Product Name	GAOTek Industrial gas detector for NH3 gas
Product SKU	GAOTek-AGD-115
Product URL	https://gaotek.com/product/gaotek-industrial-gas-detector-for-nh3-gas/

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CONTENTS

GAOTek Industrial Gas Detector For NH3 Gas

1. INTRODUCTION:

These series point gas detectors are widely used in chemical industry, petroleum, metallurgy, liquefied gas stations, spray painting operations, gas

Indoor and outdoors are dangerous places where toxic and flammable gases are generated, stored, and used such as transmission and distribution. point type gas

The detector is a gas detector developed by our company with practical functions and easy operation. Can be used with our company's gas alarm controller Gt-K series

Together they form an industrial gas alarm system.

This product adopts wall-mounted installation (can also be installed in a tube, bracket, or ceiling). It is used in conjunction with the controller and

The controller microcontroller processes various data uploaded by the gas detector and finally completes the display and output of the data

control functions.

Note: It is a combustible gas detector, and is a toxic gas detector.

1.1 **The design, manufacturing, and inspection of this product comply with the following national standards:**

GB 3836.1-2010 "Explosive atmospheres Part 1: General requirements for equipment"

GB 3836.2-2010 "Explosive atmospheres Part 2: Equipment protected by explosion-proof outer "d""

GB 12476.1-2013 "Electrical equipment for combustible dust environments - Part 1: General requirements"

GB 12476.5-2013 "Electrical equipment for combustible dust environments - Part 5; Shell protection type "tD""

GB 12358-2006 "General technical requirements for ambient gas detection and alarm devices in workplaces"

GB 4208-2017 "Enclosure Protection Level (IP Code)"

1.2 **Product name and model**

Product name: Point-type gas detector for industrial and commercial purposes

Product model: GT-GT-D300F/D400F, GT-GT-D300T/D400T

1.3 **Functional features**

- Display the concentration of detected gas.
- Fault alarm, high and low alarm.
- Field screen display includes a backlight, the characters are larger and clearer, and when the device alarms, the backlight turns red.
- Infrared remote-control input, no need to open the cover for the operation, more convenient.
- Supports three different sound and light outputs, corresponding to a fault, low alarm, and high alarm respectively.
- Zero adjustments, calibration, and test functions.
- Output DC4-20mA standard signal.
- Supports RS485, secondary bus, LoRa, and flexible communication methods.
- Equipped with high-performance ARM microprocessor for easy operation.
- Three-way relay (250V 5A) output, automatically turns on the fan and solenoid valve.
- Can store 40 high and low alarm records cyclically.
- The toxic gas detector can realize the conversion of mg/m³ and ÿmol/mol.

2. Technical parameters of series gas detectors

Power and power	Power supply 24V; flammable: ÿ4W; oxygen/toxic: ÿ3W
Measuring range	Flammable: (0- 100) % LEL; Oxygen/Toxic: (0-1000) ÿmol/mol (by sensing
Accuracy	± 5% FS (determined by sensor)
Minimum reading	Flammable: 1% LEL; Toxic: 0. 1 ÿmol/mol (determined by the sensor)
Response time	Toxic: ÿ60 seconds; Flammable: ÿ 30 seconds

|	
Sensor life	36 months (determined by sensor)
Sensor type	Combustible: catalytic combustion type; Toxic: electrochemical type (imported sensor)
Detection method	diffusion
Way of working	Long-term continuous work
Connection method	M20 * 15 male thread explosion- proof hose
Contact output	Passive contact capacity 5A/220V (3 pieces
Explosion-proof signs	Ex d IIC T6 Gb/Ex tD A21 IP67 T80ÿ
Protection level	IP67
Ambient temperature and humidity	Flammable: -40ÿ70ÿ, 15%ÿ95% RH; Toxic: -20ÿ60ÿ; 15%ÿ95%RH
Weight	ÿ2kg
Transmission distance	ÿ1200m (only RS485, second bus, 4-20mA)
Output signal	4-20mA current signal, corresponding to full scale

