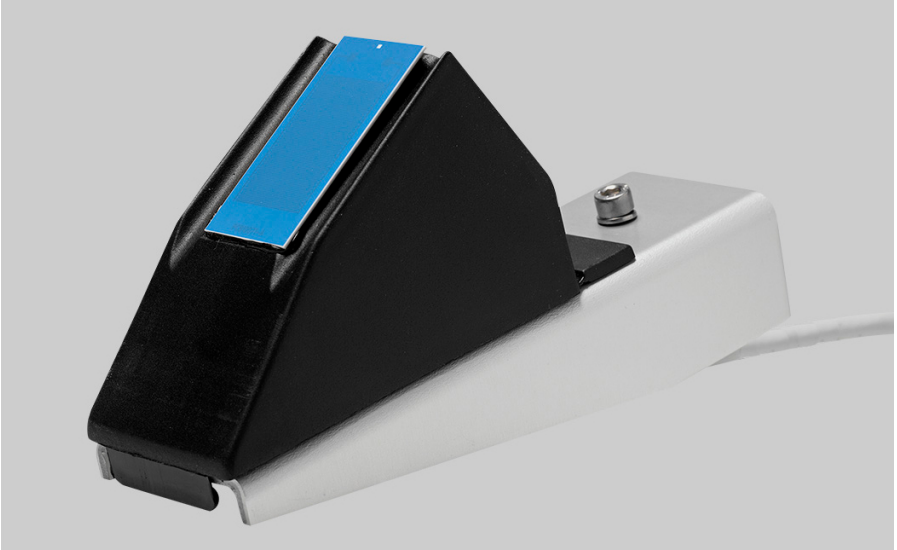
DATASHEET

DRD11A

Vaisala · Authorized Partner

Distributed by AKRIBIS

Rain Detector DRD11A



Features

- Fast and accurate precipitation detection (ON/OFF)
- Rain intensity measurement with processing unit
- Heating element for keeping sensor free of snow and condensed moisture, and for quick drying
- Maintenance free

Vaisala DRD11A Rain Detector detects rain and snow quickly and accurately. It uses droplet detection instead of signal level threshold.

A delay circuitry allows a two-minute interval between raindrops before assuming the OFF position (no rain). This enables the sensor to accurately distinguish between rain cessation and light rain.

DRD11A also features an analog rain signal for estimating rain intensity. Since this signal is proportional to the percentage of moist or wet area on the sensor plate, rain intensity has a direct impact on the amplitude and variation of this analog signal.

The DRD11A sensor is positioned at a 30° angle. The design together with the internal heating element ensure that the surface dries quickly. This is an essential factor for calculating intensity. The same heating element also protects the surface from fog and condensed moisture. It activates at low temperatures to melt snow and allow snow detection. Sensor performance is not affected by reasonable amounts of dirt and dust due to droplet detection.

The low heating power model DRD11L is designed for areas with only rain or wet and moist snow precipitation.

Technical Data

Measurement Performance

Sensor	Capacitive principle, thick layer sensor RAINCAP®, with a thin glass shield Integrated heater element
Rain Detection Sensitivity	
Minimum wet area	0.05 cm^2 (0.008 in^2)
Detection delay	< 0.1 ms
OFF delay (active)	< 5 min
Precipitation Type Identification	
DRD11A only	Rain
When air temperature and relative humidity are available	Rain, Sleet/Mixed, Snow
Sensor Plate	
Sensing area	7.2 cm^2 (1.12 in^2)
Angle	30°

Inputs and Outputs

Operating voltage	12 VDC ±10 %
Average power consumption	0.30 W at 12 V
Maximum power consumption with sensor plate heating on	3.12 W at 12 V [1)]
Rain on/off output	Open collector, active low signal corresponds to rain Maximum voltage 15 V Maximum current 50 mA
Analog output	1 ... 3 V (wet ... dry)
Frequency output	1500 ... 6000 Hz, non-calibrated
Supply current	Typical less than 150 mA Maximum 260 mA Heater off 25 mA
Heating power, sensor plate	0.5 ... 2.3 W
Control for Heater OFF	
OFF	Connect to GND
Contact rating	Minimum 15 V, 2 mA

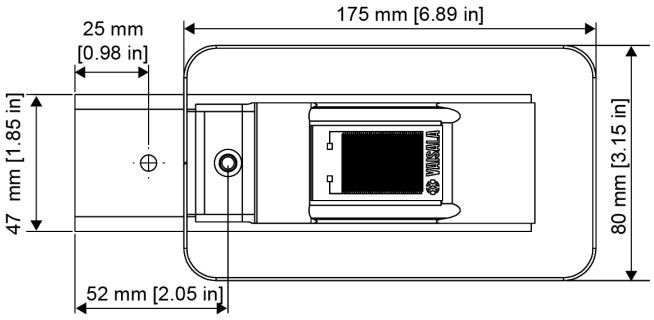
1) The actual power consumption depends on the temperature and rain intensity.

Mechanical Specifications

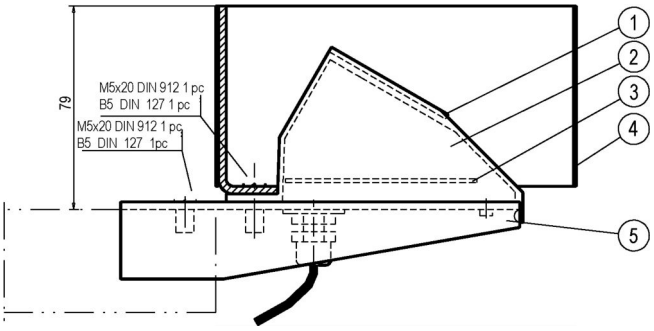
Dimensions (H × W × L)	With wind shield: 110 × 80 × 175 mm (4.33 × 3.15 × 6.89 in) Without wind shield: 90 × 46 × 157 mm (3.54 × 1.81 × 6.18 in)
Weight	0.5 kg (1.1 lb)
Cable length	4 m (13 ft 1 in)
Ground wiring	Separate ground wires for signal and heater
Mounting	By one screw (M5 x 20 mm) to sensor arm
Materials	
Housing	Polypropylene
Windshield and support bracket	Aluminum
Moisture shield	Polyurethane

Operating Environment

Operating temperature	-15 ... +55 °C (+5 ... +131 °F)
Storage temperature	-40 ... +65 °C (-40 ... +149 °F)



Product Dimensions



1) Sensor, RAINCAP® 2) Polyurethane moisture shield 3) Component assembly 4) Wind shield 5) Mounting plate

CE

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