

## OZONE SENSOR DIGITAL INTERFACE

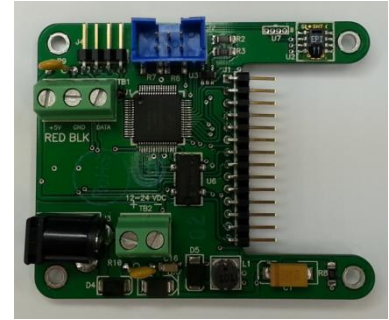
### Models SM-6 & SM-7

#### SM-6 & SM-7 Features

The SM-6\* and SM-7 are microprocessor-based digital interfaces that pair with Eco Sensors' SM-X and SM-EC ozone sensing modules, respectively. When paired, they can be utilized as stand-alone digital ozone sensing instruments or combined with Eco Sensors' ozone controllers, such as the OS-4 and the OS-6.

The SM-6 and SM-7 can be powered by a 12 VDC adapter, wired 5 VDC, or wired 12-24 VDC connection. It transmits ozone concentration (ppb), temperature (°C), and relative humidity (%) via an RS-232 serial cable. This signal can be used as a sensor input for Eco Sensors' ozone controllers and third-party PLCs. Additionally, connecting the serial data cable directly to a computer facilitates data logging and real-time data analysis.

Please read all the instructions in this manual as well as the manual for the user-replaceable sensor that is paired with your SM-6 or SM-7. All manuals can be found at [www.ecosensors.com/support](http://www.ecosensors.com/support).



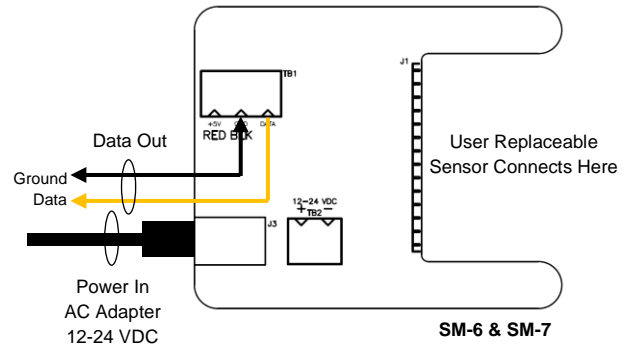
#### Power and Wiring

Disconnect power before opening the case. Use only one of the following three methods to power the SM-6 and SM-7:

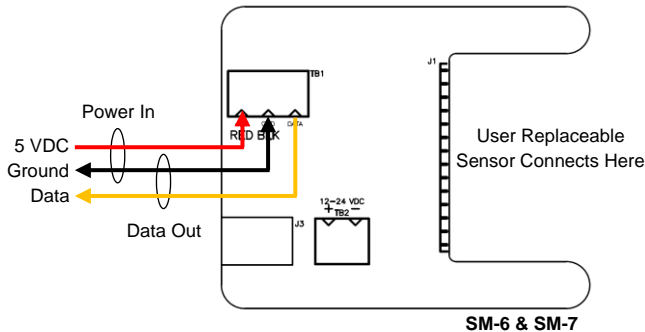
1. AC Adapter (included): 12-24 VDC, 50 mA (minimum), barrel connector. Refer to Tech Note P-101 at [www.ecosensors.com/support](http://www.ecosensors.com/support) for additional AC adapter specifications.
2. TB1: 5 VDC, 50 mA (minimum), wired connection (16-26 gauge).
3. TB2: 12-24 VDC, 50 mA (minimum), wired connection (16-26 gauge).

**WARNING:** Never connect 12-24 VDC to TB1. This will damage the SM-6 and SM-7 and void the warranty.

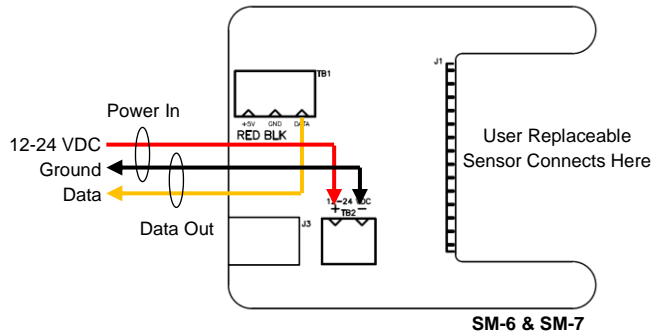
**SM-6 & SM-7 Wiring Illustration #1**



**SM-6 & SM-7 Wiring Illustration #2**



**SM-6 & SM-7 Wiring Illustration #3**



\*The SM-6 is a direct replacement for the SM-4 and is backwards compatible with Eco Sensors' ozone controllers. The SM-6 includes hardware and firmware changes that extend its functionality for use with Eco Sensors' calibrated user-replaceable ozone sensors.

## Data Output

Data from the SM-6 and SM-7 can be accessed via an RS-232 serial cable. Basic communication parameters are listed in the table to the right. For more details, refer to the **RS-232 Communication Manual**, available at [www.ecosensors.com/support](http://www.ecosensors.com/support).

Serial data is sent from the SM-6 and SM-7 approximately once per second. An example output is given below for 1 ppm (1000 ppb) ozone, 23 °C, and 33% relative humidity:

1000, 23, 33

### Serial Communication Parameters

| Parameter    | Value |
|--------------|-------|
| Speed (baud) | 9600  |
| Data bits    | 8     |
| Stop bits    | 1     |
| Parity       | None  |
| Flow Control | None  |

## Sensor Replacement

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



SM-6 / SM-X



SM-7 / SM-EC

## Notes and Precautions

- Disconnect power before opening the case to change the user replaceable sensor.
- After connecting power, allow 1 hour for warm-up before testing. Allow 24 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.

## Specifications

For additional specifications, refer to the user manual for the user-replaceable sensor module at [www.ecosensors.com/support](http://www.ecosensors.com/support).

|                   |   |
|-------------------|---|
| <b>Enclosure:</b> | Wall-mountable, self-extinguishing, black ABS plastic |
| <b>Wiring:</b>    | 16-26 gauge   |
| <b>Power in:</b>  | 5 VDC (TB1) or 12-24 VDC (TB2 or J3); 50 mA, minimum  |
| <b>Data out:</b>  | RS-232, 9600 baud, 8-N-1 format                       |

## 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

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KEEP THIS MANUAL AND WARRANTY FOR YOUR RECORDS.

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