



Pedelec Impulse Evo RS

EPAC Electrically power assisted cycle

Original User Guide | EN

Version 2

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impulse evo rs

CONTENTS

I. Introduction		EN-4	3.2.1	Determining the correct saddle height	EN-16	3.11	Wheel	EN-29
I.I	Explanation of the safety information symbols	EN-4	3.2.2	Adjusting the saddle height: Saddle clamp(s)*	EN-16	3.11.1	Changing the wheel	EN-29
I.II	The Impulse Evo RS pedelec	EN-5	3.2.3	Adjusting the saddle height: Quick-release skewer*	EN-16	3.11.1.1	Axle nut*	EN-29
II.	Information pack	EN-5				3.11.2	Quick-release wheels*	EN-29
II.I	Booklet and CD	EN-5	3.3	Shifting and tilting the saddle	EN-17	3.11.3	Quick-release axle*	EN-31
II.II	Component guides	EN-6	3.3.1	Screw supports: Shifting and tilting the saddle	EN-18	3.11.4	Rims	EN-32
II.III	Service book	EN-6	3.3.2	Twin-screw supports: Shifting and tilting the saddle	EN-18	3.11.5	Tyres	EN-33
II.IV	EU declarations of conformity	EN-7	3.3.3	Clamp attachment: Shifting and tilting the saddle	EN-18	3.12	Suspension fork*	EN-33
III. Cycle dealers		EN-7				3.12.1	Lockout system	EN-33
IV. Legal regulations for pedelecs		EN-7				3.12.2	Air system*	EN-34
IV.I	International	EN-7	3.4	Adjusting the sprung seatpost	EN-19	4. Before every trip		EN-34
IV.II	Germany	EN-8	3.5	Adjusting the height and angle of the handlebars	EN-19	5. Quick-start guide		EN-35
IV.II.I	Lights	EN-8	3.6	Switching the lights on and off*	EN-19	5.1	Charging the battery	EN-35
IV.II.I.I	Replacement bulbs	EN-9	3.7	Braking	EN-20	5.3	Switching on the pedelec	EN-37
IV.II.II	Disposal	EN-9	3.8	Chain*	EN-20	5.4	Battery charge level and remaining range	EN-37
V. Intended use		EN-9	3.8.1	Measuring and adjusting the chain tension	EN-21	5.5	Changing assist mode	EN-38
V.I	Pedelec	EN-9	3.8.2	Checking for chain wear	EN-21	5.6	Enabling push assist	EN-39
V.II	E-mountain bike	EN-10	3.8.3	Chain cleaning and maintenance	EN-21	5.7	Displaying favourite settings	EN-39
VI. Pedelec weight*		EN-10	3.9	Belt*	EN-22	5.8	Configuring settings in the main menu	EN-40
VI.I	Overall weight	EN-10	3.9.1	Belt tension	EN-22	5.8.1	Accessing the main menu	EN-40
VII. The pedelec and its components*		EN-11	3.9.2	Checking the belt for wear	EN-24	5.8.2	Navigating within a menu	EN-40
1. General safety information		EN-12	3.9.3	Cleaning the belt	EN-24	5.8.3	Returning from a menu	EN-40
2. Protection from theft, manipulation and loss		EN-14	3.10	Gears	EN-24	5.9	Changing ride profile	EN-41
3. Before your first ride		EN-15	3.10.1	FAG electronic shift unit	EN-25	5.10	Switching off the pedelec	EN-41
3.1	Attaching the pedals	EN-15	3.10.1.1	Technical details	EN-25	5.11	Unlocking and removing the battery	EN-42
3.2	Adjusting the saddle height	EN-16	3.10.1.2	Basic functions	EN-26	6. Drive unit, display and easy-reach control		EN-42
			3.10.1.3	Shift unit: Shift strategy	EN-26	6.1	Safety information	EN-42
			3.10.1.4	Shift unit: Shifter adjustment	EN-27	6.2	Technical details	EN-43
			3.10.1.5	Shift unit: Change shift cable	EN-28	6.3	Overview and basic functions	EN-45
			3.10.1.6	Shift unit: Slope sensor	EN-28	6.3.1	Switching on the pedelec	EN-46
						6.3.2	Switching off the pedelec	EN-47
						6.3.3	Battery charge level and remaining range	EN-47

*dependent on model

6.3.4	Changing assist mode	EN-48
6.3.5	Enabling push assist	EN-48
6.3.6	Favourite settings	EN-49
6.3.6.1	Displaying favourite settings	EN-49
6.3.6.2	Impulse Evo (Smart) display: Preselecting favourite settings	EN-50
6.4	Main menu	EN-51
6.4.1	Configuring settings in the main menu	EN-51
6.4.1.1	Accessing the main menu	EN-51
6.4.1.2	Navigating within a menu	EN-52
6.4.1.3	Returning from a menu	EN-52
6.4.2	Impulse Evo (Smart) display: Menu structure	EN-53
6.4.3	Impulse Evo Smart Compact display: Menu structure	EN-56
6.4.3.1	Impulse Evo (Smart) display: Display ride data	EN-57
6.4.3.2	Clear trip data	EN-58
6.4.3.3	Impulse Evo (Smart) display: Clearing tour data	EN-58
6.4.3.4	Contrast	EN-58
6.4.3.5	Brightness	EN-59
6.4.3.6	Language	EN-59
6.4.3.7	Unit	EN-60
6.4.3.8	Impulse Evo (Smart) display: Date	EN-60
6.4.3.9	Impulse Evo (Smart) display: Time	EN-60
6.4.3.10	Impulse Evo Smart Compact display: Time	EN-61
6.4.3.11	Impulse Evo (Smart) display: Parking light	EN-61
6.4.3.12	Impulse Evo (Smart) display: Navigation indicator sound	EN-61
6.4.3.13	Wheel circumference	EN-62

*dependent on model



6.4.3.14	Light reserve	EN-62
6.4.3.15	Shift sensor	EN-63
6.4.3.16	Climb assist	EN-63
6.4.3.17	Ride profile	EN-64
6.4.3.18	Impulse Evo (Smart) display: Name	EN-64
6.4.3.19	Favourite settings	EN-64
6.4.3.20	Impulse Evo Smart Compact display: Name	EN-65
6.4.3.21	Factory settings	EN-65
6.4.3.22	Impulse Evo (Smart) display: Version	EN-65
6.4.3.23	Impulse Evo Smart Compact display: Version	EN-66
6.5	Tips	EN-66
6.5.1	Transporting your pedelec	EN-66
6.5.2	Trailer bikes and trailers	EN-67
6.5.3	Luggage rack	EN-67
6.5.3.1	Safety information	EN-68
6.5.3.2	Assembly	EN-69
6.5.4	Storage	EN-69
6.5.5	Cleaning	EN-69
7. Impulse E-Bike navigation app		EN-70
7.1	Technical requirements	EN-70
7.2	Menu structure	EN-71
7.3	Installation	EN-72
7.4	Basic functions	EN-73
7.4.1	Location from map	EN-73
7.4.2	Every day	EN-73
7.4.3	Leisure time	EN-74
8. Impulse Evo Smart display*		EN-74
8.1	Show route	EN-74
8.1.1	Technical requirements	EN-74
8.1.2	Show route	EN-74
8.2	Charging the smartphone	EN-78



9. Battery		EN-79
9.1	Safety information	EN-79
9.2	Technical details	EN-81
9.3	Overview and basic functions	EN-81
9.3.1	Display panel	EN-82
9.3.1.1	Battery charge level	EN-82
9.3.1.2	Capacity	EN-82
9.3.1.3	Sleep mode	EN-83
9.3.2	Inserting and locking the battery	EN-83
9.4	Tips	EN-85
9.4.1	Range	EN-85
9.4.2	Storage	EN-86
9.4.3	Cleaning	EN-86
10. Battery charger		EN-87
10.1	Safety information	EN-87
10.2	Technical details	EN-89
10.3	Functions	EN-90
10.3.1	Charging a battery	EN-90
10.3.1.1	Battery display during charging	EN-91
10.4	Tips	EN-91
10.4.1	Cleaning	EN-91
10.4.2	Storage	EN-91
11. Fault		EN-92
11.1	Drive unit, display and easy-reach control	EN-92
11.2	Battery	EN-96
11.3	Charger	EN-98
11.4	Other	EN-99
12. Torque settings		EN-99

I. Introduction

This user guide contains information on how to use, maintain and look after your Impulse Evo RS pedelec.

DANGER



Before using your pedelec for the first time, carefully read this user guide. Please also read the other items in the information pack ⇒ *II. Information pack Page EN-5*. Familiarise yourself with the appearance and meaning of the safety information symbols. Ensure to contact your cycle dealer ⇒ *III. Cycle dealers Page EN-7* in the event clarification is required. Failure to comply with safety symbols and instructions can result in death, very serious injuries and/or damage to the bicycle. The manufacturer's liability and any warranty are deemed null and void for any damage or injury caused by a failure to adhere to safety symbols and instructions.

Ensure that your cycle dealer has provided you with all the documents included with the bike upon delivery. Keep this user manual and the other documents in the information pack for future reference. Please pass on the user manual and information pack to other people who will use, maintain or repair this pedelec. Failure to do so can lead to uncertainty which may cause death, severe injuries and/or damage to equipment.




You can download this guide, the “Original User Guide | General” and parts of the information pack as PDFs from our website (www.derby-cycle.com/en/downloads/downloads.html). There you will also find links to the websites of the various component manufacturers.



I.I Explanation of the safety information symbols


DANGER



This symbol  combined with the signal word “DANGER” indicates a potentially dangerous situation. Failure to comply with this safety instruction can result in death or very serious injuries.


WARNING



This symbol  in conjunction with the signal word “WARNING” indicates a potentially dangerous situation. Failure to comply with this safety warning can result in serious injury.


CAUTION



This symbol  combined with the signal word “CAUTION” indicates a potentially dangerous situation. Failure to comply with this safety instruction can result in minor injuries.

IMPORTANT



This symbol  combined with the signal word “IMPORTANT” indicates a potentially dangerous situation. Failure to comply with this safety instruction can result in damage to the pedelec and its components.



This symbol indicates helpful tips, useful or important information about the product or its additional uses. It does not indicate a dangerous or harmful situation.

I.II The Impulse Evo RS pedelec

Your Impulse Evo RS pedelec is an EPAC (electrically power assisted cycle). When the assist mode is switched on, the electric motor provides assistance as long as you are pedalling. You can control the degree of assistance, which is adjusted using various assist modes ⇒ [5.5 Changing assist mode Page EN-38](#). The drive assistance is dependent on the force and speed of your pedalling and the speed you are travelling. Motor assist stops as soon as you stop pedalling and when the battery is discharged or if you reach a speed of 25 km/h. So pedalling harder is required if you want to travel faster than 25 km/h.

II. Information pack

In addition to this user guide, your Impulse Evo RS pedelec comes with a booklet, CD, service book, two declarations of conformity and component guides. The following points describe the contents of the information pack in more detail.

II.I Booklet and CD

The booklet contains a “Quick-start guide” describing how to check the torque settings, attach the pedals and adjust the height of the saddle. At the back of the booklet is a CD. The CD includes the “Original User Manual | General” in several languages, which provides general information on the different types of bikes and their components. If you go online you can follow a link to our website. The CD can be played on any standard PC or laptop. Proceed as follows:

Method A

1. Insert the CD.
2. Left-click the shelexec.exe file twice.
3. Select the required language.
4. Select “Open User Guide from CD” or “Check Online for New Version of User Guide”.

Method B

1. Insert the CD.
2. Right-click once “Open Folder to Show Files”.
3. Left-click “Start” twice.
4. Select the required language.
5. Select “Open User Guide from CD” or “Check Online for New Version of User Guide”.



You will need the Adobe Acrobat Reader software to read the manuals. It is included on the CD; you can also download it for free from <https://acrobat.adobe.com/uk/en/acrobat/pdf-reader.html>.

The paper version of ‘Original User Guide | General’ can be ordered free of charge from:

Derby Cycle Werke GmbH
Siemensstraße 1-3
49661 Cloppenburg, Germany
info@derby-cycle.com

II.II Component guides

In the component guides you will find important information on using and maintaining the components of your pedelec. They often also provide information on any warranties. If there is no specific user guide included for the particular component you are interested in, look in our “Original User Guide | General” (CD) ⇒ [II.I Booklet and CD Page EN-5](#) or on the component manufacturer's website.

You can also find a list of our component manufacturers at [www.http://www.derby-cycle.com/en/downloads/downloads.html](http://www.derby-cycle.com/en/downloads/downloads.html).



II.III Service book

In the accompanying service book, you will find the warranty terms, a list of wearing parts, a cycle passport, and forms to use for initial sale, maintenance and owner changes.



DANGER

Keep the service book appropriately up-to-date and adhere to the maintenance intervals. Components can fail if wear and damage are not identified in good time. Should this happen whilst you are cycling, you could injure yourself very seriously or even die. Replace any worn, damaged or bent components before using the bike again.

II.IV EU declarations of conformity

EU declarations of conformity confirm that we have complied with all of the safety requirements of the regulations applicable to the pedelec and the battery charger.

III. Cycle dealers

Ask our cycle dealers for advice. On Page 2 you will find a link to the brand website with all cycle dealers in your region.

IV. Legal regulations for pedelecs

IV.I International



DANGER

Never ride “hands free”. You could fall off and seriously injure or even kill yourself – and also be liable for prosecution. You must always have at least one hand on the handlebars.

Always observe the relevant national traffic regulations. Otherwise you run the risk of a serious accident. Before using your pedelec abroad, find out about the regulations applicable in that country.

Like all bicycles, the pedelec must comply with the respective national road traffic regulations and applicable standards. If you carry out any technical modifications, bear in mind the relevant national traffic regulations and applicable standards. If the cut-off speed exceeds 25 km/h and/or the speed of the push assist exceeds 6 km/h, the pedelec will become liable to mandatory registration and insurance. Technical modifications can impair the function of your pedelec, resulting in damage to components. If this happens while you are riding the bike you could be severely injured or killed. Furthermore, it will invalidate the manufacturer's liability, warranty and guarantee (where applicable).



Observe the respective national regulations regarding the disposal of the drive system, display, easy-reach control, pedelec battery and charger. Otherwise you will be committing an offence and run the risk of a fine.

IV.II Germany

The following regulations (not exhaustive) were applicable in Germany when this guide was compiled (10/2016):

- » The motor may only be used as an aid to pedalling, i.e. it may only “help” when the rider is actively pedalling.
- » The average motor power must not exceed 250 W.
- » The motor power must continue to fall as the speed of the bike continues to increase.
- » The motor must cut out automatically at 25 km/h.

For you, this means:

- » There is no obligation to wear a helmet.

DANGER

In the interests of your own safety, a suitable helmet should always be worn. A cycle helmet can protect you from severe injuries. Make sure that the helmet fits properly.

- » You do not require a driving licence.
- » There is no requirement for compulsory insurance.
- » The use of cycle paths is regulated as for normal bicycles.
- » The use of children trailers and cycle trailers is generally permitted for pedelecs.

DANGER

Before you use a trailer bike or trailer, make sure you read Section 6.5.2 Trailer bikes and trailers Page EN-67. Otherwise there is a risk of serious injury or death.

IV.II.I Lights

In Germany, the requirements for lights on bicycles is regulated in Section 67 of the Road Traffic Licensing Regulation (StVZO) and in the Technical Requirements for vehicle parts. Lights include both battery and dynamo-powered lights, and include reflectors that work without a power supply and simply reflect external light.

Light type	Number	Position	Characteristics
Front light	1	Front	White light The illuminance must be at least 10 lux at the centre of the beam at a distance of 10 metres.
Reflector	At least 1	Front	White The reflector can be integrated into the front light.
Rear light	1	Rear	Red light The lowest point of the illuminating surface must not be lower than 250 mm above the road surface. A parking light function is also permitted.
Reflector	At least 1	Rear	Red The highest point of the illuminating surface must not be higher than 600 mm above the road surface.

Light type	Number	Position	Characteristics
Large reflector	1	Rear	Red The large reflector is marked with a Z. It can be integrated in the rear light.
Reflector	2	Per pedal	Yellow They reflect light in both directions (forwards and backwards).
Reflector (or reflective wheel stripe)	At least 2	Per wheel	Yellow Attached to the spokes at an angle of 180°. They reflect light to the sides.
Reflective stripe (or wheel reflector)	1	Per wheel	Ring-shaped reflecting white stripe.

IV.II.I.I Replacement bulbs

The replacement bulbs you will need depend on the type of lights fitted on your bike. The table below tells you what type of bulb you need:

Type	Power supply	
Front light (LED, incandescent)	6 V	2.4 W
Front light halogen	6 V	2.4 W
Rear light	6 V	0.6 W
Rear light with parking light	6 V	0.6 W
Lighting with LED lamps	LED lamps are not replaceable	
Hub dynamo	6 V	3 W

IV.II.II Disposal

Do not dispose of the drive system, display, easy-reach control, pedelec battery or charger in the household waste. Hand them in at the designated places (such as a recycling centre, battery collection point or cycle dealer).



Electrical devices marked with this symbol must not be disposed of in household waste.

V. Intended use

V.I Pedelec

This bicycle is designed and equipped for use on public roads and paved paths. It can also be used on non-challenging terrain.

The manufacturer and dealer accept no liability for damage resulting from any use beyond this definition and/or failure to comply with the safety information and instructions in the user guide.

This applies particularly to off-road use, overloading and failure to properly rectify faults.

Also included in the definition of intended use are conformance to the operating, maintenance and repair conditions in the user guide and service book ⇒ [II.III Service book Page EN-6](#) - stipulated by the manufacturer.

Fluctuations in the consumption and power of the battery and a reduction of capacity ⇒ [9.3.1.2 Capacity Page EN-82](#) with increasing age are common and technically unavoidable, and as such do not constitute material defects.

V.II E-mountain bike

This bicycle is not designed and equipped for use on public roads. The equipment stipulated must be fitted to the cycle before it may be used on public roads. It is designed to be used off-road, but not for competitions. The manufacturer and dealer accept no liability for damage resulting from any use beyond this definition and/or failure to comply with the safety information and instructions in the user guide. This applies particularly to the use of this bicycle in competitions, overloading and the failure to properly rectify faults. Also included in the definition of intended use are conformance to the operating, maintenance and repair conditions in the user guide and service book ⇒ [II.III Service book Page EN-6](#) - stipulated by the manufacturer. Fluctuations in the consumption and power of the battery and a reduction of capacity ⇒ [9.3.1.2 Capacity Page EN-82](#) with increasing age are common and technically unavoidable, and as such do not constitute material defects.

VI. Pedelec weight*



Pedelecs are heavier than normal bicycles. The exact weight depends on the equipment fitted. If you want to know the precise weight of your pedelec, we recommend having it weighed by a cycle dealer. Most dealers have a professional and accurate cycle weigher.

VI.I Overall weight



DANGER

Do not exceed the permitted overall weight of the pedelec as this can result in fracturing or failing of important safety parts (such as the brakes). If this happens while you are riding the bike, severe falls might result – with fatal consequences.

Overall weight = Weight of the bike + weight of the rider + weight of the trailer bike or trailer + weight of luggage and/or child

Bike type	Overall weight permitted	Weight of rider**
Impulse Evo RS pedelec	130 kilograms	Max. 102 kilograms
Pedelec Impulse Evo RS XXL	170 kilograms	Max. 142 kilograms

** for a pedelec weighing 28 kilograms.

*dependent on model

VII. The pedelec and its components*



- | | |
|----------------------------------------|----------------------|
| 1 Back light | 24 Pedal |
| 2 Luggage rack | 25 Crank |
| 3 Saddle | 26 Inner bearing |
| 4 Seat post | 27 Chain rings |
| 5 Crossbar | 28 Derailleur |
| 6 Handle bars | 29 Belt / chain |
| 7 Bell | 30 Chain stay |
| 8 Front stem | 31 Rear stand |
| 9 Easy-reach control | 32 Gears |
| 10 Front light | 33 Sprocket assembly |
| 11 Headset | 34 Back brake |
| 12 Headtube | 35 Seat stay |
| 13 Shock absorber | 36 Seat tube |
| 14 Display | 37 Down tube |
| 15 Mudguard | 38 Chargers |
| 16 Fork | |
| 17 Battery Include and docking station | |
| 18 Front brake | |
| 19 Hub | |
| 20 Spokes | |
| 21 Wheel rim | |
| 22 Tyre | |
| 23 Motor | |

*dependent on model

1. General safety information

Comply with the safety and user instructions at the start of the following sections.

DANGER



We discourage allowing children under the age of 14 years to ride pedelecs. They may not be able to cope with the speed. Serious accidents and falls might result.

Wear a cycle helmet. While there is no legal obligation to wear one, you should always wear a suitable cycle helmet for your own safety. A cycle helmet can protect you from severe injuries. Make sure that the helmet fits properly.

Keep your hands and other body parts and clothing away from moving parts, otherwise you can become ensnared, have a serious fall and injure yourself.

Adapt your riding style to the prevailing traffic conditions, otherwise you could fall off and involve yourself and others in a serious accident. Take into consideration the longer braking distances needed on wet or icy roads. Think ahead, anticipating the actions of other road users and reduce your speed. Avoid sudden jerky movements of the handlebars and braking actions. Dismount if you ever feel unsafe.

Only use the bicycle for its intended purpose ⇨ [V. Intended use Page EN-9](#), otherwise component failure may result. Should this happen whilst you are cycling, you could injure yourself very seriously or even die.

DANGER



Check that the brakes work and that the handlebars can move freely before every ride. Do not use the bike if it is not in perfect technical condition. If you are unsure, ask your cycle dealer to check it over.

Inspect your pedelec before every trip, and after each time it has been transported anywhere or left unattended ⇨ [4. Before every trip Page EN-34](#). Components might fail if wear and damage are not detected early enough. Should this happen whilst you are cycling, you could injure yourself very seriously or even die. The additional power means higher loads are applied to wearing parts on a pedelec than on a normal cycle. Replace any worn, damaged or bent components before using the bike again.

Do not exceed the overall weight permitted for the pedelec because parts important for safety might fracture or fail ⇨ [VI.I Overall weight Page EN-10](#). If this happens while you are riding the bike, severe falls might result – with fatal consequences.

Contact your cycle dealer when wearing parts and other components need to be replaced. We recommend having your cycle dealer assemble and adjust the bike.

