



Multi gas analyzer NMA-270

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1. Safety Measures

- Before using the detector, kindly pay attention to the following important instructions, do not use damaged gas detectors. Before using the detector, kindly check the shell for cracks or missing parts.
- Replacing components by yourself may damage the internal safety of the detector.
- Do not expose the gas detector to electric shock or severe continuous mechanical vibration.
- Waste batteries and sensors should be disposed of by qualified recyclers or hazardous materials handlers. Do not throw them into rubbish bins.
- Do not disassemble the device or expose the battery to fire. Also, avoid creating a short circuit between the positive and negative terminals, which could result in fire or explosion.
- Do not disassemble, adjust, or repair the gas detector without permission.
- Do not splash water, chemical solvents, benzene, or gasoline on the detector, and avoid inhaling such substances, which may cause the sensor to malfunction, and prevent the unit from falling or being violently shaken.
- To ensure the accuracy of the detector's measurements, it is essential to calibrate it regularly, typically every six months.
- It is necessary to avoid the frequent impact of high concentrations of toxic gas on the detector.
- When the sensor has failed or its service life (24 months), do not continue to use it.

2. Introduction

Multi Gas Analyzer NMA-270 equipped with modular detection unit technology, configured with single gas sensor or multiple gas sensors, up to 16 kinds of gas can be detected. It has a clear LCD touch screen and an alarm function to ensure that toxic gases can also be detected and remind operators to prevent them in harsh working conditions.

3. Features

- 3000 Alarm Record Query Function
- Small size, easy to carry, strong intensity, good sound quality, light warning indication
- Large screen display in English
- Sound and light alarm function self-check
- Safety warning: Timing Flash and sound
- Easy to use, easy to operate and low maintenance cost
- Maximum capacity for real-time detection of 16 gases
- High power pumping function
- Quick detection of gas leak points
- Adjustable range
- quick preheating, quick response time
- Sound vibration alarm signal
- Convenient zero adjustment, convenient and quick
- It can detect up to 8 free combinations of gases

4. Specifications

Model	NMA-270
Response time	≤30s
Indication error	≤3%FS
Gases analyzed	EX, CO, O ₂ , H ₂ S, NH ₃ , Benzene gas, natural gas, CH ₄ , fluorine, H ₂ S, HCL, N ₂ , H ₂ , CL ₂ , NO _x , formaldehyde, SO ₂ , NO, NO ₂ , Phospine, CO ₂ , hydrogen fluoride
Temperature	20-50°C
Relative humidity	≤93% (non-condensing)
Preheating time	≤90s
Indication mode	LCD color touch LCD display
Charging time	no less than 10
Sampling mode	built-in pump suction type
Continuous time	no less than 10 hours
Continuous working time	no less than 15 hours
Battery specification	DC7.2 v-26ah lithium-ion recharge
Operation humidity	5-90% RH (No condensation)
Principle of sensor	electrochemistry, catalysis, infrared laser
Dimensions (W×D×H)	293 mm x 109 mm x 209 mm
Weight	4.75kg

5. Applications

It is widely used in Petroleum, chemical industry, medicine, environmental protection, boiler, pipeline and other flue gas analysis, air treatment, all need to detect and analyze gas concentration occasions.

6. Instrument Introduction



- | | |
|----------------------------|---------------------|
| 1. Time | 7. Menu/Exit button |
| 2. Electricity | 8. Right Button |
| 3. Gas name | 9. Power light |
| 4. Detection Concentration | 10. Alarm Light |
| 5. Gas Unit | 11. Fault Light |
| 6. Left Button | 12. On/Off button |



6.1 Appearance description

The function of the key: Button  start

6.1.1 Indicator Lamp

- The left indicator is the power status indicator.
- The middle one is the alarm light.
- Fault indicator light on the right.

6.1.2 Indicator status

When charging, the left indicator flashes and the indicator stays on when charging is completed; When working normally, the battery status indicator flashes, and the indicator in the interface of the system setting is always on.

6.1.3 Charging Function Description

When the indicator light of the charger is red, it means "charging". If the button is pressed at this time, all the indicators will flash. The screen shows "charging" and shows "charging OK" after completion of charging.

