

Technical Specification:

Dimensions: 180.3mm x 99.1mm x 44.5mm

Weight: 0.28kg

Operating Temperature: 0°C to 40°C

Storage Temperature: -5°C to 45°C

Humidity: 15 to 90%

Digital Display: 3.5 Digit 1/2" Liquid Crystal Display

Battery: Standard 9V Alkaline (Type PP3, MN 1604, 6F 22)

Display Range: 0 to 199 ppm (µL/L)

Linear Range: 0 to 99 ppm (µL/L)

Resolution: 1 ppm (µL/L)

Measuring Accuracy: +/-3 ppm (µL/L)

Typical Battery Life

9V Alkaline Type 250 - 500 Hours

References

Jarvis M.J. et al, "Low Cost Carbon Monoxide Monitors in Smoking Assessment," Thorax 1986; 41:886-887.

FDA Notice

Caution: Federal Law restricts this device to sale by, or on the order of a physician.



Your respiratory partner

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Ordering Info:

- 29506 CO Calibration Gas Cylinder (50 ppm (50µL/L))
- 20202 2020 Mouthpieces Mini
- 29512 Sampling-T Connector set (pack of 10)
- 29507 Regulator and Tubing Kit



the difference is clear

Vitalograph BreathCO Quick Start User Training Manual



Introduction

INDICATIONS FOR USE

The Vitalograph BreathCO™ Monitor is a small handheld instrument which is used to measure levels of breath carbon monoxide which is the level of carbon monoxide (CO) in a person's exhalation. This can be used in a variety of environments e.g. hospital wards, occupational health centers and private homes.

This display indicates parts per million (ppm/ $\mu\text{L/L}$) of carbon monoxide. It is considered to be the single most effective motivational tool in smoking intervention. Equally importantly, weekly follow-up after smoking cessation will detect and therefore deter relapse.

How to operate

1. Firmly mount the Sampling-T in the taper on top of the case.
2. Switch the instrument ON using the switch located on the end, nearest the display. The LCD at the top of the monitor will read a high number, which will rapidly fall.
3. A new mini-mouthpiece should be fitted to the Sampling-T for each new user.
4. The unit should be allowed to "warm up" until the display shows $000 \pm$. If this is not achieved within two or three minutes please refer to the "Display re-zeroing" section.
5. The subject should take in a deep breath, hold it for 10 seconds and then breath out slowly through the mouthpiece over a period of 20 seconds or more.
6. Record the highest reading indicated on the display after completing the blow.

Note: Any unauthorised changes to the BreathCO device may compromise product safety and/or data and as such Vitalograph cannot be held responsible and the device will no longer be supported.

Display re-zeroing

Changes in the ambient operating temperature or CO level can cause small drifts in the instrument zero. If adjustment is necessary, slowly move the small slider control, adjacent to the liquid crystal display window, until the display shows all zeros. If the instrument will not zero, possible causes are high ambient levels of CO, faulty calibration or equipment malfunction. To eliminate the possibility of the high ambient level, the unit should be removed to another location and zeroing attempted again.

Calibration

It is recommended that an accuracy check be performed on a monthly basis as the sensor may drift by <2% per month. Follow steps 1-4 below to check accuracy and calibrate if required. The Vitalograph- BreathCO is re-calibrated by exposing it to a gas of known concentration. (BreathCO Calibration Gas Cat. No. 29506). This is usually 50ppm/ $\mu\text{L/L}$ CO.

Note: Failure to calibrate may result in incorrect readings.

**Calibrate only in a well ventilated environment.
Ensure gas canister is secured prior to accuracy/calibration.**

1. Turn BreathCO on, allow display to stabilize, then adjust to 0 if needed.
2. Connect the gas to the Sampling-T.
3. Let the gas flow slowly (approx. 0.5 ltr/min) through the Sampling-T into the instrument. When using the Vitalograph Calibration Kit the regulator is pre-set to 5psi.
4. Once the displayed value stops increasing, it should be within $\pm 5\%$ of the gas concentration. (i.e. 48-52).
5. If the instrument does not display a reading within the specifications, slowly adjust the "SPAN" recessed adjustment screw on the rear of the instrument, until the display reads 50. (Be careful or you could damage it). If this cannot be achieved, the electrochemical sensor in the product must be replaced. Please contact our technical support department if this should occur.
6. After calibration, disconnect the Sampling -T and allow the instrument to settle for 5 minutes. Recheck the instrument zero. Re-adjust the zero if necessary, as detailed in the previous section.

General maintenance

A General maintenance and calibration should be performed on an annual basis. A calibration check should be performed as required. The Sampling-T should be changed after approximately 50 tests have been performed. A red LED on the front of the device will turn on to indicate low battery.

When replacing the battery be sure to use only alkaline batteries.

1. Press down on panel marked 'OPEN' and slide cover in direction of arrow. Then gently lift cover from the instrument.
2. Remove and discard the old battery.
3. Replace with a new battery of the correct type.
4. Ensure that the connector is fitted correctly.
5. Ensure the leads are tucked neatly away, before replacing battery compartment cover.

Note: When the device reaches its use-by-date a service is required to replace the sensor. The use-by-date is specified as 2 years from the date of manufacture.