Wireless Infrared Proximity Sensor

Wireless Sensor Network Based on LoRa Technology

R311LA

Data Sheet

Wireless Infrared Proximity Sensor

Introduction

R311LA is able to detect the existence of an object nearby. It has an infrared proximity sensor that can detect if there is an object existing within its detection range and transmits the detected data to Gateway for display via a wireless network; it uses the SX1276 wireless communication module.

Main Characteristics

- Applying SX1276 wireless communication module

- 2 sections of 3.0V CR2450 coin cell batteries in parallel

- Compatible with LoRaWAN^{TM} Class A

- Using frequency hopping spread spectrum technology

- Configure parameters through third-party platform

- Applicable to third-party platforms: Actility / ThingPark, TTN, MyDevices / Cayenne

- The product has low power consumption and supports longer battery life

   Note:

   The battery life is determined by the frequency reported by the sensor and other variables, please refer to http://www.netvox.com.tw/electric/electric_calc.html/
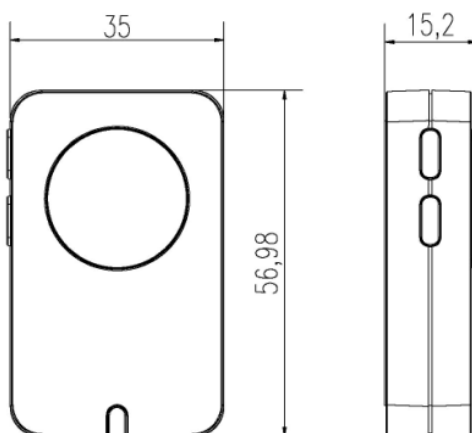   On this website, users can find various types of batteries with different configurations.

Application

- Presence of toilet paper

- Other

Wireless Infrared Proximity Sensor

Dimensions

Electrical

Input Power Supply	2 sections of 3V CR2450 button batteries in parallel (single CR2450 battery capacity 620 mAh)
Working Voltage Range	2.4 V to 3.0V
Sleeping Current	12uA / 3.0V
Emission Current (Max)	120mA / 3.0V
Receive Current (Max)	11mA / 3.0V
Battery Measurement Accuracy	± 0.1V

* Specific electrical characteristics will vary depending on the power supply voltage

Infrared Proximity Sensor

Sensing Distance	The effective detection distance is about 5cm (the data is not a specific distance value). The detection distance will vary according to different objects detected, and the data is nonlinear.

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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;
Receive Sensitivity	-136dBm (LoRa, Spreading Factor=12, Bit Rate=293bps)； -121dBm (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 environment.
Data Transfer Rate	0.3kbps ~ 50kbps (LoRa) 1.2kbps ~ 300kbps (FSK)
Modulation System Mode	LoRa / FSK (Note: you can choose one of them)
Supported LoRaWAN Band	EU863-870,US902-928,AU915-928,KR920-923,AS923-1,AS923-2,AS923-3,IN865-867,CN470-510 (Note: optional, to be done in the factory configuration)

Physical

Size	57 mm x 35 mm x 15.2 mm
Weight	48.9g
Operating Temperature	-20°C ~ 55°C
Ambient Humidity Range	<90% RH (no condensation)
Storage Temperature Range	-40℃ ~ 85℃