PIC102

User Manual

1 What's in the box

The PIC102 powermeter comes with the following:
- PIC102 powermeter
- Crank bolt
- (2) AA size batteries
- Quick Start Guide

2 Installation

2.1 Required Tools

1. 8 mm hex tool
2. Crank extractor
3. Phillips screwdriver #1
4. Torque wrench
5. Pedal wrench

2.2 Installation and replacing batteries

Your power meter is delivered without the batteries installed. To install the batteries, follow these steps:
1. Loosen the screw from the cap - the screw will stay captive to the cap
2. Slide the cap off the powermeter
3. Remove the old batteries from the battery holder
4. Place the new batteries in the holder in the correct orientation.

2.3 Installing PIC102 powermeter

1. Remove the pedal using a 15 mm or 9/16 " pedal wrench. Note that the left side pedal is reverse threaded – you must turn the wrench **clockwise** to remove it
2. Remove the existing left side crank arm using a 8 mm hex wrench to unscrew the bolt, turn **counter-clockwise.** Press the resistance knob down while you unscrew the bolt.
3. Push PIC102 firmly onto the bottom bracket spline, ensuring that it points the opposite direction of the crank arm on the other side of the bike
4. Use the 8 mm hex wrench to install the crank bolt. Manufacturer specifications vary, but you should make sure the bolt is very tight
5. Install the pedal onto the PIC102 by rotating it **counter-clockwise**
6. Tighten the pedal to the bike manufacturer's specified torque

3 Pairing

3.1 Pairing with ANT+ enabled displays

PIC102 is compatible with a wide variety of ANT+ enabled power display units including sport watches and cycling computers. To receive power and cadence information from PIC102, it must first be paired to a display unit, sports watch, or bike computer. Pairing procedures vary between display units; the following generic instructions are provided:

1. Turn on the display unit;
2. Spin the crank arm four times to wake the sensor;
3. Go to the *Sensors* menu on your display unit
4. Select *Add a new sensor*
5. A list of available power sensors will be shown. Select the ANT+ ID that matches your PIC102 which is etched on the side of the sensor.

3.2 Pairing with SPINPower console

1. Take the console off the bike
2. Remove a battery from the console - this will shut it down
3. Press and hold any button for 10 seconds to clear the console screen
4. While pressing the *Play / Pause* button, reinstall the battery to start the console in the pairing mode - the screen will display all symbols and numbers
5. Press the *Play / Pause* button once to set up your console - the screen will now display "E01" and "PoS" which allows you to configure your PIC102 power sensor
6. Before selecting PIC102 powermeter from the console, start pedalling your bike to ensure the powermeter is transmitting power and cadence data

7. Press the **Sensor Connection** *(heart)* button to select an available powermeter. Continue to cycle through the available powermeters nearby until the console displays the matching ANT+ ID of your powermeter shown on the third row
8. Once you have connected to your powermeter, press the **Play / Pause** button once to return to the main workout screen

3.3 Pairing with Real Ryder console

1. Take the console off of the bike.
2. Remove a battery from the console - this will shut it down.
3. Press and hold any button for 10 seconds to clear the console screen
4. While holding the **Sun Burst** button, reinstall the battery to start the console in the pairing mode - the screen will display all symbols and numbers
5. Press the **Play / Pause** button once to set up your console - the screen will now display "E01" and "PoS" which allows you to configure the power sensor
6. Press the **Sun Burst** button again. The screen will now display "POWER", and "PoS".
7. Before selecting the powermeter from the console, start pedalling your bike to ensure the powermeter is transmitting power and cadence data
8. On the console, press the ≈ button to select an available powermeter. Continue to cycle through the available powermeters nearby until the console displays on the third row the matching ANT+ ID of your powermeter shown on the third row
9. Once you have paired the powermeter, press the **Sun Burst button** twice to return to the main workout screen.

3.4 Pairing with Freemotion console

1. Remove the batteries from the powermeter and set them aside
2. Turn the crank arm and the powermeter for 4 rotations
3. On the Freemotion console, press the **START** button to turn on the console.
4. Press and hold the **Backlight** and **MAX** buttons for 6 seconds; "SETTING" will appear at the top of the screen;
5. Press the **MAX** button once; "PAIRING" will appear
6. Press the **START** button once; "PWR SENSOR will appear
7. On the console, press the **START** button once to start the pairing process. During the pairing process, the console will count down 30-seconds; During the countdown, re-install the batteries in the powermeter. If the pairing process is successful, "PAIRED" will appear on the screen

Note: The value that appears in the console display should match the ANT+ ID marked on the powermeter. If the numbers do not match, repeat steps 3–8. If the pairing process fails, the word "FAILED" will appear. If the pairing process fails, repeat steps 3–8. Make sure to orient the

batteries correctly when you install them in the powermeter. If the pairing process continues to fail, repeat steps 3–8 with a new set of batteries.

