

Portable gas detection alarm

OT600 multi-functional gas detector

operating instruction



Henan Otywell Electronic Technology Co., LTD

ISO9001 quality management system certification enterprise

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If the user does not install or repair parts according to the instructions in this manual, the user shall be responsible for the resulting liability.

User service guidelines

1. Before using this product, please check the accessories, product certificate and factory inspection report according to the product list. If you find that they are not complete, please contact the seller or manufacturer immediately.

2. Within 12 months from the date of sale, if the product quality is lower than the technical indicators and the user complies with the storage, transportation and use requirements, free repair will be enjoyed according to the warranty card.

3. Our company will charge for the maintenance of damage caused by violation of operation regulations and requirements, faults caused by non-designated special technical service department of our company or product quality problems caused by irresistible factors.

4. When the product is repaired, please show the warranty card of the product actively. If you cannot show the warranty card of the product, it will be charged for repair.

5. After product maintenance and repair, please show this manual. The maintenance personnel will fill in the attached "Maintenance and Repair Record" and sign it. At the same time, please sign the "Maintenance and Repair Record" of the maintenance personnel to confirm the maintenance and repair content and put forward valuable opinions. If you are a unit user, please stamp your official seal.

6. If you have any questions or dissatisfaction with the products and services provided by us, including product technology, quality, installation and maintenance, service attitude, charging standards and other issues, please contact us in time, we will properly handle your opinions.

The appearance and color of the products in the product catalogue are for reference only. The supply is subject to the actual goods. Our company reserves the right to modify the technical parameters of the related products in this catalogue without prior notice. If you have any questions, please call our service hotline.

matters need attention

Before using the detector, please read the following precautions:

★ Before using the detector, please check whether there are cracks or missing parts on the shell. If the detector is damaged or missing parts, please contact our company or dealer immediately.

★ Replacing components by yourself may damage the internal security of the detector.

★ Do not expose gas detectors to electric shock or severe continuous mechanical vibration.

★ Discarded batteries and sensors should be disposed of by qualified recyclers or hazardous waste handlers, not thrown into the trash can.

★ Do not disassemble or put the battery into fire, and avoid short circuit of positive and negative terminals of the battery, otherwise it will cause fire or explosion.

★ Do not dismantle, adjust or repair this gas detector without permission.

★ Do not splash water, chemical solvents, benzene or gasoline on the detector, and avoid the detector to inhale such substances, otherwise it may cause the detector to fail.

★ Prevent the machine from falling from a height or subjected to violent vibration.

★ In order to ensure the measurement accuracy of the detector, the detector should be calibrated regularly (at least one year).

★ Artificial frequent impact of toxic gas with high concentration on the detector should be avoided.

★ Do not continue to use the sensor when it has failed or exceeded its service life.

★ Before using this instrument, please read the instruction manual carefully and operate it in strict accordance with the instructions.

★ For any application or use failure beyond the description in this manual, please contact the dealer or manufacturer for solution.

Try not to install the instrument in the following situations:

- 1、 1. Where temperature and humidity exceed working conditions.
- 2、 2. Places with strong corrosive gases.
- 3、 3. Places with a large amount of dust, salt and metal powder.
- 4、 4. Places where water, oil and chemical liquids are easy to splash.
- 5、 5. In the case of direct vibration or impact.
- 6、 6. Situations with electromagnetic interference.

catalogue

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1. Overview

The OT600 series is an industrial-grade, highly sensitive portable multi-gas detection instrument. It is designed for use in explosion-proof environments for gas leak emergency response, as well as in underground pipelines and mines. This device effectively ensures the safety of personnel and prevents damage to production equipment. The product features a rubber-coated design for a comfortable feel. It primarily measures gas leakage concentrations and can detect various gases depending on the sensor type. The compact size, ease of operation, portability, and excellent shock resistance make it ideal for various applications. The product uses high-resolution color LCD technology, providing a clear and intuitive display.

1.1 The design, manufacture and verification of this product shall comply with the following national standards

GB/T 3836.1-2021 Explosion-proof Environment Part 1: General requirements for equipment

GB/T 3836.4-2021 Explosive environment Part 4: Equipment protected by intrinsically safe "i"

GB 12358-2024 General Technical Requirements for Environmental Gas Detection and Alarm Instruments in Workplaces

JJG 693-2011 Flammable gas detection alarm

JJG 915-2008 Carbon monoxide detection alarm

JJG 695-2019, hydrogen sulfide gas detector

JJG 551-2021 Sulfur dioxide gas detector

2. Product terminology

"LEL" stands for Lower Explosive Limit. It is the minimum concentration of flammable gas in air that can ignite upon contact with an open flame, known as the lower explosive limit (LEL). In English, it is referred to as Lower Explosion Limit. When the concentration of flammable gas in the air reaches its lower explosive limit, the flammable environment

is considered 100% explosive, or 100% LEL.

