

# HMI/Drive Unit

## Safety Notes



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

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

The term “battery” used in these operating instructions refers both to standard batteries (batteries with holder on the bike frame) and to rear rack batteries (batteries with holder under the rear rack).

- ▶ **Do not open the drive unit yourself. The drive unit is maintenance-free and may be repaired only through a qualified repair person and only using original spare parts.** This will ensure that the safety of the drive unit is maintained. Unauthorised opening of the drive unit will void any and all warranty claims.
- ▶ **All components mounted to the drive unit and all other components of the eBike drive (e.g., the chainwheel, chainwheel seat, pedals) may be replaced only against identical components or components specifically approved for your eBike by the bicycle manufacturer.** This protects the drive unit against overload and damage.
- ▶ **Remove the battery from the eBike before working on the eBike (e.g., assembling, maintenance, etc.), transporting it via car or plane or storing it.** Danger of injury when accidentally actuating the On/Off switch.
- ▶ **Use only original Bosch batteries approved for your eBike by the manufacturer.** Using other batteries can lead to injuries and pose a fire hazard. When using other batteries, Bosch shall not assume any liability and warranty.
- ▶ **Please read and observe the safety warnings and instructions enclosed in the operating instructions of the battery as well as in the operating instructions of your eBike.**

## Product Description and Specifications

### Intended Use

The drive unit is intended exclusively for your eBike and may not be used for other purposes. The eBike is intended for use on paved paths. It is not permitted for use in competition.

### Product Features (see page 3)

The numbering of the product features refers to the illustrations on the graphics page. All representations of bike components, with exception of the drive unit, drive HMI, speed sensor and corresponding holders, are schematic and can deviate from your eBike.

- 1 Drive HMI
- 2 Holder for drive HMI
- 3 “info/reset” button for multi-function indicator
- 4 “mode” assistance button
- 5 “light” button
- 6 Increase-assistance-level button ▲
- 7 Decrease-assistance-level button ▼
- 8 Drive unit
- 9 Speed sensor
- 10 Spoke magnet of the speed sensor

### Indication Elements, Drive HMI

- a Speed indication
- b Light indicator
- c Assistance-level indicator
- d Multi-function indicator
- e Assistance-mode and error code indicator
- f Battery charge control indicator

## Technical Data

Drive Unit		Drive Unit
Article number		0 275 007 000/ 0 275 007 001
Rated continuous output	W	250
Output torque, max.	Nm	50
Rated voltage	V=	36
Operating temperature	°C	-5...+40
Storage temperature	°C	-10...+50
Degree of protection		IP 5K4K (protected against dust and splash water)
Weight, approx.	kg	4

Drive HMI		HMI
Article number		1 270 020 900
Operating temperature	°C	-5...+40
Storage temperature	°C	-10...+50
Degree of protection		IP 5K4K (protected against dust and splash water)
Weight, approx.	kg	0.15

Lighting*		
Rated voltage	V=	6
Power output		
– Front light	W	2.4
– Rear light	W	0.6

\* Not possible via the eBike battery in all country-specific versions, depending on the statutory regulations

## Assembly

### Inserting and Removing the Battery

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

### Inserting and Removing the Drive HMI (see figure A)

To **insert** the drive HMI, place it turned by approx. 30° onto holder **2** and then turn it clockwise to the stop.

To **remove** the drive HMI, turn it approx. 30° anticlockwise and pull it out of the holder **2**.

► **Remove the drive HMI when parking the eBike, so that the drive cannot be used by unauthorised persons.** Without the drive HMI, the drive cannot be switched on.

### Checking the Speed Sensor (see figure B)

The speed sensor **9** and its spoke magnet **10** must be mounted in such a manner that the spoke magnet, after a turn of the wheel, moves past the speed sensor with a clearance of no more than 17 mm, max.

**Note:** If the clearance between speed sensor **9** and spoke magnet **10** is too large or if the speed sensor **9** is not properly connected, the speed indication **a** will fail, and the eBike drive will operate in emergency mode.

In this case, loosen the screw of the spoke magnet **10** and fasten the spoke magnet to the spoke in such a manner that it runs past the speed sensor with the lowest clearance possible. When the speed is still not being indicated in the speed indication **a** after this, please refer to an authorised bicycle dealer.

