

DELIVERING EXCELLENCE

TO DEALERS AND E-CYCLISTS ACROSS THE GLOBE

BATTERIES | MOTORS | DISPLAYS



ABOUT PROMOVEC

Promovec delivers excellence in the field of complete e-bike solutions, design, development, production, distribution and after sale service.

Promovec is a Danish company based in Aarhus, founded in 2001, and employing 34 people from locations in Denmark, Germany, U.K. and China.

For more information on Promovec visit: www.promovec.com



**POSSIBILITY TO BUY
EXTENDED 5 YEAR
GUARANTEE**

PROMOVEC BATTERIES



LIFE SPAN

Promovec's Li-On batteries have an expected life span of up to five years dependant on usage pattern.

Note: Life span of batteries are often calculated in number of cycles. Promovec's batteries have an estimated life span of 800-1.000 full charging cycles.

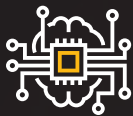


WARRANTY

2 years with min. 70 % capacity warranty from sale to enduser

Possibility to buy extended 5 years min. 70 % capacity warranty

MINIMALISTIC & HIDDEN DESIGN | POWERFUL BATTERIES FROM
230 - 560 WH | KEYED LOCKING MECHANISM | CHARGING IN 5 HOURS OR LESS



MEMORY

SMART BMS with 800 charge cycle memory and data read out tool

Real-time information available



CAPACITY

Up to 36 V and 19.2 Ah
or 48 V and 13.6 Ah

2 Ah charger standard – other options possible



CELLS

Based on branded and selected cells

Compact and low weight

High safety due to safety-grid, special connections between battery and carrier, security circuit in BMS and alu-housing



HOW TO CHARGE THE BATTERY

A) We recommend charging the battery as often as possible as wear and tear is enhanced by deepening the drainage

B) If the e-bike is used daily charge the e-bike after use. When charging and draining the battery it is best to use as few amperes as possible

C) If the e-bike is set aside for more than a week it is recommended plugging off the charger 24 hours after charging.

D) If the e-bike is set aside for more than a month it should be charged for 24 hours once every month

E) The best temperature to charge at is approx. 20 degrees Celsius. At temperatures above 20 degrees Celsius the chemistry within the battery begins to degrade.

NOTE: The charger automatically switches off at 0 degrees Celsius.

MORE ON HOW

A

Battery can be either on or off the bike when charging. Charging however must be done in dry conditions

C

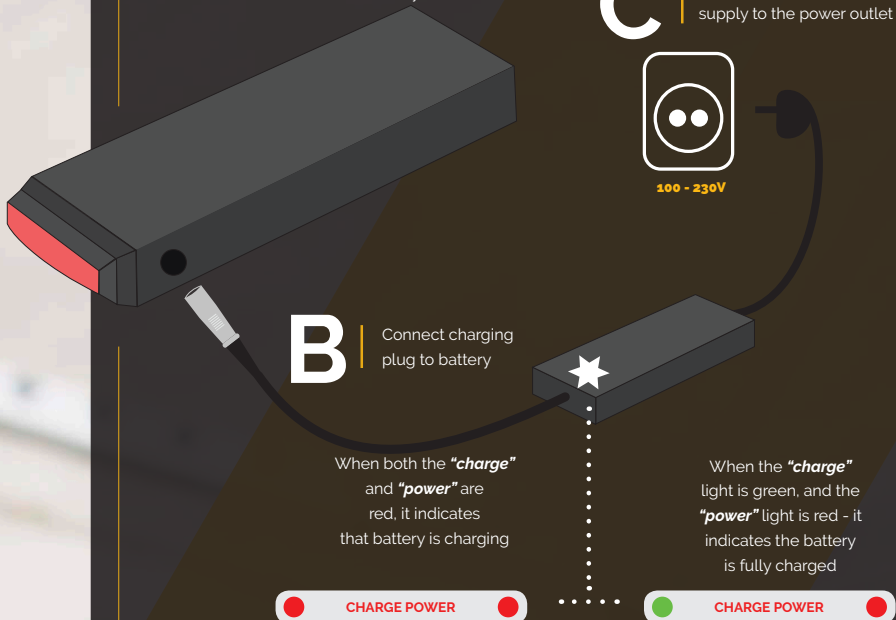
Connect the main power supply to the power outlet



