Product Name	GAOTek Formaldehyde Gas Monitor – OLED Display
Product SKU	GAOTek-FGD-123
Product URL	https://gaotek.com/product/gaotek-portable-formaldehyde-gas-test-instrument-2/

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Contents

GAOTek Formaldehyde Gas Monitor – OLED Display

1. Product Overview:

GAOTek Formaldehyde Gas Monitor – OLED Display is a fast-response and high-accuracy gas measurement device. With an internal sampling pump, fast sampling speed and high flow rate, ensure the detector's response time. Unique design, small size, and easy to carry with. Special high-intensity engineering plastics housing, suitable for different kinds of situations and environments. We are dedicated to providing you with the most reliable, accurate, and safest gas detection solution.

2. Product Advantages:

- Employing original imported first-class brand sensor.
- (optional) High-speed data transmission by USB, which can download and print data.
- LCD dot matrix display, the gas type, unit, concentration,
- local time can be shown on the screen.
- The gas concentration unit PPM and mg/m3 can be shifted quickly.
- Built-in micro sampling pump, 10 grades of suction are available.
- Explosion-proof certification, explosion-proof grade: Ex ia IIC T4 Ga

3. Product Functions:

- Monitor the specified gas concentration in the environment and enclosed space and alarm.
- Self-calibration and zero calibration functions, make the detection more accurate and reliable.
- One press to restore the factory setting, free from the bother of misoperation
- With temperature and pressure compensation, this can realize gas concentration compensation under conditions of different temperatures or pressures.
- Two-stage alarm with sound and light, alarm point is settable.
- Rechargeable lithium polymer battery of large capacity.
- Employing pumping sampling method and the pumping suction is adjustable.
- Special engineering plastics housing of high intensity, anti-skipping, water-proof, dust-proof, explosion-proof.
- Elegant aluminum alloy suitcase.

4. Product Applications:

Petrochemical & Chemical Industry

Municipal Engineering & Utilities

Agricultural & Environmental Protection

Electronic

Food & Pharmaceutical Industry

Other Industries

5. Standard Accessories:

- GAOTek-FGD-123
- Aluminum suitcase
- A charging adapter
- Instruction
- Qualification certificate

Based in New York City & Toronto, GAO Tek Inc. is ranked as one of the top 10 global B2B technology suppliers. GAO ships overnight within the U.S. & Canada & provides top-notch support thanks to its 4 decades of experience.

6. Product Technical Specifications:

GAOTek-FGD-123

Gas Detected	CH2O
Detection principle	Electrochemistry
Sampling Method	Pumping suction
Measure Range	0-10ppm
Resolution	0.01ppm
Precision	2%F.S.
Signal Output (optional function)	High-speed data transmission by USB, available for data downloading and printing
Response Time	≤10S
Repeatability	≤±1%
Zero shift	≤±1% (F.S/year)
Temperature	-20℃~50℃
Explosion-Proof	Exia Ⅱ CT4
Alarm mode	Sound, light, vibration
Dimensions	205*75*32mm
Recovery Time	≤10S
Linearity error	≤±1%
Display	LCD dot matrix display
Gas unit	Units are switchable
Humidity	0~90%RH
Degree of protection	IP66
Operating time	100h (pump off)
Weight	300g

Normal gas types and parameters (Other gases are not listed and can be customized)

Detected gas	measure range	Optional ranges	Resolution	Response time
Flammable gas (EX)	0-100%LEL	0-100%VOL	0.1%LEL/0.1%VOL	≤10S
Oxygen (O2)	0-30%VOL	0-25%VOL	0.01%VOL/0.1%VOL	≤10S
Carbon monoxide (CO)	0-1000ppm	0-2000ppm	0.1ppm/1ppm	≤10S
Hydrogen sulfide (H2S)	0-100ppm	0-1000ppm	0.01ppm/0.1ppm	≤10S
Ammonia (NH3)	0-100ppm	0-200ppm	0.01ppm/0.1ppm	≤10S
Chlorine (CL2)	0-10ppm	0-100ppm	0.01ppm/0.1ppm	≤10S
Hydrogen Chloride (HCL)	0-20ppm	0-100ppm	0.01ppm/0.1ppm	≤10S
Nitric oxide (NO)	0-100ppm	0-250ppm	0.01ppm/0.1ppm	≤10S
Nitrogen dioxide (NO2)	0-20ppm	0-100ppm	0.01ppm/0.1ppm	≤10S
formaldehyde (CH2O)	0-10ppm	0-50ppm	0.01ppm/0.1ppm	≤10S
Ozone (O3)	0-10ppm	0-100ppm	0.01ppm/0.1ppm	≤10S
Carbon dioxide (CO2)	0-2000ppm	0-100%VOL	1ppm/0.01%VOL	≤10S

