Wireless Noise & Temperature & Humidity Sensor

Wireless Sensor Network Based on LoRa Technology

Introduction

RA0724 is a Wireless Noise & Temperature & Humidity Sensor. It can detect the value of noise, temperature, and humidity. The device will transmit the detected data to other devices 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.

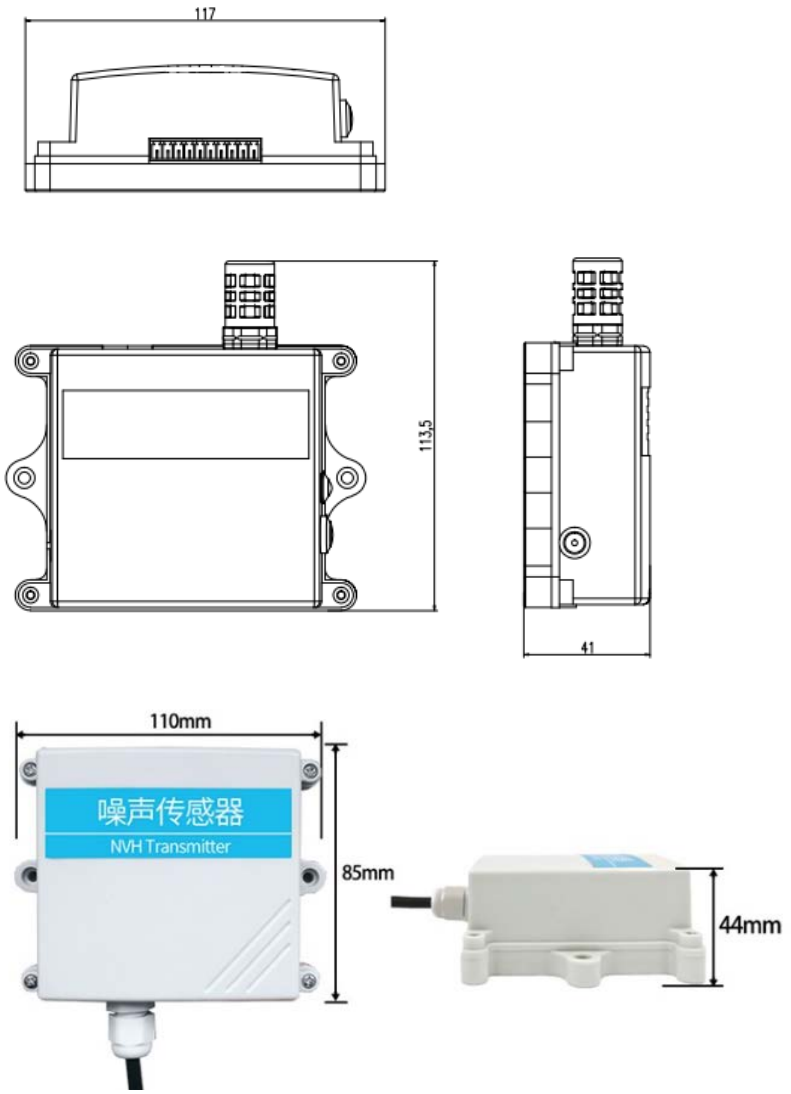
Main Characteristic

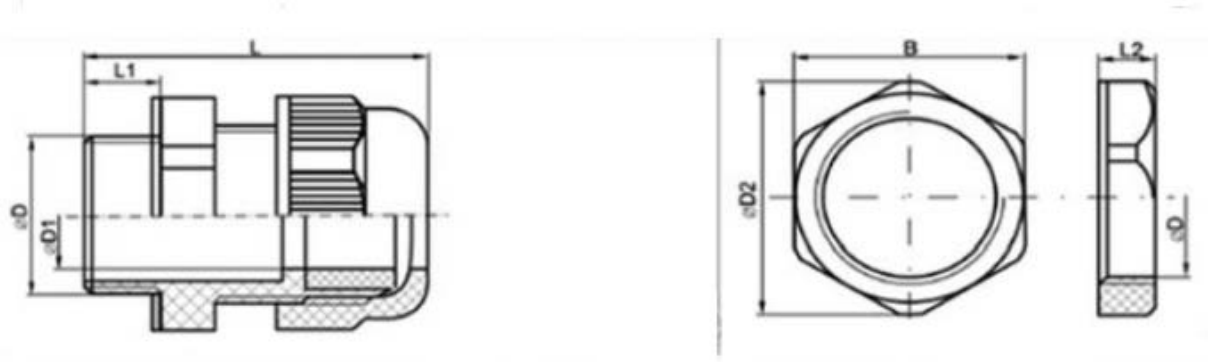
- Adopt SX1276 wireless communication module
- Noise detection
- Temperature and humidity detection
- Compatible with LoRaWAN™ Class A
- Frequency hopping spread spectrum
- Configuring parameters and reading data via the third-party software platforms, and set alarms via SMS text and email (optional)
- Applicable to the third-party platforms: Actility/ ThingPark, TTN, MyDevices /Cayenne

Application Scenario

- Temperature and humidity detection
- Noise detection
- Other

Dimension (The Host Body)





Model	D(mm)	B(mm)	D2(mm)	L(mm)	L1(mm)	L2(mm)
M12	11.8	17.8	19.5	30.3	8	5

Electric

Power supply	DC adapter power supply, DC 12V/1A
Operating current 1	About 50mA (no radio frequency signal transmission)
Operating current 2	About 80mA (a radio frequency signal emission)

Noise Sensor Specification

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

Temperature and Humidity Sensor Specification

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

Frequency

Frequency Range	863MHz-928MHz 470MHz-510MHz
TX Power	US915 20dbm; AS923 16dbm; AU915 20dbm; CN470 19.15dbm; EU868 16dbm; KR920 14dbm; IN865 20dbm;
Receive Sensitivity	-121dBm (Frequency deviation=5kHz, Bit Rate=1.2kbps) -136dBm (LoRa，Spreading Factor=12, Bit Rate=293bps)
Antenna Type	Built-in antenna
Communication Distance	10km (visible linear obstacle-free transmission distance, actual transmission distance depending on the environment)
Data Transfer Rate	0.3kbps ~ 50kbps (LoRa) 1.2kbps ~ 300kbps (FSK)
Modulation Method	LoRa/FSK (Note: choose one of them)
Supportable 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

Dimension	Host body - L:117mm x W:113.5mm x H:41mm Noise Sensor - L: 110 mm*W: 85 mm*H: 44mm Noise Sensor Waterproof - D: 19.5mm*L: 30.3mm (Screw Thread M12*1.5)
Ambient Temperature Range	-20℃ ~ 55℃
Ambient Humidity Range	<90%RH (No condensation)
Storage Temperature Range	-40℃ ~ 85℃