Using AeroPod® as a stand-alone power meter

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Firmware 9.x

Introduction

AeroPod is the *only* device that functions both as a CdA measurement system, and also as a stand-alone power meter.

AeroPod works as a stand-alone power meter when setup by the user to operate with **profiles 1 and 2** (profiles 3 and 4 are reserved for CdA measurements)

These instructions will show you how to setup and use AeroPod as a stand-alone power meter.

For information regarding attaching AeroPod to your bike, and pairing AeroPod to your ANT+ sensors, please consult the **AeroPod Installation Instructions**, included with your AeroPod.

Setting up AeroPod for Power Meter use

Using AeroPod as a power meter requires you to do these five things:

1) Use Isaac software or PowerHouse bike app to enter bike/rider information in *profile 1 or 2* (profile3 and 4 are reserved for CdA measurement)
2) Make sure your sensors are in good condition (good battery, correctly positioned on the bike)
3) Pair AeroPod to your speed and cadence sensors
4) Pair AeroPod to your bike computer display device
5) Perform AeroPod power meter calibration ride (shorter than AeroPod CdA calibration ride)

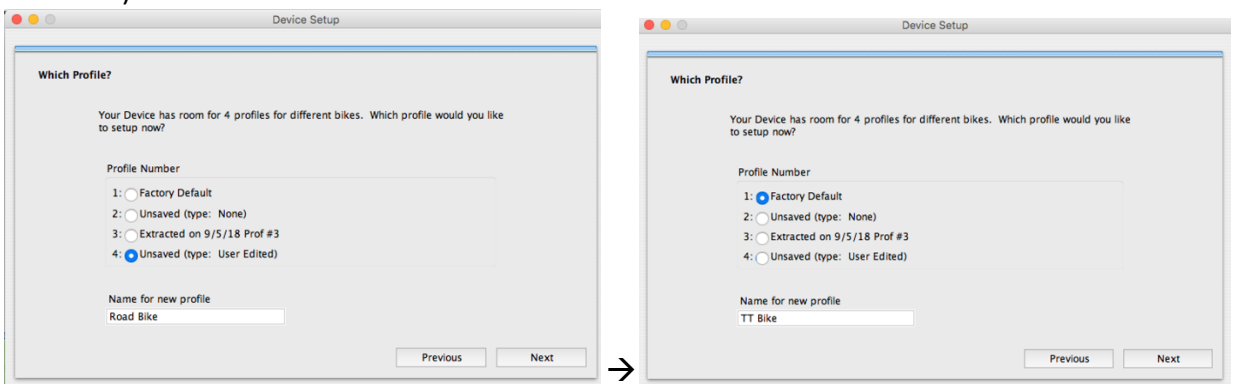
1. Set AeroPod to profile 1 or 2 and enter bike/rider parameters

Your AeroPod ships from the factory, pre-set to profile 4. **CdA measurement is done ONLY in profiles 3 and 4.**

Profiles 1 and 2 are used for AeroPod stand-alone power meter measurements

To enter your parameters, connect AeroPod to Isaac software, then use the command "Device/Setup Device…" to launch the setup wizard.

When you see this screen, **select profile 1 or 2** (profile 1 is selected below, and given the name "TT Bike"):



When you've selected the profile, click Next and enter the following information as requested

Body weight/height
Bike and gear weight
Normal ride position
Tire type and road surface

On the last step of the wizard, select "Best Accuracy"

TIP: If you have more than one bike, you can create and store up to 2 different power meter profiles.

TIP: We strongly recommend you measure your body weight and the weight of your bike and gear. This will improve the accuracy of AeroPod measurement.

TIP: Velocomp's "Velocomp" app for iOS/Android allows you to set profile parameters from your smartphone, without using Isaac software

2. Check your sensors

Make sure the batteries in your sensors are fresh.

If you're using a magnet-less speed sensor, place it on the hub of your front wheel.

Finally, spin the wheel and bike crank, and confirm with your bike computer that the sensors are functioning correctly. (If you're using a HR strap, make sure it is functioning too).

3. Pair AeroPod to your ANT+ sensors

Awaken your sensors. (You can also pair a HR strap to AeroPod)

To start AeroPod sensor pairing, *press-hold the AeroPod button for 4 seconds until the light flashes green*. Release the button when the light flashes green.