3. Product display picture

3.1-Dimensional drawing of series gas detector
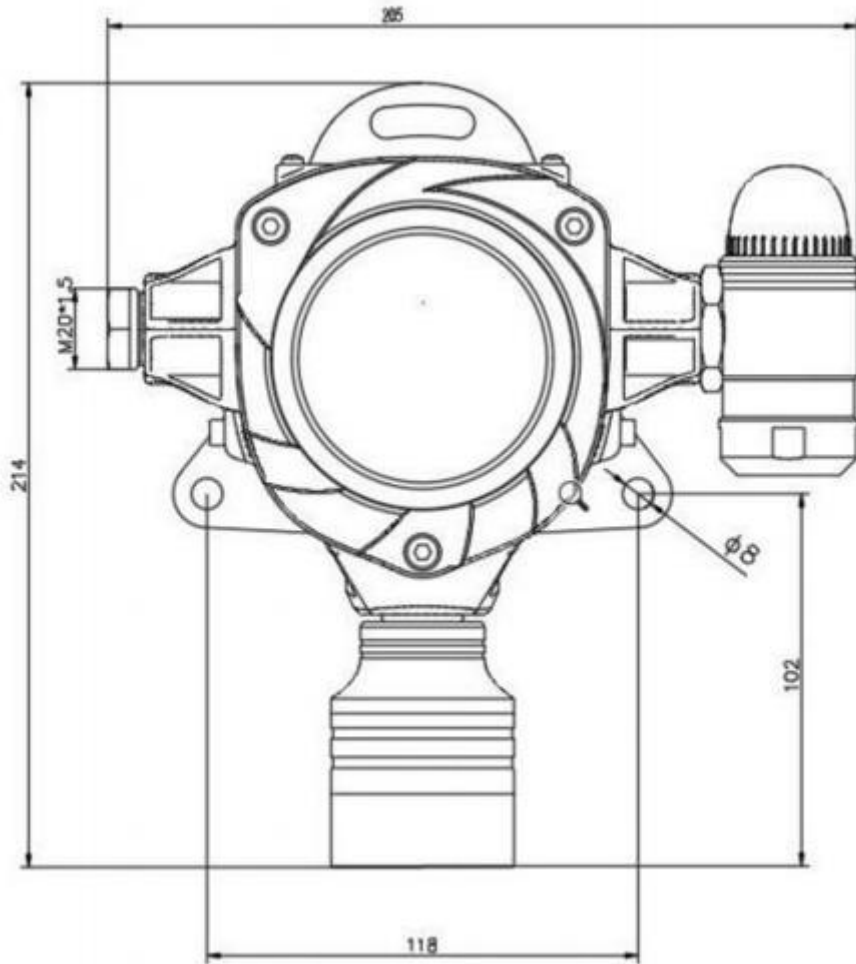
Overall dimensions: 205*214*84mm

