Wireless Toilet Occupancy Sensor R718PQA Data Sheet

Wireless Sensor Network Based on LoRa Technology

R718PQA

Wireless Toilet Occupancy Sensor

General Description

The R718PQA is a wireless communication device that detects toilet occupancy. The device is equipped with a reed switch sensor for detecting the switch status of the door; a built-in PIR sensor (pyroelectric human body infrared sensor) to detect whether someone is in the toilet. Two detections are established at the same time to determine if the toilet is occupied. Through the wireless network, the detected data is transmitted to other devices for display, which uses the SX1276 wireless communication module.

Features of NETVOX Sensors

• Compatible with LoRaWAN
• 2 ER14505 lithium batteries (3.6V / section) parallel power supply
• Detectable occupancy status
• Simple operation and setting
• Protection class IP65
• Compatible with LoRaWANTM Class A
• Frequency hopping spread spectrum
• Configuration parameters can be configured via a third-party software platform, data can be read and alerts can be set via SMS text and email (optional)
• 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
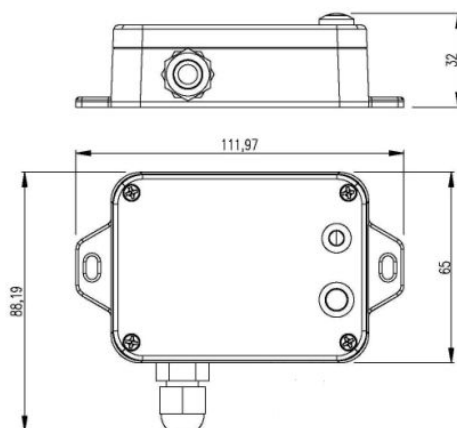On this website, users can find battery life of various models in different configurations.

Example Application

• Detect Occupancy Status
• Others

netvox™

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Technical Specifications

Main Part　　(Unit. mm)

Electric

Input Power	2 x 3.6V ER14505 AA lithium batteries (3.6V, 2400mah/section）
Life Time	Battery life are 4.5 years (condition: ambient temperature 25 ° C, report every 15 mins, txpower = 20 dBm, LoRa spreading factor SF = 10)
Sleeping Mode	34uA
Wake up Mode	6.3mA@3.3V
Low Voltage Threshold	3.2V
Receiving Current (max)	11mA @3.3V
Transmitting Current (max)	120mA/3.3V

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

PIR Sensor

Power Supply	+3VDC
Measurement Range	5M

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

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(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.

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

TX Power	19dBm±1dBm
Rx Sensitivity	-136dBm (LoRa，Spreading Factor=12, Bit Rate=293bps) -121dBm (FSK,Frequency deviation=5kHz, Bit Rate=1.2kbps)
Antenna Type	Build-in antenna
Communication Range	Up to 10 km, the actual transmission distance depends on the environment.
Data Transfer Rate	0.3kbps～50kbps
Spread Technique	LoRa/FSK
Available Frequency	EU863-870, US902-928, AU915-928, KR920-923, AS923, CN470-510 Configured before shipment

Physical

Dimension	Main Part: 112mm x88.19mm x 32mm
Weight	150g
Environment Temperature Range	-20℃ ～ 55℃
Environment Humidity Range	<90% RH (No condensation)
Storage Temperature	-40℃ ～ 85℃

Contact: