OWNER'S MANUAL

# ELECTRIC BICYCLE

EN

epowered by BOSCH

eBike Systems (28 mph)

TREK

Electra

**IT IS IMPORTANT TO READ THE WARNINGS AND INSTRUCTIONS IN THIS MANUAL BEFORE RIDING YOUR NEW BICYCLE.**

## WELCOME

**Welcome to our bike family**
Thank you for purchasing your new bike.

We believe in bikes. We make high quality bikes that are built to last.
That is why each bike we make comes with a limited lifetime warranty.
We wish you many carefree and enjoyable cycling kilometers with your new bike!

However, if you experience any problems with your bike, do not hesitate to contact your local retailer.
If the problem persists, please call our customer service for a solution.

www.trekbikes.com
www.electrabike.com

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## IMPORTANT TO READ BEFORE THE FIRST RIDE

**US Customer: Supplemental Product Information**

**The most important points for you to do**

**1. Even if you have ridden a bicycle for years, it is important for every person to read the general "Bicycle Owner's manual" and the specific "Electric Bicycle Owner's manual" carefully before you ride on the new electric bicycle.**

- Both manuals contains detailed information and useful suggestions about your new bicycle.
- Make sure that you understand the proper use, maintenance, and disposal of the components of the electrical system of your new electric bicycle.

**2. Think about safety. Your safety and that of other road users is very important.**

- Do not ride the electric bicycle without the battery. The battery must be on the bicycle while riding, else the bicycle has no lights when needed.
- Check your bicycle for normal operation, loose parts and defects before riding. If you find any problem, visit your bicycle dealer for repairs before riding.
- Be aware that other road users (cars, trucks, motorcycles) do not expect that an electric bicycle can ride faster than a normal bicycle. Riding faster also increases the risk of accidents.
  Distances will close much faster, and braking distances will become longer.
- Do not ride abusively. Only ride in the use conditions specified for your bicycle:
  - Electric City/Trekking bicycles are approved for Condition 1 (paved roads with tires staying on the ground).
  - Electric Mountain bicycles are approved for Condition 3 (rougher surfaces, jumps of not more than 24 in (61 cm)).

  Please refer to the general Bicycle Owner's manual for more detailed information.
- Do not overload the rear rack. The maximum allowable weight for the rear rack on electric bicycles is 44 lb (20 kg) for bicycles with a rear rack battery and 55 lb (25 kg) for bicycles with a down tube battery. On bicycles with a luggage rack at both sides of the rear fender only, without a top deck, the maximum allowed load on the rack is 33 lb (15 kg) in total.

**3. The electric system of your new bicycle needs special attention.**

- Do not clean your electric bicycle with a high pressure washer. Any electrical system is sensitive to moisture. High pressure water might enter connectors or other parts of the electric system.
- Handle your battery with care. Do not drop or impact the battery. Mishandling of the battery could lead to severe damage or over-heating. In an extremely rare case, a battery that has been severely impacted or otherwise mishandled could potentially catch fire.
  If you suspect damage to your battery, visit your dealer immediately for inspection.

**4. Maintain the battery as instructed in this Bicycle Owner's manual.**

Failure to follow these instructions may result in damage to your battery and may require battery replacement:

- Only charge the battery with the included Bosch charger.
- When not using the battery for a longer period, charge it to approximately 60% (three to four LEDs lit on the charge-control indicator). Check the charge condition after six months. When only one LED of the charge-control indicator lights up, recharge the battery again to approximately 60%.
- Once charging the battery is complete, unplug the battery from the charger and unplug the charger from the wall socket.
- A Li-Ion battery will self-discharge over time. If the battery is left uncharged, then stored without charging, it may discharge to such a low state that the battery can no longer be charged and must be replaced.
- Store the battery in a dry, well-ventilated location. Protect the battery against moisture and water.
- Under unfavorable weather conditions, it is recommended e.g. to remove the battery from the bicycle and store it in a protected location.
- The battery can be stored at temperatures between 14°F (-10°C) and 140°F (+60°C). For a long battery life, however, it is best to store the battery at room temperature of approximately 68°F (20°C) is of advantage.
- If the bicycle is not ridden for an extended time, do not store the battery on the bicycle.

**5. Be careful when transporting an electric bicycle.**

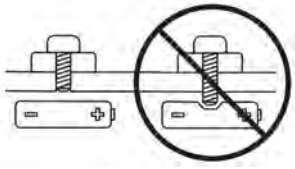
- An electric bicycle is heavier than a normal bicycle. If transporting on a vehicle, be aware of the maximum load capacity of the vehicle's roof, towing hook and/or the bicycle carrier. Refer to the manuals of the vehicle and bicycle carrier for details.
- Remove the controller (if removable), and battery and, if present, panniers from the bicycle and store them elsewhere in the vehicle during the drive.
- Always respect local laws about transportation of an electric bicycle.
- Because Li-Ion batteries of this size and power are considered 'Dangerous goods, class 9' when transporting, regulations may restrict the transport of separate Li-Ion batteries in some places. The restrictions apply to most airlines and some trucking companies. If you intend to ship or travel with your electric bicycle (with installed battery), check with the airline or carrier and local regulations about traveling with a Li-Ion battery.

**6. Obey local regulations.**

In most countries the regulations for the use of an electric bicycle are the same as those for a standard bicycle. However, there may be local differences such as where you can ride, minimum rider age, or required equipment and registration. It is the rider's responsibility to know the local regulations that apply to an electric bicycle and to obey them.

**7. Mounting accessories on an e-bike.**

An electric bike has hidden wiring through frame and has other critical e-bike parts like the drive unit and battery pack. When mounting accessories (e.g. a bottle cage), be sure not to impact the wiring or battery pack, e.g. by using too long or pointed bolts. This might cause a short circuit to the electric system and/or damage to the battery.



***⚠ Warning. A short circuit in the electric system and/or damage to the battery might lead to over-heating. In an extremely rare case, a battery pack that has been severely impacted could potentially catch fire.***

**8. Visit your dealer on a regular basis for maintenance of your new bicycle.**

- Your dealer has the right knowledge and equipment to maintain your e-bike and to mount accessories safely.
- If you have questions about your new electric bicycle, ask your dealer!

**Limited warranty**

Your bicycle is covered by a Lifetime Limited Warranty. Please visit our web site for details.

**Additional information for 'Fast electric bicycles'**

The 'Fast Electric Bicycle' is an electric bicycle that provides additional assistance at speeds up to 28 mph so long as the rider keeps pedaling. This is higher than the assisted speed provided by a standard electric bicycle (20 miles per hour).

*Note.*
*The maximum speed depends on how hard you pedal, and whether you are descending on a decline.*

**Local Regulations**
The regulations that cover use of a Fast Electric Bicycle vary by country, state, and even municipality in certain locations. You must comply with the local regulations that concern the minimum age of the rider, driver license, insurance, license plate, traffic and maximum speed regulations, and any other regulations.
The regulations may change at any time. It is the rider's responsibility to obey the regulations that apply to a Fast Electric Bicycle.

*Note.*
*Wearing a helmet might not be mandatory in your location, but for your own safety, we strongly recommends wearing a helmet.*

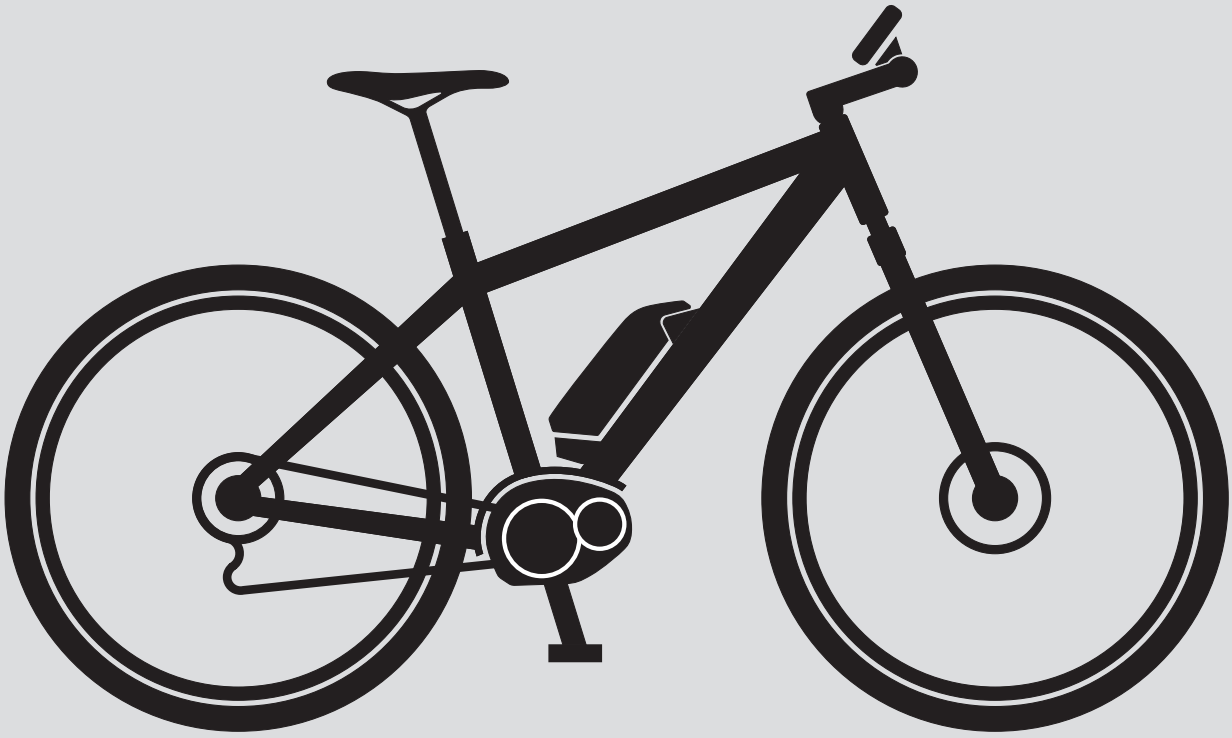
**How long does a charge last?**
The maximum range on one battery charge depends on your style of use and the environment where the Fast Electric Bicycle is used. The faster you go under motor power, the shorter the range.

**How fast can I go?**
Your Fast Electric Bicycle is still a bicycle. This bicycle does not have a throttle. Unless you have the "Walk-Assist" mode, you must be pedaling to use the power of the assist system.

Other road users may not expect a bicycle to be ridden at the speed of a Fast Electric Bicycle.
In traffic and crowded areas, ride at a safe speed.
Obey all traffic regulations as defined by the regulations for your area.

# Owner’s Manual – The Bosch Drive System
# Drive Unit | On-board computer | Battery | Charger (28 mph)

BDU386 | BDU490P | BUI215 | BUI255 | BUI330 | BUI350 | CUI100 | BBS266 | BBS276 | BBR266 | BBR276 | BBP285 | BBP286 | BBP287 | BBP288 | BBP295 | BBP296 | BCS210 | BCS230



**en** Original operating instructions

**This manual contains important safety, performance and service information. Read and understand it along with the information provided to you by your bicycle manufacturer before using the product, and keep it for reference.**

**Age: 18+**

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# Introduction

Thank You for Purchasing a Bosch Drive System Equipped Bicycle!

Your Bosch eBike Systems team appreciates having you as a customer and wishes you many years of safe and satisfied use of your bicycle.

## About Warnings

This manual contains many **DANGER**, **WARNING**, and **CAUTION** indicators concerning the consequences of failure to use, assemble, maintain, store, inspect and dispose of a Bosch-equipped eBike in a safe manner.

– The combination of the safety alert symbol and the word **DANGER** indicates a hazardous situation that, if not avoided, will result in death or serious injury.
– The combination of the safety alert symbol and the word **WARNING** indicates a hazardous situation that, if not avoided, could result in death or serious injury.
– The combination of the safety alert symbol and the word **CAUTION** indicates a hazardous situation that, if not avoided, could result in minor or moderate injury.

## General Warnings



**Read all safety warnings and all instructions.** Failure to follow the warnings and instructions may result in death or serious injury.

**Save all safety warnings and instructions for future reference.**

The term **battery pack** used in these operating instructions refers to all original Bosch eBike battery packs.

▶ **Riders must be aware of and follow all applicable rules and regulations related to the operation or use of e-bikes in their local jurisdiction when operating or otherwise using this product.** Riders must have the physical coordination, reaction and mental capabilities to control a bike and manage traffic, road conditions, and sudden situations and also respect the laws and instructions governing bicycle use.

**⚠ WARNING**

▶ **This manual contains important safety, performance and service information.** Read it before you take the first ride on your new bicycle, and keep it for reference. The manual can also be found online at www.bosch-ebike.com.

▶ **This manual is intended to be read together with the separate user manual provided with your bicycle.** Be sure to read all provided documents including labels on the product before your first ride.

▶ **Read ALL accompanying manuals before riding the bike for the first time.** Your Bosch Drive System comes with additional manuals and documents provided by the manufacturer of the bicycle and other components. Failure to read and understand safety information can result in death or serious injury.

▶ **Take responsibility for your own SAFETY.** If you have any questions or do not understand something, consult with your dealer or the bicycle or component manufacturer.

▶ **Some eBike accessories may present a choking hazard to small children.** Keep these accessories away from children.

**⚠ CAUTION**

- **The Bosch Drive System adds weight to your bicycle which you may not be used to lift.** Avoid injury, use proper lifting techniques.

# Using Your Operator’s Manual

Your operator's manual consists of several parts:
- Operating instructions for the Bosch eBike system (this manual)
- Operating instructions for the drive unit
- Operating instructions for the on-board computer
- Operating instructions for the charger
- Operating instructions for the battery

- **Read and observe the safety warnings and instructions in all operating instructions of the eBike system and your eBike.**

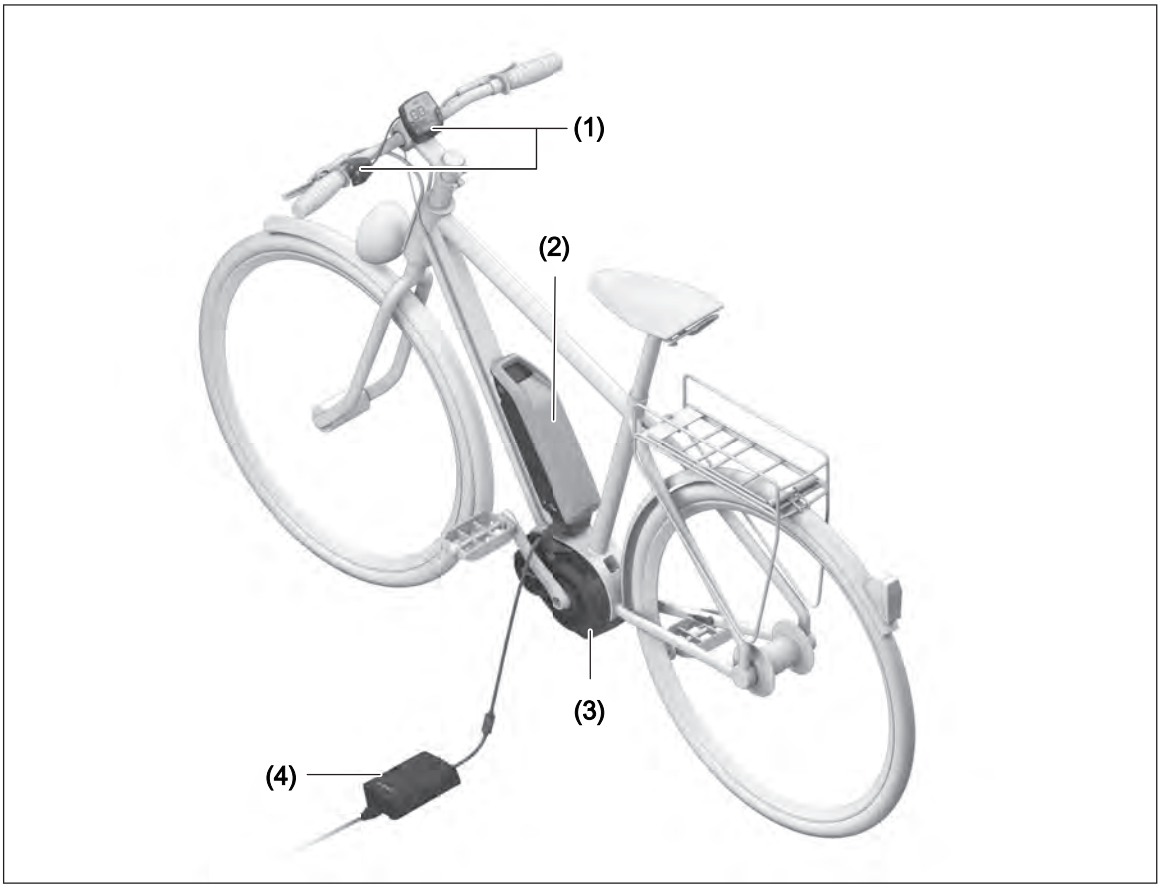
## Graphics

The bicycle shown in this manual may differ slightly from your bicycle, but will be similar enough to help you understand our instructions.

RIGHT-HAND and LEFT-HAND sides are determined by facing in the direction the bicycle will travel when going forward. When you see a broken line (------), the item referred to is hidden from view.

# Bosch Drive System Overview

## Bicycle View (Standard)

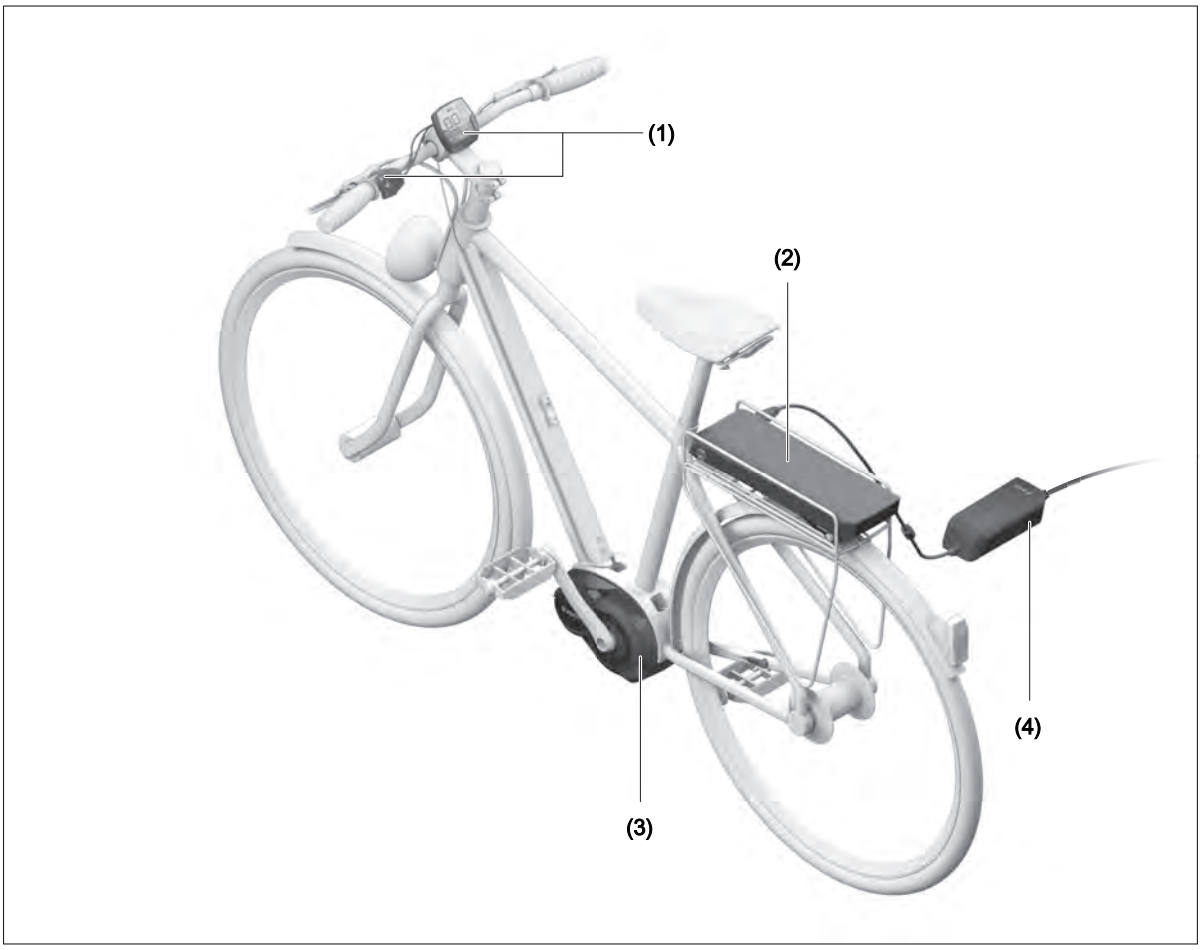



### Bosch Drive System Components

All representations of bike components are schematic and can deviate from your eBike.

**(1)** On-board computer
**(2)** Standard battery "PowerPack"
**(3)** Drive unit
**(4)** Charger

# Bicycle View (Rack-Type)




## Bosch Drive System Components

All representations of bike components are schematic and can deviate from your eBike.

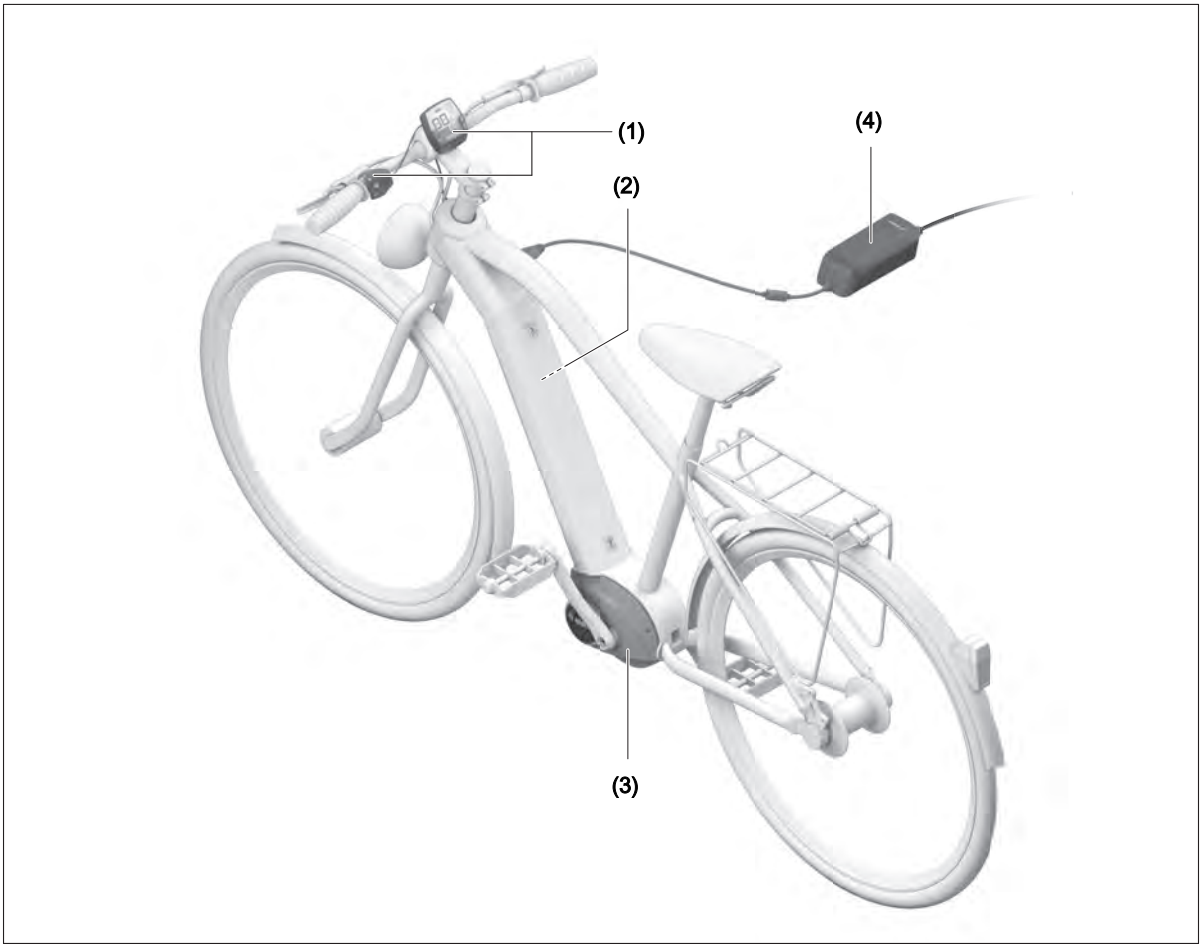
**(1)** On-board computer

**(2)** Rack-mounted battery "PowerPack"

**(3)** Drive unit

**(4)** Charger

# Bicycle View (PowerTube)




## Bosch Drive System Components

All representations of bike components are schematic and can deviate from your eBike.

**(1)** On-board computer
**(2)** Frame-mounted battery "PowerTube"
**(3)** Drive unit
**(4)** Charger

# Operating your Bosch Drive System

## Getting Ready to Ride

**Read and understand all safety warnings and instructions.** Failure to follow the below warnings could result in death or serious injury.

- ▶ **Protect others from death or serious injury. Prevent unauthorized use.** Always remove battery from the bicycle when not in use and store in a secure location. Failure to secure your bicycle from unauthorized use can result in death or serious injury to others.
- ▶ **Read and understand the influences on the operating range when planning your ride** (see "Influences on range", page English – 9).

### Before your first ride

Check your bicycle owner's manual for important information about the bike components, such as the brakes, pedals, gears, gear shifting, etc.

**⚠ WARNING**

- ▶ **If you have an impairment or disability such as a visual impairment, hearing impairment, physical impairment, cognitive/language impairment, or a seizure disorder, consult your physician before using this product.**
- ▶ **To reduce the risk of serious injury related to exercise, take the following precautions before use: Do not overexert yourself.** Use of the Bosch Drive System requires varying amounts of physical activity.

Consult a doctor before using the device if you have any medical condition or issue that affects your ability to safely perform physical activities, or if you:

- – are or may be pregnant
- – have heart, respiratory, back, joint, or other orthopedic conditions
- – have high blood pressure
- – have difficulty with physical exercise
- – have been instructed to restrict physical activity

- ▶ **Wearing a helmet can prevent a severe head injury. Whenever riding, always wear a helmet that meets or exceeds established safety standards.** Approved helmets in the USA must meet the US Consumer Product Safety Commission standard, so look for a CPSC reference.
- ▶ **Riding a Bosch drive system equipped bicycle capable of speeds up to 28 mph requires proficiency in the activity of road cycling.** This product can allow you to achieve speeds greater than you may be used to achieving without the aid of motor assistance. It also may allow for riding longer periods of time at a higher speed. Higher speed results in higher forces if a crash occurs. Control your bicycle at all times. Your risk of death or serious injury increases with both speed and age.

The following are required for safe use of this product:

- – Knowledge of the laws/safety guidelines/rules of road cycling (riding safely)
- – Ability to operate and control a standard road bike
- – Experienced rider who is actively riding
- – Capable, comfortable and confident riding safely at speed up to 28 mph
- – Your bike should match your riding style, be properly adapted to the dimensions of your body, and be well maintained.

- ▶ **Do not use this product under the influence of drugs and/or alcohol.**

**⚠ WARNING**

- ▶ **While riding, do not become distracted by the onboard computer and always remain alert to all riding conditions.** The on-board computer should only be used in a stationary and safe start-up position. Utilize the operating unit to change motor assistance levels while riding.

- ▶ **Check your bicycle manual for maximum riding weight of your bicycle.** Overloading your bicycle can result in component failure which can result in death or serious injury. Typically maximum riding weight is defined by the sum of the rider's weight plus the weight of any luggage.
- ▶ **In addition to reading and understandings your owner's manuals, be sure you know or refamiliarize yourself with local laws prior to using this product.** Consult your bicycle dealer, local library,

## Intended Use

**⚠ WARNING**

- ▶ **Understand your bike and its intended use by consulting your bicycle owner's manual.** Using your bike in an unintended manner can result in death or serious injury.
- ▶ **Using the Bosch Drive System for purposes other than what is was designed for could cause death or serious injury.**

Your Bosch drive unit is not intended for towing another bicycle. For trailer towing, consult your bicycle owner's manual and trailer owner's manual for towing instructions and towing compatibility.

# Safe Start-up Procedure

**⚠ WARNING**

- ▶ **Follow the safe startup procedure below.** Failure to follow safe startup procedure can result in death or serious injury.

## Preparations

Before starting check the following:
- – Check that you have unplugged the battery charger
- – Your battery pack is locked in place (Pull on the battery pack to ensure it is locked in place)
- – Remove the battery pack key

## Start Riding

- – Sit in the saddle with both feet touching the ground and two hands on the handlebars.
- – Once you are in a stable position, turn on the Bosch on-board computer. The Bosch Drive System will always start up in **OFF** mode.
- – Place both hands on the handlebars and begin pedaling.

# Notes on cycling with the eBike system

## When does the eBike drive work?

The eBike drive assists your cycling only when you are pedaling. If you do not pedal, the assistance will not work. The motor output always depends on the pedaling force you apply.

If you apply less force, you will receive less assistance than if you apply a lot of force. This applies irrespective of the assistance level.

The eBike drive automatically switches off at speeds over **28 mph**. When the speed falls below **28 mph**, the drive automatically becomes available again.

An exception applies to the push assistance function, in which the eBike can be pushed at low speed without pedaling. The pedals may rotate when the push assistance is in use.

You can also use the eBike as a normal bicycle without assistance at any time, either by switching off the eBike system or by setting the assistance level to **OFF**. The same applies when the battery is drained.

## Interaction between the eBike system and gear-shifting

The gear-shifting should be used with an eBike drive in the same way as with a normal bicycle (observe the operating instructions of your eBike on this point).

Irrespective of the type of gear-shifting, it is advisable to briefly stop pedaling when changing gear. This will facilitate the gear change and reduce wear on the powertrain.

By selecting the correct gear, you can increase your speed and range while applying the same amount of force.

Test the range of your eBike in different conditions before planning longer and more demanding trips.

- ▸ **Read and understand the influences on the operating range when planning your ride** (see "Influences on range", page English – 9).

## Influences on range

The range is affected by a number of factors, such as:

- Assistance level
- Speed
- Gear shifting behavior
- Tire type and tire pressure
- Age and condition of the battery
- Route profile (gradients) and conditions (road surface)
- Headwind and ambient temperature
- Weight of eBike, rider and luggage

For this reason, it is not possible to predict the range accurately before and during a trip. However, as a general rule:

- With the **same** assistance level on the eBike drive: The less energy you need to exert in order to reach a certain speed (e.g. by changing gears optimally), the less energy the eBike drive will consume and the higher the range per battery charge will be.
- The **higher** the selected assistance level under otherwise constant conditions, the smaller the range will be.

**Note:** Plan your routes so that you can always reach your destination without motor assistance.

# Transport

**⚠ WARNING**

- **Always remove the battery pack from the bicycle before transporting the bicycle on a vehicle bike rack.** Failure to remove the battery pack when using a vehicle bike rack can lead to death or serious injury. The battery may detach during transport and cause an accident to following vehicles.
- **Always use an approved and compatible bicycle rack when transporting your eBike. The Bosch drive system adds weight to the bicycle.** Refer to your bicycle rack manual to be sure your eBike is compatible. Overloading a bike rack can result in death or serious injury.
- **Use proper lifting techniques as electric bikes are generally heavier than bicycles.**

Ship batteries only when the housing is undamaged. Tape or mask off open contacts and pack up the battery in such a manner that it cannot move around in the packaging. Inform your parcel service that the package contains dangerous goods. Please also observe possibly more detailed national regulations. Always check state and federal regulations before attempting to ship your battery.

- **If you transport your eBike attached to the outside of your car, e.g. on a bike rack, remove the on-board computer and the eBike battery to avoid damaging them.**

If you have any questions about transporting the batteries, contact an authorized bicycle dealer. You can also order suitable transport packaging from the dealer.

# Maintenance/Cleaning

**⚠ WARNING**

- **Do not open any of the components. Service should only be carried out at an authorized Bosch eBike dealer.** Failure to follow above warning can cause death or serious injury. Refer to your bicycle manual or component manual for all non-Bosch drive system components.
- **Always remove the battery pack before performing any bicycle inspection, maintenance or repair.** Failure to remove the battery pack before performing bicycle inspection, maintenance or repair can lead to serious injury.
- **If you suspect that something is loose, do not ride your bike.** See your Bosch eBike dealer, only a qualified service provider should perform work on your Bosch Drive System. All nuts, bolts, screws require the correct tightening force. Too little force and the fastener may not hold securely. Too much force and the fastener can strip threads, stretch, deform or break. Either way, incorrect tightening force can result in component failure, which can cause you to lose control and fall.
- **If replacing your battery, buy only a genuine Bosch battery pack from an approved source. See your Bosch eBike dealer for original Bosch parts.**
- **Always switch the battery pack off, when inserting or removing it from the holder.** Never attempt to insert or remove the battery pack while riding the bike.
- **Do not charge or use your eBike in any area with a potentially explosive atmosphere, such as at a fueling area, or in areas where the air contains chemicals or particles (such as grain, dust, or metal powders).** Obey all signs and instructions.
- **Do not submerge your eBike components in water, or wash with pressurized hose.** Your Bosch drive unit is designed to be water tight to rain water or non-pressure hose washing.
- **Note down the manufacturer and the number of the key.** In case of loss of the keys, please refer to an authorised Bosch eBike dealer. Please provide

the name of the manufacturer and the number of the key.

- ▸ **Do not paint any components of the Bosch drive system as they may cause premature failure of the component.**

## Taking care of your eBike

Please observe the operating and storage temperatures of the eBike components. Protect the drive unit, on-board computer and battery against extreme temperatures (e.g. from intense sunlight without adequate ventilation). Extreme temperatures can cause the components (especially the battery) to become damaged.

Have your eBike system checked by an expert at least once a year (including mechanical parts, up-to-dateness of system software).

Please have your eBike serviced and repaired by an authorized bicycle dealer.

## After-sales service and advice on using products

If you have any questions about the eBike system and its components, contact an authorized bicycle dealer.

For contact details of authorized bike dealerships, please visit www.bosch-ebike.com.

Please contact an authorized bicycle dealer if the battery is no longer working.

## Cleaning

- ▸ **Do not submerge your eBike components in water, or wash with pressurized hose.** Your Bosch drive unit is designed to be water tight to rain water or non-pressure hose washing.

Keep all components of your eBike clean, especially the battery-pack contacts and corresponding holder contacts. All components including the drive unit may not be immersed in water or cleaned with a high-pressure cleaner. Keep all components of your eBike clean, especially the batterypack contacts and corresponding holder contacts. Clean them carefully with a soft, damp cloth (using only mild soap and water).

# Battery Recycling Program

The drive unit, on-board computer incl. operating unit, battery, speed sensor, accessories and packaging should be disposed of in an environmentally correct manner.

Do not dispose of eBikes and their components with household waste.




You may recycle your Bosch battery pack by calling 1.800.822.8837.

**Robert Bosch GmbH**
72757 Reutlingen
Germany

**www.bosch-ebike.com**

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# Owner’s Manual – The Bosch Drive System Intuvia

BUI255




**en** Original operating instructions

**This manual contains important safety, performance and service information. Read and understand it along with the information provided to you by your bicycle manufacturer before using the product, and keep it for reference.**

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# Introduction

## About Warnings

This manual contains many **DANGER**, **WARNING**, and **CAUTION** indicators concerning the consequences of failure to use, assemble, maintain, store, inspect and dispose of a Bosch-equipped eBike in a safe manner.

– The combination of the safety alert symbol and the word **DANGER** indicates a hazardous situation that, if not avoided, will result in death or serious injury.
– The combination of the safety alert symbol and the word **WARNING** indicates a hazardous situation that, if not avoided, could result in death or serious injury.
– The combination of the safety alert symbol and the word **CAUTION** indicates a hazardous situation that, if not avoided, could result in minor or moderate injury.

## General Warnings



**Read all safety warnings and all instructions.** Failure to follow the warnings and instructions may result in death or serious injury.

**Save all safety warnings and instructions for future reference.**

The term **battery pack** used in these operating instructions refers to all original Bosch eBike battery packs.

**⚠ WARNING**

- ▶ **This manual contains important safety, performance and service information.** Read it before you take the first ride on your new bicycle, and keep it for reference. The manual can also be found online at www.bosch-ebike.com.
- ▶ **This manual is intended to be read together with the separate user manual provided with your bicycle.** Be sure to read all provided documents including labels on the product before your first ride.
- ▶ **Read ALL accompanying manuals before riding the bike for the first time.** Your Bosch Drive System comes with additional manuals and documents provided by the manufacturer of the bicycle and other components. Failure to read and understand safety information can result in death or serious injury.
- ▶ **Take responsibility for your own SAFETY.** If you have any questions or do not understand something, consult with your dealer or the bicycle or component manufacturer.
- ▶ **Some eBike accessories may present a choking hazard to small children.** Keep these accessories away from children.

**⚠ CAUTION**

- ▶ **The Bosch Drive System adds weight to your bicycle which you may not be used to lift.** Avoid injury, use proper lifting techniques.

## Using your Manual

In addition to the functions outlined here, changes to software relating to troubleshooting and functional modifications may be introduced at any time.

### Graphics

The bicycle shown in this manual may differ slightly from your bicycle, but will be similar enough to help you understand our instructions.

RIGHT-HAND and LEFT-HAND sides are determined by facing in the direction the bicycle will travel when going forward. When you see a broken line (------), the item referred to is hidden from view.

# Operating your on-board computer

## Safety instructions



**Read all the safety information and instructions.** Failure to observe the safety information and follow instructions may result in electric shock, fire and/or serious injury.

**Save all safety warnings and instructions for future reference.**

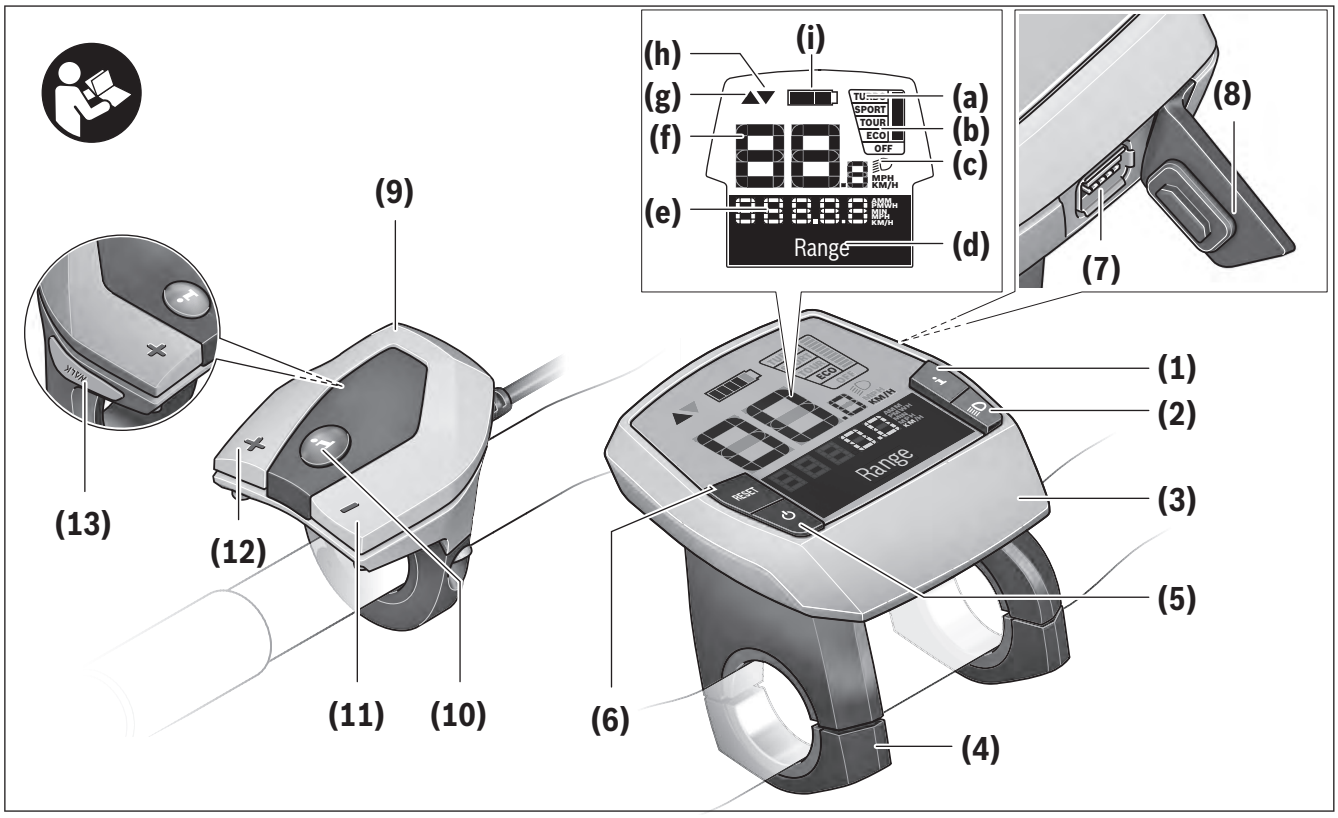
The term **battery pack** used in these operating instructions refers to all original Bosch eBike battery packs.

- **Only charge the on-board computer with USB power source (5 V, 500 mA max) and USB cable rated at least 500 mA.** Using USB power source or USB cable not appropriately rated for the application may result in fire, explosion or personal injury.
- **Charge the on-board computer in temperatures above +32 degrees F (0 degrees C) and below +104 degrees F (40 degrees C). Store on-board computer in locations where temperatures will not exceed 104 degrees F (40 degrees C).** This is important to prevent serious damage to the battery in the on-board computer.
- **Do not expose on-board computer to fire or excessive temperature.** Exposure to fire or temperature above 212 °F (100 °C) may cause explosion.
- **Do not recharge the on-board computer (via USB port) in damp or wet environment.** Water entering on-board computer may result in electric shock or fire.
- **Never submerge on-board computer in fluid of any kind or allow fluid to enter them.** Corrosive or conductive fluid (such as seawater or industrial chemical or bleach containing products, etc.) can cause short circuit which may result in fire, personal injury and property damage.
- **Battery leakage may occur under extreme usage or temperature conditions. Avoid contact with skin and eyes.** The battery liquid is caustic and could cause chemical burns to tissues. If liquid comes in contact with skin, wash quickly with soap and water. If the liquid contacts your eyes, immediately flush eyes with water for a minimum of 15 minutes and seek medical attention.
- **Place on-board computer on flat nonflammable surfaces and away from flammable materials when recharging on-board computer using external USB power source.** Carpeting and other heat insulating surfaces block proper air circulation which may cause overheating of the on-board computer. If smoke or melting of the on-board computer is observed, unplug the external USB power source immediately and do not use the on-board computer. Contact customer service immediately.
- **Before each use, check the on-board computer, cable and plug.** If damage is detected, do not use the on-board computer. Damaged on-board computer, charging cables and plugs increase the risk of a fire, explosion and personal injury.
- **Do not use the on-board computer as a handle.** Lifting the eBike up by the on-board computer can cause irreparable damage to the on-board computer.
- **Do not disassemble on-board computer.** No user serviceable part inside. Incorrect reassembly or damage may result in fire or explosion.
- **Do not allow yourself to be distracted by the display of the on-board computer.** If you do not concentrate exclusively on the traffic around you, you risk being involved in an accident. If you want to change any settings on the on-board computer other than the assistance level, always stop before entering the relevant data.