100 - 230V

B

Connect charging plug to battery



When both the **"charge"** and **"power"** are red, it indicates that battery is charging

When the **"charge"** light is green, and the **"power"** light is red - it indicates the battery is fully charged

TO HANDLE THE BATTERY

The electric bike uses maintenance-free Li-ION batteries. *Please note that the battery should not be dismantled.*

The battery is delivered with a capacity of approx. 0-60% charge from the factory. Before commissioning it is necessary to charge the battery to full capacity with the supplied charger (green diode is on).

In order to achieve maximum battery life and range of the e-bike we recommend that charging takes place in a heated room. By temperatures below 20°C prolonged charging time must be expected, with the result that charging of the battery to full capacity cannot take place, which again leads to reduced driving range. Please note that the capacity of the battery will decrease when temperatures fall below 20°C.

Optimum battery charging conditions are at 20°C. If the battery is exposed to direct sunlight, the battery life deteriorates considerably.

When the battery is taken indoors for charging, condensation may occur inside the battery as well as on the outside. Therefore, please do not start charging until the condensation has disappeared. The battery contains a printed circuit board that controls each battery cell. If charging takes place while there is still some condensation in the battery, this printed circuit board may be damaged.

Memory effect does not occur in Li-ION batteries. It is thus unnecessary to discharge the battery before starting a recharge.

Charging of the Li-ION battery at many frequent intervals may prolong the battery life. However, please note that once charging of the battery has been started you should not discontinue the process as this may have a negative influence on the battery life.

NOTE

Rechargeable batteries must always be kept in dry conditions and dismantled from any equipment.

Do not pull the wires when dismantling the charger from the battery. Grab hold of the plug and pull it carefully out of the battery.

Never leave the battery in the charger when the charger is off. Never leave your battery in your e-bike for a longer period of time.

Please note that the capacity of the battery will weaken over time and at lower temperatures. The more you use your e-bike the more the capacity will decrease thereby affecting the range. Over time the reduced battery performance will also be noticeable when driving in a hilly countryside. The battery life will normally allow charging/discharging between 800 and 1,000 times. Please also note that periods with low temperatures will influence the capacity and thus the performance of the battery negatively. This will change when the temperature increases to approx. 20°C.

Other parameters of major importance for the performance/range are user weight, driving manners, terrain, surface and tire pressure. The user himself/herself may also influence the performance/range depending on how much pedal power is used.

It costs only little to have the charger connected all the time, as the charger will switch to standby when the battery is charged to full capacity. However, the charger should not be connected for more than max. one week. The battery should then be removed from the charger and charging to full capacity should take place once a month (full charge - green diode on charger is on).

PROMOVEC BATTERIES

Capacity	Estimated range
6.6 Ah, 36 V 238 Wh	Up to 60 km
7,8 Ah, 36V 281 Wh	Up to 50 km
8.8 Ah, 36 V 317 Wh	Up to 60 km
9,6 Ah, 36 V 345 Wh	Up to 70 km
10.4 Ah, 36 V 375 Wh	Up to 80 km
11.0 Ah, 36 V 396 Wh	Up to 80 km
12.8 Ah, 36 V 482 Wh	Up to 100 km
13,2 Ah, 36 V 415 Wh	Up to 100 km
15,6 Ah, 36 V 562 Wh	Up to 130 km
17,4 Ah, 36 V 626 Wh	Up to 150 km

FACTORS EFFECTING RANGE

OWN EFFORT

(50% VS. 20%)

