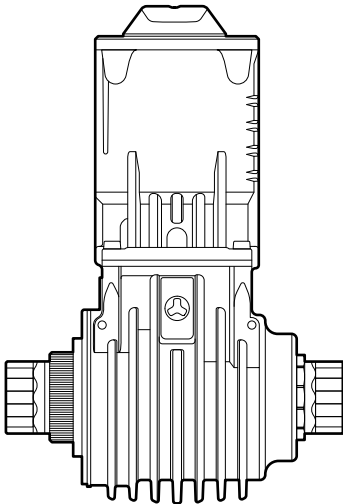
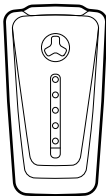
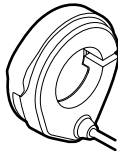
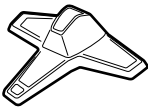
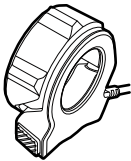
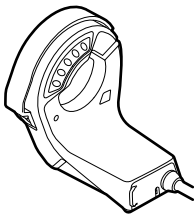
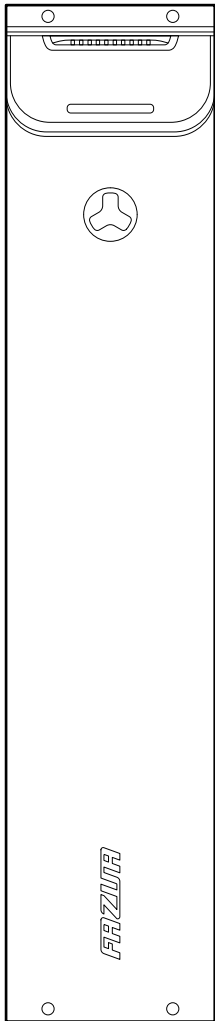




FAZUA *RIDE 60 DRIVE SYSTEM*



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1 ABOUT THIS USER MANUAL

1.1 Read and keep the original system user manual

This original system user manual* (hereinafter referred to in brief as “user manual”) belongs to the drive system FAZUA RIDE 60. It contains all safety-related information as well as extensive information and detailed descriptions on how to handle and use the drive system.

You can:

- view and download the user manual online at <https://fazua.com/support/help-center/downloads/>,
- request a printed version via the FAZUA service platform <https://fazua.com/support/contact/>.

The user manual is based on the standards and regulations valid in the European Union.

Be sure to read the user manual before using the components of the FAZUA RIDE 60 drive system or the E-Bike with the FAZUA RIDE 60 drive system for the first time. If you do not observe the user manual, you or other persons may suffer serious injuries and/or the drive system or individual components may be damaged.

Keep this user manual and all documents belonging to the drive system to hand at all times so that you can access them when necessary. If you pass on components of the FAZUA RIDE 60 drive system or the E-Bike with the FAZUA RIDE 60 drive system to others, make sure that you also hand over the user manual and all associated documents too.

In addition to this user manual for the FAZUA RIDE 60 drive system, always also observe the manufacturer's instructions for the E-Bike in which the drive system is installed.

1.2 Explanation of characters and symbols used

Depending on the degree of risk, safety and warning information and important additional information is marked in this document as follows:



Risks that could result in death or serious injury are identified with the signal word "Warning".

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⚠ CAUTION

Risks that could result in moderate or minor injuries are identified with the signal word "Caution".

NOTICE

Risks relating to actual product damage or property damage on other objects are marked with the signal word "Notice".



Important additional information is marked with this information symbol.

2 SAFETY

2.1 Functional principle & proper use

FAZUA drive systems are designed as electrical drive systems for E-Bikes. The battery system of the FAZUA RIDE 60 (battery) is approved for use in altitudes of up to 3,000 m.

As intended, the electric pedal assist function switches off as soon as you reach or exceed a certain [country and product specific] speed*. When you ride at a speed that exceeds the switch-off point, you pedal without assistance from the drive system, using only your own muscle power.

The drive system as a whole consists of several components:

A → **Drive unit**

→ More detailed information can be found in [Section "Drive unit"](#).

B → **Control element and display**

→ More detailed information can be found in [Section "Control element and display"](#).

C → **Battery and charger**

→ More detailed information can be found in [Section "Battery and charger"](#).

The individual components are available in different model versions, which partly differ from each other due to their design and handling.

* In Germany, the speed at which the electric pedal assist automatically switches off is 25 km/h.

Detailed information about the function of the individual components forming part of the drive system as well as about special features and handling the specific models can be found in the individual sections of this user manual that describe the components.

The version of the drive system installed in your E-Bike, i.e. the specific combination of component models, is specially adapted to your E-Bike and must therefore not be changed.

The basic principle is that the installation of the drive system as well as specific work on the system are only permitted to be carried out via the routes specified by the manufacturer or by an authorised specialist.

For information about which work you may carry out yourself and which work must be carried out by an authorised specialist, refer to the individual sections of this user manual that describe the components.

Porsche eBike Performance GmbH accepts no liability for any damage caused by incorrect or improper installation, improper handling or use other than intended.

Only use the components of the drive system as described in this user manual. Any other usage is regarded as unintended and can result in accidents, serious personal injury and damage to the drive system.

2.2 Symbols and pictograms of the drive system

On individual components of the drive system, you will find specific symbols and pictograms which are listed along with their meanings.



This symbol indicates that the user of the drive system or the individual components must read and understand the user manual before use.



Any devices identified with this symbol (in this case, the charger) may only be used in dry indoor areas.

WARNING! When using in damp environments and on contact with liquids, there is a risk of electric shock!



An electrical device marked with this symbol corresponds to protection class II: The device has double or reinforced insulation as protection against electric shock.



An electrical device marked with this symbol meets the safety requirements of protection class III.



This symbol is a warning against hot surfaces.

WARNING! There is a risk of burns on contact, and a risk of fire on contact with flammable materials.



Li-ion

These symbols indicate that the component labeled with these symbols as a lithium-ion battery must be disposed of separately at the end of its service life and may not be disposed of with the household waste.



This symbol indicates that the component marked with this symbol must be disposed of separately as electrical or electronic equipment at the end of its service life and must not be disposed of with household waste.



This symbol indicates products that meet all requirements for obtaining the European CE marking.

Specific information can be found in [Chapter 10 “Declarations of conformity”](#).



This symbol indicates products that meet all requirements for obtaining the European UKCA marking.

Specific information can be found in [Chapter 10 “Declarations of conformity”](#).



The "Geprüfte Sicherheit" (GS mark) seal of approval is awarded by independent certification bodies.

A device marked with the GS test seal complies with the safety-relevant requirements of the German Product Safety Act (Produktsicherheitsgesetz; ProdSG).



The “type tested” test seal is awarded by the TÜV certification body.

A device marked with the test seal shown here complies with the safety-relevant requirements for Canada and the USA.



The "UL® Listed" test seal is awarded by the US certification body, UL®.

A device labeled with the “UL® Listed” test seal shown corresponds to the safety-relevant requirements for Canada and the USA.



The FCC Seal is issued by the "Federal Communications Commission", an independent U.S. government agency responsible for implementing and enforcing U.S. communications laws and regulations.

An electrical device bearing the FCC seal complies with U.S. electromagnetic compatibility requirements.



The test seal illustrated is issued by the SGS certification body.

A device labeled with this test seal complies with the safety requirements applicable in Canada and the USA according to UL standards.

The drive system and battery have been tested to UL standards. In the process, the following UL standards were applied: UL 2271 - Standard for Batteries for Use In Light Electric Vehicle (LEV) Applications, UL 2849 - Outline of Investigation for Electric Bicycles, Electrically Power Assisted Cycles (EPAC Bicycles), Electric Scooters, and Electric Motorcycles.

2.3 General safety instructions for the drive system

The general safety instructions listed below refer to the drive system as a whole and must always be taken into account when using the E-Bike equipped with it.



WARNING

Dangers for E-Bike users!

Specific dangers fundamentally exist for users of E-Bikes. Depending on the E-Bike model in which the drive system is installed, additional dangers may arise which are not mentioned here.

- ▶ Read and follow the manufacturer's instructions for your E-Bike.
- ▶ Find out about and observe any applicable national regulations regarding E-Bikes.



WARNING

Dangers due to unauthorised modifications!

If you carry out unauthorised modifications to the drive system or to the components, you may cause an explosion, suffer an electric shock or cause serious injury to yourself or others.

- ▶ Never make any unauthorised modifications or changes to individual components of the drive system.

- ▶ Do not perform any unauthorised replacement of the drive system components.
- ▶ Never open any components of the drive system without authorisation. The components of the drive system do not require any maintenance.
- ▶ Only allow repairs to the drive system to be performed by authorised specialists.
- ▶ Only allow the components of the drive system to be replaced by an authorised specialist and with genuine spare parts.



WARNING

Danger due to accidental start-up!

If the drive system is put into operation in inappropriate situations, this can result in accidents and serious injuries.

- ▶ To prevent the drive system from starting up, switch off the drive system and, if necessary, prevent it from being switched back on unintentionally or unnoticed when the E-Bike is being transported or stored and when carrying out any work on the E-Bike.
- ▶ If possible, remove the battery*

NOTICE

Danger of damage!

Improper handling can damage the drive system or individual components.

- ▶ Only have individual components of the drive system replaced with components of identical design or other components expressly approved by the manufacturer of the drive system. This will protect the other components from possible damage.
- ▶ Have individual components of the E-Bike replaced exclusively by identical components or other components expressly approved by the E-Bike manufacturer. This will protect your E-Bike (including the drive system) from possible damage.

* Only applies if your E-bike is equipped with a battery (see [Chapter 19 "Model variants of the battery"](#)).

3 INSTRUCTIONS FOR RIDING AN E-BIKE WITH THE FAZUA DRIVE SYSTEM

Observe the following instructions for riding your E-Bike equipped with a FAZUA RIDE 60 drive system.

Changing gear

The gears of your E-Bike are operated in exactly the same way as on a conventional bicycle. Selecting a suitable gear increases the speed, power and range of your E-Bike while maintaining pedal frequency.

Range/route planning

How long or how far you can ride your E-Bike before you need to recharge the battery depends on several factors.

These factors include, for example:

- The set assistance level;
- The (riding) speed at which you move forwards;
- The way in which you change gear;
- The type of tyres and the set tyre pressure;
- The selected route and weather conditions;
- The weight of the rider and the E-Bike (total weight);
- The condition and age of the battery

The following general principles apply:

- Familiarise yourself with your E-Bike step by step while away from roads and heavy traffic.
- Test the maximum range of your E-Bike under various outdoor conditions before planning longer trips. An exact statement regarding the range of your system is not possible before or during a trip.

Storage and operating temperatures

- Observe the operating and storage temperatures for the components of the drive system (especially for the battery), as they can get damaged by extreme temperatures.

For more detailed information about storage and operating temperatures, refer to the data sheets of the individual components in the annex (see [Chapter 27 "Data sheets \[technical data\]"](#)) and [Chapter 4 "Storing and transporting E-Bikes with the FAZUA drive system"](#).

4 **STORING AND TRANSPORTING E-BIKES WITH THE FAZUA DRIVE SYSTEM**



WARNING

Danger due to accidental start-up!

If the drive system is put into operation in inappropriate situations, this can result in accidents and serious injuries.

- To prevent the drive system from starting up, switch off the drive system and, if necessary, prevent it from being switched back on unintentionally or unnoticed when the E-Bike is being transported or stored.

- If possible, remove the battery*

→ Before transport and storage, always disconnect the charger from the battery and transport/store the charger separately from the battery.

→ In principle, the charger, battery should be stored:

- in a cool, dry place,
- protected from direct sunlight, sources of heat and frost,
- out of the reach of children.

→ When transporting and storing your E-Bike or the components of the drive system, observe the specified temperature ranges for the components.

You can find information about the temperature ranges in the data sheets of the individual components (see [Chapter 27 "Data sheets \(technical data\)" Section "Annex"](#)).

→ If your E-Bike has a removable battery, always transport and store the battery separately from the E-Bike.

The following applies as a matter of principle: All batteries (and cells) containing lithium are subject to the regulations for transporting dangerous goods.

All removable batteries, all permanently installed batteries of the FAZUA RIDE 60 drive system are (rechargeable) batteries containing lithium.

* Only applies if your E-bike is equipped with a battery (see [Chapter 19 "Model variants of the battery"](#)).

As long as the respective battery is not damaged, it may be transported by road by private individuals. Commercial transport requires compliance with the regulations on the packaging, labelling and transport of hazardous goods. Open contacts must be covered and the respective battery must be securely packed. When shipping, the parcel service must be notified of the presence of hazardous goods inside the packaging.

→ When transporting and sending the battery, observe the information in the document "Lithium-ion battery product safety data sheet". You can view and download this online at <https://fazua.com/support/help-center/downloads/>.

→ During longer periods of inactivity, observe the following information about the charge level of the battery and the temperature range.

If you do not intend to use the battery for an extended period of time, it should have a minimum charge level of 60% before you stop using it. The ambient temperature in the place of storage should be in the range of -15 °C to +25 °C.

Check the charge status of the battery after 6 months of non-use: If the check reveals that the charge level is 20% or less, recharge the battery to a charge level of 60% or more.

→ If you have further questions, please contact a FAZUA Certified Partner or visit the FAZUA service platform (<https://fazua.com/support/contact/>).

