



# HIGH VISION

## User Manual

To read and keep.



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## 1.1 Purpose of the manual

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This manual is an integral part of the HMI unit and has been drawn up by the manufacturer in its original language (Italian) to provide all the information necessary for an adequate and safe use of the drive unit and the HMI unit throughout their life cycle (from transport, delivery, installation, use and maintenance to disposal).

Before carrying out any operation, users and technicians must carefully read the instructions and scrupulously comply with them. If you have any doubts about their correct interpretation, consult the manufacturer to obtain the necessary clarifications. Only by observing the following is the smooth operation of the unit over time and the onset of dangerous situations for people and things avoided.

The manual provides warnings and indications relating to safety rule for the prevention of accidents. In any case, the safety rules imposed on them by current regulations must be observed with the utmost care by the operators. Any changes to the safety rules that may take place over time must be transposed and implemented.



**CAUTION:** It is recommended that you read this manual carefully before installing and operating the unit. OLI eBike Systems with a view to continuous improvement may change without notice some characteristics of the components used. This does not affect the validity of the information contained in this document. If inconsistencies are found between what is described in the manual and the use of the machine, please inform the manufacturer.



**IMPORTANT:** The updated copy of this manual can be found on the website [www.oli-ebike.com](http://www.oli-ebike.com).

## 1.2 Preservation of the manual

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The installation, use and maintenance manual must accompany the unit throughout its life cycle and must be available to all operators and technicians who may need it. The manual must follow the unit if it is transferred to a new user or owner.

## 1.3 Constructor

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Our company is at your disposal for any problem or information. Communications and requests can be forwarded to:

### OLI eBike Systems srl

Via delle Pesche, 821 - 47522 Cesena - (FC) -ITALY

Phone +39 / 0547 318322

[info@oli-ebike.com](mailto:info@oli-ebike.com)

[www.oli-ebike.com](http://www.oli-ebike.com)

For any need concerning the use, maintenance, or request of spare parts, please specify the identification data of the unit shown on the manufacturer's label.

## 1.4 Guarantee and returns

The product is covered by a guarantee according to the terms and provisions of the law and commercial agreements. The buyer loses the right to the warranty in case of incorrect installation or use or when he has made changes or repairs to the supply without the authorization of the manufacturer. Upon receipt of the product, the recipient must verify that there are no defects, damage resulting from transport and / or incompleteness in the supply. Any complaints must be immediately reported to the manufacturer by written communication and countersigned by the carrier. Labor services such as sending a technician are excluded from the warranty. Under no circumstances may compensation be claimed for damages.

If you return the product, reuse the original packaging for shipping, trying to protect it as best as possible from any impacts resulting from transport.

## 1.5 Technical assistance

Ordinary and extraordinary maintenance must take place in accordance with the instructions contained in this manual. For any cases not included and for any kind of assistance, it is recommended to contact the manufacturer directly, referring to the data reported on the identification plate of the unit: model, serial number  
The correct reference guarantees quick and precise answers.

## 1.6 Transport, packaging and storage

The unit is supplied with a dedicated packaging that avoids damage due to transport.

Upon receipt of the goods, the customer must check whether the model and quantity received correspond to the data of the order confirmation.

Components must be stored indoors in dry, weather-protected environments and at temperatures above -10 °C.

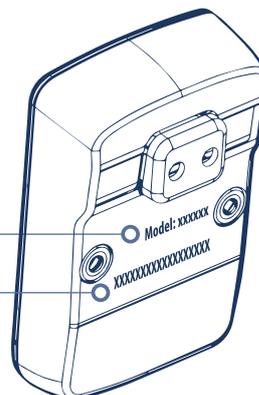
**!** **IMPORTANT:** It is the responsibility of the installer to dispose of the packaging in an appropriate manner in compliance with the laws in force on the subject.

## 1.7 Identification of the HMI unit

The identification of the HMI unit is shown on the back of the device via code and serial number

• Code

• Serial number



**!** **IMPORTANT:** Identification code and serial number must never be removed.

## 1.8 Safety

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

All unauthorized modifications will invalidate the guarantee. Furthermore, a modified eBike could lead to accidents for which substantial compensation must be paid.

Accidental activation of the vehicle can cause injury (even in the case of the push aid).

Walk mode may involve the rotation of the pedals, therefore keep at a distance that does not interfere with them.

In order to minimise the causes that can create hazardous situations for users and others, we encourage you to adopt good rules of behaviour. Particularly when using the eBike, it is good practice to respect the following points:

- consult your doctor before starting a training program;
- observe the traffic regulations relating to pedal assisted bicycles;
- don't get distracted by looking at the display when you are riding the bicycle;
- do not use the display as a handle;
- only use the HMI unit and the control panel supplied;
- remove the battery before performing any type of operation.

It is necessary to remove the battery:

- Before any intervention on the eBike
- During transport by car / plane
- In case of conservation



**IMPORTANT:** The manufacturer declines all responsibility for damage to persons or property resulting from improper use of the equipment, from errors in installation and use or from inexperience, imprudence and negligence with respect to the indications / instructions given in this manual.



**IMPORTANT:** The manufacturer declines all responsibility for damage to persons or property, as well as to the defective operation of the unit if no original spare parts and products recommended for cleaning and maintenance are used.

## 1.9 EU Declaration of Conformity

### UE Declaratrion of conformity

**Manufacturer:** OLI eBike Systems S.r.l.  
**Address:** Via delle Pesche, 821, 47522 Cesena FC (IT)

Declares that this document is released under his sole responsibility.

**Object of the declaration:**

Description	Code	Trading name
Human Machine Interface	EBHMI0020	Display High Vision

The object of the declaration described above is in conformity with the following relevant Union harmonization legislation:

- DIRECTIVE 2014/30/EU of 26 February 2014 relating to electromagnetic compatibility.
- DIRECTIVE 2011/65/EU of 8 June 2011 on the restriction of the use of certain hazardous substances in electrical and electronic equipment (RoHS), subsequent amendments and/or additions.

**The following regulations have been applied:**

- EN 55032:2015
- EN 55035:2017
- EN 15194:2017

Signed in the name and on behalf of OLI eBike Systems.

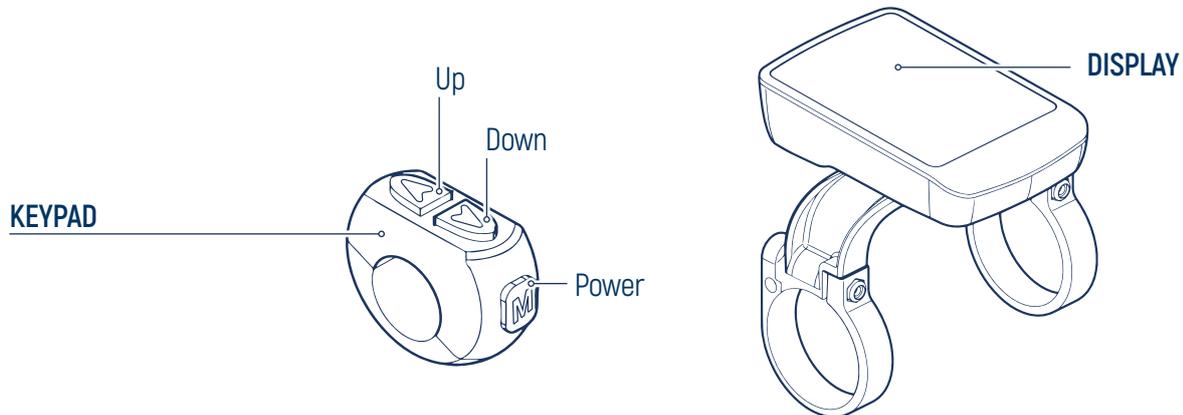
Cesena, 27/07/2023

  
Giorgio Gavioli  
Chief Executive Officer

# 1. GENERAL INFORMATIONS

## 1.10 General description

HIGH VISION is an HMI unit that allows you to analyse and view data relating to the eBike and the training in progress. The unit consists of a sturdy, injection-moulded ABS body housing the LCD display and a keypad containing the keys that allow for control and navigation.



