Wireless Outdoor Noise/Temperature/Humidity Sensor with Solar Panel

Wireless Sensor Network Based on LoRa Technology

(subject to the actual object)

Introduction

R72624 is a wireless communication device that detects noise, temperature and humidity. R72624 has the built-in noise detector and the built-in temperature and humidity sensor that can detect the value of noise, temperature and humidity and transmit the detected data to other device via the wireless network for display. It adopts SX1276 wireless communication module.

Operating Principle

The module R100H (R100L) communicate with the noise sensor via RS485 and communicate with the sensor of temperature and humidity via I^2C.

Main Characteristic

- Adopt SX1276 wireless communication module
- Compatible with LoRaWAN™ Class A
- Frequency Hopping Spread Spectrum (FHSS)
- Noise, temperature, and humidity detection
- With solar panel
- Rechargeable battery pack (Users need to purchase and install rechargeable lithium batteries by self)
- Configuring parameters and reading data via the third-party software platforms, and set alarms via SMS text and email (optional)
- Applicable to the third-party platforms: Actility/ ThingPark, TTN, MyDevices/Cayenne
- Low consumption and long battery life

  Battery Life:

  1. Actual range may vary depending on environment.
  2. Battery life is determined by sensor reporting frequency and other variables

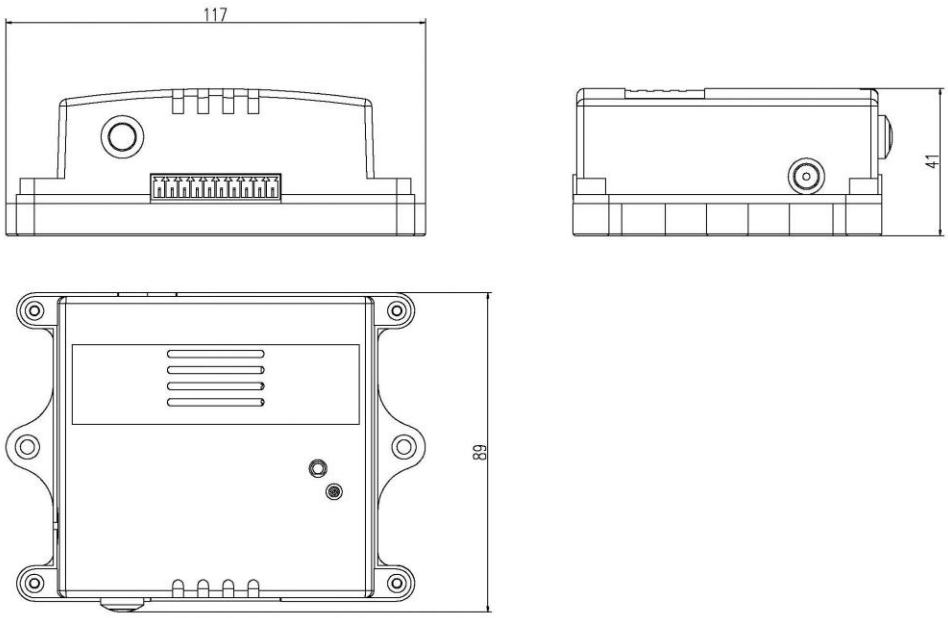
*Please refer to web: http://www.netvox.com.tw/electric/electric_calc.html

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

Application Scenario

- Temperature and humidity detection
- Noise detection
- Other

Dimension (The Host Body)



Electric

Power Supply	3 rechargeable lithium batteries (18650) in series (single-cell rechargeable lithium battery is 3.7V, and the capacity recommended 3500mah)
Operating Voltage Range	9.8VDC～12.6VDC
Low Voltage Alarm	10.5V
Operating Current 1	15mA (Standby mode)
Operating Current 2	30mA (Operating mode)

Battery Specification

Solar panel Specification	5W / 18VDC
Lithium battery specification	3 rechargeable lithium batteries in series (single-cell rechargeable lithium battery is 3.7V, and the capacity recommended 3500mah)
Lithium battery charging current	About 300mA(guaranteed enough sunshine intensity)
Lithium battery charging time	Filled with about 4 days (guaranteed enough sunshine intensity, and calculated with a rechargeable battery capacity of 3500mah)
The amount of time to operating when lithium batteries are fully charged once	About 580 hours (report data once every 15 minutes, with a rechargeable battery capacity of 3500mah)

Noise Sensor Specification

Operating Voltage	9VDC-24VDC
Power Consumption	0.4W（Max.）
Measuring Range	30dB-130dB
Measurement Error	3% F.S
Resolution	0.1dB
Frequency Weighting Characteristics	A weighted
Frequency Response	35Hz-20kHz
Response Time	≤2 seconds
Output Interface	RS485 output

SHT-30 Temperature and Humidity Sensor Specification

Operating Voltage	+3.3VDC
Temperature Measurement Range	-20℃~55℃
Temperature Measurement Accuracy	±1℃ @25℃
Humidity Measurement Range	0%RH-100%RH
Humidity Measurement Accuracy	±4%RH @25℃

Frequency

Frequency Range	863MHz-928MHz 470MHz-510MHz
TX Power	US915 20dbm； AS923 16dbm； AU915 20dbm； CN470 19.15dbm； EU868 16dbm； KR920 14dbm； IN865 20dbm；
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	10km (visible linear obstacle-free transmission distance, actual transmission distance depending on the environment)
Data Transfer Rate	0.3kbps～50kbps
Modulation Method	LoRa/FSK (Note: choose one of them)
Supportable LoRaWAN Band	EU863-870，US902-928，AU915-928，KR920-923，AS923，CN470-510 (Note: The frequency band is optional and needs to be configured before shipment)

Physical

Dimension	Mask body: D 220mm*H 340mm, Solar panel size: 290mm*150mm*25mm Host Body: 117mm*89mm*41mm
Weight	Partial weight of the mask body (with lithium battery inside the mask body, main body, noise sensor): about 2340g Solar panel weight (solar panel, solar panel bracket, antibird pin): about 1355g
Mask Service Life	The mask material is ABS and can be used outdoors for 3 years.
Operating Temperature Range	-20℃ ～ 55℃
Operating Humidity Range	< 90%RH (no condensation)
Storage Temperature range	-40℃ ～ 85℃