8. Press the *Backlight* button once; "BACK" will appear.
9. Press the *START* button.
10. Press the *Backlight* button repeatedly until "BACK" appears.
11. Press the *START* button. The console will exit the settings mode.

3.5 Pairing with Schwinn Echelon2 Console

1. Press and hold both the *STAGE* and *AVG/MAX* buttons for 5 seconds. The Service Menu will be displayed
2. In the Service Menu, tapping the *STAGE* or *AVG/MAX* buttons allows you to scroll left or right
3. Tap the *AVG/MAX* button to scroll to the "SENSOR TYPE" menu. Press the *Lightbulb* button
4. Scroll left or right to select "**4iiii**", then press the *Lightbulb* button again
5. Enter the 5 digits of your powermeter's ANT+ ID. Press *STAGE* to decrease the digit, or press *AVG/MAX* to increase the digit. Press *Lightbulb* to accept the digit
6. Press *Lightbulb* again to pair the powermeter
7. Wait for the console

3.6 Pairing with Bluetooth Smart

Pairing procedures vary widely between Bluetooth Smart display units. Please consult the manufacturer's instructions to pair your PIC102. The following are instructions for pairing using the 4iiii app:

1. Spin the crank four times to wake your powermeter
2. Open the 4iiii app on your smartphone
3. Tap the menu and select Precision Configuration
4. Select your PIC102 from the list of powermeters
5. Select "*Single Sided"* when prompted
6. Once the left edge of the info pane turns green, tap on the menu and select Workout

Quick Tip: If your powermeter does not appear in the list, check that it is disconnected from all other Bluetooth Smart devices, and that Bluetooth is enabled on your phone. Also, check that the batteries in the powermeter have sufficient charge.

4 Performing a Zero Offset

For best performance, you should perform a zero offset after installing your PIC102. This allows it to account for the specifics of your pedal and bike.

4.1 Performing a zero offset via ANT+

To perform a zero offset on your powermeter using your ANT+ display unit, follow these steps.
1. Unclip and dismount from your bike
2. Spin the crank four times to wake your powermeter
3. Place the crank arms in the 12 and 6 o'clock positions **GRAPHIC**
4. Tighten the resistance knob so the crank arms do not move
5. Use the display unit to zero-offset your powermeter
    a. Follow the manufacturer instructions for performing a zero offset
    b. Instructions are provided for several consoles in the following sections
    A two-digit response, or success, or failed should appear on your display unit
Quick Tip: Some display units use the term "Calibration" rather than "Zero Offset".

Two Digit Response	Result	Description	What to do
10	Success	The zero offset was successful	Go Ride!
20	Error	Crank movement detected	Make sure the resistance knob is tightened so the crank arms do not move. Make sure they are positioned at the 12 and 6 o'clock positions.
40	Error	Firmware mismatch	Connect to the 4iiii app to update firmware
50	Error	Firmware error	Connect to the 4iiii app to update firmware
99	Error	Powermeter side not found	

0	Error	Powermeter not found	Spin crank four times to wake up. Replace the batteries.
If an error cannot be solved with the recommendations above, contact your 4iiii authorized dealer for support.			

4.2 Performing a zero offset with Freemotion console

Follow these steps to perform a zero offset with your Freemotion console:

1. Press the **START** button to turn on the Freemotion console
2. Press and hold the **Backlight** and **MAX** buttons for 6 seconds; "SETTING" will appear
3. Press and hold the **Backlight** and **MAX** buttons for 6 seconds again; "ZERO RESET" will appear.
4. Spin the crank arm four times to wake the powermeter
5. Place your crank arms in the 12 and 6 o'clock position
6. Tighten the resistance knob to prevent the crank arm from rotating
7. On the console, press the **START** button to start the zero offset process
8. The console will show a 60-second countdown and some numerical measurement values. If the process is successful, "SUCCESS" will be displayed. If the process fails, "FAILED" will appear

