


M40 Cheat Sheet

Turn On / Turn Off

Press On/Off key  for 1 second. Unit emits a single beep, goes into display, and then begins countdown. **Always turn the meter on/off in clean air.** Hold for 5 seconds to turn the unit off.

Zero the instrument and span oxygen.

If the meter alarms when you turn it on, follow these steps:

Wait 1 minute for meter to adjust. Meter is not instant on.

Press ▲ (up arrow) to access the ZERO screen

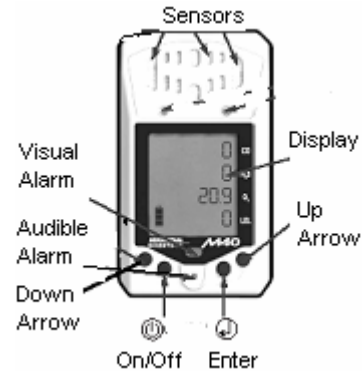
Press Enter to start the Zeroing function.

You may have to repeat these steps more than once.

It's normal to have to zero the meter.

Do not zero meter in hazardous environment.

Do not force meter to zero after metering.



Switch on the backlight

Press Enter to turn on/off the backlight

Sensors and Alarms


Sensor		Range	Low Alarm	High Alarm
CO	Carbon Monoxide	0-999 PPM	35	70
H ₂ S	Hydrogen Sulfide	0-999 PPM	10	20
LEL	Lower Explosive Limit	0-100%	10	20
O ₂	Oxygen	0-30%	19.5	22.5

When the meter is in alarm, the displayed value of the alarming gas blinks.

If the meter O₂ alarms when turn on, zero the meter.

When the LEL goes above 100%, +OR appears instead of a number on the display.


The LEL sensor is turned off to prevent the meter from being the source of ignition. The meter must be recalibrated after and over-range (+OR) condition.

Battery Type= Lithium-Ion lasts 12 hours 

Battery life is indicated by the battery symbol at bottom right of display

▲ (up arrow) Press the ▲ (up arrow) key to cycle between

Zero – zero sensors and span the oxygen

 Peak (Peak Readings) – This mode displays the highest measured levels

- Pressing Enter will zero the peak readings

TWA – Time weighted average

STEL – Short Term Exposure Limit

DON'T

- 1) Use vehicle exhaust to bump test the meter.
- 2) Meter does not have to be left on charge. Use the battery level indicator.
- 3) Store meter on top of engine compartment. Keep away from heat.

CAUTIONS AND NOTES

- 1) Measure pH first; a corrosive will destroy your meter.
- 2) LEL, CO, H₂S all fail at zero.
- 3) H₂S odor threshold 130 PPB (rotten eggs). IDLH 100 PPM. TWA-C 10 PPM. Heavier than air.
- 4) CO must be below 9 for occupant to use dwelling.
- 5) Oxygen
 - a. If the oxygen level is below 16%, you will not get an accurate LEL reading (too low).
 - b. If the oxygen level is above 22.5%, you will not get an accurate LEL reading (too high).
 - c. An oxygen sensor lasts about 2 years
- 6) LEL sensor is a catalytic bead
 - a. Silicone (Armor All) vapors will coat the catalytic bead, and cause it to fail.
 - b. Lead and hydraulic fluid will also destroy the catalytic bead.
 - c. LEL sensor cannot respond or will slowly respond to long chain hydrocarbons. Turpentine, diesel fuel, and jet fuel are some examples.
 - d. LEL sensors cannot respond to Freon or chlorinated solvent vapors.
- 7) You can smell natural gas and propane (ethyl mercaptan) in PPB (Odor threshold 100-200 PPB). The LEL's lowest reading for methane is 500 PPM. Use the Bacharach sniffer for leak detection; it can read down to 50 PPM.
- 8) Meter is calibrated to pentane. You must use the correction a factor to calculate the actual reading.

LEL Correction Factors

Acetone	0.9
Acetylene	0.7
Benzene	1
Butane	0.9
Ethane	0.7
Ethanol	0.8
Ethylene	0.7
Hexane	1.2
Hydrogen	0.5
Isopropanol	1
Methane	0.5
Methanol	0.6
Pentane	1
Propane	0.8
Styrene	1.1
Toluene	1.1
Xylene	1.3
JP-4	1.2
JP-5	0.9
JP-8	1.5

PPM CO TIME Carbon Monoxide Symptoms

35	8	Hours	OSHA PEL (8 hour work day)
200	2-3	Hours	Mild headache, fatigue, nausea and dizziness
400	1-2	Hours	Serious headache- other symptoms intensify
			Life threatening after 3 hours
800	45	Minutes	Dizziness, nausea and convulsions
			Unconscious with 2 hours
			Death within 2-3 hours
1600	20	Minutes	Headache, dizziness and nausea
			Death within 1 hour
3200	5-10	Minutes	Headache, dizziness and nausea
			Death within 1 hour
6400	1-2	Minutes	Headache, dizziness and nausea
			Death within 25-30 minutes
12,800	1-3	Minutes	Death

PPM H2S SYMPTOMS

10	Eye irritation
50-100	Coughing, eye irritation, loss of sense of smell after 2-15 minutes. Altered respiration, pain the eyes, and drowsiness after 15-30 minutes followed by throat irritation after one hour. Several hours exposure results in gradual increase in severity of symptoms and death may occur within the next 48 hours.
200-300	Marked conjunctivitis and respiratory tract irritation after one hour exposure
500-700	Loss of consciousness; death within 30 minutes to 1 hour
700-1000	Rapid unconsciousness, cessation of respiration, and death
1000-2000	Unconsciousness at once, with early cessation of respiration and death in a few minutes.

Correction factor example: The meter reads 10% LEL in a methane atmosphere. To find actual % LEL methane, multiply 10% by the number in the methane column 0.5 to get 5 % LEL methane.