

Dissolved CO₂ Waterproof Sleeve

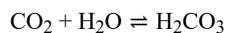
PS-3545

Overview

The Dissolved CO₂ Waterproof Sleeve is designed to be used with the Wireless CO₂ Sensor (PS-3208). The Waterproof Sleeve is a membrane made of ePTFE (expanded polytetrafluoroethylene, similar to Teflon®), which is permeable to many gases, including carbon dioxide, but impermeable to water. When the sleeve is properly installed, the probe of the CO₂ Sensor can be submerged in water, allowing you to monitor CO₂ exchange in an aqueous environment.

⚠ IMPORTANT: The Wireless CO₂ Sensor is NOT a waterproof or immersible sensor. Failure to correctly test and install the sleeve could void the product warranty and damage the sensor.

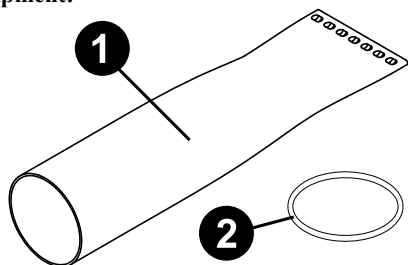
Once dissolved into water, CO₂ exists in a chemical equilibrium and forms carbonic acid (H₂CO₃). In other words:



This equilibrium is affected by pH, temperature, dissolved ions, and partial pressure of the CO₂ gas. The impact of this dynamic equilibrium is a relatively slower response in the gas measurement when compared to other dissolved gas sensors like oxygen. Due to these variables, the measurements of dissolved CO₂ are qualitative and accuracy of the measurement is difficult to assign.

Equipment

Included equipment:



- ① 5× ePTFE sleeves
- ② 5× O-rings

Required equipment:

- Wireless CO₂ Sensor (PS-3208)

Compatible equipment:

- 250-mL Sample Bottle (SE-6938)
- Photosynthesis Chamber (PS-3251)

Procedures

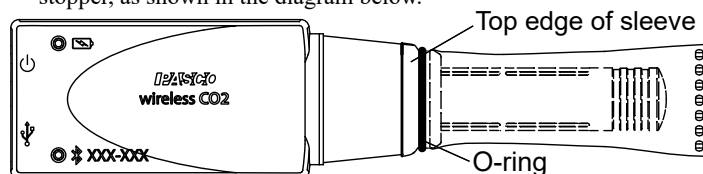
Using the Sleeve with a Sample Bottle

The following instructions explain how to use the Waterproof Sleeve with the Wireless CO₂ Sensor and the 250 mL bottle included with the sensor. These bottles are also available in the 250-mL Sample Bottle 4-Pack (SE-6938).

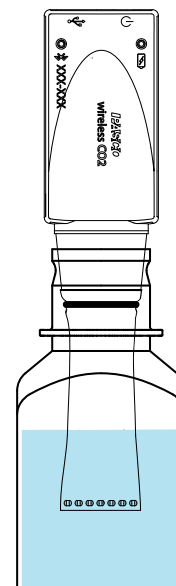
1. Visually inspect the ePTFE sleeve for punctures or tears. If any imperfections are visible, discard the sleeve and replace it.
2. Insert the probe end of the sensor into the sleeve. Make sure that the sleeve completely covers the collar of the probe stopper, as shown below. (You may need to gently stretch the sleeve in order to fit it onto the sensor probe.)



3. Slide the O-ring over the sleeve and secure it into the notch of the stopper, as shown in the diagram below.



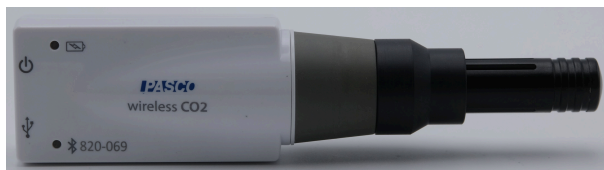
4. The sensor's probe can now be safely submerged into solutions up to the O-ring. Insert the probe into the included 250-mL Sample Bottle or similar container, as shown below.



Using the Sleeve with the Photosynthesis Chamber

The Waterproof Sleeve can also be used in conjunction with the Photosynthesis Chamber (PS-3251), allowing you to monitor the dissolved CO₂ content of the solution in the chamber. To do so:

1. Visually inspect the ePTFE sleeve for any punctures or tears. If any imperfections are visible, discard the sleeve and replace it.
2. Fit the waterproof sleeve adapter included in the Photosynthesis Chamber over the stopper of the sensor probe, as shown below.



3. Use a sharp pair of scissors to trim the length of the Waterproof Sleeve to between 6.5 and 7.0 cm.
4. Slide the O-ring over the seam end of the Waterproof Sleeve, then insert the probe end of the sensor into the sleeve, as shown below.



5. Ensure the sleeve fully covers the narrow portion of the sleeve adapter. You may need to gently stretch the sleeve to ensure full coverage. Once the sleeve is fully covered, slide the O-ring as far as possible along the narrow portion of the adapter, as shown below.



6. The sensor can now be safely submerged into solutions up to the O-ring. Use the largest opening in the Photosynthesis Chamber lid to do so, inserting the probe end of the sensor into the opening as if it were a stopper. (See Figure 1.)

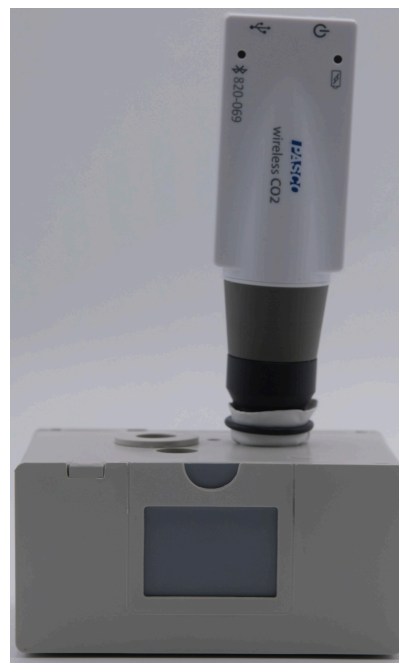


Figure 1: Inserting the Wireless CO₂ Sensor with Waterproof Sleeve into the Photosynthesis Chamber.

Technical support

Need more help? Our knowledgeable and friendly Technical Support staff is ready to answer your questions or walk you through any issues.

- Chat [pasco.com](https://www.pasco.com)
- Phone 1-800-772-8700 x1004 (USA)
+1 916 462 8384 (outside USA)
- Email support@pasco.com

Limited warranty

For a description of the product warranty, see the Warranty and Returns page at www.pasco.com/legal.

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