

POLAR POWER OUTPUT SENSOR - INSTALLATION GUIDE

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→ **Installation of Polar Power Output Sensor**

- The Polar Power Output sensor is compatible with the Polar S725™ / S720i™ / S710i™ / S710™ and S625X™ products and with bikes with a rear derailleur. It is designed especially for road cycling but it is also suitable for most mountain bike types. However, the wires can not take strong external stress.
- The wireless speed sensor supplied with the S725™ / S720i™ / S710i™ / S710™, as well as the optional wireless cadence sensor, should be removed from the bike if the Power Output Sensor is installed.

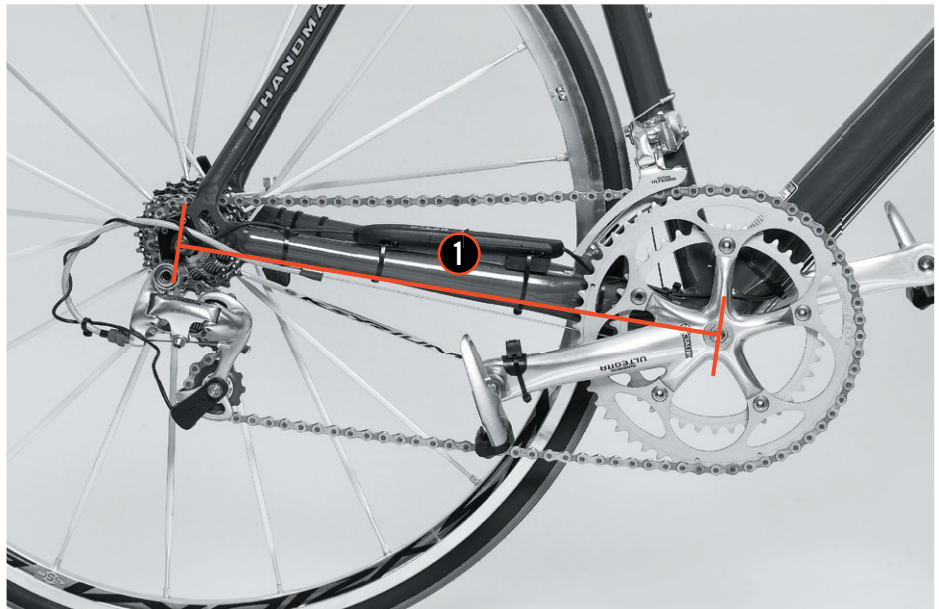


→ Step one: preliminaries

- Clean bike and chain! Otherwise things will get very messy!
- For most accurate readings, all settings must be as accurate as possible! Don't accept rough estimates. Be precise!
- Use a bike stand
- Use the right tools!
 - 10mm spanner
 - Allen keys
 - Chain breaker
 - Scissors (for cutting cable ties)
 - Measuring tape
 - Rubber gloves (if needed)

**→ Getting started**

- Accuracy is of extreme importance, a person who intends to determine training intensity using Watts is going to be a very informed cyclist and probably very precise!
- Measure the rear chain stay length in mm (1)



→ Chain facts!

- If you know the factory default weight and length of the chain, set those values in the wrist unit. The weight of lubricant, dirt, etc. on the chain is insignificant – use of the standard factory default chain weight is sufficient.
- Note that there is no need to re-enter chain length & weight if links are removed. The system uses chain density (weight/length). Removing links from the chain does not affect density.
- Be precise! If you do not know the factory default weight, take the chain off and measure it!
- It is easiest to install power sensor when changing chains.
- Make sure the chain is not too long or short!
- Remember that chain length is modified according to frame size.
- Not all chains use the same opening / closing method. Some chains require specialized tools for installation! Make sure a qualified mechanic does the job!
- Note that the chain length and weight are directly proportionate to power value. If they have, for example, 1% error, then the Power Value will also have this 1% error.

