

**Wireless RS232 Adaptor
User manual**

Table of Content

| | |
|---|---|
| 1. Statement..... | 2 |
| 2. Appearance..... | 2 |
| 3. Introduction..... | 2 |
| 4. Main Characteristics..... | 2 |
| 5. Operation..... | 3 |
| 6. Installation..... | 6 |
| 7. Important Maintenance Instruction..... | 6 |

1. Statement

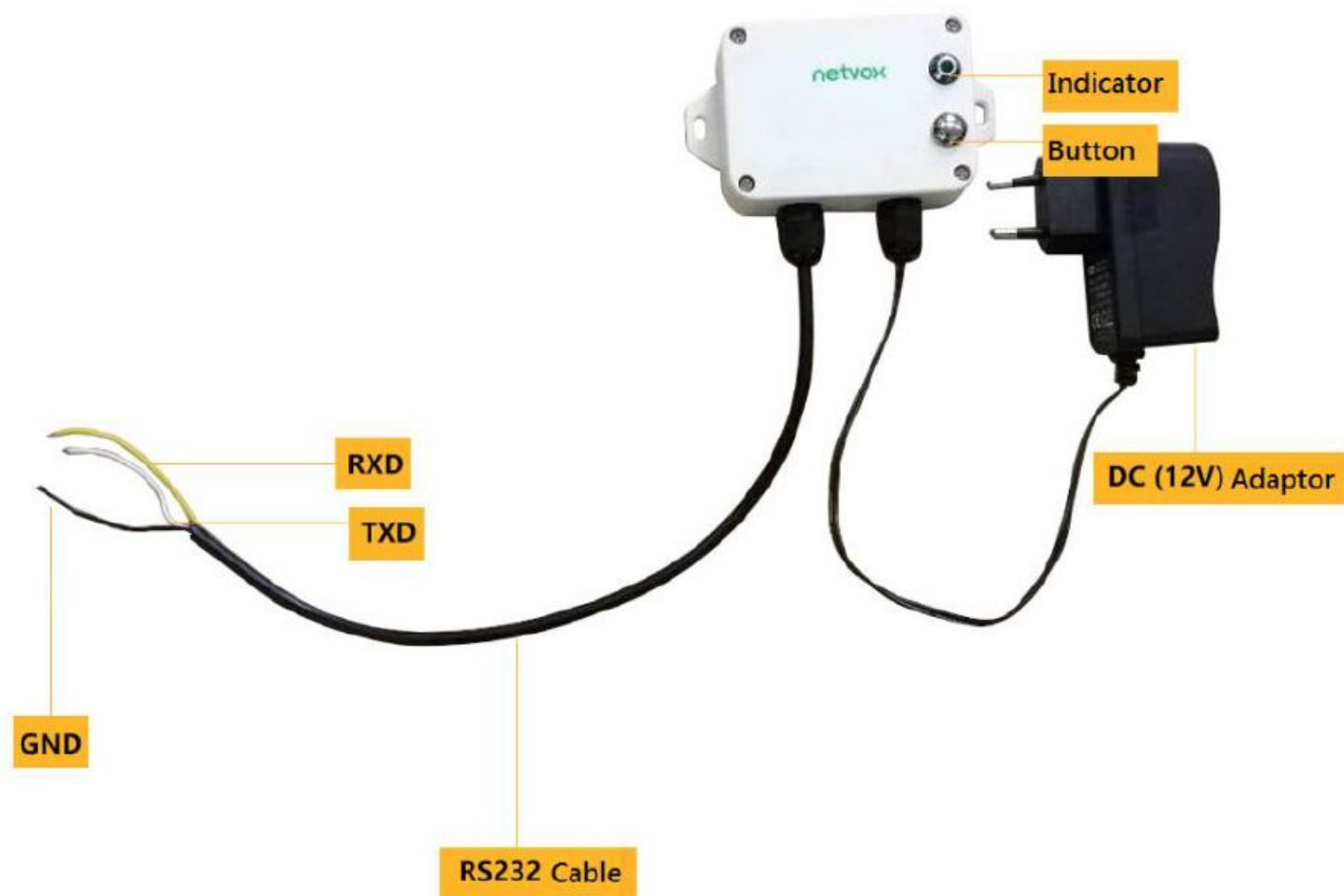
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2. Appearance



3. Introduction

The R718PDA is a Class C type device based on the LoRaWAN open protocol of Netvox and is compatible with the LoRaWAN protocol.

