Wireless H2S Sensor

R718PA4
User Manual

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1. Introduction

R718PA4 is a Netvox Class A device based on LoRaWAN^{TM} protocol and compatible with the LoRaWAN protocol.

R718PA4 can be connected to a hydrogen sulfide sensor with RS485 to report the concentration of hydrogen sulfide collected by the device to the corresponding gateway.

LoRa Wireless Technology:

LoRa is a wireless communication technology dedicated to long distance and low power consumption. Compared with other communication methods, LoRa spread spectrum modulation method greatly increases to expand the communication distance. Widely used in long-distance, low-data wireless communications. For example, automatic meter reading, building automation equipment, wireless security systems, industrial monitoring. Main features include small size, low power consumption, transmission distance, anti-interference ability and so on.

LoRaWAN:

LoRaWAN uses LoRa technology to define end-to-end standard specifications to ensure interoperability between devices and gateways from different manufacturers.

2. Appearance

H$_2$S Sensor

Adapter

Indicator

Function Key
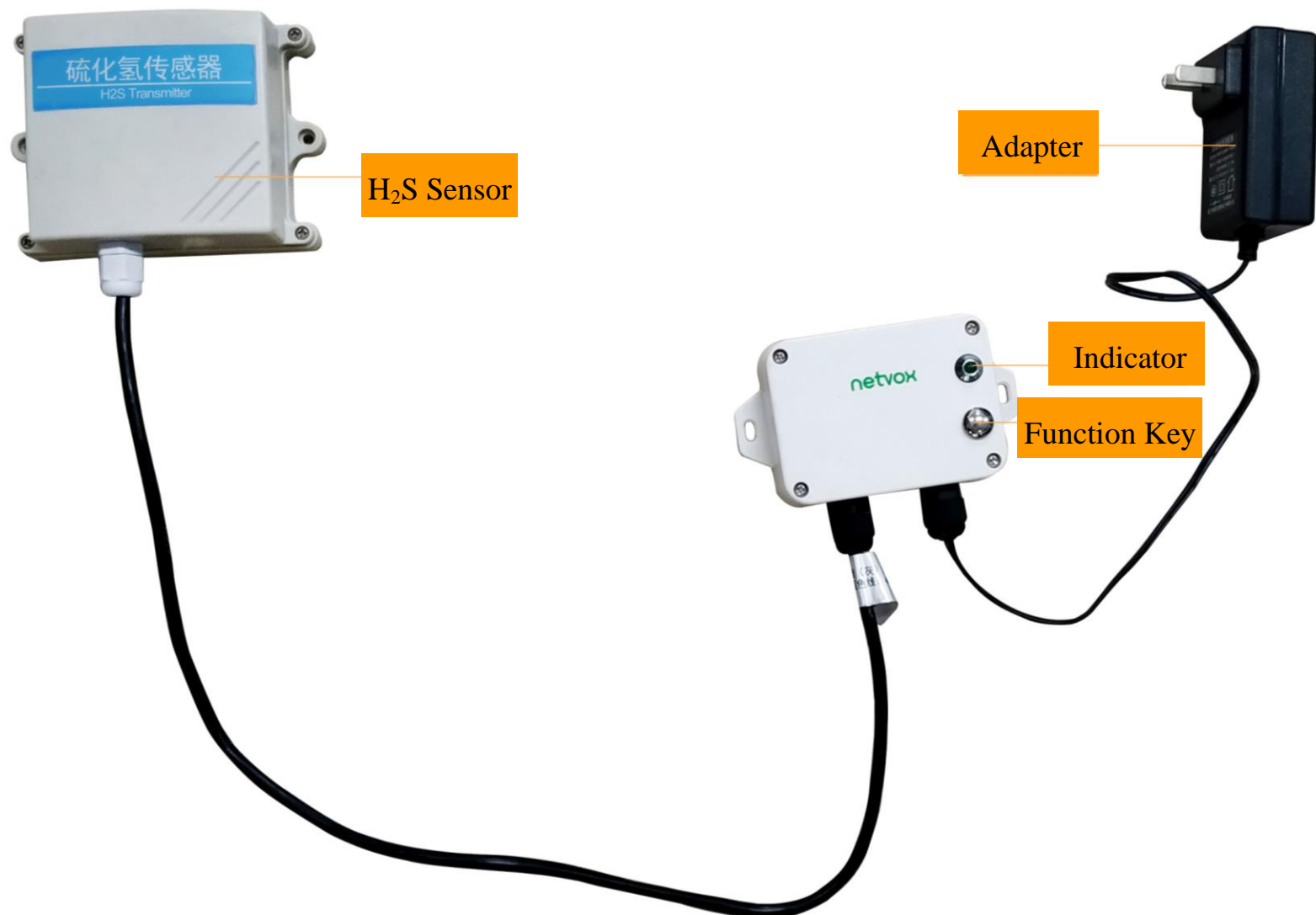
3. Main Features

- Adopt SX1276 wireless communication module

- 12V DC power supply

- H$_2$S detection

- The base is attached with a magnet that can be attached to a ferrous object

- Main body protection class IP65 / IP67 (optional)