%VOL: Percentage of gas volume.

ppm: one millionth of the volume percentage of a gas.

$\mu\text{mol/mol}$ (micromoles per mole) is the unit of amount of substance.

Conversion: $1\text{ppm}=1\mu\text{mol/mol}$.

3. Main technical parameters

- Suitable gases: combustible/gas toxic/harmful/oxygen, etc
- Detection principle: catalytic combustion type, electrochemical type, infrared type, laser, semiconductor type and so on
- Detection mode: natural diffusion / external pump suction at will (external pump is optional)
- Measurement range: (0–100)% LEL (combustible gases); (0–100) $\mu\text{mol/mol}$ (toxic gases), etc. (depending on gas type)
- Accuracy class: $\pm 3\%$ FS (combustible/oxygen); $\pm 5\%$ FS (toxic)
- Low limit alarm set value: 20%LEL (flammable)
- Upper limit alarm setting: 50%LEL (flammable)
- Alarm mode: LED, sound, vibration indication alarm, fault and under voltage
- Display mode: LCD color liquid crystal display
- Response time: less than 30s
- Environmental temperature: $-25^{\circ}\text{C} \sim +55^{\circ}\text{C}$
- Relative humidity:(20~93)%
- Supply voltage: DC 3.7 V
- Battery capacity: 1800 mAh+1300 mAh lithium ion rechargeable battery
- Charging time: <5 h

- Standby time: ≥ 8 h
- Pressure limit: 86kPa~106kPa
- Product size: L 158 mm×W 83 mm×H 45 mm
- Product weight: about 450 g
- Explosion-proof certificate number: CNEx23.1392X
- Explosion-proof mark: Ex ia IIC T4 Ga/Ex ia IIIC T₂₀₀ 130°C Da
- Protection level: IP66 or above
- Type approval certificate mark and number of measuring instrument:

 (CH₄, CO);  (H₂S, SO₂)
 2020C200-41 2023C139-41

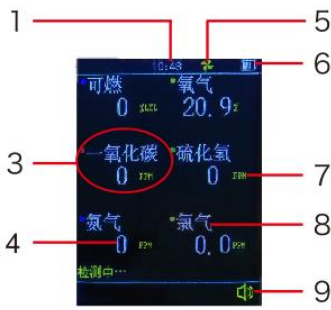
4. Appearance function and indication

4.1 Overall structure diagram of OT600



Note: When using the natural diffusion method of detection, the attached calibration cover is only used for installation or closing during product calibration, and it needs to be during normal detection to avoid detection failure and possible personal safety hazards!

4.2 Description of the display interface of OT600 product



1、Time indication	6、Battery level
3、Detection channels	7、Detection unit
4、Detect the concentration	8、Detection of gases
5、Pump indication	9、Sound icon

5. OT600 product operation instructions

5.1 OT600 product startup instructions

In the shutdown state, press the power button for more than 2s to start the detector. Then the system automatically performs the following self-test program:

1. System display: Welcome interface. Turn on the sound to detect the function of the buzzer. Turn on the vibration, suction pump and sound alarm indicator to check whether each function is normal as shown in Figure 3.

2. Display the high and low alarm of each detection channel,

detection range and self-test procedure. After the self-test procedure is completed, directly enter the normal detection state. As shown in Figure 4.

3. Pump shutdown operation: Press "middle key" and "left key" at the same time, and the pump will be shut down after 10s countdown. See Figure 5.



Figure 3

报警:	低报:	高报:	量程:
可燃	20	50	100
氧气	19.5	23.5	50.0
一氧化碳	50	150	1000
硫化氢	15	35	100
氯气	20	50	200
氨气	5.0	10.0	20.0

退出

Figure 4



Figure 5

5.2 Shutdown instructions for OT600 products

In the on state, and the device is working in detection mode, press the power button. At this time, the buzzer will emit intermittent sound, vibration and light warning. After 3s, the information will disappear and release the button to turn off.