Otherwise components could become loose due to incorrect assembly. If this happens whilst you are cycling, you could injure yourself very seriously or even die. If you do have to tighten something yourself, a full list of torque settings is in Section ⇨ [12. Torque settings Page EN-99](#) (strict adherence to which is a requirement).

DANGER



Only use original replacement parts. Replacement parts from other manufacturers can impair the function of your pedelec. Serious accidents can result.

Ask your cycle dealer to show you how to use, and explain, the special features of the components. Please also follow the component guides. We recommend having your cycle dealer assemble and adjust the bike. Otherwise components could become loose due to incorrect assembly. If this happens whilst you are cycling, you could injure yourself very seriously or even die. If you do have to tighten something yourself, a full list of torque settings is in Section ⇒ [12. Torque settings Page EN-99](#) (strict adherence to which is a requirement).

WARNING



Do not ride in unfavourable lighting conditions (fog, rain, dusk, darkness) without adequate lights ⇒ [IV.II.1 Lights Page EN-8](#). Failure to do so can result in accidents and serious injuries.

Always remove the battery before starting work on the pedelec. The pedelec could switch on unexpectedly and you could be seriously injured.

CAUTION



Do not open up the motor, display, battery or charger as you could injure yourself. Parts might also be damaged beyond repair, invalidating the warranty. Contact your cycle dealer when problems arise.

IMPORTANT



Always park your pedelec so that it cannot tip over. Components can be damaged if the bike tips over. If your bike is not equipped with a kick stand, one can be fitted if required. Please contact your cycle dealer.

Do not clean the pedelec with a water hose or high pressure washer. Although the components are sealed, damage to the cycle may still result. Clean the pedelec with a soft damp cloth.

2. Protection from theft, manipulation and loss

DANGER



Protect your pedelec from unauthorised access. Serious injury may result if third parties modify components (e.g. the brakes) without your knowledge. Inspect your pedelec before every trip, and after each time it has been transported anywhere or left unattended ⇒ [4. Before every trip Page EN-34](#). If your bike is damaged, only ride it again once the damage has been rectified. Your bike will not be replaced under warranty if lost or stolen.

The following measures can help you to protect your pedelec from theft and manipulation and to recover it if it has been stolen:



Always lock the bike and battery even if you leave it for a short while. Ideally, the lock(s) should block the wheel powered by the motor. Do not leave the key in. To be on the safe side, you can also remove the battery. A pedelec must also be secured with a lock when parked outside residential areas (e.g. in a shed or basement).

Do not park your pedelec in deserted locations – especially for long periods. If possible, park your pedelec in private or communal garages or individual bike lockers which have surveillance.



Attach your pedelec to a fixed object (such as a tree, street lamp or fence) so that it cannot be carried away.

Quick-release wheels should be attached to a fixed object together with the frame. This prevents the wheel from being stolen. Alternatively, the quick-release levers can be replaced by an anti-theft device. Contact your cycle dealer if you have questions on this.

Use a high-quality bike lock. Invest about 10% of the purchase price of the bike in locks. Your cycle dealer will be able to fit a suitable frame lock if your bike does not already have one. You can also use other types of bike lock. Ask your cycle dealer for advice.

Make a note of the important details of your pedelec (e.g. in the service book ⇒ [II.III Service book Page EN-6](#), bike passport) and have it registered by the police. This makes it easier to describe and identify if stolen.



Have the police code your pedelec; the address and initials of the owner are engraved on the frame in an encrypted form. Coding makes the illegal resale of a bike more difficult and deters thieves. A coded bike also makes it easier to identify the owner.

Bicycle theft is often covered by household contents insurance. Check the terms of your insurance policy as soon as possible.

3. Before your first ride

Make sure that your pedelec is adjusted to your height and ready to use. Familiarise yourself with the basic functions of your pedelec.

DANGER



Ask your cycle dealer to show you how to use, and explain, the special features of the pedelec and its components. Please also follow the component guides. We recommend having your cycle dealer perform all assembly and adjustment work. Otherwise components could become loose due to incorrect assembly. If this happens whilst you are cycling, you could injure yourself very seriously or even die. If you do have to tighten something yourself, a full list of torque settings is in Section ⇒ [12. Torque settings Page EN-99](#) (strict adherence to which is a requirement).

DANGER



Adjusting the pedelec to your height. If the bike is not correctly adjusted to your height, you can lose control of the bike and fall badly.

Practise braking and riding with the assist function in a safe place before venturing into traffic. If you do not familiarise yourself with the operation and higher speed of your pedelec, you could cause a serious accident. Ride in ECO mode until you feel confident enough to try the higher modes ⇒ [6.3.4 Changing assist mode Page EN-48](#). Dismount if you ever feel unsafe.

3.1 Attaching the pedals

1. Screw the right-hand pedal (marked 'R') into the right-hand pedal crank in a clockwise direction.
2. Screw the left-hand pedal (marked 'L') anticlockwise into the left-hand pedal crank.

DANGER



Screw the pedals in straight, otherwise you could damage the thread on the pedal crank; if this happens when you are cycling, a severe fall could result.

3. Tighten both pedals towards the front wheel to a torque of 40 Nm.

3.2 Adjusting the saddle height

3.2.1 Determining the correct saddle height

1. Sit on the pedelec and at the same time lean against a wall.
2. Turn the foot pedal on the opposite side to the wall to its lowest point.

3. If your leg is not fully extended when your heel is on the pedal, raise the saddle. Lower the saddle if you cannot reach the pedal. The following sections explain how to adjust the saddle height on your bike. The seatpost can be fastened using the saddle clamp ⇒ [3.2.2 Adjusting the saddle height: Saddle clamp\(s\)* Page EN-16](#) or quick-release lever ⇒ [3.2.3 Adjusting the saddle height: Quick-release skewer* Page EN-16](#).



For 3. Extend leg

WARNING



Seatpost marking

The seatpost is marked to indicate how far you may pull it out from the frame. Never pull the seatpost further out than the marking. This could cause it to bend or break, and cause you to fall.

3.2.2 Adjusting the saddle height: Saddle clamp(s)*

1. Undo the saddle clamp(s) by turning it/them anticlockwise with an Allen key.
2. Move the seatpost into the right position.
3. Tighten the saddle clamp(s) again by turning it/them clockwise ⇒ [12. Torque settings Page EN-99](#).
4. Test the tightness of the saddle by trying to move it.



For 1. Loosen seat clamp(s)



For 3. Tighten seat clamp(s)

3.2.3 Adjusting the saddle height: Quick-release skewer*

DANGER



The quick-release skewer must be correctly closed before you set off. Otherwise the seatpost can loosen or fracture – if that happens while you are riding the bike you could fall off, resulting in serious injuries.

1. Open the quick-release skewer by swinging the lever by 180°. You will now usually be able to see the word 'OPEN' on the inside of the lever.



For 1. Quick-release skewer open

*dependent on model

2. Close the quick-release skewer by swinging the lever by 180°. You will now usually be able to see the word 'CLOSE' on the outside of the lever.



For 2. Quick-release skewer closed

DANGER

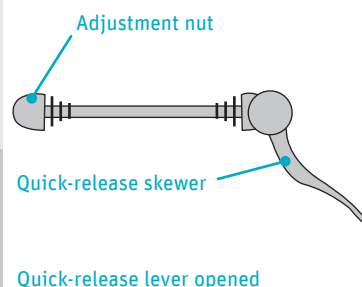
It should be so hard to close the quick-release skewer that you need to use the balls of your hands (120 N: corresponds to a weight force of 12 kg). You should have the mark of the lever imprinted on your hand. Otherwise, it could open when you are cycling, which could lead to the seatpost coming loose and causing you to fall. If you close the quick-release skewer too tightly, the seatpost can break; if this happens when you are cycling, you could fall. For 3. Extend leg

Quick-release skewer is too easy to close

1. Turn the adjustment nut clockwise.
2. Swing the quick-release lever closed again.

Quick-release skewer is too stiff to close

1. Turn the adjustment nut anticlockwise.
2. Swing the quick-release lever closed again.



3. Try to twist the saddle to check that it is firmly fixed.

3.3 Shifting and tilting the saddle

DANGER



Never clamp the saddle in the curve of the saddle rail; always do it in the straight section. Only shift the saddle within the straight section (fig. 1). Saddles that stay clamped outside this area can fail (fig. 2).



Fig. 1



Fig. 2

Use a torque wrench to tighten the clamping screws. Observe the specified torque setting. If no value is shown on the component, use the torque settings from the following table:

Thread	Tightening torque [Nm]
M5 / M6 / M7 / M8	M5: 5 / M6: 10 / M7: 14 / M8: 22

Failure to comply can result in screws/bolts becoming loose, tearing away or fracturing. If that happens while you are riding the bike, components may come off and you could have a severe crash. If screws are overtightened, components can also be damaged.

3.3.1 Screw supports: Shifting and tilting the saddle

1. Loosen the clamping screw by turning it anticlockwise. Turn the screw completely two to three times at most or the whole mechanism could fall apart.
2. Move the saddle backwards or forwards as required.
3. Tilt the bicycle saddle to the desired angle.
4. Tighten the clamping screw by turning it clockwise with a torque wrench.
5. Ensure that the newly-tightened saddle does not tip; test it by pressing down on the front and back alternately.



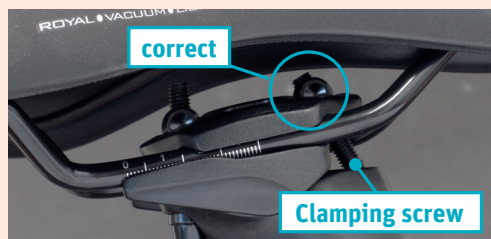
For 1. Loosen the clamping screw

3.3.2 Twin-screw supports: Shifting and tilting the saddle

DANGER



Screw the clamping screws fully in a straight position in the nuts. Failure to do so can result in the screws tearing out of the nuts.



1. To move the saddle, loosen the front and rear screws by turning them anticlockwise. Turn the screws completely two to three times at most or the whole mechanism could fall apart.



For 1. Loosen screws

2. Move the saddle backwards or forwards as required.
3. Tighten the screws using a torque wrench to turn them clockwise.
4. To alter the angle of the saddle, loosen the front screw by turning it anticlockwise. Turn the screw completely two to three times at most or the whole mechanism could fall apart.
5. Tighten the front screw by the same number of turns.
6. Ensure that the newly-tightened saddle does not tip; test it by pressing down on the front and back alternately.

3.3.3 Clamp attachment: Shifting and tilting the saddle

1. Turn the clamping nut clockwise to loosen it. You may need to keep the nut on the other side in place with a second key.
1. Move the saddle backwards or forwards as required.



For 1. Loosen clamping nut

2. Tilt the bicycle saddle to the desired angle.
3. Turn the clamping nut clockwise to tighten it. You may need to keep the nut on the other side in place with a second key. Observe the correct torque setting.
4. Ensure that the newly-tightened saddle does not tip; test it by pressing down on the front and back alternately.

3.4 Adjusting the sprung seatpost

DANGER



It is best to ask your cycle dealer to adjust the suspension elements of the seatpost.

1. Remove the seatpost.
2. Tighten the suspension adjustment screw with an Allen key (6 mm AF) in the clockwise direction to reduce the suspension or loosen anticlockwise to increase the suspension.

DANGER



The suspension adjustment screw must not protrude from the seatpost, otherwise the screw/seatpost can loosen – if this happens while riding you could fall off, resulting in serious injuries.



Suspension adjustment screw

Screw must not protrude from the seatpost

3.5 Adjusting the height and angle of the handlebars



DANGER

Ask your cycle dealer to perform these adjustments. You can otherwise run the risk of loosening the handlebars which could lead to a fall causing severe injuries.

3.6 Switching the lights on and off*

A slider control is located on the rear of the front light. Depending on which way you move it, the front and rear light will be on or off when you are riding.

*dependent on model

3.7 Braking

Make sure that you can always reach the brakes comfortably and that you are familiar with their operation and position. Note which brake lever operates the front and rear brakes. If your pedelec is fitted with a back pedal or coaster brake, you can operate it by pedalling backwards.

DANGER



Practise braking in a safe place before venturing into road traffic.

In some instances, the braking effect can be different or stronger than what you are used to. If you do not take the time to familiarise yourself with the braking effect, you could cause a serious accident. Practise until you feel safe. Dismount if you ever feel unsafe.

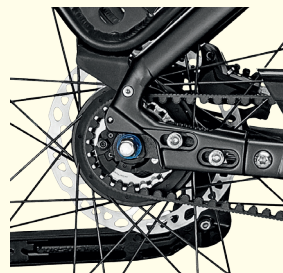


Rim brake

Rim brakes: Avoid continual, uninterrupted braking on long downhill stretches because it causes the braking effect to diminish and/or tyre damage. Brake intermittently with intervals in between to allow the airflow to cool the braking system. If necessary, make regular stops to ensure adequate cooling.

Replace the brake pads when they reach the safe wear limit. Using worn brake pads can result in serious injuries with fatal consequences.

CAUTION



Disc brake

Disc brakes: Avoid touching the brake discs after intensive use of the brakes - they can become very hot. You could burn yourself if you touch them.

3.8 Chain*



Bicycle chain

WARNING



Always remove the battery before starting work on the pedelec. The cycle could switch on without warning and you could be seriously injured.

CAUTION



Check the chain for signs of wear before every trip. A worn or damaged chain can break. If this happens while you are riding the bike, you can easily injure yourself.

3.8.1 Measuring and adjusting the chain tension

Measuring the chain tension

1. Remove the pedelec battery.
2. Press the chain up or down at its tautest point. The tension is correct if you can move the chain up and down by about 5 mm.
3. Check the chain at four or five points over a complete revolution of the crank.

Adjusting the chain tension

1. Remove the pedelec battery.
2. Undo the rear wheel nuts.
3. Remove the brake anchor as required.
4. Pull the rear wheel back in the drop-outs until the chain just has the permissible amount of play.
5. Carefully tighten all bolts in a clockwise direction to a torque setting of 35 – 40 Nm. Make sure the wheel is refitted straight.

3.8.2 Checking for chain wear

1. Remove the pedelec battery.
2. Check chain wear with a chain wear indicator or vernier calliper.
3. Replace the chain if it is worn.

3.8.3 Chain cleaning and maintenance



Lubricate the chain after riding in the rain. Clean and lubricate it when you clean the wheel.

1. Remove the pedelec battery.
2. Brush the chain coarsely with a hand brush.
3. Then remove the old chain oil with a dry cloth.
4. Now you can oil the chain. Follow the application instructions from the chain oil supplier.
5. When you have finished, turn the crank to distribute the chain oil.

3.9 Belt*



Bicycle belt

WARNING



Always remove the battery before starting work on the pedelec. The cycle could switch on without warning and you could be seriously injured.

CAUTION



Check the drive belt for signs of wear before every trip. A worn or damaged drive belt can break. If this happens while you are riding the bike, you can easily injure yourself.

IMPORTANT



Do not kink, twist, bend backwards, turn over, knot or bind together the belt. Doing so can damage it beyond repair.

3.9.1 Belt tension

Measuring the belt tension

There are various ways to measure the tension of the drive belt. One of these is the Carbon Drive app, which measures the tension based on the natural frequency (Hz) of the belt length.

Smartphone operating system	Download
iOS	http://www.gatescarbondrive.com/CDS/Products/ACCESSORIESANDTOOLS
Android	



The Carbon Drive app works best in a quiet environment.

1. Remove the pedelec battery.
2. Load the app on to your smartphone.
3. Start the app.
4. Select the tension icon.
5. Switch on the microphone, click “Measure” and hold the phone over the middle of the belt making sure that the microphone is pointing towards the belt.

6. Pluck the belt so that it vibrates like a guitar string. The app converts the sound into the natural frequency of the belt.
7. Turn the crank a quarter of a revolution and repeat the measurement.
8. Compare the frequency of the belt with the reference value to see if the tension needs adjusting.

Specified tension values	Short, light rider	Tall, heavier rider
Hub gear	50 Hz	60 Hz

Adjusting the belt tension

1. Remove the pedelec battery.
2. Undo the bolts from the drop-out by turning them anticlockwise.
3. Increase or reduce the tension with the set screw. Make sure the wheel is refitted straight.

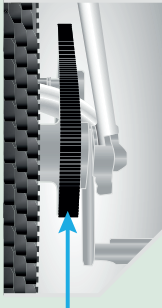


For 2. Loosen screws

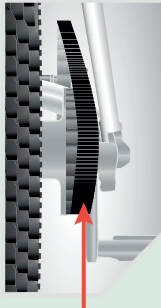


For 3. Set screw

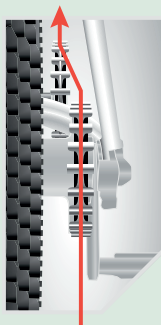
IMPORTANT



Correct alignment



Sprockets are not aligned correctly

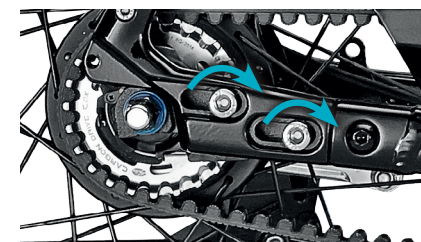


Sprockets are not aligned correctly

When adjusting the tension, the correct alignment of the belt must be maintained. Otherwise it can cause noise, premature wear of the belt or sprocket, and the belt to come off the drive.

Fig.: Gates Corporation: Gates Carbon Drive User Manual. 2014, Page 13.
URL: <http://www.gatescarbondrive.com/Tech/Resources> (as of 07/01/2016)

4. Tighten the drop-out screws to a torque setting of 16 - 20 Nm in a clockwise direction ⇒ [12. Torque settings Page EN-99](#).



For 4. Tighten screws

3.9.2 Checking the belt for wear

1. Remove the pedelec battery.
2. Check the belt for wear.

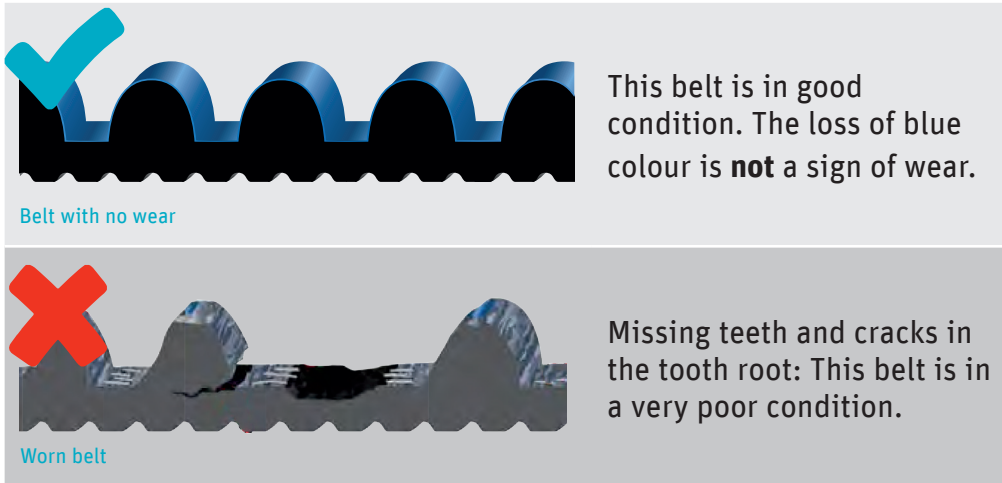


Fig.: Gates Corporation: Gates Carbon Drive User Manual. 2014, Page 14.
URL: <http://www.gatescarbondrive.com/Tech/Resources> (as at 07/01/2016)

3. When the safe wear limit has been reached, the belt must be replaced.



When the middle guide on the sprocket is more worn on one side than the other, this is a sign of a poorly adjusted belt line. On black anodized front sprockets, this is relatively easy to see because the anodizing on the abrasive side is worn down to the aluminium.

3.9.3 Cleaning the belt

1. Remove the pedelec battery.
2. Clean the belt with a soft, damp cloth.

IMPORTANT



When you are cleaning the belt, ensure that no water enters the motor. Water ingress can damage the motor beyond repair.

3. Leave it to dry.

3.10 Gears

The gears are operated by controls on the handlebars (gear lever, twist grips, buttons, ...). The gear shift allows you to adjust the gears of your bicycle, and so the transmission, to current riding conditions. On a straight level stretch, a higher gear is sensible to achieve and maintain a higher speed without having to pedal too much. As soon as you start going uphill, a lower gear is beneficial because it is important to be able to climb the hill with little effort. Select the gears so that your legs are always moving at a steady pace.



If your pedelec has an FAG electronic shift unit, you can set from the menu the gear in which you want to start off following every next stop ⇒ [3.10.1 FAG electronic shift unit](#)
[Page EN-25](#).

Derailleur*

This system lifts the chain on to a sprocket when the gear is changed. The chain must continue moving so that the teeth of the sprocket can engage with the chain links easily and smoothly. For a successful gear change, therefore, you must keep pedalling forwards, never backwards – but at the same time pedal lightly without force.



Derailleur

Hub gear*

Here the change of gear takes place inside the rear wheel hub. Space is very tight inside the hub, so it is sensible to pedal lightly when changing gear.



Hub gear

3.10.1 FAG electronic shift unit

IMPORTANT



Retrofitting onto an unsuitable frame is not recommended.

The FAG shift unit is an electronic cycle shifter. It comprises a switch actuator and a communication module. On the Impulse Evo RS system, the switch actuator is in the down tube and the communication module on the motor holder. The switch actuator uses a shift cable to perform the mechanical movement at the cycle shifter connected.

*dependent on model

3.10.1.1 Technical details

Switch actuator

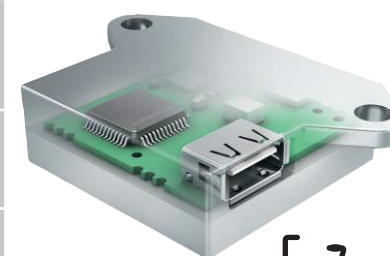
Power supply	24V / 36V
Power consumption	Testing < 10 mA
	Shift process < 800 mA
Shift speed	150 mm/s
Tension	Maximum 100 N
Length	203.5 mm
Diameter	25 mm
Protective class in fitting	IP54



Position on pedelec

Communication module

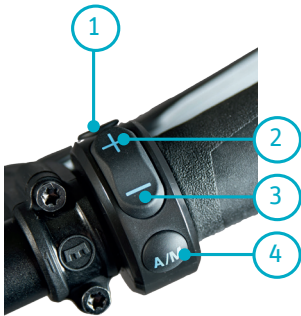
Nominal voltage	5V to 7V
Standby current	0.038 A
Protection class	IP54
Weight	2 g



Position on pedelec

3.10.1.2 Basic functions

Easy-reach control



No.	Symbol	Function
1		"Activate shift unit" menu option
2		Increase value
3		Decrease value
4		Shift mode setting A = Automatic mode M = Manual mode



The electronic shifter is powered from the pedelec battery. When this battery is flat, shifting is no longer possible. Enabling the light reserve [⇒ 6.4.3.14 Light reserve Page EN-62](#) is recommended so that it is still possible to shift once the motor has run down.

