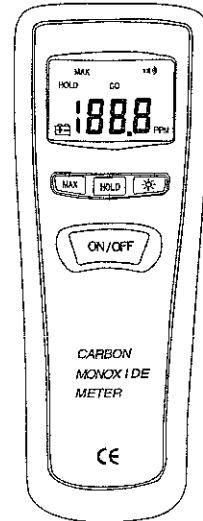


**MT180  
USER'S MANUAL  
CARBON MONOXIDE METER**



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## 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.

## 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%).	

## 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:

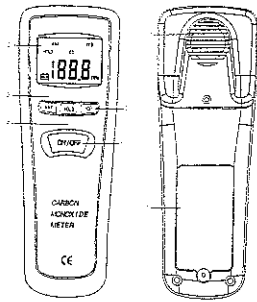
- Above 200 PPM, the beeper sounds continuously with the concentration of CO.
- From 35 PPM to 200 PPM, the beeper sounds discontinuously with the concentration of CO.

## Specifications

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

## Instrument Familiarization:

1. CO sensor
2. LCD Display
3. MAX Hold button
4. Data Hold button
5. Back-light button
6. Power button
7. Battery door



## DATA HOLD

The Data Hold function allows the meter to “freeze” a measurement for later reference.

1. Press the DATA HOLD button to “freeze” the reading on the indicator.

The indicator “HOLD” will be appear in the display.

2. Press the DATA HOLD button to return to normal operation.

## MAX Hold

To hold the highest reading on the LCD, press the MAX hold button. The MAX hold button is located on the left side of the meter (bottom button). The meter reading will not change as readings change, rather it will only display the highest reading encountered since the MAX hold button was pressed. Press the MAX hold button again to return to normal operation.


## BACKLIGHT BUTTON

1. Press the “BACKLIGHT” key, the “light” will be appear in the display.
2. Press it again, the “light” close.

## POWER BUTTON

1. Press the power button, power is on and the meter can measure.
2. Pull it again, Power is off.

## BATTERY REPLACEMENT

1. As battery power is not sufficient, LCD will display “ ” replacement with one battery type 9V is required.
2. Open battery cover, then take out the battery from instrument and replace with a new 9-Volt battery and place the battery cover back.

## 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.
- Poorly maintained gas, oil, or kerosene appliances.
- Internal combustion engines (e.g., automobiles, lawnmowers, blowers).

## 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)	<ol style="list-style-type: none"> <li>1. Cracked heat exchanger.</li> <li>2. Not enough air to burn fuel properly.</li> <li>3. Defective/blocked flue.</li> <li>4. Maladjusted burner.</li> <li>5. Building not properly pressurized.</li> </ol>
Central heating furnaces	Coal or kerosene	<ol style="list-style-type: none"> <li>1. Cracked heat exchanger.</li> <li>2. Not enough air to burn fuel properly.</li> <li>3. Defective grate.</li> </ol>
Room heaters Central heaters	Kerosene	<ol style="list-style-type: none"> <li>1. Improper adjustment.</li> <li>2. Wrong fuel (not K-1).</li> <li>3. Wrong wick or wick height.</li> <li>4. Not enough air to burn fuel.</li> <li>5. System not properly vented.</li> </ol>

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Water heaters	Natural gas or LPG	<ol style="list-style-type: none"> <li>1. Not enough air to burn fuel properly.</li> <li>2. Defective/blocked flue.</li> <li>3. Maladjusted burner.</li> <li>4. Building not properly pressurized.</li> </ol>
Ranges Ovens	Natural gas or LPG	<ol style="list-style-type: none"> <li>1. Not enough air to burn fuel.</li> <li>2. Maladjusted burner.</li> <li>3. Misuse as a room heater.</li> <li>4. System not properly vented.</li> </ol>
Stoves Fireplaces	Gas, wood, coal	<ol style="list-style-type: none"> <li>1. Not enough air to burn fuel properly.</li> <li>2. Defective/blocked flue.</li> <li>3. Green or treated wood.</li> <li>4. Cracked heat exchanger.</li> <li>5. Cracked firebox.</li> </ol>

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