5.3 The OT600 product enters the menu setting interface

The factory default password is 1111. If no setting is set, the detection interface will return after 10 seconds.

The user menu function is described as follows:

Alarm record: You can view recent alarm records.

Alarm setting: you can set the low and high alarm values of each detection channel.

Zero setting: the zero shift of each detection channel can be set.

Instrument calibration: the gas parameters of each channel can be verified or calibrated by sample gas.

Self-test: can detect whether the indicators of the instrument are

normal.

Information shows: the alarm range and other parameters of each channel can be viewed intuitively.

Time setting: The alarm time can be set.

Password reset: You can set the login password to avoid other factors of misoperation.

Restore factory: you can directly restore to the factory function, after the restoration, the original information will be automatically deleted. Please operate carefully.

Exit: This function can directly return to the detection interface, or automatically return to the detection interface after 10 seconds without other operations.

Warning: Charging the product while it is on cannot guarantee the accuracy of the product's detection data. Please do not charge the product at the detection site to avoid fire or explosion caused by sparks from unplugging and plugging the charger; please try not to charge the detector while it is on, so as not to affect the charging speed and battery life.

5.4 OT600 product alarm indication description

Low alarm

- Slowly modulated beeping alarm
- The alarm indicator light flashes slowly
- vibrate

High alarm

- A rapid pitch change beeping alarm

- The alarm indicator light flashes quickly
- vibrate

5.5 Menu operation instructions

1、 1. Alarm record: Record alarm data.

A) Enter the password verification page by pressing the "middle key" on the normal detection interface. Enter the menu interface by pressing the confirmation key after entering the password "1111". Select the first item "Alarm Record" by pressing the left and right keys. Click the "middle key" to enter the "Alarm Record" as shown in Figure 1-1.

b) Click the "middle key" to select and enter the "clear/exit" function. As shown in Figure 1-2

C) Click "left key" to clear the alarm record. As shown in Figure 1-3. Prompt whether to clear the alarm record, and click "left key" again to clear the alarm record. As shown in Figure 1-4. Click "right key" to return to the menu item.

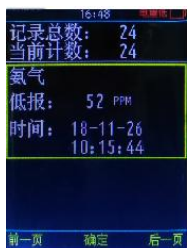


Figure 1-1

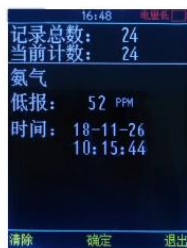


Figure 1-2



Figure 1-3



Figure 1-4

2、 Alarm setting: set the low and high alarm values of the channel.

A) Select "Alarm Settings" in the menu item to enter the alarm Settings interface, as shown in Figure 2-1

b) Press the left and right keys to switch between channels "Previous" or "Next".

C) Press the middle key to "select" and adjust the position of the selection box up and down. As shown in Figure 2-2. Press the left and right keys to "increase" or "decrease" the high and low alarm values set.

D) Adjust the selection box to the bottom, press the left key to select "Save", and the save icon will appear. As shown in Figure 2-3, it indicates that the save is successful. Press the right key "Exit" to return to the menu interface. Press the middle key "Select" to return to channel switching.



Figure 2-1



Figure 2-2

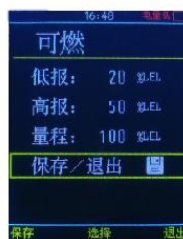


Figure 2-3

3. Zero setting: Enter zero translation, and the air pump will be automatically opened

A) Press the left and right keys to switch between the channels "Previous" or "Next". See Figure 3-1

b) After selecting the desired gas channel, use the middle button to confirm the selected channel, as shown in Figure 3-2. Wait for the zero point value to stabilize, then press the left button to select 'Save', and a save icon will appear, as shown in Figure 3-3, indicating a successful save. Press the right button to 'Exit' and return to the menu interface. Press the middle button 'Select' to switch channels.

