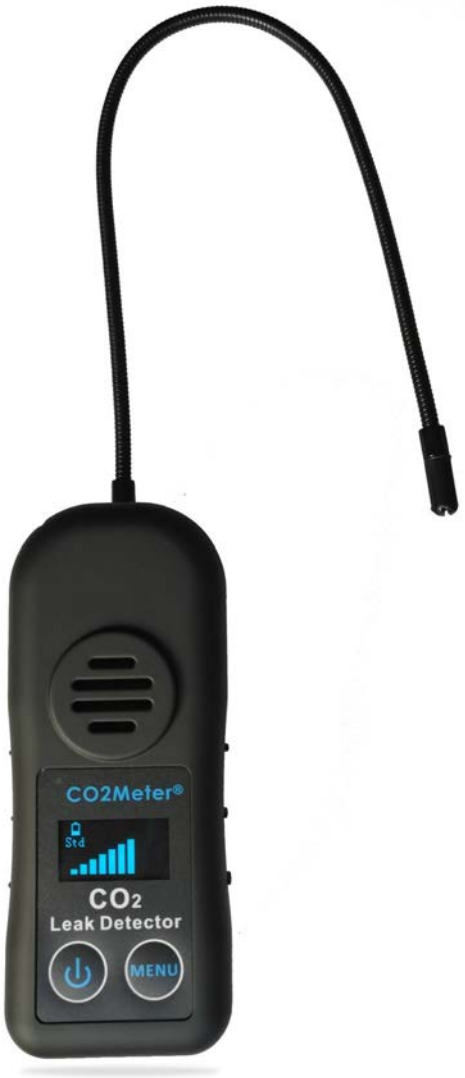
CO2Meter
Carbon Dioxide Leak Detector
Operating Instructions

Model: SAN-13 - CO2 Leak Detector



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INTRODUCTION

Congratulations on your purchase of the CO2Meter SAN-13 Carbon Dioxide Leak Detector.
The SAN-13 is designed to detect leaks in CO2 systems like supply lines, cylinders, bulk tanks, or any enclosed space that CO2 is stored in or runs through. It is used in a variety of applications and industries such as beverage, wineries, breweries, indoor agriculture, refrigeration, and many others.

The SAN-13 CO2 Leak Detector features advanced NDIR sensor technology providing accurate, reliable, and fast readings of even the smallest CO2 leaks.

The SAN-13 is shipped fully tested and calibrated and, with proper use, will provide years of reliable service.

FEATURES

- NDIR Sensor Technology taking 20 readings per second
- Audible and Visual Indicator of CO2 leak
- Two sensitivity modes, enabling quick and easy location of large and small leaks
- Large OLED Display
- Rechargeable Li-Ion batteries with a 12-hour battery life
- Dual calibration methods: Ambient Air or Nitrogen
- Automatic power-off at 5 minutes to conserve battery life
- Extremely Small, Compact Design
- Rugged design with protective rubber enclosure
- Heavy duty metal clip
- IP54 housing to protect against dust, rain or splashdown
- Removable serpentine probe with thread

