



Product Name	GAOTek Ammonia Gas Detector
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GAOTek Ammonia Gas Detector

1. INTRODUCTION:

WASP-XM hand held pump gas detector, using an intelligent operating system. 3.5-inch TFT LCD display, real-time observation of the target gas concentration, concentration values color will be changed according to the higher and lower two level alarm.

It applies to toxic gas leak disaster, underground pipe or mines, industrial gas detection, power, petrochemicals, medical equipment, cold storage and furniture workplace environments and other places, can effectively ensure staff safety from abuse, production equipment from damage.

With built-in air pump sampling methods, fast response, and low noise.

2. TECHNICAL SPECIFICATIONS:

Type	Portable pump suction gas detector
Measurement principle	Electrochemical, PID, infrared, etc.
Detect gas	Toxic, combustion, oxygen, infrared methane, etc.
Detect range	Depends on customer choice
Battery	Built -in rechargeable lithium battery 3.7V 3000mAh(can't be replaced)
Continues operation time	> 8 hours
Charger	USB interface charger
Display	3.5 inch TFT LCD display

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Alarm method	sound、 screen display
Sampling method	Pump suction
Data record	Total 200 thousands pieces
Operation temperature	-20~60°C
Operation humidity	0-95%RH (non-condensation)
Housing material	ABS+TPE
Warranty	1 year
Size	228*84*50
Weight	550g

3. PRECAUTIONS:

Since some steps or improper operation, and ignore certain specific conditions may impair performance of the instrument, for safety and measure performance of instrument, please strictly refer to the following instructions to operate and measurements:

- 1、 Before use this instrument, please read carefully and total understand the content of this manual, strictly follow every stipulate of this manual.
- 2、 Gas detector must be test and maintain by trained technical every three to six month, and write record.
- 3、 The first use instrument must be charged fully, and by matched dedicated charger.

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- 4、 Since this instrument have built-in high-capacity battery, so please don't test it in high temperature environment.
- 5、 The lithium-ion battery was built-in in this instrument may leak or explosion risk if it is not used properly. Do not disassemble or put the battery into fire.
- 6、 Please test performance before use it, if the instrument can not pass the performance test, can re-calibrate or restore factory calibration.
- 7、 The vent of sensor must keep clean, Sensor vent blockage or dirt of water network cause reading lower than the actual concentration.
- 8、 The change of atmosphere pressure may cause the reading to suddenly change.
- 9、 When detecting combustible gas, the concentration of oxygen in the air will affect the concentration of combustible gas.
- 10、 This instrument operation temperature is -20 to +60° , but the different sensor may cause operation temperature range reduce.
- 11、 Do not be covered by any foreign matter or insert into the alarm of the instrument, make sure there is no foreign matter around it too. Otherwise, it will affect sound of alarm.
- 12、 Please do not change the battery at will. If you need to replace the battery, please contact GRI Instrument's technical support.

If an instrument is suspected to be abnormal, welcome to immediately contact technical staff in our company.











4. CHARGING AND BATTERY:

This Instrument use lithium battery to supply power, since no full charge when delivery out from factory, so need fully charge before use it, follow below steps.

