

Portable Single Gas Detector

User Manual v1.1.1

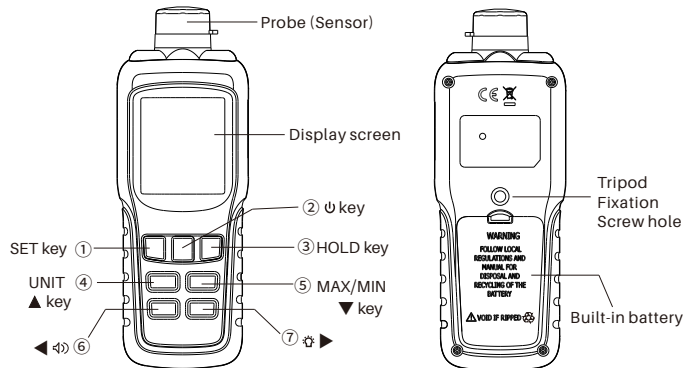


1. Introduction

YW-GS series instruments are portable single gas detectors. The instrument uses natural diffusion mode to detect gas, and sensitive elements use high-quality gas sensors. They can be used in petroleum, chemical industry, environmental protection, metallurgy, refining, gas transmission and distribution, and biochemical medicine fields.

2. Product Description Diagram

2.1 Appearance

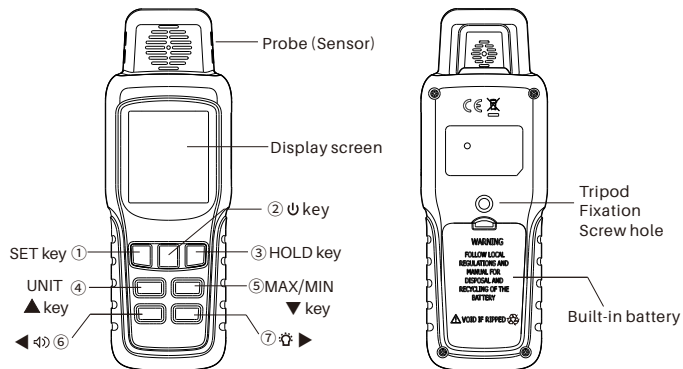


Button function

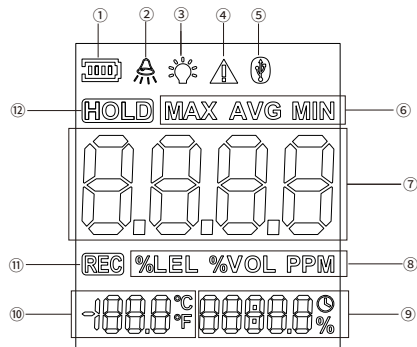
- ① SET key: Enter/exit setting
- ② ⏏ key: Power switch
- ③ HOLD key: Display hold

- ④ UNIT ▲ key: Switch temperature unit, value increase
- ⑤ MAX/MIN ▼ key: Switch measurement mode, value decrease
- ⑥ ◀▶: Turn on/off alarm beep sound, move digits left
- ⑦ ⏏▶: Turn on/off backlight, move digits right

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2.2 LCD display



- ① Battery power indicator
- ② Beep alarm switch status
- ③ Backlight switch status
- ④ Alarm status
- ⑤ USB prompt
- ⑥ Maximum/average/minimum
- ⑦ Value
- ⑧ Data unit
- ⑨ Humidity display
- ⑩ Temperature display
- ⑪ Data recording prompt
- ⑫ Data hold

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3. Turn on and off

(1) Power on: For Model B, long press the "⏻" button to turn on the instrument. The instrument will emit a long beep, and the screen will fully display for about 3 seconds before entering the sensor preheating countdown. After the countdown is completed, enter the normal measurement state; if you want to actively exit the preheating state, you can long press the "SET" button to exit. There is no preheating stage for other models. They will directly enter the measurement interface after being turned on.

(2) Power off: Long press the "⏻" button to power off.

4. Backlight

The backlight can be turned on or off by short pressing the "☀▶" button, and the display screen will display the backlight symbol when the backlight is turned on.

5. Alarm Sound

Short press the "◀⏻" button to turn on or off the alarm beep sound. After opening, the screen will display the beep sign.

6. Temperature Units

You can short press the "UNIT ▲" button to convert between Fahrenheit and Celsius, while the display screen displays the corresponding temperature unit symbol.

7. Maximum/Minimum Value Mode

Short press the "MAX" button to enter the maximum value mode, and the screen will display the icon of the maximum value mode. When entering this mode, the current value will be taken as the maximum value. After entering, the data will begin to update the maximum value and display on the screen. The temperature and humidity data will not be involved in the maximum value mode statistics and will still be displayed normally. The minimum value mode is the same.

8. Alarm Setting

Under the main measurement interface, short press the "SET" button to enter the setting menu. Press the "SET" button again to select a menu item. After selecting a menu item, follow the steps below to set the alarm points:

Step 1: Set "AL1 (ALARM 1)" alarm point 1, short press "SET" button to enter the setting, short press "◀⏻" or "☀▶" button to move the selected digit, the selected digit will blink; short press "UNIT ▲" or "MAX/MIN ▼" button to adjust the value of the blinking digit, setting it to a number between 0 and 9 based on the selected digit;

Step 2: After setting the alarm point 1, short press the "SET" button to enter the "AL2 (ALARM 2)" alarm point 2 setting while saving the value of alarm point 1, and the setting operation is the same as Step 1;

Step 3: After completing the setting, short press the "SET" button to enter the next option setting or long press the "SET" button to return to the main measurement interface.

