** WARNING **

- KEEP DETECTOR AWAY FROM ELECTROMAGNETIC & MAGNETIC INTERFERENCES (i.e. PHONES & MAGNETS)
- STORE DETECTOR WITHIN SPECIFICATIONS
- IF UNWELL, SEEK CLEAN AIR & MEDICAL HELP.
- DO NOT OPEN THE UNIT
- KEEP AWAY FROM DUST & PARTICULATE
- NEVER EXPOSE TO EXHAUST GAS or CONCENTRATED VAPORS, HARSH CHEMICALS OR EXTREMELY HIGH CONCENTRATION LEVELS AS IT MAY POISON THE SENSOR
- READ & FOLLOW INSTRUCTIONS
- TO ENSURE ACCURACY, CALIBRATE DEVICE AT LEAST EVERY 6 MONTHS
- BUMP TEST WHEN FIRST UNPACKING TO CONFIRM DETECTOR OPERATION
- BUMP TEST BEFORE USE TO CONFIRM DETECTOR OPERATION

**INTRODUCTION**

You have purchased the SINGLE GAS DETECTOR by FORENSICS DETECTORS™. The detector has a temperature indicator, time, alarm functionality, adjustable alarms and calibration friendly for industrial, business, home or R&D.

**OPERATION**

ON/OFF: Press POWER button for 5 seconds. After self check, normal operation begins and the gas level is show.

MENU MODE: Quickly press POWER button to enter the main MENU SELECTION. Use UP and DOWN buttons to make your selection, then press POWER button to select.

**MENU OPTIONS**

Gas Zero: Expose to ZERO air for 2 minutes using certified gas or fresh air (only for O2 Detectors, expose to pure N2). Maintain a flow of about 0.5L/min when using gas bottles and use the sensor cap provided to deliver the gas to the detector. Then press Save to register the Zero reading.

Gas Calib: Enter passcode 8888. Enter CAL gas concentration – usually mid point of detection range or lowest alarm level. Expose to CAL air for 2 minutes using certified gas. For O2 detectors, simply expose the detector to fresh air that has 20.9% of O2. Maintain a flow of about 0.5L/min when using gas bottles and use the sensor cap provided to deliver the gas to the detector.

Set Time: Follow screen instructions. Move cursor and adjust alarm levels.

Record: Time-stamped history of alarm activation.

**BATTERY CHARGING**

The product has a built-in lithium battery and is charged via micro-USB. When the battery mark on the screen is full, charging is completed. To Operate the Detector whilst charging, plug the charging cable whilst detector is ON. **DO NOT** charge in dangerous test locations to avoid fire or explosions.

**SPECIFICATIONS**

Sensor: Electrochemical Sensor
Sensor Life: 2-3 years (comes with calibration certificate)
Detection Range: see Table 1
Error: <±5% F.S. of detection range (see Table 1)
Recovery/Response Time: < 30 seconds
Storage / Operating Temperature: 14°F - 122°F
Storage / Operating Humidity: <95% RH
Battery: DC3.7V Li-Ion battery 1500mAh
Dimension/Weight: 4.3x2.3x1.7 inches & 5.4oz
Rating: ATEX certified Ex ib IIB T3 Gb, IP65 certified.
Charging Time: 3 hours, Operating Time: >24 hours

Contact Us

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Table 1: Professional Series Model FD-90A gas detectors offered by FORENSICS DETECTORS™

<table>
<thead>
<tr>
<th>Gas</th>
<th>Range</th>
<th>Low Alarm</th>
<th>High Alarm</th>
</tr>
</thead>
<tbody>
<tr>
<td>H2</td>
<td>0-1000ppm</td>
<td>35ppm</td>
<td>250ppm</td>
</tr>
<tr>
<td>H2S</td>
<td>0-100ppm</td>
<td>10ppm</td>
<td>15ppm</td>
</tr>
<tr>
<td>CO</td>
<td>1000ppm</td>
<td>50ppm</td>
<td>200ppm</td>
</tr>
<tr>
<td>CO2</td>
<td>0-50,000ppm</td>
<td>1000ppm</td>
<td>2000ppm</td>
</tr>
<tr>
<td>C2H4O</td>
<td>0-20ppm</td>
<td>10ppm</td>
<td>15ppm</td>
</tr>
<tr>
<td>O2</td>
<td>0-30%</td>
<td>19.5%</td>
<td>23.5%</td>
</tr>
<tr>
<td>NH3</td>
<td>0-100ppm</td>
<td>25ppm</td>
<td>50ppm</td>
</tr>
<tr>
<td>Cl2</td>
<td>0-20ppm</td>
<td>5ppm</td>
<td>10ppm</td>
</tr>
<tr>
<td>O3</td>
<td>0-20ppm</td>
<td>5ppm</td>
<td>10ppm</td>
</tr>
<tr>
<td>SO2</td>
<td>0-20ppm</td>
<td>2ppm</td>
<td>5ppm</td>
</tr>
<tr>
<td>PH3</td>
<td>0-20ppm</td>
<td>0.3ppm</td>
<td>5ppm</td>
</tr>
<tr>
<td>N2</td>
<td>0-250ppm</td>
<td>20ppm</td>
<td>50ppm</td>
</tr>
<tr>
<td>NO</td>
<td>0-20ppm</td>
<td>5ppm</td>
<td>10ppm</td>
</tr>
<tr>
<td>HCl</td>
<td>0-500ppm</td>
<td>10ppm</td>
<td>20ppm</td>
</tr>
<tr>
<td>HCN</td>
<td>0-50ppm</td>
<td>10ppm</td>
<td>20ppm</td>
</tr>
<tr>
<td>CH2O</td>
<td>0-10ppm</td>
<td>2ppm</td>
<td>5ppm</td>
</tr>
<tr>
<td>VOC</td>
<td>0-100ppm</td>
<td>20ppm</td>
<td>50ppm</td>
</tr>
</tbody>
</table>

What is CALIBRATION?

Your detector comes already calibrated, ready to use. Turn ON and GO. However, calibration is an important function to be performed to ensure your gas detector operates accurately (EVERY 6 MONTHS). Accuracy and Calibration drift can happen over time because of chemical degradation of sensors and the natural drift in electronic components. There are two parts to the calibration, ZERO Calibration and SPAN Calibration.

ZERO CALIBRATION: Ensures a good baseline to ZERO target gas exposure. This ensures the detector reads a true ZERO. For example, for CO detectors, this is performed in fresh air, with NO carbon monoxide present.

SPAN CALIBRATION: Ensures accurate gas concentration reading (i.e. ensure that the display reading in ppm is accurate and true). For example, an OSHA safety officer using a CO detector used in the field would want to calibrate to a concentration of 50ppm, since ambient CO is usually in the lower range. The span calibration gas concentration chosen is best chosen to represent the concentration that the sensor typically is exposed to, as to ensure maximum accuracy for daily application usage.

What is Bump Testing?

Bump testing is to expose the gas detector to a small amount “blast” of target gas to ensure the detector operates and alarms as programmed. The function of this test is to verify detection operation and build user confidence, particularly in hazardous and critical user applications. Recommended to bump test when first purchased and unpacking detector and weekly thereafter.