7. Project Cases:

8. More Applications of the Product:

- Furniture, Floor, Wallpaper, Coating, Gardening, Interior Decoration and Renovation, Dyestuff, Papermaking, Pharmacy, Health Care, Foodstuff, Antiseptic.
- Disinfection, Chemical Fertilizer, Resin, Adhesive, Pesticide, Raw Material, Sample, Technological Process, Livestock Farm, Refuse Processing Plant, Perm Place.
- Bio-pharmaceutical Plant, Green Household, Livestock Breeding, Green House Cultivating, Warehouse Logistics, Brewing And Fermentation, Agricultural Production.

9. Note before using:

- Before using the instrument, please read the product instruction manual carefully.
- It is strictly forbidden to open the cover with power on site.
- It is strictly forbidden to replace the sensor with electricity.
- Operations such as installation, commissioning, and setting must be carried out by professionals.
- The calibration check should be carried out regularly, and the sensor beyond the effective service period and faulty sensor should be replaced in time.
- It is strictly forbidden to use gas higher than the measuring range to impact the sensor.
- Prevent the instrument from being dropped from a height or subjected to severe vibration.
- It is strictly forbidden to expose the instrument to a high-concentration corrosive gas environment for a long time to prevent damage to the sensor.
- It is strictly forbidden to use in high temperature and high humidity environments. If the environment humidity is high, a filter and dehumidification device must be added.
- Users are not allowed to start maintenance or replace parts without authorization.
- Man-made damage is not covered by the warranty.
- It is not allowed to arbitrarily replace the components or structures that affect the explosion-proof performance, so as not to affect the explosion-proof performance.
- Warning: Potential electrostatic charge hazard, avoid ignition hazard caused by electrostatic charge during normal use, maintenance, and cleaning of the instrument.
- When used in an explosive environment, the device should not be touched and wiped. If it must be wiped or touched, it should be done in a safe place, and wipe the casing with a wrung wet cloth. It is strictly forbidden to wipe the casing with a dry cloth!
- For portable products, before entering the dangerous area, the human body should discharge static electricity first, and then carry the instrument into the site.
- The charging must be carried out in a safe place, and use the special charger for this machine. The charging must be turned off. After charging, please insert the USB dust plug back into the USB charging port.

10. Keys Operation:

⏻	Turn on/off: long press for 3 seconds to power on/off, short press to confirm or save data.
MENU	Menu: In the detection mode, press this button to enter the parameter setting mode, and in parameter setting mode, press this button to move the cursor.
↑	Plus: In parameter setting mode, short press to select items upward or increase values. Long press for 3 seconds to turn on/off the alarm function quickly.
↓	Minus: In the parameter setting mode, short press to select items downward or decrease value. Long press for 3 seconds to turn on/off the air pump quickly.
ESC	Exit: In parameter setting mode, short press to return to the previous menu. Long press to shift switch the gas concentration unit quickly.

① — Air Inlet
② — Air Outlet
③ — air chamber of sensor
④ — LCD
⑤ — PLUS
⑥ — MINUS
⑦ — MENU
⑧ — ESC
⑨ — ON/OFF

Note: The long press function only works in detection mode. When you change or reset any data, please remember to click the "ON/OFF" button to confirm and save the settings. Remember to turn on the pump when starting the detection. Please turn off the pump when there is no need to detect it, which will be helpful for the service life of the pump.

10.1 Power On/Off:

Put the detector in clean air and press the "ON/OFF" for three seconds, the detector will be turned on and the pump will start to work. The screen displays the following interface successively: Brand and Logo, main parameter interface, and initialing countdown. The countdown would be 60 or 120 seconds (about 2 minutes), which is to make sure that the sensors are fully activated. After a countdown, the device enters the normal detection interface. Take the detector out of the detected environment and wait for the data to get down to zero, then press the "ON/OFF" to turn off the detector.