3.2-Dimensional drawing of series gas detector
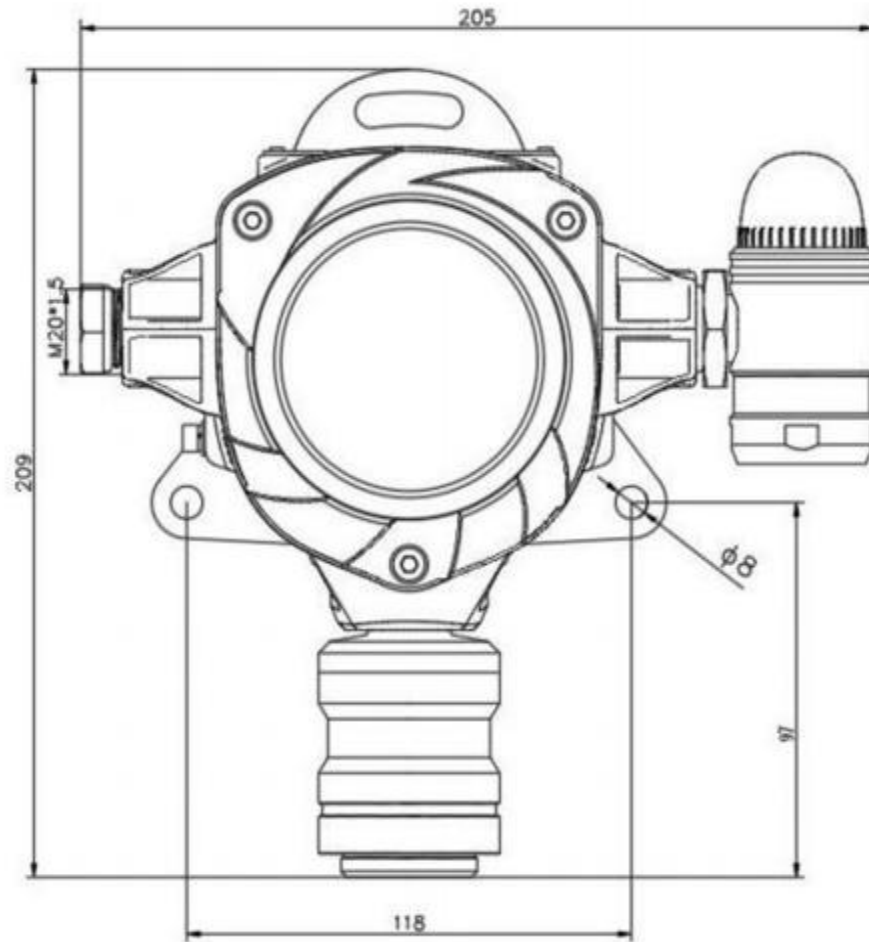
Overall dimensions: 205*209*84mm

4. GAOTek series gas detector installation instructions

4.1 Installation location

1. The gas detector should be installed in a place with no impact, no vibration, no strong electromagnetic field interference, and easy maintenance. The detector installation location
2. The clearance between it and surrounding process pipes or equipment should not be less than 0. 5 m.
3. When detecting flammable or toxic gases that are heavier than air, the detector should be installed at a height of 0.3m to 0.6m from the floor (or floor);
4. When measuring flammable or toxic gases that are lighter than air, the detector should be installed within 2.0m above the release source;
5. When detecting flammable or toxic gases that are slightly heavier than air, the detector should be installed at a height of 0.5m to 1.0m below the release source;
6. For flammable or toxic gases that are slightly lighter than air, the detector should be installed at a height 0.5m to 1.0m higher than the release source;
7. To determine whether the leaked gas medium is heavier than air, the ratio of the molecular weight of the leaked gas medium to the molecular weight of the ambient air should be used as the basis.
8. Accurate and judge according to the following principles:
9. When the ratio is greater than or equal to 1.2, the leaked gas is heavier than the air;
10. When the ratio is greater than or equal to 1.0 and less than 1.2, the leaked gas is slightly heavier than air;
11. When the ratio is 0.8~ 1 .0, the leaked gas is slightly lighter than air;
12. When the ratio is less than or equal to 0.8, the leaked gas is lighter than air;

4.2 Installation precautions

4.2.1 To use the gas detector correctly and prevent the occurrence of gas   d detector failure, please do not install it in the following locations:

1. Places directly affected by steam and oil fumes;
2. Air supply vents, ventilation fans, doors, and other places with large air flow;
3. Places with a lot of moisture and water droplets (relative humidity: ÿ95%RH);
4. Point-type toxic gas detector: places where the temperature is below -20ÿ or above 60ÿ;
5. Places with strong electromagnetic fields.