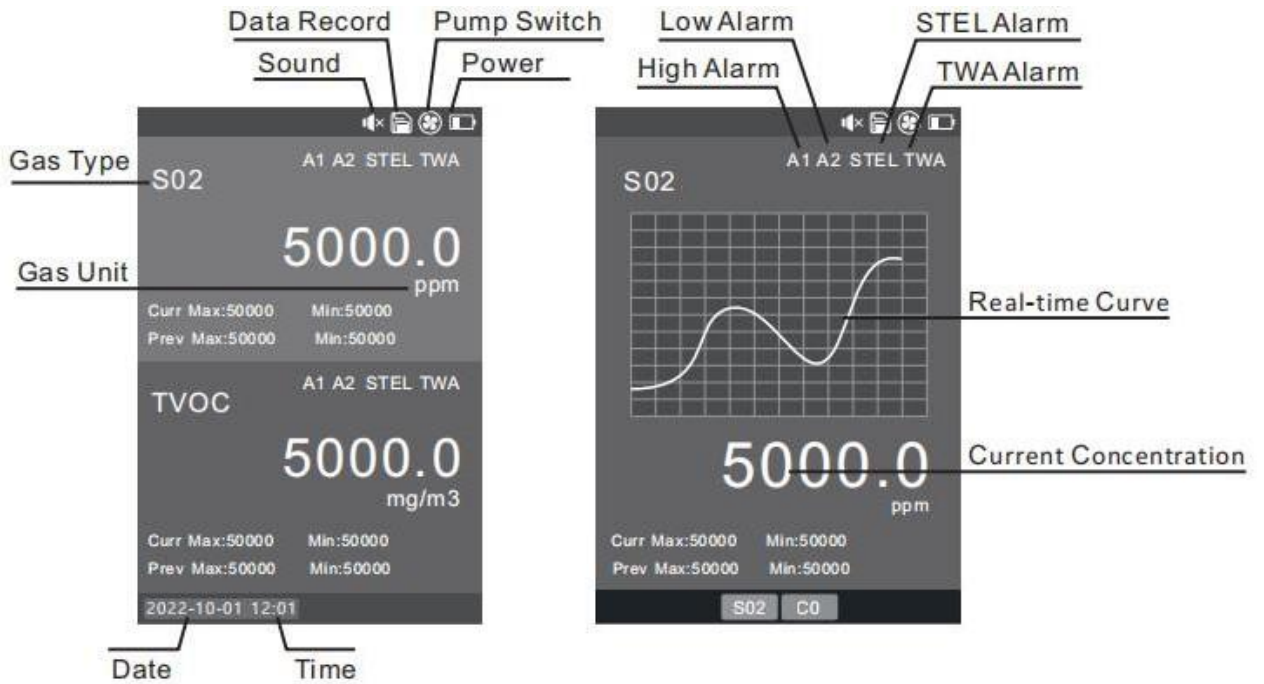
1. Plug USB cable.
2. In start status, please check if the battery status icon is charge icon.  ; When in turn off status to plug USB, there will be also charging prompts. After a period of time, it will go out automatically.
3. It will take about 5 hours to charge full.

5. TURN ON or OFF

There are 8 keys on instrument, each button has different functions. Before operation, please be familiar with functions of each button. The specific information of key is as shown in the following table:

	Turn on: Long press 3 seconds till picture coming out. Turn off: Long press 5 seconds till screen is dark to power off. Reuse function: short press is function of return.
	Button for pump, to control pump on and off.
	Shortcut button: in test interface, press shortcut key into shortcut menu set.
	OK button: Confirmation function
	UP button: Shift function and numerical addition /subtraction function
	Down button: Shift function and numerical addition /subtraction function
	Left button: Shift function
	Right button: Shift function

6. USER INTERFACE



1. When product you bought is a single gas, the boot will automatically enter single display of data interface.
2. When product you bought is two gases, the boot is automatically entered into dual gas display of data interface. You can locate gas which you need to choose through UP or Down of "shift button". Then press "OK button" to enter display interface of chosen gas. In a single gas display interface, left or right "shift button" can be switched in the two gases



7. SYSTEM SETTINGS

1.1 Time

Shift date and time through upper and down button, left and right button to select value that needs to be modified, then change value by upper and down button. Press OK button to determine setting.

1.2 Backlight Brightness

Shift intensity and dormant through upper and down button, adjust backlight strength grade through left and right button. Adjust screen standby time of entering backlight and dormant when there is no operation on device .left and right button to select value that needs to be modified, then change value by upper and down button. Press OK button to determine setting.

For example: When we set dormant time is 30 seconds, it means ,when device isn't operated for 30 seconds, device will turn off screen. If this value is set to 0 seconds, it means,screen is always bright and will not turn off.

1.3 Language

Shift device language to Chinese or English through upper and down button.

1.4 Preheat

Select value need to be modified by left and right button, change value through upper and down movements.

The countdown time equals to time of equipment needs to be warm up after turned on.

1.5 Pump

Level: The speed of pump is fast or slow. Higher level represents faster pump speed. Lower level represents slower pump speed. When pump is not opened, pump level shows 0 and cannot be adjusted. The currently set pump level will be saved. At the next boot, pump speed defaults to this level until it is modified.

Note: The level of pump is related to flow. Please keep level of pump speed same as calibration pump speed when using device for measurement.

1.6 Detection mode

There are three types of detection mode:

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- 1. Automatic
- 2. Cycle
- 3. Specifying time

Automatic mode: The device boot pump is automatically working, it continues to keep pump sampling state. You can stop pump or open sampling status of pump again according to the button of pump. At this time, "detection duration", "stop duration" and "number of cycles" cannot be set and are invalid.

