

Portable Gas Detection Alarm

User Manual

G41



Henan Otywell Electronic Technology Co.,Ltd.
ISO9001 Quality Management System Certified Enterprise

Thank you for using the series of products of our company. When you are ready to use this product, please be sure to read this instruction carefully and follow the relevant operating steps provided so that you can fully enjoy the services provided by our company and avoid The machine may be damaged or other accidents may occur due to your misuse.

Please keep this manual in a safe place so that you can consult it and get help when you need it in the future.

Copyright Notice

The copyright of this manual belongs to our company. Without written permission, any part of this manual may not be copied, translated, stored in a database or retrieval system, nor may it be disseminated electronically, reproduced, recorded, or by any other means or means .

Our company.dheres to the principle of scientific and technological progress and is constantly committed to product improvement and product performance. The company reserves the right to make any product improvements without prior notice.

If the user installs or repairs replacement parts without following the instructions in this manual, the resulting liability shall be borne by the user.

Please refer to the actual product purchased for the product, product color and style.

User Service Guide

1. Before using this product, please carefully check whether the accessories, product certificate and user warranty card are complete according to the product factory list. If any defects are found, please contact the seller or manufacturer immediately.

2. This product has a one-year warranty from the date of sale. If the user complies with the storage, transportation and usage requirements, but the product quality is lower than the technical specifications, the warranty card will provide free maintenance.
3. For damage caused by violation of operating regulations and requirements, failure caused by repairs by a special technical service department not designated by our company, or product quality problems caused by force majeure factors, our company will perform repairs for a fee.
4. When the product is being repaired, please take the initiative to show the product warranty card. If the product warranty card cannot be produced, it will be repaired for a fee.
5. After product maintenance and repair, please show this manual. The maintenance personnel will fill in the attached "Maintenance and Repair Situation Record" and sign it. At the same time, please sign on the maintenance personnel's "Maintenance and Repair Situation Record" to confirm the maintenance. Repair content and provide valuable feedback. If you are an organizational user, please stamp it with your official seal.
6. If you have any questions or dissatisfaction with the products and services we provide, including product technology, quality, installation and maintenance, service attitude, charging standards, etc., please contact us in time and we will properly handle your opinions.

Table of Contents

1. Overview	1
2. Main Technical Specifications	2
3. Product Operation Instructions	3
4. Notes for Use	12
5. Common Faults and Solutions	14
6. Warranty and Maintenance	15
7. Storage	15
8. Accessories and Others	15

1. Overview

This product is an inherently safe device for continuous detection of leaked gas concentrations. It is suitable for explosive environments such as gas leak emergency response in mines and underground pipelines, ensuring the safety of personnel and preventing damage to production equipment. The product uses natural diffusion for gas detection, capable of simultaneously detecting multiple gas concentrations. It features high-quality gas sensors for excellent sensitivity and repeatability. Embedded microcomputer control ensures simple operation, comprehensive functionality, and high reliability. The LCD display provides clear and intuitive information. Its compact and portable design enhances usability and features a housing made of high-strength engineering plastics with composite anti-slip rubber, providing durability against water, dust, explosion, shock, static electricity, and electromagnetic interference.

1.1 Normative References This product's design, manufacture, and testing comply with the following national standards:

GB/T 3836.1-2021 Explosive atmospheres - Part 1: Equipment - General requirements

GB/T 3836.4-2021 Explosive atmospheres - Part 4: Equipment protected by intrinsic safety "i"

GB/T 4208-2017 Degrees of protection provided by enclosures (IP Code)

GB 12358-2024 General technical requirements for environmental gas detection and alarm instrument in workplaces

1.2 Product Features

- Audible, visual, and vibrating alarms; low battery alarm; fault alarm; fall alarm; distress call; one-button distress call
- Real-time concentration display, alarm status, communication status, battery level, etc.
- Automatic switching between Chinese and English interfaces
- Multi-level calibration, automatic zero tracking; factory settings restoreable; automatic prevention of concentration calibration errors
- Wireless communication via infrared, Bluetooth, LoRa, 4G, etc.
- Interconnectivity with confined space detectors, portable analyzers; supports BeiDou GPS positioning
- Stores 30,000 data entries, configurable storage interval and mode
- Can be worn on safety helmets or wrist-mounted
- Supports docking station (non-rechargeable lithium battery or rechargeable lithium battery optional)