# Operation

## Initial Operation

### Requirements

The drive of your eBike can only be activated when the following requirements are met:

- A sufficiently charged battery is inserted (see operating instructions of the battery).
- The drive HMI is properly inserted in the holder (see “Inserting and Removing the Drive HMI”, page 26).
- The drive HMI is properly connected (see “Checking the Speed Sensor”, page 26).

### Switching the Drive On/Off

Insert the battery into the holder and switch it on via the On/Off button (see operating instructions of the battery).

**Note:** When switching on the battery, the pedals of the eBike may not be subject to load, as otherwise the output capacity of the drive will be limited.

If the battery was inadvertently switched on with load applied to the pedals, then switch it off and then on again without load.

Switching on the battery also switches on the display of the drive HMI. The drive HMI indicates the charge condition of the battery as well as the settings of the drive unit.

The drive is activated as soon as you step into the pedals. The assistance level depends on the settings of the drive HMI.

As soon as you stop pedaling, or as soon as you have reached a speed of 25 km/h, the assistance from the eBike drive is switched off. The drive is automatically re-activated as soon you start pedaling again and the speed is below 25 km/h.

To switch off the drive, switch the battery off via the On/Off button (see operating instructions of the battery).

When no power output of the drive is requested for approx. 10 minutes, (e.g., because the eBike is parked), the battery automatically switches off to save energy.


## Indications and Settings of the Drive HMI


**Note:** Indications and settings on the drive HMI are only possible when the eBike battery is switched on. The drive HMI does not have an own power supply.


### Charge Condition of the Battery

Besides on the charge-control indicator on the battery itself, the charge condition can also be read from indicator **f** of the drive HMI.

On indicator **f**, each bar of the battery symbol is equivalent to a capacity of approx. 20 %:

 100 % to 80 % capacity

 20 % to 5 % capacity; the battery should be recharged.

 Less than 5 % capacity; drive assistance is no longer possible. The LEDs of the charge-control indicator on the battery go out.

When the eBike lighting is powered via the battery (country-specific), the capacity upon first indication of the empty battery symbol will be sufficient for approx. 2 hours of lighting. When the symbol begins to flash, the lighting will continue to operate only for a short period.

### Adjusting the Assistance Mode

The level of assistance of the eBike drive when pedaling can be adjusted via the drive HMI.

**Note:** For individual versions, it is possible that the the assistance mode is pre-set and cannot be changed. It is also possible that less modes are available for selection than listed here.

A maximum of four assistance modes are available:

*ECO* “ECO”: Effective assistance at maximum efficiency for maximum cruising range

*FOUR* “TOUR”: Uniform assistance, for touring with long cruising range

**SPORT** **“SPORT”**: Powerful assistance for sportive riding off road as well as for urban traffic

**SPEED** **“SPEED”**: Maximum assistance, supporting highest cadence for sportive riding

To **change the assistance mode**, press the **“mode”** button **4** until the desired mode is displayed in indicator **e**.

### Adjusting the Assistance Level

In the set assistance mode, the assistance level can be adjusted anytime, even during riding.

**Note:** For individual versions, it is possible that the assistance level is pre-set and cannot be changed.

A maximum of three assistance levels as well as the assistance shut-off are possible.

Assistance degree* at:	Assistance level		
	“1”	“2”	“3”
“ECO”	30 %	60 %	90 %
“TOUR”	50 %	100 %	160 %
“SPORT”	55 %	110 %	200 %
“SPEED”	60 %	130 %	250 %

\* The assistance degree can vary for individual versions.

To **increase the assistance level**, press the ▲ button **6** until the desired level is displayed in indicator **c**.

To **decrease the assistance level**, press the ▼ button **7** until the desired level is displayed in indicator **c**.

In assistance level **“0”**, the drive is switched off. The eBike can be operated as a normal bicycle through pedaling.

### Switching the Lighting On/Off

Depending on country-specific regulations, two lighting versions are possible:

- The front light, rear light and display lighting can be switched on and off at the same time via the drive HMI.
- Only the display lighting can be switched on and off; the front and rear light of the eBike are independent of the drive HMI.

For both versions, the **lighting is switched on** by pressing the **“light”** button **5**. The lighting indicator **b** appears on the display.