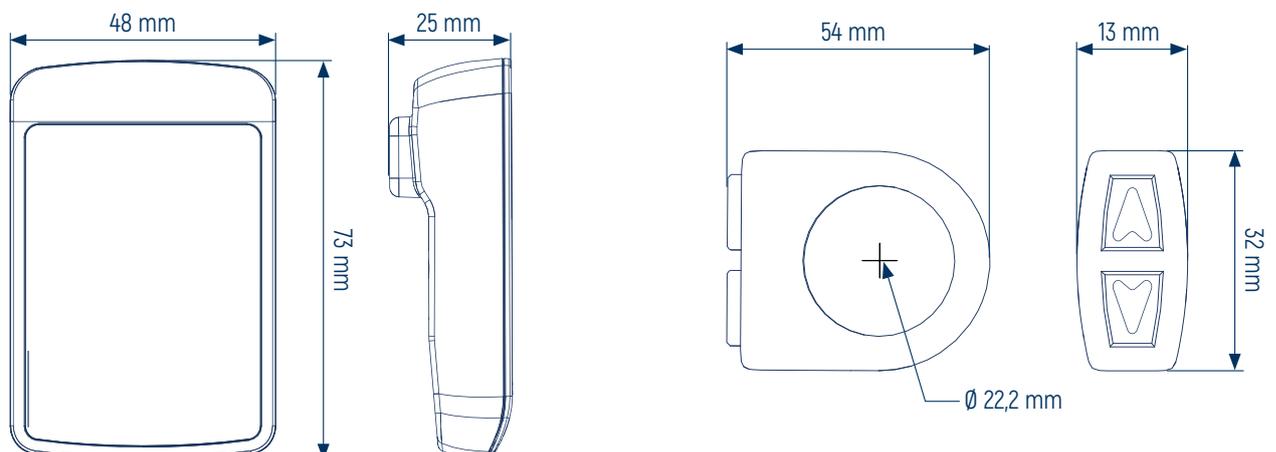
**!** **IMPORTANT:** The HIGH VISION unit is exclusively intended for use as an HMI on an eBike. Uses other than those foreseen and not compliant with what is described in this manual, as well as being considered improper and prohibited, can create dangerous conditions for people and things.

**!** **IMPORTANT:** The manufacturer declines all responsibility for improper use of the product.

## 1.11 Technical table

Display type	LCD TFT
Operating Temperature	-5° / 40° C
Storage Temperature	-20° / 60° C
Protection level	IP66

## 1.12 Size

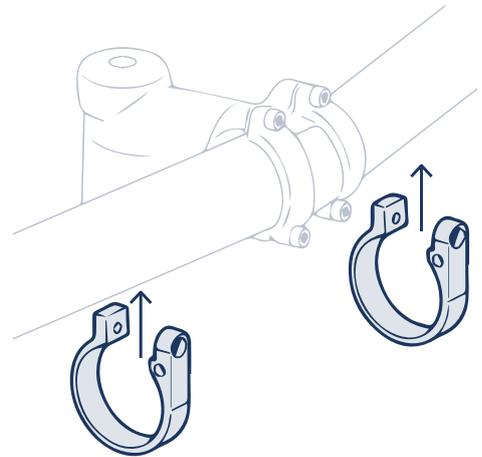


# 2. INSTALLATION

## 2.1 Display installation

1

Insert the display holder rings on the handlebar.

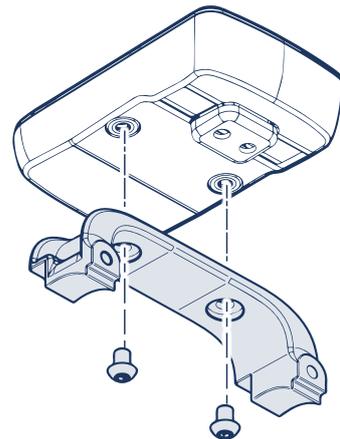


2

Install the display on the support, tightening the M4 fixing screws.



1,5 - 3 Nm

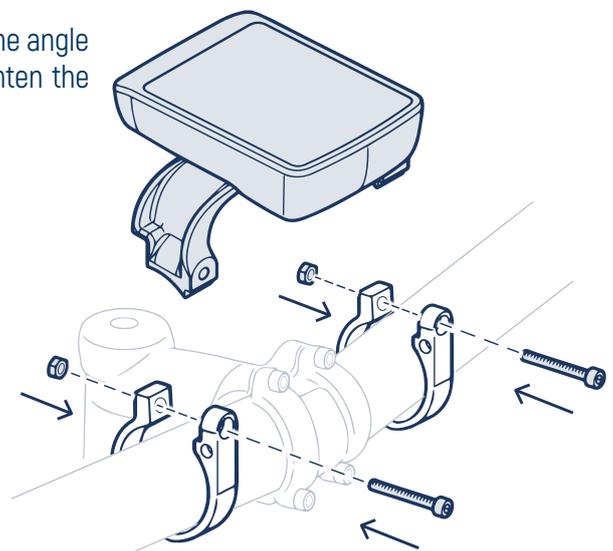


3

Position the display on the supports paying attention to the angle (15 ° - 35 ° with respect to the horizontal plane) and tighten the fixing screws with the nuts.



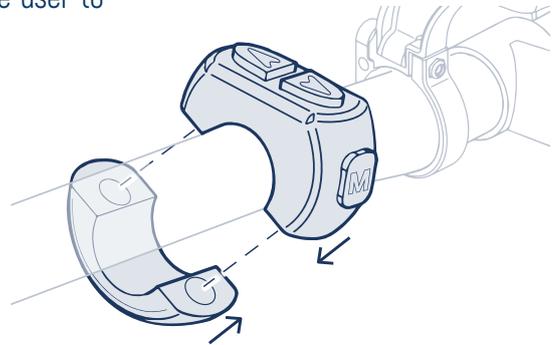
1,5 - 3 Nm



## 2.2 Keypad installation

1

Position the keypad while paying attention to the angle (15 ° - 35 ° with respect to the horizontal plane), so as to allow the user to operate it comfortably while moving.



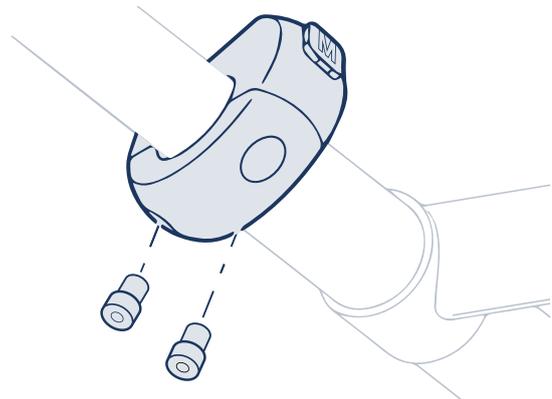
2

Tighten the fixing screws.

3

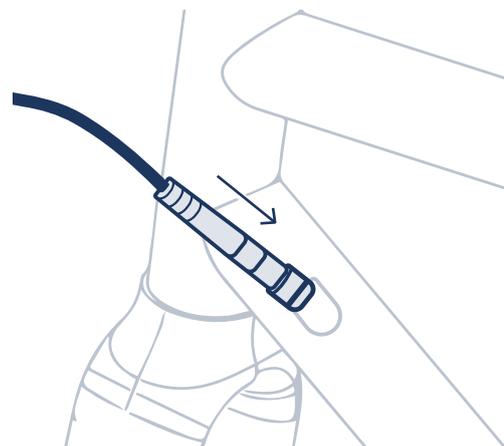


1,5 - 3 Nm



3

Insert the display cable into the frame to be able to connect it to the power unit.



