# Wireless 3-axis Accelerometer Sensor

Wireless Sensor Network Based on LoRa Technology


# R313FA1

# Data Sheet

## Introduction

When the device moves or shakes beyond the set threshold, it immediately reports the current acceleration and velocity of the X, Y, and Z axes. The device is compatible with the LoRaWAN protocol and adopts SX1276 wireless communication module.

## Main Characteristic

- 2 sections 3.0V CR2450 button batteries
- 3-axis Acceleration and Velocity Detection
- Compatible with LoRaWAN protocol
- Adopt SX1276 wireless communication module
- Compatible with LoRaWAN™ Class A
- Frequency hopping spread spectrum
- Configuration parameters can be configured through third-party software platforms, data can be read and alarms can be set via SMS text and email (optional)
- Applicable to the third-party platforms: Actility/ThingPark, TTN, MyDevices/Cayenne
- Low power consumption and long battery life

Note:

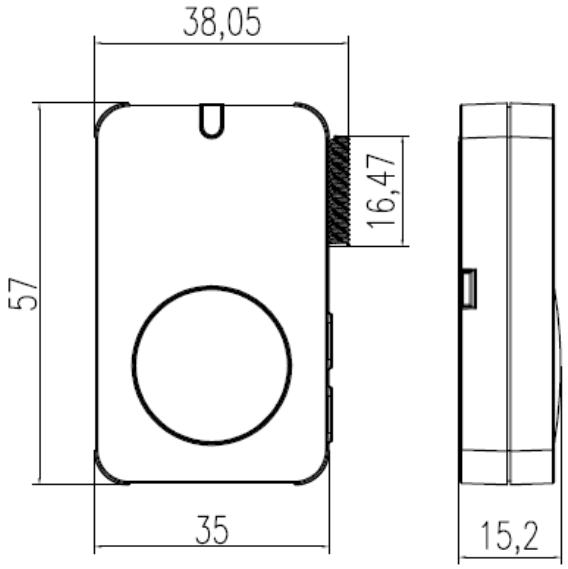
Battery life is determined by the sensor reporting frequency and other variables, please refer to http://www.netvox.com.tw/electric/electric_calc.html

On this website, users can find battery life of various models in different configurations.

## Application

- Smart Home
- Industrial Equipment
- Others

## Dimension




## Electric

| | |
|---|---|
| Input Power | 2 x 3.0V CR2450 button batteries |
| Operation Voltage Range | DC 2.4V to 3.0V |
| Low Battery Voltage Threshold | 2.4V |
| Standby Current | 40uA/ 3.0V |
| Emission Current (max) | 120mA / 3.0V |
| Receiving Current (max) | 11mA/ 3.0V |
| Battery Measurement Accuracy | ± 0.1V |

## 3-axis Accelerometer Sensor

| | |
|---|---|
| Operating Temperature Range | -40℃ to 85℃ |
| ADC Maximum Resolution | 13 Bits |
| Communication Method | SPI communication |
| Three-axis Acceleration Accuracy | ±16g |
| Sampling Rate | 800 Hz (default) |

## Frequency

| | |
|---|---|
| Frequency Range | 863MHz-928MHz 470MHz-510MHz |
| TX Power | US915 20dbm<br>AS923 16dbm<br>AU915 20dbm<br>CN470 19.15dbm<br>EU868 16dbm<br>KR920 14dbm<br>IN865 20dbm |
| Receiving Sensitivity | -136dBm<br>(LoRa, Spreading Factor=12, Bit Rate = 293bps)<br>-121dBm<br>(FSK, Frequency deviation=5kHz, Bit Rate=1.2kbps) |
| Antenna Type | External antenna |
| Communication Distance | 10 km<br>(visible linear obstacle-free transmission distance, actual transmission distance depending on the environment) |
| Data Transfer Rate | LoRa: 0.3kbps ~ 50kbps<br>FSK: 1.2kbps ~ 300kbps |
| Modulation | LoRa / FSK (Note: choose one of them) |
| Supportable LoRaWAN Frequency | EU863-870, US902-928, AU915-928, KR920-923, AS923-1, AS923-2, AS923-3, IN865-867,CN470-510<br>(Note: The frequency band is optional and needs to be configured before shipment) |

## Physical

| | |
|---|---|
| Dimension | 57 mm x 38.05 mm x 15.2 mm |
| Weight | 48.9g |
| Environment Humidity | <90 %RH (No condensation) |
| Operating Temperature | -20°C ～ 55 °C |
| Storage Temperature | -40°C ～ 85 °C |