

Instruction of SPD200/CO

As this device is an intellectual precise measurement apparatus, it is very important that you read through these instructions before using this device.

I. Introduction

This carbon monoxide detector can detect the existence of carbon monoxide and inspect its thickness between 1~1000PPM. It can be used in industries such as mining, metallurgy, petrochemical, pharmaceutical, waste water treatment, papermaking and infrastructure construction, etc.

The product features:

- It uses the intellectualized design and has gotten multiple functions.
- With highlight backlight display and acousto-optic alarming, it is easily configured.
- The embedded temperature compensation enables the device to measure the correct value in the environment temperature of -10~50°C.
- As its case is ergonomically designed, it looks handsome, feels good and is easy to carry.

II. Technical features

Measurement display: displays with 4 digit LCD

Operation temperature: -10~50°C (14~122°F)

Storing temperature: 0~40°C (32~104°C)

Operation humidity: 0~99%RH (relative humidity)

Storing humidity: 20%~80% RH (relative humidity)

Measuring range: 0~1000PPM

Resolution: 1PPM

Measurement error: ±5%

Over measurement range display: --OL--

Alarming method: acousto-optic alarming

Working principle of the sensor: electrochemistry sensor

The service life of the sensor: 2 years (it can be then replaced)

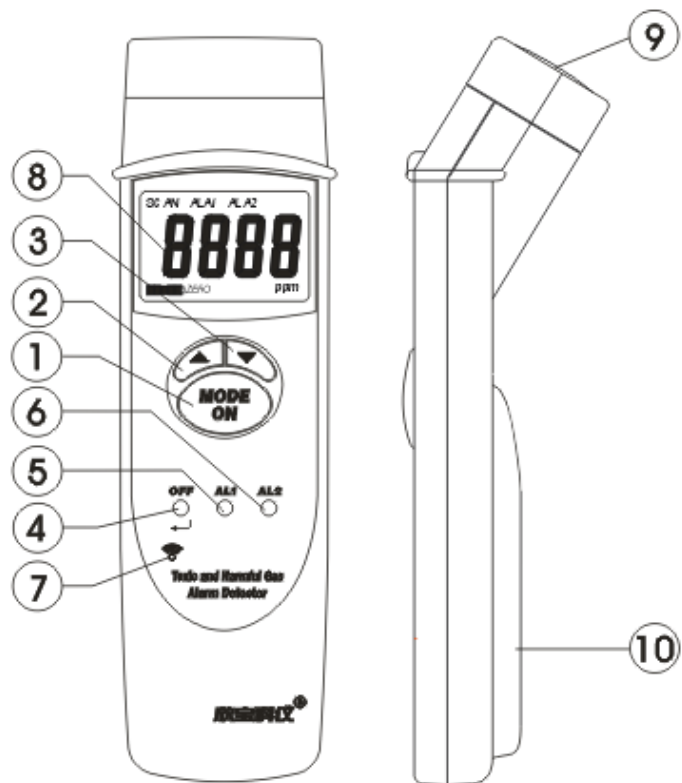
Power supply: 3×1.5V AAA alkaline batteries

Battery service life: about 100 hours of continuous use (when the backlight is off).

Size: 172×51×26 (mm)

III. Explanation of the appearance

- ①: MODE ON: press and hold for 2s to enable it
- ②: Position shifting button (▲)
- ③: Figure adjusting button (▼)
- ④: MODE OFF: press and hold for 2s to disable it
- ⑤: The first siren (yellow indicator)
- ⑥: The second siren (red indicator)
- ⑦: Buzzer
- ⑧: Display
- ⑨: Sensor
- ⑩: Battery compartment cover (push the cover downwards to open it)



IV. Explanation of the display



8888	Displays the measured value
SCAN	Measurement prompt
ALA1	Prompt for the grade I alarming
ALA2	Prompt for the grade I alarming
PPM	Unit prompt
	Battery volume prompt
ZERO	Prompt of zero calibration

V. How to operate it:

1. Enable and disable

Press the MODE ON for 2s after the batteries are ready to enable it. The device is in the measuring status after being enabled and the "SCAN" shows in the display; press and hold the MODE OFF for 2s to disable it.

2. Backlight On/Off

You can switch the backlight on or off by slightly touching the MODE OFF when the measurement is in the status of "SCAN".

