

Wireless Window Sensor with Glass Break Detector

Wireless Sensor Network Based on LoRa Technology



R313CB Data Sheet

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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.

Main characteristics

- 2 pcs 3.0V CR2450 button batteries in parallel
- Adopts SX1276 wireless communication module
- Compatible with LoRaWAN™ Class A
- Frequency hopping spread spectrum (FHSS)
- Configuration parameters can be configured through third-party software platforms, data can be read and alarms can be set via SMS text and email (optional)
- 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 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.

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Applications

- Villa
- Office
- Hotel
- Apartment

Dimensions

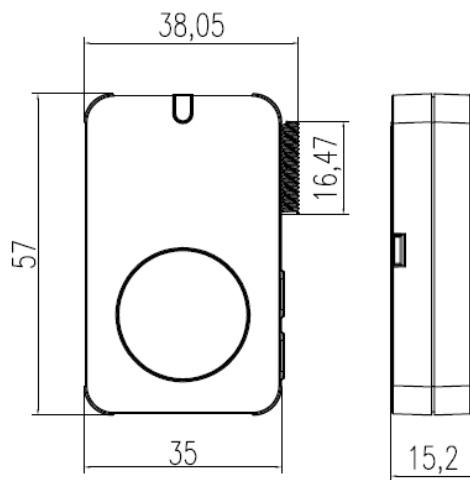


Figure2 R311CB Main Body (Unit: mm)

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

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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 (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)

Reed Switch Sensor

Sensor Case Size	L:42mm*W:13mm*H:12mm
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).

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Physical

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