Display



automatic mode



manual mode

3.10.1.3 Shift unit: Shift strategy

Path: Settings | Device settings | Shift unit | Shift strategy

1. Navigate to the "Shift strategy" menu as described in [⇒ 6.4.1 Configuring settings in the main menu Page EN-51](#).

Start

It is possible here to select a start gear which is set automatically when switching from riding to a standstill (such as stopping at traffic lights). If you select "2" for example, the shifter switches to second gear - provided you were in a higher gear before. Manually shifting down when starting off is not required when a start gear is activated.

2. You can select between different start gears and setting "Off" (no start gear):

1	2	3	4	5	6	7	Off
1st gear	2nd gear	3rd gear	4th gear	5th gear	6th gear	7th gear	No gear

*The number of gears displayed depends on the gear shifter you have.

3. Select the required option using the \oplus/\ominus buttons. The selection is highlighted.
4. Confirm your selection by briefly pressing the \odot button. You return to column "Top Gear at".

Top Gear at

Here you can select the speed at which the shift (in the automatic mode) should shift to the highest gear.

20 km/h	22 km/h	24 km/h	26 km/h	28 km/h	30 km/h	32 km/h
---------	---------	---------	---------	---------	---------	---------

5. Select the required option using the \oplus/\ominus buttons. The selection is highlighted.
6. Confirm your selection by briefly pressing the SET button. You return to sub level 3.



For sporty riders, who feel comfortable with higher cadence, we recommend the adjustment range 28 to 32 km/h. Cyclists who prefer lower tread frequencies feel the most comfortable at speeds of 20 to 26 km/h

3.10.1.4 Shift unit: Shifter adjustment

Path: Settings | Device settings | Shift unit | Shifter adjustment

The electronic shifter works with a gear cable. This cable can easily stretch over its life, or needs to be readjusted after being renewed. You can perform fine adjustment of the tension in “Shifter adjustment”.

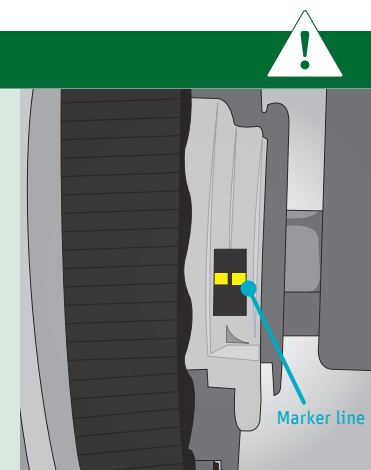
1. Navigate to the “Settings” menu as described in [⇒ 6.4.1 Configuring settings in the main menu Page EN-51](#).
2. You can choose between:

-2.50 mm	-2.00 mm	-1.50 mm	-1.00 mm	-0.50 mm	0.00 mm	0.50 mm	1.00 mm	1.50 mm	2.00 mm	2.50 mm
----------	----------	----------	----------	----------	---------	---------	---------	---------	---------	---------

3. Select the required option using the \oplus/\ominus buttons. The selection is highlighted.
4. Confirm your selection by briefly pressing the SET button. You return to sub-level 3.

IMPORTANT

The shifter is adjusted correctly when the two yellow marker lines line up exactly. Whether this is so, you can fix in the adjustment gear (mostly the 4th gear). If the adjustment range is too short, i.e. it is not possible to line up the two yellow marker lines, the position of the gear hub sliding block must be moved.



3.10.1.5 Shift unit: Change shift cable

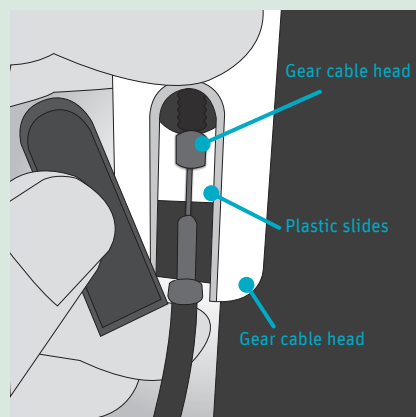
Path: Settings | Device settings | Shift unit | Change shift cable


This function must only be used when the gear cable needs to be replaced. In this case the shifter actuator moves to its gear cable replacement position. Please read the instructions on the display.

IMPORTANT



Make sure the gear cable head is fully pressed into the white plastic slide groove provided.





1. Navigate to the “Gear cable replacement” menu option as described in [⇒ 6.4.1 Configuring settings in the main menu Page EN-51](#).
2. The following text is shown on the display - “The shift unit is now in the gear cable replacement position. You can remove the cable and/or mechanically readjust it. Please press SET to end.”
3. Briefly pressing the  button returns you to sub-level 3.

3.10.1.6 Shift unit: Slope sensor

Path: Settings | Device settings | Shift unit | Slope sensor

The Slope sensor detects whether the pedelec drives uphill or downhill and adjusts the circuit. If different components have been installed on the front and rear wheel, recalibration may be required. To do this, follow these steps:

1. Navigate to the “Slope sensor” menu as described in [⇒ 6.4.1 Configuring settings in the main menu Page EN-51](#).
2. The following text is shown on the display: "Please bring bike into straight position. Start calibration?".
3. Select the No or Yes by using the / buttons. The selection is highlighted. You return to sub-level 3.



The calibration process takes about one second to complete with return to the menu. Keep the pedelec in the upright position for this period.

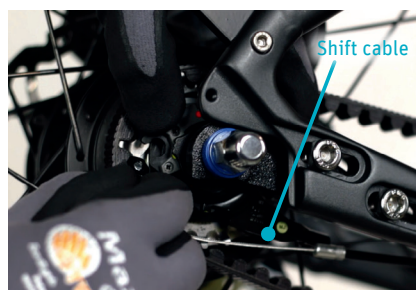
3.11 Wheel

3.11.1 Changing the wheel

3.11.1.1 Axle nut*

Removing the rear wheel

1. Remove the pedelec battery.
2. Change the gear to the one recommended by the gear manufacturer for disassembly.
3. Remove the gear shift cable from the rear wheel.
4. Undo the axle nuts using a 15 mm spanner, turning anticlockwise.
5. Take off the belt/chain.
6. Remove the rear wheel.



For 3. Remove shift cable from rear wheel



For 4. Undo axle nuts

Replacing the rear wheel

1. Attach the belt/chain.
2. Insert the rear wheel centrally in the drop-outs as far as it will go.
3. Re-attach the gear shift cable.
4. If necessary, fasten the brake anchor.
5. Tighten the axle nuts using a 15 mm spanner, turning clockwise.
6. Reinsert the battery.

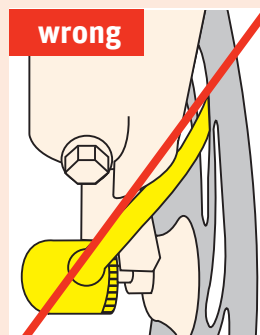
*dependent on model

3.11.2 Quick-release wheels*

DANGER



wrong



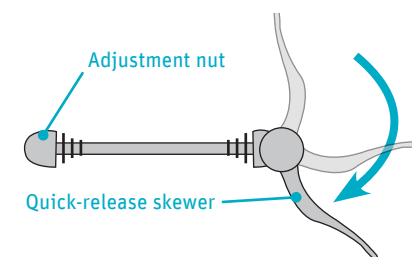
Quick-release skewer and brake disc collide

Front wheel: The quick-release lever must be positioned on the opposite side to the brake disc (where fitted). If the quick-release lever is on the same side as the brake disc, there is a risk that they can clash and lock the front wheel (see diagram), which can cause a serious accident.

All quick-release systems must be correctly tightened before you set off. Otherwise the components can loosen – if that happens while riding you could fall off, resulting in serious injuries.

Removing the front wheel

1. Remove the pedelec battery.
2. Open the axle lever by folding it by 180°. You will now usually be able to see the word 'OPEN' on the inside of the lever.
3. Undo the adjustment nut by turning it slightly **anticlockwise**.



For 2. Open the quick-release skewer

IMPORTANT



Detach all cables from the wheel (e.g. lighting cables), otherwise you could tear them.



If your bike is fitted with rim brakes it is sensible to release them before you remove the front wheel. Otherwise you may not be able to remove the front wheel.

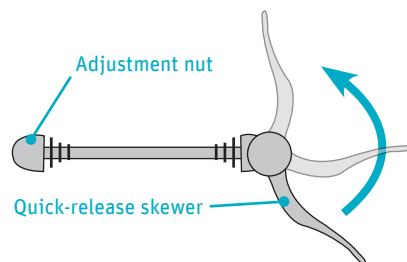
4. Remove the front wheel.

Replacing the front wheel

1. Insert the wheel into the front fork ends.

2. Gently turn the adjustment nut on the quick-release lever in a **clockwise** direction.

3. Close the quick-release skewer by swinging the lever back 180°. You will now usually be able to see the word 'CLOSE' on the outside of the lever.



For 3. Close the quick-release skewer

DANGER



It should be so hard to close the quick-release skewer that you need to use the balls of your hands (120 N: corresponds to a weight force of 12 kg). You should have the mark of the lever imprinted on your hand. Otherwise it could open when you are cycling, which could lead to the wheel becoming loose and cause you to fall.

Quick-release skewer is too easy to close

1. Open the quick-release skewer.
2. Turn the adjustment nut **clockwise**.
3. Swing the quick-release lever closed again.
4. Repeat if necessary.

Quick-release skewer is not easy to close

1. Open the quick-release skewer.
2. Turn the adjustment nut **anticlockwise**.
3. Swing the quick-release lever closed again.
4. Repeat if necessary.



Quick-release skewers cannot be closed by simply turning the lever.

DANGER



If you have released the rim brakes to remove the wheel, you must close them again, otherwise you will not be able to brake and run the risk of serious injury.

WARNING

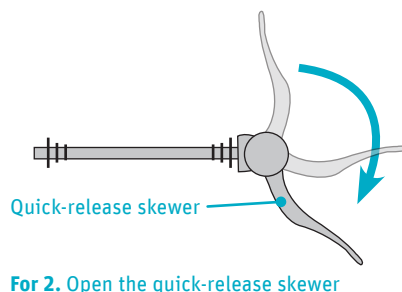


Reattach any cables disconnected before (such as light cables), otherwise they can get caught in the spokes. If that happens while you are riding the bike you could be thrown off and seriously injured.

3.11.3 Quick-release axle*

Removing the front wheel

1. Remove the pedelec battery.
2. Open the quick-release lever on the front wheel by turning it down 180°. You will now usually be able to see the word 'OPEN' on the inside of
3. the lever.
4. Hook the quick-release lever into the slot and turn it anticlockwise until the quick-release axle protrudes from the axle hole about 1 cm.
5. Lift out the front wheel and remove the quick-release axle.



IMPORTANT



Detach all cables from the wheel (e.g. lighting cables), otherwise you could tear them.

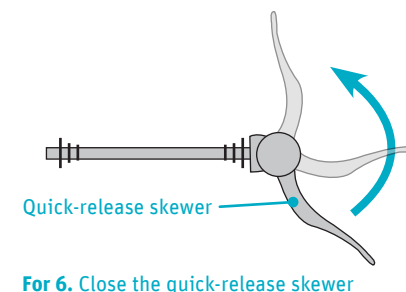


If your bike is fitted with rim brakes you must release them. Alternatively, you can deflate the front tyre. Otherwise you may not be able to remove the front wheel.

6. Remove the front wheel.

Replacing the front wheel

1. Apply a thin layer of grease to the quick-release axle.
2. Push the wheel into the front forks and align with the axle holes.
3. Reinsert the quick-release axle.
4. Move the quick-release lever to the open position.
5. Hook the quick-release lever into the slot and turn it clockwise. This will screw the axle in the thread. Ensure that the wheel is correctly centred.
6. Close the quick-release skewer by swinging the lever back 180°. You will now usually be able to see the word 'CLOSE' on the outside of the lever.



DANGER



It should be so hard to close the quick-release skewer that you need to use the balls of your hands (120 N: corresponds to a weight force of 12 kg). You should have the mark of the lever imprinted on your hand. Otherwise it could open when you are cycling, which could lead to the wheel becoming loose and cause you to fall.

*dependent on model

Quick-release skewer is too easy to close

1. Open the quick-release skewer.
2. Hook the quick-release lever into the slot and turn it clockwise. This will screw the axle in the thread. Make sure that your wheel is correctly centred.
3. Close the quick-release skewer.
4. Repeat if necessary.

Quick-release skewer is not easy to close

1. Open the quick-release skewer.
2. Hook the quick-release lever into the slot and turn it anticlockwise until the quick-release axle protrudes from the axle hole about 1 cm.
3. Close the quick-release skewer.
4. Repeat if necessary.

WARNING

Reattach any previously disconnected cables (e.g. lighting cables), otherwise you could tear them.

3.11.4 Rims

Wear

WARNING

Look out for deep grooves on both rims. The rims could fracture and cause a fall. Replace rims as soon as you detect signs of wear. Many rims have a wear indicator. If it can no longer be felt at a certain point, the rim is worn.



Cleaning

1. Remove the pedelec battery.
2. Brush the rims with a hand brush. Heavier soiling can be removed with a soft, damp cloth.

IMPORTANT

When you are cleaning the rims, make sure that no water gets into the motor. Water ingress can damage the motor.

3. Leave to dry.

3.11.5 Tyres

DANGER



Do not either overinflate or underinflate the tyres. If the air pressure is too high, this could lead to a worst-case scenario of the tyres bursting and you could fall. On the other hand, if the air pressure is constantly too low, the tyre can wear prematurely. The maximum permissible pressure is marked on the side of the tyre in bar and psi (pounds per square inch). You can measure the tyre pressure yourself by using a tyre gauge. Alternatively, you can contact your cycle dealer.

3.12 Suspension fork*

The suspension forks support the front wheel.



The distance travelled by the wheel between its unloaded and fully loaded positions is called the total suspension travel.


Make of suspension fork	Fork type	Total suspension travel
Fox	32 Float Evo	120 mm
Fox	32 F CTD	120 mm
Postmoderne	HG141	45 mm
RST	Pulse	50 mm
RST	Verso 3	50 mm
Sram	Recon Silver	100 mm 120 mm

*dependent on model


Make of suspension fork	Fork type	Total suspension travel
Sram	Reba RL	100 mm 120 mm
Sram	XC 32 TK	120 mm
Sram	XC	100 mm
Suntour	XCR Air	120 mm
Suntour	XCR	100 mm
Suntour	CR85	63 mm
Suntour	NCX-D	63 mm
Suntour	NEX	63 mm
Suntour	CR-8V	50 mm
Suntour	CR-7V	40 mm

Model year 2015/2016 Version 18/12/2015

3.12.1 Lockout system

If your suspension forks are fitted with a lockout system, it is possible to lock the suspension. There are some riding situations where that can be useful: for example, if you are riding up a hill or if you are standing up from the saddle when accelerating. To switch the suspension to fixed, turn the rotary control on the right-hand side of the fork to 'LOCK' (or alternatively: ). To reactivate the suspension, turn the control to the 'OPEN' position.



LOCK/ 	Suspension locked
OPEN	Suspension activated

DANGER



Do not ride over rough terrain with the suspension locked. It can damage the suspension forks. A broken fork could cause you to fall off and seriously injure yourself.

3.12.2 Air system*

On some suspension forks it is possible to alter the air pressure. You will need assistance from your cycle dealer to do this, or if you feel confident of doing it yourself, a suspension fork pump with a pressure gauge and the suspension fork manufacturer's installation manual. The valve with cap (e.g. marked 'AIR') is usually located on the left-hand side of the fork.



4. Before every trip

DANGER



Replace any damaged (e.g. cracks, grooves) or bent components before using the bike again. Not doing so can lead to essential parts failing and cause a serious fall.


Do not use the bike if it is not in perfect technical condition. If you are unsure, ask a cycle dealer to check it over.

We recommend asking your cycle dealer to assemble and adjust the bike. Otherwise, components could become loose due to a faulty assembly. If this happens whilst you are cycling, you could injure yourself very seriously or even die.

Inspect your pedelec before every trip, and after each time it has been transported anywhere or left unattended. Use the following checklist to help you.

Checklist

Type	Characteristics
Frame / forks	Check the frame and forks for visible warping, cracks and damage.
Handlebars / front stem	Check they are seated securely. Check that the bell is working and attached correctly and securely.
Saddle / seatpost	Check that the quick-release skewers / through-axles (if available) are secure.

Type	Characteristics
Wheels	Check the condition (damage, foreign bodies), concentricity and pressures of the tyres.
	 The maximum permissible pressure is marked on the side of a tyre in bar and psi (pounds per square inch). Tyres should not be inflated above or below this pressure.
	Check the valves are seated securely.
	Visually inspect the rims for damage and wear.
	Check that the quick-release skewers / through-axles (if available) are secured correctly.
Chain or belt	Check the chain, belt, pinions and sprockets for wear and damage.
Brakes	Check that the brake system (including brake levers) is working and attached correctly and securely.
	Visual inspection of the brake pads/disks.
Lights	Check that the light system is adjusted and in working order.
	Check that reflectors are affixed in accordance with applicable national traffic regulations.
Threaded joints	Check that all threaded joints are tightened as specified.
Luggage	Check it is attached securely.

5. Quick-start guide

5.1 Charging the battery



If you only want to go for a quick test run, you do not need to charge the battery. You should charge it before your first longer cycle ride however, ⇒ [10.3.1 Charging a battery Page EN-90](#), because the battery is only partially charged (production regulations dictate that batteries are supplied partially charged by approx. 50 %).

IMPORTANT



Perform a ‘learning cycle’: You should completely run down a new, **fully** charged battery once until the drive assistance stops and without recharging it in between. In that way, the battery ‘learns’ its capacity, and the actual capacity will agree with the level indicated on the battery status display. As soon as the battery enters Sleep mode, press the battery button for one second. Then the learn cycle can be continued. Please perform a learn cycle every six months or 5,000 kilometres. If you do not repeat this from time to time, the actual capacity of the battery will increasingly diverge from the value on the battery status display.

5.2 Inserting and locking into place a battery

PLEASE NOTE



Hold the battery tight so it does not fall. It might be damaged otherwise.

1. Grip the battery with both hands and hold it to the left of the docking station. Ensure that the battery charge level display is pointing towards you.



2. Place the battery catches into the dents provided.



3. Roll the battery into the docking station until it clicks into place.



4. Turn the battery key clockwise. Now the battery is locked.



IMPORTANT



The recommendation is to remove the key now and keep it in a safe place so it does not break off and is not lost.




Make a note of the key number on the sales receipt or proof of purchase. You can order a replacement with this number if you lose the key ⇒ [11.2 Battery Page EN-96](#).

5.3 Switching on the pedelec



Do not switch on the pedelec when you are riding. Otherwise the motor can stop and you will not be provided with the full assist level.

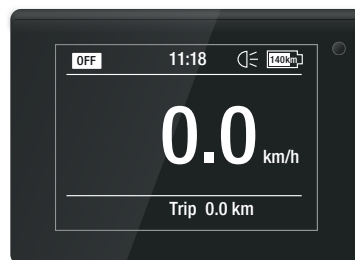
1. Press the  button on the easy-reach control for one second. The display light turns on. On the Impulse Evo (Smart) display, the display light goes out after about 30 seconds. The cycle light also switches on. A welcome message appears in the information field of the display. If you have an Impulse Evo RS system with back pedal, “Please pedal” is shown. You can configure other settings from the start menu.



Press the  button




Impulse Evo (Smart) display: Start menu



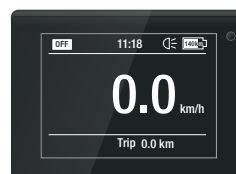
Impulse Evo Smart Compact display: Start menu



If the system does not switch on despite pressing the  button, press the battery button for one second. The pedelec switches on. If it still does not switch on, check the battery → [9.3.1 Display panel Page EN-82](#).



5.4 Battery charge level and remaining range








The battery charge level and remaining range are shown in the top of the display. A battery-shaped icon shows the remaining range, telling you how long the Impulse Evo system can continue to assist you. The lower the battery charge level, the shorter the part in the battery. The range also shows a lower value. When the charge level of the battery falls below a minimum, the motor also cuts out the assist.



High battery charge level and long remaining range



Low battery charge level and short remaining range

Symbol	Battery charge level
	100 – 75%
	74 – 50%
	49 – 25%
	24 – 10%
	0%



Measurements are taken whilst the cycle is being ridden. The display calculates from the readings of the last 20 kilometres ridden an average value. This value is then used as the basis for the remaining range. So the remaining range displayed is heavily dependent on the riding style over the last 20 kilometres.

5.5 Changing assist mode

1. You must be in the start menu to change the assist mode. Select the level of assist you require by briefly pressing the ⊕/⊖ buttons.

Display	Assist	Power consumption
ULTRA*	Assist function is working with maximum power	Very high
POWER	Assist function is working hard	High
SPORT	Assist is working with medium power	Medium
ECO	Assist is working with low power	Low
OFF	No assist	Very low

2. Assist starts working as soon as you start pedalling. Assistance is deactivated as soon as you stop pedalling or you reach a speed of 25 km/h.

Impulse Evo (Smart) display

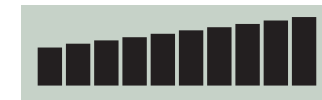
Underneath the assist level selected is a display area showing the current assist level from the drive unit in the form of ten bars having increasing heights. The more bars are dark, the higher the assist level being provided. This display is only shown when an assist mode is selected.



The drive unit is not assisting



The drive unit is providing medium assist



The drive unit is providing maximum assist

5.6 Enabling push assist

WARNING



Push assist may only be used when pushing the pedelec. Otherwise you could seriously injure yourself. Push assist is not designed to provide assistance when someone is sitting on the pedelec. On back pedal models the pedal crank also turns.

