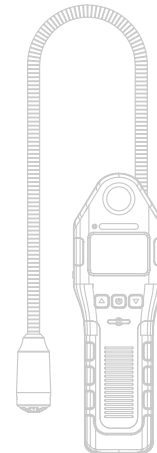# Portable Gas Leak Detector

Operation Manual

1. Brief introduction

Portable gas detector (hereinafter called detector) is a new type of detector for detecting gas leakage from the gas pipelines, gas valve, and other possible places. With imported high quality semi-conductor sensor and embedded microcontroller, it has very high sensitivity, excellent man-machine operation interface and various adaptive ability.The housing of the detector is made of high strength engineering plastics and compound anti-slip rubber. It is waterproof, dustproof, and with good handle.

2. Features

2.1 Product characteristics

★ Polarized GUI operation interface;

★ Adopts a dot-up screen display;

★ Three buttons, simple and intuitive operation.

2.2 Function

1.Audible, visual, vibration and display four alarm methods

2.Support fault alarm and indication

3.Support gas unit switch function

4.Support multi-point calibration, most is five points

5.Support software to read data

6.Type-C USB interface.

3. Specifications

Detecting gas	Detecting Range	Alarm point	Resolution
CH_4	(3~20)%LEL	10%LEL	1%LEL

Response time	≤30s
Working condition	Tem:-25℃～55℃ Hum:<95%RH no dew
Power	DC3.7V
Display	Dot matrix screen, resolution 190x128
Alarm	LCD indication, audible, visual and vibration alert alarm
Sampling method	Diffusion
Communication	Software in computer
Charging	Type-C charging connect, 5V/1A standard charger
Working time	≥10h
Charging time	≤5h
Life of gas sensor	5 years
Explosion-proof grade	Ex ib ⅡC T3 Gb
Weight	about 360g
Dimensions	208*66*36mm(L*W*H)

4. Structure

Gooseneck

Label (back)

Alarm light

USB

State light

LCD

Buttons

Buzze

Sensor
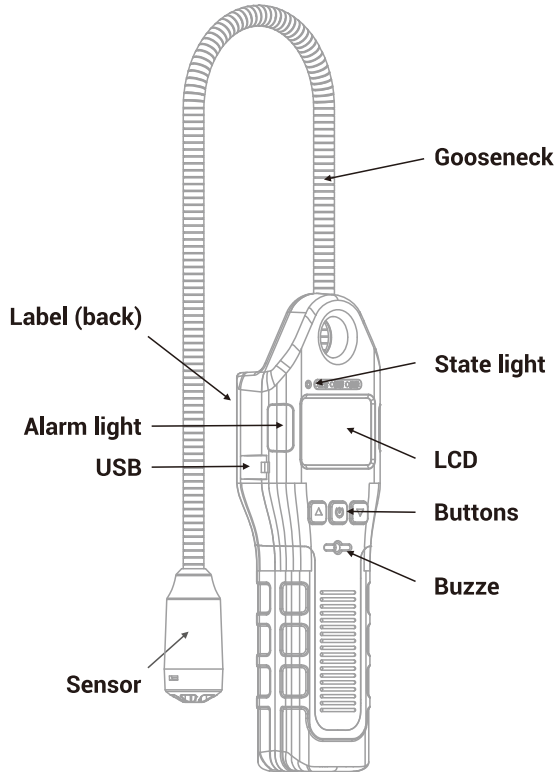
5. Operation & Function

5.1 Turn on self check and warming

Press the button for 2s and then release it. The LCD will on and display opening diagram (Figure 1). The detector will make system initialization, self check and warming.It enters into detecting status after warming.(Figure 2)
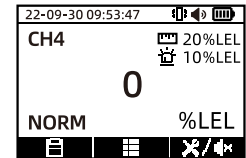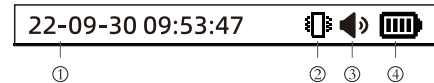
Welcome !

Figure 1

22-09-30 09:53:47

CH4   20%LEL
              10%LEL

0

NORM   %LEL

Figure 2

5.2 Main interface

5.2.1 Status bar

22-09-30 09:53:47

① ② ③ ④

① Time.

② Vibration status icon; indicate the opening of the vibration function, indicating that the vibration function is turned off.

③ Sound icon; indicate that the opening of sound, X indicating that the function of the sound is closed.

④Battery power indicator: The battery power is divided into four grids. After the power is exhausted, the icon becomes and flash reminder.

5.2.2 The main interface display

The detector is shown in Figure 2 under normal detection state, which can detect the concentration of environment in real time. Gas type in top left corner, Gas state in the lower left corner, gas concentration range and alarm point in top right corner, gas unit in the lower left corner. gas concentration in the middle.