▶ **Read and observe the safety warnings and instructions in all operating instructions of the eBike system and your eBike.**

# Product Description and Specifications

## Product Features




**(1)** Display function button **i**
**(2)** Bike light button
**(3)** On-board computer
**(4)** Holder for on-board computer
**(5)** On/off button for on-board computer
**(6)** **RESET** button
**(7)** USB port
**(8)** Protective cap for USB port
**(9)** Operating unit
**(10)** Display function button **i** on the operating unit
**(11)** Decrease assistance level/scroll down button **–**
**(12)** Increase assistance level/scroll up button **+**
**(13)** Push assistance button **WALK**
**(14)** Locking mechanism for on-board computer
**(15)** Locking screw for on-board computer
USB charging cable (Micro A – Micro B)[A)]

A) Not depicted, available as an accessory

### Display elements of on-board computer

**(a)** Drive unit assistance indicator
**(b)** Assistance level indicator
**(c)** Illumination indicator
**(d)** Text indicator
**(e)** Value indicator
**(f)** Speedometer
**(g)** Gear change recommendation: Higher gear
**(h)** Gear change recommendation: Lower gear
**(i)** Battery charge indicator

## Technical Data

| On-board computer | | Intuvia |
|---|---|---|
| Product code | | BUI255 |
| Max. USB port charging current | mA | 500 |
| USB port charging voltage | V | 5 |
| USB charging cable[A)] | | 1 270 016 360 |
| Operating temperature | °F | +23 to +104 |
| Storage temperature | °F | +50 to +104 |
| Charging temperature | °F | +32 to +104 |
| Internal lithium-ion battery | V<br>mAh | 3.7<br>230 |
| Protection rating[B)] | | IP54 |
| Weight, approx. | lb | 0.30 |

A) Not included with the product as standard

B) When the USB cover is closed

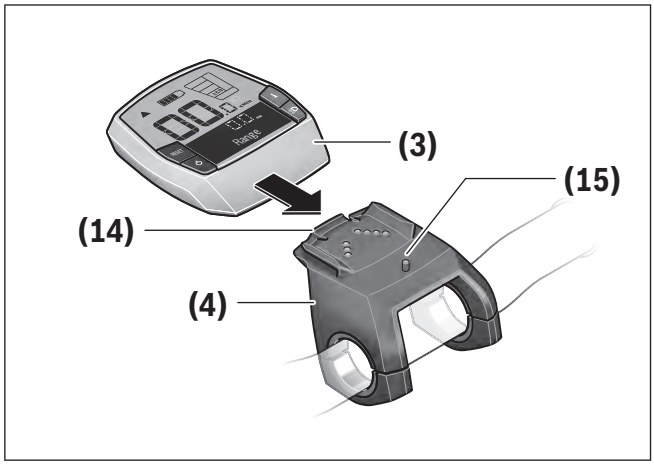
The Bosch eBike system uses FreeRTOS (see http://www.freertos.org).

# Assembly

## Inserting and removing the battery

For inserting and removing the eBike battery in/from the eBike, please read and observe the battery operating instructions.

## Inserting and removing the on-board computer




**(3)** On-board computer

**(4)** Holder for on-board computer

**(14)** Locking mechanism for on-board computer

**(15)** Locking screw for on-board computer

To **insert** the on-board computer **(3)**, slide it into the holder **(4)** from the front.

To remove the on-board computer **(3)**, push on the locking mechanism **(14)** and slide it forwards out of the holder **(4)**.

▶ **When you park up the eBike, remove the on-board computer.**

The on-board computer can be secured in place to prevent it from being removed from the holder. To do this, remove the holder **(4)** from the handlebars. Put the on-board computer in the holder. Screw the locking screw **(15)** (M3 thread, 8 mm long) from below into the corresponding thread in the holder. Mount the holder back on the handlebars.

**Note:** The locking screw is not designed to prevent theft.

# Operation

## Prerequisites

The eBike system can only be activated when the following requirements are met:

– A sufficiently charged battery is inserted (see battery operating instructions).

– The on-board computer is properly inserted in the holder (see "Inserting and removing the on-board computer", page English – 7).

– The speed sensor is connected properly (see drive unit operating instructions).

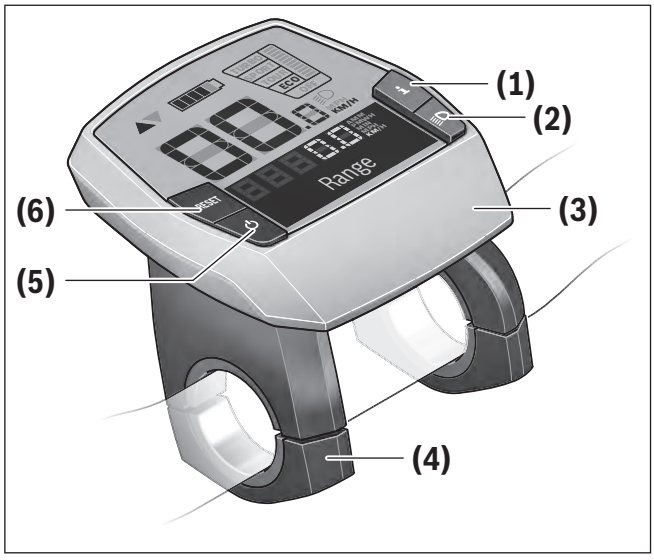
## Switching the eBike system on/off

The following options are available for **switching on** the eBike system:

– If the on-board computer is already switched on when you insert it into the holder, the eBike system will be automatically activated.
– When the on-board computer and the eBike battery are inserted, briefly press the on/off button of the on-board computer.
– With the on-board computer inserted, press the on/off button on the eBike battery (some bicycle manufacturer-specific solutions prevent access to the battery on/off button; see the battery operating instructions).

The drive is activated as soon as you start pedaling (except for in the push assistance function or with the assistance level **OFF**). The motor output depends on which assistance level is set on the on-board computer.

As soon as you stop pedaling when in normal operation, or as soon as you have reached a speed of **20/28 mph**, the eBike drive unit switches off the assistance. The drive is automatically re-activated as soon you start pedaling again and the speed is below **20/28 mph**.




The following options are available for **switching off** the eBike system:

– Press the on/off button of the on-board computer.
– Switch off the eBike battery using its on/off button (some bicycle manufacturer-specific solutions prevent access to the battery on/off button; see the bicycle manufacturer operating instructions).
– Remove the on-board computer from its holder.

If no power is drawn from the eBike drive for about 10 minutes (e.g. because the eBike is not moving) and no button is pressed on the on-board computer or the operating unit of the eBike, the eBike system, and therefore also the battery, will switch off automatically to save energy.

## eShift (optional)

eShift is the integration of electronic gear shifting systems into the eBike system. The eShift components are electrically connected to the drive unit by the manufacturer. The separate operating instructions describe how to operate the electronic gear-shifting systems.

## Energy supply of the on-board computer

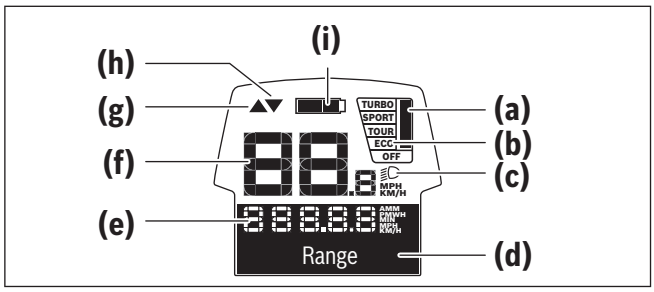
If the on-board computer is in the holder **(4)**, a sufficiently charged battery is inserted in the eBike and the eBike system is switched on, then the on-board computer is powered by the battery of the eBike.

If the on-board computer is removed from the holder **(4)**, the energy is supplied via an internal battery. If the internal battery is weak when the on-board computer is switched on, **<Attach to bike>** will appear on the text indicator **(d)** for 3 s. The on-board computer will then turn off again.

To charge the internal battery, put the on-board computer back in the holder **(4)** (when a battery is inserted in the eBike). Switch the eBike battery on by its on/off button (see battery operating instructions).

You can also charge the on-board computer via the USB port. To do this, open the protective cap **(8)**. Connect the USB port **(7)** of the on-board computer via a suitable USB cable to a standard USB charger or

the USB port of a computer (5 V charging voltage, max. 500 mA charging current). **<USB connected>** will appear on the text indicator **(d)** of the on-board computer.




## Powering external devices from the USB port

The USB port can be used to operate or charge most devices that can be powered via USB (e.g. various mobile phones).

Charging requires the on-board computer to be mounted and a sufficiently charged battery to be inserted in the eBike.

Open the protective cap **(8)** for the USB port on the on-board computer. Use a Micro-A – Micro-B USB charging cable (available from your Bosch eBike dealer) to connect the USB port on the external device to the USB port **(7)** on the on-board computer.

Once the electrical load has been disconnected, the USB port must be carefully resealed with the protective cap **(8)**.

**A USB connection is not a watertight plug connection. When cycling in wet conditions, ensure no external devices are connected and that the USB port is fully covered by the protective cap (8).**

**Attention:** Any electrical devices connected can reduce the range of the eBike.

## Switching on/shutting down the on-board computer

To **switch on** the on-board computer, briefly press the on/off button **(5)**. The on-board computer can also be switched on when it is not inserted in the holder (if the internal battery is sufficiently charged).

To **switch off** the on-board computer, press the on/off button **(5)**.

If the on-board computer is not inserted in the holder, it automatically switches off after 1 minute to save energy if no button is pressed.

- ▸ **If you are not going to be using your eBike for several weeks, remove the on-board computer from its holder.** Store the on-board computer in a dry environment at room temperature. Regularly recharge the on-board computer's battery (at least every 3 months).

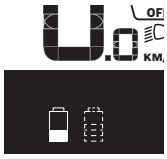
## Battery charge indicator

The battery charge indicator **(i)** displays the state of charge of the eBike battery, not that of the on-board computer's internal battery. The state of charge of the eBike battery can also be checked on the LEDs of the battery itself.

Each bar of the battery symbol on the indicator **(i)** represents approximately 20 % of the capacity:

- The eBike battery is fully charged.
- The eBike battery should be recharged.
- The LEDs of the battery charge indicator on the battery go out. The capacity for assisting the drive has been used up, and assistance is gently switched off. The remaining capacity is made available for the lighting and the on-board computer. The indicator flashes. The capacity of the eBike battery is enough for about two hours of lighting. This does not account for other consumers (e.g. automatic gearbox, charging external devices from the USB port).

If the on-board computer is removed from the holder **(4)**, the last displayed state of charge of the battery is saved. If an eBike is powered by two batteries, the battery charge indicator **(i)** displays the state of charge of both batteries.



If an eBike has two batteries inserted into it and both batteries are charged on the bike, the charging progress of both batteries will be indicated on the display (the left-hand battery is being charged in the illustration). You can also tell by the flashing indicator on the battery which of the two batteries is being charged at the moment.

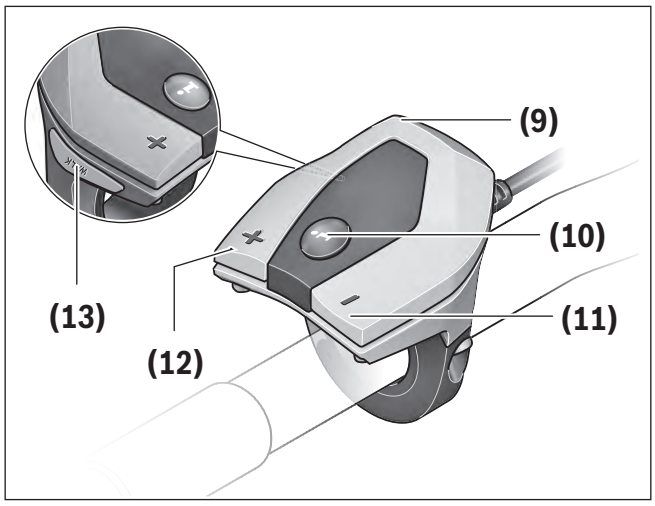
## Setting the assistance level

On the operating unit **(9)**, you can set the level of assistance you want the eBike drive to provide you with while pedaling. The assistance level can be changed at any time, even while cycling.

**Note:** In some models, the assistance level may be preset and cannot be changed. There may also be fewer assistance levels available than stated here.

The following assistance levels are available as a maximum:

- **OFF:** Motor assistance is switched off. The eBike can just be moved by pedaling, as with a normal bicycle. The push assistance cannot be activated at this assistance level.
- **ECO:** Effective assistance with maximum efficiency, for maximum range
- **TOUR:** Steady assistance, long range for touring
- **SPORT/eMTB:**
  **SPORT:** Powerful assistance, for mountain biking and for cycling in urban traffic
  **eMTB:** Optimum assistance whatever the terrain, rapid acceleration when starting from a standstill, improved dynamics, top performance (**eMTB** is only available in combination with drive units BDU250P CX, BDU365, BDU450 CX and BDU480 CX. This also requires a software update.)
- **TURBO:** Maximum assistance even at high pedaling speeds, for biking sports




To **increase** the assistance level, press the **+** button **(12)** on the operating unit repeatedly until the required assistance level appears on the indicator **(b)**.
To **decrease** the assistance level, press the **–** button **(11)**.

The requested motor output is shown on the display **(a)**. The maximum motor output depends on the selected assistance level.

When the on-board computer is removed from the holder **(4)**, the last indicated assistance level is stored; the motor-output indicator **(a)** remains empty.

## Interaction between the eBike system and gear-shifting

The gear-shifting should be used with an eBike drive in the same way as with a normal bicycle (observe the operating instructions of your eBike on this point).

Irrespective of the type of gear-shifting, it is advisable that you briefly stop pedaling when changing gear. This will aid the gear change and reduces wear on the powertrain.

By selecting the correct gear, you can increase your speed and range while applying the same amount of force.

For this reason, follow the gear change recommendations provided by the indicators **(g)** and **(h)** on your display. If indicator **(g)** is displayed, you should

change to a higher gear with lower cadence. If indicator **(h)** is displayed, you should select a lower gear with higher cadence.

### Switching bike lights on/off

On the model in which the lighting is powered by the eBike system, the front and rear lights can be switched on and off at the same time via the on-board computer using the bike light button **(2)**.

Before starting each journey, check that your bike lights are working correctly.

When the lighting is switched on, **<Lights on>** appears and when the lighting is switched off, **<Lights off>** appears for approx. 1 s on the text indicator **(d)**. The lighting symbol **(c)** is displayed when the light is on.

The on-board computer saves the light status and activates this saved status accordingly after a restart.

Switching the bike lights on and off has no effect on the backlighting of the display.

### Switching the push assistance on/off

The push assistance aids you when pushing your eBike. The speed of this function depends on the selected gear and can reach a maximum of **3.7 mph**. The lower the selected gear, the lower the speed of the push assistance function (at full power).

- ▶ **The push assistance function must only be used when pushing the eBike.** There is a risk of injury if the wheels of the eBike are not in contact with the ground while using the push assistance.

To **activate** the push assistance, briefly press the **WALK** button on your on-board computer. After activation, press the **+** button within 3 s and keep it pressed. The eBike drive is switched on.

**Note:** The push assistance cannot be activated at assistance level **OFF**.

The push assistance is **switched off** as soon as one of the following occurs:

- You release the **+** button;
- the wheels of the eBike are locked (e.g. by applying the brakes or hitting an obstacle);
- the speed exceeds **3.7 mph**.

The push assistance function is subject to local regulations; the way it works may therefore differ from the description above. It can also be deactivated.

## Displays and settings of the on-board computer

### Speed and distance indicators

The **speedometer (f)** always displays the current speed.

You can choose from the following functions in the **function display** (combination of text indicator **(d)** and value indicator **(e)**):

- **<Clock>:** Current time
- **<Max. speed>:** Maximum speed achieved since the last reset
- **<Avg. speed>:** Average speed achieved since the last reset
- **<Trip time>:** Journey time since the last reset
- **<Range>:** Estimated range of the available battery charge (at constant conditions such as assistance level, route profile, etc.)
- **<Odometer>:** Total distance traveled with the eBike (cannot be reset)
- **<Trip distance>:** Distance traveled since the last reset

To **switch between display functions**, press the **i** button **(1)** on the on-board computer or the **i** button **(10)** on the operating unit repeatedly until the required function is displayed.

To reset the **<Trip distance>**, **<Trip time>** and **<Avg. speed>**, switch to one of these three functions and then press and hold the **RESET** button **(6)** until the indicator is set to zero. This will also reset the values of the other two functions.

To reset the **<Max. speed>**, switch to this function and then press and hold the **RESET** button **(6)** until the indicator is set to zero.

To reset the **<Range>**, switch to this function and then press and hold the **RESET** button **(6)** until the indicator is reset to the value of the factory setting.

If the on-board computer is removed from the holder **(4)**, all values of the functions are saved and can still be displayed.

## Displaying/adjusting basic settings

The basic settings can be displayed and changed regardless of whether the on-board computer is inserted in the holder **(4)** or not. Some settings can only be viewed and changed when the computer is inserted. Depending on the equipment of your eBike, some menu items may not be present.

To go to the basic settings menu, simultaneously press and hold the **RESET** button **(6)** and the **i** button **(1)** until **<Configuration>** appears in the text indicator **(d)**.

To **switch between the basic settings**, press the **i** button **(1)** on the on-board computer repeatedly until the required basic setting is displayed. If the on-board computer is inserted in the holder **(4)**, you can also press the **i** button **(10)** on the operating unit.

To **change the basic settings**, press the on/off button **(5)** next to the **–** indicator to reduce or scroll down, or the lighting button **(2)** next to the **+** indicator to increase or scroll up. If the on-board computer is inserted in the holder **(4)**, it is also possible to change the settings with the **– (11)** and **+ (12)** buttons on the operating unit.

To exit the function and save a changed setting, press the **RESET** button **(6)** for 3 s.

You can choose between the following basic settings:

- **<– Clock +>:** Setting the current time. The time can be changed faster by pressing the setting buttons for longer.
- **<– Wheel circum. +>:** Changing the value pre-set by the manufacturer by ±5 %. This menu item is displayed only when the on-board computer is in the holder.
- **<– English +>:** Changing the language of the text indicator. You can choose between German, English, French, Spanish, Italian, Portuguese, Swedish, Dutch and Danish.
- **<– Unit km/mi +>:** Displaying the speed and distance in either kilometers or miles.
- **<– Time format +>:** Displaying the time in 12-hour or 24-hour format.
- **<– Shift recom. on +>/<– Shift recom. off +>:** Switching the shift recommendation display on or off.
- **<Power-on hours>:** Total time traveled with the eBike (cannot be changed)
- **<Displ. vx.x.x.x>:** Display software version.
- **<DU vx.x.x.x>:** Drive unit software version. This menu item is displayed only when the on-board computer is in the holder.
- **<DU SN xxxxxxx/xxx>:** Drive unit serial number. This menu item is displayed only when the on-board computer is in the holder.
- **<DU PN xxxxxxxxxx>:** Drive unit part number. This menu item is displayed only when the on-board computer is in the holder and the drive unit has access to a part number.
- **<Service MM/YYYY>:** This menu item is displayed if the bicycle manufacturer has set a fixed service date.
- **<Serv. xx km/mi>:** This menu item is displayed if the bicycle manufacturer has set a service date after a certain traveling distance.
- **<Bat. vx.x.x.x>:** Battery software version. This menu item is displayed only when the on-board computer is in the holder. When using two batteries, the software versions of both batteries are displayed successively.

– **<Bat. PN xxxxxxxxxx>:** eBike battery part number. This menu item is displayed only when the on-board computer is in the holder and the eBike battery has access to a part number. When using two batteries, the software versions of both batteries are displayed successively.
– **<Cha. vx.x.x.x>:** Software version of the charger used to charge the eBike battery. This is displayed only if the charger has access to the software version.
– If the eBike is equipped with ABS, the software version, serial number and part number of the ABS are also displayed.

# Transport

- ▶ **If you transport your eBike attached to the outside of your car, e.g. on a bike rack, remove the on-board computer and the eBike battery to avoid damaging them.**
- ▶ **Always remove the battery pack from the bicycle before transporting the bicycle on a vehicle bike rack.** Failure to remove the battery pack when using a vehicle bike rack can lead to death or serious injury. The battery may detach during transport and cause an accident to following vehicles.
- ▶ **Always use an approved and compatible bicycle rack when transporting your eBike. The Bosch drive system adds weight to the bicycle.** Refer to your bicycle rack manual to be sure your eBike is compatible. Overloading a bike rack can result in death or serious injury.
- ▶ **Use proper lifting techniques as electric bikes are generally heavier than bicycles.**

Ship batteries only when the housing is undamaged. Tape or mask off open contacts and pack up the battery in such a manner that it cannot move around in the packaging. Inform your parcel service that the package contains dangerous goods. Please also observe possibly more detailed national regulations. Always check state and federal regulations before attempting to ship your battery.

If you have any questions about transporting the batteries, contact an authorized bicycle dealer. You can also order suitable transport packaging from the dealer.

# Maintenance/cleaning

- ▶ **Do not open any of the components. Service should only be carried out at an authorized Bosch eBike dealer.** Failure to follow above warning can cause death or serious injury. Refer to your bicycle manual or component manual for all non-Bosch drive system components.
- ▶ **Always remove the battery pack before performing any bicycle inspection, maintenance or repair.** Failure to remove the battery pack before performing bicycle inspection, maintenance or repair can lead to serious injury.
- ▶ **If you suspect that something is loose, do not ride your bike.** See your Bosch eBike dealer, only a qualified service provider should perform work on your Bosch Drive System. All nuts, bolts, screws require the correct tightening force. Too little force and the fastener may not hold securely. Too much force and the fastener can strip threads, stretch, deform or break. Either way, incorrect tightening force can result in component failure, which can cause you to lose control and fall.
- ▶ **Do not paint any components of the Bosch drive system as they may cause premature failure of the component.**

## Taking care of your eBike

Please observe the operating and storage temperatures of the eBike components. Protect the drive unit,

on-board computer and battery against extreme temperatures (e.g. from intense sunlight without adequate ventilation). Extreme temperatures can cause the components (especially the battery) to become damaged.

Have your eBike system checked by an expert at least once a year (including mechanical parts, up-to-dateness of system software).

Please have your eBike serviced and repaired by an authorized bicycle dealer.

The bike retailer can also schedule the service based on a mileage and/or a time period. In this case, the on-board computer displays a message telling you when the service date is due each time it is switched on.

## Cleaning

- **Do not submerge your eBike components in water, or wash with pressurized hose.** Your Bosch drive unit is designed to be water tight to rain water or non-pressure hose washing.

Keep all components of your eBike clean, especially the battery-pack contacts and corresponding holder contacts. All components including the drive unit may not be immersed in water or cleaned with a high-pressure cleaner. Keep all components of your eBike clean, especially the batterypack contacts and corresponding holder contacts. Clean them carefully with a soft, damp cloth (using only mild soap and water).

## After-sales service and advice on using products

If you have any questions about the eBike system and its components, contact an authorized bicycle dealer.

For contact details of authorized bike dealerships, please visit www.bosch-ebike.com.

Please contact an authorized bicycle dealer if the battery is no longer working.

# Troubleshooting

The components of the eBike system are continuously monitored automatically. If a fault is detected, the corresponding fault code will appear on the on-board computer.

The drive may also be switched off automatically depending on what type of fault has occurred. You can continue riding at any time without assistance from the drive, but you should have your eBike checked before completing any more journeys.

- ▶ **Only have repairs performed by a certified bicycle dealer.**

| Code | Cause | Corrective measures |
|---|---|---|
| 410 | One or more buttons of the on-board computer are disabled. | Check whether any buttons are stuck, e.g. as a result of dirt finding its way in. Clean the buttons if need be. |
| 414 | Operating unit connection problem | Have the connections checked |
| 418 | One or more buttons on the operating unit are disabled. | Check whether any buttons are stuck, e.g. as a result of dirt finding its way in. Clean the buttons if need be. |
| 419 | Configuration error | Restart the system. If the problem persists, contact your Bosch eBike dealer. |
| 422 | Drive unit connection problem | Have the connections checked |
| 423 | eBike battery connection problem | Have the connections checked |
| 424 | Communication problem between components | Have the connections checked |
| 426 | Internal time-out error | Restart the system. If the problem persists, contact your Bosch eBike dealer. With this error, it is not possible to bring up the wheel circumference in the basic settings menu or to adjust it. |
| 430 | Internal battery of the on-board computer is flat (does not apply to BUI350) | Charge the on-board computer (in the holder or via the USB port) |
| 431 | Software version error | Restart the system. If the problem persists, contact your Bosch eBike dealer. |
| 440 | Internal drive unit fault | Restart the system. If the problem persists, contact your Bosch eBike dealer. |
| 450 | Internal software error | Restart the system. If the problem persists, contact your Bosch eBike dealer. |
| 460 | Error at USB port | Remove the cable from the USB port of the on-board computer. If the problem persists, contact your Bosch eBike dealer. |
| 490 | Internal fault of the on-board computer | Have the on-board computer checked |

| Code | Cause | Corrective measures |
|---|---|---|
| 500 | Internal drive unit fault | Restart the system. If the problem persists, contact your Bosch eBike dealer. |
| 502 | Bike light fault | Check the light and the associated wiring. Restart the system. If the problem persists, contact your Bosch eBike dealer. |
| 503 | Speed sensor fault | Restart the system. If the problem persists, contact your Bosch eBike dealer. |
| 504 | Speed signal distortion detected. | Check that the spoke magnet is positioned correctly, and adjust it if necessary. Check that nothing has been tampered with (tuning). Drive assistance is reduced. |
| 510 | Internal sensor fault | Restart the system. If the problem persists, contact your Bosch eBike dealer. |
| 511 | Internal drive unit fault | Restart the system. If the problem persists, contact your Bosch eBike dealer. |
| 530 | Battery fault | Switch off the eBike, remove the eBike battery and reinsert the eBike battery. Restart the system. If the problem persists, contact your Bosch eBike dealer. |
| 531 | Configuration error | Restart the system. If the problem persists, contact your Bosch eBike dealer. |
| 540 | Temperature error | The eBike is outside of the permissible temperature range. Switch off the eBike system and allow the drive unit to either cool down or heat up to the permissible temperature range. Restart the system. If the problem persists, contact your Bosch eBike dealer. |
| 550 | An impermissible load has been detected. | Remove the load. Restart the system. If the problem persists, contact your Bosch eBike dealer. |
| 580 | Software version error | Restart the system. If the problem persists, contact your Bosch eBike dealer. |
| 591 | Authentication error | Switch off the eBike system. Remove the battery pack and reinsert it. Restart the system. If the problem persists, contact your Bosch eBike dealer. |
| 592 | Incompatible component | Use a compatible display. If the problem persists, contact your Bosch eBike dealer. |
| 593 | Configuration error | Restart the system. If the problem persists, contact your Bosch eBike dealer. |
| 595, 596 | Communication error | Check the wiring to the drive and restart the system. If the problem persists, contact your Bosch eBike dealer. |

| Code | Cause | Corrective measures |
|---|---|---|
| 602 | Internal battery fault | Restart the system. If the problem persists, contact your Bosch eBike dealer. |
| 603 | Internal battery fault | Restart the system. If the problem persists, contact your Bosch eBike dealer. |
| 605 | Battery temperature error | The battery is outside of the permissible temperature range. Switch off the eBike system and allow the battery to either cool down or heat up to the permissible temperature range. Restart the system. If the problem persists, contact your Bosch eBike dealer. |
| 606 | External battery fault | Check the wiring. Restart the system. If the problem persists, contact your Bosch eBike dealer. |
| 610 | Battery voltage error | Restart the system. If the problem persists, contact your Bosch eBike dealer. |
| 620 | Charger fault | Replace the charger. Contact your Bosch eBike dealer. |
| 640 | Internal battery fault | Restart the system. If the problem persists, contact your Bosch eBike dealer. |
| 655 | Multiple battery faults | Switch off the eBike system. Remove the battery pack and reinsert it. Restart the system. If the problem persists, contact your Bosch eBike dealer. |
| 656 | Software version error | Contact your Bosch eBike dealer so that they can perform a software update. |
| 7xx | Error relating to third-party components | Observe the information in the operating instructions of the respective component manufacturer. |
| Display is blank | Internal fault of the on-board computer | Restart your eBike system by switching it off and back on. |

# Battery Recycling Program

The drive unit, on-board computer incl. operating unit, battery, speed sensor, accessories and packaging should be disposed of in an environmentally correct manner.

Do not dispose of eBikes and their components with household waste.

You may recycle your Bosch battery pack by calling 1.800.822.8837.

**Robert Bosch GmbH**
72757 Reutlingen
Germany

**www.bosch-ebike.com**

**1 270 U20 XBI** (2020.04) T / 59

# Owner’s Manual – The Bosch Drive System
# Purion

BUI215




**en** Original operating instructions

**This manual contains important safety, performance and service information. Read and understand it along with the information provided to you by your bicycle manufacturer before using the product, and keep it for reference.**

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# Introduction

## About Warnings

This manual contains many **DANGER**, **WARNING**, and **CAUTION** indicators concerning the consequences of failure to use, assemble, maintain, store, inspect and dispose of a Bosch-equipped eBike in a safe manner.

– The combination of the safety alert symbol and the word **DANGER** indicates a hazardous situation that, if not avoided, will result in death or serious injury.
– The combination of the safety alert symbol and the word **WARNING** indicates a hazardous situation that, if not avoided, could result in death or serious injury.
– The combination of the safety alert symbol and the word **CAUTION** indicates a hazardous situation that, if not avoided, could result in minor or moderate injury.

## General Warnings



**Read all safety warnings and all instructions.** Failure to follow the warnings and instructions may result in death or serious injury.

**Save all safety warnings and instructions for future reference.**

The term **battery pack** used in these operating instructions refers to all original Bosch eBike battery packs.

▶ **Read ALL accompanying manuals before riding the bike for the first time.** Your Bosch Drive System comes with additional manuals and documents provided by the manufacturer of the bicycle and other components. Failure to read and understand safety information can result in death or serious injury.

**⚠ WARNING**

▶ **This manual contains important safety, performance and service information.** Read it before you take the first ride on your new bicycle, and keep it for reference. The manual can also be found online at www.bosch-ebike.com.

▶ **This manual is intended to be read together with the separate user manual provided with your bicycle.** Be sure to read all provided documents including labels on the product before your first ride.

▶ **Take responsibility for your own SAFETY.** If you have any questions or do not understand something, consult with your dealer or the bicycle or component manufacturer.

▶ **Some eBike accessories may present a choking hazard to small children.** Keep these accessories away from children.

**⚠ CAUTION**

▶ **The Bosch Drive System adds weight to your bicycle which you may not be used to lift.** Avoid injury, use proper lifting techniques.

# Using your Manual

In addition to the functions outlined here, changes to software relating to troubleshooting and functional modifications may be introduced at any time.

## Graphics

The bicycle shown in this manual may differ slightly from your bicycle, but will be similar enough to help you understand our instructions.

RIGHT-HAND and LEFT-HAND sides are determined by facing in the direction the bicycle will travel when going forward. When you see a broken line (------), the item referred to is hidden from view.

# Operating your Bosch on-board computer

## Safety instructions



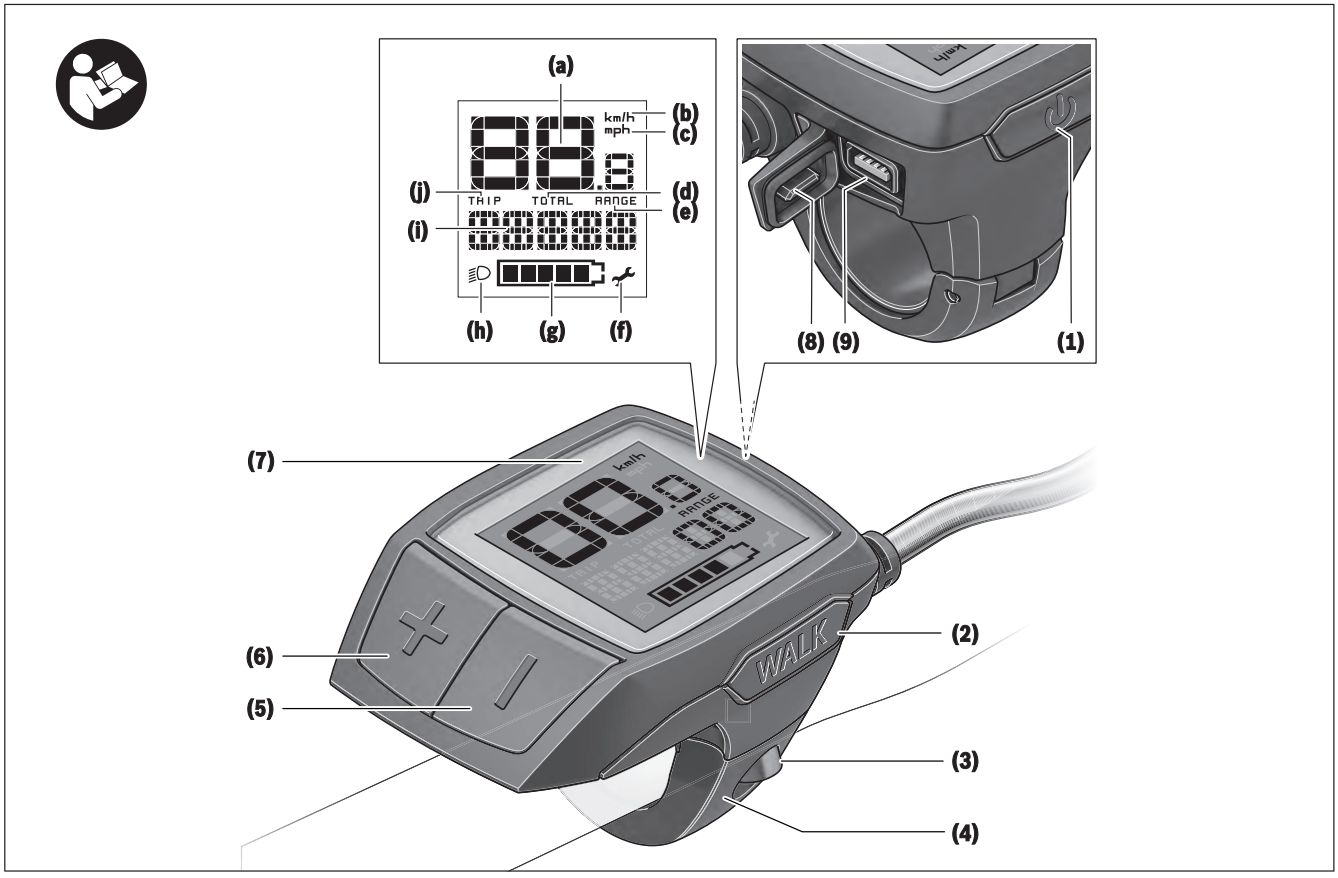
**Read all the safety information and instructions.** Failure to observe the safety information and follow instructions may result in electric shock, fire and/or serious injury.

**Save all safety warnings and instructions for future reference.**

The term **battery pack** used in these operating instructions refers to all original Bosch eBike battery packs.

- ▶ **Read and observe the safety warnings and instructions in all operating instructions of the eBike system and your eBike.**
- ▶ **Do not allow yourself to be distracted by the display of the on-board computer.** If you do not concentrate exclusively on the traffic around you, you risk being involved in an accident. If you want to change any settings on the on-board computer other than the assistance level, always stop before entering the relevant data.
- ▶ **Set the display brightness such that you can adequately see important information like speed or warning symbols.** An incorrectly set display brightness can result in dangerous situations.
- ▶ **When using the push assistance, ensure that you can always control the eBike and hold it securely.** The push assistance can be suspended under certain conditions (e.g. obstacle on the pedal or accidentally slipping off the button of the operating unit). The eBike can suddenly move backwards towards you or start to tip. This poses a particular risk for the user if there is an additional load. When using the push assistance on the eBike, do not place the eBike in situations in which you cannot hold the eBike by yourself.
- ▶ **Warning! Chemical Burn Hazard. Keep batteries away from children.** This product contains a lithium button/coin cell battery. If a new or used lithium button/coin cell battery is swallowed or enters the body, it can cause severe internal burns and can lead to death in as little as 2 hours. Always completely secure the battery compartment. If the battery compartment does not close securely, stop using the product, remove the batteries, and keep it away from children. If you think batteries might have been swallowed or placed inside any part of the body, seek immediate medical attention. Cell battery shall be disposed of properly. Even used cells may cause injury.
- ▶ **Do not expose on-board computer to fire or excessive temperature.** Exposure to fire or temperature above 212 °F (100 °C) may cause explosion.
- ▶ **Never submerge on-board computer in fluid of any kind or allow fluid to enter them.** Corrosive or conductive fluid (such as seawater or industrial chemical or bleach containing products, etc.) can cause short circuit which may result in fire, personal injury and property damage.
- ▶ **Battery leakage may occur under extreme usage or temperature conditions. Avoid contact with skin and eyes.** The battery liquid is caustic and could cause chemical burns to tissues. If liquid comes in contact with skin, wash quickly with soap and water. If the liquid contacts your eyes, immediately flush eyes with water for a minimum of 15 minutes and seek medical attention.
- ▶ **Before each use, check the on-board computer, cable and plug.** If damage is detected, do not use the on-board computer. Damaged on-board computer, charging cables and plugs increase the risk of a fire, explosion and personal injury.
- ▶ **Do not disassemble on-board computer.** No user serviceable part inside. Incorrect reassembly or damage may result in fire or explosion.

# Product description and specifications




## Product Features

**(1)** On/off button for on-board computer
**(2)** Push assistance button **WALK**
**(3)** Fastening screw for on-board computer
**(4)** Holder for on-board computer
**(5)** Decrease assistance level button **–**
**(6)** Increase assistance level button **+**
**(7)** Display
**(8)** Protective cap for USB port
**(9)** USB diagnostic port (for servicing purposes only)
**(10)** Battery compartment cover

### On-board computer information

**(a)** Speedometer
**(b)** km/h unit indicator
**(c)** mph unit indicator
**(d)** Total distance indicator **TOTAL**
**(e)** Range indicator **RANGE**
**(f)** Service indicator
**(g)** Battery charge indicator
**(h)** Lighting indicator
**(i)** Assistance level indicator/value indicator
**(j)** Trip distance indicator **TRIP**

## Technical data

| On-board computer | | Purion |
|---|---|---|
| Product code | | BUI215 |
| Batteries[A)] | | 2 × 3 V CR2016 |
| Operating temperature | °F | +23 to +104 |
| Storage temperature | °F | +50 to +104 |
| Protection rating[B)] | | IP54 |
| Weight, approx. | lbs | 0.22 |

A) We recommend using batteries offered by Bosch. You can purchase them from your bicycle dealer (article number: 1 270 016 819).

B) When the USB cover is closed

The Bosch eBike system uses FreeRTOS (see http://www.freertos.org).

This device is in compliance with Part 15 of the FCC Rules. Operation is subject to the following two conditions:
1. This device must not cause harmful interference, and
2. this device must accept any interference that is received, including interference that may cause undesired operation.

# Operation

## Symbols and their meaning

| Symbol | Explanation |
|---|---|
| | Short button press (less than 1 second) |
| | Medium button press (between 1 second and 2.5 seconds) |
| | Long button press (longer than 2.5 seconds) |

## Start-up

### Requirements

The eBike system can only be activated when the following requirements are met:

– A sufficiently charged battery is inserted (see battery operating instructions).
– The speed sensor is connected properly (see drive unit operating instructions).

### Switching the eBike system on/off

The following options are available for **switching on** the eBike system:

– Press the on/off button **(1)** of the on-board computer with the eBike battery inserted.
– Press the on/off button of the eBike battery (see battery operating instructions).

The drive is activated as soon as you start pedaling (except for in the push assistance function or with the assistance level **OFF**). The motor output depends on the settings of the assistance level.

As soon as you stop pedaling when in normal operation, or as soon as you have reached a speed of **20/28 mph**, the eBike drive unit switches off the assistance. The drive is automatically re-activated as soon you start pedaling again and the speed is below **20/28 mph**.

The following options are available for **switching off** the eBike system:

– Press the on/off button **(1)** of the on-board computer.
– Switch off the eBike battery using its on/off button (some bicycle manufacturer-specific solutions prevent access to the battery on/off button; see the bicycle manufacturer operating instructions).

The system shuts down after being switched off. This takes approximately three seconds. It cannot be switched back on until shutdown has been completed.

If the eBike is not moved for approx. ten minutes **and** no button is pressed on the on-board computer, the eBike system switches off automatically in order to save energy.

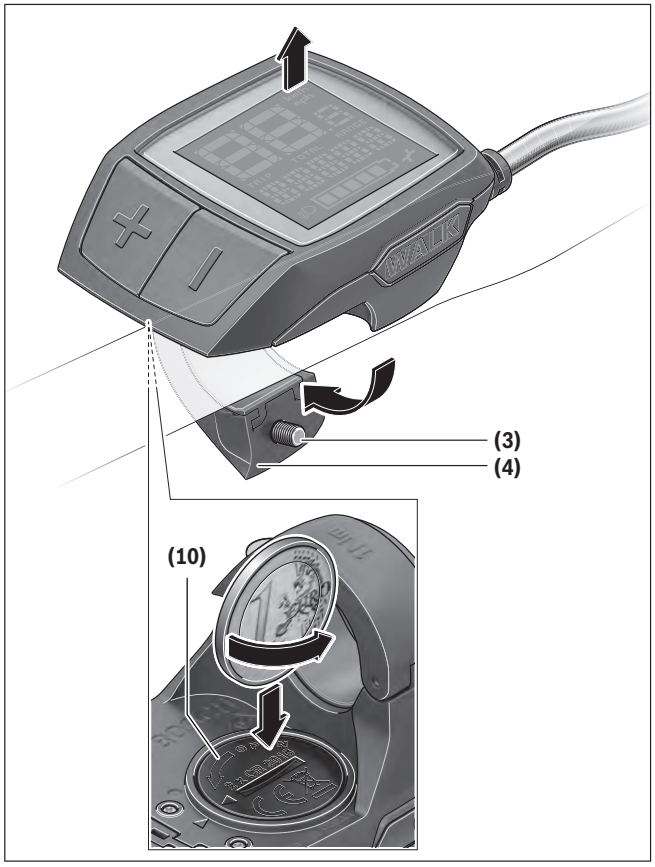
**Note:** Always switch off the eBike system when you park the eBike.

**Note:** If the batteries of the on-board computer are drained, you can still switch on your eBike using the bike's battery. It is, however, recommended that you replace the internal batteries as soon as possible in order to avoid damage.

### Energy supply of the on-board computer

The on-board computer is supplied with voltage by two CR2016 button cells.