7. Installation

Installation Conditions

- **Location:** Store in a ventilation room.
- **Temperature Range:** -20°C to 60°C.
- **Relative Humidity:** No more than 93%.
- **Air Quality:** Free from harmful gases and corrosive impurities.

8. Operations

8.1 Multi-gas analyzer NMA-270 boot interface description

In the shutdown state, press the key, when the buzzer beeps, it indicates that the detector is on, and then the system internal implementation of self-inspection procedures and sensor preheating.



Figure-1

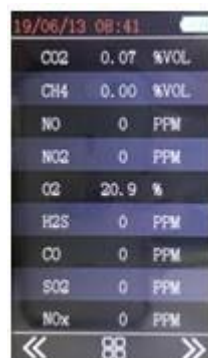


Figure-2

When the system enters the main program, it displays the name of each channel, detection value, and self-check of the unit. At this time, it enters the normal detection state, and the collection pump works. **Refer Figure-2**

8.2 Multi-gas analyzer NMA-270 shutdown instructions

Press the button when in detection mode and on. The screen shows that it is shutting down, after 3s the information disappears. Release the key to close it.

8.3 Multi-gas analyzer NMA-270 parameter function

The user menu function description is shown in the table below :

Alarm record: Recent alarm records can be viewed, and up to 500 records of memory.

Alarm setting: The low-level and high-level alarm values of each detection channel can be set.

Zero setting: Zero translation of each detection channel can be set (except oxygen)

Calibration setting: Gas parameters of each channel can be verified or calibrated with a sample gas.

Precision setting: The accuracy of the detection channel can be changed (decimal places).

Upload Settings: Used to connect computer data transmission.

Bluetooth Settings: Set the Bluetooth switch and connect the Bluetooth printer for printing alarm records.

8.3.1 Clock setting: modify system time

Warning: Kindly do not charge the portable gas detector at the test site to avoid fire or explosion caused by sparks generated by unplugging the charger; Kindly try not to charge the portable gas detector when it is on, so as not to affect the charging speed and battery life.

8.4 Detailed Operation Description

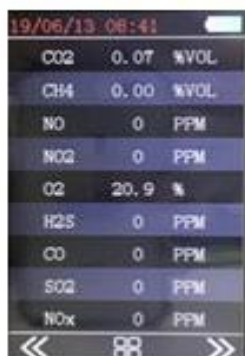


Figure-3

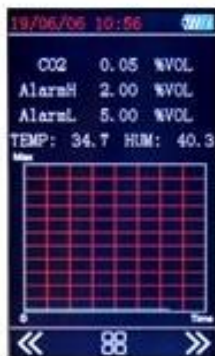


Figure-4

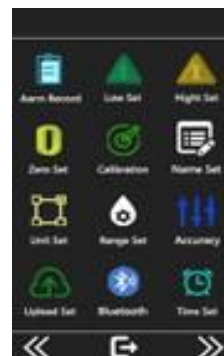


Figure-5

Press the left and right keys (red mark in **Figure-3**) to enter the channel detail detection interface (**Figure 4**) and switch the channels to display. Click the "set" key (green mark in **Figure 3**), enter the password 1111 and click "ok" to enter the system function interface (**Figure-5**).

8.4.1 Alarm Record: record alarm data.

Enter the system function interface and select the first item "alarm record". Display as shown in **Figure 6**.

Interface display: Alarm channel, alarm time, alarm status, alarm concentration, alarm total number, alarm location.

Blue mark (Figure 6) prints the alarm record; The red mark (**Figure 6**) clears the alarm record. Click exit to return to the detection interface.

