Wireless Window Sensor with Glass Break Detector

Wireless Sensor Network Based on LoRa Technology

R313CB
Data Sheet

Introduction

The R313CB device has a built-in reed switch sensor and can be externally connected to the reed switch. It can be used for door and window switch status detection and externally connected to broken glass sensor to detect the glass status. It adopts the SX1276 wireless communication module.

Working Principle

The built-in reed switch and the externally connected reed switch are in a series connection state; when the reed switch state is to be detected, a high level state is detected when all the reed switches are closed. Similarly, when the reed switch is not fully closed, it detects a low level state. When the glass is broken, the glass breakage detection will change its resistance value, and there is a high and low level change for its detection port.

Features

- 2 pcs 3.0V CR2450 button batteries in parallel
- Adopts SX1276 wireless communication module
- Compatible with LoRaWAN^{TM} Class A
- Frequency hopping spread spectrum (FHSS)
- Applicable to the third-party platforms: Actility/ThingPark, TTN, MyDevices/Cayenne
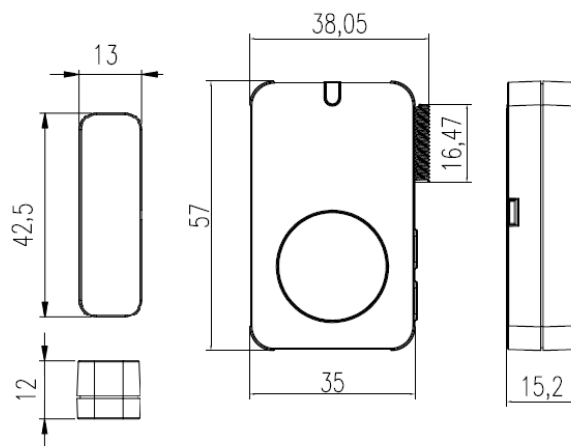- Low power consumption and long battery life

Note: Please visit http://www.netvox.com.tw/electric/electric_calc.html for more information about battery lifespan.

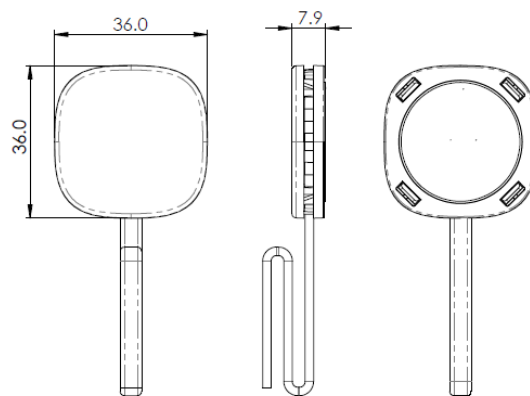**Wireless Window Sensor with Glass Break Detector**

Applications

- Villa

- Office

- Hotel

- Apartment

Dimensions

R313CB Main Body (Unit: mm)

R313CB Glass Break Sensor (Unit: mm)

Wireless Window Sensor with Glass Break Detector

Electric

Rated Power	2pcs 3.0V CR2450 button battery in parallel (single-section CR2450 battery capacity: 620mah)
Working Voltage Range	DC 2.4V to 3.0V
Battery Low Voltage Alarm	2.4 V
Sleeping Current	15uA / 3.0V
Transmitting Current (max)	120mA/ 3.0V
Receiving Current (max)	11mA/ 3.0V
Battery Voltage Accuracy	±0.1V

Reed Switch Sensor

Sensor Case Size	42mm (L) x13mm (W) x 12mm (H)
Sensor Characteristic	Within the magnetic range, it is at off state (conducting). When out of the magnetic range, it is at on state (non-conducting).

Glass Break Sensor

Detection Mode	Piezoelectric buzzer
Impedance	Normal (NC): 7Ω (max) Alarm (NO): $1M\Omega$ (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

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Wireless Window Sensor with Glass Break Detector

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
RX Sensitivity	-136 dBm (LoRa, Spreading Factor=12; Bit Rate=293bps) -121 dBm (FSK, Frequency deviation=5kHz; Bit Rate=1.2kbps)
Antenna Type	External antenna
Communication Range	Up to 10 km Note: Actual transmission distance depends on the environment.
Data Transfer Rate	0.3kbps–50kbps
Modulation	0.3kbps–50kbps (LoRa) 1.2kbps–300kbps (FSK)
Available Frequency	EU863-870, US902-928, AU915-928, KR920-923, AS923-1, AS923-2, AS923-3, IN865-867, CN470-510 Note: optional, to be done in the factory configuration

Physical

Main Body Dimension	57mm x 38.05mm x 15.2mm
Weight	45g
Operating Temperature	-20°C–55°C
Environment Humidity Range	<90% RH (No condensation)
Storage Temperature	-40°C–85°C