Wireless Barometer

PS-4255

Introduction

The Wireless Barometer is used to measure various quantities related to the atmospheric condition of the device's surroundings. The sensor can measure the pressure and temperature of the surrounding air, as well as calculate the device's current altitude using the pressure measurement. (Note that the temperature measurement is primarily used to correct pressure and responds more slowly than dedicated temperature sensors.) These measurements are shown on the built-in OLED display at one second intervals and can be recorded and analyzed by connecting the sensor to PASCO data collection software.

Components

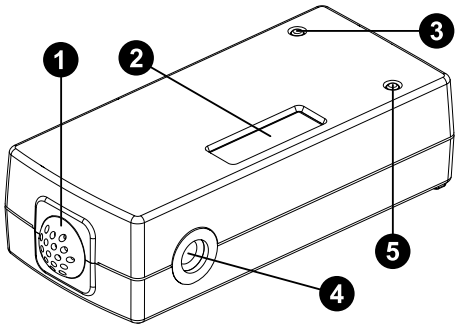
Included components:

- Wireless Barometer
- USB-C cable

Required software:

- PASCO Capstone, SPARKvue, or Chemvue data collection software

Features



1 Snout

Allows air to enter the sensing elements used to measure pressure and temperature.

2 OLED display

Displays measurements even when the sensor is not connected to data collection software.

3 Battery Status LED

Indicates the charge status of the sensor's battery.

LED	Status
Red blink	Low battery
Yellow ON	Charging
Green ON	Fully charged

4 Mounting rod hole

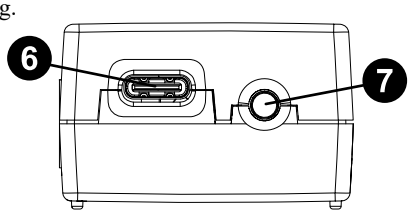
Use to connect the sensor to a ¼-20 threaded mounting rod.

5 Bluetooth Status LED

Indicates the status of the sensor's Bluetooth connection.

LED	Status
Red blink	Ready to pair
Green blink	Connected
Yellow blink	Remotely logging data

See the software's online help for more information on remote data logging.



6 USB-C connection port

Use to connect the sensor to a charger, or to the USB port or powered USB hub of a computer, using the provided cable.

7 Power button

Press and briefly hold to turn the sensor on and off. Press and release twice in quick succession to switch between measurements on the OLED display.

Initial step: Charge the battery

Charge the battery by connecting the micro USB port to any standard USB charger. The Battery Status LED is solid yellow while charging. When fully charged, the LED changes to solid green.

Get the software

You can use the sensor with SPARKvue, PASCO Capstone, or Chemvue software. If you're not sure which to use, visit pasco.com/products/guides/software-comparison.

A browser-based version of SPARKvue is available for free on all platforms. We offer a free trial of SPARKvue and Capstone for Windows and Mac. To get the software, go to pasco.com/downloads or search for **SPARKvue** or **chemvue** in your device's app store.

If you have installed the software previously, check that you have the latest update:

SPARKvue: Main Menu > Check for Updates

PASCO Capstone: Help > Check for Updates

Chemvue: See the download page.

Check for a firmware update

SPARKvue

1. Press the power button until the LEDs turn on.
2. Open SPARKvue. Select **Sensor Data** on the Welcome Screen.

3. From the list of available devices, select the sensor that matches your sensor's device ID.
4. A notification will appear if a firmware update is available. Click **Yes** to update the firmware.
5. Close SPARKvue once the update is complete.

PASCO Capstone

1. Press the power button until the LEDs turn on.
2. Open PASCO Capstone and click **Hardware Setup** in the Tools palette.
3. From the list of available wireless devices, select the sensor that matches your sensor's device ID.
4. A notification will appear if a firmware update is available. Click **Yes** to update the firmware.
5. Close Capstone once the update is complete.

Chemvue

1. Press the power button until the LEDs turn on.
2. Open Chemvue, then select the **Bluetooth** button.
3. From the list of available devices, select the sensor that matches your sensor's device ID.
4. A notification will appear if a firmware update is available. Click **Yes** to update the firmware.
5. Close Chemvue once the update is complete.

Set up the software

SPARKvue

Connect the sensor to a tablet or computer via Bluetooth:

1. Turn on the Wireless Barometer. Check to make sure the Bluetooth Status LED is blinking red.
2. Open SPARKvue, then click **Sensor Data**.
3. From the list of available wireless devices on the left, select the device with a device ID matching the one printed on your sensor.

Connect the sensor to a computer via USB-C cable:

1. Open SPARKvue, then click **Sensor Data**.
2. Connect the provided USB-C cable from the USB-C port on the sensor to a USB port or powered USB hub connected to the computer. The sensor should automatically connect to SPARKvue.

