RS-YG-N01

485 type photoelectric smoke detector fire alarm User manual

Document version：V2.0

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1.Product introduction

1.1 product description

The RS-YG-N01 Photoelectric Smoke Fire Alarm (hereafter referred to as the alarm) is capable of detecting smoke generated during a fire. The alarm adopts photo-electricity smoke device and excellent production technology. It has stable work, beautiful appearance, simple installation and no need for debugging. It can be widely used in shopping malls, hotels, shops, warehouses, computer rooms, houses and other places for fire safety testing. The alarm has a built-in buzzer that emits a strong sound after an alarm. The alarm uses standard 485 signal output, Modbus protocol, and supports secondary development.

1.2 Main Specifications

Power supply：10~30V DC　　Static power：0.12W

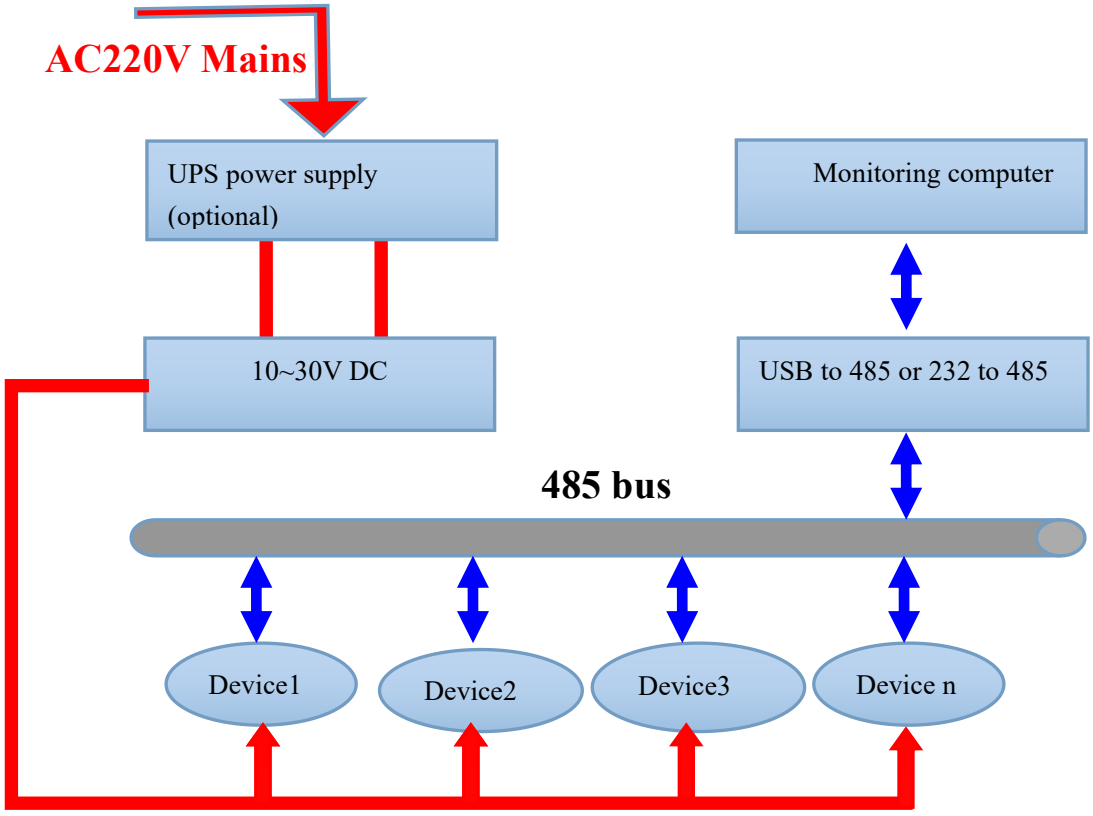
Alarm power consumption：0.7W　　Alarm sound：≥80dB

