



SW120R Rain Detector

**Simple low-cost solution to know
when it is raining**



Applications

- Building Management Systems (BMS)
- Urban meteorology
- Low-Cost Hydro-Met stations
- Weather Hobbyist
- Flood warning systems

Features and Benefits

- Low cost
- Small and compact
- Simple on/off output
- Internal resistive heater to dry the probe quickly



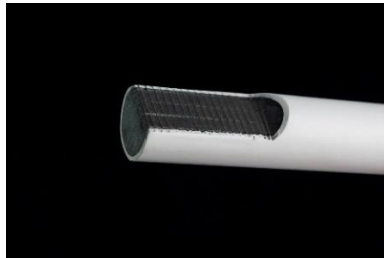
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The SW120R rain sensor works on the principle of conduction between three electrodes on a flat surface. Beneath the sensing surface is embedded a 100Ω, 5-watt ceramic resistor that can be used to heat the sensor. Passing 120mA current through the resistor raises the temperature of the sensing surface approximately 20-30°C above air temperature.

The heater can be used to prevent dew condensation on the surface allowing the separation of surface wetness caused by dew and rain. The SW120R can therefore be used to detect rain or total duration of surface wetness. Operation of the heater will also stimulate rapid drying of the sensor surface giving a closer approximation of the duration of rainfall.



To detect rain the sensor should be mounted at an angle of 30 - 40 degrees to encourage surplus water to run from the surface to assist in rapid drying of the sensor when the rain has stopped. These probes are essentially 'ON' or 'OFF' devices with virtually no graduation between the two modes. The sensitive part of the probe is an etched area which consists of three carbon electrodes separated by waterproof resin. It is difficult to define sensitivity; however, a droplet of distilled water 1mm in diameter will switch the sensor from "OFF" to "ON" mode producing a signal output change from 0v to over 1.4V. The Rain Detector may be mounted at ground level or on the cross arm.

Wiring Information	
Cable Colour	Electrical Connection
Red	Sensor Power Supply 8 – 24 VDC
Blue	Sensor Power Supply 0V
Green	Signal Output 0V
Yellow	Signal Output 0V – Dry / >1.4V – Wet
Black	Heater Connection 100Ω to white
White	Heater Connection 100Ω to black

Technical Specifications	
Length / Diameter	150mm / 20mm
Sensing Area	15 x 30 mm
Weight	150g
Cable Length	2m
Temperature Range	-20°C to 55°C
Power Requirements	8-24VDC @ 5mA

Ordering Information	
Order Code	Product
P-781-010	SW120R Rain Detector Probe

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