

EVTSCAN AS8801

EVTSCAN AS8801 Portable Oxygen Detector User Manual

Model: AS8801

1. INTRODUCTION

The EVTSCAN AS8801 Portable Oxygen Detector is a specialized device designed to accurately detect the presence and concentration of oxygen in various environments. It serves as a critical component of safety systems, alerting users to potential hazards related to oxygen deficiency or enrichment. This manual provides comprehensive instructions for the safe and effective operation, maintenance, and troubleshooting of your AS8801 detector.



Figure 1: EVTSCAN AS8801 Portable Oxygen Detector and charging cable. The device is blue with a black top and a digital display showing "20.9".

2. SAFETY INFORMATION

Understanding oxygen concentration levels and their effects is paramount for safe operation. This device is designed to provide alerts for unsafe oxygen levels. Always adhere to local safety regulations and guidelines when using this detector.

2.1 Effects of Anoxic and Oxygen-Rich Atmospheres

The following table outlines the symptoms associated with various oxygen concentration levels in the atmosphere (at atmospheric pressure):

Oxygen Concentration (%)	Symptoms / Effects
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Oxygen Concentration (%)	Symptoms / Effects
100%	Fatal, 6 minutes (in absolutely closed environments like hyperbaric oxygen chambers)
50%	Fatal, can be cured after 45 minutes of treatment (in absolutely closed environments like hyperbaric oxygen chambers)
> 23.5%	Oxygen-rich atmosphere
20.96%	Normal atmospheric oxygen level
Lowest, 19.5%	Minimum safe oxygen level
15% to 19%	Reduced efficiency, problems in head, lungs, and circulatory system
10% to 12%	Shortness of breath, loss of judgment, purple lips
8% to 10%	Treatment failure, syncope, coma, pale skin, nausea, and vomiting
6% to 8%	Within 8 minutes: low blood pressure, rapid heartbeat, mouth breathing, rapid cessation of breathing
4% to 6%	Within 40 seconds: convulsions, breathing stopped, death

Warning: Always evacuate areas immediately if the oxygen detector alarms, indicating unsafe oxygen levels. Do not re-enter until the area has been properly ventilated and re-tested.

3. PRODUCT OVERVIEW

The AS8801 is a compact and robust oxygen detector designed for industrial and personal safety applications. It features an electrochemical sensor for accurate oxygen measurement and provides audible and visual alarms.

3.1 Key Features

- Electrochemical principle for oxygen detection.
- Audible and visual alarm system (alarm value adjustable, sound up to 80 decibels).
- Low power alarm indication.
- Adjustable low/high alarm settings.
- Automatic/manual shutdown options.
- High brightness backlight for clear display.
- Rechargeable lithium-ion battery (3.7 volts).
- Compact and portable design with a belt clip.



Figure 2: Front and back view of the AS8801 detector. The front shows the display and control buttons, while the back features a metal clip for attachment.



Figure 3: Side view of the AS8801, highlighting the integrated belt clip for easy portability.

4. SPECIFICATIONS

Parameter	Value
Gas Type	Oxygen (O ₂)
Measuring Range	0~30% VOL
Resolution	0.1%
T90 Response Time	10 seconds
Measuring Principle	Electrochemical principle
Sensor Life Expectancy	2 years

Parameter	Value
Alarm Sound Level	Up to 80 decibels (adjustable)
Power Source	Rechargeable lithium-ion battery, 3.7 volts
Battery Operating Time	5-8 hours (12 hours with AS8930 sampling pump)
Working Temperature	-10~50°C (except LEL is 0~40°C)
Operating Humidity	15~95% RH, typical
Storage Temperature	0~40°C
Product Dimensions	Approx. 66.35 x 95.8 x 52mm (2.6 x 3.8 x 2 inches)
Weight	Approx. 280g (9.9oz)
Material	Plastic

5. SETUP AND INITIAL USE

5.1 Charging the Device

Before first use, fully charge the AS8801 detector. Connect the provided USB charging cable to the device's charging port and a compatible USB power adapter (not included). The battery indicator on the display will show charging status. A full charge typically takes several hours.