Signal output：RS485　　letter of agreement：Modbus-RTU

Smoke sensitivity：1.06±.26%ＦＴ　　Standards compliant：GB4715-2005

working environment：-10℃~50℃，≤95%，No condensation

1.3 System framework



System solution block diagram

2. product features

1.Ceiling installation

2.Tamper cover

3.Using a microprocessor

4. Automatic temperature compensation

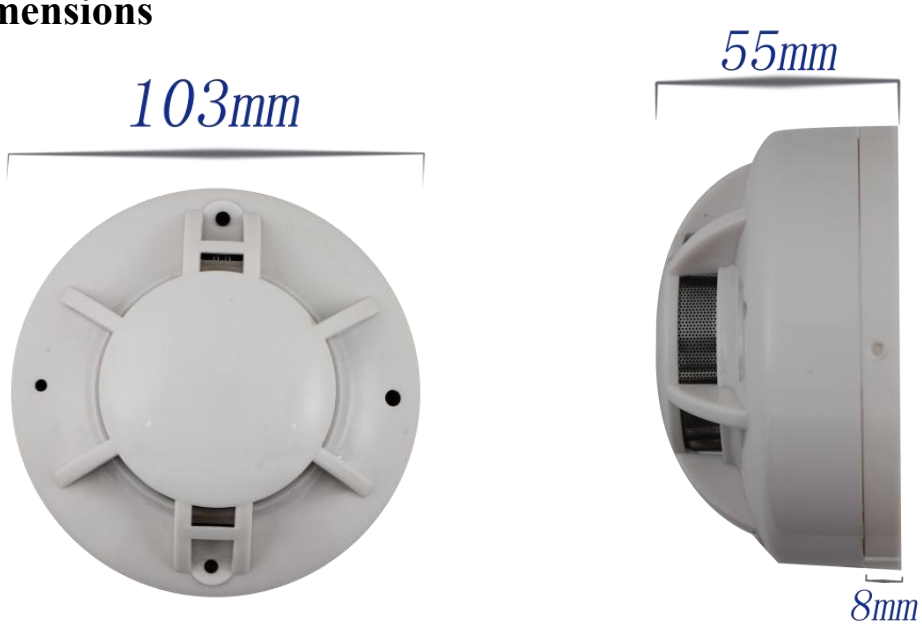
5. Full 360° detection

6. LED ON&OFF selectable

7. Adjustable alarm delay

8. Using patch technology, anti-EMI, RFI interference

3. Dimensions



4. Installation and wiring instructions

4.1 Equipment inspection before installation

Equipment List：

1. 1 set of smoke sensor

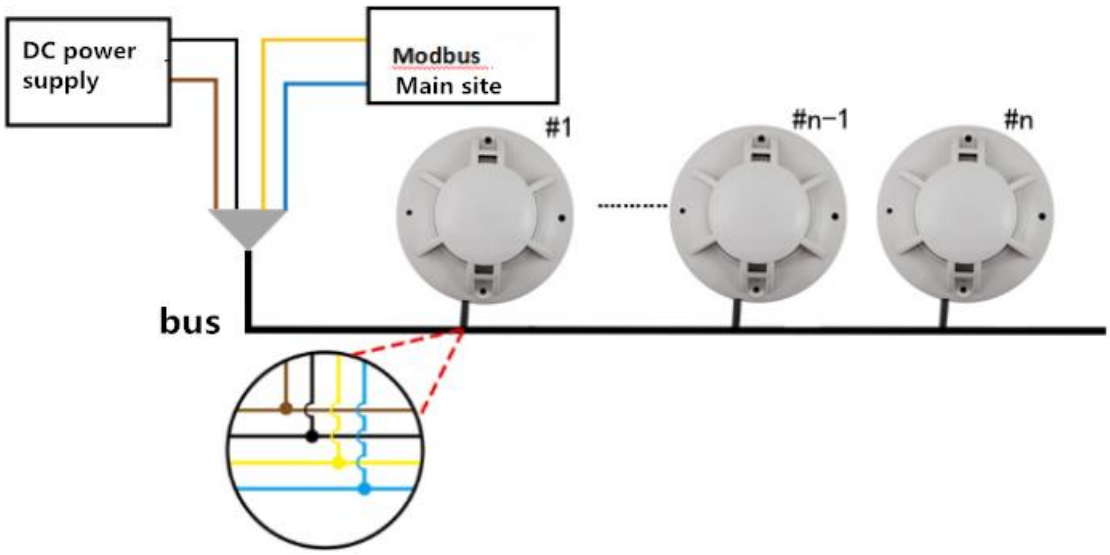
2. Certificate, warranty card, wiring instructions, etc.

3. 12V/1A waterproof power supply 1 (optional)

4. USB to 485 (optional)

4.2 Wiring instructions

The power input can be 10~30V. When wiring the 485 signal line, note that the A\B lines cannot be connected in reverse, and the addresses between multiple devices on the bus cannot conflict.



Line color	Description	Remarks
brown	Power supply	10~30V DC
black	Negative power supply	
yellow	485-A	
blue	485-B	