## 3.1 Commands

To navigate the software there are 3 keys that can be used with short press or with a press of more than 2 seconds. Throughout this manual, the following icons are used to indicate the type of key and press for each action.

Key	Short press (< 1")	Long press (> 2")
Power	 Turn the display on or off; from the Menu and Advanced section, return to the last displayed Home screen.	 Turn the display on or off; from the Menu and Advanced section, return to the last displayed Home screen.
Up	 It allows you to: increase the level of assistance; scroll through the menu items.	 From any main screen allows you to change the operating mode of the lights.
Down	 It allows you to: decrease the level of assistance; scroll through the menu items.	 From any main screen allows you to activate Walk mode.
Up+Down	-	 From the main screens, pressing the two keys simultaneously allows access to the Menu.

## 3.2 Power ON

To turn on the display, depending on the type of battery installed:

- Press the Power button for a long time
- Press the on key on the battery.

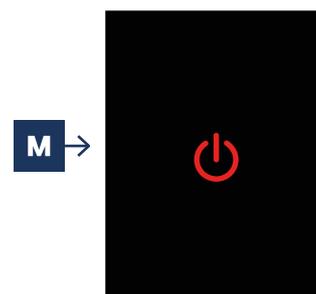


## 3.3 Power OFF

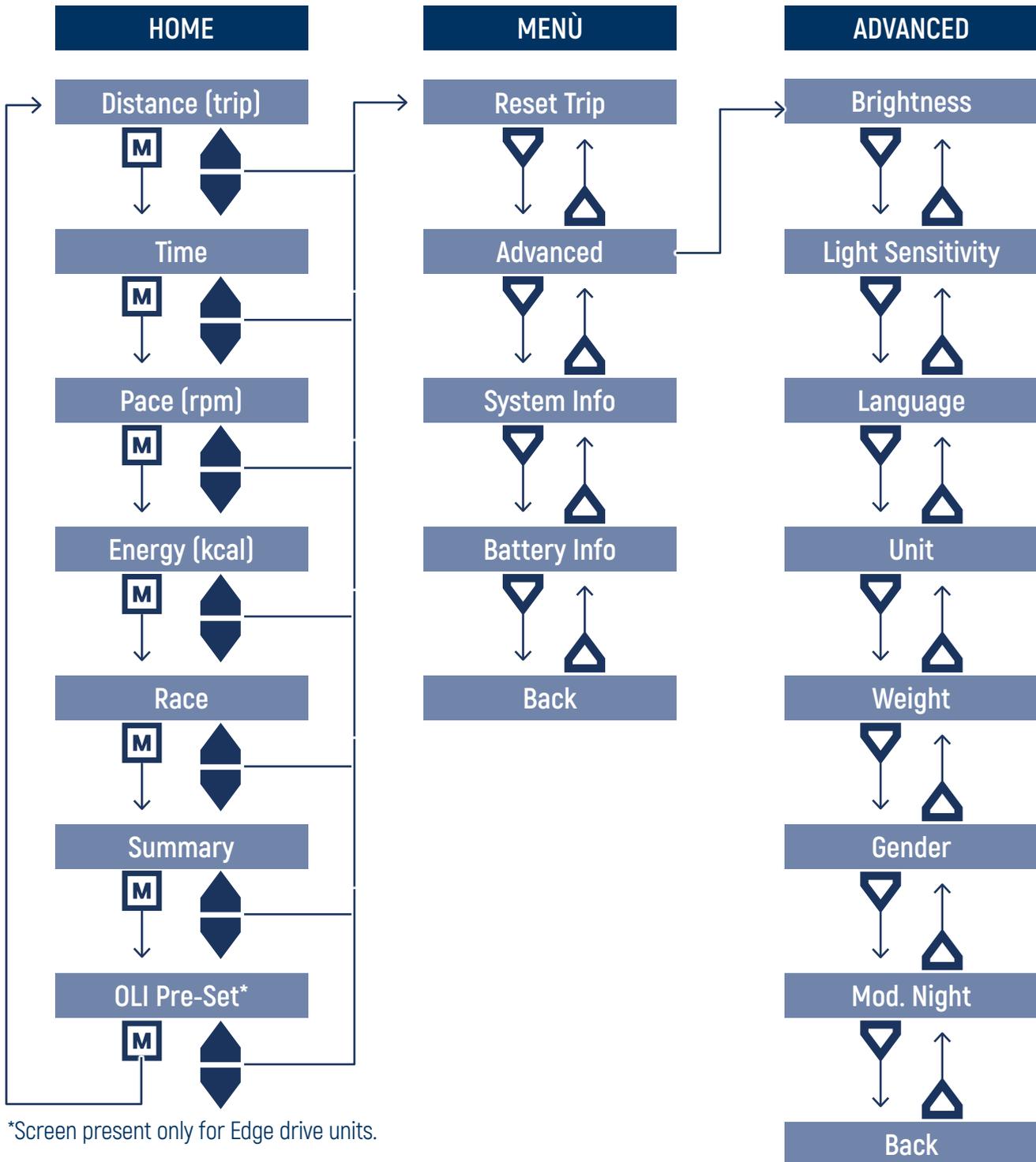
To turn off the display, depending on the type of battery installed:

- Press the Power button for a long time
- Press the off key on the battery.

If the eBike isn't used for a certain amount of time, depending on the type of battery, the system will switch off automatically.



## 3.4 Navigation diagram



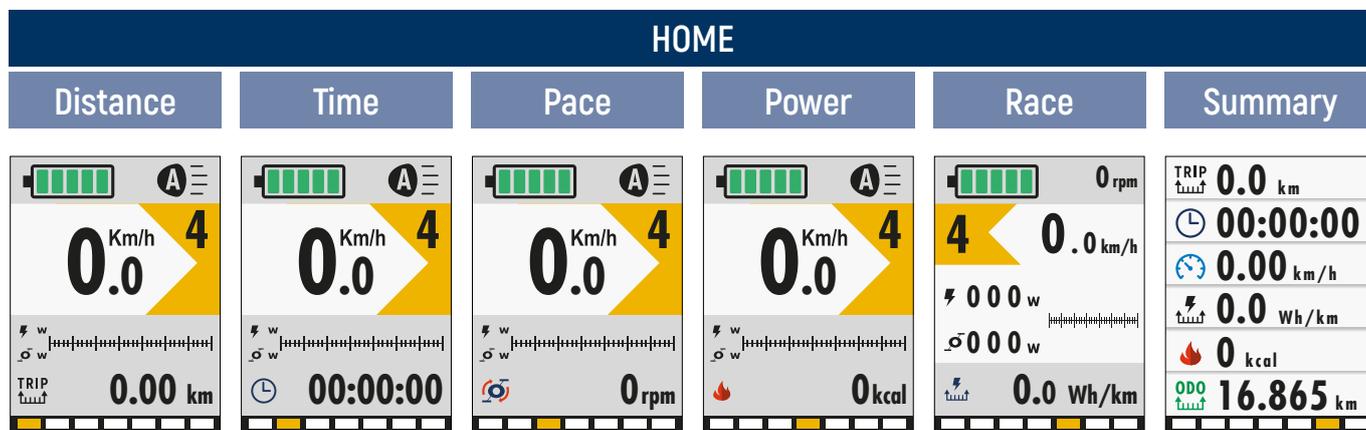
**IMPORTANT:** Some specifications, features and aesthetic details may vary depending on the eBike manufacturer. Refer to the bike manufacturer's specifications.

# 3. USE

## 3.5 Home screens

The Home section consists of 6 screens.

After powering on, the first Distance screen of the Home section is displayed.

