

# COHP CO Monitor User Manual

## NOTE:

Typical calibration takes approximately 90 seconds. If unit will not calibrate within 3 minutes, repeat the calibration steps with compressed air turned off. If the problem persists, contact Bullard's Customer Service Department at 1-877-BULLARD (285-5273).

## NOTE:

Cam valve switch must be in RUN position for active monitoring of CO in the air supply.

## Battery Replacement

A 9-volt battery is installed under the front panel cover to provide power to the CO monitor. This monitor may also run solely on AC power if the COHP attached to an AC power supply. Regardless of AC or DC power to the CO monitor, a 9 volt DC battery MUST be installed in the CO monitor at all times.

To replace the 9-volt battery, remove the panel cover from the front of the CO monitor. Lift it off from either the left or right side. If a 9-volt battery is being used to power the monitor and the battery power becomes too low, the monitor will indicate low battery (LB) on the display to indicate it is time to change the battery (Figure 4).

## Optional DC Power Supply

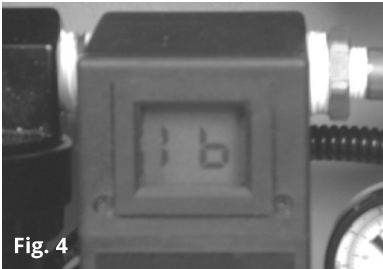


Fig. 4

The COHP may be operated using 8 AA batteries to provide power to the external lights and alarm and the CO Monitor. During DC operation, the unit will operate continuously for 40 hours. Alarm status and duration can affect length of operation when using the DC backup power supply. Lights located on the box will indicate whether the box is being operated on AC or DC power. If

the COHP being operated with backup DC power (8 AA batteries), the amber light on the top of the box will burn steady. If the battery power for the box falls below the required voltage, the amber light on the top of the box will flash indicating it is time to change the batteries. There will also be an audible alert in the form of short, intermittent beeps that will serve as notification that the batteries are low. The battery compartment is located on the interior surface of the COHP case (Figure 5).

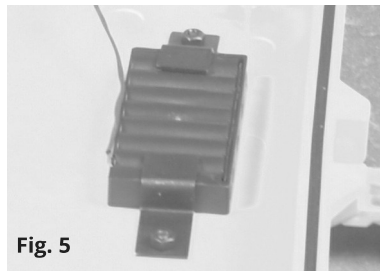


Fig. 5

## Sensor Replacement

### ATTENTION

Before installing a replacement sensor, verify that you have the correct sensor. The CABRS is the replacement sensor for all COM10 or COM5 monitors with serial numbers with a suffix "A," and serial numbers with NO suffix. The CABRS2 is the replacement sensor for all COM10 or COM5 monitors with serial numbers with a suffix "B." Also, the monitors that require the CABRS2 will have an extra board to which the sensor mounts. See photos below to view the two sensors.



CABRS



CABRS2

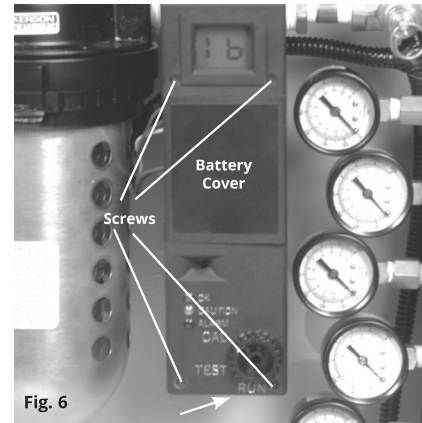


Fig. 6

The sensor is easily accessible by removing the front of the housing from the COM5 or COM10 monitor.

To gain access to the sensor, remove the four screws on the front of the CO monitor only. After removing the four screws, gently pry the front of the housing off from the bottom of the housing.

### WARNING

Removing the front of the housing by prying at the top will result in damage to the housing and render the product unsafe for use. This damage is not covered under warranty.

Gently pull out the old sensor.

Remove the shorting clip cover from the new sensor.

Align pins and gently push the new sensor into the sockets.

