

# **Wireless Wearable Emergency Button with Inactivity Detection**

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Wireless Sensor Network Based on LoRa Technology



## **R309**

## **Data Sheet**

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**Introduction**

R309 is a wireless emergency button alarm device, which can realize the wireless alarm function together with other devices through the buttons on the device. At the same time, the device has built-in vibration sensors to further improve the alarm system. This device is compatible with LoRaWAN protocol. Chip modules conforming to LoRaWAN wireless protocol are integrated in it and added to the gateway to display the collected data in the gateway. Users can monitor all changes in the network through the cloud access gateway, easily realize the real remote control of the Internet of things, and achieve the functions of energy conservation, emission reduction and green environmental protection.

**Main Characteristic**

- Adopt SX1262 wireless communication module
- IP Rating: IP67
- 2 x CR2032 batteries in parallel power supply
- It is light in size and can be worn with wristband or lanyard
- Built in vibration sensor
- Frequency hopping spread spectrum (FHSS)
- Compatible with LoRaWAN™ Class A
- 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](http://www.netvox.com.tw/electric/electric_calc.html)

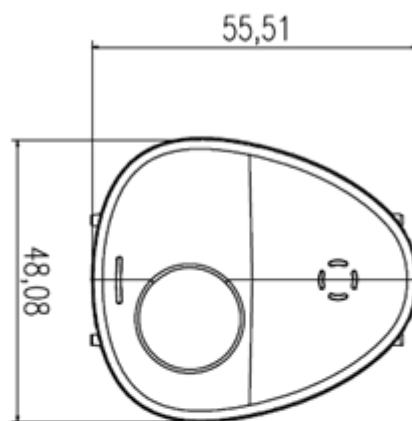
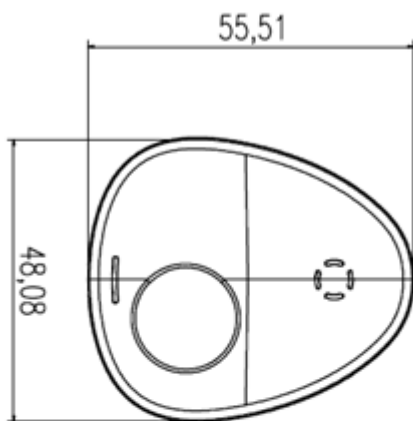
On this website, users can find battery life of various models in different configurations.

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**Application**

- Hospitals
- Elderly care
- Personal homes / toilets
- Nursing homes
- Hotels
- Schools
- Communities
- Shopping malls
- Others

**Dimension**



R30900

A: Lanyard style

R30901

B: Wristband style

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**Electric**

Power Supply Mode	2 x CR2032 button batteries supply power, with a total battery capacity of 450mAh
Working Voltage	2.5V to 3.0V
Battery Life	2 years (Conditions: ambient temperature 25 °C, 60min report once, txpower=20dbm, LoRa spread spectrum factor SF=7) The specific measurement shall prevail.
Sleeping Current	≤6uA
Battery Accuracy	±0.1V
Low Voltage Alarm	2.5V

**LoRa Module**

Module Wake-up Current	6.3mA/ 3.3V
RF Receiving Current	11mA/ 3.3V
RF Emission Current	120mA/ 3.3V

**Vibration Sensor**

Vibration Sensor Type	Ball type omnidirectional signal trigger switch
Voltage	<6V
Current	2uA to10mA
Insulation Resistance	>10M Ω
Trigger Rate	100% (amplitude > 1 mm, frequency > 20 Hz)
Trigger Frequency	>50Hz

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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;
Receiving Sensitivity	-136 dBm (LoRa, Spreading Factor=12, Bit Rate = 293bps) -121 dBm (FSK, Frequency deviation=5kHz, Bit Rate=1.2kbps)
Antenna Type	Built-in antenna
Communication Distance	10 km (Visible linear obstacle-free transmission distance, actual transmission distance depending on the environment.)
Data Transfer Rate	0.3kbps ~ 50kbps (LoRa) 1.2kbps ~ 300kbps (FSK)
Modulation	LoRa / FSK (Note: choose one of them)
Supportable LoRaWAN 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**

Dimension	Lanyard style: 48mm x 55.5mm x 18.2mm Wristband style: 48mm x 55.5mm x 19.8mm
Environment Humidity Range	<90 % RH (No condensation)
Operating Temperature	-20°C to 55 °C
Storage Temperature	-40°C to 85 °C