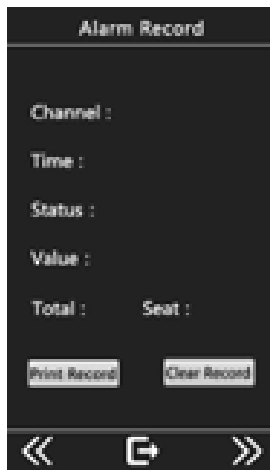


Figure-6

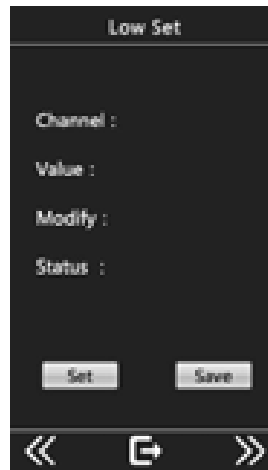


Figure-7



Figure-8

8.4.2 Low/high alarm setting: sets the channel's low and high alarm values

- 1) Select "**low/high alarm setting**" from the system function and enter the alarm setting interface. As shown in **Figure 7**
- 2) Press the button setting (**Figure 7**) to display (**Figure 8**), enter the corresponding value of a setting, and click save (red mark in **Figure 7**). Click exit to return to the detection interface.

Note: The input value cannot be higher than the channel range. The input value should be in decimal place with the displayed value.

8.4.3 Zero setting: enter zero translation



Figure-9

Press the left and right keys to switch the selection channel. As shown in **Figure 9** click "**Settings**", modify the value to display the current zero value, click "**Save**" when the value is stable, click "**Modify State**" to display complete modification, and click "**Exit**" to return to the detection interface.

Note: this operation is prohibited in the CO₂ channel. Therefore, if you click the "set" button, you must save the modification to exit. Therefore, you should use the modification carefully.

8.4.4 Instrument calibration: enter calibration.

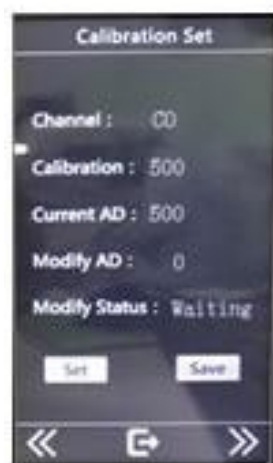


Figure-10

- Press the left and right keys to switch the selection channel. As shown in **Figure 10**, after selecting, press the "**set**" key to enter the standard gas value.
- Set the standard gas value as required. Introduce the standard gas, and once the AD value is stable, click the "**Save**" button. Then, click "**Exit**" to return to the detection interface.

Note: Methane and carbon dioxide must be calibrated with 1/2 standard gas in the range; Once the calibration program is started, the steps must be completed, and there is no exit in the process.

8.4.5 Name setting, unit setting, range setting

Note: This setting is finished in the factory, and the customer is not allowed to change it without permission.

8.4.6 Precision setting: modify channel accuracy.



Figure-11

- From the system interface, click precision setting to enter the precision setting interface (**Figure 11**). Click "set input decimal place (e.g. 0.01 input 2; 0.1 enter 1).
- Click exit to return to the detection interface.

8.4.7 Upload Settings:

Connect to the computer and transfer the alarm recording data to the computer.

- Click the upload Settings button, and the upload status display is waiting for PC access. As shown in **Figure 13**
- Connect to the computer, run the computer software, select the USB port of the computer connected by the data cable, click Connect, and click Upload. As shown in **Figure 12**



Figure-12



Figure-13



Figure-14



Figure-15

The computer displays the interface as shown in **Figure 12**, and the upper computer state of the detector interface changes to PC ready (as shown in **Figure 14**).

Click the upload button on the detector screen, and the upload state displays as being uploaded (as shown in **Figure 15**).

After uploading, click exit to return to the detection interface.

Note: This operation should be completed within 10 Seconds. If a timeout occurs, kindly repeat the operation B) and C).

8.4.8 Bluetooth Settings: turn on/off Bluetooth

When printing paper alarm records, start by turning on the power switch of the Bluetooth printer. Next, activate the Bluetooth function on the detector. After you finish printing, make sure to turn off the Bluetooth function to conserve battery life. Additionally, the Bluetooth printer should be switched on and off as needed to further reduce power consumption. Once you're done, click "**Exit**" to return to the detection interface.

8.4.9 Time setting: change the system time. As shown in figure 16



Figure-16

Click the up and down button after the corresponding year, month and day to change the time, and then click save to complete the change. Click exit to return to the detection interface.