2. Main Technical Specifications

- Detectable Gases: Combustibles, oxygen, toxic and harmful gases
- Detection Principles: Catalytic combustion/electrochemical
- Detection Ranges: Ex: (0~100)% LEL O₂: (0.0~30.0)% VOL
CO : (0~1000) ppm, H₂S: (0~100) ppm
- Alarm Thresholds: Ex: Low 20% LEL, High 50% LEL
O₂: Low 19.5% VOL, High 23.5% VOL
CO: Low 50 ppm, High 150 ppm
H₂S Low 15 ppm, High 35 ppm

- Response Time: Combustibles $\leq 20s$, Oxygen $\leq 35s$, Others $\leq 45s$
- Sampling Method: Natural diffusion
- Operating Voltage: DC 3.7V
- Display: LCD
- Operating Temperature: -10°C to $+55^{\circ}\text{C}$
- Relative Humidity: $<93\%$
- Protection Level: IP65
- Pressure Limit: 86 kPa to 106 kPa
- Weight: Approximately 200 g
- Dimensions: L 77 mm $\times$ W 71 mm $\times$ H 45 mm

Relevant units of gas and conversion relationship:

(1) ppm: refers to parts per million. For example, 5ppm carbon monoxide means that the air contains 5 parts per million of carbon monoxide.

(2) LEL: refers to the concentration at the lower explosive limit of the gas. For example, 10% LEL means that 10% of the lower explosive limit of the gas has been reached.

(3) VOL: refers to the percentage of gas volume. For example, 5% VOL refers to 5% of the volume of a specific gas in the air.

(4) Correlation: The VOL is the largest of the three.

Example: The lower explosive limit of methane is 5% VOL, so a methane gas of 10% LEL has the following corresponding relationship:

$$10\%LEL=0.5\%VOL=5000\text{ppm}=5000 \times 10^{-6}=5000\mu\text{mol/mol}$$

3. Product Operation Instructions

3.1 Overall Appearance and Function Indicators



Figure 3-1

3.1.1 Button Instructions

There are two buttons on the top left and right sides of the product, with different functions in different interfaces:

Left Button:

Increase/Upward Selection/Decrease.

Right Button:

Power

On/Off/Confirm/Downward Selection/Increase



3.1.2 Indicator Light Instructions

There are three indicator lights below the screen from left to right: yellow light, green light, red light, respectively indicating: Fault indicator light, Operation indicator light, Alarm indicator light.

3.2 Power On Instructions

When the product is powered off, short press the right button to power on the product. The system will automatically perform a self-check program, displaying the welcome screen on the screen. After the self-check is complete, the main detection interface is displayed.

3.3 Main Detection Interface

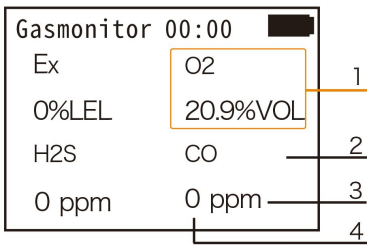


Figure 3-2

Number	Name
1	Overall measurement of the tested gas
2	Name of the tested gas
3	Unit of the tested gas
4	Current concentration value of the tested gas

Note: The above figure is for illustration purposes. The actual detection interface depends on the gas being detected.

Single Gas Detection: In the main detection interface, press the left button once to enter the detection interface, displaying the gas name, current gas concentration, TWA value, STEL value, and trend chart (as shown in Figure 3-3). Press the left button again to switch back to the main detection interface.

Multiple Gas Detection: In the main detection interface, press the left button once to enter the detection interface of a single gas, displaying the gas name, current gas concentration, TWA value, STEL value, and trend chart (as shown in Figure 3-3). Press the left button again to switch to another gas detection interface. After all gases have been detected, press the left button again to return to the main detection interface.

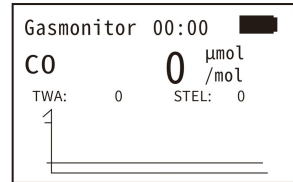


Figure 3-3

3.4 Power Off Instructions

While the device is powered on, press and hold the right button for more than 5 seconds. The device will vibrate, the screen will turn black with a horizontal line, release the button to turn off the instrument.

