Wireless Short-Range Occupancy Sensor

Wireless Sensor Network Based on LoRa Technology

R718PQ

Data Sheet

Wireless Short-Range Occupancy Sensor

Introduction

The R718PQ is a wireless communication device that detects occupancy status. The device has a built-in PIR sensor (pyroelectric human body infrared sensor) to detect whether someone has entered; the detected data is transmitted to other devices through the wireless network, and the SX1276 wireless communication module is used.

Features

- SX1276 wireless communication module
- 2 ER14505 battery AA size (3.6V / section) parallel power supply
- PIR sensor
- Protection grade IP65
- Magnetic base
- 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

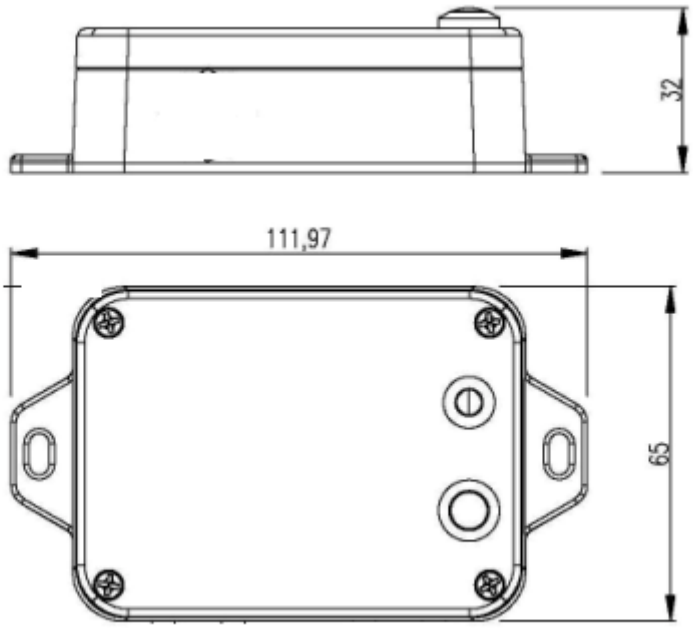
Note:

Please visit http://www.netvox.com.tw/electric/electric_calc.html for detailed information about battery life calculation.

Applications

- Occupancy detection
- Others

Dimensions



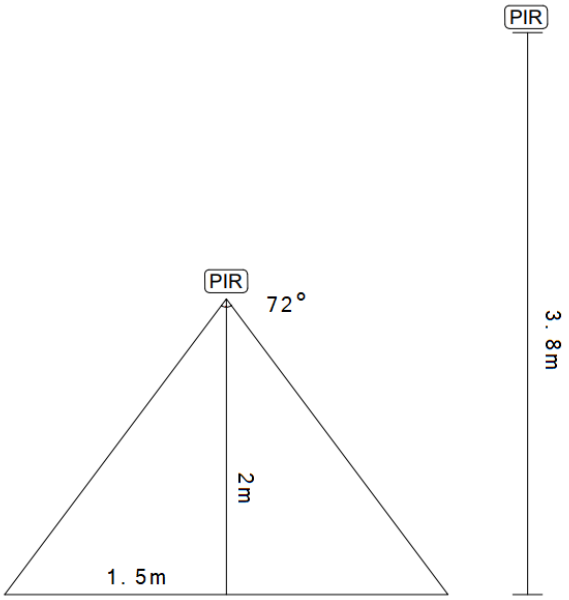
Electrical Specifications

Power Supply	2 ER14505 lithium batteries (3.6 V, 2400 mAh /section) in parallel
Battery Life	Battery life is 4.8 years (conditions: ambient temperature 25°C, 15 min report once, txpower=20 dBm, LoRa spreading factor SF = 10)
Standby Current	About 30 uA
Wake-up Current	6.3 mA/ 3.3V
Low Battery Alarm	3.2 V
RF Receiving Current	11 mA/ 3.3V
RF Emission Current	120 mA/ 3.3V

Note: Electrical specifications may vary due to the power supply voltage.

PIR Sensor

Measuring Distance	3.8M (Straight distance perpendicular to the sensor)
Detecting Angle	About 72° (2 meters away perpendicular to the sensor)



Largest detecting angle being 72° Longest detecting distance being 3.8M

* When using a PIR sensor, pay attention to the general items:

A. When a heat source other than the human body is detected, the false trigger may occur as follows:

(1) When small animals enter the detection range.

(2) Far-infrared from sunlight, car headlights, incandescent lamps, etc. to irradiate the sensor directly.

(3) When the temperature of the detection range changes drastically due to the warm air of the cold greenhouse equipment, the cold air, and the water vapor of the humidifier.

B. It is difficult to trigger the PIR sensor as follows:

(1) There are substances such as glass and acrylic which are difficult to transmit far infrared rays between the sensor and the detection object.

(2) The heat source in the detection range hardly moves, or moves at high speed.

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	Up to 10 km, the actual transmission distance depends on the real environment
Data Transfer Rate	0.3kbps to 50kbps
Modulation System Mode	LoRa/FSK (Note: choose one of them)
Supportable LoRaWAN band	EU863-870, US902-928, AU915-928, KR920-923, AS 923, CN470-510 (Note: optional, to be configured before shipment)

Physical Properties

Dimensions	L: 112 mm*W: 65 mm*H: 32 mm
Body Weight	About 150g
Ambient Temperature Range	-20°C to 55°C
Ambient Humidity Range	<90% RH (No condensation)
Storage Temperature Range	-40°C ~ 85°C