



Multi-Sense Sensor

Wireless Sensor Network Based on LoRa Technology

R31502

Data Sheet

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Introduction

R31502 is a comprehensive detection device with temperature and humidity, light, tilt, door magnetism detection, and external vibration.

The radio transmission of R31502 is based on LoRa long-distance technology. According to the required behavior and state, it can transmit information and data to the server, and can directly transmit and connect to the central system of the programmable alarm system.

The sensors used are reliable, accurate, and can detect multiple applications. R31502 has the advantages of durability, beautiful appearance, multi-function integration, low power consumption, and convenient installation and use.

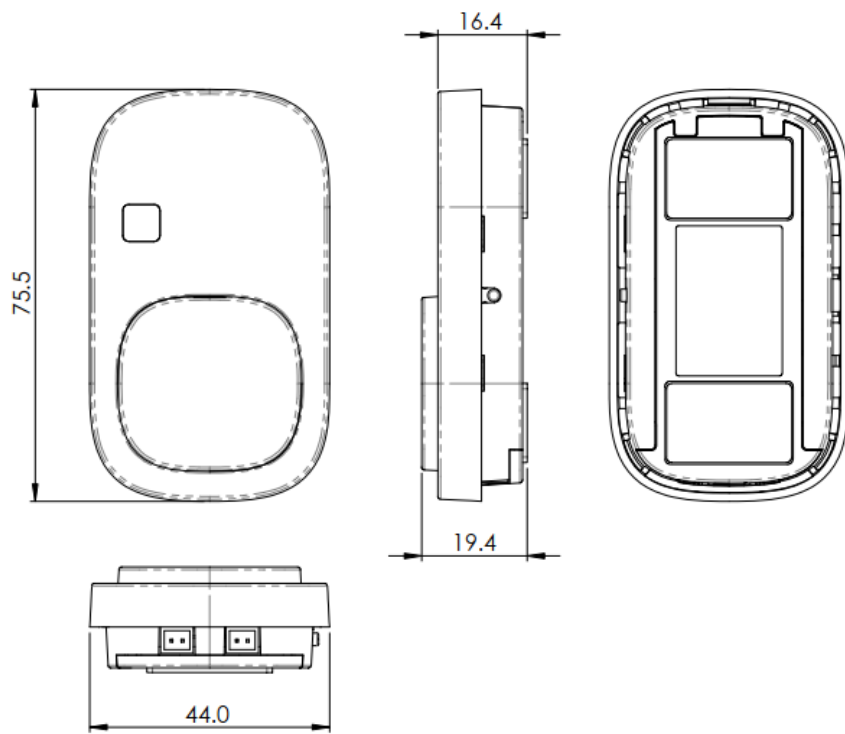
Main Characteristic

- Adopt SX1262 wireless communication module
- 2 x 3.0V CR2450 button batteries in parallel
- Compatible with LoRaWAN™ Class A
- Frequency hopping spread spectrum (FHSS)
- Applicable to the third-party platforms: Actility/ThingPark, TTN, MyDevices/Cayenne
- Low power consumption and long battery life
- 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 the battery life of various models in different configurations.

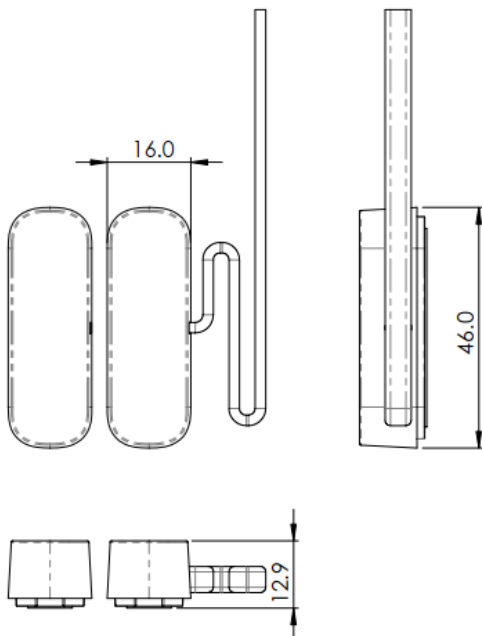
Application

- Security system
- Villas
- Office
- Hotels and apartments
- Schools, shopping malls and supermarkets
- Others

