

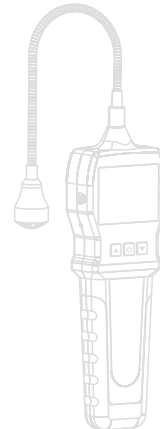
# BH-90E

## Portable Gas Detector

[www.bosean.net](http://www.bosean.net)



Operation Manual (v1.3)



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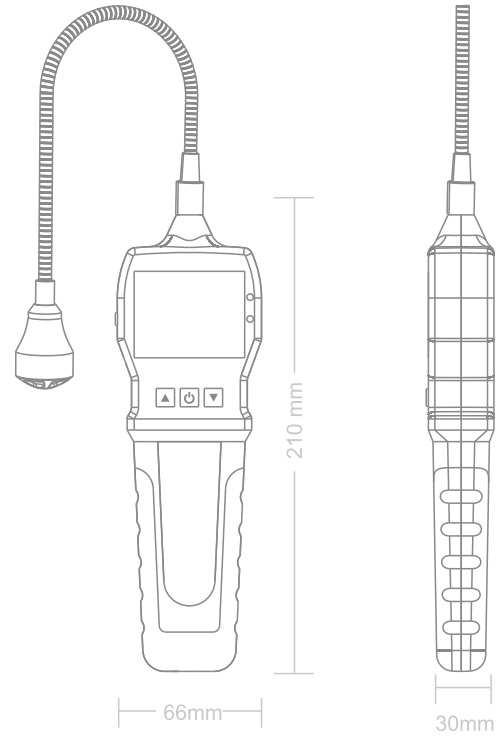
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Please read this manual carefully before using this product and keep it for future reference, any deviation from the instructions may compromise the safety, quality and performance of this instrument.

## 1.Introduction

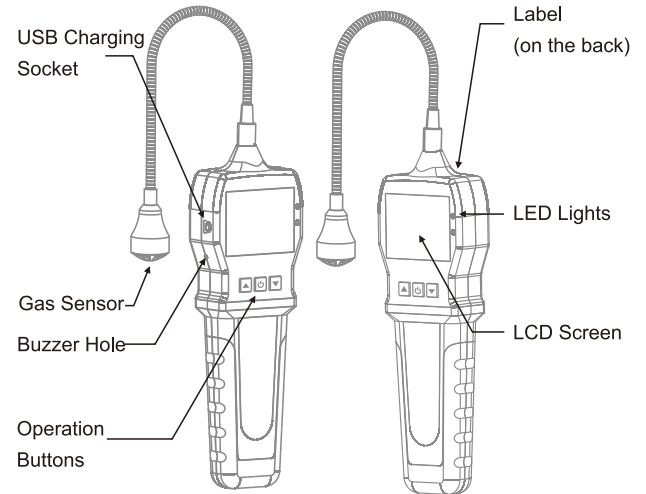
BH-90E portable gas detector (hereinafter called detector) is a new type of gas leak detector that adopts LSI technique and meets international smart technology standards. With imported high quality semi-conductor sensor and embedded microcontroller, it detects gas leakage with high sensitivity and strong adaptive ability. Being waterproof, dustproof, explosion-proof, and easy to use with high reliability, the detector is widely used in oil, coal, municipal construction, chemical engineering, environmental protection, metallurgy, refining, gas transmission and distribution, biochemistry, agriculture, pharmaceutical industries.

### Mail features and functions:

- ▶ MCU control, low consumption.
- ▶ High resolution STN LCD.
- ▶ Housing made of high strength engineering plastics and compound anti-slip rubber.
- ▶ Detection range (low alarm point, high alarm point) adjustable.
- ▶ Low battery alert, intrinsically safe design.
- ▶ 3 alarm types: sound (mute mode also available), light and vibration.
- ▶ Gas calibration completed by the factory .
- ▶ Zero adjustment and data logging.

## 2.Configuration & Structure

### 2.1 Configuration



### 2.2 Structure



The main shell, circuit boards, batteries, display, sensors, chargers.

