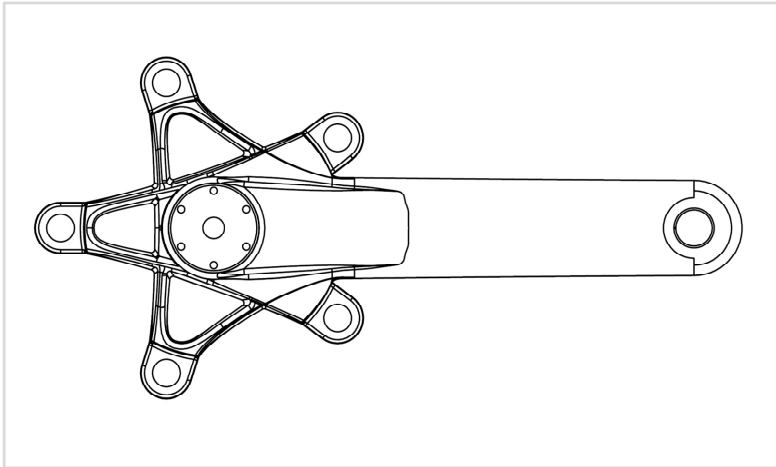





INSTRUCTION BOOK



THM POWERMETER



 Please bear in mind that your THM component is a lightweight construction manufactured from carbon – take this into account for assembly/maintenance work and when handling the product and proceed with caution!

INTRODUCTION.....	5
Preface.....	5
SAFETY.....	6
Fundamental safety precaution	6
Assembly & Maintenance.....	6
On the road.....	7
Transport & Storage	7
SPECIFICATIONS.....	8
Delivery specifications.....	8
Technical Specifications.....	9
ASSEMBLY	10
Get started	10
Before the first Ride.....	10
Connecting to an ANT+ device	11
Calibration	11
ZWATT APP.....	12
Temperature compensation	12
Runtime and Charging	13
Flight mode	14
Reset.....	14
LEGAL	15
Important product information.....	15
Materials defect liability.....	18
Warranty.....	18

Preface

This manual is an integral part of your THM component and it provides you with information regarding the safe operation of your THM Powermeter. Read this manual carefully prior to assembling your THM component. Always read and observe all of the assembly and maintenance instructions in this manual, as well as those provided in the manuals of other manufacturers whose products are used on your bicycle (e.g. frame, chainwheels, pedals,).



WARNING

Non-observance of the information contained in this manual could result in an accident and death or serious injury.

You will encounter the following symbols and references in this manual:

- The arrow indicates the consequence of your action.



WARNING

This safety message indicates a hazardous situation which, if not avoided, could result in death or serious injury.

NOTICE

This message warns of a risk of material damage.



INFO

This refers to additional information or tips.

Retain this manual for other users of your THM components. Make sure that all users read, understand and observe this manual. If you ever sell or give away your THM components, this manual should be transferred to the new owner.

We hope you get a lot of joy from your THM components!

Your THM-Carbones Team

Fundamental safety precaution

Always remember that riding a bicycle involves potential danger for the rider and other road users, as well as for the bicycle and its components. Even if protective equipment and safety devices are used, accidents resulting in death or serious injury can still occur.

You should therefore use your common sense and avoid any unreasonable behaviour!

Assembly & Maintenance



WARNING

Risk of accident caused by assembly and maintenance work which has not been conducted in a professional manner.

- Do not overestimate your technical ability. All assembly and maintenance work should be performed by a specialist workshop for bicycles. This is the only way to ensure the work is conducted in a professional manner.
- Always observe all the specified tightening torques for the screw connections.
- Only ever use original THM components which are available from your specialist dealer or directly from THM.
- Never make any modifications to your THM components.
- Check your THM components before each journey to ensure the surfaces are completely undamaged. Send us your THM components for inspection before further use if damage is visible (cracks, fractures, deformations, deep scratches in the paintwork which extend into the carbon structure, large abrasions, etc.) or if you are in any doubt about their functionality.
- Always ensure your bicycle is maintained in a flawless condition. Care and maintenance will prolong the service life of your bicycle and its components and improve your personal safety.

