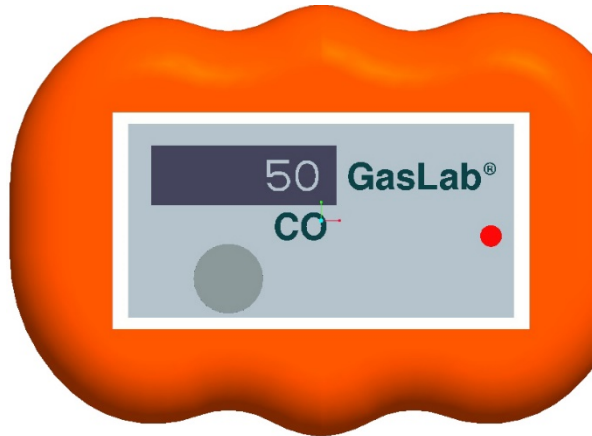


GasLab SAN-100 Micro Carbon Monoxide Monitor

User Manual



The GasLab SAN-100 is a wearable, personal safety meter designed to monitor ambient concentrations of carbon monoxide (CO) in real time. CO gas poisoning is the most common type of fatal poisoning in the world.

Features

- Silicone boot and metal clip are light and comfortable to wear.
- Electrochemical sensor, no consumable parts.
- Displays peak CO level until reset.
- Lithium-ion rechargeable battery. USB Charging port.
- Runs 10+ days per charge.

Applications

- **Heating and Ventilation.** CO is produced by oxygen-starved combustion in improperly ventilated fuel-burning appliances such as oil and gas furnaces, gas water heaters, gas ovens, gas or kerosene space heaters, fire places and wood stoves.
- **Internal Combustion Indoors.** CO is produced by all internal combustion engines. This makes the SAN-100 useful in garages, car parks, venues, repair facilities or job sites where cars, trucks or machinery is run indoors. Portable power generator use indoors.
- **Fire Fighters.** CO is produced naturally in trace amounts by the partial oxidation of methane in the atmosphere, volcanoes and forest fires.

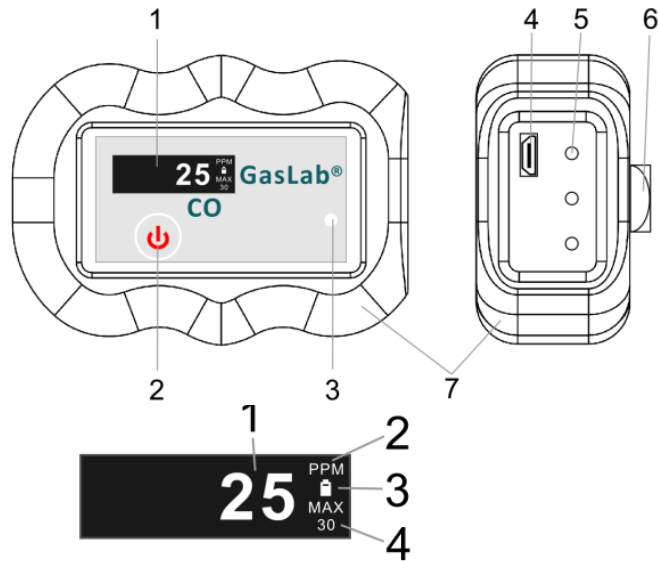
Please take a moment to read these instructions before use. They will provide you with all the necessary information for the correct use of your carbon monoxide monitor.

Theory of Operation

The SAN-100 Carbon Monoxide Monitor uses an electrochemical sensor to determine the concentration of carbon monoxide in air. Air reaches the sensor by diffusing through the vent holes (see item 6 below). Normal air movement is enough to carry the sample to the sensor.

Device

1. OLED display
2. Power button
3. Indicator LED
4. Micro USB charge port
5. Vent holes
6. Clip
7. Silicone boot



OLED Display

1. Carbon Monoxide concentration
2. PPM – parts per million
3. Battery Charge Indicator
4. Peak (max) reading

Note: The peak reading on screen displays the highest concentration of CO detected since the peak was last reset. To reset the peak reading, press Power button to restart the device.

OPERATION

Plug the USB cable into the meter and a 120VAC wall adapter. It will take approximately 2 hours to receive a full charge. Once the meter is charged, it can run 10+ days before recharging.

Press the power button to turn on the meter.

When the meter is first turned on, it performs a 3 second countdown for device warm up, then enters normal display with current carbon monoxide readings displayed. The device starts taking measurements when powered on and updates readings every 3 seconds.

The OLED display will turn off automatically after 120 seconds of inactivity to conserve battery power. However, the sensor will continue to monitor the CO level. Briefly press the Power button to view the display.

Hold down the Power button for 3 seconds to turn the meter off. This will conserve the battery's charge until you need to use the meter again.

