

# Multi-Sense Sensor

Wireless Sensor Network Based on LoRa Technology

## R31504

## Data Sheet

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## Introduction

**R31504** is a comprehensive detection device with temperature and humidity, PIR, door magnetism, seat occupancy detection, and an emergency button.

The radio transmission of R31504 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. R31504 has the advantages of durability, beautiful appearance, multi-function integration, low power consumption, and convenient installation and use.

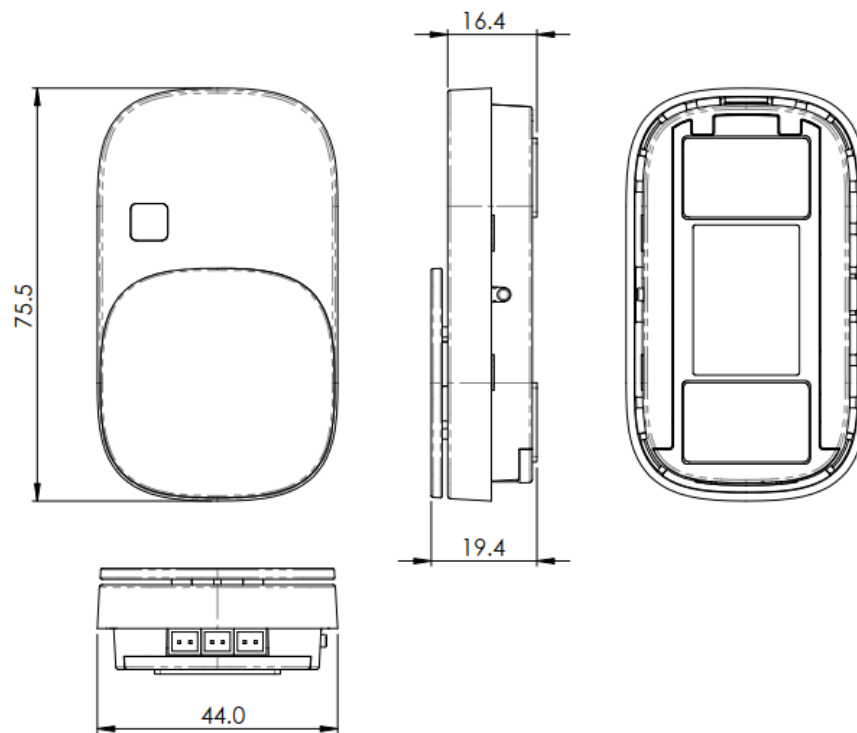
## Main Characteristic

- 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](http://www.netvox.com.tw/electric/electric_calc.html) on this website, users can find the battery life of various models in different configurations.

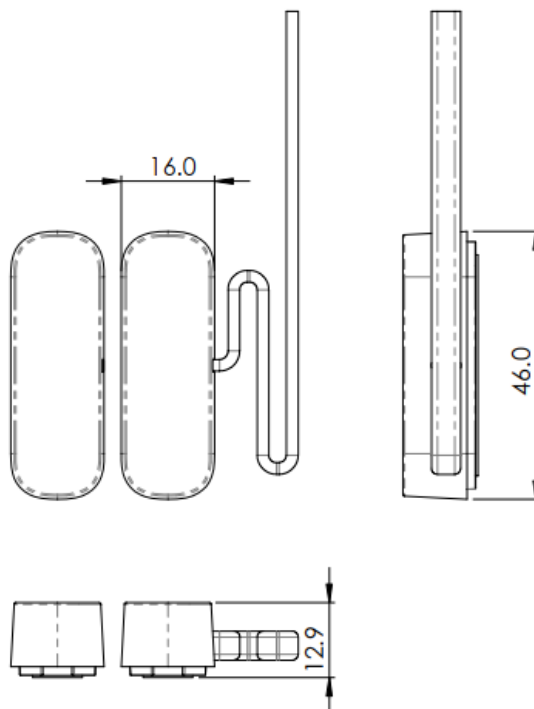
## Application

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

## Dimension



Main body- Include emergency button  
(75.5mm x 19.4mm x 44mm)



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

## The Port Types

The type of R31504 must be configured according to the rules.



Left	Center	Right
Seat occupancy 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

### ---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

### ---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 <sup>10</sup> Ω
Maximum Contact Resistance	100m Ω
Maximum Switching Current	0.5A

### ---Emergency Button---

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

### ---Seat Occupancy Sensor---

Pressure Measurement Range	The minimum value is 200-300g
Maximum operating voltage	20V (DC)
Maximum operating current	50mA
Maximum output resistance	50 Ω
Substrate pressure resistance	2KV (DC)
Durability	At least 150,000 times

### ---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](http://www.netvox.com.tw/download/R315_combination.xlsx)