On the road



WARNING

Risk of accident caused by erratic riding behaviour or improper equipment.

- Always ride with foresight, attention and a readiness to brake.
- Adjust your speed to the prevailing conditions (traffic, weather, visibility, etc.).
- Do not use your THM-component at ambient temperatures below -10°C (14°F).
- Do not exceed the maximum rider weight for which your THM components have been approved
- Do not perform jumps with your bicycle as this generates an enormous amount of force.
- Always comply with the traffic regulations that are in force in the country where you are using your bicycle.
- When riding your bicycle you should always wear a high quality cycling helmet (e.g. ANSI certified) that is in excellent condition. Your clothing should be close-fitting but not restrictive.
- Only ride your bicycle if you are in good physical condition and your bicycle and all of its components are operating in a flawless manner.
- If you are involved in a heavy fall you should not continue to ride your bicycle. If such a case occurs, send us your THM components for inspection, even if no external damage is visible. In your own interest you should treat all of the components on your bicycle which have been produced by other manufacturers in the same manner.

Transport & Storage



WARNING

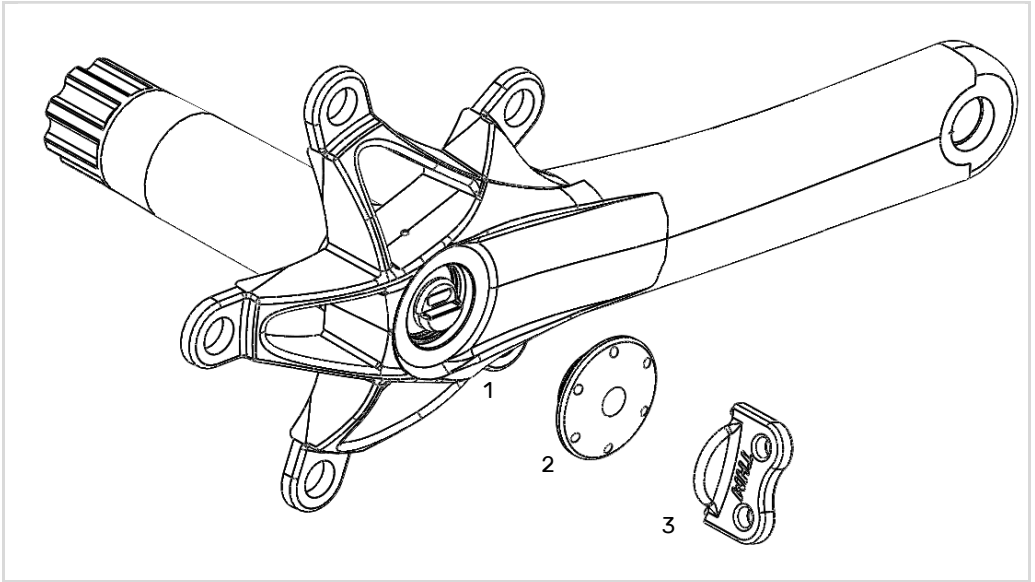
Risk of accident caused by damaged bicycle components.

- Always transport your bicycle in an appropriate and careful manner.
- Do not store your THM components at an ambient temperature below -15°C (5°F) or above 55°C (131°F).

Risk of accident.

- Do not allow children to play with your bicycle.

Delivery specifications



- 1** Powermeter Modul
- 2** Protection lid (incl. O-ring)
- 3** Key

Instruction book

Charging cable 1.8 m (USB to micro USB)

Technical Specifications

Crankset	CLAVICULA SE compact or standard
Weight (±5%)	320 g compact; 329 g standard (without chainrings)
Material	Carbon
Finish	Matt or Glossy
Diameter axle	30 mm
BCD	5 bolt 110 mm or 130 mm
Sensor position	Integrated in the axle (measures leftside)
Measurement	Power, Cadence, Torque effectiveness, Pedal Smoothness (L)
Power range	0 W – 1999 W
Accuracy	± 2 %
Connectivity	ANT+; Bluetooth LE
Handheld	ANT+ or Bluetooth compatible bike computer or smartphone
App	Team ZWATT Power Meter
Manufacture electric module	SENSITIVUS gauge
Firmware	Firmware updates via App
Battery	Integrated Rechargeable Li-ion battery
Runtime	150 h
Charging socket	Micro USB port
Waterproofing	IP 67

