BOSEAN BH-4A

BOSEAN Portable 4-in-1 Multi-Gas Detector BH-4A User Manual

Comprehensive guide for the setup, operation, maintenance, and troubleshooting of your BOSEAN BH-4A Multi-Gas Detector.

1. Introduction

The BOSEAN BH-4A is a portable 4-in-1 multi-gas detector designed to monitor the concentration of carbon monoxide (CO), combustible gases (LEL), hydrogen sulfide (H2S), and oxygen (O2) in the ambient environment. This device features high-precision industrial-grade sensors, stable performance, and simple operation, providing real-time detection and historical alarm data display. Its robust design ensures suitability for various harsh environments.

2. Product Features

- **Multiple Gas Detection:** Simultaneously detects Carbon Monoxide (CO), Combustible Gas (LEL), Hydrogen Sulfide (H2S), and Oxygen (O2).
- **Triple Alarm System:** Features high-decibel buzzer alarms with three modes: sound, light, and vibration for enhanced safety.
- **High Precision Measurement:** Equipped with industrial-level sensors for high accuracy and stability, offering real-time detection and historical alarm data display.
- **Durable Design:** IP65 rated for complete dust and water protection, and explosion-proof (Exib IIB T3 Gb) for use in challenging environments.
- **Large Capacity Battery:** Powered by a rechargeable 3.7V 1800mAh lithium battery, providing over 8 hours of continuous operation.

3. Device Components

Figure 3.1: Front and back view of the BOSEAN BH-4A Multi-Gas Detector. Key components include the LCD display, power button, navigation buttons, sensor holes, USB charging port, and back clip.

Figure 3.2: Close-up of the LCD panel, displaying gas concentrations and device status.

Figure 3.3: The sturdy back clip allows for easy attachment to clothing or belts for portable use.

Figure 3.4: The gas detection sensor hole, where ambient air is drawn in for analysis.

4. Setup

4.1. Initial Charging

Before first use, ensure the device is fully charged using the provided USB cable. The charging port is located on the side of the device. A full charge typically takes several hours.

Figure 4.1: USB charging socket for recharging the device's internal battery.

5. Operating Instructions

5.1. Power On/Off

To power on the device, press and hold the power button for more than 2 seconds. The device will undergo a startup calibration sequence, which may take a few moments. Ensure you are in a gas-free environment during startup. To power off, press and hold the power button until you hear three beeps and the display shows 'OFF'.

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Video 5.1: Demonstrates how to power on and power off the multi-gas detector, including the startup sequence and audible cues.

5.2. Automatic Power Off

The device features an automatic power-off function. If no operation is performed for 10 minutes, the device will automatically shut down to conserve battery. This feature can be toggled ON/OFF in the settings menu. When ON, a circular icon is displayed on the screen.

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Video 5.2: Shows how to enable or disable the automatic power-off function and its visual indicator on the display.

5.3. Backlight Control

In normal operating mode (SCAN), press the 'back' button to toggle the display backlight ON or OFF.

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Video 5.3: Illustrates how to activate and deactivate the display backlight for improved visibility in different lighting conditions.

5.4. Measurement Modes

The device supports several measurement modes: Normal (SCAN), Peak Value (P.VALUE), Time-Weighted Average (TWA), and Short-Term Exposure Limit (STEL). Use the 'down' button to cycle through these modes in the following order: SCAN → P.VALUE → TWA → STEL → SCAN.

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Video 5.4: Demonstrates switching between different measurement modes (SCAN, P.VALUE, TWA, STEL) to view various gas concentration metrics.

5.5. Alarm Operation

When gas concentration approaches a set alarm threshold, the numerical value will flash, and the device will activate its triple alarm (sound, light, and vibration) to notify the user. The alarm will cease once the concentration returns to a safe level.

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Video 5.5: Shows the device's alarm in action, including visual, audible, and vibratory alerts when gas levels exceed set limits.

5.6. Alarm Settings

To access alarm settings, press and hold the 'up' button in normal operating mode (SCAN). You can then navigate through different alarm thresholds (ALM.L for low, ALM.H for high, TWA ALM., STEL ALM.) using the navigation buttons. Select the desired gas using the 'back' button, then adjust the alarm value using the 'up' (increase) and 'down' (decrease) buttons. Confirm the setting by pressing the 'power' button. Repeat for other gases as needed. Exit the alarm setting mode by pressing the 'power' button to return to measurement mode.

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Video 5.6: Detailed guide on how to adjust the low and high alarm thresholds for each gas detected by the device.

5.7. Language Switching

The device supports both English and Japanese languages. Refer to the settings menu to switch between languages. This is typically found under a 'Language' or 'Lan' option within the system settings.

Figure 5.1: Instructions for changing the display language between English and Japanese.

6. Maintenance

6.1. Calibration

The device uses industrial-grade sensors that require periodic calibration to maintain accuracy. Calibration should ideally be performed by qualified personnel or according to manufacturer guidelines. The calibration setting is password-protected to prevent accidental changes.

6.2. Cleaning

Clean the device regularly with a soft, damp cloth. Do not use abrasive cleaners or solvents, as these may damage the casing or sensors. Ensure the sensor openings are free from dust and debris.

6.3. Storage

Store the device in a cool, dry place away from direct sunlight and extreme temperatures. When storing for extended periods, ensure the battery is partially charged (around 50%) and recharge periodically to prevent deep discharge.

7. Troubleshooting

Problem	Possible Cause	Solution
Device does not power on.	Low battery or device malfunction.	Charge the device fully. If issue persists, contact support.
Inaccurate readings.	Sensor contamination or calibration required.	Clean sensor area. Consider professional calibration if readings remain inconsistent.

Problem	Possible Cause	Solution
Alarm triggers unexpectedly.	High gas concentration or incorrect alarm settings.	Evacuate the area if gas is suspected. Verify alarm thresholds in settings.
Display is dim or unreadable.	Backlight off or low battery.	Activate backlight (Section 5.3). Charge the device.
Device shuts down automatically too soon.	Automatic power off enabled.	Disable automatic power off in settings (Section 5.2).

8. Technical Specifications

Feature	Detail
Brand	BOSEAN
Model Number	BH-4A
Style	Portable
Power Source	Battery Powered (Rechargeable Lithium, 3.7V 1800mAh)
Color	Yellow, Black
Item Weight	210 grams
Alarm Type	Audible, Visual, Vibration
Upper Temperature Rating	50 Celsius
Sensor Type	Gas Detector
UPC	778862660709
Protection Level	IP65 (Dustproof & Waterproof)
Explosion-proof Flag	Exib IIB T3 Gb

9. Warranty and Support

For warranty information, technical support, or service inquiries, please contact the seller or manufacturer directly. Keep your purchase receipt as proof of purchase. Note that sensor replacement parts may not be readily available, and the device may have a limited operational lifespan for its sensors (e.g., 2 years).