Snifit® Model 40

Carbon Monoxide Analyzer

Introduction

Designed for HVAC professionals and utility personnel, the Snifit Model 40 Analyzer is ideal in checking for the presence of CO in rooms and garages, or around registers, furnaces, stoves, hot water heaters and other types of combustion appliances. Used in conjunction with your Digital Multimeter (DMM), the Snifit samples the surrounding air and provides a voltage output that is proportional to the detected CO concentration that is then displayed on the DMM.

Features

- Measures 0 to 1999 ppm CO in room air
- Sensitive CO sensor will last up to 2 years
- Output of 1 mV/ppm CO
- Compact pocket size
- Low battery check
- Manual zero adjust
- Factory calibrated on 100 ppm CO
- Simple field calibration
- Auto power-off after 35 minutes
- Single 9V battery provides at least 1500 hours of operation

Bacharach, Inc.
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Phone: 412-963-2157/2164 Fax: 412-963-2640
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Specifications

Gas Monitored	Carbon Monoxide (CO)
Range	0 to 1999 ppm
Accuracy	± (5% of reading + 5 ppm)
Resolution	1 mV/ppm CO
Response	≤30 sec. to 90% of final value
Power	9V battery
Battery Life	1500 hours minimum
Temperature Range	32 to 104 °F (0 to 40 °C)
Case Material	High impact plastic
Weight	0.25 lb (0.11 kg) without battery
Dimensions	5.5" L x 2.0" W x 1.6" H (140 x 51 x 41 mm)

Operation

Turning the Snifit On/Off

If not already done, install a 9V battery as described under *Battery Installation*.

Turn on the Snifit by pressing its **Power On** button. The **Power On** LED indicates when the instrument is operating.

Turn off the instrument by pressing the **Power Off** button (or the instrument will automatically shut off after approximately 35 minutes).

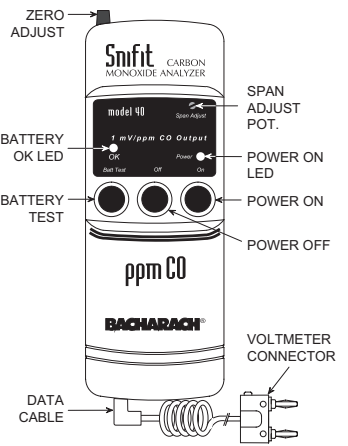

Figure 1. Snifit 40

Voltmeter Connection

Connect the Snifit to a voltmeter using the supplied Data Cable (see Figure 1). We suggest using a 3½ digit or greater Digital Multimeter having a 2 VDC range or auto ranging capability, a 10 MΩ or greater input impedance, and an accuracy of at least ±1mV.

Zeroing the Sensor

Turn on the Snifit and allow the voltmeter reading to stabilize – approximately 30 seconds. Then with the instrument sampling fresh air (air that is free of CO), adjust the **Zero Adjust** knob at the top of the instrument for a voltmeter reading of 0 ±1 mV.

If you're not sure about the quality of the surrounding air, you can apply a blend of Oxygen/Nitrogen gas to the sensor as described under *Calibration*.

Checking for CO

Important! *Ensure that the sensor grille at the rear of the instrument is unobstructed and open to the atmosphere. A quick instrument check can be performed by allowing the smoke of a blown-out match to enter into the sensor grille. This should cause the indicated CO level to increase.*

After the Snifit has been connected to a voltmeter and zeroed, simply hold the instrument in the area that you suspect the presence of CO gas. If CO is present, the voltmeter will indicate the concentration of CO in 1 mV per ppm. For example: a voltmeter reading of 150 mV indicates a CO concentration of 150 ppm.

Battery Check

For accurate CO readings, pressing the **Batt Test** button must cause the **Batt Test OK** LED to light. If this LED does not light, replace the battery as described under *Battery Installation*.

