

Low-power point-type gas detector operating instruction

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Version: V1.02

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Catalogue

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1. Product Overview

This gas detector employs advanced ultra-large-scale integrated circuit technology and is designed in accordance with international standard intelligent specifications, representing a fully intelligent gas detection and alarm system utilizing hybrid digital-analog communication technology. Featuring cutting-edge technology, outstanding performance, high stability, communication capabilities, and self-diagnostic functions, it offers convenient installation and maintenance. As a typical intelligent field monitoring instrument, its performance is fully demonstrated, significantly meeting the stringent requirements for equipment reliability in industrial safety monitoring. The gas detection and alarm system finds wide application in industries such as petroleum, chemical, metallurgy, refining, gas transmission and distribution, and biochemical pharmaceuticals, enabling wireless detection, control, and alarm operations.

Products are organized according to:

GB 12358-2024 "General Technical Requirements for Gas Detection and Alarm Devices in Workplaces"

GB15322.1-2019 "Flammable Gas Detectors – Part 1: Point-type Flammable Gas Detectors for Industrial and Commercial Applications"

GB/T 50493-2019 "Design Standard for Detection and Alarm Systems of

Flammable and Toxic Gases in Petrochemical Industries"

Explosion-proof compliance follows:

GB/T 3836.1-2021 "Explosive Atmospheres – Part 1: Equipment – General Requirements"

GB/T 3836.2-2021 Explosive Atmospheres – Part 2: Equipment protected by flameproof enclosure "d"

2. Instrument Features and Functions

1. Battery-powered, ultra-long standby time
2. The sensor unit incorporates built-in temperature compensation and calibration coefficients, featuring high accuracy and excellent linearity.
3. LCD Liquid Crystal Display
4. Features built-in simple calibration, automatic zero-checking, and automatic compensation programs
5. Wireless connection controller with radiation and electromagnetic interference resistance, reducing false alarms
6. Cost-effective and easy to install and commission

Qualification :

Detection Principle: Catalytic combustion type

Detected gas: See label

Sampling method: Natural diffusion

Test Range: See label

Resolution: See label

Accuracy: See label

Response Time: Measuring flammable materials <30s

Environmental temperature: -20°C to 55°C

Relative humidity: <95%

Explosion-proof type: Intrinsically safe

Explosion-proof rating: See label

Protection rating: IP66

Power source: Powered by a 3.6V battery

Detector connection to host: Wireless

Pressure Range: 86 kPa to 106 kPa

Dimensions: 175 mm × 185 mm × 90 mm

Installation Steps:

1. Open the packaging, remove three suction cups and mounting screws, and install them into the designated holes on the housing;
2. Remove the antenna and install it at the corresponding position on the detector;
3. Secure the detector at the location to be monitored.

3. Detector Panel Operations:



Operation Panel Magnetic Rod Operation Panel Magnetic Rod

- [Power] Operation indicator light
- [M] Power button, menu key, confirm key
- [Malfunction] Fault indicator light
- [▶] Wake-up key, Shift key, Exit key
- [Low Report] Low Report Indicator Light
- [▲] Power off key, Add key
- [High Report] High Report Indicator Light

Power-on procedure: Place the magnetic stick at position M for 3 seconds to turn on the device.

Power-off procedure: Short-press [▶] on the magnetic stick to wake it up, then place the magnetic stick at ▲ for 3 seconds to power off.

Menu Options: Long press [▶] with the Magnetic Stick to wake it up, or long press [M] to enter the password [1111]

Power-up sequence: Start the controller first, then start the detector.

4. Detector Status Description

State	Explain
Boot initialization	Long-press the M key for 3 seconds to power on; the audio and light alarm will sound once, the power indicator will turn on, and the countdown will display normally.
Off State	Long-press the ▲ key for 3 seconds to shut down; the display will end when the countdown finishes
Dormant state	The display shows the concentration correctly, and the power indicator is off.
Wake-up State	The display shows the concentration correctly, and the power indicator is on.
Menu Status	Wake-up state: Press and hold the M key to enter password verification. Enter the menu after successful verification
Alarm Status	When the concentration exceeds the low alarm threshold, the alarm indicator light turns on and the audio-visual alarm is activated.

