

# Wireless Vibration Sensor Rolling Ball Type

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Wireless Sensor Network Based on LoRa Technology



## R313DA Data sheet

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## Introduction

When the vibration sensor moves or vibrates, the R313DA can detect vibrations or moving signals and transmit the detected data to other devices through the wireless network.

The SX1276 wireless communication module is used.

## Main Characteristic

- 2 sections 3.0V CR2450 button batteries in parallel
- Compatible with LoRaWAN protocol
- Adopt SX1276 wireless communication module
- Rolling ball type vibration detection
- 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:

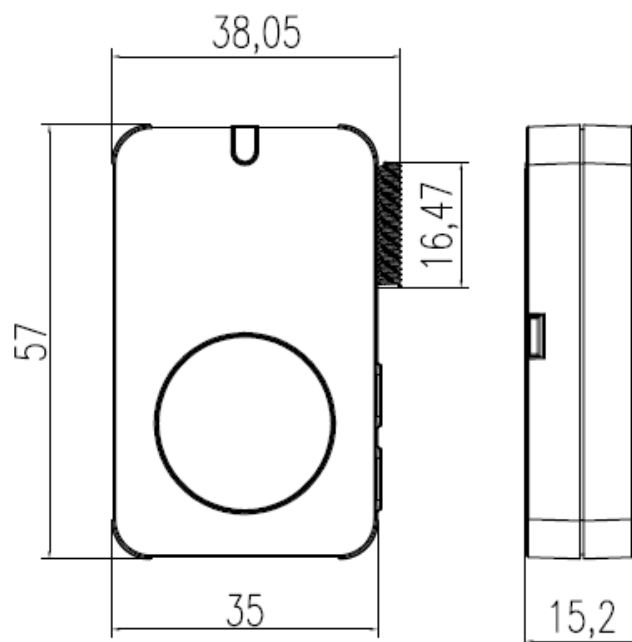
Battery life is determined by the sensor reporting frequency and other variables, please refer to [http://www.netvox.com.tw/electric/electric\\_calc.html](http://www.netvox.com.tw/electric/electric_calc.html)

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

## Application

- Vibration detecting
- Object to be detected vibration or movement

### Dimension



### Electric

Input Power	2 x 3.0V CR2450 button batteries in parallel (The capacity of each CR2450 battery is 620mah.)
Work Voltage Range	DC 2.4 V to 3.0V
Standby Current	13uA / 3.0V
Emission Current (max)	120mA / 3.0V
Receiving Current (max)	11mA / 3.0V
Battery Measurement Accuracy	± 0.1V
Low Battery Alarm	2.4V

### Vibration Sensor

Sensor Type	Dual ball type single direction tilt sensitive trigger switch
Life span	10,000 cycles
Vibration Sensor Sensitivity	In a horizontal position, be easy to trigger with a shaking.

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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
Receiving Sensitivity	-136dBm (LoRa, Spreading Factor=12, Bit Rate = 293bps) -121dBm (FSK, Frequency deviation=5kHz, Bit Rate=1.2kbps)
Antenna Type	External antenna
Communication Distance	10 km (visible linear obstacle-free transmission distance, actual transmission distance depending on the environment)
Data Transfer Rate	0.3kbps ~ 50kbps (LoRa) 1.2kbps ~ 300kbps (FSK)
Modulation Method	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 (Note: The frequency band is optional and needs to be configured before shipment)

**Physical**

Dimension	57 mm x 35 mm x 15.2 mm
Weight	About 45 g
Environment Humidity	< 90 %RH (No condensation)
Operating Temperature	-20°C to 55 °C
Storage Temperature	-40°C to 85 °C