3. How to set up the alarming grade for the device

Switch the device to the preset status of the grade I alarming-line by slightly touching the MODE ON button when the device is in status of measurement "SCAN" and the "ALA1" shows in the display; touch the Position Shift button and Figure Adjusting button (0~ 9) to set up the data of the grade I alarming-line (if you touch the MODE ON button now, you would give up setting up the grade I alarming-line enters into the measurement status); touch the MODE OFF button to save the setup value for the grade I alarming-line and switch the device to the status for setting up the grade II alarming-line and the "ALA2" shows in the display. Touch the Position Shift button and Figure Adjusting button (0~9) to set up the data of the grade II alarming-line (if you touch the MODE ON button now, you would give up setting up the grade II alarming-line enters into the measurement status); touch the MODE OFF button to save the setup value for the grade II alarming-line and switch the device to the status of zero calibration. Touch the MODE OFF button slightly to exit zero calibration and the alarming line of the device is set up. (The factory default setup value for the grade I alarming-line is 35PPM and 100PPM for the grade II alarming-line)

4. Zero calibration for the device (the content of carbon monoxide in clean air is about 0PPM)

Switch to the status of the grade I alarming-line by slightly touching the MODE ON button when the device is in the status of "SCAN"; then touch the MODE OFF button to skip the status for setting up the grade I and grade II alarming-line and enter into the status of zero calibration; "ZERO" and "0000" show in the display and "0000" flickers; you must keep the device in clean air for more than 1 minute and then touch the MODE OFF to save the value of zero calibration; then the zero calibration is finished. The device will switch to the status of measurement "SCAN" automatically.

5. Meter alarming

The device alarms when the device measurement value is higher than the preset value. The buzzer alarms and the yellow indicator flickers when the device measurement value is higher than the value preset for the grade I alarming-line; and the buzzer alarms and the red indicator flickers when the device measurement value is higher than the value preset for the grade II alarming-line.

6. Device calibrating (it should be operated by a professional only and there must be a calibrated environment of carbon monoxide)

Due to the characters of the sensor itself, the output of the sensor may reduce with time (less than 2% per month); therefore, the sensor should be calibrated when it is used for a certain period of time (half year is recommended as the calibration interval). Calibration method: Switch off the device and take out the batteries. Press down the MODE OFF button and load batteries again. The device will be enabled automatically when the batteries are loaded; release the MODE OFF button and cover the battery compartment (to prevent the battery dropping out during calibrating). The device will display "--00"; you cannot enter into the calibration status without keying in the password "--86". Touch the Position Shift button slightly (selecting the changing position) and Figure Adjustment button (0~ 9) to key in the password. The device enters into the calibration status automatically when you key in the correct password (when a wrong password is keyed in, exit the calibration status and return to the measurement status by slightly touching the MODE ON button or MODE OFF button). The previous value of the carbon monoxide calibrated will be displayed on the device. Touch the Position Shift button (selecting the changing position) and Figure Adjustment button (0~ 9) to adjust the figures displayed (to get the calibrated thickness value of the carbon monoxide to be used currently; if it is same as the thickness value of the carbon monoxide calibrated last time, it is unnecessary to change the value). Keep the device in the environment with the calibrated carbon monoxide for at least 2 minutes and touch the MODE OFF to save the calibrated data. The device then returns to the measurement status. Press and hold the MODE OFF button for 2s and the device is disabled and the device calibrating is finished.

VI. Attention:

- 1 This device is a precise measurement apparatus. To avoid damaging the device, keep it away from water and hot objects (more than 60°C).
- 2 If the device will be measuring for long time, please turn off the backlight to save power consumption and prolong the service life of the battery.
- 3 When "■■■■■" is displayed, the battery is fully charged; the small black frame in the battery sign reduces as the battery power volume reduces. When "□ □" is displayed, it indicates the power volume of the battery is too weak and the device cannot work normally. Please promptly replace the battery to avoid any unnecessary loss. First turn off the device, then take out the used batteries and put new batteries in.
- 4 The device is disabled automatically if no button is pressed in 10 minutes when it is in the setup status.
- 5 When the buzzer alarms, the measured value is higher than the alarming-line you have set up; so please take measures to protect people's lives and property.

- 6 If you are not going to use this device for a long period of time, turn off the device and take out the batteries to avoid damage due to the battery oozing liquid. If you take out the batteries when the device is on, the data preset for the grade I and grade II alarming-line will be lost; when the device is powered on and enabled, the previous values preset for the grade I and grade II alarming will return. If you are going to save the values preset for the two grades of alarming lines, you must turn off the device normally once.
- 7 When there is a big difference between the displayed value measured in the clean air by the device and the 0PPM value, a ZERO calibration is required for the device. For how to operate it, see item 4.

VII. Tips about carbon monoxide

The thickness of carbon monoxide	Explanation
0—1PPM	The normal content of carbon monoxide in air
50PPM	The maximum thickness of carbon monoxide when a person will stay in a sealed room for 8 hours
100PPM	The thickness threshold of carbon monoxide for the environment that a person is in
200PPM	Person may get a slight headache, become tired, nauseas and dizzy
800PPM	A person may be dizzy, nauseas and tic and die in 2 to 3 hours