FORENSICS DETECTORS

Portable Gas Detector
FD-90E-RED
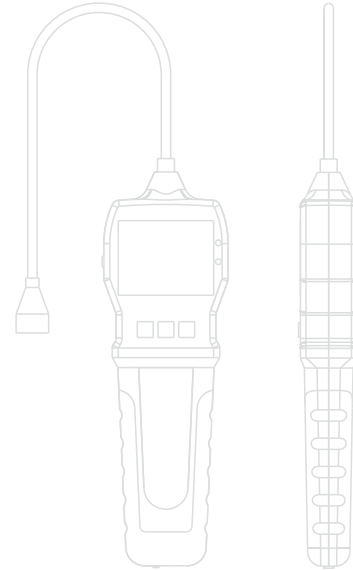
FORENSICS DETECTORS

Operation Manual

1.Introduction

The FD-90E portable gas detector is a state-of-the-art gas leak detector that adopts the LSI technique and meets international smart technology standards. With employ the best Japanese high quality semi-conductor sensor and embedded microcontroller to detect gas leakage with high sensitivity and fast reaction time. The detector is waterproof, dustproof, explosion-proof, and easy to use with super high reliability. This detector is widely used in oil, coal, municipal construction, chemical engineering, environmental protection, metallurgy, refining, gas transmission and distribution, biochemistry, agriculture and pharmaceutical industries.

ACCURATE: Accurate Made in Japan sensor, most sensitive with ppm (0-10,000ppm) or umol/mol concentration display. Comes FACTORY CALIBRATED. Turn ON and GO.
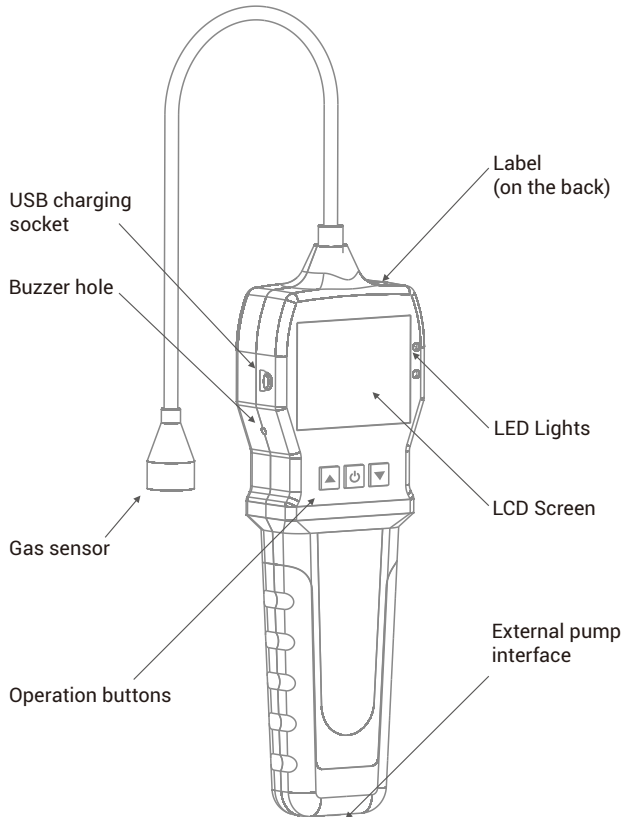
ALARMS: Adjustable Audio, visual, and vibration alarms alert when preset levels are reached.

COLOR DISPLAY: Large color LCD screen with temp and humidity. Shock proof, water proof, dust proof and explosion proof.

USES: Designed for inspectors, utility workers, refinery workers, maintenance engineers and technicians.

TRUST: ** 1 year limited warranty ** Arrives with USA calibration certificate ** 100% product test and verification in the USA ** 100% quality guaranteed **

2.Detector Overview

USB charging socket

Buzzer hole

Gas sensor

Operation buttons

Label (on the back)

LED Lights

LCD Screen

External pump interface

3.Technical Specifications

|			
Target gas	Combustible gas	**Range**	0-10,000ppm (μmol/mol)
Sampling method	Natural diffusion	**Response time**	<30s
Alarm point	Default: Low alarm: 500ppm; High alarm: 2000ppm. Supports personalized setting.		
Alarm types	Audible buzzer alarm; Visual LED light alarm; Vibration alarm		
Warm-up time	60S	**Sensor life**	5 years
Sensor type	Japanese FIGARO sensor		
Power supply	Rechargeable lithium battery, DC3.7V 1800mAh		
Charging time	4hours		
Operating time	> 8 hours (normal working environment)		
Working condition	Temperature: -1040 Humidity: ≤95% RH with no condensation.		
Storage condition	Temperature: -20~50℃ Humidity: ≤85% RH, avoid caustic gases or substances.		
Weight	Approx. 300g (excluding accessories)		
Dimension	Approx. 210mm(L)×66mm(W)×30mm(H)		
Packing list	Detector, Carrying case, Charger, USB cable,		

4.Operation Instructions

4.1 Device ON / OFF

Press the ⏻ button and then release it to turn ON the detector. Press the same ⏻ button to turn it OFF in any case.