5 RIDING AND SYSTEM DATA

The riding and system data of your FAZUA RIDE 60 drive system can be accessed in different ways. The way in which you access the different data depends on which data you wish to access.

The following options exist for displaying/handling the riding and system data:

- **While riding, the current riding data** (e.g. riding performance, speed, pedal frequency) **and system data** (e.g. battery temperature) **can be displayed on a mobile device.**
 - To do this, use the FAZUA app ([Chapter 5.2 “FAZUA app”](#)) or a suitable device with compatible software from a third-party provider (see [Chapter 5.1 “Connectivity \(connections to devices from third-party providers\)”](#)).
The drive system and the mobile device are connected wirelessly (see [Chapter 5.1 “Connectivity \(connections to devices from third-party providers\)”](#)).
- **You can set the different modes and adapt the drive system’s ride performance to your personal preferences.**
 - To do this, use the FAZUA app (see [Chapter 5.2 “FAZUA app”](#)) or the FAZUA Toolbox (see [Chapter 5.3 “FAZUA Toolbox”](#)).
- **You can access a whole range of system information and carry out your own firmware updates, etc.**
 - Use the FAZUA Toolbox (see [Chapter 5.3 “FAZUA Toolbox”](#)) to do so.
The drive system and external device are connected via a USB cable (USB-C)*.

5.1 Connectivity (connections to devices from third-party providers)

You can wirelessly connect your FAZUA RIDE 60 drive system to a compatible bicycle computer or to other suitable devices from third-party providers using the integrated connectivity software.

With the FAZUA RIDE 60 drive system, the third-party provider’s device can be connected wirelessly either via Bluetooth Low Energy (BLE) or via ANT+.

* The USB cable required for this is not included in the scope of delivery.

5.1.1 **Bluetooth® connection**



The third-party provider's Bluetooth® compatible device must be equipped with a BLE interface version of 4.0 or higher.

If the Bluetooth® connection is successful, the LED display **[B.2]** on your drive system will display the associated animation (see "Establishing a BLE connection" in [Chapter 25.1 "Overview of LED Hub indicator"](#) or in [Chapter 25.2 "Overview of Control Hub indicator"](#)).

Detailed information about establishing the Bluetooth® connection, etc. can be found on the FAZUA website. Scanning (or clicking on) the following QR code will take you directly to the corresponding website:

<https://fazua.com/support/help-center/knowledge-base/bluetooth-low-energy-ble/>

5.1.2 **ANT+ connection**

ANT+ [= *advanced and adaptive network technology*] is a wireless protocol for the collection and transfer of sensor data via the LEV or PWR profile.

ANT+ enabled devices that are compatible with the FAZUA RIDE 60 drive system can be connected to the drive system via ANT+.

5.2 FAZUA app

You can download the FAZUA app to a suitable device (e.g. a Smartphone or tablet) from the FAZUA website.

You can also find extensive information about the FAZUA app and its functions on the FAZUA website. Scanning (or clicking on) the following QR code will take you directly to the corresponding website:

<https://fazua.com/support/help-center/knowledge-base/fazua-app/>

5.3 FAZUA Toolbox

The FAZUA Toolbox is the software for FAZUA drive systems. The Basic version of the FAZUA Toolbox enables you to access a range of information and carry out a firmware update yourself.

The (E-Bike) drive system and the device on which the FAZUA Toolbox is installed (e.g. computer, tablet) are connected via a USB cable (USB-C).*

5.3.1 Download

You can download the latest version of the FAZUA Toolbox (for Windows, Mac or Linux) to a suitable device (e.g. computer, tablet) from the FAZUA website. Scanning (or clicking on) the following QR code will take you directly to the corresponding website:

<https://fazua.com/support/help-center/fazua-toolbox-software/>

* The USB cable required for this is not included in the scope of delivery.

Install the file after downloading it.

As soon as the FAZUA Toolbox Basic version has been installed, you can connect your FAZUA drive system (via USB cable) to the device, and discover the many functions of the FAZUA Basic Toolbox.

5.3.2 Overview of functions

In the **Product Information** area, you can see whether you have the latest version of the Toolbox and check the serial numbers and hardware versions of your system components such as the battery, motor and display. You can also create a system report with all relevant information about your FAZUA drive system.

In the **Live Data** area, you can find all the latest (system)information (e.g. error data, electric values, battery SOC). Live Data is particularly important when interacting with the FAZUA service team.

In the **Configuration** area, you can carry out settings that best suit your riding feeling. For example, you can set the power for Breeze mode, River mode or Rocket mode.

In the **Firmware Update** area, you can update the firmware of your FAZUA drive system.

To perform a firmware update, proceed as follows:

1. Connect your E-Bike (together with battery) via a USB cable (USB-C) to the device on which the FAZUA Toolbox is installed (e.g. computer, tablet).

The drive system's USB socket **[B.3]** is located on the display (LED Hub or Control Hub) (see [Chapter 15 "Detailed view and part designations:"](#)).



You can carry out the firmware update locally (if you have saved a firmware version on your device) or online.

Porsche eBike Performance GmbH recommends the online update as then you will be automatically provided with the latest firmware.

2. Switch your drive system on (see [Chapter 17.1 "Switching the drive system on and off"](#)).
3. Click on "RIDE 60 BUNDLE UPDATE".

You can now choose between the online update and a local update.

If you select the "online" option, the latest firmware bundle will be downloaded automatically (Internet connection required!). Components for which a later version is available will be selected automatically for the update.

4. Click on "Start". All selected components will now be updated.

Do not disconnect the USB cable or the battery under any circumstances during the update.

5. After all updates have been successfully installed, remove the USB cable from the USB socket **[B.3]** and close the USB socket carefully so that water or dirt cannot enter it.

Calibration (calibrating the torque sensor)

This function enables you to calibrate the power of your E-Bike by setting the torque sensor.

IMPORTANT: This type of calibration is **ONLY** required if you notice a change in the motor support mode.

To calibrate the torque sensor, proceed as follows:

1. Stand your E-Bike upright and lift up the rear wheel.
Use the bike stand for this if one exists. **IMPORTANT:** Do not turn your E-Bike upside down.
2. Connect your E-Bike (together with battery) via a USB cable (USB-C) to the device on which the FAZUA Toolbox is installed (e.g. computer, tablet).
The inserted battery should display a charge level of at least 20%.
The drive system's USB socket **[B.3]** is located on the display (LED Hub or Control Hub) (see [Chapter 15 "Detailed view and part designations:"](#)).
3. Switch your drive system on (see [Chapter 17.1 "Switching the drive system on and off"](#)).
4. Start the torque sensor calibration process.
You will now be guided through the process step by step.

6 TROUBLESHOOTING

1. If your E-Bike or the drive system does not function as desired, first check whether the fault can be rectified using the "Troubleshooting" overview table below.
2. If necessary, contact a FAZUA Certified Partner or visit the FAZUA service platform (<https://fazua.com/support>), if:
 - The fault is not listed in the overview table,
 - The fault is listed in the overview table, but it is not resolved by following the instructions provided, or if you are unsure.

"TROUBLESHOOTING" OVERVIEW TABLE	
Problem	Possible cause / solution
Motor power feels lower than usual.	It is very hot and the heat management of the battery and/or drive unit is limiting the power.
	It is very cold and the battery [= lithium-ion battery] is not delivering the usual power.
All LEDS are flashing red three times every two seconds.	<p>There is a connection error between the drive unit and battery.</p> <p>→ Clean the interfaces and contacts on the battery so that you can insert the battery properly.*</p>
All LEDS are flashing yellow twice every ten seconds.	<p>There may be a poor connection between the speed sensor and the drive unit.</p> <p>→ Check that the speed sensor and magnet are correctly located in their receptacle on the rear wheel. If you cannot find any faults, contact a FAZUA Certified Partner.</p>

* Only applies if your E-bike is equipped with a battery (see [Chapter 19 "Model variants of the battery"](#)).

"TROUBLESHOOTING" OVERVIEW TABLE	
Problem	Possible cause / solution
The LEDs on the indicator are flashing white.	A firmware update is being carried out. → In this case, wait and do not switch off the drive system until the LEDs stop flashing.
The drive system cannot be switched on.	The interfaces (between the battery and the drive unit) may be dirty. → Clean the interfaces and contacts on the battery.*
The battery cannot be inserted.	The interfaces (between the battery and drive unit) may be dirty. → Clean the interfaces and contacts on the battery.***

* Only applies if your E-bike is equipped with a battery (see [Chapter 19 "Model variants of the battery"](#)).

*** Only applies if your E-bike is equipped with a battery (see [Chapter 19 "Model variants of the battery"](#)).

7 DISPOSAL INSTRUCTIONS

According to the EU Directives on waste electrical equipment (Directive 2012/19/EU) and waste accumulators (Directive 2006/66/EC), the corresponding components must be collected separately and disposed of in an environmentally friendly manner.

- Before disposing of your E-Bike, remove the battery and any other batteries installed on the E-Bike as well as all components and controls that contain batteries.

7.1 Disposing of your E-Bike

After you have removed all batteries, the E-bike is considered to be waste electrical equipment and must be taken to a recycling facility.

- Please contact your city or local authorities (council, region) for information regarding free collection points for waste electrical equipment and/or collection points where the component or E-Bike can be recycled.
- Ask your bicycle dealer about the obligation for dealers to take back bicycles and about the voluntary take-back system for (old) E-Bikes.
- If your E-Bike is equipped with a permanent battery, point this out to the respective contact person at the collection point or to the dealer.
- If necessary, make sure you delete any personal data stored on the device before you return the electrical or electronic device to the collection point. This task is your responsibility.

7.2 Disposing of batteries

The drive system's battery are lithium-ion batteries which must be disposed of as hazardous waste.

- For disposal of the battery, please refer to the following information on the disposal regulations for batteries.
- Dispose of the drive system's battery as well as any other batteries installed on the E-Bike at a recycling centre or collection point in your town or municipality.

The crossed-out dustbin displayed on the battery (see [Chapter 1.2 "Explanation of characters and symbols used"](#)) indicates that the battery must not be disposed of with household waste at the end of its service life, but must be taken to a special used battery collection point for lithium-ion batteries. If a battery contains mercury (Hg), cadmium (Cd) or lead (Pb), the corresponding chemical symbol appears below the crossed-out dustbin.

In accordance with statutory obligations, the end user must return all batteries/battery packs to a suitable collection point at the end of their service life. Every end user should also contribute to preventing battery waste wherever possible. The use of long-life batteries and rechargeable batteries/power packs, as well as the careful handling of batteries/power packs and the devices powered by them is therefore recommended. Before disposing of the product, always check whether the battery/power pack can be repaired or reconditioned.

Some batteries/power packs contain toxic substances. The collection and recycling of used batteries separately from the household waste is intended to ensure that the products are recycled or disposed of properly to prevent harmful effects on the environment and human health.

Due to their design, lithium-ion batteries also pose special risks, such as the risk of explosion and fire when exposed to heat, and must therefore be handled with special care (see also [Chapter 21 "Specific safety instructions for the battery and charger"](#)).

Batteries and battery packs can be returned to dealers or deposited at suitable collection points in the city or municipality free of charge. City councils/local authorities are able to provide information on collection points.

8 MANUFACTURER'S WARRANTY FOR THE EUROPEAN UNION AND UNITED KINGDOM

Porsche eBike Performance GmbH, Marie-Curie-Strasse 6, 85521 Ottobrunn, Germany (hereinafter referred to as the "Manufacturer") guarantees the end customer (hereinafter referred to as the "Customer"), in accordance with the following provisions, that the drive system and its components installed in the bike (hereinafter referred to as the "Product") purchased by the customer within the European Union (as of 1 January 2017) and Switzerland (hereinafter referred to as the "geographical scope") are free of design, material and processing faults and will function without restriction for a period of two years following delivery (warranty period).

Nevertheless, if a fault occurs or the drive system is not fully functional, the manufacturer will remedy this at his own discretion and expense by repairing or supplying new or reconditioned parts.

The statutory rights of the customer due to defects according to Section 437 of the German Civil Code (Bundesgesetzbuch; BGB) remain unaffected and are not limited by this warranty, but the customer is additionally entitled to the rights from this warranty.

However, claims under this guarantee shall only exist if

- the product shows no damage or signs of wear and tear caused by use deviating from its normal purpose and from the manufacturer's specifications stated in the user manual,
- the product does not show any signs of repairs, that a product component has been opened, or other interventions by specialist workshops not authorised by the manufacturer, and
- the serial number has not been removed or rendered illegible.

Claims under this warranty require the customer, before sending the product, to contact either the dealer from whom he purchased the bicycle or the manufacturer and give them the opportunity to assess the fault over the telephone within a period of eight days.

Claims under the warranty can only be asserted to the manufacturer on presentation of the original invoice with date of purchase.

Claims under this guarantee can only be asserted by handing over or sending the product to the manufacturer. The manufacturer shall bear all costs for sending and returning the product. If the manufacturer or the dealer has named a specific freight company to the customer for sending the product and the customer nevertheless uses another freight company, the customer must bear the additional costs incurred.

This warranty shall apply to the extent and under the conditions set forth above, including the presentation of proof of purchase, even in the event of resale, to any subsequent future owner of the product residing within the territorial scope of this warranty.

This guarantee is subject to the law of the Federal Republic of Germany, unless and insofar as this is contradicted by mandatory consumer protection regulations in the country of the respective customer.