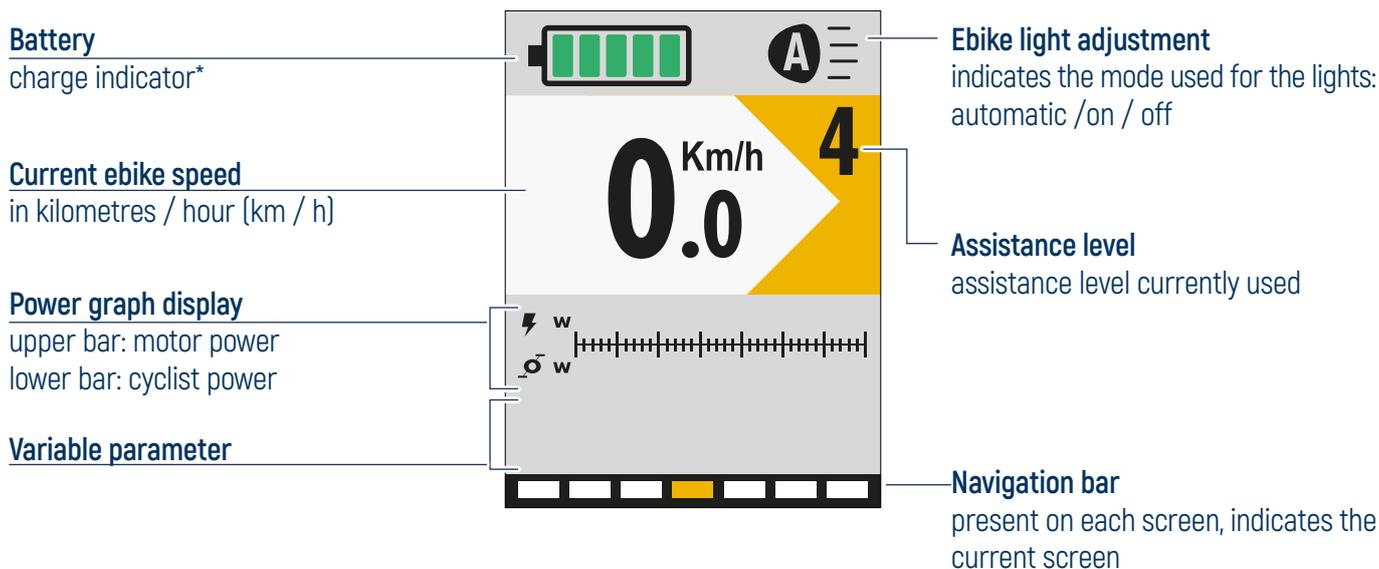


To scroll through the screens you need to press the power-on key **M**.

From any screen in the Home section, you can:

- adjust the **assistance level** by pressing the up **▲** and down keys **▼**;
- enter **Walk** mode by holding down the down key **▼**;
- adjust the brightness of the eBike **lights** by holding down the up key **▲** for 2";
- enter the **Menu** section by holding down the up + down keys at the same time **◆** for 2".

The screens in the Home section differ from each other in the type of information displayed.



**! \*IMPORTANT:** Depending on the type of battery used by the eBike manufacturer, the state of charge can be represented as a percentage or in notches. Refer to the bike manufacturer's specifications.

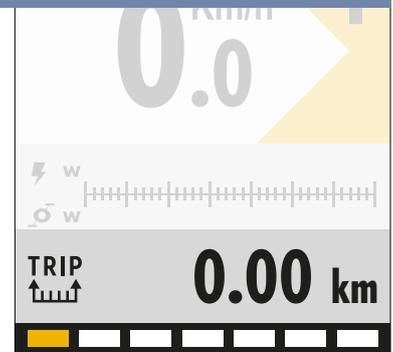
# 3. USE

The first 4 screens differ only for the variable parameter which is described below.

## Distance



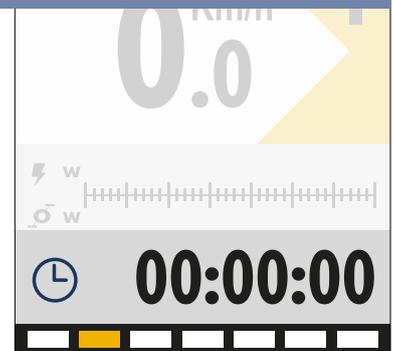
Indicates the distance travelled in kilometres (km) since the last reset.



## Time



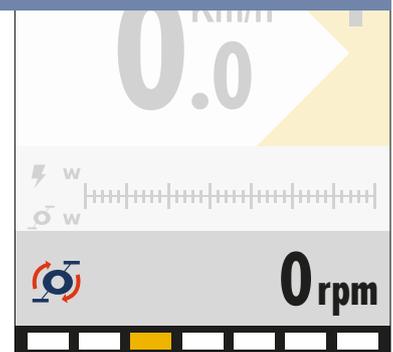
Indicates the time elapsed in motion since the last reset. The value is expressed in hours: minutes: seconds.



## Pace



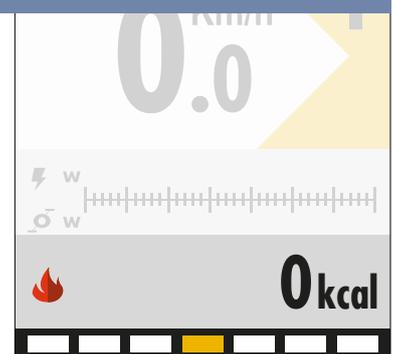
Indicates the number of complete crank rotations per minute in RPM (revolutions per minute)



## Power



Indicates the energy consumed by the cyclist in kilocalories (kcal) since the last reset.



# 3. USE

## Race

It is the fifth screen of the Home section.

In this screen, the values in watts (w) of the motor power and cyclist power are expressed in full.



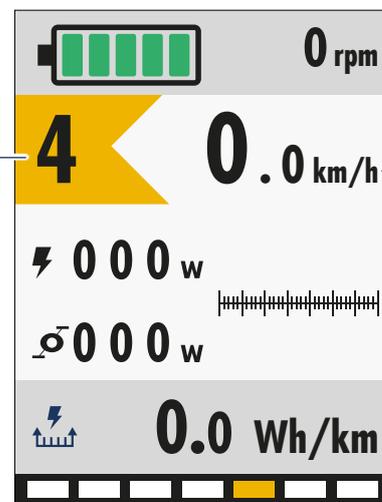
Indicates the instantaneous power delivered by the motor in watts (w).



Indicates the instantaneous power expressed by the cyclist in watts (w).



Indicates the average energy consumption in watt-hours per kilometre (Wh / km), calculated since the last reset. This data allows you to adjust the level and, therefore, the consumption of the eBike according to the need. By calculating the relationship between this data and the battery capacity, the exact distance possible for each charge is obtained.



**Current ebike speed**  
in kilometres / hour (km / h)

**Pedaling cadence**  
number of complete crank rotations per minute in RPM (revolutions per minute)

**Assistance level**  
assistance level used

## Summary

It is the sixth screen of the Home section. This screen summarizes the variable parameters of the previous screens.



Indicates the distance travelled in kilometres (km) since the last reset.



Indicates the time elapsed in motion since the last reset. The value is expressed in hours: minutes: seconds.



Indicates the average speed in kilometres per hour (km / h) measured since the last reset.



Indicates the average energy consumption in watt-hours per kilometre (Wh / km), calculated since the last reset.



Indicates the energy consumed by the cyclist in kilocalories (kcal) since the last reset.



Indicates the total distance travelled by the eBike in kilometres (km). Non-resettable value.

