netvox™ R31512

Wireless Temperature / Humidity / Built-In Vibration / PIR / Emergency Button / Tilt / Water Leak / Reed Switch / Glass Break Sensor

Wireless Temperature / Humidity /

Built-In Vibration / PIR /

Emergency Button / Tilt / Water Leak /

Reed Switch / Glass Break Sensor

Wireless Sensor Network Based on LoRa Technology

R31512 Data Sheet

Introduction

The R315 series can be equipped with up to 8 types of sensors, including temperature and humidity, illumination, reed switch, internal vibration, external vibration, emergency button, tilt, water leakage, glass breakage, seat occupancy, PIR, dry contact, and digital output functions.

Various models of the R315 series are available to meet your needs, depending on your application scenario. For detailed lists of functionalities, please refer to our website.

The functions of the **R31512** include:

Temperature and humidity, built-in vibration, PIR, emergency button, tilt, water leak, reed switch, and glass break sensor.

Features

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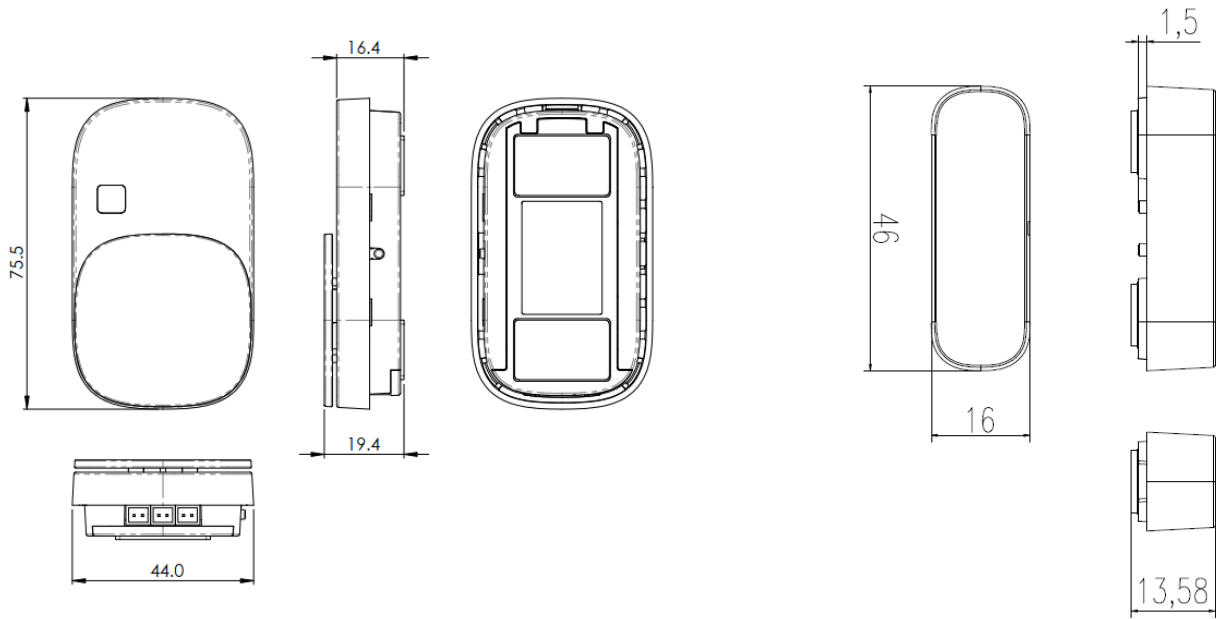- Low power consumption and long battery life

Note

Battery life is determined by the sensor reporting frequency and other variables, please visit

http://www.netvox.com.tw/electric/electric_calc.html for battery lifespan and calculation.
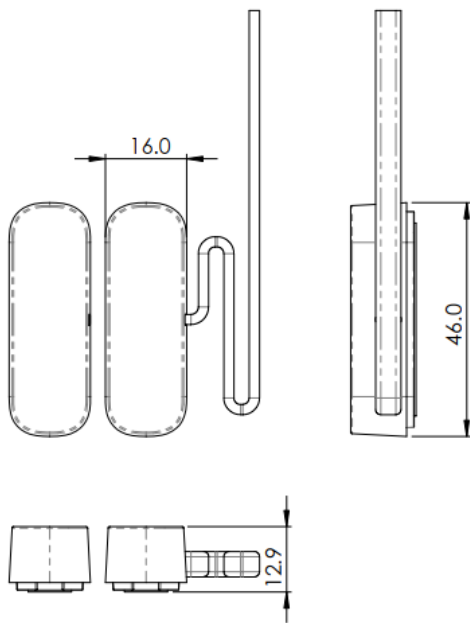
Applications

