WATERPROOF & SHOCKPROOF METER FD-103
FORENSICS DETECTORS™

MODEL: FD-103

*** * ATTENTION * ***

- **KEEP DETECTOR AWAY FROM ELECTROMAGNETC & MAGNETIC INTERFERENCES (i.e. PHONES & MAGNETS)**
- **STORE DETECTOR WITHIN SPECIFICATIONS**
- **IF UNWELL, SEEK FRESH AIR & MEDICAL HELP**
- **KEEP AWAY FROM DUST, VAPORS, HARSH CHEMICALS. STORE IN A CLEAN PLACE**
- **DO NOT EXPOSE DIRECT TO EXHAUST FUMES**

INTRODUCTION

You have purchased the **WATERPROOF AND SHOCKPROOF METER FD-103 by FORENSICS DETECTORS™**. This product tracks gas levels (either CO, O2, H2S – depending on your version) that is suited for any application needing extra robustness. The monitor operates from a lithium 9V battery that will last up to 2 years. For critical applications, we recommend calibration every 6 months. Don't forget to bump test daily. The meter is IP67 compliant and is very rugged. The detector comes with a stainless belt clip, cling and calibration cap. The cap has a 3mm bard that can connect to a tube to enable gas to be localized on the sensor hole for calibration or forced air detection via pump convection flow. When the gas concentration in the environment is higher than the preset alarm points, it will alarm via sound, light, and vibration.

BATTERY

The FD-103 monitor has a built-in 9v lithium battery. When the detector operates, the battery icon appears on the top left LCD display. When replacing the battery, unscrew the 4 x hex screws and replace with a lithium 9v battery.

OPERATION

ON/OFF: The ON/OFF power button is located on the front left of the detector. Press the POWER button to turn ON. Preset alarm levels will be shown then a 60 second countdown will take place. Once done the FD-103 monitor will display the instantaneous gas concentration that it detects. To turn OFF. Hold the power button for a 3 secs.

DISPLAY MODE

Press the MENU (M) button on the right hand side to scroll through the DISPLAY selection options as shown in the table. After 6 seconds the display will return to showing the normal instantaneous detected level.

Display	Description
S	STEL: Short Term Exposure reading 15-minute time weighted average.
T	TWA: Time Weight Average 8 hour time weighted average reading.
Time	Digital Clock Display

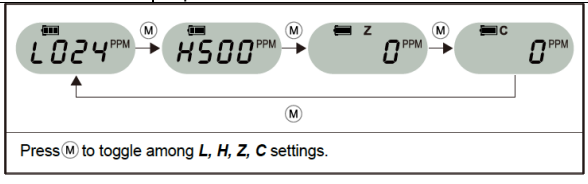
TIME CHANGE

When in the time display, hold the MENU button for 2 seconds to change the time. The time hour digit will flash - use the POWER button to change the hour. Press the MENU button to toggle to minutes and use the POWER button to change the minutes. Once done, hold the MENU button for 2 seconds to save the time.

MENU FUNCTIONS

Press the MENU button for 2 seconds to enter into the menu functions. **Enter 1234 password**. The Power button toggles numbers and MENU button toggles digit selection. When completed hold MENU button to enter the MENU Function as shown in the below table. Use the MENU button to toggle between these selections.

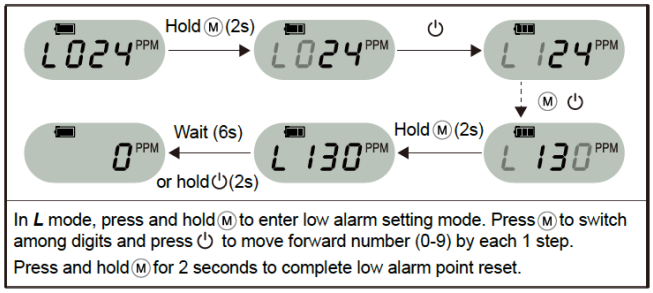
Display	Description
L	Low Alarm Point
H	High Alarm Point
Z	Zero Calibration
C	Span Calibration



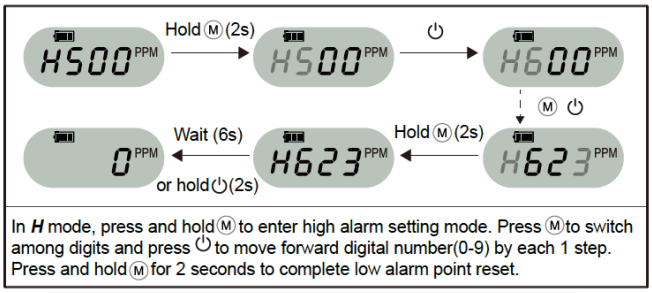
WATERPROOF & SHOCKPROOF METER FD-103
FORENSICS DETECTORS™

ALARM SETPOINT

To change the alarm setpoints enter into the **L** or **H** menu setting.