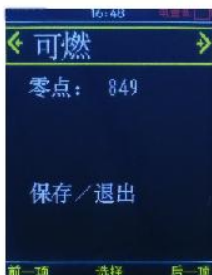


Figure 3-1

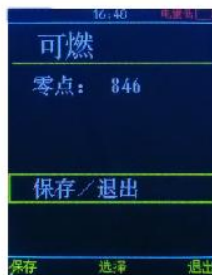


Figure 3-2

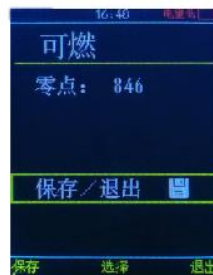


Figure 3-3

4. Instrument calibration: Enter the calibration, and the air pump will be automatically opened.

A) Press the left and right keys to switch between the channels "previous" or "next". As shown in Figure 4-1, select the channel and enter zero point translation. As shown in Figure 4-2.

b) Press the left key "Save" to save the zero point. (Note that when saving the zero point value, it should be in clean air)

C) Enter the standard gas password (9119) according to the intermediate key "standard gas" to enter the standard gas. As shown in Figure 4-3

D) Press the left and right keys to input the standard gas value. See Figure 4-4

E) Press the middle key "ventilation" to start ventilation calibration and wait for the value to stabilize (this process is not greater than 60s). Click the left key "Save" to save the ventilation value. See Figure 4-5

F) After the save is successful, the save icon is displayed. Click the right key "Exit" to return to the menu item, and click the middle key "Select" to return to channel switching.



Figure 4-1



Figure 4-2



Figure 4-3



Figure 4-4

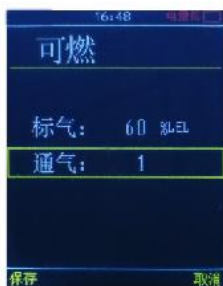


Figure 4-5

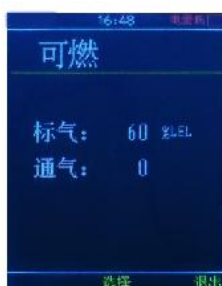


Figure 4-6



Figure 5-1

5. Self-test: self-test the horn, vibration and buzzer. See Figure 5-1

a) Press the left key to quickly go to the next item, press the right key "Exit" to return to the menu item.

6. Information display: Display the information of each channel, as shown in Figure 6-1

A) Right-click "Exit" to return to the menu item.

通道:	低报:	高报:	量程:
可燃	20	50	100
氧气	19,5	23,5	30,0
一氧化碳	50	150	1000
硫化氢	15	35	100
氮气	20	50	200
氯气	5,0	10,0	20,0

Figure 6-1

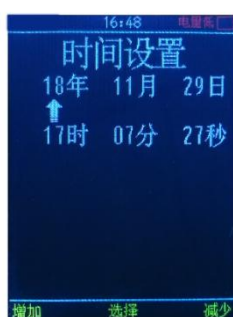


Figure 7-1

7. Time setting: Set the time, as shown in Figure 7-1

A) Press the middle key "select" to switch the year, month, day, hour, minute and second. Press the left and right keys "increase" and "reduce" to adjust the time.

8. Password reset: Modify the user password

A) First, verify the original password of the user. As shown in Figure 8-1, after verification, enter the password modification.

b) As shown in Figure 8-2. Press the left and right keys to "increase" and "decrease" the value. After entering and confirming the password, it will prompt whether to save. Press the left key "Yes" to save the password, and the modification is successful. Return to the menu item, press the right key "No" to not save and return to the menu item. As shown in Figure 8-3



Figure 8-1

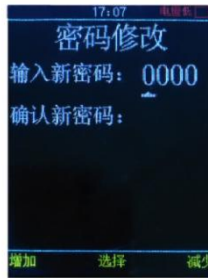


Figure 8-2



Figure 8-3

9. Restore to factory: Restore the data to factory.

A) First verify the user password.

b) Prompt whether to resume. See Figure 9-1

c) Press the left key "Yes" to start the recovery. As shown in Figure 9-2. Return to the menu after the recovery is complete.

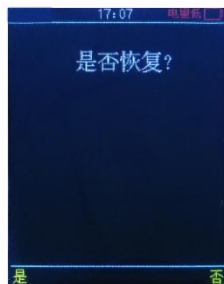


Figure 9-1



Figure 9-2

6. Precautions for use

(1) Prevent the machine from falling from a high place or subjected to violent vibration.

(2) It may not be able to work normally in the presence of high concentration gas.

(3) Please operate and use strictly according to the instruction manual, otherwise it may lead to inaccurate test results or damage to the machine.

(4) This product shall not be stored or used in an environment containing corrosive gases (such as high concentration of chlorine gas, etc.), nor shall it be used and stored under other harsh conditions (including high or low temperature, high humidity, electromagnetic field and strong sunlight).

(5) If there is dirt on the surface of the machine after long-term use, please wipe it gently with a clean soft cloth dipped in water, and do not use corrosive solvents and hard objects to wipe the surface of the machine, otherwise it may cause scratches or damage to the surface of the machine.