4.2.2 During on-site installation, the shell connection must be well grounded.

- After installation, the ground connection is safe and reliable;

5. Instructions for use of GAOTek series gas detectors

5.1 Power on

1. Connect the controller and gas detector equipment, and then turn on the power after confirming that everything is correct. The gas detector will display the combustible gas sign and continue.
2. The status of the electrical appliance, the detected concentration value, and the current concentration as a percentage of the range are displayed. The normal light is on and the detection starts.
3. To ensure data accuracy and consistency, please let the aging equipment sit for at least 48 hours after turning it on before calibrating or using it (portable)
4. Please plug the detector into the charger foraging).

5.1.1 Indicator light description

1. [Green light] The detector's normal operation indicator light is on
2. [Yellow light] Detector failure indication.
3. [Red light] Alarm indicator light; when an alarm occurs on the detector, the indicator light turns on, and when the alarm disappears, the indicator light automatically goes out;

5.2 Detection

1. When the gas concentration is higher than the set concentration, the alarm sounds, the alarm LED lights up, and the alarm light flashes. Press the silence button to clear it.
2. Remove sound. When the gas concentration is lower than the set concentration, the alarm will turn off the alarm sound and the LED light will go out. Different alarm types of sounds
3. The alarm light flashes at different frequencies.

5.3 Settings

The gas detector can set gas and sensor parameters, set address, set alarm points, query historical alarm records, set time, calibrate the gas detector, and correct the sensor zero point.

5.3.1 Menu settings

1. Press the "MENU" key of the infrared remote control, and the field screen displays the setting interface, and the left and right keys of the infrared remote control the setting type, from left to
2. On the right are: address, alarm, record, time, zero adjustment, calibration, test, and the corresponding content displayed at the bottom of the field screen.

5.3.2 Address setting

a. In the address interface, press the confirmation key, and the address content flashes, enter different addresses with the up and down keys or infrared numeric keys, and the infrared numeric keys
b. When inputting, the left and right keys switch to different bits, and the address range is: 1-255 (maximum 255).
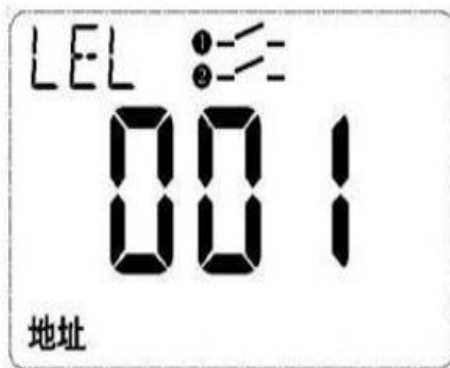
Flameable
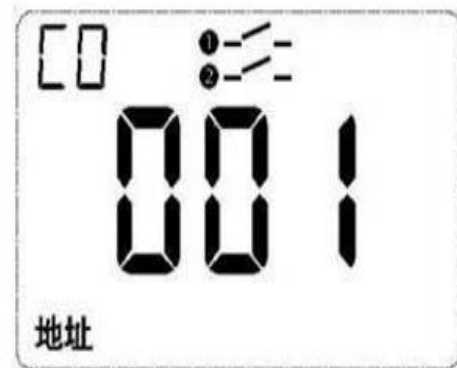
Poisonous

5.3.3 Alarm settings

(1) In the alarm interface, press the confirm key to enter the alarm settings. The left and right keys can switch the alarm type. Select the corresponding alarm type.
(2) Gas detectors have only two alarm types: low alarm and high alarm; toxic gas detectors have four alarm types to choose from.
(3) They are: below the low report, above the low report, below the high report, above the high report. Press the confirmation key again and use the up and down keys to modify the alarm value
(4) After it is correct, press the confirm key to save the data and press the return key to return.

