

# Wireless Wearable Presence Tag with Emergency Button and Inactivity Detection

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Wireless Sensor Network Based on ZigBee Technology



**Z309**

## **Data Sheet**

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## Introduction

Z309 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 module conforms to the ZigBee Pro™ protocol standard and is added to the gateway to display the collected data in the gateway. Users can monitor all changes in the network by accessing the gateway through the cloud, 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

- Conforms to ZigBee Pro™ protocol specifications and is applicable to ZigBee intelligent network
- IP Rating: IP67
- 2 x CR2032 batteries in parallel power supply
- It is light in size and can be worn with wrist strap, key chain, or pendant
- Use 2.4GHz ISM band, 16 channels in total
- Wireless communication distance is 210 meters (depending on the specific environment)
- Fully IEEE 802.15.4 compliant
- Easy installation and configuration

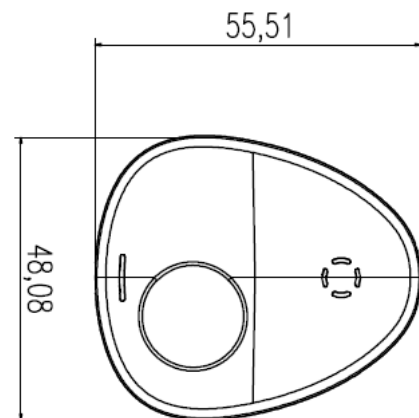
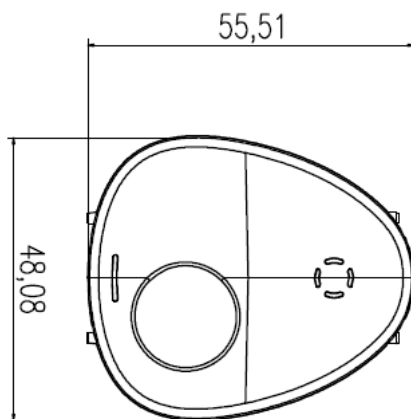
## Application

- Hospitals
- Elderly care
- Personal homes/toilets
- Nursing homes

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- Hotels
- Schools
- Communities
- Shopping malls
- Others

**Dimension**



A: Watch strap style mainboard size

B: Key chain/ pendant style mainboard size

**Wireless Wearable Presence Tag with Emergency Button and Inactivity Detection****Electric**

Power Supply Mode	2 x CR2032 button batteries supply power, with a total battery capacity of 450mAh
Battery Life	1.5years (Conditions: According to 10 hours outdoor and 14 hours indoor, rejoin the current channel every 5min, trigger and locate 30 times a day, and send heartbeat information to CIE every 2min (the calculation is based on the actual measurement). The specific measurement shall prevail.
Sleeping Current	≤ 6uA
Emission Current	33mA
Receiving Current	28mA
Battery Measurement Accuracy	±0.1V
Low Battery Threshold	2.5V

**Frequency**

Frequency Range	2.4 – 2.4835 GHz
Communication Channel	16 (ISM 11 <sup>th</sup> ~ 26 <sup>th</sup> channel)
Power Output	7 dBm (max)
Receiving Sensitivity	-101 dBm
Antenna Type	Built-in antenna
Communication Distance	210m (open visual linear distance)
Data Transfer Rate	250kbps
Modulation	DSSS (O-QPSK)

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**Vibration Sensor**

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

**Physical**

Dimension	Watch strap style main body: 48mm x 55.5mm x 19.8mm Key chain/ pendant style main body: 48mm x 55.5mm x 18.2mm
Environment Humidity Range	<90 % RH (No condensation)
Operating Temperature	-20°C to 55 °C
Storage Temperature	-40°C to 85 °C