

Wireless Seat Sensor

Wireless Sensor Network Based on LoRa Technology



R313WA

Data Sheet

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Introduction

R313WA is a device that detects the presence of a seat and is compatible with the LoRaWAN protocol. If there is someone on the seat, R313WA will send a message to the gateway. When detecting the seat is empty, the device will send a message that restoring to normal status to the gateway.

Main Characteristics

- 2 section 3.0V CR2450 button batteries in parallel
- Adopt SX1276 wireless communication module
- Two -way seat sensor
- Compatible with LoRaWAN™ Class A
- Frequency hopping spread spectrum technology
- Applicable to 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.

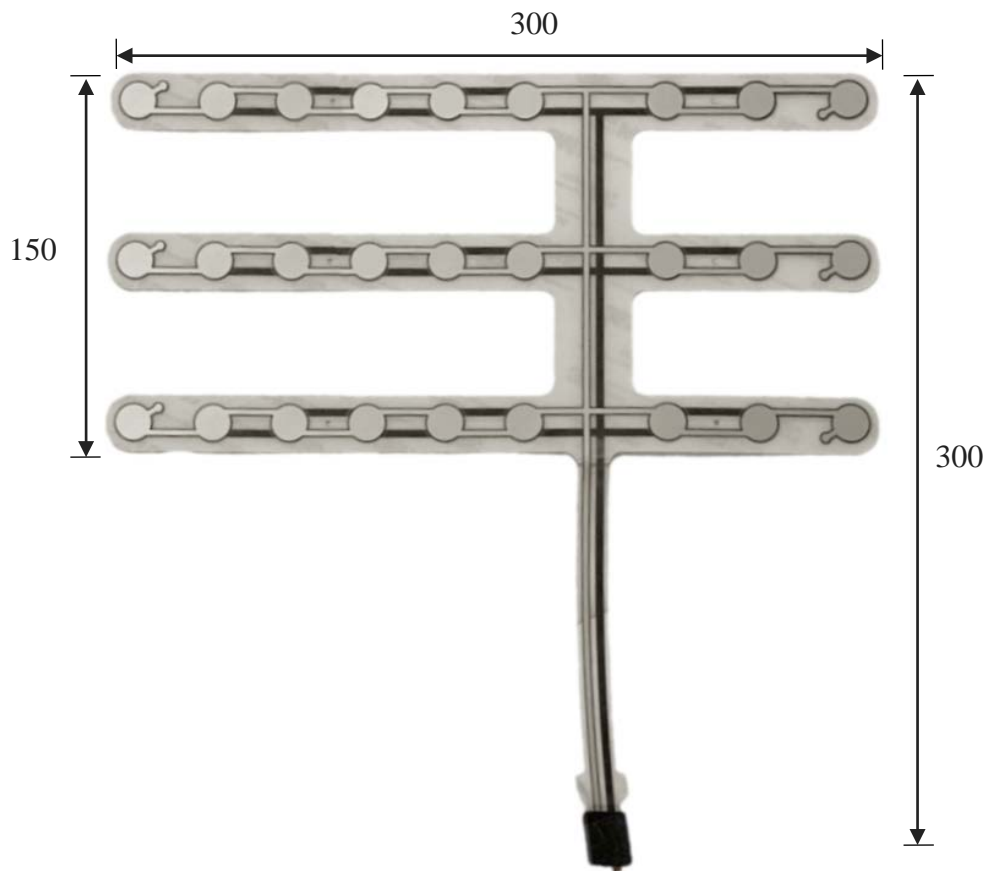
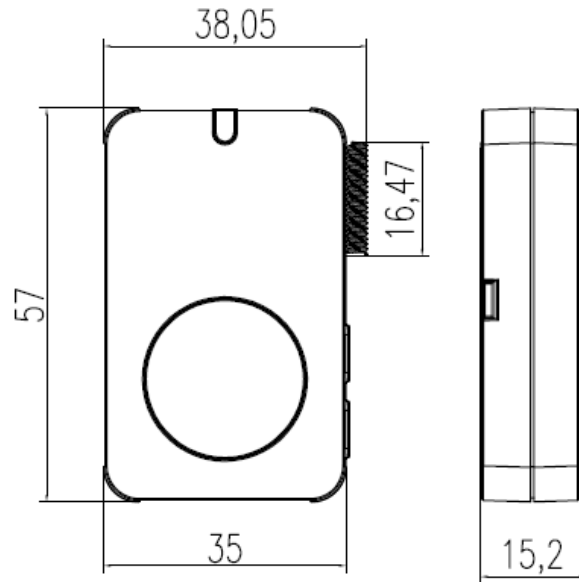
Please refer to http://www.netvox.com.tw/electric/electric_calc.html

Application

- Theater seat detection
- Conference hall seat detection
- Large classroom seating detection
- Performance of the stadium seating status

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Dimensions



Unit: mm

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Electrical

Input Power	2 section 3V CR2450 button batteries in parallel (Single CR2450 battery capacity 620mah)
Operation Voltage	2.4V to 3.0V
Standby Current	12uA/3.0V
Transmitting Current (max)	120mA / 3.0V
Receiving Current (max)	11mA/ 3.0V
Battery Measurement Accuracy	± 0.1V

Seat Sensor Characteristics

Maximum Operating Current	50mA
Maximum Output Resistance	50 Ω
Substrate Pressure Resistance	2KV (DC)
Durability	At least 150,000 times
Pressure Range	The minimum value is 200-300g

Cable Characteristics

Cable Material	UL2468 28AWG
Cable Line Maximum Temperature	80 °C
Cable Wire Diameter	1mm
Cable Length	1000 mm (± 15mm)

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Frequency

Frequency Range	863MHz-928MHz 470MHz-510MHz
Power Output	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	External antenna
Communication Distance	Up to 10 km (visible linear obstacle-free transmission distance , actual transmission distance depends on the environment.)
Data Transfer Rate	0.3kbps to 50k bps
Modulation	LoRa/ FSK (Note: You can choose one of them)
Supportable LoRaWAN Band	EU863-870,US902-928,AU915-928,KR920-923,AS923-1, AS923-2,AS923-3,IN865-867,CN470-510 (Note: The frequency band is optional and needs to be configured before shipment)

Physical

Main Unit Casing Size	57 mm x 38.05 mm x 15.2 mm
Seat Sensor Size	300 mm x 300 mm x 0.65 mm
Body Weight	48.9g
Operating Temperature	-20°C to 55 °C
Environment Humidity	<90 %RH (No condensation)
Storage Temperature	-40°C to 85 °C