When gas leaks less than the pre-set alarm value, the detection status bar shows "normal". If the screen is in the breath screen state, the normal state indicator "green" is twinted twice in 10 seconds.

When gas leaks more than the pre-set alarm value, the detection status displays "alarm" and flashes. At the same time, 0.25 seconds of the bee tweeting, the alarm status indicator "red" and the alarm lights on both sides flashed. The vibrator vibrates, if the screen is in the breath screen, the backlight of the screen is turned on.

When gas leaks exceed the gas sensor range, the detection status displays "over limit" and flashes. Gas concentration display "OR", At the same time, 0.25 seconds of the bee tweeting, the alarm status indicator "red" and the alarm lights on both sides flashed. The vibrator vibrates, if the screen is in the breath screen, the backlight of the screen is turned on.

When the sensor detect sensor fault, the detection status shows "fault" and flashes. At the same time, the buzzer give sound intervals 2 seconds and twice, and the fault status indicator "yellow" flashes twice. if the screen is in the breath screen, the backlight of the screen is turned on.

Note: When the mute state is turned on, if the detector detection status changes, the mute state is turned off, and the icon changes from ◀× to ◀)) , and the buzzer resumes the alarm sound.

When the gas concentration return to the normal state, the detection status displays "normal" and the alarm is lifted.

5.2.3 The main interface buttons

Under the main interface, press the left button (shown in ▤) to enter the "Alarm Record" interface. Can view the detector history alarm record.

Press the right button as ✕/◀×show under the main interface, enter the seftcheck, the bee twiser twisted 3 times, the vibration of the vibrator 3 times, and the indicator flickering 3 times; You can turn off or open the beeurist function for long press right button for 2 seconds. The indicator icon indicates ◀× that the buzzer is turned off, and the ◀)) means the is buzzer is turned on.

Note: 1. Press any key can open the screen when the backlight is off.

2. When make the self check on the main interface, the buzzer and vibration will be self checked whether they are turned on or off.

5.3 Alarm record interface

The alarm record interface is used to view the historical alarm records of the detector. When there is no record, the interface is shown in Figure 3, press the left button to return the main interface; when there is a record, the interface is shown in Figure 4, press the left button to return to the main interface, and press the middle button/right button to view the records.
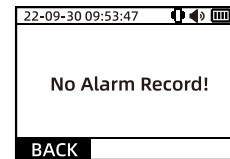
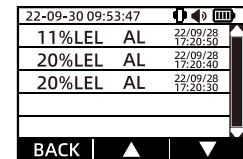| 22-09-30 09:53:47 ◀))▦	22-09-30 09:53:47 ◀))▦
No Alarm Record!	11%LEL AL 22/09/28 17:20:50
	20%LEL AL 22/09/28 17:20:40
	20%LEL AL 22/09/28 17:20:30
BACK	**BACK** ▲
Figure 3	**Figure 4**

When there are records, press and hold the middle button for about 2 seconds, "Enter Password" as shown in Figure 5. Press the left button to close it, press the middle button to move the cursor, and right-click to edit the number. After entering the correct password, "Clear Record" as shown in Figure 6. Press the left button to return, press right button delete the record.
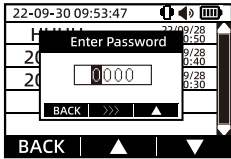

| Figure 5 | Figure 6 |

Note: The detector can store 50,000 alarm records

5.4 Main menu interface

The main menu interface is used for detector-related function selection, setting, and indication as shown in Figure 7. Press the left/right button to select the icon, and press the middle button to select the function and switch the interface.

Figure 7

Icon	Description	Content
🏠	Main interface	Return to the main interface. If there is no operation in the main menu interface, it will return to the main interface after a delay of 10 seconds automatically.
	Gas zero	Enter the gas zero calibration interface to make zero calibration.
⊙	Gas calibration	Enter the gas calibration interface, and make gas calibration.
	Channel settings	Parameterize the gas.
⚙	System settings	Set system parameters such as language, backlight, date and time.
ℹ	System information	Used to view device parameter information
↻	System Restore	Used to restore the factory parameters and settings of the detector
⏻	Power off	Turn off the detector

5.5 Main Menu Functions

5.5.1 Gas zero

Select the gas zero icon in the main menu interface of the detector, and press the middle button to enter the gas zero interface (as shown in Figure 8). In the gas zero interface, press the left button to return to the upper interface, and press the right button to make the zero calibration. After success, it shows "zero calibration successful" as shown in Figure 9, and the icon behind the value display box changes from to ⊗ to ✓. When failed, it shows "Zero Failure"(see Figure 10), press the middle key to close it.
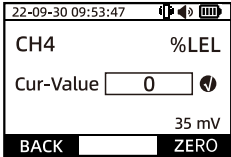
Figure 8