Combustible alarm setting:

Alarm type	Alarm type	Alarm mode
L<	20	Alarm when the value is higher than the low value
H<	50	Alarm when the value is higher than the high value

Toxic alarm setting

| Alarm type	Alarm type	Alarm mode
L<	50	Alarm below low alarm value
L>	50	Alarm when the value is higher than the low value
H<	100	Alarm when the value is lower than the high value
H>	100	Alarm when the value is higher than the high value

5.3.4 Record query

Switch to the recording interface. The field screen only displays the alarm value and occurrence time of the latest alarm. The screen is as follows

Flameable record Show

Toxic record show
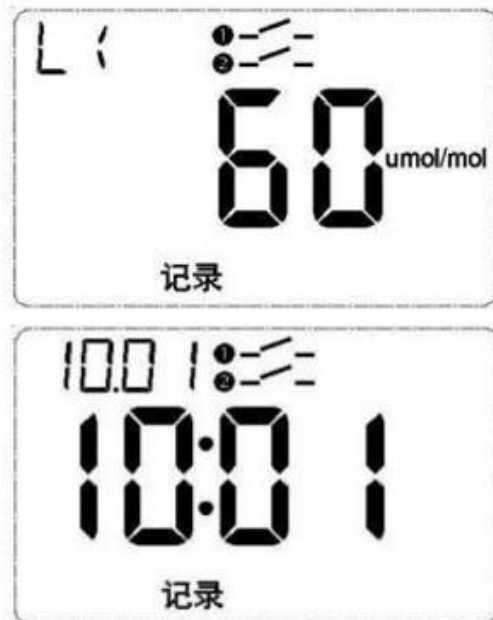
Combustion record querry

Toxic record show

After querying the last record, the history query will automatically jump out. You can also press the return key to return to the menu interface.

5.3.5 Time setting

- Enter the time interface, display the current time, press the confirmation key to switch to different setting contents, corresponding to the year, month, day, hour, and minute flashes sparkle

Set content	Setting method	Remark
Year	Up and down keys increase or decrease	Maximum setting 2099
moon	Up and down keys increase or decrease	1-12 Cycle settings
day	Up and down keys increase or decrease	1-31 Cycle settings
hour	Up and down keys increase or decrease	1-24 cycle settings
Point	Up and down keys increase or decrease	1-24 cycle settings

After setting the time, press the confirm button to save. The set time content will not flash at this time. Press the Escape key to return to the menu.

5.3.6 Zero adjustment setting

In the zero setting interface, press the confirm button to automatically zero and save. The screen is as follows: Flammable zero:

5.3.7 Calibration settings

- Use the flow controller to configure a standard gas with a flow rate of 500 mL/min (for carbon monoxide gas, use a flow rate of 200 mL/min).
- Ventilate the probe. In the calibration setting interface, press the confirm key to enter the calibration setting, and enter the calibration using the up and down keys or the infrared remote control digital keys.
- value, the left and right keys cycle through different bits, so that the gas concentration value displayed by the detector is the same as the standard gas concentration value, and the correction is completed
- Then press the confirm key to save. The calibration value stops flashing and only the calibration value is displayed. Press the return key to return to the menu settings.

Combustible calibration settings:
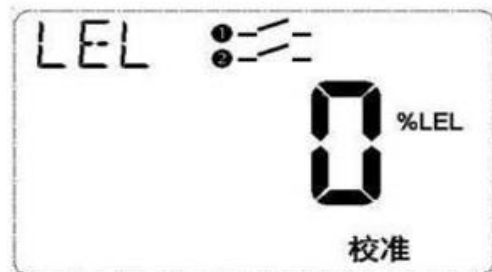
Toxic calibration settings:
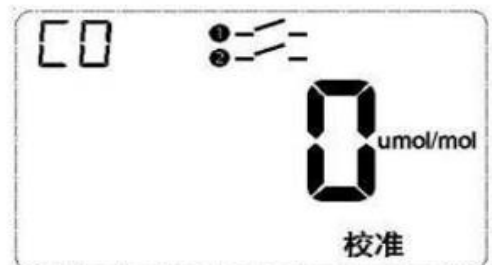
5.3.8 Test setup

In the test interface, the confirmation key switches the display content. The specific operation content is shown in Table

