: normally open	11…28 V AC or 10…32 V DC	- 3 m cable, 4 pol. - fixing kit
441502	Precipitation status (yes/no)	Semiconductor relay: Type: Changeover	11…28 V AC or 10…32 V DC	- 3 m cable, 5 pol. - fixing kit
5.4106.00.901	Precipitation status (yes/no)	Semiconductor relay; Type: normally open	11…28 V AC or 10…32 V DC	- 3 m cable, 4 pol.

Scope of supply:
- 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:
5.4106.00.000 / 441502

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.

5.4106.00.901

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

- In case of interrupted or missing operating voltage (sensor “off”) precipitation “no” is signalized; thus, there is possibly no object protection.

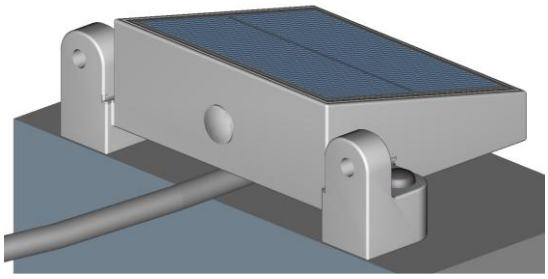
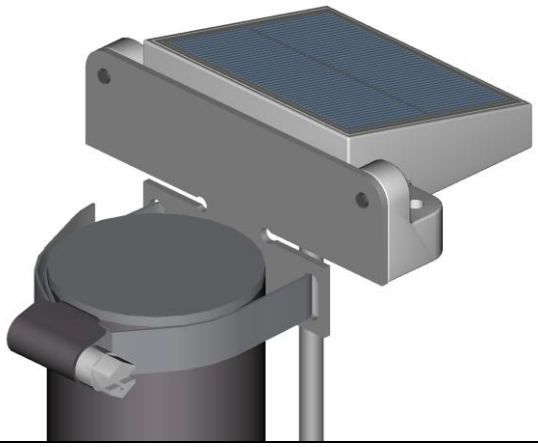
4 Installation

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.

Instrument without fixing kit Mounting is possible at an even vertical or horizontal surface.	
Instrument with fixing kit Mounting can be carried out at the end of a mast tube (Ø 35-50mm).	

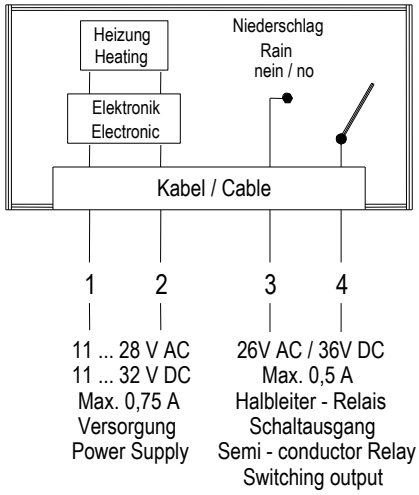
4.2 Electrical Mounting

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

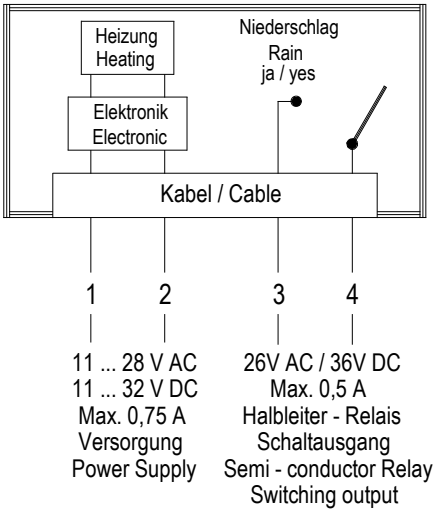
5.4106.00.000			
	Supply	Output	
	Contact 1-2	Contact 3-4	
Sensor surface wet	Yes	open	
Sensor surface dry	Yes	closed	
Sensor surface wet or dry	no	open	

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



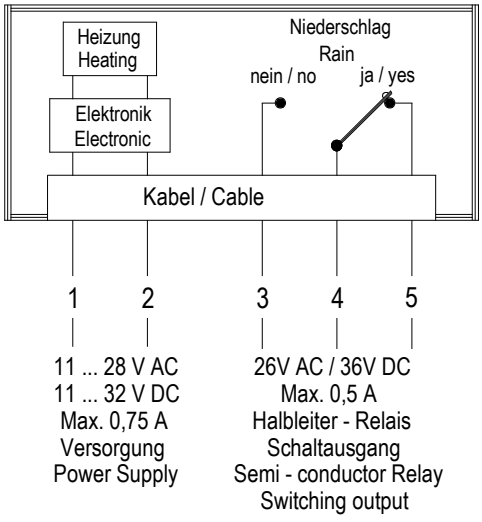
5.4106.00.901			
	Supply	Output	
	Contact 1-2	Contact 3-4	
Sensor surface wet	Yes	closed	
Sensor surface dry	Yes	open	
Sensor surface wet or dry	no	open	

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



441502			
	Supply	Output	Output
	Contact 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



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_2O_3), glass-coated Fixing kit: Stainless steel 1.4301
Connection	
5.4106.00.000	Cable, non-detachable, type: LiYY 4 x 0.25mm², 3m long
441502	Cable, non-detachable, type: LiYY 5 x 0.14mm², 3m long
5.4106.00.901	Cable, non-detachable, type: LiYY 4 x 0.25mm², 3m long

