
Wireless Temperature / Humidity / Light / Built-In Vibration / PIR / Tilt /
2-Gang Reed Switch / Glass Break Sensor

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Wireless Sensor Network Based on LoRa Technology



R31527 Data Sheet

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Introduction

R31527 is a comprehensive detection device with temperature, humidity, illuminance, internal vibration, PIR, tilt, glass break, and two reed switches.

The radio transmission of the series is based on LoRa long-distance technology. It can transmit data to the server, and the central system of the programmable alarm system.

Up to 8 types of sensors can be equipped in one device. R315 series gets you accurate results, helping you monitor various applications.

Features

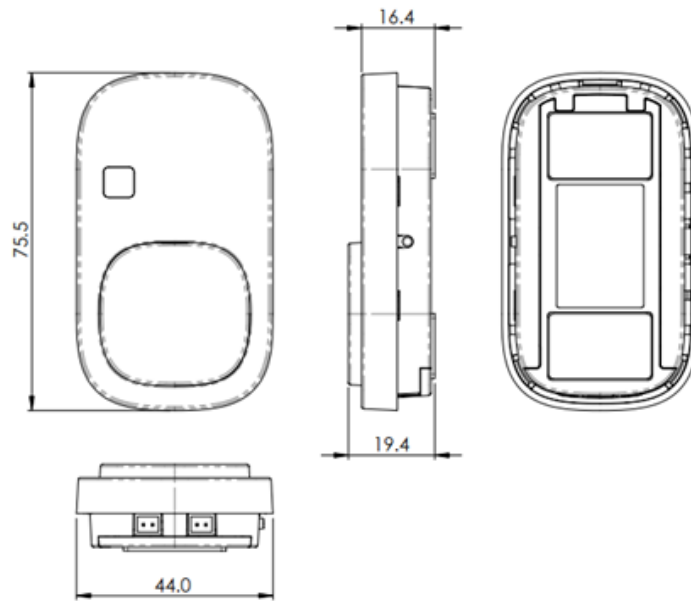
- SX1262 wireless communication module
- 2 x 3.0V CR2450 button batteries in parallel
- Compatible with LoRaWAN™ Class A
- Frequency hopping spread spectrum (FHSS)
- Applicable to the third-party platforms: Actility/ThingPark, TTN, MyDevices/Cayenne
- Low power consumption and long battery life

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.

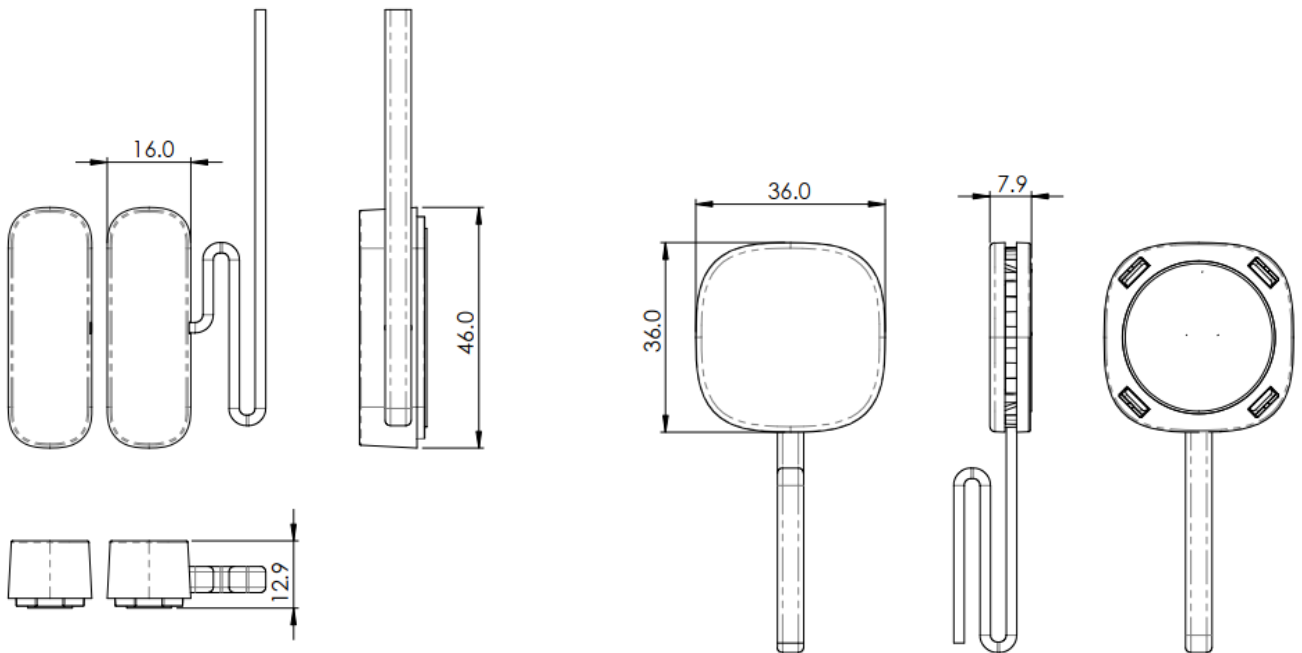
Applications

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

Dimensions



▲ Main body with light sensor
(75.5mm x 44mm x 19.4mm)



▲ Reed switch
(46mm x 16mm x 12.9mm)

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

Port



Left	Reed switch
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	38uA/3.0V
Battery Measurement Accuracy	$\pm 0.1V$

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	$\pm 1^{\circ}C$
Humidity Measurement Range	0% RH to 100% RH
Humidity Measurement Accuracy	$\pm 7\%RH$

PIR Sensor

Sleep Current Value	10uA
Detectable Angle	80° horizontally; 90° vertically
Detectable Range	2.5m

Light Sensor

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

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

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

Reed Switch

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

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
Applicable Glass Type	As long as any glass is impacted by high frequency, its vibration frequency and amplitude can be detected to a certain extent.
Dimensions	36 x 36 x 7.9mm
Wire Length	100cm
Installation	<p>Step 1. Wipe the glass.</p> <p>Step 2. Remove the backing material of double-sided tape.</p> <p>Step 3. Fix the sensor on the glass.</p> <p>Note: The sensor should be fixed about 10cm from the corner of the glass frame.</p>

Frequency

Frequency Range	863MHz-928MHz 470MHz-510MHz
TX Power	<p>US915 20dbm</p> <p>AS923 16dbm</p> <p>AU915 20dbm</p> <p>CN470 19.15dbm</p> <p>EU868 16dbm</p> <p>KR920 14dbm</p> <p>IN865 20dbm</p>
Receiving Sensitivity	-123 dBm (Frequency deviation = 5kHz, Bit Rate = 1.2kb/s)
Antenna Type	Spiral antenna
Communication Distance	<p>10 km (line of sight)</p> <p>Note: Communication distance may vary due to the environment.</p>

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 Breaking Sensor: -10°C to 50°C
Ambient Humidity Range	<90 %RH (No condensation)
Storage Temperature	-40°C to 85 °C