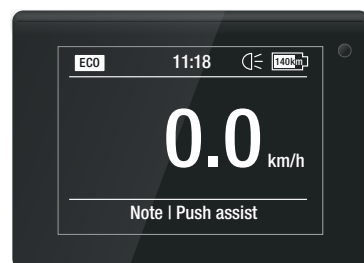


Push assist helps you when pushing the bike (up to max. 6 km/h). This is particularly helpful when you want to push your pedelec uphill.

1. Press and hold the ⊕ button. The push assist is activated after three seconds. A warning is sounded at the same time on the Impulse Evo (Smart) display. **Note (1/1)** **Push assist** or **Note | Push assist** is shown. Keep the button pressed until you no longer need push assist.



Impulse Evo (Smart) display:
Push assist activated

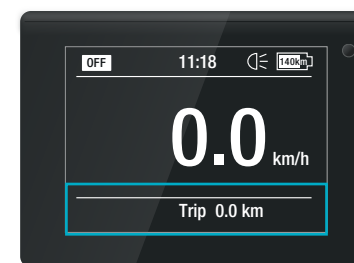


Impulse Evo Smart Compact display:
Push assist activated

5.7 Displaying favourite settings



Impulse Evo (Smart) display:
Favourite settings



Impulse Evo Smart Compact display:
Favourite settings

If you are in the start menu and want to change to other favourite settings proceed as follows:


1. While in the start menu, briefly press the ⊕ button. If you have selected several favourite settings in the start menu ⇒ [6.3.6.2 Impulse Evo \(Smart\) display: Preselecting favourite settings Page EN-50](#), the next favourite is now displayed.
2. Keep pressing the ⊕ button until the desired favourite setting is displayed.

5.8 Configuring settings in the main menu



You cannot configure any settings in the main menu while you are riding.

5.8.1 Accessing the main menu

1. If you are in the start menu, press the  button for three seconds: You are now in the main menu.



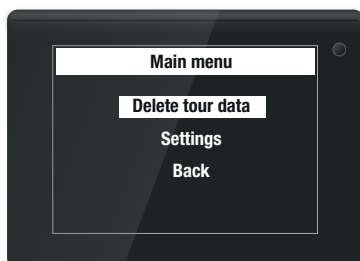
Impulse Evo (Smart) display: Start menu



Impulse Evo (Smart) display: Main menu






Impulse Evo Smart Compact display:
Start menu



Impulse Evo Smart Compact display:
Main menu




5.8.2 Navigating within a menu

1. Use the / buttons to navigate to the required option. The option selected is highlighted.
2. To confirm your selection, briefly press the  button. You will then either move to the next lowest menu level or confirm your setting.

5.8.3 Returning from a menu

There are four different ways to return to the next highest level or the start menu:


Back option

1. Use the / buttons to navigate to the “Back” option. It is highlighted when selected.
2. Confirm by pressing the  button. You return to the next highest level.

Briefly pressing the button

1. If there is no “Back” option, and one of the options displayed is selected, briefly press the  button to return to the next highest level.














Prolonged pressing of the button

1. Pressing the  button for about three seconds returns you to the start menu.



Start riding

1. The start menu is displayed as soon as you start moving.

5.9 Changing ride profile

1. While in the start menu, press the  button for three seconds. You are now in the main menu.
2. Select main menu option “Settings” using the / buttons. The option selected is highlighted.
3. Confirm by briefly pressing the  button. You are now in sub-level 1.
4. Select “Device settings” using the / buttons.
5. Confirm with .
6. Select “Drive” using the / buttons. The option selected is highlighted.
7. Confirm by pressing the  button. You are now in sub-level 2.
8. Select “Biking profile” using the / buttons. The option selected is highlighted.
9. Confirm by pressing the  button. You access the ride profiles.

Ride profile	Characteristics			
	Power on start-up	Power delivery	Maximum power	Power consumption
Relax	Low	Low	Low	Low
Regular	Medium	Medium	Medium	Medium
Dynamic	High	High	High	High

10. Use the / buttons to select the required option. It is highlighted.

11. Briefly pressing the  button returns you to sub-level 2.


5.10 Switching off the pedelec

DANGER



Only ride the pedelec when you can safely reach the brakes ⇒ [3.7 Braking Page EN-20](#). Your pedelec does not have an Emergency stop button. You must activate the brakes to stop the cycle quickly in a dangerous situation. The maximum brake force is greater than the propulsion force possible. This means stopping is guaranteed at all times by pressing the brakes. Note that the drive system does not disable automatically after braking. Switch the drive system to idle after braking.

On the easy-reach control

1. Press the  button on the easy-reach control for one second. The Impulse Evo system switches off.

Via the battery

1. Briefly press the battery button twice. The Impulse Evo system switches off after a few seconds.

5.11 Unlocking and removing the battery

IMPORTANT



Hold the battery tight so that it does not fall out of your hand. It can be damaged if you drop it.

1. Hold the battery, put the key into the battery lock and turn it anticlockwise. The battery is unlocked.



2. Hold the battery with both hands and roll it out of the docking station.



IMPORTANT



The recommendation is to remove the key now and keep it in a safe place so it does not break off and is not lost.

Hold the battery tight so that it does not fall out of your hand. It can be damaged if you drop it.

6. Drive unit, display and easy-reach control

6.1 Safety information




DANGER

Do not let yourself become distracted by the display. If you do not fully concentrate on the traffic, you risk being involved in a serious accident or fall with fatal consequences.



WARNING

Do not attempt any modifications to the drive unit. For example, it is not permitted to raise the cut-off speed above 25 km/h. Furthermore, the speed of the push assist must not exceed 6 km/h. Pedelecs with modified drive power may no longer comply with the legal requirements of their relevant country. You may be liable to prosecution if you ride on public roads with a “tuned” pedelec. There is also the risk of a technical failure. Modified bikes of this type are excluded from the warranty and guarantee.

Always remove the battery before starting to work on the pedelec. Accidental activation of the  button may lead to severe injuries.



CAUTION

Do not open the drive unit. There is a risk of electric shock. It will also invalidate any warranty claim. Only have repairs to the drive unit carried out by trained cycle dealers.

Do not touch the motor after a long downhill ride - it can become very hot. You could burn yourself if you touch it.

IMPORTANT



All components mounted on the drive unit, and all other drive components, may only be replaced with identical components or those approved specially for your pedelec by the manufacturer. Otherwise it may result in overloading and damage.

Do not open the display; you may damage it beyond repair.



At low temperatures, the display can react slowly. Observe the permitted ambient temperature range during operation of the display ⇒ [6.2 Technical details Page EN-43](#).

6.2 Technical details

Drive unit

Type	Brushless electric motor	
	Back pedal	Free-wheel
Nominal power	250 W	250 W
Nominal torque	35 Nm	35 Nm
Max. torque	80 Nm	80 Nm
Nominal voltage	36 V	36 V
Cut-off speed	25 km/h	25 km/h
Permitted ambient temperature range during operation	-10 bis +40 °C	-10 bis +40 °C
Storage temperature	-10 to +50 °C	-10 to +50 °C
Recommended storage temperature	18 to 23 °C	18 to 23 °C
Protection class	IP 54	IP 54
Weight	4 kg	4 kg

Impulse Evo display

Type	LCD display
Permitted ambient temperature range during operation	-10 bis +40 °C
Storage temperature	-10 to +50 °C
Recommended storage temperature	18 to 23 °C
Dimensions L W H D	9.4 cm 7.6 cm 2 cm 12 cm
Protection class	IP 54
Weight	127 g
Languages	DE EN NL FR ES IT FI DA

Impulse Evo Smart Compact display

Type	LCD with USB charge socket and Bluetooth
Permitted ambient temperature range during operation	-10 bis +40 °C
Storage temperature	-10 to +50 °C
Recommended storage temperature	18 to 23 °C
Dimensions L W H D	7.5 cm 5.3 cm 1.5 cm 9 cm
Protection class	IP 54
Weight	70 g
Languages	DE EN NL FR ES IT FI DA

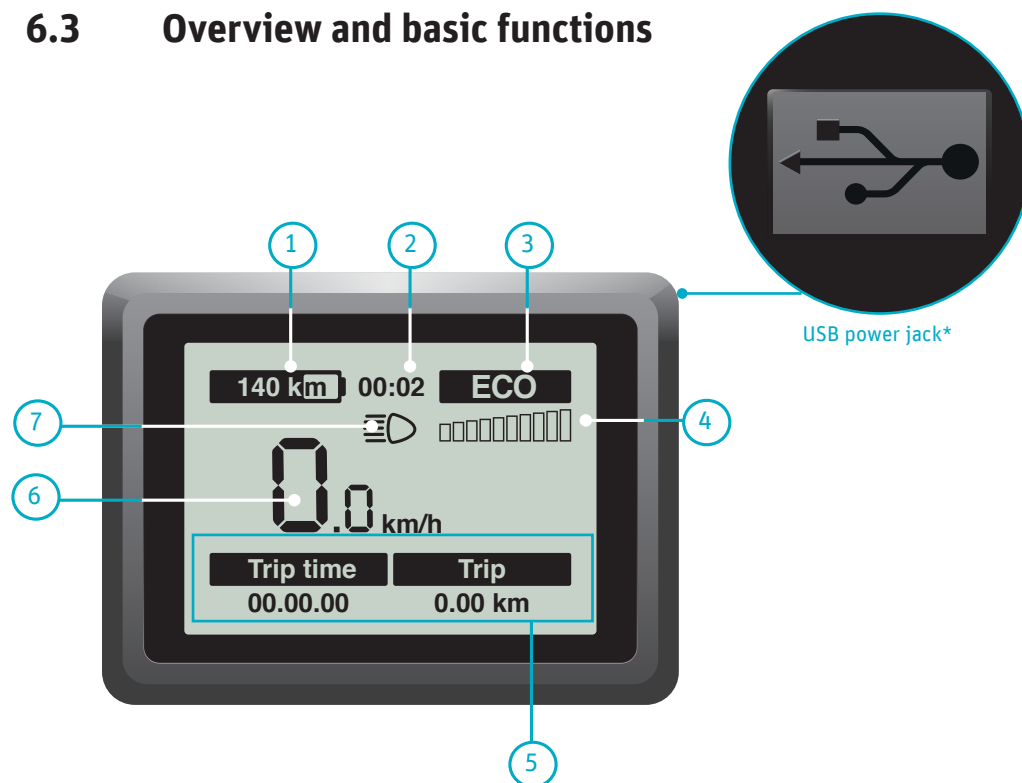
Impulse Evo Smart display

Type	LCD with USB charge socket and Bluetooth
Permitted ambient temperature range during operation	-10 bis +40 °C
Storage temperature	-10 to +50 °C
Recommended storage temperature	18 to 23 °C
Dimensions L W H D	9.4 cm 7.6 cm 2 cm 12 cm
Protection class	IP 54
Weight	127 g
Languages	DE EN NL FR ES IT FI DA

Easy-reach control

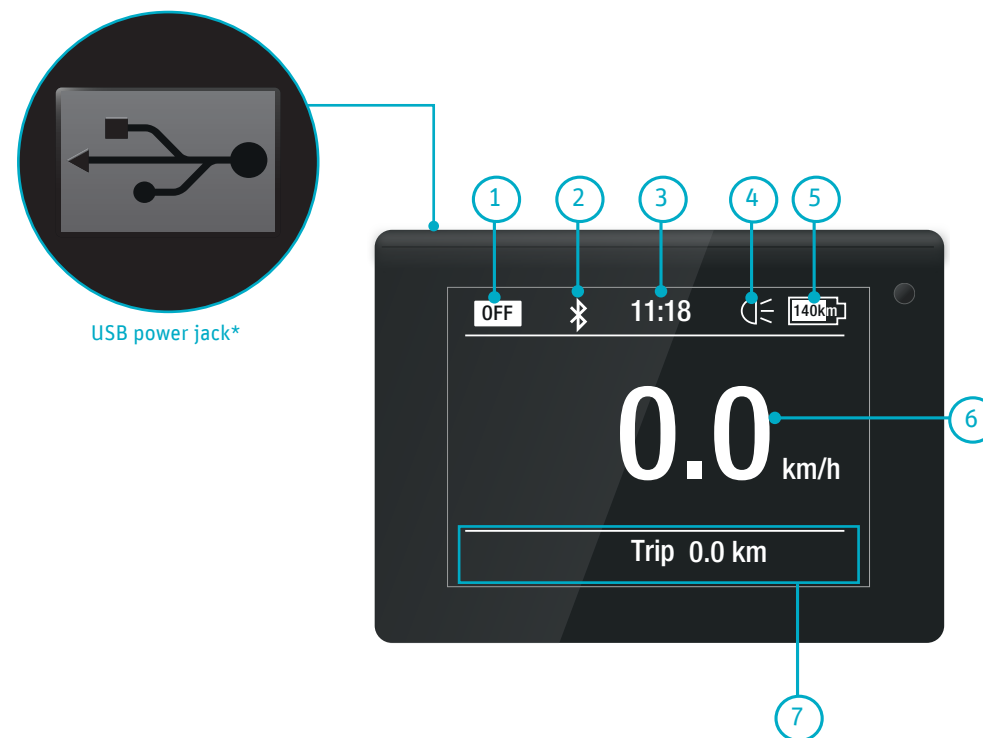
Type	Easy-reach control with four buttons
Permitted ambient temperature range during operation	-10 bis +40 °C
Storage temperature	-10 to +50 °C
Recommended storage temperature	18 to 23 °C
Protection class	IP 54
Weight	27 g

6.3 Overview and basic functions



Impulse Evo (Smart) display

No.	Function
1	Battery charge level + remaining range (when assist mode selected) ⇒ 6.3.3 Battery charge level and remaining range Page EN-47
2	Time ⇒ 6.4.3.9 Impulse Evo (Smart) display: Time Page EN-60
3	Assist mode ⇒ 6.3.4 Changing assist mode Page EN-48
4	Assist display ⇒ 6.3.4 Changing assist mode Page EN-48
5	a) Information field b) Favourite settings ⇒ 6.3.6 Favourite settings Page EN-49
6	Speed
7	Light symbol



Impulse Evo Smart Compact display

No.	Function
1	Assist mode ⇒ 6.3.4 Changing assist mode Page EN-48
2	Time ⇒ 6.4.3.10 Impulse Evo Smart Compact display: Time Page EN-61
3	Bluetooth (for connection with smartphone)
4	Light symbol
5	Battery charge level + remaining range (when assist mode selected) ⇒ 6.3.3 Battery charge level and remaining range Page EN-47
6	Speed
7	a) Information field b) Favourite settings ⇒ 6.3.6 Favourite settings Page EN-49



Easy-reach control

No.	Symbol	Function
1		a) On ⇒ 6.3.1 Switching on the pedelec Page EN-46 b) Off ⇒ 6.3.2 Switching off the pedelec Page EN-47
2		a) Increase value / scroll up b) Push assist ⇒ 6.3.5 Enabling push assist Page EN-48 c) Enable display light
3		a) Decrease value / scroll down b) Enable display light
4		a) Configure/confirm b) In the main menu, switch between the favourite settings ⇒ 6.3.6 Favourite settings Page EN-49. c) Enable display light

6.3.1 Switching on the pedelec



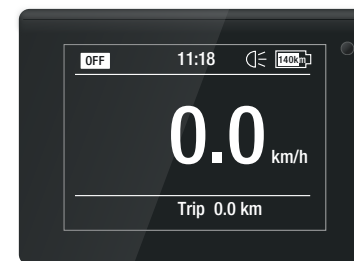
The system can only be activated if a sufficiently charged battery has been inserted.

Do not switch on the pedelec when you are riding. Otherwise the motor can stop and you will not be provided with the full assist level.

1. Press the button on the easy-reach control for one second. The display light turns on. On the Impulse Evo (Smart) display, the display light goes out after about 30 seconds. The cycle light also switches on. A welcome message appears in the information field of the display. If you have an Impulse Evo RS system with back pedal, “Please pedal” is shown. You can configure other settings from the start menu.




Impulse Evo (Smart) display:
Start menu



Impulse Evo Smart Compact display:
Start menu



If the system does not switch on despite pressing the  button, press the battery button for one second. The pedelec switches on. If it still does not switch on, check the battery ⇒ [9.3.1 Display panel Page EN-82](#).




6.3.2 Switching off the pedelec

DANGER



Only ride the pedelec when you can safely reach the brakes ⇒ [3.7 Braking Page EN-20](#). Your pedelec does not have an Emergency stop button. You must activate the brakes to stop the cycle quickly in a dangerous situation. The maximum brake force is greater than the propulsion force possible. This means stopping is guaranteed at all times by pressing the brakes. Note that the drive system does not disable automatically after braking. Switch the drive system to idle after braking.

On the easy-reach control

1. Press the  button on the easy-reach control for one second. The Impulse Evo system switches off.

Via the battery

1. Briefly press the battery button twice. The Impulse Evo system switches off after a few seconds.



You can switch off your Impulse Evo RS pedelec from any level in the menu. The start menu does not need to be displayed for this.

The last configured settings remain saved.

If the pedelec remains stationary for 10 to 20 minutes, the Impulse Evo RS switches itself off.

6.3.3 Battery charge level and remaining range

The battery charge level and remaining range are shown in the top left of the display. A battery-shaped icon shows the remaining range, telling you how long the Impulse Evo system can continue to assist you. The lower the battery charge level, the shorter the black part in the battery. The range also shows a lower value. When the charge level of the battery falls below a minimum, motor assist also cuts out.

180 km






High battery charge level
and long remaining range

30km

Low battery charge level
and short remaining range



Measurements are taken whilst the cycle is being ridden. The display calculates an average value from the readings of the last 20 kilometres ridden. This value is then used as the basis for the remaining range. So the remaining range displayed is heavily dependent on the riding style over the last 20 kilometres.

Symbol	Battery charge level
	100 – 75 %
	74 – 50%
	49 – 25 %
	24 – 10 %
	0%

6.3.4 Changing assist mode

1. You must be in the start menu to change the assist mode. Select the assist level you require by briefly pressing the ⊕/⊖ buttons.

Display	Assist	Power consumption
ULTRA*	Assist function is working with maximum power	Very high
POWER	Assist function is working hard	High
SPORT	Assist is working with medium power	Medium
ECO	Assist is working with low power	Low
OFF	No assist	Very low

2. Assist starts working as soon as you start pedalling. Assist cuts out as soon as you stop pedalling or when you have reached a speed of 25 km/h.

Impulse Evo (Smart) display

Underneath the assist level selected is a display area showing the current assist level from the drive unit in the form of ten bars having increasing heights. The more bars are dark, the higher the assist level being provided. This display is only shown when an assist mode is selected.



The drive unit is not assisting



The drive unit is providing medium assist



The drive unit is providing maximum assist

6.3.5 Enabling push assist

Push assist helps you when pushing the bike.

WARNING



Push assist may only be used when pushing the pedelec. Otherwise you could seriously injure yourself. Push assist is not designed to provide assistance when someone is sitting on the pedelec. On back pedal models, the pedal crank also turns.

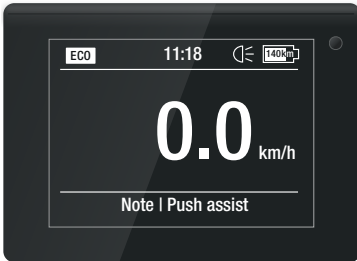


Push assist helps you when pushing the bike (up to max. 6 km/h). This is particularly helpful when you want to push your pedelec uphill.

1. Press and hold the ⊕ button. The push assist is activated after three seconds. A warning is sounded at the same time on the Impulse Evo (Smart) display. **Note (1/1) Push assist** or **Note | Push assist** is shown. Keep the button pressed until you no longer need push assist.



Impulse Evo (Smart) display:
Push assist activated

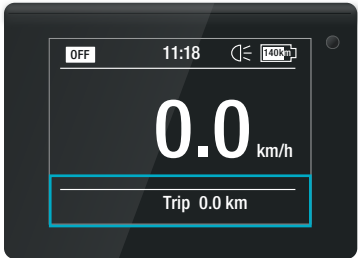


Impulse Evo Smart Compact display:
Push assist activated

6.3.6 Favourite settings



Impulse Evo (Smart) display:
Favourite settings



Impulse Evo Smart Compact display:
Favourite settings

6.3.6.1 Displaying favourite settings

Proceed as follows if you are in the start menu and want to change to other favourite settings:

1. Briefly press the ⊕ button in the start menu. If you have selected several favourite settings in the start menu ⇒ [6.3.6.2 Impulse Evo \(Smart\) display: Preselecting favourite settings Page EN-50](#), the next favourite setting is now displayed.
2. Keep pressing the ⊕ button until the desired favourite setting is displayed.

Impulse Evo Smart Compact display

You can display the following favourite settings on the Impulse Evo Smart Compact display:

Display	Meaning
Trip (in km)	Trip (e.g. day trip, short trip) in kilometres.
Trip time (in 00:00:00 format)	Duration of trip (e.g. day trip, short trip) in hours, minutes and seconds.
Trip Ø (in km/h)	Average speed (in kilometres per hour) achieved on the trip (e.g. day trip, short trip).
Total km (in km)	Total number of kilometres ridden.

6.3.6.2 Impulse Evo (Smart) display: Preselecting favourite settings










Path: Settings | Personalise | Favourite settings





You can select which of the following favourite settings you want displayed in the start menu.

Favourite settings	Display	Meaning
Trip km/time	Trip (in km)	Trip (e.g. day trip, short trip) in kilometres.
	Trip time (in 00:00:00 format)	Duration of trip (e.g. day trip, short trip) in hours, minutes and seconds.
Trip max./Ø	Trip max. (in km/h)	Maximum speed (in kilometres per hour) achieved on the trip (e.g. day trip, short trip).
	Trip Ø (in km/h)	Average speed (in kilometres per hour) achieved on the trip (e.g. day trip, short trip).
Tour km/Ø	Tour (in km)	Tour (e.g. cycle tour over several days) in kilometres.
	Tour Ø (in km/h)	Average speed (in kilometres per hour) achieved on the tour (e.g. cycle tour over several days).
Cadence/Assistance	Cadence (in rpm)	The number of crank revolutions per minute.
	Assist <div> <div></div> <div></div> <div></div> <div></div> <div></div> </div>	The five equal-sized boxes indicate the assist level you are currently receiving. The more bars are dark, the higher the assist level being provided.

