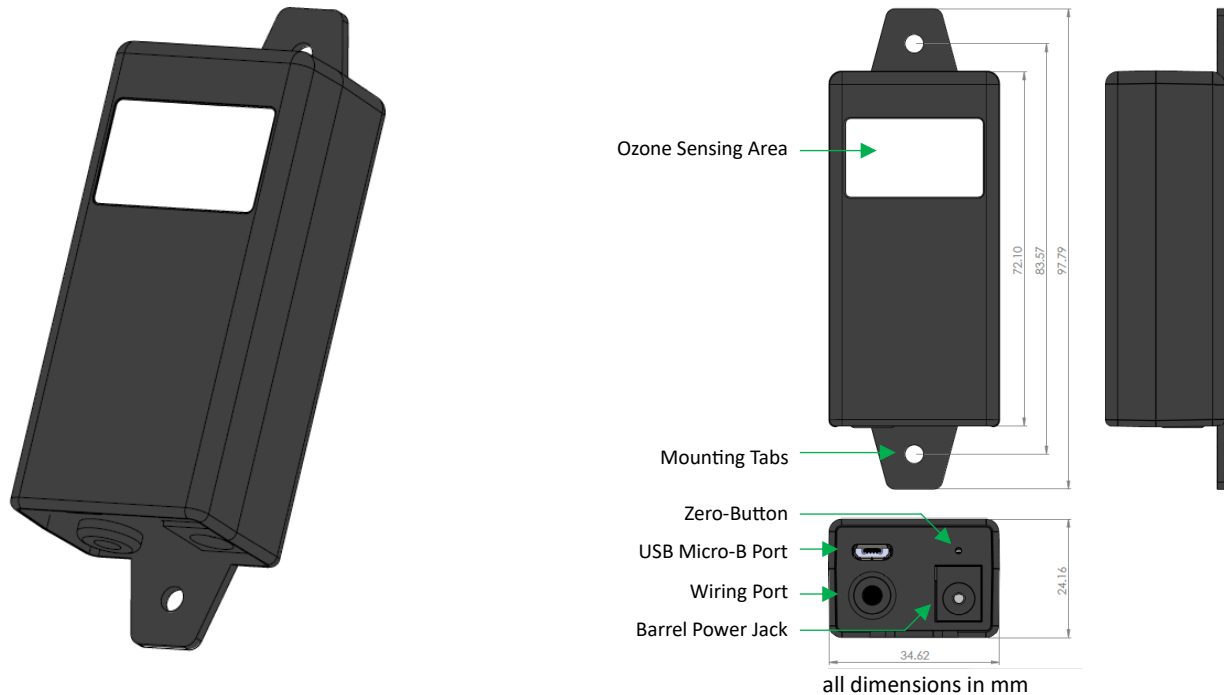


Calibrated Digital Ozone (O₃) Sensor Instrument – SM-500



DESCRIPTION

The SM-500 is a calibrated digital ozone sensor instrument that utilizes a state-of-the-art electrochemical (EC) ozone sensing element. The SM-500 can be paired with Eco Sensors' OS-4 & OS-6 ozone controllers or it can be configured as an independent digital ozone instrument via RS-232 or USB serial communication. The SM-500 includes a user-replaceable calibrated sensor module (RME-O3) that enables users to easily maintain calibration requirements for their application. The SM-500 also includes a convenient zero button. The SM-500 is available with standard calibration ranges of 0-20 ppm and 1-50 ppm. Custom calibration ranges may be available. Please contact Eco Sensors for more information.

FEATURES

- Integrates seamlessly with Eco Sensors' OS-4 or OS-6 Ozone Controllers using standard 3-wire power and communication cable.
- USB power and serial communication is available via the USB micro-b port.
- Other flexible power configurations are possible:
 - 5 VDC power input via screw terminal
 - 7-30 VDC power input via screw terminal or barrel jack
- Other convenient data configurations are possible:
 - RS-232 transmission via screw terminal
 - Analog output, featuring a buffered 0-2 V signal that is linearly proportional to the gas concentration.
- Zero button for re-zeroing of the sensor module in the application.
- A user-replaceable sensor module within the SM-500
- Temperature and relative humidity sensor data is included in the digital output.

SM-500

SPECIFICATIONS

Ozone sensor specifications are inherent to the integrated user-replaceable RME-O3 sensor module within the SM-500.