8 Dimension diagram

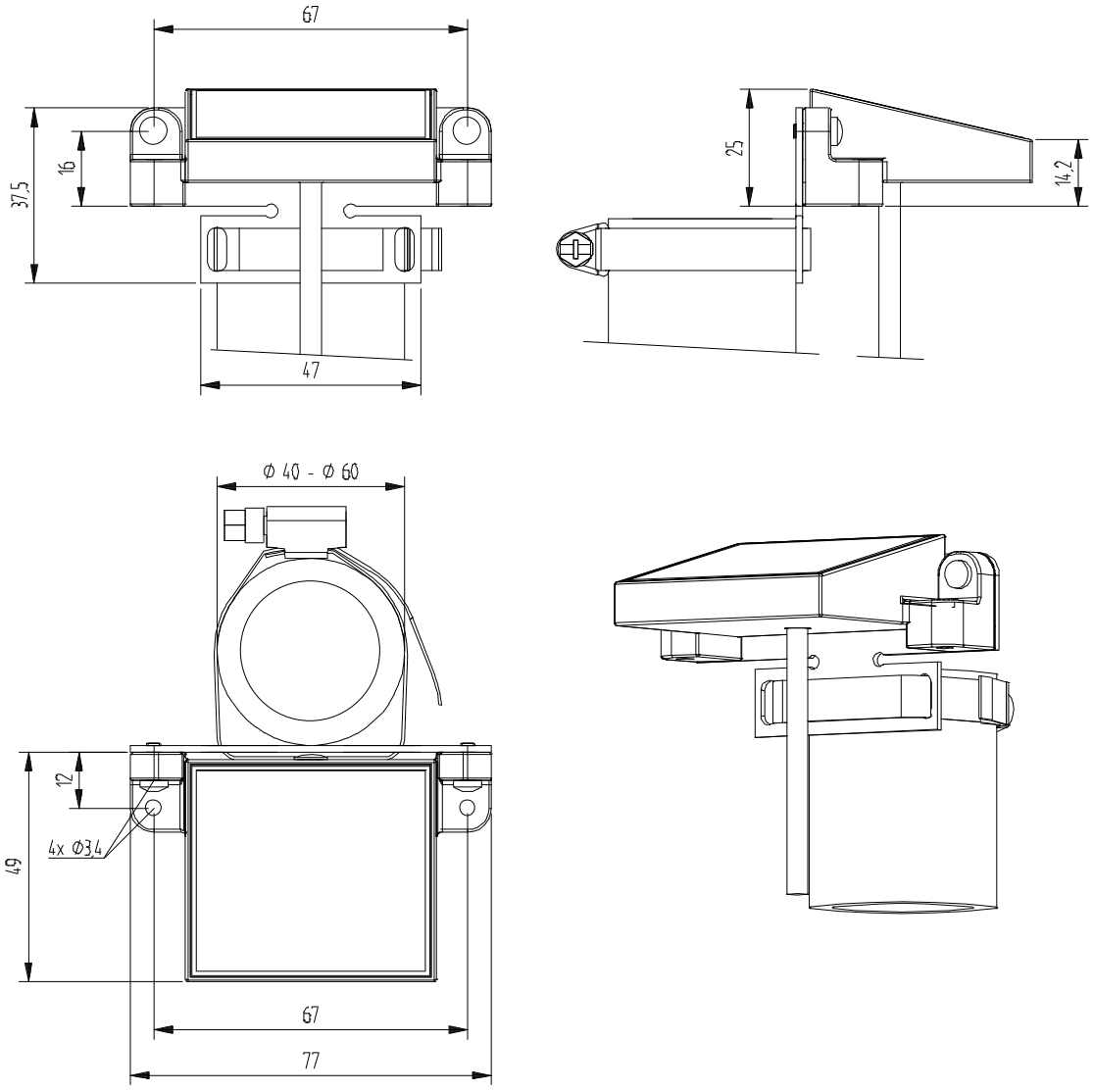


Figure 1: Rain monitor with fixing kit

9 EC-Declaration of Conformity

Document-No.: **000903** Month: 03 Year: 14

Manufacturer: **A D O L F T H I E S G m b H & C o. K G**

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Description of Product: **Precipitation Monitor**

Article No.	**5.4105.00.000**	**5.4105.00.010**	**5.4105.00.020**
	5.4106.00.000	**441502**	**5.4106.00.901**

specified technical data in the document: **021012/08/08; 021707/03/14**

The indicated products correspond to the essential requirement of the following European Directives and Regulations:

2004/108/EC	DIRECTIVE 2004/108/EC OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 15 December 2004 on the approximation of the laws of the Member States relating to electromagnetic compatibility and repealing Directive 89/336/EEC
2006/95/EC	DIRECTIVE 2006/95/EC OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 12 December 2006 on the harmonisation of the laws of Member States relating to electrical equipment designed for use within certain voltage limits
552/2004/EC	Regulation (EC) No 552/2004 of the European Parliament and the Council of 10 March 2004 on the interoperability of the European Air Traffic Management network (the interoperability Regulation)

The indicated products comply with the regulations of the directives. This is proved by the compliance with the following standards:

Reference number	Specification
IEC 61000-6-2: 2005	Electromagnetic compatibility Immunity for industrial environment
IEC 61000-6-3: 2006	Electromagnetic compatibility Emission standard for residential, commercial and light industrial environments
IEC 61010-1: 2010	Safety requirements for electrical equipment for measurement, control, and laboratory use. Part 1: General requirements