

Precipitation monitor NW-R

General

1.) application

The precipitation sensor 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 condensation guard can be used to report status or to transmit control signals to connected rain protection devices such as windows, air vents, awnings, or Venetian blinds.

2.) mode of operation

Precipitation in the form of drizzle, rain, snow or hail is detected by means of a light barrier system and triggers a signal. A built-in incidence- filter shall smooth the triggering of switching signals in case of individual incidences, as for example leaves, bird droppings, insects etc. For this, a certain number of at least n incidences should have occurred within a

time-window of 50sec. The number of drop incidents (1...15) can be selected through the DIP switch on the PC-board.

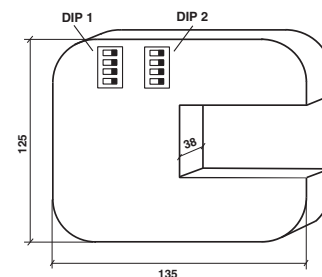
With the precipitation end the switching signal is reset after a selectable switch-off delay. Thanks to the immediate evaluation of the incidences it is possible to determine precisely the beginning and end of the precipitation period.

The instrument is equipped with a heating system for extreme weather conditions. This avoids ice and snow forming on the housing surface. In addition, the surface retains a temperature of $>0^{\circ}\text{C}$ by means of a regulated heating.

Setting of switch-off delay

In the factory a setting is carried out for 12 drop incidences within 50seconds with a switch-off delay of 25 seconds. If this setting is to be changed, the switch-off delay, and the number of drop incidents are set through the DIP switches according to the table.

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



Operation preparation

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 while operating, is not exposed to strong vibrations or shocks.

To connect the instrument electrically, remove the cover with its 5 screws. The connection terminals and the DIP switches for selecting the number of incidences and switch-off delays are accessible. The electrical connection is carried out according to the wiring diagram. Insert the cable from below through the PG screwings on the bottom of the case

and connect it to the connecting terminals and the shield connection. After the wiring - and mounting work is done, the nuts of the PG-screwings, and die screws of the cover are to be screwed tight with the case so that water cannot penetrate it.

Attention:

All electrician works must be done by technical personal. The exposed electronic system may not be damaged.

The relay outputs are switched in such a way that in the case of failure of the supply voltage „condensation“ is reported.

Operation without heating

At a directly detection of condensation it is possible to drive the device without a heating. In that case, the 3 contact spring can be remote.

Attention: residual risk at extreme weather conditions through ice and snow

Maintenance

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

Implementing

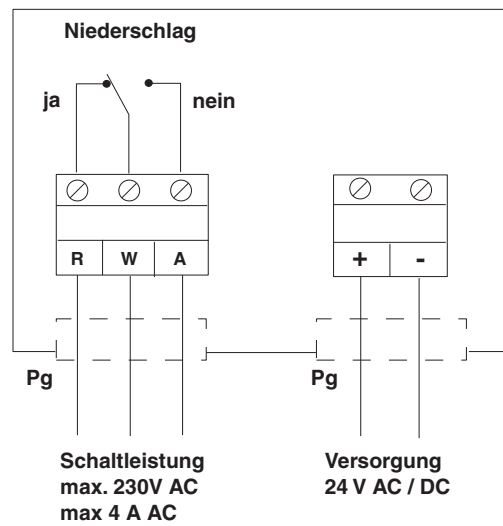
After the electrical connection has been established, and the case has been screwed, the operating voltage can be switched on. The setting of the relay output is undefined after switching on the operating voltage and shows „no condensation“.

Technical data

Type	NW-R
Art. No.	80086020
Operation voltage	24 V AC//DC± 15 %
Operating current	ca. 50 mA
Heater current	max 1A
Measuremnt value	Condensation state (rain, snow, hail, etc.)
Output	Condensation = relay ON (also at $U_B = 0$); no condensation = relaz OFF
Sensor range	25 cm ²
Activate conditions	1 bis 15 happenings within 50 sec.
Disabling conditions	25...375 s; see „setting of switch-off delay“
Switch-on delay	non
Switch-off delay	settable
Max. contact exposure	max. 230 V AC; 4 A
environmental temperature	-25 ... +55°C
Dimensions	HxBxT 38x125x135mm
Weight	0,4 kg
Storage temperature	-25 ...+70°C
Humidity	0 ...85 % r.F. non condensing
Protection grade	IP 65 according to DIN 40050
ESD immunity	Category 3 according to IEC-1000-4-2
EMV immunity	Use in typical industrial enviroment. Category 3 according to IEC-1000-4-4 (Test was carried out within a whole system)
CE sign	yes

Terminal assignment

+	Operating voltage 24V DC/AC
-	Operating voltage 0V
R	Contact „condensation“
W	Contact root
A	Contact „no condensation“

Connection diagram

Wiring diagram