3.5 Menu List

In the main detection interface, short press the right button, the screen will display the password input interface (as shown in Figure 3-4). In this interface, the left button functions as "Increase", and the right button functions as "Confirm". The default password is "1111". Press the left button to increase the first digit to "1" (as shown in Figure 3-5). Press the right button to move the arrow below the second digit, then press the left button to increase the second digit to "1". Repeat this process until all four digits are "1111", then press the right button to confirm.

If the product detects a single gas, it will enter the menu interface; if multiple gases are detected, the screen will display "Channel Selection" (as shown in Figure 3-6). Press the left button to switch channels. For example, if the product detects 4 types of gases, there

will be 4 channels, such as "1: Combustible Gas" "2: Oxygen" "3: Carbon Monoxide" "4: Hydrogen Sulfide". Select the desired channel and press the right button to enter the menu interface (as shown in Figure 3-7, Figure 3-8), which contains 8 menu items: **Primary Alarm, Secondary Alarm, Zero Setting, Calibration Setting, Alarm Record, Time Setting, Factory Reset, and Language/Other.** If the product supports 4G function, there will also be a "4G SN" menu.

In the menu interface, the left button functions as "Upward Selection", the right button functions as "Downward Selection", and "Left Button + Right Button" functions as "Confirm". If no operation is performed for a period of time, the system will automatically return to the main detection interface.

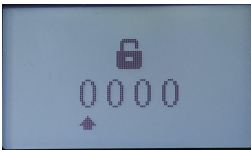


Figure 3-4

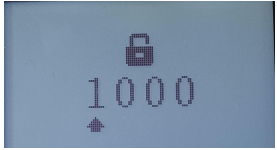


Figure 3-5

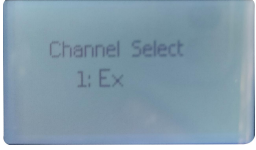


Figure 3-6

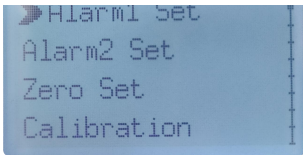


Figure 3-7

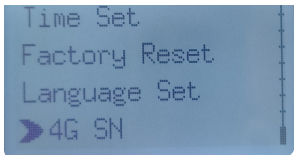


Figure 3-8

3.5.1 Alarm1 Set

In the menu interface, press the left button or right button to select the "Alarm1 Set" menu item, and simultaneously press the left and right buttons to enter the primary alarm interface (as shown in Figure 3-9). In this interface, the left button functions as "Decrease",

the right button functions as "Increase". Press the left or right button to decrease or increase the value, and simultaneously press the left and right buttons to save the setting. If not saved, it will revert to the default value. (If there are no special requirements, do not modify the alarm values!)

3.5.2 Alarm2 Set

In the menu interface, press the left button or right button to select the "Secondary Alarm" menu item, and simultaneously press the left and right buttons to enter the secondary alarm interface (as shown in Figure 3-10). In this interface, the left button functions as "Decrease", the right button functions as "Increase". Press the left or right button to decrease or increase the value, and simultaneously press the left and right buttons to save the setting. If not saved, it will revert to the default value. (If there are no special requirements, do not modify the alarm values!)

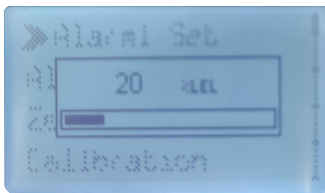


Figure 3-9

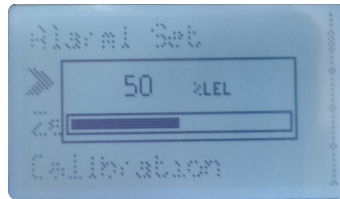


Figure 3-10

3.5.3 Zero Setting

In the menu interface, press the left button or right button to select the "Zero Setting" menu item, and simultaneously press the left and right buttons to enter the zero setting interface (as shown in Figure 3-11). This interface displays the saved value (the last set zero point value) and the current value (real-time updated current zero point value). When the current value stabilizes, press the left

button to prompt whether to save, and press the right button to select "Yes" to display "Success", indicating successful setting. If not saved, press the right button to return to the menu interface. (This operation should be performed in clean air to ensure the accuracy of the product!)