Favourite settings	Display		Meaning	
Power cost	Trip cost (in €)		Cost in euro, incurred during the trip (e.g. day trip, short trip).	
	Tour cost (in €)		Cost in euro, incurred during the tour (e.g. cycle tour over several days).	
Total saving	(in €)	(in CO2)	Cost saving compared with travelling by car.	Total CO2 savings compared with travelling by car.
Total km	(in km)		Total number of kilometres ridden.	

You can select all or just one of the available options. Proceed as follows:

1. While in the start menu, press the  button for three seconds. You are now in the main menu.
2. Select main menu option “Settings” using the / buttons. The option selected is highlighted.
3. Confirm by briefly pressing the  button. You are now in sub-level 1.
4. Select “Personalise” using the / buttons. The option selected is highlighted.
5. Confirm by pressing the  button. You are now in sub-level 2.
6. Use the / buttons to select the “Favourite settings” option. The option selected is highlighted.

7. Confirm by pressing the  button. You access the favourite settings.
8. Use the / buttons to select the required option. It is highlighted.
9. Briefly press the  button to set or remove the option in the box.
10. Once you have made your selection, you can return to sub-level 2 by choosing the “Back” option.


6.4 Main menu

6.4.1 Configuring settings in the main menu



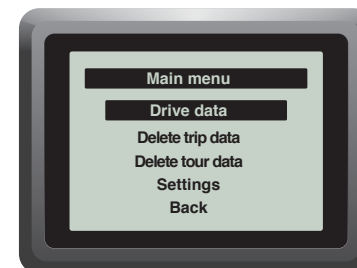
You cannot configure any settings in the main menu while you are riding.

6.4.1.1 Accessing the main menu

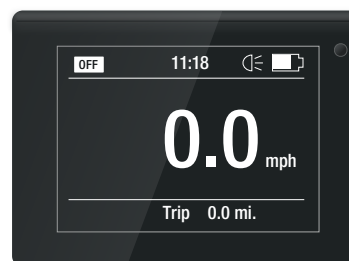
1. If you are in the start menu, press the  button for three seconds. You are now in the main menu.



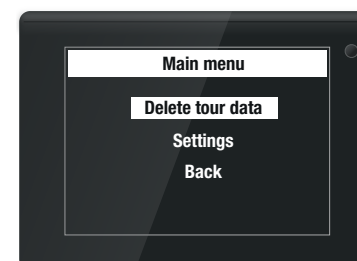
Impulse Evo (Smart) display: Start menu



Impulse Evo (Smart) display: Main menu




Impulse Evo Smart Compact display:
Start menu



Impulse Evo Smart Compact display:
Main menu


6.4.1.2 Navigating within a menu

1. Use the ⊕/⊖ buttons to navigate to the required option.
The option selected is highlighted.
2. To confirm your selection, briefly press the  button.
You access the next-lowest menu level.

6.4.1.3 Returning from a menu

There are four different ways to return to the next highest level or the start menu:

Back option

1. Use the ⊕/⊖ buttons to navigate to the “Back” option. It is highlighted when selected.
2. Confirm by pressing the  button. You return to the next-highest level.

Briefly pressing the button

1. If there is no “Back” option, and one of the options displayed is selected, briefly press the  button to return to the next highest level.

Prolonged pressing of the button

1. Pressing the  button for three seconds returns you to the start menu.

Start riding

1. The start menu is displayed as soon as you start moving.

6.4.2 Impulse Evo (Smart) display: Menu structure

Main menu	Sub-level 1			
Display ride data ⇒ 6.4.3.1 Impulse Evo (Smart) display: Display ride data Page EN-57	Trip (in km)			
	Trip time (in 00:00:00 format)			
	Trip max. (in km/h)			
	Trip Ø (in km/h)			
	Tour (in km)			
	Tour Ø (in km/h)			
	Total (in km)			
Clear trip data ⇒ 6.4.3.2 Clear trip data Page EN-58	Confirm delete?	No		
		Yes		
Clear tour data ⇒ 6.4.3.3 Impulse Evo (Smart) display: Clearing tour data Page EN-58	Confirm delete?	No		
		Yes		
	Sub-level 1	Sub-level 2	Sub-level 3	
Settings	Device settings	Display	Contrast ⇒ 6.4.3.4 Contrast Page EN-58	-5 to +5
			Brightness ⇒ 6.4.3.5 Brightness Page EN-59	-5 to +5
			Language ⇒ 6.4.3.6 Language Page EN-59	Deutsch
				English
				Français
				Nederlands
				Español
				Italiano
				Suomi
				Dansk

Main menu	Sub-level 1	Sub-level 2	Sub-level 3	
Settings	Device settings	Display	Unit ⇒ 6.4.3.7 Unit Page EN-60	Kilometres
				Miles
			Date ⇒ 6.4.3.8 Impulse Evo (Smart) display: Date Page EN-60	Day: 01 to 31
				Month: January to December
				Year: 2015 to 2114
			Time ⇒ 6.4.3.9 Impulse Evo (Smart) display: Time Page EN-60	Hour: 00 to 23
				Minute: 00 to 59
				Second: 00 to 59
			Parking light ⇒ 6.4.3.11 Impulse Evo (Smart) display: Parking light Page EN-61	OFF
				15 secs
				30 secs
				45 secs
				60 secs
			Navigation indicator sound ⇒ 6.4.3.12 Impulse Evo (Smart) display: Navigation indicator sound Page EN-61	Normal
				Quiet
				Quiet, short
				Off
		Drive	Wheel circumference ⇒ 6.4.3.13 Wheel circumference Page EN-62	1,510 mm to 2,330 mm
			Light reserve ⇒ 6.4.3.14 Light reserve Page EN-62	No
				Yes
			Shift sensor ⇒ 6.4.3.15 Shift sensor Page EN-63	OFF, 50 ms to 300 ms
			Climb assist ⇒ 6.4.3.16 Climb assist Page EN-63	1 to 7
			Ride profile ⇒ 6.4.3.17 Ride profile Page EN-64 ⇒ 5.9 Changing ride profile Page EN-41	Relax
				Regular
				Dynamic

Main menu	Sub-level 1	Sub-level 2	Sub-level 3			
Settings	Device settings	Shift unit	Shift strategy	ON		
				OFF		
			Adjustment	-2.50 mm to 2.50 mm		
			Change Shift Cable	The shift unit is now in the gear cable replacement position. You can remove the cable and/or readjust it. Please press SET to end.		
			Slope sensor	Please bring bike into straight position. Start calibration?		
	Personalise	Name ⇒ 6.4.3.18 Impulse Evo (Smart) display: Name Page EN-64				
		Favourite settings ⇒ 6.3.6.2 Impulse Evo (Smart) display: Preselecting favourite settings Page EN-50	Trip km/time			
			Trip max./Ø			
			Tour km/Ø			
			Cadence			
	Other	Factory settings ⇒ 6.4.3.21 Factory settings Page EN-65	Reset to factory settings?	No		
				Yes		
		Software	Version ⇒ 6.4.3.22 Impulse Evo (Smart) display: Version Page EN-65	Software version	Serial number	Test display

6.4.3 Impulse Evo Smart Compact display: Menu structure


Main menu	Sub-level	Sub-level 2	Sub-level 3	
Clear trip data ⇒ 6.4.3.2 Clear trip data Page EN-58	Confirm delete?	Yes		
		No		
Settings	Device settings	Display	Contrast ⇒ 6.4.3.4 Contrast Page EN-58	-2 to +2
			Brightness ⇒ 6.4.3.5 Brightness Page EN-59	-2 to +2
			Language ⇒ 6.4.3.6 Language Page EN-59	Deutsch
				English
				Français
				Nederlands
				Español
				Italiano
				Suomi
				Dansk
			Unit ⇒ 6.4.3.7 Unit Page EN-60	Kilometres
				Miles
			Time ⇒ 6.4.3.9 Impulse Evo (Smart) display: Time Page EN-60	Hour: 00 to 23
				Minute: 00 to 59
				Second: 00 to 59
			Name ⇒ 6.4.3.20 Impulse Evo Smart Compact display: Name Page EN-65	
		Drive	Wheel circumference ⇒ 6.4.3.13 Wheel circumference Page EN-62	1,510 mm to 2,330 mm
			Light reserve ⇒ 6.4.3.14 Light reserve Page EN-62	Yes
				No
			Shift sensor ⇒ 6.4.3.15 Shift sensor Page EN-63	OFF, 50 ms to 300 ms
			Climb assist ⇒ 6.4.3.16 Climb assist Page EN-63	1 to 7
			Ride profile ⇒ 6.4.3.17 Ride profile Page EN-64 ⇒ 5.9 Changing ride profile Page EN-41	Relax
				Regular
			Dynamic	
		Factory settings?	Yes	
			No	
		Display of component information		

Main menu	Sub-level	Sub-level 2	Sub-level 3	
Settings	Device settings	Shift unit	Shift strategy	ON
				OFF
			Adjustment	-2.50 mm to 2.50 mm
			Change Shift Cable	The shift unit is now in the gear cable replacement position. You can remove the cable and/or readjust it. Please press SET to end.
			Slope sensor	Please bring bike into straight position. Start calibration?
	Version			

6.4.3.1 Impulse Evo (Smart) display: Display ride data


You can display the following menu options in the “Show ride data” main menu option:

Menu options	Meaning
Trip (in km)	Trip (e.g. day trip, short trip) in kilometres.
Trip time (in 00:00:00 format)	Duration of trip (e.g. day trip, short trip) in hours, minutes and seconds.
Trip max. (in km/h)	Maximum speed (in kilometres per hour) achieved on the trip (e.g. day trip, short trip).
Trip Ø (in km/h)	Average speed (in kilometres per hour) achieved on the trip (e.g. day trip, short trip).
Tour (in km)	Tour (e.g. cycle tour over several days) in kilometres.
Tour Ø (in km/h)	Average speed (in kilometres per hour) achieved on the tour (e.g. cycle tour over several days).
Total (in km)	Total number of kilometres ridden.

1. In the main menu, navigate to the option “Display ride data” as described under ⇒ [6.4.1.2 Navigating within a menu Page EN-52](#).
2. Select the required option using the ⊕/⊖ buttons. The option selected is highlighted. A box on the right shows how far you can scroll up and down.
3. Briefly press the  button to return to the main menu.

6.4.3.2 Clear trip data


In main menu option “Clear trip data”, you can reset to 0 options Trip (in km), Trip time (in 00:00:00), Trip max. (in km/h)* and Trip Ø (in km/h). Proceed as follows:

1. Navigate to main menu “Clear trip data” as described in ⇒ [6.4.1 Configuring settings in the main menu Page EN-51](#).
2. The following question appears on the display: “Confirm delete?” with “Yes” and “No” underneath.
3. Select the required option using the ⊕/⊖ buttons. The selection is highlighted.
4. Confirm your selection by briefly pressing the  button. You will then return to the main menu options.

*Impulse Evo (Smart) display

6.4.3.3 Impulse Evo (Smart) display: Clearing tour data

In main menu option “Delete tour data”, you can reset to 0 options Tour (in km) and Tour Ø (in km). Proceed as follows:

1. Navigate to main menu “Clear tour data” as described in ⇒ [6.4.1 Configuring settings in the main menu Page EN-51](#).
2. The following question appears on the display: “Confirm delete?” with “Yes” and “No” underneath.
3. Select the required option using the ⊕/⊖ buttons. The selection is highlighted.
4. Confirm your selection by briefly pressing the  button. You will then return to the main menu options.

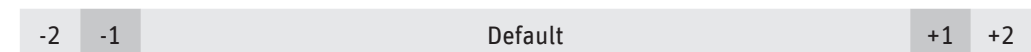
6.4.3.4 Contrast


Path: Settings | Device settings | Display | Contrast

You can adjust the contrast of the display to improve legibility:

1. Navigate to “Contrast” as described in ⇒ [6.4.1 Configuring settings in the main menu Page EN-51](#).

You can choose between:



2. Use the ⊕/⊖ buttons to select the contrast strength required. The strength selected is highlighted.
3. Press the  button to confirm. You return to sub-level 2.

6.4.3.5 Brightness


Path: Settings | Device settings | Display | Brightness

You can adjust the brightness of the display to improve legibility:

1. Navigate to “Brightness” as described in ⇒ [6.4.1 Configuring settings in the main menu Page EN-51](#).

You can choose between:




2. Use the ⊕/⊖ buttons to select the brightness required.
The brightness strength selected is highlighted.
3. Press the  button to confirm. You return to sub-level 2.

6.4.3.6 Language

Path: Settings | Device settings | Display | Language

Option “Language” allows you to select the language in which the display text appears. You can choose between:

- | | |
|--------------|------------|
| » Deutsch | » Español |
| » English | » Italiano |
| » Français | » Suomi |
| » Nederlands | » Dansk |

1. Navigate to “Language” as described in ⇒ [6.4.1 Configuring settings in the main menu Page EN-51](#).
2. Use the ⊕/⊖ buttons to select the desired language.
The language selected is highlighted.
3. Confirm by briefly pressing . You return to sub-level 2.


6.4.3.7 Unit

Path: Settings | Device settings | Display | Unit

1. Navigate to “Unit” as described in ⇒ [6.4.1 Configuring settings in the main menu Page EN-51](#).

You can choose between:

- » Kilometres
- » Miles

2. Use the ⊕/⊖ buttons to select the desired unit.
It is highlighted.
3. Confirm by briefly pressing . You return to sub-level 2.

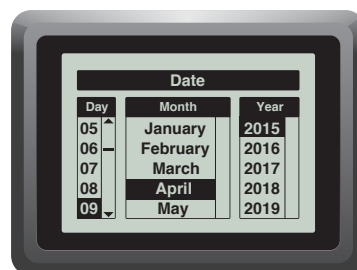
6.4.3.8 Impulse Evo (Smart) display: Date

Path: Settings | Device settings | Display | Date



1. Navigate to option “Date”.

You can choose between:

Day	01 to 31
Month	January to December
Year	2015 to 2114



Setting the date

2. Use the ⊕/⊖ buttons to select the option required.
The selection is highlighted.
3. Confirm by briefly pressing . You move to the next option.
4. Confirming the year with  returns you to sub-level 2.

6.4.3.9 Impulse Evo (Smart) display: Time

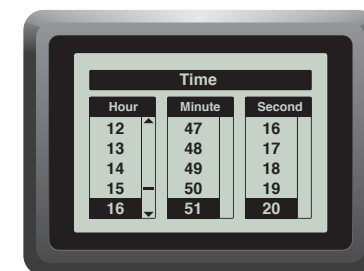
Path: Settings | Device settings | Display | Time

The time is shown in the start menu. Proceed as follows to set or change the time:



1. Navigate to “Time” as described in ⇒ [6.4.1 Configuring settings in the main menu Page EN-51](#).

You can choose between:

Hour	00 to 23
Minute	00 to 59
Second	00 to 59





Setting the time

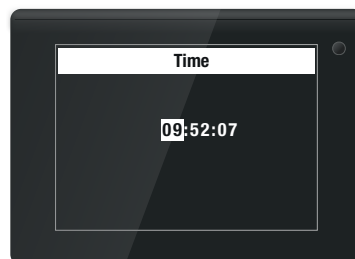
2. Use the ⊕/⊖ buttons to select the option required.
The selection is highlighted.
3. Confirm by briefly pressing . You move to the next option.
4. Confirming the seconds with  returns you to sub-level 2.

6.4.3.10 Impulse Evo Smart Compact display: Time

Path: Settings | Device settings | Display | Time

The time is shown in the start menu. Proceed as follows to set or change the time:

1. Navigate to “Time” as described in [⇒ 6.4.1 Configuring settings in the main menu Page EN-51](#).
2. Use the ⊕/⊖ buttons to select the digits required. The selection is highlighted white.
3. Confirm by briefly pressing . You move to the next option.
4. Confirming the seconds with  returns you to sub-level 2.



Setting the time

6.4.3.11 Impulse Evo (Smart) display: Parking light


Path: Settings | Device settings | Display | Parking light

From this menu, you can set how long the parking light of the pedelec stays on after the system switches off.

1. Navigate to “Parking light” as described in [⇒ 6.4.1 Configuring settings in the main menu Page EN-51](#).

You can choose between:

OFF	15 secs.	30 secs.	45 secs	60 secs
-----	----------	----------	---------	---------

2. Use the ⊕/⊖ buttons to select the desired option. The selection is highlighted.
3. Confirm by briefly pressing . You return to sub-level 1.

6.4.3.12 Impulse Evo (Smart) display: Navigation indicator sound


Path: Settings | Device settings | Display | Navigation indicator sound

Proceed as follows if you want to be made aware of turns by an audible sound:

1. Navigate to “Navigation indicator sound” as described in [⇒ 6.4.1 Configuring settings in the main menu Page EN-51](#).

You can choose between:

Normal	Quiet	Quiet, short	Off
--------	-------	--------------	-----

2. Use the ⊕/⊖ buttons to select the desired option. The selection is highlighted. An audible sound is emitted at the same time - which makes you aware of turns in the future too.
3. Confirming the audible sound with  returns you to sub-level 2.

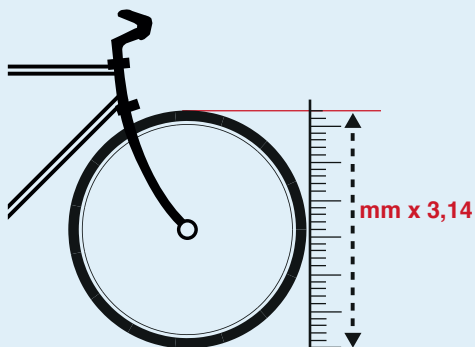
6.4.3.13 Wheel circumference

Path: Settings | Device settings | Drive | Wheel circumference

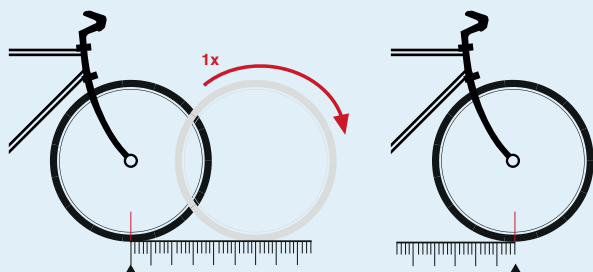


Ask your cycle dealer for the wheel circumference. Alternatively, you can measure it yourself:

1. Wheel diameter in mm x 3.14 = wheel circumference in mm.



2. Push the bike for one complete revolution of the wheel and measure the distance travelled on the ground in mm.



Calculation

Tyre height x 2 + rim diameter x 3.14 mm = wheel circumference

e.g. $[(42 \times 2) + 622] \times 3.14 \text{ mm} = 2,037 \text{ mm}$

1. Navigate to “Wheel circumference” as described in ⇒ [6.4.1 Configuring settings in the main menu Page EN-51](#).

You can pick values between:

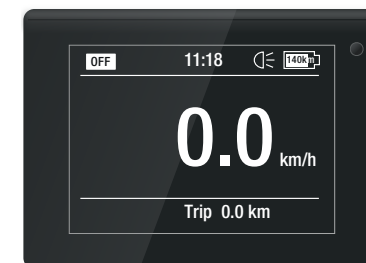
- » 1,510 mm to 2,330 mm
2. Use the ⊕/⊖ buttons to select the option required. The option selected is highlighted.
 3. Confirming the wheel circumference with **SET** returns you to sub-level 2.

6.4.3.14 Light reserve

Path: Settings | Device settings | Drive | Light reserve

When enabled, the Light reserve function keeps back part of the battery power for long-term light function. Light reserve is retained for two hours once assist power is no longer being provided. This function is set as standard and can be disabled.

1. Navigate to “Light reserve” as described in ⇒ [6.4.1 Configuring settings in the main menu Page EN-51](#).
2. Use the ⊕/⊖ buttons to select “Yes” or “No”. The option selected is highlighted.
3. Confirming with **SET** returns you to sub-level 2.



Light reserve is enabled

WARNING



We recommend keeping the light reserve switched on. Otherwise the lights and the Impulse Evo RS system go out at the same time. If you are out and about in poor light (in fog, rain, early morning, late evening), you run the risk of not being seen, and as a result of a serious accident.

6.4.3.15 Shift sensor

Path: Settings | Device settings | Drive | Shift sensor

The shift sensor detects gear changes and interrupts the motor assist for a fraction of a second (ms = milliseconds). This enables smoother and quicker gear changes especially with a hub gear. This makes the shift process more gentle for the pedelec. The higher the value selected, the longer the interruption to the motor assist and the more time the gear has to change.

1. Navigate to “Shift sensor” as described in ⇒ [6.4.1 Configuring settings in the main menu Page EN-51](#).

You can choose between:

OFF	50 ms	100 ms	150 ms	200 ms	250 ms	300 ms
-----	-------	--------	--------	--------	--------	--------

Short interruption

Long interruption

2. Use the ⊕/⊖ buttons to select the desired option. The option selected is highlighted.
3. Confirming with ⊙ returns you to sub-level 2.

6.4.3.16 Climb assist

Path: Settings | Device settings | Drive | Climb assist

The power sensor in the motor registers your pedalling force as you ride. The motor controller interprets the pedal power signals and responds (differently depending on the climb assist value setting). The lower the set value (e.g. 1), the more sluggish the reaction of the motor when assist is enabled. With a high value (e.g. 7), the motor reacts very responsively to the pedal force. When riding uphill it can be an advantage if the power sensor does not react so sensitively, so as to provide the motor assist as evenly and smoothly as possible.

1. Navigate to “Climb assist” as described in ⇒ [6.4.1 Configuring settings in the main menu Page EN-51](#).

You can choose between:

1	2	3	4	5	6	7
---	---	---	---	---	---	---

Slow comportment

Sensitive comportment

2. Use the ⊕/⊖ buttons to select the option required. The option selected is highlighted.
3. Confirming with ⊙ returns you to sub-level 2.

6.4.3.17 Ride profile

[Profile: Settings](#) | [Device settings](#) | [Drive](#) | [Ride profile](#)

In the ride profile, it is possible to specify the maximum assist level to be achieved by the motor.



Select the ride profile in line with the routes you ride. For a leisurely tour with friends at the weekend, the “Relax” assist level is the right choice. If you often speed from one appointment to the next, the “Dynamic” setting can inject the necessary pace.

The most recent setting remains saved.