8.5 Gas Detector Parameter List

N	Measuring Range	Optional Range	Resolution	Response time
EX	0-100%LEL	0-100%VOL (infrared)	1%LEL/1%vo	≤10s
CO	0-1000PPM	0-500/2000/5000 PPM	0.1/1PPM	≤10s
O2	0-30%VOL	0-30%、0-100%VOL	0.1%vol	≤10s
H2S	0-100PPM	0-50、200、1000PPM	1/0.1PPM	≤10s
NH3	0-100PPM	0-50、500、1000PPM	1/0.1PPM	≤15s
Benzene gas	0-100PPM	0-1、10、50、100PPM	0.01/0.1PPM	≤20s
Natural gas	0-100%LEL	0-100%LEL	1%LEL	≤20s
CH4	0-100%LEL	0-100%VOL	1%LEL/1%vol	≤20s
Fluorine	0-10PM	0-1、10PPM	1/0.1PPM	≤20s
HCl	0-20PPM	0-20/50PPM/100 PPM	0.01/0.1PPM	≤20s
N2	0-30%VOL	0-30%VOL、100%VOL	0.1%LEL/1PPM	≤20s
H2	0-100%LEL	0-1000PPM	1%LEL/0.1PPM	≤20s
CL2	0-20PPM	0-10、100PPM	0.1PPM	≤20s

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NO _x	0-20PPM	0-50、 1000PPM	0.1/1PPM	≤20s
Formaldehyde	0-20PPM	0-50、 100PPM	1/0.1PPM	≤20s
SO ₂	0-20PPM	0-50、 1000PPM	0.1/1PPM	≤20s
NO	0-250PPM	0-500、 1000PPM	1PPM	≤20s
NO ₂	0-20PPM	0-50、 1000PPM	0.1/1PPM	≤20s
Phosphine	0-20PPM	0-20、 100PPM	0.1PPM	≤20s
CO ₂	0-5000PPM	0- 1%/5%/10%V OL (infrared)	1PPM/0.01%V OL	≤20s
Hydrogen fluoride	0-10PPM	0-1、 10、 50 、 100PPM	0.01/0.1PPM	≤20s

9. Maintenance

- Prevent the unit from falling or being violently shaken.
- The unit may not work properly in the presence of high concentrations of gas.
- Kindly operate and use in strict accordance with the instructions, otherwise the test results may be inaccurate or damage the machine.
- This product shall not be stored or used in an environment containing corrosive gases (such as high concentration of chlorine gas, etc.), nor in other harsh environments, including (too high, too low temperature, high humidity, electromagnetic fields, and strong sunlight.
- If there is dirt on the surface of the machine after long-term use, kindly dip a clean, soft cloth with water and gently wipe it, and do not use corrosive solvents or hard objects to wipe the surface of the machine, otherwise it may cause scratches or damage to the surface of the machine.
- To ensure detection accuracy, the machine shall be calibrated regularly, and the verification period shall not exceed one year.
- Kindly unload the lithium battery and sensor of the waste portable gas detector. Do not throw them into the garbage can randomly.
- The products with the explosion-proof certificate are not allowed to change the components or structures that affect the explosion-proof performance at will.

10. Troubleshooting

Problem	Possible Cause	Solution
Cannot be turned on	Voltage Too Low	Kindly charge in time
	System halted	-
	Circuit failure	-
No reaction to test gas	Circuit failure	-
Inaccurate display	Sensor expiration	Replace the sensor
	Long-term uncalibrated	Kindly timely calibrate
Time display error	Strong electromagnetic interference	Reset time
	The battery is completely dead	Charge in time and reset the time
Zero calibration function is not available	Excessive sensor drift	Calibrate or replace the sensor in time
Display"-0" on the interface of normal test	Sensor drift	Zero calibration
The full range is displayed on the normal detection interface of the instrument	Sensor fault	replace the sensor

11. Standard Accessories

S.No	Accessories
1.	Instructions
2	Certificates
3.	Warranty cards
4.	USB chargers
5.	High-grade aluminum alloy instrument boxes
6.	Stainless steel sampling handle
7.	Packing box



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