

# Precipitation Monitor

7030.0000 BG

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## Range of application

The precipitation monitor transmits signals to determine the beginning and the end of precipitation and the duration of the period of precipitation as required by meteorological services.

In addition, the precipitation monitor can be used to report status or to transmit control signals to connected rain protection devices such as windows, air vents or awnings.

## Mode of operation

Drops of precipitation are detected by means of a IR light barrier system. The drops interrupt the light barrier, thus triggering a signal in the connected electronics.

The instrument is equipped with an "event filter" to prevent misinterpretation of data due to the effects

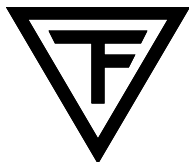
of insects, bird droppings, falling leaves etc. Precipitation is only reported if at least 2 drops pass through the light barrier system at a certain speed within a period of 50 seconds. Precipitation is reported by a cut through relay. An adjustable switch-off delay smoothes the switching signals when there are a number of short-term precipitation events.

The instrument is equipped with a heating system for extreme weather condition. This maintains a temperature of  $> 0\text{ }^{\circ}\text{C}$  on the surface of the monitor (housing cover) in order to prevent ice from forming and snow from piling up. A soiling of the sensor windows is avoided to the greatest possible extend by their vertical position that keeps the windows moisture free. Therefore, the maintenance requirements are very small.

By using PTC`s as heating elements the power input can reach a high peak value during the switch-on phase. This value must be limited to max. 50 W.

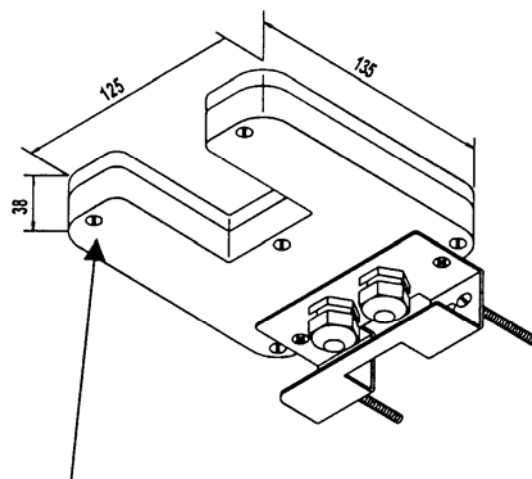
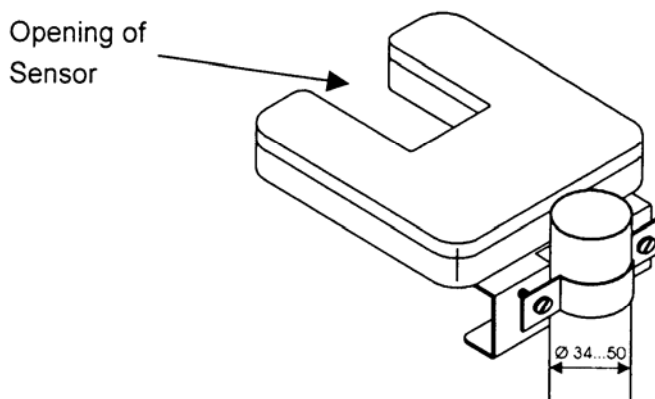
## Technical data

Measuring principle:	IR-light barrier
Measuring value:	Precipitation
Output:	relay contact (Precipitation yes/no)
Sensor area:	25 cm <sup>2</sup>
Sensibility:	drop size $\geq 0.2\text{ mm}$
Event sequence	
Switch-on:	min. 2 precipitation drops within 50 sec (default)
Switch-off:	delay adjustable from 25...375 s
Relays-output:	single pole switch
Contact load:	230 V AC; 4 A AC; 1000 VA
Operating voltage:	24 V AC/DC $\pm 15\%$
Heating:	max. 1 A
Operating temperature:	-30...+60 $^{\circ}\text{C}$
Protection:	IP 65 acc. to DIN 40050
Weight:	approx. 0.4 kg