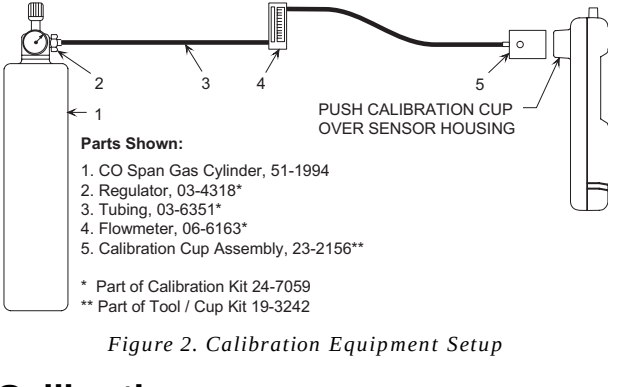

Figure 2. Calibration Equipment Setup

Calibration

Important! *For accurate Snifit operation, periodic calibration of its CO sensor is required.*

To calibrate the CO sensor, you will need the equipment listed under *Accessories*. Note that the Zero Gas Cylinder is needed only if you're unsure about the quality of the surrounding air for zeroing purposes.

Calibrate the sensor to a known concentration of CO gas as follows:

1. Assemble the calibration equipment per Figure 2.

2. Zero the instrument as previously described under *Zeroing the Sensor*.

   If necessary, you can use the calibration cup to apply a blend of Oxygen / Nitrogen gas directly over the sensor by attaching a zero gas cylinder to the regulator and adjusting the regulator knob for a flow rate of 2 SCFH.

3. Push the Calibration Cup over the sensor housing.

4. Attach a CO Span Gas Cylinder to the regulator. Then apply span gas to the sensor by adjusting the regulator knob for a flow rate of 2 SCFH.

5. Allow span gas to flow until the voltmeter reading stabilizes – approximately 3 minutes. Then, using Calibration Tool 06-9453 (supplied in Calibration Tool / Cup Kit 19-3242), turn the **Span Adjust** potentiometer until the CO level indicated by the voltmeter reading matches the concentration stamped on the Span Gas Cylinder.

6. Calibration is now complete. Turn off the regulator and remove the calibration equipment.

Maintenance

Battery Installation

Remove the slotted screw from the rear of instrument; then lift off the front case.

Install a 9V Alkaline battery (Duracell MN1604 or equiv.) in the location shown in Figure 3; then reinstall the front case.

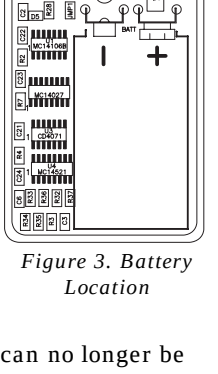

Figure 3. Battery Location

Sensor Replacement

The sensor needs replaced when it can no longer be calibrated to the Span Gas Cylinder value using the **Span Adjust** potentiometer.

1. See Figure 4. Remove the slotted screw from the rear of instrument; then lift off the front case and remove the printed circuit board assembly.

2. Unplug the old sensor and dispose of it properly.

3. Inspect the sensor gasket and filter. Replace an item if is torn, deformed, or contaminated with dirt.

4. **Remove** the wire-jumper from the pins of the new sensor; plug in the sensor; then reassemble the instrument.

5. Calibrate the new sensor.

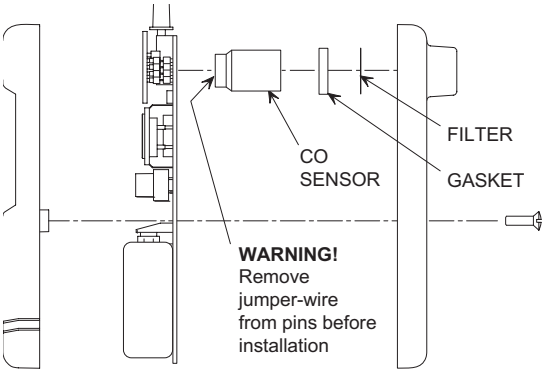

Figure 4. Sensor Installation

Replacement Parts

Item	Part No.
CO Sensor	19-7061
Gasket	19-3234
Filter	19-3244

Accessories

Item	Part No.
Calibration Kit	24-7059
Calibration Tool / Cup Kit	19-3242
Span Gas Cylinder, 100 ppm CO in air	51-1994
Zero Gas Cylinder, 20.9% O_2 in Nitrogen	51-7131

Bacharach Service Center

Replacement parts and accessories can be obtained by contacting the following Bacharach Service Center:

Bacharach, Inc.
625 Alpha Drive
Pittsburgh, PA 15238
Phone: (412) 963-2214
FAX: (412) 963-2606