

Carbon Dioxide Gas Analyzer

OT800



Instruction Manual

Henan Otywell Electronic Technology Co., Ltd.

Thank you for using the products of Henan Otywell Electronic Technology Co., Ltd. Before using this product, please read this manual carefully and operate in accordance with the relevant operating steps provided, so that you can fully enjoy the services provided by our company and avoid damage to the unit or other accidents caused by your improper operation.

Copyright Statement

Henan Otywell Electronic Technology Co., Ltd. adheres to the principle of scientific and technological progress, and continuously commits to product improvement and performance enhancement. The company reserves the right to improve any product without prior notice.

If the user installs, repairs or replaces components without permission in accordance with this manual, the user shall be responsible for any resulting liabilities.

User Service Guide

1 Before using this product, please carefully check the completeness of accessories, product certificate and user warranty card according to the factory list. If anything is missing, please contact the seller or manufacturer immediately.

2 Within twelve months from the date of sale, if the product quality fails to meet the technical indicators due to user compliance with storage, transportation and usage requirements, free maintenance is provided with the warranty certificate.

3 We will charge for maintenance for damages caused by violation of operating regulations, failures caused by maintenance by non-our designated technical service departments, or product quality problems caused by force majeure.

4 Please present the product warranty card voluntarily when repairing the product. Maintenance will be charged if the warranty card cannot be presented.

5 After product maintenance, please present this manual. The maintenance personnel will fill in the attached "Maintenance Record" and sign it. Meanwhile, please sign on the maintenance personnel's "Maintenance Record" to confirm the maintenance content and put forward valuable opinions. For enterprise users, please affix the official seal.

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

Warning: It is strictly prohibited to charge the detector at the operation site or disassemble it with power on at the operation site.

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Usage Instructions

Please read the following precautions before using the detector

Do not use a damaged gas detector. Before using the detector, check the shell for cracks or missing parts. If the detector is damaged or missing parts, please contact our company or dealer immediately.

Replacing components by yourself may damage the internal safety of the detector.

Do not expose the gas detector to electric shock or severe continuous mechanical vibration.

Waste batteries and sensors should be disposed of by qualified recyclers or hazardous waste handlers. Do not throw them into the trash can casually.

It is prohibited to disassemble or throw batteries into fire, and avoid short-circuiting the positive and negative poles of batteries, otherwise it will cause fire or explosion.

It is prohibited to disassemble, adjust or repair this gas detector without permission.

Do not splash water, chemical solvents, benzene, gasoline, etc. on the detector, and avoid the detector inhaling such substances, otherwise it may cause the detector to malfunction.

Prevent the unit from falling from a height or being subjected to severe vibration.

To ensure the measurement accuracy of the detector, it needs to be calibrated regularly (generally every six months).

Avoid artificially impacting the detector with high-concentration toxic gas frequently.

Do not continue to use the sensor when it has failed or exceeded its service life (24 months).

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

For any application or usage failure beyond the description in this manual, please contact the dealer or manufacturer for solutions.

Note: If the sensor is biased, it needs to be aged (5 hours) when recharging after the battery is exhausted (the machine runs to automatic shutdown or naturally exhausted after long-term idleness). If not aged, the corresponding sensor will display full scale after startup.

1. Overview

The OT800 series is a high-sensitivity portable multi-gas detector for industrial use. It is suitable for gas leakage emergency rescue, underground pipelines, mines and other places, which can effectively protect the life safety of staff and production equipment from loss. It is mainly used to detect pipeline gas leakage, and can also detect different gases according to different sensor types. The product is compact, easy to operate, portable and shock-resistant. It adopts high-resolution dot matrix LCD display technology for more intuitive and clear display.

Model Description

The meaning of the detector model and code is as follows:

OT 800

OT800: OT is the company code, representing Otywell; 800 is the design serial number, representing multi-gas.