9 SERVICE



If possible, prepare a description of the fault and all information about the relevant components before contacting a FAZUA Certified Partner or the FAZUA service team.

→ If you require service, contact a FAZUA Certified Partner or the FAZUA service team.

→ Also visit the FAZUA service platform, if necessary:

<https://fazua.com/support/contact/>

There, you will find extensive content on the subject of "Service", as well as a search function for locating FAZUA Certified Partners in your area.

10 DECLARATIONS OF CONFORMITY

10.1 EU Conformity of the individual components or of the drive system

The individual components or the drive system as a whole comply with all applicable EC provisions of the European Economic Area.

- The EU Declaration of Conformity for the drive system can be requested from Porsche eBike Performance GmbH.
- The EU Declaration of Conformity for the E-Bike as a whole (including the drive system) can be requested from the manufacturer of your E-Bike.

10.2 UK Conformity of the individual components or of the drive system

Each individual component, as well as the drive system as a whole, complies with the applicable regulations for obtaining the British UKCA marking.

- The UKCA Declaration of Conformity for the drive system can be requested from Porsche eBike Performance GmbH.
- The UKCA Declaration of Conformity for the E-Bike as a whole (including the drive system) can be requested from the manufacturer of your E-Bike.

10.3 Special information about components with Bluetooth® function

Porsche eBike Performance GmbH hereby declares that the components in question with Bluetooth® function conform to the basic requirements and other relevant regulations of the Radio Equipment Directive Directive 2014/53/EU, EMC Directive 2014/30/EU, ErP Directive 2009/125/EC, Low Voltage Directive 2014/35/EC and ROHS Directive 2011/65/EC.

→ You can find the complete Declaration of Conformity for your components with Bluetooth® function on the Internet at

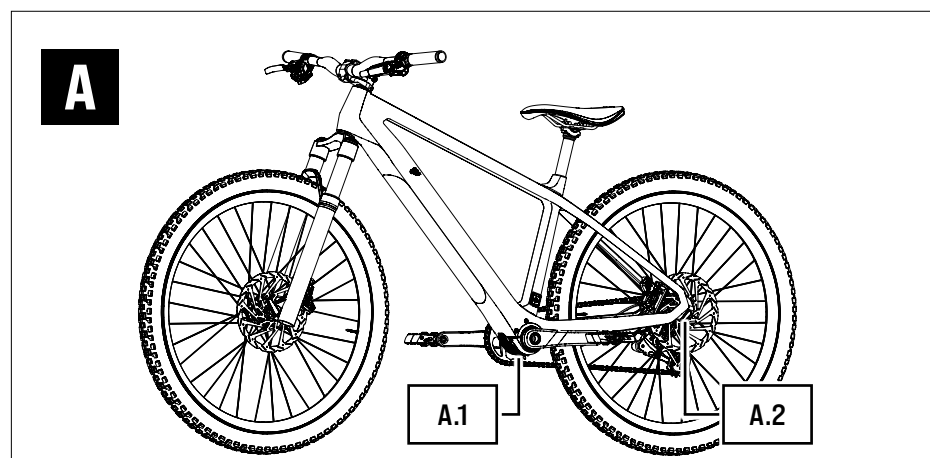
<https://fazua.com/support/help-center/downloads/>.

DRIVE UNIT

The drive unit converts the battery energy and supports you when pedalling. The speed sensor on the rear wheel determines the driving speed (with the help of a magnet). If the determined cycling speed exceeds the switch-off point*, the drive unit automatically switches off the electric pedal assist. As soon as the cycling speed drops below the switch-off point, the electric Pedal Assist function starts again.

IMPORTANT: The drive unit and speed sensor are permanently installed on your E-Bike and must not be modified. If you make changes to the drive unit or to the speed sensor itself, this may impair the safety and function of the drive system.

11 DETAIL VIEW AND PART DESIGNATIONS/ POSITIONS ON THE E-BIKE



Part designations

- A.1 → Drive unit (permanently installed component)
- A.2 → Speed sensor + magnet

* The electric pedal assist switches off as soon as you reach or exceed a certain (country and product specific) speed

12 CORRECT POSITION OF SPEED SENSOR AND MAGNET



For the drive system to function correctly, the speed sensor and magnet [A.2] must be mounted in the correct position on the rear wheel. If this is not the case or if the speed sensor is not connected correctly, the drive system will operate in "Soft Fault" mode.

→ More detailed information can be found in [Chapter 16.2 "E-Bike status"](#).

The correct positions of the speed sensor and magnet depend on the manufacturer.

- If you notice that the drive system is in "Soft Fault" mode, make sure, if possible, that the speed sensor and magnet are correctly located in their holder on the rear wheel.
- If the problem cannot be resolved, do not use the E-Bike but contact an authorised specialist.

13 CLEANING AND MAINTAINING THE DRIVE UNIT

CAUTION
Risk of injury!

If the drive system is set in motion while you are handling it, you may injure yourself.

- ▶ To prevent the drive system from being set in motion, switch off the drive system and, if necessary, prevent it from being switched back on unintentionally or unnoticed when cleaning the E-Bike or the components of the drive system.
- ▶ If possible, remove the battery* prior to cleaning.

NOTICE
Danger of damage!

Improper cleaning can damage the drive unit.

- ▶ Never clean the drive unit with a hard water jet or a high-pressure cleaner.

* Only applies if your E-bike is equipped with a battery (see [Chapter 19 "Model variants of the battery"](#)).

- ▶ Do not use any aggressive cleaning agents when cleaning.
 - ▶ Do not use any sharp, angular or metallic objects for cleaning.
-
- Always keep all components of the E-Bike and drive system in a clean condition.
 - Clean the exterior of the drive unit gently with a cloth or soft brush.
 - If necessary, use a mild soap solution for the external removal of coarser soiling.
 - Wipe all surfaces dry after cleaning.
 - Clean the cooling unit of the drive unit regularly.
Do not clean the radiator until it is visibly or heavily soiled!
 - For more information about cleaning and maintaining your drive system, contact a FAZUA service partner or visit the FAZUA service platform (<https://fazua.com/support/contact/>).

CONTROL ELEMENT AND DISPLAY

Use the control element to carry out all the settings for the drive system; the indicator provides information about the current settings and the battery charge level.

14 MODEL VARIANTS OF THE CONTROL ELEMENT AND DISPLAY



Depending on the model, the control element and display will be either one combined component or two separate components.

The table below shows which models are currently available.

Control element with display [Combined component]	Control element [Separate component]	Display [Separate component]
<ul style="list-style-type: none"> Control Hub 	<ul style="list-style-type: none"> Ring Control 	<ul style="list-style-type: none"> LED Hub
	<ul style="list-style-type: none"> Mode Control 	
	<ul style="list-style-type: none"> Road Control 	

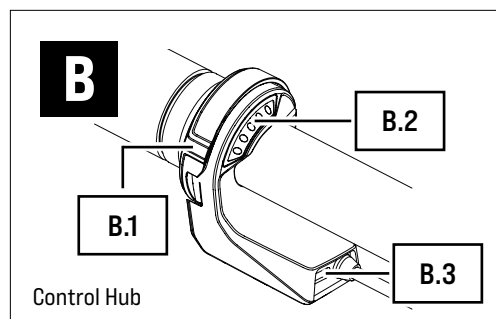
15 DETAILED VIEW AND PART DESIGNATIONS:

15.1 Control Hub



The Control Hub is attached to the handlebars, as standard.

ATTENTION: Do not leave any 5V devices connected to the USB port when the drive system with Energy 430 is switched off.



Part designations

B.1 → Control switch

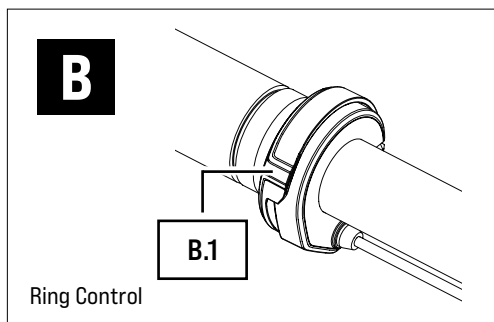
B.2 → LED display

B.3 → USB port

15.2 Ring Control



The Ring Control is attached to the handlebars, as standard.



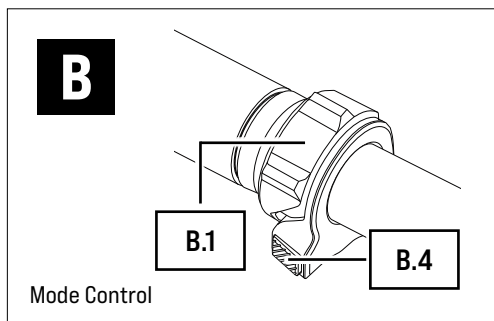
Part designations

B.1 → Control switch

15.3 Mode Control



The Mode Control is attached to the handlebars, as standard.



Part designations

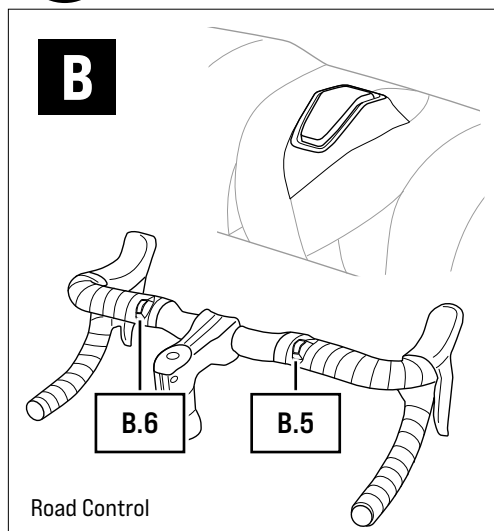
B.1 → Control switch

B.4 → Button

15.4 Road Control



The Road Control is attached to the handlebars, as standard.



Part designations

B.5 → right switch (RoC R)

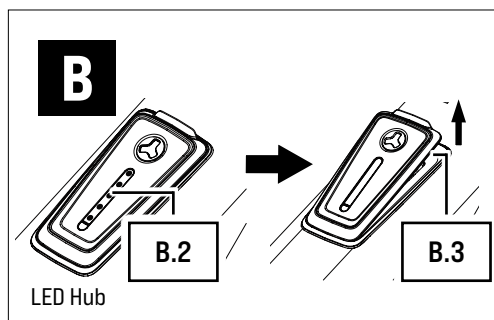
B.6 → left switch (RoC L)

15.5 LED Hub



The LED Hub is attached to the top tube as standard.

ATTENTION: Do not leave any 5V devices connected to the USB port when the drive system with Energy 430 is switched off.



Part designations

B.2 → LED display

B.3 → USB port

16 DRIVING AND STATUS INFORMATION ON THE DISPLAY

The LED indicator [B.2] shows the charge level and the set support level for the Pedal Assist function. The LED indicator also displays information about the current status of your E-Bike.



You can find a complete overview of the possible displays in [Chapter 25 "Overview of indicators"](#).

- LED Hub: see [Chapter 25.1 "Overview of LED Hub indicator"](#).
- Control Hub: see [Chapter 25.2 "Overview of Control Hub indicator"](#).

16.1 Current charge level and set assistance level

Battery charge level*:

The charge level is indicated by the number of illuminated LEDs. Each of the 5 LEDs represents 20% of the total charging capacity.

When the battery is fully charged, all 5 LEDs light up.

Pedal Assist support level:

Each assistance level is assigned a colour, i.e. You can read off the assistance level currently set via the colour of the lit LEDs on the display.

→ More detailed information can be found in [Chapter 17.2 "Pedal Assist/support levels"](#).

16.2 E-Bike status

Possible status displays

- **The blue LED at the top is flashing = "Ready for operation"**

After successfully installing the battery in the E-Bike, the blue status indicator briefly flashes to indicate that you can now switch on the drive system using the control element.

- **All LEDs are flashing yellow twice every ten seconds = "Soft Fault"**

If a "Soft Fault" occurs, the status display flashes yellow. In this way, the drive system indicates that there is a temporary or non-critical fault that in most cases will result in reduced performance.

* The charge level of the component (battery) that is (currently) supplying energy to the drive system is always displayed: When energy is being supplied by the regular (main) battery, the charge level of the regular (main) battery is displayed.

If there is a "Soft Fault", you can continue riding your E-Bike but Porsche eBike Performance GmbH strongly advises against doing so in order to avoid causing further damage to the drive system or E-Bike.

- **All LEDS are flashing red three times every two seconds = "Hard Fault".**

When a "Hard Fault" occurs, the status display flashes red. If a "Hard Fault" occurs on your E-Bike, the E-Bike may no longer be used and must be serviced.

17 USING THE CONTROL ELEMENT

WARNING

Danger due to distraction during operation!

If you get distracted by shifting gears on the control element or by looking at the display while cycling, accidents and serious injuries can result.

- ▶ Before using your E-Bike for the first time, familiarise yourself, away from road traffic, with the functions and how to handle your control element.
- ▶ Do not use the control element and do not look at the display while riding if it distracts you.



All operating functions are explained below.

You can find a complete overview of how to use your control element in the annex in [Chapter 26 "Overview of control elements"](#).

- Control Hub: see [Chapter 26.1 "Overview of Control Hub"](#),
- Ring Control: see [Chapter 26.2 "Overview of Ring Control"](#),
- Mode Control: see [Chapter 26.3 "Overview of Mode Control"](#),
- Road Control: see [Chapter 26.4 "Overview of Road Control"](#).