4.3 Performing a zero offset with Echelon2 console

Follow these steps to perform a zero offset with your Echelon2 console:

1. Press and hold both the **STAGE** and **AVG/MAX** buttons for 5 seconds. The Service Menu will be displayed
2. Tap the **AVG/MAX** button to scroll to you reach the "CALIBRATE 4IIII" menu. Press the **Lightbulb** button."ZERORESET" will be displayed on the screen
3. Spin the crank arm four times to wake your powermeter
4. Place your crank arms in the 12 and 6 o'clock position
5. Tighten the resistance knob to prevent the crank arm from rotating
6. Press the **Lightbulb** button until "ZEROPOINT SETTING… " is displayed on the screen
7. The unit will perform the zero offset and when the process is complete, "ZEROPOINT SET" will be displayed on the top of the screen
8. Press the **Lightbulb** button again to exit the Zero Offset menu
9. After a short period of time, the console will return to the workout screen

4.4 Performing a zero offset with the 4iiii App (Bluetooth Smart)

This type of zero offset is performed by pairing your powermeter with the 4iiii App, not through your phone's Bluetooth settings. Follow these steps:

1. Unclip and dismount from your bike
2. Spin the crank arms four times to wake your powermeter
3. Place your crank arms in the 12 and 6 o'clock position
4. Tighten the resistance knob to prevent the crank arm from rotating
5. Ensure that you have an internet connection (cellular or WiFi) and that Bluetooth is enabled in your smartphone settings
6. Open the 4iiii App
7. Tap on the menu and select PRECISION configuration
8. If your powermeter is not already paired with the 4iiii App, you will be presented with a list of nearby powermeters; select your powermeter from the list
9. Once the left edge of the PRECISION info pane turns green, tap the Zero button.

Show graphics for zero offset in the app

5 Advanced Features

5.1 Renaming your powermeter using the 4iiii app

Each powermeter has its own Bluetooth Smart name. These names can be changed using the 4iiii App. Follow these steps:

1. Spin the crank arms four times to wake your powermeter
2. Connect to your powermeter using the 4iiii App
3. Tap the Pencil icon;
4. Enter a new name (9 character limit)
5. Tap Save
6. Disconnect from your powermeter.

Quick Tip: After renaming your powermeter, you may have to reconnect before the new name is displayed

5.2 Setting Scale Factor compensation values

The *scale factor* feature allows the user to adjust the output of the powermeter. In single-sided mode, this feature can be used to compensate for left and right leg strength imbalance. This *scale factor* can also be used to modify the output of your PRECISION powermeter to match third-party power meters or a smart trainer.

Power output can be reduced by inputting a scale factor lower than 1, or increased by inputting a scale factor greater than 1.

For example, to increase the reported power from your single-sided powermeter by 2%, follow the provided steps:
1. Spin the crank arms 4 times to wake your powermeter
2. Connect using the 4iiii App
3. Tap the gear button
4. Enter 1.02 as the new scale factor and tap *Done*

Quick Tip: *The default value for the scale factor is 1.000.*

Quick Tip: *The scale factor modifies the power output for each leg independently. For example, to decrease the total power output of a dual-sided powermeter by 2%, change both scale factors 0.980. This value is obtained by dividing the default value of 1.000 by the percentage that you want to reduce (1.02).*

6 Maintenance and Care

Your powermeter should be cared for properly. Follow these guidelines:
- Store your powermeter between temperatures of -20°C (68°F) and 50°C (122°F)
- Do not allow water or other liquids to enter the battery compartment
- Avoid using abrasive materials when cleaning your powermeter
- Clean your crank arm using a cloth and water or mild soap
- Do not expose your powermeter to degreasers or corrosive cleaning agents
- To ensure a watertight seal, ensure that the battery cap screw is fully tightened

7 Troubleshooting

7.1 Power output is half of expected value on Bluetooth Smart display unit	Enable third-party compatibility mode using the 4iiii App (see Section 5.3)
7.2 Power output is double the expected value on Bluetooth Smart display unit	Enable third-party compatibility mode using the 4iiii App (see Section 5.3)
7.3 Powermeter cannot connect to Bluetooth Smart display unit	• Spin the crank arms four times to wake your powermeter