10.2 Zero Calibration:

Zero calibration must be done in clean air. Better to do it once after an alarm happens. Press "MENU" to enter parameter setting mode, select "calibrate zero", and press "ON/OFF" to enter the mode. Observe the value of "real-time concentration ". If the reading is not zero and the drifting is too big when the reading is stable, then it is necessary to conduct zero-point calibration.

Press "ON/OFF", the real-time concentration will go back to zero, and press "ESC" to go back to detection mode, gas concentration values also back to zero. Note: Zero calibration of oxygen detector, nitrogen detector, and carbon dioxide detector (target gases are components of the air) cannot be done in the air. Only the target point calibration (the value of target point concentration is the standard concentration value in the clean air) can be done.

11. Process of Over-range incorrect operation:

Users should avoid using gases that exceed the measure range to impact the sensor, because it will affect the lifespan and sensitivity of the sensor, even, "poison" the sensor. If there is any over-range incorrect operation that makes the detector display a concentration at a large reading, the remedy is to take the device out of the environment immediately put it in clean air for over half an hour, and then observe the reading, if it keeps going down, then wait until the reading back to zero before powering it off, and do the zero-point calibration next lime before using it. If the reading is maintained at full scale, the user should send the device back to the manufacturer or agent for repair or replacing the sensor.

Note:

*If the detector is used for the gas cylinder detection, considering the high pressure in the cylinder, please use a pressure regulator, and keep it as the below data:

Flow rate: 900 mL to 1200 ml/minute

Pressure: 0.1 MPa or 1 Bar.

*Please put the detector in clean air for about 5 minutes and wait for the data to fall to normal before turning it off after measurement.

12. Read before operation (For PID sensors):

Suppose the detector is equipped with a high-resolution PID sensor (which means the resolution is 0.001 ppm) after the detector is turned on in clean air. In that case, it must be placed in clean air for 10-15 minutes before entering the target environment for detection.

Suppose the detector is equipped with a Normal-resolution PID sensor (which means the resolution is 0.01 ppm, 0.1 ppm, 1 ppm) after the detector is turned on in clean air. In that case, it must be placed in clean air for 5 minutes before entering the target environment for detection.

The factory default of the detector is the standard VOC gas detection mode, the CF coefficient of this mode is 1, so when the detector is turned on, it is in the standard VOC detection mode. If you want to detect other VOC gases, let's say N2H4 as an example. Before detecting N2H4, it is necessary to enter the "Gas CF set" and change the coefficient to 3, and then perform the detection. If you press the ESC key to exit after the modification, then this coefficient is only

valid at the current startup. After the detection is completed and the shutdown is completed, you need to set the above settings again at the next startup; if you press the "Power ON/OFF" key to save after the modification, the coefficient will still be valid for the next startup.

Customers can detect other VOC gases by correcting the corresponding CF coefficient according to the CF coefficient table of other gases provided by us.

When there are different VOC gases in the environment at the same time, the displayed gas value is the comprehensive concentration value of the mixed gas.

13. Operation Interface:

When the detector is turned on completely, the device will enter the detecting interface. The gas type will be shown on the top left, and the time and battery power will be on the right. In the middle, there is the real-time concentration. If the detector has with data storage function, there will be the storage status at the top of the concentration: ON or OFF, and the total storage number. There will be BEEP-ON at the bottom left, which means the alarm is on. The PUMP-ON is at the bottom right, which means the pump is working.

13.1 Power On / Off:

Put the detector in clean air, and press the "ON/OFF" for three seconds, the detector will be turned on and the pump will start to work. The screen displays the following interface successively: Brand and Logo, main parameter interface, and initialing countdown. The countdown would be 60 or 120 seconds, which is to make sure that the sensors are fully activated. After a countdown, the device enters the normal detection interface.

Take the detector out of the detected environment and wait for the data to get down to zero, then press the "ON/OFF" to turn off the detector.

13.2 Alarm point set:

Press "Menu", choose the "Alarm point set", and start to set the alarm value.
There are LOW POINT and HIGH POINT for set, press "MENU" to move the cursor to the value you want to set, and press the "PLUS" or "MINUS" to change the value. After the setting is done, press the "ON/OFF" button to save the settings.

13.3 Pump speed set Press:

"Menu", choose the "Pump speed set", and start to set the pump speed.
Changing the pump speed doesn't influence gas detection now.