### Changing the batteries




If the on-board computer shows **LOW BAT** on the display, remove the on-board computer from the handlebars by unscrewing the fastening screw **(3)** of the on-board computer. Open the battery compartment cover **(10)** using a suitable coin, remove the used batteries and insert new CR2016 batteries. You can obtain batteries recommended by Bosch from your bicycle dealer.

When inserting the batteries, ensure that the polarity is correct.

Close the battery compartment again and fasten the on-board computer to your eBike's handlebars using the fastening screw **(3)**.

## Switching the push assistance on/off

The push assistance aids you when pushing your eBike. The speed of this function depends on the selected gear and can reach a maximum of **3.7 mph**.

- ▸ **The push assistance function must only be used when pushing the eBike.** There is a risk of injury if the wheels of the eBike are not in contact with the ground while using the push assistance.

To **activate** the push assistance, briefly press the **WALK** button on your on-board computer. After activation, press the **+** button within 10 s and keep it pressed. The eBike drive is switched on.

**Note:** The push assistance cannot be activated at assistance level **OFF**.

The push assistance is **switched off** as soon as one of the following occurs:

- You release the **+** button;
- the wheels of the eBike are locked (e.g. by applying the brakes or hitting an obstacle);
- the speed exceeds **3.7 mph**.

The push assistance function is subject to local regulations; the way it works may therefore differ from the description above. It can also be deactivated.

## Setting the assistance level

You can set the level at which the eBike drive assists you while pedaling on the on-board computer. The assistance level can be changed at any time, even while cycling.

**Note:** In some models, the assistance level may be preset and cannot be changed. There may also be fewer assistance levels available than stated here.

The following assistance levels are available as a maximum:

- **OFF:** Motor assistance is switched off. The eBike can just be moved by pedaling, as with a normal bicycle. The push assistance cannot be activated at this assistance level.
- **ECO:** Effective assistance with maximum efficiency, for maximum range

- **TOUR/TOUR+:**
  **TOUR:** Steady support, for long-range touring
  **TOUR+:** Dynamic support for natural and sporty driving (only in conjunction with **eMTB**)
- **SPORT/eMTB:**
  **SPORT:** Powerful assistance, for mountain biking and for cycling in urban traffic
  **eMTB:** Optimum assistance whatever the terrain, rapid acceleration when starting from a standstill, improved dynamics, top performance (**eMTB** is only available in combination with drive units BDU250P CX, BDU365, BDU450 CX and BDU480 CX. This also requires a software update.)
- **TURBO:** Maximum assistance even at high cadences, for biking sports

To **increase** the assistance level, briefly press the button **+ (6)** on the on-board computer repeatedly until the required assistance level appears on the indicator **(i)**. To **decrease** the assistance level briefly press the button **– (5)**.

If the display is set to **TRIP**, **TOTAL** or **RANGE**, the selected assistance level will only be shown briefly (for approx. one second) on the display when switching over.

## Switching bike lights on/off

For the model which has the bike lights powered by the eBike system, a medium-length press of the button **+** will switch on the front and rear lights simultaneously. A medium-length press of the button **+** will switch the bike lights off again.

The lighting symbol **(h)** is displayed when the light is on.

Before starting each journey, check that your bike lights are working correctly.

The on-board computer saves the light status and activates this saved status accordingly after a restart.

Switching the bike lights on and off has no effect on the backlighting of the display.

# Displays and configurations of the on-board computer

## Battery charge indicator

The battery charge indicator **(g)** displays the eBike battery's state of charge. The state of charge of the eBike battery can also be checked on the LEDs of the battery itself.

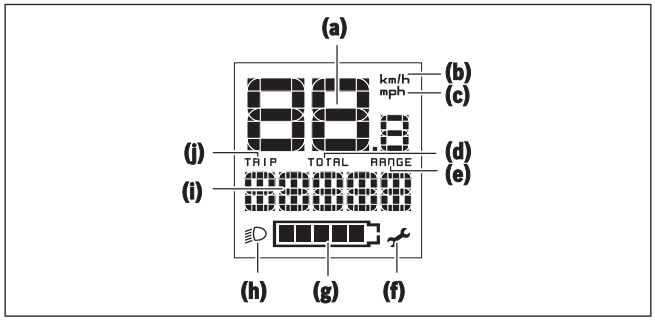
Each bar of the battery symbol on the indicator **(g)** represents approximately 20 % of the capacity:

- The eBike battery is fully charged.
- The eBike battery should be recharged.
- The LEDs of the battery charge indicator on the battery go out. The capacity for assisting the drive has been used up, and assistance is gently switched off. The remaining capacity is made available for the lighting. The indicator flashes.

  The capacity of the eBike battery is enough for about 2 hours of lighting.

If an eBike is powered by 2 batteries, the battery charge indicator **(g)** displays the state of charge of both batteries.

## Speed and distance indicators




The speedometer **(a)** always displays the current speed.

The indicator **(i)** always displays the last setting as standard. Repeated medium-length presses of the button **–** will display the trip distance **TRIP**, the total distance **TOTAL** and the battery range **RANGE** one after the other. (Briefly pressing the button **–** will decrease the assistance level.)

To **reset** the trip distance **TRIP**, select the trip distance **TRIP** and simultaneously press and hold the buttons **+** and **–**. The display will initially show **RESET**. If you continue to press both buttons, the trip distance **TRIP** will be set to **0**.

To **reset** the battery range **RANGE**, select the battery range **RANGE** and simultaneously press and hold the buttons **+** and **–**. The display will initially show **RESET**. If you continue to press both buttons, the range **RANGE** will be reset to the value of the factory setting.

You can switch the displayed values from kilometers to miles by holding down the button **–** and briefly pressing the on/off button **(1)**.

The versions of the subsystems and their model part numbers can be displayed for servicing purposes, provided the subsystems divulge this information (dependent on the subsystem). With the system **switched off**, simultaneously press the buttons **–** and **+** and then press the on/off button **(1)**.

The USB port is reserved for connecting diagnostic systems. The USB port does not have any other function.

▶ **The USB port must always be completely sealed with the protective cap (8).**

| Action | Buttons | Duration |
|---|---|---|
| Switch on on-board computer | ⏻ | |
| Switch off on-board computer | ⏻ | |
| Increase assistance | **+** | |
| Decrease assistance | **–** | |
| Display **TRIP**, **TOTAL**, **RANGE**, assistance modes | **–** | |
| Switch on bike lights | **+** | |
| Switch off bike lights | **+** | |
| Reset trip distance | **– +** | |
| Activate push assistance<br>Implement push assistance | **WALK**<br>**+** | 1. <br>2. As required |
| Switch from kilometers to miles | **–**<br>⏻ | 1. Keep pressed<br>2. |
| Display the versions [A)B)] | **– +**<br>⏻ | 1. Keep pressed<br>2. |
| Adjust display brightness[A)] | **– +**<br>⏻<br>**–** or **+** | 1. Keep pressed<br>2. |

A) The eBike system must be switched off.

B) The information is shown as scrolling text.

# Troubleshooting

The components of the eBike system are continuously monitored automatically. If a fault is detected, the corresponding fault code will appear on the on-board computer.

The drive may also be switched off automatically depending on what type of fault has occurred. You can continue riding at any time without assistance from the drive, but you should have your eBike checked before completing any more journeys.

- ▶ **Only have repairs performed by a certified bicycle dealer.**

| Code | Cause | Corrective measures |
|---|---|---|
| 410 | One or more buttons of the on-board computer are disabled. | Check whether any buttons are stuck, e.g. as a result of dirt finding its way in. Clean the buttons if need be. |
| 414 | Operating unit connection problem | Have the connections checked |
| 418 | One or more buttons on the operating unit are disabled. | Check whether any buttons are stuck, e.g. as a result of dirt finding its way in. Clean the buttons if need be. |
| 419 | Configuration error | Restart the system. If the problem persists, contact your Bosch eBike dealer. |
| 422 | Drive unit connection problem | Have the connections checked |
| 423 | eBike battery connection problem | Have the connections checked |
| 424 | Communication problem between components | Have the connections checked |
| 426 | Internal time-out error | Restart the system. If the problem persists, contact your Bosch eBike dealer. With this error, it is not possible to bring up the wheel circumference in the basic settings menu or to adjust it. |
| 430 | Internal battery of the on-board computer is flat (does not apply to BUI350) | Charge the on-board computer (in the holder or via the USB port) |
| 431 | Software version error | Restart the system. If the problem persists, contact your Bosch eBike dealer. |
| 440 | Internal drive unit fault | Restart the system. If the problem persists, contact your Bosch eBike dealer. |
| 450 | Internal software error | Restart the system. If the problem persists, contact your Bosch eBike dealer. |
| 460 | Error at USB port | Remove the cable from the USB port of the on-board computer. If the problem persists, contact your Bosch eBike dealer. |
| 490 | Internal fault of the on-board computer | Have the on-board computer checked |

| Code | Cause | Corrective measures |
|---|---|---|
| 500 | Internal drive unit fault | Restart the system. If the problem persists, contact your Bosch eBike dealer. |
| 502 | Bike light fault | Check the light and the associated wiring. Restart the system. If the problem persists, contact your Bosch eBike dealer. |
| 503 | Speed sensor fault | Restart the system. If the problem persists, contact your Bosch eBike dealer. |
| 504 | Speed signal distortion detected. | Check that the spoke magnet is positioned correctly, and adjust it if necessary. Check that nothing has been tampered with (tuning). Drive assistance is reduced. |
| 510 | Internal sensor fault | Restart the system. If the problem persists, contact your Bosch eBike dealer. |
| 511 | Internal drive unit fault | Restart the system. If the problem persists, contact your Bosch eBike dealer. |
| 530 | Battery fault | Switch off the eBike, remove the eBike battery and reinsert the eBike battery. Restart the system. If the problem persists, contact your Bosch eBike dealer. |
| 531 | Configuration error | Restart the system. If the problem persists, contact your Bosch eBike dealer. |
| 540 | Temperature error | The eBike is outside of the permissible temperature range. Switch off the eBike system and allow the drive unit to either cool down or heat up to the permissible temperature range. Restart the system. If the problem persists, contact your Bosch eBike dealer. |
| 550 | An impermissible load has been detected. | Remove the load. Restart the system. If the problem persists, contact your Bosch eBike dealer. |
| 580 | Software version error | Restart the system. If the problem persists, contact your Bosch eBike dealer. |
| 591 | Authentication error | Switch off the eBike system. Remove the battery pack and reinsert it. Restart the system. If the problem persists, contact your Bosch eBike dealer. |
| 592 | Incompatible component | Use a compatible display. If the problem persists, contact your Bosch eBike dealer. |
| 593 | Configuration error | Restart the system. If the problem persists, contact your Bosch eBike dealer. |
| 595, 596 | Communication error | Check the wiring to the drive and restart the system. If the problem persists, contact your Bosch eBike dealer. |

| Code | Cause | Corrective measures |
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| 602 | Internal battery fault | Restart the system. If the problem persists, contact your Bosch eBike dealer. |
| 603 | Internal battery fault | Restart the system. If the problem persists, contact your Bosch eBike dealer. |
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| 606 | External battery fault | Check the wiring. Restart the system. If the problem persists, contact your Bosch eBike dealer. |
| 610 | Battery voltage error | Restart the system. If the problem persists, contact your Bosch eBike dealer. |
| 620 | Charger fault | Replace the charger. Contact your Bosch eBike dealer. |
| 640 | Internal battery fault | Restart the system. If the problem persists, contact your Bosch eBike dealer. |
| 655 | Multiple battery faults | Switch off the eBike system. Remove the battery pack and reinsert it. Restart the system. If the problem persists, contact your Bosch eBike dealer. |
| 656 | Software version error | Contact your Bosch eBike dealer so that they can perform a software update. |
| 7xx | Error relating to third-party components | Observe the information in the operating instructions of the respective component manufacturer. |
| Display is blank | Internal fault of the on-board computer | Restart your eBike system by switching it off and back on. |

# Battery Recycling Program

The drive unit, on-board computer incl. operating unit, battery, speed sensor, accessories and packaging should be disposed of in an environmentally correct manner.

Do not dispose of eBikes and their components with household waste.

You may recycle your Bosch battery pack by calling 1.800.822.8837.

**Robert Bosch GmbH**
72757 Reutlingen
Germany

**www.bosch-ebike.com**

**1 270 U20 XBP** (2021.12) T / 50

# Owner’s Manual – The Bosch Drive System
# Kiox

BUI330



**en** Original operating instructions

**This manual contains important safety, performance and service information. Read and understand it along with the information provided to you by your bicycle manufacturer before using the product, and keep it for reference.**

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Maintenance and cleaning ..... 22
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# Introduction

## About Warnings

This manual contains many **DANGER**, **WARNING**, and **CAUTION** indicators concerning the consequences of failure to use, assemble, maintain, store, inspect and dispose of a Bosch-equipped eBike in a safe manner.

– The combination of the safety alert symbol and the word **DANGER** indicates a hazardous situation that, if not avoided, will result in death or serious injury.
– The combination of the safety alert symbol and the word **WARNING** indicates a hazardous situation that, if not avoided, could result in death or serious injury.
– The combination of the safety alert symbol and the word **CAUTION** indicates a hazardous situation that, if not avoided, could result in minor or moderate injury.

## General Warnings



**Read all safety warnings and all instructions.** Failure to follow the warnings and instructions may result in death or serious injury.

**Save all safety warnings and instructions for future reference.**

The term **battery pack** used in these operating instructions refers to all original Bosch eBike battery packs.

▶ **Read ALL accompanying manuals before riding the bike for the first time.** Your Bosch Drive System comes with additional manuals and documents provided by the manufacturer of the bicycle and other components. Failure to read and understand safety information can result in death or serious injury.

**⚠ WARNING**

▶ **This manual contains important safety, performance and service information.** Read it before you take the first ride on your new bicycle, and keep it for reference. The manual can also be found online at www.bosch-ebike.com.

▶ **This manual is intended to be read together with the separate user manual provided with your bicycle.** Be sure to read all provided documents including labels on the product before your first ride.

▶ **Take responsibility for your own SAFETY.** If you have any questions or do not understand something, consult with your dealer or the bicycle or component manufacturer.

▶ **Some eBike accessories may present a choking hazard to small children.** Keep these accessories away from children.

**⚠ CAUTION**

▶ **The Bosch Drive System adds weight to your bicycle which you may not be used to lift.** Avoid injury, use proper lifting techniques.

# Using your Manual

In addition to the functions outlined here, changes to software relating to troubleshooting and functional modifications may be introduced at any time.

## Graphics

The bicycle shown in this manual may differ slightly from your bicycle, but will be similar enough to help you understand our instructions.

RIGHT-HAND and LEFT-HAND sides are determined by facing in the direction the bicycle will travel when going forward. When you see a broken line (------), the item referred to is hidden from view.

# Operating your Bosch Drive System

## Safety instructions



**Read all the safety information and instructions.** Failure to observe the safety information and follow instructions may result in electric shock, fire and/or serious injury.

**Save all safety warnings and instructions for future reference.**

The term **battery pack** used in these operating instructions refers to all original Bosch eBike battery packs.

- ▶ **Read and observe the safety warnings and instructions in all operating instructions of the eBike system and your eBike.**
- ▶ **Do not allow yourself to be distracted by the display of the on-board computer.** If you do not concentrate exclusively on the traffic around you, you risk being involved in an accident. If you want to change any settings on the on-board computer other than the assistance level, always stop before entering the relevant data.
- ▶ **Set the display brightness such that you can adequately see important information like speed or warning symbols.** An incorrectly set display brightness can result in dangerous situations.
- ▶ **Do not open the on-board computer.** Opening the on-board computer can result in irreparable damage and void your warranty.
- ▶ **Do not use the on-board computer as a handle.** Lifting the eBike up by the on-board computer can cause irreparable damage to the on-board computer.
- ▶ **The push assistance function must only be used when pushing the eBike.** There is a risk of injury if the wheels of the eBike are not in contact with the ground while using the push assistance.
- ▶ **When the push assistance is activated, the pedals may turn at the same time.** When the push assistance function is activated, make sure that there is enough space between your legs and the turning pedals to avoid the risk of injury.
- ▶ **When using the push assistance, ensure that you can always control the eBike and hold it securely.** The push assistance can be suspended under certain conditions (e.g. obstacle on the pedal or accidentally slipping off the button of the operating unit). The eBike can suddenly move backwards towards you or start to tip. This poses a particular risk for the user if there is an additional load. When using the push assistance on the eBike, do not place the eBike in situations in which you cannot hold the eBike by yourself.
- ▶ **Do not stand your bicycle upside down on its saddle and handlebars if the on-board computer or its holder protrude from the handlebars.** This may irreparably damage the on-board computer or the holder. Also remove the on-board computer before placing the bicycle on a wall mount to ensure that the on-board computer does not fall off or become damaged.
- ▶ **Caution!** When using the control unit with *Bluetooth*®, this may cause interference that affects other devices and systems, airplanes and medical devices (e.g. pacemakers, hearing aids). Similarly, the possibility that this may cause damage to humans and animals in the immediate vicinity cannot be completely excluded. Do not use the control unit with *Bluetooth*® in the vicinity of medical devices, gas stations, chemical plants, areas with a potentially explosive atmosphere or on blast sites. Do not use the control unit with *Bluetooth*® in airplanes. Avoid using the device in close proximity to your body over an extended period of time.
- ▶ The *Bluetooth*® word mark and logos are registered trademarks owned by Bluetooth SIG, Inc. and any

use of such marks by Bosch eBike Systems is under licence.

- ▶ **The on-board computer is fitted with a radio interface. Local operating restrictions, e.g. in airplanes or hospitals, must be adhered to.**
- ▶ **Do not enter information or make selections while riding.** Interacting with the display unit while riding can lead to accidents causing serious injury or death. You must observe road and traffic conditions, and comply with traffic laws at all times.
- ▶ **Using your mobile device while operating an eBike may be distracting. Distracted driving is a serious safety concern and can lead to accidents causing serious injury or death. In order to prevent distracted driving, most devices come equipped with a "Do Not Disturb" mode. The "Do Not Disturb" mode should be used while operating an eBike.** Please consult your device-specific instructions for more information. You, as the eBike operator, are fully responsible for ensuring that you pay attention to road conditions and comply with traffic laws at all times.
- ▶ **Do not activate push assistance function while riding on the bike.** Only use push assitance function when pushing the eBike.
- ▶ Please note that certain State or local laws may require that class III eBikes must be equipped with a functioning speedometer that displays speed in miles per hour. Riders must be aware of any and all applicable rules and regulations related to the operation or use of class III eBikes in any applicable jurisdictions before operating or otherwise using this product.

## Safety Warnings for charging the on-board computer battery

- ▶ **Only charge the on-board computer with USB power source (5 V, 1000 mA max) and USB cable rated at least 1000 mA.** Using USB power source or USB cable not appropriately rated for the application may result in fire, explosion or personal injury.
- ▶ **Charge the on-board computer in temperatures above +32 degrees F (0 degrees C) and below +104 degrees F (40 degrees C). Store on-board computer in locations where temperatures will not exceed 104 degrees F (40 degrees C).** This is important to prevent serious damage to the battery in the on-board computer.
- ▶ **Do not expose on-board computer to fire or excessive temperature.** Exposure to fire or temperature above 212 °F (100 °C) may cause explosion.
- ▶ **Do not recharge the on-board computer (via USB port) in damp or wet environment.** Water entering on-board computer may result in electric shock or fire.
- ▶ **Never submerge on-board computer in fluid of any kind or allow fluid to enter them.** Corrosive or conductive fluid (such as seawater or industrial chemical or bleach containing products, etc.) can cause short circuit which may result in fire, personal injury and property damage.
- ▶ **Battery leakage may occur under extreme usage or temperature conditions. Avoid contact with skin and eyes.** The battery liquid is caustic and could cause chemical burns to tissues. If liquid comes in contact with skin, wash quickly with soap and water. If the liquid contacts your eyes, immediately flush eyes with water for a minimum of 15 minutes and seek medical attention.
- ▶ **Place on-board computer on flat nonflammable surfaces and away from flammable materials when recharging on-board computer using external USB power source.** Carpeting and other heat insulating surfaces block proper air circulation which may cause overheating of the on-board computer. If smoke or melting of the on-board computer is observed, unplug the external USB power source immediately and do not use the on-board computer. Contact customer service immediately.
- ▶ **Before each use, check the on-board computer, cable and plug.** If damage is detected, do not use the on-board computer. Damaged on-board com-

puter, charging cables and plugs increase the risk of a fire, explosion and personal injury.

- ▶ **Do not disassemble on-board computer.** No user serviceable part inside. Incorrect reassembly or damage may result in fire or explosion.

**NOTICE:** This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions:

1. This device must not cause harmful interference, and
2. this device must accept any interference received, including interference that may cause undesired operation.

**NOTICE:** Changes or modifications made to this equipment not expressly approved by the Robert Bosch GmbH may void the FCC authorization to operate this equipment.

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

- – Reorient or relocate the receiving antenna.
- – Increase the separation between the equipment and receiver.
- – Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- – Consult the dealer or an experienced radio/TV technician for help.

**Radiofrequency radiation exposure Information:**
The radiated output power of the device is far below the FCC radio frequency exposure limits. Nevertheless, the device shall be used in such a manner that the potential for human contact during normal operation is minimized.

This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with minimum distance of 20 cm between the radiator and your body. This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.

**ISED Notice (Canada)**

This device contains licence-exempt transmitter(s)/ receiver(s) that comply with Innovation, Science and Economic Development Canada's licence-exempt RSS(s). Operation is subject to the following two conditions:

1. this device may not cause interference, and
2. this device must accept any interference, including interference that may cause undesired operation of the device.

This equipment complies with Canada radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with minimum distance of 20 cm between the radiator and your body. This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.

## Safety Instructions in Conjunction with the Navigation System

- ▶ **Do not plan any routes while riding. Make sure that you come to a complete stop and only input a new destination while at a standstill.** If you do not concentrate exclusively on the traffic around you, you risk being involved in an accident.
- ▶ **Discontinue following your route if the navigation system suggests a path for you to take that may be risky or dangerous for you according to your capabilities as a rider.** Allow the navigation

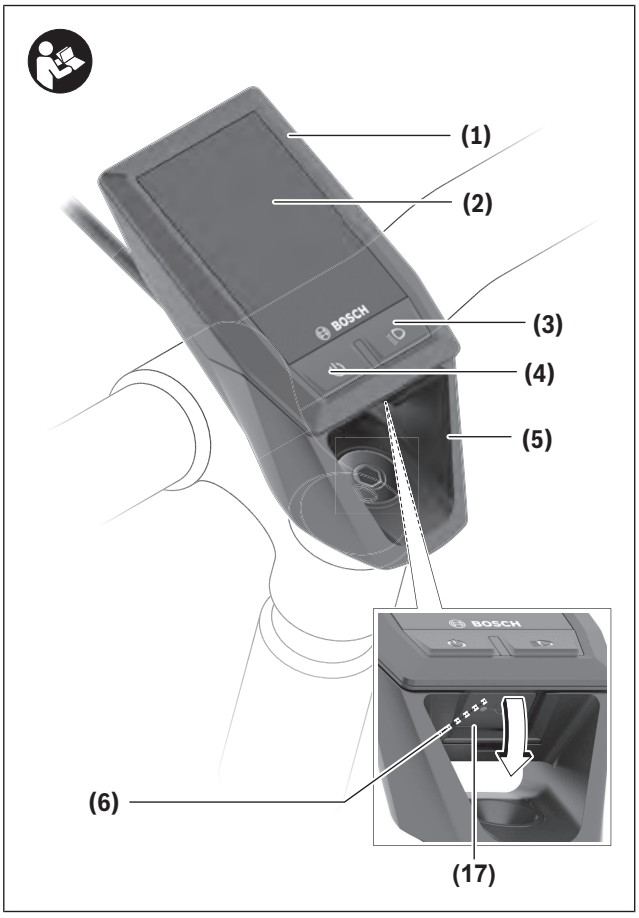
system to select an alternative route for you instead.

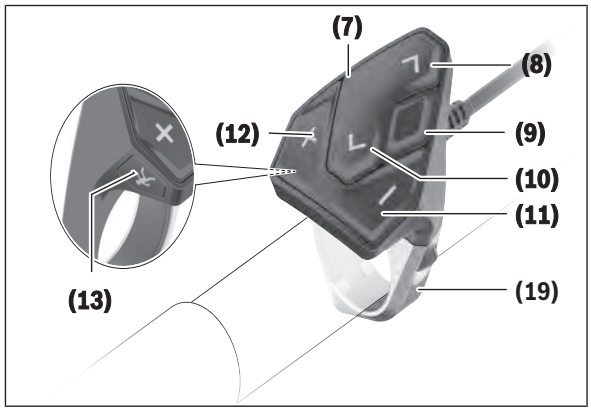
- ▶ **Make sure to observe all traffic signs regardless of the route proposed by the navigation system.** The navigation system is unable to take roadworks or temporary diversions into account.
- ▶ **Do not use the navigation system in circumstances where special attention must be given to safety, or if it is unclear how to proceed (road closures, diversions, etc.).** Always carry additional map sources and means of communication.
- ▶ **The navigation system instructs you to perform an unsafe or illegal maneuver.** Cancel the navigation system and choose an alternative route.
- ▶ **The navigation system directs you into an unsafe area.** Cancel the navigation system and choose an alternative route.
- ▶ **The navigation system does not direct you to the nearest emergency facility when needed.** Make an emergency call and inquire as to the quickest available route.
- ▶ **The location of the bicycle is indicated incorrectly by the navigation system.** Use a secondary source of information to determine where you are located currently.
- ▶ **The volume of the navigation system prevents you from hearing surrounding traffic while riding.** Ensure that you are able to perceive sounds from traffic in the vicinity at all times, so that you can react to potential dangers appropriately.
- ▶ NAVIGATION SERVICES ARE PROVIDED FOR PLANNING PURPOSES ONLY. INFORMATION FROM NAVIGATION SERVICES MAY DIFFER FROM ACTUAL CONDITIONS. USER MUST EXERCISE INDEPENDENT JUDGEMENT WHEN USING THE NAVIGATION SERVICES TO ENSURE THAT THE ROUTE PROVIDED BY THE NAVIGATION SERVICES IS SAFE AND APPROPRIATE FOR EBIKE USAGE.

## Privacy notice

If the on-board computer is sent to Bosch Service because it requires servicing, the data stored on the on-board computer may be transmitted to Bosch.

# Product Description and Specifications




**(1)** On-board computer
**(2)** Display
**(3)** Bike light button
**(4)** On/off button for on-board computer
**(5)** Holder for on-board computer
**(6)** USB port
**(7)** Operating unit
**(8)** Next page/scroll right button **>**
**(9)** Select button
**(10)** Previous page/scroll left button **<**
**(11)** Decrease assistance level button **–**/ scroll down button
**(12)** Increase assistance level button **+**/ scroll down button
**(13)** Push assistance button
**(17)** USB port protective cover[a)]
**(19)** Holder for operating unit

a) Available as spare part

# Technical data

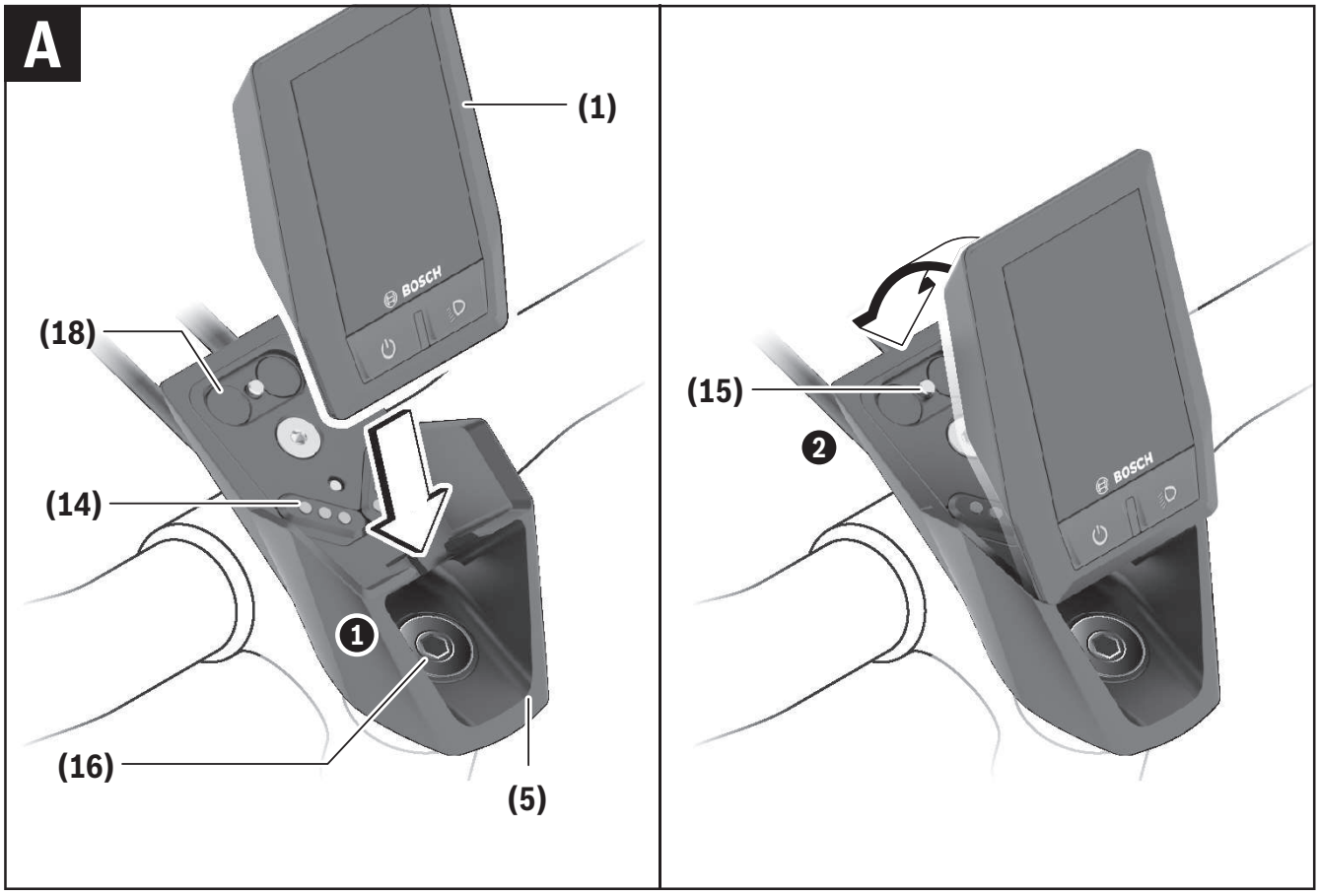
| On-board computer | | Kiox |
|---|---|---|
| Product code | | BUI330 |
| Max. charging current of USB port[A)] | mA | 1000 |
| USB port charging voltage | V | 5 |
| USB charging cable[B)] | | 1 270 016 360 |
| Operating temperature | °F | +23 to +104 |
| Charging temperature | °F | +32 to +104 |
| Storage temperature | °F | +50 to +104 |
| Internal lithium-ion battery | V<br>mAh | 3.7<br>230 |
| Protection rating[C)] | | IP57 |
| Weight, approx. | lbs | 0.13 |
| *Bluetooth® Low Energy* | | |
| – Frequency | MHz | 2400–2480 |
| – Transmission power | mW | < 10 |

A) At an ambient temperature of < 77 °F

B) Not included as part of standard delivery

C) When the USB cover is closed

# Assembly




**(1)** On-board computer
**(5)** Holder for on-board computer
**(14)** Drive unit contacts
**(15)** Locking screw for on-board computer
**(16)** Headset screw
**(18)** Magnet holder

## Fitting and removing the on-board computer (see figure A)

Fit the lower part of the Kiox into the holder **(5)** first and tilt it forward gently until you can feel that the on-board computer is firmly fixed in the magnetic holder.

To remove the on-board computer, hold it by the top end and pull it toward you until it disengages from the magnetic holder.

- ▶ **When you park up the eBike, remove the on-board computer.**

The on-board computer can be secured in place to prevent it from being removed from the holder. To do this, loosen the headset screw **(16)** until the Kiox holder can be swiveled sideways. Put the on-board computer in the holder. Screw the locking screw (M3, 6 mm long) from below into the thread provided in the on-board computer (using a longer screw may damage the on-board computer). Swivel the holder back into place and tighten the headset screw in accordance with the manufacturer's specifications.

# Operation

## Before initial commissioning

The **Kiox** is supplied with a partially charged battery. Before using it for the first time, this battery must be charged for at least one hour via the USB port (see "Energy supply of the on-board computer", page English – 12) or via the eBike system.

The control unit should be attached such that the buttons are almost perpendicular to the handlebars.

When turning on the on-board computer for the first time, the language selection is displayed and then you can use the menu item **<Intro to Kiox>** to find out more about the main functions and displays. You can access this menu item again at a later time via **<Settings>** → **<Information>**.

### Selecting system settings

Fit the on-board computer in the holder and proceed as follows while the bicycle is stationary:

Go to the status page (use the **<** button **(10)** on the operating unit to get to the first display) and open the **<Settings>** with the select button **(9)**.

You can use the **– (11)** and **+ (12)** buttons to select the setting you want. You can open the settings, as well as any additional submenus, using the select button **(9)**. You can use the button **< (10)** to go back to the previous menu from any settings menu.

The following settings can be changed in the **<Sys settings>**:

- **<Brightness>**
- **<Time>**
- **<Date>**
- **<Time zone>**
- **<24h format>**
- **<Bright background>**
- **<Imperial units>**
- **<Language>**
- **<Factory reset>**

## Setting up the eBike system

### Requirements

The eBike system can only be activated when the following requirements are met:

- A sufficiently charged eBike battery is inserted (see battery operating instructions).
- The on-board computer is properly inserted in the holder.

### Switching the eBike system on/off

The following options are available for **switching on** the eBike system:

- With the on-board computer and the eBike battery inserted, briefly press the on/off button **(4)** of the on-board computer.
- With the on-board computer inserted, press the on/off button on the eBike battery (some bicycle manufacturer-specific solutions prevent access to the battery on/off button; see the battery operating instructions).

The drive is activated as soon as you start pedaling (except for in the push assistance function or with the assistance level **OFF**). The motor output depends on the settings of the assistance level.

As soon as you stop pedaling when in normal operation, or as soon as you have reached a speed of **20/28 mph**, the eBike drive unit switches off the assistance. The drive is automatically re-activated as soon you start pedaling again and the speed is below **20/28 mph**.

The following options are available for **switching off** the eBike system:

- Briefly press the on/off button **(4)** of the on-board computer.
- Switch off the eBike battery using its on/off button (some bicycle manufacturer-specific solutions prevent access to the battery on/off button; see the bicycle manufacturer operating instructions).
- Remove the on-board computer from its holder.

If no power is drawn from the eBike drive for about **10** minutes (e.g. because the eBike is not mov-

ing) and no button is pressed on the on-board computer or the control unit of the eBike, the eBike system will switch off automatically.

## Energy supply of the on-board computer

If the on-board computer is in the holder **(5)**, a sufficiently charged eBike rechargeable battery is inserted into the eBike and the eBike system is switched on, then the on-board computer rechargeable battery is powered and charged by the eBike rechargeable battery.

If the on-board computer is removed from the holder **(5)**, the power is supplied by the on-board computer battery. If the on-board computer battery's charge is running low, a warning message appears on the display.

To charge the on-board computer battery, put the on-board computer back in the holder **(5)**. Note that if you are not charging the eBike battery, the eBike system will automatically switch off after 10 minutes if it is not activated. If this happens, the on-board computer battery will also stop charging.

You can also charge the on-board computer via the USB port **(6)**. To do this, open the protective cap **(17)**. Use a Micro USB cable to connect the USB port on the on-board computer to a commercially available USB charger (not included with the product as standard) or to the USB port of a computer (max. **5 V** charging voltage; max. **1000 mA** charging current).

If the on-board computer is removed from the holder **(5)**, all values of the functions are saved and are still displayed.

Following use, the USB port must be carefully re-sealed with the protective cap **(17)**.

If the Kiox battery is not recharged, the date and time will be retained for up to six months. When the on-board computer is switched on again, the date and time will be reset if a *Bluetooth*® connection to the app has been established and the smartphone has successfully identified the current location via GPS.

**Note:** The Kiox **only** charges while it is switched on.

**Note:** If the Kiox is switched off during charging via a USB cable, the Kiox can only be switched on again once the USB cable has been disconnected.

**Note:** To maximize the lifespan of the on-board computer battery, it should be recharged for one hour every three months.

## Storage mode/resetting the Kiox

The on-board computer has an energy-saving storage mode, which minimizes the rate at which the internal battery discharges. Setting to this mode erases the date and time.

This mode can only be activated by pressing and holding the on/off button **(4)** of the on-board computer (for at least eight seconds).

If the on-board computer does not start when the on/off button **(4)** is pressed briefly, the on-board computer is in storage mode.

You can deactivate storage mode by pressing the on/off button **(4)** for at least two seconds.

The on-board computer detects whether it is in fully working order. If you press and hold the on/off button **(4)** for at least eight seconds while the on-board computer is in fully working order, it will go into storage mode. If, contrary to expectations, the Kiox is not in working order and cannot be operated, pressing and holding the on/off button **(4)** (for at least eight seconds) will reset it. After being reset, the on-board computer will restart automatically after approx. five seconds. If the Kiox does not restart, press the on/off button **(4)** for two seconds.

To reset the Kiox to its factory settings, select **<Settings>** → **<Sys settings>** → **<Factory reset>**. All user data will be lost.

## Battery Charge Indicator

The battery charge indicator of the eBike battery **d** (see "Start page", page English – 16) can be read on the status page and in the status bar. The eBike battery's state of charge is also indicated by the LEDs on the eBike battery itself.

| Color of the indicator | Meaning |
|---|---|
| Green | The eBike rechargeable battery is over 30 % charged. |
| Orange | The eBike rechargeable battery is charged between 15 % and 30 %. |
| Red | The eBike rechargeable battery is charged between 0 % and 15 %. |
| Red + ! | The capacity for assisting the drive has been used up, and assistance is switched off. The remaining capacity will be provided for the bike lights and the on-board computer. |

If the eBike battery is being charged on the bike, a corresponding notification will be displayed.

If the on-board computer is removed from the holder **(5)**, the state of charge that was last displayed for the eBike rechargeable battery is saved.

## Setting the assistance level

On the operating unit **(7)**, you can set the level of assistance you want the eBike drive to provide you with while pedalling. The assistance level can be changed at any time, even while cycling.

**Note:** In some models, the assistance level may be preset and cannot be changed. There may also be fewer assistance levels available than stated here.

The following assistance levels are available as a maximum:

- **OFF:** Motor assistance is switched off. The eBike can just be moved by pedaling, as with a normal bicycle. The push assistance cannot be activated at this assistance level.
- **ECO:** Effective assistance with maximum efficiency, for maximum range
- **TOUR/TOUR+:**
  **TOUR:** Steady support, for long-range touring
  **TOUR+:** Dynamic support for natural and sporty driving (only in conjunction with **eMTB**)
- **SPORT/eMTB:**
  **SPORT:** Powerful assistance, for mountain biking and for cycling in urban traffic
  **eMTB:** Optimum assistance whatever the terrain, rapid acceleration when starting from a standstill, improved dynamics, top performance (**eMTB** is only available in combination with drive units BDU250P CX, BDU365, BDU450 CX and BDU480 CX. This also requires a software update.)
- **TURBO:** Maximum assistance even at high cadences, for biking sports

To **increase** the assistance level, press the **+ (12)** button on the operating unit repeatedly until the desired assistance level appears on the display. To **decrease** the assistance level, press the **– (11)** button.

The requested motor output appears on the display **h** (see "Start page", page English – 16). The maximum motor output depends on the selected assistance level.

If the on-board computer is removed from the holder **(5)** and reinserted, the on-board computer always starts again at the assistance level **OFF**.

## Switching the push assistance on/off

The push assistance aids you when pushing your eBike. The speed of this function depends on the selected gear and can reach a maximum of **3.7 mph**.

- ▶ **The push assistance function must only be used when pushing the eBike.** There is a risk of injury if the wheels of the eBike are not in contact with the ground while using the push assistance.

To **activate** the push assistance, briefly press the **WALK** button on your on-board computer. After activation, press the **+** button within 10 s and keep it pressed. The eBike drive is switched on.

**Note:** The push assistance cannot be activated at assistance level **OFF**.

The push assistance is **switched off** as soon as one of the following occurs:
– You release the **+** button;
– the wheels of the eBike are locked (e.g. by applying the brakes or hitting an obstacle);
– the speed exceeds **3.7 mph**.

The push assistance function is subject to local regulations; the way it works may therefore differ from the description above. It can also be deactivated.

▸ **Do not activate push assistance function while riding on the bike.** Only use push assitance function when pushing the eBike.

## Switching bicycle lights on/off

On the model in which the lighting is powered by the eBike system, the front and rear lights can be switched on and off at the same time via the on-board computer using the bike light button **(3)**.

Before starting each journey, check that your bike lights are working correctly.

If the lighting is switched on, the bike light indicator **c** (see "Start page", page English – 16) lights up in the status bar of the display.

Switching the bike lights on and off has no effect on the backlighting of the display.

## Creating a user ID

In order to be able to use all the functions of the on-board computer, you must register online.

With a user ID, you can analyze your ride data, plan offline routes and transfer these routes to the on-board computer.

You can set up a user ID via your **Bosch eBike Connect** smartphone app or simply at www.ebike-connect.com. Enter the details required for registration. The **Bosch eBike Connect** smartphone app is available to download free of charge from the App Store (for Apple iPhones) or from the Google Play store (for Android devices).

## Connecting the On-Board Computer with the Bosch eBike Connect App

Follow these steps to establish a connection to your smartphone:
– Load the app.
– Select the tab **<My eBike>**.
– Select **<Add new eBike device>**.
– Add **Kiox**.

The app will then display an instruction to press and hold the bike lighting button **(3)** on the on-board computer for 5 seconds.

Press and hold the button **(3)** for at least 5 seconds. The on-board computer automatically activates the *Bluetooth® Low Energy* connection and switches to pairing mode.

Follow the instructions on the screen. Once pairing is complete, the user data is synchronized.

**Note:** The *Bluetooth®* connection does not need to be activated manually.

## Activity tracking

In order to record activities, you must be registered with and logged into the eBike Connect portal or the eBike Connect app.

To record activities, you must consent to the storage of your location data either in the portal or in the app. Without this, your activities will not be shown in the portal or the app. The position is only recorded if you as a user are logged into the on-board computer.

## eShift (optional)

eShift is the integration of electronic gear shifting systems into the eBike system. The eShift components are electrically connected to the drive unit by the manufacturer. The separate operating instructions describe how to operate the electronic gear-shifting systems.

## eSuspension (optional)

eSuspension refers to the integration of electronic absorption and suspension elements into the eBike system. Predefined settings for the eSuspension system can be selected in the **Quick Menu**.

Further information about these settings can be found in the operating instructions of the eSuspension manufacturer.

eSuspension is only available in conjunction with the Kiox on-board computer and only possible in combination with the BDU450 CX, BDU480 CX and BDU490P drive units.

## Lock (premium function)

The lock function is available to purchase from the **<Shop>** in the eBike Connect app. Once the lock function is switched on, the assistance from the eBike drive unit is deactivated by removing the on-board computer. Activation is then only possible via the on-board computer that is associated with the eBike.

