

User Manual R1.1
Santacary Technology Co., Ltd.
XAR-OZ Ozone Gas Detector



INTRODUCTION

Santacary XAR-OZ is a precise gas detector for monitoring ozone (O₃) in the workplace. It has been designed to notify of the presence of ozone (O₃) gas. XAR-OZ portable gas detector has a wide range of applications in industrial, business, home or R&D and other fields. It is useful for detection of ozone residue after disinfection.

Please read this manual carefully before use. This operation manual will provide you with all the necessary information for the correct use of your XAR-OZ ozone detector.

FEATURES

- Portable O₃ gas detector
- O₃ gas detector range: 0 ~ 20 PPM. Resolution: 0.1 PPM
- Audible alarm
- Support zero and span calibration
- Two points of instantaneous alarm
- Trend chart display showing the past readings for O₃
- With temperature and humidity measurement
- Only two buttons and easy to operate
- Four AA Alkaline Batteries

Note:

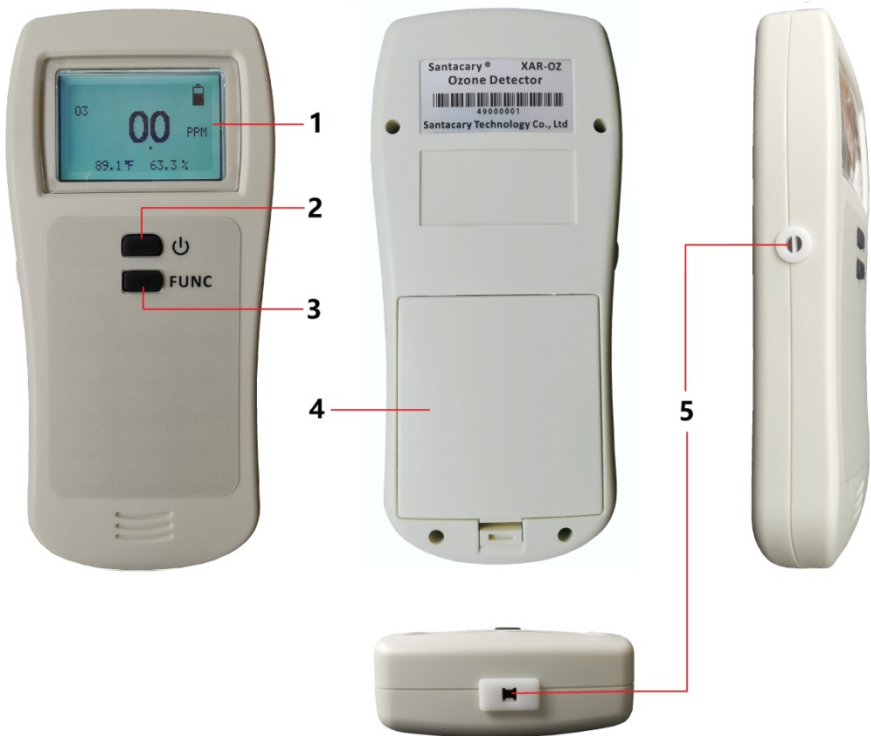
- XAR-OZ should be used in a strong convection air environment.

UNIT DESCRIPTION

Device

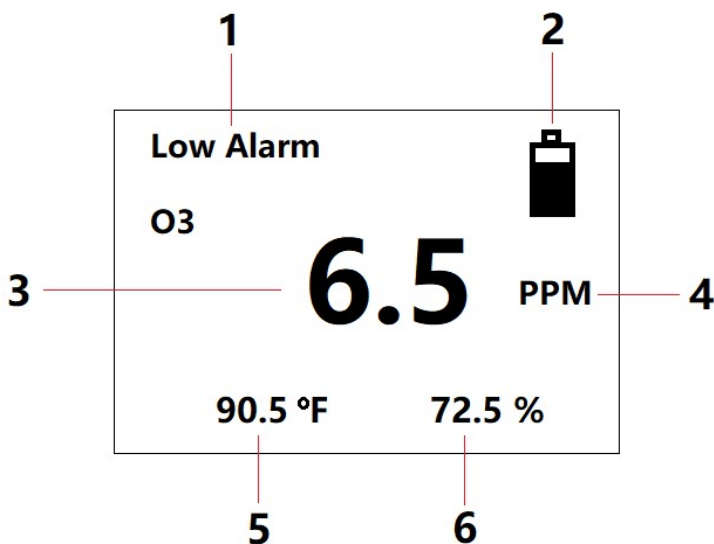
1. Liquid crystal display (LCD)
2. Power button

3. Function button
4. Battery compartment cover
5. Air sampling ports



DISPLAYS

Normal Display



1. Alarm Status (None/Low Alarm/High Alarm)
2. Battery Level
3. O3 concentration
4. O3 concentration unit (PPM)
5. Air Temperature
6. % Relative Humidity

