Wireless NO2 Sensor

Wireless Sensor Network Based on LoRa Technology

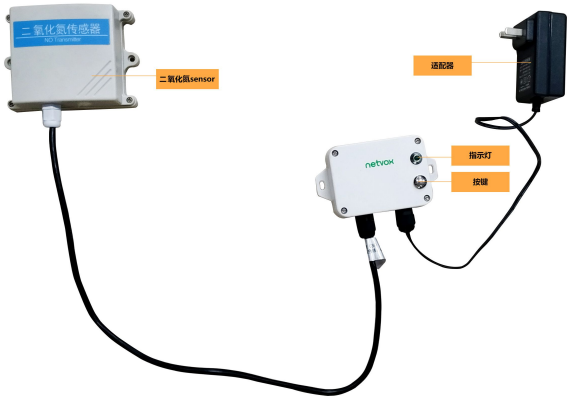

Fig. R718PA5 Appearance
(subject to the actual object)

History

Version	Date	Note
0.1	2019-06-25	Initial Release

Notes:

Hardware Version
61R718p6801V0.2

Overview

The R718PA5 is a wireless communication device that detects NO_2 concentration in ambient air. The main unit communicates with the NO_2 sensor via the RS485 connection interface. The collected data will be shown in the other devices such as a third party platform through wireless network compatible with LoRaWAN™ protocol.

Main characteristics

- Adopt SX1276 wireless communication module
- DC 12V adapter power supply
- Body 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

- NO2 concentration detection

Dimensions

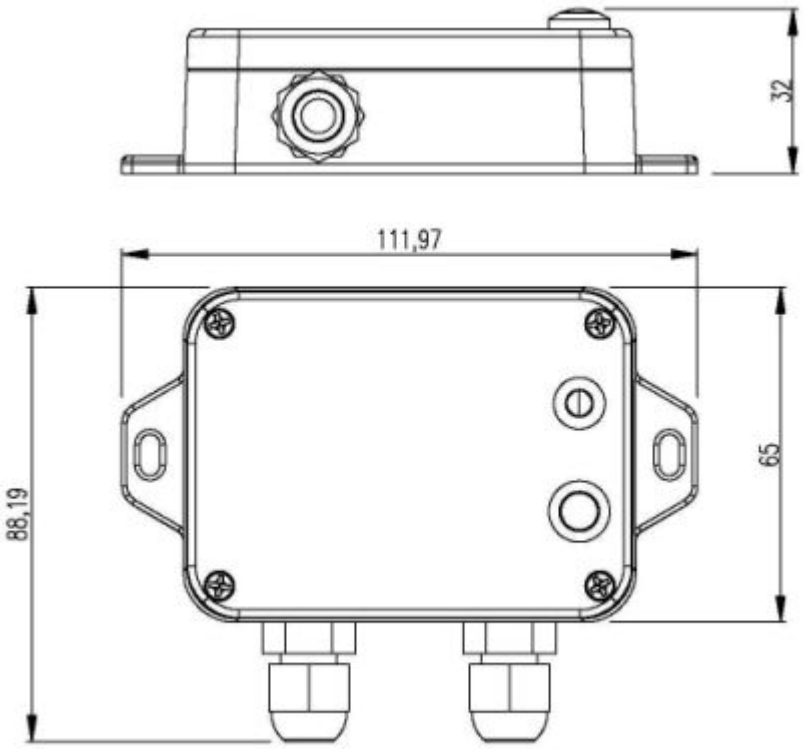

Fig. Main unit housing size

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

Electrical characteristics

Power supply	DC 12V adapter power supply
Working current	<70mA (external sensor)

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

NO2 sensor parameters

Power supply	+ 12V~+24 VDC
NO_2 measurement range	0- 20ppm
NO_2 measurement method	Electrochemical sensors
NO_2 measurement accuracy	< = ± 3 % of reading (@25 ° C)
Response time	Usually less than 15 seconds
Service life	NO_2 sensor warranty for 2 years Gas probe warranty for 1 year
Communication port	RS485

Radio frequency characteristics

Frequency range	863MHz-928MHz 470MHz-510MHz
Power output	19 dBm ±1dBm
Receiving sensitivity	-136dB (LoRa, Spreading Factor=12, Bit Rate = 293bps); -121 dBm (FSK, Frequency deviation=5kHz, Bit Rate=1.2kbps)
Antenna type	Built-in antenna
Communication distance	Up to 10km (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/F SK (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 body 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