- During pairing, if AeroPod finds a cadence sensor the light will flash red three times

The pairing process, which can last up to 60 seconds, ends when the light turns solid green, then goes out.

4. Pair AeroPod to your bike computer

- Make sure your sensors are awake.
- Click the button of AeroPod. The status light will show either solid yellow (ready for calibration) or solid Green (previously calibrated, ready to ride)
- Follow the instructions of your bike computer to pair AeroPod. AeroPod will be found as a "power sensor"

5. Perform AeroPod calibration ride

After pairing AeroPod to your sensors, AeroPod is ready for a calibration ride.

IMPORTANT: Every time you perform a sensor pairing, *even when you re-pair AeroPod to the same sensors,* AeroPod is "forced" into calibration ride mode.

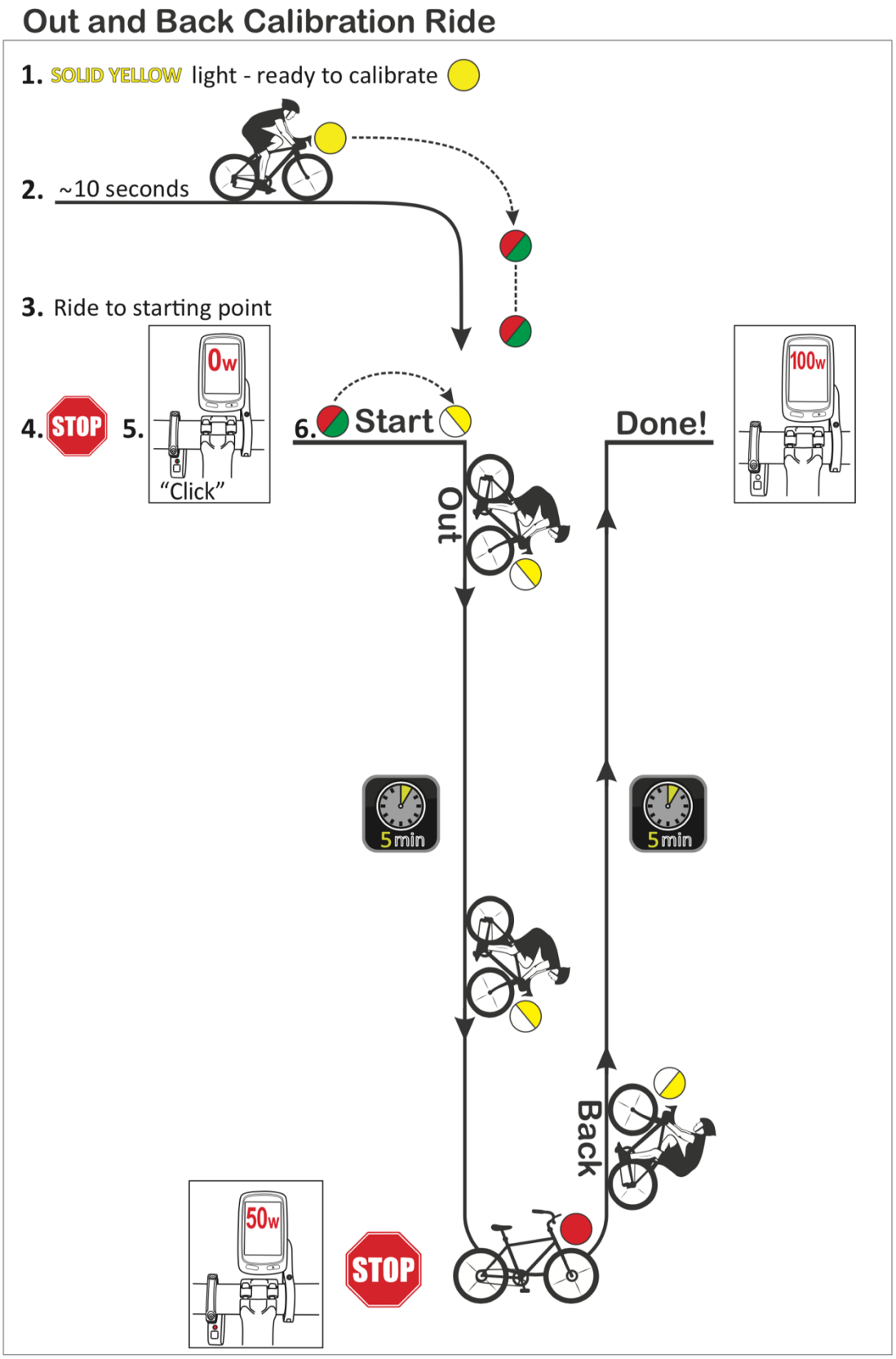
The AeroPod calibration ride in profiles 1 and 2 is identical to the calibration ride for other Velocomp power meter products:

1) You will ride "out" for about 3 minutes. Watts rise to 50W
2) You will STOP, turn around, and ride back to the starting point. Watts rise to 100W when you reach the starting point.
3) After returning to the starting point, the cal ride ends automatically and "normal" watts are shown

The next page shows the AeroPod calibration ride pictorially.

When the calibration ride is complete you are ready to start using AeroPod for power measurement.

AeroPod Calibration Ride, Power Meter Mode (profile 1 or 2 or 3)



Riding with AeroPod in power meter mode

When AeroPod is used in power meter mode, its memory will record opposing force measurements (wind speed, hill slope, bike speed, power). Power measurements from AeroPod will be transmitted to your bike computer.

After completing your ride, you can download your AeroPod ride file into Isaac software for more detailed analysis.

Using Isaac Software to Analyze AeroPod Power Meter Data

NOTE: USE THE REFERENCES BELOW TO DOWNLOAD, INSTALL, AND USE ISAAC SOFTWARE:

ISAAC SOFTWARE DOWNLOAD:
https://velocomp.com/isaac-software-installation/

ISAAC SOFTWARE INSTALLATION:
http://www.velocompforum.com/viewtopic.php?f=12&t=4505

ISAAC USER MANUAL: http://velocompforum.com/viewtopic.php?f=12&t=4010

Once you've finished riding, you can download your AeroPod ride file.

Please consult the "Isaac User Manual" for details regarding the information recorded in the AeroPod ride file.

AEROPOD POWER METER MODE, TIPS AND TROUBLESHOOTING

1) AeroPod status light does not turn on when I click its button
    a. Battery needs charging. Connect AeroPod to USB charger. Click button; status light will flash red continuously. When the battery is fully charged the status light will turn off
    b. After charging, if AeroPod status light remains unresponsive to button clicks, press-hold its button CONTINUOUSLY for about 10 seconds, *until you see the status light flash*. This "Hard Reset" reboots AeroPod.
2) Status light is solid RED after sensor pairing (AeroPod pairing instructions, Step 4)
    a. Make sure you have an ANT+ speed sensor installed on your bike. Look for an ANT+ logo on your sensor:

        i. Attach magnet-less ANT+ speed sensors to the front wheel hub.
        ii. Magnet-based ANT+ speed sensors: make sure the spoke magnet passes within 1 to 2 coin widths of the speed sensor.
    b. Confirm proper operation of speed sensor by spinning bike wheel; bike computer display should show speed.
        i. If speed is shown, pair AeroPod to speed sensor following step 4 of AeroPod instructions.
        ii. If bike speed is not shown in display, remove speed sensor battery, insert battery "backwards" momentarily, then reinsert normally (sensor reset). Pair sensor to bike computer, then spin bike wheel; bike computer display should show speed. If confirmed, pair AeroPod to sensor (step 4).
    c. If you still don't see bike speed, replace speed sensor battery. Pair speed sensor to bike computer, then spin bike wheel; bike computer display should show speed. If confirmed, perform AeroPod Step 4 instructions again.
    d. If you still don't see bike speed, speed sensor is defective.
3) I see zero watts on my bike computer screen *even after riding for 90 seconds*
    a. AeroPod is asleep. Click its button. **Light must show solid Green.**
    b. If AeroPod light flashes green, *then light turns off*, pair speed sensor to AeroPod (press-hold AeroPod button for 4 seconds, until flashing). **Whenever you do a sensor pairing, you will have to do a new O&B cal ride.**
    c. Cadence sensor is not functioning properly. To check proper operation of cadence sensor, spin bike crank backwards for 5 seconds, and confirm that non-zero cadence (RPM) is shown on bike computer display.
    d. Confirm AeroPod status light is solid green, then pair AeroPod to bike computer (instructions Step 5), making sure to follow your bike computer's pairing instructions.
4) I see zero watts, or low watts, or high watts *only for the first 90 seconds of my ride*, **then power becomes normal**
    a. AeroPod is not tightly fastened to its mount. After attaching AeroPod to mount, but before tightening the mount bolt fully, gently rotate AeroPod "downward"