Type	Interface content	Display value	Modification method
1	4-20mA zero point value	flammable: 120; toxic: 110	Correct the output to 4mA through the up and down keys of the infrared remote control
2	Fixed value of range percentage	0.2, 0.4, 0.6,full scale 0.8, 1 times	The detector corresponds to output 7.2, 10.4, 13.6, 16.8, 20mA
3	3Calibrate 4-20mA output	1000	Use the up and down keys or infrared remote control digital keys to input, and the left and right keys cycle to switch between high and low The low bit flashes. After the calibration is completed, press the confirmation key to save. The current The calibration value is saved when it stops flashing.

Return key to return. The display screen is as follows:

Note: The host setting status times out for 30 seconds and automatically exits the setting, but the set alarm value is not saved

Warning: (It is not recommended that customers change the menu alarm settings of the alarm at will, so as not to cause unnecessary trouble and affect the alarm.

normal use of the alarm. Don't just raise the alarm value casually and fail to alarm when danger occurs, which may lead to accidents

Flammable:

poisonous:

6. Maintenance of gas detectors

6.1 Precautions

- After the detector is installed and debugged, please do not move it randomly;
- GT-D300/GT-D400 series gas detector
- The gas detector has been strictly calibrated before leaving the factory. Please do not replace components at will after installation. If replaced, it must be recalibrated;
- The service life of the gas detector sensor is normally two years; the service life may vary depending on the use environment decline, inspection and maintenance should be carried out regularly every year;
- The gas detector sensor is prohibited from being impacted by high concentration gas, otherwise the sensor may be damaged;
- Avoid frequent power outages for gas detectors. Frequent power outages will lead to unstable operation of the detection components;
- During use, it is necessary to regularly check whether the instrument is working properly. The inspection cycle is recommended to be once every six months

6.2 Analysis and troubleshooting of common faults

Fault phenomenon	Cause Analysis	Method of exclusion	Remark
The power indicator light does not light up	Incorrect wiring	Check whether the power cord is connected correctly and whether the power supply is 24V Power on again and observe whether it lights up. If the connection is normal, please Contact the manufacturer and return to the factory for testing	
The host has no display after turning on the power	Poor wire connection	Check whether the power supply is connected properly and whether the socket is secure. examine Check whether the connector inside the controller is secure	

Alarms and faults occur when powering on for the first time		Reset the system and observe for a period of time	
There is leakage	Not grounded	Check if safety ground is connected	
Field screen displays ERR	Parameter settings are incorrect	Reset parameters	

7. Gas parameters

The following are the basic parameters of gas detectors (there are many types of gases and it is impossible to list them all. If there is nothing in the following table you want to know For gas parameters, please call the contact information below for consultation

Detected gas	Range default value	Accuracy	Minimum reading	detection principle
Carbon monoxide	(0-1000)ÿmol/mol	±10%	1ÿmol/mol	electrochemical formula
Chlorine	(0-50)ÿmol/mol	±10%	0.1ÿmol/mol	electrochemical formula
Ammonia	(0-100)ÿmol/mol	±10%	1ÿmol/mol	electrochemical formula
hydrogen sulfide	(0-100)ÿmol/mol ±2ÿmol/mol	±2ÿmol/mol	1ÿmol/mol	electrochemical formula
Phosphine	(0-20)ÿmol/mol	±5% FS	0.1ÿmol/mol	electrochemical formula
sulfur dioxide	(0-20)ÿmol/mol	±5% FS	0.1ÿmol/mol	electrochemical formula
nitrogen dioxide	(0-20)ÿmol/mol	±5% FS	0.1ÿmol/mol	electrochemical formula
Nitric oxide	(0-250)ÿmol/mol	±5%FS	1ÿmol/mol	electrochemical formula
oxygen	(0-30)%VOL	±3% FS	0.1ÿmol/mol	electrochemical formula
hydrogen	(0-1000)ÿmol/mol	±10%	1ÿmol/mol	electrochemical formula
hydrogen chloride	(0-50)ÿmol/mol	±10%	0.1ÿmol/mol	electrochemical formula