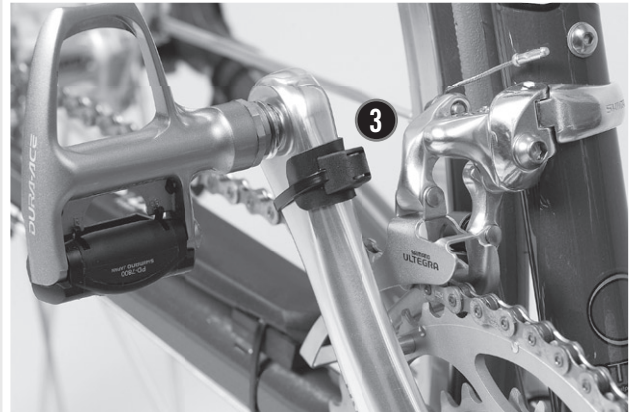
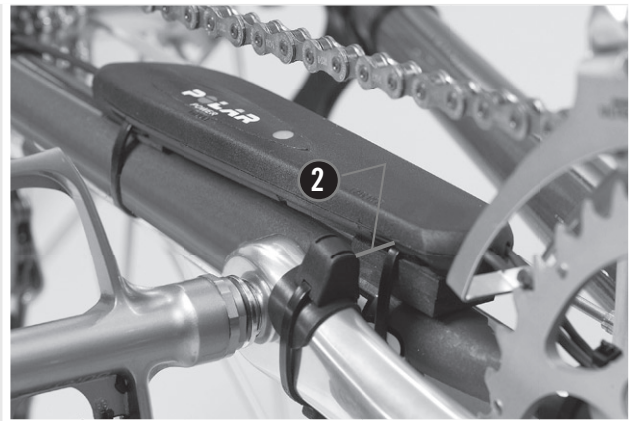
**→ Measure the wheel diameter in mm**

- Examples of wheel diameters can be found in Polar user manuals, however don't be lazy, measure the real distance!
- Remember to check the wheel diameter when changing tyres!
- Place the wheel's valve on the ground and put a marker point on the ground. Bring the bike forward one complete turn of the wheel until the valve is once again near to the ground.
- Measure the distance between the two points in mm and subtract 4 mm to account for your weight on the bike to get your wheel circumference. Use this value for Wheel 1 in the Bike Set menu of the wrist unit.
- Remember, in the Polar products you can use two wheel measurements (bike 1 and 2)!



➔ **Preparation done, let's begin with the power sensor main unit !**

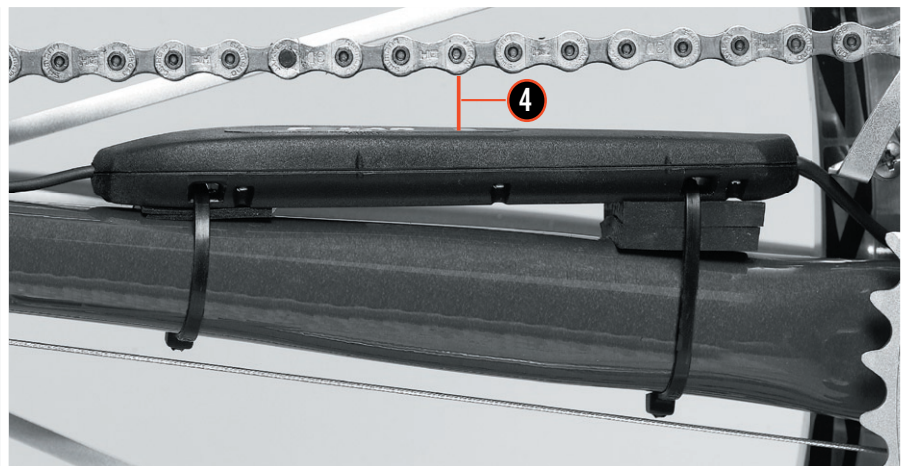
- The sensor should be installed in the middle of the chain stay
- The determining factor during installation of the power sensor is the cadence sensor position! Max distance between magnet and sensor is 7mm (2)
- The crank magnet should pass the "cadence" notch of the power sensor.
- Place the cadence magnet on the crank arm as close as possible to the pedal axle.
- To avoid slipping, place a rubber pad under the magnet and plastic tie (you can also use some silicone to keep the magnet in position)
- Make sure the cadence magnet passes the front mech (derailleur) in the bike's biggest gear! (3)



