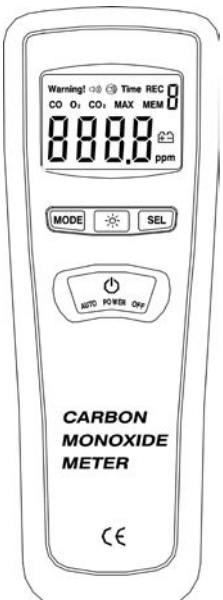
Carbon Monoxide Meter
Instruction Sheet



1. Introduction

The Carbon Monoxide Meter detects the presence of carbon monoxide
(CO) and measures concentrations between 1-1000 parts per million (PPM).
The Meter indicates the presence of carbon monoxide in two ways:

- By a reading on the LCD in PPM.
- By a beeper tone.

2. Safety Information-Read First

- Do not use the Meter as a personal safety monitor.
- Learn and recognize the effects of CO poisoning.

0-1PPM	Normal background levels.
9 PPM	ASHRAE Standard 62-1989 for living areas.
50 PPM	OSHA enclosed space 8-hour average level. *
100 PPM	OSHA exposure limit. *
200 PPM	Mild headache, fatigue, nausea and dizziness.
800 PPM	Dizziness, nausea and convulsions. Death within 2 to 3 hours.
*U.S. Department of Labor, Occupational Safety & Health Administration (OSHA) Regulation 1917.24: The CO content in any enclosed space shall be maintained at not more than 50 PPM (0.005%). Remove employees from enclosed space if the CO concentration exceeds 100 PPM (0.01%).	

3. What the Meter Does

The Meter indicates the presence of CO by a reading on the LCD and a beeper tone.

The beeper functions much like clicking of a Geiger counter:

• Above 200 PPM, the beeper sounds continuously with the concentration of CO.

• From 35 PPM to 200 PPM, the beeper sounds discontinuously with the Concentration of CO.

4. Specifications

Temperature **Operating:** **Storage:**	 0℃ to + 50℃ -30℃ to + 60℃
Operating humidity	0-99% Relative humidity (non-condensing)
Measurement range	0 to 1000PPM
Measurement Resolution	1PPM
Accuracy	±5% or ± 10 PPM
Warm up period	<2 seconds
Battery	9V, NEDA 1604A or IEC 6LR61, or equivalent.
Auto power off	Meter automatically shuts down after 15 minutes of inactivity
Sensor type	Stabilized electrochemical Gas-specific (CO)
Typical sensor life	3 years

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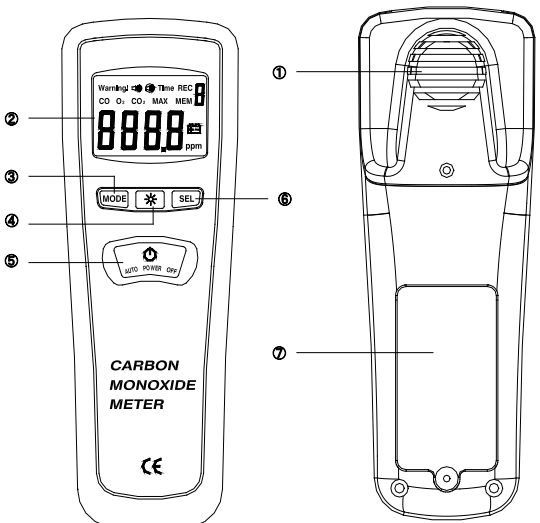


Instrument Familiarization:

① CO sensor
② LCD Display
③ MODE button
④ Alarm light
⑤ Power button
⑥ SEL button
⑦ Battery door

6. MODE Button Functions

With operation of MODE button, you can read maximum data, recall data, storage data, recall alarm, display measuring time and set alarm. Each time you press MODE, you will forward one step in the mode cycle.

① **Measure mode**

In this mode the meter measures the dynamic data, and the LCD displays 'CO', 'ppm' and data. Keep pressing SEL button over four seconds, you can turn on / off the backlight. Press MODE button to enter maximum data mode

② **Maximum data mode**

In this mode, LCD displays the max. data of this measurement. When turn off the meter, the maximum data will be cleared.

③ **Recall data mode**

In this mode, LCD displays the stored data. Press SEL button can recall next stored data.

This meter has up to ten locations for storing data. The data on the top right corner of the LCD show you the memory position. Press MODE button to enter next mode.

