



Multi-Sense Sensor

Wireless Sensor Network Based on LoRa Technology

R31501

Data Sheet

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Introduction

R31501 is a comprehensive detection device with PIR, water leak, door magnetism, glass break detection, and internal vibration.

The radio transmission of R31501 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. R31501 has the advantages of durability, beautiful appearance, multi-function integration, low power consumption, and convenient installation and use.

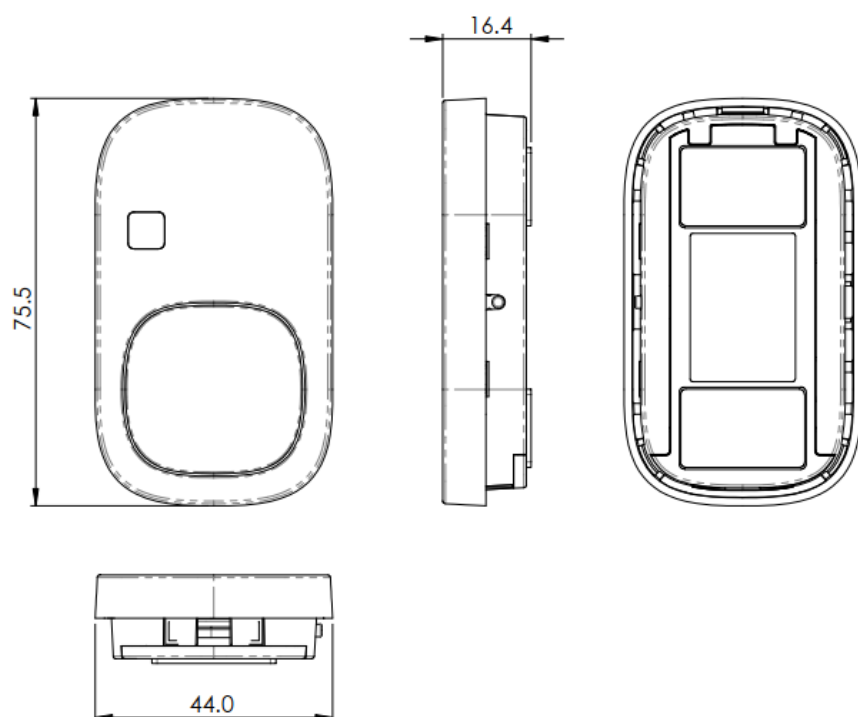
Main Characteristic

- 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 battery life of various models in different configurations.

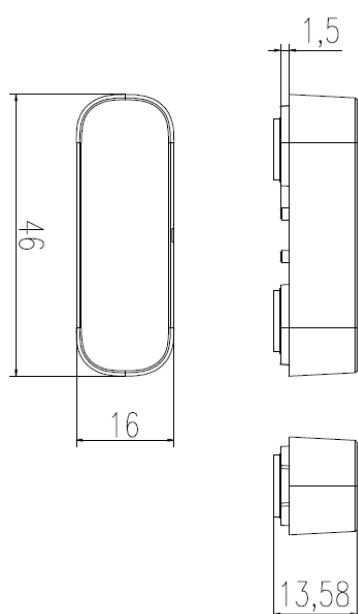
Application

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

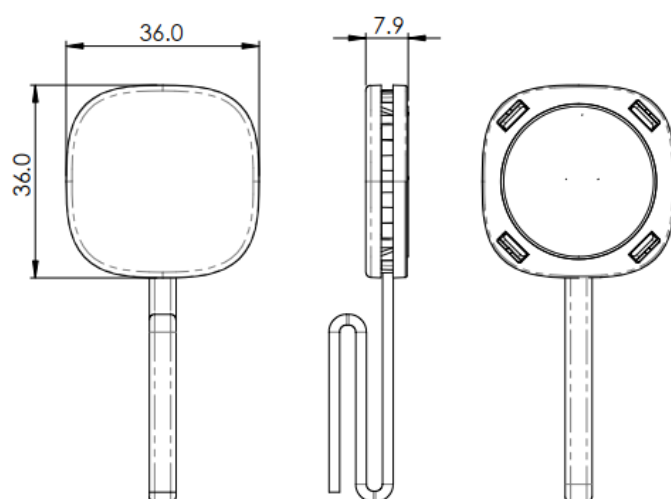
Dimension



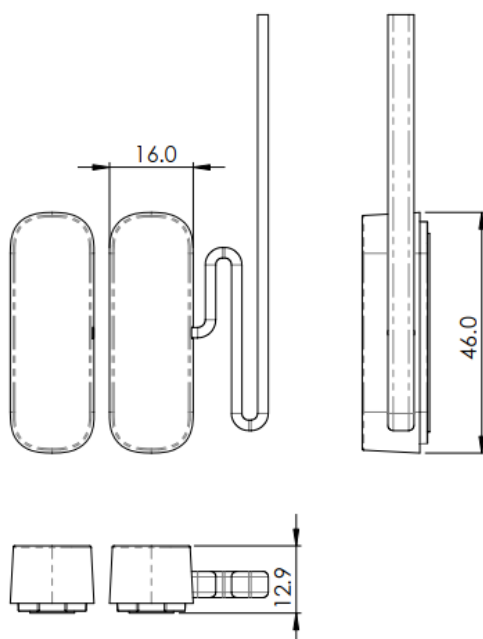
Main body
(75.5mm x 16.4mm x 44mm)



Water Leak Sensor
(46mm x 16mm x 13.58mm)



Glass Break Sensor
(36mm x 36mm x 7.9mm)



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

The Port Types

The type of R31501 must be configured according to the rules.



Left	Center	Right
Water leak sensor	Glass break 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

---PIR Sensor---

Sleep Current Value	9.5uA
Detectable Angle	80 ° horizontally and 55 ° vertically
Detectable Range	3m to 5m

---Reed Switch---

Minimum Insulation Resistance	$10^{10} \Omega$
Maximum Contact Resistance	100m Ω
Maximum Switching Current	0.5A

---Internal 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

---Glass Break Sensor---

Detection Mode	Piezoelectric buzzer
Power Supply	Self-generated voltage chip

Impedance	Normal (NC) : 7Ω (max) Alarm (NO) : 1MΩ (min)
Sensor Sensing Range	within 2.5M radius
Signal Sensing Time	1-3 seconds
Loop Voltage	15VDC (max)
Loop Current	25mA (max)
Applicable Glass Type	In theory, as long as any glass is impacted by high frequency, its vibration frequency and amplitude can be detected to a certain extent
Operating Temperature	-10 to 50 °C
Dimensions	36.2 x 36.2 x 8.5cm
Wire Length	100cm
Installation	The glass at the installation position must be wiped clean first, and then the double-sided adhesive tape on the back of the detector must be torn and fixed on the glass. The detector should be installed about 10 cm from the corner of the glass frame.

---Water Leak Sensor---

Rivet Material	Phosphor bronze
Rivet Surface Treatment	Nickel plated

---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