17.1 Switching the drive system on and off

The way in which your E-Bike reacts to being switched on and off depends on the state in which the E-Bike is found when it is switched on or off:

- If the E-Bike was **switched off**, it will **switch** itself **on**.
- If the E-Bike was **switched on** (and **active**), it will **switch** itself **off**.



After 15 minutes of inactivity, the drive system's battery switches itself off automatically. To use the drive system again after it has switched itself off automatically, simply switch it back on as usual.



For instructions on how to use your control element to switch the drive system on or off, see the respective overview in the annex in [Chapter 26 "Overview of control elements"](#).

17.2 Pedal Assist/support levels

You can control the strength of the Pedal Assist function using the support level, i.e. how much/with how much power you wish the drive unit to support you when pedalling.



You can set or change the support level while cycling and while stationary.

No support (white) The LED display [B.2] lights up white.

- You are riding without electric pedal assist (like a conventional bicycle).

Assistance level "Breeze" The LED display [B.2] lights up green.

- You are riding with low but effective support for a maximum range.

Assistance level "River" The LED display [B.2] lights up blue.

- You are riding with reliable assistance for most applications.

Assistance level "Rocket" The LED display [B.2] lights up pink.

- You are riding with maximum assistance for challenging rides.



You can check and individually adjust the maximum motor power using the FAZUA Toolbox or the FAZUA app. You can also assign other colours for the three support levels there.

→ You can find more information about using the FAZUA app and the FAZUA Toolbox in [Chapter 5 "Riding and system data"](#).



For instructions on how to use your control element to change support levels, see the respective overview in the annex in [Chapter 26](#) “Overview of control elements”.

17.3 Boost function

 **CAUTION**
Risk of injury!

► Boost mode may only be activated while riding or when stationary, provided that the rider is fully ready to ride. Activating Boost mode while pushing or standing next to the bike can lead to dangerous situations.

The following applies to the Boost function:

In addition to the “regular” assistance levels, which you can use permanently*, the drive system has an additional function: The Boost function allows you to ride with a (higher) maximum motor power of 450 watts for a short time to momentarily give you an extra push.

The duration of the extra push due to the Boost function depends on the situation in which you activate the Boost function:

- If you activate the Boost function **from a standstill**, you receive an extra push for **4 seconds**.
- If you activate the Boost function **while already riding**, you receive an extra push for **12 seconds**.

The Boost function is deactivated automatically after 4 or 12 seconds or when you stop pedaling (e.g. to brake).



The Boost function cannot be activated if:

- The e-bike reaches a speed of more than 25 km/h (15.5 mph).
- you have not selected a support level (the white LEDs on the indicator light up).
- the battery charge level is less than 10%.



For instructions on how to use your control element to change the Boost function, see the respective overview in the annex in [Chapter 26](#) “Overview of control elements”.

* depending on the charge level of the battery.

17.4 "Push Assist" mode



You can injure yourself and damage the drive system or individual components through improper use of the Push Assist function.

- ▶ Only use the Push Assist function when pushing the E-Bike.
- ▶ When the Push Assist function is activated, hold the E-Bike securely with both hands and make sure that the wheels are in contact with the ground.
- ▶ Be careful not to injure yourself on the rotating pedals when using the "Push Assist" function.



Push assist makes it easier to push the E-Bike. In Push Assist mode, your E-Bike can reach a speed of up to 6 km/h (3.7 mph), depending on the gear selected.

The following applies to the Push Assist function:

- Push Assist can only be used if no support has been set.
 - Set the support level to "none" for using the Push Assist function.
- Push Assist is activated after approx. 2 seconds and sets the E-Bike in motion for as long as you keep the control switch* [B.1] / the button** [B.4] / the right-hand switch*** [B.5] held down.
 - Switch Push Assist off by releasing the control switch [B.1] / the button [B.4] / the right-hand switch [B.5].
- You must hold the E-Bike with both hands when pushing it with Push Assist activated. You can slow down the speed of the E-Bike to your walking pace by holding or restraining the E-Bike while pushing.
- Push assist is automatically deactivated in the following situations:
 - you release the control switch [B.1] / the button [B.4] / the right-hand switch [B.5],

* Applies to Control Hub and Ring Control.

** Applies to Mode Control.

*** Applies to Road Control.

- the wheels on the E-Bike block,
- the E-Bike reaches a speed of over 6 km/h (3.7 mph).



For information on how to use your control element to activate the Push Assist function, refer to the respective overview in the annex in [Chapter 26 “Overview of control elements”](#).

17.5 Switching the bicycle lighting on and off



Depending on the model, bicycle lighting can be connected to the drive system. If this is the case, you can switch the bicycle lighting on and off with the control element.



For instructions on how to use your control element to switch the bicycle lighting on or off, see the respective overview in the annex in [Chapter 26 "Overview of control elements"](#).

18 CLEANING AND MAINTAINING THE CONTROL ELEMENT AND DISPLAY

CAUTION Risk of injury!

If the drive system is set in motion while you are handling it, you may injure yourself.

- ▶ Be careful not to start the drive system unintentionally when cleaning the control element.
- ▶ If possible, remove the battery*

NOTICE Danger of damage!

Improper cleaning may damage the control element or display.

- ▶ Never immerse the control element and display in water or other liquids for cleaning.
- ▶ Do not use any aggressive cleaning agents when cleaning.
- ▶ Do not use any sharp, angular or metallic objects for cleaning.
- Always keep all components of the E-Bike and drive system in a clean condition.
- Clean the exterior of the control element and display gently with a cloth or soft brush.

* Only applies if your E-bike is equipped with a battery (see [Chapter 19 "Model variants of the battery"](#)).

→ If necessary, use a mild soap solution for the external removal of coarser soiling.

IMPORTANT: Dampen the cloth only slightly or wring it out well to prevent liquid from penetrating the inside of the housing and the connections. If liquid enters the inside of the housing or the connections, the control element and the display may be damaged.

→ Wipe all surfaces dry after cleaning.

BATTERY AND CHARGER



IMPORTANT: For reasons of clarity and to avoid confusion, the term “battery” is used in this user manual exclusively to refer to the regular [main] battery [ENERGY 430 fix / ENERGY 480 fix / ENERGY 430 / ENERGY 480] which is dealt with in this section and for [rechargeable] batteries in general.

The battery acts as an energy supply for all the electrical functions/components of the drive system [electric pedal assist, operating element, display] and, if applicable, for additional electric components of the E-Bike (e.g bicycle lighting). Use the charger to charge the battery.

19 MODEL VARIANTS OF THE BATTERY



Depending on the model, the battery is either:

- permanently installed in the E-Bike and cannot be removed [models: ENERGY 430 fix, ENERGY 480 fix].

or

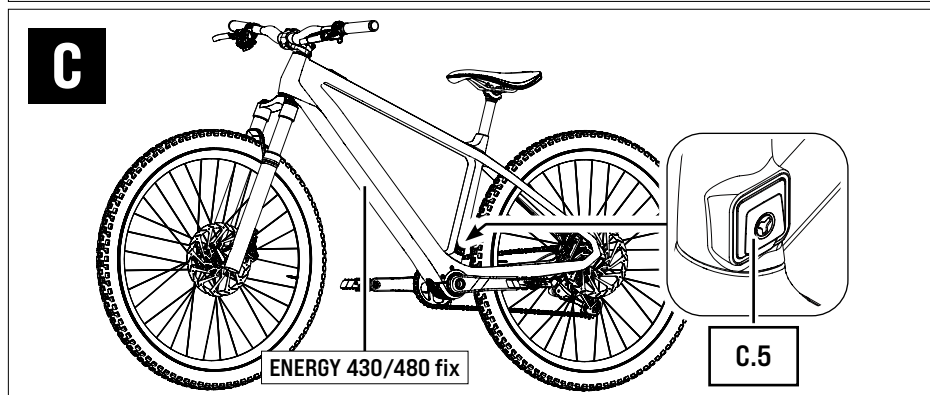
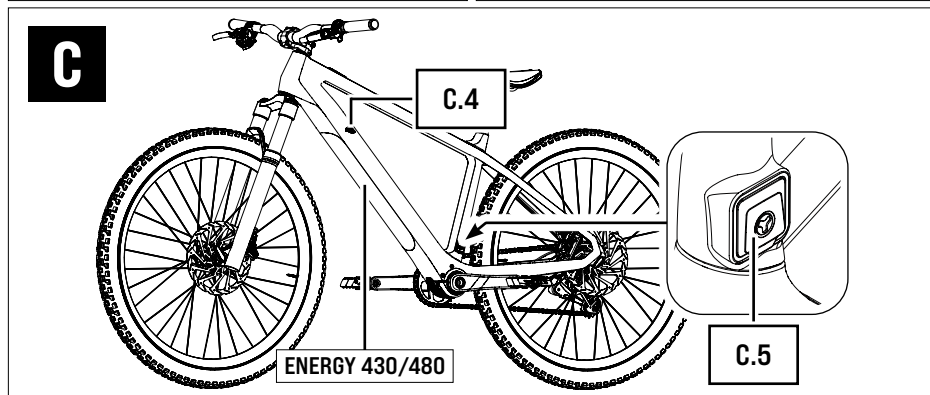
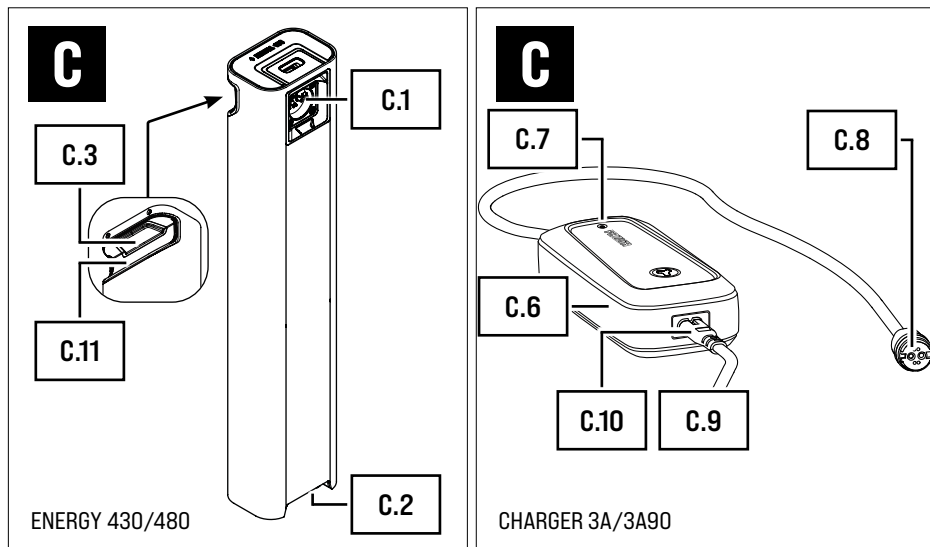
- a separate component that can be removed from the E-Bike [models: ENERGY 430, ENERGY 480].



The appearance and assembly/handling of the model variants of the removable battery [ENERGY 430 / ENERGY 480] are identical, as are those of the model variants of the permanently installed battery [ENERGY 430 fix / ENERGY 480 fix].

For this reason, the respective model variants are described together in this user manual.

20 DETAILED VIEW AND PART DESIGNATIONS



Part designations

- C.1 → Charging socket * (battery)
- C.2 → Interface* (battery)
- C.3 → Push button* (battery lock)
- C.4 → Cylinder lock and key*
- C.5 → Charging socket with cover flap** (E-Bike)
- C.6 → Mains adapter
- C.7 → LED display
- C.8 → Charging plug
- C.9 → Mains cable with mains plug*** (power connection)
- C.10 → Plug
- C.11 → Charge level indicator

21 SPECIFIC SAFETY INSTRUCTIONS FOR THE BATTERY AND CHARGER

WARNING

Danger of battery explosion!

If you use inappropriate batteries or do not handle the battery properly, the battery may explode.

- Only use the original charger from FAZUA to charge the battery.
- Never use a damaged battery! Products with broken seals must not be used and must be immediately taken to a suitable recycling facility (see [Chapter 7 “Disposal instructions”](#)).

* Applies only to removable batteries, not to permanently installed batteries.

** Applies to removable and permanently installed batteries. The charging connection is optional. The position can vary depending on the individual manufacturer.

*** Different from country to country, therefore not pictured.

- ▶ Never attempt to charge a damaged battery!
- ▶ Do not continue using the battery but have it checked out by an authorised specialist, and if necessary replaced, if:
 - You notice damage to the battery,
 - Liquid is leading out of the battery,
 - You notice a strange odour or a strange noise coming from the battery.
- ▶ Never open the battery! Attempting to open a battery poses an increased risk of explosion!
- ▶ Keep the battery away from heat (e.g. strong sunlight), open fire or water or other liquids.
- ▶ Only use the battery in E-Bikes equipped with an original FAZUA RIDE 60 drive system. Never use the battery for other purposes or in other drive systems.

 **WARNING****Fire hazard due to incorrect handling!**

Improper handling of the battery and/or charger or attempting to charge batteries with an incompatible charger could cause a fire.