Cycle mode: The device boot pump does not work automatically. To start or stop sampling status by hand through press ON/OFF button. You can set "detection duration" to determine sampling time as a single cycle, set "stop duration" to determine stop time of each cycle, set the "cycle times" to set total number of cycles. After the cycle is over, pump will be stopped automatically. If you want to start cycle again, you need to press pump button again. During sampling process of pump, when you press pump button, this cycle will be terminated.

Specifying time mode: The device boot pump does not work automatically, Press pump button by hand to start or stop pump sampling status. You can set "Detection Details" to specify duration of pump works. When pump finish setting time to complete sampling work, it will be automatically stopped. If you need to press the setting time to sampling pump again, you need to press pump button again. The key to the opening. During sampling process of pump, when you press pump button, the detection will be terminated.

1.7 Key sound

Set device button to be mute, through left or right button.

1.8 Restore factory equipment parameters

Select the gas that needs to be recovered, press "Restore" key to restore calibration information/parameter settings from factory. Before using this function, you need to press and hold the right button under this menu and enter the password.

1.9 Restore factory system settings

To restore system settings to factory system settings. Before using this function, you need to press and hold right button under this menu and enter the password.

1.10 Modify password

When user needs to modify password, enter original password first, verify it correctly, and then enter new password. After modification is successful, device will prompt it is successful. The original password of factory is 9527

1.11 reset password



When user forgets password, you can contact the manufacturer to provide a super password. After entering the super password, device password will return to original password of factory: 9527

8. PARAMETER SETTINGS

You need to enter a password under this menu to modify parameters, otherwise you can only view it. Press and hold right button under this menu to pop up password window. The default password from factory is: 9527

1.12 Channel setting contains following settings:

1. Channel
2. Range
3. Unit
4. Decimal point

Channel: Select the gas you need to set Range: Set the range of selected gas Unit: Set the unit of selected gas

Decimal point: Set the decimal point of selected gas

1.13 CFC settings

Only when gas type is selected as TVOC, CFC function can be used. CFC setting contains the following settings:

1. Channel
2. CFC mode
3. Preset selection



4. CFC coefficient

Channel: Choose a gas that needs to set CFC (it takes effect only for TVOC gas)

CFC mode: You can only select the Preset mode by default Preset selection: Select the subdividable gas type of TVOC gas

CFC coefficient: Display CFC coefficient of subdividable gas in selected VOC gas



9. ALARM SETTINGS

Threshold value:

The threshold value contains the following settings:

1. Channel
2. Type
3. Threshold value
4. Hysteresis error
5. Hysteresis error value

Channel: Select the gas you need to set

Type: Select the alarm type (A1, A2, STEL, TWA) to be set up
Threshold value: Set alarm threshold value

Hysteresis error: Set to whether open this function

Hysteresis error value: Set it. The role of this function is: triggering alarm value of cancellation = alarm threshold value-hysteresis value, for example: alarm threshold value is set to 10 ppm, the hysteresis error value is set to 2 PPM, when device triggers the alarm at 10ppm, when gas concentration drops to 8 PPM= 10ppm-2ppm to trigger the device to cancel alarm.



Conditions:

Conditions include the following settings:

1. Channel
2. Type
3. Condition

Channel: Select the gas you need to set

Type: Select the alarm type (A1, A2, STEL, TWA) to be set up

Conditions: Select the trigger conditions of each alarm type (A1, A2, STEL, TWA), which are greater than > and less than < optional. For example, the type selected A1, the condition is greater than >, the type selection A2, the condition is less than <, then when the device concentration > A1 trigger the A1 alarm, the concentration > A2 trigger the A2 alarm.

Mode:

The mode contains the following settings:

1. Recovery
2. Reminder

Recovery: Select the alarm recovery mode that needs to be set, and there are two modes of automatic and manual recovery modes. In automatic mode, when concentration of device fall below alarm value after device alarm, device will automatically cancel sound & light alarm and screen display alarm logo. In manual mode, sound & light alarm and screen display alarm sign will continue until people relieve alarm button. At this time, sound and light alarm will block for 5 minutes. The alarm logo is prompted according to whether current concentration exceeds the standard.



Note: manual termination of alarm is as follows: On the main interface of a single gas data display , long press & hold the right-shift button,

Tip: Select method of alarm reminder , including: Turn off: Turn off sound and light alarm reminder
Sound only: Turn off sound alarm reminder

Light only: Turn off light alarm reminder

Open all: Turn on all, sound and light alarm reminder

10. CALIBRATION

You need to enter a password under this menu to modify parameters, otherwise you can only view it. Press and hold right button under this menu to pop up password window. The default password is original password from factory: 9527

Two points calibration:

Two points of calibration contain the following settings:

1. Channel
2. Objective point
3. Target ADC
4. Target concentration

Channel: Select gas you need to set

Objective point: Select target point that requires calibration, there are zero points and gains (can also be used as a range calibration)

Target ADC: Set corresponding ADC of target point in previous step



Target concentration: Set corresponding concentration of selected target point
After all above settings are completed, you can press saving button to confirm the saving is successful.