(6) In order to ensure the detection accuracy, the machine should be calibrated regularly, and the verification period should not exceed one year.

(7) It is recommended that the service life of infrared sensor and

semiconductor sensor is 5 years, and that of catalytic combustion sensor and electrochemical sensor is 2 years.

(8) Please remove the lithium battery and sensor of the discarded detector and send it to the designated place or return it to our company. Do not throw it into the trash can.

(9) If you have any application or use fault beyond the description in this manual, please contact us for solution.

(10) In the explosive gas environment, the battery pack cannot be disassembled or replaced, nor can the battery pack be charged. In the explosive gas environment, the peripheral plug-in equipment that has not been certified as explosion-proof cannot be used, nor can the sensor be replaced.

(11) For products with explosion-proof certificates, components or structures that affect the explosion-proof performance shall not be replaced or modified at will.

(12) In the corresponding national standards, there are clear provisions for the selection, installation or use of electrical design in explosive dangerous places. The installation or use units shall strictly abide by these provisions to ensure the explosion-proof safety of electrical equipment in explosive dangerous places.

(13) Charging must be carried out in a safe place and use the professional charger provided with the machine.

7. Common faults and their solutions

fault phenomenon	Possible cause of failure	process mode
The computer cannot be started	voltage below level	Please charge in time
	system halted	Please contact the distributor or manufacturer for repair

	fault	Please contact the distributor or manufacturer for repair
No reaction to the test gas	The circuit is faulty or the sensor life has expired	Please contact the distributor or manufacturer for repair
The display is inaccurate	The sensor is overdue	Please contact the distributor or manufacturer for repair
	Not calibrated for a long time	Please calibrate in time
The time is displayed incorrectly	The battery is completely dead	Charge and reset the time when appropriate
	Strong electromagnetic interference	Reset the time
The zero calibration function is not available	The sensor drifts too much	Calibrate or replace the sensor in time
It does not show zero in a clean air environment	Sensor drift	Perform zero calibration
The normal detection interface of the instrument shows full scale	Sensor malfunction	Contact the distributor or manufacturer to replace the sensor

8. Warranty and Maintenance

(1) The warranty period of this product is one year (except for wear and tear parts). In case of failure under normal use, free factory maintenance and maintenance services can be enjoyed. The damage caused by man-made and natural disasters or abnormal use is not within

the scope of warranty.

(2) If the sensor life expires, please contact us for a new sensor.

(3) If the user cannot troubleshoot, he/she can send the detector back to our company for maintenance. We will troubleshoot the fault as soon as possible and return it to the user.

9. Storage

The product should be stored in a ventilated room with ambient temperature of $-10^{\circ}\text{C}\sim+55^{\circ}\text{C}$ and relative humidity not greater than 85%, and the air shall not contain harmful gases or impurities that corrode the product.

10. accessories

The supporting products provide one gas detection alarm, one instruction manual, one product certificate and warranty card, one factory test report and a set of charger.

Schedule Gas parameter table

The measured gas	measuring range	resolution ratio	Underreporting	Overreporting
combustible EX	0-100%LEL	1%LEL	20	50
Oxygen O ₂	0-30%VOL	0.1%VOL	19.5	23.5
Hydrogen sulfide, H ₂ S	0-100ppm	1ppm	15	35
carbon monoxide CO	0-1000ppm	1ppm	50	150
Nitrogen dioxide, NO ₂	0-20ppm	0.1ppm	5	10
natural gas	0-100%LEL	1%LEL	20	50
methane	0-100%LEL	1%LEL	20	50
Carbon dioxide, CO ₂	0-5000ppm	1ppm	1500	2500
nitric oxide NO	0-250ppm	1ppm	50	150
nitrogen	0-100%VOL	0.1%VOL	76.5	80.5
Sulfur dioxide, SO ₂	0-20ppm	0.1/1ppm	5	10
Chlorine gas, Cl ₂	0-20ppm	0.1ppm	5	10
Ammonia NH ₃	0-100ppm	0.1/1ppm	15	35
Hydrogen H ₂	0-1000ppm	1/10ppm	50	150
Phosphine, PH ₃	0-20ppm	0.1/1ppm	5	10
chlorine hydride HCl	0-20ppm	0.1/1ppm	5	10

For more product parameters, please contact us

Otywell



Excellent quality, trustworthy

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