Wireless O3 Sensor

Wireless Sensor Network Based on LoRa Technology

Figure 1 Appearance of R718PA3 (subject to the actual product)

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Introduction

The R718PA3 is a wireless communication device that detects O_3 concentration in ambient air. The body and the O_3 sensor are connected through the RS485 interface, and the detected data is transmitted to other devices through the wireless network.
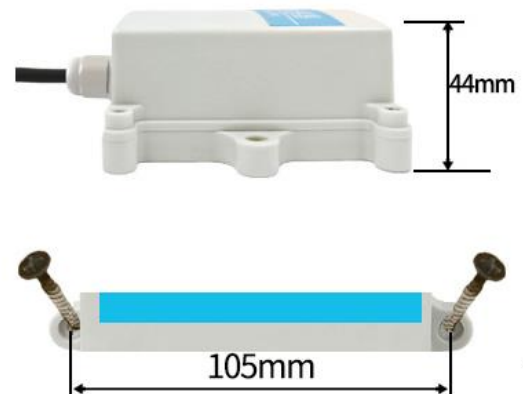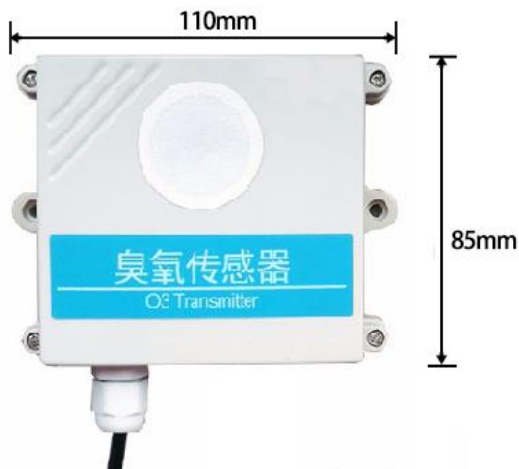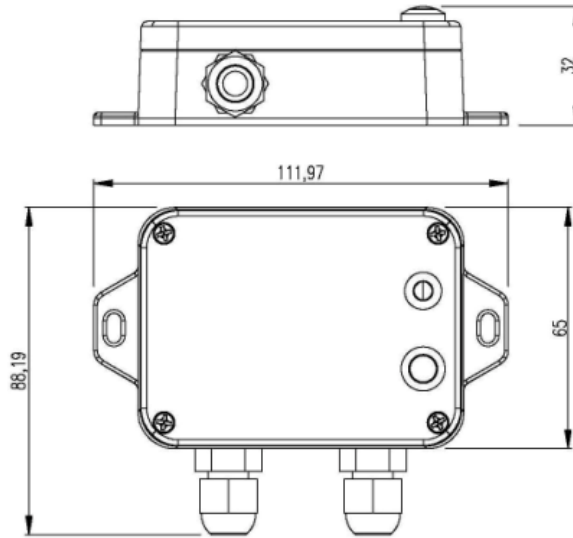
Main Characteristics

- Adopt SX1276 wireless communication module

- DC 12V adapter power supply

- Main unit protection class IP65

- The base is equipped with a magnet that can be attached to the iron object

- RS485 communication

- Compatible with LoRaWAN^{TM} Class A

- Frequency hopping spread spectrum technology

- Configuration parameters can be configured through third-party software

- Platforms, 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

Application

- O_3 concentration detection

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Dimensions

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

Electrical characteristics

Power supply	DC 12V adapter power supply
Working current	55mA (external sensor)

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

O$_3$ sensor parameters

Power supply	+ 9V ~ +24 VDC
O$_3$ measurement range	0- 20ppm
O$_3$ measurement method	Electrochemical sensors
O$_3$ repeatability	$\leqq \pm$ 3 % of reading (@25 ° C)
Detectable lower limit	< 20ppb
Response time	Usually less than 15 seconds
Service life	1 year
Communication port	RS485

Radio frequency characteristics

Frequency range	863MHz-928MHz 470MHz-510MHz
Power output	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); -121 dBm (FSK, Frequency deviation=5kHz, Bit Rate=1.2kbps)
Antenna type	Built-in antenna

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Communication distance	10 km (visible linear obstacle-free transmission distance, actual transmission distance depends on the environment)
Data transfer rate	0.3kbps to 50k bps
Modulation system mode	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 characteristics

Main unit size	Main part - L: 112 mm*W: 88.19 mm*H: 32 mm O3 Sensor - L: 110 mm*W: 85 mm*H: 44mm O3 Sensor Waterproof (white) - D: 19.5mm*L: 30.3mm - M12*1.5 (Screw Thread)
Ambient temperature range	-20 °C to 55°C
Main unit weight	About 160g
Ambient humidity range	< 90% RH (No condensation)
Storage temperature range	-40 °C ~ 85 °C