### 3. Technical Specifications

Range	0–10,000ppm(μmol/mol)
Sampling method	Natural diffusion
Alarm point	Default: Low alarm: 500ppm; High alarm: 2000ppm. Support personalized setting
Alarm types	Audible buzzer alarm; Visual LED light alarm; Vibration alarm
Warm-up time	T <sub>90</sub> <60s
Response time	<30s
Protection level	IP65
Explosion-proof grade	Ex ib IIB T3 Gb
Sensor type	Imported FIGARO sensor
Sensor life	2 years
Power supply	Rechargeable lithium battery, DC3.7V 1800mAh
Continuous working hours	No less than 8 hours (normal working environment)
Working condition	Temperature: -10~40°C Humidity: ≤95% RH with no condensation.
Storage condition	Temperature: -20~50°C Humidity: ≤85% RH, avoid caustic gases or substances.
Weight	Approx. 300g
Charging time	6~8h
Dimension	Approx. 210mm(L)×66mm(W)×30mm(H)
Packing list	Detector, Carrying case, Charger, USB cable, Warranty card, Thank-you card.

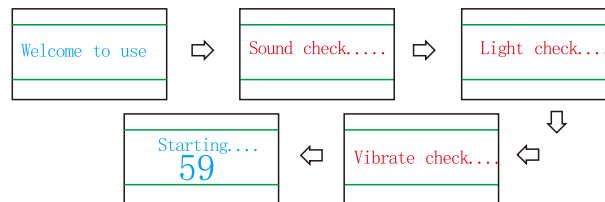
### 4. Operation Instruction

#### 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

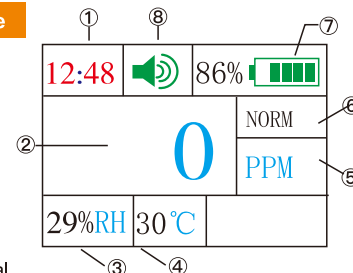


After self-check is done, the device enters into detection interface

#### 4.3 Detection interface

##### 4.3.1 Overview

- Time
- Gas concentration
- Humidity
- Temperature
- Unit
- Gas status(NORM-normal, LA-low alarm, HA-high alarm, RA-range alarm)
- Battery status
- Sound mode(may be muted by pressing then release it, vice versa)



### [4.3.2 Parametric query]

On the detection interface, you may press  to see all parameters.

Date: 2021.06.25	
Time: 15:45	
LA : 500ppm	ADV: 0278
HA : 2000ppm	Volt : 0.22V
RA : 10000ppm	BL : 5MIN
BAT : 3.96V	


### [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

## 4.4 Function menu

### [4.4.1 Overview]

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 (umol/mol or ppm)

	MENU	
	6. Set Time	→ Set time (year, month, 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!

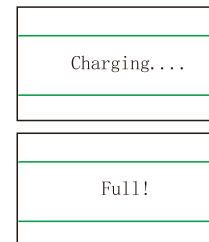
**About Gas Calib:** Gas calibration is already completed by the factory, personal change may affect its normal use. If for any specific use you need to use this function, please contact the seller to get the password first.

**About Default:** You may need to restore factory setting in case of wrong operation or gas calibration error. Please contact the seller to get the password first if it's needed.

## 4.5 Charging

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.

First, make sure the detector is off, then connect the charger to the 220V AC power source: the detector will turn on automatically, the screen will indicate "Charging". When screen displays "Full!", it means charging is completed.



## WARNING!!!

It's impossible to 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. Troubleshooting

Possible fault	Reasons	Solution
Unable to turn on the detector	Battery voltage too low	Charge in time
Did not indicate 0	Sensor fluctuating	Zero adjustment required
Indication inaccurate	Not calibrated over long time	Gas calibration required
	Sensor fault	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 fault	Contact the seller

## 6. NOTICES

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

6.2 Please don't use sensor tip to touch other objects directly or block sensor tip.

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

6.4 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.

6.5 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).

6.6 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.

6.7 For any operation or fault not stipulated in this manual, please contact the seller.