Replace the front cover of the monitor when the sensor replacement is complete. Ensure LED lights are aligned with housing before securing the front cover with screws.

After replacing the sensor, allow the instrument to warm up for at least 30 minutes. The new sensor must be zeroed and calibrated before first use. See Zero-Point Adjustment and Calibration Instructions.

## One Year LIMITED Warranty

Bullard warrants to the original purchaser that the CO Monitor will be free of defects in material and workmanship under normal use and service for a period of one (1) year from the date of purchase. Bullard's obligation under this warranty is limited to repairing or replacing, at its option, parts that are returned within the warranty period and that are, after examination, shown to Bullard's satisfaction to be defective, subject to the following limitations.

- CO Monitor must be returned to the Bullard factory with shipping charges prepaid.
- CO Monitor must not be altered from its original factory configuration.
- CO Monitor must not have been misused, subjected to negligent use, or damaged in transport.
- The date of purchase is within the one year warranty period. (A copy of the purchaser's original invoice showing the date of purchase is required to validate warranty coverage.)

In no event shall Bullard be responsible for damages for loss of use or other indirect, incidental, consequential or special costs, expenses or damages incurred by the purchaser, notwithstanding that Bullard has been advised of the possibility of such damages.

ANY IMPLIED WARRANTIES, INCLUDING WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE, ARE SPECIFICALLY EXCLUDED FROM THIS WARRANTY.

Some states do not allow the exclusion or limitation of incidental or consequential damages, or allow limitations on how long an implied warranty lasts, so the above limitations or exclusion may not apply to you. This warranty gives you specific legal rights, and you may have other rights which vary from state to state.



## Return Authorization

The following steps must be completed before Bullard will accept any returned goods. Please read carefully.

Follow the steps outlined below to return goods to Bullard for repair or replacement under warranty or for paid repairs:

1. Contact Bullard Customer Service by telephone or in writing at:

**Bullard**  
 1898 Safety Way  
 Cynthiana, KY 41031-9303  
 Toll-Free: 877-BULLARD (285-5273)  
 Phone: 859-234-6611

In your correspondence or conversation with Customer Service, describe the problem as completely as possible. For your convenience, the representative will try to help you correct the problem over the phone.

2. Verify with your representative that the product should be returned to Bullard. Customer Service will provide you with written permission and a return authorization number.
3. Before returning the product, decontaminate and clean it to remove any hazardous materials which may have settled on the product during use. Laws and/or regulations prohibit the shipment of hazardous or contaminated materials. Products suspected to be contaminated will be professionally discarded at the customer's expense.
4. Ship returned products, including those under warranty, with all transportation charges pre-paid. Bullard cannot accept returned goods on a freight collect basis.
5. Returned products will be inspected upon return to the Bullard facility. Bullard Customer Service will telephone you with a quote for required repair work which is not covered by warranty. If the cost of repairs exceeds stated quote by more than 20%, your representative will call you for authorization to complete repairs.

