

ACO100

CO DMM ATTACHMENT

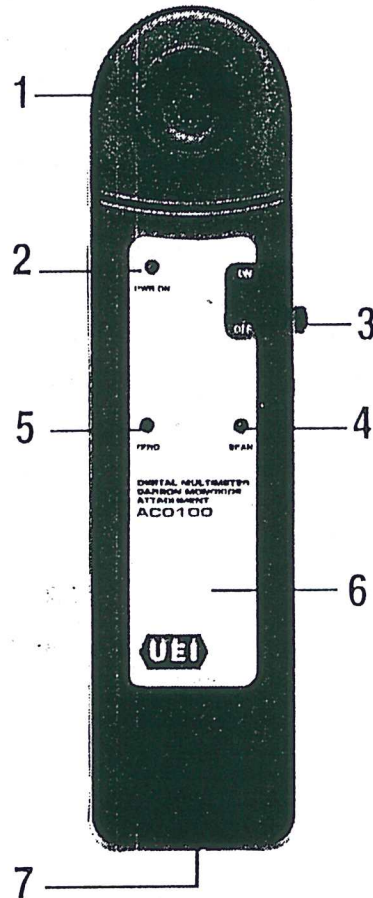


INSTRUCTION MANUAL



Beaverton, OR

Product Features



1. Sensor
2. Power Indicator
3. On/Off Switch
4. Calibration Pot
5. Zero Adjustment Pot
6. Battery Compartment (on backside of unit)
7. Cord Attachment

The following chart shows the maximum allowable exposure limits and symptoms developed for CO inhalation.

CONCENTRATION OF CO IN AIR	INHALATION TIMES AND TOXIC SYMPTOMS
9 ppm	The maximum allowable concentration for short term exposure in a living area according to ASHRAE.
35 ppm	The maximum allowable concentration for continuous exposure in any eight hour period, according to federal law.
200 ppm	*Maximum concentration allowable at any time according to OSHA, Slight headaches, fatigue, dizziness, nausea after 2-3 hours.
400 ppm	Frontal headaches within 1-2 hours, life threatening after 3 hours. Maximum allowable limit in flue gas according to EPA and AGA.
800 ppm	Dizziness, nausea and convulsions within 45 minutes. Unconsciousness within 2 hours. Death within 2-3 hours
1600 ppm	Headache, dizziness and nausea within 20 minutes. Death within 1 hour.
3200 ppm	Headache, dizziness and nausea within 5-10 minutes. Death within 30 minutes.
6400 ppm	Headache, dizziness and nausea within 1-2 minutes. Death within 10-15 minutes.
12,800 ppm	Death within 1-3 minutes.

* Exposure to this concentration and higher, the effects can vary depending on size, age, sex and health.

Caution

The ACO100 is factory calibrated and designed to measure quantitative readings of Carbon Monoxide (CO) only. This product can be used with any digital multimeter (DMM) with a 2 to 4 volt DC scale capable of measuring .001 volts DC.

General Description

The ACO100 is an advanced state-of-the-art CO detector. When used with a DMM it will display levels of CO in the part per million (ppm) range on a 2 to 4 volt DC scale. The signal output from the ACO100 is 1mV DC = 1ppm CO.

The ACO100 uses an advanced electrochemical sensor that measures CO only. A built-in filter reduces most cross-sensitivity to other gases. This product should be used with DMMs with greater than or equal to 10 megohm impedance.

Operation

1. Attach the adapter cord to the ACO100 by sliding the adapter into the jack provided.
2. Attach the "banana" jack to the common and voltage parts of the DMM.
3. Turn on the DMM and select a 20-40 volt DC scale.
4. If the voltage reading is below 4V DC with the ACO100 in the off position, the 9V battery in the unit must be changed.
5. Select a 2-4V DC scale and turn on the ACO100 (if autoranging, lock into range). The red LED will illuminate.
6. In a clean environment (no CO), allow the unit's reading to stabilize near zero. Use a small screwdriver to adjust the zero pot until DMM display reads zero.
7. As CO is being sensed, the DMM displays the ppm change.
8. Turn unit off to conserve battery power.

Battery Replacement

1. Remove the 4 case screws from the back of the unit.
2. Detach the 9V battery from its connector.
3. Replace the battery and reassemble the case.

Caution: Do not over tighten the case screws.

Note: Unit can be used immediately after battery replacement. Wait one hour for calibration after battery replacement.

Calibration

Interval requirement personal safety application, 30 days. All other applications, at least annually. Calibrate if the unit is not functioning properly.

1. Turn on unit in a clean environment and allow 2-3 minutes for stabilization.
2. Attach proper gas, regulator and adapter assembly over the sensor. Allow the gas to flow for 90 seconds.
3. Adjust the reading on the display of the DMM to equal the concentration of gas provided using the calibration pot.
4. Disconnect the gas and allow the unit to zero.

Note: If the unit fails to calibrate, service is necessary.

Specifications

Size: 6.5" x 1.625" x 1.125"

(65 x 42 x 29mm)

Weight: 5 oz. (142g)

Battery: 9V Alkaline

Duty Cycle: 2,000 hours

Sensor: Long life/low cost

Electrochemical

Range: 0-1999ppm with

3.5 digit DMM display

Calibration: 100ppm

Response Time: 90% of reading in 60 seconds

Temperature: 0-120°F

Relative Humidity: 5-95% RH

Accuracy: ± 2 ppm or $\pm 5\%$ of reading, whichever is greater

Resolution: 1ppm

General CO Testing Guidelines

1. Follow the operation instructions of your instrument.
2. Check air inside living space. The recommended maximum in this area is 9ppm. Many contractors choose to check each room's air register.
3. If measurement is above 9ppm, a definite CO concentration problem exists and further investigation is necessary to pinpoint the source of the contamination.
4. Turn on any device or appliance that might create CO. This includes gas and oil furnaces, hot water heaters, gas-fired cooking appliances, free-standing kerosene or diesel heaters, wood burning devices, and other devices that burn a hydrocarbon fuel.
5. Retest the living space. The CO level still should be no higher than 9ppm. If it is, further investigation is necessary to pinpoint the source of the contamination.
6. CO is caused by incomplete combustion of hydrocarbon fuels. Possible causes of contamination include auto exhaust, bad fuel, improper gas pressure, poor burner condition, atmospheric inversion, negative house pressure, blocked flue, or cracked furnace heat exchanger.
7. **Always document the date and time of the test on your work order and have your customer sign off on the testing procedure.**

Warranty

Your ACO100 is warranted to be free from defects in materials and workmanship for a period of one year from the date of purchase. If, within the warranty period, your instrument should become inoperative from such defects, the unit will be repaired or replaced at our option. This warranty covers normal use and does not cover damage which occurs in shipment or failure which results from alteration, tampering, accident, misuse, abuse, neglect, or improper maintenance. A purchase receipt or other proof of date of original purchase date will be required before warranty repairs will be rendered. Instruments out of warranty will be repaired for a service charge. Return the unit postage paid and insured to:

UEI Service Department
5500 SW Arctic Drive
Beaverton, OR 97005
(503) 644-8723

This warranty gives you specific legal rights. You may also have other rights which vary from state to state.

Accessories

Standard Accessories

Instruction Manual
Adapter Cord: AJDMM1020
Adjustment Screwdriver and Hex Wrench: JODMM1030

Optional Accessories

Calibration Kit: AJDMM1000
Calibration Regulator: P014201
100ppm Calibration Gas: CM0159
Carrying Pouch: AJDMM1060