

I. Introduction

Carbon Monoxide Meter Instruction Manual



Version: 8805-EN-00

Pure carbon monoxide (CO) is colorless, odorless, and non-irritant gas: molecular weight: 28.01; density: 1.250g/l; freezing point: -207°C; boiling point: -190°C. Its solubility in water is quite low, but it dissolves instantly in ammonia water. Air mixed explosion limit is between 12.5% and 74%. After entering human body, carbon monoxide will combine with hemoglobin in blood, making the hemoglobin not able to combine with oxygen, which causes oxygen deficit to organism organization, leading to death from suffocation. Therefore, carbon monoxide is toxic, and is colorless, odorless, and tasteless, which is easy to be ignored and thus causing poisoning.

Gas perniciousness: carbon monoxide can harm human health, and serious carbon monoxide would cause death. Therefore, people should pay attention to safe gas using, and people working in factory should pay attention to carbon monoxide concentration.

Carbon monoxide detector can detect carbon monoxide concentration, observing concentration value all the time. It has quite clear large LCD screen and voice and light alarm indication, making sure that it can detect dangerous gas and inform operators of precautions under adverse situation. It is widely used in petroleum, chemistry, coal mine, metallurgy, papermaking, fire-fighting, municipal administration, telecommunication, food, textile and other industries.

Carbon monoxide detector functions:

- ▶ Large-screen digital and character display, instant value and maximum value display.
- ▶ Safety indication: regular light flashing and voice indication. When carbon monoxide concentration increases, buzzing voice frequency would also be increased.
- ▶ Excellent audible alarm.
- ▶ Low maintenance cost.
- ▶ Support carbon monoxide detection.
- ▶ Solid shell and robust electric characters.
- ▶ Carbon monoxide concentration of 0-1000ppm can be displayed on the large LCD screen.
- ▶ Bright back-light lightening; it can clearly indicate carbon monoxide detector under dark environment.
- ▶ Automatically shut off if it is not operated for 10 minutes, to extend battery service life.
- ▶ Convenient to replace battery.
- ▶ Special sensor for stable electronic chemistry carbon monoxide.
- ▶ Sensor of over three-year service life and battery of 100-hour alkaline service life (typical value).

II. Safety instruction

1. Understand and know toxicity of carbon monoxide

0-1PPM	Normal
9 PPM	ASHRAE 62-1989 regulated standard living area
50 PPM	Average for staying for eight hours in OSHA closed space
100 PPM	OSHA exposure limit
200 PPM	Light headache, tired, sick and dizzy
800 PPM	Dizzy, sick and hyperspasmia, and die in two or three hours

US Department of Labor regulates in Article 24 of the 1917 OSHA that: carbon monoxide concentration in any closed space should be not higher than 50PPM (0.005%). If carbon monoxide concentration exceeds 100PPM (0.01%), it is necessary for workers to transfer their sites.

Please do not use this table only in personal safety inspection.

2. Carbon monoxide and tools fault:

Typical problems of highly-concentrated carbon monoxide that may be generated is indicated in the following table

Tool	Fuel	Typical Problem
Gas stove indoor heater	Petrol Natural gas Liquefied gas	1. Damaged heat exchanger 2. The air is not sufficient to support normal burning of fuel 3. Pipe damage or blocking 4. Fire stove imbalance 5. House is improperly pressed
Central furnace	Coal Kerosene	1. Damaged heat exchanger 2. The air is not sufficient to support normal burning of fuel 3. Fireplace damage
Indoor heater Central heater	Kerosene	1. Adjustment error 2. Wrong fuel (not K-1) 3. Wrong lamp wick or lamp wick height 4. The air is not sufficient to support normal burning of fuel 5. Abnormal system exhausting
Water heater	Natural gas Liquefied gas	1. The air is not sufficient to support normal burning of fuel 2. Pipe damage or blocking 3. Heating stove imbalance 4. House is improperly pressed
Wave oven	Natural gas Liquefied gas	1. The air is not sufficient to support normal burning of fuel 2. Heating stove imbalance 3. Wrongly used as indoor warm heater 4. Abnormal system exhausting
Stove Fireplace	Gas Wood Coal	1. The air is not sufficient to support normal burning of fuel 2. Pipe damage or blocking 3. Green or processed rice material 4. Damaged heat exchanger 5. Damaged heating room

3. Normal source of potentially dangerous carbon monoxide:

- ▶ Stove, gas stove or fireplace lack of maintenance
- ▶ Blocked exhaust pipe for chimney
- ▶ Gas, petrol or kerosene tools lack of maintenance
- ▶ Combustion motor (such as auto, grass mower and blower)