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➔ **Check that the Power Sensor is flat and level**

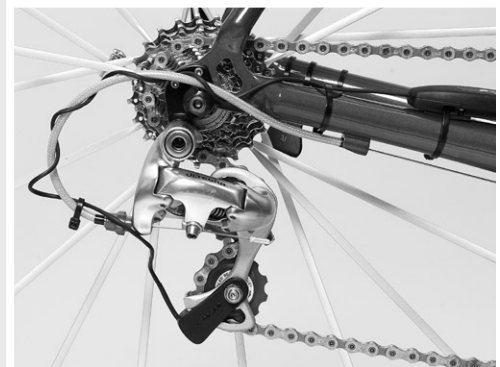
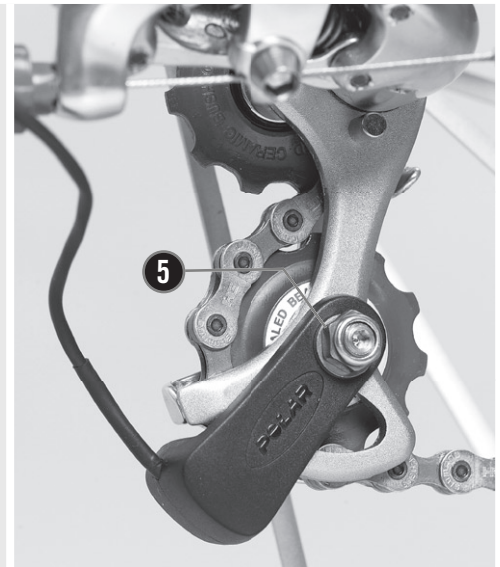
- Place rubber pads under the power sensor to protect frame and to make sure that the power sensor is flat and level.
- The power sensor should be installed so that when the chain is in the small front chain ring and in the small rear cog, the sensor will be as close as possible (5-10 mm / 0.2" - 0.4") to the chain without touching it when the chain is under tension (4)
- If the power sensor is not spaced correctly, power numbers will be inaccurate & inconsistent when using the big chain ring.



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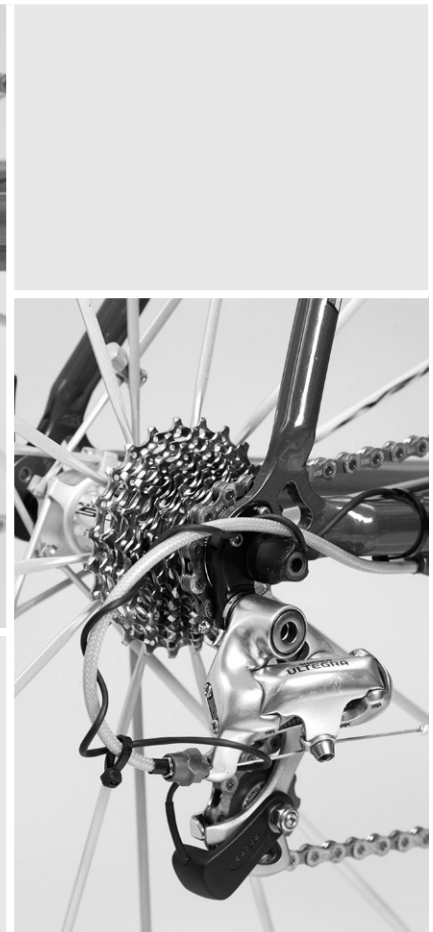
→ **Installing the chain speed sensor**

- Remove original bolt from lower pulley wheel (5)
- Wind the wire from the power sensor to the chain speed sensor securely around the rear derailleur cable
- Insert correct Polar bolt, the bolt used depends on rear mech (derailleur), Campagnolo, Shimano or MTB
- Attach the chain speed sensor and bolt
- Tighten with 10mm spanner
- Be very careful not to tighten too much!