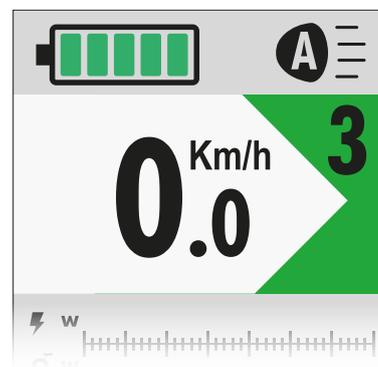
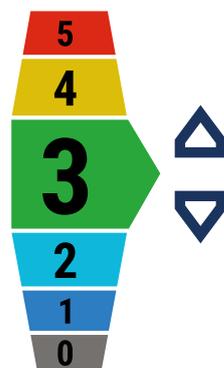


## 3.6 Assistance level

From any screen in the Home section it is possible to change the assistance level by pressing the up key  $\blacktriangle$  to increase it and the down key  $\blacktriangledown$  to decrease it.

The table shows the multiplication factor for each level of assistance.

Level	Multiplicative factor*
LEVEL 0	0%
LEVEL 1	50%
LEVEL 2	100%
LEVEL 3	200%
LEVEL 4	300%
LEVEL 5	400%



\* The assistance percentages of the levels are indicative because they can be customized by the eBike manufacturer.

**!** **IMPORTANT:** The standard configuration of OLI eBike Systems is described below. Some eBike manufacturers, in collaboration with OLI eBike Systems, may have developed different configurations and varied the number of levels available. Refer to the eBike manufacturer's specifications.

## 3.7 Walk mode

The system is equipped with a walk assistance function, which allows you to activate the motor up to a maximum speed of 6 km / h, allowing you to tackle short stretches more easily by pushing the eBike.

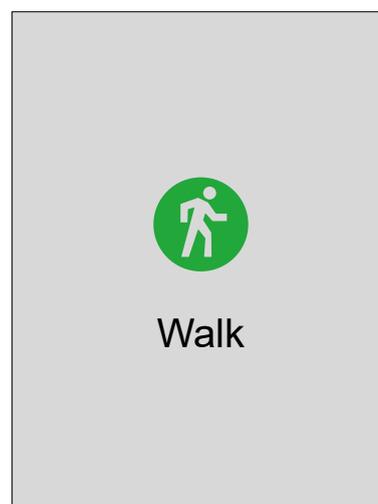
To activate the walk assistance function, press and hold the down key  $\blacktriangledown$ . The motor will start in Walk mode and the corresponding icon will appear on the display.

To deactivate Walk mode, release the down key  $\blacktriangledown$ .

If assistance level zero (0) is set, the motor is disabled and the walk assistance function cannot be used.

The motor will shut down in the following cases:

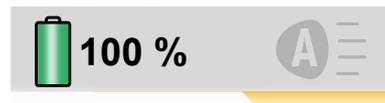
- release of the down key  $\blacktriangledown$ ,
- speed exceeding 6 km / h,
- locking the eBike wheel.



## 3.8 Battery charge indication

The remaining charge indication can be in percentage or notches, depending on the type of battery mounted on the ebike. Refer to the eBike manufacturer to find out the type of battery installed on your eBike.

### INDICATION IN %



The communication between the battery and the Drive Unit allows for a precise indication of the remaining charge. This gives you access to the **actual remaining charge values** as they are calculated directly from the built-in BMS.

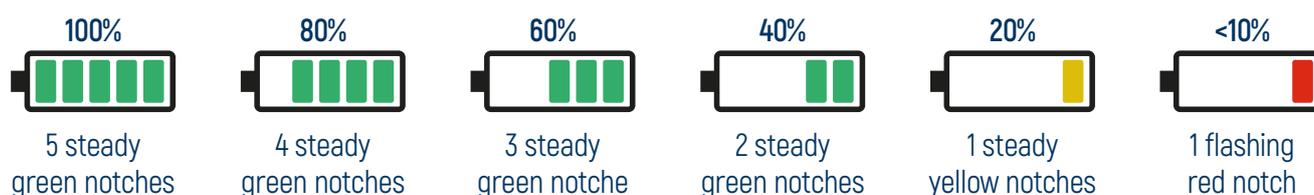
### INDICATION IN NOTCHES



Batteries that do not allow communication with the OLI eBike system do not allow access to the actual remaining charge values.

In these cases, the indication of the remaining charge level shown on the display is an estimate, which can be conditioned by multiple external factors: years of battery life, charge and discharge cycles, level of assistance used, outside temperature, etc.

Countless tests on batteries of different capacities have allowed us to considerably improve the reliability of the estimate shown on the display, which will be represented in 5 notches, each of them represents 20%.



### ENERGY SAVING

When the battery is less than 10% charged, the drive unit goes into power saving mode, providing up to 2 hours of light on. Initially, it is possible to use assistance up to level 3, then the drive unit provides assistance up to level 2, and finally the drive unit ceases to provide assistance entirely.

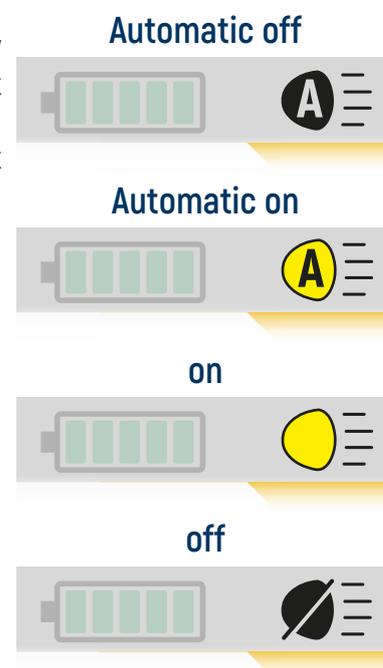
## 3.9 Lights operation

The lights of the eBike can be adjusted in four different ways:

- **automatic off** (default setting at power-on), shutdown takes place automatically by means of the twilight sensor integrated in the HMI which detects the ambient brightness level;
- **automatic on**, switching on takes place automatically through the twilight sensor integrated in the HMI which detects the level of low ambient light;
- **on**, lights always on;
- **off**, lights always off.

To change the operating mode of the lights:

- press and hold the up key ▲ for 2",
- the lights change mode and the icon in the display changes status,
- release the up key ▲ to confirm the mode.



**!** **IMPORTANT:** In some countries, the switching on and off of the lights on PEDELECs is regulated by the highway code. Check with the eBike manufacturer that the configuration of your vehicle complies with the regulations in force in the country in which it is used.

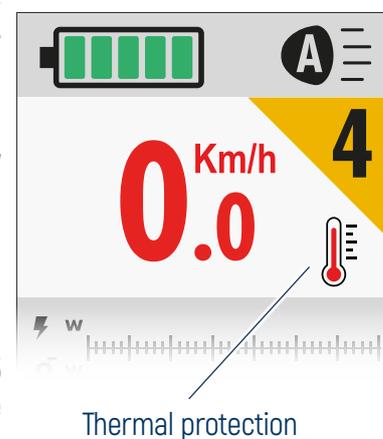
## 3.10 Thermal management

If the drive unit is subjected to significant stress for an extended period of time, it can **reach high temperatures**. To optimize heat dissipation and prevent the Drive Unit from overheating, it is recommended to maintain a pedalling frequency of **65-70 rpm**.

In case of high temperatures, the **thermal protection** system will be activated, which gradually reduces the power in order to speed up the cooling process. On the screen, the km/h indicator will turn red, and the thermometer icon will appear.

Throughout the icon's life, it's a good idea to decrease the level of assistance used.

If precautions are not taken, the temperature will continue to rise until **Warning 203** appears, which will completely cease to provide assistance until the temperature drops.