The R718PDA can transmit the serial port transparently and directly report the information received by the serial port to the corresponding gateway. Serial port transparent transmission only supports RS-232 protocol.

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.

4. Main Characteristics

- Compatible with LoRaWAN
- Power is supplied from an external 12V power supply
- Support RS232 series port
- Simple operation and setting

5. Operation

On/Off

| | |
|--|---|
| Power on | External 12V power supply |
| Turn on | Press and hold the function key for 3 seconds till the green indicator flashes once. |
| Turn off (Restore to factory setting) | Press and hold the function key for 5 seconds till the green indicator flashes for 20 times. |
| Power off | Remove power |
| Note: | <ol style="list-style-type: none"> At 1st -5th second after power on, the device will be in engineering test mode. Remove and supply the power; the device is at off state by default. Need to be turned on to use. 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 (Or at factory setting) | <p>Turn on the device to search the network.</p> <p>The green indicator stays on for 5 seconds: success</p> <p>The green indicator remains off: fail</p> |
| Had joined the network (Not at factory setting.) | <p>Turn on the device to search the previous network.</p> <p>The green indicator stays on for 5 seconds: success</p> <p>The green indicator remains off: fail</p> |
| Fail to join the network (when the device is on) | <p>First two mins: wake up every 15 seconds to send request.</p> <p>After two mins: enter sleeping mode and wake up every 15 minutes to send request.</p> <p>Note: Suggest to remove batteries if the device is not used to save power.</p> <p>Suggest to check the device verification information on the gateway or consult your platform server provider.</p> |

Function Key

| | |
|------------------------------|---|
| Press and hold for 5 seconds | <p>Restore to factory setting / Turn off</p> <p>The green indicator flashes for 20 times: success</p> <p>The green indicator remains off: fail</p> |
| Press once | <p>The device is in the network: 87+ReceiveData (ReceiveData is the most recently received data) format packet</p> <p>The device is not in the network: the green indicator remains off</p> |

Serial Transmission Rate Configuration

| | |
|--|---|
| Serial Transmission Rate Default Value | 9600 |
| Configuration Method | Downlink instructions through LORANWAN |
| Serial Transmission Rate Option | <p>00 Baudrate = 115200; 01 Baudrate = 57600; 02 Baudrate = 38400;</p> <p>03 Baudrate = 28800; 04 Baudrate = 19200; 05 Baudrate = 9600;</p> <p>06 Baudrate = 4800; 07 Baudrate = 2400;</p> |

Data Report

The device will send a version package report immediately after powering on the device.
 The device has no operation until any configuration is done.
 The device sends a down-link command configuration with LOLAWAN for the data that needs to be sent through the R232 and sends the data received by the R232 to the gateway.
 The device sends a down-link command with LoRaWan to send the data periodically.

When the RS232 interface of the R718PDA receives the serial port data sent from the RS232 device connected to it, it will actively report the received data to the gateway in the format of 87+ReceiveData.