5. Instrument Operation

5. 1. Buttons and Functions

Key	Function
M Key	Power button: Long press for 3 seconds when powered off to turn on Menu Key: Short press while powered on to enter password verification; confirm to access the menu Confirm Key: Verify current settings when operating the menu
► Key	Wake Key: Short press to wake from sleep mode; power light turns on Shift Key: Menu Status Number Shift Exit Key: Exit operation for certain functions

▲ Key	Power button: Hold for 3 seconds in standby mode to power off Increase Key: Increase the menu status number
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5. 2. Instrument System Function Menu Description

Instrument Function List:

Use Function List					
FU-1	Underreporting Settings	FU-2	High Report Settings	FU-3	Accuracy Settings
FU-4	Range Settings	FU-5	Zero Point Translation	FU-6	Calibration Settings
FU-7	Mode Settings	FU-8	Address Settings	FU-9	Types of Gases
FU-A	Unit Settings	FU-C	Channel Settings		

The specific operations for the menu functions are shown in the table below:

Display Image Parameters	Detailed Operation Instructions
Address: 88 Menu Channel Zero 0 0 0 0 %LEL %VOL PPM Graph 1 Address: 88 Menu Channel Zero 1 1 1 1 %LEL %VOL PPM Graph 2	1. Password Verification: Short press the "M" key to enter the password verification screen (Figure 1). Short press " ► " to move the cursor, and short press " ▲ " to adjust digit size; the interface will be adjusted as shown in Figure 2. Short press the "M" key again to access the menu.
Address: 88 Menu Channel Zero F U - 1 %LEL %VOL PPM Graph 3 Address: 88 Menu Channel Zero 8 8 2 0 %LEL %VOL PPM Graph 4	2. Underreporting Settings After entering the menu, the cursor appears as shown in Figure 3. Press and hold the "M" key to proceed to the next interface (Figure 4). Press and hold the " ► " or " ▲ " keys to adjust number size. Once data settings are complete, press and hold "M" to save the data and

	automatically return to the previous interface. Note: When setting a low report value, it cannot exceed the high report value; otherwise, the setting will fail.				
Address: 88 Menu Channel Zero <table border="1"> <tr> <td data-bbox="240 779 657 958">F U - 2</td> <td data-bbox="657 779 772 958"> %LEL %VOL PPM </td> </tr> </table> Graph 5 Address: 88 Menu Channel Zero <table border="1"> <tr> <td data-bbox="240 1104 657 1283">8 8 5 0</td> <td data-bbox="657 1104 772 1283"> %LEL %VOL PPM </td> </tr> </table> Graph 6	F U - 2	%LEL %VOL PPM	8 8 5 0	%LEL %VOL PPM	3. High Report Settings: To enter the menu, press and hold the "▲" key to position the cursor as shown in Figure 5; press and hold "M" to proceed to the next interface (Figure 6); press and hold both "▶" and "▲" keys to adjust number size. After completing data settings, press and hold "M" to save the data and return to the previous interface. Note: When setting a high reading value, it must not exceed the range limit; otherwise, the setting will fail.
F U - 2	%LEL %VOL PPM				
8 8 5 0	%LEL %VOL PPM				

Address: 88 Menu Channel Zero

F U - 3

%LEL
%VOL
PPM

Graph 7

Address: 88 Menu Channel Zero

8 8 8 1

%LEL
%VOL
PPM

Graph 8

4. Precision Settings:

After entering the menu, press and hold the "▲" key to position the cursor as shown in Figure 7; press and hold the "M" key to proceed to the next interface (Figure 8); press and hold both the "▶" and "▲" keys to adjust settings. Once configured, press and hold "M" to save data and automatically return to the previous interface.

Note: This is related to sensor characteristics and is pre-set at factory manufacture. For further instructions, consult the manufacturer.