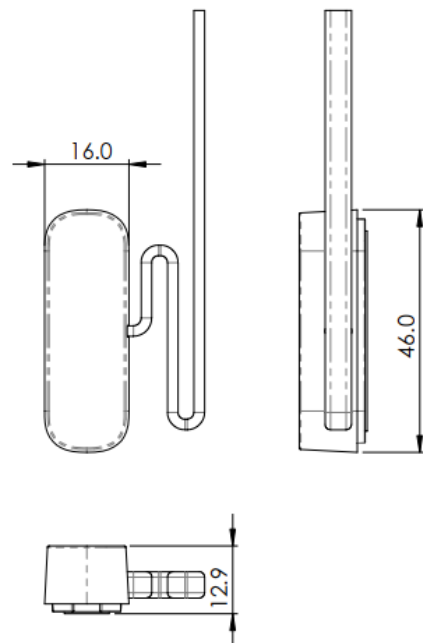
Dimension



Main body- Include light sensor
(75.5mm x 19.4mm x 44mm)



Reed Switch
(46mm x 16mm x 12.9mm)



External Vibration Sensor
(46mm x 16mm x 12.9mm)

The Port Types

The type of R31502 must be configured according to the rules.



Left	Center	Right
External vibration sensor	/	Reed switch

Electrical Characteristics

---Electric---

Power Supply	2* 3V CR2450 button batteries connected in parallel (The capacity of a single CR2450 battery is 620mah, subject to the actual shipment)
Operating Voltage Range	2.3V to 3V
Battery Low Voltage Alarm	2.4V
Sleep Current	29uA/3.0V
Battery Measurement Accuracy	± 0.1V

*The specific electrical characteristics will vary depending on the supply voltage

---Temperature and Humidity Sensor---

Temperature Measurement Range	-20°C to 55°C
Temperature Measurement Accuracy	±1°C
Humidity Measurement Range	0% RH to 100% RH
Humidity Measurement Accuracy	±7%RH

---Reed Switch---

Minimum Insulation Resistance	10 ¹⁰ Ω
Maximum Contact Resistance	100m Ω
Maximum Switching Current	0.5A

---Tilt Sensor---

Conversion Angle	45±5 degrees
Contact Resistance	Less than 10 ohms
The Insulation Resistance	Greater than 100 megohms
Operating Temperature	-40°C to 85 °C
Installation Type	Suitable for PCB at vertical state

---External Vibration Sensor---

Model	Ball-type omnidirectional signal trigger switch
Voltage	<6V
Current	2uA to 10mA
Insulation Resistance	>10M Ω
Trigger Rate	100% (amplitude > 1 mm, frequency > 20 Hz)
Trigger Frequency	>50Hz

---Light Sensor---

Illumination Measurement Range	1 Lux to 3000 Lux
Illumination Measurement Accuracy	<15%

---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	-123 dBm (Frequency deviation=5kHz, Bit Rate=1.2kb/s)
Antenna Type	Spiral antenna
Communication Distance	10 km(Visible linear obstacle-free transmission distance, actual transmission distance depending on the environment.)
Data Transfer Rate	0.6kbps ~ 300kbps
Modulation	FSK
Supportable LoRaWAN Frequency	EU863-870, US902-928, AU915-928, KR920-923, AS923-1, AS923-2, AS923-3, IN865, CN470-510 (Note: The frequency band is optional and needs to be configured before shipment.)

---Physical---

Operating Temperature Range of R315 Host Body	-20°C to 55 °C
Operating Temperature Range of Glass Breaking Sensor	-10°C to 50°C
Environment Humidity Range	<90 %RH (No condensation)
Storage Temperature	-40°C to 85 °C

More Combinations

Please refer to this file:

http://www.netvox.com.tw/download/R315_combination.xlsx