

Pioneer

Pedaling Monitor Sensor

SGY-PM910H

User's Manual

EN

DE

FR

NL

IT

ES



Please read the **Important Information for the User** in the product box for product warnings and other important safety information.

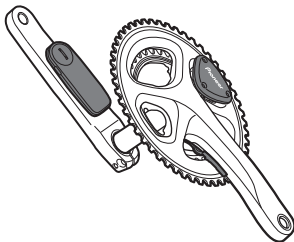


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This product is ANT+™ certified.
 Visit <http://www.thisisant.com/directory/> for a list of compatible products and apps.

Features

This product is a sensor system that analyzes the pedaling of a bicycle in real time. It calculates the direction and intensity of the force acting on the pedals and calculates pedaling efficiency.

Description of components

- **Strain gauge unit:** Detects the strain on the crank and calculates the direction and intensity of the force on the crank.
- **Magnet:** Used to detect the angle of rotation.
- **Transmitters:** Send information from the strain gauge unit and the magnet to the Cyclocomputer.

Switching modes

The switch in the right transmitter changes the system to the following modes.

- **Pedaling mode:** Used in combination with the Cyclocomputer SGX-CA500/CA900. This mode calculates pedaling efficiency and maximizes the functionality of the product.
- **Power meter mode:** Used with a Cyclocomputer that supports ANT+™.

Manuals

The product's manuals consist of this User's Manual, an Installation Manual, and Important Information for the User.

- **User's Manual:**
Explains how to pair the product with the Cyclocomputer and calibrate the sensors.
- **Installation Manual:**
[For American Users] <http://www.pioneerelectronics.com>
[For Canadian Users] <http://www.pioneerelectronics.ca>
[For European Users] <http://www.pioneer.eu>
Explains details about handling methods. The product installation methods (for dealers) are also described as references.
- **Important Information for the User:**
Important Information for the User provides detailed information related to safety.

Compatibility

Crank sets

The product is compatible with the following crank sets.

Crank sets	Remarks
SHIMANO FC-9000	<ul style="list-style-type: none"> Crank lengths of 165, 167.5, 170, 172.5, 175 mm, crank set of 50-34T, 52-36T, 52-38T, 53-39T, 54-42T, 55-42T are compatible. *
FC-6800	<ul style="list-style-type: none"> Crank lengths of 165, 170, 172.5, 175 mm, crank set of 50-34T, 52-36T, 53-39T are compatible. *

* Descriptions in this manual are for a 170 mm crank set.

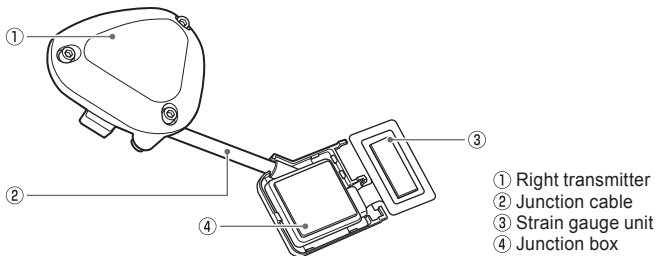
This product is designed to be used for recreational cycling and cycle training applications only and is not designed to withstand racing conditions. Additionally, this product is designed to be used while cycling on paved roads only. Any damage or malfunction arising from use in racing or riding on dirt roads, cobblestone or any other unpaved roads will not be covered by the manufacturer's limited warranty.

Installing and calibrating the product requires specialized techniques and tools. Ask the shop where you bought the product to install and calibrate it.

Accessories

This product contains the following parts.

Pedaling monitor sensor (right side)



Pedaling monitor sensor part (right side) x 1



For FC-9000

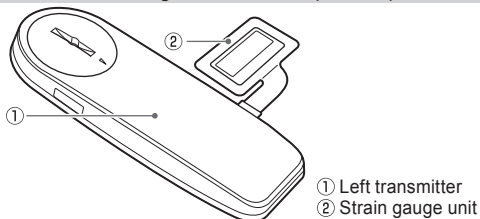


For FC-6800

Strain gauge unit cover (right side) x 2



Chain ring adapter x 1

Pedaling monitor sensor (left side)

Pedaling monitor sensor part (left side) x 1

Magnet

Magnet x 2

Accessories

Batteries (CR2032) x 2

Phillips-head screws x 10

User's Manual (this document)

Warranty Card

Important Information for the User

Installing and Removing the Batteries/ Switching Modes

You must install the batteries before using the product.