Conclusion: 53 % less cycles at only 20 % - own effort

Variable	Own effort (50%)	Own effort (20%)
Driven distance	40 km	40 km
Capacity on new battery (11.6 Ah)	11.600 mAh	11.600 mAh
Range on a new battery	70 km	56 km
Consumption pr. km	170 mAh	215 mAh
Consumption pr. trip	6.800 mAh	8.600 mAh
Excess capacity	4.800 mAh	3.000 mAh
Wear of capacity pr. trip	6 mAh	8 mAh
Number of cycles	4.800 / 6 = 800	3.000 / 6 = 375

WEIGHT OF USER

(75 KG VS. 100 KG)

Conclusion: 15 % less cycles with 100 kg user weight

Variable	User weight 75 kg	User weight 100 kg
Driven distance	40 km	40 km
Capacity on new battery (11.6 Ah)	11.600 mAh	11.600 mAh
Range on a new battery	70 km	67 km
Consumption pr. km	170 mAh	180 mAh
Consumption pr. trip	6.800 mAh	7.200 mAh
Excess capacity	4.800 mAh	4.400 mAh
Wear of capacity pr. trip	6 mAh	6.5 mAh
Number of cycles	4.800 / 6 = 800	4.400 / 6.5 = 677

TYRE PRESSURE

(NORMAL VS. LOW)

Conclusion: 36 % less cycles & 20 % more power consumed

Variable	Normal tyre pressure	Low tyre pressure
Driven distance	40 km	40 km
Capacity on new battery (11.6 Ah)	11.600 mAh	11.600 mAh
Range on a new battery	70 km	60 km
Consumption pr. km	170 mAh	200 mAh
Consumption pr. trip	6.800 mAh	8.000 mAh
Excess capacity	4.800 mAh	3.600 mAh
Wear of capacity pr. trip	6 mAh	7 mAh
Number of cycles	4.800 / 6 = 800	3.000 / 7 = 514

USE OF EX CHARGER (E.G. HOME + WORK)

(SINGLE VS. EXTRA)

Conclusion: 71 % extra cycles if using extra charger

Variable	Single	Extra charger
Driven distance	40 km	2 x 20 km
Capacity on new battery (11.6 Ah)	11.600 mAh	11.600 mAh
Range on a new battery	70 km	70 km
Consumption pr. km	170 mAh	170 mAh
Consumption pr. trip	6.800 mAh	3.400 mAh
Excess capacity	4.800 mAh	8.200 mAh
Wear of capacity pr. trip	6 mAh	3 mAh
Number of cycles	4.800 / 6 = 800	8.200 / 3 = 2733



PROMOVEC MOTORS

At Promovec we develop a wide range of noiseless motors.

Be it mid, front or rear solutions our motors are all powerful, compact and silent.

All motors come with a 3 year warranty.

For more information on our motors visit:
www.promovec.com

FRONT MOTOR

- Attractive price points and good value for money
- Excellent commuter riding experience due to front wheels perfect reaction when driving straight
- Looks like a regular bicycle and sleeker designs are possible
- Helps distribute and decrease weight
- Simple and reliable technology requiring low maintenance

MID MOTOR

- Smooth and natural riding experience whether on even or hilly ground and makes the rider feel strong
- Torque sensor provides instant power and is easy to start from a full stop even on steep hills
- Motor weight is located centrally on the frame in addition to being low improving stability when riding
- Improved frame balance front to rear and reduced frame flex

REAR MOTOR

- Good price point and value for money
- Looks like a regular bicycle and appears stealthier
- Higher power can be better handled by stronger dropouts in the rear of the bike
- Fantastic traction and smooth acceleration
- Excellent commuter riding experience because rear wheel motor excels when turning – optimal for MTB