Main Functions and Features

1. Large-screen color Chinese menu operation
2. High-resolution touch LCD display

3. Rapid detection of gas leakage points
4. Adjustable measuring range
5. Fast preheating and rapid response time
6. Audible and vibration alarm signals
7. Convenient zero adjustment
8. Free combination of up to 8 detectable gases

Main Technical Indicators:

Detected Gas: Carbon Dioxide

Measuring Range: (0~400) ppm

Sampling Method: Built-in pump suction

Response Time: ≤30s

Indication Error: ≤3%FS

Operating Environment: Temperature -10℃~55℃; Relative Humidity ≤93% (non-condensing)

Storage Environment: Temperature -10℃~55℃; Relative Humidity ≤93% (non-condensing)

Preheating Time: ≤30s

Indication Mode: LCD color touch display

Charging Time: Not less than 10 hours

Continuous Working Time: Not less than 15 hours

Sensor Life: 2 years

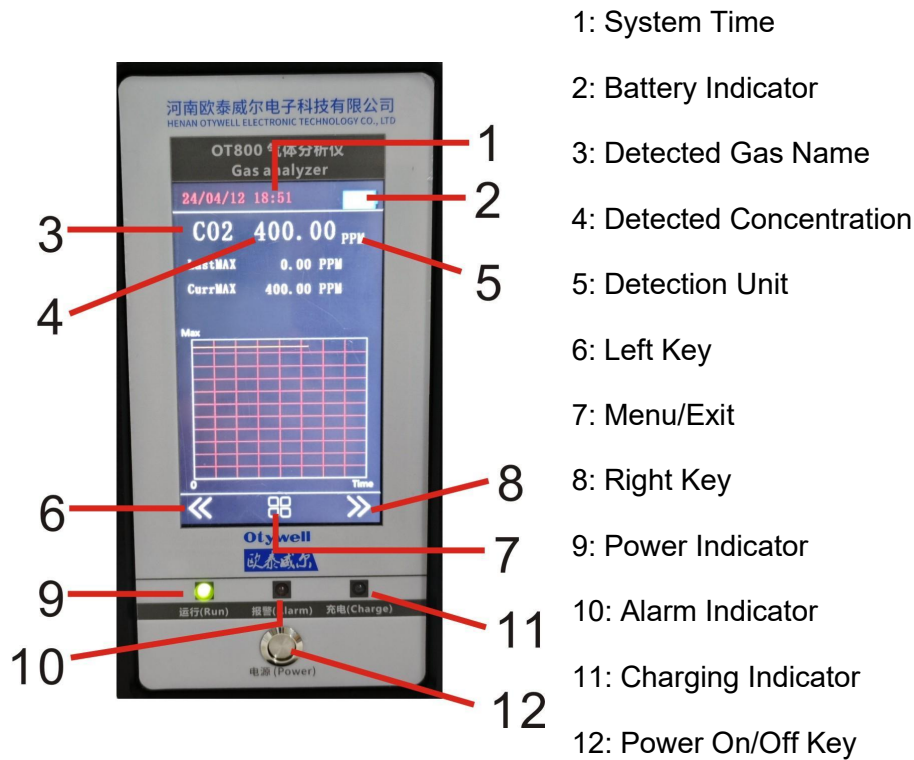
Battery Specification: DC7.2V-26Ah lithium-ion rechargeable battery

Weight: About 4.75kg

Dimensions: 293x110x210(mm)

2. Appearance and Function Indication

2.1 Appearance



2.2 Appearance Description

1. Key Function: Press the key to power on.
2. Indicators:

Left indicator: Power status indicator.

Middle indicator: Alarm indicator.

Right indicator: Fault indicator.

3. Indicator Status: Left indicator flashes during charging and stays on when charging is completed; battery status indicator turns off during normal operation.

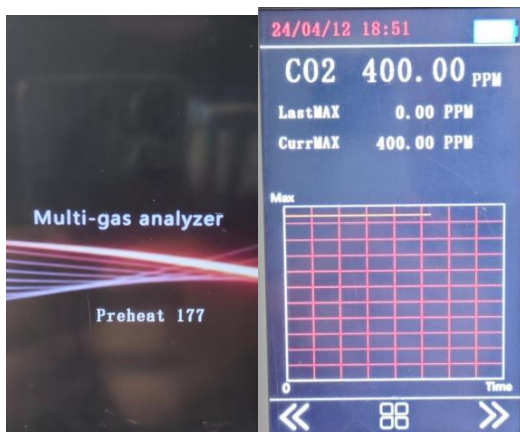
Charging Function Description:

The charger indicator is red, indicating "Charging". If the key is pressed at this time, all indicators flash and the screen displays "charging". It displays "chargeOK" after charging is completed. To improve charging efficiency, it is not recommended to press keys during charging.

