FNIRSI

GD-02

Color Screen Combustible Gas Detector User Manual V1.2

※Please read this instruction manual carefully before using the product and keep it properly.

CATALOG

1.Safety Requirements

1.1 Environmental requirement

⃠ Precautions

Situations to Avoid

①The sensor must be protected from exposure to silicone adhesives, hairspray, silicone rubber, putty, or any other environments containing volatile silicone compounds. If silicone compound vapors adsorb onto the sensor’s surface, the sensitive material of the sensor may become coated with silica formed from the decomposition of these compounds, which will inhibit the sensor's sensitivity and cause irreversible damage.Make sure the temperature measurement port is not blocked to avoid measurement deviations in the device.

②When the sensor is exposed to high concentrations of corrosive gases such as H2S, SOX, Cl2, HCl, etc. in highly corrosive environments, it can lead to corrosion or damage to the heating elements and sensor leads. Additionally, it may cause irreversible degradation of the sensitive material’s performance.

③If the sensor contamination by Alkalis, Alkali Metal Salts, and Halogens. its performance may degrade.

④Exposure to water, either from splashes or immersion, can cause a decline in the sensor's sensitivity.

⑤Ice formation on the surface of the sensor’s sensitive material can cause the sensitive layer to crack, resulting in the loss of sensitivity.

⑥Applying a voltage higher than the specified value to the sensor or heater, even if no physical damage occurs to the sensor, can result in damage to the leads and/or heater, leading to a decline in the sensor's sensitivity.

Situations to Avoid, which may lead to a decline in the sensor's performance

①Minor condensation under indoor conditions has little effect on sensor performance. However, if water remains on the sensitive layer for a while, it will degrade the sensor’s performance.

②Prolonged exposure to high-concentration gases will affect its performance，whether or not the sensor is powered on. For example, spraying lighter fluid directly onto the sensor can cause severe damage.

③Prolonged exposure to extreme conditions such as high humidity, high temperature, or heavy pollution will severely affect the sensor's performance, whether powered on or not.

④Frequent or excessive vibration can cause resonance in the sensor’s internal leads, leading to breakage. Such vibrations can occur during transportation or on the assembly line, especially when using pneumatic screwdrivers or ultrasonic

The following situations are prohibited

①Please avoid allowing any part of the sensor to come into contact with liquids, the gas sensor is designed to detect gas composition and concentration.

②Do not insert or remove the sensor from the module.

③Do not alter or move the installation of electronic components.

④Do not block or contaminate the sensor's venting surface, it will cause a decrease in sensitivity and slower response time

⑤Do not subject the sensor to excessive impact or vibration. If the casing is damaged, the output may become unreliable. Please ensure the structure is intact before use.

⑥Do not perform testing immediately after detecting in high-concentration environments. After in high-concentration gas environments, recovery to the initial state is slow. The recovery speed is proportional to the overrange factor.

⑦Do not disassemble the sensor, as disassembly may damage it.

♻Disposal of Waste

①Please do not dispose of used batteries or equipment with regular household waste. They should be handled according to national or local regulations.

2. Product Overview

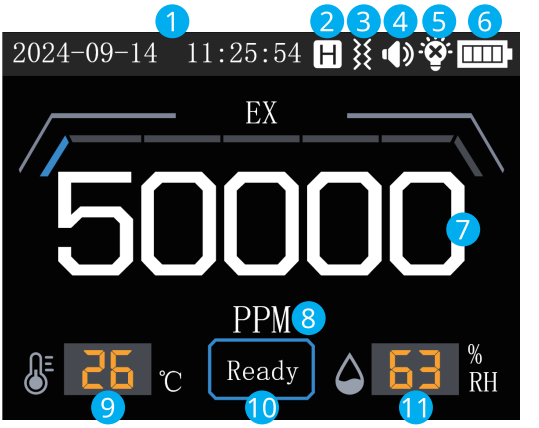
2.1 Product Introduction

The GD-02 is a stable, safe, and reliable color-screen combustible gas detector. It accurately measures methane gas concentrations in the current environment and offers strong anti-interference capabilities,making it suitable for most environments. This device is ideal for methane gas detection, as well as for monitoring temperature and humidity in the environment.It features high accuracy, long lifespan, low-temperature resistance, fast

time, quick startup, rapid zeroing, and excellent resistance to poisoning. The device is durable and reliable, maintaining excellent accuracy, repeatability, linearity, and consistency for over 3 years. Additionally, it offers strong resistance to electromagnetic interference.This user manual includes important safety information and warnings. Please read it carefully and adhere strictly to all warnings and precautions.