PROMOVEC MOTORS

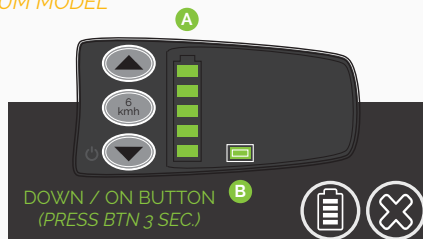
250-500 W WITH HALL SENSORS AND FREE
WHEEL | SPEEDS AT 25 KM/H AND 45 KM/H
| DETACHABLE WATERPROOF GOLD PLATED
CONNECTORS – IP66 | DOUBLE SPROCKETS
FOR HIGH TORQUE AND LOW WEIGHT |
SEALINGS – TESTED IN WATER TANKS

BASIC

SHOULD YOU WANT TO CHANGE YOUR DISPLAY YOU CAN CHOSE FROM A BASIC DISPLAY IF YOUR CURRENT DISPLAY IS A BASIC MODEL AND FROM A PREMIUM DISPLAY IF YOUR CURRENT MODEL IS A PREMIUM MODEL



Promovec®
the e-bike solution



DOWN / ON BUTTON (B)
(PRESS BTN 3 SEC.)

BATTERY INDICATION

The **battery indicator (A)** is integrated in the LED display on the handlebar. On the display you can see the approximate battery level. **5 lines = full charge.**

Please note that the battery level may vary depending on whether you drive uphill or downhill.

ERROR INDICATION

The **error indicator (B)** is also integrated in the display. If the first light on the battery indicator on the display starts flashing when driving, an error has been detected in the electrical system.

The number of flashes indicates the type of error – see last page for error codes.



ASSIST FUNCTION

The **assist function (C)** has 5 setting options. By pressing the up / down button you may choose the appropriate assist level. **5 lines = full assist.**

The motor will only provide power at speeds below 24.6 km/h.

WALK ASSIST

This solution also has a **"walk assist" (D)** feature. By pressing the **"6 km/h" button** on the display, this feature allows you to drive up to 6 km per hour without activating the pedals – regardless of the setting of the assist level.

LIGHTS ON/OFF

Turn the light on/off by pressing the **"level up" (E)** button for 5 seconds



ON AND OFF

Press the **button (A)**, until it turns on/off.

BATTERY INDICATOR

The battery indicator **(B)** allows you to see the approximate battery level using 5 segments. When reaching the lowest level, it will start flashing.

Please note that the battery level may vary depending on, whether you drive uphill or downhill.

ERROR CODES

If first light on the battery indicator starts flashing **(C)** when driving, an error has been detected in the electrical system. Number of flashes indicates error type.



ASSIST FUNCTION

The assist function has 5 setting options. You may choose the assist level by pressing the **"level up/down button" (D)**

The motor will only provide power at speeds below 24.6 km/h.

WALK ASSIST

When not pedaling, it is possible to activate the **"walk assist"**.

Press and hold the **"down button" (E)** for approximately 4 seconds to activate it. It is suitable for pulling the bike uphill.

LIGHTS ON/OFF

Turn the light on/off by pressing the **"level up" (F)** button for 3 seconds



PREMIUM



ON AND OFF

Press the **button (A)**, until it turns on/off.

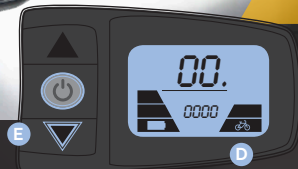
BATTERY INDICATOR

The **battery indicator (B)** allows you to see the approximate battery level using 5 segments. When reaching the lowest level, it will start flashing.

Please note that the battery level may vary depending on, whether you drive uphill or downhill.

LIGHTS ON/OFF

Turn the light on/off by pressing the **"level up" (C)** button for 3 seconds



ASSIST LEVEL

The assist-function has 5 setting options. You may choose the assist level by pressing the **"up/down button"**:

The selected level is indicated on the display **(D)**

Level 5 - is the highest level.

Level 1 - is the lowest level.

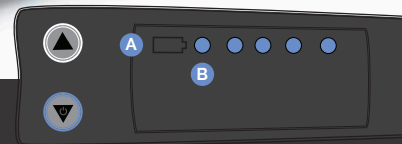
Level 0 - assist function disabled

The motor will only provide power at speeds below 24.6 km/h.