3. Operation Instructions

3.1 Product Startup Interface Description

In the off state, press the key, the buzzer beeps and the detector starts up. Then the system performs self-inspection and sensor preheating internally. See Figure 1.



The system enters the main program to display each channel name, detection value and unit self-inspection, and enters the normal detection state with the sampling pump working. See Figure 2.

3.2 Product Shutdown Description

In the on state and when the device is in detection mode, press the key. The screen displays "Shutting down", and the information disappears after 3s. Release the key to shut down.

3.3 Product Parameter Functions

The user menu functions are described in the table below:

Alarm Record: View recent alarm records, up to 500 records

Alarm Setting: Set low and high alarm values for each detection channel

Zero Setting: Set zero shift for each detection channel (except oxygen)

Calibration Setting: Verify or calibrate gas parameters of each channel with sample gas

Accuracy Setting: Change the accuracy (decimal places) of detection channels

Upload Setting: Connect to computer for data transmission

Bluetooth Setting: Set Bluetooth switch, connect to Bluetooth printer for printing alarm records

Clock Setting: Modify system time

Warning: Do not charge the portable gas detector at the detection site to avoid fire or explosion caused by sparks generated by plugging and unplugging the charger. Try not to charge the portable gas detector when it is on to avoid affecting charging speed and battery life.

3.4 Detailed Operation Instructions



In normal standby detection state, click the left and right keys (red mark in Figure 3) to enter the channel detailed detection interface (Figure 4), and switch channel display left and right. In the to-be-detected state, click the setting key (green mark in Figure 3), enter password 1111, click OK to enter the system function interface (Figure 5).

1). Alarm Record: Record alarm data.

Enter the system function interface and select the first item "Alarm Record". See Figure 6.

Interface display: Alarm channel, alarm time, alarm status, alarm concentration, total alarms, alarm position.

Blue mark (Figure 6): Print alarm record; Red mark (Figure 6): Clear alarm record. Click Exit to return to the detection interface.

报警记录	低报设置
报警通道：	当前通道：
报警时间：	当前数值：
报警状态：	修改数值：
报警浓度：	修改状态：
总数：位置：	
打印记录	设置
清空记录	保存

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2). Low/High Alarm Setting: Set low and high alarm values for channels.

A) Select "Low/High Alarm Setting" in the system function to enter the alarm setting interface. See Figure 7.

B) Press the setting key (blue mark in Figure 7) to display Figure 8, enter the corresponding setting value, and click Save (red mark in Figure 7). Click Exit to return to the detection interface.

Note: The input value cannot be higher than the channel range, and the input value shall be consistent with the decimal places of the displayed value.

3) . Zero Setting: Enter zero shift.

零点设置

当前通道：

当前数值：

修改数值：

修改状态：

设置

保存

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A) Press left and right keys to switch and select channels. See Figure 9.

B) Click Setting, modify the value to display the current zero value, click Save when the value is stable, the modification status shows complete, click Exit to return to the detection interface.

Note: This operation is prohibited for the carbon dioxide channel. Since the modification must be saved and completed before exiting if the setting key is clicked for this operation, use this modification with caution.

4) . Instrument Calibration: Enter calibration. See Figure 10.



A) Press left and right keys to switch and select channels. See Figure 10. After selection, press the setting key to enter the standard gas value.

(Note: Methane and carbon dioxide must be calibrated with 1/2 range standard gas.)

B) Press OK to save the standard gas value. Pass in the standard gas, click Save when the AD value is stable. Click Exit to return to the detection interface.

5). Name Setting, Unit Setting, Range Setting.

Note: This setting is completed at the factory and shall not be changed by the customer without permission.

6). Accuracy Setting: Modify channel accuracy.