2.2 Operation diagram

2.3 Combustible Gas Detector Interface Diagram



①Date/Time:Year,Month,-Day;Time

②Data Hold:Short press the power button to activate the HOLD data hold function

③Vibration function

④Buzzer alarm: Indicates whether the alarm function is enabled

⑤Flashlight: Long press the left button to turn on the flashlight, press again to turn it off.

⑥Battery Indicator: Displays the system battery level.

⑦Gas Concentration: This area displays the gas concentration value measured by the device.

⑧Concentration Units

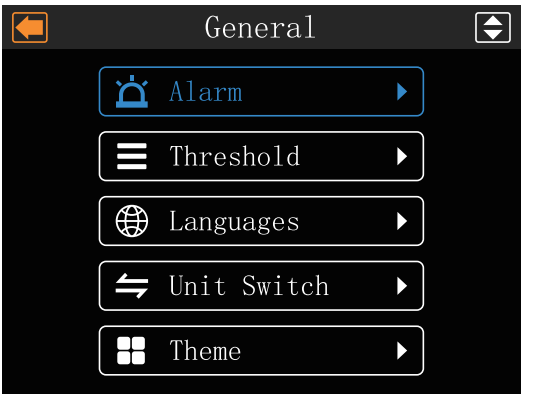
⑨Temperature: This area displays the real-time temperature value measured by the device.

⑩Gas Concentration Level: When there is no value, it shows "Ready." Below the threshold, it shows "Normal." Above the threshold, it shows "High Alarm" or "Low Alarm."

⑪Humidity: This area displays the real-time humidity measured by the device.

Key	Operation	Function description
⏻	Long press	Switch on/off
	Short press	HOLD Data Hold Function
▶	Long press	Enter setting page
◀	Long press	Turn On Flashlight
◀ ▶	Short press	Enter Curve Switching Page, with Curve Updating Every 0.5 Seconds

2.4 General Settings Page



Alarm Settings：Use the left/right buttons to choose whether to enable the indicator light, vibrator, and buzzer (ON/OFF).

Threshold Settings：Use the up/down buttons to select high or low alarm options.

Press the OK button to enter the four-level navigation menu, where you can adjust the values. Press or hold the up/down buttons to adjust the threshold. The alarm will respond and record based on the set threshold.

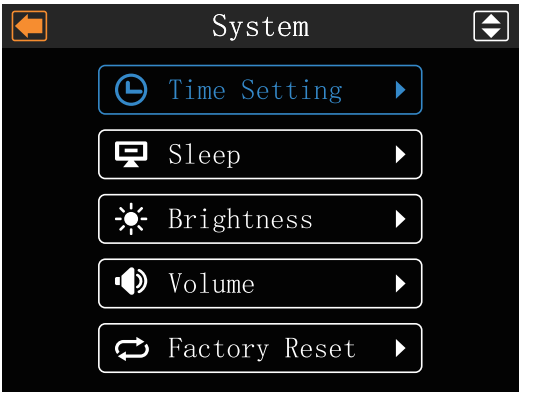
Language switch： Press the left or right key to select Chinese and English.

Language： Use the left/right buttons to select between Chinese and English (ON/OFF).

Unit Switch： Use the up/down buttons to change the unit, no need to press the OK button.

Interface Style： Use the left/right buttons to select between dark mode and light mode.

2.5 System Settings



Time Setting：Select any direction, press the OK button to enter, then long press the up/down buttons to adjust the values.