WALK ASSIST

When not pedaling, it is possible to activate the **"walk assist"**. Press and hold the down button to activate it **(E)**.

It is suitable for pulling the bike uphill.



DOWN / ON BUTTON
(PRESS BTN 3 SEC.)



BATTERY INDICATION

The **battery indicator (A)** is integrated in the LED display on the handlebar. On the display you can see the approximate battery level. **5 dots = full charge.**

Please note that the battery level may vary depending on whether you drive uphill or downhill.

ERROR INDICATION

The **error indicator (B)** is also integrated in the display. If the first light on the battery indicator on the display starts flashing when driving, an error has been detected in the electrical system.

The number of flashes indicates the type of error.



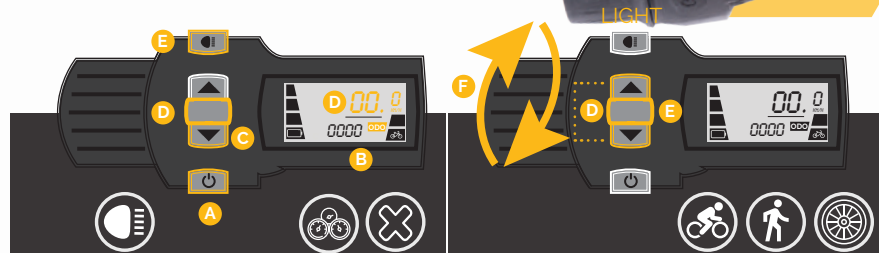
ASSIST FUNCTION

The **assist function (C)** has 5 setting options. By pressing the up / down button you may choose the appropriate assist level.

The motor will only provide power at speeds below 24.6 km/h.

WALK ASSIST

This solution also has a **"walk assist" (D)** feature. By pressing the **"6 km/h"** button on the display, this feature allows you to drive up to 6 km per hour without activating the pedals - regardless of the setting of the assist level.



ON AND OFF

Press the **button (A)**, until it turns on/off. The system closes down automatically after 5 minutes inactivity.

BATTERY INDICATOR

These show the **battery level (B)**. When reaching the lowest level, the indicator will start flashing.

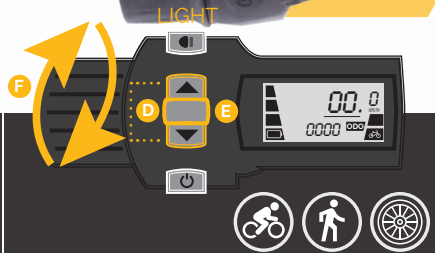
SETTINGS FOR KM/H AND MPH

Press and hold **"down arrow" (C)** for 10 sec. to change between MPH and KM/H.

MODE FUNCTION (TRIP - ODO)

Press the **mode button (D)** to switch between ODO and Trip counter. Reset TRIP by holding the Mode button for 2 seconds. ODO mode shows the total distance travelled.

LIGHTS ON/OFF (E)



ASSIST FUNCTIONS

Assist level can be controlled in 2 ways:

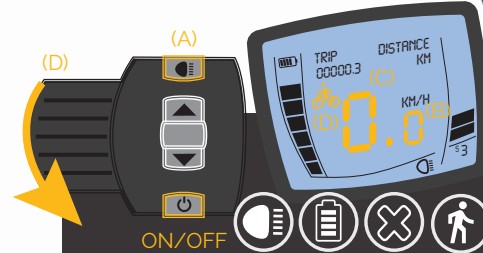
5 assist levels - On the right side of the display the selected assist level is indicated. Throttle/walk assist (for quick change) - Turn the throttle when not pedaling, and the **"walk assist"** is activated.

THROTTLE

Operates by turning the inner part of the handle up or down **(F)**.