14. Zero Calibration:

Zero calibration must be done in clean air. Better to do it once after an alarm happens.

Press "MENU" to enter parameter setting mode, select "calibrate zero", and press "ON/OFF" to enter the mode. Observe the value of "real-time concentration". If the reading is not zero and the drifting is too big when the reading is stable, then it is necessary to conduct zero-point calibration. Press "ON/OFF", the real-time concentration will go back to zero, and press "ESC" to go back to detection mode, gas concentration values also back to zero.

Note: Zero calibration of oxygen detector, nitrogen detector, and carbon dioxide detector (target gases are components of the air) cannot be done in the air. Only the target point calibration (the value of target point concentration is the standard concentration value in the clean air) can be done.

15. Process of Over-range incorrect operation

Users should avoid using gases that exceed the measure range to impact the sensor, because it will affect the lifespan and sensitivity of the sensor, even, "poison" the sensor. If there is any over-range incorrect operation that makes the detector display a concentration at a large reading, the remedy is to take the device out of the environment immediately put it in clean air for over half an hour, and then observe the reading, if it keeps going down, then wait until the reading back to zero before powering it off, and do the zero-point calibration next time before using it. If the reading is maintained at full scale, a user should send the device back to the manufacturer or agent for repair or replacing the sensor.

16. Calibrate span:

Note: Calibration needs to be done by professionals and with necessary accessories and standard gas.

Prepare the standard gas before starting the span calibration. In detection mode, press “MENU”, select “calibrate span”, and press the ON/OFF button to enter. Then you will need to enter the password. (If you need the password, please contact the manufacturer to get it)

After entering the password successfully, press ON/OFF to enter the span calibration interface, as shown in the picture. The interface will display “concentration”, and “set value. The concentration is the result got from the calculation of several internal calibration parameters. The process of calibration is the process of recalculating the internal parameters of the device. The set value is the value that needs to be entered manually; it should be the concentration of the standard gas to be calibrated. Select the parameter under the current interface, and modify its value with the “PLUS” and “MINUS” buttons.

The calibration process is as below:

1. Connect the detector with a standard gas cylinder and by T-shape hose, ensuring that the bypass flowmeter has flow to empty.

2. Enter the span calibration interface, and set the “SET value” as the standard gas concentration.

3. Release the standard gas to the detector at a flow rate of 900 mL – 1200 mL/min. The value of “concentration” will become larger gradually, and become stable after 30 seconds.

4. When the value of “concentration” is stable, press the “ON/OFF” button, the value of “concentration” will be the same with or almost the same with the “Set value”. The calibration is finished.

5. Cut off the standard gas supply. Press “ESC” to go back to the detection interface.

17. Date & Time:

Press the menu to enter “Date & Time set” to change the date and time.

18. Language Select:

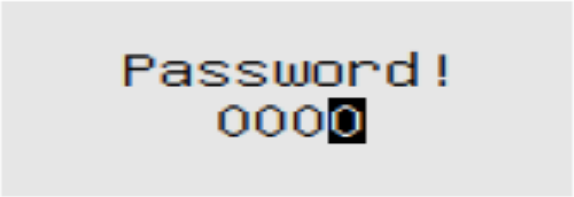
Press the menu to enter the language set to change the language if needed.

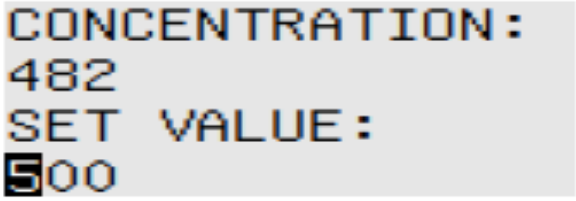
19. Gray Level set:

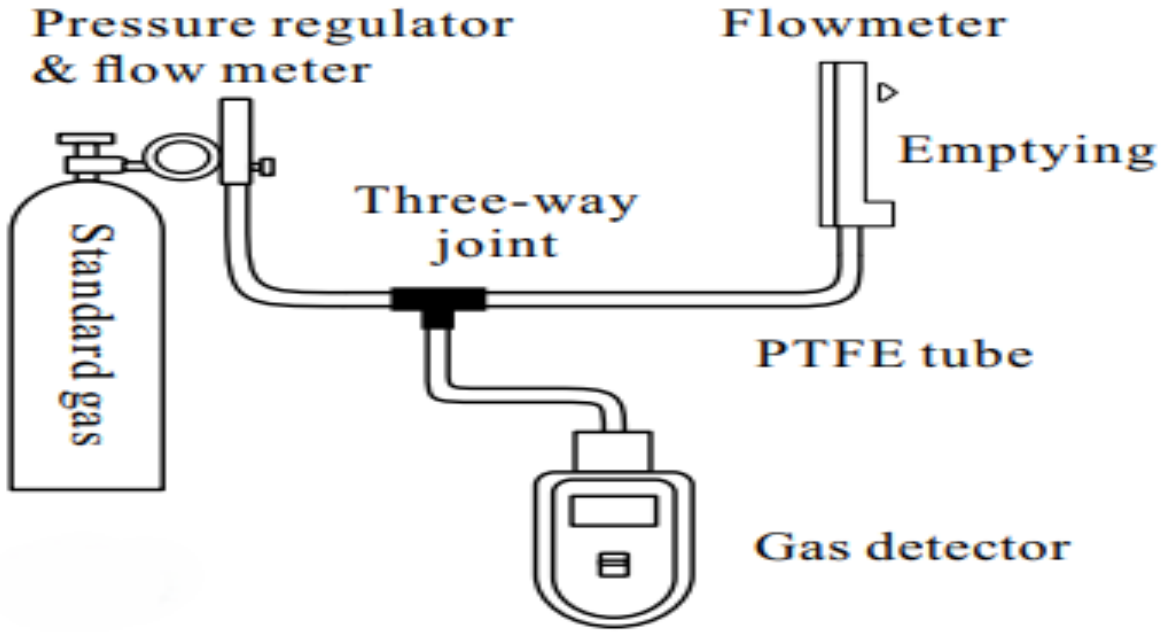
Press the menu to enter “Gray level set” can change the backlight of the detector.

20. Restore Setting:

When all the settings are wrong, or users operate the detector in the wrong way, you can restore the detector to factory settings. But if the detector works normally, please don't operate this setting. To avoid the wrong setting, a password is needed. If you want to restore the detector to the factory setting, please contact the supplier.







21. Storage set:

In the storage setting, you can set the storage status and the interval. Every time you turn on the detector, the storage status defaults OFF, so you need to set the storage status if you want to record the data.
Press MENU, choose the “Storage set”, move the cursor by pressing MENU at the “ENABLE”, and press MINUS to change NO to YES. The storage interval can be 5 seconds, 10 seconds, 15 seconds, etc. The highest interval is 1 hour.

22. View history data:

Press the MENU, and choose “view history data”. Then at the top is the record total number, and the reminder “PLEASE SELECT”. Now, if you press MINUS, then the record data will be from the first record to the second in turn. If the record number is above 10, and you want to check the specific number, you press the MENU again, then you can input the exact number and check that record (press the MENU to move the cursor and press the MINUS and to change the number), press ON/OFF to confirm and then you will see the detailed record.
In the detailed record interface, at the top are the record total number and current number. In the middle are the date and time, and the concentration is at the bottom.

23. Erase history data:

To make sure the detector works perfectly and you can check the history data quickly, we suggest you erase the history data regularly. Press MENU, choose the “Erase ex_flash”, password is needed (the password is 9999), then press ON/OFF, it shows “erasing”, and when finished, it will turn back to the detecting interface.

Note: The storage function is optional. If you don't add this function when making a purchase, then the instrument will not have “storage set”, “view history data”, or “erase history data” functions.

24. Gas CF Set (Only for PID sensors):

The factory default of the detector is the standard VOC gas detection mode, the CF coefficient of this mode is 1, so when the detector is turned on, it is in the standard VOC detection mode. If you want to detect other VOC gases, let's say N2H4 as an example. Before detecting N2H4, it is necessary to enter the "Gas CF set" and change the coefficient to 3, and then perform the detection. If you press the ESC key to exit after the modification, then this coefficient is only valid at the current startup. After the detection is completed and the shutdown is completed, you need to set the above settings again at the next startup; if you press the “Power ON/OFF” key to save after the modification, the coefficient will still be valid for the next startup.
Press the menu and select to enter “Gas CF set”. Press the “Menu” key to select the place you want to modify.

Press the “<” and “>” key to change its number.