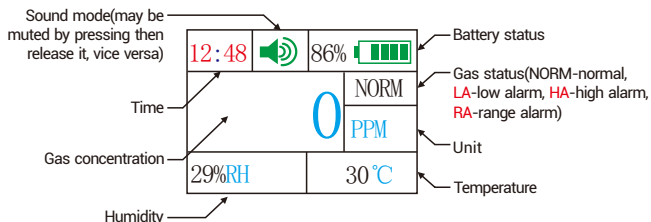Every time the device is turned ON, it will undergo a self-check process

4.2 Self check

Welcome to use	⇨	Sound check.....	⇨	Light check....

⇩

Starting.... 59	⇦	Vibrate check....	⇦
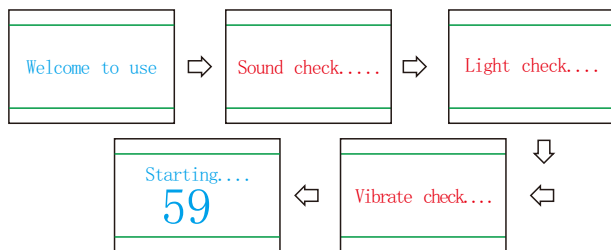
After self-check has completed, the device enters into detection interface (see next).

4.3 Detection interface

4.3.1 Overview

Sound mode(may be muted by pressing then release it, vice versa)

Time

Gas concentration

Humidity

Battery status

Gas status(NORM-normal, LA-low alarm, HA-high alarm, RA-range alarm)

Unit

Temperature

4.3.2 Parametric query

On the detection interface, press ▲ to see all parameters.

Date: 2018.06.25
Time: 15:45
LA :   500 ppm
HA : 2000 ppm
RA : 1000 ppm
BAT : 3.96V 86%

ADV : 0278
Volt : 0.22V
BL   : 5MIN

4.3.3 Alarm types

▶ Low alarm: Red LED light +"LA" on detection interface+ slow beeping + vibration

▶ High alarm: Red LED light +"HA" on detection interface + fast beeping + vibration

▶ Range alarm: Red LED light + "RA" on detection interface + fast beeping + vibration

For personalized setting or alarm records review/deletion purpose, press on detection interface, then it will enter the function menu (see below).

4.4 Function menu

Press ▼ or ▲ to choose a specific function, then press ⏻ to enter.

MENU	
➡ 1.Gas Zero	⟶ Zero adjustment
2.Gas Calib	⟶ Gas calibration
3.LA Set	⟶ Set low alarm point
4.HA Set	⟶ Set high alarm point
5.Unit Set	⟶ Set unit(μmol/mol or ppm)

| MENU	
➡ 6. Set Time	→ Set time (year,mouth,date,hour,minute)
7. Default	→ Restore factory settings
8. AL Record	→ Check/delete alarm records
9. ESC	→ Exit menu, back to detection interface
10. Turn off	→ Turn off the detector

⚠ Attention!

About Gas Calib: Gas calibration is already completed by the factory, changing this will affect its normal use. If for any specific use you need to use this function, please email us to obtain the PASSWORD.

About Default: You may need to restore factory setting in case of a wrong operation or gas calibration error. Please email us to obtain the PASSWORD.

When you see low battery alert or when the detector can't turn on because battery voltage is too low, please charge the detector in time (see below).

4.5 Battery Charging

First, make sure the detector is off, then connect the USB charger. The detector will turn on automatically, the screen will indicate "Charging". When screen displays "Full!", it means charging is completed.

Charging....	Full!
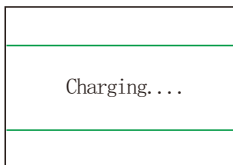
⚠ WARNING!!!

▶ DO NOT turn on the detector when it's off and being charged.

▶ DO NOT charge the detector at leak detection site, to avoid fire or explosions caused by sparks introduced from plugging and unplugging the charger.

▶ DO NOT charge the detector when it's on, which may affect charging speed.

5. Caution

5.1 Prevent the detector from falling down from high places or strenuous vibration.

5.2 DO NOT use sensor tip to touch other objects directly nor block sensor tip.

5.3 When there is interferential high-concentration gas, detector may not work normally.

5.4 The detector will only detect gas concentration from the detection interface. So, for example, when you are on the function menu, it will not detect.

5.5 The detector should not be stored or used where there are caustic gases (such as Cl2), or under other rigorous circumstances (including excessive high and low temperature, high humidity, electromagnetic field and strong sunlight).

5.6 After long-term use, if there is dust on detector surface, please clean it lightly with clean soft cloth, instead of caustic solvents or hard things.

6. Troubleshooting

Problem	Reason	Solution
Unable to turn on the detector	Battery voltage too low	Charge battery
Did not indicate 0	Sensor fluctuating	Zero adjustment required
Levels inaccurate	Lost calibration over long period of time	Gas calibration required
	Sensor faulty	Contact the seller
Time inaccurate	Battery run out completely	Charge first then reset the time
	Drift in oscillator parameters	Reset the time
RA alarm in clear air	Sensor faulty	Contact the seller

7. Customer Support