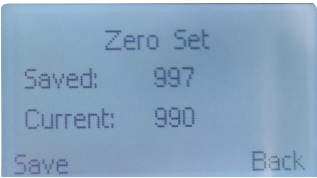


Figure 3-11

3.5.4 Calibration Setting

In the menu interface, press the left button or right button to select the "Calibration Setting" menu item, and simultaneously press the left and right buttons to enter the calibration setting interface (as shown in Figure 3-12). Taking combustible gas as an example, the default standard gas value is 60%LEL. Press the left button to modify the standard gas value (as shown in Figure 3-13). Press the left or right button to decrease or increase the standard gas value. After modification, simultaneously press the left and right buttons to confirm, and a prompt will appear (as shown in Figure 3-14). If you select "No", it will return to the interface shown in Figure 3-13 to continue modification; if you select "Yes", a prompt will appear (as shown in Figure 3-15), indicating to input gas with the same concentration as the set standard gas value. After the gas concentration stabilizes, press the left button to save, indicating successful calibration. (Non-professionals should not operate this. If in doubt, please consult the manufacturer!)

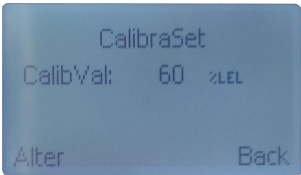


Figure 3-12

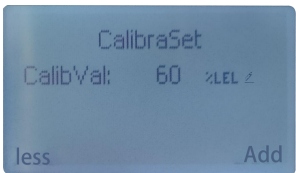


Figure 3-13

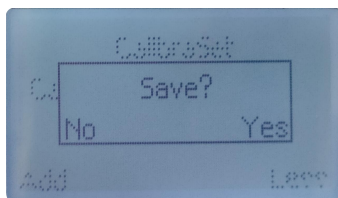


Figure 3-14

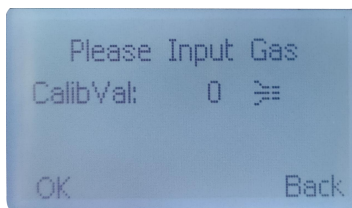


Figure 3-15

3.5.5 Alarm Record

In the menu interface, press the left button or right button to select the "Alarm Record" menu item, and simultaneously press the left and right buttons to enter the alarm record interface (while in the main detection interface, hold down the left button, then press the right button, and release both buttons to enter the alarm record interface), as shown in Figure 3-16. This interface displays the time, gas name, alarm value, alarm status (high alarm, low alarm, fault), current page number/total page number of each alarm in the current channel. Press the left or right button to switch page numbers to view alarm records. Press the left and right buttons simultaneously to prompt whether to clear (as shown in Figure 3-17). Press the left or right button to return to the main detection interface or clear the alarm record.

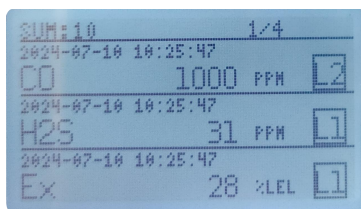


Figure 3-16

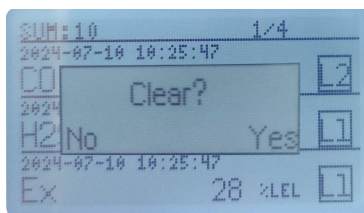


Figure 3-17

3.5.6 Time Setting

In the menu interface, press the left button or right button to select the "Time Setting" menu item, and simultaneously press the left and right buttons to enter the time setting interface (as shown in Figure 3-18). Press the left button to increase the year value. After modifying the year, press the right button to enter the month value modification, and so on. After modifying the year, month, day, hour, minute, and second, simultaneously press the left and right buttons to prompt whether to save (as shown in Figure 3-19). Press the left button to prompt "Success!", then return to the main detection interface; press the right button to return to the menu interface.

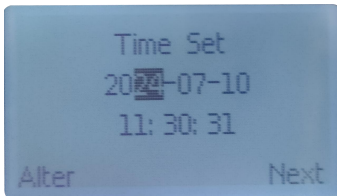


Figure 3-18

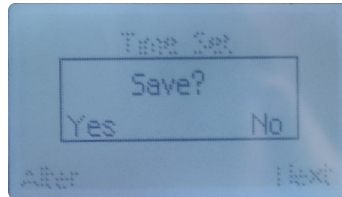


Figure 3-19

3.5.7 Language and Others

In the menu interface, press the left or right button to select the "Language and Others" menu item. Simultaneously press the left and right buttons to enter the Language and Others interface, as shown in Figure 3-20. Press the left button to initiate language settings. There are two options: "中文" (Chinese) and "English". Press the right button to switch to backlight settings, then press the left button to adjust backlight settings. Options include "60 seconds", "Always On", and "10 seconds". After making the changes, press the right button to return to the menu interface.