Collect data using SPARKvue:

1. Select the measurement you intend to record from the **Select measurements for templates** column by clicking the check box next to the relevant measurement's name.
2. Click **Graph** in the **Templates** column to open the Experiment Screen. The graph's axes will auto-populate with the selected measurement versus time.
3. Click **Start** to begin collecting data.

PASCO Capstone

Connect the sensor to a computer via Bluetooth:

1. Turn on the Wireless Barometer. Check to make sure the Bluetooth Status LED is blinking red.
2. Open PASCO Capstone, then click **Hardware Setup** in the **Tools** palette.
3. From the list of **Available Wireless Devices**, click the device with a device ID matching the one printed on your sensor.

Connect the sensor to a computer via micro USB cable:

1. Open PASCO Capstone. If desired, click **Hardware Setup** to check the connection status of the sensor.
2. Connect the provided USB-C cable from the USB-C port on the sensor to a USB port or powered USB hub connected to the computer. The sensor should automatically connect to Capstone.

Collect data using Capstone:

1. Double-click the **Graph** icon in the **Displays** palette.
2. In the new blank graph display, click the **<Select Measurement>** box on the y-axis and select an appropriate measurement from the list. The x-axis will automatically adjust to measure time.
3. Click **Record** to begin collecting data.

chemvue

Connect the sensor to a computer via Bluetooth:

1. Turn on the Wireless Barometer. Check to make sure the Bluetooth Status LED is blinking red.
2. Open chemvue, then click **Bluetooth** at the top of the screen.
3. From the list of available wireless devices, click the device with a device ID matching the one printed on your sensor.

Connect the sensor to a computer via USB-C cable:

1. Open chemvue. If desired, click the **Bluetooth** button to check the connection status of the sensor.
2. Connect the provided USB-C cable from the USB-C port on the sensor to a USB port or powered USB hub connected to the computer. The sensor should automatically connect to chemvue.

Collect data using chemvue:

1. Open the **Graph** display by selecting its icon from the navigation bar at the top of the page.
2. The display will automatically be set to plot pressure versus time. If a different measurement is desired for either axis, click the box containing the default measurement's name and select the new measurement from the list.
3. Click **Start** to begin collecting data.

Use the OLED display

The OLED display on the sensor case displays a single measurement from the sensor, refreshing at one second intervals. By default, the measurement shown is pressure as measured in kilopascals (kPa). However, you can change the displayed measurement by quickly pressing and releasing the power button twice in quick succession. The measurements will always cycle through the following pattern, restarting from the beginning after the last measurement:

- Pressure (kPa)
- Pressure (psi)
- Pressure (mbar)
- Pressure (atm)
- Pressure (inHg)
- Altitude (ft)
- Altitude (m)
- Temperature (°C)
- Temperature (°F)

Zero or calibrate the altimeter

When performing measurements with the altimeter, you may prefer to zero the altitude measurement at a baseline elevation in order to simplify your data. Alternatively, if absolute altitude measurements are required for your experiment, you can calibrate the measurement for greater accuracy. Both zeroing and calibration follow the same procedure, which varies depending on your chosen software. For instructions on zeroing or calibrating the altimeter, see the PASCO Capstone, SPARKvue, or Chemvue online help.

NOTE: Zeroing or calibrating the altimeter will not affect the measurements of pressure or temperature.

Software help

The SPARKvue, PASCO Capstone, and Chemvue Help provide information on how to use this product with the software. You can access the help from within the software or online.

SPARKvue

Software: Main Menu > Help

Online: help.pasco.com/sparkvue

PASCO Capstone

Software: Help > PASCO Capstone Help

Online: help.pasco.com/capstone

Chemvue

Software: Main Menu > Help

Online: help.pasco.com/chemvue

Experiment files

Download one of several student-ready activities from the PASCO Experiment Library. Experiments include student handouts and teacher notes. Visit pasco.com/freelabs/PS-4255.

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

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.

Copyright

Trademarks

Product end-of-life disposal

This electronic product is subject to disposal and recycling regulations that vary by country and region. It is your responsibility to recycle your electronic equipment per your local environmental laws and regulations to ensure that it will be recycled in a manner that protects human health and the environment. To find out where you can drop off your waste equipment for recycling, please contact your local waste recycle or disposal service, or the place where you purchased the product. The European Union WEEE (Waste Electronic and Electrical Equipment) symbol on the product or its packaging indicates that this product must not be disposed of in a standard waste container.

CE statement

This device has been tested and found to comply with the essential requirements and other relevant provisions of the applicable EU Directives.

FCC statement

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions:

(1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

Battery disposal

Batteries contain chemicals that, if released, may affect the environment and human health. Batteries should be collected separately for recycling and recycled at a local hazardous material disposal location adhering to your country and local government regulations. To find out where you can drop off your waste battery for recycling, please contact your local waste disposal service, or the product representative. The battery used in this product is marked with the European Union symbol for waste batteries to indicate the need for the separate collection and recycling of batteries.