To **switch off the lighting**, press the **“light”** button **5** again; the lighting indicator **b** goes out.

### Speed and Distance Indicators

**Note:** Depending on country-specific version, distance and speed can either be displayed in **“km”** and **“km/h”** or in **“mi”** and **“mph”**. Adjustment of the drive HMI and the selection of the display possibilities for the km and mile version are identical.

The **speed indication a** always displays the current speed.

The following indications are available in **multi-function indicator d**:

*odo* 0 1635 km

Total distance **“odo”**: Indicates the total distance covered with the eBike

*trip* 06850 km

Trip distance **“trip”**: Distance covered since the last reset

*avg* 002 17 km/h

Average speed **“avg”**: Average speed achieved since the last reset

000 72<sup>range</sup> km

Range **“range”**: Estimated range of the available battery charge (for constant conditions such as assistance mode, assistance level, route profile etc.)

To **switch within the multi-function indicator**, press the **“info/reset”** button **3** until the desired function is displayed.

To **reset** the trip distance **“trip”** and the average speed **“avg”**, switch to one of both indications and then press the **“info/reset”** button **3** until the indication is reset to zero.

## Error Code Indication

The components of the eBike drive are continuously and automatically monitored. When an error is detected, the respective error code is indicated in display **e**.

Depending on the type of error, the drive is automatically shut off if required. Continued travel without assistance from the drive is possible at any time. However, have the eBike checked before attempting new trips.

- **Have all inspections and repairs carried out only by an authorised bicycle dealer.** When an error is still displayed despite corrective measures, please also refer to an authorised bicycle dealer.

Code	Cause	Corrective Measure
001	Internal error of the drive HMI	Have the drive HMI checked
002	One or more buttons of the drive HMI are blocked.	Check if any buttons are blocked, e.g. from dirt or debris. Clean the buttons, if required.
003	Connection problem of the drive HMI	Have connections and contacts checked
100	Internal error of the drive unit	Have the drive unit checked
101	Connection problem of the drive unit	Have connections and contacts checked
102	Error of the speed sensor	Have the speed sensor checked
103*	Connection problem of the lighting system	Have connections and contacts checked
104	Connection problem of the drive HMI	Have connections and contacts checked
105	Temperature of the drive unit too high (above 40 °C)	Allow the drive unit to cool down. Continued travel without assistance from the eBike drive is possible and speeds up the cooling of the drive unit.
200	Internal electronics error of the battery	Have the battery checked
201	Temperature of the battery too high (above 40 °C)	Allow the battery to cool down. Continued travel without assistance from the eBike drive is possible and speeds up the cooling of the battery.
202	Temperature of the battery too low (below -10 °C)	Allow the battery to warm up slowly in a warm location.
203	Connection problem of battery	Have connections and contacts checked
204	Incorrect battery polarity	Charge the battery with the original Bosch charger as described in the operating instructions.

\* only for eBike lighting via battery (country-specific)

## Notes on Riding with the eBike Drive

### When does the eBike Drive Operate?

The eBike drive supports you when riding, as long as you step into the pedals. Without pedaling, there is no assistance. The degree of assistance always depends on the amount of your pedaling power.

When applying less pedaling power, the assistance or support will be lower than when applying a lot of pedaling power. This applies independent of the assistance mode and level.

The eBike drive automatically switches off at speeds in excess of 25 km/h. When the speed falls below 25 km/h, the drive is automatically available again.

The eBike can also be ridden as a normal bicycle without assistance at any time, by either switching off the battery or setting the assistance level to **"0"**. The same applies when the battery is empty.

### Interaction of the eBike Drive with the Bicycle Gears

The bicycle gears should be used as with a normal bicycle, even with eBike drive (please observe the operating instructions of your eBike). Independent of the type of gearing, it is recommended to briefly interrupt the pedaling while changing gears. This makes changing gears easier and reduces the wear of the drive train.

By selecting the right gear, you can increase the speed and range with the same pedaling effort.

### Gathering First Experience

It is recommended to gather first experience with the eBike away from roads with heavy traffic.

Try out the different assistance modes and assistance levels. As soon as you feel safe, you can participate in traffic with the eBike as with any other bicycle.

Test the operating range of your eBike under different conditions before planning longer and more challenging rides.

