INSIZE

www.insize.com

SINGLE GAS DETECTOR OPERATION MANUAL

PLEASE SCAN QR CODE TO WATCH THE OPERATION VIDEO OF PRODUCTS.

VIDEO

INSIZE

V0

Affix. Table1

Model	Range	L-alarm	H-alarm
CH4	0-100%LEL	20%LEL	50%LEL
C3H8	0-100%LEL	20%LEL	50%LEL
H2	0-100%LEL	20%LEL	50%LEL
H2	0-1000ppm	35ppm	250 ppm
H2S	0-100ppm	10ppm	15ppm
H2S	0-100ppm	10ppm	20ppm
CO	0-1000ppm	35ppm	200ppm
CO	0-1000ppm	30ppm	60ppm
O2	0-30%vol	19.5%vol	23.5%vol
C2H4	0-100%LEL	20%LEL	50%LEL
C2H4	0-20ppm	5ppm	10ppm
C2H4O	0-20ppm	10ppm	15ppm
C2H5OH	0-100%LEL	20%LEL	50%LEL
NH3	0-100ppm	25ppm	50ppm
CL2	0-20ppm	5ppm	10ppm
O3	0-20ppm	5ppm	10ppm
O3	0-10ppm	2ppm	5ppm
SO2	0-20ppm	2ppm	5ppm
SO2	0-100ppm	2ppm	5ppm
PH3	0-20ppm	0.3ppm	5ppm
PH3	0-5ppm	0.3ppm	2ppm
CO2	0-5000ppm	1000ppm	2000ppm
CO2	0-50000ppm	1000ppm	2000ppm
NO	0-250ppm	20ppm	50ppm
NO2	0-20ppm	5ppm	10ppm
HCN	0-500ppm	10ppm	20ppm
HCN	0-50ppm	10ppm	20ppm
HCL	0-50ppm	10ppm	20ppm
CH2O	0-10ppm	2ppm	5ppm
VOC	0-100ppm	20ppm	50ppm
C6H6	0-100ppm	20ppm	50ppm

Note: For other gases and ranges, please contact supplier.

1.Description

0611 Series Single gas detector can make continuous detection of combustible and toxic gases. It is suitable for combustible and toxic gas leakage detection in underground pipe or mines, and keeps the workers safe, prevents the facilities from being destroyed.

The detector, adopting excellent-quality sensor, makes detection in the way of natural diffusion. It has good sensitivity and reproducibility. The detector adopts embedded MCU controller, easy to operate.

The shell adopts special high strength material and anti-skid rubber, with the characters of water-proof and dust-proof.

2.Features and specifications

2.1 Features

Advanced MCU control with low power consumption;

Adjustable low and high alarm level;

Adjustable calibrating level;

High concentration protection;

Self test for the gas sensor;

Low battery indication;

Self-adjustment function

Visual and audible alarm with vibration;

Password management to avoid wrong operation;

Explosive proof housing

2.2 Specifications

Gas Detected: combustible gas (CH4, C3H8, H2, etc) by default. (Other gas like O2, H2S, NO, PH3, NH3, NO2, HCN, SO2, etc, can be specified by customers in advance.)

Range: 0~100%LEL

Alarm points:

Low alarm point: 20%LEL, High alarm point: 50%LEL

For other gas, please see attached table 1.

Accuracy: ≤±5% F.S.

Response time: T90<60s

Indication: LCD indicates the time and state

Indication of alarm, fault and low voltage with LED, sound, vibration

Operating Environment:

Operating temperature: -10°C~55°C

Humidity: <95%RH non-condensing

Operating voltage: DC3.7V Li battery 1500mAh

Working time: > 8h continuously

Charging time: 4h～6h

Sensor life: 2 years

Weight: about 205g

Dimension: 124×60×46mm

6. Notices

6.1 Falling down from high places or strong shake is prohibited.

6.2 The detector may not work properly at interferential high-concentration gas.

6.3 To avoid incorrect result or possible damage to the detector, please operate and handle the detector in accordance with the manual.

6.4 The detector should be not stored or used neither under the circumstance with caustic gas (such as Cl$_2$), nor under the other rugged circumstances, including excessive high or low temperature, high humidity, electromagnetic field and strong sunshine.

6.5 If there is dust on the surface of the detector after a long-term use, please clean it lightly with clean soft cloth. The surface may be scraped or destroyed with caustic solvent or hard things.

6.6 To assure the testing accuracy, the detector should be calibrated periodically. And the calibration period should be less than one year.

6.7 Please put the used Lithium batteries to the appointed places or send to our company. Don't discard them into the dustbin.

7. Storage

The detector should be stored in a general environment where the ambient temperature is -20°C~55°C and the relative humidity is no more than 85% indoors and the air must not contain harmful gas or impurities that have a corrosive effect on the detector.

