



RAINFALL SENSOR TIPPING BUCKET WATER PRECIPITATION SENSOR MODEL NO: HS-RF009



PRODUCT OVERVIEW

The HS-RF009 Rainfall Sensor is a precision hydrological and meteorological instrument designed for accurate measurement of natural precipitation in accordance with IEC 61724-1 requirements for solar PV monitoring systems.

This sensor employs a double tipping bucket mechanism with a streamlined three-dimensional design for improved drainage and minimal maintenance. It converts measured rainfall into digital output signals suitable for real-time monitoring, recording, and analysis, ensuring high reliability and data integrity for environmental, agricultural, hydrological, and photovoltaic applications.

FEATURES

- In tipping bucket rain gauge design ensures high measurement accuracy and easy maintenance.
- Resolution options of 0.2 mm or 0.5 mm, meeting standard tipping bucket sensitivity requirements.
- Wide measurable rain intensity range 0.01 mm/min to 4 mm/min (max passable rain: 8 mm/min).
- Accuracy within $\pm 2\%$, complying with industry standards for meteorological and PV monitoring applications.
- Flexible output signals: voltage, current loop, pulse, or RS485 Modbus-RTU for universal compatibility (Standard output RS485, rest output are optional)
- Rugged construction with operating temperature range from 0°C to +70°C (with optional heating).
- Compact design with standard $\Phi 200$ mm rain inlet and optimized funnel edge for precise collection. Scenarios.

KEY ADVANTAGES

- High accuracy, wide measurement range.
- Industry-standard outputs available as option (pulse, 4–20 mA, voltage).
- Supports IEC 61724-1 PV performance monitoring needs.
- Robust, weatherproof construction with corrosion-resistant materials.
- Low power consumption for continuous remote monitoring.



Safety Instructions

The installation and assembly of electrical equipment must be carried out by electrically qualified persons. The sensor may not be used with equipment whose direct or indirect purpose is to prevent human death or injury, or whose operation poses a risk to humans, animals or property.



Electrical Connection

The sensors are designed for safety extra-low voltage (SELV) operation. The cable shield shall be connected to the PE during installation.

WARNING: Connecting the supply voltage to the signal lines will damage the device.

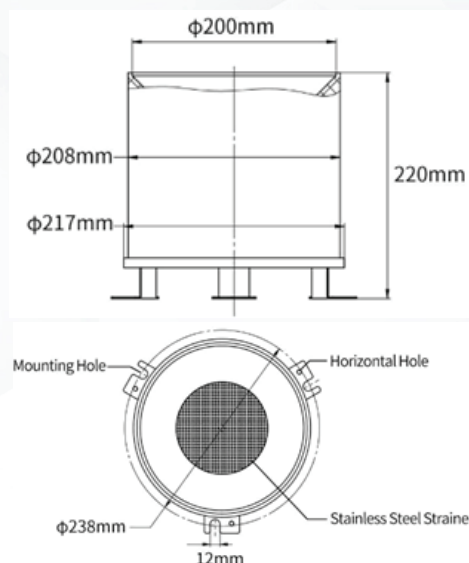


APPLICATIONS

Solar PV Power Plants, Meteorology, environmental monitoring, Airports, ports, industrial automation, agriculture, transportation, Reservoirs & Dams, Field Observatories & Remote Sites and research.

INSTALLATION

The tipping bucket is factory-calibrated with the optimal inclination locked. During installation, ensure the base is perfectly levelled and secure all components per the included manual. For reliable long-term performance, periodic cleaning of the funnel and tipping bucket is recommended. Do not attempt to adjust the tipping bucket inclination in the field.



Specifications	Parameters
Power Supply	12 to 30 V DC
Signal Output	RS485
Rain Intensity Range	0.01 mm/min to 4 mm/min (max. passable: 8 mm/min)
Accuracy	$\leq \pm 2\%$
Edge Acute Angle	$40^\circ - 45^\circ$
Rain Inlet Diameter	$\phi 200\text{ mm}$
Cable length	2.5m (Extendable)
Power Consumption	$< 0.1\text{ Watt}$
Resolution	0.2 mm/0.5 mm (selectable)
Weight	Approx. 2kg
Compliance	IEC 61724-1:2021, GB/T11832-2002
Operating Temperature	0° to 70°C
Range	0.02 - 200 mm/h
Response time	$< 30\text{ s}$
Certification	NABL certification and CE compliance



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