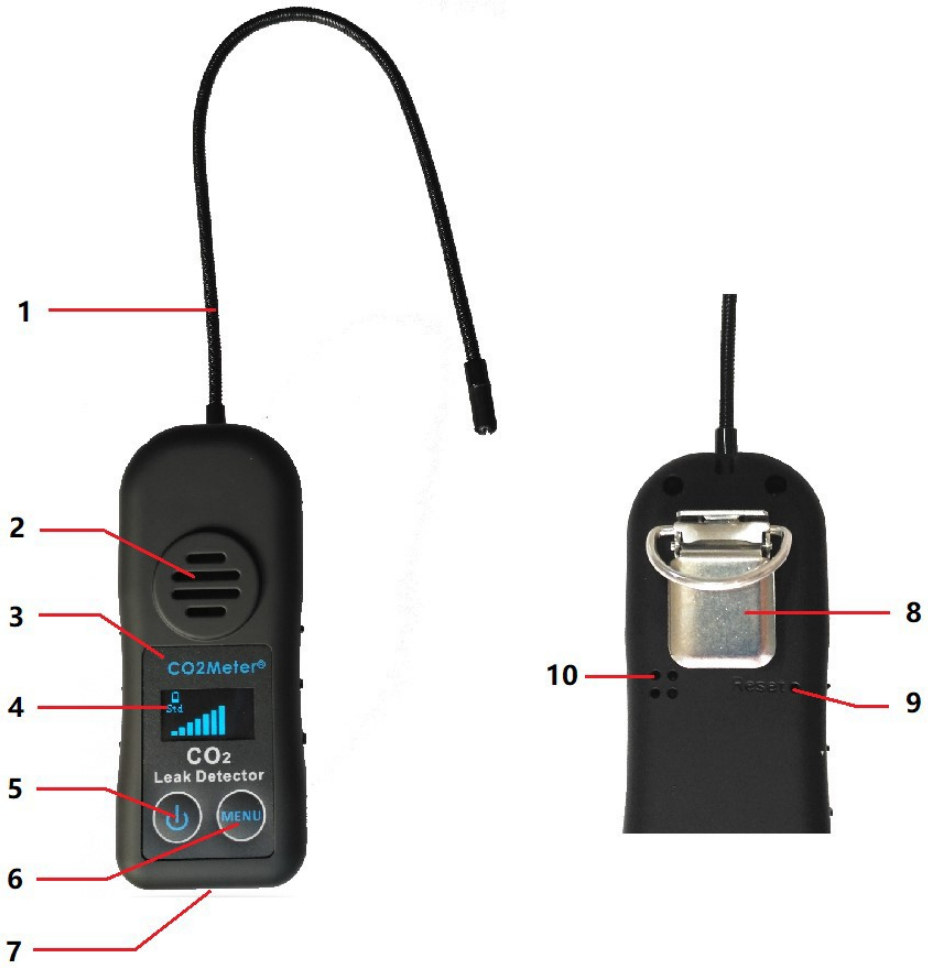
APPLICATIONS

- Carbonated beverage delivery systems
- Wineries, breweries, and bakeries
- CO2 refrigeration service
- Bulk CO2 manufacturing, delivery, and service
- General leak detection (using CO2 as test gas)

INCLUDES

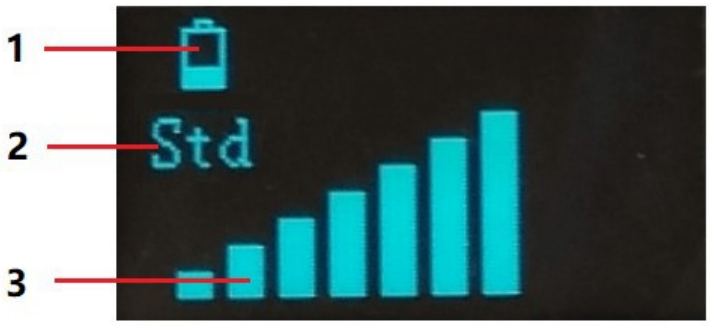
- SAN-13 CO2 Leak Detector
- Calibration Certificate
- American USB Plug
- USB Charging Cable
- Soft Side Zip-Up Traveling Case

INSTRUMENT



1. Removable serpentine probe
2. Exhaust vent
3. Battery Indicator
4. OLED display
5. Power button
6. Menu button
7. USB charging port (bottom side)
8. Heavy duty metal clip
9. Factory reset button
10. Audio Outlet

OLED DISPLAY



1. Battery indicator
2. Sensitivity mode (standard sensitivity or High sensitivity)
3. Display bar indicating level of CO2 leak

OPERATION

The SAN-13 is shipped with an NDIR (Non-dispersive Infrared) sensor and battery already installed. The sensor has been calibrated and should not need recalibration for at least 3-6 months from the date of purchase.

The SAN-13 is designed to only read CO2 (carbon dioxide). Please note, that normal atmosphere CO2 concentrations are approximately 350~450 ppm. The device will see these background levels but should not alarm at these levels. Please attempt to limit excess exposure to CO2 like from a car exhaust or your breath as these could be high enough to make the SAN-13 alarm.

Instructions for finding leaks

1). Press the power button  to turn on instrument. When the device is “on” the pump will be flowing gas. The pump will only shut off when the device is turned off.

2). Set the instrument to High Sensitivity (Refer to section 2. - Menu Setting).

3). Place the tip of the leak detector probe close to the source of the suspected leak. Try to position the probe within range of the possible leak source.

4). Slowly move the probe past each possible leak point at a speed of approximately 1~2 inches per second.

5). Watch the bars displaying on the SAN-13 and listen for the audible alert of a leak. When the SAN-13 detects the leak point the bars will display and the audible alert will sound. The higher the leakage concentration, the more and higher the bars display, and it will emit a different audible tone (slow or rapid beeping).

6). If the concentration of carbon dioxide is high, reset the instrument to Standard Sensitivity before repositioning the probe at the suspected leak source. The Standard sensitivity setting helps find the exact site when a leak is large.