4.3Installation Notes

4.3.1Suitable installation location

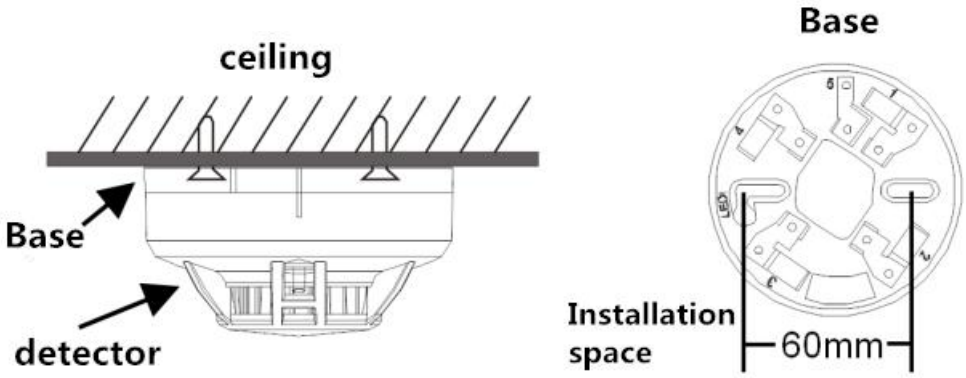
When installed on the roof, it should be placed in the middle of the roof. If it is installed on the inclined or human roof, the alarm should be kept at a certain distance from the roof. When the slope is less than 30°, the distance is 0.2m, more than 30°. The distance is from 0.3m to 0.5m.

4.3.2 Location and environment to avoid installation

1. Places where smoke is normally trapped
2. Locations with large dust, water mist, steam, oil mist pollution and corrosive gases
3. Locations with relative humidity greater than 95%
4. Locations with ventilation speeds greater than 5 m/s
5. Close to fluorescent fixtures

4.3.3 installation method

Two mounting holes of 5 mm in diameter were placed at a distance of 60 mm from the ceiling, and the detector base was fixed to the ceiling with a plug and a screw.



5. Configuration software installation and use

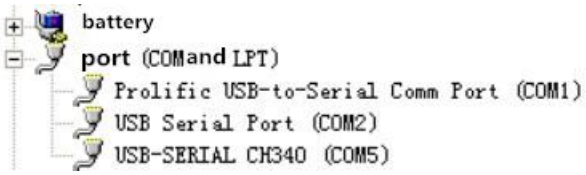
5.1 Software selection

Open the package and select "Debug Software"---"485 Parameter Configuration Software" to find 

Open it.