More detailed instructions regarding this can be found in the online operating instructions at www.Bosch-eBike.com/Kiox-manual.

## Software updates

Software updates are transferred from the app to the on-board computer in the background as soon as the app is connected with the on-board computer. If an update has been fully transferred, this is shown **three times** upon restarting the on-board computer. The update can then be started. The eBike should not be used during the update.

Alternatively, you can check for the presence of any updates via **<Sys settings>** and then start these.

## Powering external devices from the USB port

The USB port can be used to operate or charge most devices that can be powered via USB (e.g. various mobile phones).

Charging requires the on-board computer to be mounted and a sufficiently charged battery to be inserted in the eBike.

Open the protective cap **(17)** for the USB port on the on-board computer. Use a Micro-A – Micro-B USB charging cable (available from your Bosch eBike dealer) to connect the USB port on the external device to the USB port **(6)** on the on-board computer.

Once the electrical load has been disconnected, the USB port must be carefully resealed with the protective cap **(17)**.

- ▶ **A USB connection is not a watertight plug connection. When cycling in wet conditions, ensure no external devices are connected and that the USB port is fully covered by the protective cap (17).**

**Attention:** Any electrical devices connected can reduce the range of the eBike.

# Displays and settings of the on-board computer

**Note:** All interface displays and texts on the following pages correspond to the release status of the software. The interface displays and texts may change slightly following a software update.

## Operating logic

You can use the **< (10)** and **> (8)** buttons to switch between the different riding value information pages (even while riding). This way, you can keep both hands on the handlebars while cycling.

You can use the **+ (12)** and **– (11)** buttons to increase or decrease the assistance level.

The **<Settings>** that can be accessed via the **Status screen** cannot be changed while riding.

You can use the select button **(9)** to perform the following functions:

– You can access the quick menu while riding.
– You can access the settings menu from the **Status screen** while stationary.
– You can confirm values and acknowledge informative hints.
– You can exit a dialog.

If the on-board computer is removed from its holder and not switched off, it will display information regarding the last journey, as well as status information. Press the bike lights button **(3)** to go to the next page.

If no button is pressed after the on-board computer is removed from the holder, it will switch itself off after 1 minute.

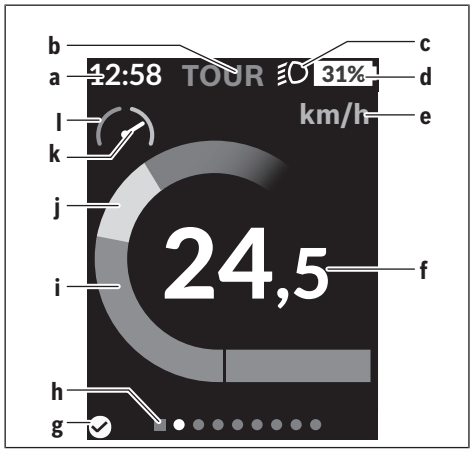
## Screen sequence

Provided the on-board computer is fitted to the holder, you can view the following displays one after the other:

1. Start page
2. Time and range
3. Distance and journey time
4. My performance, cadence and heart rate
5. Average and maximum speed
6. Distance, range, my performance and heart rate
7. Gradient, calories burned and total distance
8. Information page for navigation: **<Plan a route in the eBike Connect Smartphone app>**
9. Status page

## Start page

When you insert the on-board computer into the holder for the first time while it is switched on, it will display the following start page. The on-board computer will then remember the most recently displayed page and will show this page again the next time it is switched on.




**a** Time/speed indicator
**b** Assistance level indicator
**c** Lighting indicator
**d** Battery charge indicator of the eBike battery
**e** Unit of speed indicator[a)]
**f** Speed
**g** Connection status
**h** Navigation bar
**i** Motor output
**j** Your performance
**k** Average speed
**l** Performance evaluation

a) Can be changed between km/h and mph via the status page **<Settings>**/**<Sys settings>**

The **a** ... **d** indicators form the status bar and are shown on every page. If the speed is already being displayed on the screen itself, the **a** indicator will change to the current time in hours and minutes. The status bar displays:

- **Speed/time:** The current speed in km/h or mph or the current time
- **Assistance level:** Indicates the current level of assistance using a color code
- **Light:** A symbol that indicates whether the light is on
- **eBike battery state of charge:** Indicates the current state of charge as a percentage

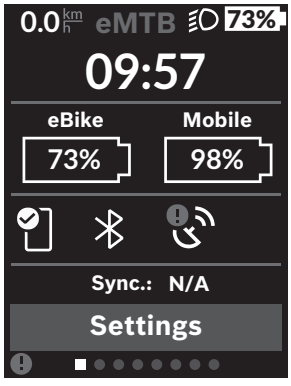
The performance evaluation **l** graphically displays your current speed in comparison to your average speed **k**.

- Indicator in orange area (left side): Below your average speed
- Indicator in green area (right side): Above your average speed
- Indicator in the middle: Corresponds to your average speed

The navigation bar **h** indicates which page you are on. Your current page is highlighted. You can use the **< (10)** and **> (8)** buttons to move to additional pages.

From the initial start page, you can access the status page via the **< (10)** button.

## Status screen




As well as the status bar, the status page also shows you the current time and the state of charge of all your eBike's batteries, as well as the state of charge of your smartphone battery if the smartphone is connected via *Bluetooth*®.

- Good connection
- Poor connection
- No connection

You will also be shown the date of the most recent synchronization between the smartphone and Kiox.

You can access the **<Settings>** from the bottom section.

## <Settings>

You can access the settings menu via the status page. The **<Settings>** cannot be accessed or changed while riding.

You can use the **– (11)** and **+ (12)** buttons to select the setting you want. You can open the settings, as well as any additional submenus, using the select button **(9)**. You can use the button **< (10)** to go back to the previous menu from any settings menu.

You can find the following superordinate sections on the first navigation level:

- **<Registration>** – Registration notification:
  This menu item is only shown if you have not yet registered on eBike Connect.
- **<My eBike>** – Settings for your eBike:
  You can reset the counters (such as the number of kilometers traveled that day or average values) to zero either automatically or manually, and you can reset the range. You can change the wheel circumference value that was preset by the manufacturer by ±5 %. If your eBike features **eShift**, you can also configure your eShift system here. The bicycle manufacturer or dealer may base the service date on the distance traveled and/or a period of time. The due date for the service is displayed under **<Next Service: ...>**. The bike component page displays the serial number and hardware and software versions for each component, in addition to other key data that is relevant for the components.
- **<Screens>** Here you can set the content and order of the screens, and reset these to factory settings if required.
- **<Bluetooth>** – Switching the *Bluetooth*® function on or off: Connected devices, for example heart rate monitors, are displayed.
- **<My profile>** – Active user data:
  Is only displayed if the user is registered.

– **<Sys settings>** – A list of options for adjusting the settings of your on-board computer:
  You can display the speed and distance in kilometers or miles, display the clock in 12- or 24-hour format, adjust the time, date and time zone and select your preferred language. You can reset the Kiox to its factory settings, run a software update (if available) and choose between a black or white design.
– **<Information>** – Information about your Kiox:
  References to FAQs (frequently asked questions), certifications, contact information, license information
– **<Certifications>**




You can find a detailed description of each parameter in the online operating instructions at www.Bosch-eBike.com/Kiox-manual.

## Quick Menu

Selected settings are displayed on the **Quick Menu**. These settings can be changed even while riding.

You can access the **Quick Menu** via the select button **(9)**. It cannot be accessed from the **Status screen**.

The following settings can be changed via the **Quick Menu**:

– **<Reset trip data?>**
  All data on the distance traveled so far is reset to zero.
– **<eShift>** (optional)
  You can set the cadence here.
– **<eSuspension>** (optional)
  This is where you can set a manufacturer-defined shock absorption or suspension mode.

# Troubleshooting

The components of the eBike system are continuously monitored automatically. If a fault is detected, the corresponding fault code will appear on the on-board computer.

The drive may also be switched off automatically depending on what type of fault has occurred. You can continue riding at any time without assistance from the drive, but you should have your eBike checked before completing any more journeys.

- ▶ **Only have repairs performed by a certified bicycle dealer.**

| Code | Cause | Corrective measures |
|---|---|---|
| 410 | One or more buttons of the on-board computer are disabled. | Check whether any buttons are stuck, e.g. as a result of dirt finding its way in. Clean the buttons if need be. |
| 414 | Operating unit connection problem | Have the connections checked |
| 418 | One or more buttons on the operating unit are disabled. | Check whether any buttons are stuck, e.g. as a result of dirt finding its way in. Clean the buttons if need be. |
| 419 | Configuration error | Restart the system. If the problem persists, contact your Bosch eBike dealer. |
| 422 | Drive unit connection problem | Have the connections checked |
| 423 | eBike battery connection problem | Have the connections checked |
| 424 | Communication problem between components | Have the connections checked |
| 426 | Internal time-out error | Restart the system. If the problem persists, contact your Bosch eBike dealer. With this error, it is not possible to bring up the wheel circumference in the basic settings menu or to adjust it. |
| 430 | Internal battery of the on-board computer is flat (does not apply to BUI350) | Charge the on-board computer (in the holder or via the USB port) |
| 431 | Software version error | Restart the system. If the problem persists, contact your Bosch eBike dealer. |
| 440 | Internal drive unit fault | Restart the system. If the problem persists, contact your Bosch eBike dealer. |
| 450 | Internal software error | Restart the system. If the problem persists, contact your Bosch eBike dealer. |
| 460 | Error at USB port | Remove the cable from the USB port of the on-board computer. If the problem persists, contact your Bosch eBike dealer. |
| 490 | Internal fault of the on-board computer | Have the on-board computer checked |

| Code | Cause | Corrective measures |
|---|---|---|
| 500 | Internal drive unit fault | Restart the system. If the problem persists, contact your Bosch eBike dealer. |
| 502 | Bike light fault | Check the light and the associated wiring. Restart the system. If the problem persists, contact your Bosch eBike dealer. |
| 503 | Speed sensor fault | Restart the system. If the problem persists, contact your Bosch eBike dealer. |
| 504 | Speed signal distortion detected. | Check that the spoke magnet is positioned correctly, and adjust it if necessary. Check that nothing has been tampered with (tuning). Drive assistance is reduced. |
| 510 | Internal sensor fault | Restart the system. If the problem persists, contact your Bosch eBike dealer. |
| 511 | Internal drive unit fault | Restart the system. If the problem persists, contact your Bosch eBike dealer. |
| 530 | Battery fault | Switch off the eBike, remove the eBike battery and reinsert the eBike battery. Restart the system. If the problem persists, contact your Bosch eBike dealer. |
| 531 | Configuration error | Restart the system. If the problem persists, contact your Bosch eBike dealer. |
| 540 | Temperature error | The eBike is outside of the permissible temperature range. Switch off the eBike system and allow the drive unit to either cool down or heat up to the permissible temperature range. Restart the system. If the problem persists, contact your Bosch eBike dealer. |
| 550 | An impermissible load has been detected. | Remove the load. Restart the system. If the problem persists, contact your Bosch eBike dealer. |
| 580 | Software version error | Restart the system. If the problem persists, contact your Bosch eBike dealer. |
| 591 | Authentication error | Switch off the eBike system. Remove the battery pack and reinsert it. Restart the system. If the problem persists, contact your Bosch eBike dealer. |
| 592 | Incompatible component | Use a compatible display. If the problem persists, contact your Bosch eBike dealer. |
| 593 | Configuration error | Restart the system. If the problem persists, contact your Bosch eBike dealer. |
| 595, 596 | Communication error | Check the wiring to the drive and restart the system. If the problem persists, contact your Bosch eBike dealer. |

| Code | Cause | Corrective measures |
|---|---|---|
| 602 | Internal battery fault | Restart the system. If the problem persists, contact your Bosch eBike dealer. |
| 603 | Internal battery fault | Restart the system. If the problem persists, contact your Bosch eBike dealer. |
| 605 | Battery temperature error | The battery is outside of the permissible temperature range. Switch off the eBike system and allow the battery to either cool down or heat up to the permissible temperature range. Restart the system. If the problem persists, contact your Bosch eBike dealer. |
| 606 | External battery fault | Check the wiring. Restart the system. If the problem persists, contact your Bosch eBike dealer. |
| 610 | Battery voltage error | Restart the system. If the problem persists, contact your Bosch eBike dealer. |
| 620 | Charger fault | Replace the charger. Contact your Bosch eBike dealer. |
| 640 | Internal battery fault | Restart the system. If the problem persists, contact your Bosch eBike dealer. |
| 655 | Multiple battery faults | Switch off the eBike system. Remove the battery pack and reinsert it. Restart the system. If the problem persists, contact your Bosch eBike dealer. |
| 656 | Software version error | Contact your Bosch eBike dealer so that they can perform a software update. |
| 7xx | Error relating to third-party components | Observe the information in the operating instructions of the respective component manufacturer. |
| Display is blank | Internal fault of the on-board computer | Restart your eBike system by switching it off and back on. |

# Maintenance and cleaning

Do not clean any of the components with pressurized water.

Keep the screen of your on-board computer clean. Dirt can cause faulty brightness detection.

Clean your on-board computer using a soft cloth dampened only with water. Do not use cleaning products of any kind.

Have your eBike system checked by an expert at least once a year (including mechanical parts, up-to-dateness of system software).

The bike retailer can also schedule the service based on a mileage and/or a time period. In this case, the on-board computer displays a message telling you when the service date is due each time it is switched on.

Please have your eBike serviced and repaired by an authorized bicycle dealer.

- ▸ **Only have repairs performed by a certified bicycle dealer.**

# Battery Recycling Program

The drive unit, on-board computer incl. operating unit, battery, speed sensor, accessories and packaging should be disposed of in an environmentally correct manner.

Do not dispose of eBikes and their components with household waste.

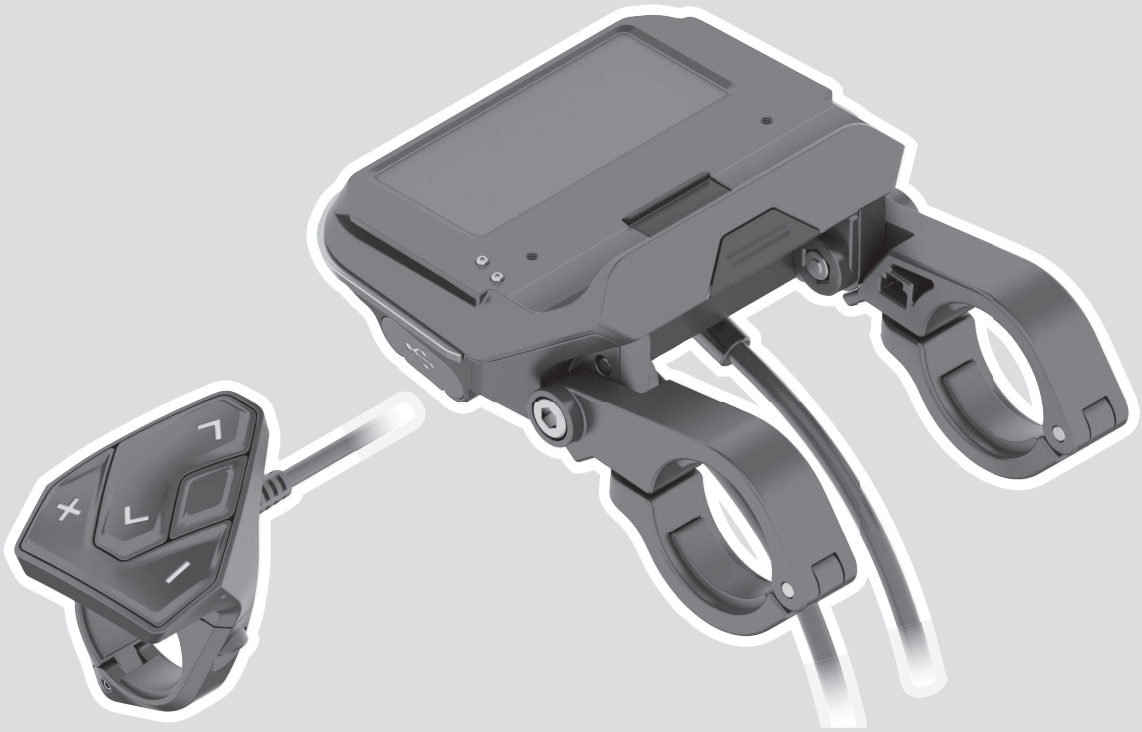
You may recycle your Bosch battery pack by calling 1.800.822.8837.

**Robert Bosch GmbH**
72757 Reutlingen
Germany

**www.bosch-ebike.com**

**1 270 U20 XBK** (2022.01) T / 74

# Owner’s Manual – The Bosch Drive System SmartphoneHub



**en** Original operating instructions

**This manual contains important safety, performance and service information. Read and understand it along with the information provided to you by your bicycle manufacturer before using the product, and keep it for reference.**

# Table of Contents

Introduction ..... 2
About Warnings ..... 2
General Warnings ..... 2
Using your Manual ..... 3
Operating your Bosch Drive System ..... 4
Safety instructions ..... 4
Product description and specifications ..... 8
Intended use ..... 9
Technical data ..... 9
Operation ..... 10
Displays and settings of the SmartphoneHub ..... 13
Troubleshooting ..... 16
Maintenance and cleaning ..... 19
Battery Recycling Program ..... 20

# Introduction

## About Warnings

This manual contains many **DANGER**, **WARNING**, and **CAUTION** indicators concerning the consequences of failure to use, assemble, maintain, store, inspect and dispose of a Bosch-equipped eBike in a safe manner.

– The combination of the safety alert symbol and the word **DANGER** indicates a hazardous situation that, if not avoided, will result in death or serious injury.
– The combination of the safety alert symbol and the word **WARNING** indicates a hazardous situation that, if not avoided, could result in death or serious injury.
– The combination of the safety alert symbol and the word **CAUTION** indicates a hazardous situation that, if not avoided, could result in minor or moderate injury.

## General Warnings



**Read all safety warnings and all instructions.** Failure to follow the warnings and instructions may result in death or serious injury.

**Save all safety warnings and instructions for future reference.**

The term **battery pack** used in these operating instructions refers to all original Bosch eBike battery packs.

▶ **Read ALL accompanying manuals before riding the bike for the first time.** Your Bosch Drive System comes with additional manuals and documents provided by the manufacturer of the bicycle and other components. Failure to read and understand safety information can result in death or serious injury.

**⚠ WARNING**

▶ **This manual contains important safety, performance and service information.** Read it before you take the first ride on your new bicycle, and keep it for reference. The manual can also be found online at www.bosch-ebike.com.

▶ **This manual is intended to be read together with the separate user manual provided with your bicycle.** Be sure to read all provided documents including labels on the product before your first ride.

▶ **Take responsibility for your own SAFETY.** If you have any questions or do not understand something, consult with your dealer or the bicycle or component manufacturer.

▶ **Some eBike accessories may present a choking hazard to small children.** Keep these accessories away from children.

**⚠ CAUTION**

▶ **The Bosch Drive System adds weight to your bicycle which you may not be used to lift.** Avoid injury, use proper lifting techniques.

# Using your Manual

In addition to the functions outlined here, changes to software relating to troubleshooting and functional modifications may be introduced at any time.

## Graphics

The bicycle shown in this manual may differ slightly from your bicycle, but will be similar enough to help you understand our instructions.

RIGHT-HAND and LEFT-HAND sides are determined by facing in the direction the bicycle will travel when going forward. When you see a broken line (------), the item referred to is hidden from view.

# Operating your Bosch Drive System

## Safety instructions



**Read all the safety information and instructions.** Failure to observe the safety information and follow instructions may result in electric shock, fire and/or serious injury.

**Save all safety warnings and instructions for future reference.**

The term **battery pack** used in these operating instructions refers to all original Bosch eBike battery packs.

- ▶ **Read and observe the safety warnings and instructions in all operating instructions of the eBike system and your eBike.**
- ▶ **Do not allow yourself to be distracted by the display of the on-board computer.** If you do not concentrate exclusively on the traffic around you, you risk being involved in an accident. If you want to change any settings on the on-board computer other than the assistance level, always stop before entering the relevant data.
- ▶ **Do not open the on-board computer.** Opening the on-board computer can result in irreparable damage and void your warranty.
- ▶ **Do not use the on-board computer as a handle.** Lifting the eBike up by the on-board computer can cause irreparable damage to the on-board computer.
- ▶ **Do not stand your bicycle upside down on its saddle and handlebars if the SmartphoneHub or its holder protrude from the handlebars.** This may irreparably damage the SmartphoneHub or the holder.
- ▶ **Caution!** Using the on-board computer with *Bluetooth*® and/or WiFi can interfere with the operation of other devices and systems, including airplanes and medical devices (e.g. pacemakers, hearing aids). Similarly, the possibility that this may cause damage to humans and animals in the immediate vicinity cannot be completely excluded. Do not use the on-board computer with *Bluetooth*® in the vicinity of medical devices, service stations, chemical plants, blasting areas or other areas where there is a risk of explosion. Do not use the on-board computer with *Bluetooth*® in airplanes. Avoid using the device in close proximity to your body over an extended period of time.
- ▶ The *Bluetooth*® word mark and logos are registered trademarks owned by Bluetooth SIG, Inc. and any use of such marks by Bosch eBike Systems is under licence.
- ▶ **The on-board computer is fitted with a radio interface. Local operating restrictions, e.g. in airplanes or hospitals, must be adhered to.**
- ▶ **Do not allow your attention to be diverted from surrounding traffic when using COBI.Bike products. Always observe the applicable legal provisions in your country for the permitted use of your bicycle on public streets. In particular, note that it is prohibited to pick up or hold your smartphone in your hand while cycling on public streets.**
- ▶ **Consult a doctor before using fitness app programs.** Fitness apps may cause people to overexert themselves physically.

**Note:** We recommend that COBI.Bike products are only used by persons at least 10 years of age.

- ▶ **Choose the USB charging cable length appropriately.** USB charging cable length must not be long enough to catch in handlebar or front wheel. This is important to prevent personal injury.
- ▶ **Accessing other apps, reading pop up messages/other content, or otherwise using your mobile device while operating an eBike may be distracting. Distracted driving is a serious**

**safety concern and can lead to accidents causing serious injury or death. In order to prevent distracted driving, most mobile devices come equipped with a "Do Not Disturb" mode. The "Do Not Disturb" mode should be used while operating an eBike.** Please consult your device-specific instructions for more information. You, as the eBike operator, are fully responsible for ensuring that you pay attention to road conditions and comply with traffic laws at all times.

- ▶ Please note that certain State or local laws may require that class III eBikes must be equipped with a functioning speedometer that displays speed in miles per hour. Riders must be aware of any and all applicable rules and regulations related to the operation or use of class III eBikes in any applicable jurisdictions before operating or otherwise using this product.

**Note:** Usage of the SmartphoneHub is limited to category 1 and 2 according to ASTM-F2043-13.

**Warning!** If a bicycle/component is used in a higher category than defined for this bike/component by the manufacturer, the stress on its materials will increase. This results in a shortened life span of all components and, in extreme cases, can lead to the failure of important components. This means an increased danger of accidents and injury. Therefore, it is important to select a bicycle/component which intended usage condition covers the expected riding conditions. Please find the different specific usage conditions and their explanations below:

- **Condition 1:** This is a set of conditions for the operation of a bicycle on a regular paved surface where the tires are intended to maintain ground contact.
- **Condition 2:** This is a set of conditions for the operation of a bicycle that includes Condition 1 as well as unpaved and gravel roads and trails with moderate grades. In this set of conditions, contact with irregular terrain and loss of tire contact with the ground may occur. Drops are intended to be limited to 15 cm (6") or less.

On other terrains (such as on bumpy paths or steep downhill tracks), there is a danger that the smartphone may detach from the holder, fall down and therefore become damaged. There is also a considerable risk of an accident if the smartphone falls out.

## Safety Instructions in Conjunction with the Navigation System

- ▶ **Do not plan any routes while riding. Make sure that you come to a complete stop and only input a new destination while at a standstill.** If you do not concentrate exclusively on the traffic around you, you risk being involved in an accident.
- ▶ **Discontinue following your route if the navigation system suggests a path for you to take that may be risky or dangerous for you according to your capabilities as a rider.** Allow the navigation system to select an alternative route for you instead.
- ▶ **Make sure to observe all traffic signs regardless of the route proposed by the navigation system.** The navigation system is unable to take roadworks or temporary diversions into account.
- ▶ **Do not use the navigation system in circumstances where special attention must be given to safety, or if it is unclear how to proceed (road closures, diversions, etc.).** Always carry additional map sources and means of communication.
- ▶ **The navigation system instructs you to perform an unsafe or illegal maneuver.** Cancel the navigation system and choose an alternative route.
- ▶ **The navigation system directs you into an unsafe area.** Cancel the navigation system and choose an alternative route.
- ▶ **The navigation system does not direct you to the nearest emergency facility when needed.** Make an emergency call and inquire as to the quickest available route.
- ▶ **The location of the bicycle is indicated incorrectly by the navigation system.** Use a secondary

source of information to determine where you are located currently.

- ▶ **The volume of the navigation system prevents you from hearing surrounding traffic while riding.** Ensure that you are able to perceive sounds from traffic in the vicinity at all times, so that you can react to potential dangers appropriately.
- ▶ NAVIGATION SERVICES ARE PROVIDED FOR PLANNING PURPOSES ONLY. INFORMATION FROM NAVIGATION SERVICES MAY DIFFER FROM ACTUAL CONDITIONS. USER MUST EXERCISE INDEPENDENT JUDGEMENT WHEN USING THE NAVIGATION SERVICES TO ENSURE THAT THE ROUTE PROVIDED BY THE NAVIGATION SERVICES IS SAFE AND APPROPRIATE FOR EBIKE USAGE.

## Safety Instructions for Charging the On-Board Computer Battery

- ▶ **Only charge the on-board computer with USB power source (5 V, 1000 mA max) and USB cable rated at least 1000 mA.** Using USB power source or USB cable not appropriately rated for the application may result in fire, explosion or personal injury.
- ▶ **Charge the on-board computer in temperatures above +32 degrees F (0 degrees C) and below +104 degrees F (40 degrees C). Store on-board computer in locations where temperatures will not exceed 104 degrees F (40 degrees C).** This is important to prevent serious damage to the battery in the on-board computer.
- ▶ **Do not expose on-board computer to fire or excessive temperature.** Exposure to fire or temperature above 212 °F (100 °C) may cause explosion.
- ▶ **Do not recharge the on-board computer (via USB port) in damp or wet environment.** Water entering on-board computer may result in electric shock or fire.
- ▶ **Never submerge on-board computer in fluid of any kind or allow fluid to enter them.** Corrosive or conductive fluid (such as seawater or industrial chemical or bleach containing products, etc.) can cause short circuit which may result in fire, personal injury and property damage.
- ▶ **Battery leakage may occur under extreme usage or temperature conditions. Avoid contact with skin and eyes.** The battery liquid is caustic and could cause chemical burns to tissues. If liquid comes in contact with skin, wash quickly with soap and water. If the liquid contacts your eyes, immediately flush eyes with water for a minimum of 15 minutes and seek medical attention.
- ▶ **Place on-board computer on flat nonflammable surfaces and away from flammable materials when recharging on-board computer using external USB power source.** Carpeting and other heat insulating surfaces block proper air circulation which may cause overheating of the on-board computer. If smoke or melting of the on-board computer is observed, unplug the external USB power source immediately and do not use the on-board computer. Contact customer service immediately.
- ▶ **Before each use, check the on-board computer, cable and plug.** If damage is detected, do not use the on-board computer. Damaged on-board computer, charging cables and plugs increase the risk of a fire, explosion and personal injury.
- ▶ **Do not disassemble on-board computer.** No user serviceable part inside. Incorrect reassembly or damage may result in fire or explosion.

**NOTICE:** This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions:

1. This device must not cause harmful interference, and
2. this device must accept any interference received, including interference that may cause undesired operation.

**NOTICE:** Changes or modifications made to this equipment not expressly approved by the Robert Bosch GmbH may void the FCC authorization to operate this equipment.

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

– Reorient or relocate the receiving antenna.
– Increase the separation between the equipment and receiver.
– Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
– Consult the dealer or an experienced radio/TV technician for help.

**Radiofrequency radiation exposure Information:** The radiated output power of the device is far below the FCC radio frequency exposure limits. Nevertheless, the device shall be used in such a manner that the potential for human contact during normal operation is minimized.

**NOTICE:** This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with minimum distance of 20 cm between the radiator and your body. This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter:

1. This device must not cause harmful interference, and
2. this device must accept any interference that is received, including interference that may cause undesired operation.

**ISED Notice (Canada)**

This device contains licence-exempt transmitter(s)/ receiver(s) that comply with Innovation, Science and Economic Development Canada's licence-exempt RSS(s). Operation is subject to the following two conditions:

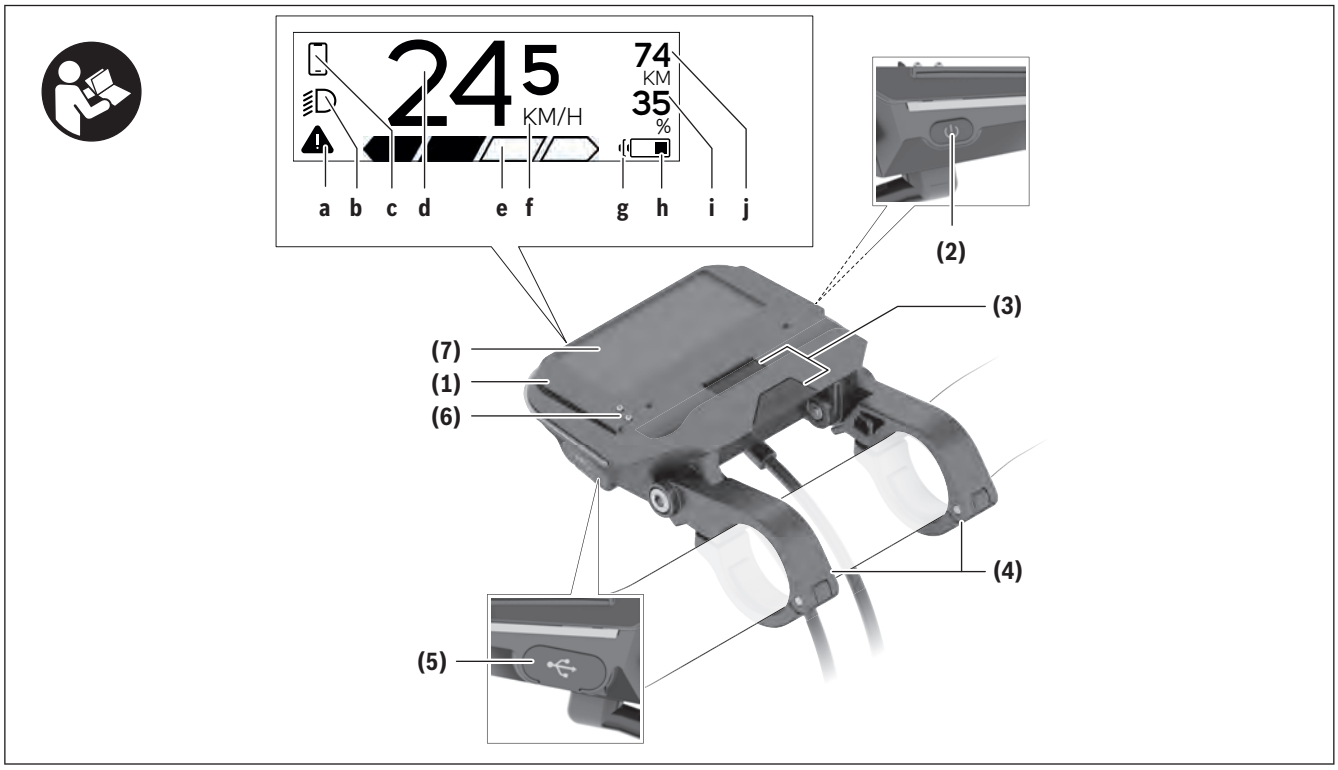
1. this device may not cause interference, and
2. this device must accept any interference, including interference that may cause undesired operation of the device.

This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with minimum distance of 20 cm between the radiator and your body. This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.

## Privacy notice

If the SmartphoneHub is sent to Bosch Service for servicing, note that the data stored on the device may be transmitted to Bosch.

# Product description and specifications

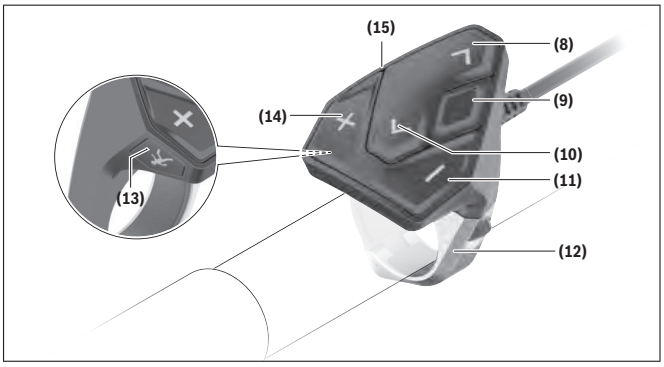



**(1)** SmartphoneHub
**(2)** On/off button for SmartphoneHub
**(3)** Release lever for smartphone holder
**(4)** Holder for SmartphoneHub[a)]
**(5)** Protective cap for USB port
**(6)** Power supply for smartphone holder
**(7)** Display

a) For mounting on the handlebars, custom solutions are possible even without the use of the handlebar clamps.

## Display elements for SmartphoneHub

**a** Error indicator
**b** Bike lights display
**c** Smartphone connection indicator
**d** Speed
**e** Assistance level indicator
**f** Unit indicator
**g** Indicator for second battery (optional)
**h** Battery charge indicator
**i** State of charge of the battery
**j** Operating range




**(8)** Next page button
**(9)** Select button
**(10)** Previous page button
**(11)** Decrease assistance level button **–**
**(12)** Holder for operating unit
**(13)** Start/push assistance button **WALK**
**(14)** Increase assistance level button **+**
**(15)** Operating unit

# Intended use

The SmartphoneHub is designed to control Bosch eBike systems and display cycling data.

In addition to the functions outlined here, changes to software relating to troubleshooting and functional modifications may be introduced at any time.

The description of additional functions can be found in the online version of these instructions at www.Bosch-eBike.com/smartphonehub-manual.

The SmartphoneHub is suitable for cycling on reinforced paths without jumps and with few ledges (< 15 cm) at average speeds of between 15 and 25 km/h, for example on asphalt roads, country paths, paths reinforced with gravel or sand, and reinforced woodland paths.

If used incorrectly, there is a danger that the smartphone may detach from the holder, fall down and therefore become damaged. There is also a considerable risk of an accident if the smartphone falls out.

The **SmartphoneHub** is intended for use with a smartphone.

The basic cycling data, however, is shown on the display of the SmartphoneHub. Additional information and functions can be added via the **COBI.Bike** smartphone app.

Communication between the SmartphoneHub and smartphone takes place via a *Bluetooth*® connection.

# Technical data

| On-board computer | | SmartphoneHub |
|---|---|---|
| Product code | | CUI100 |
| Max. charging current of USB port | mA | 1000 |
| USB port charging voltage | V | 5 |
| Operating temperature | °F | 23 to 104 |
| Storage temperature | °F | 50 to 104 |
| Charging temperature | °F | 32 to 104 |
| Internal lithium-ion battery | V<br>mAh | 3.7<br>300 |
| Protection rating[A)] | | IP54 |

| On-board computer | | SmartphoneHub |
|---|---|---|
| Weight, approx. | lb | 0.26 |

A) When the USB cover is closed

The Bosch eBike system uses FreeRTOS (see http://www.freertos.org).

# Operation

## Start-up

### Requirements

The eBike system can only be activated when the following requirements are met:
- A sufficiently charged battery is inserted (see battery operating instructions).
- The speed sensor is connected properly (see drive unit operating instructions).

### Switching the eBike system on/off

The following options are available for **switching on** the eBike system:
- Press the on/off button **(2)** of the on-board computer with the eBike battery inserted.
- Press the on/off button of the eBike battery (see battery operating instructions).

The drive is activated as soon as you start pedaling (except for in the push assistance function or with the assistance level **OFF**). The motor output depends on the settings of the assistance level.

As soon as you stop pedaling when in normal operation, or as soon as you have reached a speed of **20 mph**, the eBike drive unit switches off the assistance. The drive is automatically re-activated as soon you start pedaling again and the speed is below **20 mph**.

The following options are available for **switching off** the eBike system:
- Press the on/off button **(2)** of the on-board computer.
- Switch off the eBike battery using its on/off button (some bicycle manufacturer-specific solutions prevent access to the battery on/off button; see the bicycle manufacturer operating instructions).

The system shuts down after being switched off. This takes approximately three seconds. It cannot be switched back on until shutdown has been completed.

If the eBike is not moved for approx. ten minutes **and** no button is pressed on the on-board computer, the eBike system switches off automatically in order to save energy.

**Note:** Always switch off the eBike system when you park the eBike.

**Note:** If the battery of the SmartphoneHub is empty, you can still switch on your eBike using the eBike battery. The SmartphoneHub battery begins charging automatically once the eBike battery is switched on. Alternatively, the battery of the SmartphoneHub can be charged via the USB port.

## Linking the SmartphoneHub with a smartphone

You can expand the indicators and functions of the SmartphoneHub using the **COBI.Bike** smartphone app. This app can be downloaded free of charge from the App Store (for Apple iPhones) or from the Google Play Store (for Android devices).

To connect your SmartphoneHub with the smartphone, open the **COBI.Bike** app on your smartphone and follow the instructions in the app.

## Inserting a smartphone into the Universal Mount

A Universal Mount **(16)** is supplied for attaching a smartphone. Specific holders for iPhones can be purchased from the range of accessories. No separate power supply is necessary for an iPhone holder.

For the Universal Mount, the power (5 V/1 A, max. 1.5 A) is supplied using a separate USB cable (included with delivery) via the micro-A/B USB port of the SmartphoneHub.

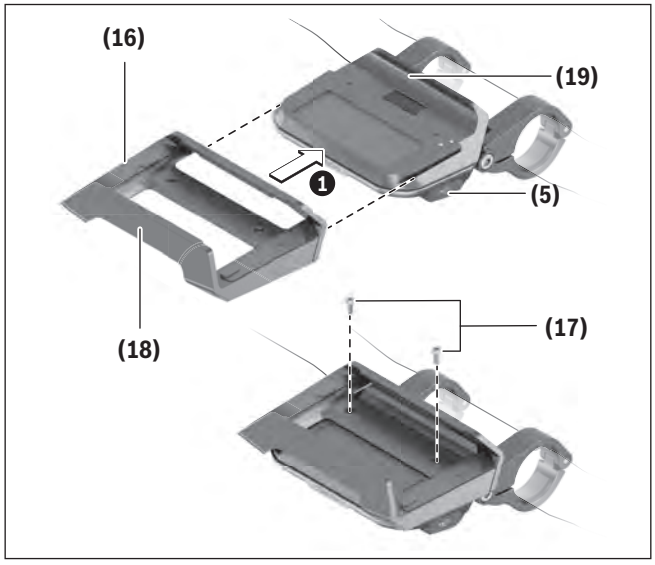
The Universal Mount **(16)** can only hold Apple iPhones and Android smartphones (including case) measuring between 0.28 in and 0.32 in deep, between 4.87 in and 6.24 in long and between 2.31 in and 3.1 in wide. The maximum permitted weight of the smartphone, including its case, is 0.55 lb.

**Please note that the manufacturer specifications do not always reflect the maximum dimensions.** Some manufacturers do not factor the exposed position of the camera into the depth.

The specified dimensions include any phone cases. Smartphones with **folio and carrying cases** must not be used.

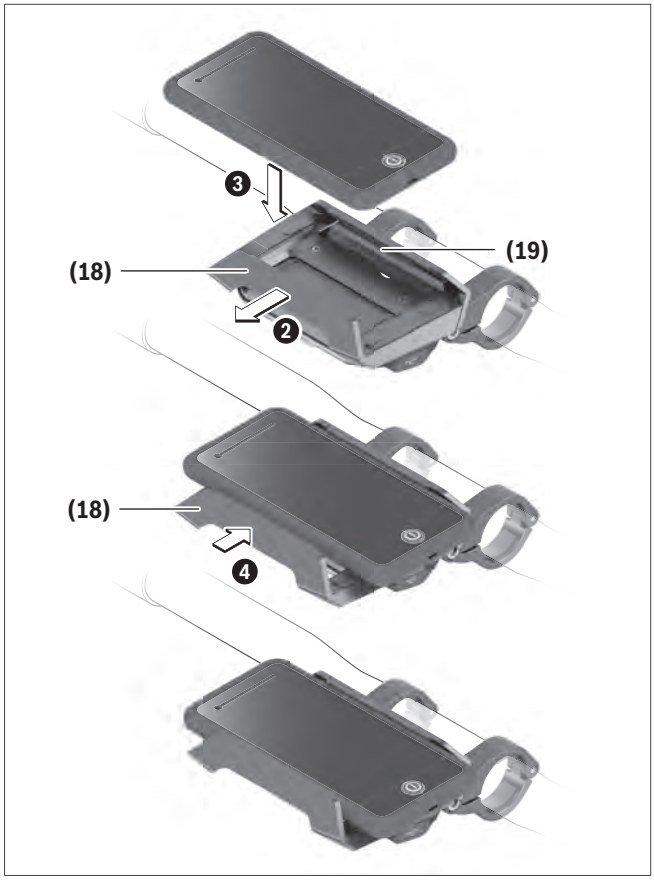
Be careful not to pinch your fingers between the retaining brackets and the Smartphone when inserting your smartphone.

### Attaching the Universal Mount




Push the Universal Mount **(16)** onto the SmartphoneHub from the front until you hear it click into place ❶. The Universal Mount can also be fixed in place using the two fastening screws **(17)**.

### Inserting the smartphone




Pull the front mounting bracket **(18)** forward ❷.

Insert the smartphone with the long side of the phone positioned against the rear mounting bracket **(19)** ❸.

Allow the front mounting bracket **(18)** to slide slowly toward the smartphone and release it ❹.

### Power supply for the smartphone (optional)

The smartphone can be supplied with power (5 V/1 A) using a separate USB cable (included with delivery) via the micro A/B USB port of the SmartphoneHub. To do this, connect the smartphone to the USB port of the SmartphoneHub using the USB cable.

### Removing the smartphone

Use both hands to push the smartphone forward along with the front mounting bracket until the smartphone can be removed from the Universal Mount. If necessary, remove the USB cable for the power supply.

## Software update

If a software update is available for the SmartphoneHub, an indicator is shown in the smartphone app. Follow the instructions in the app to perform the update.

## Recovering the SmartphoneHub

A recovery operation should be carried out on the SmartphoneHub if it is no longer functioning correctly. To do this, open the app on your smartphone and follow the instructions.

## Power supply for the SmartphoneHub

The SmartphoneHub has an internal lithium-ion polymer battery (nominal/minimum 300 mAh, 3.7 V) that cannot be removed.