## Influences on the Operating Range

With a fully charged battery and an efficient riding manner, an operating range of up to 145 km is possible.

However, the operating range depends on many factors, such as:

- Assistance mode and level
- Gear-switching behaviour,
- Bicycle tires and tire pressure,
- Age and condition of the battery,
- Route profile (inclines) and road or path conditions (road or path surface),
- Head wind and ambient temperature,
- Weight of the eBike, rider and equipment/luggage

For these reasons, it is not possible to predict an accurate operating range before starting your ride. General rules:

- For the **same** assistance level of the eBike drive: The less power or force that you have to bring about to reach a certain speed (e.g. through optimal use of the gears), the less energy the eBike drive will consume, and the greater the range for a battery charge.
- The **higher** the selected assistance degree (assistance mode and level) under otherwise same conditions, the lower the range.

### Careful Handling of the eBike

Please observe the operating and storage temperatures of the eBike components. Protect the drive unit, drive HMI and battery against extreme temperatures (e.g. from intense sunlight without adequate ventilation). The components (especially the battery) can become damaged through extreme temperatures.

## Maintenance and Service

### Maintenance and Cleaning

Keep all components of your eBike clean, especially the battery contacts and corresponding holders. Clean them carefully with a soft, damp cloth.

All components including the drive unit may not be immersed in water or cleaned with a high-pressure cleaner.

For service or repairs on the eBike, please refer to an authorised bicycle dealer.

### After-sales Service and Customer Assistance

In case of questions concerning the eBike drive and its components, please refer to an authorised bicycle dealer.

For the next service support bicycle dealer, please refer to service support search in the Service Section of the Internet page [www.bosch-ebike.com](http://www.bosch-ebike.com).

### Transport

The batteries are subject to the Dangerous Goods Legislation requirements. The user can transport the batteries by road without further requirements.

When being transported by third parties (e.g. via air transport or forwarding agency), special requirements on packaging and labelling must be observed. For preparation of the item being shipped, consulting an expert for hazardous material is absolutely required.

Use the 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. Please also observe possibly more detailed national regulations.

In case of questions concerning transport of the batteries, please refer to an authorised bicycle dealer.

### Disposal

The drive unit, drive HMI, battery, speed sensor, accessories and packaging should be sorted for environmental-friendly recycling.

Do not dispose of eBikes and their components into household waste!

#### Only for EC countries:



According to the European Guideline 2002/96/EC, electrical devices/tools that are no longer usable, and according to the European Guideline 2006/66/EC, defective or used battery packs/batteries, must be collected separately and disposed of in an environmentally correct manner.

Please return batteries that are no longer usable to an authorised bicycle dealer.



#### Li-ion:

Please observe the instructions in section "Transport", page 31.

**Subject to change without notice.**

# Battery Pack

## Safety Notes



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

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

The term “battery” used in these operating instructions refers both to standard batteries (batteries with holder on the bike frame) and to rear rack batteries (batteries with holder under the rear rack), except when explicitly referring to the design type.

- ▶ **Remove the battery from the eBike before working on the eBike (e.g., assembling, maintenance, etc.), transporting it via car or plane or storing it.** Danger of injury when accidentally actuating the On/Off switch.
- ▶ **Do not open the battery.** Danger of short-circuiting. When the battery has been opened, any and all warranty claims through Bosch shall be invalid.



**Protect the battery against heat (e.g., also against continuous intense sunlight), fire and immersing into water.** Danger of explosion.

- ▶ **Keep the battery when not being used away from paper clips, coins, keys, nails, screws or other small metal objects, that can make a connection from one contact to another.** Shorting the battery contacts may cause burns or a fire. For short-circuiting damage caused in this manner, any and all warranty claims through Bosch shall be invalid.
- ▶ **Under abusive conditions, liquid may be ejected from the battery. Avoid contact. If contact accidentally occurs, flush with water. If liquid contacts eyes, additionally seek medical help.** Liquid ejected from the battery may cause skin irritations or burns.