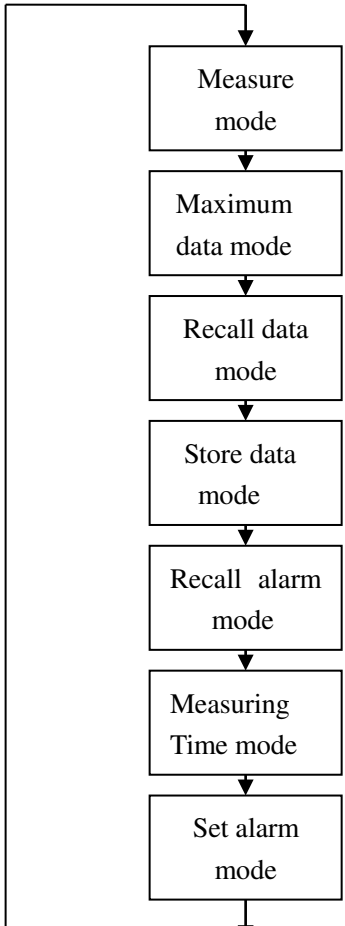
④ **Store data mode**

You can store the measuring data by pressing SEL button in this mode. The position of the storage is displayed on the top right corner of LCD. After you stored data, the number of the memory will increase accordingly. You can select the position of storage data by pressing SEL button

⑤ **Recall alarm mode**

Press MODE button again to enter this mode, the LCD displays the alarm data---30ppm. When the measuring data is more than 30ppm and less than 200ppm, the meter will warn with discontinuity beeper; when the measuring datum is over 200ppm, the unit will warn with continuity beeper. In both cases, the alarm light glows with red light.

Keep pressing SEL button over eight seconds you can enter the manual zero adjusting state. The data in the middle of LCD will firstly with flicker then turn into zero and enter into the measure mode.


Measure mode
Maximum data mode
Recall data mode
Store data mode
Recall alarm mode
Measuring Time mode
Set alarm mode

⑥ **Measuring time mode**

Entering this mode, you can read the measuring time on the LCD. It will be cleared after you turn off the unit. The unit will disable auto power off function in this mode. While in other modes, the meter will enable auto power off after about 15 minutes without pressing any button.

⑦ **Set alarm**

In this mode, you can turn on / off the buzzer by pressing SEL button. At the same time, LCD displays 'on' or 'off'. When LCD displays 'on', the buzzer will enable. Otherwise the buzzer will disable, but the alarm light will enable.

POWER BUTTON

I. Press the power button, power is on and the meter can measure.
II. Press it again, Power is off.

BATTERY REPLACEME

I. As battery power is not sufficient, LCD will display " " replacement with one battery type 9V is required.

II. Open battery cover, then take out the battery from instrument and replace with a new 9-Volt battery and place the battery cover back.

7. Common Sources of CO

Common sources of potentially dangerous levels of CO are:

- Poorly maintained furnaces, gas heaters, or fireplaces.
- Dirty or plugged chimneys, or flue exhausts.5
- Poorly maintained gas, oil, or kerosene appliances.
- Internal combustion engines (e.g., automobiles, lawnmowers, blowers).

8. CO and Appliance Malfunctions

The following table identifies typical problems that can produce high levels of CO.

Appliance	Fuel	Typical Problems
Gas furnaces Room heaters	Oil, natural gas, or LPG (liquefied petroleum gas)	1. Cracked heat exchanger. 2. Not enough air to burn fuel properly. 3. Defective/blocked flue. 4. Maladjusted burner. 5. Building not properly pressurized.
Central heating furnaces	Coal or kerosene	1. Cracked heat exchanger. 2. Not enough air to burn fuel properly. 3. Defective grate.
Room heaters Central heaters	Kerosene	1. Improper adjustment. 2. Wrong fuel (not K-1). 3. Wrong wick or wick height. 4. Not enough air to burn fuel. 5. System not properly vented.

Water heaters	Natural gas or LPG	1. Not enough air to burn fuel properly. 2. Defective/blocked flue. 3. Maladjusted burner. 4. Building not properly pressurized.
Ranges Ovens	Natural gas or LPG	1. Not enough air to burn fuel. 2. Maladjusted burner. 3. Misuse as a room heater. 4. System not properly vented.
Stoves Fireplaces	Gas, wood, coal	1. Not enough air to burn fuel properly. 2. Defective/blocked flue. 3. Green or treated wood. 4. Cracked heat exchanger. 5. Cracked firebox.