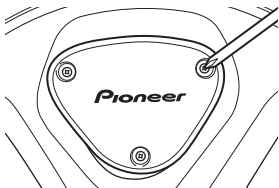
- The product can be used as the ANT+ Power meter with the cyclocomputers of other companies (power meter mode).
To use the product in power meter mode, insert the battery in the left-side part first, and then the right-side part.

1. Loosen the screws on the transmitter and remove its cover.

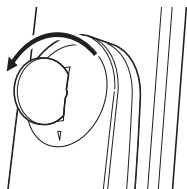
Use a hex wrench (2 mm) to loosen the screw and remove the cover.

- Be careful not to lose the removed screw.

- Right transmitter (screws: 3 x)

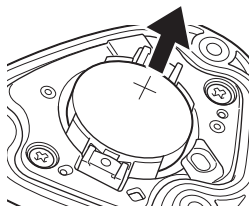


- Left transmitter (Loosen/tighten with coin)

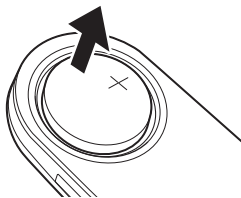


2. Remove the old battery.

- Right transmitter



- **Left transmitter**



3. Install the new battery (CR2032).

- Do not use batteries other than CR2032.

4. Check the LED display.

Check the following LEDs to make sure that they are working properly.

- **Pedaling mode:**
When the batteries are installed, the LEDs light green for 10 seconds.
- **Power meter mode:**
When the batteries are installed, the left and right transmitters start pairing. When pairing is finished, the LEDs on the left and right transmitters light green for 10 seconds.

- If the LEDs do not light, or only one side lights, install the batteries again. If the LEDs still do not light, the battery may be almost empty. Replace the battery with a new one.

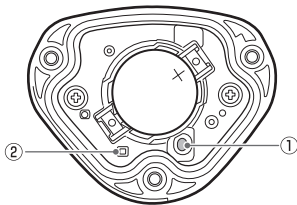
5. Start the sensors.

Rotate the bicycle's crank set one rotation to start the sensors.

6. Check the sensor modes.

Pushing the push switch in the right transmitter, the LEDs light as follows depending on the actual sensor mode.

- **Pedaling mode:**
The LEDs light green for 5 seconds.
- **Power meter mode:**
The LEDs light orange for 5 seconds.



- ① **Push switch**
- ② **LED**

- Make sure that the left and right sensors light properly.

7. Switch the sensor mode.

Change the sensor mode by using the push switch in the right transmitter while the batteries are removed.

- **While in pedaling mode:**
The sensors restart in power meter mode and the LEDs light orange for 5 seconds.
- **While in power meter mode:**
The sensors restart in pedaling mode and the LEDs light green for 5 seconds.

- For use with Pioneer's SGX-CA500/CA900, set the sensor mode to pedaling mode.
For use with other cyclocomputer brands, set the sensor mode to power meter mode.
- If the left transmitter is not found, the LEDs blink red 5 times.
- If the LEDs on the left and right transmitters do not light the same color, green or orange, another left transmitter may be connected. In this case, check that both side transmitters light properly in a location away from any other left transmitter, and then switch the sensor modes.

8. Install the cover and tighten the screws to fix it in place.

Use a tool that can measure the torque to tighten the screws.

- Tightening torque: 18 cN·m

Pairing with the Cyclocomputer

This section describes how to pair the installed SGX-PM900 pedaling monitor sensors on your bicycle to the SGX-CA500/CA900 Cyclocomputer.

- This pairing procedure may be different if you are using a cyclocomputer other than the Pioneer SGX-CA500/CA900. Please refer to your cyclocomputer's owner manual for sensor pairing.

1. Check the sensor modes.

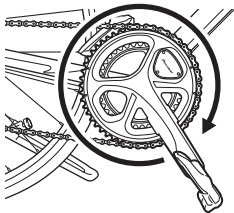
Check that the right transmitter and the left transmitter are in "Pedaling mode."