- Compatible with LoRaWAN^{TM} Class A

- Frequency hopping spread spectrum

- Configuration parameters can be configured via a third-party software platform, 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

4. Set up Instruction

On/Off

Power on	DC12V adapter
Turn on	DC12V power supply, the green indicator flashing once means turn on successfully.
Turn off (Restore to factory setting)	Press and hold the function key for 5 seconds and the green indicator flashes 20 times.
Power off	Remove DC12V adapter.
Note:	1. At 1st to 5th second after power on, the device will be in engineering test mode. 2. On/off interval is suggested to be about 10 seconds to avoid the interference of capacitor inductance and other energy storage components.

Network Joining

Never joined the network	Turn on the device to search the network to join. The green indicator stays on for 5 seconds: success The green indicator remains off: fail
Had joined the network	Turn on the device to search the previous network to join. The green indicator stays on for 5 seconds: success The green indicator remains off: fail
Fail to join the network (when the device is on)	Suggest to check the device verification information on the gateway or consult your platform server provider.

Function Key

Press and hold for 5 seconds	Restore to factory setting / Turn off The green indicator flashes for 20 times: success The green indicator remains off: fail
Press once	The device is in the network: the green indicator flashes once and sends a report The device is not in the network: the green indicator remains off

5. Data Report

The device will send a version package report immediately after power-on. Then, it will send a report

data with the concentration of hydrogen sulfide **after it is powered on for 20s**.

The device sends data according to the default configuration before any other configuring.

Default setting:

MaxTime: Max Interval = 3min = 180s

MinTime: The MinTime configuration is not available.

*But the software has restriction, MinTime must be configured a number greater than 0.

Note:

1. The cycle of the device sending the data report is according to the default.

2. R718PA4 reports the concentration of hydrogen sulfide.

Please refer Netvox LoRaWAN Application Command document and Netvox Lora Command Resolver

http://cmddoc.netvoxcloud.com/cmddoc to resolve uplink data.

Report Configuration:

Description	Device	CmdID	DeviceType	NetvoxPayLoadData		
ConfigRepo rtReq	R718PA4	0x01	0x57	MinTime (2bytes Unit:s)	MaxTime (2bytes Unit:s)	Reserved (5Bytes,Fixed 0x00)
ConfigRepo rtRsp		0x81		Status (0x00_success)	Reserved (8Bytes, Fixed 0x00)	
ReadConfig ReportReq		0x02		Reserved (9Bytes, Fixed 0x00)		
ReadConfig ReportRsp		0x82		MinTime (2bytes Unit:s)	MaxTime (2bytes Unit:s)	Reserved (5Bytes,Fixed 0x00)

Report Configuration Example:

(1) Configure the report MaxTime = 1min

(The MinTime configuration is useless, but it needs to be set greater than 0 because of the software limitation.)

Downlink: 0157000A003C0000000000   3C H$_{ex}$ = 60 D$_{ec}$

Device Returns:

8157000000000000000000 (configuration successful)

8157010000000000000000 (configuration failed)

(2) Read device configuration parameters

Downlink: 0257000000000000000000

Device Returns: 8257000A003C0000000000 (current configuration parameter)

6. Installation

This product comes with a waterproof function.

When using it, users can attach the back side to the iron surface, or use screws to fix both ends to the wall.

Note: To install the battery, use a screwdriver or similar tool to assist in opening the battery cover.

1. The device has a built-in magnet (as the figure below). It can be attached to the surface of an iron object conveniently and quickly when it is installed.
In order to make the device installation more secure, use screws (purchased) to fix the device to the wall or other surface (such as the installation diagram). The device is screwed by two screws in the middle (purchased by users).

Note:

Do not install the device in a metal shielded box or in an environment with other electrical equipment around it to avoid affecting the wireless transmission of the device.

2. The device periodically reports the data according to Max Time. The default Max Time is 1 hour. Note: Max Time can be modified by the downlink command, but it is not recommended to set this time too small to avoid excessive battery drain.