The SmartphoneHub can be switched on via its on/off button **(2)** or via the on/off button of the eBike battery. If the SmartphoneHub cannot be switched on, it must be charged via a USB cable for at least 30 minutes.

If you do not use your SmartphoneHub, recharge the SmartphoneHub every 3 months. You can charge the SmartphoneHub battery via the USB port on the SmartphoneHub using any power supply unit, smartphone charger, etc.

## Switching the push assistance on/off

The push assistance aids you when pushing your eBike. The speed of this function depends on the selected gear and can reach a maximum of **3.7 mph**.

- ▸ **The push assistance function must only be used when pushing the eBike.** There is a risk of injury if the wheels of the eBike are not in contact with the ground while using the push assistance.

To **activate** the push assistance, briefly press the **WALK** button on your operating unit. After activation, press the **+** button within three seconds and keep it pressed. The eBike drive is switched on.

**Note:** The push assistance cannot be activated at assistance level **OFF**.

The push assistance is **switched off** as soon as one of the following occurs:
- You release the **+** button;
- the wheels of the eBike are locked (e.g. by applying the brakes or hitting an obstacle);
- the speed exceeds **3.7 mph**.

The push assistance function is subject to local regulations; the way it works may therefore differ from the description above. It can also be deactivated.

### Setting the assistance level

On the operating unit **(15)**, you can set the level of assistance you want the eBike drive to provide you with while pedalling. The assistance level can be changed at any time, even while cycling.

**Note:** In some models, the assistance level may be preset and cannot be changed. There may also be fewer assistance levels available than stated here.

The following assistance levels are available as a maximum:
- **OFF:** Motor assistance is switched off. The eBike can just be moved by pedaling, as with a normal bicycle. The push assistance cannot be activated at this assistance level.
- **ECO:** Effective assistance with maximum efficiency, for maximum range
- **TOUR/TOUR+:**
  **TOUR:** Steady support, for long-range touring
  **TOUR+:** Dynamic support for natural and sporty driving (only in conjunction with **eMTB**)
- **SPORT/eMTB:**
  **SPORT:** Powerful assistance, for mountain biking and for cycling in urban traffic
  **eMTB:** Optimum assistance whatever the terrain, rapid acceleration when starting from a standstill, improved dynamics, top performance (**eMTB** is only available in combination with drive units BDU250P CX, BDU365, BDU450 CX and BDU480 CX. This also requires a software update.)
- **TURBO:** Maximum assistance even at high cadences, for biking sports

To **increase** the assistance level, press the **+ (14)** button on the operating unit repeatedly until the desired assistance level appears on the display. To **decrease** the assistance level, press the **– (11)** button.

### Switching bicycle lights on/off

On the model in which the lighting is powered by the eBike system, the front and rear lights can be switched on and off at the same time by pressing and holding the **+** button **(14)** on the operating unit.

If the light is switched on, a symbol is shown on the display or in the app.

Alternatively, the light can be switched on and off using the app.

Switching the bike lights on and off has no effect on the backlighting of the display.

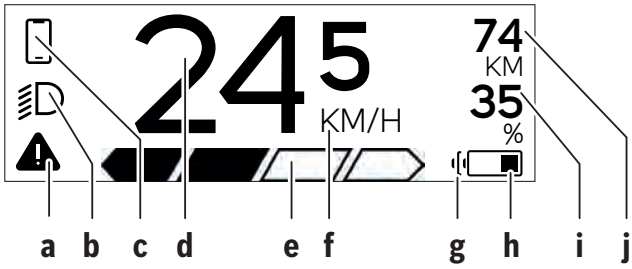
## Displays and settings of the SmartphoneHub

The SmartphoneHub is connected to the drive unit via a cable.

The smartphone is mechanically connected to the SmartphoneHub via a smartphone attachment.

The communication between the SmartphoneHub and smartphone takes place via *Bluetooth*®.

The SmartphoneHub has a scratch-resistant 1.52" LCD display with a resolution of 192 × 64 pixels. The integrated display is suitable for use without a corresponding smartphone. No app content of the smartphone can be shown on the integrated display.



**a** Error indicator:
This indicator appears when at least one error is present in the error memory.

**b** Bicycle lighting indicator:
This indicator appears when the light is switched on.

**c** Smartphone connection indicator:
This indicator appears when the smartphone has been connected to the SmartphoneHub via *Bluetooth*®.

This indicator appears when the smartphone has been connected to the SmartphoneHub and the **COBI.Bike** app is open on the smartphone at the same time. In this setting, the **COBI.Bike** app records the journey.

**d** Speed:
The current speed is displayed here.

**e** Assistance level indicator




**f** Unit indicator:
Depending on the settings selected in the **COBI.Bike** app, the speed can either be shown in km/h or mph. The default setting is km/h.

**g** Indicator for second battery:
If the eBike is equipped with two batteries, the two batteries are shown here in succession.

**h** Battery charge indicator:
The battery symbol displays the current state of charge of the battery.

The battery is empty or not inserted.

**i** State of charge of the battery in percent

**j** Range of the eBike battery:
Depending on the state of charge of the battery, the maximum range is shown here.

## Other displays




An error has occurred.
The error indicator remains on the display until the user presses the select button **(9)** to acknowledge the error. The warning triangle subsequently remains in the main display view (alongside speed, etc.) until the error has been resolved.




In a two-step activation process, after pressing the **(13)** button, the rider is prompted to press the **+** button **(14)** for two seconds.



After two seconds, the push assistance mode is displayed.









This indicator and the text shown on the left appear when there are problems that mean that the drive unit cannot provide any assistance. This is the case if, for example, the eBike battery is empty.




If the eBike battery is being charged, the screen shows the current state of charge. The battery symbol flashes.



This indicator appears if, for example,
- the DiagnosticTool is connected or
- an external power source is connected to the SmartphoneHub (e.g. a powerbank)




If the state of charge of the eBike battery is below 20 %, the battery charge indicator **h** will flash.

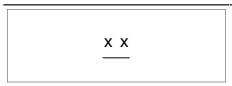


This indicator appears if, for example,
- the state of charge of the eBike battery is low or
- no eBike battery is recognized by the system.

The assistance is switched off.




These indicators appear when the eBike is due for servicing.




This indicator appears if software problems occur. A software update must be carried out in the **COBI.Bike** app.

You can carry out the update independently in the **COBI.Bike** app and you do not have to go to a Bosch eBike dealer.



This indicator appears when the SmartphoneHub is connecting to the smartphone.



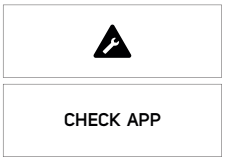
The completion of the *Bluetooth*® pairing is indicated by means of a check mark against the small smartphone symbol.





This indicator appears whenever the SmartphoneHub is in recovery mode (only in this status can new software be installed). The small *Bluetooth*® symbol indicates the connection to the smartphone.

The completion of the recovery operation is indicated by a check mark.




Your operating system is nonfunctional for the following reasons:

1. One or more incompatible components have been detected. This state can only be rectified by a Bosch eBike dealer.
2. An out-of-date version of the software has been detected. This can only occur as a result of an intentional software downgrade. The problem can be resolved with a software update. Please follow the instructions in the **COBI.Bike** app.

Following this notification, the eBike system switches off.

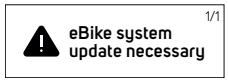



This indicator appears when the **COBI.Bike** app is open and in dashboard mode.




This indicator appears when the **COBI.Bike** app is connected to the Bosch SmartphoneHub and the drive unit is waiting to be switched on. To do this, perform one of the following actions:

- Press the "Start" button in the **COBI.Bike** app.
- Turn the smartphone into the horizontal position while the **COBI.Bike** app is open.
- Press the **+** button on the operating unit.




This indicator appears when one or several eBike components require a software update.

The update can only be carried out by an authorized Bosch eBike dealer.

The indicator can be hidden by pressing any button on the operating unit. The indicator appears during every eBike system start-up until the update has been carried out. You can still continue to use your eBike without restrictions. The number at the top on the right will indicate the number of notifications.

# Troubleshooting

The components of the eBike system are continuously monitored automatically. If a fault is detected, the corresponding fault code will appear on the on-board computer.

The drive may also be switched off automatically depending on what type of fault has occurred. You can continue riding at any time without assistance from the drive, but you should have your eBike checked before completing any more journeys.

- ▶ **Only have repairs performed by a certified bicycle dealer.**

| Code | Cause | Corrective measures |
|---|---|---|
| 410 | One or more buttons of the on-board computer are disabled. | Check whether any buttons are stuck, e.g. as a result of dirt finding its way in. Clean the buttons if need be. |
| 414 | Operating unit connection problem | Have the connections checked |
| 418 | One or more buttons on the operating unit are disabled. | Check whether any buttons are stuck, e.g. as a result of dirt finding its way in. Clean the buttons if need be. |
| 419 | Configuration error | Restart the system. If the problem persists, contact your Bosch eBike dealer. |
| 422 | Drive unit connection problem | Have the connections checked |
| 423 | eBike battery connection problem | Have the connections checked |
| 424 | Communication problem between components | Have the connections checked |
| 426 | Internal time-out error | Restart the system. If the problem persists, contact your Bosch eBike dealer. With this error, it is not possible to bring up the wheel circumference in the basic settings menu or to adjust it. |
| 430 | Internal battery of the on-board computer is flat (does not apply to BUI350) | Charge the on-board computer (in the holder or via the USB port) |
| 431 | Software version error | Restart the system. If the problem persists, contact your Bosch eBike dealer. |
| 440 | Internal drive unit fault | Restart the system. If the problem persists, contact your Bosch eBike dealer. |
| 450 | Internal software error | Restart the system. If the problem persists, contact your Bosch eBike dealer. |
| 460 | Error at USB port | Remove the cable from the USB port of the on-board computer. If the problem persists, contact your Bosch eBike dealer. |
| 490 | Internal fault of the on-board computer | Have the on-board computer checked |

| Code | Cause | Corrective measures |
|---|---|---|
| 500 | Internal drive unit fault | Restart the system. If the problem persists, contact your Bosch eBike dealer. |
| 502 | Bike light fault | Check the light and the associated wiring. Restart the system. If the problem persists, contact your Bosch eBike dealer. |
| 503 | Speed sensor fault | Restart the system. If the problem persists, contact your Bosch eBike dealer. |
| 504 | Speed signal distortion detected. | Check that the spoke magnet is positioned correctly, and adjust it if necessary. Check that nothing has been tampered with (tuning). Drive assistance is reduced. |
| 510 | Internal sensor fault | Restart the system. If the problem persists, contact your Bosch eBike dealer. |
| 511 | Internal drive unit fault | Restart the system. If the problem persists, contact your Bosch eBike dealer. |
| 530 | Battery fault | Switch off the eBike, remove the eBike battery and reinsert the eBike battery. Restart the system. If the problem persists, contact your Bosch eBike dealer. |
| 531 | Configuration error | Restart the system. If the problem persists, contact your Bosch eBike dealer. |
| 540 | Temperature error | The eBike is outside of the permissible temperature range. Switch off the eBike system and allow the drive unit to either cool down or heat up to the permissible temperature range. Restart the system. If the problem persists, contact your Bosch eBike dealer. |
| 550 | An impermissible load has been detected. | Remove the load. Restart the system. If the problem persists, contact your Bosch eBike dealer. |
| 580 | Software version error | Restart the system. If the problem persists, contact your Bosch eBike dealer. |
| 591 | Authentication error | Switch off the eBike system. Remove the battery pack and reinsert it. Restart the system. If the problem persists, contact your Bosch eBike dealer. |
| 592 | Incompatible component | Use a compatible display. If the problem persists, contact your Bosch eBike dealer. |
| 593 | Configuration error | Restart the system. If the problem persists, contact your Bosch eBike dealer. |
| 595, 596 | Communication error | Check the wiring to the drive and restart the system. If the problem persists, contact your Bosch eBike dealer. |

| Code | Cause | Corrective measures |
|---|---|---|
| 602 | Internal battery fault | Restart the system. If the problem persists, contact your Bosch eBike dealer. |
| 603 | Internal battery fault | Restart the system. If the problem persists, contact your Bosch eBike dealer. |
| 605 | Battery temperature error | The battery is outside of the permissible temperature range. Switch off the eBike system and allow the battery to either cool down or heat up to the permissible temperature range. Restart the system. If the problem persists, contact your Bosch eBike dealer. |
| 606 | External battery fault | Check the wiring. Restart the system. If the problem persists, contact your Bosch eBike dealer. |
| 610 | Battery voltage error | Restart the system. If the problem persists, contact your Bosch eBike dealer. |
| 620 | Charger fault | Replace the charger. Contact your Bosch eBike dealer. |
| 640 | Internal battery fault | Restart the system. If the problem persists, contact your Bosch eBike dealer. |
| 655 | Multiple battery faults | Switch off the eBike system. Remove the battery pack and reinsert it. Restart the system. If the problem persists, contact your Bosch eBike dealer. |
| 656 | Software version error | Contact your Bosch eBike dealer so that they can perform a software update. |
| 7xx | Error relating to third-party components | Observe the information in the operating instructions of the respective component manufacturer. |
| Display is blank | Internal fault of the on-board computer | Restart your eBike system by switching it off and back on. |

# Maintenance and cleaning

Do not clean any of the components with pressurized water.

Keep the screen of your on-board computer clean. Dirt can cause faulty brightness detection.

Clean your on-board computer using a soft cloth dampened only with water. Do not use cleaning products of any kind.

Have your eBike system checked by an expert at least once a year (including mechanical parts, up-to-dateness of system software).

The bike retailer can also schedule the service based on a mileage and/or a time period. In this case, the on-board computer displays a message telling you when the service date is due each time it is switched on.

Please have your eBike serviced and repaired by an authorized bicycle dealer.

- ▸ **Only have repairs performed by a certified bicycle dealer.**

# Battery Recycling Program

The drive unit, on-board computer incl. operating unit, battery, speed sensor, accessories and packaging should be disposed of in an environmentally correct manner.

Do not dispose of eBikes and their components with household waste.

You may recycle your Bosch battery pack by calling 1.800.822.8837.

**Robert Bosch GmbH**
72757 Reutlingen
Germany

**www.bosch-ebike.com**

**1 270 U20 XBC** (2022.03) T / 66

# Owner’s Manual – The Bosch Drive System Nyon

BUI350




**en** Original operating instructions

**This manual contains important safety, performance and service information. Read and understand it along with the information provided to you by your bicycle manufacturer before using the product, and keep it for reference.**

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# Introduction

## About Warnings

This manual contains many **DANGER**, **WARNING**, and **CAUTION** indicators concerning the consequences of failure to use, assemble, maintain, store, inspect and dispose of a Bosch-equipped eBike in a safe manner.

– The combination of the safety alert symbol and the word **DANGER** indicates a hazardous situation that, if not avoided, will result in death or serious injury.
– The combination of the safety alert symbol and the word **WARNING** indicates a hazardous situation that, if not avoided, could result in death or serious injury.
– The combination of the safety alert symbol and the word **CAUTION** indicates a hazardous situation that, if not avoided, could result in minor or moderate injury.

## General Warnings



**Read all safety warnings and all instructions.** Failure to follow the warnings and instructions may result in death or serious injury.

**Save all safety warnings and instructions for future reference.**

The term **battery pack** used in these operating instructions refers to all original Bosch eBike battery packs.

▶ **Read ALL accompanying manuals before riding the bike for the first time.** Your Bosch Drive System comes with additional manuals and documents provided by the manufacturer of the bicycle and other components. Failure to read and understand safety information can result in death or serious injury.

**⚠ WARNING**

▶ **This manual contains important safety, performance and service information.** Read it before you take the first ride on your new bicycle, and keep it for reference. The manual can also be found online at www.bosch-ebike.com.

▶ **This manual is intended to be read together with the separate user manual provided with your bicycle.** Be sure to read all provided documents including labels on the product before your first ride.

▶ **Take responsibility for your own SAFETY.** If you have any questions or do not understand something, consult with your dealer or the bicycle or component manufacturer.

▶ **Some eBike accessories may present a choking hazard to small children.** Keep these accessories away from children.

**⚠ CAUTION**

▶ **The Bosch Drive System adds weight to your bicycle which you may not be used to lift.** Avoid injury, use proper lifting techniques.

# Using your Manual

In addition to the functions outlined here, changes to software relating to troubleshooting and functional modifications may be introduced at any time.

## Graphics

The bicycle shown in this manual may differ slightly from your bicycle, but will be similar enough to help you understand our instructions.

RIGHT-HAND and LEFT-HAND sides are determined by facing in the direction the bicycle will travel when going forward. When you see a broken line (------), the item referred to is hidden from view.

# Operating your Bosch Drive System

## Safety instructions



**Read all the safety information and instructions.** Failure to observe the safety information and follow instructions may result in electric shock, fire and/or serious injury.

**Save all safety warnings and instructions for future reference.**

The term **battery pack** used in these operating instructions refers to all original Bosch eBike battery packs.

- ▸ **Read and observe the safety warnings and instructions in all operating instructions of the eBike system and your eBike.**
- ▸ **Do not allow yourself to be distracted by the display of the on-board computer.** If you do not concentrate exclusively on the traffic around you, you risk being involved in an accident. If you want to change any settings on the on-board computer other than the assistance level, always stop before entering the relevant data.
- ▸ **Set the display brightness such that you can adequately see important information like speed or warning symbols.** An incorrectly set display brightness can result in dangerous situations.
- ▸ **Before commencing a training program, please consult a doctor to confirm that you are able to cope with any stresses that the program may place on you.** Only this way can you ensure that you will not be subject to any potential overexertion.
- ▸ **When using a heart rate monitor, the heart frequency that is shown may be distorted as a result of electromagnetic interference.** The heart frequency shown only serves as a reference. No liability can be assumed for any consequences incurred as a result of an incorrectly indicated heart frequency.
- ▸ **Nyon is not a medical product.** The values shown on the fitness screen may differ from the actual values.
- ▸ **Do not open the on-board computer.** Opening the on-board computer can result in irreparable damage and void your warranty.
- ▸ **Do not use the on-board computer as a handle.** Lifting the eBike up by the on-board computer can cause irreparable damage to the on-board computer.
- ▸ **The push assistance function must only be used when pushing the eBike.** There is a risk of injury if the wheels of the eBike are not in contact with the ground while using the push assistance.
- ▸ **When the push assistance is activated, the pedals may turn at the same time.** When the push assistance function is activated, make sure that there is enough space between your legs and the turning pedals to avoid the risk of injury.
- ▸ **When using the push assistance, ensure that you can always control the eBike and hold it securely.** The push assistance can be suspended under certain conditions (e.g. obstacle on the pedal or accidentally slipping off the button of the operating unit). The eBike can suddenly move backwards towards you or start to tip. This poses a particular risk for the user if there is an additional load. When using the push assistance on the eBike, do not place the eBike in situations in which you cannot hold the eBike by yourself.
- ▸ **Caution!** Using the on-board computer with *Bluetooth*® and/or WiFi can interfere with the operation of other devices and systems, including airplanes and medical devices (e.g. pacemakers, hearing aids). Similarly, the possibility that this may cause damage to humans and animals in the immediate vicinity cannot be completely excluded. Do not use the on-board computer with *Bluetooth*®

in the vicinity of medical devices, service stations, chemical plants, blasting areas or other areas where there is a risk of explosion. Do not use the on-board computer with *Bluetooth*® in airplanes. Avoid using the device in close proximity to your body over an extended period of time.

- The *Bluetooth*® word mark and logos are registered trademarks owned by Bluetooth SIG, Inc. and any use of such marks by Bosch eBike Systems is under licence.
- **Do not enter information or make selections while riding.** Interacting with the display unit while riding can lead to accidents causing serious injury or death. You must observe road and traffic conditions, and comply with traffic laws at all times.
- **Using your mobile device while operating an eBike may be distracting. Distracted driving is a serious safety concern and can lead to accidents causing serious injury or death. In order to prevent distracted driving, most devices come equipped with a "Do Not Disturb" mode. The "Do Not Disturb" mode should be used while operating an eBike.** Please consult your device-specific instructions for more information. You, as the eBike operator, are fully responsible for ensuring that you pay attention to road conditions and comply with traffic laws at all times.
- **Do not activate push assistance function while riding on the bike.** Only use push assitance function when pushing the eBike.
- Please note that certain State or local laws may require that class III eBikes must be equipped with a functioning speedometer that displays speed in miles per hour. Riders must be aware of any and all applicable rules and regulations related to the operation or use of class III eBikes in any applicable jurisdictions before operating or otherwise using this product.

## Safety Instructions in Conjunction with the Navigation System

- **Do not plan any routes while riding. Make sure that you come to a complete stop and only input a new destination while at a standstill.** If you do not concentrate exclusively on the traffic around you, you risk being involved in an accident.
- **Discontinue following your route if the navigation system suggests a path for you to take that may be risky or dangerous for you according to your capabilities as a rider.** Allow the navigation system to select an alternative route for you instead.
- **Make sure to observe all traffic signs regardless of the route proposed by the navigation system.** The navigation system is unable to take roadworks or temporary diversions into account.
- **Do not use the navigation system in circumstances where special attention must be given to safety, or if it is unclear how to proceed (road closures, diversions, etc.).** Always carry additional map sources and means of communication.
- **The navigation system instructs you to perform an unsafe or illegal maneuver.** Cancel the navigation system and choose an alternative route.
- **The navigation system directs you into an unsafe area.** Cancel the navigation system and choose an alternative route.
- **The navigation system does not direct you to the nearest emergency facility when needed.** Make an emergency call and inquire as to the quickest available route.
- **The location of the bicycle is indicated incorrectly by the navigation system.** Use a secondary source of information to determine where you are located currently.
- **The volume of the navigation system prevents you from hearing surrounding traffic while riding.** Ensure that you are able to perceive sounds from traffic in the vicinity at all times, so that you can react to potential dangers appropriately.

- NAVIGATION SERVICES ARE PROVIDED FOR PLANNING PURPOSES ONLY. INFORMATION FROM NAVIGATION SERVICES MAY DIFFER FROM ACTUAL CONDITIONS. USER MUST EXERCISE INDEPENDENT JUDGEMENT WHEN USING THE NAVIGATION SERVICES TO ENSURE THAT THE ROUTE PROVIDED BY THE NAVIGATION SERVICES IS SAFE AND APPROPRIATE FOR EBIKE USAGE.

## Safety Instructions for Charging the On-Board Computer Battery

- **Only charge the on-board computer with USB power source (5 V, 1500 mA max) and USB cable rated at least 1500 mA.** Using USB power source or USB cable not appropriately rated for the application may result in fire, explosion or personal injury.
- **Charge the on-board computer in temperatures above +32 degrees F (0 degrees C) and below +104 degrees F (40 degrees C). Store on-board computer in locations where temperatures will not exceed 104 degrees F (40 degrees C).** This is important to prevent serious damage to the battery in the on-board computer.
- **Do not expose on-board computer to fire or excessive temperature.** Exposure to fire or temperature above 212 °F (100 °C) may cause explosion.
- **Do not recharge the on-board computer (via USB port) in damp or wet environment.** Water entering on-board computer may result in electric shock or fire.
- **Never submerge on-board computer in fluid of any kind or allow fluid to enter them.** Corrosive or conductive fluid (such as seawater or industrial chemical or bleach containing products, etc.) can cause short circuit which may result in fire, personal injury and property damage.
- **Battery leakage may occur under extreme usage or temperature conditions. Avoid contact with skin and eyes.** The battery liquid is caustic and could cause chemical burns to tissues. If liquid comes in contact with skin, wash quickly with soap and water. If the liquid contacts your eyes, immediately flush eyes with water for a minimum of 15 minutes and seek medical attention.
- **Place on-board computer on flat nonflammable surfaces and away from flammable materials when recharging on-board computer using external USB power source.** Carpeting and other heat insulating surfaces block proper air circulation which may cause overheating of the on-board computer. If smoke or melting of the on-board computer is observed, unplug the external USB power source immediately and do not use the on-board computer. Contact customer service immediately.
- **Before each use, check the on-board computer, cable and plug.** If damage is detected, do not use the on-board computer. Damaged on-board computer, charging cables and plugs increase the risk of a fire, explosion and personal injury.
- **Do not disassemble on-board computer.** No user serviceable part inside. Incorrect reassembly or damage may result in fire or explosion.
- **Read and observe the safety warnings and instructions in all operating instructions of the eBike system and your eBike.**

**NOTICE:** This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions:

1. This device must not cause harmful interference, and
2. this device must accept any interference received, including interference that may cause undesired operation.

**NOTICE:** Changes or modifications made to this equipment not expressly approved by the Robert Bosch GmbH may void the FCC authorization to operate this equipment.

**NOTE:** This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This

equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

**Radiofrequency radiation exposure Information:**

The radiated output power of the device is far below the FCC radio frequency exposure limits. Nevertheless, the device shall be used in such a manner that the potential for human contact during normal operation is minimized.

This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with minimum distance of 20 cm between the radiator and your body. This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.

**ISED Notice (Canada)**

This device contains licence-exempt transmitter(s)/ receiver(s) that comply with Innovation, Science and Economic Development Canada's licence-exempt RSS(s). Operation is subject to the following two conditions:

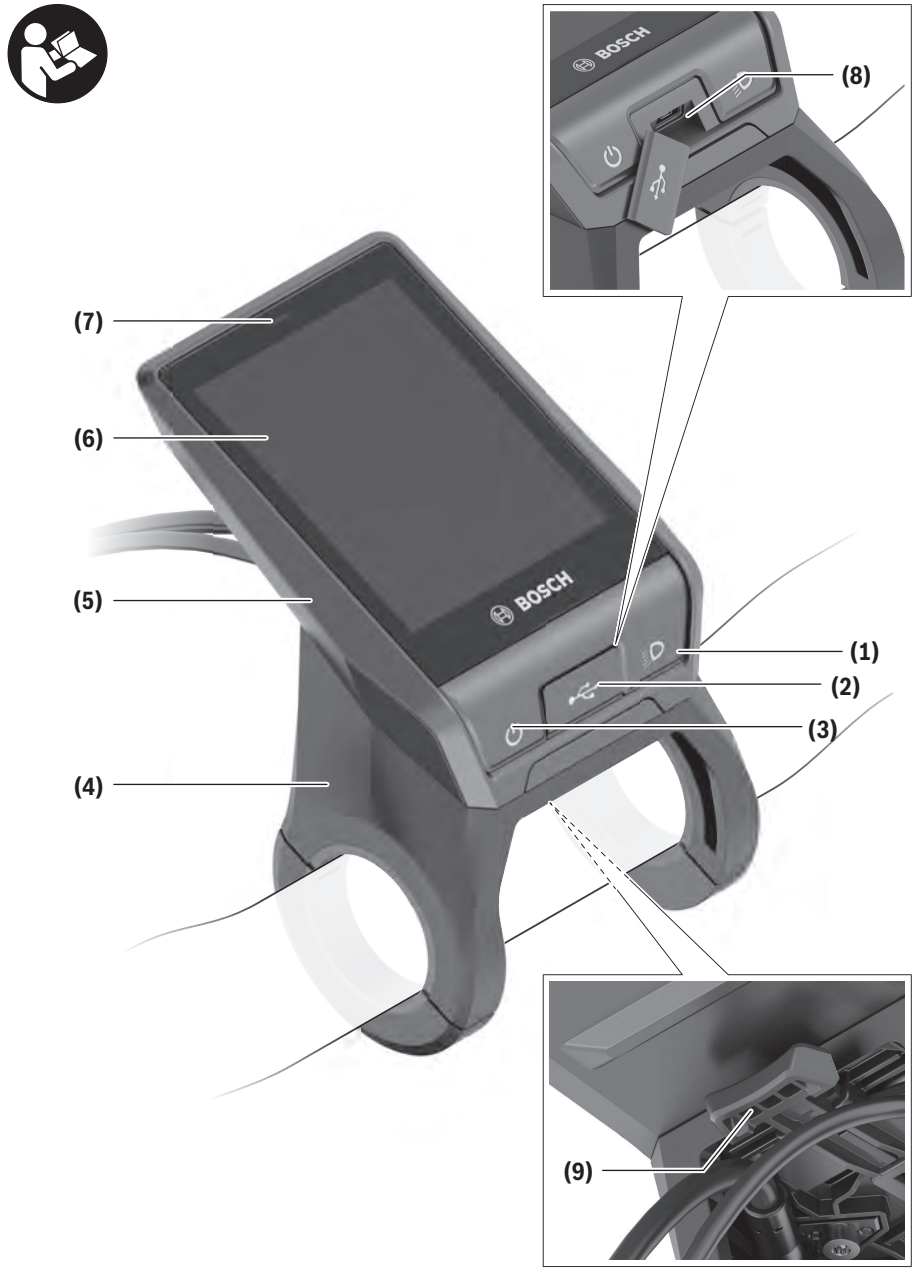
1. this device may not cause interference, and
2. this device must accept any interference, including interference that may cause undesired operation of the device.

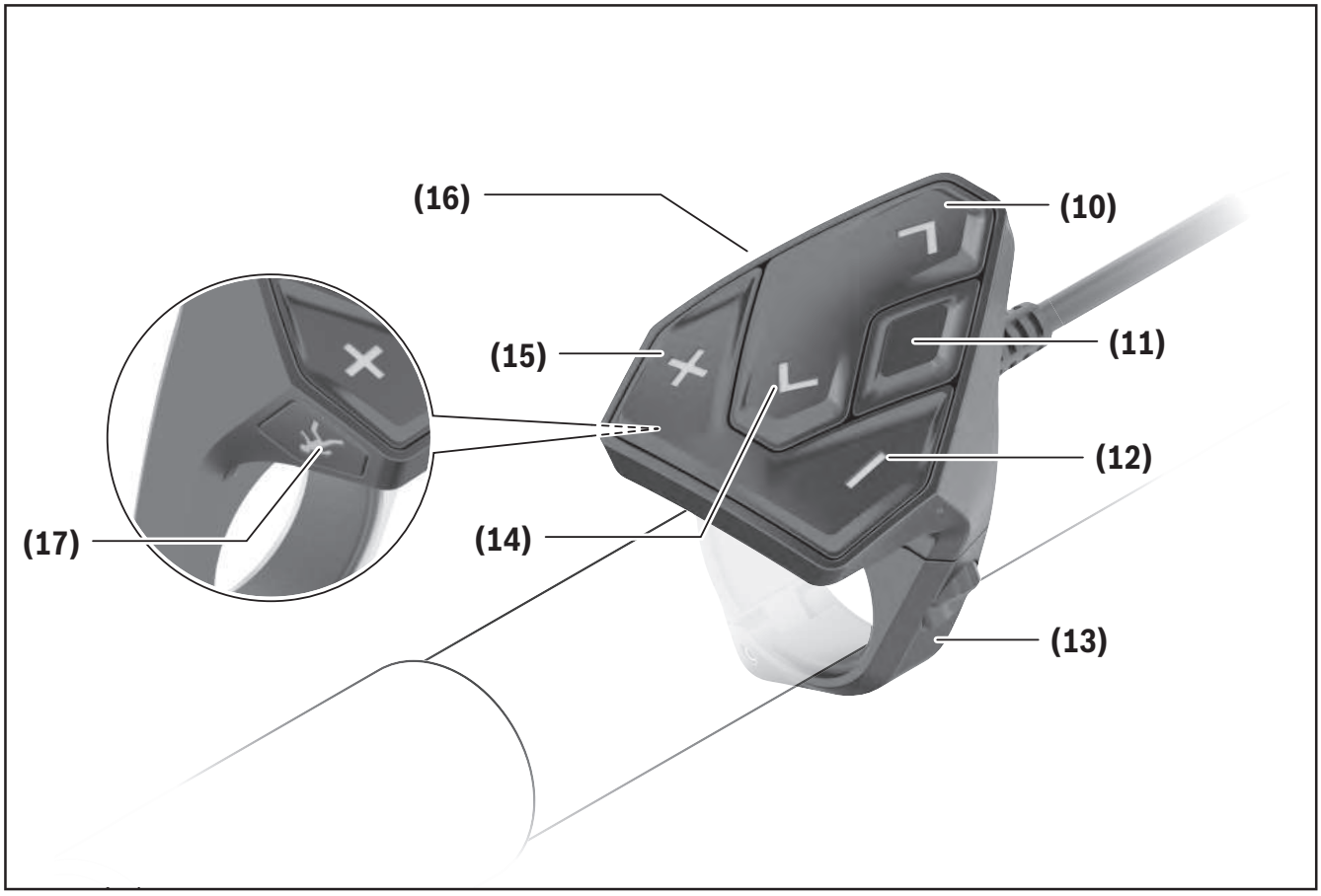
This equipment complies with Canada radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with minimum distance of 20 cm between the radiator and your body. This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.

## Privacy notice

If the on-board computer is sent to Bosch Service because it requires servicing, the data stored on the on-board computer may be transmitted to Bosch.

# Product Description and Specifications






## Product Features

All illustrations of bike parts except for the drive unit, on-board computer including operating unit, speed sensor and the corresponding holders are schematic and may differ on your eBike.

**(1)** Bike light button
**(2)** Protective cap for USB port
**(3)** On/off button for on-board computer
**(4)** Holder for on-board computer[a)]
**(5)** On-board computer
**(6)** Display (touch-sensitive)
**(7)** Brightness sensor
**(8)** USB port
**(9)** Release mechanism
**(10)** Button for next page
**(11)** Select button
**(12)** Button for decreasing the assistance level
**(13)** Holder for operating unit
**(14)** Button for previous page
**(15)** Button for increasing the assistance level
**(16)** Operating unit
**(17)** Start/push assistance button **WALK**

a) For mounting on the handlebars, custom solutions are possible even without the use of the handlebar clamps.

## Intended Use

The **Nyon (BUI350)** on-board computer is designed to control Bosch eBike systems and display cycling data.

In addition to the functions outlined here, changes to software relating to troubleshooting and functional modifications may be introduced at any time.

To find out more, visit: www.Bosch-eBike.com.

Instructions on how to use the app and the portal can be found in the online operating instructions at www.Bosch-eBike.com.

The **Nyon (BUI350)** on-board computer is only intended as a navigation system for bicycles and is not suitable for other means of transport (e.g. hikers or vehicle drivers).

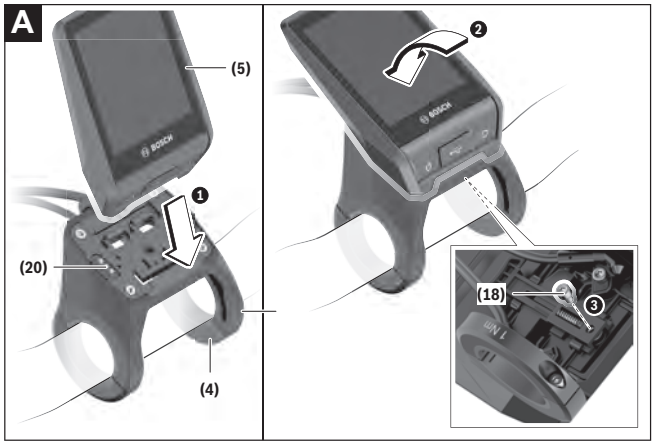
## Technical Data

| On-board computer | | Nyon |
|---|---|---|
| Product code | | BUI350 |
| Total internal memory | GB | 8 |
| Max. USB port charging current (output) | mA | 1500 |
| Max. USB port charging voltage | V | 5 |
| USB charging cable | | 1 270 016 360 |
| Operating temperature | °F | 23 to 104 |
| Storage temperature | °F | 50 to 104 |
| Charging temperature | °F | 32 to 104 |
| Internal lithium-ion battery | V<br>mAh | 3.7<br>1000 |
| Protection rating | | IPx5 |
| Supported Wi-Fi standards | | 802.11b/g/n (2.4 GHz) |
| Weight, approx. | lbs | 0.44 |
| Wi-Fi | | |
| – Frequency | MHz | 2400–2480 |
| – Transmission power | mW | < 100 |
| *Bluetooth*® | | |
| – Frequency | MHz | 2400–2480 |
| – Transmission power | mW | < 10 |

# Assembly

- ▸ **Deactivate and remove the on-board computer if you are fitting or working on the holder.** This avoids malfunctions/misuse.
- ▸ **Deactivate and remove the on-board computer if you are fitting or removing the securing screw.** This avoids malfunctions/misuse.

## Inserting and removing the on-board computer




**(4)** Holder for on-board computer[a)]
**(5)** On-board computer
**(9)** Release mechanism
**(18)** Locking screw for on-board computer
**(19)** Drive unit contacts
**(20)** Operating unit contacts

a) For mounting on the handlebars, custom solutions are possible even without the use of the handlebar clamps.

To **insert** the on-board computer **(5)**, first fit the lower section into the holder **(4)** and then press it forward until you can feel that the on-board computer is fixed in place. Make sure that the on-board computer is firmly fixed in place.

To **remove** the on-board computer **(5)**, press on the release mechanism **(9)** and take out the on-board computer from above.

- ▸ **When you park up the eBike, remove the on-board computer.**

It is possible that the release mechanism may become jammed by a screw. To rectify this, remove the holder **(4)** from the handlebars. Put the on-board computer in the holder. Screw the locking screw **(18)** (M3 thread, 5 mm long) from below into the corresponding thread in the holder. Mount the holder back on the handlebars.

**Note:** The locking screw is not designed to prevent theft.

# Operation

## Setting up the eBike system

### Requirements

The eBike system can only be activated when the following requirements are met:
- A sufficiently charged eBike battery is inserted (see battery operating instructions).
- The on-board computer is properly inserted in the holder.
- The battery of the on-board computer must be sufficiently charged.

### Switching the eBike system on/off

The following options are available for **switching on** the eBike system:
- Once the on-board computer and the eBike battery are fitted, briefly press the on/off button **(3)** on the on-board computer.
- With the on-board computer inserted, press the on/off button on the eBike battery (bicycle manufacturer-specific solutions are possible when there is no access to the battery on/off button; see the operating instructions from the bicycle manufacturer).

The drive is activated as soon as you start pedaling (except for in the push assistance function or with the assistance level **OFF**). The motor output depends on the settings of the assistance level.

As soon as you stop pedaling when in normal operation, or as soon as you have reached a speed of **20/28 mph**, the eBike drive unit switches off the assistance. The drive is automatically re-activated as soon you start pedaling again and the speed is below **20/28 mph**.

The following options are available for **switching off** the eBike system:
- Press the on/off button **(3)** of the on-board computer for at least three seconds.
- Switch off the eBike battery using its on/off button (some bicycle manufacturer-specific solutions prevent access to the battery on/off button; see the bicycle manufacturer operating instructions).
  **Note:** This will place the **Nyon (BUI350)** into standby mode.
- Remove the on-board computer from its holder.

If no power is drawn from the eBike drive for about **10** minutes (e.g. because the eBike is not moving) and no button is pressed on the on-board computer or the control unit of the eBike, the eBike system will switch off automatically.

This will place the **Nyon (BUI350)** into standby mode.

### Standby mode

You can put your on-board computer in standby mode, which allows the on-board computer and system to start up quicker when required.

The standby mode can be activated as follows:
- Press and hold the on/off button **(3)** of the on-board computer for 1 to 3 seconds, making sure not to exceed 3 seconds.
- Wait for 10 minutes until the system switches off.
- Switch off the rechargeable battery via the on/off button of the battery.

Standby mode is ended if you press and hold the on/off button **(3)** of the on-board computer for 1 second.

Standby mode is ended and the on-board computer switches off automatically if the state of charge of the on-board computer battery is less than 75 %. In any event, the on-board computer will be switched off at the latest when its internal clock reaches midnight (00:00).

If **Nyon (BUI350)** cannot be switched on or does not work properly, press and hold the on/off button (approx. 15 s). This could rectify the error.

## Energy supply of the on-board computer

If the on-board computer is in the holder **(4)**, a sufficiently charged eBike rechargeable battery is inserted into the eBike and the eBike system is

switched on, then the on-board computer rechargeable battery is powered and charged by the eBike rechargeable battery.

If the on-board computer is removed from the holder **(4)**, the power is supplied by the on-board computer rechargeable battery. The state of charge of the on-board computer rechargeable battery is displayed in the top left corner of the status bar.

| Color of the indicator | Meaning |
|---|---|
| Green | The on-board computer rechargeable battery is over 30 % charged. |
| Orange | The on-board computer rechargeable battery is charged between 15 % and 30 %. |
| Red | The on-board computer rechargeable battery is 15 % charged or less. |

If the on-board computer rechargeable battery's charge is running low, a warning message appears on the display.

To charge the on-board computer battery, put the on-board computer back in the holder **(4)**. Note that if you are not charging the eBike battery, the eBike system will automatically switch off after 10 minutes if it is not activated. If this happens, the on-board computer battery will also stop charging.

You can also charge the on-board computer via the USB port **(8)**. To do this, open the protective cap **(2)**. Use a Micro USB cable to connect the USB port on the on-board computer to a commercially available USB charger (not included with the product as standard) or to the USB port of a computer (max. **5 V** charging voltage; max. **1500 mA** charging current).

If the on-board computer battery is not recharged, the date and time will be retained for approx. six months.

**Note:** To maximize the lifespan of the on-board computer battery, it should be recharged for one hour every three months.

Following use, the USB port must be carefully resealed with the protective cap **(2)**.

- ▶ **A USB connection is not a watertight plug connection. When cycling in wet conditions, ensure no external devices are connected and that the USB port is fully covered by the protective cap (2).**

It is not possible to charge external devices via the USB port.

## Battery Charge Indicator

The battery charge indicator of the eBike rechargeable battery **g** (see "**<Ride Screen>**", page English – 18) can be read in the status bar. The eBike rechargeable battery's state of charge is also indicated by the LEDs on the eBike rechargeable battery itself.

| Color of the indicator | Meaning |
|---|---|
| Green | The eBike rechargeable battery is over 30 % charged. |
| Orange | The eBike rechargeable battery is charged between 15 % and 30 %. |
| Red | The eBike rechargeable battery is charged between 0 % and 15 %. |
| Red + ! | The capacity for assisting the drive has been used up, and assistance is switched off. The remaining capacity will be provided for the bike lights and the on-board computer. |

If the eBike battery is being charged on the bike, a corresponding notification will be displayed.

If the on-board computer is removed from the holder **(4)**, the state of charge that was last displayed for the eBike rechargeable battery is saved.

## Starting operation of the on-board computer

- ▸ **Prior to initial start-up, remove the protective film from the display to guarantee that the on-board computer is fully functional.** If the protective film remains on the display, this can impact the functionality/performance of the on-board computer.
- ▸ **Full functionality cannot be guaranteed for the on-board computer if protective films are used on the display.**

The Nyon is supplied with a partially charged battery. Before the first use, the Nyon battery must be fully charged via the USB port or via the eBike system.

It is possible to set off within a short duration (approx. 4 seconds) of switching on the on-board computer. During the subsequent period, the on-board computer will continue loading the complete operating system in the background.

**Note:** When you switch on the on-board computer for the first time, the on-board computer may require a longer period of time before it is ready for travel.

If the on-board computer is connected to a Wi-Fi network, the user will be informed about the existence of a new update where applicable. Make sure to download the update and install the latest version.

### Creating a user ID

In order to be able to use all the functions of the on-board computer, you must register online.

With a user ID, you can analyze your ride data, plan offline routes and transfer these routes to the on-board computer.