The data report can be decoded by the Netvox LoraWAN Application Command document and <http://www.netvox.com.cn:8888/page/index>

Data Report Cycle Configuration Example:

| Description | Device | CmdID | NetvoxPayLoadData |
|------------------------|--------------|-------|-------------------------|
| SetPollSensorPeriodReq | R718PDA A | 0x03 | Period(2Byte, Unit: 1s) |
| SetPollSensorPeriodRsp | | 0x83 | Status(0x00_success) |
| GetPollSensorPeriodReq | | 0x04 | |
| GetPollSensorPeriodRsp | | 0x84 | Period(2Byte, Unit: 1s) |

Configure device cycle Period = 30s

Downlink: 03001E

Device returns:

8300 (configuration successful)

8301 (configuration failed)

(1) Read device parameters

Downlink: 04

Device returns:

84001E (current device parameters)

Data Report Configuration Example:

| Description | Device | CmdID | NetvoxPayLoadData |
|------------------------|---------|-------|----------------------|
| SetPollSensorRawCmdReq | R718PDA | 0x05 | SensorRawCmd |
| SetPollSensorRawCmdRsp | | 0x85 | Status(0x00_success) |
| GetPollSensorRawCmdReq | | 0x06 | |

| | | | |
|----------------------------|--|------|--------------|
| GetPollSensor RawCmdRsp | | 0x86 | SensorRawCmd |
|----------------------------|--|------|--------------|

Data Report Configuration Example:

(2) Configuring the device SensorRawCmd

Downlink: 05112233445566

Device return: 8500 (configuration is successful)

8501 (configuration failed)

(3) Read SensorRawCmd

Downlink: 06

Device return: 86112233445566 (device current SensorRawCmd)

Serial Transmission Rate Configuration Example:

| Description | Device | CmdID | NetvoxPayLoadData |
|----------------|-------------|-------|----------------------|
| SetBaudRateReq | R718PD A | 0x08 | BaudRateType (1Byte) |
| SetBaudRateRsp | | 0x88 | Status(0x00_success) |
| GetBaudRateReq | | 0x09 | |
| GetBaudRateRsp | | 0x89 | BaudRateType (1Byte) |

For example, the configuration serial transmission rate is 115200.

Downlink: 0800

Device return: 8800 (configuration succeeded)

8801 (configuration failed)

Read device serial transmission rate parameter

Downlink: 09

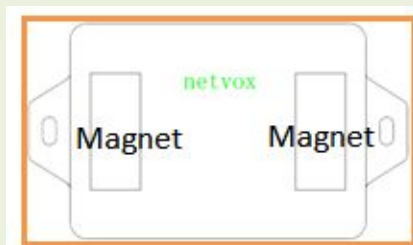
Device return: 8900 (device current parameter)

6. Installation

1. The LoRa to RS-232 adapter (R718PD) has a built-in magnet (see Figure 1 below). It can be attached to the surface of an object with iron material during installation, which is convenient and quick. To make the installation more secure, please use screws (purchased separately) to fix the device to the wall or other objects (as shown below).

