Wireless 03 Sensor

Wireless Sensor Network Based on LoRa Technology

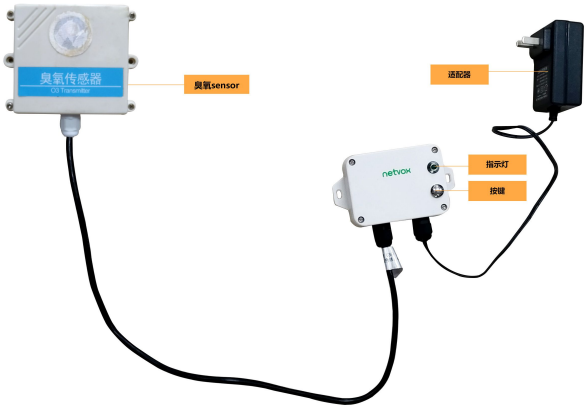

Figure 1 Appearance of R718PA3 (subject to the actual product)

History

Version	Date	Note
0.1	2019-06-14	Initial Release

Notes:

Hardware Version
61R718p6801V0.2

Overview

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™ 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 scenario

- O_3 concentration detection

Dimensions

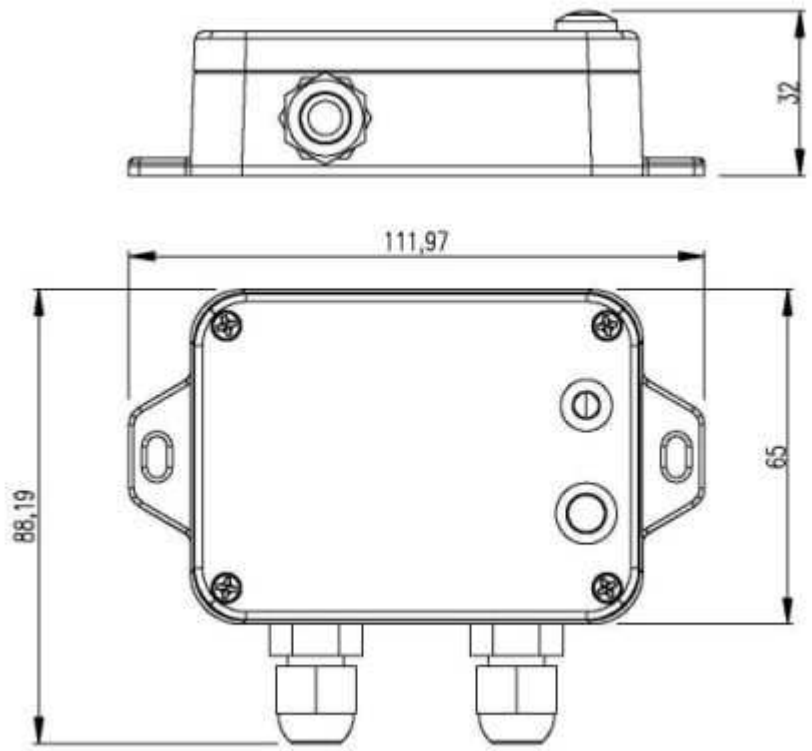

Fig. Main unit housing size

Main unit case size: 112 mm x 88.19 mm x 32 mm

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	< = ± 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	19 dBm ±1dBm
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
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	L: 112 mm*W: 88.19 mm*H: 32 mm
Ambient temperature range	-20 °C to 55°C
Main unit weight	About 160g
Ambient humidity range	<90% RH (no condense)
Storage temperature range	-40 °C ~ 85 °C