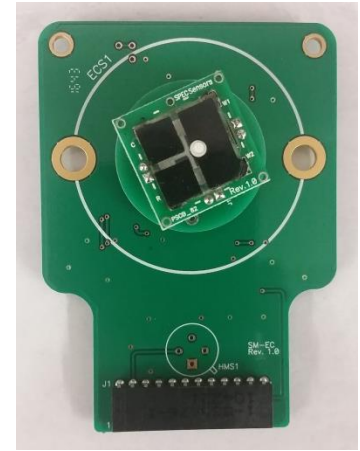


# USER REPLACEABLE OZONE SENSOR MODULE WITH ELECTROCHEMICAL SENSOR

## Model SM-EC

### SM-EC Features

The SM-EC is a pre-calibrated, user-replaceable, ozone sensor module that utilizes a state-of-the-art electrochemical (EC) sensing element. The SM-EC is designed to pair exclusively with Eco Sensors' SM-7 digital interface. These modules can be configured as an independent digital ozone sensor or paired with Eco Sensors' OS-4 & OS-6 ozone controllers. The SM-EC 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.



### Specifications

<b>Measurement Range:</b>	<b>0-20 ppm</b>	<b>1-50 ppm</b>
<b>Sensor Technology:</b>	Electrochemical (EC)	Electrochemical (EC)
<b>Compatible Instruments:</b>	OS-4 & OS-6 & Stand-alone	OS-6 & Stand-alone
<b>Lower Detection Limit*:</b>	0.03 ppm	0.80 ppm
<b>Resolution*:</b>	0.01 ppm	0.01 ppm
<b>Accuracy*:</b>	The greater of: ± 10% of reading or ± 0.03 ppm	The greater of: ± 10% of reading or ± 0.2 ppm
<b>Response Time*:</b>	< 60s	
<b>Measurement Rate:</b>	1 second	
<b>Temperature Compensation:</b>	Yes	
<b>Recommended Temperature Range:</b>	50 °F to 86 °F (10 °C to 30 °C)	
<b>Recommended Humidity Range:</b>	30 - 60% RH	
<b>Warm-up Time:</b>	1 hour before testing; for best results allow 12 hours before continued use.	
<b>Enclosure:</b>	Wall mountable, self-extinguishing, black ABS plastic.	
<b>Enclosure Size:</b>	5.05 x 3.33 x 1.04 in (128.3 x 84.6 x 26.42 mm)	

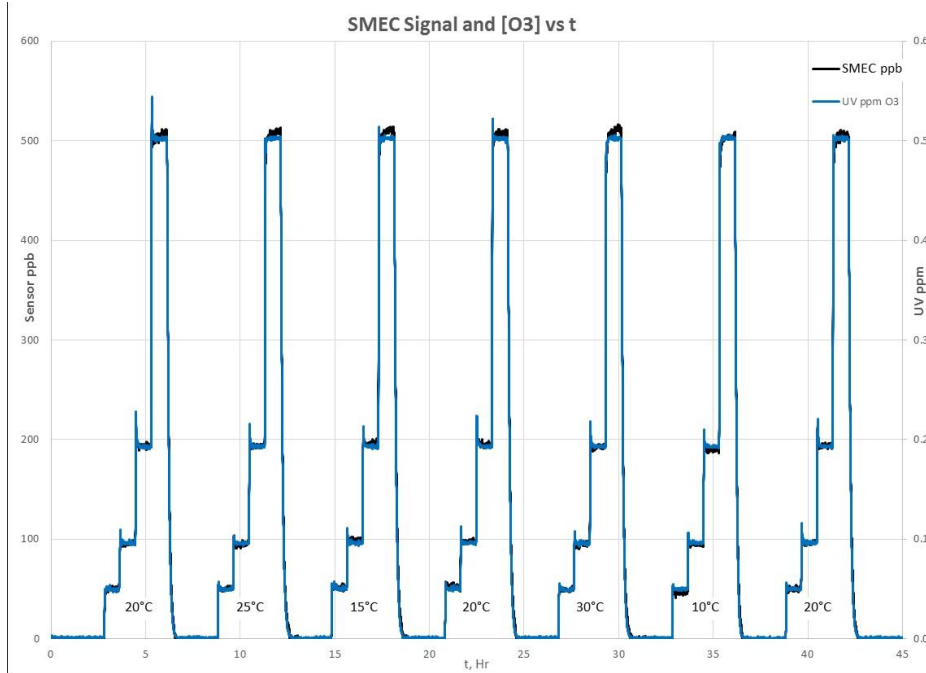
\*At ambient conditions: 25 °C, 50% RH

For additional power and input/output specifications, please refer to the SM-7 User Manuals at [www.ecosensors.com/support](http://www.ecosensors.com/support).