Figure 9

Figure 10

5.5.2 Gas calibration

Select the gas calibration icon in the main menu interface of the detector, press the middle button to enter the password input interface (as shown in Figure 11); press the left button to return to the upper page, press the middle button to enter the password (as shown in Figure 12), input the password '1111' and press the right button (OK) to enter the gas calibration interface (Figure 13)
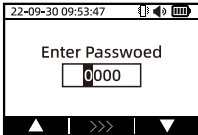

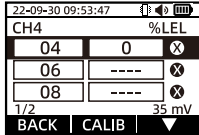**Figure 11**

Figure 12

Figure 13

The gas type is displayed in the upper left corner of the calibration interface, and the unit corresponding to the standard gas is displayed in the upper right corner. press the left button to return to the upper page; press the right button to select the calibration point; press the middle button to edit the calibration point and perform calibration operations (as shown in Figure 14), press the left button to cancel the calibration operation, press the middle button to move the cursor, press the right button to edit the value at the cursor, and perform the calibration operation when the cursor moves out of
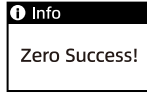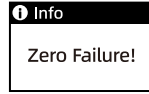
the last digit. After success, it shows "calibration successful" as shown in Figure 15, and the icon behind the value display box changes from to ⊗ to ✓ . Press the middle key to close it.
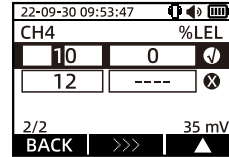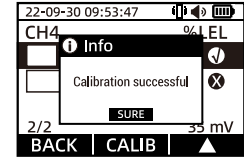

Figure 14

Figure 15

After the calibration fails, a corresponding prompt box will pop up. When the "Calibration Failed" prompt box pops up (as shown in Figure 16), it means that the calibration threshold limit has not been met; when the "Invalid Calibration" prompt box (as shown in Figure 17) or the "Repeat Calibration" prompt box pops up (as shown in Figure 18), it means that the current calibration point conflicts with the calibrated point.

Figure 16

Figure 17

Figure 18

5.5.3 Channel Settings

Select the channel setting icon in the main menu interface, press the middle button to enter the channel setting interface (as shown in Figure 19), press the left button to return to the upper interface; press the right button to switch menu options; press the middle button to set the option parameters (as shown in Figure 20). Unit switching, zero calibration threshold/calibration threshold editing can be performed in the channel setting interface.
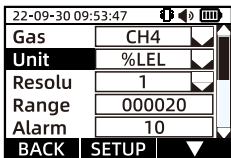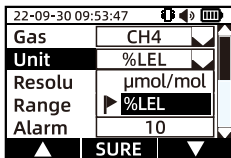

Figure 19	Figure 20

Figure 19

Figure 20

Note: The zero calibration threshold/calibration threshold is mainly used for gas zero calibration and calibration operations, and customers generally do not need to set it.

5.5.4 System Settings

Select the system setting icon in the main menu interface of the detector, and press the middle value to enter the system setting interface (as shown in Figure 21). press the left button to return to the previous page; press the right button to switch the menu; press the middle button to set the option parameters.

Language: It cannot be set after leaving the factory.

Backlight: Set the time to turn off the backlight of the instrument. Backlight constant when set to '0s'. When the screen is off, the upper left working status indicator (green) flashes twice every 10 seconds.

Vibration switch: set the status of the vibrator switch, the icon indicates that the vibration is on, and the vibration icon in the status bar is displayed; the icon indicates that the vibration is off, and the vibration icon in the status bar is displayed.

Date & Time: Edit the date and time. In the editing interface (as shown in Figure 22), press the left button to return to the upper page; press the right button to edit (as shown in Figure 23), press the middle button to move the

cursor, press the right button to edit the value, and save the changed parameters when the cursor moves out of the last digit.
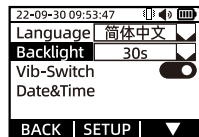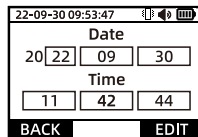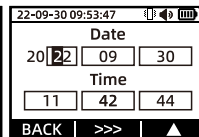

Figure 21

Figure 22

Figure 23

5.5.5 System Settings

Select the system information icon in the main menu interface of the detector, and press the middle button to enter the system information interface (as shown in Figure 24). View the instrument software version and device number in this interface; press the left button to return to the upper page.
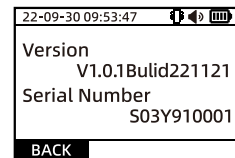