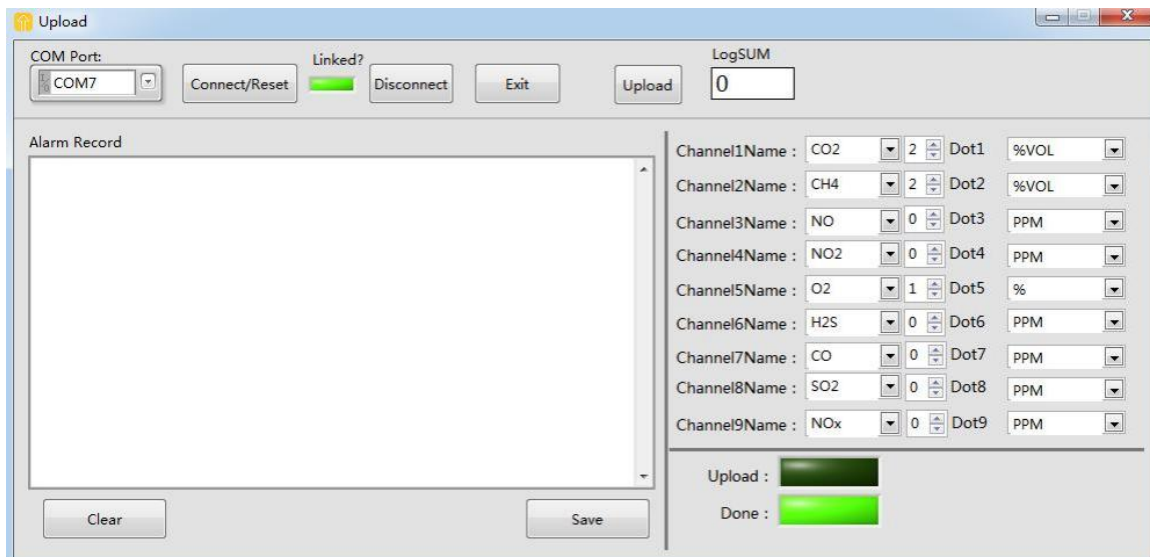
A) Click Accuracy Setting on the system interface to enter the accuracy setting interface (Figure 11).

B) Click Setting to enter decimal places (e.g., enter 2 for 0.01; enter 1 for 0.1). Click Exit to return to the detection interface.

7). Upload Setting: Connect to computer to transmit alarm record data to computer.

A) Click the Upload Setting button, the upload status displays "Waiting for PC access". See Figure 13.

B) Connect to the computer, run the computer software, select the computer USB port connected by the data cable, click Connect, and click Upload. See Figure 12.



The computer displays the interface as shown in Figure 12, and the upper computer status of the detector interface changes to "PC Ready". Click the upload button on the detector screen, the upload status changes to "Uploading". Click Exit to return to the detection interface after uploading is completed.

Note: This operation must be completed within 10s. Repeat steps B and C if timeout occurs.

8). Bluetooth Setting: Turn on/off Bluetooth function.

To print paper alarm records with this function, first turn on the power switch of the Bluetooth printer, then turn on the Bluetooth switch of the detector. Turn off the Bluetooth function in time after use to reduce power consumption and obtain longer

battery life. (The Bluetooth printer should also be turned on and off as needed to reduce power consumption.) Click Exit to return to the to-be-detected interface.

9) . Time Setting: Modify system time. See Figure 16.



10)

Click the up and down keys behind the corresponding year, month and day to change the time, click Save to complete the modification after modification. Click Exit to return to the detection interface.

Charging Function Description:

The charger indicator is red, indicating "Charging", and all product keys are on. The charger indicator is green when not charging.

The screen displays "Charging" during charging, and it is strictly prohibited to power on at this time.

4. Usage and Precautions

4.1 Prevent the unit from falling from a height or being subjected to severe vibration.

4.2 The unit may not work normally in the presence of high-concentration gas.

4.3 Please operate and use in strict accordance with the manual, otherwise it may lead to inaccurate detection results or damage to the unit.

4.4 This product shall not be stored or used in environments containing corrosive gases (such as high-concentration chlorine gas), nor in other harsh environments including excessively high/low temperature, high humidity, electromagnetic fields and strong sunlight.

4.5 If the surface of the unit is dirty after long-term use, please wipe it gently with a clean soft cloth dipped in water. Do not use corrosive solvents or hard objects to wipe the surface, otherwise it may scratch or damage the surface.

4.6 To ensure detection accuracy, the unit should be calibrated regularly, and the verification period shall not exceed one year.

4.7 Remove the lithium battery and sensor of the waste portable gas detector and send them to the designated place or return them to our company. Do not throw them into the trash can casually.

4.8 For any application or usage failure beyond the description in this manual, please contact our company for solutions.