Sleep Mode： ①Left or right key to select ON/OFF to turn on the sleep.

②Left or right key to adjust percentage bar for the sleep brightness.

③Use the left/right buttons to adjust the values for entering sleep mode or automatic shutdown.Sleep mode will reduce screen brightness and power consumption. The device will exit sleep mode when motion is detected.

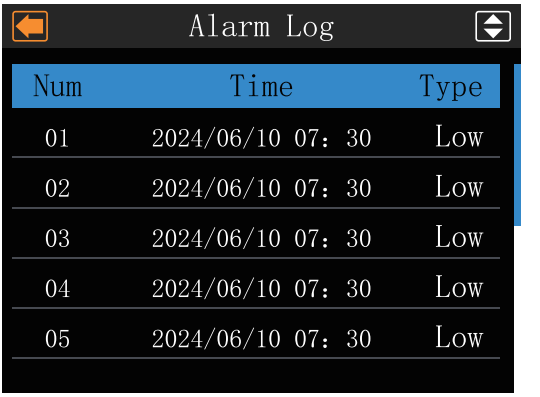
Brightness：Use the progress bar and press or hold the left/right buttons to adjust the brightness.

Volume:① Use the left/right buttons on the progress bar to adjust the volume.

② Use the left/right buttons to select whether to enable volume (ON/OFF). The volume here controls the global sound switch but does not affect the alarm sound.

Restore Factory Settings：Use the left/right buttons to choose whether to restore factory settings, then press the OK button to confirm.

2.6 Alarm Records Page



Alarm Log：Records the time and type of alarms, exceeding the thresholds, with a maximum of 30 entries. Older entries will be cleared and overwritten once this limit is exceeded. Records are created only when the alarm level increases. Use the up/down buttons to browse through the log.

3.Technical Specifications

3.1 Model Parameters

Parameter	Specification
Model Parameters	GD-02
Screen Material	2.0-inch Color Screen
Detectable Gases	Methane, Propane, Isobutane
Measurement Range	0~50000ppm（甲烷Methane)
	0~100 (A%LEL)
Resolution	1ppm/1%LEL
Measurement Range (%LEL)	0~100
Operating Temperature	-10~55°C
Warm-up TimeResponse Time	Around 15-16 seconds
(T90)	<5s
Recovery Time (T10)	<10s
Service Life	>3 years
Sampling Time	≈0.5s
Size	≈63×28×139(+360)mm
Product Weight	≈296g

4.Operation Manual

4.1 Power On

Long press power button to turn on the device. Wait for the system to load and enter the main interface of the color screen combustible gas detector.

4.2 Language Settings

Long press the button to enter the system menu. Short press the Select button to choose General Settings, then press OK to confirm. Use the Select button to choose Language Settings and press OK to enter. Use the Left/Right buttons to select Chinese / English.

4.3 Gas Concentration Threshold and Unit Settings

Gas Concentration Threshold Adjustment:

Long press the button to to enter the system menu. Click the selection button to choose General Settings and press the OK button to confirm. In the General Settings, click the selection button to choose Threshold Settings and press OK to confirm. Use the up and down buttons to select the high or low alarm options, then press OK to enter the four-level navigation for detailed value adjustment. Use the up or down buttons to adjust the threshold value by either clicking or holding the buttons.

Concentration Unit Adjustment:

Long press the button to to enter the system menu. Click the selection button to choose General Setting and press the OK button to confirm. In the General Settings, click the selection button to choose Unit Switch, and press OK to confirm. Use the up and down buttons to select the concentration unit. No need to press the confirm button to save, simply press the back button to exit.

Other Function Adjustments in General Settings:

The navigation for selecting and enabling corresponding functions is similar to the above two steps, so it is omitted.

4.4 Date and Brightness Adjustment

Time Setting:

Long press the button to enter the system menu. Click the selection button to choose System Settings and press the OK button to confirm. In the System Settings, click the selection button to choose Date , then press OK to confirm.Use the selection button to choose the date or time you want to adjust, then press OK to enter the numeric adjustment. Use the up and down buttons to adjust the values. Press the back button to save the settings.