3. The device can be used in scenarios such as:

- Sewer
- Pig farm
- Chemical plant
- Wastewater treatment plant
- Exploration drilling channel
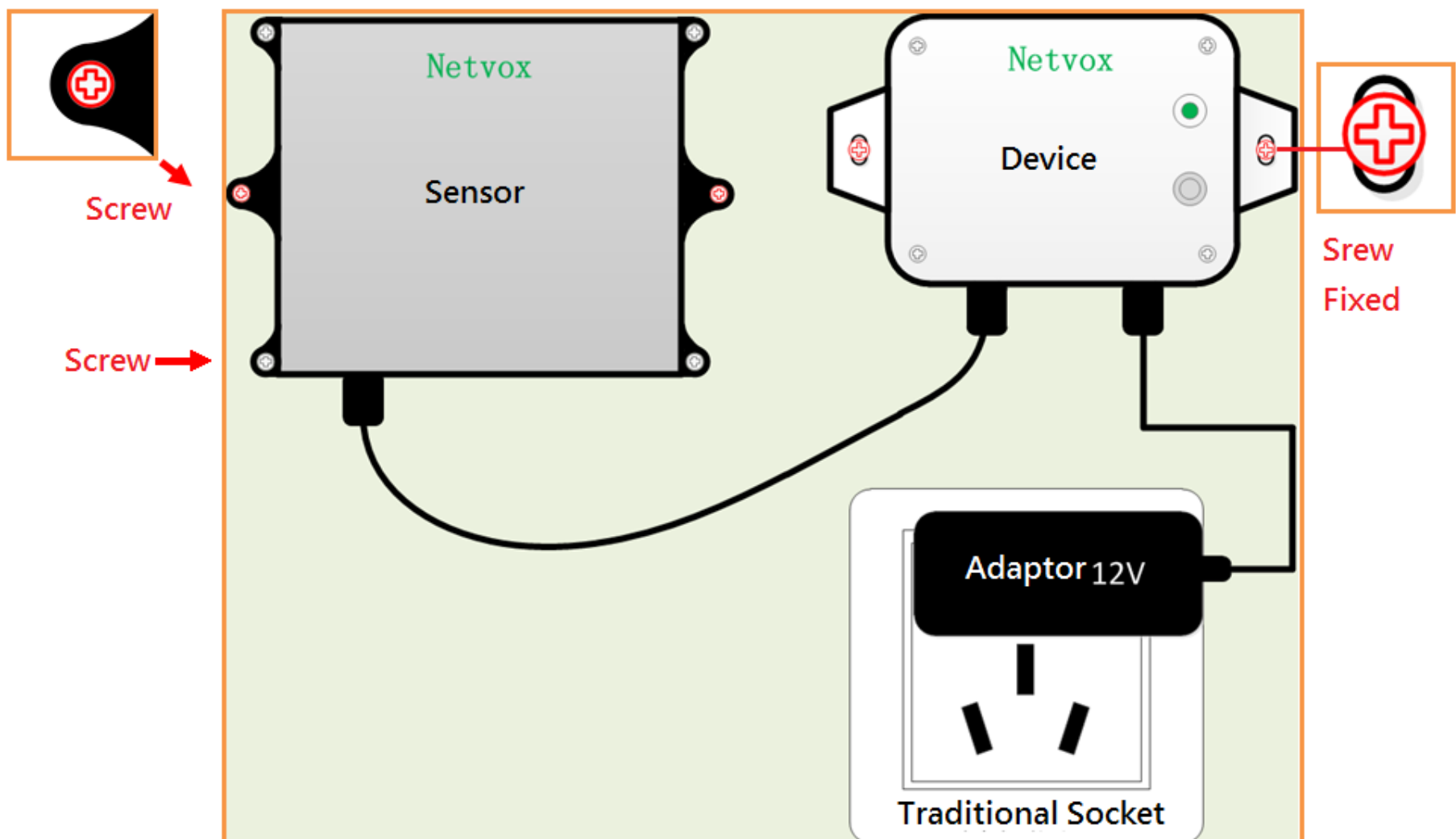
7. Important Maintenance Instruction

Kindly pay attention to the following in order to achieve the best maintenance of the product:

- Keep the equipment dry. Rain, moisture and various liquids or water may contain minerals that can corrode electronic circuits.

  In case the device is wet, please dry it completely.

- Do not use or store in dusty or dirty areas. This way can damage its detachable parts and electronic components.

- Do not store in excessive heat place. High temperatures can shorten the life of electronic devices, destroy batteries,

  and deform or melt some plastic parts.

- Do not store in excessive cold place. Otherwise, when the temperature rises to normal temperature, moisture will form inside

  which will destroy the board.

- Do not throw, knock or shake the device. Treating equipment roughly can destroy internal circuit boards

  and delicate structures.

- Do not wash with strong chemicals, detergents or strong detergents.

- Do not paint the device. Smudges can make debris block detachable parts up and affect normal operation.

- Do not throw the battery into the fire to prevent the battery from exploding. Damaged batteries may also explode.

All the above suggestions apply equally to your device, batteries and accessories.

If any device is not operating properly.

Please take it to the nearest authorized service facility for repairing.