OPERATION MANUAL

CARBON MONOXIDE METER



CE

Model: 7701

INTRODUCTION

Congratulations on your purchase of this digital pen type CO meter. Please read the manual completely before using the meter.

Features:

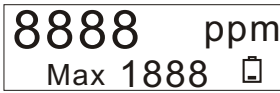
- **Adjustable** CO warning level
- **Dual and digital** display
- **Backlight** for operating in dark area
- **Low battery** indicator
- **Auto power off** function

CO levels and its effect

ppm	Symptoms and applicable standard
0-1	Normal background levels
9	Maximum indoor air quality level: Maximum allowable concentration per ASHRAE Residential standards 62-1989 for living area.
25	Maximum limit 8 hrs of continuous exposure per California OSHA workplace standards.
35	Maximum 8 hrs average exposure level per US OSHA workplace standards.
50	Maximum concentration for continuous exposure in any 8 hrs average level per OSHA standards.
100	Remove employees from enclosed space if the CO concentration exceeds 100ppm per OSHA exposure limit.
200	Mild headache, fatigue, nausea and dizziness w/i 2-3 hrs.
400	Frontal headache, life threatening after 3hrs. Maximum concentration in flue gas per the US EPA and AGA standards.
800	Dizziness, nausea, convulsions, death w/i 2-3 hrs.
1600	Nausea w/i 20 min.,death w/i 2-3 hrs

CONTROLS AND INDICATORS

LCD display



1. Primary display: Current CO value.
2. Secondary display: Max. CO value.
3. : Low battery indicator.

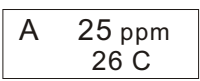
Function Keys

1. : Turn the meter on and off.
   Select the alarm value.
2. : Turn on and off the backlight.
   Switch temperature unit C and F.
   Reset the maximum CO value.
   Select the calibration value.
3. + : Enter calibration mode.

OPERATING INSTRUCTIONS

1. Power on/off

Press to turn on and turn off the meter. When meter is power on, the preset alarm value and current air temperature will be blinking on the LCD. Meter is now running Self-Test and will finish in about 15 seconds with a short beep, then enter the measuring mode.



IMPORTANT:
It is recommended to turn on the meter in an area free of CO since high CO level may cause failure in passing Self-Test.

2. Switch temperature units

Users can select °C or °F as the temperature unit by pressing for more than 1 sec. during Self-Test.

3. Alarm setting

The meter is preset the alarm value at 25ppm to give warnings of possible danger. Users can adjust the value for different needs or standard by turning off the meter, then press and hold until the value options show. There are 25, 30,35, 45,50, 70,100 and 200ppm displaying in cycles. Release the button to select the preferred value. Then the meter will return to Self-Test mode in some seconds.

4. Measurement

The meter detects the existence of CO in the environment and displays the reading in ppm. It also indicates the maximum value (at lower side of the LCD) of all readings since it is power on. Users can reset the maximum value by pressing for two seconds in measuring mode.

5.Backlight

The meter features backlight function for using in dark areas. Press to activate and switch off the backlight.

6.Low battery indicator

shows on the LCD when battery voltage gets low.

7. Auto power off

The meter turns itself off automatically after 15 minutes non-operation. (It won't auto power off during calibrating)

CALIBRATION

To enter the calibration mode, turn off meter and press ⏻ + 💡 simultaneously for 2 seconds. It will show blinking ppm on the upper display and calibration value "0" at lower side. Now the meter is running 0ppm calibration as default.

0ppm calibration

The meter is preset calibration value at 0ppm. Just put the meter in the area free of CO and enter calibration mode, it calibrates automatically. The LCD is now displaying a blinking ppm value at upper side which slowly runs down to 0 or minus value, then stops blinking when the calibration is completed. This takes about 10 minutes.

Note:

Don't be alarmed if high ppm or minus value shows up when entering calibration mode. It will go down and approach to 0 in seconds. The erratic readings are caused by electromagnetic interference (EMI) in the environment, such as computers or cell phone. It is suggested to get the meter away from the interference, otherwise the calibration may take much longer time or never complete.

100ppm/500ppm calibration

1. For other standard calibration, press and hold 💡 to select the calibration value. (0, 100, 500ppm).
2. Place the meter into the sealed box filled with standard gas (e.g. 100ppm/500ppm) for 15 minutes. Then the calibration will be done automatically.
3. Check if the reading meets calibration value. If it does, the calibration is well completed. If no, repeat the procedure.

OPERATING NOTICE

1. Keep the meter from electromagnetic interference(EMI) which may cause erratic readings.
2. Recovering time is required when meter exposed to high level CO. The longer the exposure, the longer recovering time is needed.
3. Self-Test after power on is to test the sensor and circuit condition.

TROUBLESHOOTING

- **Power on but no display**
  a) Check if the time since power on is over 300 mS.
  b) Make sure the batteries are in good contact and correct polarity.
  c) Replace a new battery and try again.
- **Display disappears**
  Check whether the low battery indicator shows before display disappears. If so, replace a new battery
- **Calibration failure**
  a) Check if the low battery indicator shows before calibration. If so, replace a new battery and try again.
  b) Make sure the standard gas is correct.
- **E 2.**: The value is underflow.
- **E 3.**: The value is overflow.
- **E 4.**:The value is error because of some original data.
- **E 31.**: A/D failure, return the meter to the dealer for repairing.
- **E 33.**: Some measurement circuits failure, return the meter to the dealer for repairing.
- **E 35.**: Self-Test failure. Turn on the meter again in other area free of CO. Sensor failure. Return the meter to the dealer for repairing.

SPECIFICATION

1.CO range: 0~999ppm
2.Resolution: 1 ppm
3.Accuracy: +/-20% at 0~100ppm
+/-15% at 100~500ppm
(at 20+/-5℃, 50+/-20%RH)
4.Battery: 3 AAA alkaline.
Battery life is 250 hours when backlight off and 35 hours when backlight on.

MATERIALS SUPPLIED

- ✓ The meter x 1
- ✓ AAA alkaline battery x 3
- ✓ Operation manual x1
- ✓ Wrist Strap x 1
- ✓ Carrying Pouch x1
- ✓ Color box

WARRANTY

The meter is warranted to be free from defects in material and workmanship for a period of one year from the date of purchase. This warranty covers normal operation and does not cover battery, misuse, abuse, alteration, neglect, improper maintenance, or damage resulting from leaking batteries. Proof of purchase is required for warranty repairs. Warranty is void if the meter has been opened .

RETURN AUTHORIZATION

Authorization must be obtained from the supplier before returning items for any reason. When requiring a RA (Return Authorization), please include data regarding the defective reason, the meters are to be returned along with good packing to prevent any damage in shipment and insured against possible damage or loss.

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Anemometer
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K.J.T. type Thermometer
K.J.T.R.S.E. type Thermometer
pH Meter
Conductivity Meter
T.D.S. Meter
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