ADJUSTING THE WHEEL SIZE

Press **both arrow keys (D)** at the same time. Press the up or down arrow to increase or decrease the digits. Press the Mode key to change the next digit. Store press the Mode button, until the display returns to normal.



FRONT LIGHT

Turn on the front light (if mounted) by pressing the **"light" button (A)**. Adjust brightness of the display by pressing light button continuously. When front light is on, a light indicator is shown.

DRIVING SPEED

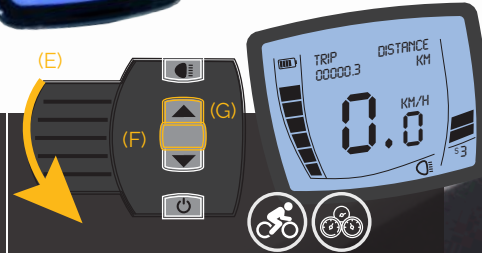
The current driving speed is shown in the display center area **(B)**.

ERROR INDICATOR

A code and a wrench symbol will show the error type. The error code will appear in the "speed indication" space **(C)** in the center of the display. Error code numbers range from 02 to 09 (see next page).

WALK-ASSIST

To activate the **walk assist (D)**, turn the throttle downwards towards yourself - to deactivate it, let go. A walking man and a bike are shown when activated.



BOOST FUNCTION

To get a temporary **"boost"** effect while cycling, e.g. to pass other cyclists, turn the throttle downwards towards yourself **(E)** and the bike will accelerate to maximum assist level. When you let go of the throttle, the assist level will drop to previous level.

TRIP INFORMATION

In the upper area of the display it is possible to view different information of relevance for the trip. Press **"menu" (F)** button on the left lever - to switch between different types of trip information.

SETTINGS FOR KM/H AND MPH

To change the speed units between kph and mph, press the **"up" arrow** 10 seconds **(G)**. Mph is chosen when kph is no longer displayed.

ERROR CODES

NUMBER OF FLASHES / ERROR CODE NUMBER SHOWN IN DISPLAY	ERROR	POSSIBLE ERROR
	No light in display	No voltage in display. Check connectors and wires for any damage
	Display turns off after 3 sec.	Damage to brown or blue display wire
2	Indicates errors in power consumption	Measure battery voltage and check motor wire for damage
3	Damage on wire from controller to front wheel	Check motor wire and connectors for damage
4	Battery voltage too low	Charge the battery and check battery voltage and charger
5	Brake (optional)	Brake lever does not return to position
6	Crank sensor	The sensor signal exceeds 11 V
7	Throttle is damaged or does not return properly	Signal from the throttle exceeds 1.3 V
8	Controller error	Error on controller or short circuit in throttle wires or crank sensor wires
9	Battery voltage too high	Battery voltage is too high or a 24 V controller is mounted on a 36V battery

MISCELLANEOUS

STORAGE FOR THE WINTER

If you put away your e-bike for a longer period (more than one month), it will be sufficient to charge the battery once a month.

Before putting the battery away for storage you should make sure that it is fully charged, as the battery will be damaged by being left totally or partly discharged for a longer period.

WARNING

- Do not heat, short, puncture or in any other way damage the battery
- Do not disassemble or destroy the battery
- Do not throw the battery into open fire
- Do not lower the battery into water or any other liquid
- When charging the battery only use the enclosed battery charger
- Do not charge the battery at temperatures below 0°C or above 45°C.
- Do not cover the battery charger

BATTERY DISPOSAL

Batteries contain substances that can be harmful to human health and the environment if not handled properly. Batteries are marked with a symbol of the crossed out garbage. It symbolizes that waste batteries must not be disposed of with normal household waste but must be separately collected. It is important that you submit your used batteries to the collection systems established. In this way, you help to ensure that the batteries are recycled in accordance with the law and will not harm the environment.

All cities have established collection systems, where disposed off batteries can be collected from households or they can be delivered at recycling stations and other collection sites. Additional information is available from your local authorities.



CONNECT



PROMOVEC



PRO-MOVEC A/S