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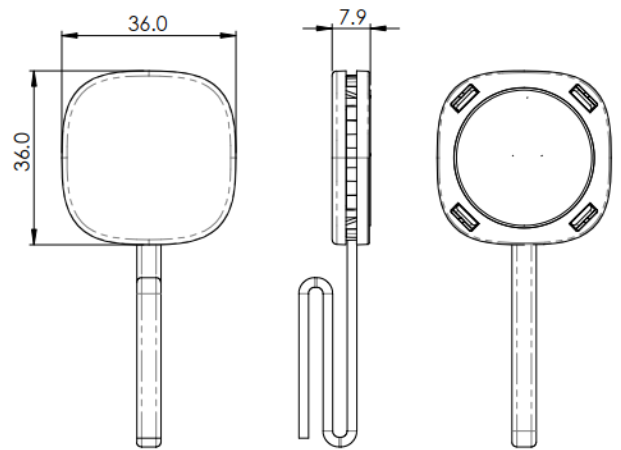
Dimensions

▲ Main body

(75.5mm x 19.4mm x 44mm)
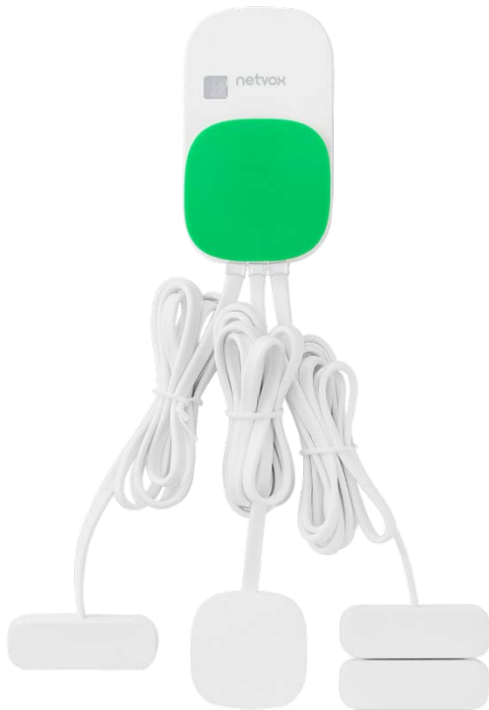
▲ Water Leak

(46mm x 16mm x 13.58mm)

▲ Reed switch

(46mm x 16mm x 12.9mm)

▲ Break Glass

(36mm x 36mm x 7.9mm)

Port

Left	Water Leak Sensor
Center	Glass Break Sensor
Right	Reed Switch

Electrical Specifications

Power Supply	2* 3V CR2450 button batteries connected in parallel
Operating Voltage Range	2.3V to 3V
Battery Low Voltage Alarm	2.4V
Sleep Current	40uA/3.0V
Battery Measurement Accuracy	± 0.1V

Note: Electrical specifications may 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

Internal Vibration Sensor

Model	Ball-type omnidirectional signal trigger switch
Insulation Resistance	>10M Ω
Trigger Rate	100% (amplitude > 1 mm, frequency > 20 Hz)
Trigger Frequency	>50Hz

PIR Sensor

Detectable Angle	80° horizontally; 90° vertically
Detectable Range	2.5m

Emergency Button

Average Pressing Life	100,000 times
Contact Resistance	≤200mΩ

Tilt Sensor

Conversion Angle	45±5 degrees
Contact Resistance	Less than 10 ohms
The Insulation Resistance	Greater than 100 megohms
Installation Type	Suitable for PCB at vertical state

Water Leak Sensor

Rivet Material	Phosphor bronze
Rivet Surface Treatment	Nickel plated

Reed Switch

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

Glass Break Sensor

Detection Mode	Piezoelectric buzzer
Impedance	Normal (NC): 7Ω (max) Alarm (NO): 1MΩ (min)
Sensor Sensing Range	Within 2.5M radius
Signal Sensing Time	1 – 3 seconds
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.
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.

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 (line of sight) Note: Communication distance may vary due to the environment.
Data Transfer Rate	LoRaWAN: 0.3kbps – 50kbps FSK: 0.6kbps – 300kbps
Modulation	LoRa/FSK (Note: One modulation method is required.)
Supportable LoRaWAN Frequency	EU863-870, US902-928, AU915-928, KR920-923, AS923-1, AS923-2, AS923-3, IN865, CN470-510 (Note: optional, to be configured before shipment)

Physical Properties

Operating Temperature	Main body: -20°C to 55 °C Glass Break: -10°C to 50°C
Ambient Humidity Range	<90 %RH (No condensation)
Storage Temperature	-40°C to 85 °C