Ethylene oxide	(0-100)ÿmol/mol	±10%	1ÿmol/mol	electrochemical formula
carbon dioxide	(0-50)ÿmol/mol	±10%	0.1ÿmol/mol	electrochemical formula
hydrogen cyanide	(0-50)ÿmol/mo	±10%	0.1ÿmol/mol	electrochemical formula
hydrogen fluoride	(0-10)ÿmol/mol	±10%	0.1ÿmol/mol	electrochemical formula
Volatile organic compounds	(0-1000)ÿmol/mol	±10%	1ÿmol/mol	electrochemical formula

8. GT-D300/GT-D400 series gas detector and controller connection diagram

8.1 Electrical connection

Note: When using the two-bus wiring mode for power supply, the terminals L+ and L- are non-polar, regardless of positive or negative
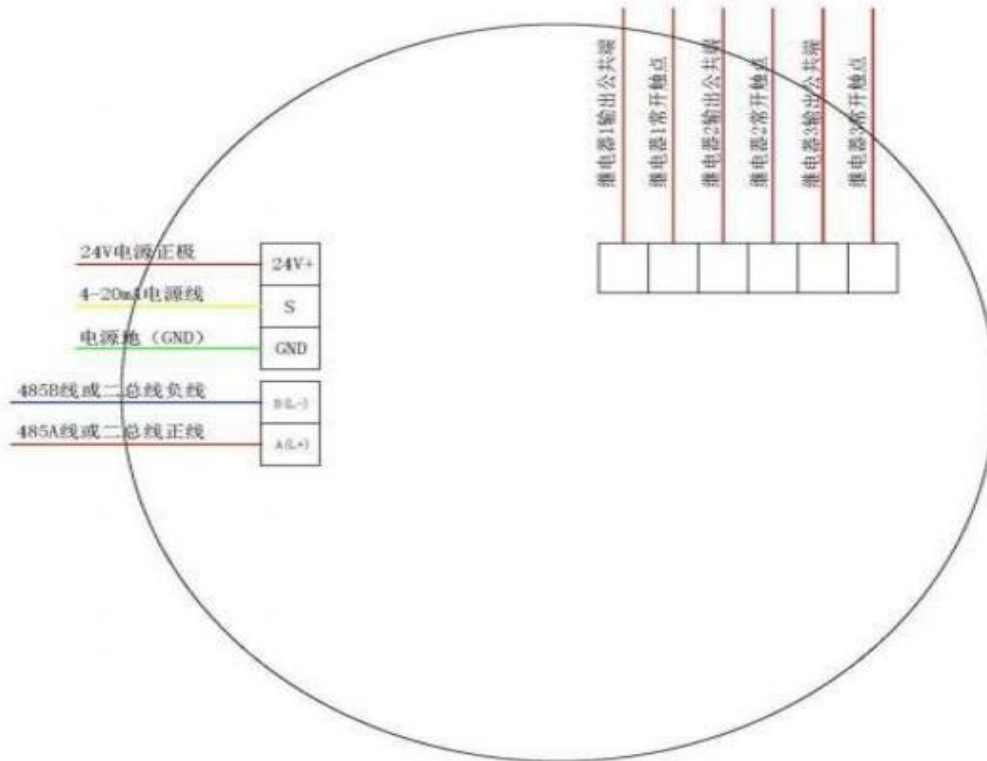
8.2 Connection instructions between alarm controller and gas detector