Note: When first time entering target ADC and target concentration input box, device automatically reads ADC and concentration in current device, and customer can modify it to other values required.

multi -point calibration:

Multi -point calibration contains the following settings:

1. Channel: Select gas you need to set up
2. Objective point: Select target point that needs to be calibrated, respectively 1 to 10
3. Target ADC: Set corresponding ADC of target point in previous step
4. Target concentration: Set corresponding concentration of selected target point

After above settings are completed, you can press SAVE button to confirm the saving is successful.

calibration list:

Calibration list contains the following options:

1. Channel

Channel: Select Multi -point calibration information of gas you need to view
Note: Serial number 1 in calibration list is corresponding to zero point, serial number 12 in calibration list is corresponding to gain point, 1 to 10 in multiple calibration is corresponding to calibration list 2 to 11 . The "√" in the box is to removed this calibration point.



11. RECORD

Record Settings

Record settings include the following settings:

1. Mode
2. Interval
3. Number of times

Mode: Set record mode of device. The recording mode is automatic, manual, specified, and closed.

Automatic: The device will automatically turn on data recording function and continuously maintain status of data record.

Manual: After device is turned on, you need to manually turn on data recording function, start record data according to specified record interval until manual operation stops the data record button (in this mode, press&hold UPPER shift button on main interface, preservation record icon will be appeared at top of screen. Means it began to record. When you want to end record data, press&hold UPPER shift button again, the icon disappears and stops record data)

Specify number of times: After device is turned on, you need to manually turn on data record function, complete data record according to specified record interval and number of times, and automatically stop record.

Close: Close device data record function
Interval: Time interval between each adjacent data

Number: Specify number of data you need to record during data record process (only useful in specified number of times)

Note: Data record button (in manual or specified number mode, press&hold button on main interface, preserved record icon appears at top of screen, means to Start record. Disappeared means to Stop recording data)

View Record



View records include the following settings:

1. Channel
2. Type
3. From

Channel: Choose the gas you need to view

Type: Select data type you need to view, has sampling records, alarm records, and calibration records

From: Choose time to quickly locate data that needs to be viewed from a certain time

Note: Page operation: downward key = downward page, upward key = upward pages, left shift button = to left page, right shift button = to right page

Clear record

Clear records include the following options:

1. Channel
2. Type

Channel: Choose gas that needs to be cleared record Type: Select data type that needs to be empty

Storage perception

Storage perception includes the following options:

Channel: Select type of gas that needs to be viewed Type: Select data type that needs to be viewed

12. Wireless

Reserved function

13. Communication Setting



Reserved function

14. Log

Reserved function

15. About this machine

Check this device related information

16. Quality Assurance

We can guarantee, there will be no material or process defects in this pump-sunction handheld gas detector produced by GRI company during its normal use period.

The above quality assurance includes sensors and batteries. These equipment within one year from the date of delivery or from the first time using, we ensure that there are no imperfection of materials or craftsmanship within 1 year, Priority to those who expire first.

Except for text materials with company's products.

17. Responsibility Limit

Our company does not make any other clear or implied quality commitments, including but not limited to purpose of sale or to meet the special needs.

If product does not meet above quality assurance, our company can take measures to replace or repair the defective product or return loan.

In the following circumstances, our company will not bear any special, unexpected or accompanied by damage responsibilities, including loss of interests, loss of use, sales problems, production or any use of the following products (causing claims), Regardless of whether the claim is based on contract or infringement, including strict responsibility.

When buyers receive product, they should carefully check whether product is damaged. Our company should make a reasonable calibration for specific use of bought product. In the process of using, repair and maintenance, It should be executed strictly in accordance with the company's product use manual. This has become a clear condition for our company's warranty.



Unqualified personnel repair and maintain the product, and use products or parts that have not been certified will cause the warranty to lose its effectiveness. For other complex products, users should fully understand their purposes, performance and limitations. This is very basic and one of the conditions for our company's warranty.

Buyers decide purpose and adaptability of purchased products. Both parties agreed that the technical suggestions and services provided by the company are not charged and buyers bear risk, so our company does not bear the responsibility brought by it.