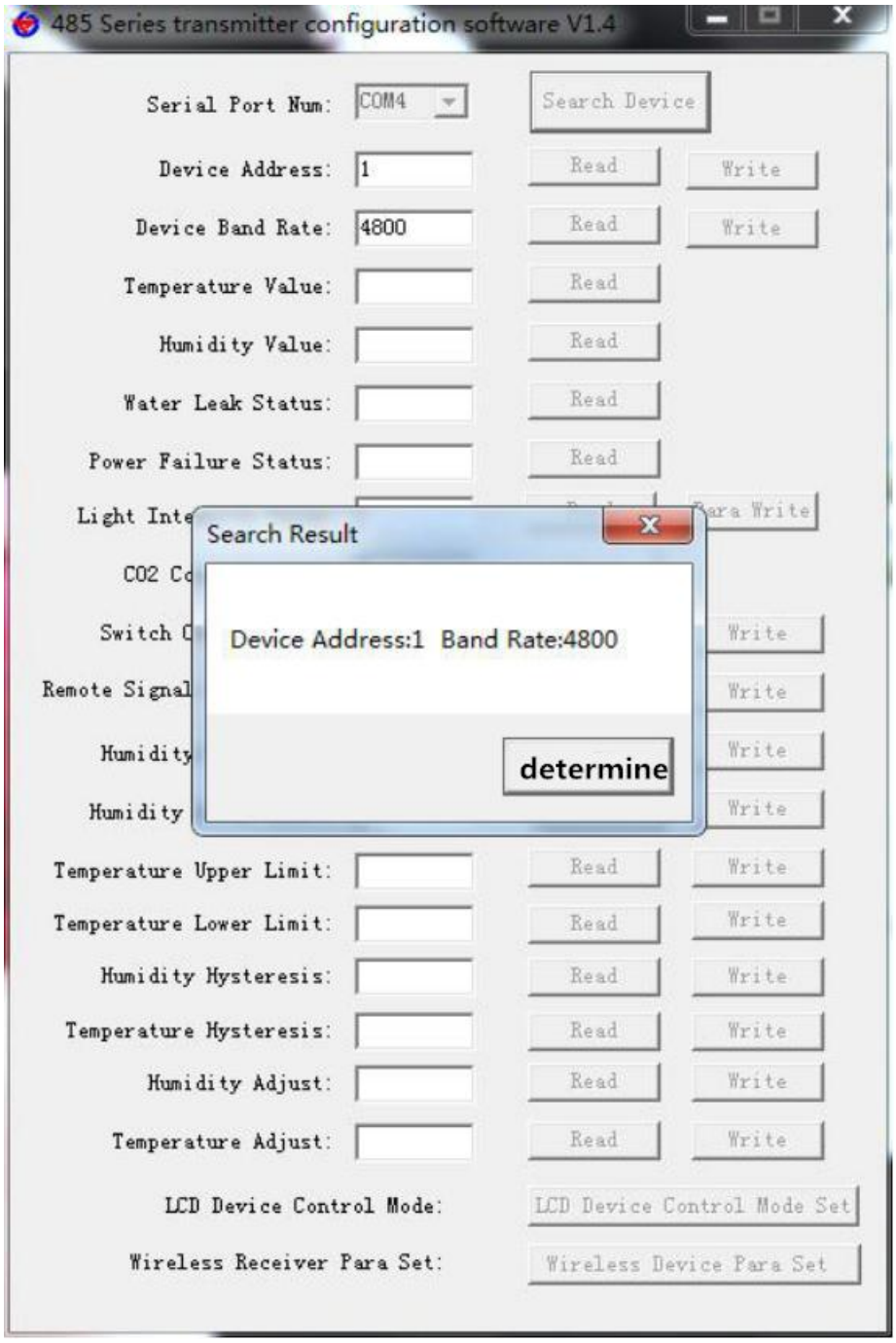
5.2parameter settings

1. Select the correct COM port ("My Computer - Properties - Device Manager - Port" to view the COM port). The following figure lists the drive names of several different 485 converters.



2. Connect only one device and power on separately. Click the test baud rate of the software. The software will test the baud rate and address of the current device. The default baud rate is 4800 bit/s and the default address is 0x01.
3. Modify the address and baud rate according to the needs of use, and query the current functional status of the device.
4. If the test is not successful, please re-check the equipment wiring and 485 driver installation

5.



6. letter of agreement

6.1 Basic communication parameters

Code	8-bit binary
Data bit	8 digits
Parity bit	no
Stop bit	1 person
Error check	CRC (redundant cyclic code)
Baud rate	2400bit/s, 4800bit/s, 9600 bit/s can be set, the factory default is 4800bit/

	s

6.2 Data frame format definition

Adopt Modbus-RTU communication protocol, the format is as follows:

Initial structure ≥ 4 bytes of time

Address code = 1 byte

Function code = 1 byte

Data area = N bytes

Error check = 16-bit CRC code

End structure ≥ 4 bytes of time

Address code: is the address of the transmitter, which is unique in the communication network (factory default 0x01).

Function code: The instruction function of the command sent by the host. This transmitter only uses function code 0x03 (read register data).

Data area: The data area is the specific communication data. Note that the 16-bit data high byte is in front!

CRC code: Two-byte check code.

Host inquiry frame structure:

address code	function code	Register start address	Register length	Check code low	Check code high
1 byte	1 byte	2 bytes	2 bytes	1 byte	1 byte

Slave response frame structure：

address code	function code	Effective number of bytes	Data area	Second data area	Nth data area	Check code
1 byte	1 byte	1 byte	2 bytes	2 bytes	2 bytes	2 bytes

6.3 Register address

Register address	PLC or configuration address	content	operating
0003 H	40004	Alarm status， 0 stands for normal, 1 is alarm	Read only
0033 H	40052	Alarm-delay. Default is 0s, 0-65535s could be seted	Read/Write
07D0 H	42001	Address. Default of 1, 1-254 could be seted	Read/Write
07D1 H	42002	Baud rate. 0standards for 2400, 1 standards for4800, 2 standards for 9600	Read/Write

6.4 Communication protocol example and explanation

Example: Asking for the working status of the alarm

Inquiry frame:

address code	function code	starting address	Data length	Check code low	Check code high
0x01	0x03	0x00 0x03	0x00 0x01	0x74	0x0A

Response frame: Answer to the alarm status alarm

address code	function code	Returns the number of valid bytes	Alarm status	Check code low	Check code high
0x01	0x03	0x02	0x00 0x01	0x79	0x84

Alarm status description：

Alarm status code	Alarm status

0	normal
1	Alarm

7. Common problems and solutions

The device cannot be connected to the PLC or computer, possible reasons:

1) The computer has multiple COM ports, and the selected port is incorrect.

2) The device address is incorrect, or there is a device with a duplicate address (all the factory defaults to 1).

3) Baud rate, check mode, data bit, stop bit error.

4) The host polling interval and the waiting response time are too short and need to be set to more than 200ms.

5) The 485 bus is disconnected, or the A and B lines are reversed.

6) If the number of devices is too large or the wiring is too long, the power should be supplied nearby, add 485 enhancer, and increase the resistance of 120Ω terminal.

7) The USB to 485 driver is not installed or damaged.

8) Equipment damage.

8. Contact information

Shandong Renke Measurement & Control Technology Co., Ltd.
Address: 2886 Fengjing Road, High-tech Zone, Jinan City, Shandong Province
Zip code: 250101
Phone: 400-085-5807
Fax: (86)0531-67805165
Website: www.renkeer.com
Cloud platform address: www.0531yun.cn

9. Document history

The V1.0 documentation was created.

V2.0 documentation update.