

User Manual R1.0
Santacary Technology Co., Ltd.
HL-OZL Desktop Low-level Ozone Gas Monitor



INTRODUCTION

Santacary HL-OZL is an ultrasensitive desktop Ozone gas monitor with 0.01 ppm resolution for monitoring low-level ozone (O₃) in the workplace. The HL-OZL will continuously display the ambient concentration of O₃ and activate its audible and visual alarms whenever the preset set points are exceeded. HL-OZL has a wide range of applications in industrial, business, home or R&D and other fields. It is 10 times 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 HL-OZL ozone gas monitor.

FEATURES

- Desktop O₃ gas monitor
- Low-level O₃ gas monitor range: 0 ~ 10 PPM. Resolution: 0.01 PPM
- Audible and visual alarm
- Two points of instantaneous alarm
- With temperature and humidity measurement

Note:

HL-OZL should be used in a strong convection air environment.

THEORY OF OPERATION

The Santacary HL-OZL ultrasensitive ozone gas monitor uses electrochemical technology, operating by the diffusion principle, for determining the concentration of O₃ in air samples. In diffusion mode, the air penetrates the grille on one side and back of the monitor into the interior. Normal air movements are enough to carry the sample to the sensor.

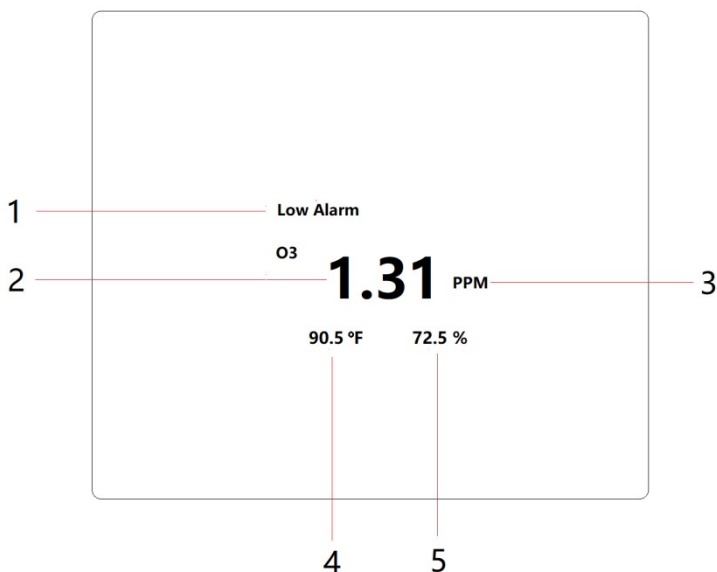
UNIT DESCRIPTION

Device

1. Display panel
2. Power button
3. Grille
4. 5VDC Power socket



Display



1. Alarm Status (None/Low Alarm/High Alarm)
2. O₃ concentration (Resolution is 0.01 PPM)
3. O₃ concentration unit (PPM)
4. Air Temperature
5. % Relative Humidity

OPERATING INSTRUCTIONS

1. Turn on monitor

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

The monitor starts taking measurements when power on and updates readings every 2 second. In the condition of operating environment

change, it takes 90 seconds to respond for O₃, and 30 minutes for humidity.

Note:

Always ensures that the grille is not blocked and open to the atmosphere.

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

ALARM

Low Alarm and High Alarm

HL-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. HL-OZL is equipped with audio and visual 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 6 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 4 beeps/sec.

Factory Alarm Set points

Gas	Low	High
O ₃	1.00 PPM	5.00 PPM

Low Alarm

O₃ **1.31** PPM

90.5 °F 72.5 %

High Alarm

O₃ **6.35** PPM

90.5 °F 72.5 %

PLACEMENT

HL-OZL can not only be placed on the desktop, but also be pasted onto the wall for use. Use double-sided adhesive to stick the back of this monitor. Note that the thickness of the double-sided adhesive is more than 3mm to reserve air flow space for the rear grille. The wall mount placement method is referred to the following figure.

Double sided adhesive for pasting on wall



Install the HL-OZL at a location and height in the room where you want to test the ozone concentration.

MATERIALS SUPPLIED

- HL-OZL desktop low-level ozone gas monitor
- Carry case
- DC 5V 1.0A adapter
- 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	5.0VDC 1.0A
Dimensions	77x77x33mm (3.03x3.03x1.3")
Weight	69grams (2.43oz.) without adapter

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

MAINTENANCE

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

1. Inspect the monitor at regular intervals.
2. Clean the exterior with a soft damp cloth. Do not use solvents, soaps, or polishes.
3. Do not immerse the monitor in liquids.
4. Keep away HL-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 HL-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 monitor can't power on	Power adapter isn't well plugged.	Please check whether the power adapter is well plugged.
	Damaged or defective monitor	Contact Santacary Technology Co., Ltd.
The monitor enters alarm immediately when activated	Sensor needs to stabilize	If the monitor is not used for long time, the warm up time of O ₃ sensor needs more than 3 minutes.
Monitor does not accurately measure O ₃ gas.	Monitor is colder/hotter than O ₃ gas temperature	Allow the monitor to attain ambient temperature before use
	Air grilles are blocked	Make sure that the air grilles are ventilated

WARRANTY

The HL-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 monitor has been opened.

CONTACT US

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