- ▶ Only use original and compatible components from FAZUA with each other. Do not attempt to charge a third-party battery with the FAZUA charger and do not attempt to charge the FAZUA battery with a third-party charger.
- ▶ The charger and battery heat up during charging, so keep away from combustible materials and do not leave the two components unattended during charging. During charging place the charger and battery on a well ventilated surface.
- ▶ Never attempt to charge non-rechargeable batteries!
- ▶ Take care not to handle metal objects such as coins, paper clips, screws, etc. in the immediate vicinity of the battery and to store the battery separately from metal objects. Metal objects can close a circuit between the terminals of the battery (i.e. "short-circuit" the battery) and cause a fire as a result.
- ▶ Do not short-circuit the battery.

► If a battery fire breaks out:

- If possible, carefully remove other batteries from the danger zone.
- Evacuate all persons from the danger zone.
- Use plenty of cold water (at least ten times the weight of the battery) to extinguish the fire.

 **WARNING**

Danger of chemical burns from battery acid!

The battery contains battery acid. If you come into contact with this liquid, the affected area of skin and/or mucous membranes may suffer chemical burns. Contact with the eyes may result in a loss of sight.

- Protect the battery from mechanical influences and any other load.
- Do not touch any liquid leaking from the battery.
- If you have come into contact with liquid leaking from the battery, immediately rinse the affected part of the body thoroughly under plenty of running water.
- After rinsing, seek advice from a doctor immediately, in particular on eye contact and/or if the mucous membranes are affected (e.g. nasal mucous membranes).

 **WARNING**

Health risk due to irritation of the airways!

If the battery is damaged, gases may escape which may irritate the respiratory tract.

- Protect the battery from mechanical influences and any other load.
- If you notice or suspect that gas is leaking from the battery, immediately ensure a supply of fresh air and seek medical attention as soon as possible.

 WARNING**Danger of interference with medical equipment!**

The magnetic connections in the battery and charger can interfere with the function of pacemakers.

- ▶ Keep the battery and charger away from pacemakers or persons wearing a pacemaker and draw the attention of persons with pacemakers to the danger.

 WARNING**Risk of electric shock!**

Improper handling of the charger or an incorrect mains connection may expose you and others to the risk of electric shock.

- ▶ Only connect the charger to an easily accessible and properly installed earth contact outlet.
- ▶ Make sure that the mains voltage at the mains connection corresponds to the information on the charger.
- ▶ Only use the charger in dry indoor areas.
- ▶ Keep the charger away from all liquids and humidity.
- ▶ Do not pull on the cables, but always grasp the corresponding plug when disconnecting the connectors.
- ▶ Do not handle the plugs of the charger with wet or damp hands.
- ▶ Take care not to bend the charger cable or lay them over sharp edges.
- ▶ Do not open the charger yourself. The charger may only be opened by an authorised specialist and may only be repaired with genuine spare parts.
- ▶ Before each use of the charger, check all individual parts (mains adapter, mains cable, charger cable and all plugs) for damage. If the charger's mains cable is damaged, it must be replaced by the manufacturer, its customer service department or a similarly qualified person to avoid any dangers.
- ▶ Never use a damaged charger. Otherwise, there is a high risk of electric shock!

- Keep the charger in a clean condition. There is an increased risk of electric shock if the charger is dirty or soiled.

WARNING

Dangers due to unauthorised use!

There is a particular risk to children (younger than 14 years) and people with limited physical, sensory and mental abilities (e.g. physically handicapped, elderly people with limited physical and mental abilities) or a lack of experience and knowledge (e.g. older children)! If children or people with physical or mental impairments handle the battery or charger, there is an increased risk potential as these user groups must not be able to correctly assess certain risks, for example.

- The charger and the battery must not be used by children or persons with limited physical, sensory or mental abilities unless they are supervised or have been instructed in the safe use of the charger and have understood the resulting dangers.
- Children must not be allowed to play with the charger and/or with the battery.
- Cleaning and user maintenance must not be carried out by children without supervision.
- Keep the charger and the battery out of the reach of children.

CAUTION

Risk of burns!

The cooling unit on the drive unit can become very hot during operation and you may burn yourself when touching it.

- Be careful when removing the battery.* If necessary, allow the drive unit to cool down completely first.

* Applies only to removable batteries, not to permanently installed batteries.

NOTICE**Danger of damage!**

Improper handling can damage the drive system or individual components.

- ▶ Before inserting the battery, make sure that the contacts on the battery are dry.* If the contacts are damp or wet when inserted, the battery and drive system may get damaged.
- ▶ When charging, make sure that the charger's cables cannot present trip hazards in order to prevent components from being damaged, e.g. by a fall.
- ▶ Always make sure that the cover flap of the charging socket on the E-Bike is sealed correctly and completely to ensure that no dust or splash water can enter the charging socket.
- ▶ Keep solvents and chemicals that can damage surfaces (e.g. cleaning products) away from the battery. The battery must not come into contact with them.

22 USING THE BATTERY

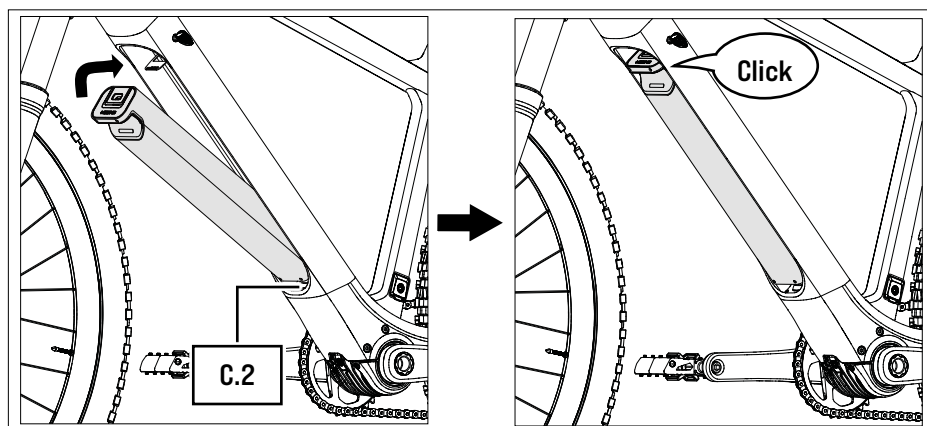
22.1 Inserting/removing the battery



Only applies if your E-bike is equipped with a battery (see [Chapter 19 "Model variants of the battery"](#)).

22.1.1 Inserting the battery

1. Check the battery for visible damage before insertion (visual check).
2. Place the battery with the interface [C.2] first on the corresponding interface of the E-Bike.



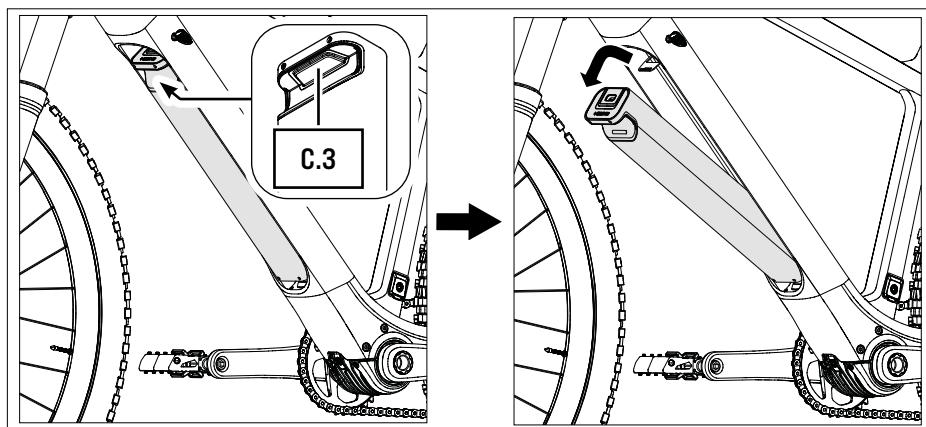
3. Swing the top end of the battery into the down tube of the E-Bike.

The battery locks in place automatically when the two interfaces on the battery and the E-Bike are correctly interlocked and the battery is swivelled fully into the receptacle on the down tube. An audible engagement sound ("click") is heard when the device engages.

Contact an authorised specialist if the battery cannot be inserted or if the battery does not (audibly) click into place on the E-Bike.

22.1.2 Removing the battery

1. Secure the battery with one hand.
2. Reach into the cutout on the battery and push the elastic pushbutton [C.3] in as far as it will go.



3. Press and hold the push button and gently pull the battery forwards out of the down tube.
4. Remove the battery from the interface on the E-Bike.

22.2 Checking the battery status (on the battery)



This chapter only applies to E-Bikes that are equipped with a removable battery (see [Chapter 19 “Model variants of the battery”](#)).

22.2.1 Checking the battery's current charge level

With removable batteries, it is possible to check the battery's current charge level directly on the battery.

IMPORTANT: The system is not designed for checking the current charge level during the charging process to see whether the battery has already reached its maximum charge level or if it can still be charged. You can use the LED indicator [C.7] on the charger for this purpose.

→ More detailed information can be found in [Chapter 23.3 “Charging process”](#).

To check the current charge level directly on the battery:

→ Tip the battery backwards and forwards.

Depending on the charge level, different numbers of LEDs light up on the charge level indicator [C.11]. Each LED represents 20% of the [charging] capacity. If all five LEDs are lit, the battery is fully charged.

22.2.2 Checking the battery's state of health (SoH)

On the ENERGY 480, it is possible to check the battery's so-called "state of health" (SoH).



The state of health (SoH) is an indicator showing the battery's capacity over its useful life. In general, the SoH depends on the number of charge cycles.

The battery's state of health affects the battery's performance/charging capacity.*

If the state of health shows 80%, for example, this means that the battery still has 80% of its original capacity when fully charged.

You can check the battery's state of health digitally using the FAZUA Toolbox and the FAZUA app.

To check the battery's state of health using the FAZUA Toolbox and the FAZUA app:

→ Connect the E-Bike (with battery inserted) via the USB socket** to a device with access to the FAZUA Toolbox, or open the FAZUA app.

You can find more information about using the FAZUA app and the FAZUA Toolbox in [Chapter 5 "Riding and system data"](#).

23 CHARGING THE BATTERY

The charging process can be interrupted at any time.

IMPORTANT: Charge the battery **only within the specified temperature range*****. Charging outside the specified temperatures may damage the charger and/or battery.

→ Fully charge the battery prior to initial operation so that you can use the full capacity of the battery.



Porsche eBike Performance GmbH recommends that you do not allow the battery to become fully discharged.

→ Charge the battery when the charge level reaches 20%.

* See the notes in the "Range/trip planning" section in [Chapter 3 "Instructions for riding an E-Bike with the FAZUA drive system"](#)

** The USB cable required for this is not included in the scope of delivery.

*** You can find information about the temperature ranges in the data sheets of the individual components (see [Chapter 27 "Data sheets \(technical data\)"](#) Section "Annex").

23.1 *Preparing the charger*

1. Take the mains adapter **[C.6]** and the mains cable **[C.9]**.
2. Plug the appliance plug **[C.10]** of the mains cable into the corresponding socket on the mains adapter.

23.2 *Connecting/disconnecting the charger*

IMPORTANT: Which charging connection is available to you for charging the battery depends on the battery model and your drive system's equipment.

Charging connection for permanently installed batteries on E-Bikes :

- Charging socket **[C.5]** on the E-Bike.
→ For details, see [Chapter 23.2.1 "Using the charging connection on the E-Bike"](#)

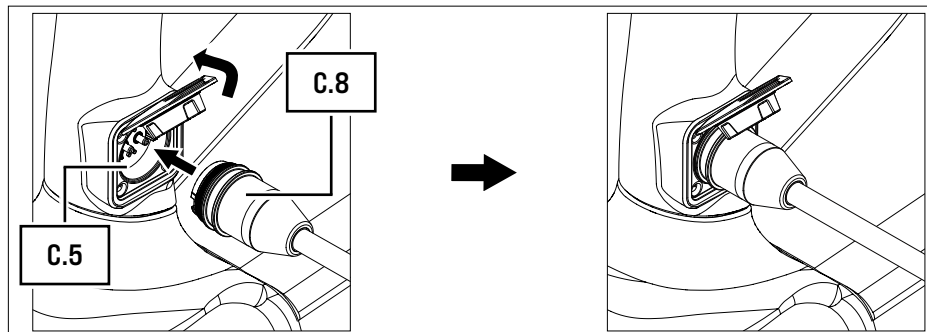
Charging connection for removable batteries on E-Bikes :

- Charging socket **[C.5]** on the E-Bike.
→ For details, see [Chapter 23.2.1 "Using the charging connection on the E-Bike"](#)
- Charging socket **[C.1]** on the battery.
→ For details, see [Chapter 23.2.3 "Using the charging connection on the battery"](#).

23.2.1 Using the charging connection on the E-Bike

Connecting the charger

1. Open the cover flap to access the charging socket [C.5] on the E-bike.
2. Insert the charging plug [C.8] into the charging socket [C.5].



3. Insert the mains plug [C.9] into a suitable wall outlet to establish the power connection.

Charging process

4. For information about the charging process, see [Chapter 23.3 "Charging process"](#).

Disconnecting the charger

5. When charging is complete, unplug the mains plug [C.9] from the outlet to disconnect the charger from the mains.
6. Remove the charging plug [C.8] from the charging socket [C.5] on the E-Bike.

IMPORTANT: Then immediately seal the charging socket [C.5] on the E-Bike by closing the appropriate cover flap.