## CO Monitor Troubleshooting Guide

<b>Monitor will not calibrate at 10 ppm.</b>	<ol style="list-style-type: none"> <li>1. Prior to performing a calibration, allow the temperature of the monitor to stabilize to the environment in which it will be used for several minutes.</li> <li>2. The COHP Box should be under pressure with air pressurizing the CO Monitor. (i.e. under static pressure).</li> <li>3. Perform a zero point adjustment using impurity-free air.</li> <li>4. If the instrument zeroes, perform a calibration using 10 ppm CO.</li> <li>5. Verify that the calibration gas is 10 ppm and the gas cylinder is not empty. (Gauges are available.)</li> <li>6. If the instrument will not calibrate, remove the air supply and repeat both the zero point adjustment and the 10 ppm CO calibration.</li> <li>7. If the instrument will not calibrate, replace the sensor and repeat both the zero point adjustment and the 10 ppm CO calibration.</li> </ol>
<b>Monitor will not successfully complete a zero point adjustment.</b>	<ul style="list-style-type: none"> <li>• Wait 5 minutes and repeat steps 1-4 above.</li> </ul>
<b>Monitor displays a (-0) reading or rc.</b>	<ul style="list-style-type: none"> <li>• Wait 5 minutes and repeat steps 1-6 above.</li> </ul>
<b>Monitor zeroes during the zero point adjustment and the reading elevates after returning to the RUN mode.</b>	<ol style="list-style-type: none"> <li>A. Allow unit to stabilize in the run mode for 5 minutes.</li> <li>B. Repeat steps 1-6 above.</li> <li>C. If the unit will not calibrate, the supply air may be contaminated.</li> <li>D. Check the supply air for CO level.</li> </ol>
<b>Monitor will not turn ON.</b>	<ul style="list-style-type: none"> <li>• Verify that the ON/OFF button under the front cover of the monitor has been pressed to activate the monitor</li> <li>• Check AC power supply             <ol style="list-style-type: none"> <li>1. Confirm the ON/OFF switch on the control box is in the ON position</li> <li>2. Confirm AC power cord is connected to working outlet</li> <li>3. Confirm unit is wired correctly</li> </ol> </li> <li>• Using Battery back up             <ol style="list-style-type: none"> <li>1. Confirm the AA batteries are good – replace if needed</li> </ol> </li> <li>• Using 9V battery installed in monitor             <ol style="list-style-type: none"> <li>1. Verify that the battery is good – replace if needed</li> </ol> </li> <li>⚠ <b>NOTE</b>              Monitor will not turn ON without a 9V battery installed in the correct position. Reversing the + and - poles will prevent the monitor from functioning too.</li> <li>• If the power supply is good and the monitor will not power up, return it to the factory for repair or replacement.</li> </ul>
<b>Monitor does not display flashing green light after calibration or a partial display appears on the monitor screen.</b>	<ul style="list-style-type: none"> <li>• With the monitor ON and the unit on battery power only, remove and reinstall the 9 volt battery.</li> <li>⚠ <b>NOTE</b>              9V battery must be good for this step to work.</li> <li>• Repeat steps 1-6 above.</li> </ul>
<b>Monitor does not turn OFF.</b>	<ul style="list-style-type: none"> <li>• Monitor must be switched to the RUN or TEST mode for monitor to turn OFF.</li> <li>• The rotary cam switch is not locked in the CAL, TEST or RUN position.</li> <li>• Turn the switch knob slightly until it is in the correct position.</li> <li>⚠ <b>NOTE</b> <ol style="list-style-type: none"> <li>1. AC appears on the display if attempting to go to CAL mode.</li> <li>2. CO and an alternating number appears on the display if the unit is in the TEST mode.</li> <li>3. A number (PPM content of CO in the compressed air) appears on the display if attempting to go to the RUN mode.</li> </ol> </li> </ul>
<b>Monitor displays (F1) reading.</b>	<ul style="list-style-type: none"> <li>• This can occur when the ON / OFF button is pushed while the monitor is in the fault mode with F1 showing on the display.</li> <li>• Continue to push the ON / OFF button until F1 is shown on the display.</li> <li>• Turn the switch knob slightly to lock the monitor into the CAL, TEST or RUN mode.</li> </ul>
<b>Monitor displays (8.88, 2F or 9E) with flashing lights.</b>	<ul style="list-style-type: none"> <li>• Check power supply.</li> <li>• Verify that the 9V battery and the AA batteries are good.</li> <li>• If the power supply is good and the monitor will not power up, return it to the factory for repair or replacement.</li> </ul>
<b>Monitor shuts down after 60 second countdown.</b>	<ul style="list-style-type: none"> <li>• Check power supply.</li> <li>• Verify that the 9V battery and the AA batteries are good.</li> <li>• If the power supply is good and the monitor will not power up, return it to the factory for repair or replacement.</li> </ul>
<b>Monitor displays "lb".</b>	<p>This indicates a low battery condition and the 9V battery in the CO monitor should be replaced.</p>
<b>Yellow caution LED flashes.</b>	<ul style="list-style-type: none"> <li>• This is normal for TEST mode and no action is necessary.</li> <li>• If the unit is not in TEST mode, then it may indicate a low battery condition. Replace the 9V battery in the CO monitor.</li> </ul>

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