Note:

- a. Alarm point 1 is a low alarm point, and alarm point 2 is a high alarm point.
- b. The values of the high and low alarm points should not be the same, and the value of the high alarm point must be greater than the value of the low alarm point.
- c. **Model A:** If the measured value exceeds the set high or low limit, the instrument will emit an alarm sound. When the measured value exceeds the high alarm point, the instrument will emit an alarm sound; when the measured value is lower than the low alarm point, the alarm sound of the instrument will be faster.

For other models, if the measured value exceeds the low alarm point, the instrument will emit the alarm sound; as the measured value approaches the high alarm point, the alarm sound emitted by the instrument will become more rapid.

9. Automatic Shutdown Setting

The instrument is automatically shut down after 10 minutes of no-button operation by default. The instrument can be set to an automatic shutdown time of 0~99 minutes. The setting operation is the same as Step 1 of the alarm point setting. After the setting is completed, short press the "SET" button to save the setting value and return to the main measurement interface. When the instrument setting value is 0, the interface displays OFF, and the instrument will not automatically shut down.

10. Data Setting Description

In the setting interface, it will automatically exit the setting for 30 seconds without any button operation, and the unsaved value will be automatically discarded.

11. Check the Instrument Version Number

When the instrument is fully displayed during startup, short press the "SET" button and the "HOLD" button (combination key), and the interface will show the version number.

12. Calibration

(1) When the screen shows the instrument version number, long press the "SET" button to enter the device calibration. During calibration, the backlight is automatically opened, and the instrument will display the calibration interface.

(2) **Model B:** Short press the "SET" button to start the preheating stage; the interface will show the countdown of 300 seconds; the lower right corner will show the current calibration state as 400ppm background calibration; and enter the automatic calibration stage after the preheating countdown ends.

For other models: Enter calibration point 1. The lower left corner of the screen shows the current calibration point group; the lower right corner will show the unit and the zero calibration under that unit. Calibration point 1 needs to be calibrated in an environment without the corresponding unit gas. You can use the "◀, ▶" buttons to select the median, "▲, ▼" buttons to adjust the numerical value. After the environmental gas and instrument values stabilize, short press the "SET" button to calibrate the zero value, and then the screen will prompt a calibration result. If the calibration is successful, it will jump to calibration point 2, which requires calibration in an environment with the corresponding unit gas. The calibration method is the same as calibration point 1.

(3) If the calibration is successful, it will display "SUCC" and the calibration is complete. If the instrument calibration fails, it will display "Err". When calibration fails, any operation except for turning off the instrument will not exit calibration.

Note:

a. In calibration mode, press and hold the "SET" button to exit the calibration and return to the main measurement interface; under calibration group, pressing and holding the "SET" button will not process the current calibration point and will jump to the next process or the next calibration

point.

b. Before starting calibration, please place the instrument in the corresponding gas environment and calibrate the instrument while it is stationary.

c. After the calibration is completed, please wait patiently for 15 seconds. The instrument can automatically return to the main measurement interface or return by pressing and holding the "SET" button.

d. This instrument is a precision instrument. Non-professionals are advised not to calibrate it randomly to avoid affecting measurement accuracy.

13. Power Capacity Status

When the instrument prompts "🔋", please charge or replace the battery in time.

14. Restore Factory Settings

When the screen displays the instrument version number, press and hold the "◀ 🔧 ▶" button to restore factory settings.

15. Precautions

- Please operate the instrument correctly under the conditions specified by the technical parameters; otherwise, it may damage the instrument or lead to inaccurate test results.
- Please do not use or store the instrument in high temperatures, low temperatures, high humidity, strong electromagnetic fields, or environments containing corrosive gases (such as higher concentrations of chlorine gas).
- In order to ensure testing accuracy, please calibrate the instrument regularly, and the calibration cycle should not exceed one year.
- The instrument may not be used properly in the presence of high concentrations of gas.
- Prevent the instrument from falling from a height or suffering severe vibrations.
- In environments containing explosive gases, charging, disassembling, or replacing the sensor should not be performed to avoid sparks caused during the operation that may lead to fires or explosions.
- In environments containing explosive gases, peripherals without explosion-proof certification should not be used.

- When there is dirt on the surface of the instrument, please use a clean, soft cloth dipped in water to gently wipe it; avoid using hard objects or corrosive solvents to clean the instrument to prevent damaging it.

16. Product Specifications

Model	A	B	C	D	E	F	G
Detected gas	Oxygen	Carbon dioxide	Carbon monoxide	Hydrogen sulfide	Nitric oxide	Hydrogen	Ammonia
Measurement range	0~30%vol	400~10000ppm	0~1000ppm	0~100ppm	0~250ppm	0~1000ppm	0~100ppm
Indication error	≤±5%FS	± (5%reading+50ppm) 400~2000ppm, other ranges are for reference only	≤±5%FS				
Resolution	0.1%vol	1ppm					0.1ppm
Response time	T<45s						
Operation environment	Temperature: -10~50°C; Humidity: <95%RH						
Storage environment	Temperature: -10~55°C; Humidity: ≤85%RH (The air must not contain harmful gases or impurities that can corrode the sensor)						
Sensor life	2 years (Depending on the specific use environment and sensor)						
Protection class	IP40						
Dimensions	180×65×34mm						
Material	ABS						