You can set up a user ID via your **Bosch eBike Connect** smartphone app or simply at www.eBike-Connect.com. Enter the details required for registration. The **Bosch eBike Connect** smartphone app is available to download free of charge from the App Store (for Apple iPhones) or from the Google Play store (for Android devices).

### Connecting the on-board computer to the portal

The on-board computer can be connected to the portal via a Wi-Fi connection.

**Note:** The on-board computer does not support the use of router channels 12 and 13. If your router is fixed to channel 12 or 13, these channels are not displayed in the list of available networks on the on-board computer. If necessary, adjust the settings on your router accordingly in order to connect the on-board computer to your network.

To do this, proceed as follows:

– Press **<Login>** on the **<Status Screen>**.
– Select **<WiFi>**.
– Select a network.
– Enter your username and password.

Once a connection has been successfully established, all data that you have shared on your profile in the portal will be synchronized with the on-board computer.

### Connecting the On-Board Computer with the Bosch eBike Connect App

Follow these steps to establish a connection to your smartphone:

– Load the app.
– Select the tab **<My eBike>**.
– Select **<Add new eBike device>**.
– Add **Nyon (BUI350)**.

The app will then display an instruction to press and hold the bike lighting button **(1)** on the on-board computer for 5 seconds.

Press and hold the button **(1)** for at least 5 seconds. The on-board computer automatically activates the *Bluetooth® Low Energy* connection and switches to pairing mode.

Follow the instructions on the screen. Once pairing is complete, the user data is synchronized.

**Note:** The *Bluetooth®* connection does not need to be activated manually.

## Setting the assistance level

On the operating unit **(16)**, you can set the level of assistance you want the eBike drive to provide you with while pedaling. The assistance level can be changed at any time, even while cycling.

**Note:** In some models, the assistance level may be preset and cannot be changed. There may also be fewer assistance levels available than stated here.

The following assistance levels are available as a maximum:

- **OFF:** Motor assistance is switched off. The eBike can just be moved by pedaling, as with a normal bicycle. The push assistance cannot be activated at this assistance level.
- **ECO:** Effective assistance with maximum efficiency, for maximum range
- **TOUR/TOUR+:**
  **TOUR:** Steady support, for long-range touring
  **TOUR+:** Dynamic support for natural and sporty driving (only in conjunction with **eMTB**)
- **SPORT/eMTB:**
  **SPORT:** Powerful assistance, for mountain biking and for cycling in urban traffic
  **eMTB:** Optimum assistance whatever the terrain, rapid acceleration when starting from a standstill, improved dynamics, top performance (**eMTB** is only available in combination with drive units BDU250P CX, BDU365, BDU450 CX and BDU480 CX. This also requires a software update.)
- **TURBO:** Maximum assistance even at high cadences, for biking sports

To **increase** the assistance level, press the **+** button **(15)** on the operating unit repeatedly until the required assistance level appears on the indicator. To **decrease** the assistance level, press the **–** button **(12)**.

The requested motor output is shown on the display **j**. The maximum motor output depends on the selected assistance level.

## Switching the push assistance on/off

The push assistance aids you when pushing your eBike. The speed of this function depends on the selected gear and can reach a maximum of **3.7 mph**.

▶ **The push assistance function must only be used when pushing the eBike.** There is a risk of injury if the wheels of the eBike are not in contact with the ground while using the push assistance.

To **activate** the push assistance, briefly press the **WALK** button on your on-board computer. After activation, press the **+** button within 10 s and keep it pressed. The eBike drive is switched on.

**Note:** The push assistance cannot be activated at assistance level **OFF**.

The push assistance is **switched off** as soon as one of the following occurs:

- You release the **+** button;
- the wheels of the eBike are locked (e.g. by applying the brakes or hitting an obstacle);
- the speed exceeds **3.7 mph**.

The push assistance function is subject to local regulations; the way it works may therefore differ from the description above. It can also be deactivated.

## Switching bicycle lights on/off

On the model in which the lighting is powered by the eBike system, the front and rear lights can be switched on and off at the same time via the on-board computer using the bike light button **(1)**.

Before starting each journey, check that your bike lights are working correctly.

If the lighting is switched on, the bike light indicator **f** lights up in the status bar of the display.

Switching the bike lights on and off has no effect on the backlighting of the display.

## Lock (premium function)

The lock function is available to purchase from the **<Shop>** in the eBike Connect app. Once the lock function is switched on, the assistance from the eBike drive unit is deactivated by removing the on-board computer. Activation is then only possible via the on-board computer that is associated with the eBike.

More detailed instructions regarding this can be found in the online operating instructions at www.Bosch-eBike.com.

## Activity tracking

In order to record activities, you must be registered with and logged into the eBike Connect portal or the eBike Connect app.

To record activities, you must consent to the storage of your location data either in the portal or in the app. Without this, your activities will not be shown in the portal or the app. The position is only recorded if you as a user are logged into the on-board computer.

Once synchronization is complete, the activities will already be displayed in the app and in the portal during the journey.

## eShift (optional)

eShift is the integration of electronic gear shifting systems into the eBike system. The eShift components are electrically connected to the drive unit by the manufacturer. The separate operating instructions describe how to operate the electronic gear-shifting systems.

## Software Updates

If **Nyon (BUI350)** is connected to the Wi-Fi, it automatically checks whether a newer version of the software is available. If a software update is available, a notification will inform the user of this. Alternatively, the user can search for updates manually under **<System Settings>**.

## Notes on cycling with the eBike system

### Taking care of your eBike

Please observe the operating and storage temperatures of the eBike components. Protect the drive unit, on-board computer and battery against extreme temperatures (e.g. from intense sunlight without adequate ventilation). Extreme temperatures can cause the components (especially the battery) to become damaged.

Keep the screen of your Nyon clean. Dirt can cause faulty brightness detection. The day/night switchover function in the navigation mode may function incorrectly.

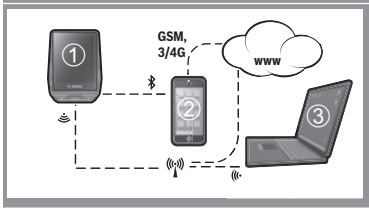
Abrupt changes in environmental conditions can cause the window to steam up from the inside. The temperature will equalize after a short period and the condensation will subsequently disappear.

## The Nyon operating system

The Nyon operating system consists of three components:

1. The Nyon on-board computer with operating unit
2. The **Bosch eBike Connect** smartphone app
3. The www.ebike-connect.com online portal

A number of settings and functions can be administered or used on all components. Some settings and functions can only be accessed or operated via specific components. Data is automatically synchronized if a *Bluetooth*®/Internet connection has been established. The following table provides on overview of the possible functions.

| Functions of the online portal | | | ③ |
|---|---|---|---|
| Functions of the smartphone app | | ② | |
| Functions of the on-board computer | ① | | |
|  | | | |
| Login | ✓ | ✓ | ✓ |
| Registration | | ✓ | ✓ |
| Modification of settings | ✓ | ✓ | ✓ |
| Collection of trip data | ✓ | | |
| Real-time display of trip data | ✓ | | |
| Processing/analysis of trip data | | ✓ | ✓ |
| Creation of user-defined displays | ✓ | | |
| Indication of current location | ✓A) | ✓A) | ✓ |
| Navigation | ✓ | | |
| Route planning | ✓ | ✓ | ✓ |
| Indication of remaining range (Circle around current location) | ✓ | | |
| Training effect in real time | ✓ | | |
| Trip overview | | ✓ | ✓ |
| Purchase of premium functions | | ✓ | |

A) GPS required

**Premium functions**

The standard functions of the **Nyon (BUI350)** operating system can be supplemented through the purchase of **premium functions** via the App Store for Apple iPhones or the Google Play store for Android devices.

In addition to the free **Bosch eBike Connect** app, premium functions are available for a fee. A detailed list of the additional apps that are available can be found in the online operating instructions at www.Bosch-eBike.com.

# Displays and settings of the on-board computer

**Note:** All interface displays and texts on the following pages correspond to the release status of the software. The interface displays and texts may change slightly following a software update.

The Nyon has a touch-sensitive screen. The individual screens can be navigated between by swiping right or left. Status screen functions or submenus can be called up by pressing the corresponding buttons.

The Nyon has standard screens and predefined screens. The user can also create their own custom screens. The order and number of screens can be set by the user. Max. 25 tiles can be used for the screens. The description of the screens in these operating instructions corresponds to the basic configuration that is provided upon delivery of the on-board computer.

The standard screens are:

– **<Status Screen>**
– **<Ride Screen>**
– **<Trip Data Screen>**
– **<Map Screen>**
– **<Analysis Screen>**

The predefined screens include:

– **<Fitness Screen>**
– **<eMTB Screen>**
– **<Basic Screen>**

You can use the **< (14)** and **> (10)** buttons to switch between the different pages of riding values (even while riding). This way, you can keep both hands on the handlebars while cycling.

You can use the **+ (15)** and **– (12)** buttons to increase or decrease the assistance level.

The **<Settings>** that can be accessed via the **<Status Screen>** cannot be changed while riding.

## <Ride Screen>




**a** Speed

**b** Unit of speed

**c** Time[a)]
The current time is shown according to the selected time zone. This is set automatically via GPS.

**d** Assistance level
The screen is colored according to the assistance level that is set.

**e** Connection to heart rate monitor
This also functions as a placeholder for additional events. An indicator is displayed whenever the respective event occurs (e.g. connection to a smartphone).

**f** Bike lighting
This symbol is displayed whenever the bike lights are switched on.

**g** Battery charge indicator of the eBike rechargeable battery

**h** Range information[b)c)]

**i** Distance traveled

**j** Motor output

**k** Your output

**z** Destination indicator

a) On eBikes with ABS, the time is replaced by the letters **((ABS))** during system start-up or if there is a fault with the ABS.

b) When the navigation system is **active**, a destination flag will be shown at the end of the scale and the remaining distance to the destination will be displayed. If the eBike battery has sufficient capacity, the right-hand section of the scale will be shown in green. If the right-hand section of the scale is shown in orange or red, it is either uncertain or impossible that you will reach your destination with motor assistance at the assistance level you have currently selected. If you select a lower assistance level, the remaining battery capacity may still be sufficient to allow you to reach your desired destination.

c) When the navigation system is **inactive**, the number of kilometers traveled will be shown on the left, and the range on the right.

The indicators for **a through to g** form the status bar and are shown on every page.

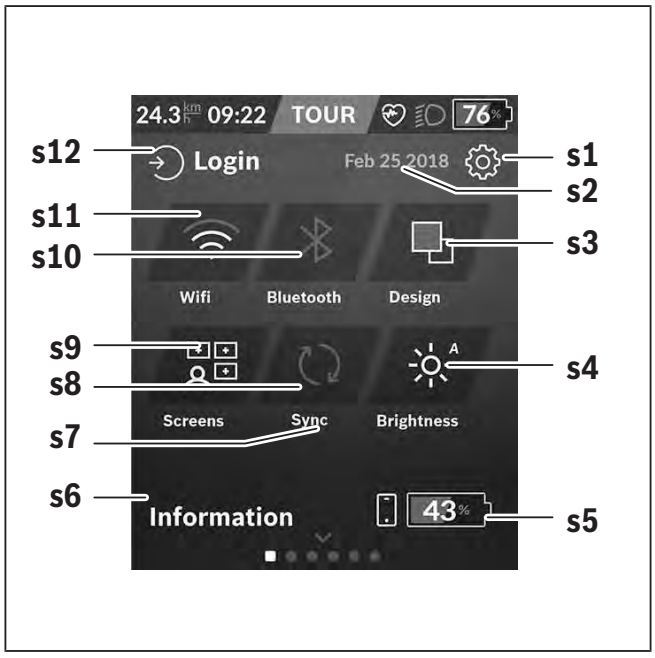
If the on-board computer is removed from the holder, the status bar will change:




**l** On-board computer rechargeable battery charging
If a *Bluetooth*® and/or Wi-Fi connection is present, this will be displayed in the middle of the corresponding icons.

**g** Battery charge indicator of the eBike rechargeable battery
Most recent state of charge of the eBike rechargeable battery

## <Status Screen>




**s1** Button for **<Settings>**

**s2** Date

**s3** **<Design>**
Here, the background can be changed from light to dark.

**s4** Button for **<Brightness>**
Here, a brightness setting can be selected from the following: 25 % | 50 % | 75 % | 100 % | Auto.

**s5** Smartphone battery charging

**s6** **<Information>**
Events that are currently occurring are shown here (e.g. map download).

**s7** Time of last synchronization

**s8** Button for synchronization

**s9** Button for **<Screens>**
Via this button, the order of screens and their content can be adjusted.

**s10** Button for **<Bluetooth>**
**Tap:** Activate/deactivate
**Press and hold:** Quick access to the *Bluetooth*® menu

**s11** Button for **<WiFi>**
**Tap:** Activate/deactivate
**Press and hold:** Quick access to the Wi-Fi menu

**s12** **<Login>**
Here, the user can connect with their ID.

**<Settings>**

You can access the settings menu via the status screen. The **<Settings>** cannot be accessed or changed while riding.

Tap the **<Settings>** button and select the required setting/submenu. Press the back arrow in the header to move to the previous menu. Press the **x** symbol (in the right of the header) to close the settings menu.

You can find the following superordinate sections on the first level of settings:

– **<Map Settings>**
Via **<Map Settings>**, the map display format (2D/3D) can be selected, downloaded maps and map updates can be reviewed, and recommended maps can be downloaded.

– **<My eBike>** – Your eBike settings:
You can reset the counters (such as the number of kilometers traveled that day or average values) to zero either automatically or manually, and you can reset the range. You can change the wheel circumference value that was preset by the manufacturer by ±5 %. If your eBike features **eShift**, you can also configure your eShift system here. The bike retailer can schedule the service based on a mileage and/or a time period. The bike component page displays the serial number and hardware and software versions for each component, in addition to other key data that is relevant for the components.

– **<Screen Management>**
You can select this menu item to adjust the screen and tile contents to your personal requirements.

– **<Connections>**
Here, the *Bluetooth*® and Wi-Fi connections can be adjusted. To be able to use the heart rate display, you must add either the **<Fitness Screen>** from the predefined screens or a heart rate tile to your standard screens. Once you are connected, the heart symbol on the tile turns blue.
Recommended heart rate monitors:
- Polar H7
- Polar H10 Heart Rate Sensor
- Runtastic Heart Rate Combo Monitor
- Wahoo TICKR Heart Rate Monitor
- BerryKing Heartbeat chest strap
- BerryKing Sportbeat armband

May be compatible with other devices.

– **<My Profile>**
The data belonging to the active user can be viewed here.

– **<System Settings>**
You can display the speed and distance in kilometers or miles, display the clock in 12- or 24-hour format, adjust the time, date and time zone and select your preferred language. You can reset the Nyon to its factory settings, run a software update (if available) and choose between a black and white design.

– **<Information>**
Information on FAQ (frequently asked questions), certification, contact information, information on licenses. You can find a detailed description of each parameter in the online operating instructions at www.Bosch-eBike.com.

– **<Certificates>**




## <Map Screen>

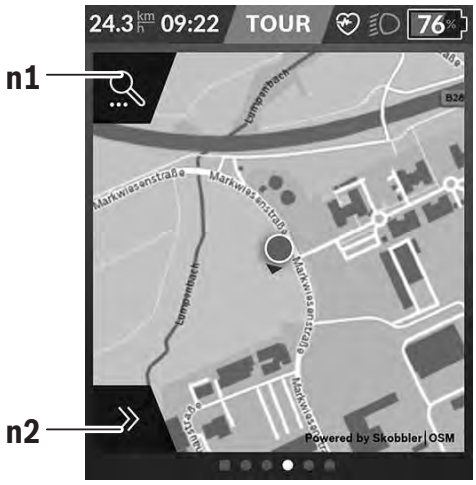
The navigation system draws on map material that is based on OpenStreetMap (OSM).

Whenever you switch on Nyon, it will begin with a satellite search to enable it to receive GPS signals. Once enough satellites have been found, the location point will change color from gray to blue. In unfavorable weather conditions or locations, the search for satellites may take a little longer. If no satellites have been found after an extended period of time, Nyon will restart.

When searching for satellites for the first time, the process can take several minutes.

In order to achieve the best possible positional accuracy, the first satellite search should be carried out outdoors. Ideally, you should remain stationary for a few minutes while this takes place, even if your position has already been found.

Once Nyon has determined your location, this will be shown to you on the map. To **zoom in** to a section of the map, place **two** fingers on the touchscreen and spread them apart. To **zoom out** of a section of the map, place two fingers on the touchscreen and bring them together. To **move around** the map, simply place two fingers on the touchscreen and move them across the map. To **select a destination**, press and hold a finger against a location on the map.




**n1** Navigation search

**n2** Navigation functions

Using the navigation functions **n2**, you can select your destinations and ensure that these can be reached with the current state of charge.

While the navigation system is active, the user is informed about the current assistance mode they are using and whether they are able to reach their destination with the current eBike battery state of charge.

The circle around the user's position shows how far they are able to travel with the current level of battery charge, taking into account the current assistance level and the terrain to be covered. Adjusting the assistance level will adjust the radius of the circle accordingly.

If you select the navigation search **n1**, you will be shown the following menu:




**n3** Input field **<Destination>**
Here, you can enter the address of your destination or a point of interest (e.g. a restaurant). Depending on the input, all potential addresses within a radius of 100 km will be shown to you.

**n4** Button for **<Home>**
By selecting this button, you will be directed to your home address.[a)]

**n5** Button for **<Work>**
By selecting this button, you will be directed to your workplace address.[a)]

**n6** Button for **<Locations>**
Select this button to view the locations you have saved that have been synchronized from the app or the portal.

**n7** Button for **<Routes>**
The routes that have been saved and subsequently synchronized are shown in the portal.

**n8** Button for **<POI>**
Select this button to view destinations of general interest, such as restaurants or shopping facilities.

**n9** Button for **<Map Settings>**
By selecting this button, you can adjust how the maps are displayed or manage your maps.

**n10** **<Recent Destinations>**
The most recent routes and locations are listed here.

a) Data from the app and the portal is imported and displayed.

If you have entered a destination, the quickest available route (**<Fast>**) will be shown to you first. You can also select the scenic (**<Scenic>**) or the MTB route (**<MTB>**). Alternatively, you can receive directions to take you home (when you have logged your home address in the portal), select one of your recent destinations or choose from saved locations and routes.

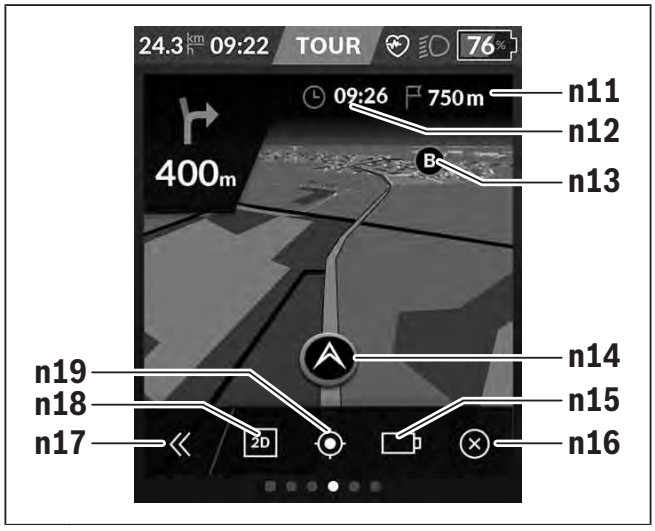
The remaining range of the battery is calculated and displayed according to the topographical conditions. The calculation of the topographical range extends to a maximum of 100 km.

If you have imported or planned GPX routes via the online portal, these will be transmitted to your Nyon via *Bluetooth*® or a Wi-Fi connection. You can begin these routes as and when necessary. If you are located in the vicinity of the route, you can be directed to the start of the route or begin following the navigation system immediately.

In temperatures below 0 °C, significant deviations must be taken into account with regard to height measurement.

### Active Navigation

The following figure shows an example of active navigation with explanations of the depicted symbols.



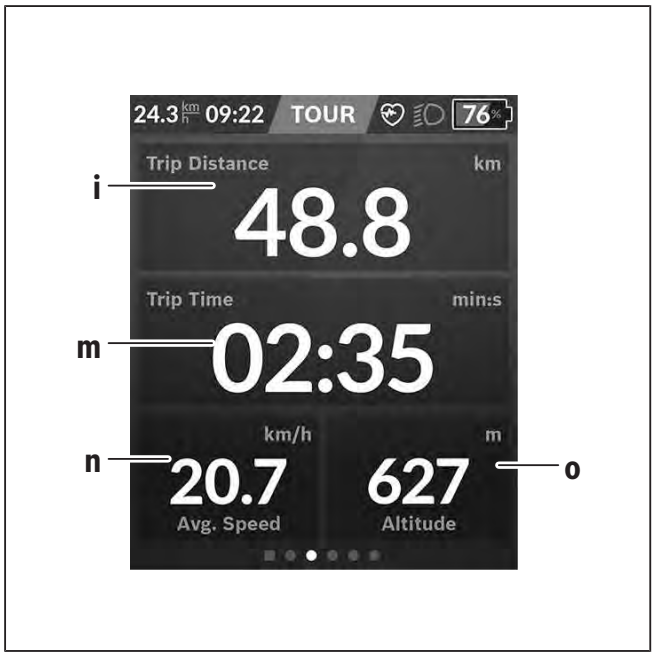

**n11** Distance to the destination
**n12** Arrival time
**n13** Destination
**n14** Current position
**n15** Range indicator battery
**n16** End active navigation
**n17** Open and close panel (back to search)
**n18** Switch between 2D and 3D view
**n19** Center view (only visible when the map has been moved)

### Range display

When you have started navigation, the system shows you whether the current state of charge of the rechargeable battery will be enough to reach your destination. The color and appearance of the range indicator **n15** change according to the state of charge that the eBike rechargeable battery will have when you reach your destination. The following table provides an overview of the possible displays relating to the state of charge of the eBike rechargeable battery.

| Appearance | Color | State of charge of the eBike rechargeable battery at destination |
|---|---|---|
| | Green | > 30 % |
| ! | Orange | 15 % to 30 % |
| | Red | 0 % to 15 % |

## <Trip Data Screen>




**i** **<Trip Distance>**
Indicator for distance traveled

**m** **<Trip Time>**
Indicator for trip duration

**n** **<Avg. Speed>**
Indicator for average speed

**o** **<Altitude>**
Indicator for altitude

## <Analysis Screen>




**p** **<Riding Mode Usage>**
Indicator for use of different riding modes

**q** **<Max. Speed>**
Indicator for maximum speed

**r** **<Ascent>**
Indicator for gradient

**s** **<Avg. Power>**
Indicator for relationship of own output compared to motor output

## Creating custom screens

In order to incorporate predefined screens or create new screens, navigate to the status screen and select the adjustment **s9** button. Four icons are shown to you in the footer that allow you to make an adjustment.

As an option, the function can also be started via **<Settings>** → **<Screens>**.

The following options are available to you:
– Move screens
– Create new screens
– Delete screens
– Add predefined screens

When creating your own screens, there is the possibility of inserting the **<Speed>**, **<Cadence>** and **<My Power>** tiles with built-in destination indicator.

If the pointer of the destination indicator is on the left-hand side, the background goes orange. Your performance is below the average value.

If the pointer of the destination indicator is on the right-hand side or in the center, the background goes green. That means that your performance is above the average value or is in line with it.

## <Fitness Screen> (predefined screen)




**t** **<My Power>**
Indicator for own output

**u** **<Cadence>**
Indicator for cadence

**r** **<Heartrate>**
Indicator for heart rate

**v** **<Calories>**
Indicator for kilocalories burned

## <eMTB Screen> (predefined screen)




**r** **<Slope>**
Indicator for gradient

**o** **<Altitude>**
Indicator for altitude

**w** **<Altitude Graph>**
Indicator for elevation profile

**x** **<Max. Slope>**
Indicator for maximum gradient

**y** **<Ascent>**
Indicator for gradient

## <Basic Screen> (predefined screen)




**i** **<Trip Distance>**
Indicator for distance traveled

**m** **<Trip Time>**
Indicator for trip duration

**a** **<Avg. Speed>**
Indicator for average speed

## <Quick Menu>

Selected settings are displayed on the quick menu. These settings can also be changed while riding.

You can access the quick menu via the select button **(11)**. You can use the **< (14)** and **> (10)** buttons to switch between the submenus. The submenu items can be selected with the **+ (15)** and **– (12)** buttons.

From the **<Status Screen>**, you are unable to reach the **<Quick Menu>**.

The following submenus can be changed via the **<Quick Menu>**:

- **<Trip Data>**
  Via this submenu, you can reset all data on the distance traveled so far to zero.
- **<Select Destination>**
  Via this submenu, you can save your current position, return to a saved position, or receive directions to take you home.
- **<Map Zoom>**
  Via this submenu, you can zoom in or out of a section of the map.
- **<Brightness>**
  Via this submenu, a brightness setting can be selected from the following: 25 % | 50 % | 75 % | 100 % | Auto.
- **<Design>**
  Via this submenu, you can select a light or dark background.
- **<eShift>** (optional)
  Via this submenu, you can set the cadence.
- **<Custom Riding Modes>** (premium function, can be obtained from the App Store or Google Play Store)
  Via this submenu, you can select individual riding modes.
- **<Quick Menu>**
  Via this submenu, you can leave the **<Quick Menu>** again.

# Troubleshooting

The components of the eBike system are continuously monitored automatically. If a fault is detected, the corresponding fault code will appear on the on-board computer.

The drive may also be switched off automatically depending on what type of fault has occurred. You can continue riding at any time without assistance from the drive, but you should have your eBike checked before completing any more journeys.

- ▶ **Only have repairs performed by a certified bicycle dealer.**

| Code | Cause | Corrective measures |
|---|---|---|
| 410 | One or more buttons of the on-board computer are disabled. | Check whether any buttons are stuck, e.g. as a result of dirt finding its way in. Clean the buttons if need be. |
| 414 | Operating unit connection problem | Have the connections checked |
| 418 | One or more buttons on the operating unit are disabled. | Check whether any buttons are stuck, e.g. as a result of dirt finding its way in. Clean the buttons if need be. |
| 419 | Configuration error | Restart the system. If the problem persists, contact your Bosch eBike dealer. |
| 422 | Drive unit connection problem | Have the connections checked |
| 423 | eBike battery connection problem | Have the connections checked |
| 424 | Communication problem between components | Have the connections checked |
| 426 | Internal time-out error | Restart the system. If the problem persists, contact your Bosch eBike dealer. With this error, it is not possible to bring up the wheel circumference in the basic settings menu or to adjust it. |
| 430 | Internal battery of the on-board computer is flat (does not apply to BUI350) | Charge the on-board computer (in the holder or via the USB port) |
| 431 | Software version error | Restart the system. If the problem persists, contact your Bosch eBike dealer. |
| 440 | Internal drive unit fault | Restart the system. If the problem persists, contact your Bosch eBike dealer. |
| 450 | Internal software error | Restart the system. If the problem persists, contact your Bosch eBike dealer. |
| 460 | Error at USB port | Remove the cable from the USB port of the on-board computer. If the problem persists, contact your Bosch eBike dealer. |
| 490 | Internal fault of the on-board computer | Have the on-board computer checked |

| Code | Cause | Corrective measures |
|---|---|---|
| 500 | Internal drive unit fault | Restart the system. If the problem persists, contact your Bosch eBike dealer. |
| 502 | Bike light fault | Check the light and the associated wiring. Restart the system. If the problem persists, contact your Bosch eBike dealer. |
| 503 | Speed sensor fault | Restart the system. If the problem persists, contact your Bosch eBike dealer. |
| 504 | Speed signal distortion detected. | Check that the spoke magnet is positioned correctly, and adjust it if necessary. Check that nothing has been tampered with (tuning). Drive assistance is reduced. |
| 510 | Internal sensor fault | Restart the system. If the problem persists, contact your Bosch eBike dealer. |
| 511 | Internal drive unit fault | Restart the system. If the problem persists, contact your Bosch eBike dealer. |
| 530 | Battery fault | Switch off the eBike, remove the eBike battery and reinsert the eBike battery. Restart the system. If the problem persists, contact your Bosch eBike dealer. |
| 531 | Configuration error | Restart the system. If the problem persists, contact your Bosch eBike dealer. |
| 540 | Temperature error | The eBike is outside of the permissible temperature range. Switch off the eBike system and allow the drive unit to either cool down or heat up to the permissible temperature range. Restart the system. If the problem persists, contact your Bosch eBike dealer. |
| 550 | An impermissible load has been detected. | Remove the load. Restart the system. If the problem persists, contact your Bosch eBike dealer. |
| 580 | Software version error | Restart the system. If the problem persists, contact your Bosch eBike dealer. |
| 591 | Authentication error | Switch off the eBike system. Remove the battery pack and reinsert it. Restart the system. If the problem persists, contact your Bosch eBike dealer. |
| 592 | Incompatible component | Use a compatible display. If the problem persists, contact your Bosch eBike dealer. |
| 593 | Configuration error | Restart the system. If the problem persists, contact your Bosch eBike dealer. |
| 595, 596 | Communication error | Check the wiring to the drive and restart the system. If the problem persists, contact your Bosch eBike dealer. |

| Code | Cause | Corrective measures |
|---|---|---|
| 602 | Internal battery fault | Restart the system. If the problem persists, contact your Bosch eBike dealer. |
| 603 | Internal battery fault | Restart the system. If the problem persists, contact your Bosch eBike dealer. |
| 605 | Battery temperature error | The battery is outside of the permissible temperature range. Switch off the eBike system and allow the battery to either cool down or heat up to the permissible temperature range. Restart the system. If the problem persists, contact your Bosch eBike dealer. |
| 606 | External battery fault | Check the wiring. Restart the system. If the problem persists, contact your Bosch eBike dealer. |
| 610 | Battery voltage error | Restart the system. If the problem persists, contact your Bosch eBike dealer. |
| 620 | Charger fault | Replace the charger. Contact your Bosch eBike dealer. |
| 640 | Internal battery fault | Restart the system. If the problem persists, contact your Bosch eBike dealer. |
| 655 | Multiple battery faults | Switch off the eBike system. Remove the battery pack and reinsert it. Restart the system. If the problem persists, contact your Bosch eBike dealer. |
| 656 | Software version error | Contact your Bosch eBike dealer so that they can perform a software update. |
| 7xx | Error relating to third-party components | Observe the information in the operating instructions of the respective component manufacturer. |
| Display is blank | Internal fault of the on-board computer | Restart your eBike system by switching it off and back on. |

# Maintenance and cleaning

▸ **Deactivate the on-board computer if you are carrying out cleaning, maintenance or servicing work on the holder or the on-board computer.**
Only then malfunctions/misuse can be avoided.

Do not clean any of the components with pressurized water.

Keep the screen of your on-board computer clean. Dirt can cause faulty brightness detection.

Clean your on-board computer using a soft cloth dampened only with water. Do not use cleaning products of any kind.

Have your eBike system checked by an expert at least once a year (including mechanical parts, up-to-dateness of system software).

The bike retailer can also schedule the service based on a mileage and/or a time period. In this case, the on-board computer displays a message telling you when the service date is due each time it is switched on.

Please have your eBike serviced and repaired by an authorized bicycle dealer.

▸ **Only have repairs performed by a certified bicycle dealer.**

# Battery Recycling Program

The drive unit, on-board computer incl. operating unit, battery, speed sensor, accessories and packaging should be disposed of in an environmentally correct manner.

Do not dispose of eBikes and their components with household waste.

You may recycle your Bosch battery pack by calling 1.800.822.8837.

**Robert Bosch GmbH**
72757 Reutlingen
Germany

**www.bosch-ebike.com**

**1 270 U20 BN2** (2021.12) T / 98

# Owner’s Manual – The Bosch Drive System Drive Unit

BDU330 | BDU380 | BDU385 | BDU386



**en** Original operating instructions

**This manual contains important safety, performance and service information. Read and understand it along with the information provided to you by your bicycle manufacturer before using the product, and keep it for reference.**



## Active Line/Active Line Plus/Performance Line

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Operating your Bosch drive unit....4
Safety instructions....4
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Operation....8
Maintenance/Cleaning....10

# Introduction

## About Warnings

This manual contains many **DANGER**, **WARNING**, and **CAUTION** indicators concerning the consequences of failure to use, assemble, maintain, store, inspect and dispose of a Bosch-equipped eBike in a safe manner.

– The combination of the safety alert symbol and the word **DANGER** indicates a hazardous situation that, if not avoided, will result in death or serious injury.
– The combination of the safety alert symbol and the word **WARNING** indicates a hazardous situation that, if not avoided, could result in death or serious injury.
– The combination of the safety alert symbol and the word **CAUTION** indicates a hazardous situation that, if not avoided, could result in minor or moderate injury.

## General Warnings



**Read all safety warnings and all instructions.** Failure to follow the warnings and instructions may result in death or serious injury.

**Save all safety warnings and instructions for future reference.**

The term **battery pack** used in these operating instructions refers to all original Bosch eBike battery packs.

**⚠ WARNING**

- ▶ **This manual contains important safety, performance and service information.** Read it before you take the first ride on your new bicycle, and keep it for reference. The manual can also be found online at www.bosch-ebike.com.
- ▶ **This manual is intended to be read together with the separate user manual provided with your bicycle.** Be sure to read all provided documents including labels on the product before your first ride.
- ▶ **Read ALL accompanying manuals before riding the bike for the first time.** Your Bosch Drive System comes with additional manuals and documents provided by the manufacturer of the bicycle and other components. Failure to read and understand safety information can result in death or serious injury.
- ▶ **Take responsibility for your own SAFETY.** If you have any questions or do not understand something, consult with your dealer or the bicycle or component manufacturer.
- ▶ **Some eBike accessories may present a choking hazard to small children.** Keep these accessories away from children.

**⚠ CAUTION**

- ▶ **The Bosch Drive System adds weight to your bicycle which you may not be used to lift.** Avoid injury, use proper lifting techniques.

## Using your Manual

In addition to the functions outlined here, changes to software relating to troubleshooting and functional modifications may be introduced at any time.

### Graphics

The bicycle shown in this manual may differ slightly from your bicycle, but will be similar enough to help you understand our instructions.

RIGHT-HAND and LEFT-HAND sides are determined by facing in the direction the bicycle will travel when going forward. When you see a broken line (------), the item referred to is hidden from view.

# Operating your Bosch drive unit

## Safety instructions



**Read and understand all safety warnings and instructions.** Failure to follow the below warnings could result in death or serious injury.

**Save all safety warnings and instructions for future reference.**

The term **battery pack** used in these operating instructions refers to all original Bosch eBike battery packs.

- **Do not attempt to change – in particular, to increase – the power of your drive or the maximum speed that it supports.** Doing this may put yourself and others at risk, and you could also breach statutory regulations.
- **Do not open the drive unit yourself. The drive unit must only be repaired by qualified personnel using only original spare parts.** This will ensure that the safety of the drive unit is maintained. Unauthorized opening of the drive unit will render warranty claims null and void.
- **All components fitted to the drive unit and all other components of the eBike drive (e.g. chainring, chainring receptacle, pedals) must only be replaced with identical components or components that have been specifically approved by the manufacturer for your eBike.** This will protect the drive unit from overloading and becoming damaged.
- **Remove the battery from the eBike before beginning work (e.g. inspection, repair, assembly, maintenance, work on the chain, etc.) on the eBike, transporting it with a car or airplane, or storing it.** Unintentional activation of the eBike system poses a risk of injury.
- **The eBike system can be activated by pushing the eBike backwards or by turning the pedals backwards.**
- **The push assistance function must only be used when pushing the eBike.** There is a risk of injury if the wheels of the eBike are not in contact with the ground while using the push assistance.
- **When the push assistance is activated, the pedals may turn at the same time.** When the push assistance function is activated, make sure that there is enough space between your legs and the turning pedals to avoid the risk of injury.
- **After a ride, do not allow your unprotected hands or legs to come into contact with the housing of the drive unit.** Under extreme conditions, such as continuously high torques at low travel speeds, or when riding up hills or carrying loads, very high temperatures may be reached on the housing.
  The temperatures that may be reached on the drive unit housing are influenced by the following factors:
  – Ambient temperature
  – Ride profile (route/gradient)
  – Ride duration
  – Assistance modes
  – User behavior (personal effort)
  – Total weight (rider, eBike, luggage)
  – Motor cover on the drive unit
  – Heat dissipation properties of the bicycle frame
  – Type of drive unit and type of gear-shifting
- **Use only original Bosch batteries that the manufacturer has approved for your eBike.** Using other batteries can lead to injuries and pose a fire hazard. Bosch accepts no liability or warranty claims if other batteries are used.
- **Do not make any modifications to your eBike system or fit any other products that might in-**

**crease the performance of your eBike system.** Doing so will generally reduce the service life of the system and risks damaging the drive unit and the bike. You also run the risk of losing the guarantee and warranty claims on the bicycle you have purchased. By handling the system improperly you are also endangering your safety and that of other road users, thus running the risk of high personal liability costs and possibly even criminal prosecution in the event of accidents that can be attributed to manipulation of the bicycle.



**Under extreme conditions, such as continuously high loads at low speed when riding up hills or carrying loads, parts of the drive unit can reach temperatures in excess of 60 °C.**

- ▶ **Please observe all local, state and federal regulations when registering and using eBikes.**
- ▶ **Read and observe the safety warnings and instructions in all operating instructions of the eBike system and your eBike.**

## Privacy notice

When you connect the eBike to the Bosch Diagnostic-Tool, data about the eBike drive unit (e.g. energy consumption, temperature, etc.) is transferred to Bosch eBike Systems (Robert Bosch GmbH) for the purposes of product improvement. You can find more information about this on the Bosch eBike website at www.bosch-ebike.com.

# Product description and specifications

## Intended use

The drive unit is intended exclusively for driving your eBike and must not be used for any other purpose.

In addition to the functions outlined here, changes to software relating to troubleshooting and functional modifications may be introduced at any time.

## Technical data

| Drive unit | | Active Line | Active Line Plus | Performance Line | Performance Line Sport |
|---|---|---|---|---|---|
| Product code | | BDU330 | BDU380 | BDU385 | BDU386 |
| Continuous rated power | W | 250 | 250 | 250 | 250 |
| Torque at drive, max. | Nm | 40 | 50 | 65 | 65 |
| Rated voltage | V= | 36 | 36 | 36 | 36 |
| Operating temperature | °F | +23 to +104 | +23 to +104 | +23 to +104 | +23 to +104 |
| Storage temperature | °F | +50 to +104 | +50 to +104 | +50 to +104 | +50 to +104 |
| Protection rating | | IP 54 | IP 54 | IP 54 | IP 54 |
| Weight, approx. | kg | 2.9 | 3.2 | 3.2 | 3.2 |

The Bosch eBike system uses FreeRTOS (see http://www.freertos.org).

| Bicycle lights[A)] | | |
|---|---|---|
| Voltage approx.[B)] | V= | 12 |
| Maximum power | | |
| – Front light | W | 17.4 |
| – Rear light | W | 0.6 |

A) Depends on legal regulations, not possible in all country-specific models via the eBike battery

B) When changing the bulbs, ensure that they are compatible with the Bosch eBike system (ask your bicycle dealer) and are suitable for the specified voltage. Bulbs must only be replaced with bulbs of the same voltage.

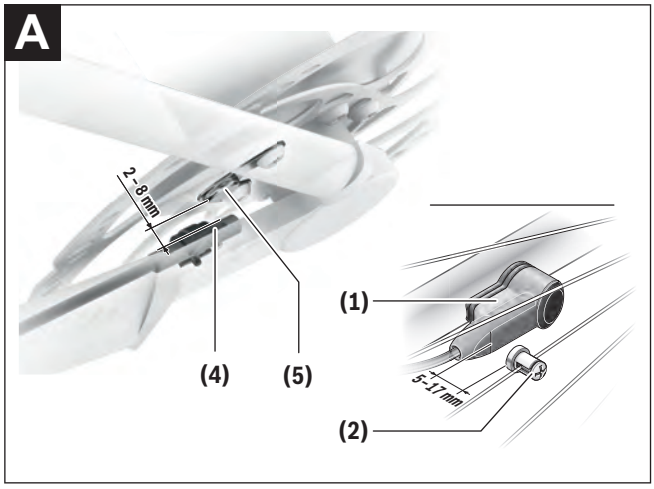
**Inserting a bulb incorrectly can cause it to blow.**

# Assembly

## Inserting and removing the battery

For inserting and removing the eBike battery in/from the eBike, please read and observe the battery operating instructions.

## Check speed sensor




**(1)** Speed sensor (standard)

**(2)** Spoke magnet

**(4)** Speed sensor (slim)[A)]

**(5)** Magnet

A) Different sensor shape and installation position possible

**Speed Sensor (standard)**

The speed sensor **(1)** and its spoke magnet **(2)** must be fitted such that the spoke magnet moves past the speed sensor at a distance of at least 5 mm and at most 17 mm with each rotation of the wheel.

**Note:** If the distance between the speed sensor **(1)** and the spoke magnet **(2)** is too small or too large, or if the speed sensor **(1)** is not properly connected, the speedometer display will fail and the eBike drive unit will operate in emergency mode.

Should this occur, loosen the screw of the spoke magnet **(2)** and fasten the spoke magnet to the spoke such that it runs past the marking on the speed sensor at the correct clearance. If the speed is still not being indicated on the speedometer display after doing this, please contact an authorized bicycle dealer.

**Speed Sensor (slim)**

The speed sensor (slim) **(4)** and its spoke magnet **(5)** must be fitted ex works such that the spoke magnet moves past the speed sensor at a distance of at least 2 mm and at most 8 mm with each rotation of the wheel.

The correct distance between the magnet and sensor must be maintained (see figure A) if design changes are made.

**Notes:** Ensure that you do not damage the sensor or sensor bracket when fitting or removing the rear wheel.

# Operation

## Start-up

### Requirements

The eBike system can only be activated when the following requirements are met:
- A sufficiently charged battery is inserted (see battery operating instructions).
- The on-board computer is properly inserted in the holder (see on-board computer operating instructions).
- The speed sensor is correctly connected.

### Switching the eBike system on/off

The following options are available for **switching on** the eBike system:
- If the on-board computer is already switched on when you insert it into the holder, the eBike system will be automatically activated.
- When the on-board computer and the eBike battery are inserted, briefly press the on/off button of the on-board computer.
- With the on-board computer inserted, press the on/off button on the eBike battery (some bicycle manufacturer-specific solutions prevent access to the battery on/off button; see the battery operating instructions).

The drive is activated as soon as you start pedaling (except for in the push assistance function, Switching the push assistance on/off). The motor output depends on which assistance level is set on the on-board computer.

As soon as you stop pedaling when in normal operation, or as soon as you have reached a speed of **20 mph**, the eBike drive unit switches off the assistance. The drive is automatically re-activated as soon you start pedaling again and the speed is below **20 mph**.

The following options are available for **switching off** the eBike system:
- Press the on/off button of the on-board computer.
- Switch off the eBike battery using its on/off button (some bicycle manufacturer-specific solutions prevent access to the battery on/off button; see the bicycle manufacturer operating instructions).
- Remove the on-board computer from its holder.

If the eBike is not moved for approx. ten minutes **and** no button is pressed on the on-board computer, the eBike system switches off automatically in order to save energy.