Address: 88 Menu Channel Zero F U - 4 %LEL %VOL PPM Graph 9	5. Range Settings: After entering the menu, press and hold the "▲" key to position the cursor as shown in Figure 9; press and hold "M" to proceed to the next interface (Figure 10); press and hold both "▶" and "▲" keys to adjust settings. Once data configuration is complete, move the cursor to the fourth position, press "M" to save the data, and the system will automatically return to the previous interface.
Address: 88 Menu Channel Zero 8 1 0 0 %LEL %VOL PPM Graph 10	
Address: 88 Menu Channel Zero F U - 5 %LEL %VOL PPM Graph 11	6. Zero Point Translation: After entering the menu, press and hold the "▲" key to position the cursor as shown in Figure 11, then press and hold "M" to display the current zero value (Figure 12). Press M to save and exit, or press "▶" to exit without saving. Warning: Do not operate without
Address: 88 Menu Channel Zero 1 3 7 5 %LEL %VOL PPM Graph 12	

	professional knowledge. Contact the manufacturer for instructions.
Address: 88 Menu Channel Zero F U - 6 %LEL %VOL PPM Graph 13	7. Single-point calibration: After entering the menu, press and hold the "▲" key to position the cursor as shown in Figure 13; press and hold the "M" key to proceed to the next interface (Figure 14); use the "►" and "▲" keys to adjust the standard gas values. Once data settings are complete, press and hold the "M" key to save the data and automatically proceed to the next interface (Figure 15). At this point, introduce the standard gas; once the readings stabilize, press
Address: 88 Menu Channel Zero F U 4 0 %LEL %VOL PPM Graph 14	
Address: 88 Menu Channel Zero 8 8 8 0 %LEL %VOL PPM Graph 15	

	and hold the "M" key to save the data and press the "►" key to exit and return to the detection interface. If the displayed data matches the standard gas values, calibration is successful. Warning: Do not operate this device without professional knowledge, as it may affect detector accuracy.						
<table border="1"> <tr> <td colspan="2" data-bbox="240 1196 774 1272">Address: 88 Menu Channel Zero</td></tr> <tr> <td data-bbox="240 1272 655 1442" rowspan="3">F U - 7</td><td data-bbox="655 1272 774 1321"></td></tr> <tr> <td data-bbox="655 1321 774 1370">%LEL</td></tr> <tr> <td data-bbox="655 1370 774 1442">%VOL PPM</td></tr> </table> Graph 16	Address: 88 Menu Channel Zero		F U - 7		%LEL	%VOL PPM	8. Pattern Settings: Already configured at factory; do not operate
Address: 88 Menu Channel Zero							
F U - 7							
	%LEL						
	%VOL PPM						

Address: 88 Menu Channel Zero F U - 8 %LEL %VOL PPM	9. Address Settings: After entering the menu, press and hold the "▲" key to position the cursor as shown in Figure 16; press and hold "M" to navigate to the next interface (Figure 17); press and hold both "▶" and "▲" keys to adjust number size. Once data settings are complete, press "M" to save the data and automatically return to the previous interface.
Graph 17 Address: 00 Menu Channel Zero 8 8 8 1 %LEL %VOL PPM Graph 18	
Address: 88 Menu Channel Zero F U - 9 %LEL %VOL PPM Graph 19	10. Gas Type Settings: Already configured at factory; do not operate
Address: 88 Menu Channel Zero F U - A %LEL %VOL PPM Graph 20	11. Unit Setup: Already configured at factory; do not operate

Address: 88 Menu Channel Zero		12. Channel Settings: Already configured at factory; do not operate
F U - C		
Graph 21		

6. matters need attention

1. This device must be used in environments free of corrosive gases and protected from drops or severe vibrations.
2. Do not blow the detector directly with high-speed airflow, as this may affect test results.
3. Avoid frequent exposure of this device to high-concentration gas samples, as it may shorten the sensor's service life.
4. For mixed flammable gases or liquid vapors, the detection results of this device may exhibit certain inaccuracies.
5. All units are calibrated before leaving the factory; new units do not require secondary calibration.
6. This product is explosion-proof certified.

7. Warranty and Maintenance

1. This product has a one-year warranty period; damages caused by human error or improper use are not covered.
 2. If the sensor has reached its end of life, please contact our company to replace it with a new one.
 3. If the user cannot resolve the issue, they may return the instrument to our company for repair.
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