Comment

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



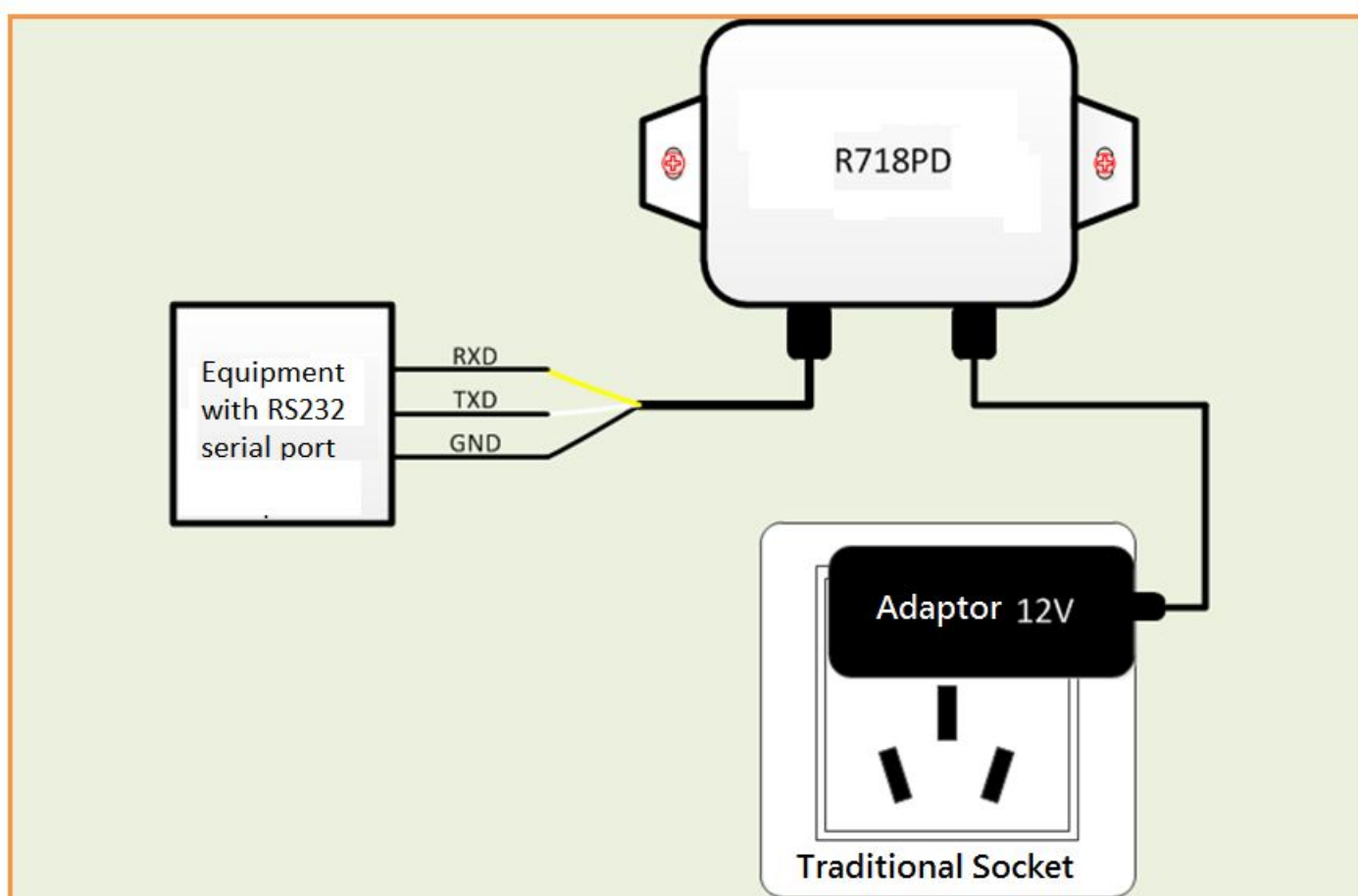
1. Connect the yellow wire (RXD), white wire (TXD), and black wire (GND) to the corresponding interfaces of the RS232 serial device.

2. LoRa to RS-232 adapter (R718PD) supports serial port transparent transmission, and sends commands or reads data to the connected RS232 device according to the configured cycle time. The read information will be reported directly to the gateway.

LoRa to RS-232 adapter (R718PD) can be applied to equipment with RS232 serial port.

E.g:

- UPS un-interruptible power supply
- Access control
- Hard disk player
- Other devices with RS232 serial port



7. Important Maintenance Instruction

Your device is a product of superior design and craftsmanship and should be used with care. The following suggestions will help you use the warranty service effectively.

- Keep the equipment dry. Rain, moisture, and various liquids or moisture 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 can damage its detachable parts and electronic components.
- Do not store in excessive heat. High temperatures can shorten the life of electronic devices, destroy batteries, and deform or melt some plastic parts.
- Do not store in a 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. Rough handling of equipment can destroy internal circuit boards and delicate structures.
- Do not wash with strong chemicals, detergents or strong detergents.
- Do not apply with paint. Smudges can block debris in detachable parts and affect normal operation.
- Do not throw the battery into a fire to prevent the battery from exploding. Damaged batteries may also explode.

All of the above suggestions apply equally to your device, battery and accessories. If any device is not working properly.

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