3.5.8 4G SN

In the menu interface, press the left or right button to select the "4G SN" menu item. Simultaneously press the left and right buttons to enter the 4G SN interface, as shown in Figure 3-21. In this interface, you can view the 4G upload QR code and SN number.

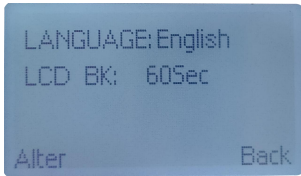


Figure 3-120



Figure 3-21

3.6 One-Key Rescue Function

When the device is powered on, long press the left button to activate the one-key rescue function; press the left button briefly again to cancel the rescue.

4. Notes for Use

- (1) Prevent the device from falling from a height or experiencing severe vibration.
- (2) It may not function properly in the presence of high concentration gases.
- (3) Please strictly follow the instructions for operation and usage to avoid inaccurate results or damage to the device.
- (4) This product should not be stored or used in environments containing corrosive gases (such as high concentrations of chlorine) or other harsh conditions (including excessively high or low temperatures, high humidity, electromagnetic fields, or intense sunlight).
- (5) If the device surface accumulates dirt due to prolonged use, clean gently with a clean soft cloth dampened with water. Do

not use corrosive solvents or hard objects to clean the device surface, as this may scratch or damage it.

- (6) To ensure detection accuracy, the device should be calibrated regularly, with calibration intervals not exceeding one year.
- (7) Recommended lifespan for catalytic combustion and electrochemical sensors is 2 years.
- (8) Please remove batteries and sensors from discarded detectors and dispose of them at designated locations or return them to our company. Do not dispose of them in regular trash bins.
- (9) For any applications or malfunctions beyond what is described in this manual, please contact our company for assistance.
- (10) In explosive gas environments, do not disassemble or replace battery packs, charge battery packs, use uncertified peripheral devices, or replace sensors.
- (11) Products with explosion-proof certificates must not have their components or structures affecting explosion-proof performance changed or modified at will.
- (12) The electrical design, selection, installation, and use of equipment in explosive hazard locations are clearly specified in relevant national standards. Installation and user units must strictly adhere to these regulations to ensure the explosion-proof safety of electrical equipment in explosive hazard locations.
- (13) Charging should be done in a safe place using the specialized charger provided with the device.

5. Common Faults and Solutions

Fault Phenomenon	Possible Cause	Solution
Cannot turn on	Low voltage	Please charge in time
	Device crash	Contact dealer or manufacturer for repair
	Circuit failure	Contact dealer or manufacturer for repair
No response to detected gas	Circuit failure or sensor life expired	Contact dealer or manufacturer for repair
Inaccurate display	Sensor expired	Contact dealer or manufacturer for repair
	Long-term no calibration	Please calibrate in time
Time display error	Battery fully discharged	Charge promptly and reset time
	Strong electromagnetic interference	Reset time
Zero point calibration function unavailable	Sensor drift too much	Calibrate or replace sensor promptly
Value displayed on the interface when there is no detected gas	Sensor drift	Perform zero point calibration

Detector normal detection interface displays full scale	Sensor fault	Contact dealer or manufacturer for sensor replacement
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6. Warranty and Maintenance

(1) This product has a one-year warranty (excluding consumables). In case of failure under normal use, free factory repair and maintenance services are available. Damage caused by human factors, natural disasters, or abnormal use is not covered by the warranty.

(2) If the sensor lifespan expires, please contact our company to replace it with a new sensor.

(3) If the user cannot troubleshoot, the detector can be returned to our company for repair. We will promptly troubleshoot and return the device to the user.

7. Storage

The product should be stored in a well-ventilated indoor environment free from harmful gases or impurities in the air.

8. Accessories and Others

The accompanying products include one gas detection alarm, one set of chargers, one calibration cover, one manual, one certificate of conformity, and one warranty card. Products undergo inspection and certification before leaving the factory. In case of damage during transportation, the manufacturer is responsible for replacement.

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