1. Navigate to “Ride profile” as described in [⇒ 6.4.1 Configuring settings in the main menu Page EN-51](#).

You can select from the following:

Ride profile	Characteristics			
	Power on start-up	Power delivery	Maximum power	Power consumption
Relax	Low	Low	Low	Low
Regular	Medium	Medium	Medium	Medium
Dynamic	High	High	High	High

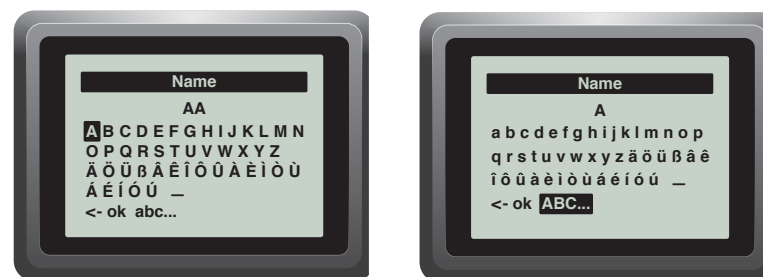
2. Use the ⊕/⊖ buttons to select the option required. The option selected is highlighted.
3. Confirming with returns you to sub-level 2.

6.4.3.18 Impulse Evo (Smart) display: Name

[Path: Settings](#) | [Device settings](#) | [Personalise](#) | [Name](#)

The “Name” option allows you to enter a name or text which is displayed when you switch the pedelec on or off.

1. Navigate to “Name” as described in [⇒ 6.4.1 Configuring settings in the main menu Page EN-51](#).
2. Use the ⊕/⊖ buttons to select the desired letters. The letter selected is highlighted.



Setting the name

3. Press the button to confirm.
4. Once you have made your selection, press “OK” to return to sub-level 2 or for the start menu.

6.4.3.19 Favourite settings

[⇒ 6.3.6.2 Impulse Evo \(Smart\) display: Preselecting favourite settings Page EN-50](#)



6.4.3.20 Impulse Evo Smart Compact display: Name

Path: Settings | Device settings | Name


The “Name” option allows you to enter a name or text with 15 characters, which is displayed when you switch the pedelec on or off.

1. Navigate to “Name” as described in [⇒ 6.4.1 Configuring settings in the main menu Page EN-51](#).
2. Press the ⊖ button for one second. The first letter of the word shown underneath is highlighted white.
3. Use the ⊕/⊖ buttons to select the desired letters. The letter selected is highlighted white.

Letters	Spacer	Back/Delete
A to Z, Ä, Ö, Ü	Space	<


4. Press the  button to confirm. You move to the next letter.
5. When you have made your selection, press  for three seconds to return to sub-level 2.

Back/Delete

1. Move to the letter to be changed or deleted.
2. Select < with the ⊕/⊖ buttons.
3. Press the  button to confirm. You move to the previous letter.

6.4.3.21 Factory settings

Path: Settings | Device settings | Other | Factory settings


1. Navigate to “Factory settings” as described in [⇒ 6.4.1 Configuring settings in the main menu Page EN-51](#).
2. The following question appears on the display: “Reset factory settings?” with “Yes” and “No” underneath.
3. Select the required option using the ⊕/⊖ buttons. The selection is highlighted.
4. Confirm your selection by briefly pressing the  button. You return to sub-level 2.

6.4.3.22 Impulse Evo (Smart) display: Version

Path: Settings | Device settings | Other | Version

If you want to display the name of the current software version on your display and motor, proceed as follows:

Display of software version

1. Navigate to “Version” as described in [⇒ 6.4.1 Configuring settings in the main menu Page EN-51](#). This shows the current display, motor and Bluetooth chip* software.
2. Pressing the  button returns you to sub-level 2.



Ask if there is a software update for your pedelec in the course of regular maintenance checks listed in the service book.

Display of serial number

1. Navigate to “Version” as described in ⇒ [6.4.1 Configuring settings in the main menu Page EN-51](#).
2. Briefly press the ⊖ button. This shows you the serial numbers of the display and motor.
3. Pressing the ⊕ button returns you to sub-level 3.

Test display

It is advisable to access the test display in order to clearly identify pixel errors.

1. Navigate to “Version” as described in ⇒ [6.4.1 Configuring settings in the main menu Page EN-51](#).
2. Press the ⊖ twice quickly in succession. This shows you a black screen.
3. Pressing the ⊕ button returns you to sub-level 3.

6.4.3.23 Impulse Evo Smart Compact display: Version

Path: Settings | Device settings | Other | Version

This menu option shows you which software versions are currently on your display and motor. The serial numbers of the display and motor are also shown.

1. Navigate to “Version” as described in ⇒ [6.4.1 Configuring settings in the main menu Page EN-51](#).
2. Pressing the ⊕ button returns you to sub-level 2.

6.5 Tips

6.5.1 Transporting your pedelec

WARNING



Remove panniers and other attachments during transport, as they can come off and cause serious accidents.

Always remove the battery before transporting the pedelec.

There is a risk of injury due to accidental activation of the ⏻ button. The battery could also fall from the docking station and be damaged. Use a special battery bag that protects the battery from heat, shocks and impacts.

By car: The bike rack must be designed for the higher weight of the pedelec ⇒ [VI.I Overall weight Page EN-10](#), otherwise it can break and cause a serious accident. It is imperative to follow the guidance of the bike rack manufacturer.

IMPORTANT



Pedelecs carried on a rear-mounted bike rack must have suitable weather protection. This applies particularly to the docking station, which must be protected from water ingress. Water ingress can damage the motor and its components. Suitable covers are available from your dealer and online.



Bus, train and plane: Find out from your travel company well in advance if their regulations allow you to take your pedelec with you.

6.5.2 Trailer bikes and trailers

The use of trailer bikes and trailers is generally permitted for the Impulse Evo RS pedelec, but please observe the following safety instructions:

DANGER



Do not exceed the overall weight of the pedelec because parts important for safety might fracture or fail. If this happens while you are riding the bike, it can lead to severe falls – with fatal consequences ⇒ [VI.I Overall weight Page EN-10](#).

Trailer bikes and trailers alter the riding characteristics. Adapt your riding style accordingly. If you do not adapt your riding style, you could seriously injure or kill yourself or the child in the trailer. The braking distance becomes longer, so you have to start braking earlier, and the steering response becomes more sluggish. Practise starting, braking, going round corners, and up and down hills, starting with an empty trailer bike or trailer.

Only use trailer bikes and trailers that conform to the relevant national regulations. In addition, they should be designed and tested in accordance with DIN EN 15918. Otherwise components could break while you are riding the bike; resulting in serious or even fatal injuries for you and/or your child. Please consult your cycle dealer if you want to purchase a trailer bike or trailer.

6.5.3 Luggage rack

Position	Over the rear wheel
Maximum carrying capacity	15 kg*
Tested	in accordance with DIN EN 14872

DANGER



***Check for different specifications on the luggage rack itself or in the luggage rack manufacturer's installation instructions.** Otherwise it may result in the luggage rack fracturing. If this happens while you are riding the bike, you can seriously injure yourself. The maximum carrying capacity is specified on the luggage rack carrier or on the mounting of the rear light.

6.5.3.1 Safety information

DANGER



Attach any luggage securely and regularly check it. If it is not secure, straps etc. can get caught up in the spokes and/or rotating wheels. Serious falls can result.

Do not exceed the overall weight of the pedelec because parts important for safety might fracture or fail. If this happens while you are riding the bike, it can lead to severe falls – with fatal consequences. ⇒ *VI.I Overall weight Page EN-10.*

Modifying the luggage rack in any way is not permitted. The luggage rack fracturing may result. If this happens while you are riding the bike, you can seriously injure yourself.

The maximum carrying capacity of the luggage rack must not be exceeded, otherwise it may result in the luggage rack fracturing. If this happens while you are riding the bike, you can seriously injure yourself.

Luggage alters the handling characteristics of the bike. Adapt your riding style accordingly. If you do not adapt your riding style, you could seriously injure or kill yourself. The braking distance becomes longer, so you have to start braking earlier, and the steering response becomes more sluggish.

WARNING



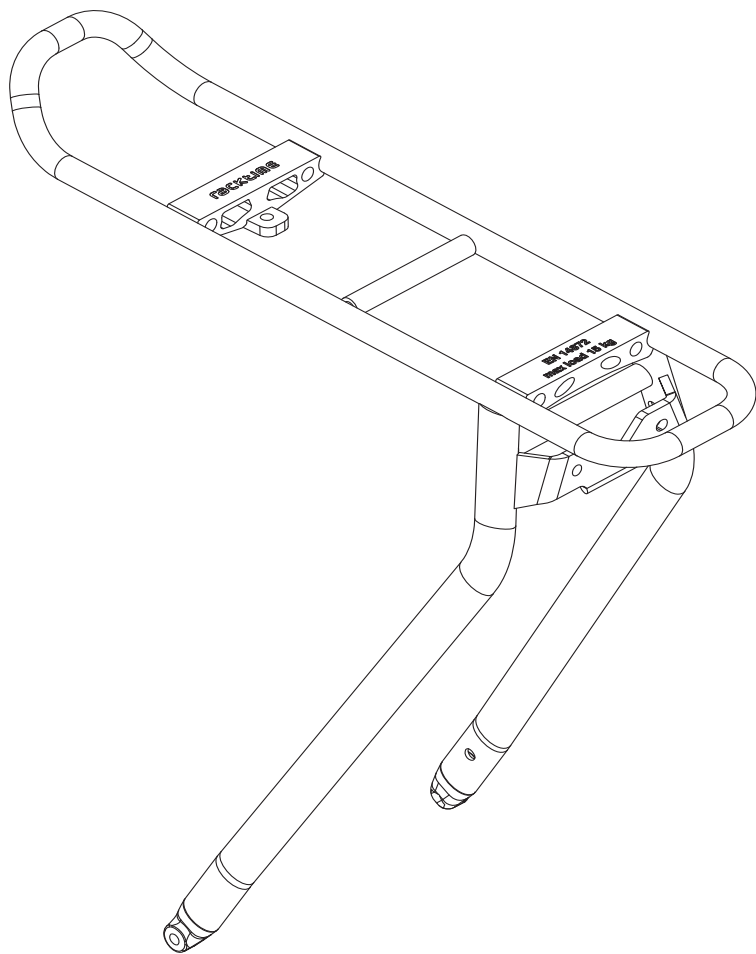
Make sure that the luggage does not obscure the view of the reflectors and rear lights, and that they are easily visible to other road users. Otherwise there is a risk of not being seen in unfavourable lighting conditions (fog, dusk, darkness), which could result in you being seriously injured.



Carry your luggage in side-mounted panniers. Distribute the weight evenly to ensure safer riding characteristics.

The luggage rack on your pedelec is delivered without a flap. One can be fitted later. Please contact your cycle dealer. Visit <http://www.racktime.com> for more luggage rack accessories.

6.5.3.2 Assembly



6.5.4 Storage

1. Remove the battery from the pedelec.
2. Store the battery in a dry, not excessively warm room. The battery should not be exposed to direct sunshine. The recommended storage temperature range is 18 bis 23 °C.

6.5.5 Cleaning

WARNING



Remove the battery before cleaning the pedelec. Accidental activation of the ⏻ button can result in severe injuries.

IMPORTANT



Do not clean the pedelec and its components with a water hose or high pressure washer. Although the components are sealed off, damage may still result. Clean the bike with a soft damp cloth.

Do not immerse the drive unit or components into water. Damage may still result even though the components are sealed.

Do not use any cleaners which contain alcohol or solvent, or which scour. No coarse sponges or brushes may be used either. They leave scratches and cause the surface to become matt. Clean the bike with a soft damp cloth.



Do not allow dirt to dry out. It is best to clean the cycle immediately after your ride.

Drive unit

CAUTION



Do not clean the drive unit when it is warm

(e.g. straight after a ride). You may burn yourself otherwise. Wait until the drive unit has cooled down.

1. Remove the battery from the pedelec.
2. Clean the outside of the drive unit with a soft, damp cloth.

Display and easy-reach control

1. Clean the outside of the display and easy-reach control with a soft, damp cloth.

7. Impulse E-Bike navigation app



The app is only available in Europe, USA and Australia.



Also watch our video clip on <https://www.youtube.com/watch?v=hqYGQuTiPCg>






Also read our “Impulse E-Bike Navigation: Brief App Guide”: <http://www.derby-cycle.com/en/downloads/downloads.html>



7.1 Technical requirements

Smartphone operating system	iOS	≥ 7
	Android	≥ 4.3.3

7.2 Menu structure

Calculate route	Start-destination	<div>Start  / destination </div>	Current location	
			Find location	
			Contact location	
			Location from map ⇒ 7.4.1 Location from map Page EN-73	
			Place of interest	Accommodation
				Place to eat/drink
				Cycle service
	Place used recently			
	Round trip	<div>Start </div>	Current location	
			Find location	
			Contact location	
			Location from map ⇒ 7.4.1 Location from map Page EN-73	
			Place of interest	Accommodation
Place to eat/drink				
Cycle service				
Place used recently				
Every day ⇒ 7.4.2 Every day Page EN-73 Leisure time ⇒ 7.4.3 Leisure time Page EN-74*				
Record route				
My routes	Routes recorded			
	Routes remembered			

Settings	Navigation instructions*	Activate voice instructions	Volume
	My E-Bike and me	Vehicle class	Pedelec
			S-pedelec
		Bike type	City trekking cycle
			Mountain bike
		Weight (including trailer) in kg	
		Me	Body weight
			Average speed in km/h (manual)
			Use display speed of my vehicle.

*Not shown until connected to the Impulse Evo Smart display / Impulse Evo Smart Compact display.



“Leisure time” and “Navigation instructions” are enabled for a week following connection in the Impulse E-Bike navigation app.

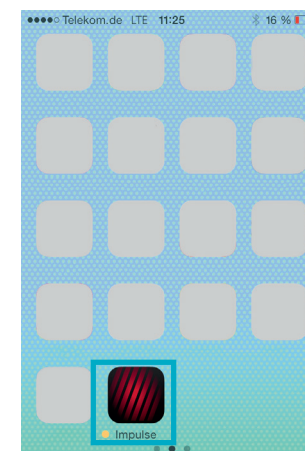
7.3 Installation

1. Load the Impulse Evo navigation app onto your smartphone.
The app is free.

iOS 	https://itunes.apple.com/app/id988052596
Android 	https://play.google.com/store/apps/details?id=eu.beemo.impulse



2. Following successful installation, the app is shown on the start screen of your smartphone.
3. Clicking the Impulse icon opens the Impulse Evo navigation app.

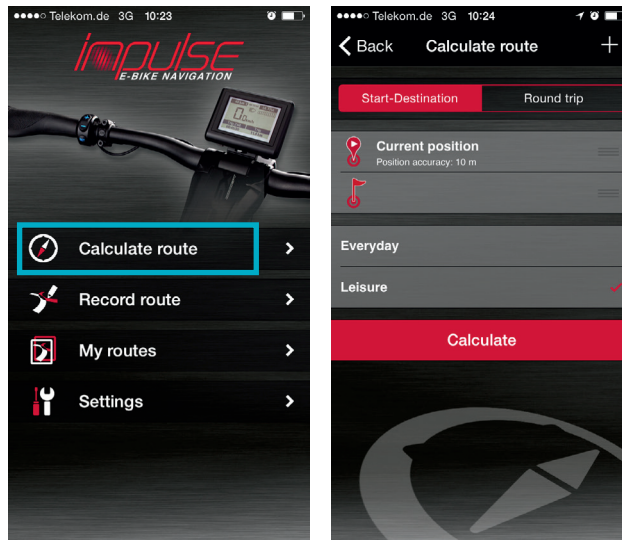


7.4 Basic functions

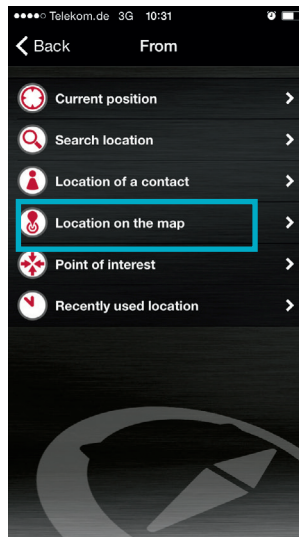
7.4.1 Location from map

Proceed as follows to select a location from a map:

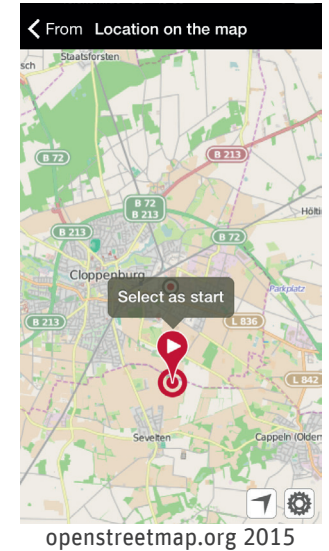
1. Select “Calculate route”. You access the menu.



2. Select “Location from map”.



3. Use your finger to tap the place required. Keep it there for two seconds. The place is selected.



7.4.2 Every day

Appropriate route planning to reach your every day destinations speedily. It prefers these options whenever possible:

- » Secondary routes
- » Cycle lanes and paths
- » Short and direct routes
- » Easily accessible, paved surfaces

7.4.3 Leisure time

Appropriate route planning - especially for leisure time and tourist activities. It prefers these options whenever possible:

- » Sign-posted, official themed routes and long-distance cycle paths
- » Easily accessible, paved surfaces
- » Secondary routes are preferred
- » More beautiful surroundings as regards countryside

8. Impulse Evo Smart display*



Also watch our video clip on <https://www.youtube.com/watch?v=hqYGQuTiPCg>



8.1 Show route

You can connect the display to a smartphone to show a route on your Impulse Evo Smart display.

8.1.1 Technical requirements

You require a smartphone with the following:

Wireless technology	BTLE (Bluetooth Low Energy) 4.0, BTLE 4.1	
Operating system	iOS	≥ 7
	Android	≥ 4.3.3
App installed	Impulse E-Bike navigation ⇒ 7.3 Installation Page EN-72	

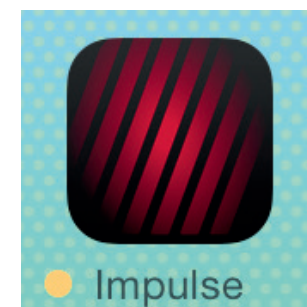
8.1.2 Show route

DANGER

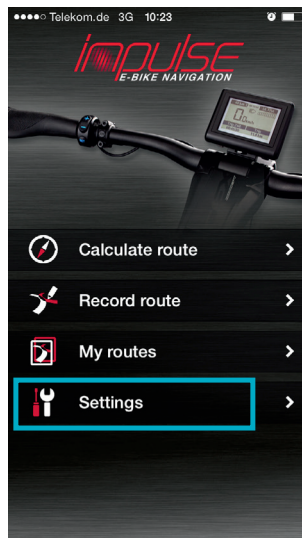


Safely secure the smartphone and its charger cable whilst the cycle is moving. They may otherwise get caught up in rotating parts, causing a serious fall. Ask your cycle dealer for a suitable smartphone holder.

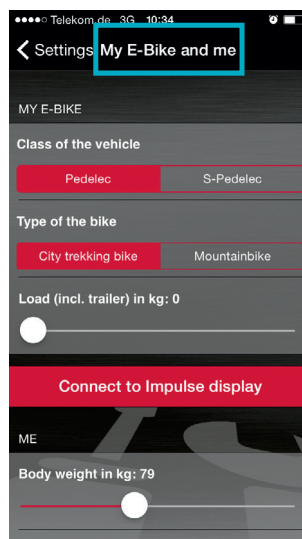
1. Enable Bluetooth on your mobile.
2. Switch on the pedelec ⇒ [6.3.1 Switching on the pedelec Page EN-46](#).
3. Open the “Impulse E-Bike Navigation” app.



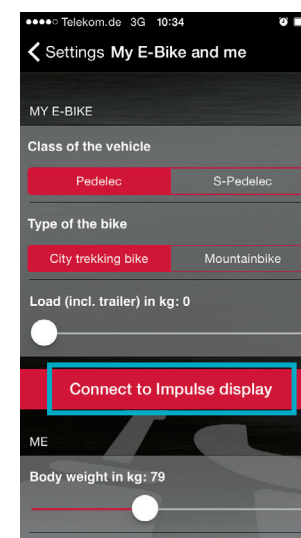
4. Go to “Settings”.



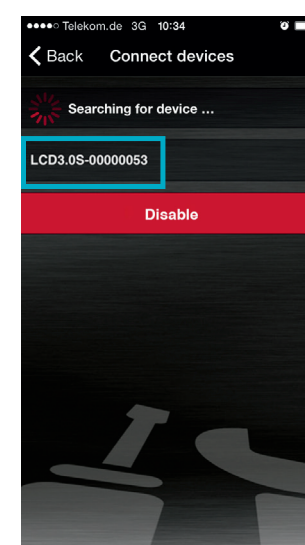
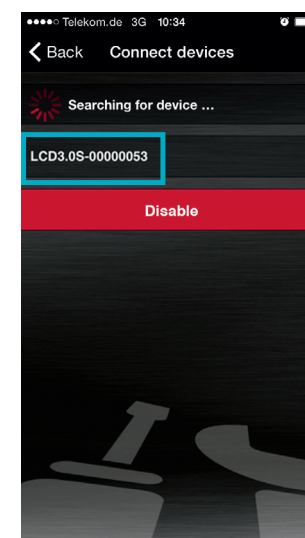
5. Select “My E-Bike and me”.



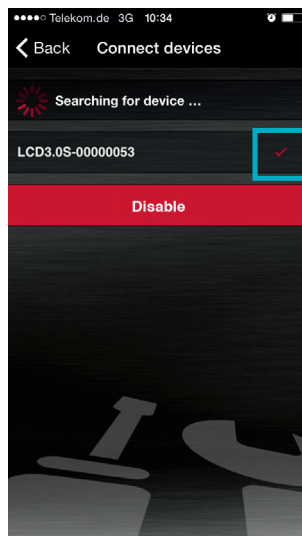
6. Select “Connect to Impulse display”. The app starts to look for the pedelec. After a short time, all Bluetooth-enabled pedelecs are displayed in the form of a number combination.



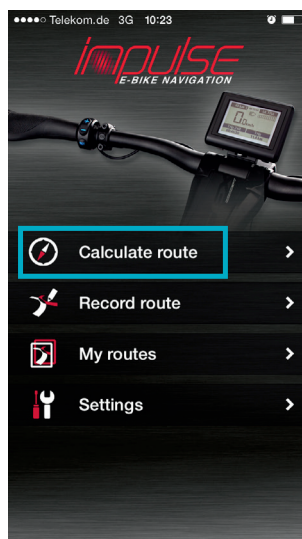
7. Select the pedelec you want to connect to your smartphone. The number of your pedelec is on the back of the display. This is an 8-digit serial number. Use the last digits of the number.



