

Wireless Activity Detection Sensor

Wireless Sensor Network Based on LoRa Technology



R311FA

Data Sheet

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Wireless Activity Detection Sensor

Introduction

It can detect the sudden movement or vibration of the device and send an alarm signal to the gateway for processing. It uses the SX1276 wireless communication module.

Main Characteristic

- Adopt SX1276 wireless communication module
- Compatible with LoRaWAN™ Class A
- 2 section 3V CR2450 button battery
- Frequency Hopping Spread Spectrum (FHSS)
- Acceleration sensor detection
- Vibration intensity sensitivity: 62.5mg
- Improved interference immunity
- Encrypt-RF™ Security (Diffie-Hellman Key Exchange + AES-128 CBC for sensor data messages)
- Third-Party online wireless sensor monitoring and notification system to configure sensors, view data and set alerts via SMS text and email (optional)
- Available third-party platform: 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.

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Application

- Smart home
- Anti-theft system
- Industrial device
- Security field

Dimension

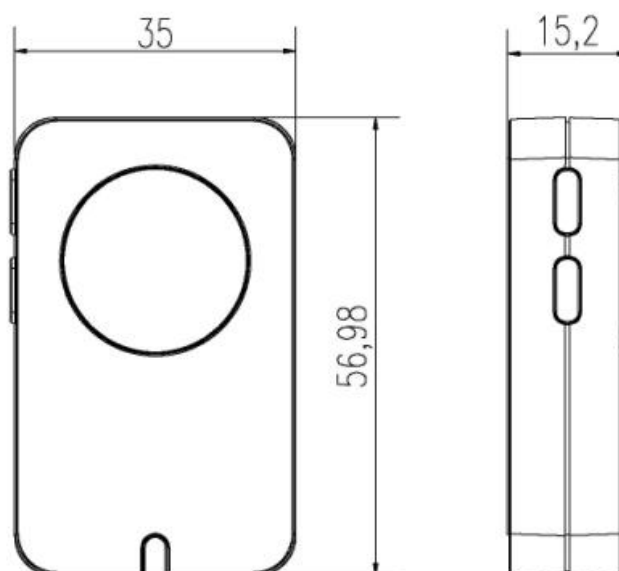


Figure 2 Dimensions of main engine shell(excluding external antenna)

Electric

Input Power	2pcs 3.0V CR2450 button battery
Operation Voltage Range	DC 2.4V~3.0V
Standby Current	40uA/ 3.0V
Transmitting Current (max)	120mA / 3.0V
Receiving Current (max)	11mA / 3.0V
Battery Measurement Accuracy	±0.1V

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Frequency

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

Physical

Dimension	57mm x 35mm x 15.2mm
Weight	30.4g (Including batteries)
Environment Humidity	<90 %RH (No condensation)
Operating Temperature	-20°C to 55 °C
Storage Temperature	-40°C to 85 °C