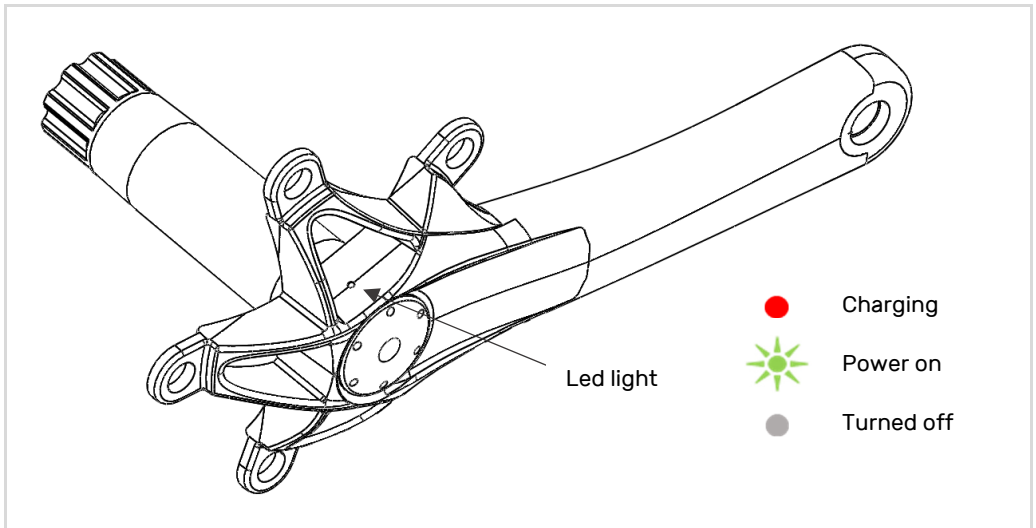
Get started

Find the Instruction for the Assembly of the crankset delivered with the crankset or on the THM Website. www.thm.bike

Before the first Ride

The power crank leaves the factory in flight mode. For first use, plug in the USB-charger for at least 5 seconds.

- While USB-charger is plugged in, the red LED indicates charging.
- Carefully pull off the USB-Charger and the green LED starts flashing.
- Now the crank is ready for connecting with your mobile ANT+ or Bluetooth device
- To save energy the powermeter will switch off after 5 min if it is not connected to any device.
- You can turn on the powermeter by turning the crankset several times.



INFO

If the green led double flashes the powermeter is in upgrade mode

Connecting to an ANT+ device.

The ANT+ ID to identify the crankset is located on the inside of the crankarm on the chainringside. A detailed description how to find and add ANT+ devices to your specific bike computer please find in the introduction of the bike computer. General the procedure is:

Settings > Sensors > Add > ...

INFO

To pair the powermeter it has to be turned on. (green led flashing)

Calibration

After the assembly it is important to proceed a calibration. Make sure that you do not touch the crankset/pedals and there is no other load on the crankarms while the calibration.

- Position the drive side crankarm straight upwards.
- Send the calibration command via ANT+ bike computer or App (Settings > Sensors > XXXXX > calibrate)
- Your device will respond if the calibration was successful.

After the calibration the powermeter is ready to use!

INFO

The calibration can be performed when pedals are mounted.

ZWATT APP

The ZWATT App can be used to:

- Calibrate the powermeter
- Update firmware
- Check the state of charge
- Set the crankset into flight mode (p. 14)

The ZWATT APP can be found for Android in the Play store or for iOS in the iOS store.

Temperature compensation

The powermeter is equipped with an active temperature compensations. It will compensate a potential offset due to temperature changes.



INFO

Do not calibrate your powermeter direct after charging. This could disturb the temperature compensation. Please wait at least 15 min before calibrating.

Runtime and Charging

The powermeter is equipped with an integrated li ion rechargeable battery. The runtime is around 150 hours. The battery can be charged via any micro USB cable and standard 5 V USB charger.