7). Once you have isolated the leak source, reset the sensitivity back to High sensitivity to continue using SAN-13 (please see section 2. Menu Setting).

8). When the operator has concluded leak detection, depress the power button to turn off the SAN-13. If the operator does not shut off the SAN-13 manually, the device will auto-shut off after 5 minutes of idle time to help conserve battery power.

Menu Settings

By pressing the Menu button  for 5 seconds, the unit enters Menu status. There are four menu options available by pressing the Menu button  shortly in sequence. The menu items are described in the following table.

Menu Items	Functional Description
Ambient cali.	Ambient Air Calibration. User presses the power button  to implement Ambient Air Calibration
N2 cali.	Nitrogen Calibration (Zero calibration). User presses the power button  to implement Nitrogen Calibration
Sens.: Std/High	Sensitivity mode setup. User presses the power button  to switch “Sens.: Std” (standard sensitivity) or “Sens.: High” (high sensitivity).
Buzz: On/Off	Setting Audio tone on/off. User presses the power button  to switch “Buzz: On” (allowing audio tone) or “Buzz: Off” (prohibiting audio tone).
Exit	User presses the power button  to exit the menu status.

Sensitivity

There are two kinds of sensitivity modes: standard and high sensitivity to enable quick and easy location of large and small leaks. See the following settings table.

Modes	Possible Leak Detected	Leak Detected
High sensitivity	≥1000 ppm, slow beeping, half bars display	≥1500 ppm, rapid beeping, full bars display
Standard sensitivity	≥5000 ppm, slow beeping, half bars display	≥10000 ppm, rapid beeping, full bars display

Other Points of Use

Operators can factory reset the device by depressing the reset button on the back of the device. See the instrument layout on page 4.

To conserve battery power, the unit will automatically turn itself off after 5 minutes of inactivity.

CALIBRATION

The SAN-13 comes pre-calibrated from the factory. However, the CO2 sensor should be calibrated at least once a year. You can perform the calibration yourself, or you may return the device to CO2Meter for factory calibration for a nominal fee.

MAINTENANCE

Cleaning and Storage

You may clean the device with a damp cloth ensuring the device is dry prior to use. Do not use soap or Alcohol to clean the device. Do not use aromatic hydrocarbons or chlorinated solvents like perfume or ammonia for cleaning.

SPECIFICATIONS

Sensing Method - Dual Beam NDIR (Non-dispersive-infrared)
Sample Method – micro pump
Automatic Background Calibration (ABC): No ABC exists in this device

Technical Specifications

Operating Environment	32°F~122°F (0°C~50°C), <95% RH non-condensing
Storage	14°F~140°F (-10°C~60°C), <99% RH non-condensing
Power Supply	Li-ion battery (4.2V,1500mAh), Micro USB cable w. Wall USB charger

Dimensions	16.54x1.95x1.83 Inch (420x49.5x46.5mm)
Weight	6.07 oz. (172 grams)
Sensitivity (High)	1000 ppm
Sensitivity (Standard)	5000 ppm
Warm up time	<5 seconds at 22°C
Response time	< 1 second
Probe length	12” (30 cm), Removable
Measurement Range	0~20.0%Vol CO2
Measurement interval	50 ms (20x per second)

Out of range of operating conditions will impact the accurate of CO2 measurement.

TROUBLESHOOTING

Symptom / Issue	Possible Cause / Resolution
Cannot power on	Press the Power Button for more than 5 seconds
	Check that the Li-ion battery is charged
	If monitor is charged but will not turn on, contact support
Will not detect CO2	Verify battery is charged. If pump still cannot be heard running, contact CO2Meter.

SUPPORT

The quickest way to obtain technical support is via email. Please send all support inquires 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 instrument comes with a 1YEAR (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.

For more information visit our website: www.co2meter.com/pages/terms-conditions

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, an 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're here to help!

If the troubleshooting guide above doesn't help you solving your problem or for more information, please contact us using the information below.

Support@CO2Meter.com
(386) 256-4910 (M-F 9:00am–5:00pm EST)
www.CO2Meter.com

See CO2Meter, Inc. Terms & Conditions at:
www.CO2Meter.com/pages/terms-conditions

CO2METER.COM
CO2 MEASUREMENT SPECIALISTS

131 BUSINESS CENTER DRIVE
ORMOND BEACH, FL 32174
SUPPORT (386) 256-4910
SALES (877) 678-4259
WWW.CO2METER.COM | SALES@CO2METER.COM