4.7.Charging

Please charge the detector when it shows low battery or the detector can't be turned on due to low battery. Before charging, please turn off the detector to avoid any potential damage. When the battery mark on the screen is full and doesn't change any more, it means the charging is completed, you can pull off the charger.

Warning: During charging status, the detector can't detect the gas leakage. Please do not try to charge it at testing places to avoid fire or explosion. Please do not charge it when the detector is working to avoid potential damage.

Note: Make sure full charge for at least once within 1 months

If do not use it for a long time.

5.Possible fault and corresponding solution

Possible fault	Possible reason	Corresponding solution
No response to alarm	Wrong alarm point	Please reset the alarm point
	Fault of electric circuit	Please contact the manufacturer
No response to gas detected	Zero drift	Calibrate zero point
	Fault of electric circuit	Please contact the manufacturer
Inaccurate indication	Sensor is overdue	Please contact manufacturer to replace gas senor
	Uncalibrated for long time	Please calibrate it in time
Insufficient working hours	Fault of Charger	Please change charger
	Fault of the Device	Please contact the manufacturer
Can not charge electricity	Fault of Charger	Please change charger
	Fault of the Device	Please contact the manufacturer

3. Structure

3.1 Appearance

LCD screen
Alarm light
Buttons
Sensor
Back clip
USB charging connection
Buzzer
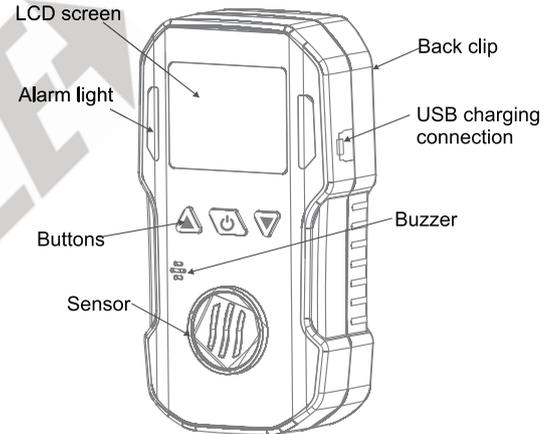
3.2 Detector structure

The main shell, circuit boards, batteries, display, sensors, chargers of the components.

3.3 Principle

Electrochemical or Catalytic sensor.

4. Operation & Function

4.1 Display Elements

1.Gas type
2.Concentration value
3.Battery indicator
4.Time
5.Temperature (inside the device)
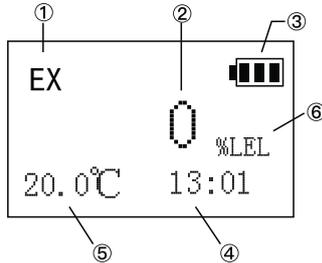6.Gas unit

EX

0 %LEL

20.0℃   13:01

Fig.1

4.2 Push buttons

To active the detector, press and hold it for 5 seconds
Press it to cancel the the operation;
To deactive the detector, press and hold it for 5 seconds
Press it to set up the parameters.

Can check parameters, alarm record, low alarm, high alarm, zero calibration, calibration,time set.

4.2 Turn On

Press the button for 5s and release, the device beeps twice with vibration and LED flash and then the screen shows "Starting" with backlight on for sound, light and vibration self test on startup.
After self test, it enters into detecting status and displays the concentration of gas in the environment as Figure 1.
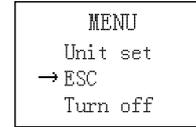
MENU
Unit set
→ESC
Turn off

Fig.20

■ 9.Turn off

Under the menu function interface, choose "Turn off", press ▲ to turn off, press ▼ to return normal detecting interface.
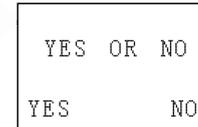
YES OR NO

YES   NO

Fig.21

4.6 Alarm information

The following table shows the details of each alarm:

Low alarm:	Short slow alarm tone; The alarm indication is yellow; The red alarm light flashes; Device vibrates .
High alarm:	Abnormal harsh alarm tone; The alarm indication is red; The red alarm light flashes; Device vibrates.
Low battery alarm:	When the device is in low battery, it will give slow short alarm every minute to remind user.

■ 5.Low alarm setting

Enter "LA set" menu, use ▲ to adjust the cursor, use ▼ to adjust the value, choose the right value and press "SAVE". then it will return the normal detecting interface show as Figure 18. If no special requirement, please do not revised alarm value.

```
Low alarm set
    020 %LEL
      ★
→    Save    ▼
```
<center>Fig.18</center>

■ 6.High alarm setting

The setting is same as low alarm setting. Note: High alarm value never lower than low alarm value. If no special requirement, please do not revised alarm value.