Figure 24

5.5.6 System Restore

Select the system restore icon in the main menu interface of the detector, press the middle button to enter the password input interface (as shown in Figure 25), enter the password "1111" and then press the right button (OK) to enter the system restore interface (as shown in Figure 26), press the left button to return to the upper page; press the right button to restore the factory settings, after the recovery is successful, a pop-up "setting is successful!" prompt box (Figure 27).
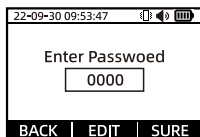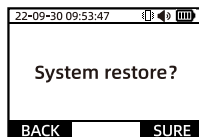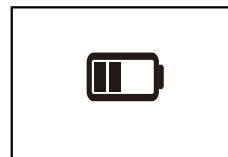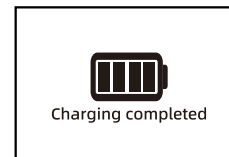
Figure 25 | Figure 26 | Figure 27

5.5.7 Shutdown

Select the shutdown icon in the main menu interface of the detector, press the middle button to enter the shutdown interface (as shown in Figure 28), press the left button to return to the upper page; press the right button to perform shutdown operations (as shown in Figure 29), and the detector will shut down after the progress bar is completed.
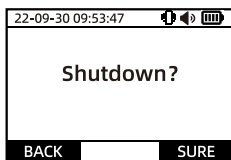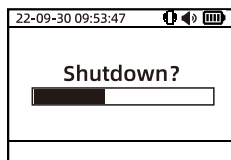
Figure 28 | Figure 29

6. Charging function description

When the interface prompts "Battery is low!" or the detector cannot be turn on normally due to low battery, please charge it in time. When the detector is turned off, when the charger is plugged into the detector, it will automatically start charging and display the charging status (as shown in Figure 30). After the charging is completed, the interface will display "Charging Complete" (as shown in Figure 31). At this time, you can unplug the charger and turn on the detector for normal use.

Figure 30 | Figure 31

Low battery

When the power of the detector is low, the interface will prompt "Battery low!" (as shown in Figure 32) every two minutes, accompanied by four beeps of the buzzer "Didi Didi".
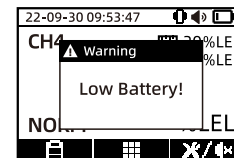
Figure 32

Low battery turn off

When the battery power of the detector is lower than the normal working voltage, and automatic shutdown prompt box will pop up (as shown in Figure 33), the detector will shut down after the countdown ends.
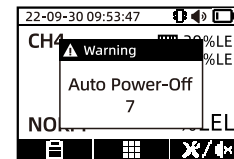
Figure 33

Note: Please try not to charge the detector when it is turned on, so as not to affect the charging speed; please do not charge the detector at the detection site, so as to avoid fire or explosion caused by sparks generated by plugging and unplugging the charger.

7. Storage

The detector should be stored in a ventilated room with an ambient temperature of -25°C-55°C and a relative humidity not greater than 85%, and the air must not contain harmful gases or impurities that may corrode the detector.

8. Accessories

Type	Quantity
Combustible gas detector	1
Box	1
Leather case	1
Charger	1
USB data cable	1
Manual	1
Certificate warranty card	1

9.Precautions for use

1. Prevent the detector from falling from a high place or being subjected to strenuous exercise .

2. In a high-concentration gas environment, or the detector cannot be used normally.

3. Please do not use a lighter to impact the sensor part, which will cause the sensor to drift

4. Please strictly follow the operation and usage specifications in the manual, otherwise it may cause inaccurate test results or damage the detector.

5. This product should not be stored or used in an environment containing corrosive gases (such as high concentration of chlorine gas, etc.), nor should it be used or stored in other harsh environments, including excessively high or low temperature, high humidity, and strong electromagnetic fields.

6. If there is dirt on the surface of the detector after long-term use, please wipe it gently with a clean soft cloth dipped in water instead of using corrosive solvents and hard objects to wipe the surface of the detector, otherwise it may cause scratches or damage to the surface of the detector

7. In order to ensure the detection accuracy of the detector, it should be calibrated regularly, and the calibration period should not exceed one year.

8. The battery pack cannot be disassembled or replaced in an explosive gas environment, nor can the battery be charged; in an explosive gas environment, peripheral plug-in instruments that are not certified for explosion-proof cannot be used, and sensors cannot be replaced .

10. Common faults and solutions

Phenomenon	Possible Reasons	Solutions
Unable to turn on the detector	Low voltage	Charge in time
	Crash	Please contact dealer or manufacturer for repair
	Circuit failure	Please contact dealer or manufacturer for repair
No response to gas detection	Circuit failure	Please contact dealer or manufacturer for repair
Inaccurate display	Sensor expired	Please contact the dealer or manufacturer to replace the sensor
	Long-term uncalibrated	Please calibrate in time
Wrong time display	The battery is Completely drained	Please charge and reset the time in time
	Strong electromagnetic interference	Reset time
Zero calibration failed	Sensor drift	Contact the distributor or manufacturer for replace.