- Use the delivered key (see p. 7) to loosen the protection lid.
- Plug in the micro USB cable → red Led light indicates charging
- Charging is finished when the light turns off.
- Remove the cable and tighten the protection lid properly.

After charging close the crankset with the threaded protection lid. Ensure that the lid is tighten properly. The state of charge can be checked in the ZWATT App.

During the charging process the crankset is turned off and will not sent any data to your bike computer or smartphone.

INFO

The runtime will be less in cold conditions, which is a common behaviour of li ion batteries. Therefore keep always a good state of charge in cold conditions to avoid sudden turn offs.

WARNING

- Do not charge the cold li ion battery. This will decrease the lifetime of the battery.
- Only charge the battery in between 5°C (41 °F) and 35°C (95°F)
- If you are not using the powermeter, please ensure that the battery is charged from time to time to avoid deep discharge which would destroy the li ion battery. Also see flight mode to save battery.

INFO

If needed the integrated li ion battery can be replaced by THM

Flight mode

The flight mode turns off the crankset. It is not possible to wake it up by turning the crankset. The only way to wake it up again is to plug in a USB charger with micro USB cable. If you are not using the powermeter for a longer time. Set the powermeter to flight mode to reduce the battery consumption during this period.

Reset

If it is not possible to wake up your powermeter or you get faulty power values. Plug in an USB charger with a micro USB cable to reset the powermeter.

Important product information

Product Information:

Product Name: THM Powermeter
FCC ID: Contains FCC ID: 06R2398
IC ID: Contains IC: 3797A-2398

California Proposition 65:

The enclosed hardware and its packaging contain chemicals the State of California has found to cause cancer, birth defects or reproductive harm.

RoHS:

We hereby certify that this product and its packaging are in compliance with European Union Directive 2011/65/EU on the Restriction of the Use of Certain Hazardous Substances in Electrical and Electronics Equipment, commonly known as RoHS.

FCC Rules Part 15:

The enclosed hardware 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) it must accept any interference received, including interference that may cause undesired operation.

FCC Compliance Statement:

This equipment has been tested and found to comply with 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 residential installations. 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 interference to radio or television equipment reception, which can be determined by turning the equipment 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

To assure continued compliance, any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate this equipment. (Example- use only shielded interface cables when connecting to a computer or peripheral devices).

The product does not contain any user-serviceable parts. Unauthorized repairs or modifications could result in permanent damage to the equipment, and void your warranty and your authority to operate this device under Part 15 regulations.

CAUTION! The manufacturer is not responsible for any radio or TV interference caused by unauthorized modifications to this equipment. Such modifications could void the users authority to operate the equipment.

IC Statement

This device complies with Industry Canada license-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. The device meets the exemption from the routine evaluation limits in section 2.5 of RSS 103 and users can obtain Canadian information on RF exposure and compliance.

Le présent appareil est conforme aux CNR d'Industrie Canada applicables aux appareils radio exempts de licence.

L'exploitation est autorisée aux deux conditions suivantes: (1) l'appareil ne doit pas produire de brouillage, et (2) l'utilisateur de l'appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d'en compromettre le fonctionnement. Le dispositif rencontre l'exemption des limites courantes d'évaluation dans la section 2.5 de RSS102 et les utilisateurs peuvent obtenir l'information canadienne sur l'exposition et la conformité de rf.

CE Statement:

Europe – EU Declaration of Conformity This device complies with the essential requirements of the R&TTE Directive 1999/5/EC. The following test methods have been applied in order to prove presumption of conformity with the essential requirements of the R&TTE

Directive 1999/5/EC:

EN 60950-1:2006+A12:2011

EN 55022+EN 55024(2010)

EN 301 489-1 V1.8.1(2008-04)

EN 301 489-3V1.4.1(2002-08)

EN 300 440-2 V1.3.1(2009-03)

This device is a 2.4 GHz wideband transmission system (transceiver), intended for use in all EU member states and EFTA countries, except in France and Italy where restrictive use applies. In Italy the end-user should apply for a license at the national spectrum authorities in order to obtain authorization to use the device for setting up outdoor radio links and/or for supplying

public access to telecommunications and/or network services. This device may not be used for setting up outdoor radio links in France and in some areas the RF output power may be limited to 10 mW EIRP in the frequency range of 2454 – 2483.5 MHz. For detailed information the end-user should contact the national spectrum authority in France. We hereby declare that these products are in compliance with the essential requirements and other relevant provisions

As a minimum it is recommended to inspect the product for damage including cracks, dents, and serious scratches after all rides and after transport.