The terminals "power +, S (signal), and power - of the alarm controller are connected to the terminals inside the corresponding gas detector respectively. Sub "power +, S (signal), power For example: the controller 24v (positive pole) is connected to red, the gas detector 24v (positive pole) is also connected to red; the controller GND (negative pole) is connected. Black, the gas detector GND (negative electrode) should also be connected to black; the controller S (signal) should be connected to yellow, and the gas detector S (signal) should also be connected. yellow An example of the wiring diagram is as follows:
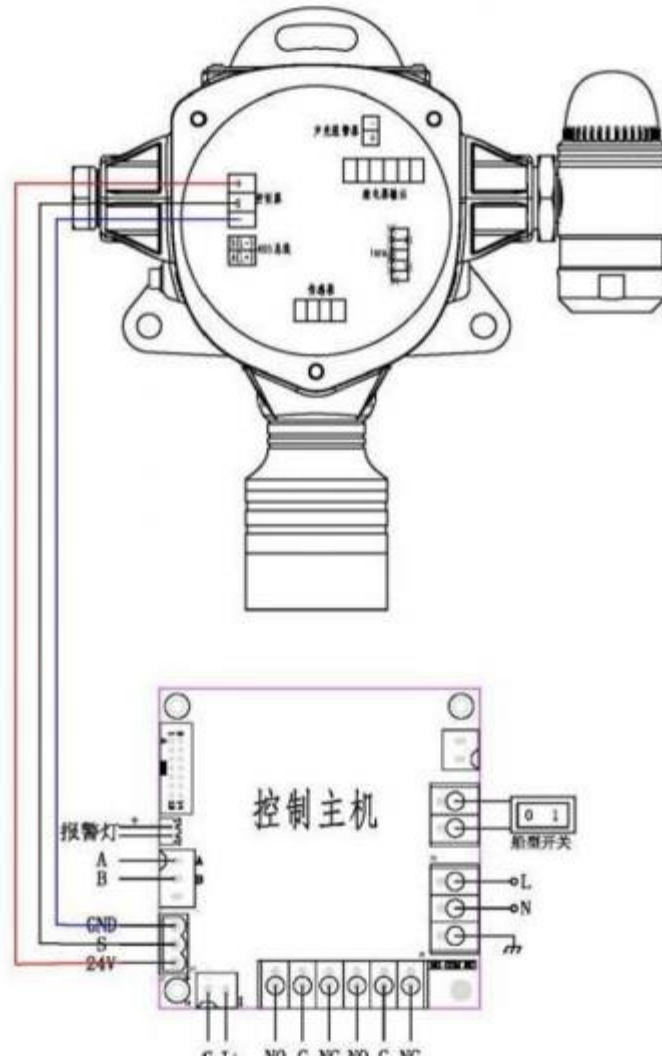
Wiring diagram with controller

9. Gas detector maintenance and upkeep

1. It is strictly prohibited to disassemble it casually.
2. It is strictly forbidden for the gas detector to be immersed in water, oil and other liquids, or installed in places with corrosive gases.
3. It is strictly forbidden to use large amounts of gas directly into the gas detector to avoid sensitivity reduction or damage to the sensor.
4. Gas detectors should be calibrated at least once a year to ensure detection accuracy
5. It is forbidden to test the probe with pure gas, and it is strictly forbidden to use a lighter for fumigation test to avoid premature failure of the gas detector due to excessively high concentration of gas fumigation test

10. Replaceable important parts

1. Gas sensor and housing
2. Sound and light alarm light and housing
3. Infrared remote control
4. Supporting circuit board

11. Ordering instructions

1. Please read this manual carefully before ordering, and clearly indicate the specifications, model, hemming form, quantity and surface treatment status of the product.
2. When users order products, please fill in the name of the ordering unit, receiving unit, paying unit, and mailing address (including province, city, prefecture, district, street, number), telephone number, postal code, account opening bank, account number and representative. Never omit.
3. In the past, it cost us a lot to mail or express sample samples, so if you need us to send them to you
4. For sample samples, we hope that the postage or express fee will be paid by you.
5. All orders of our products are subject to cash collection or payment on delivery.

12. Completeness

a. When the instrument leaves the factory, it includes the following:
b. One copy of the instruction manual.
c. A product certificate and warranty card.
d. A factory inspection report.