7. Then disconnect the mains cable [C.9] from the mains adapter [C.6] and keep the two parts separate.

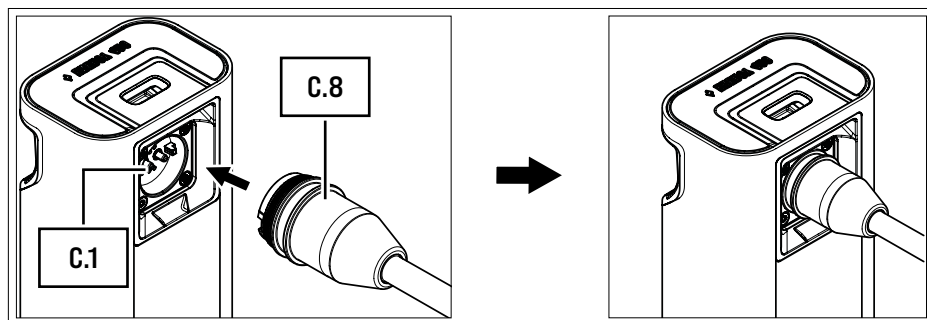
23.2.3 Using the charging connection on the battery



This chapter only applies to E-Bikes that are equipped with a removable battery (see [Chapter 19 “Model variants of the battery”](#)).

Connecting the charger

1. Remove the battery from the E-Bike (see [Chapter 22.1.2 “Removing the battery”](#)).
2. Insert the charging plug **[C.8]** into the charging socket **[C.1]** on the battery.



3. Insert the mains plug **[C.9]** into a suitable wall outlet to establish the power connection.

Charging process

4. For information about the charging process, see [Chapter 23.3 “Charging process”](#).

Disconnecting the charger

5. When charging is complete, unplug the mains plug **[C.9]** from the outlet to disconnect the charger from the mains.
6. Remove the charging plug **[C.8]** from the charging socket **[C.1]** on the battery.
7. If necessary, reinsert the battery into the E-Bike.
8. Then disconnect the mains cable **[C.9]** from the mains adapter **[C.6]** and keep the two parts separate.

23.3 Charging process

The charging process begins as soon as you have connected the charger to the E-Bike or battery on one side and to the power supply on the other.

The flashing LEDs on the charge level indicator **[C.11]** of the battery indicate that the battery is being charged.*

During the charging process, the **LED indicator [C.7]** on the charger lights up **red** to indicate that the **battery is charging**.

When the colour of the **LED indicator [C.7]** switches to **green**, this indicates that the **battery is fully charged**.



The relevant indicator for determining whether the battery is fully charged, is the LED display **[C.7]** on the charger.

It can occur that the LED indicator **[B.2]**, the charge level indicator **[C.11]** on the battery, the FAZUA app and the FAZUA Toolbox already display a charge level of 100%, however the red LED indicator **[C.7]** on the charger still lights up (for a while).

This can be caused, among other things, by unbalanced cells which will synchronise again during the automatic balancing process.

→ Do not disconnect the charger from the charging connection used until the charger's **LED display [C.7]** has changed from red to green.

* Applies only to removable batteries, not to permanently installed batteries.

24 *CLEANING THE BATTERY AND CHARGER*

NOTICE

Danger of damage!

Improper cleaning can damage the battery or the charger.

- ▶ Never immerse the battery or the charger in water or other liquids. Keep liquids away from the battery and charger.
- ▶ Do not use any aggressive cleaning agents when cleaning.
- ▶ Do not use any sharp, angular or metallic objects for cleaning.
- ▶ Always keep all components of the E-Bike and drive system in a clean condition.

24.1 *Cleaning the battery*



IMPORTANT: The cleaning instructions for the battery only apply to removable batteries (see [Chapter 19 “Model variants of the battery”](#)). If your E-bike is equipped with a permanently installed battery, you do not need to clean it separately.

- Remove the battery in order to clean it (see [Chapter 22.1.2 “Removing the battery”](#)).
- Clean the exterior of the battery gently with a cloth or soft brush.
- If necessary, use a mild soap solution for the external removal of coarser soiling.

IMPORTANT: Dampen the cloth only slightly or wring it out well to prevent liquid from penetrating inside the housing and the contacts/interfaces. If liquid gets inside the housing or into the contacts/interfaces, the battery may be damaged and electrical safety may be impaired.

- Wipe all surfaces dry after cleaning.

IMPORTANT: Pay particular attention to the contacts and interfaces between the battery and drive unit: The interfaces must not be soiled or contaminated and must be completely dried before inserting the battery to avoid damage.

24.2 Cleaning the charger

- Clean the exterior of the charger gently with a cloth or soft brush.
- If necessary, use a mild soap solution for the external removal of coarser soiling.

IMPORTANT: Dampen the cloth only slightly or wring it out well to prevent liquid from penetrating the inside of the housing and the connections. If liquid enters the interior of the housing or the connections, the charger may be damaged and electrical safety may be impaired.

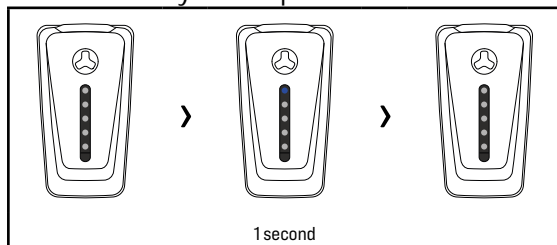
- Wipe all surfaces dry after cleaning.

ANNEX

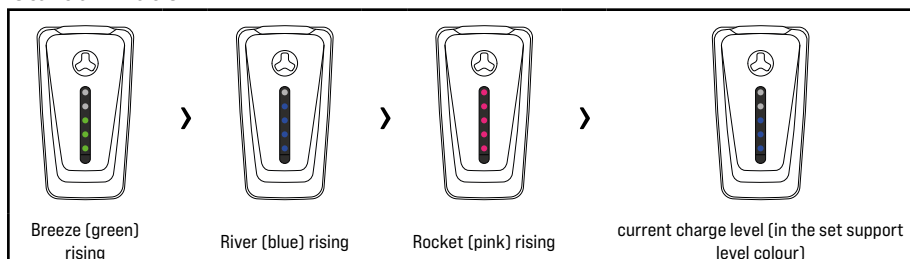
25 OVERVIEW OF INDICATORS

25.1 Overview of LED Hub indicator

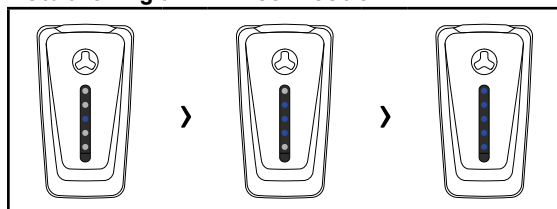
Power/ Battery Wake Up*



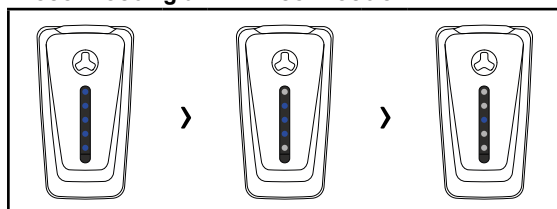
Start animation



Establishing a BLE connection**



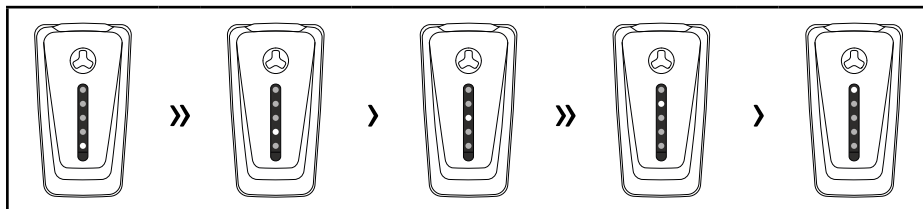
Disconnecting a BLE connection**



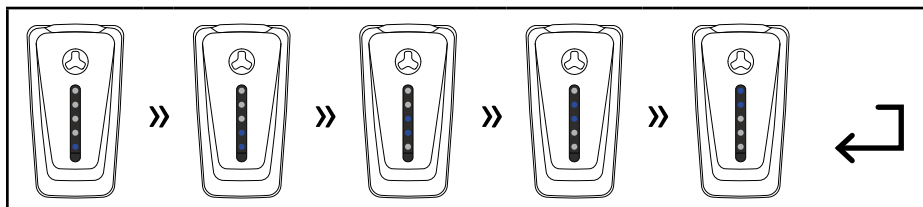
* One LED lights up blue briefly if any movement is applied to the bike. No action is required.
Battery automatically returns to sleep mode on its own.

** BLE = Bluetooth® Low Energy

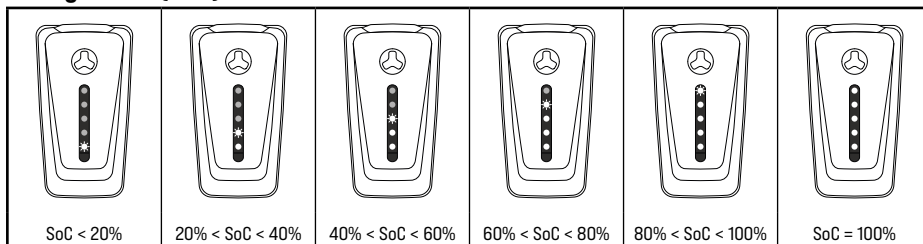
Push Assist



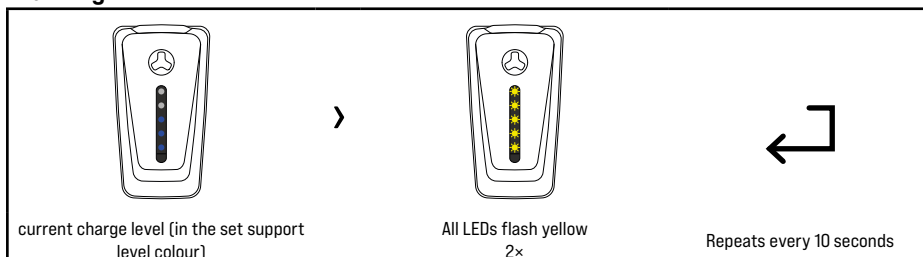
Boost function



Charge level (SoC)*



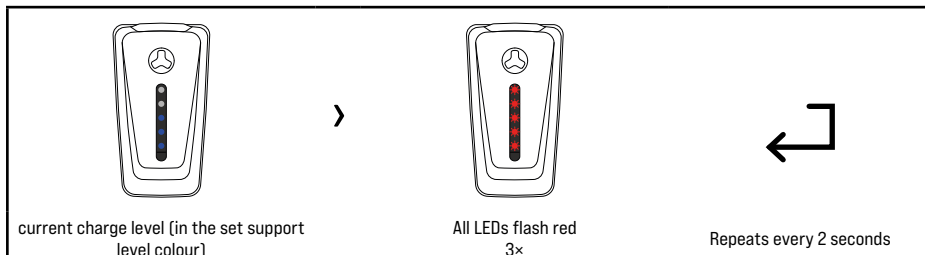
Warning**



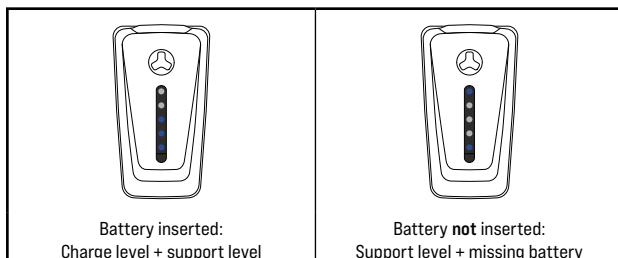
* The charge level (SoC) is displayed in the set support level colour (see [Chapter 17.2 "Pedal Assist/support levels"](#)).

** The "Warning" animation appears in the event of technical faults which require the rider's attention but do not necessarily hinder use of the drive system. In principle, the fault can be repaired by the rider.

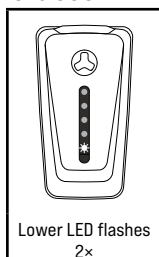
Error*



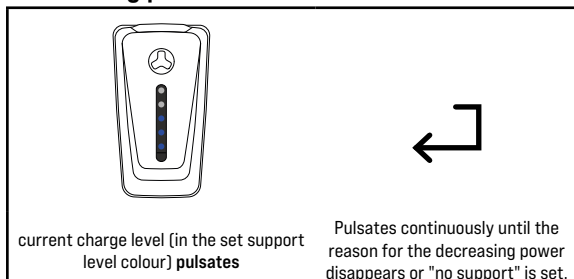
USB connection



0% SoC



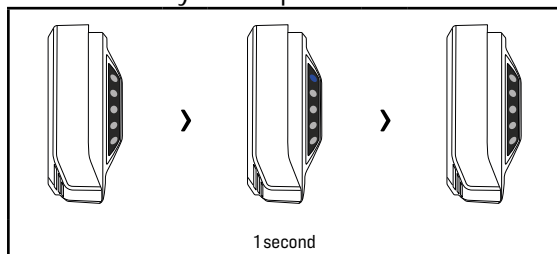
Decreasing power of the drive unit



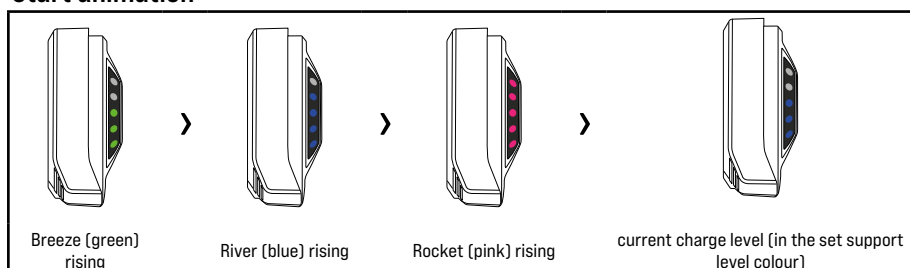
* The "Fault" animation appears in the event of technical faults which hinder use of the drive system and require immediate attention.