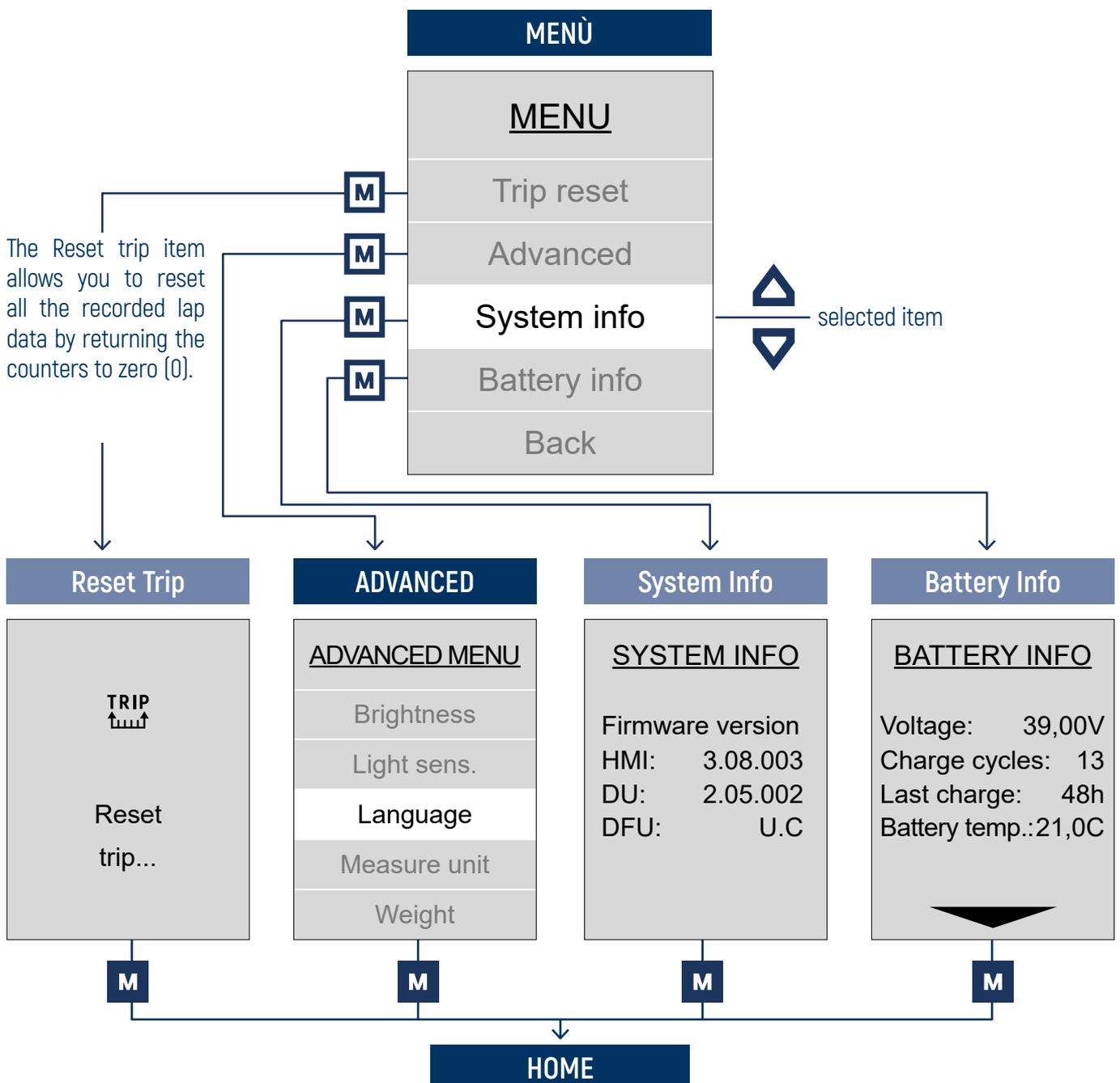


## 3.11 Menu

From the Home section, hold down the up + down keys at the same time  for 2 "to enter the Menu section.  
From any screen, by holding down the power-on key  for 2 ", you can return to the last viewed Home screen.

From the Menu page:

- use the up  and down keys  to scroll through the items present, the selected item is highlighted in the centre in the white line,
- press the power-on key  to confirm and open the page of the selected item, the Back item takes you to the first screen of the Home section.



## 3.12 Advanced

From the Home section, hold down the up + down keys at the same time  for 2 "to enter the Menu section.

From any screen, by holding down the power-on key  for 2 ", you can return to the last viewed Home screen.

From the Advanced page:

- use the up  and down keys  to scroll through the items present, the selected item is highlighted in the centre in the white line,
- press the power-on key  to confirm and open the page of the selected item, the Back item takes you back to the Menu page.

<u>ADVANCED MENU</u>
Brightness
Light sens.
<b>Language</b>
Measure unit
Weight
Gender
Night mode
Back

### LIGHT SENSITIVITY

From this screen it is possible to adjust the sensitivity of the twilight sensor, choosing a value between 10 and -10, to manage:

- automatic switching on of the lights,
- automatic display brightness.

Use the up  and down keys  to scroll through the values.

The selected value is highlighted in the centre in the white line.

Press the power-on key  to confirm and return to the Advanced page.

Select the Back item and press the power-on key  to return to the Advanced page without setting any value.

<u>LIGHT SENS.</u>
2
1
<b>0</b>
-1
-2



## BRIGHTNESS

From this screen, you can adjust the brightness of the screen.

Use the up  and down keys  to scroll through the values.  
The selected value is highlighted in the centre in the white line.

Press the power-on key  to confirm and return to the Advanced page.

Select the Back item and press the power-on key  to return to the Advanced page without setting any value.

<u>BRIGHTNESS</u>
4
5
6
7
8
9
10
Auto
Back

## LANGUAGE

From this screen you can choose the language.

Use the up  and down keys  to scroll through the values.  
The selected value is highlighted in the centre in the white line.

Press the power-on key  to confirm and return to the Advanced page.

Select the Back item and press the power-on key  to return to the Advanced page without setting any value.

<u>LANGUAGE</u>
Italiano
English
Français
Deutsch
Español
Čeština
Polski
Back

## MEASURE UNIT

From this screen it is possible to select the unit of measure with which the following are calculated: instantaneous speed, average speed, average consumption, lap distance, total distance.

Use the up  and down keys  to scroll through the values.  
The selected value is highlighted in the centre in the white line.

Press the power-on key  to confirm and return to the Advanced page.

Select the Back item and press the power-on key  to return to the Advanced page without setting any value.

<u>MEASURE UNIT</u>
Km
Miles
Back

## WEIGHT

From this screen you can set your body weight by choosing a value between 50 and 150 kg.

Use the up  and down keys  to scroll through the values. The selected value is highlighted in the centre in the white line.

Press the power-on key  to confirm and return to the Advanced page.

Select the Back item and press the power-on key  to return to the Advanced page without setting any value.



<u>WEIGHT</u>
68
69
<b>70</b>
71
72

 **IMPORTANT:** Setting this datum is not necessary for the eBike to function correctly. The value has the sole purpose of making the calculation of the calories consumed reliable.

## GENDER

From this screen you can set your gender.

Use the up  and down keys  to scroll through the values. The selected value is highlighted in the centre in the white line.

Press the power-on key  to confirm and return to the Advanced page.

Select the Back item and press the power-on key  to return to the Advanced page without setting any value.



<u>GENDER</u>
Male
<b>Female</b>
Back

 **IMPORTANT:** Setting this datum is not necessary for the eBike to function correctly. The value has the sole purpose of making the calculation of the calories consumed reliable.

## NIGHT MODE

From this screen you can choose the configuration for night mode:

- automatic, the night mode is set automatically by means of the twilight sensor inside the display, which detects the ambient brightness;
- active, night mode always active;
- deactivated, night mode always deactivated.

Use the up  and down keys  to scroll through the values. The selected value is highlighted in the centre in the white line.

Press the power-on key  to confirm and return to the Advanced page.

Select the Back item and press the power-on key  to return to the Advanced page without setting any value.