Low Battery Alarm

The meter continuously measures the rechargeable battery voltage. If it drops to a critical level, the low battery alarm will sound until the battery is recharged or the battery power is depleted.

Note that the meter can continue to monitor CO levels while charging.

CO SENSOR CROSS-SENSITIVITY

Electrochemical sensors are cross-sensitive to specific gases other than the target gas of interest. While cross-sensitivities are limited, as much as possible by sensor design, some interactions still exist. The table below shows the most common cross-sensitivities.

Gas	Gas Concentration	SAN-100 Reading
H ₂	200ppm	40ppm
C ₂ H ₄ (Ethene)	100ppm	80ppm
NO	35ppm	6ppm
SO ₂	20ppm	0ppm
H ₂ S	100ppm	0ppm
NO ₂	5ppm	0ppm
C ₂ H ₆ O (Ethanol)	1000ppm	0ppm

If the meter is exposed to one of the above gases, it will clear itself if you expose it to normal outdoor air for 30 minutes. Do not expose the device to the fumes of inorganic solvents (e.g., paint fumes) or organic solvents.

SPECIFICATIONS

CO Sensor:

Measurement Range	0~1,000ppm
Resolution	1ppm
Temperature Range	-4°F to 122°F (-20 to 50°C)
Humidity Range	15 to 90%RH
Temperature Drift	0.35%/°C
Baseline Drift (-20-40°C)	≤10ppm
EC Sensor Expected Lifespan	24 months

General:

Operating	-4°F ~ 122°F (-20°C ~ 50°C), 15~90% RH non-condensing
Storage	-4°F to 140°F (-20°C ~ 60°C), <99% RH non-condensing
Power Supply	Li-ion battery(4.2V, 400mAh)
Dimensions	2.36x1.38x0.98" (60x35x25mm)
Weight	1.41oz. (40 grams)

CLEANING AND STORAGE

The front panel and case can be cleaned with a mild solution of detergent and water. Apply sparingly with a soft cloth and allow drying completely before using. Do not use aromatic hydrocarbons or chlorinated solvents for cleaning.

TROUBLESHOOTING GUIDE

Symptom / Issue	Possible Cause / Resolution
Device does not power ON	Make sure the power supply is connected properly and that there is power at the outlet. Use the supplied adapter. Verify that your meter has had enough time to charge before turning it on.
Reading does not change	In fresh air, you will rarely see CO levels above 1%. This is normal.

CO RECOMMENDED LEVELS

- < 1ppm Average CO level in fresh air
- 9ppm Maximum recommended indoor CO level (OSHA)
- 25ppm Maximum TWA Exposure for 8 hour workday (ACGIH)
- 50ppm OSHA long-term workplace exposure limit
- 50-100ppm Symptoms of mild CO poisoning include headaches and dizziness
- 700ppm Life-threatening CO levels

SUPPORT

The quickest way to obtain technical support is via email. Please send all support inquiries to support@co2meter.com.

Please include a clear, concise definition of the problem and any relevant troubleshooting information or steps taken so far, so we can duplicate the problem and quickly respond to your inquiry.

WARRANTY

This meter comes with a 1 YEAR (warranty period) limited manufacturer's warranty, starting from the date the meter was shipped to the buyer.

During this period of time, CO2Meter.com warrants our products to be free from defects in materials and workmanship when used for their intended purpose and agrees to fix or replace

(at our discretion) any part or product that fails under normal use. To take advantage of this warranty, the product must be returned to CO2Meter.com at your expense. If, after examination, we determine the product is defective, we will repair or replace it at no additional cost to you.

This warranty does not cover any products that have been subjected to misuse, neglect, accident, modifications or repairs by you or by a third party. No employee or reseller of CO2Meter.com's products may alter this warranty verbally or in writing.

LIABILITY

All liabilities under this agreement shall be limited to the actual cost of the product paid to CO2Meter.com. In no event shall CO2Meter.com be liable for any incidental or consequential damages, lost profits, loss of time, lost sales or loss or damage to data, injury to person or personal property or any other indirect damages as the result of use of our products.

RETURNS

If the product fails under normal use during the warranty period, a RMA (Return Material Authorization) number must be obtained from CO2Meter.com. After the item is received CO2Meter.com will repair or replace the item at our discretion.

To obtain a RMA number, call us at (386) 256-4910 or email us at support@co2meter.com. When requesting a RMA please provide reason for return and the original order number.

If we determine that the product failed because of improper use (water damage, dropping, tampering, electrical damage etc.), or if it is beyond the warranty date, we will inform you of the cost to fix or replace the product.


For additional warranty information visit our website: www.CO2Meter.com/pages/faq


CONTACT US

We are here to help!

For information or technical support, please contact us.

 support@co2meter.com

 (386) 256-4910 (Technical Support)

 (386) 872-7665 (Sales)

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