4.9 Do not disassemble or replace the battery pack or charge the battery pack in explosive gas environments. Do not use peripheral plug-in equipment without explosion-proof certification or replace sensors in explosive gas environments.

4.10 For products with explosion-proof certification, it is not allowed to replace or modify components or structures affecting explosion-proof performance without permission.

5. Troubleshooting

Fault Phenomenon	Possible Cause	Solution
Cannot power on	Low voltage	Charge in time
Crash	Contact dealer or manufacturer for maintenance	
Circuit fault	Contact dealer or manufacturer for maintenance	
No response to detected gas	Circuit fault	Contact dealer or manufacturer for maintenance
Inaccurate display	Sensor expired	Contact dealer or manufacturer to replace sensor
Inaccurate display	Not calibrated for a long time	Calibrate in time
Incorrect time display	Battery completely exhausted	Charge in time and reset time
Incorrect time display	Strong electromagnetic interference	Reset time

Zero calibration unavailable	Excessive sensor drift	Calibrate or replace sensor in time
"-0" displayed on normal detection interface	Sensor drift	Perform zero calibration
Full scale displayed on normal detection interface	Sensor fault	Contact dealer or manufacturer to replace sensor

6. Storage

The portable gas detector should be stored in a ventilated room with an ambient temperature of $-20^{\circ}\text{C}\sim 60^{\circ}\text{C}$ and relative humidity not more than 93%, and the air shall not contain harmful gases or impurities corrosive to the portable gas detector.

7. Accessory List

Outer packing box for portable gas detector *1, Portable gas detector *1, Detector charger *1, Instruction manual *1, Certificate & warranty card *1, Bluetooth printer *1, Data cable for computer upload *1, Bluetooth printer charger *1.

Gas Detector Parameter Table

DetectedGas	MeasuringRange	OptionalRange	Resolution	ResponseTime
Combustible EX	0-100%LEL	0-100%VOL(IR)	1%LEL/1%vol	$\leq 10\text{s}$
Carbon Monoxide CO	0-1000PPM	0-50/2000/5000 PPM	0.1/1PPM	$\leq 10\text{s}$
Oxygen O ₂	0-30%VOL	0-30%/0-100%VOL	0.1%vol	$\leq 10\text{s}$
Hydrogen Sulfide H ₂ S	0-100PPM	0-50/200/1000 PPM	1/0.1PPM	$\leq 10\text{s}$
Ammonia NH ₃	0-100PPM	0-50/500/1000 PPM	1/0.1PPM	$\leq 15\text{s}$
Benzene	0-100PPM	0-1/10/50/100PPM	0.01/0.1PPM	$\leq 20\text{s}$

Hydrogen	0-100%LEL	0-1000PPM	1%LEL/1PPM	≤20s
Natural Gas	0-100%LEL	0-100%LEL	1%LEL	≤20s
Methane	0-100%LEL	0-100%VOL	1%LEL/1%vol	≤20s
Fluorine	0-10PPM	0-1/10PPM	1/0.1PPM	≤20s
Hydrogen Chloride	0-20PPM	0-20/50/100PPM	0.01/0.1PPM	≤20s
Nitrogen N2	0-30%VOL	0-30%VOL/100%VOL	0.1%LEL/1PPM	≤20s
Hydrogen H2	0-100%LEL	0-1000PPM	1%LEL/0.1PPM	≤20s
Chlorine CL2	0-20PPM	0-10/100PPM	0.1PPM	≤20s
Nitrogen Oxides	0-20PPM	0-50/1000PPM	0.1/1PPM	≤20s
Formaldehyde	0-20PPM	0-50/100PPM	1PPM	≤20s
SulfurDioxide SO2	0-20PPM	0-50/1000PPM	0.1/1PPM	≤20s
NitricOxide NO	0-250PPM	0-500/1000PPM	1PPM	≤20s
Nitrogen Dioxide NO2	0-20PPM	0-50/1000PPM	0.1/1PPM	≤20s
Phosphine	0-20PPM	0-20/100PPM	0.1PPM	≤20s
CarbonDioxide	0-5000PPM	0-1%/5%/10%VOL(100%VOL)	1PPM/0.01%VOL	≤20s
HydrogenFluoride	0-10PPM	0-1/10/50/100PPM	0.01/0.1PPM	≤20s

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