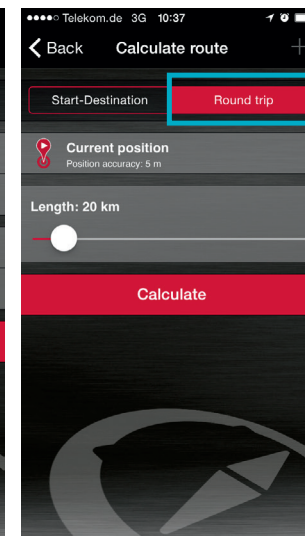
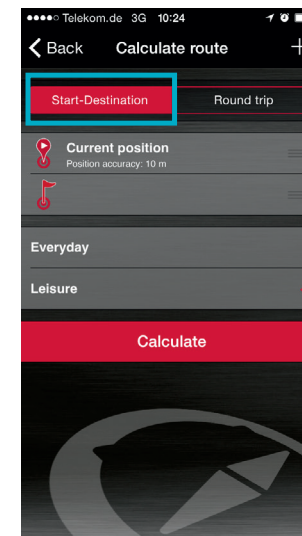
8. Once you have selected the required pedelec in the app, the selection is ticked red. The smartphone is connected to the pedelec.



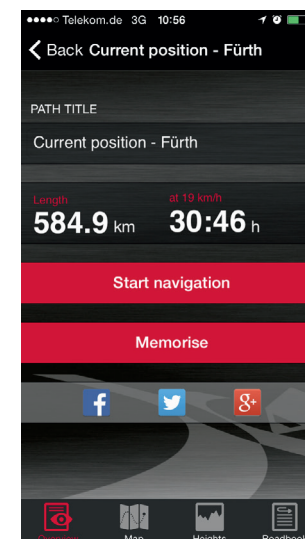
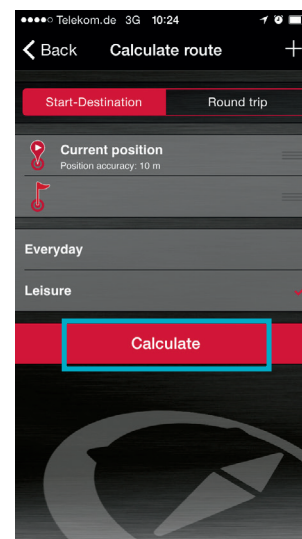
9. Now go to “Calculate route”



10. Enter the start and destination, or the round trip



11. Select “Calculate”.
The title, length (in km) and journey time (in h) of the route are displayed.



12. Select “Start navigation”. Navigation is shown in partial steps on the Impulse Evo Smart display.




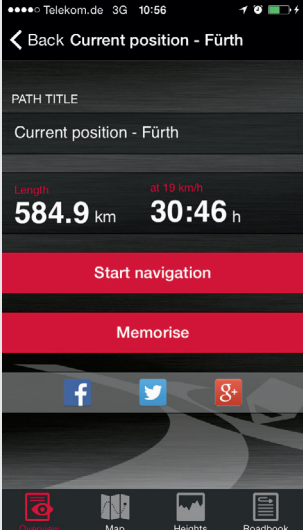
13. Select how you want the route displayed on the smartphone:

Symbol	Smartphone display	Meaning
		As elevations: A chart provides information on elevation changes over the entire route. Also displayed are the highest and lowest points on the route, and the steepest uphill and downhill inclines.

Symbol	Smartphone display	Meaning
		As a map

openstreetmap.org 2015

Symbol	Smartphone display	Meaning
		As a roadbook: List of places on the route. The list is read from the top down.

Symbol	Smartphone display	Meaning
		As an overview: Display of route title, length (in km) and journey time (in h).



Whether the smartphone battery charges, depends on the power consumption of your mobile. If it is very high because many apps (Bluetooth, WLAN, GPS) are open for example or because the display light is on very bright, the charge level of the smartphone will only rise very slowly. When the power consumption is high, it is also possible that there is no increase in the charge level and only a prolonging of how long the smartphone can be used. A smartphone is no longer powered once the pedelec battery is flat or the Impulse Evo system is off.

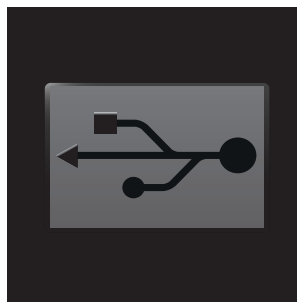
1. Use the correct cable to connect the smartphone to the display.

Cable type

USB OTG (on the go) micro cable

8.2 Charging the smartphone

You can use the USB charge socket on the display to charge your smartphone battery.



USB power jack

DANGER



Safely secure the smartphone and its charger cable whilst the cycle is moving. They may otherwise get caught up in rotating parts, causing a serious fall. Ask your cycle dealer for a suitable smartphone holder.

9. Battery

9.1 Safety information

DANGER



People (including children) who, because of their physical, sensory or intellectual capabilities, or because of their lack of experience or knowledge, are unable to use batteries, are prohibited from using them unless supervised or under the instruction of a responsible person. Otherwise there is a risk of mishandling with consequential very serious injuries.

WARNING




Only operate your pedelec with a suitable original battery. The use of other batteries can cause explosions, serious burns and fires. Further consequences can include malfunctions and a limited battery life. You can find a list of approved batteries in [⇒ 9.2 Technical details Page EN-81](#).

Only use the correct original battery charger to charge your battery. The use of other battery chargers can cause explosions, serious burns and fires. Further consequences can include malfunctions and a limited battery life. You can find a list of permitted chargers in [⇒ 11.3 Charger Page EN-98](#).

WARNING



Always remove the battery before starting to work on the pedelec. Accidental activation of the  button can result in serious injuries.

Keep batteries away from sparks and fires. Prevent batteries from heating up too much. They can explode and cause serious burns and fires. Further consequences can include malfunctions and a limited battery life. Keep batteries away from sources of heat (e.g. direct sunlight and radiators). When charging the battery, ensure there is adequate ventilation and observe the permitted ambient temperature range: 0 - 40 °C. Do not extinguish a burning battery with water, only the surrounding burning material. Fire extinguishers with metal fire powder (Class D) are more suitable. If it is possible to take the battery safely outside, smother the fire with sand.

Batteries must not be short-circuited. They can explode and cause serious burns and fires. Further consequences can include malfunctions and a limited battery life. Do not store batteries in a box or drawer where they can be short-circuited by contact with each other or with conductive materials (screws, paper clips, keys, coins, nails or other small metal objects).

Batteries must not be destroyed, shredded, taken apart, opened up or repaired. They can explode and cause serious burns and fires. Contact your cycle dealer for help if you have problems with the battery.

WARNING



Damaged batteries must not be charged, used or transported.

- » They can explode and cause serious burns and fires.
- » Gases can be released and irritate the airways. Ensure there is a supply of fresh air and consult a doctor in the event of discomfort.
- » Liquid can escape and cause skin irritation. Prevent contact with it. In the event of accidental contact, wash off the liquid with water. If the liquid gets into the eyes, flush out with plenty of water and seek medical help.

Do not send batteries by post. Batteries are dangerous goods that under certain conditions may explode, causing severe burns and fires. Only trained personnel may prepare and transport batteries. If you have a complaint about a battery, please always go through your cycle dealer. Dealers are able to have batteries collected free of charge under hazardous goods regulations.

CAUTION



Batteries must not be immersed in water. This presents a risk of explosion. Do not extinguish a burning battery with water, only the surrounding burning material. Fire extinguishers with metal fire powder (Class D) are more suitable. If it is possible to take the battery safely outside, smother the fire with sand. But you need not be afraid of the battery exploding under you when you ride the cycle through rain. The battery is sealed to prevent moisture and spray water from entering.

IMPORTANT



Batteries must not be subjected to mechanical impact. This poses a risk of damage. A battery can still be damaged after a drop or impact even if there are no visible signs of damage. A battery which looks fine on the outside should therefore also be subjected to an inspection. Please contact your cycle dealer.

Perform a 'learning cycle': A new, **fully charged** battery should be run down once until the motor assist stops and without recharging in between. In that way the battery 'learns' its capacity, and the actual capacity will agree with the level indicated on the battery status display. As soon as the battery enters Sleep mode, press the battery button for one second. Then the learn cycle can be continued. Please perform a learn cycle every six months or 5,000 kilometres. When the battery becomes older and you do not repeat the cycle from time to time, the difference between actual battery capacity and charge level display will become greater and greater.

Only use the battery to operate this pedelec, otherwise there is a risk of damage to the device.



Batteries are subject to the dangerous goods regulations. Private users are permitted to transport them on the road without further conditions. When transported by commercial third parties (such as by air, freight forwarders and logistics firms), special requirements of packaging and labelling must be observed. Please contact your cycle dealer if you have any questions about transportation.

9.2 Technical details

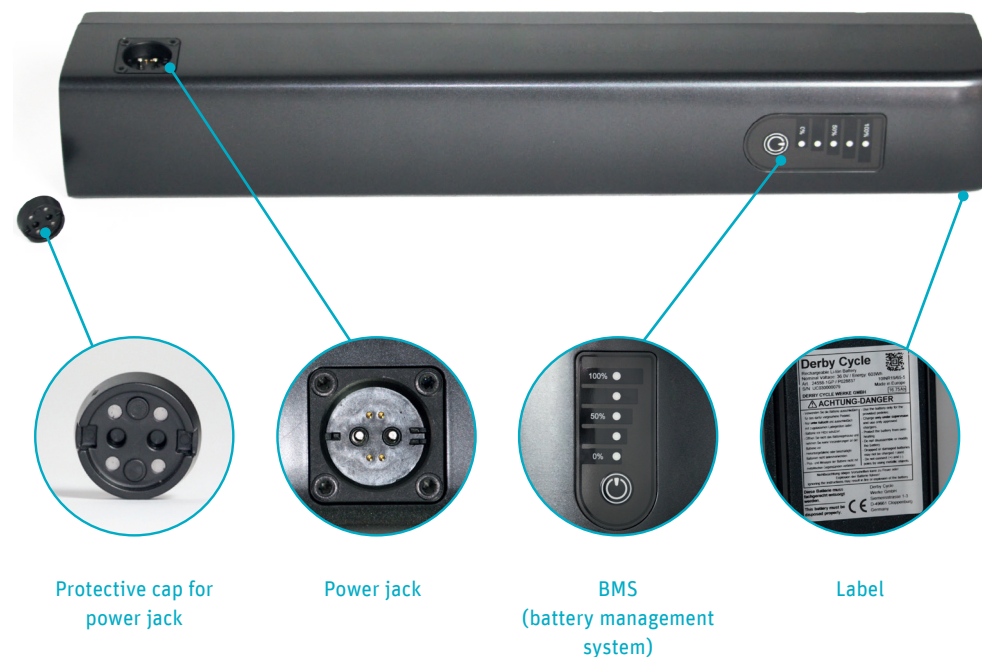


Type	11,6 Ah	15 Ah	17 Ah
Position	Down tube	Down tube	Down tube
Nominal capacity	11,6 Ah	15 Ah	16.75 Ah
Nominal voltage	36 V	36 V	36 V
Power	418 Wh	540 Wh	603 Wh
Weight	2600 g	2800 g	2900 g
Charge cycles	1,100 full cycles	1,100 full cycles	1,100 full cycles
Charge time*	Approx. 3.5 hours	Approx. 3.5 hours	Approx. 4 hours
Cell	Li-ion	Li-ion	Li-ion
Range**	135 km	180 km	205 km
Permissible ambient temperature for charging	0 to +40°C	0 to +40°C	0 to +40°C
Storage temperature	-10 to +50 °C	-10 to +50 °C	-10 to +50 °C
Permitted ambient temperature range during operation	-10 to +40 °C	-10 to +40 °C	-10 to +40 °C
Recommended storage temperature	18 to 23 °C	18 to 23 °C	18 to 23 °C

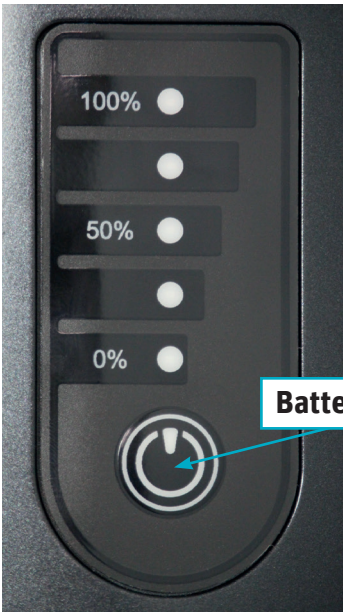
* With a 4 A charger, until battery is fully charged (95% battery capacity).

** Measured in the lowest assist mode under optimal conditions and with a fully charged battery of the highest capacity.

9.3 Overview and basic functions



9.3.1 Display panel



On the outside of the battery are a button and a display panel with five LEDs. Three LEDs show percentage values. The LEDs light up when you press the battery button. The number lighting up, and how, provides information on the battery.

9.3.1.1 Battery charge level

1. Briefly press the battery button in standby mode.

Display	Description	Battery charge level
100%	5 LEDs light up	100 – 84%
	4 LEDs light up	83 – 68%
50%	3 LEDs light up	67 – 51%
	2 LEDs light up	50 – 34%
0%	1 LED lights up	33 – 17%
0%	1 LED flashes	17 – 0%

9.3.1.2 Capacity



Capacity indicates the quantity of electric charge that a battery can deliver or store. It is specified in ampere hours (Ah). Even when used properly, capacity diminishes over time due to chemical reactions (ageing). So it reduces with every charging cycle for example. A battery also ages slightly when it is not used.

A charging cycle is the complete charging of a battery from 0 to 100% capacity. It follows that not every charging process equates to a charging cycle. For example, a charge from 50 to 100% capacity is only half a charging cycle.

1. Press the battery button for five seconds. The maximum available capacity (state of health) of the battery will be displayed.

Display	Description	Battery charge level
100%	3 – 5 LEDs light up	The battery has a capacity of over 50%.
< 50%	0 – 2 LEDs light up	The capacity of the battery is below 50%.



The battery may need to be replaced when fewer than 3 LEDs light up. Discuss how to proceed with your cycle dealer.

9.3.1.3 Sleep mode



To prevent a total discharge, the battery management system (BMS) switches the battery to Sleep mode. Your battery reverts to Sleep mode after 10 days (depending on charge level).

To wake from Sleep mode

1. Press the battery button for one second. The following appears:

Display	Description
	The first, second, third, fourth and fifth LEDs come on in order and then all go off.

2. The battery has now “woken up”.



If no LED flashes, or all five LEDs flash several times, the battery may be faulty ⇒ [11.2 Battery Page EN-96](#).

Initiating Sleep mode

1. Press the battery button twice. The following appears:

Display	Description
	The first and fifth LEDs flash twice.

2. The battery is now in Sleep mode.

9.3.2 Inserting and locking the battery

IMPORTANT



Grasp the battery firmly, so that it does not fall out of your hand. It can be damaged if you drop it.



One-key system: The same key (if available) can be used for the cycle and battery lock.

1. Grip the battery with both hands and hold it to the left of the docking station. Ensure that the battery charge level display is pointing towards you.



2. Place the battery catches into the dents provided.



3. Roll the battery into the docking station until it clicks into place.



4. Turn the battery key clockwise. Now the battery is locked.



PLEASE NOTE



The recommendation is to remove the key now and keep it in a safe place so it does not break off and is not lost.

9.3.3 Unlocking and removing the battery

1. Hold the battery, put the key into the battery lock and turn it anticlockwise. The battery is unlocked.



2. Hold the battery with both hands and roll it out of the docking station.



PLEASE NOTE



Hold the battery tight so it does not fall. It might be damaged otherwise.

9.4 Tips

9.4.1 Range

Various factors determine how far you can go with your battery:



When you go on a long trip it is worth taking a spare battery or battery charger with you.

Ride profile: You need the most power in the highest ride profile (Dynamic). The range becomes shorter.



Select the ride profile in line with the routes you ride. For a leisurely tour with friends at the weekend, the “Relax” assist level is the right choice. If you often cycle at greater speed (such as to work), the “Dynamic” setting can inject the necessary pace.

Assist mode: You consume the most battery power in the highest assist mode. The range decreases, the higher the selected assist mode.



Vary the assist modes you use. If there is a tailwind when going downhill or on the level, you can still go fast with a lower assist mode.

Tyre pressure: If the tyre pressure is too low it is harder for the tyres to rotate. The drive unit needs to provide more assistance and the range decreases.

Riding style: A low pedalling speed combined with high gears results in high power consumption.



Change down in good time to maintain constant cadence, especially when starting.

Your fitness level: The fitter you are, the less assistance you will need.

Total weight: The lower the total weight supported by the bike, the easier it will be to ride ⇒ [VI.I Overall weight Page EN-10](#).

Outside temperatures: The lower the outside temperatures (e.g. cold in winter), the shorter the range.



Insert the battery just before starting off with your pedelec. This way you prevent low temperatures shortening the range.

Battery capacity: A much shorter service life after the charging process indicates that the battery has lost considerable capacity. ⇒ [9.3.1.2 Capacity Page EN-82](#).



The battery may have to be replaced. Discuss how to proceed with your cycle dealer.

Route selected: You need to pedal harder when cycling uphill or against strong head wind. This is registered by the power sensor, which in turn requires the motor to work harder.

Charging a smartphone: Connecting a smartphone to your Impulse Evo Smart display to charge it also requires power.

9.4.2 Storage

1. Remove the battery from the pedelec.
2. Store the battery in a dry, not excessively warm room. The battery should not be exposed to direct sunshine. The recommended storage temperature range is 18 to 23 °C.

IMPORTANT



The battery should not be stored in a fully charged state. A charge level between 50 and 70% (●●●) is ideal. Since the battery loses charge very slowly, you should recharge it when only one or two LEDs come on, but after six months at the latest.

9.4.3 Cleaning



DANGER

If you wipe the battery avoid touching the contacts, otherwise there is the risk of an electric shock.



WARNING

Remove the battery from the pedelec before cleaning. Unintentionally pressing the ⏻ button represents a risk of injury.



CAUTION

Batteries must not be immersed in water. This presents a risk of explosion. Do not extinguish a burning battery with water, only the surrounding burning material. Fire extinguishers with metal fire powder (Class D) are more suitable. If it is possible to take the battery safely outside, smother the fire with sand. But you need not be afraid of the battery exploding under you when you ride the cycle through rain. The battery is sealed to prevent moisture and spray water from entering.

IMPORTANT



Do not spray the battery with a water hose or wash it with a high-pressure cleaner. Damage to the battery may still result even though the components are sealed. Clean the battery with a soft, damp cloth.

Do not use any cleaners which contain alcohol or solvent, or which scour. No coarse sponges or brushes may be used either. They leave scratches and cause the surface to become matt. Clean the battery with a soft, damp cloth.



Do not allow dirt to dry out. It is best to clean the battery immediately after your ride.

1. Remove the battery from the pedelec.
2. Clean the casing with a slightly damp, soft cloth.
3. If the battery terminals are dirty, clean them with a dry, soft cloth.

10. Battery charger

10.1 Safety information

DANGER



Battery chargers are not a toy and must not be used by children under the age of 8 years. Older children must be sufficiently trained on how to use the battery charger. People who, because of their physical, sensory or intellectual capabilities, or because of their lack of experience or knowledge, are unable to use battery chargers, are prohibited from using them unless supervised or under the instruction of a responsible person. Otherwise there is a risk of mishandling with consequential very serious injuries.

WARNING



Only use the correct, original charger to charge the battery. The use of other battery chargers can cause explosions, serious burns and fires. Further consequences can include malfunctions and a limited battery life. You can find a list of permitted chargers in ⇒ [11.3 Charger Page EN-98](#).

Only charge the correct, original battery with the charger. The use of other batteries can cause explosions, serious burns and fires. Further consequences can include malfunctions and a limited battery life. You can find a list of approved batteries in ⇒ [9.2 Technical details Page EN-81](#).

WARNING



Check the charger, cable and plug before each use. Do not use the charger if you detect signs of damage. Do not open the charger yourself, and only have it repaired by qualified experts using original spare parts. This poses a risk of fire and explosion. Damaged chargers, cables and plugs also increase the risk of electric shock.

The charger is only intended to be used indoors. Keep the charger away from rain and moisture. Do not use it on a damp surface. If water gets into the charger there is a risk of electric shock. If water has penetrated the casing, unplug the device immediately and have it checked out by your dealer. Condensation might form on the charger when the temperature suddenly changes from cold to warm. When this happens, wait about an hour. This is the time a charger needs to reach the temperature of the warm surroundings. Prevent this happening by storing the charger where it is used.

The charger and battery may not be covered during the charging process. Do not use the charger and battery on materials which can catch fire easily (such as paper and textiles) or within a combustible environment. This also applies when the battery is charged when fitted to the pedelec. In this case, the pedelec must be positioned such that a potential fire cannot spread quickly (exercise caution with carpeted floors). Do not expose the battery and pedelec to direct sunshine above 40 degrees. The charger heat generated during the charge process represents a risk of fire. When temperatures are higher than 85 °C, or there is smoke or an unusual smell, immediately unplug the mains connector of the charger from the socket and disconnect the battery from the charger. An overheated battery is damaged and may not be used again. Always stay with the charger when it is in use.

WARNING



Keep battery chargers away from sparks and fires. It can explode causing severe burns and fires. Further consequences can include malfunctions and a reduced service life. Ensure there is adequate ventilation for charging.

IMPORTANT




The mains voltage must match the supply voltage of the battery charger, otherwise there is a risk of damage to the device. The supply voltage for the charger is specified on the label on the back of the device.

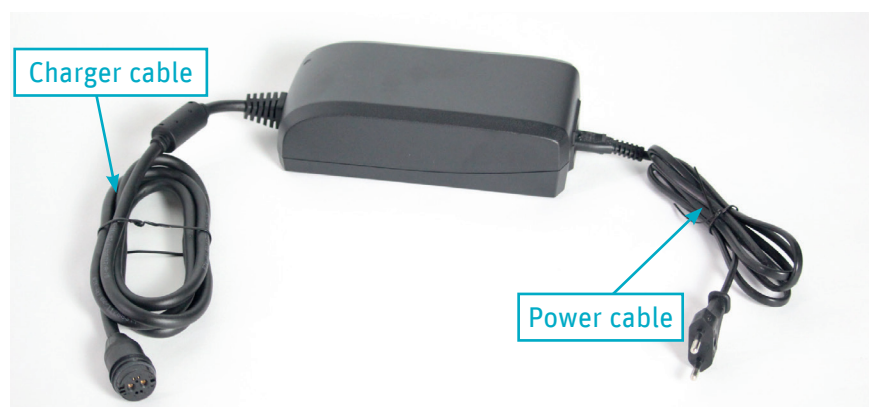
Do not charge batteries for a long period if they are already fully charged or are not being used. Electrical storms, voltage fluctuations and short circuits can damage the battery.