Brightness:

Long press the button to enter the system menu. Click the selection button to choose System Settings and press the OK button to confirm. In the System Settings, click the selection button to choose Brightness , then press OK to confirm. Use the left and right buttons to adjust the brightness in real time. Press the back button to save the settings.

Other Function Adjustments in General Settings:

The navigation for selecting and enabling corresponding functions is similar to the above two steps, so it is omitted.

5.Quick Start Guide

5.1 Quick Measurement

Power on the combustible gas detector with a color screen and wait for it to warm up. Once ready, the main interface will load, and the device is ready to use.

- Place the device in the area to be tested. It can detect combustible gases (methane, propane, isobutane).
- Check real-time gas concentration, temperature, and humidity on the main screen.
- Short press the power button to activate the HOLDS function and freeze the data.
- Use the left and right buttons to switch between curve pages for data visualization and analysis.
- Long press the left button to turn on the flashlight, If visibility is low.

5.2 Firmware Upgrade

To turn off the device, press and hold both the right button and the power button. The device will then enter the Bootloader interface. Insert a USB Type-C cable to connect to the computer and enter the Bootloader interface for firmware upgrade.

- Once in the Bootloader, the computer will recognize the USB drive. Simply copy the firmware file to the drive.
- The device will automatically run the existing firmware, if no action is taken in the Bootloader for 1 minute.

6. Troubleshooting

6.1 Unable to Power On

Possible causes:

•.Low battery

•Loose or damaged battery connection

Solution:

①Check battery charge and charge if low

②If battery fails to charge or device still does not power on, try reinstalling or replacing the battery.

6.2 Not Displaying

Possible causes:

•Screen backlight is off

•Display hardware malfunction

•System software error

Solution:

①Check and adjust the backlight brightness settings according to the manual.

②Restart the device to ensure the system returns to normal.

③If the screen still doesn't display properly, it may need to be repaired or replaced.

7.Maintenance

Cleaning the Device Exterior:

- Frequency: Clean once a month, depending on the usage environment..
- Method: Gently wipe the device surface with a soft cloth. Avoid using chemical cleaners, especially those containing alcohol or strong acids/alkalines, as they may damage the casing or screen.
- Notes:

• Regularly clean the gas detection port and around the buttons to keep the device clean.

• Ensure no liquid, dust, or debris enters the device ports.

Battery and Power Check:

- Battery Maintenance: For the combustible gas detector with built-in batteries, regularly check the battery's health. Avoid fully discharging the battery, it is recommended to charge it periodically and avoid leaving the device unused for extended periods.
- Charging Guidelines: Use the official charger for charging, avoid overcharging or deep discharging, and ensure the battery stays within the proper working voltage range.
- Battery Replacement: If the battery shows excessive wear (e.g., failure to charge properly or rapid discharge), it should be replaced promptly.

Storage and Transportation:

- Storage Environment:The device should be stored in a dry, well-ventilated environment, away from high temperatures, high humidity, or extreme temperature fluctuations. Avoid placing it in direct sunlight.
- Transportation：Handle the device carefully to prevent drops, especially during transportation. It is recommended to use a protective case or a dedicated carrying bag.

Software Update:

- Regularly check for new firmware updates for the device. The latest firmware can fix known bugs and improve device performance.
- When updating, ensure the correct procedure is followed, use the official firmware files, and avoid power loss or other interruptions during the update.

Factory Reset:

- If the device malfunctions or doesn't work properly, you can try performing a factory reset. This will erase all custom configurations and restore the device to its original state.
- Refer to the user manual or contact customer support for instructions on how to perform a factory reset.

8.Contact US

Any FNIRSI users who contact us with questions will receive our promise of a satisfactory solution, plus an extra 6-month warranty as a token of our appreciation for your support! By the way, we have created an exciting community, and we welcome you to contact FNIRSI staff to join.

Download User manual&APP&Software