- ▶ **Vapours can escape in case of damage and improper use of the battery. Provide for fresh air and seek medical attention in case of complaints.** The vapours can irritate the respiratory system.
- ▶ **Charge the battery only with chargers recommended by the manufacturer.** A charger that is suitable for one type of batteries may create a risk of fire when used with other batteries.
- ▶ **Use the battery only in conjunction with eBikes as recommended by the manufacturer.** This is the only way to protect the battery against dangerous overload.
- ▶ **Use only original Bosch batteries approved for your eBike by the manufacturer.** Using other batteries can lead to injuries and pose a fire hazard. When using other batteries, Bosch shall not assume any liability and warranty.
- ▶ **Please read and observe the safety warnings and instructions enclosed in the operating instructions of the charger and drive unit/drive HMI (Human Machine Interface), as well as in the operating instructions of your eBike.**

## Product Description and Specifications

### Product Features (see page 4–5)

The numbering of the product features refers to the illustrations on the graphics pages. All representations of bike components, with exception of the batteries and their holders, are schematic and can deviate from your eBike.

- 11 Holder of the rear rack battery
- 12 Rear rack battery
- 13 Operation and charge-control indicator
- 14 On/Off button
- 15 Key of the battery lock
- 16 Battery lock

- 17 Upper holder of the standard battery
- 18 Standard battery
- 19 Bottom holder of the standard battery
- 20 Carrying strap
- 21 Battery charger

## Technical Data

Lithium-ion battery	Battery Pack	
Article number		
– Standard battery, black		1 270 020 500
– Standard battery, white		1 270 020 501
– Standard battery, silver		1 270 020 502
– Rear rack battery		1 270 020 503
Rated voltage	V=	36
Rated capacity	Ah	8
Energy	Wh	288
Operating temperature	°C	–10...+40
Storage temperature	°C	–10...+60
Allowable charging temperature range	°C	0...+40
Weight	kg	2.5
Degree of protection		IP 54 (dust and splash water protected)

## Assembly

- ▶ **Place the battery only on clean surfaces.** In particular, avoid contaminating the charge socket and the contacts, e.g. by means of sand or ground.

## Checking the Battery Before Using for the First Time

Check the battery before charging it or using it with your eBike for the first time.

For this, press the On/Off button **14** to switch on the battery. When no LED of the charge-control indicator **13** lights up, the battery may be damaged.

- ▶ **Do not charge a damaged battery and do not use it.** Please refer to an authorised bicycle dealer.

When at least one, but not all LEDs of the charge-control indicator **13** is lit, then fully charge the battery before using for the first time.

## Charging the Battery

- ▶ **Use only the charger listed on the graphics page.** Only this charger is matched to the lithium-ion battery used in your eBike.

**Note:** The battery is supplied partially charged. To ensure full battery capacity, completely charge the battery in the charger before using for the first time.

The battery must be removed from the eBike for charging.

For charging the battery, read and observe the operating instructions of the battery charger.

The battery can be charged any time without reducing the battery life. Interrupting the charging procedure does not cause damage to the battery.

The battery is equipped with a temperature control indicator, which enables charging only within a temperature range between 0 °C and 40 °C. This provides for a long life of the battery.

## Charge-control Indicator

When the battery is switched on, the five green LEDs of the charge-control indicator **13** indicate the charge condition of the battery.

In this, each LED indicates approx. 20 % capacity. When the battery is completely charged, all five LEDs light up.

Additionally, the charge condition of the switched on battery is indicated on the drive HMI. Read and observe the and operating instructions of the drive unit and the drive HMI.

When the capacity of the battery is below 5 %, all LEDs of charge-control indicator **13** on the battery go out; however, the drive HMI does provide an additional indication.

## Inserting and Removing the Battery (see figures C–D)

- ▶ **Always switch the battery off when inserting or removing it from the holder. When the battery is inserted yet empty, please also observe the drive HMI indication.** Otherwise, the battery can become damaged.

In order for the battery to be inserted, the key **15** must be inserted into the lock **16** and the lock must be unlocked.

To **insert the standard battery 18**, place it via the contacts onto the bottom holder **19** on the eBike. Pivot it into the upper holder **17** so that it engages into the holder.

To **insert the rear rack battery 12**, slide it forwards with the contacts facing ahead until it engages in holder **11** on the rear rack.

Check if the battery is tightly seated. Always lock the battery with lock **16**, as otherwise the lock can open and the battery can fall out of the holder.