	● Ensure the powermeter is paired with your Bluetooth Smart display unit ● Ensure the Bluetooth option is enabled on your Bluetooth Smart display unit ● Ensure the powermeter is not connected to another Bluetooth Smart display unit ● Remove the battery from your powermeter, wait one minute, and put the battery back into your powermeter ● Replace battery in your powermeter (see Section 2.2)
7.4 Powermeter is not shown while attempting to pair with the 4iiii App	● Spin the crank arms four times to wake your powermeter ● Ensure the powermeter is paired with your Bluetooth Smart display unit ● Ensure the Bluetooth option is enabled on your Bluetooth Smart display unit ● Ensure the powermeter is not connected to another Bluetooth Smart display unit ● Remove the battery from your powermeter, wait one minute, and put the battery back into your powermeter ● Replace battery in your powermeter (see Section 2.2)
7.5 Powermeter cannot connect to ANT+ display unit	● Spin the crank arms four times to wake your powermeter ● Ensure the powermeter is paired with your ANT+ display unit ● Remove the battery from your powermeter, wait one minute, and put the battery back in your powermeter ● Replace battery in your powermeter (see Section 2.2)
7.6 Cannot connect PIC102 to ANT+ display unit	● Spin the crank arms four times to wake your powermeter ● Ensure the powermeter is paired with your ANT+ display unit ● Remove the battery from your powermeter, wait one minute, and put the battery back in your powermeter

	● Replace battery in your powermeter (see Section 2.2) ● Connect to your ANT+ display unit using the ANT+ ID on the crank arm

8 Specifications

Accuracy	± 1.5% error
Power Range	0 - 4000 watts
Cadence Range	30 - 170 RPM
Battery Type	AA
Battery Life (riding)	1200+ hours
Communication	ANT+ / Bluetooth Smart
Weather Sealing	IP54
Operating Temperature Range	10°C - 50°C / 50°F to 122°F
Storage Temperature Range	-20°C to 50°C / -4°F to 122°F
Weight (with crank arm and batteries)	1.2 kg / 2.6 lbs

9 Warranty

9.1 Covered Products

This warranty covers the PIC102 product manufactured by 4iiii Innovations Inc. ("4iiii") and purchased by the end purchaser (the "Product"), unless otherwise specifically agreed in writing by 4iiii.

9.2 Limited Warranty

4iiii warrants solely to the end purchaser of the Product, subject to the exclusions and procedures set forth below, that the Product and its internal components shall be free from defects in materials and workmanship and will substantially conform to 4iiii's applicable specifications for the Product, for a period of 12 months from the date of original purchase (the invoice date) of the Product (the "Warranty Period"). Repairs and replacement components for the Product are warranted, subject to the exclusions and procedures set forth below, to be free from defects in material and workmanship, and will substantially conform to 4iiii's applicable specifications for the Product, for 30 days from replacement or delivery, or for the balance of the original Warranty Period, whichever is greater. This LIMITED WARRANTY is only valid while the Product is affixed to the end purchaser's crank.

9.3 Exclusion of all other warranties

The LIMITED WARRANTY shall apply only if the Product is installed, used, maintained, stored and operated in accordance with 4iiii's relevant User's Manual and Specifications, and the Product is not modified or misused in anyway. The Product is provided "AS IS" and the implied warranties of merchantability and fitness for a particular purpose and all other warranties, express, implied or arising by statute, by course of dealing or by trade usage, in connection with the design, sale, installation, service or use of any products or any component thereof, are excluded from this transaction and shall not apply to the Product. The LIMITED WARRANTY is in lieu of any other warranty, express or implied, including but not limited to, any warranty of merchantability or fitness for a particular purpose, title, and non-infringement.

9.4 Limitation of remedies

The purchaser's EXCLUSIVE REMEDY against 4iiii shall be, at 4iiii's option, the repair or replacement of any defective Product or components thereof with new, refurbished or reconditioned Product or components thereof at no charge to the end purchaser for parts and labour. The end purchaser shall be responsible for all shipping and handling costs for return of the Product with return shipping and handling costs for return after repair or replacement of the Product paid by 4iiii. The end purchaser shall notify 4iiii immediately of any defect. Repair shall be made through 4iiii or 4iiii authorized representatives only. Repair, modification or service of 4iiii products by any party other than 4iiii or 4iiii authorized representatives shall render this warranty null and void. The remedy in this paragraph shall only apply if the Product is installed, used, maintained, stored and operated in accordance with 4iiii's relevant User's Manual and Specifications, and the Product is not modified or misused in anyway. NO OTHER REMEDY (INCLUDING, BUT NOT LIMITED TO, SPECIAL, INDIRECT, INCIDENTAL, CONSEQUENTIAL OR CONTINGENT DAMAGES FOR LOST PROFITS, LOST SALES, INJURY TO PERSON OR

