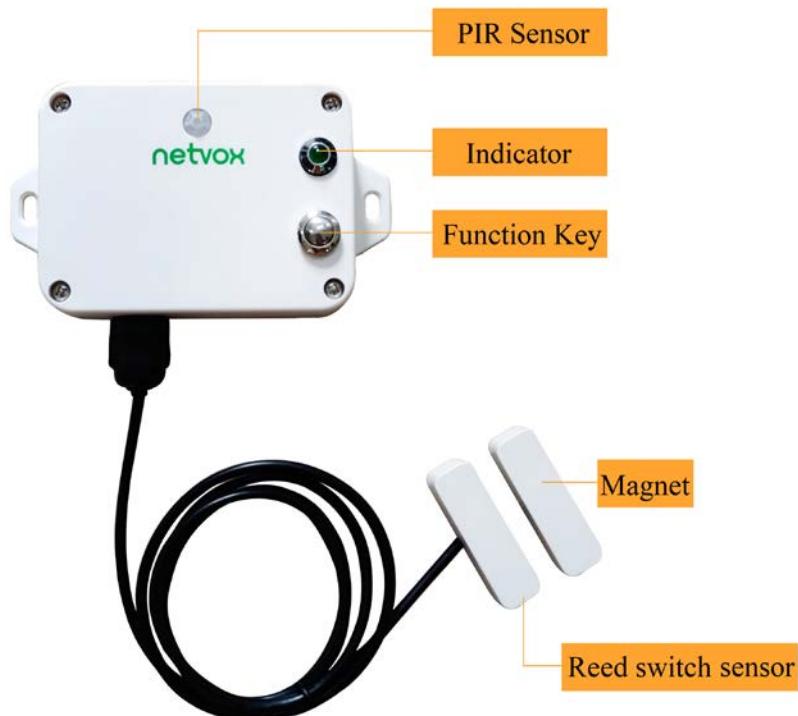


# Wireless Toilet Occupancy Sensor

## R718PQA Data Sheet

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Wireless Sensor Network Based on LoRa Technology



R718PQA (Subject to the object)

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## Introduction

R718PQA is a wireless communication device for detecting toilet occupancy. The device is connected with a reed sensor to detect the opening and closing state of the door. Built-in PIR sensor (pyroelectric human infrared sensor) to detect whether someone enters the toilet. The two simultaneous tests to determine whether the toilet is occupied. The detected data is transmitted to other devices for display through wireless network, which adopts SX1276 wireless communication module.

## Main Characteristics

- Adopts SX1276 wireless communication module
- 2 section of ER14505 lithium battery (3.6V / section) in parallel
- Reed switch detection
- PIR sensor
- Protection level of device body: IP65/ IP67 (optional)
- The base is attached with a magnet, which can be adsorbed on iron objects
- LoRaWAN™ Class A compatible
- Frequency Hopping Spread Spectrum (FHSS)
- Configuring parameters and reading data via third-party software platforms, and set alarms via SMS text and email (optional)
- Available third-party platform: Actility/ThingPark, TTN, MyDevices/Cayenne
- Low power consumption and longer battery life

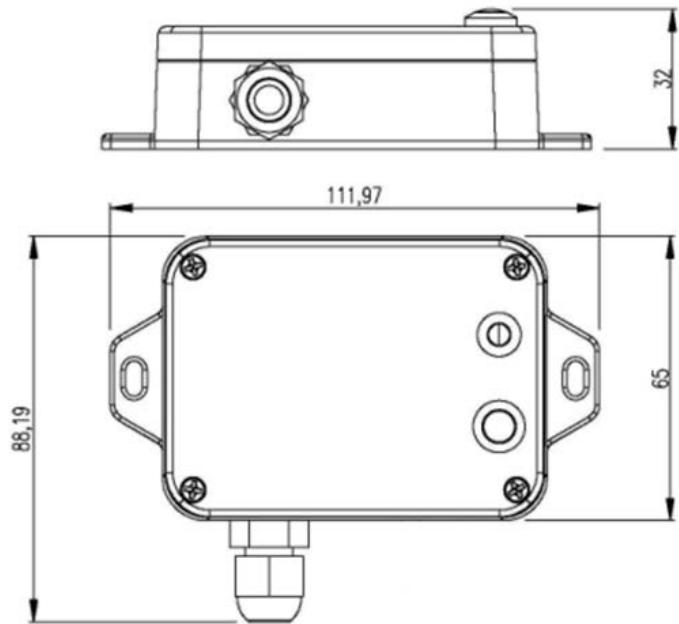
### Battery Life:

Please refer to web: [http://www.netvox.com.tw/electric/electric\\_calc.html](http://www.netvox.com.tw/electric/electric_calc.html)

At this website, users can find battery life time for various models at different configurations.

## Applications

- Occupancy detection
- Other



(Unit: mm)

## Electrical Characteristics

Power supply	2 section of ER14505 lithium battery in parallel (3.6V 2400mAh/ section)
Battery life	4.5 years (Condition: ambient temperature 25 °C, report once every 15 mins, txpower = 20dBm, LoRa spreading factor SF = 10)
Sleeping current	34uA
Wake-up current	6.3mA/ 3.3V
Low battery voltage alarm value	3.2V
RF receiving current	11 mA / 3.3V
RF emission current	120 mA/ 3.3V

\*Specific electrical characteristics may vary depending on the power supply voltage

## PIR Sensor

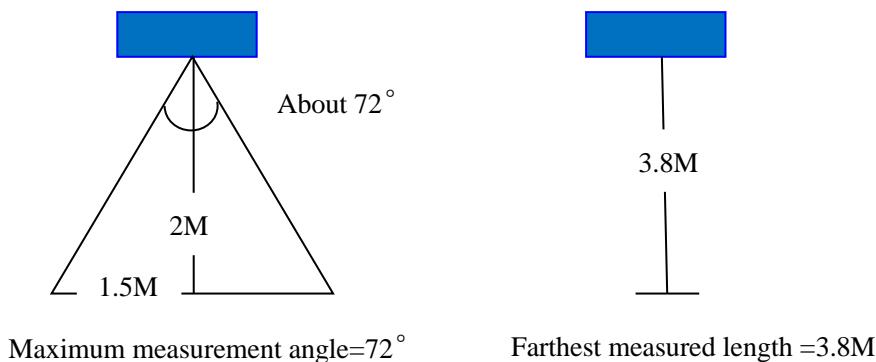
Measuring distance	3.8M (Linear distance of vertical sensor)
Detection angle	72° (Measured at 2 meters perpendicular to the sensor)

## 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	Built-in antenna
Communication distance	10 km (The actual transmission distance depends on the environment.)
Data transfer rate	0.3kbps ~ 50kbps (LoRa) 1.2kbps ~ 300kbps (FSK)
Modulation system mode	LoRa / FSK (Note: you can choose one of them)
Available LoRaWAN Band	EU863-870, US902-928, AU915-928, KR920-923, AS923, CN470-510 (Note: optional, to be done in the factory configuration)

## Physical

Dimension	L:112 mm * W:88.19 mm * H:32 mm
Main Body Weight	150 g
Ambient Temperature Range	-20°C to 55°C
Ambient Storage Temperature Range	-40°C to 85°C
Ambient Humidity Range	<90% RH (No condensation)



When using PIR sensor, pay attention to the following general matters:

1. When a heat source other than the human body is detected, false triggering will occur as follows:
  - (1) When small animals enter the detection range.
  - (2) Far infrared direct sensor for sunlight, automobile headlights, incandescent lamps, etc.
  - (3) When the temperature in the detection range changes dramatically due to the warm air and cold air of the cold greenhouse equipment and the water vapor of the humidifier.
2. It is difficult to trigger the PIR sensor as follows:
  - (1) There are substances such as glass and propylene that are difficult to penetrate the far infrared ray between the sensor and the detection object.
  - (2) When the heat source within the detection range hardly acts or moves at high speed.