Check that the water tight cap on the drive side is fully sealed

Check bolts etc. for correct torque on a regular basis.

Materials defect liability

We provide a 24-month warranty for all THM products which covers material and processing defects. During this period all products accepted to be defective are replaced at no cost to the user. The liability period starts at the time the relevant THM product was purchased. Liability does not extend to any kind of damage caused by accidents, modifications, negligence or improper handling and use. Liability shall expire if repair work or any other work on the THM product has been conducted by unauthorized person. The same shall also apply to any direct or indirect

INFO

Please contact us **before** returning a defective THM product!

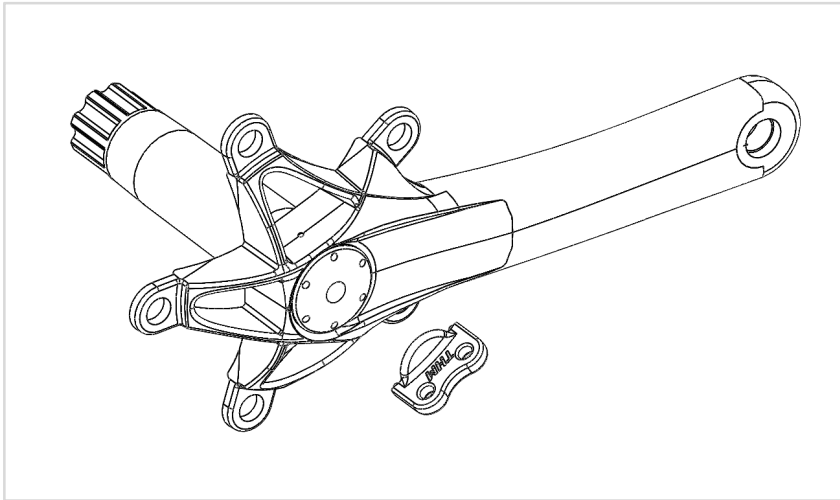
If products are returned without our previous agreement, the shipping costs incurred will be charged to your account!

Warranty

Minor damage to your THM products will be repaired by our workshop free of charge even after expiration of the 24-month liability period, provided that the work required does not exceed 0.5 hrs. The decision regarding whether or not a repair is to be carried out free of charge rests solely with us.

If the damage has been self-inflicted, there is no entitlement to free repair work! In the event of self-inflicted damage please send us the product concerned for inspection. We will then assess the level of work required and either perform the repair free of charge or send you a quotation. It is then up to you to decide whether or not to go ahead with the repair work. When returning a damaged product to us please ensure adequate postage costs are provided. Any shipment which is not prepaid will be rejected and returned to the sender! In the event of irreparable damage (e.g. caused by an accident) we will provide a 40% discount from the respective list price if you purchase a new THM product as a replacement. The relevant claim must be forwarded directly to THM Faserverbund-Technologie GmbH. The irreparable product shall then remain our property.

The company THM Faserverbund-Technologie GmbH is constantly striving to improve product designs as technical developments continue. We therefore reserve the right to make alterations which must not correspond to the text and illustration contained in this manual, and without incurring obligation to alter any products previously delivered. Technical specifications, dimensions and weights are to be understood with the corresponding allowances. Reproduction or translation of this publication, in whole or in part, is not permitted without the written consent of the company THM Faserverbund-Technologie GmbH. All rights under the provisions of the copyright act are reserved.



080520TK2-1 User manual THM Powermeter

THM Faserverbund-Technologie GmbH
Am Sportplatz 3
D-24791 Alt Duvstedt
Germany

info@thm.bike
www.thm.bike