PROPERTY, OR ANY OTHER INCIDENTAL OR CONSEQUENTIAL LOSS) SHALL BE AVAILABLE TO THE END PURCHASER, even if 4iiii has been advised of the possibility of such damages. Without limiting the foregoing, 4iiii shall not be liable for any damages of any kind resulting from use, quality, performance or accuracy of any Product. 4iiii IS NOT RESPONSIBLE FOR PURCHASER'S NEGLIGENCE OR UNAUTHORIZED USE OF THE PRODUCT. IN NO EVENT SHALL 4iiii BE IN ANY WAY RESPONSIBLE FOR ANY DAMAGES RESULTING FROM END PURCHASER'S OWN NEGLIGENCE, OR FROM OPERATION OF THE PRODUCT IN ANY WAY OTHER THAN AS SPECIFIED IN 4iiii's RELEVANT USER'S MANUAL AND SPECIFICATIONS. 4iiii is NOT RESPONSIBLE for defects or performance problems resulting from: (1) misuse, abuse or neglect of Product; (2) the utilization of the Product with interfaces not supported by 4iiii; (3) the operation of the Product under any specification other than, or in addition to, the specifications set forth in 4iiii's relevant User's Manual and Specifications; (4) damage caused by accident or natural events such as lightning (or other electrical discharge) or fresh/salt water immersion of Product; (5) damage occurring in transit; or (6) normal wear and tear. 4iiii IS NOT RESPONSIBLE for (1) aesthetic or structural damage to the end purchaser's crank resulting from installation or removal of the Product, or (2) damages incurred to the end purchaser's crank when the Product is sent in for warranty, service and/or replacement of the Product.

9.5 Warranty service

To obtain warranty service, the end purchaser must send his/her crank along with the Product and must contact 4iiii for shipping instructions and an RMA tracking number. Return the Product, freight prepaid, along with the original sales receipt as a required proof of purchase for warranty repairs, with the RMA tracking number written on the outside of the package and ship to 4iiii. In the event of a Product failure for which warranty is claimed where the point of sale was through a 4iiii authorized dealer and/or distributor, such authorized dealer and/or distributor will perform an assessment of the Product, follow the 4iiii authorized removal procedure and be the contact with 4iiii while providing the end purchaser with a replacement product. VOIDING WARRANTY. This Limited Warranty shall be null and void if: (1) the Product is repaired or serviced by anyone other than an authorized 4iiii representative; (2) the Product is installed on any non-compatible crank including, but not limited to, a carbon crank; or (3) the Product is exposed to external heat sources that expose Product to temperatures in excess of storage and operating specifications.

FCC ID: ZZNPM1Ø2

Model: PIC102

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.

The grantee is not responsible for any changes or modifications not expressly approved by the party responsible for compliance. Such modifications could void the user's authority to operate the equipment.

The device has been evaluated to meet general RF exposure requirement.

The device can be used in portable exposure condition without restriction.

NOTE: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

—Reorient or relocate the receiving antenna.

—Increase the separation between the equipment and receiver.

—Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.

—Consult the dealer or an experienced radio/TV technician for help.

ISED Certification Number: 9896A-PM102
Model: PIC102
ISED Statement
This device complies with Innovation, Science and Economic Development Canada licence-exempt RSS standard(s). Operation is subject to the following two conditions: (1) this device may not cause interference, and (2) this device must accept any interference, including interference that may cause undesired operation of the device.
CAN ICES-3(B)/NMB-3(B)

Le présent appareil est conforme aux CNR Innovation, Sciences et Développement économique Canada applicables aux appareils radio exempts de licence. L'exploitation est autorisée aux deux conditions suivantes:
(1) il ne doit pas produire de brouillage et
(2) l' utilisateur du dispositif doit étre prêt à accepter tout brouillage radioélectrique reçu, même si ce brouillage est susceptible de compromettre le fomctionnement du dispositif.
CAN ICES-3(B)/NMB-3(B)

The device has been evaluated to meet general RF exposure requirement. The device can be used in portable exposure condition without restriction.

L'appareil a été évalué pour répondre aux exigences générales d'exposition aux radiofréquences. L'appareil peut être utilisé en condition d'exposition portable sans restriction.