User Manual R1.1
Santacary Technology Co., Ltd.
XAR-OZL Low-level Ozone Gas Detector

INTRODUCTION

Santacary XAR-OZL is an ultrasensitive Ozone gas detector with 0.01 ppm resolution for monitoring low-level ozone (O_3) in the workplace. It has been designed to notify of the presence of low-level O_3 gas. XAR-OZL has a wide range of applications in industrial, business, home or R&D and other fields. It is 10x more sensitive than a regular ozone gas meter as it employs a high-quality ozone sensor.

It is important to measure low-concentration ozone accurately. The California Ambient Air Quality Standard (CAAQS) for outdoor ozone is 0.09 ppm for a 1-hour average, and 0.07 ppm for an 8-hour average. OSHA guidelines state that ozone in the workplace should never exceed 0.1 ppm over an 8-hour day. NIOSH outlines a recommended exposure limit of 0.10 ppm (0.2 mg/m3) and an immediately dangerous to life or health (IDLH) ozone level of 5 ppm or higher.

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-OZL ozone gas detector.

FEATURES

➢ Portable O_3 gas detector
➢ Low-level O_3 gas detector range: 0 ~ 10 PPM. Resolution: 0.01 PPM
➢ Audible alarm
➢ Two points of instantaneous alarm
➢ Trend chart display showing the past readings for O_3
➢ With temperature and humidity measurement
➢ Only two buttons and easy to operate
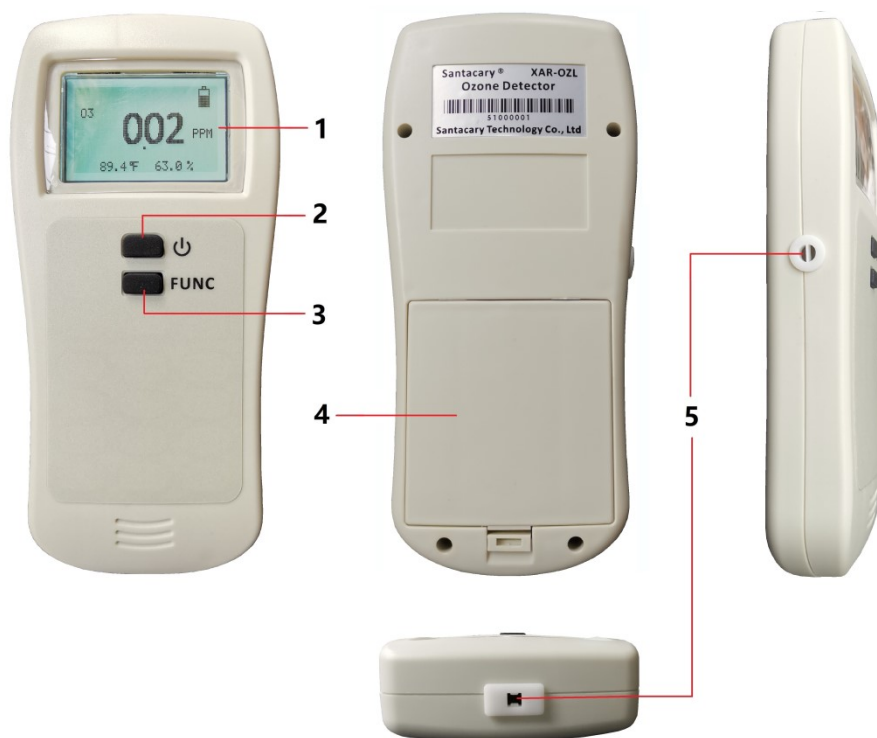➢ Four AA Alkaline Batteries

Note:

➢ XAR-OZL should be used in a strong convection air environment.
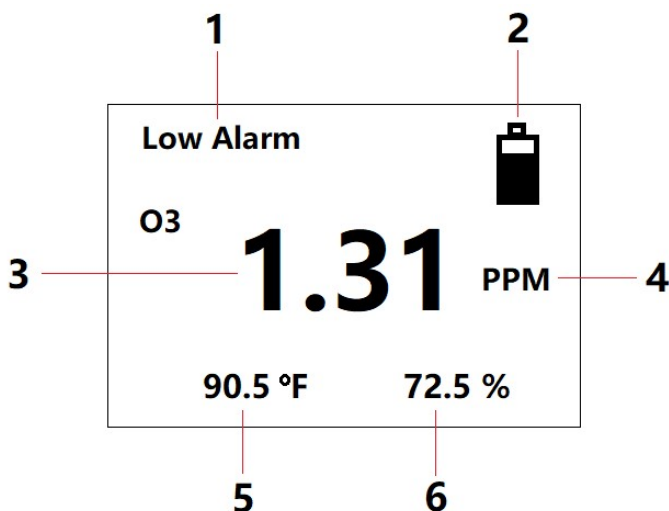
UNIT DESCRIPTION