Product Part Number:		SM-500	
Sensor Module Part Number:		RME-O3-20	RME-O3-50
Sensor Technology:		Electrochemical (EC) Ozone Sensor	
Measurement Range:		0-20 ppm	0.8-50 ppm
Compatible Instruments:		OS-4, OS-6, & Stand-alone	OS-6 & Stand-alone
Digital Output	Lower Detection Limit:	0.03 ppm	0.8 ppm
	Resolution*:	0.005 ppm	0.01 ppm
	Accuracy*:	The greater of: ± 10% of reading or ± 0.2 ppm	The greater of: ± 10% of reading or ± 0.2 ppm
Analog Output	Default Set Point:	1 V @ 10 ppm	1 V @ 25 ppm
	Default Range:	0-20 ppm (0-2 V)	0.8-50 ppm (0-2 V)
	Lower Detection Limit:	0.3 ppm	0.8 ppm
	Resolution*:	0.1 ppm	0.2 ppm
	Accuracy*:	The greater of: ± 10% of reading or ± 0.2 ppm	The greater of: ± 10% of reading or ± 0.2 ppm
Response Time*:		< 30s TO 50% FS, <180s to 90% FS	
Data Update Rate:		1 second	
Temperature Compensation:		Yes	
Operating Temperature Range:		-4 °F to 104 °F (-20 °C to 40 °C)	
Operating Humidity Range:		15 - 90% RH	
Warm-up Time:		1 hour before testing; for best results allow 12 hours before continued use.	
Supply Voltage:		5-30 VDC, 20 mA	
Enclosure Size:		3.85 x 1.36 x 0.95 in (97.8 x 34.6 x 24.2 mm)	

*At ambient conditions: 25 °C, 50% RH, 1 atm

SENSOR REPLACEMENT

- Turn off the power switch (if applicable) and/or disconnect the instrument from its power source.
- Unscrew and open the SM-100/500 back panel.
- Remove the SM-100/500 retention screw.
- Gently lift the RME sensor out of the enclosure, gently but firmly unplug the RME sensor away from the host board.
- Replace the RME sensor by gently sliding the boards together. The RME connector is not keyed, so take care to ensure the metal pads of the plug and socket are aligned correctly. There is an arrow on both the white plug and white socket; these align to indicate proper connection.
- Replace the SM-100/500 retention screw.
- Replace and screw together the SM-100/500 back panel.
- Reconnect the instrument to its power source and allow sensor to stabilize for up to 24 hours.



Back panel Retention screw SM-100/500 RME Sensor

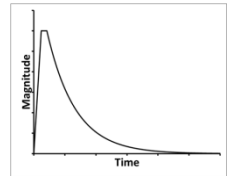
SM-500

NOTES & PRECAUTIONS

- Do not touch the sensor area.
- Disconnect power before opening the instrument to change the user replaceable sensor.
- After connecting power, allow 1 hour for warm-up before testing. For best results, allow 12 hours for warm-up before continued use.
- Keep the instrument dry. Never let water or other liquids contact the sensor element or circuit board.
- Do not drop the instrument or subject it to continuous vibration.
- Do not store or use the instrument in areas with high levels of dust.
- Do not clean the instrument with cleaning chemicals or solvents. If necessary, wipe clean with a damp cloth (water only).
- Do not operate the instrument in environments with combustible gases and materials.
- Call a qualified electrician if you have any questions regarding electrical wiring codes.
- Possible chemical interferents include: Chlorine (Cl₂), Nitrogen Dioxide (NO₂), and Hydrogen Sulfide (H₂S)

SM-500 NORMAL STARTUP OPERATION

The SM-500 sensor output has the normal startup profile pictured here. When powering the sensor, its output will rapidly increase followed by a gradual decrease. Once this process is complete, the sensor output will be most accurate and stable. The time and magnitude of this response depends on the length of time the sensor has been unpowered.



SM-500 WARM-UP TIMES

Time Since Last Powered	Warm-Up Time
[New Instrument]	24 hours
≥ 24 hours	12 hours
1-24 hours	6 hours
10-60 minutes	30 minutes
< 10 minutes	10 minutes

WARRANTY

This product is warranted against defects in materials and workmanship for one year following the date of purchase by the original owner. This warranty does not include damage to the product that results from misuse, accident, dropping, modifications or alterations, and it does not apply if the instructions in this manual are not followed, or if the unit is otherwise used outside its intended specifications.

If a defect develops during the warranty period, Eco Sensors, in its sole discretion, will repair the instrument or replace it with a new or reconditioned model of equivalent quality. In the event of replacement with a new or reconditioned instrument, the replacement unit will continue the warranty of the original unit.

If the product should become defective during the warranty period, please return it through your distributor, or call Eco Sensors at (800) 472-6626 or e-mail at sales@ecosensors.com to receive return instructions and a Return Materials Authorization (RMA) number.

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