Wireless Noise Sensor

Wireless Sensor Network Based on LoRa Technology

R718PA7

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1. Introduction

R718PA7 is a wireless communication device that detects the noise. The main unit and the noise sensor communicate via the RS485 connection interface, and it sends detected data to the other device via wireless network with LoRa™ wireless communication protocol standards.

The noise sensor adopts a high-sensitivity pickup with stable signal and high precision. It has the characteristics of wide measurement range, good linearity, convenient use, easy installation and long transmission distance. Noise sensors are widely used in industrial field noise testing occasions, such as warehouses, computer rooms, production workshops, archives, libraries, schools, shopping malls, smart homes, building control, airports, railway stations, etc.

2. Working Principle

The module R100H (R100L) and the noise sensor communicate via RS485.

3. Features

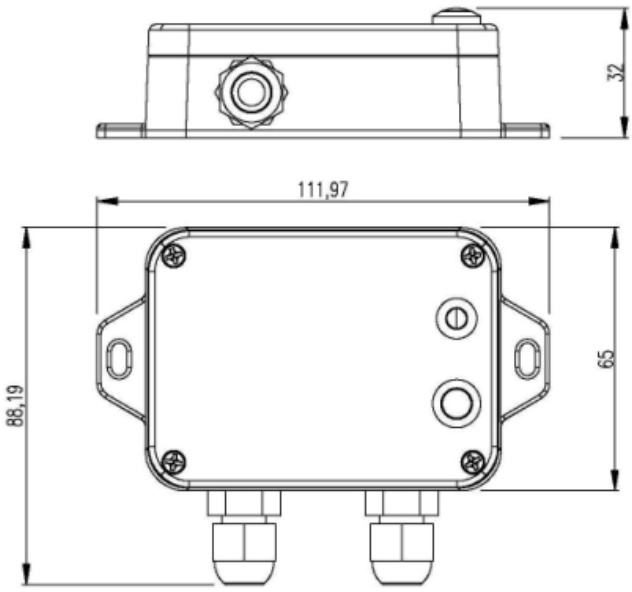
- SX1276 wireless communication module
- DC 12V adapter power supply
- Main body IP65/IP67 (optional)
- Main body adopts PG7 waterproof fixed joint
- Magnetic base
- RS485 communication
- Noise sensor lifespan: 1 – 2 years (Note: Lifespan may vary due to the environment.)
- Compatible with LoRaWAN™ Class A
- Frequency hopping spread spectrum technology
- 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

4. Applications

- Noise level detection
- Warehouses, computer rooms, production workshops, archives, libraries, schools, shopping malls, smart homes, building control, airports, railway stations, etc.

5. Dimensions

Main body: 112 mm (L) x 88.19mm (W) x 32 mm(H)



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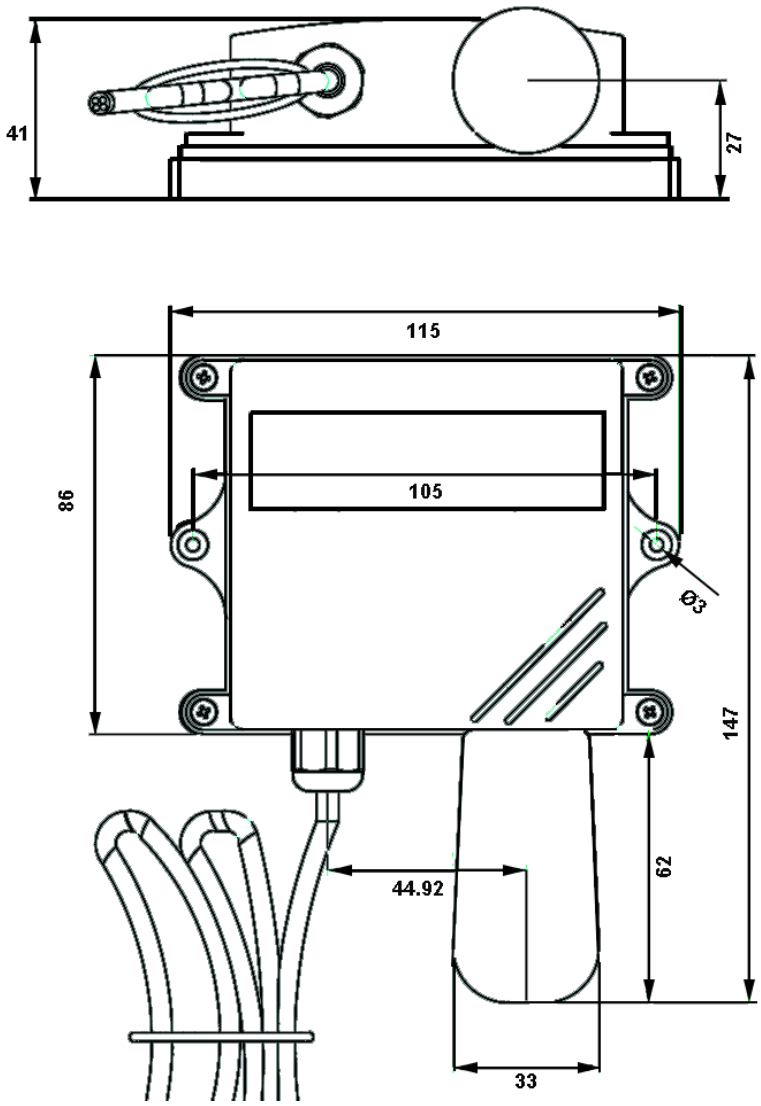
Noise Sensor: 147mm x 115mm x 41mm



6. Electrical Specifications

Power Supply	DC 12V adapter power supply
Operating Current	<70mA (external sensor)

Note: Electrical specifications may vary depending on the power supply voltage.

7. Noise Sensor Parameter

Power Supply (default)	10V – 30VDC
Power Consumption	0.4W
Operating Temperature	-20℃ – 60℃
Operating Humidity	0% – 95%RH (No condensation)
Measurement Range	30dB – 130dB
Resolution	0.1db
Measurement Error	±3dB
Weighting Curve	A-Weighting
Response Time	≤ 3s
Frequency Response	20Hz – 12.5kHz
Communication Interface	RS-485

8. Frequency

Frequency Range	863MHz – 928MHz 470MHz – 510MHz
TX Power	US915 20dbm AS923 16dbm AU915 20dbm CN470 19.15dbm EU868 16dbm KR920 14dbm IN865 20dbm
Receiving 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	10km (The actual distance may vary depending on the environment.)

Data Transfer Rate	0.3kbps – 50kbps (LoRa) 1.2kbps – 300kbps (FSK)
Modulation Method	LoRa/FSK (Note: One modulation method is required.)
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 configured before shipment)

9. Physical Properties

Dimensions	Main body: 112 mm (L) x 88.19mm (W) x 32 mm(H) Noise Sensor: 147mm x 115mm x 41mm
Ambient Temperature Range	-20°C – 55°C
Main unit Weight	About 160g
Ambient Humidity Range	<90% RH (No condensation)
Storage Temperature Range	-40°C – 85°C