■ 7.Unit set

Enter "Unit set" function show as Figure 19, choose the suitable unit and save it.
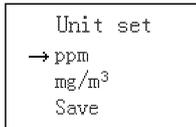
Note: this function can be used on the PPM unit gas.

```
Unit set
→ ppm
  mg/m³
  Save
```
<center>Fig.19</center>

■ 8.ESC

Under the menu function interface, choose ESC, press ⏻ to return normal detecting interface.

4.4 Turn off

To deactivate the detector, press ⏻ key, then it displays the following information:
At this time, the buzzer gives beep sound. After 3 seconds, when it displays the following figure on the screen, loosen the ⏻ key. The detector is turned off.
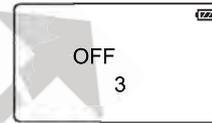
```
  OFF          BYE
   3
```
<center>Fig.2   Fig.3</center>

Attentions: When the detector is not detecting status, press ⏻ continuously till it returns to the detection mode.

4.5 Menu Operating Instructions

The user menu contains the following options:
Alarm record, low alarm settings, high alarm settings, zero calibration, calibration, time set.
In the detection state, press ⏻ key, the screen displays the following screen, directly into user menu as shown in figure4.
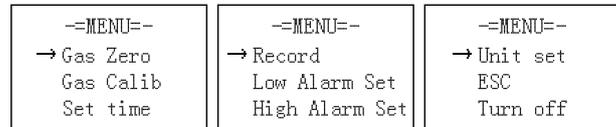
```
-=MENU=-        -=MENU=-        -=MENU=-
→ Gas Zero      → Record        → Unit set
  Gas Calib       Low Alarm Set    ESC
  Set time        High Alarm Set   Turn off
```
<center>Fig.4</center>

Parameter setting of the detector

■ **1. Zero function setting**

Press the button ⏻ in the menu interface, the interface shown as Figure 5; press ⏻ key to en enter into the zero setting page as Figure 6; press the button ▲ for zero drift, as shown in Figure 7; the instrument directly into the menu settings page, press the button ⏻ to save the drift value, interface as shown in Figure 8; the instrument directly into the menu screen, press the button ⏻ again, the instrument enters the normal detection interface.

Warning: this operation is to ensure that the operation is carried out in clean air, otherwise the concentration of the reaction gas in the environment will affect the accuracy of the portable gas detector.

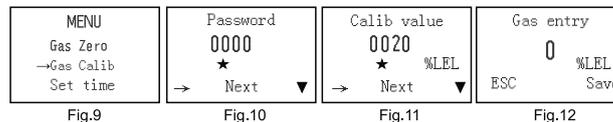| MENU →Gas Zero Gas Calib Set time	Gas Zero 0 %LEL ESC Save	Gas Zero 0 %LEL ESC Save	Saving
Fig.5	Fig.6	Fig.7	Fig.8

■ **2. Gas calibration setting**

Press the button ⏻ in the menu interface, move the cursor with ▼ key, the interface shown as Figure 9; press ⏻ enter into the calibration setting page as Figure 10; press ▲ to choose number, press ▼ to adjust the number, input password 8888 and press the button ⏻ into calibration interface.

Input the standard calibration gas value in the calibration interface as in Figure 11, for example, EX 20%LEL on the gas cylinder, input 20 and press "Next" into gas entry interface as Figure 12.

Please inject standard calibration gas, once the value is stable after 2 minutes, press "SAVE" calibration is done. The rate of flow 500ml/min is recommended.

★ **Menu language**

Input password 9988 for Chinese menu and 9987 for English menu

MENU Gas Zero →Gas Calib Set time	Password 0000 ★ → Next ▼	Calib value 0020 ★ %LEL → Next ▼	Gas entry 0 %LEL ESC Save
Fig.9	Fig.10	Fig.11	Fig.12

■ **3.Time setting**

Press the button ⏻ in the menu interface, move the cursor with ▼ key, choose the set time, the year interface shown as Figure 13; press → to move the *, press ▲ to adjust number, press Next to confirm.

After set year, press next, you can set month, date, hour, minute, Press "SAVE" to complete the time set.

Year 2020 ★ → Next ▼	Month 04 ★ → Next ▼	Minute 12 ★ → Save ▼
Fig.13	Fig.14	Fig.15
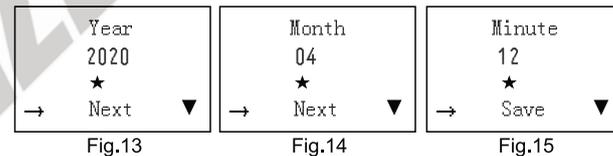
■ **4.Alarm Record**

Enter alarm record interface, display date and max alarm value, it saves the max alarm value every 3 minutes as shown in Figure 16, "11291236" means 29th November 12:36, "32" indicates the alarm value, L is low alarm, H is high alarm. Press "ESC" return to main interface. Press ▼ to delete the record as shown in Figure 17.

Recourd 11291236: 32 L 11101236: 61 H ESC Delete	Deleting
Fig.16	Fig.17