Keep the battery charger clean. If the contacts are dirty, the dirt can burn during charging, leaving burn marks. The charger may need to be replaced in such cases ⇒ [10.4.1 Cleaning Page EN-91](#).


10.2 Technical details

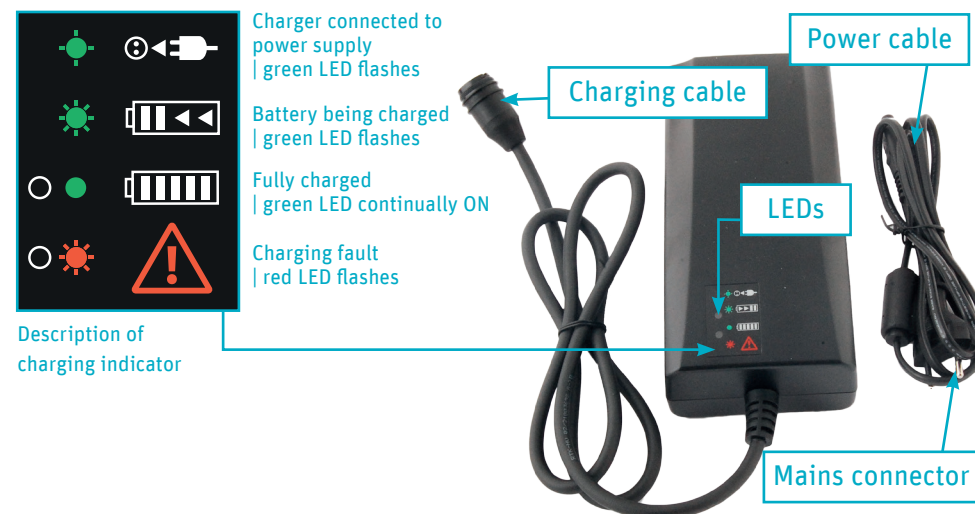
Charger type 1

Battery voltage	36 V
AC input voltage	230- 240 V
Frequency	50 - 60 Hz
Max. DC output voltage	42 V
Max. charge current	4 A
Dimensions (L W H)	175 mm 82 mm 47 mm
Permitted ambient temperature range during charging	0 to +40 °C
Permitted ambient temperature range during charging	0 to +40 °C
Storage temperature	-10 to +50 °C
Recommended storage temperature	18 to 23 °C
Weight	720 g
Protection class	 The charger is only intended to be used indoors. Keep the charger away from rain and moisture. Water penetrating into the charger poses a risk of electric shock.



Charger type 2

Battery voltage	36 V
AC input voltage	230 - 240 V
Frequency	50 - 60 Hz
Max. DC output voltage	42 V
Max. charge current	4 A
Dimensions (L W H)	206 mm 94 mm 61 mm
Permitted ambient temperature range during charging	0 to +40 °C
Permitted ambient temperature range during charging	0 to +40 °C
Storage temperature	-10 to +50 °C
Recommended storage temperature	18 to 23 °C
Weight	753 g
Protection class	 The charger is only intended to be used indoors. Keep the charger away from rain and moisture. Water penetrating into the charger poses a risk of electric shock.





The charging display symbols can vary. If you are not sure what the symbols mean, contact your cycle dealer.

10.3 Functions

10.3.1 Charging a battery

DANGER



Read and follow the information on the charger specification plate, otherwise there is a risk of misuse resulting in serious injuries.

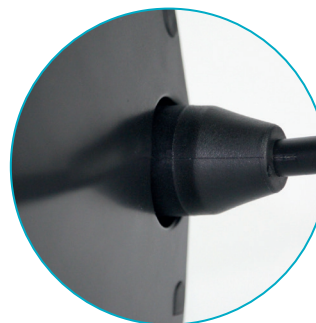
Damaged batteries must not be charged.



The battery can remain on the pedelec during the charging process. It can also be removed and charged elsewhere.

Charging the battery with charger type 1

1. Remove the protective cap on the battery.
2. Connect the charger plug to the battery (it clicks into place).
3. Insert the mains plug into a power socket.



4. All five LEDs ●●●●● light continually on the battery when it is fully charged. No LED flashes.
5. Remove the power cable from the socket after completing the charging process.
6. Remove the charging cable from the battery charging socket.

Charging the battery with charger type 2

1. Connect the power cable to the battery charger.
2. Fold up the protective cap on the battery.
3. Connect the charging cable to the battery charging socket (it clicks into place).
4. Insert the mains plug into a power socket. The red LED lights red briefly, then the green LED flashes at a constant speed 🟢.
5. The charger switches off once the battery is fully charged. The green LED on the charger is continually on ●. All five LEDs ●●●●● on the battery light continually. No LED flashes.



If the battery now stays on the charger, the charger regularly checks whether the battery is still fully charged. The charger LED starts to flash again. After checking and ascertaining that the battery is full, the charger switches back to “light continually”.

6. Remove the power cable from the socket after completing the charging process.
7. Remove the charging cable from the battery charging socket.
8. Fold down the protective battery cap.

10.3.1.1 Battery display during charging

Display	Description	Battery charge level
● ● ● ● ●	5 LEDs light up and no LED flashes	100 – 97%
● ● ● ● ○	4 LEDs light up and the 5th LED flashes	80 – 96%
● ● ● ○	3 LEDs light up and the 4th LED flashes	60 – 79%
● ● ○	2 LEDs light up and the 3rd LED flashes	40 – 59%
● ○	1 LED lights up and the 2nd LED flashes	20 – 39%
○	1 LED flashes	0 – 19%

10.4 Tips

10.4.1 Cleaning



DANGER

Always unplug the charger from the mains before cleaning and especially before wiping it, otherwise you could get an electric shock if you touch the contacts.



IMPORTANT

Do not immerse the charger in water. Damage may still result even though the components are sealed.

Do not use any cleaners which contain alcohol or solvent, or which scour. No coarse sponges or brushes may be used either. They leave scratches and cause the surface to become matt. Clean the charger with a soft damp cloth.


1. Remove the charging cable from the battery charging socket.
2. Unplug the charger from the mains socket.
3. Clean the casing with a slightly damp, soft cloth.
4. If the contacts are dirty, clean them with a soft dry cloth.

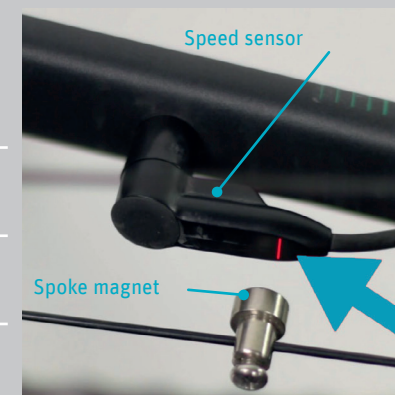
10.4.2 Storage

1. Store the battery charger in a dry, not excessively warm room. The charger should not be exposed to direct sunshine. The recommended storage temperature range is 18 bis 23 °C.

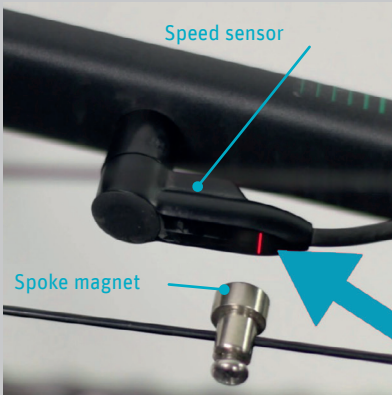
11. Fault


11.1 Drive unit, display and easy-reach control

Description	Cause	Remedy
Display does not light up and is not functioning, no motor assist.	a) Battery is in Sleep mode.	a) Wake battery from Sleep mode ⇒ 9.3.1.3 Sleep mode Page EN-83 . If the battery does not respond, briefly connect it to the battery charger ⇒ 10.3.1 Charging a battery Page EN-90 .  If the battery still does not respond or the LEDs flash in an unusual way, the battery is damaged and must be removed from the charger.
	b) Battery flat or defective	b) Insert a new or fully charged battery ⇒ 10.3.1 Charging a battery Page EN-90 .
	c) The pedelec is OFF. If the drive unit is not required to deliver power for a longer period (because the pedelec is stationary for example), the Impulse Evo RS switches off by itself.	c) Switch on the pedelec ⇒ 6.3.1 Switching on the pedelec Page EN-46 .
	d) Ambient temperature too high/low.	d) The permitted ambient temperature range during operation of the battery is in range -10 to +40 °C.
There is no speed display.	a) The spoke magnet has slipped.	a) Check whether the spoke magnet has slipped. It should be as close as possible to the speed sensor on the chain stay (max. 10 mm). Align the magnet with the marker point on the speed sensor.
	b) The speed sensor is faulty.	b) Contact your cycle dealer to have the speed sensor replaced.
	c) Spoke magnet missing.	c) Contact your cycle dealer. They can fit a new spoke magnet to your pedelec.
	d) Speeds below 10 km/h are not always displayed due to the inertia of the system.	d) Check whether a speed is displayed when riding at a higher speed. If that is the case, the display is not faulty.
Speed display incorrect	a) Incorrect unit set.	a) Check the mph and km/h settings ⇒ 6.4.3.7 Unit Page EN-60 .
	b) Wheel circumference setting incorrect.	b) Set the correct wheel circumference ⇒ 6.4.3.13 Wheel circumference Page EN-62 .



Description	Cause	Remedy
Some of the display is missing.	The display is faulty.	Enable the test display ⇒ 6.4.3.22 Impulse Evo (Smart) display: Version Page EN-65 . The display may have to be replaced. Please contact your cycle dealer.
Display lighting not working.	The display is faulty.	Please contact your cycle dealer. The display may have to be replaced.
The display is misted up.	Moisture has got in.	Dry out the pedelec complete with display at room temperature (19 - 21°C). If the display is still misted up, contact your cycle dealer. The display may have to be replaced.
Smartphone cannot connect to Impulse Evo RS Smart display.	a) The requirements for connecting your smartphone to the Impulse Evo Smart display are not satisfied.	a) Check the technical requirements of your smartphone ⇒ 7.1 Technical requirements Page EN-70 .
	b) The pedelec software is not up to date.	b) Contact your cycle dealer for a software update.
	c) The distance from the smartphone to the display is too long.	c) Shorten the distance from the smartphone to the display (to a maximum of 3 metres).
	d) The Bluetooth module of the display is faulty.	d) Contact your cycle dealer.
	e) The Impulse E-Bike navigation app is not up to date.	e) Download the latest version of the Impulse E-Bike navigation app ⇒ 7.3 Installation Page EN-72 .
	f) The smartphone has “crashed”.	f) Switch off the smartphone (remove and reinsert its battery if necessary) and restart it.
	g) The Bluetooth function on your smartphone is disabled.	g) Enable the Bluetooth function on your smartphone.
Motor assist level is too weak.	a) Climb assist is set too low.	a) Change the value ⇒ 6.4.3.16 Climb assist Page EN-63 .
	b) Battery is flat.	b) Install new/charged battery ⇒ 10.3.1 Charging a battery Page EN-90 .
	c) Unsuitable ride profile.	c) Change the ride profile ⇒ 6.4.3.17 Ride profile Page EN-64 .
Motor idles.	a) Gear changing is not properly set.	a) Check the gears. Contact your cycle dealer.


Description	Cause	Remedy
	b) Chain/belt has come off.	b) Lift the chain/belt on to the sprocket and adjust the tension. Contact your cycle dealer ⇒ 3.8.1 Measuring and adjusting the chain tension Page EN-21 ⇒ 3.9.1 Belt tension Page EN-22 .
Power assist sporadically cuts out.	a) The spoke magnet has slipped.	a) Check whether the spoke magnet has slipped. It should be as close as possible to the speed sensor on the chain stay (max. 10 mm). Align the magnet with the marker point on the speed sensor.
	b) Climb assist is set too high.	b) Change the value ⇒ 6.4.3.16 Climb assist Page EN-63 .
		
Motor noise	a) There are various reasons for motor noise – it is not always due to a mechanical fault. For example, the following factors can negatively affect noise: <ul style="list-style-type: none"> » Excessively high cadence with a low load. » Very high assist level (e.g. riding uphill). » Derailleur gear (as opposed to a gear hub). 	
	b) Chain/belt tension too high.	b) Reduce chain/belt tension. Contact your cycle dealer ⇒ 3.8.1 Measuring and adjusting the chain tension Page EN-21 ⇒ 3.9.1 Belt tension Page EN-22 .
	c) Dirty chain/belt.	c) Clean chain/belt ⇒ 3.8.3 Chain cleaning and maintenance Page EN-21 ⇒ 3.9.3 Cleaning the belt Page EN-24 .
	d) Defective pedals.	d) Replace pedals ⇒ 3.1 Attaching the pedals Page EN-15 .
	e) Motor bolts not tight enough.	e) Tighten motor bolts ⇒ 12. Torque settings Page EN-99 .
Buttons on easy-reach control not functioning	Easy-reach control is defective.	Please contact your cycle dealer. The easy-reach control may have to be replaced.
The system freezes in a mode.		
Shift sensor not working.	Shift sensor defective.	Please contact your cycle dealer. The shift sensor may have to be replaced.
Push assist is too weak.	a) Software is not up to date.	Please contact your cycle dealer. They can install the latest system software.
	b) Shift cable incorrectly threaded.	Please contact your cycle dealer.





Display message	Cause	Remedy
“Setting cannot be requested from/by motor.”	Cable connection defective.	Contact your cycle dealer to have the cable connection checked and/or repaired.
“Check speed sensor”	a) The spoke magnet has slipped.	a) Check whether the spoke magnet has slipped. It should be as close as possible to the speed sensor on the chain stay (max. 10 mm). Align the magnet with the marker point on the speed sensor.
	b) The speed sensor is faulty.	b) Contact your cycle dealer to have the speed sensor replaced.
	c) Spoke magnet missing.	c) Contact your cycle dealer. He will be able to replace the spoke magnet.
	d) Assist mode is queried at standstill.	d) The message should disappear when travelling at over 6 km/h.
“Back pedal sensor: \n“\ /Hardware defective”	Coaster sensor defective.	Contact your cycle dealer. The motor may have to be replaced.
“Waiting for drive”	Motor is not ready yet.	The message should disappear after 5 to 6 seconds.
“No 36 V battery voltage”	a) No connection to battery.	a) Remove battery and reinsert it.
	b) Dirty contacts.	b) Clean the battery discharge plug and docking station contacts with a soft, dry cloth.
	c) The battery is damaged.	 c) Damaged batteries must not be charged or used for any other purpose. Contact your cycle dealer. The battery may have to be replaced.
	d) Battery not charged.	d) Charge the battery.
“Fault with rotor magnet”	The motor unit is faulty.	Contact your cycle dealer. The motor may have to be replaced.
“Fault with rotor sensor”	The motor unit is faulty.	Contact your cycle dealer. The motor may have to be replaced.
“Back pedal sensor / range fault”	Coaster sensor defective.	Contact your cycle dealer. The motor may have to be replaced.
Start of transfer failed	Transfer fault	1. Switch the system off and back on three times ⇒ 6.3 Overview and basic functions Page EN-45 .
Init. transfer failed		
Data transfer failed		
End transfer failed		
Fault: Address not within permitted range	Possibly out-dated software version	1. Switch the system off and back on ⇒ 6.3 Overview and basic functions Page EN-45 . If the fault message persists, contact your cycle dealer. The system software may need updating.
Fault: No address received		
Fault: Unable to save data		





Do not switch the pedelec off whilst you are riding it. This can cut out the motor or mean you do not receive full assist.

11.2 Battery



Display	Description	Cause	Remedy
●●●●●	5 LEDs flash quickly after the battery button is pressed.	a) Battery is flat and is disabled.	a) If the battery is flat, it will work again briefly after a short recovery period, then switch off again. It must now be charged ⇒ 10.3.1 Charging a battery Page EN-90 .
		b) The battery is overloaded.	b) If the battery is overloaded, it switches itself on again after a short rest period and can be used again as normal.
		c) The battery is too cold or too hot.	c) The permitted ambient temperature range during operation range of the battery is -10 bis +40 °C.
●	The 1st LED flashes rapidly after pressing the battery button.	There is a charging fault.	 Unplug the charger from the mains immediately. If the problem reoccurs, a new battery charger is required.
	No LEDs light up after pressing the battery button. The range appears too short	The battery is faulty. a) The range depends on: <ul style="list-style-type: none">» Ride profile» Assist mode» Tyre pressure» Riding style» Physical condition» Overall weight» Outside temperatures» Battery capacity» The route selected» Smartphone charging via display	Please contact your cycle dealer. The battery must be replaced. a) There are many reasons why the range may seem low ⇒ 9.4.1 Range Page EN-85 .

Display	Description	Cause	Remedy
		b) A learning cycle has not been carried out.	 Perform a 'learning cycle': A new, fully charged battery should be run down once until the motor assist stops and without recharging in between. In that way the battery 'learns' its capacity, and the actual capacity will agree with the level indicated on the battery status display. As soon as the battery enters Sleep mode, press the battery button for one second. Then the learn cycle can be continued. Please perform a learn cycle every six months or 5,000 kilometres. If you do not repeat this from time to time, the actual capacity of the battery will increasingly diverge from the value on the battery status display.
	Battery key lost	Order another key. We recommend making a note of the key number on the sales receipt/document. This number can be used to order a replacement key. TRELOCK: 1. Go to website www.trelock.de 2. Select your language. 3. Select "Your service", then "Trelock key service". 4. Follow the instructions. AXA: 1. Go to website www.keyservice.axasecurity.com and follow the instructions. If you no longer have the key number, replacing the lock is the only option. Contact your cycle dealer for this.	
	The battery gets very hot when being charged.	a) High ambient temperatures	a) Stop charging immediately and let the battery cool down. Then resume charging in a cooler environment. If the problem persists, contact your cycle dealer (the battery may need replacing).
		b) Damaged battery.	 b) Damaged batteries must not be charged or used for any other purpose. Contact your cycle dealer. The battery may have to be replaced.
	The battery does not charge.	a) Ambient temperature too high or low.	a) You can charge the battery in ambient temperatures between 0 °C and 40 °C.
		b) Damaged battery.	 b) Damaged batteries must not be charged or used for any other purpose. Contact your cycle dealer. The battery may have to be replaced.
		c) Battery charger faulty.	c) Have your charger checked out by your cycle dealer; it may have to be replaced.
	Battery is damaged.	Accident or fall involving the pedelec or the battery has been dropped.	 Damaged batteries must not be charged or used for any other purpose. Contact your cycle dealer. The battery may have to be replaced.



Display	Description	Cause	Remedy
	Battery does not “wake up” from Sleep mode.	a) Battery is flat.	a) Briefly charge the battery.
		b) Damaged battery.	 a) If the battery still does not respond or the LEDs flash in an unusual way, the battery is damaged and must be removed from the charger.  b) Damaged batteries must not be charged or used for any other purpose. Contact your cycle dealer. The battery may have to be replaced.

11.3 Charger


Charger type 1

Description	Cause	Remedy
Charger gets hotter than 85 °C.	Ambient temperature too high, direct sunlight	1. Unplug the charger from the mains immediately and let it cool down.
		 Always stay with the charger and the battery when it is in use.
		2. Continue the charging process when the charger has cooled down.
	Damaged charger	 Permitted ambient temperature range during charging: 0 bis +40 °C.
		3. If the problem reoccurs, please ask your dealer; the charger may have to be replaced.
		Please ask your dealer; the charger may have to be replaced.

Charger type 2

Display	Description	Cause	Remedy
	The red LED flashes continuously.	There is a charging fault.	 Unplug the charger from the mains immediately. If the problem reoccurs, a new battery charger is required.

11.4 Other

Description	Remedy
Foot pedal has come away from the drive unit.	 A hammer may never be used to fit the crank to the shaft. This can damage the pedal force sensor, resulting in malfunction of the drive. Have this work carried out by your cycle dealer.

12. Torque settings

DANGER



Only use appropriate tools to tighten screws and bolts. Observe the specified torque setting. The component manufacturer's torque settings take precedence (where available). Failure to comply can result in screws/bolts becoming loose, tearing away or fracturing. If that happens while you are riding the bike, components may come off and you could have a severe crash. If screws are overtightened, components can also be damaged. Tighten all screws and bolts that are relevant for safety with a torque wrench. This indicates the corresponding torque in newton metres (Nm).

If no values are shown on the component or component manuals, use the torque settings from the following table.

Screw fixing	Thread	Tightening torque (Nm)
Pedal crank screw	M6	10
Pedal crank arm, aluminium	M6	12 – 14
Pedal	9/16	40
Front axle nut	General	25 – 30
Rear axle nut	General	35 – 40
Stem wedge	M8	23
Ahead stem angle adjustment	M6	8 – 10
Ahead stem handlebar clamp	M5 / M6 / M7	M5: 5 / M6: 10 / M7: 14
Ahead stem steerer tube	M5 / M6 / M7	M5: 5 / M6: 10 / M7: 14
Bar end, external clamp	M5 / M6	M5: 5 / M6: 10
Saddle clamp bottom	M5 / M6 / M8	M5: 5 / M6: 10 / M8: 20
Saddle clamp top	M5 / M6 / M7 / M8	M5: 5.5 / M6: 5.5 / M7: 14 / M8: 20
Rim brake shoe	M6	10
Sliding drop-outs	M10	16
Disc brake calliper, Shimano, IS and PM	M6	6 – 8
Disc brake calliper, AVID, IS and PM	M6	8 – 10
Disc brake calliper, Magura, IS and PM	M6	6
Gear lever clamp	M5	5
Brake lever clamp	M5	Ref. manufacturer's spec.
Cassette fixing ring	N/A	30 – 40
Screw-on handlebar plugs	M4 / M5	M4: 3 / M5: 5
Motor housing	M5	5.9
Motor bolts	M8	25
Luggage rack	M5 / M6	M5: 5 – 6 / M6: 8 – 10