- See page 8 to switch the modes.

2. Tap the [Sensors] icon in the home screen of the SGX-CA500/CA900.

The sensor list screen opens.

3. Rotate the bicycle's crank set three rotations to start the transmitter.



- Pair with the Cyclocomputer within 5 minutes after the transmitters are activated.
- After the transmitters are activated, it may take more than 1 minute to pair with the Cyclocomputer.

4. Tap [Connect New] in the sensor list screen of the SGX-CA500/CA900.

The sensor connection menu opens.

5. Tap [Device Type] and then [Pedaling Monitor R].

- For the left transmitter, tap [Pedaling Monitor L].
- If multiple sensors are activated, bring the main unit closer to the sensor, or specify the device number to pair the sensor you want to pair. Refer to the User's Guide of the Cyclocomputer SGX-CA500/CA900 regarding how to specify a device number to pair a sensor.

6. Tap [Search].

The search for the sensor starts.

A [Searching. Please wait.] message appears.

7. Check the information about the sensor.

Information about the sensors appears when the sensors are found.

Check the following items.

- [Device Number]
Make sure that the device number is the same as the device number of the transmitter.
- [Error Rate]
Make sure that "OK" is displayed.

Pedaling Monitor R	
Device Number	129
Manufacturer Number	---
Error Rate	OK
Battery	

- The device numbers are printed on the right junction box and on the side of the left sensor. Refer to the Installation Manual for details.

- If the numbers that are displayed on [Device Number] are different from the transmitter device numbers, specify the device numbers to pair with the sensor.
Refer to the User's Guide of the Cyclocomputer SGX-CA500/CA900 regarding how to specify a device number to pair a sensor.
- If "NG" is displayed in the [Error Rate] area, the information from the sensor is not being received correctly because transmission conditions are bad. Make sure that the sensor you are pairing is activated, then bring the SGX-CA500/CA900 closer to the sensor and perform the pairing operation again.
- You may not pair with the sensor due to the influence of the 2.4 GHz frequency band. If "NG" is displayed even if the SGX-CA500/CA900 is moved closer to the sensor and paired with it, try again someplace where there is no interference from microwaves, radio waves, or wireless equipment.

**Pairing of the right transmitter is completed.
Then, pair the left transmitter.**

Calibrating the Sensors

This section describes how to use the Cyclocomputer SGX-CA500/CA900 to calibrate the zero point of the pedaling monitor sensor that is installed on the bicycle.

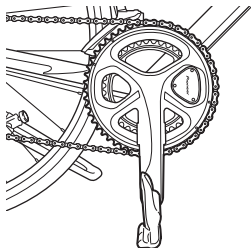
- The right-side pedaling monitor sensor is used as an example in this description. The procedure to calibrate the left side is the same as for the right side.

Getting Ready

1. Stop the bicycle on a flat safe place.

Calibrating the Zero Point

1. Position the crank arm so it is perpendicular to the ground.



2. Tap the [Sensors] icon in the home screen of the SGX-CA500/CA900.

The sensor list screen opens.

3. Tap [Pedaling Monitor R] and then [Calibration (Zero)].

4. Tap [Start Calibration].

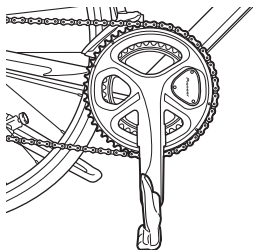
The calibration starts.

If the calibration is successful, "Success" appears in the [Result] field. If "Failure" is displayed, the sensor may be calibrated in an unstable condition causing the crank to be moving during the calibration. Calibrate again with the crank stopped.

- This product has a correction function for the zero point fluctuation caused by varying temperatures. The accuracy of this function improves when the sensor is calibrated in different temperatures. This function cannot measure correctly if you calibrate or check the sensor before it is acclimated to the outside temperature.

Checking the Zero Point

1. Position the crank arm so it is perpendicular to the ground.



2. Tap [Pedaling Monitor R] in the sensor list screen of the SGX-CA500/CA900.

3. Confirm the value in [Force Preview].

Make sure that the [Tangential Direction Force] and [Radial Direction Force] values are as shown here.