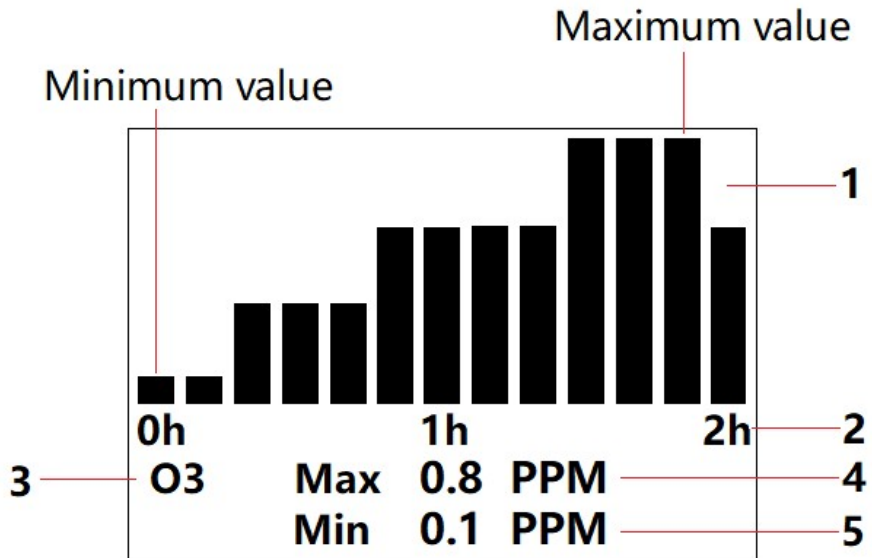
Trend Chart Display

XAR-OZ has a data log function that provides up to 2 hours history of O3 concentration.

The trend chart displays the past readings for O3. The time per division (indicates the chart's time per unit division) is 10 min / div. Trend chart contains a maximum of 13 recorded data at one time. The time span is 2 hours. After the chart is full the data is FIFO (first-in, first-out). Below is the example of Trend Chart Display.

1. Vertical bar of O3 (The higher the bar, the greater the value)

2. Time scale (farther to the right, longer time in the past)
3. Measurement name (O3)
4. Maximum value on the chart of O3 concentration
5. Minimum value on the chart of O3 concentration



At the bottom of the chart, there are two numerical indicators: Max and Min. The Max and Min values will reflect the maximum and minimum values on the chart of O3 concentration.

Log Display


The Log Display lists the 13 recorded data in the trend chart with time samples.

1. O3 unit
2. Time samples in past (m--minute, h--hour)
3. O3 concentration (PPM)

O3		PPM	
0m	0.2	70m	0.4
10m	0.2	80m	0.3
20m	0.3	90m	0.3
30m	0.5	100m	0.2
40m	0.1	110m	0.3
50m	0.9	2h	0.4
1h	0.6		

OPERATING INSTRUCTIONS

1. Turn on detector

When the detector is turned off, press Power button  to turn on the unit.

When the unit is first turned on, it performs 10 seconds countdown for detector initial warm up, then enters normal display with current O3 concentration (PPM), temperature (°C or °F), and humidity (%RH) readings displayed.

The detector starts taking measurements when power on and updates readings every 2 seconds. In the condition of operating environment change, it takes 120 seconds to respond for O₃, and 30 minutes for humidity.

Note:


Air Sampling Port: Always ensures that the detector vents are not blocked and open to the atmosphere.

2. Press any button to turn on the backlight.

When LCD backlight is off, press any button to turn on the backlight. LCD backlight will turn off automatically after 2 minutes of inactivity.

3. Press Function button **FUNC** shortly to switch Normal Display, Trend Chart Display and Log Display in loop.

4. Temperature Units Setup Menu

Press Power button  shortly to switch two temperature units: °F and °C in loop.

5. Calibration of Detector

This detector can implement calibration when needed. Below is the guideline.

- Calibrate the detector at least once every 180 days depending on the use and sensor exposure to poisons and contaminants.
- Calibrate the detector if the ambient gas display varies at startup.
- Calibrate only in a clean atmosphere, which is free of ozone gas.

By pressing the Function button **FUNC** for 3 seconds, the detector enters into **Calibration Menu**. In this menu, there are four items by pressing the Function button **FUNC** shortly to loop switching: “Fresh Air Calibration 0 PPM Ozone”, “Ozone Span Calibration 10 PPM”, “Factory Reset” and “Exit” as described in below table.


Calibration Menu

Menu Items	Functional Description
Fresh Air Calibration 0	The XAR-OZ will perform an automatic



PPM Ozone	fresh air adjustment (to zero the sensor). If the fresh air adjustment is successful, the unit will proceed to Normal Display
Ozone Span Calibration 10 PPM	To implement the span calibration with 10 PPM Ozone gas. If the span calibration is successful, the unit will proceed to Normal Display
Factory Reset	To restore factory settings. One press to restore factory setting, free from the bother of mis-operation
Exit	Exit the Menu and proceed to Normal Display


Procedures of Calibration

Step 1. To zero the sensor

Place the detector in clean atmosphere which is free of Ozone gas. Pressing the Function button **FUNC** for 3 seconds, the detector enters into Calibration Menu. By pressing Power button  shortly in the “Fresh Air Calibration 0 PPM Ozone” item to auto zero the Ozone sensor.

