

# RD01 Rain Detector



The RD01 is a rain detector based on the principle of measuring the capacitance of the material present on a sensing element. The capacitance of the sensor element, set at an angle, changes according to the accumulation of raindrops on the sensor surface.

An integral heater keeps it free of frost and condensation, and helps speed drying to detect the end of a rain event. The heater will also activate at low temperatures to detect snow fall by melting it. An external circular windshield, protects the element from damage and improves its sensitivity to light rain.

The instrument has three different outputs:

1. "Rain ON/OFF" output, which detects whether it is raining/snowing (ON) or not (OFF),

which can be used to control a relay coil or similar devices. This is an open-collector output.

2. Analogue voltage output (calibrated, 0-1V) which indicates the precipitation rate.

3. A 1,5...6KHz frequency output (not calibrated), which provide an indication of current precipitation intensity.

The ON/OFF output has a delay circuit that indicates the "end of a rain" event with a 5 minute delay, so that the "end of rain" condition is not indicated too soon in the event of light or intermittent rain.

The heater can be disabled when power consumption is critical. To do it, set the Heater OFF input on 0V. The sensor will still detect rain in this state but will not melt ice nor detect the end of a rain event so quickly.

## Features

Can be used with all Campbell Scientific dataloggers

External windshield to protect and improve sensitivity

Integral heater keeps instrument free from frost and condensation

### 3 outputs

Rain/No Rain:

- open-collector

Rainfall Intensity:

- analogue voltage (0-1V)
- 1.5-6KHz frequency output

# Specifications

## Sensor

Type:	Capacitive, with integrated heater
Sensor sensing area:	6.6cm <sup>2</sup>
Angle of element:	30°
Sensitivity:	Min. wet area 0.05 cm <sup>2</sup>
ON delay/Trip delay (OFF>>ON):	<0.1 ms
OFF delay/Shut-off delay (ON>>OFF):	< 5 min
Dimensions:	Diam. x height $\phi 107 \times 70$ mm
Weight:	450g
Cable length:	5 m
Material:	BASF LURAN S777K

## Electrical Features

Supply Voltage:	12Vdc $\pm$ 10%
Current Consumption:	130mA (typical) 230mA (max) 10mA (with heater disabled)
Sensor Power Consumption:	0.1 ... 2.3W

## Outputs

Rain ON/OFF:	Open by default, closed in case of rain. Max. Voltage 15V Max. Current 50mA
Analogue Output:	0 ... 1V (0V = rain, 1V = dry sensor)
Frequency Output:	1500 ... 6000Hz (wet ... dry) Not calibrated

## Operating Conditions

Operating Temperature -15 ... +55°C  
Storage Temperature -40 ... +65°C