In ***L*** mode, press and hold Ⓜ to enter low alarm setting mode. Press Ⓜ to switch among digits and press ⏻ to move forward number (0-9) by each 1 step.
Press and hold Ⓜ for 2 seconds to complete low alarm point reset.



In ***H*** mode, press and hold Ⓜ to enter high alarm setting mode. Press Ⓜ to switch among digits and press ⏻ to move forward digital number(0-9) by each 1 step.
Press and hold Ⓜ for 2 seconds to complete low alarm point reset.

SPECIFICATIONS

Sensor: Electrochemical Sensor (single gas)
Range: 0-100ppm (CO-LOW), 0-1000ppm (CO), 0-100ppm (H2S), 0-30% (O2)
Resolution: 1ppm (CO/H2S)
Resolution: 0.1ppm (CO-LOW), 0.1% (O2)
Accuracy: < ±5% of full scale
Response Time: < 1minute
Store/Operate Temp & %RH: 32F–122F, <95%RH
Battery: 9V Li-Ion battery
Dimension/Weight: 110x35x41mm/150g (5.3oz)
Alarm Indicator: RED LED, 90dB buzzer and vibration
Expected Sensor Life: at least 3 years
Explosion Proof: Intrinsically safe, Exibd I
Protection Grade: IP67
Certification: EX, CE

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 before days use.**

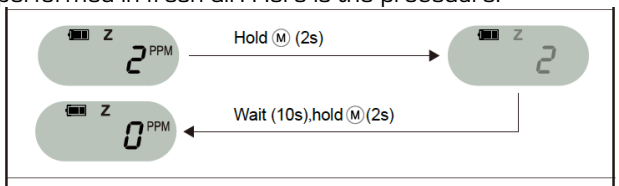
Product Tested, QA/QC in California, USA
Product Calibration Verification in California, USA
Product Packaged in California, USA
Product Made in PRC

WEB: www.forensicsdetectors.com
Email: sarah@forensicsdetectors.com

CALIBRATION

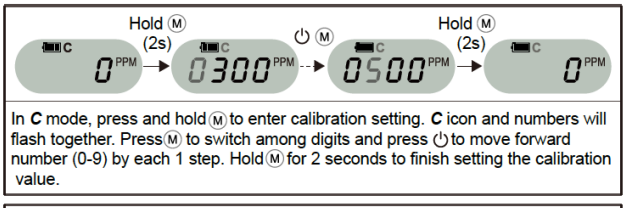
Your detector comes already calibrated, ready to use. Turn ON and GO. However, calibration is an important function to be performed to ensure your gas detector operates accurately (EVERY 6 MONTHS). Inaccuracy and calibration drift can occur over time because of chemical degradation of sensors and the natural drift in electronic components. There are two parts to the calibration, ZERO Calibration and SPAN Calibration. Don't forget, always perform ZERO calibration first! If the detector is drifting and has a small reading in fresh air, the detector needs to be ZERO calibrated (for H2S and CO). For O2, calibrate in fresh air to 20.9%

ZERO CALIBRATION: Ensures a good baseline to ZERO target gas exposure. This ensures the detector reads a true ZERO. For example, for CO or H2S detectors, this is performed in fresh air. Here is the procedure:

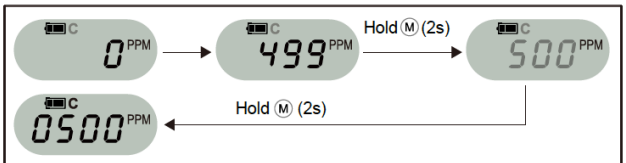


In ***Z*** mode, press and hold Ⓜ to enter zero setting. ***Z*** icon and numbers will flash together, wait till the value is stable (at least 10 seconds), then press and hold Ⓜ to complete this setting.

SPAN CALIBRATION: Ensures accurate gas concentration reading (i.e. ensure that the display reading in ppm is accurate and true). Calibration gas is used to perform this calibration and the calibration concentration is typically the mid-point of the sensor detection range. For example, H2S 0-100ppm, one would use a 50ppm H2S in air calibration gas connected to the detector via the calibration cap at a flow rate no less than 0.5LPM. Use the calibration cap to direct the gas to the sensor hole (cap comes with the product).



In ***C*** mode, press and hold Ⓜ to enter calibration setting. ***C*** icon and numbers will flash together. Press Ⓜ to switch among digits and press ⏻ to move forward number (0-9) by each 1 step. Hold Ⓜ for 2 seconds to finish setting the calibration value.



Now ***C*** icon and the numbers flash together. Open the valve and let the gas flow for 30 secs, then connect the other end of the hose with the cap.
Wait till the gas value is stable, then press and hold Ⓜ to finish the calibration.