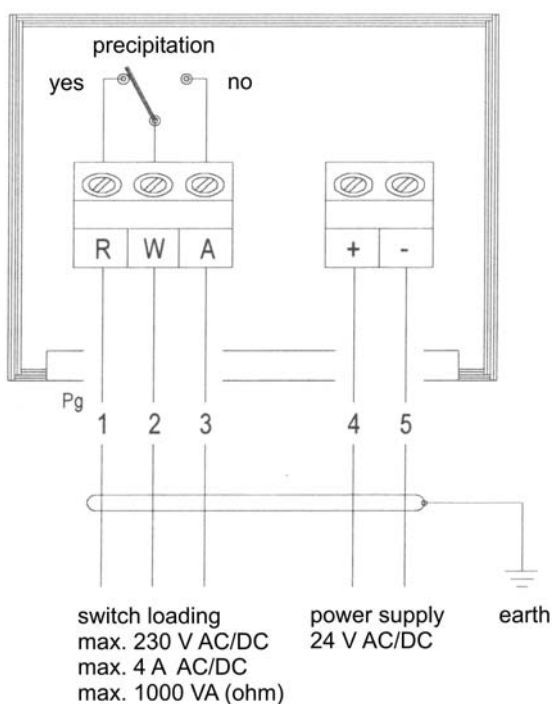
## Preparing for use

The mounting system of the instrument is designed for attachment to a mast. When mounting make sure, that the precipitation can easily reach the opening of the sensor, and that the instrument is not exposed to strong vibrations or shocks.



To connect the instrument electrically, remove the cover with its 5 screws. The connecting terminals and the DIP-switches for selecting the number of incidences and switch-off delays are then accessible. The electrical connection is carried out according to the Circuit diagram. Insert the cable from below through the Pg screwing on the base of the case and connect it to the connecting terminals. Now replace the cover uniformly and carefully so that water cannot penetrate the case.

## Circuit diagram

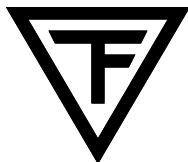


### Please Note:

The electrical connections should be carried out by an electrician. Do not damage the exposed electronics!

### Attention:

The relays-output is connected on a manner that a failure of supply voltage is signalled as "precipitation".



## Adjusting of incidences and switch-off delay

The adjustment carried out in the factory is for 2-drop incidences within 50 seconds with a switch-off delay of 25 seconds.

If this adjustment is to be changed, the switch-off delay is set through the DIP1-switch and the number of drop incidences is selected through the DIP2-switch acc. to the table.

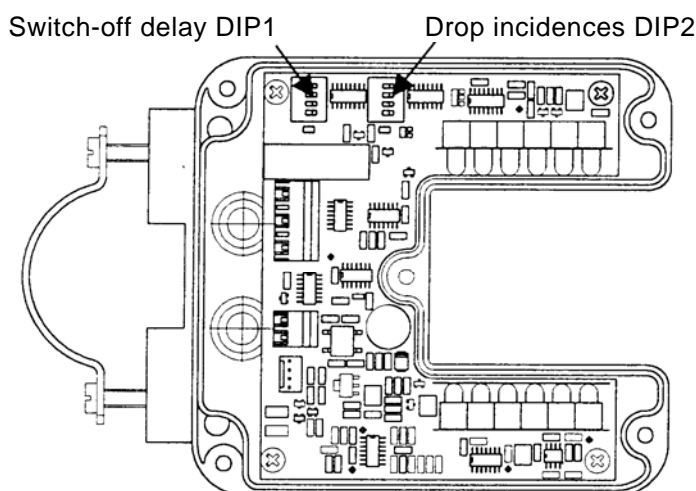
### DIP-Switch Pre-Selection

	S1	S2	S3	S4
n	1 x	2 x	4 x	8 x
DIP1				
DIP2				

The switch-off delay results from  $n \times 25$  seconds after the last drop incident.

Each setting of  $n$  between 1 and 15 is possible in binary code.

Marked squares = Default



## Taking into operation

After the electrical connection has been established, and the case has been screwed the operating voltage can be switched on. The setting of the relay output is undefined after switching on the operating voltage and shows "no precipitation".

## Maintenance

A layer of dirt can form on the windows of the sensor as a result of atmospheric pollution, which, however, is usually washed off the precipitation. According to the local degree of pollution the windows of the sensor should be checked and possibly be cleaned in appropriate intervals.