After locking, always remove the key **15** from the lock **16**. This prevents the key from falling out and the battery from being removed from unauthorised persons when the eBike is parked.

To **remove the standard battery 18**, switch it off and unlock the lock with the key **15**. Pivot the battery out of the upper holder **17** and pull it by the carrying strap **20** out of the bottom holder **19**.

To **remove the rear rack battery 12**, switch it off and unlock the lock with the key **15**. Pull the battery out of the holder **11**.

## Operation

### Initial Operation

- ▶ **Use only original Bosch batteries approved for your eBike by the manufacturer.** Using other batteries can lead to injuries and pose a fire hazard. When using other batteries, Bosch shall not assume any liability and warranty.

### Switching On and Off

Before switching on the battery, check that the lock **16** is locked.

**Note:** When switching on the battery, the pedals of the eBike may not be subject to load, as otherwise the output capacity of the drive will be limited.

To **switch on** the battery, press the On/Off button **14**. The LEDs of indicator **13** light up and at the same time indicate the charge condition.

**Note:** When the battery capacity is below 5 %, none of the LEDs of charge-control indicator **13** will light up. Only the drive HMI will indicate if the battery is switched on.

Switching on the battery is one of the requirements for starting up the eBike drive. Read and observe the operating instructions of the drive unit and the drive HMI.

To **switch off** the battery, press the On/Off button **14** again. The LEDs of indicator **13** go out. This also switches off the eBike drive.

When no power output of the drive is requested for approx. 10 minutes, (e.g., because the eBike is parked), the battery automatically switches off to save energy.

The battery is protected against deep discharging, overcharging, overheating and short-circuiting through the “Electronic Cell Protection (ECP)”. In case of hazardous situations, a protective circuit automatically switches off the battery.

## Notes for Optimum Handling of the Battery

A battery life of at least 500 full charging cycles is guaranteed.

The battery life can be prolonged when being properly maintained and especially when being operated and stored at the right temperatures. Operating temperatures between +5 °C and +35 °C are recommended.

With increasing age, however, the battery capacity will diminish, even when properly maintained.

A significantly reduced operating period after charging indicates that the battery is worn out and must be replaced.

In case the carrying strap **20** of the standard battery widens, please have it replaced by a bicycle dealer.

### Recharging the Battery prior to and during Storage

When not using the battery for a longer period, charge it to approx. 60 % (3 to 4 LEDs lit on the charge-control indicator **13**).

Check the charge condition after 6 months.

When only one LED of the charge-control indicator **13** lights up, recharge the battery again approx. 60 %.

**Note:** When the battery is stored discharged (empty) for longer periods, it can become damaged despite the low self-discharging and the battery capacity may be strongly reduced.

It is not recommended to have the battery connected permanently to the charger.

## Storage Conditions

Store the battery in a dry, well-ventilated location. Protect the battery against moisture and water. Under unfavourable weather conditions, it is recommended e.g. to remove the battery from the eBike and store it in an enclosed location until being used again.

The battery can be stored at temperatures between -10 °C and +60 °C. For a long battery life, however, store the battery in a cool and frost-free location.

Take care that the maximal storage temperature is not exceeded. As an example, do not leave the battery in a vehicle in summer and store it out of direct sunlight.

## Maintenance and Service

### Maintenance and Cleaning

Keep the battery clean. Clean it carefully with a soft, damp cloth. The battery may not be immersed in water or cleaned with a water jet.

When the battery is no longer operative, please refer to an authorised bicycle dealer.

### After-sales Service and Customer Assistance

In case of questions concerning the batteries, please refer to an authorised bicycle dealer.

Note down the number on the key **15**. In case of loss of the keys, please refer to an authorised bicycle dealer, and provide the key number.

For the next service support bicycle dealer, please refer to service support search in the Service Section of the Internet page [www.bosch-ebike.com](http://www.bosch-ebike.com).

## Transport

The batteries are subject to the Dangerous Goods Legislation requirements. The user can transport the batteries by road without further requirements.

When being transported by third parties (e.g. via air transport or forwarding agency), special requirements on packaging and labelling must be observed. For preparation of the item being shipped, consulting an expert for hazardous material is absolutely required.

Use the 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. Please also observe possibly more detailed national regulations.