III. LCD display (as shown in Figure 1)

1. Detection in process
2. Maximum value
3. Average value
4. Data hold
5. Backlight
6. Battery electric quantity
7. Gas concentration reading
8. Gas concentration unit
9. Temperature reading
10. Temperature unit

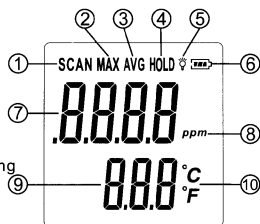
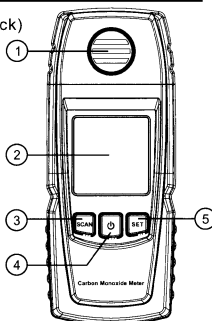


Figure 1

IV. Name and function of each component (as shown in Figure 2)

1. Air hole (pay attention to not block)
2. LCD display
3. Inspection
4. Power switch
5. Setting

Figure 2



V. Operation Instructions

1. Startup
Press the power switch "⏻" to start up.
2. Carbon monoxide concentration value indication
After startup, LCD panel will display in the full screen, and display carbon monoxide concentration value and temperature value under current environment after counting backwards for 10 seconds.

Long press "SCAN" to switch temperature unit between centigrade and fahrenheit, and in case that carbon monoxide concentration value is 0 as displayed on the screen, it indicates that there is no carbon monoxide under the current environment.

3. Buzzing
In case that carbon monoxide concentration is between 50ppm and 100ppm, buzzing will be on discontinuously; in case that the carbon monoxide concentration is above 100ppm, buzzing will be on continuously. It can change buzzing alarm limit by setting maximum and minimum concentration value.
4. Check the maximum and minimum carbon monoxide concentration value
Press "SET", the screen displays "HI.", and the default maximum carbon monoxide concentration value is 100ppm; press the "SET" again, the screen displays "Lo", and the default minimum carbon monoxide concentration value is 50ppm. Press down "SET", the instrument will display the maximum and minimum carbon monoxide concentration values repeatedly.
5. Set the maximum and minimum carbon monoxide concentration values

Long press the "SET", and "HI." or "Lo" will flash. Press "SET", and the instrument will display "HI." or "Lo" repeatedly. Long press "SCAN" or power switch "⏻" to increase or decrease carbon monoxide concentration values and increase or decrease action can be rapidly obtained by long press the key. For example, during "HI." flashing, press "SCAN" for once, and 100ppm will change into 101ppm; press power switch "⏻" again, and 101ppm will change into 100ppm, and so on. It will automatically exit the setting status if it is not operated for 10 seconds. Or long press "SET" again, "HI." or "Lo" will stop flashing, and it can also exit the setting status by pressing "SCAN".

6. Maximum value, average value and data hold
 - (1) Press "SCAN", and the screen will display MAX, and at this time the screen will display the maximum reading.
 - (2) Press "SCAN" again, the screen will display AVG, and at this time the screen will display the average reading.
 - (3) Press "SCAN" again, the screen will display HOLD, and the current data will be locked up.
 - (4) Press "SCAN" again and the screen will display SCAN.
 - (5) Press "SCAN", and the instrument will display the recorded maximum average value reading and the current locked value.

7. LCD backlight
Press the power switch "⏻" under starting status, the backlight will be on, and the backlight will be automatically off if not pressing the power switch "⏻" again for 10 seconds.
8. Shutdown
Manual shutdown: please long press power switch "⏻" until "OFF" appears to shut down.
Automatic shutdown: it is regarded as default that the machine will automatically shut down if it is not operated for 10 minutes.
9. Battery replacement
When the battery power is not sufficient, LCD would displays "⏻" which means that the battery power is not sufficient and it is necessary to replace new battery. If the instrument has not been used for long time, please take out the battery to prevent electricity leakage which may damage the instrument.

VI. Technical parameter

Detected gas	CO in air
Measuring range	0~1000ppm
Frequency ratio	1ppm
Minimum reading	1ppm
Basic error	±5%(F.S), ±10ppm
Response time	60 seconds
Sensor type	Electrochemistry CO sensor
Working environment	0~50°C. 32~122°F; 10~90%RH
Storage environment	-10~80°C. -14~176°F; 10~75%RH
Power supply	2x1.5V AA battery
Dimension	55.7x29.9x135.5mm
Weight	104g

Specific Declarations:
Our company shall hold no any responsibility resulting from using output from this product as an direct or indirect evidence.
We reserves the right to modify product design and specification without notice.