- Tangential Direction Force: 0 ± 3 N
- Radial Direction Force: 0 ± 3 N

Force Preview	
Tangential Direction Force	0 N
Radial Direction Force	0 N

Calibration of the right side is finished. Calibrate the left side in the same way.

Calibrating in Power Meter Mode

When calibrating the sensors in power meter mode, position the crank arm so it is perpendicular to the ground, do the procedure to the left and right sides together. Refer to the User's Manual of the Cyclocomputer you are using for details.

Troubleshooting

Refer to the following suggestions if you have any problems installing or using the product.

If you cannot find what you want to know here, ask the shop where you bought the product.

- I cannot pair with the Cyclocomputer in the power meter mode or pedaling mode.

Cause	Solution
The battery is almost empty.	If the LEDs do not light when you install the battery, the battery is almost empty. Replace the battery with a new one.
(+) or (-) side of the battery is installed in the opposite side.	Install the battery in the proper side (see page 7).
Pedaling monitor sensor mode is wrong.	Change the mode and pair with the Cyclocomputer (see page 8).
There are other wireless equipment or microwave ovens near by.	Separate other wireless equipment or microwave ovens. Move the sensor closer to the Cyclocomputer and pair them.
Another sensor is paired with the Cyclocomputer.	Insert the battery in the left-side part first, and then the right-side part, and check the sensor mode by pushing the push switch. If the left and right LEDs do not light orange, push and hold the push switch to switch to power meter mode. Ask the shop where you bought the product for details.

- I cannot pair with the Cyclocomputer in the power meter mode.

Cause	Solution
Pairing between right and left sensors fails.	Insert the battery in the left-side part first, and then the right-side part, and check the sensor mode by pushing the push switch. If the left and right LEDs do not light orange, push and hold the push switch to switch to power meter mode.

■ Zero point calibration fails.

Cause	Solution
The crank is subjected to external force or moving.	Calibrate the sensor in still condition (see page 12).

■ The Cyclocomputer display is not displaying normally while I am riding.

Cause	Solution
Zero point calibration fails.	Calibrate the zero point (see page 12).

■ There is a rattling noise when I am riding.

Cause	Solution
Screws used to install the sensor are loose.	Retighten the screws.

■ The magnet is rubbing while I am riding.

Cause	Solution
Foreign objects are attached to the magnet and rub against the transmitter or the junction box.	Clean the transmitter, junction box, and magnet.

Care, Maintenance, and Storage

- Use a soft dry cloth or a cloth that has been dampened and wrung out to wipe dirt from the left and right transmitters, the right strain gauge unit cover, the magnet, and other accessories.
- Do not use benzene, paint thinner, or other volatile chemicals, cleansers, or chemically treated cloths. Doing so could damage the product or cause the paint to peel off.
- If you are not going to use the product for a long period of time, remove the batteries.

Specifications

Weight:	73 g
Dimensions:	<p>Pedaling monitor sensor (right side):</p> <ul style="list-style-type: none"> • Right transmitter: 60.7 mm(W) × 46.9 mm(H) × 21.6 mm(D) • Junction box, Strain gauge unit cover: 63.3 mm(W) × 47.2 mm(H) × 9.9mm(D) <p>Pedaling monitor sensor (left side): 99.4 mm(W) × 48.2 mm(H) × 14.6 mm(D)</p> <p>Magnet: φ57.0 mm × 3.5 mm</p>
Water resistant:	This device has a water resistance rating of IPX-6/IPX-7.
Communications method (sensors):	ANT+ wireless
Battery:	CR2032
Battery operating time:	Approximately 200 hours (at moderate temperature)
Operation temperature:	-10 to 50°C
Accessories:	Magnet, Chain ring adapter, Batteries (CR2032), Cable ties, Phillips-head screws, User's Manual, Important Information for the User, Warranty Card

- The battery operating time may decrease depending on the usage condition.
- ANT+ is a Wireless Personal Network protocol with very low power requirements using 2.4GHz frequency band.
For more information, visit <http://www.thisisant.com/>
- Specifications and design are subject to change without notice.
- Illustrations used in this manual may be different from actual appearance.

<http://www.pioneerelectronics.com>

<http://www.pioneerelectronics.ca>

<http://www.pioneer.eu>

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