In case of questions concerning transport of the batteries, please refer to an authorised bicycle dealer.

## Disposal

The batteries, accessories and packaging should be sorted for environmental-friendly recycling.

Do not dispose of batteries into household waste!

### Only for EC countries:



According to the European Guideline 2002/96/EC, electrical devices/tools that are no longer usable, and according to the European Guideline 2006/66/EC, defective or used battery packs/batteries, must be collected separately and disposed of in an environmentally correct manner.

Please return batteries that are no longer usable to an authorised bicycle dealer.



### Li-ion:

Please observe the instructions in section "Transport", page 36.

**Subject to change without notice.**

# Charger

## Safety Notes



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

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

The term “Batterie” used in these operating instructions refers both to standard batteries (batteries with holder on the bike frame) and to rear rack batteries (batteries with holder under the rear rack).



**Keep the charger away from rain or moisture.** The penetration of water into a battery charger increases the risk of an electric shock.

- ▶ **Only charge Bosch lithium-ion batteries approved for eBikes with the voltages listed in the technical data.** Otherwise there is danger of fire and explosion.
- ▶ **Keep the battery charger clean.** Contamination can lead to danger of an electric shock.
- ▶ **Before each use, check the battery charger, cable and plug. If damage is detected, do not use the battery charger. Never open the battery charger yourself. Have repairs performed only by a qualified technician and only using original spare parts.** Damaged battery chargers, cables and plugs increase the risk of an electric shock.
- ▶ **Do not operate the battery charger on easily inflammable surfaces (e.g., paper, textiles, etc.) or surroundings.** The heating of the battery charger during the charging process can pose a fire hazard.
- ▶ **Vapours can escape in case of damage and improper use of the battery. Provide for fresh air and seek medical attention in case of complaints.** The vapours can irritate the respiratory system.
- ▶ **Supervise children.** This will ensure that children do not play with the charger.
- ▶ **Children or persons that owing to their physical, sensory or mental limitations or to their lack of experience or knowledge, are not capable of securely operating the charger, may only use this charger under supervision or after having been instructed by a responsible person.** Otherwise, there is danger of operating errors and injuries.
- ▶ **Connect the battery charger to a mains supply that is properly connected to earth.** Socket and extension cord must have an operative protective conductor.
- ▶ **Please read and observe the safety warnings and instructions enclosed in the operating instructions of the battery and drive unit/drive HMI, as well as in the operating instructions of your eBike.**
- ▶ 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 **26** in the representation on the graphics page):
  - For safe operation see manual. Risk of electric shock.
  - Dry location use only.
  - Charge only eBat100-199 rechargeable batteries. Other batteries may burst causing personal damage.
  - Do not replace the plug assembly as risk of fire or electric shock may result.
- ▶ Products sold in **GB only:** Your product is fitted with an BS 1363/A approved electric plug with internal fuse (ASTA approved to BS 1362).  
If the plug is not suitable for your socket outlets, it should be cut off and an appropriate plug fitted in its place by an authorised customer service agent. The replacement plug should have the same fuse rating as the original plug.  
The severed plug must be disposed of to avoid a possible shock hazard and should never be inserted into a mains socket elsewhere.

## Product Description and Specifications

### Technical Data

Battery Charger	Charger	
Article number		0 275 007 900
Rated voltage	V $\equiv$	115/230
Frequency	Hz	50/60
Battery charging voltage	V=	36
Charging current		
– Rapid-charging operation	A	4
– Silent-charging operation	A	1
Allowable charging temperature range	°C	0...+40
Charge duration (for 8 Ah battery capacity) approx.		
– Rapid-charging operation	h	2.5
– Silent-charging operation	h	8
Number of battery cells		10–80
Weight according to EPTA-Procedure 01/2003	kg	0.8
Protection class		⊕/I

The values given are valid for a nominal voltage [U] of 230 V. For different voltages and models for specific countries, these values can vary.

### Product Features (see page 6–7)

The numbering of the product features refers to the illustration of the battery charger on the graphics page.