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 (Resolution is 0.01 PPM)
4. O3 concentration unit (PPM)
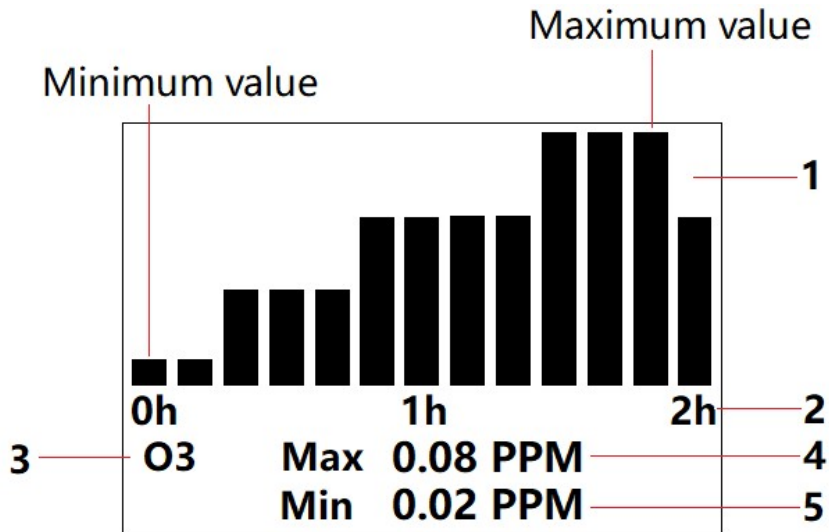5. Air Temperature
6. % Relative Humidity

Trend Chart Display

XAR-OZL 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 stamples.
1. O3 unit
2. Time stamples in past (m--minute, h--hour)

3. O3 concentration (PPM)

O3	PPM			1
0m	0.02	70m	0.04	
10m	0.02	80m	0.03	
20m	0.03	90m	0.03	
30m	0.05	100m	0.02	
40m	0.11	110m	0.03	
50m	0.09	2h	0.04	
1h	0.06			

2   3

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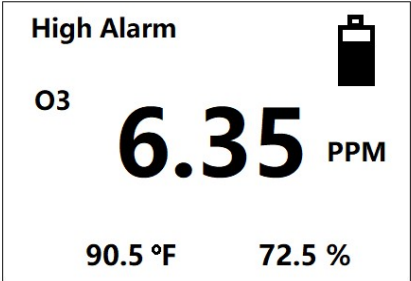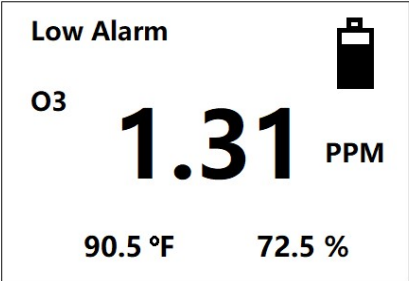
ALARM

Low Alarm and High Alarm

XAR-OZL has two alarm set points: High Alarm (O3: 5.00 PPM) and Low Alarm (O3: 1.00 PPM). These set points are factory set and cannot be changed. XAR-OZL 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 (5.00 PPM), the audio alarm will sound at 3 beeps/sec. When O3 value exceeds the defined low alarm set point (1.00 PPM) but less than the defined high alarm set point (5.00 PPM), the audio alarm will sound at 2 beeps/sec.

Factory Alarm Set points

Gas	Low	High
O3	1.00 PPM	5.00 PPM

MATERIALS SUPPLIED

➢ XAR-OZL Low-level Ozone Gas Detector
➢ Carry case
➢ English User Manual

SPECIFICATIONS

O3 Sensor Specification:

Sensor	Electrochemical sensor (with temperature compensation)
Sample Method	Diffusion
Measurement Range	0~10 PPM
Resolution	0.01 PPM
Repeatability	<±5% of signal
Accuracy	±5%FS

Warm-up time	<3 mins
Response time	< 90 seconds (diffusion)
Recovery time	< 90 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
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-OZL 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-OZL 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	Sensor needs to stabilize	If the detector is not used for long time, the

		warm up time of O3 sensor needs more than 3 minutes.
immediately when activated		warm up time of O3 sensor needs more than 3 minutes.
Detector does not accurately measure O3 gas.	Detector is colder/hotter than O3 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-OZL 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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