Aqua-Scope Rain Sensor LoRaWAN

SKU: RANLWE01
Version: 1.0.0

Product Description

This rain sensor measures the amount of rain at its location in milliliters using a tipping bucket mechanism and transmits the quantity within a 15-minute interval with an accuracy of 0.5 mm of water column, along with the temperature. In the case of heavy rain exceeding 15 l/h, a heavy rain alarm is triggered promptly. Both the heavy rain threshold and the measurement interval are configurable. The device is entirely open-source, and both hardware and firmware can be downloaded from https://github.com/aqua-scope/lorain.

The device is controlled via LoRaWAN commands and operates as a LoRaWAN Class A device. The use of the device requires LoRaWAN network coverage. Otherwise, you need to install and operate your own LoRaWAN gateway.

The device is powered by two AAA batteries. The provided VARTA batteries allow for an approximate runtime of about 2 years. A low battery level is reported wirelessly, allowing for battery replacement before the device shuts down.

Scope of Delivery

- Main Device
- Mounting Screws
- 2 * AAA Batteries

Technical Data

- Platform: STM32WLE5CCU6 inside RAK 3172
- Wireless Connection:
    - LoRa point-2-point
    - SF 9, coding 4/5
    - Frequency: EU868
    - Range: > 2km (TX 22 dB)
- Measurements:
    - Rain:
        - Min amount of rainfall: 0.5 mm or 0.5 l/m3
        - Metering Interval: 15 minutes
    - Temperature:
        - Precision: +/- 3 Degree
        - Range: - 20 °C ... 50 °C
    - Heartbeat: every 6 hours unless there is rain
    - Threshold for Heavy Rain Alarm: 25 l/h, can be configured
- User Interface: 3 colored LED, single button
- Power Supply:
    - 2 * AAA Battery
    - Voltage: 2.2 ... 3.6 V
- Environmental Conditions:
    - Shipment and Storage: -65 °C ... 125 °C
    - Operation: - 20 °C ... 50 °C
    - Rel. Humidity: 0...90 %
- Protection: IP 55
- Size of device: 132x132x139 mm
- Size of packaging: 140x140x150 mm
- Weight: 219 gr.