

Rainfall Sensor User Guide

Product Introduction

The rainfall sensor adopts a stainless steel housing and the data is read directly from the rainfall through the MODBUS-RS485 interface, without the need for secondary calculation, which is simple and convenient. The core component - the tipping bucket, adopts a three-dimensional streamlined design, which makes the water turning more fluent and has the characteristics of self-washing. The bucket sleeve is an integrated positioning structure, the internal structure is assembled at the factory, so there is no need to install the internal structure on site. This probe can be used in agriculture, industry and other outdoor applications.



Use Case Scenarios

It is widely used in agricultural sheds, industry and other outdoor locations.

Features

1. RS485 interface, long communication distance.
2. Three-dimensional streamlined tipping bucket design, turning water more smoothly.
3. Self-washing and easy to clean.
4. Super stability and anti-interference ability.
5. Standard audio interface design.
6. Wide voltage input, DC4.5~30V.
7. Standard MODBUS RTU protocol.
8. Easy to install, plug and play.

Product Specifications

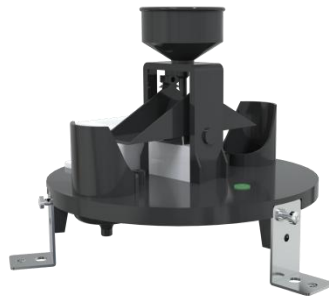
Specifications	
Model	UB-RA-N1
Working Voltage	DC 4.5~30V
Measuring Range	0mm ~ 4mm/min (max 8mm/min)
Measuring Accuracy	±0.32mm (simulated rainfall 4mm/min)
Resolution	0.2mm
Rain-bearing Diameter	φ200mm
Sharp Angle of Cutting Edge	40° ~ 45°
Communication Protocol	MODBUS RTU (RS485)
Working Environment	0°C ~55°C , <95%(40°C)
Interface Type	Audio Interface
Cable Length	3m

Mounting Method

■ Preparation

(1) Check the apparatus for damage, especially to ensure that the tipping bucket is intact. Take care to place the tipping bucket properly to prevent bruising the tip of the tipping bucket shaft and the curved diversion tips at both ends of the bucket, and do not touch the inner wall of the tipping bucket with your fingers to avoid defacing the bucket and damaging the accuracy of the instrument.

(2) Unscrew the three screws at the bottom of the appliance, take the stainless steel outer barrel, cut the ties holding the tipping bucket in place, then attach the outer barrel and the preparation is complete.



■ Out door mounting

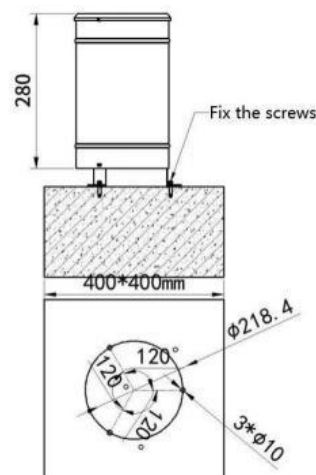
1) Making mounting base

If mounted on outdoor ground or a roof, please make a cement mounting base according to the dimensions and requirements shown in the figure below.

The surface of the cement base should be level. The size of the cement base should be at least 40cm*40cm square base with a height of no less than 30cm, or a round base with a diameter of no less than 40cm. The height of the rain collecting port edge shall be 70cm away from the ground, and no barrier higher than the rain collecting port edge is allowed within 3 to 5 meters around the instrument mouth.

2) Mounting the instrument and adjusting its level

Punch three mounting holes with $\phi 10$ mm and depth 8~10cm on the cement base according to the dimensions in the figure below. Deploy the expansion bolts in the mounting holes and lock them with the nuts. Mount the instrument on the three adjusting nuts. Adjust the height of the adjusting nuts, use a levelling instrument to make sure the instrument mouth is horizontal, then fix and lock the instrument.



Maintenance

The instrument is for long time outdoor use, and the environment is quite harsh, so the inner wall of the rain collecting port should be often wiped with a soft cloth to keep it clean.

If there are any foreign matters in the rain collecting port, such as leaves, it should be cleaned at once to keep the waterway unblocked.

When the instrument is not used for a long time, the instrument should be covered to protect the rain collecting port; the instrument should be cleaned up once a month for long time use, and it must be cleaned up once three months.

Cleaning of the tipping bucket

The tipping bucket is a key part of the instrument, it directly affects the measurement accuracy of the instrument. Over long time use, dust or oil may accumulate on the inner wall of the tipping bucket. Therefore, the tipping bucket should be cleaned. Please use water to wash the inner wall of the tipping bucket or brush it gently with a degreasing brush. It is strictly prohibited to wash the inner wall of the tipping bucket with hands or other objects.