

Wireless CO environment Sensor

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User Manual

Firmware:V1.3
Hardware:V0.4

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1. Introduction

RA0701_R72601_RA0701Y is a ClassA type device based on the LoRaWAN protocol.

The RA0701_R72601_RA0701Y data can be sent to the corresponding gateway via externally connecting the CO detector.

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



Figure 1 RA0701
Host and external CO Sensor
(subject to the actual object)



Figure2 R72601
CO Sensor and host in the mask.
Solar power supply. (subject to the actual object)

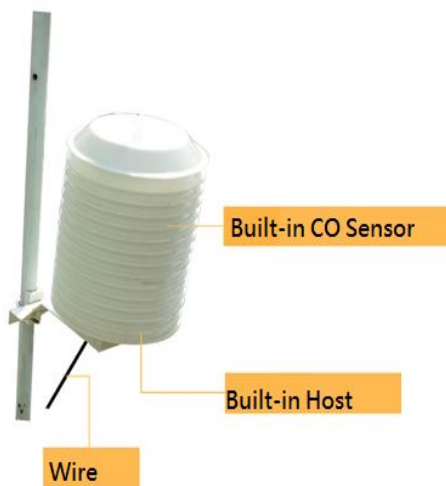


Figure 3 RA0701Y
Host and CO sensor in the mask.
(subject to the actual object)

3. Main Features

- Compatible with LoRaWAN
- RA0701 / RA0701Y: DC 12V Adapter Power Supply
- R72601: Solar and rechargeable lithium battery powered
- Easy set up and installation

4. Set up Instruction

4.1 Join Into Lora Network

RA0701_R72601_RA0701Y can communicate with the gateway. RA0701_R72601_RA0701Y needs to be added to the gateway network first.

Operations are as follows:

- (1) After power-on, the un-networked device will automatically scan the network. After scanning the network that can be joined, the green indicator light of the device will be on for 5 seconds, and the network will succeed. Otherwise, the indicator light will not work.
- (2) For devices that have been added to the network, the green indicator light is on for 5 seconds after power-off, indicating that it is already in the network.

4.2 Function Key

- (1) Press the button to activate, the LED flashes slowly once; at the same time, it takes about 35 seconds for the device to send the report to the gateway.
- (2) Press and hold the button for 5 seconds to restore the factory settings. After the factory reset is successful, the green LED flashes 20 times.

4.3 Activation

Press the button to activate the device; the activation is successful. LED flashes slowly once to show it is in the network.

4.4 Supported Frequency

The currently supported network bands are: AS923, US915_HYBRID, EU868, AU915, CN470 and KR920.

4.5 Data Report

After the device is powered on, the network will send a version package immediately, and then send the data report after about 45 seconds.

The default report configuration of the device is as follows:

ReportMaxTime: RA0701_ RA0701Y : 180 seconds, R72601: 900 seconds (subject to factory settings)

ReportMinTime: 30 seconds;

ReportChange: 0;

The RA07001_R72601_RA0701Y device does not support the ReportChange function. That is, the configuration is invalid. The sent report data string is always sent according to the ReportMaxTime cycle. The data of the device Report is: CO value, ReportType count = 1;

Note:

1. The value of ReportMaxTime is greater than (ReportType count *ReportMinTime + 10 units: second).
2. The device also supports Cayenne's TxPeriod cycle configuration instructions. Therefore, the device can also perform a report according to the cycle time of the TxPeriod value; and at a certain time, the report period is ReportMaxTime or TxPeriod, depending on which cycle time is configured last time;
3. After pressing the button, the device needs 35s time to process the sensor information, please be patient.

5. Restore to Factory Setting

RA0701_R72601_RA0701Y has a power-down save network information memory function. This feature is turned off by default. That is, it will be re-joined to the network every time when it is powered back on.

To enable it by using the ResumeNetOnOff command, each time the power is rewritten, the last joining information will be recorded (including saving the network address information assigned to it, etc., if users want to join a new network, you need to perform a factory reset first.) The device will be automatically joined to the network.

Operation method:

1. Press and hold the binding button for 5 seconds to release (the binding button is released when the LED flashes), and the LED flashes 20 times;
2. Re-start RA0701_R72601_RA0701Y to re-join to the network.

6. Installation

1. The RA0701 product does not have a waterproof function. After the network adding configuration is completed, please place it properly.

The sensor should be placed in a sheltered environment from the wind and rain, and the wall should be perpendicular to the ground at 90 degrees. Keep the sensor air vent hole directly below to prevent water to enter.