## eShift (optional)

eShift is the integration of electronic gear-shifting systems into the eBike system. The eShift components are electrically connected to the drive unit by the manufacturer. The separate operating instructions describe how to operate the electronic gear-shifting systems.

## Setting the assistance level

You can set the level at which the eBike drive assists you while pedaling on the on-board computer. The assistance level can be changed at any time, even while cycling.

**Note:** In some models, the assistance level may be preset and cannot be changed. There may also be fewer assistance levels available than stated here.

The following assistance levels are available as a maximum:
- **OFF:** Motor assistance is switched off. The eBike can just be moved by pedaling, as with a normal bicycle. The push assistance cannot be activated at this assistance level.
- **ECO:** Effective assistance with maximum efficiency, for maximum range
- **TOUR:** Steady assistance, long range for touring

– **SPORT/eMTB:**
**SPORT:** Powerful assistance, for mountain biking and for cycling in urban traffic
**eMTB:** Optimum assistance whatever the terrain, rapid acceleration when starting from a standstill, improved dynamics, top performance (**eMTB** is only available in combination with drive units BDU250P CX, BDU365, BDU450 CX and BDU480 CX. This also requires a software update.)
– **TURBO:** Maximum assistance even at high pedaling speeds, for biking sports

The requested motor output appears on the display of the on-board computer. The maximum motor output depends on which assistance level is selected.

| Assistance level | Assistance factor[A)] | | | |
|---|---|---|---|---|
| | Active Line (BDU330) | Active Line Plus (BDU380) | Performance Line (BDU385) | Performance Line Sport (BDU386) |
| **ECO** | 40 % | 40 % | 55 % | 55 %[B)] |
| **TOUR** | 100 % | 100 % | 120 % | 120 %[B)] |
| **SPORT/eMTB** | 150 % | 180 % | 200/120–300 %[C)] | 200 %[B)] |
| **TURBO** | 250 % | 270 % | 300 % | 300 %[B)] |

A) The assistance factor may vary in some models.

B) Dynamic-progressive assistance level

C) Dynamic-progressive assistance level between **TOUR** and **TURBO** modes

## Switching the push assistance on/off

The push assistance aids you when pushing your eBike. The speed of this function depends on the selected gear and can reach a maximum of **3.7 mph**. The lower the selected gear, the lower the speed of the push assistance function (at full power).

▶ **The push assistance function must only be used when pushing the eBike.** There is a risk of injury if the wheels of the eBike are not in contact with the ground while using the push assistance.

To **activate** the push assistance, briefly press the **WALK** button on your on-board computer. After activation, press the **+** button within 3 s and keep it pressed. The eBike drive is switched on.

**Note:** The push assistance cannot be activated at assistance level **OFF**.

The push assistance is **switched off** as soon as one of the following occurs:
– You release the **+** button;
– the wheels of the eBike are locked (e.g. by applying the brakes or hitting an obstacle);
– the speed exceeds **3.7 mph**.

The push assistance function is subject to local regulations; the way it works may therefore differ from the description above. It can also be deactivated.

## Switching bicycle lights on/off

On the model where the bike lights are powered by the eBike system, the front light and taillight can be switched on and off at the same time via the on-board computer.

Before starting each journey, check that your bike lights are working correctly.

# Maintenance/Cleaning

**⚠ WARNING**

- **Do not open any of the components. Service should only be carried out at an authorized Bosch eBike dealer.** Failure to follow above warning can cause death or serious injury. Refer to your bicycle manual or component manual for all non-Bosch drive system components.
- **Always remove the battery pack before performing any bicycle inspection, maintenance or repair.** Failure to remove the battery pack before performing bicycle inspection, maintenance or repair can lead to serious injury.
- **If you suspect that something is loose, do not ride your bike.** See your Bosch eBike dealer, only a qualified service provider should perform work on your Bosch Drive System. All nuts, bolts, screws require the correct tightening force. Too little force and the fastener may not hold securely. Too much force and the fastener can strip threads, stretch, deform or break. Either way, incorrect tightening force can result in component failure, which can cause you to lose control and fall.
- **If replacing your battery, buy only a genuine Bosch battery pack from an approved source. See your Bosch eBike dealer for original Bosch parts.**
- **Always switch the battery pack off, when inserting or removing it from the holder.** Never attempt to insert or remove the battery pack while riding the bike.
- **Do not charge or use your eBike in any area with a potentially explosive atmosphere, such as at a fueling area, or in areas where the air contains chemicals or particles (such as grain, dust, or metal powders).** Obey all signs and instructions.
- **Do not submerge your eBike components in water, or wash with pressurized hose.** Your Bosch drive unit is designed to be water tight to rain water or non-pressure hose washing.
- **Note down the manufacturer and the number of the key.** In case of loss of the keys, please refer to an authorised Bosch eBike dealer. Please provide the name of the manufacturer and the number of the key.
- **Do not paint any components of the Bosch drive system as they may cause premature failure of the component.**

When changing the bulbs, ensure that they are compatible with the Bosch eBike system (ask your bicycle dealer) and are suitable for the specified voltage. Bulbs must only be replaced with bulbs of the same voltage.

## Taking care of your eBike

Please observe the operating and storage temperatures of the eBike components. Protect the drive unit, on-board computer and battery against extreme temperatures (e.g. from intense sunlight without adequate ventilation). Extreme temperatures can cause the components (especially the battery) to become damaged.

Have your eBike system checked by an expert at least once a year (including mechanical parts, up-to-dateness of system software).

Please have your eBike serviced and repaired by an authorized bicycle dealer.

## After-sales service and advice on using products

If you have any questions about the eBike system and its components, contact an authorized bicycle dealer.

For contact details of authorized bike dealerships, please visit www.bosch-ebike.com.

Please contact an authorized bicycle dealer if the battery is no longer working.

## Cleaning

- **Do not submerge your eBike components in water, or wash with pressurized hose.** Your Bosch drive unit is designed to be water tight to rain water or non-pressure hose washing.

Keep all components of your eBike clean, especially the battery-pack contacts and corresponding holder contacts. All components including the drive unit may not be immersed in water or cleaned with a high-pressure cleaner. Keep all components of your eBike clean, especially the batterypack contacts and corresponding holder contacts. Clean them carefully with a soft, damp cloth (using only mild soap and water).

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Germany

**www.bosch-ebike.com**

**0 275 U07 XD3** (2020.04) T / 38

# Owner’s Manual – The Bosch Drive System
# Drive Unit

BDU480 CX | BDU490P




**en** Original operating instructions

**This manual contains important safety, performance and service information. Read and understand it along with the information provided to you by your bicycle manufacturer before using the product, and keep it for reference.**



## Performance Line/Cargo Line

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# Introduction

## About Warnings

This manual contains many **DANGER**, **WARNING**, and **CAUTION** indicators concerning the consequences of failure to use, assemble, maintain, store, inspect and dispose of a Bosch-equipped eBike in a safe manner.

– The combination of the safety alert symbol and the word **DANGER** indicates a hazardous situation that, if not avoided, will result in death or serious injury.
– The combination of the safety alert symbol and the word **WARNING** indicates a hazardous situation that, if not avoided, could result in death or serious injury.
– The combination of the safety alert symbol and the word **CAUTION** indicates a hazardous situation that, if not avoided, could result in minor or moderate injury.

## General Warnings



**Read all safety warnings and all instructions.** Failure to follow the warnings and instructions may result in death or serious injury.

**Save all safety warnings and instructions for future reference.**

The term **battery pack** used in these operating instructions refers to all original Bosch eBike battery packs.

**⚠ WARNING**

- ▶ **This manual contains important safety, performance and service information.** Read it before you take the first ride on your new bicycle, and keep it for reference. The manual can also be found online at www.bosch-ebike.com.
- ▶ **This manual is intended to be read together with the separate user manual provided with your bicycle.** Be sure to read all provided documents including labels on the product before your first ride.
- ▶ **Read ALL accompanying manuals before riding the bike for the first time.** Your Bosch Drive System comes with additional manuals and documents provided by the manufacturer of the bicycle and other components. Failure to read and understand safety information can result in death or serious injury.
- ▶ **Take responsibility for your own SAFETY.** If you have any questions or do not understand something, consult with your dealer or the bicycle or component manufacturer.
- ▶ **Some eBike accessories may present a choking hazard to small children.** Keep these accessories away from children.

**⚠ CAUTION**

- ▶ **The Bosch Drive System adds weight to your bicycle which you may not be used to lift.** Avoid injury, use proper lifting techniques.

## Using your Manual

In addition to the functions outlined here, changes to software relating to troubleshooting and functional modifications may be introduced at any time.

### Graphics

The bicycle shown in this manual may differ slightly from your bicycle, but will be similar enough to help you understand our instructions.

RIGHT-HAND and LEFT-HAND sides are determined by facing in the direction the bicycle will travel when going forward. When you see a broken line (------), the item referred to is hidden from view.

# Operating your Bosch Drive Unit

## Safety instructions



**Read and understand all safety warnings and instructions.** Failure to follow the below warnings could result in death or serious injury.

**Save all safety warnings and instructions for future reference.**

The term **battery pack** used in these operating instructions refers to all original Bosch eBike battery packs.

- **Do not attempt to change – in particular, to increase – the power of your drive or the maximum speed that it supports.** Doing this may put yourself and others at risk, and you could also breach statutory regulations.
- **Do not open the drive unit yourself. The drive unit must only be repaired by qualified personnel using only original spare parts.** This will ensure that the safety of the drive unit is maintained. Unauthorized opening of the drive unit will render warranty claims null and void.
- **All components fitted to the drive unit and all other components of the eBike drive (e.g. chainring, chainring receptacle, pedals) must only be replaced with identical components or components that have been specifically approved by the manufacturer for your eBike.** This will protect the drive unit from overloading and becoming damaged.
- **Remove the battery from the eBike before beginning work (e.g. inspection, repair, assembly, maintenance, work on the chain, etc.) on the eBike, transporting it with a car or airplane, or storing it.** Unintentional activation of the eBike system poses a risk of injury.
- **The push assistance function must only be used when pushing the eBike.** There is a risk of injury if the wheels of the eBike are not in contact with the ground while using the push assistance.
- **When the push assistance is activated, the pedals may turn at the same time.** When the push assistance function is activated, make sure that there is enough space between your legs and the turning pedals to avoid the risk of injury.
- **After a ride, do not allow your unprotected hands or legs to come into contact with the housing of the drive unit.** Under extreme conditions, such as continuously high torques at low travel speeds, or when riding up hills or carrying loads, very high temperatures may be reached on the housing.
  The temperatures that may be reached on the drive unit housing are influenced by the following factors:
  – Ambient temperature
  – Ride profile (route/gradient)
  – Ride duration
  – Assistance modes
  – User behavior (personal effort)
  – Total weight (rider, eBike, luggage)
  – Motor cover on the drive unit
  – Heat dissipation properties of the bicycle frame
  – Type of drive unit and type of gear-shifting
- **Use only original Bosch batteries that the manufacturer has approved for your eBike.** Using other batteries can lead to injuries and pose a fire hazard. Bosch accepts no liability or warranty claims if other batteries are used.
- **Do not make any modifications to your eBike system or fit any other products that might increase the performance of your eBike system.** Doing so will generally reduce the service life of the system and risks damaging the drive unit and the bike. You also run the risk of losing the guarantee and warranty claims on the bicycle you have pur-

chased. By handling the system improperly you are also endangering your safety and that of other road users, thus running the risk of high personal liability costs and possibly even criminal prosecution in the event of accidents that can be attributed to manipulation of the bicycle.



**Under extreme conditions, such as continuously high loads at low speed when riding up hills or carrying loads, parts of the drive unit can reach temperatures in excess of 60 °C.**

- ▶ **Please observe all local, state and federal regulations when registering and using eBikes.**
- ▶ **Read and observe the safety warnings and instructions in all operating instructions of the eBike system and your eBike.**

## Privacy notice

When you connect the eBike to the Bosch Diagnostic-Tool, data about the eBike drive unit (e.g. energy consumption, temperature, etc.) is transferred to Bosch eBike Systems (Robert Bosch GmbH) for the purposes of product improvement. You can find more information about this on the Bosch eBike website at www.bosch-ebike.com.

# Product description and specifications

## Intended use

The drive unit is intended exclusively for driving your eBike and must not be used for any other purpose.

In addition to the functions outlined here, changes to software relating to troubleshooting and functional modifications may be introduced at any time.

## Technical data

| Drive unit | | Performance Line CX/ Cargo Line | Performance Line Speed/ Cargo Line Speed |
|---|---|---|---|
| Product code | | BDU480 CX | BDU490P |
| Continuous rated power | W | 250 | 250 |
| Torque at drive, max. | Nm | 85 | 75/85[A)] |
| Rated voltage | V= | 36 | 36 |
| Operating temperature | °F | +23 to +104 | +23 to +104 |
| Storage temperature | °F | +50 to +104 | +50 to +104 |
| Protection rating | | IP 54 | IP 54 |
| Weight, approx. | kg | 3 | 3 |

A) Is determined by the bicycle manufacturer

The Bosch eBike system uses FreeRTOS (see http://www.freertos.org).

| Bicycle lights[A)] | | |
|---|---|---|
| Voltage approx.[B)] | V= | 12 |
| Maximum power | | |
| – Front light | W | 17.4 |
| – Rear light | W | 0.6 |

A) Depends on legal regulations, not possible in all country-specific models via the eBike battery

B) When changing the bulbs, ensure that they are compatible with the Bosch eBike system (ask your bicycle dealer) and are suitable for the specified voltage. Bulbs must only be replaced with bulbs of the same voltage.

**Inserting a bulb incorrectly can cause it to blow.**

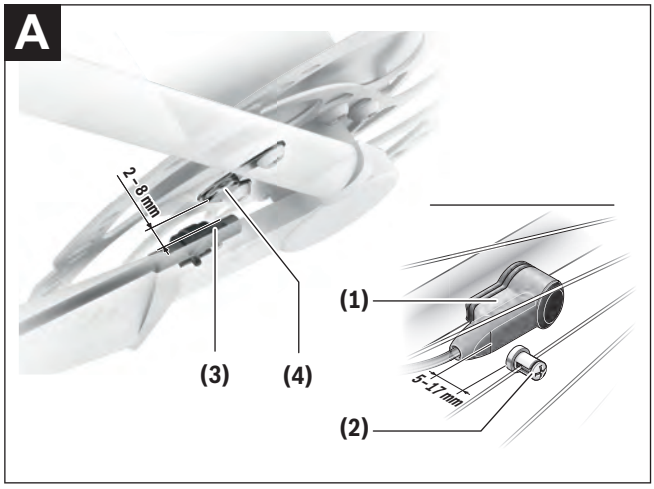
# Assembly

## Inserting and removing the battery

For inserting and removing the eBike battery in/from the eBike, please read and observe the battery operating instructions.

## Check speed sensor

**A**




**(1)** Speed sensor (standard)

**(2)** Spoke magnet

**(3)** Speed sensor (slim)[A)]

**(4)** Magnet

A) Different sensor shape and installation position possible

### Speed Sensor (standard)

The speed sensor **(1)** and its spoke magnet **(2)** must be fitted such that the spoke magnet moves past the speed sensor at a distance of at least 5 mm and at most 17 mm with each rotation of the wheel.

**Note:** If the distance between the speed sensor **(1)** and the spoke magnet **(2)** is too small or too large, or if the speed sensor **(1)** is not properly connected, the speedometer display will fail and the eBike drive unit will operate in emergency mode.

Should this occur, loosen the screw of the spoke magnet **(2)** and fasten the spoke magnet to the spoke such that it runs past the marking on the speed sensor at the correct clearance. If the speed is still not being indicated on the speedometer display after doing this, please contact an authorized bicycle dealer.

### Speed Sensor (slim)

The speed sensor (slim) **(3)** and its spoke magnet **(4)** must be fitted ex works such that the spoke magnet moves past the speed sensor at a distance of at least 2 mm and at most 8 mm with each rotation of the wheel.

The correct distance between the magnet and sensor must be maintained (see figure **A**) if design changes are made.

**Notes:** Ensure that you do not damage the sensor or sensor bracket when fitting or removing the rear wheel.

# Operation

## Start-up

### Requirements

The eBike system can only be activated when the following requirements are met:
- A sufficiently charged battery is inserted (see battery operating instructions).
- The on-board computer is properly inserted in the holder (see on-board computer operating instructions).
- The speed sensor is correctly connected.

### Switching the eBike system on/off

The following options are available for **switching on** the eBike system:
- If the on-board computer is already switched on when you insert it into the holder, the eBike system will be automatically activated.
- When the on-board computer and the eBike battery are inserted, briefly press the on/off button of the on-board computer.
- With the on-board computer inserted, press the on/off button on the eBike battery (some bicycle manufacturer-specific solutions prevent access to the battery on/off button; see the battery operating instructions).

**Note:** The eBike system **always** starts in **OFF** mode for drive units with a maximum speed of more than **20 mph**.

The drive is activated as soon as you start pedaling (except for in the push assistance function, Switching the push assistance on/off). The motor output depends on which assistance level is set on the on-board computer.

As soon as you stop pedaling when in normal operation, or as soon as you have reached a speed of **20/28 mph**, the eBike drive unit switches off the assistance. The drive is automatically re-activated as soon you start pedaling again and the speed is below **20/28 mph**.

The following options are available for **switching off** the eBike system:
- Press the on/off button of the on-board computer.
- Switch off the eBike battery using its on/off button (some bicycle manufacturer-specific solutions prevent access to the battery on/off button; see the bicycle manufacturer operating instructions).
- Remove the on-board computer from its holder.

If the eBike is not moved for approx. ten minutes **and** no button is pressed on the on-board computer, the eBike system switches off automatically in order to save energy.

## eShift (optional)

eShift is the integration of electronic gear-shifting systems into the eBike system. The eShift components are electrically connected to the drive unit by the manufacturer. The separate operating instructions describe how to operate the electronic gear-shifting systems.

## Setting the assistance level

You can set the level at which the eBike drive assists you while pedaling on the on-board computer. The assistance level can be changed at any time, even while cycling.

**Note:** In some models, the assistance level may be preset and cannot be changed. There may also be fewer assistance levels available than stated here.

The following assistance levels are available as a maximum:
- **OFF:** Motor assistance is switched off. The eBike can just be moved by pedaling, as with a normal bicycle. The push assistance cannot be activated at this assistance level.
- **ECO:** Effective assistance with maximum efficiency, for maximum range
- **TOUR:** Steady assistance, long range for touring

– **SPORT/eMTB:**
**SPORT:** Powerful assistance, for mountain biking and for cycling in urban traffic
**eMTB:** Optimum assistance whatever the terrain, rapid acceleration when starting from a standstill, improved dynamics, top performance (**eMTB** is only available in combination with drive units BDU250P CX, BDU365, BDU450 CX and BDU480 CX. This also requires a software update.)
– **TURBO:** Maximum assistance even at high pedaling speeds, for biking sports

The requested motor output appears on the display of the on-board computer. The maximum motor output depends on which assistance level is selected.

| Assistance level | Assistance factor [A] | | |
|---|---|---|---|
| | Performance Line (BDU490P) | Performance Line CX (BDU480 CX) | Cargo Line |
| **ECO** | 60 % | 60 % | 60 % |
| **TOUR** | 140 % | 140 % | 140 % |
| **SPORT/eMTB** | 240 % | 240/140–340 %[B] | 240 % |
| **TURBO** | 340 % | 340 % | 400 % |

A) The assistance factor may vary in some models.

B) Dynamic-progressive assistance level between **TOUR** and **TURBO** modes

## Switching the push assistance on/off

The push assistance aids you when pushing your eBike. The speed of this function depends on the selected gear and can reach a maximum of **3.7 mph**. The lower the selected gear, the lower the speed of the push assistance function (at full power).

▶ **The push assistance function must only be used when pushing the eBike.** There is a risk of injury if the wheels of the eBike are not in contact with the ground while using the push assistance.

To **activate** the push assistance, briefly press the **WALK** button on your on-board computer. After activation, press the **+** button within 3 s and keep it pressed. The eBike drive is switched on.

**Note:** The push assistance cannot be activated at assistance level **OFF**.

The push assistance is **switched off** as soon as one of the following occurs:
– You release the **+** button;
– the wheels of the eBike are locked (e.g. by applying the brakes or hitting an obstacle);
– the speed exceeds **3.7 mph**.

The push assistance function is subject to local regulations; the way it works may therefore differ from the description above. It can also be deactivated.

## Switching bicycle lights on/off

On the model where the bike lights are powered by the eBike system, the front light and taillight can be switched on and off at the same time via the on-board computer.

Before starting each journey, check that your bike lights are working correctly.

# Maintenance/Cleaning

**⚠ WARNING**

- **Do not open any of the components. Service should only be carried out at an authorized Bosch eBike dealer.** Failure to follow above warning can cause death or serious injury. Refer to your bicycle manual or component manual for all non-Bosch drive system components.
- **Always remove the battery pack before performing any bicycle inspection, maintenance or repair.** Failure to remove the battery pack before performing bicycle inspection, maintenance or repair can lead to serious injury.
- **If you suspect that something is loose, do not ride your bike.** See your Bosch eBike dealer, only a qualified service provider should perform work on your Bosch Drive System. All nuts, bolts, screws require the correct tightening force. Too little force and the fastener may not hold securely. Too much force and the fastener can strip threads, stretch, deform or break. Either way, incorrect tightening force can result in component failure, which can cause you to lose control and fall.
- **If replacing your battery, buy only a genuine Bosch battery pack from an approved source. See your Bosch eBike dealer for original Bosch parts.**
- **Always switch the battery pack off, when inserting or removing it from the holder.** Never attempt to insert or remove the battery pack while riding the bike.
- **Do not charge or use your eBike in any area with a potentially explosive atmosphere, such as at a fueling area, or in areas where the air contains chemicals or particles (such as grain, dust, or metal powders).** Obey all signs and instructions.
- **Do not submerge your eBike components in water, or wash with pressurized hose.** Your Bosch drive unit is designed to be water tight to rain water or non-pressure hose washing.
- **Note down the manufacturer and the number of the key.** In case of loss of the keys, please refer to an authorised Bosch eBike dealer. Please provide the name of the manufacturer and the number of the key.
- **Do not paint any components of the Bosch drive system as they may cause premature failure of the component.**

When changing the bulbs, ensure that they are compatible with the Bosch eBike system (ask your bicycle dealer) and are suitable for the specified voltage. Bulbs must only be replaced with bulbs of the same voltage.

## Taking care of your eBike

Please observe the operating and storage temperatures of the eBike components. Protect the drive unit, on-board computer and battery against extreme temperatures (e.g. from intense sunlight without adequate ventilation). Extreme temperatures can cause the components (especially the battery) to become damaged.

Have your eBike system checked by an expert at least once a year (including mechanical parts, up-to-dateness of system software).

Please have your eBike serviced and repaired by an authorized bicycle dealer.

## After-sales service and advice on using products

If you have any questions about the eBike system and its components, contact an authorized bicycle dealer.

For contact details of authorized bike dealerships, please visit www.bosch-ebike.com.

Please contact an authorized bicycle dealer if the battery is no longer working.

## Cleaning

- **Do not submerge your eBike components in water, or wash with pressurized hose.** Your Bosch drive unit is designed to be water tight to rain water or non-pressure hose washing.

Keep all components of your eBike clean, especially the battery-pack contacts and corresponding holder contacts. All components including the drive unit may not be immersed in water or cleaned with a high-pressure cleaner. Keep all components of your eBike clean, especially the batterypack contacts and corresponding holder contacts. Clean them carefully with a soft, damp cloth (using only mild soap and water).

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**0 275 U07 XD4** (2020.04) T / 38

# Owner’s Manual – The Bosch Drive System Battery

BBS266 | BBS276 | BBR266 | BBR276 | BBP285 | BBP286 | BBP287 | BBP288 | BBP295 | BBP296



**en** Original operating instructions

**This manual contains important safety, performance and service information. Read and understand it along with the information provided to you by your bicycle manufacturer before using the product, and keep it for reference.**

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# Introduction

## About Warnings

This manual contains many **DANGER**, **WARNING**, and **CAUTION** indicators concerning the consequences of failure to use, assemble, maintain, store, inspect and dispose of a Bosch-equipped eBike in a safe manner.

– The combination of the safety alert symbol and the word **DANGER** indicates a hazardous situation that, if not avoided, will result in death or serious injury.
– The combination of the safety alert symbol and the word **WARNING** indicates a hazardous situation that, if not avoided, could result in death or serious injury.
– The combination of the safety alert symbol and the word **CAUTION** indicates a hazardous situation that, if not avoided, could result in minor or moderate injury.

## General Warnings



**Read all safety warnings and all instructions.** Failure to follow the warnings and instructions may result in death or serious injury.

**Save all safety warnings and instructions for future reference.**

The term **battery pack** used in these operating instructions refers to all original Bosch eBike battery packs.

▶ **Read ALL accompanying manuals before riding the bike for the first time.** Your Bosch Drive System comes with additional manuals and documents provided by the manufacturer of the bicycle and other components. Failure to read and understand safety information can result in death or serious injury.

**⚠ WARNING**

▶ **This manual contains important safety, performance and service information.** Read it before you take the first ride on your new bicycle, and keep it for reference. The manual can also be found online at www.bosch-ebike.com.

▶ **This manual is intended to be read together with the separate user manual provided with your bicycle.** Be sure to read all provided documents including labels on the product before your first ride.

▶ **Take responsibility for your own SAFETY.** If you have any questions or do not understand something, consult with your dealer or the bicycle or component manufacturer.

▶ **Some eBike accessories may present a choking hazard to small children.** Keep these accessories away from children.

**⚠ CAUTION**

▶ **The Bosch Drive System adds weight to your bicycle which you may not be used to lift.** Avoid injury, use proper lifting techniques.

# Using your Manual

In addition to the functions outlined here, changes to software relating to troubleshooting and functional modifications may be introduced at any time.

## Graphics

The bicycle shown in this manual may differ slightly from your bicycle, but will be similar enough to help you understand our instructions.

RIGHT-HAND and LEFT-HAND sides are determined by facing in the direction the bicycle will travel when going forward. When you see a broken line (------), the item referred to is hidden from view.

# On-product warning labels

**A**




**B**




**A** Safety instructions for PowerPack

**B** Safety instructions for PowerTube

▸ **Warning labels have been placed on the Bosch eBike System for your protection. Read and follow the instructions of the labels on the product carefully. If a label becomes illegible or comes off, contact your Bosch bicycle dealer to obtain a replacement.** Replacement safety labels are provided by Bosch at no charge.

# Handling the lithium-ion battery pack

## Safety warnings for Bosch eBike batteries

**Read and understand all safety warnings and instructions.** Failure to follow the below warnings could result in death or serious injury.

**Save all safety warnings and instructions for future reference.**

The term **battery pack** used in these operating instructions refers to all original Bosch eBike battery packs.

**⚠ DANGER**

- **Do not puncture or crush the battery pack. Do not impact the battery pack or modify it in any way.** Do not use the battery pack if it shows visible damage. Danger of fire or explosion which can cause death or serious injury.




**Protect the battery pack against heat (e.g., temperature > 140 °F), fire and immersing into water.** Danger of explosion.

**⚠ WARNING**

- **Use only original Bosch battery packs approved for your eBike by the manufacturer and purchased from a credible source.** Use of non-approved or counterfeit battery packs can lead to death or serious injury.
- **Remove the battery from the eBike before beginning work (e.g. inspection, repair, assembly, maintenance, work on the chain, etc.) on the eBike, transporting it with a car or airplane, or storing it.** Unintentional activation of the eBike system poses a risk of injury.
- **Do not open the battery.** There is a risk of short-circuiting. Opening the battery voids any and all warranty claims.
- **When the battery is not in use, keep it away from paper clips, coins, keys, nails, screws or other small metal objects that could make a connection from one terminal to another.** A short circuit between the battery terminals may cause burns or a fire. Short circuit damage which occurs in this instance voids any and all warranty claims against Bosch.
- **Avoid mechanical loads and exposure to high temperatures.** These can damage the battery cells and cause the flammable contents to leak out.
- **Do not place the charger or the battery near flammable materials. Ensure the battery is completely dry and placed on a fireproof surface before charging.** There is a risk of fire due to the heat generated during charging.
- **The eBike battery must not be left unattended while charging.**
- **If used incorrectly, liquid may leak from the battery. Contact with this liquid should be avoided. If contact occurs, rinse off with water. If the liquid comes into contact with your eyes, seek additional medical attention.** Liquid leaking from the battery may cause irritation or scalding.
- **Batteries must not be subjected to mechanical shock.** There is a risk of the battery being damaged.
- **The battery may give off fumes if it becomes damaged or is used incorrectly. Ensure the area is well ventilated and seek medical attention should you experience any adverse effects.** The fumes may irritate the respiratory system.
- **Only charge the battery using original Bosch chargers.** When using chargers that are not made by Bosch, the risk of fire cannot be excluded.
- **Use the battery only in conjunction with eBikes that have original Bosch eBike drive systems.** This is the only way in which you can protect the battery against dangerous overload.

- ▸ **Use only original Bosch batteries that the manufacturer has approved for your eBike.** Using other batteries can lead to injuries and pose a fire hazard. Bosch accepts no liability or warranty claims if other batteries are used.
- ▸ **Do not use the rack-mounted battery as a handle.** Lifting the eBike up by the battery can damage the battery.
- ▸ **Read and observe the safety warnings and instructions in all operating instructions of the eBike system and your eBike.**
- ▸ **Keep the battery away from children.**

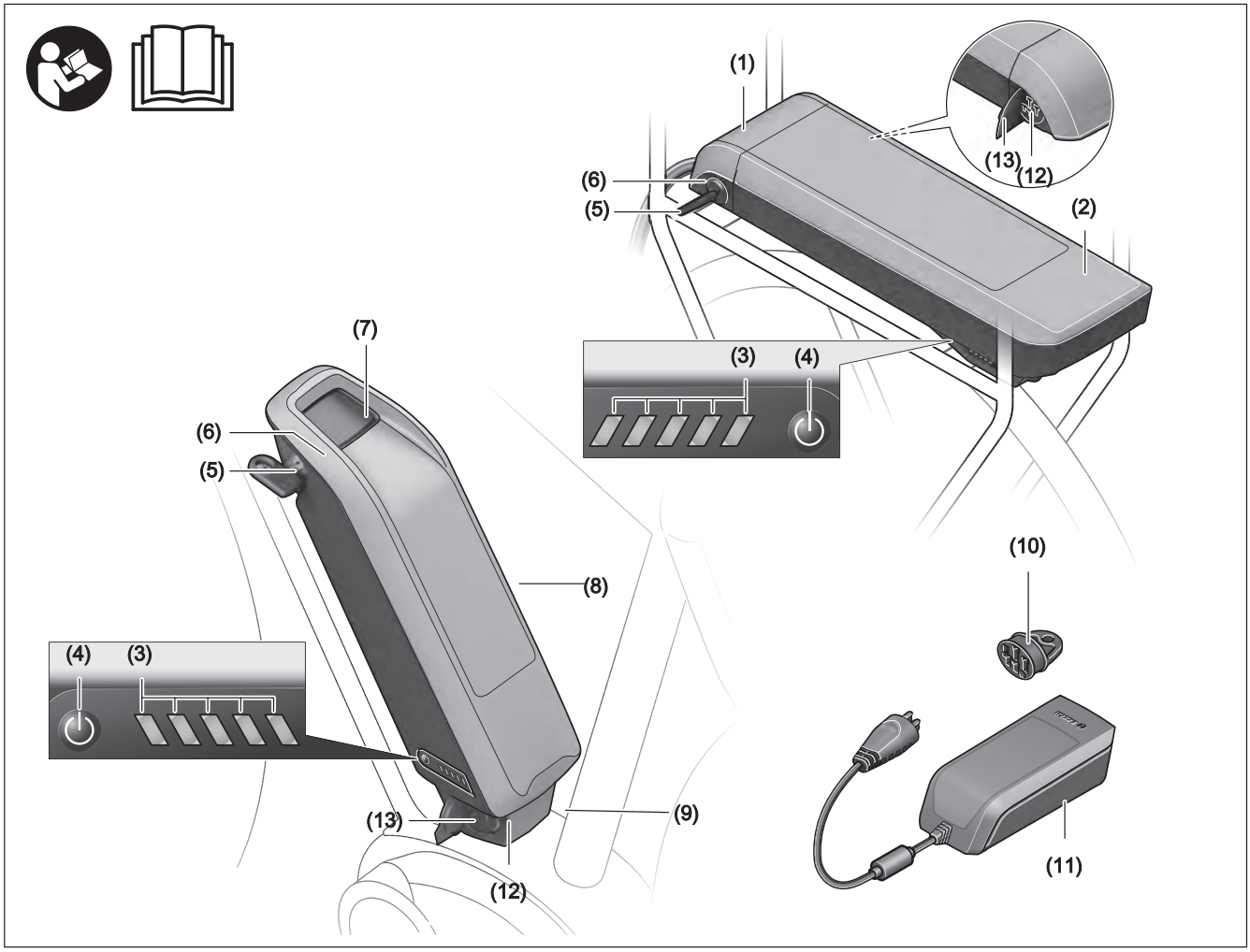
The safety of both our customers and our products is important to us. Our eBike batteries are lithium-ion batteries which have been developed and manufactured in accordance with the latest technology. We comply with or exceed the requirements of all relevant safety standards. When charged, these lithium-ion batteries contain a high level of energy. If a fault occurs (which may not be detectable from the outside), in very rare cases and under unfavorable conditions, lithium-ion batteries can catch fire.

## Privacy notice

When you connect the eBike to the **Bosch DiagnosticTool**, data about the eBike batteries (e.g. temperature, cell voltage, etc.) is transferred to Bosch eBike Systems (Robert Bosch GmbH) for the purposes of product improvement. You can find more information about this on the Bosch eBike website at www.bosch-ebike.com.

# Product description and specifications

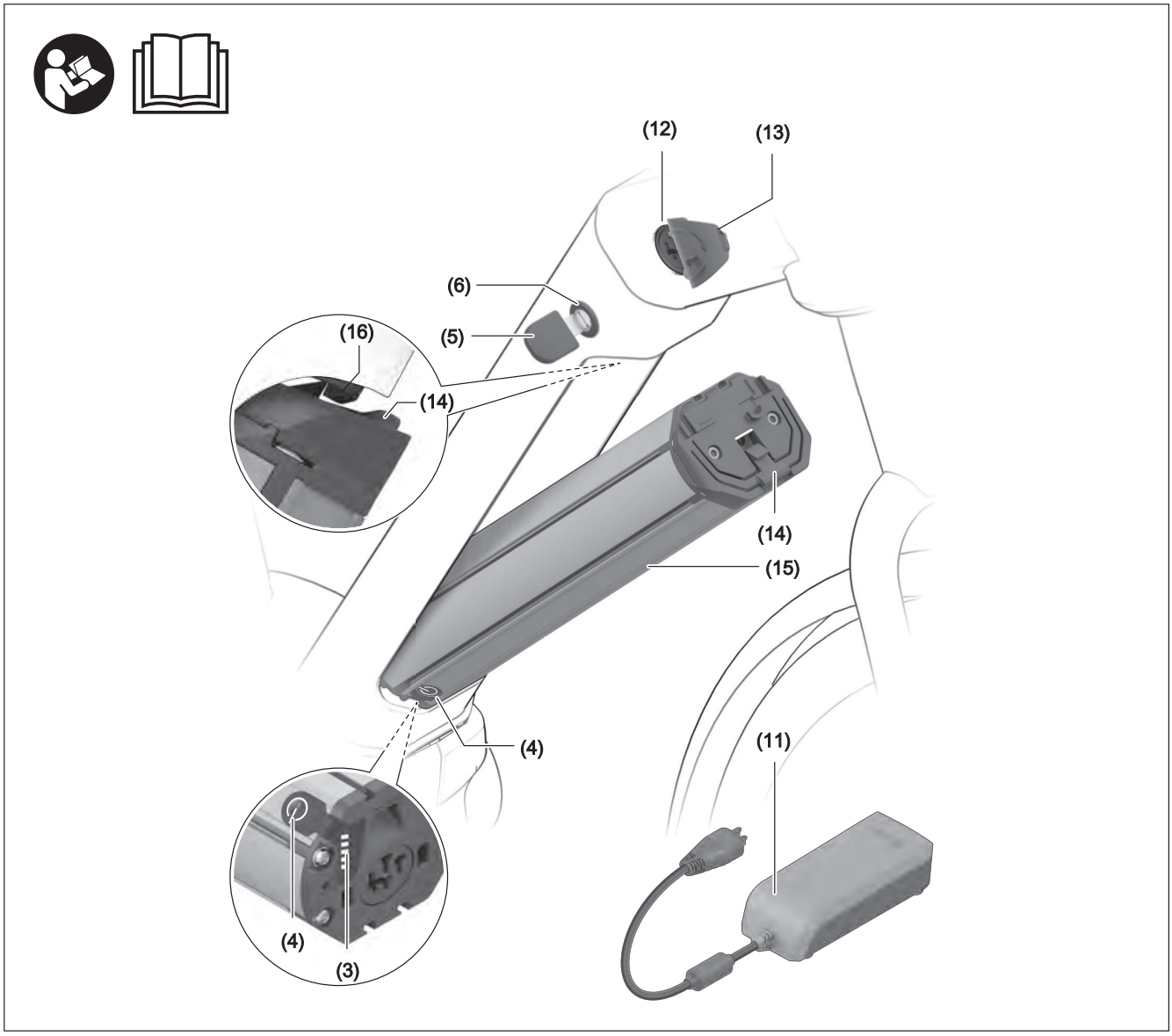
## Product features PowerPack




All representations of bike components are schematic and can deviate from your eBike.

**(1)** Rack-mounted battery holder
**(2)** Rack-mounted battery
**(3)** Operation/state of charge indicator
**(4)** On/off button
**(5)** Key for the battery lock
**(6)** Battery lock
**(7)** Upper holder for standard battery
**(8)** Standard battery
**(9)** Lower holder for standard battery
**(10)** Cover (supplied only on eBikes with two battery packs)
**(11)** Charger
**(12)** Socket for charging connector
**(13)** Charging socket cover

## Product features PowerTube




All representations of bike components are schematic and can deviate from your eBike.

**(3)** Operation/state of charge indicator
**(4)** On/off button
**(5)** Key for the battery lock
**(6)** Battery lock
**(11)** Charger
**(12)** Socket for charging connector
**(13)** Charging socket cover
**(14)** PowerTube safety restraint
**(15)** PowerTube battery
**(16)** PowerTube safety hook

## Intended Use

The Bosch eBike batteries are intended exclusively to provide the power supply for your eBike drive unit and must not be used for any other purpose.

## Technical data

| Li-ion battery | | PowerPack 400 | PowerPack 500 |
|---|---|---|---|
| Product code | | BBS266[A)]<br>BBR266[B)] | BBS276[A)]<br>BBR276[B)] |
| – Rack-mounted battery | | 0 275 007 525/526 | 0 275 007 535/536 |
| Rated voltage | V= | 36 | 36 |
| Nominal capacity | Ah | 11 | 13.4 |
| Energy | Wh | 400 | 500 |
| Operating temperature | °F | +23 to +104 | +23 to +104 |
| Storage temperature | °F | +50 to +104 | +50 to +104 |
| Permitted charging temperature range | °F | +32 to +104 | +32 to +104 |
| Weight, approx. | lb | 5.5[A)]/5.7[B)] | 5.7[A)]/6.0[B)] |
| Protection rating | | IP54 | IP54 |

A) Standard battery

B) Rack-mounted battery

Advertised battery energy capacity is an approximation. Due to manufacturing tolerances measured capacity may not always match the advertised capacity.

| Li-ion battery | | PowerTube 400 | PowerTube 500 | PowerTube 625 |
|---|---|---|---|---|
| Product code | | BBP287 horizontal<br>BBP288 vertical | BBP285 horizontal<br>BBP286 vertical | BBP295 horizontal<br>BBP296 vertical |
| Rated voltage | V= | 36 | 36 | 36 |
| Nominal capacity | Ah | 11 | 13.4 | 16.7 |
| Energy | Wh | 400 | 500 | 625 |
| Operating temperature | °F | +23 to +104 | +23 to +104 | +23 to +104 |
| Storage temperature | °F | +50 to +104 | +50 to +104 | +50 to +104 |
| Permitted charging temperature range | °F | +32 to +104 | +32 to +104 | +32 to +104 |
| Weight, approx. | lb | 6.4 | 6.4 | 7.7 |
| Protection rating | | IP54 | IP54 | IP54 |

Advertised battery energy capacity is an approximation. Due to manufacturing tolerances measured capacity may not always match the advertised capacity.

# Fitting

▶ **Ensure the battery is placed on clean surfaces only.** Avoid getting dirt, e.g. sand or soil, in the charging socket and contacts in particular.

## Testing the battery before using it for the first time

Test the battery before charging it for the first time or using it in your eBike.

To do this, press the on/off button **(4)** to switch the battery on. If none of the LEDs on the battery charge indicator **(3)** light up, the battery may be damaged.

If at least one (but not all) of the LEDs on the battery charge indicator **(3)** lights up, the battery will need to be fully charged before using it for the first time.

▶ **Do not charge or use batteries if they are damaged.** Contact an authorized bicycle dealer.

## Charging the battery

▶ **A Bosch eBike battery must only be charged using an original Bosch eBike charger.**

**Note:** The battery is supplied partially charged. To ensure full battery capacity, fully charge the battery in the charger before using it for the first time.

To charge the battery, read and follow the instructions in the operating manual for the charger.

The battery can be charged at any state of charge. Interrupting the charging process does not damage the battery.

The battery has a temperature monitoring function which only allows it to be charged within a temperature range of **32 °F** to **104 °F**.



If the temperature of the battery is outside this charging range, three of the LEDs on the battery charge indicator **(3)** will flash. Disconnect the battery from the charger and let it acclimatize.

**⚠ CAUTION**

▶ **Do not connect the battery pack to the charger until it has reached the allowable charging temperature.**

### Battery charge indicator

The five LEDs on the battery charge indicator **(3)** indicate the battery's state of charge when the battery is switched on.

Each LED represents approximately 20% of the charging capacity. When the battery is fully charged, all five LEDs will be lit.

The battery's state of charge when switched on is also shown on the display of the on-board computer. Read and follow the instructions in the operating manuals for the drive unit and on-board computer.

If the battery capacity is less than 10%, the last remaining LED will flash.

If the battery capacity is less than 5%, all the LEDs on the battery charge indicator **(3)** on the battery will go out. The display function of the on-board computer, however, will carry on working.

Once charging is complete, disconnect the battery from the charger and the charger from the mains.

## Using two batteries for one eBike (optional)

The manufacturer can also equip an eBike with two batteries. In this case, one of the charging sockets will not be accessible or it will have been sealed with a sealing cap by the bicycle manufacturer. Only charge the batteries via the charging socket that is accessible.

- ▶ **Never open charging sockets that have been sealed by the manufacturer.** Charging batteries via a charging socket that used to be sealed may cause irreparable damage.

If you want to use an eBike that is designed for two batteries with only one battery, cover the contacts of the unused socket using the cover **(10)** provided. Otherwise there is a risk that the exposed contacts will cause a short circuit (see "Inserting and Removing the battery", page English – 12).