25.2 Overview of Control Hub indicator

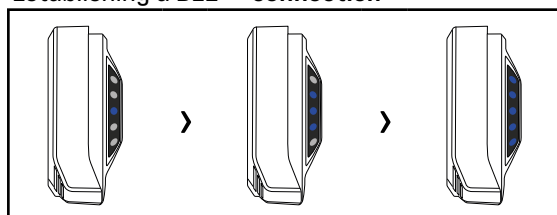
Power/ Battery Wake Up*



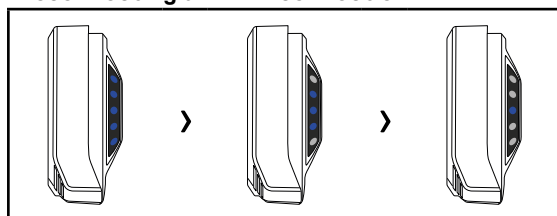
Start animation



Establishing a BLE** connection



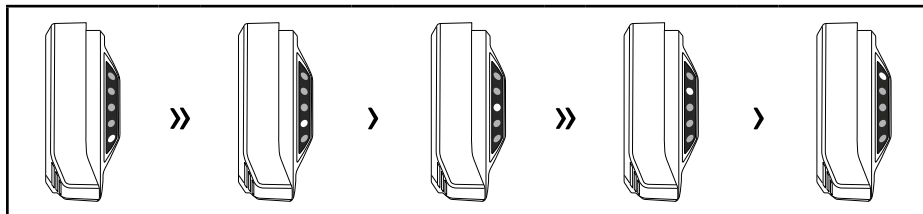
Disconnecting a BLE** connection



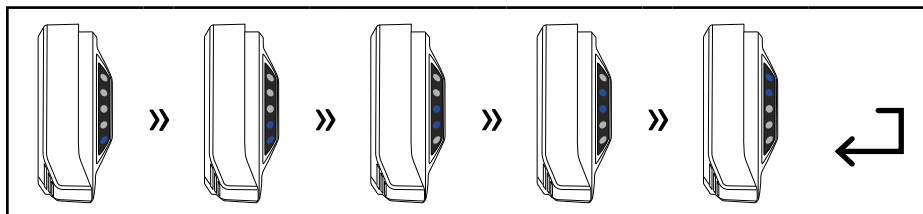
* One LED lights up blue briefly if any movement is applied to the bike. No action is required. Battery automatically returns to sleep mode on its own.

** BLE = Bluetooth® Low Energy

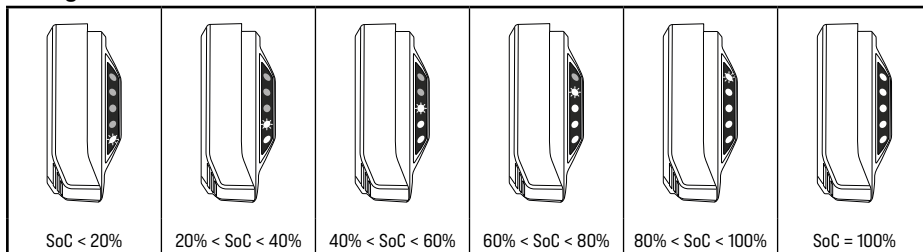
Push Assist



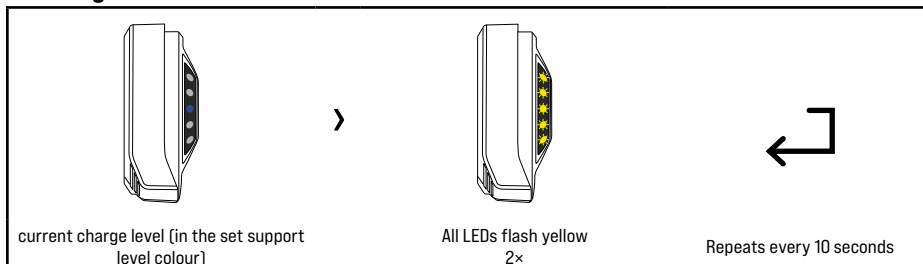
Boost function



Charge level [SoC]*



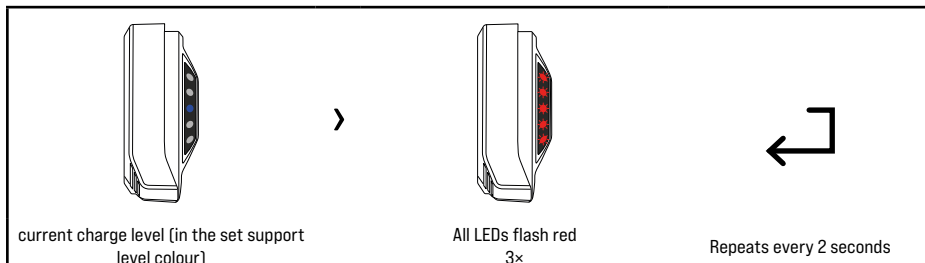
Warning**



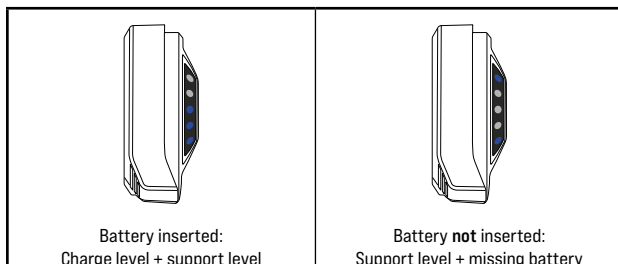
* The charge level [SoC] is displayed in the set support level colour (see [Chapter 17.2 "Pedal Assist/support levels"](#)).

** The "Warning" animation appears in the event of technical faults which require the rider's attention but do not necessarily hinder use of the drive system. In principle, the fault can be repaired by the rider.

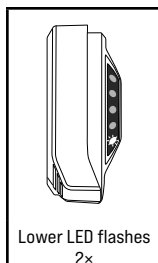
Error*



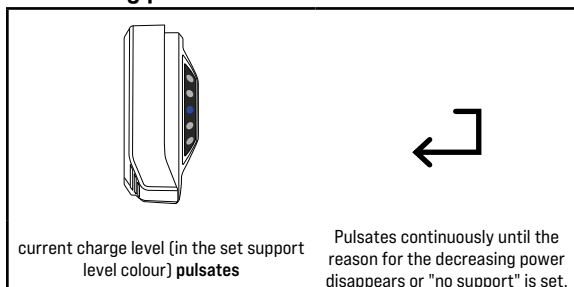
USB connection



0% SoC



Decreasing power of the drive unit



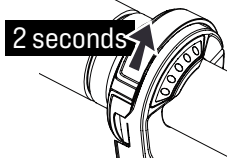
* The "Fault" animation appears in the event of technical faults which hinder use of the drive system and require immediate attention.

26 OVERVIEW OF CONTROL ELEMENTS

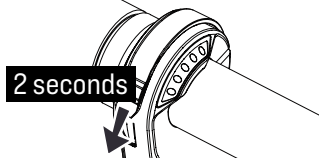
26.1 Overview of Control Hub

Switching the drive system on and off

→ For detailed information, see [Chapter 17.1 "Switching the drive system on and off"](#).



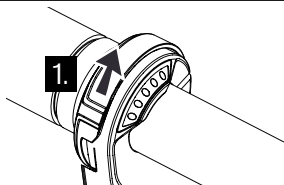
→ To **switch on**, keep the control switch [B.1] pressed upwards (for at least 2 seconds) (with the drive system switched off).



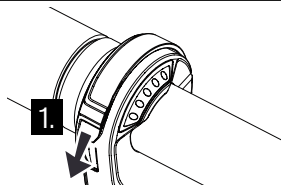
→ To **switch off**, keep the control switch [B.1] pressed downwards (for at least 2 seconds) (with the drive system switched off).

Setting the Pedal Assist function (changing support level)

→ For detailed information, see [Chapter 17.2 "Pedal Assist/support levels"](#).



→ To change to the **next support level up**, briefly press the control switch [B.1] 1× **upwards**.

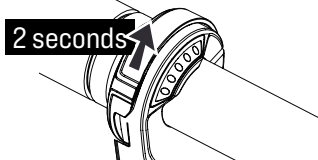


→ To change to the **next support level down**, briefly press the control switch [B.1] 1× **downwards**.

26.1 Overview of Control Hub

Activating Boost function

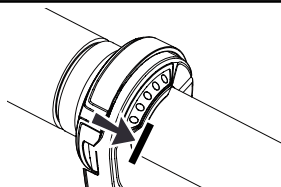
→ For detailed information, see [Chapter 17.3](#) "Boost function".



→ To activate the Boost function, keep the control switch [B.1] pressed upwards (for at least 2 seconds) (with the drive system switched on).

Using Push Assist

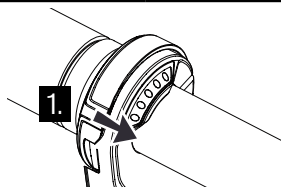
→ For detailed information, see [Chapter 17.4](#) "'Push Assist' mode".



→ To use the Push Assist function, press and hold the control switch [B.1] towards the centre of the handlebars.

Switching the bicycle lighting on and off

→ For detailed information, see [Chapter 17.5](#) "Switching the bicycle lighting on and off".



→ To **switch the bicycle lighting on**, briefly press the control switch [B.1] 1× towards the centre of the handlebars.

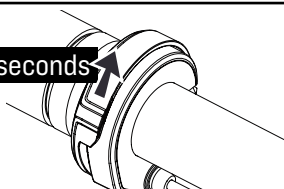
→ To **switch the bicycle lighting off**, press the control switch [B.1] 1× again towards the centre of the handlebars.

26.2 Overview of Ring Control

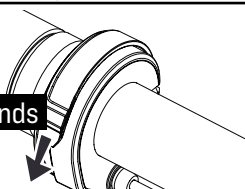
Switching the drive system on and off

→ For detailed information, see [Chapter 17.1 “Switching the drive system on and off”](#).

2 seconds



2 seconds



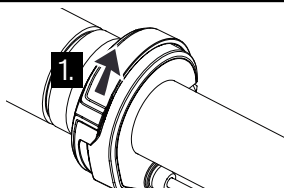
→ To **switch on**, keep the control switch [B.1] pressed upwards (for at least 2 seconds) (with the drive system switched off).

→ To **switch off**, keep the control switch [B.1] pressed downwards (for at least 2 seconds) (with the drive system switched off).

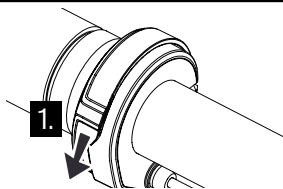
Setting the Pedal Assist function (changing support level)

→ For detailed information, see [Chapter 17.2 “Pedal Assist/support levels”](#).

1.



1.



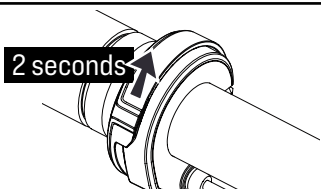
→ To change to the **next support level up**, briefly press the control switch [B.1] 1× **upwards**.

→ To change to the **next support level down**, briefly press the control switch [B.1] 1× **downwards**.

26.2 Overview of Ring Control

Activating Boost function

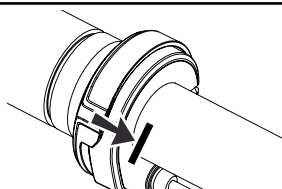
→ For detailed information, see [Chapter 17.3](#) "Boost function".



→ To activate the Boost function, keep the control switch [B.1] pressed upwards (for at least 2 seconds) (with the drive system switched on).

Using Push Assist

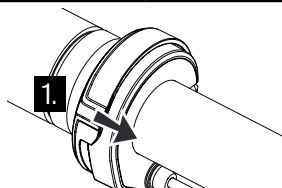
→ For detailed information, see [Chapter 17.4](#) "'Push Assist' mode".



→ To use the Push Assist function, press and hold the control switch [B.1] towards the centre of the handlebars.

Switching the bicycle lighting on and off

→ For detailed information, see [Chapter 17.5](#) "Switching the bicycle lighting on and off".



→ To **switch the bicycle lighting on**, briefly press the control switch [B.1] 1× towards the centre of the handlebars.

→ To **switch the bicycle lighting off**, press the control switch [B.1] 1× again towards the centre of the handlebars.

26.3 Overview of Mode Control

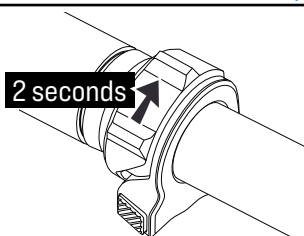


Depending on the manufacturer, **Mode Control** is configured in "**Urban**" **Mode** or in "**MTB**" **mode**.