<u>NIGHT MODE</u>
Automatic
Active
<b>Disable</b>
Back

## 3.13 OLI Pre-Set

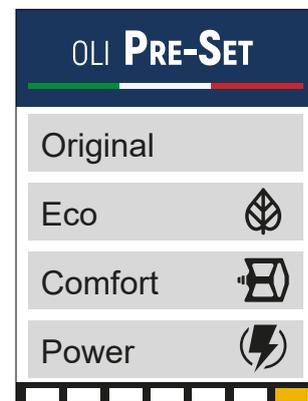
OLI Pre-Set is the seventh screen in the Home section, and is only available for Edge drive units.

From this screen you can choose between 4 different Pre-Sets, each of which allows a different behaviour of the drive unit.

To use a Pre-Set, simply:

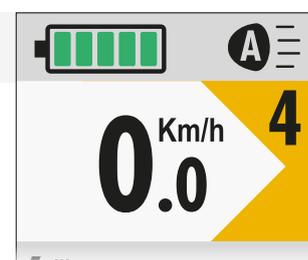
- use the up ▲ and down keys ▼ to scroll through the items present
- press the power-on key **M** to confirm

On the Home screens, the icon of the Pre-Set currently being used will appear.



**Original**

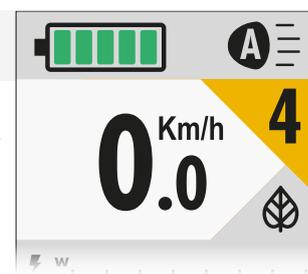
Default configuration, defined with the manufacturer's brand. This configuration is different for each bicycle model and is the setting chosen by the manufacturer. The bike will always turn on with this Pre-Set, which will not be modifiable with a customization. The number of assistance levels may vary depending on the manufacturer.



**Eco**  **4 LEVELS OF ASSISTANCE**

**Battery life**  **Climbing assistance**  **Riding control**  **Power** 

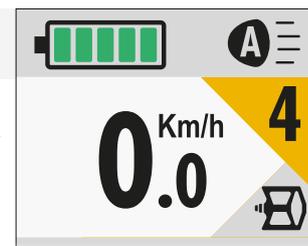
Mapping that guarantees immediate engine assistance but with progressive and gentle release. This behaviour allows for a pleasant driving feeling. Battery consumption is saved to the maximum, to ensure all the autonomy that the battery has.



**Comfort**  **4 LEVELS OF ASSISTANCE**

**Battery life**  **Climbing assistance**  **Riding control**  **Power** 

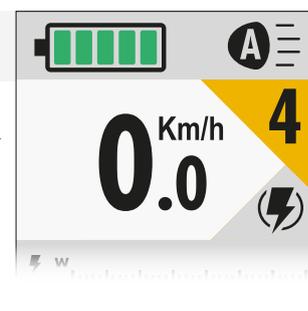
The bike retains the gentle, smooth character of the ECO, but increases power delivery and acceleration, allowing you to tackle even fairly demanding trails.



**Power**  **4 LEVELS OF ASSISTANCE (WITH OVER-RUN)**

**Battery life**  **Climbing assistance**  **Riding control**  **Power** 

Pre-Set designed specifically for technical off-road, with very fast response times; Maximum power on high levels and torque distributed over the entire delivery range. Only and exclusively on this Pre-Set there is the Over-run function; a particular function that provides, for a few tenths of a second, full assistance even when you stop pedalling.



**!** **IMPORTANT:** To ensure maximum safety, turning the pedals backwards a few degrees will immediately cause the Over-Run function to cease to provide assistance.

## 3.14 Setting Pre-Set

In the Eco, Comfort and Power Pre-Sets, it is possible to edit all the assistance levels via the screen Setting Pre-Set.

If a pre-set has been customized, the following symbol \* will appear next to the name.

To enter the **Setting** screen of a Pre-Set you need to position yourself on the Pre-Set you intend to customize and access via one of two operations:

- Press and hold the power-on key **M** for 2"
- Press the power button **M** twice in rapid succession

Once inside, scroll to the level you want to modify and select it with the power button **M**

To quickly exit a Pre-Set's Settings:

- Press and hold the power-on key **M** for 2"

To undo all customizations made on a Pre-Set, and return it to its default state, you need to:

- From the Pre-Set screen, Use the up **▲** and down keys **▼** to scroll through the Pre-Set
- Press and hold the power-on key **M** for 2"
- Scroll down to the Reset item and press the button **M**

Below are the parameters that can be edited from the Setting Pre-Set screen.

It is important to point out that the min and max editable values of the entire scale are shown here, but in order to maintain the different behaviours of the Pre-Sets, each level of each Pre-Set will be editable within a narrow range.

### ASSISTANCE (da 50% a 400%)

It adjusts the assistance required by the motor in relation to the power emitted by the rider. For example, if you choose 200%, the assist will deliver twice the power that the rider imparts to the pedals.

### MAX TORQUE (from 30% to 100%)

To decide how much maximum torque to use. For example, if you choose 50%, you will have 50% of the 90Nm.

### ACCELERATION (from 10% to 100%)

Parameter that influences the acceleration ramp at the start-up phase.

### DECELERATION (from 30% to 100%)

Parameter that influences the deceleration ramp when pedalling stops.

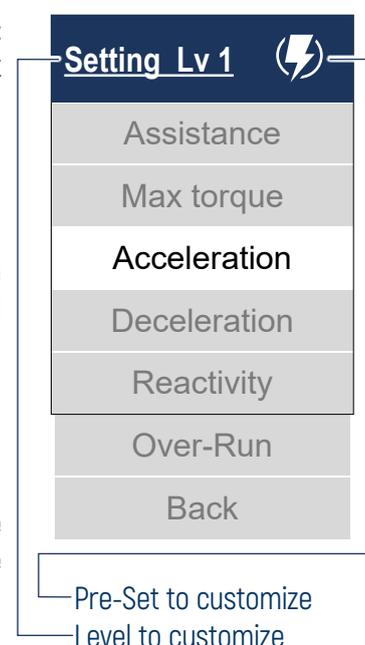
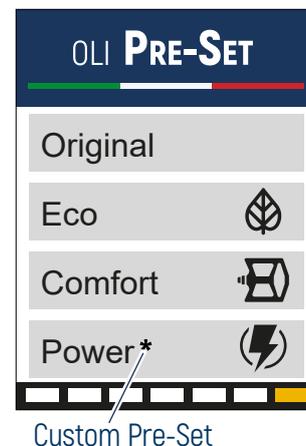
### REACTIVITY (0, 1, 2, 3)

Indicates the reactivity that the system employs to perceive pressure on the pedals.

Low numbers make you feel a soft responsiveness, high numbers make you feel very responsive.

### OVER-RUN (0, 1, 2, 3) present ONLY on Pre-Set Power.

To decide how long the assistance provided after the ride should be extended. By selecting higher values, the motor will continue to assist for an extended time.