### Charging with Two Battery Packs Inserted

If two battery packs are mounted on one eBike, both battery packs can be charged using the unsealed connection. To begin with, both batteries are charged one after the other until they reach approx. 80–90 % capacity, then they are both charged at the same time until full (the LEDs on both batteries flash).

When the bike is in operation, power is drawn from both batteries on an alternating basis.

If you take the battery packs out of the holders, you can charge each battery pack individually.

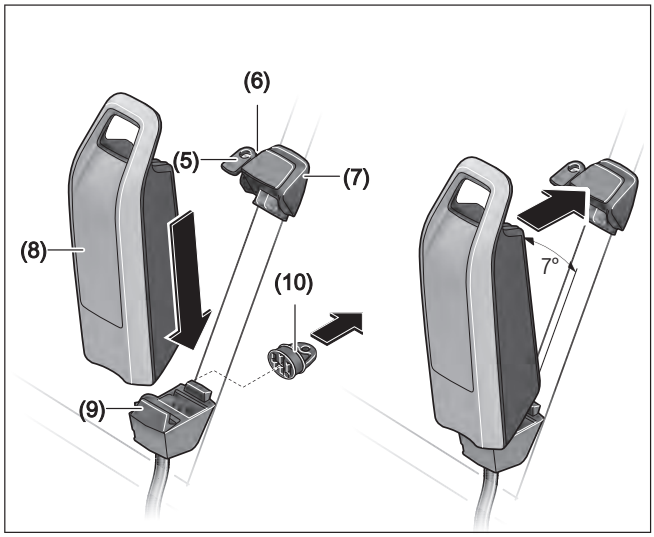
### Charging with one battery fitted

If only one battery is fitted, you can only charge the battery that has the accessible charging socket on the bike. You can only charge the battery with the sealed charging socket if you take the battery out of the holder.

## Inserting and Removing the battery

- ▸ **Always switch off the battery and the eBike system when inserting the battery into the holder or removing it from the holder.**

### Inserting and Removing the Standard Battery




In order for the battery to be inserted, the key **(5)** must be inserted into the lock **(6)** and the lock must be open.

To **insert the standard battery (8)**, place it onto the contacts on the lower holder **(9)** on the eBike (the battery can be tilted towards the frame by up to 7°). Tilt it into the upper holder **(7)** as far as possible.

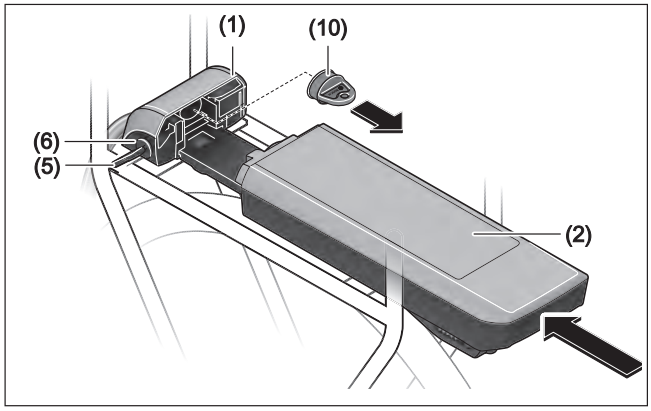
- ▸ **Always check that the battery pack is locked in place.** To do this, pull on the battery pack (after the key has been removed).

Check that the battery is secure. Always secure the battery by closing the lock **(6)** – otherwise the lock may open and the battery may fall out of the holder.

Always remove the key **(5)** from the lock **(6)** after closing it. This prevents both the key from falling out and the battery from being removed by unauthorized third parties when the eBike is not in use.

To **remove the standard battery (8)**, switch it off and open the lock using the key **(5)**. Tilt the battery out of the upper holder **(7)** and pull it out of the lower holder **(9)**.

### Inserting and removing the rack-mounted battery




In order for the battery to be inserted, the key **(5)** must be inserted into the lock **(6)** and the lock must be open.

To **insert the rack-mounted battery (2)**, slide it contacts-first into the holder **(1)** on the rack until it clicks into place.

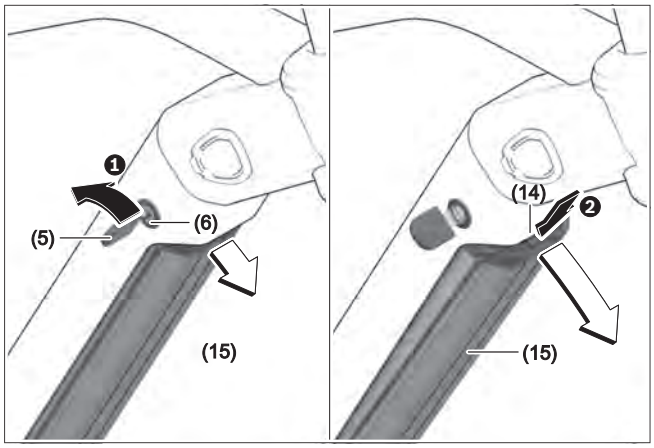
- ▸ **Always check that the battery pack is locked in place.** To do this, pull on the battery pack (after the key has been removed).

Check that the battery is secure. Always secure the battery by closing the lock **(6)** – otherwise the lock may open and the battery may fall out of the holder.

Always remove the key **(5)** from the lock **(6)** after closing it. This prevents both the key from falling out and the battery from being removed by unauthorized third parties when the eBike is not in use.

To **remove the rack-mounted battery (2)**, switch it off and open the lock using the key **(5)**. Pull the battery out of the holder **(1)**.

### Removing the PowerTube battery

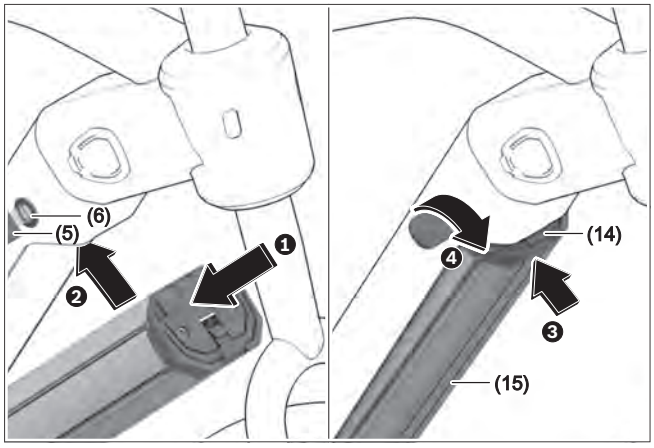



❶ To remove the PowerTube battery **(15)**, open the lock **(6)** using the key **(5)**. The battery will be unlocked and fall into the safety restraint **(14)**.

❷ Press on the safety restraint from above. The battery will be unlocked completely and fall into your hand. Pull the battery out of the frame.

**Note:** As a result of **varying** designs, the PowerTube battery may need to be inserted and removed using a different method. In this case, consult the bicycle documentation provided by your bicycle manufacturer.

### Inserting the PowerTube battery




In order for the battery to be inserted, the key **(5)** must be inserted into the lock **(6)** and the lock must be open.

❶ To insert the PowerTube battery **(15)**, place it so that its contacts are in the lower holder of the frame.

❷ Push the battery upwards until it is held by the safety restraint **(14)**.

❸ Hold the lock open with the key and press the battery upwards until you hear it click into place. Check that the battery is secure in all directions.

❹ Always secure the battery by closing the lock **(6)** – otherwise the lock may open and the battery may fall out of the holder.

▸ **Always check that the battery pack is locked in place.** To do this, pull on the battery pack (after the key has been removed).

Always remove the key **(5)** from the lock **(6)** after locking it. This prevents both the key from falling out and the battery from being removed by unauthorized third parties when the eBike is not in use.

# Operation

## Start-up

- ▸ **Use only original Bosch batteries that the manufacturer has approved for your eBike.** Using other batteries can lead to injuries and pose a fire hazard. Bosch accepts no liability or warranty claims if other batteries are used.

### Switching on/off

Switching on the battery is one way to switch on the eBike system. Read and follow the instructions in the operating manuals for the drive unit and on-board computer.

Before switching on the battery, i.e. the eBike system, make sure that the lock **(6)** is closed.

To **switch on** the battery, press the on/off button **(4)**. Do not use sharp or pointed objects to press the button. The LEDs on the indicator **(3)** will light up, indicating the battery's state of charge at the same time.

- ▸ **Always check that the battery pack is locked in place.** To do this, pull on the battery pack (after the key has been removed).

**Note:** If the battery capacity is less than 5 %, none of the LEDs on the battery charge indicator **(3)** will light up. Whether the eBike system is switched on is only visible on the on-board computer/control unit.

To **switch off** the battery, press the on/off button **(4)** again. The LEDs on the indicator **(3)** go out. This will also switch the eBike system off.

If no power is drawn from the eBike drive for about **10** minutes (e.g. because the eBike is not moving) and no button is pressed on the on-board computer or the control unit of the eBike, the eBike system will switch off automatically.

The battery is protected against deep discharge, overloading, overheating and short-circuiting by the "Electronic Cell Protection (ECP)". In the event of danger, a protective circuit switches the battery off automatically.



If a fault is detected in the battery, two of the LEDs on the battery charge indicator **(3)** will flash. Contact an authorized bicycle dealer if this happens.

## Behavior in the event of a fault

The Bosch eBike battery must not be opened, even for repairs. There is a risk that the Bosch eBike battery could catch fire, e.g. due to a short circuit. This risk arises if a Bosch eBike battery which has **already** been opened is reused at a later point in time.

Therefore, do not repair the Bosch eBike battery in the event of a fault, but have it replaced with an original Bosch eBike battery by your specialist retailer.

# Transport

**⚠ WARNING**

- ▸ **Always remove the battery pack from the bicycle before transporting the bicycle on a vehicle bike rack.** Failure to remove the battery pack when using a vehicle bike rack can lead to death or serious injury. The battery may detach during transport and cause an accident to following vehicles.
- ▸ **Always use an approved and compatible bicycle rack when transporting your eBike. The Bosch drive system adds weight to the bicycle.** Refer to your bicycle rack manual to be sure your eBike is compatible. Overloading a bike rack can result in death or serious injury.
- ▸ **Use proper lifting techniques as electric bikes are generally heavier than bicycles.**

Ship batteries only when the housing is undamaged. Tape or mask off open contacts and pack up the battery in such a manner that it cannot move around in the packaging. Inform your parcel service that the package contains dangerous goods. Please also ob-

serve possibly more detailed national regulations. Always check state and federal regulations before attempting to ship your battery.

If you have any questions about transporting the batteries, contact an authorized bicycle dealer. You can also order suitable transport packaging from the dealer.

# Maintenance/cleaning

**⚠ WARNING**

- **Do not open any of the components. Service should only be carried out at an authorized Bosch eBike dealer.** Failure to follow above warning can cause death or serious injury. Refer to your bicycle manual or component manual for all non-Bosch drive system components.
- **Always remove the battery pack before performing any bicycle inspection, maintenance or repair.** Failure to remove the battery pack before performing bicycle inspection, maintenance or repair can lead to serious injury.
- **If replacing your battery, buy only a genuine Bosch battery pack from an approved source. See your Bosch eBike dealer for original Bosch parts.**
- **Always switch the battery pack off, when inserting or removing it from the holder.** Never attempt to insert or remove the battery pack while riding the bike.
- **Do not charge or use your eBike in any area with a potentially explosive atmosphere, such as at a fueling area, or in areas where the air contains chemicals or particles (such as grain, dust, or metal powders).** Obey all signs and instructions.
- **Do not submerge your eBike components in water, or wash with pressurized hose.** Your Bosch drive unit is designed to be water tight to rain water or non-pressure hose washing.
- **Note down the manufacturer and the number of the key.** In case of loss of the keys, please refer to an authorised Bosch eBike dealer. Please provide the name of the manufacturer and the number of the key.
- **Do not paint any components of the Bosch drive system as they may cause premature failure of the component.**

## After-sales service and advice on using products

If you have any questions about the eBike system and its components, contact an authorized bicycle dealer.

For contact details of authorized bike dealerships, please visit www.bosch-ebike.com.

Please contact an authorized bicycle dealer if the battery is no longer working.

## Cleaning

- **Do not submerge your eBike components in water, or wash with pressurized hose.** Your Bosch drive unit is designed to be water tight to rain water or non-pressure hose washing.

Keep all components of your eBike clean, especially the battery-pack contacts and corresponding holder contacts. All components including the drive unit may not be immersed in water or cleaned with a high-pressure cleaner. Clean them carefully with a soft, damp cloth (using only mild soap and water).

# Storing

The service life of the battery can be extended if it is looked after well and especially if it is stored at the correct temperature.

As it ages, however, the capacity of the battery will diminish, even with good care.

A significantly reduced operating period after charging indicates that the battery pack is worn out and must be replaced. You can replace it yourself by purchasing a genuine Bosch PowerPack from an authorized Bosch eBike dealer.

## Recharging the battery before and during storage

When you are not going to use the battery for an extended period (longer than three months), store it at a state of charge of around 30 % to 60 % (when two to three of the LEDs on the battery charge indicator **(3)** are lit).

Check the state of charge after six months. If only one of the LEDs on the battery charge indicator **(3)** is lit, charge the battery back up to around 30 % to 60 %.

**Note:** If the battery is stored with no charge for an extended period of time, it may become damaged despite the low self-discharge and the battery capacity could be significantly reduced.

Leaving the battery permanently connected to the charger is not recommended.

## Storage conditions

If possible, store the battery in a dry, well-ventilated place. Protect it against moisture and water. When the weather conditions are bad, it is advisable to remove the battery from the eBike and store it in a closed room until you use it next, for example.

Store the eBike batteries in the following locations:

- In a room with a smoke alarm
- Away from combustible or easily flammable objects
- Away from heat sources

For an optimum service life, store the eBike battery at temperatures between **50 °F** and **68 °F**. Never store it at temperatures below **14 °F** or above **140 °F**.

Make sure that the maximum storage temperature is not exceeded. Do not leave the battery in your car in the summer, for example, and store it away from direct sunlight.

Leaving the battery on the bicycle for storage is not recommended.

# Troubleshooting

| Cause | Corrective measures |
|---|---|
| <br>Battery defective | **Two LEDs flash on the battery.**<br>Contact an authorized bike dealership. |
| <br>Battery too warm or too cold | **Three LEDs flash on the battery.**<br>Disconnect the battery from the charger until the charging temperature range has been reached.<br>Do not reconnect the battery to the charger until it has reached the correct charging temperature. |
| <br>The charger is not charging. | **No LEDs flashing (one or more LEDs will remain permanently lit depending on the state of charge of the eBike battery).**<br>Contact an authorized bike dealership. |
| **Charging not possible (no indicator on battery)** | |
| Connector not attached properly | Check all connections. |
| Battery contacts dirty | Carefully clean the battery contacts. |
| Socket outlet, cable or charger defective | Check the mains voltage, have the charger checked over by a bike dealership. |
| Battery defective | Contact an authorized bike dealership. |

# Battery Recycling Program

The drive unit, on-board computer incl. operating unit, battery, speed sensor, accessories and packaging should be disposed of in an environmentally correct manner.

Do not dispose of eBikes and their components with household waste.

Tape or mask off the contact surfaces of the battery pack's terminals with adhesive tape before disposing of battery packs.

Do not touch severely damaged eBike batteries with your bare hands – electrolyte may escape and cause skin irritation. Store the defective battery in a safe location outdoors. Cover the terminals if necessary and inform your dealer. They will help you to dispose of it properly.




You may recycle your Bosch battery pack by calling 1.800.822.8837.

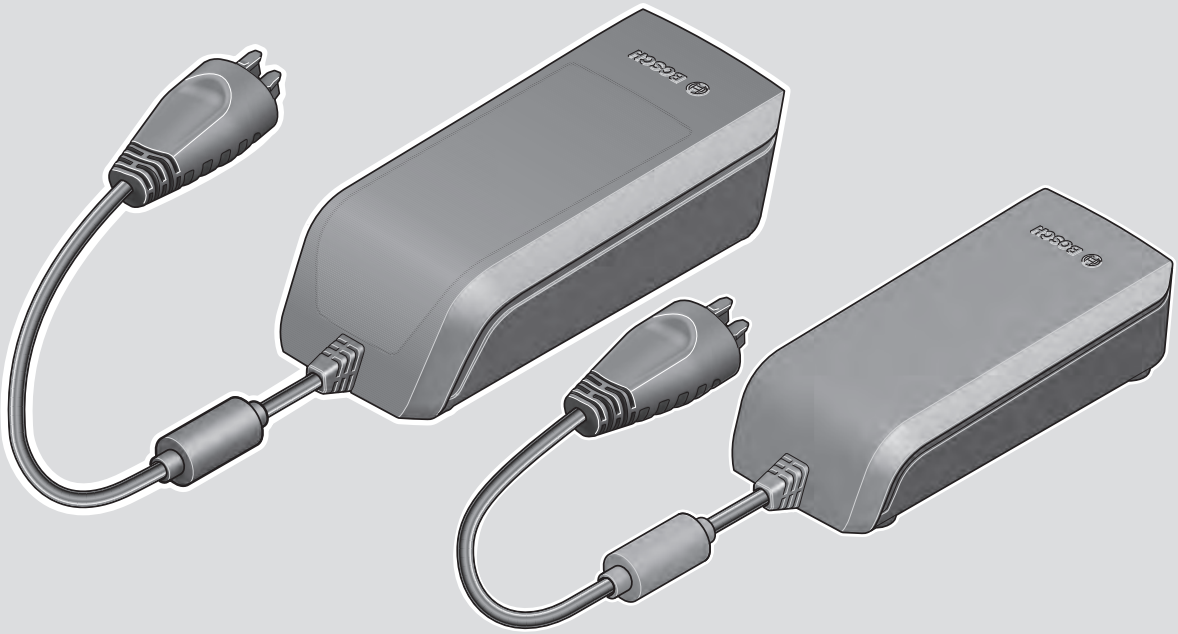
**Robert Bosch GmbH**
72757 Reutlingen
Germany

**www.bosch-ebike.com**

**0 275 U07 XPX** (2022.03) T / 56

# Owner’s Manual – The Bosch Drive System Charger

BCS 210 | BCS230



**en** Original operating instructions

**This manual contains important safety, performance and service information. Read and understand it along with the information provided to you by your bicycle manufacturer before using the product, and keep it for reference.**

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# Introduction

## About Warnings

This manual contains many **DANGER**, **WARNING**, and **CAUTION** indicators concerning the consequences of failure to use, assemble, maintain, store, inspect and dispose of a Bosch-equipped eBike in a safe manner.

– The combination of the safety alert symbol and the word **DANGER** indicates a hazardous situation that, if not avoided, will result in death or serious injury.
– The combination of the safety alert symbol and the word **WARNING** indicates a hazardous situation that, if not avoided, could result in death or serious injury.
– The combination of the safety alert symbol and the word **CAUTION** indicates a hazardous situation that, if not avoided, could result in minor or moderate injury.

## General Warnings



**Read all safety warnings and all instructions.** Failure to follow the warnings and instructions may result in death or serious injury.

**Save all safety warnings and instructions for future reference.**

The term **battery pack** used in these operating instructions refers to all original Bosch eBike battery packs.

▶ **Read ALL accompanying manuals before riding the bike for the first time.** Your Bosch Drive System comes with additional manuals and documents provided by the manufacturer of the bicycle and other components. Failure to read and understand safety information can result in death or serious injury.

**⚠ WARNING**

▶ **This manual contains important safety, performance and service information.** Read it before you take the first ride on your new bicycle, and keep it for reference. The manual can also be found online at www.bosch-ebike.com.

▶ **This manual is intended to be read together with the separate user manual provided with your bicycle.** Be sure to read all provided documents including labels on the product before your first ride.

▶ **Take responsibility for your own SAFETY.** If you have any questions or do not understand something, consult with your dealer or the bicycle or component manufacturer.

▶ **Some eBike accessories may present a choking hazard to small children.** Keep these accessories away from children.

**⚠ CAUTION**

▶ **The Bosch Drive System adds weight to your bicycle which you may not be used to lift.** Avoid injury, use proper lifting techniques.

# Using your Manual

In addition to the functions outlined here, changes to software relating to troubleshooting and functional modifications may be introduced at any time.

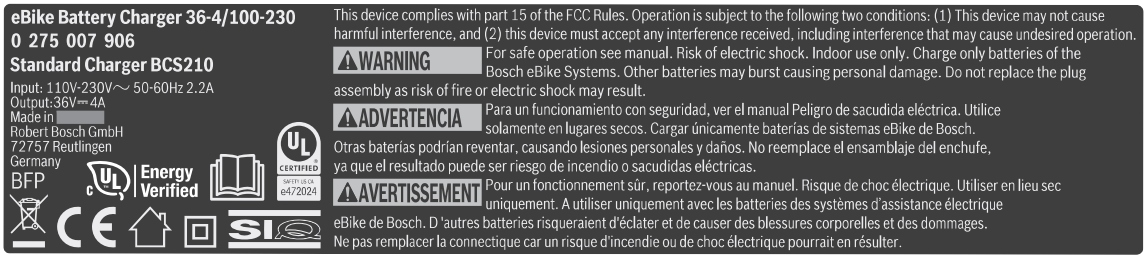
## Graphics

The bicycle shown in this manual may differ slightly from your bicycle, but will be similar enough to help you understand our instructions.

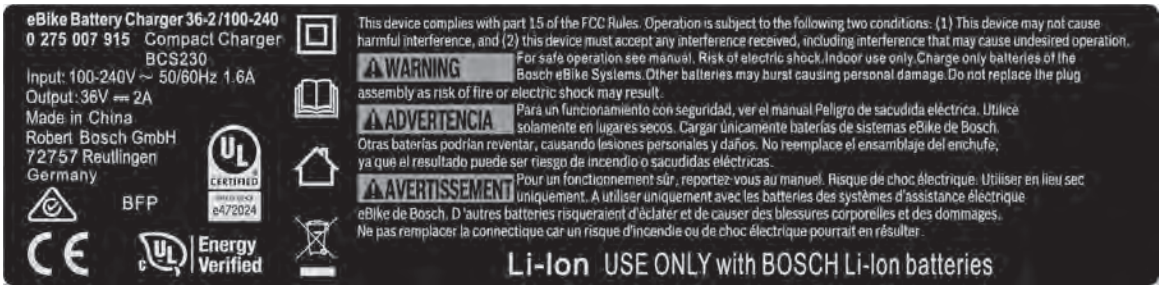
RIGHT-HAND and LEFT-HAND sides are determined by facing in the direction the bicycle will travel when going forward. When you see a broken line (------), the item referred to is hidden from view.

# On-product warning labels

**A**




**B**




**A** Wide range charger

**B** Compact charger

A short version of important safety warnings in English, French and Spanish with the following content can be found on the bottom side of the charger (marked with number **(4)** in the representation on the graphics page):

- For safe operation, see manual.
- Risk of electric shock
- Indoor use only
- Charge only batteries for the Bosch eBike Systems. Other batteries may burst causing personal damage.
- Do not replace the plug assembly as risk of fire or electric shock may result.

# Operating the Charger

## Safety Instructions

**IMPORTANT SAFETY INSTRUCTIONS SAVE THESE INSTRUCTIONS –**

**This manual contains important safety and operating instructions for this battery charger.**

- Before using battery charger, read all instructions and cautionary markings on battery charger, battery, and product using battery.

**⚠ CAUTION**

- **To reduce risk of injury, charge only batteries of the Bosch eBike Systems.** Other types of batteries may burst causing personal injury and damage.



- **Read and understand all safety warnings and instructions.** Failure to follow the below warnings could result in death or serious injury.

**Save all safety warnings and instructions for future reference.**

The term **battery pack** used in these operating instructions refers to all original Bosch eBike battery packs.

**⚠ DANGER**

- **Only charge eBike-approved Bosch lithium-ion battery packs. The battery pack voltage must match the battery pack charging voltage of the charger.** Otherwise, there is risk of fire and explosion.



**Do not expose the charger to rain or wet conditions.** If water enters a charger, there is a risk of electric shock.

**⚠ WARNING**

- **Use only the original Bosch battery charger supplied with your eBike or one approved for your eBike by the manufacturer and purchased from a trusted source.** Bypassing the battery charger or the use of a non-approved or counterfeit battery charger can lead to death or serious injury.
- **Keep the battery charger clean.** Contamination can lead to the risk of an electric shock. Clean only with the use of a damp cloth (mild soap/water).
- **Always check the charger, cable and plug before use. Stop using the charger if you discover any damage. Do not open the charger.** Damaged chargers, cables and plugs increase the risk of electric shock.
- **Do not operate the charger on an easily ignited surface (e.g. paper, textiles, etc.) or in a flammable environment.** There is a risk of fire due to the charger heating up during operation.
- **Take care if you touch the charger while it is charging. Wear protective gloves.** The charger can get very hot, especially when the ambient temperature is high.
- **The battery may give off fumes if it becomes damaged or is used incorrectly. Ensure the area is well ventilated and seek medical attention should you experience any adverse effects.** These fumes may irritate the respiratory tract.
- **The eBike battery must not be left unattended while charging.**
- **Batteries must not be subjected to mechanical shock.** There is a risk of the battery being damaged.
- **Keep the battery charger away from children.** This will ensure that children do not play with the charger.
- **Persons who are not capable of safely operating the charger because of their physical, sensory or mental limitations, or because of their lack of experience or knowledge, may only use this charger under supervision or after having been**

**instructed by a responsible person.** Otherwise, there is a risk of operating errors and injuries.

- ▶ **Read and observe the safety warnings and instructions in all operating instructions of the eBike system and your eBike.**

**NOTICE:** This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions:

1. This device must not cause harmful interference, and
2. this device must accept any interference received, including interference that may cause undesired operation.

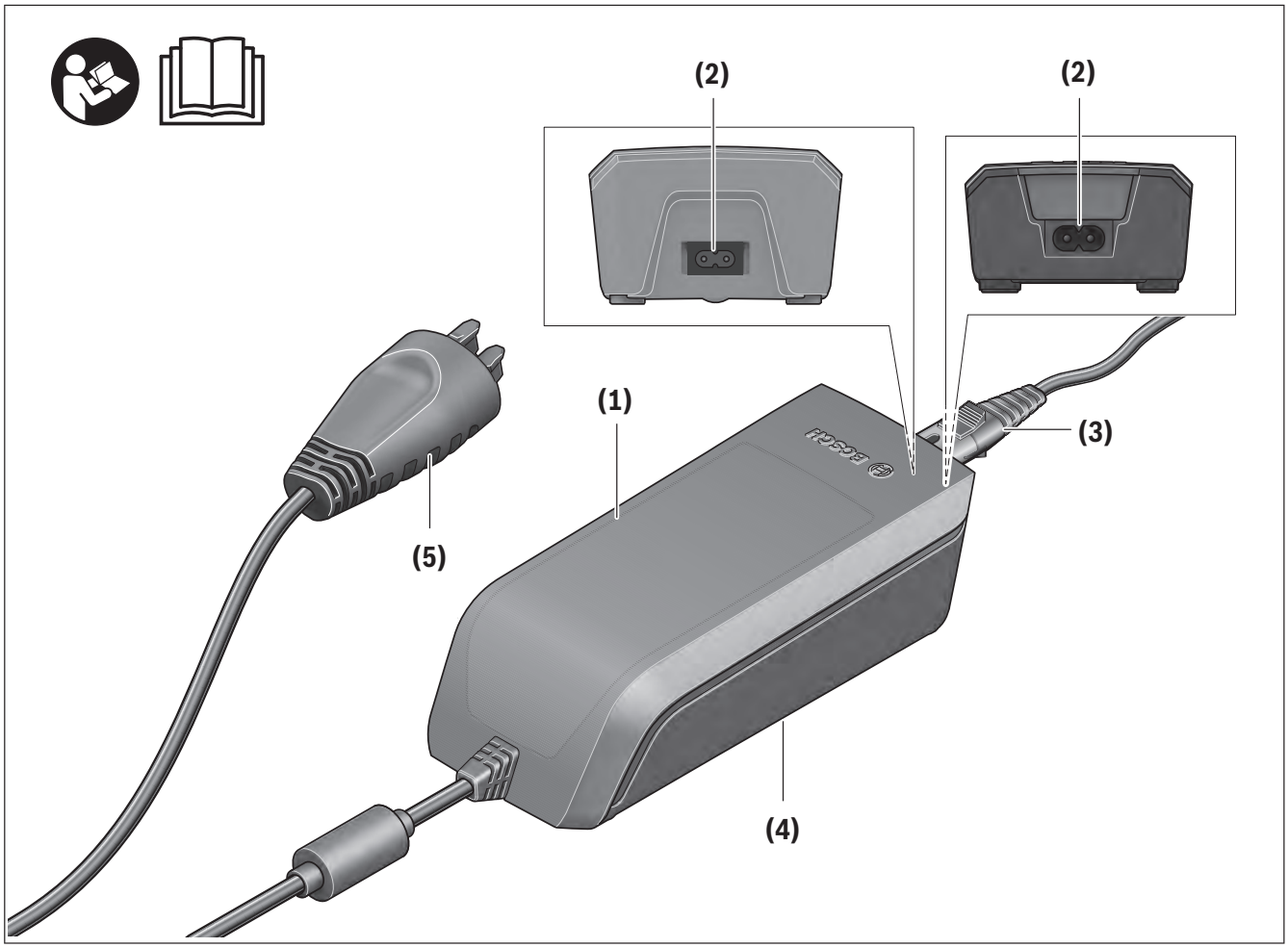
**NOTICE:** Changes or modifications made to this equipment not expressly approved by the Robert Bosch GmbH may void the FCC authorization to operate this equipment.

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

- – Reorient or relocate the receiving antenna.
- – Increase the separation between the equipment and receiver.
- – Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- – Consult the dealer or an experienced radio/TV technician for help.

Responsible party:
Bosch eBike Systems Americas
Robert Bosch LLC
27211 Burbank, Foothill Ranch, CA 92610, USA,
www.bosch-ebike.com/us/

# Product Description and Specifications




## Product Features

**(1)** Charger
**(2)** Device socket
**(3)** Device connector
**(4)** Charger safety instructions
**(5)** Charging connector

## Technical data

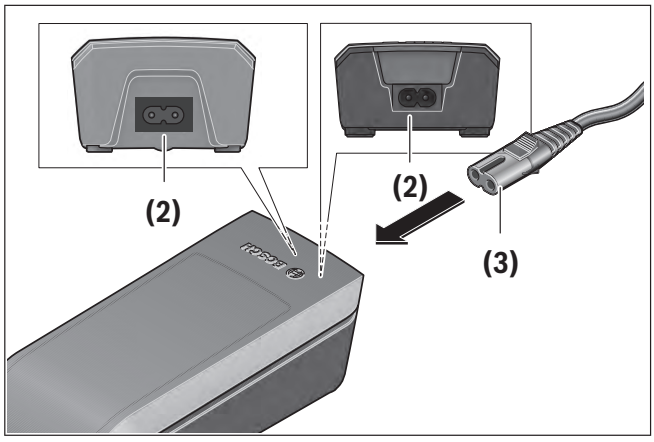
| Charger | | Wide Range Charger (36–4/100-230) | Compact Charger (36–2/100-240) |
|---|---|---|---|
| Product code | | BCS210 | BCS230 |
| Rated voltage | V~ | 90–264 | 90–264 |
| Frequency | Hz | 47–63 | 47–63 |
| Battery charging voltage | V= | 36 | 36 |
| Charging current (max.) | A | 4 | 2 |
| Charging time | | | |
| – PowerPack 400, approx. | hrs | 3.5 | 6.5 |
| – PowerPack 500, approx. | hrs | 4.5 | 7.5 |
| Operating temperature | °F | +32 to +104 | +32 to +104 |
| Storage temperature | °F | +50 to +104 | +50 to +104 |
| Weight, approx. | lb | 1.8 | 1.3 |
| Protection rating | | IP 40 | IP 40 |

| Power cable | | |
|---|---|---|
| Article number | | 1 270 020 343 |
| Rated voltage – cables | V~ | 300 |
| Rated voltage – connectors/plug-in connectors | V~ | 125 |
| Rated current – connectors/plug-in connectors | A | 10 |
| Material – cables | | PVC |
| Safety standard – cables | | UL 62 |
| Safety standard – connectors/plug-in connectors | | UL 817 |
| Length, approx. | m | 1.8 |

# Operation

## Start-up

### Connecting the charger to the mains



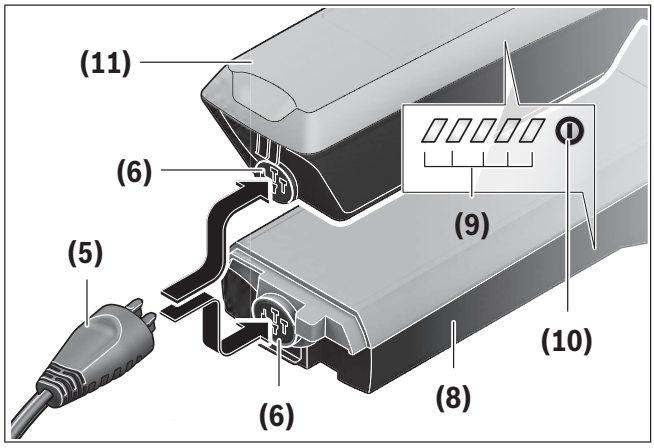

- ▸ **Note the household voltage!** The voltage of the power supply must correspond to the specifications given on the battery charger nameplate.

Plug the device connector **(3)** of the power cable into the device socket **(2)** on the charger.

Connect the power cable (country-specific) to the mains.

Use only the supplied input connection: standard AC power cord (**(3)** in the diagram) when connecting to the household electrical supply.

### Charging the battery when removed




**(5)** Charging connector

**(6)** Socket for charging connector

**(8)** Rack-mounted battery

**(9)** Operation/state of charge indicator

**(10)** On/off button for battery

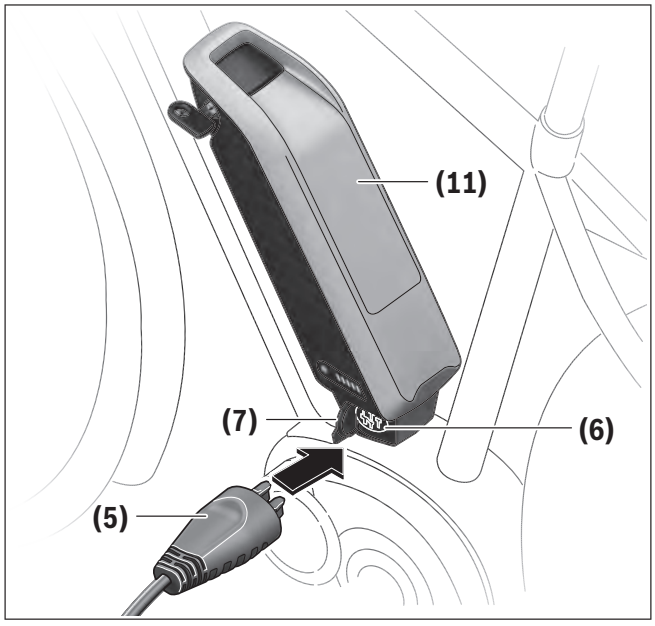
**(11)** Standard battery

Switch the battery off and remove it from its holder on the eBike. When doing so, read and observe the operating instructions of the battery.

- ▸ **Ensure the battery is placed on clean surfaces only.** Avoid getting dirt, e.g. sand or soil, in the charging socket and contacts in particular.

Plug the charging connector **(5)** of the charger into the socket **(6)** on the battery.

### Charging the battery when inserted in the bicycle

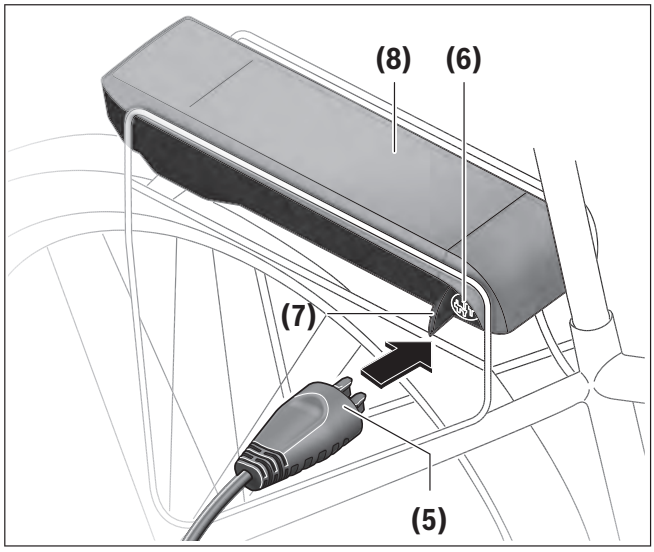



**(5)** Charging connector

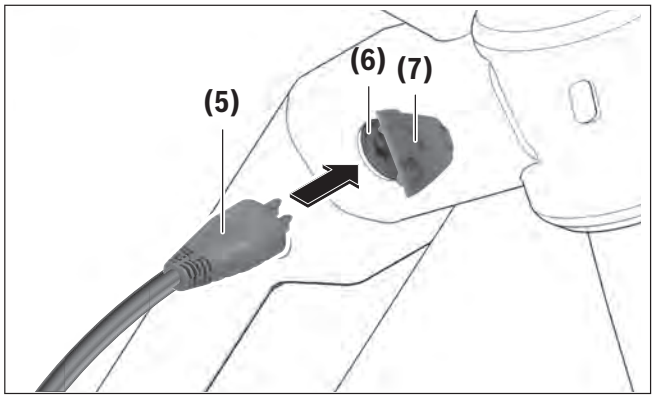
**(6)** Socket for charging connector

**(7)** Charging socket cover

**(11)** Standard battery




**(5)** Charging connector
**(6)** Socket for charging connector
**(7)** Charging socket cover
**(8)** Rack-mounted battery




**(5)** Charging connector
**(6)** Socket for charging connector
**(7)** Charging socket cover

Switch the battery off. Clean the cover of the charging socket **(7)**. Avoid getting dirt, e.g. sand or soil, in the charging socket and contacts in particular. Lift the cover of the charging socket **(7)** and plug the charging connector **(5)** into the charging socket **(6)**.

- ▸ **There is a risk of fire due to the charger heating up during charging. Ensure the battery on the bike is completely dry and placed on a fireproof surface before charging.** If this is not possible, remove the battery from the holder and charge it in a more suitable location. When doing so, read and observe the operating instructions of the battery.

## Charging with Two Battery Packs Inserted

If two battery packs are mounted on one eBike, both battery packs can be charged using the unsealed connection. To begin with, both batteries are charged one after the other until they reach approx. 80–90 % capacity, then they are both charged at the same time until full (the LEDs on both batteries flash).

When the bike is in operation, power is drawn from both batteries on an alternating basis.

If you take the battery packs out of the holders, you can charge each battery pack individually.

## Charging process

The charging process begins as soon as the charger is connected to the battery or charging socket on the bike and to the mains.

**Note:** The charging process is only possible when the temperature of the eBike battery is within the permitted charging temperature range.

**Note:** The drive unit is deactivated during the charging process.

The battery can be charged with or without the on-board computer. When charging without the on-board computer, the charging progress can be observed via the battery charge indicator.

When the on-board computer is connected, a charging notification appears on the display.

The state of charge is displayed by the battery charge indicator **(9)** on the battery and by the bars on the on-board computer.

The LEDs on the battery charge indicator **(9)** will flash during the charging process. Each solid illuminated LED represents approximately 20 % of the charging capacity. The flashing LED indicates the next 20 % currently charging.

Once the eBike battery is fully charged, the LEDs extinguish immediately and the on-board computer is switched off. The charging process is terminated. The

state of charge can be displayed for **3** seconds by pressing the on/off button **(10)** on the eBike battery.

Disconnect the charger from the mains and the battery from the charger.

When the battery is disconnected from the charger, the battery is automatically switched off.

**Note:** If you have charged the battery on the bike, carefully close the charging socket **(6)** with the cover **(7)** after charging, so that no dirt or water can get in.

If the charger is not disconnected from the battery after charging, the charger will switch itself back on after a few hours, check the state of charge of the battery and begin the charging process again if necessary.

# Maintenance/cleaning

**⚠ WARNING**

- ▶ **Do not open any of the components. Service should only be carried out at an authorized Bosch eBike dealer.** Failure to follow above warning can cause death or serious injury. Refer to your bicycle manual or component manual for all non-Bosch drive system components.
- ▶ **Do not charge or use your eBike in any area with a potentially explosive atmosphere, such as at a fueling area, or in areas where the air contains chemicals or particles (such as grain, dust, or metal powders).** Obey all signs and instructions.
- ▶ **Do not submerge your eBike components in water, or wash with pressurized hose.** Your Bosch drive unit is designed to be water tight to rain water or non-pressure hose washing.
- ▶ **Do not paint any components of the Bosch drive system as they may cause premature failure of the component.**

## After-sales service and advice on using products

If you have any questions about the eBike system and its components, contact an authorized bicycle dealer.

For contact details of authorized bike dealerships, please visit www.bosch-ebike.com.

Please contact an authorized bicycle dealer if the battery is no longer working.

# Troubleshooting

| Cause | Corrective measures |
|---|---|
| <br>Battery defective | **Two LEDs flash on the battery.**<br>Contact an authorized bike dealership. |
| <br>Battery too warm or too cold | **Three LEDs flash on the battery.**<br>Disconnect the battery from the charger until the charging temperature range has been reached.<br>Do not reconnect the battery to the charger until it has reached the correct charging temperature. |
| <br>The charger is not charging. | **No LEDs flashing (one or more LEDs will remain permanently lit depending on the state of charge of the eBike battery).**<br>Contact an authorized bike dealership. |
| **Charging not possible (no indicator on battery)** | |
| Connector not attached properly | Check all connections. |
| Battery contacts dirty | Carefully clean the battery contacts. |
| Socket outlet, cable or charger defective | Check the mains voltage, have the charger checked over by a bike dealership. |
| Battery defective | Contact an authorized bike dealership. |

# Battery Recycling Program

The drive unit, on-board computer incl. operating unit, battery, speed sensor, accessories and packaging should be disposed of in an environmentally correct manner.

Do not dispose of eBikes and their components with household waste.

You may recycle your Bosch battery pack by calling 1.800.822.8837.

**Robert Bosch GmbH**
72757 Reutlingen
Germany

**www.bosch-ebike.com**

**0 275 U07 XCX** (2022.01) T / 43

## CONTACT

**Addres and telephone number:**

**Trek US**
Customer Service
801 W Madison street,
Waterloo, Wisconsin 53594
USA

Telephone number: 920.478.4678
Internet: www.trekbikes.com

**Electra Bicycle Company**
364 2nd Street,
Encinitas,
CA 92024
USA

Telephone number: 1.800.261.1644
Internet: www.electrabike.com

**Limited warranty**
Your bicycle is covered by a Lifetime Limited Warranty. Please visit our web site for details.
For Service and Warranty, please contact your local dealer.

Please refer to the website (Menu/Support) for the latest revision of this manual.
New features, as described in the latest manual, may not be applicable on your electric bike.

TK23 Bosch eBike Systems BS2 EN-US (28mph) Rev. 1
August 2022
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