- 12** Rear rack battery
- 13** Battery charge control indicator
- 18** Standard battery
- 21** Battery charger

- 22** Ventilation openings
- 23** Charger socket
- 24** Mains voltage selector switch
- 25** Charger plug
- 26** Safety warnings, charger
- 27** Button for charge operation
- 28** Operation indicator
- 29** Charge connector
- 30** Socket for charge connector

## Operation

- ▶ **Place the battery only on clean surfaces.** In particular, avoid contaminating the charge socket and the contacts, e.g. by means of sand or ground.

### Initial Operation

#### Connecting the Charger (see figures E–F)

Set the voltage of your power source on the mains voltage selector switch **24** of the charger. You can select between 115 V and 230 V.

- ▶ **Observe the mains voltage!** The voltage of the power supply must correspond with the data given on the nameplate of the battery charger. Battery chargers marked with 230 V can also be operated with 220 V.

Then, insert the charger plug **25** of the power cord into the charger socket **23** of the charger.

Connect the mains cable to the mains supply. The operation indicator **28** on the charger lights up.

- ▶ **Do not connect the charger to the mains supply until after the correct mains voltage has been set on the mains voltage selector switch 24.** Otherwise, the charger will become damaged.

Switch the battery off and remove it from the holder of the eBike. For this, read and observe the operating instructions of the battery.

Insert the charge connector **29** of the battery charger into the socket **30** on the battery. The operation indicator **28** on the charger flashes.

## Charging Procedure

The charging procedure begins as soon as the charger is connected with the battery and the mains supply.

**Note:** The charging procedure is only possible when the temperature of the battery is within the allowable charge-temperature range.

You can select between the two charging modes “**FAST**” (rapid-charging operation) and “**SLOW**” (silent-charging operation). In the “**SLOW**” mode, the charging takes place silently.

Charge Operation	“FAST”	“SLOW”
Charging current	4 A	1 A
Operation indicator <b>28</b>	flashes	continuously lit
Charger ventilation	on	off

When starting the operation of the charger, rapid-charging operation is preset. To change the charging mode, press button **27**.

► **Use caution when touching the charger during the charging procedure. Wear protective gloves.** Especially in FAST charging mode with high ambient temperatures, the charger can heat up considerably.

**Note:** Pay attention that the charger is well ventilated during the charging procedure and that the ventilation openings **22** on both sides are not clogged or contaminated.

During the charging procedure, the LEDs of charge-control indicator **13** on the battery light up. Each continuously lit LED is equivalent to a charge capacity of approx. 20 %. The flashing LED indicates the charging of the next 20 %.

The battery is completely charged when all five LEDs of indicator **13** light up continuously. The charge procedure is automatically ended.

Disconnect the charger from the mains supply and the battery from the charger.

When disconnecting the battery from the charger, the battery is automatically switched off.

The battery can now be inserted into the eBike.

## Troubleshooting – Causes and Corrective Measures

Cause	Corrective Measure
<b>Operation indicator 28 not lit, no charging possible</b>	
Incorrect mains voltage selected at switch <b>24</b>	Select correct mains voltage
Plug not inserted correctly	Check all plug connections
Contacts of the battery contaminated	Carefully clean the contacts of the battery
Battery too warm or too cold	Allow battery to adjust to the ambient temperature until the charge-temperature range is reached
Ventilation openings <b>22</b> of the charger clogged or contaminated	Clean ventilation openings <b>22</b> and set up charger well ventilated
Socket outlet, cable or charger defective	Check mains voltage, have charger checked through bicycle dealer
Battery defective	Replace battery

## Maintenance and Service

### Maintenance and Cleaning

Make sure that the ventilation openings **22** of the charger are not obstructed and clean during use. If required, clean the ventilation openings with a vacuum cleaner.

If the charger should fail, please refer to an authorised bicycle dealer.

### After-sales Service and Customer Assistance

In case of questions concerning the charger, please refer to an authorised bicycle dealer.

For the next service support bicycle dealer, please refer to service support search in the Service Section of the Internet page [www.bosch-ebike.com](http://www.bosch-ebike.com).

### Disposal

Battery chargers, accessories and packaging should be sorted for environmental-friendly recycling.

Do not dispose of battery chargers into household waste!

#### Only for EC countries:



According to the European Guideline 2002/96/EG for Waste Electrical and Electronic Equipment and its implementation into national right, battery chargers that are no longer usable must be collected separately and disposed of in an environmental correct manner.

**Subject to change without notice.**