



# FORENSICS DETECTORS FD-90A-O2 Single Gas Detector User Manual

[Home](#) » [FORENSICS DETECTORS](#) » FORENSICS DETECTORS FD-90A-O2 Single Gas Detector User Manual 



90A-O2 Single Gas Detector  
User Manual

## Contents

- 1 **\*\* WARNING\*\***
- 2 INTRODUCTION
- 3 OPERATION
- 4 BATTERY CHARGING
- 5 SPECIFICATIONS
- 6 What is CALIBRATION?
- 7 What is Bump Testing?
- 8 GAS SAMPLING PUMP
- 9 ROBUST WORK DESIGN
- 10 Documents / Resources
  - 10.1 References
- 11 Related Posts

## **\*\* WARNING\*\***

- KEEP THE 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 THE DEVICE AT 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 shown.

**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 time digits as desired.

**Record:** Time-stamped history of alarm activation.



**LA Set:** Low Alarm point setting. Follow screen instructions. Move the cursor and adjust alarm levels.  
**HA Set:** High Alarm point setting. Follow screen instructions. Move the cursor and adjust alarm levels.  
**Unit Set:** Allows the user to select between ppm or mg/m<sup>3</sup>.  
**Note:** For O<sub>2</sub>, the unit is measured in %vol  
**ESC:** Exit menu options and back to normal operation.

## 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 the 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:**  $\pm 5\%$  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:** 4.3×2.3×1.7 inches & 5.4oz

**Rating:** ATEX certified Ex ib IIB T3 Gb. IP65 certified.

**Charging Time:** 3 hours, Operating Time: >24 hours

**Contact Us**

**WEB:** [www.forensicsdetectors.com](http://www.forensicsdetectors.com)

**Email:** [sarah@forensicsdetectors.com](mailto:sarah@forensicsdetectors.com)



**SINGLE GAS DETECTOR (PROFESSIONAL SERIES)**  
**FORENSICS DETECTORS™**

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

Gas	Range	Low Alarm	High Alarm
H2	0-1000ppm	35ppm	250ppm
H2S	0-100ppm	10ppm	15ppm
CO	1000ppm	50ppm	200ppm
CO2	0-50,000ppm	1000ppm	2000ppm
C2H4O	0-20ppm	10ppm	15ppm
O2	0-30%	19.50%	23.50%
NH3	0-100ppm	25ppm	50ppm
Cl2	0-20ppm	5ppm	10ppm
O3	0-20ppm	5ppm	10ppm
SO2	0-20ppm	2ppm	5ppm
PH3	0-20ppm	0.3ppm	5ppm
NO	0-250ppm	20ppm	50ppm
NO2	0-20ppm	5ppm	10ppm
HCN	0-500ppm	10ppm	20ppm
HCl	0-50ppm	10ppm	20ppm
CH2O	0-10ppm	2ppm	5ppm
VOC	0-100ppm	20ppm	50ppm

## What is CALIBRATION?

Your detector comes already calibrated, and ready to use. Turn it 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 the 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 the 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 of “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 bumping test when first

purchased and unpack the detector and weekly thereafter.

## GAS SAMPLING PUMP

Not required but recommended for continuous monitoring or gas sampling in isolated areas (hard to get to areas) such as sewers, tanks, shafts, etc...

**Sold Separately.** [Amazon.com](https://www.amazon.com)

**Product ASIN:** B0859JDCNB



## ROBUST WORK DESIGN

The professional series detector is a robustly designed unit. It arrives with a sling, calibration cap, and cable charger with an attached metal belt clip.

The detector conforms to a variety of qualifications: **CE ATEX certified Ex ib IIB T3 Gb IP65 certified**



Product Tested, Calibrated, QA/QC in California, USA

Product Packaged in California, USA

Product Made in China

See our Product Demos on our **YouTube** Channel



WEB: [www.forensicsdetectors.com](http://www.forensicsdetectors.com)

Email: [sarah@forensicsdetectors.com](mailto:sarah@forensicsdetectors.com)



## Documents / Resources



[FORENSICS DETECTORS FD-90A-O2 Single Gas Detector](#) [pdf] User Manual  
FD-90A-O2 Single Gas Detector, FD-90A-O2, Single Gas Detector, Gas Detector, Detector

## References

- [Amazon.com. Spend less. Smile more.](#)
- [Forensics Detectors](#)