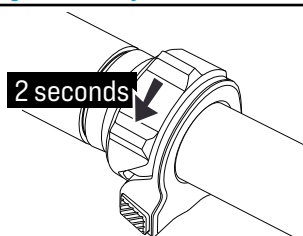
The way in which the control switch [B.1] and button [B.4] function differs to some extent in the two configuration modes. For this reason, both "Urban" and "MTB" are included in the Mode Control descriptions below. If the respective function is identical for both configuration modes, they are not shown separately.

Switching the drive system on and off

→ For detailed information, see [Chapter 17.1 "Switching the drive system on and off"](#).



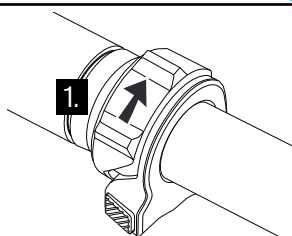
→ To **switch on**, keep the control switch [B.1] pressed upwards (for at least 2 seconds) (with the drive system switched off).



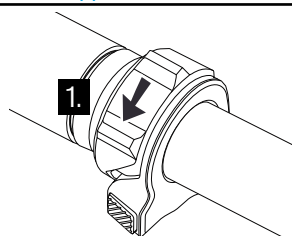
→ To **switch off**, keep the control switch [B.1] pressed downwards (for at least 2 seconds) (with the drive system switched off).

Setting the Pedal Assist function (changing support level)

→ For detailed information, see [Chapter 17.2 "Pedal Assist/support levels"](#).



→ To change to the **next support level up**, briefly press the control switch [B.1] 1× **upwards**.

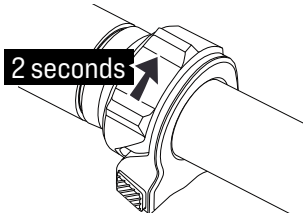
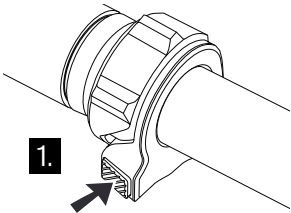
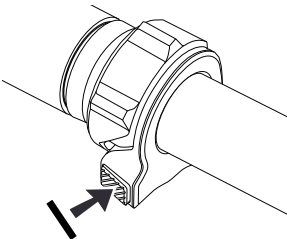


→ To change to the **next support level down**, briefly press the control switch [B.1] 1× **downwards**.

26.3 Overview of Mode Control

Activating Boost function

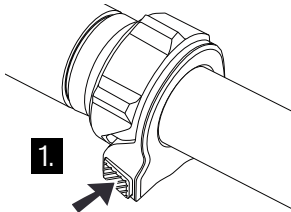
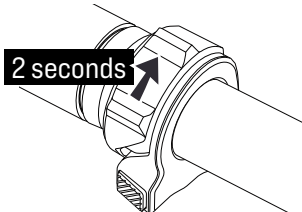
→ For detailed information, see [Chapter 17.3 "Boost function"](#).

Mode Control (Urban)	Mode Control (MTB)
	
<p>→ To activate the Boost function, keep the control switch [B.1] pressed upwards (for at least 2 seconds) (with the drive system switched on).</p>	<p>→ To activate the Boost function, press the button [B.4] 1×.</p>
<h3>Using Push Assist</h3> <p>→ For detailed information, see Chapter 17.4 "Push Assist" mode"</p> 	
<p>→ To use the Push Assist function, press and hold the button [B.4].</p>	

26.3 Overview of Mode Control

Switching the bicycle lighting on and off

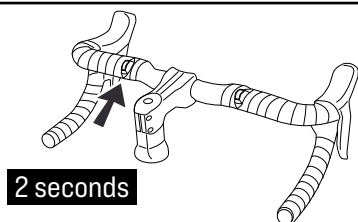
→ For detailed information, see [Chapter 17.5 "Switching the bicycle lighting on and off"](#).

Mode Control (Urban)	Mode Control (MTB)
	
<p>→ To switch the bicycle lighting on, briefly press the button [B.4] 1×.</p>	<p>→ To switch the bicycle lighting on, keep the control switch [B.1] pressed upwards (for at least 2 seconds) (with the drive system switched on).</p>
<p>→ To switch the bicycle lighting off, activate the control switch [B.1] or the button [B.4] again in the same way as when switching on.</p>	

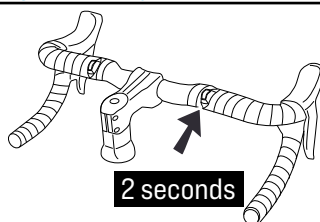
26.4 Overview of Road Control -V1

Switching the drive system on and off

→ For detailed information, see [Chapter 17.1 "Switching the drive system on and off"](#).



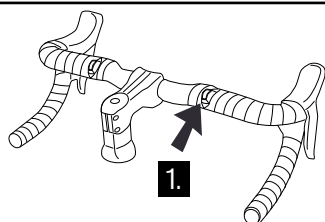
→ To **switch on**, press and hold the left switch **[B.6]** (for at least 2 seconds) (with the drive system switched off).



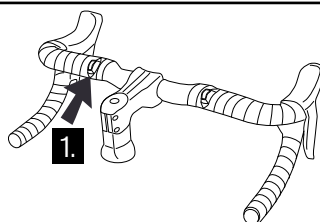
→ To **switch off**, press and hold the left switch **[B.5]** (for at least 2 seconds) (with the drive system switched on).

Setting the Pedal Assist function (changing support level)

→ For detailed information, see [Chapter 17.2 "Pedal Assist/support levels"](#).



→ To change to the **next support level up**, briefly press the right switch **[B.5]** 1×.

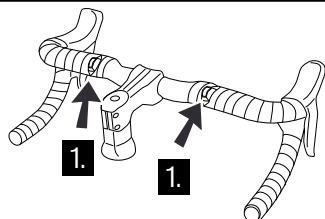


→ To change to the **next support level down**, briefly press the left switch **[B.6]** 1×.

26.4 Overview of Road Control -V1

Activating Boost function

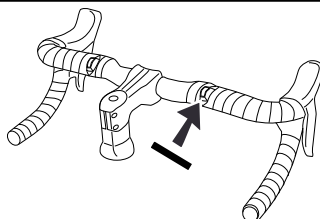
→ For detailed information, see [Chapter 17.3](#) "Boost function".



→ To activate the Boost function, briefly press the right switch [B.5] and the left switch [B.6] 1× at the same time.

Using Push Assist

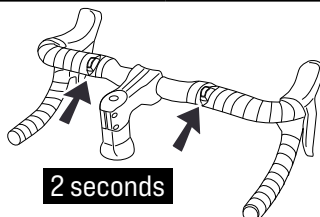
→ For detailed information, see [Chapter 17.4](#) "Push Assist" mode"



→ To use the Push Assist function, press and hold the right switch [B.5]

Switching the bicycle lighting on and off

→ For detailed information, see [Chapter 17.5](#) "Switching the bicycle lighting on and off".



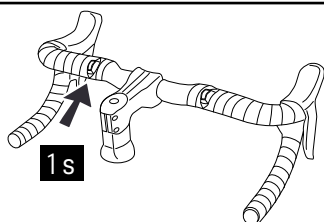
→ To **switch the bicycle lighting on**, press and hold the right switch [B.5] and the left switch [B.6] at the same time (for at least 2 seconds).

→ To **switch the bicycle lighting off**, press and hold the right switch [B.5] and the left switch [B.6] again at the same time (for at least 2 seconds).

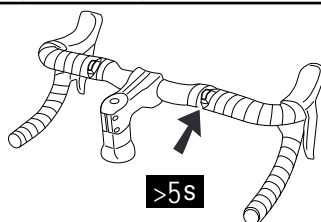
26.5 Overview of Road Control -V2

Switching the drive system on and off

→ For detailed information, see [Chapter 17.1 “Switching the drive system on and off”](#).



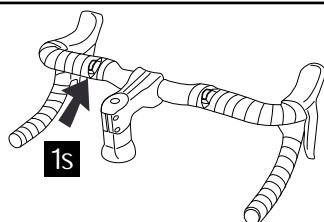
→ To **switch on**, press and hold the left switch [B.6] (for at least 1 second) (when the drive system is off).



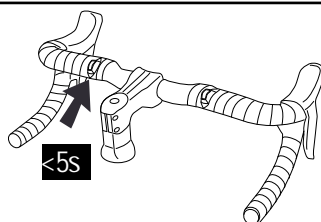
→ To **switch off**, press and hold the right switch [B.5] (for at least 5 seconds) (with the drive system switched on).

Setting the Pedal Assist function (changing support level)

→ For detailed information, see [Chapter 17.2 “Pedal Assist/support levels”](#).



→ To change to the **next support level up**, briefly press the left switch [B.6] for 1 second.

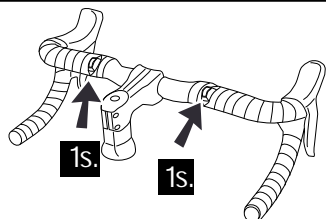


→ To change to the **next support level down**, press the left switch [B.6] for less than 5 seconds.

26.5 Overview of Road Control -V2

Activating Boost function

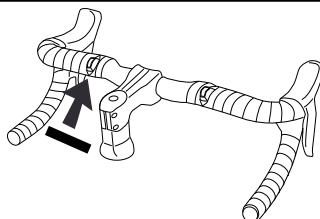
→ For detailed information, see [Chapter 17.3](#) "Boost function".



→ To activate the Boost function, briefly press the right switch [B.5] and the left switch [B.6] 1× at the same time.

Using Push Assist

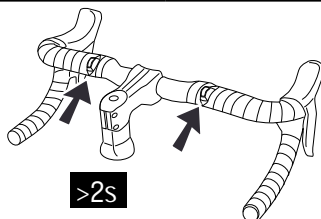
→ For detailed information, see [Chapter 17.4](#) "'Push Assist' mode"



→ To use the Push Assist function, press and hold the left switch [B.6]

Switching the bicycle lighting on and off

→ For detailed information, see [Chapter 17.5](#) "Switching the bicycle lighting on and off".



→ To **switch the bicycle lighting on**, press and hold the right switch [B.5] and the left switch [B.6] at the same time (for at least 2 seconds).

→ To **switch the bicycle lighting off**, press and hold the right switch [B.5] and the left switch [B.6] again at the same time (for at least 2 seconds).

27 ***DATA SHEETS (TECHNICAL DATA)***

27.1 ***Drive unit***

Model designation	→ RIDE 60 Drive unit
Continuous rated power	→ 250 W
[Mechanical] power, max.	→ 450 W
Nominal voltage	→ 43.2 V
Support torque, max.	→ 60 Nm
Pedaling cadence [range]	→ 55–125 rpm
Protection type	→ IP54
Weight, approx.	→ 2000 g
Operating temperature	→ -5°C to +45°C
Storage temperature	→ -15°C to +40°C

27.2 ***Control element and display***

27.2.1 ***Control Hub***

Model designations	→ Control Hub S Control Hub L
Protection type	→ IP54 (in assembled state)
Operating temperature	→ -5°C to +45°C
Storage temperature	→ -15°C to +40°C

27.2.2 ***Ring Control***

Model designation	→ Ring Control
Protection type	→ IP54 (in assembled state)
Operating temperature	→ -5°C to +45°C
Storage temperature	→ -15°C to +40°C

27.2.3 *Mode Control*

Model designation	→ Mode Control
Protection type	→ IP54 (in assembled state)
Operating temperature	→ -5°C to +45°C
Storage temperature	→ -15°C to +40°C

27.2.4 *Road Control*

Model designation	→ Road Control (Set)
Protection type	→ IP54 (in assembled state)
Operating temperature	→ -5°C to +45°C
Storage temperature	→ -15°C to +40°C

27.2.5 *LED Hub*

Model designations	LED Hub S
	LED Hub M
	LED Hub L
	LED Hub XL
Protection type	→ IP54 (in assembled state)
Operating temperature	→ -5°C to +45°C
Storage temperature	→ -15°C to +40°C

27.3 *Battery and charger*


27.3.1 *ENERGY 430 / ENERGY 430 fix*

Model designations	ENERGY 430
	→ ENERGY 430 fix
Weight, approx.	→ 2200 g
Operating temperature	→ -5°C to +45°C (ambient temperature)
Storage temperature (optimal)	→ -15°C to +25°C

27.3.2 ENERGY 480 / ENERGY 480 fix

Model designations	→ ENERGY 480 ENERGY 480 fix
Weight, approx.	→ 2300 g
Operating temperature	→ -5°C to +45°C (ambient temperature)
Storage temperature (optimal)	→ -15°C to +25°C
Charging temperature	→ 10°C to 45°C

27.3.3 Charger 3A / 3A90

Model designations	→ Charger 3A(STC-8207LD) Charger 3A90(STC-8207LD)
Nominal input voltage	→ 100–240 V AC
Frequency	→ 50–60 Hz
Charging current	→ 3 A
Charging time, approx.	→ 3.5 h
Protection class	→ 2 [Symbol: 
Weight, approx.	→ 710 g
Operating temperature	→ 0°C to +35°C (ambient temperature)
Storage temperature	→ 0°C to +45°C



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