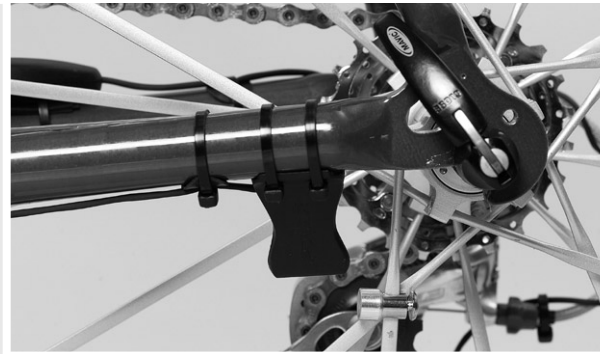
→ **Check all gears!**

- Check that the chain speed sensor does not touch wheel's spokes in bike's smallest gear!
- There can be BIG changes! Check ALL GEARS!
- Not too much cable with smallest sprocket
- Not too little cable with biggest sprocket
- Very important to check that the chain speed sensor cable does not touch the sprockets
- Use cable ties to keep cable in place
- Leave the first cable tie slightly loose to allow free movement (6)

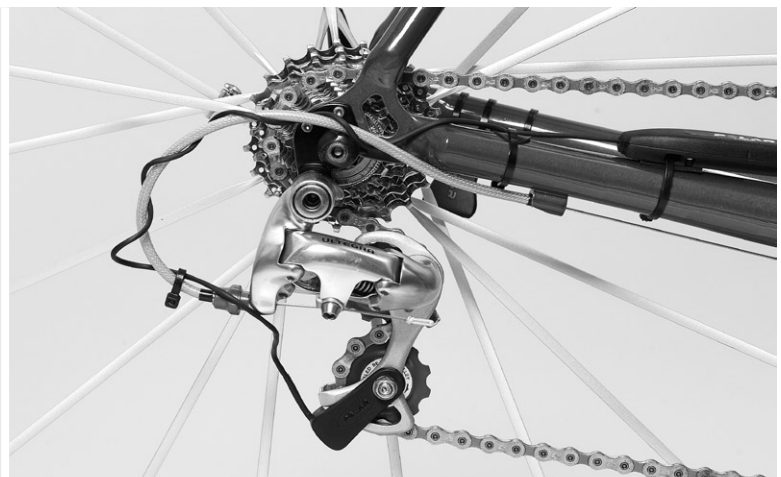


→ Installation of the wheel speed sensor

- Position the wheel speed sensor downwards on the left chain stay
- Put the speed sensor as far along the chain stay as possible to avoid excess cable and interference with power sensor
- Keep the cable in place with cable ties
- To avoid slipping, place a rubber pad under the speed sensor
- Attach one of the two speed magnets to a spoke of the rear wheel. Choose the one that fits better on your spoke
- Check magnet passes the speed sensor in correct position (distance 5 mm) (7)
- Attach the wire with cable ties so that it is not hanging loosely.

**→ Use cable ties to keep the power sensor cable in position**

- Tighten the cable ties securely - but not too much!
- Make sure the cable is kept away from chain wheels!
- Wrap the cable around gear cables, neat and tidy
- Cut off any excess cable tie ends



→ Installing the bike mount

- Position on the right side of handlebar in order to protect the cable attachment
- Wrap cable around brake cable
- Attach the cable to the bike mount (8)
- Make sure the handlebar can turn normally!

**→ Battery replacement**

- The battery for the power output sensor is in the bike mount unit.
- The estimated average battery life of the Polar Power Output Sensor is 300 riding hours.
- Open the battery cover on the right side of the bike mount with the aid of a coin. Push the battery cover gently and turn it counterclockwise.



→ Lastly

- Place the wrist unit on the handlebar mount taking care that the base contacts are touching the handlebar mount's contact pins (9)
- Remember to activate the 'Power' function in the 'Bike Set' menu in the wrist unit
- Check the wheel in use is correct
- Before riding, check that everything works OK, all bolts are tight, all excess cable ties are cut and that the chain speed sensor cable is kept out of the sprockets in all gears.
- Test the sensors by checking that colour indicator light flashes in the power sensor (10)
- **red**- for wheel speed sensor when the spoke magnet passes the speed sensor
- **green**- for cadence sensor when the cadence magnet passes the sensor in the power unit
- **yellow**- for chain speed sensor