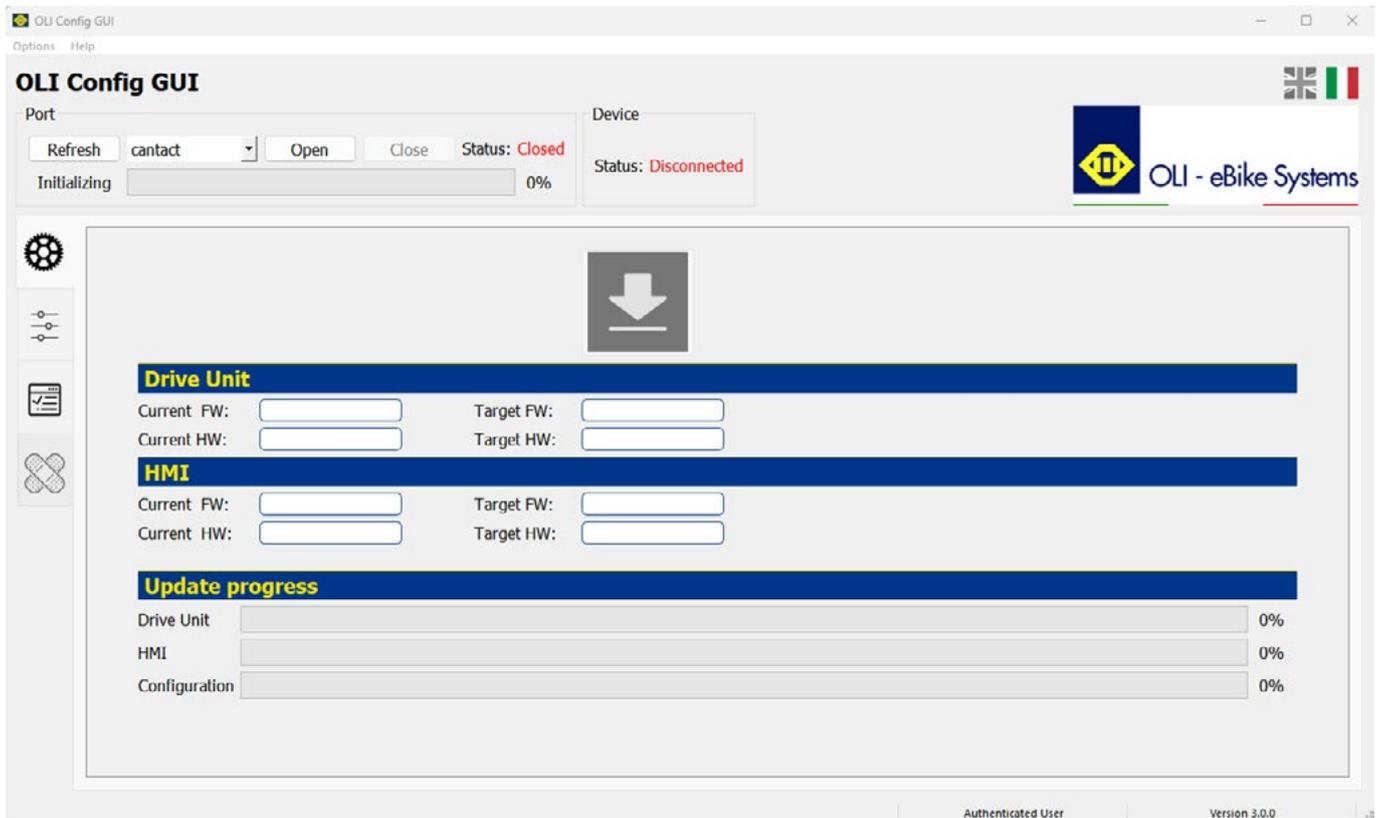


## 4.1 Connection and communication

You can use one of the following peripherals to interface the drive unit to your PC:

- OLI eBike Systems serial programming cable that connects to the USB port
- CAN OLI eBike Systems programming cable that connects to the USB port

The proprietary software, necessary for firmware changes and updates, is the OLI Config GUI. The software could be modified at any time to correct errors and / or defects in use.



## 5.1 Maintenance tips

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It is recommended to periodically check the drive unit to check the integrity of the components and the firmware. Before installing lights on the eBike, check that they are compatible and have the same voltage as the drive unit.

Respect the operating and storage temperatures of the drive unit.

It is important to protect the unit from temperatures outside the recommended temperature ranges, such as heat sources and unventilated environments with strong solar radiation.

For assistance or repairs, contact an authorized dealer.

## 5.2 Cleaning

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Cleaning operations do not require dedicated products or tools. None of the components, including the drive unit, should be immersed in water or cleaned with a high pressure jet. To clean the motor and the HMI unit, use only a cloth moistened with water.



**CAUTION:** Do not use aggressive products. Never use abrasive products or powders or basic or acid chemical detergents.



**IMPORTANT:** The manufacturer declines all responsibility for damage caused by incorrect cleaning or deriving from the use of unsuitable products.

## 5.3 Demolition and disposal

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HMI unit, display, keypad, various accessories, and packaging must be disposed of in accordance with environmental regulations existing. Do not throw the various components into household waste bins.

Do not throw this product into the fire.

### FOR UE COUNTRIES ONLY:

in accordance with European Directive 2012/19/EU electrical appliances that have become unusable and, according to European Directive 2006/66/EC, Rechargeable batteries/defective or worn batteries must be collected separately and sent for environmentally friendly reuse.

Return the non-functioning HMI unit to an authorized eBike dealership.

## 5.4 Error code

The following table lists the possible faults and the 4-character codes displayed in the error messages.

Code	Description
0104	<b>SPEED SENSOR ERROR</b> Try changing speed sensor. If the error persists, change the drive unit.
0106	<b>TORQUE OFFSET ERROR</b> Change torque sensor. If the error persists, change the drive unit.
0803	<b>DISPLAY OR LIGHTS POWER ERROR</b> External device or electronic card power supply problem. Try replacing displays or lights. If the error persists, change the engine.
0804 0811	<b>MOTOR SELF PROTECTION</b> Error can occur while the cyclist is pedaling, with too high a current request: <ul style="list-style-type: none"> <li>• Try reloading the bike configuration</li> <li>• Perform a firmware update if available</li> </ul> Check with the cyclist under what conditions the error occurred. If the error persists, change the drive unit.
0806	<b>PERIPHERAL POWER SUPPLY PROBLEM</b> It is a problem on the card similar to 0x803. Try disconnecting the BMS cable or smart devices if present. If the error persists, change the drive unit.
0807	<b>UNDERVOLTAGE ERROR</b> Battery or cable connection problem. It could also be a problem with the card. Check that the battery cables and the battery work properly. If the error persists, change the battery. If the error still persists, change the engine.
0809	<b>OVERVOLTAGE ERROR</b> Battery problem or board problem. Check that the battery cables and the battery work properly. If the error persists, change the battery. If the error still persists, change the engine.
080A 080B	<b>OVERHEATING</b> Engine overheating error. Let the engine cool down and restart. If persists, change drive unit.
0810	<b>CURRENT OFFSET ERROR</b> Card error on power up. If the error persists, change the drive unit.
0813 0815 0830	<b>SOFTWARE ERROR</b> Check with the cyclist under what conditions the error occurred, and if available, perform a firmware update.

Code	Description
0805   080C 080D   080E 080F   0814 0816   0818 0820	<b>ERRORE SCHEDA HARDWARE</b> Try resetting the bike. If the error persists, change the drive unit
0817	<b>COMUNICAZIONE CAN ERROR</b> Check the integrity of both Display and BMS cables. If the error persists, change the drive unit.
0812 0819 081A	<b>PARAMETER ERROR</b> Parameter configuration error. Try reprogramming the motor to the correct configuration and restart the bike.

## 5.5 Warning code

Warning screens are screens that indicate the presence of detected anomalies that are considered not harmful to the security of the drive drive. The firmware will automatically correct them.

The following table lists the possible anomalies and the 4-character codes displayed in the warning messages.

Code	Description
0200	<b>LOST COMMUNICATION WITH BATTERY BMS</b> Some battery readings may no longer be reliable. Press any button, the firmware will automatically correct the problem. If the problem persists, contact your local dealer.
0201	<b>MAGNET NOT DETECTED</b> Check that the magnet is seated correctly. Press any key to continue. If the problem persists, contact your local dealer.
0202	<b>ABNORMAL TORQUE GAUGE SIGNAL</b> Move the cranks and rear wheel backwards a few degrees. Press any key to continue. If the problem persists, contact your local dealer.
0203	<b>CRITICAL TEMPERATURE OF THE DRIVE UNIT</b> The Drive Unit stops delivering power until the temperature goes back to normal. We recommend stopping and waiting for the Drive Unit to cool down.
0204 0205	<b>PARAMETER READ ERROR</b> Press any button, the firmware will automatically correct the problem. If the problem persists, contact your local dealer.



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