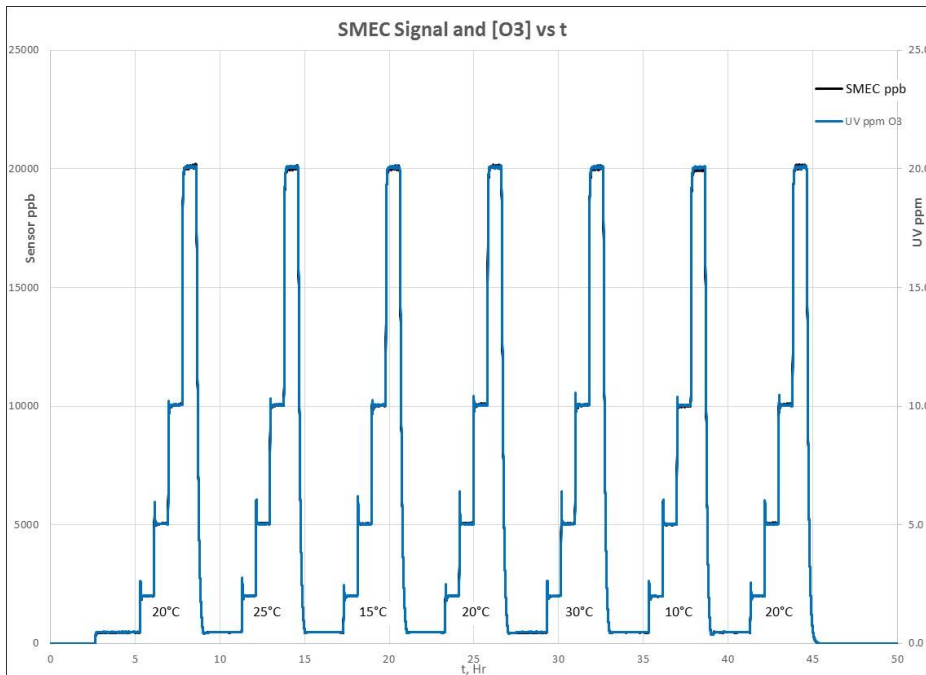
## Temperature Compensation

Temperature-compensated output of a 0-20 ppm SM-EC ozone sensor module from 10 to 30 °C, overlain with data from a reference UV ozone analyzer.

0.0 to 0.5 ppm:



0.5 to 20 ppm:



## Sensor Replacement

- Disconnect the power source from the instrument.
- Unscrew and remove the back cover.
- Gently but firmly pull the SM-EC sensor board away from the host board. Replace the sensor board by gently sliding the boards together.
- Screw on the back cover.



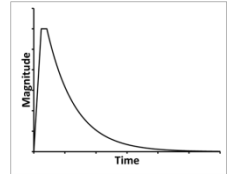
## Notes and Precautions

- 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 (Cl<sub>2</sub>), Nitrogen Dioxide (NO<sub>2</sub>), and Hydrogen Sulfide (H<sub>2</sub>S)



### SM-EC NORMAL STARTUP OPERATION

The SM-EC 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-EC WARM-UP TIMES

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

## Service and Maintenance

**Tampering with the unit or attempting repairs will void the warranty.** Repairs should only be performed by Eco Sensors or an Eco Sensors authorized service representative.

Instruments with problems during the warranty period should be returned as a system to the factory or authorized service representative for diagnosis and repair.

We recommend checking the calibration monthly and changing the user replaceable sensor annually. It is generally more cost effective to replace sensors than to recalibrate them.

## 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](mailto:sales@ecosensors.com) to receive return instructions and a Return Materials Authorization (RMA) number.

Except as provided herein, Eco Sensors makes no warranties, expressed or implied, including warranties of merchantability and fitness for a particular purpose. Eco Sensors shall not be liable for loss of use of this instrument or other incidental or consequential damages, expenses or economic loss, or claims for such damage or economic loss.

RECORD YOUR SERIAL NUMBER HERE

---

KEEP THIS MANUAL AND WARRANTY FOR YOUR RECORDS.

Eco Sensors is a registered trademark of Eco Sensors, Division of KWJ Engineering, Inc.

© Eco Sensors, Division of KWJ Engineering, Inc. 2017.

For brochures, application and tech notes, and other useful information, visit our extensive website at [www.ecosensors.com](http://www.ecosensors.com). E-mail us at [sales@ecosensors.com](mailto:sales@ecosensors.com).