At the same time, in order to ensure the accuracy of the measurement, please install the carbon monoxide transmitter in a well ventilated position.



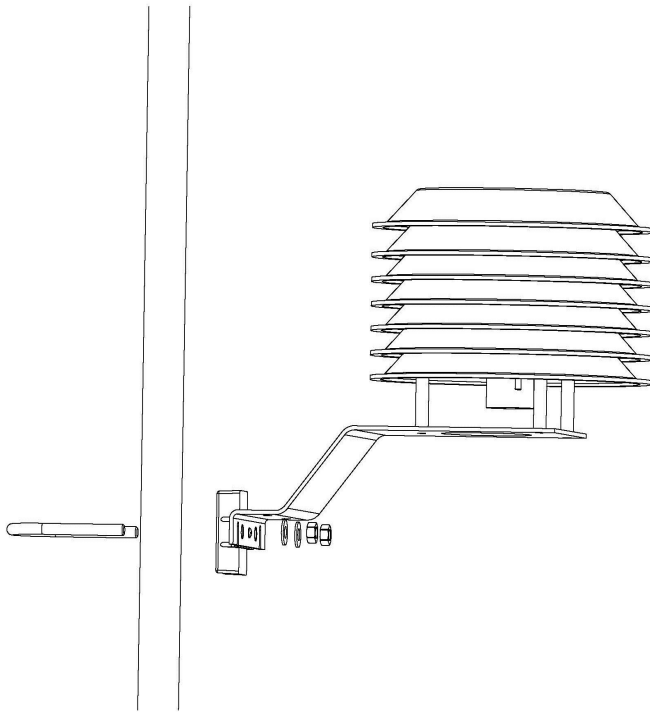
2. The R72601 product is waterproof. After the network-joining is completed, please leave it outdoors.

(1) In the position to be installed, loosen the U-shaped screw of the bottom of the R72601 and the mating washer nut, and fix the U-shaped screw through the appropriate size cylinder on the R72601 fixed strut piece. Install the washer nut in order, lock the nut till R72601 body is stable and does not shake.

(2) At the upper side of the fixed position of R72601, loosen the two U-shaped screws on the side of the solar panel and the mating washer nut. Fix the U-shaped screw through the appropriate size cylinder on the main bracket of the solar panel, and install the gasket in sequence. Lock nut till the solar panel is stable and does not shake.

(3) Adjust the angle of the solar panel. After the adjustment is completed, lock the nut.

(4) Connect the R72601 top waterproof cable to the solar panel wiring and lock it tight.



(5) R726X has a battery compartment inside, users can buy and install rechargeable 18650 lithium battery, a total of 3 sections, a single rechargeable lithium battery voltage 3.7V, capacity recommended 5000mah, the installation of rechargeable lithium battery steps are as follows:

- 1: Remove the four battery box screws and install three rechargeable lithium batteries.
- 2: Press the activation button on the battery box for the first time.
- 3: After activation, close the cover and lock the 4 box screws.

Rechargeable lithium battery installation instructions:



Fig. 1



Fig. 2



Fig. 3

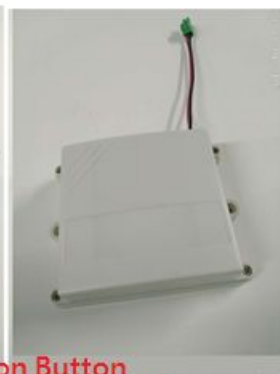


Fig.4

1. User removes the four screws of the battery holder. (Fig.1)
2. Insert the battery according to positive and negative poles. (Fig.2)

3. Press activation button after loading batteries. (Fig. 3)
4. After activation, close the holder with 4 screws.(Fig. 4)

3. The RA0701Y product is waterproof and can be placed outdoors after the network-joining is completed.

(1) In the position to be installed, loosen the bottom U-shaped screw of the RA0701Y and the mating washer nut, and fix the U-shaped screw through the appropriate size cylinder on the RA0701Y fixed strut piece. Install the washer nut in order, lock the nut till RA0701Y body is stable and does not

shake.

(2) Loosen the M5 nut at the bottom of the 727 matte and take the matte together with the screw.

(3) Insert the power DC plug from the center through hole of the RA0701Y bottom cover, insert it into the RA0701Y DC socket, and then return the mating screw to the original position and lock the N5 nut tight.

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 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. 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.