Step 2. To do span calibration

Apply a 10 PPM calibration Ozone gas to the detector. Pressing the Function button **FUNC** for 3 seconds, the detector enters into Calibration Menu. Continuously press the Function button **FUNC** shortly to select “Ozone Span Calibration 10 PPM” item. By pressing Power button  shortly to start span calibration. Or pressing Power button  shortly in the “Exit” item to cancel calibration and return to Normal Display.

6. When the measurement is completed, press power button  for 2 seconds to turn off the meter.

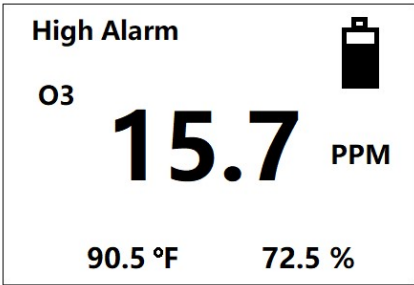
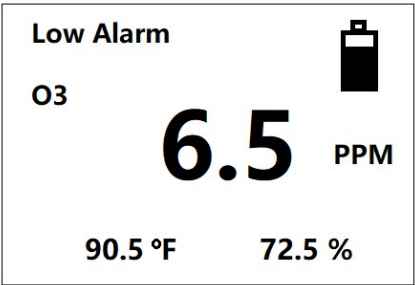
ALARM

Low Alarm and High Alarm

XAR-OZ has two alarm set points: High Alarm (O3: 10.0 PPM) and Low Alarm (O3: 5.0 PPM). These set points are factory set and cannot be changed. XAR-OZ is equipped with audio alarms to alert you when the ambient gas concentration exceeds one of the two alarm set points. When O3 value exceeds the defined high alarm set point (10.0 PPM), the audio alarm will sound at 3 beeps/sec. When O3 value exceeds the defined low alarm set point (5.0 PPM) but less than the defined high alarm set point (10.0 PPM), the audio alarm will sound at 2 beeps/sec.

Factory Alarm Set points

Gas	Low	High
O3	5.0 PPM	10.0 PPM



MATERIALS SUPPLIED

- XAR-OZ Ozone Gas Detector
- Carry case
- English User Manual

SPECIFICATIONS

O₃ Sensor Specification:

Sensor	Electrochemical sensor
Sample Method	Diffusion
Measurement Range	0~20 PPM
Resolution	0.1 PPM
Repeatability	<±5% of signal
Accuracy	± 5%FS
Warm-up time	<3 mins
Response time	< 120 seconds (diffusion)
Recovery time	< 120 seconds (diffusion)
Service life	2 years (in air)

Temperature Specification

Temperature Range	-10.0~60.0°C (14~140°F) display
Display Resolution	0.1°C (0.1°F)
Display Options	°C/°F switchable
Accuracy	±0.5°C (±0.9°F)
Response Time	5~30 seconds (device must equilibrate with environment)

RH Specification

Measurement Range	0.0~99.9%RH
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Display Resolution	1%RH
Accuracy	±4.5%RH
Response Time	<8 seconds for 63% of step change

General Specification

Operating	-10°C to 50°C (14°F to 122°F), 15~90% RH non-condensing
Storage	-10°C to 60°C (14°F to 140°F), <99% RH non-condensing
Power Supply	Four AA Alkaline Batteries
Dimensions	75x165x25mm (2.95x6.49x0.98")
Weight	125 grams (4.41 oz.) without batteries

Out of range of operating conditions will impact the accurate of O₃ measurement.

MAINTENANCE

To maintain the detector in good operating condition, perform the following basic maintenance as required.

1. Inspect the detector at regular intervals.
2. Clean the exterior with a soft damp cloth. Do not use solvents, soaps, or polishes.
3. Do not immerse the detector in liquids.
4. Keep away XAR-OZ from dust and particles and never touch exhaust or concentrated vapors, harsh chemicals or extremely high concentration levels, such as corrosive gases, organic gases. They may poison the sensor.
5. Long-term placement in high-concentration organic gas will cause

the sensor zero point to drift and slow recovery.

6. It is forbidden to store and use XAR-OZ in high-concentration alkaline gas for a long time.

Troubleshooting

If a problem occurs, refer to the solutions provided in below table. If the problem persists, contact Santacary Technology Co., Ltd..

Problem	Possible cause	Solution
The detector can't power on	Batteries are not properly placed	Please check that the batteries are properly placed
	Damaged or defective detector	Contact Santacary Technology Co., Ltd.
The detector enters alarm immediately when activated	Sensor needs to stabilize	If the detector is not used for long time, the warm up time of O ₃ sensor needs more than 3 minutes.
Detector does not accurately measure O ₃ gas.	Detector is colder/hotter than O ₃ gas temperature	Allow the detector to attain ambient temperature before use
	Air vents are blocked	Make sure that the air vents are ventilated

WARRANTY

The XAR-OZ is warranted to be free from defects in material and workmanship for a period of one year from the date of purchase. This warranty covers normal operation and does not cover misuse, abuse,

alteration, neglect, improper maintenance. Proof of purchase is required for warranty. Warranty is void if the detector has been opened.

CONTACT US

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