



LoRaWAN Rain Gauge Sensor



Features

- Support LoRaWAN™(*) protocol Class A
- High reliability and stability
- 3D streamlined design, smooth structure, better turnover performance, easy to clean and maintain
- Ultra-wide-distance transmission: 10km in line of sight scene, 2 km in urban scene
- Battery life ≥ 3 years
- Rapid installation and deployment
- IP66 enclosure, suitable for outdoor applications

Applications

- Smart Agriculture
- Smart Building and Industrial Control
- Environmental Monitoring
- Other Wireless Sensing Applications

Introduction

With a built-in wireless LoRa module, this Rain Gauge measures and transmits rainfall volume data to the base station and then to the server. The 3D streamline design integrates a tipping bucket that rotates smoothly in working condition. It can be widely applied for measuring rainfall volume in industrial environment such as weather station. The built-in independent battery can last for 3 years in ultra-low-power-consumption working mode. The main body of the sensor (the tipping bucket) is made from high quality transparent material, featuring smooth rotation, easy cleaning and maintenance etc., making it suitable for long-term outdoor application scenarios.

Specifications

Rainfall Volume	
Range	0~240 mm/hour
Accuracy	$\leq \pm 2\%$
Resolution	0.5 mm/hour

Enclosure Material	PC+PBT
Operating Temperature	0 °C to +50 °C
Operating Humidity	0 to 95 %RH
Device Weight	2.3kg

Parameters	
Product Model	LoRa-S-470/868/915-Rain-01
Microcontroller	Ultra-low-power MCU
Support Protocol	Based on LoRaWAN™ v1.0.2 protocol
LoRa Channel Plan	CN470 / EU868 / US915
LoRa Power Output	16 dBm (EIRP)
Sensitivity	470MHz: -140dBm(SF12, BW125KHz) 868MHz: -137.5dBm(SF12, BW125KHz) 915MHz: -136.5dBm(SF12, BW125KHz)
Current Consumption	5 μ A (sleep mode) 120 mA (active mode)
Communication Distance	2 to 10 km (depending on different antennas and environments)
Battery Life	≥ 3 year (upload data once per hour)
Battery Voltage	3.6V
Battery Capacity	19Ah (Non-rechargeable)
IP Rating	IP66
UV Resistance	anti-aging (from rain/sun exposure): UL746C F1



The device is designed with a fixed LoRa channel, which can not be modified by users. The supported channels are as the follows. Please refer to the user manual for how to connect this device with a LoRaWAN™ gateway.

CN470	
Uplink	Channels:[80,81,82,83,84,85,86,87] Frequency(MHz): 486.3, 486.5, 486.7, 486.9, 487.1, 487.3, 487.5, 487.7 (SF7BW125 to SF12BW125)
Downlink	Frequency(MHz): 506.7, 506.9, 507.1, 507.3, 507.5, 507.7, 507.9, 508.1 (SF7BW125 to SF12BW125) 505.3 -SF12BW125 (RX2 downlink only)
EU868	
Uplink	Channels: [0,1,2,3,4,5,6,7] Frequency(MHz): 868.1, 868.3, 868.5, 867.1, 867.3, 867.5, 867.7, 867.9 (SF7BW125 to SF12BW125)
Downlink	Multiplexing the frequency points of the 8 uplink channels. 869.525MHz -SF9BW125 (RX2 downlink only)

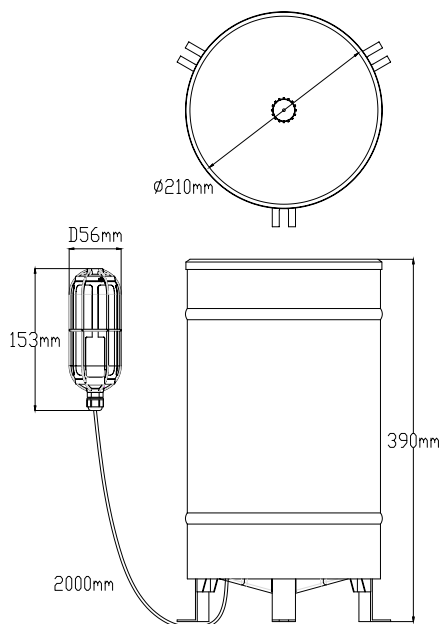
LoRaWAN Rain Gauge Sensor

US915

Uplink Channels:[8,9,10,11,12,13,14,15]
Frequency(MHz): 903.9, 904.1, 904.3, 904.5, 904.7, 904.9, 905.1, 905.3 (SF7BW125 to SF10BW125)

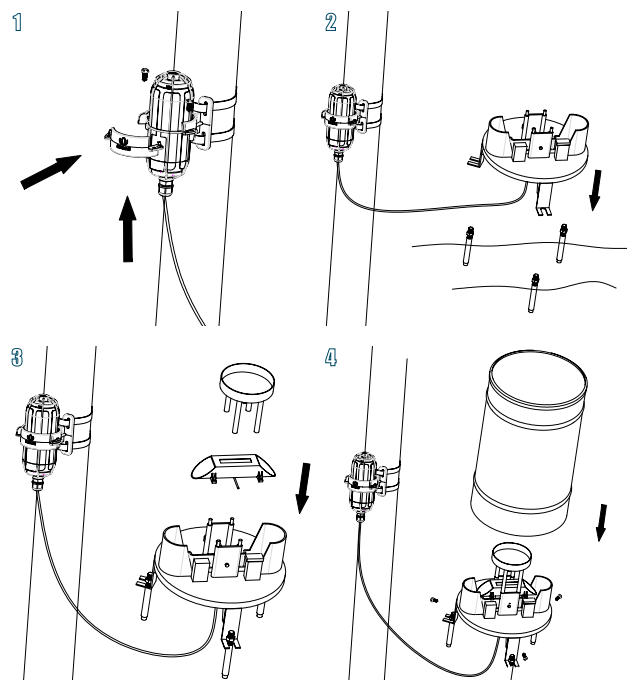
Downlink Frequency(MHz): 923.3, 923.9, 924.5, 925.1, 925.7, 926.3, 926.9, 927.5 (SF7BW500 to SF12BW500)

Device Dimensions



Installation

Please refer to the user manual for more details.



SenseCAP Series

SenseCAP is an industrial wireless sensor network that integrates easy-to-deploy hardware and data API services, enabling low-power, long-distance environmental data collection. Currently SenseCAP consists of two versions: LoRaWAN™ and NB-IoT. SenseCAP LoRaWAN™ version products include LoRaWAN™ Gateways and Sensor Nodes. NB-IoT version products include Sensor Nodes. They can collect various physical data:



If you'd like to purchase or get more info about SenseCAP, please visit website:

- Website: solution.seeed.cc
- Purchase: <https://solution.seeed.cc/product/sensecap>

You can also contact Seeed sales representatives in your local district. The following is the contact information:

- Sales: iot@seeed.cc
- Phone: +86 755 3653 4305
- Support: sensecap@seeed.cc
- Address: F9, Building G3, TCL International E City, Zhongshanyuan Road, Nanshan District, Shenzhen, China