

## DRD11A Rain Detector



### Features/Benefits

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

*Vaisala DRD11A Rain Detector*

Rain and snow are quickly and accurately detected with the DRD11A Rain Detector. The DRD11A operates via droplet detection rather than by signal level threshold.

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

The 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. This design, together with the internal heating element, ensures that the surface dries quickly, an essential factor in calculating intensity. The same heating element also protects the surface from fog and condensed moisture, and is activated at low temperatures in order to melt snow, thus allowing snow detection. Sensor performance is not affected by reasonable amounts of dirt and dust due to droplet detection.

The DRD11L is a low heating power model of the DRD11A. It is intended to be used in areas with only rain or wet/moist snow precipitation.

# Technical Data

## Sensor

Capacitive principle, thick layer sensor  
RainCap™ with a thin glass shield. Integrated heater element.

## Sensitivity of Rain Detection

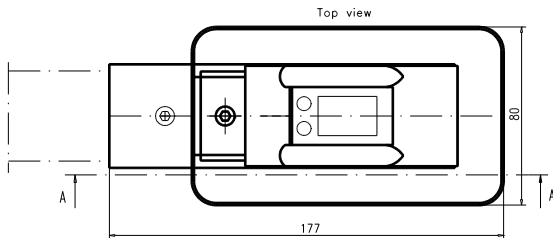
|                    |                      |
|--------------------|----------------------|
| Minimum wet area   | 0.05 cm <sup>2</sup> |
| OFF-delay (active) | < 5 min              |

## Physical

|                                |                     |
|--------------------------------|---------------------|
| Sensor plate                   |                     |
| Sensing area                   | 7.2 cm <sup>2</sup> |
| Angle                          | 30°                 |
| Housing material               | Polypropylene       |
| Windshield and support bracket | Aluminum            |
| Moisture shield                | Polyurethane        |
| Dimensions                     | (h × w × l)         |
| With wind shield               | 110 × 80 × 175 mm   |
| Without wind shield            | 90 × 46 × 157 mm    |
| Weight                         | 500 g               |
| Cable length                   | 4 m                 |

## Electrical

|                   |               |
|-------------------|---------------|
| Supply voltage    | 12 VDC ± 10 % |
| Supply current    |               |
| Typical less than | 150 mA        |
| Maximum           | 260 mA        |
| Heater OFF        | 25 mA         |
| Sensor plate      |               |
| Heating power     | 0.5 ... 2.3 W |



## Output

|   |                                |
|---|--------------------------------|
| Rain ON/OFF   |                                |
| 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 |

## Input

|  |            |
|--|------------|
| Control to switch heater OFF           |            |
| Open circuit input enables the heater. |            |
| Connection to GND disables the heater. |            |
| Contact rating min.                    | 15 V, 2 mA |

## Ground Wiring

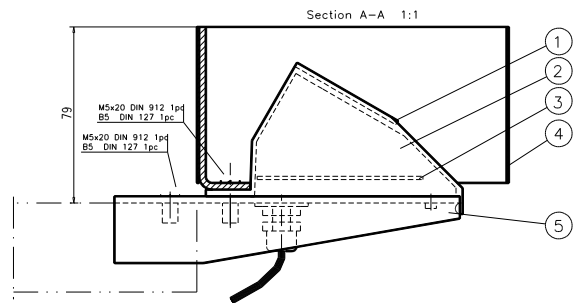
Separate ground wires for signal and heater

## Temperature Range

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

## Mounting

By one screw (M5 x 20 mm) to sensor arm



1. Sensor, RainCap™
2. Polyurethane moisture shield
3. Component assembly
4. Wind shield
5. Mounting plate

# VAISALA

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