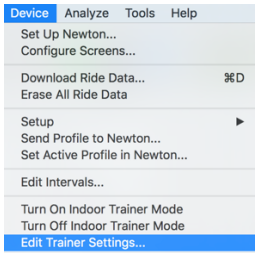
from the rear, until its rotation is stopped by the mount (pitot tube points slightly towards the ground). Then, tighten the mount bolt firmly, **so that AeroPod cannot rotate**.

b. When reattaching AeroPod, it is fixed to a position different from its prior attachment. Before tightening the mount bolt fully, gently rotate AeroPod "downward" from the rear, until its rotation is stopped by the mount (pitot tube points slightly towards the ground). Then, tighten the mount bolt firmly, **so that the AeroPod cannot rotate**.

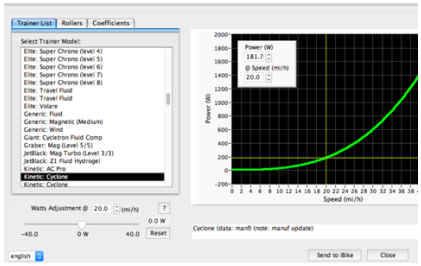
5) I see zero watts on my bike computer screen after stopping for a rest break
   a. AeroPod has gone to sleep. Click button to reawaken; light will show solid green.
6) After going over a bump, my watts change abruptly to higher or lower values for the next 90 seconds, then return to normal.
   a. AeroPod is not firmly attached to its mount, allowing it to rotate after hitting a bump. Gently rotate AeroPod from the rear, until its rotation is stopped by the mount. Then, tighten the mount bolt *firmly*, **so that AeroPod cannot rotate.**
7) My watts seem consistently too high or too low.
   a. Make sure AeroPod wind port is not blocked or obstructed by bike cables
   b. Do a new out-and-back calibration ride. You can initiate a new O&B cal ride by doing a new sensor pairing
   c. Make sure Indoor Trainer mode is OFF (see below)
   d. If you're riding in rain, unscrew pitot tube and blow-out any water that may have logged within it
8) When I put AeroPod on another bike, it shows zero power.
   a. You must perform a new sensor pairing, and out-and-back ride, each time you move AeroPod to a new bike.

USING AEROPOD WITH INDOOR TRAINERS

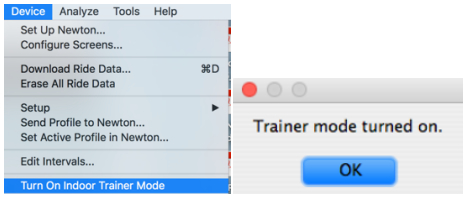
1. Connect AeroPod to your computer, click button to turn it on, then launch Isaac software
2. Select the Isaac command “Device/Edit Trainer Settings…”



3. Select your indoor trainer OR rollers model from the list underneath the tab. In the example below, “Kinetic Cyclone” indoor trainer has been selected. Then, in the bottom of the window **click the “Send to iBike” button below the speed/power graph. AeroPod will “memorize” the selected indoor trainer model in its memory.**



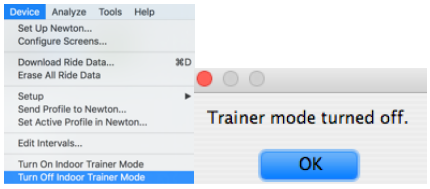
4. **To turn on indoor trainer mode**, use this command from Isaac, *then wait for Isaac’s confirmation that trainer mode has been turned on:*



5. IMPORTANT: ONCE ENABLED, INDOOR TRAINER MODE WILL REMAIN “ON” FOR ALL SUBSEQUENT POWEROD RIDES, UNTIL YOU TURN IT OFF.

IMPORTANT: WHEN TRAINER MODE IS “ON”, AEROPOD WILL NOT PROVIDE ACCURATE POWER READINGS WHEN USED FOR OUTDOOR RIDES.

6. **To turn indoor trainer mode off**, select this command from Isaac, *then wait for Isaac’s confirmation that trainer mode has been turned off:*



7. **IMPORTANT: WHEN INDOOR TRAINER MODE IS “OFF”, AEROPOD WILL NOT PROVIDE ACCURATE POWER READINGS WHEN USED FOR INDOOR RIDES.**