5.2 Powering On/Off

- To Power On:** Press and hold the power button () until the display illuminates and the device performs a self-test.
- To Power Off:** Press and hold the power button () until the display turns off. The device may prompt for confirmation before shutting down.

5.3 Initial Calibration (if applicable)

The AS8801 is factory calibrated. However, for critical applications or after prolonged use, periodic calibration may be required. Refer to the manufacturer's website or contact support for detailed calibration procedures. Always perform calibration in a fresh air environment (20.9% O₂) or with certified calibration gases.

6. OPERATING INSTRUCTIONS

6.1 Taking Readings

Once powered on, the device will continuously display the current oxygen concentration in percentage volume (VOL%). Ensure the sensor area is unobstructed and exposed to the environment you wish to monitor.



It is a device that detects the presence of gas in an area and is usually part of a safety system.

Figure 4: The AS8801 detector in an industrial environment, demonstrating its intended use for monitoring oxygen levels near equipment.

6.2 Alarm Settings

The AS8801 features adjustable low and high alarm thresholds. When the detected oxygen concentration falls below the low alarm setting or rises above the high alarm setting, the device will activate its audible and visual alarms.

- **Adjusting Alarm Values:** Refer to the device's on-screen menu or specific button combinations (usually involving the ▲ and ▼ buttons) to navigate to the alarm setting menu. Follow the prompts to set your desired low and high oxygen concentration alarm points.
- **Alarm Response:** Upon alarm activation, immediately assess the situation. If the alarm indicates an unsafe oxygen level, evacuate the area and follow established safety protocols.

6.3 Backlight Control

The device is equipped with a high-brightness backlight for visibility in low-light conditions. Typically, a short press of a specific button (often the power button or a dedicated light button) will toggle the backlight on or off, or activate it temporarily.

7. MAINTENANCE

7.1 Cleaning

Wipe the exterior of the detector with a soft, damp cloth. Do not use abrasive cleaners, solvents, or immerse the device in water. Ensure the sensor opening remains clear of dust and debris.

7.2 Battery Care

- Recharge the battery when the low power alarm activates or the battery indicator is low.
- Avoid completely draining the battery for extended periods.
- Store the device in a cool, dry place if not used for a long time, and recharge it periodically to maintain battery health.

7.3 Sensor Replacement

The electrochemical sensor has a life expectancy of approximately 2 years. If readings become erratic, or the device fails calibration, the sensor may need replacement. Contact EVTSCAN support for sensor replacement services or authorized parts.

8. TROUBLESHOOTING

Problem	Possible Cause	Solution
Device does not power on.	Battery is depleted.	Charge the device fully.
Inaccurate or erratic readings.	Sensor dirty or expired; device needs calibration; environmental interference.	Clean sensor area. Perform calibration. If issues persist, consider sensor replacement or contact support.
Alarm sounds continuously.	Oxygen level is outside set thresholds; alarm settings are incorrect.	Check the environment for unsafe oxygen levels. Verify alarm settings are appropriate for your application.
Display is dim or not visible.	Backlight is off; low battery.	Activate backlight. Charge the device.

If you encounter problems not listed here or if the suggested solutions do not resolve the issue, please contact EVTSCAN customer support.

9. WARRANTY AND SUPPORT

Specific warranty details for the EVTSCAN AS8801 Portable Oxygen Detector are not provided in this manual. Please refer to the product packaging, purchase documentation, or the official EVTSCAN website for the most current warranty information.

9.1 Customer Support

For technical assistance, troubleshooting, calibration services, or parts inquiries, please contact EVTSCAN customer support through their official channels. Visit the [EVTSCAN Store on Amazon](#) or their official website for contact information.

