ebm ❤️ bikes
1. Illustrations of iWoc® Standard

1.1 iWoc Component Diagram

A. Power "+" or "-" button - Walk mode control*
B. Power "+" or "-" button - Light control*
C. On/Off button for eBike and iWoc® remote
D. Aux button (APP Control change CONTEXT information in the screen, voice commands, Play/Pause and Zoom OUT)
E. Aux button (APP Control change MAIN information in the screen, Next Song and Zoom OUT)

1. LED White Lights for eBike power assistance level information
2. LED RGB Lights for status and notification
3. LED White Lights for eBike battery Pack level information
4. Fastening screw for on-board computer
5. Washer for fastening screw
6. Holder for iWoc® remote
7. Protective grommet for communication wire
8. iWoc Remote plug
9. Rubber ring between holder and handlebar*
10. iWoc® Body
   10.1 Buttons Panel
   10.2 Waterproof Cover
   10.3 iWoc® main Board
   10.4 iWoc® shell
   10.5 Case closing flange
   10.6 Decorative Panel (For stickers)

1.2 Icon Interpretation

- SHORT PRESS "?” BUTTON
- LONG PRESS "?” BUTTON
**IMPORTANT**

*The iWoc® has one small ring around the case-closing flange. This small rubber piece is designed to be installed in a 22mm handlebar, close to the grip area. The compression of the remote, once it has been closed by the screw, leaves the remote strongly installed. Please keep in mind that THE MAXIMUM TORQUE for the screw in the remote is 1 NEWTON. More torque could break the screw holder.*

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**1.3 Main Functions Diagram**

*Depending on the configuration of the constructor and the position of the remote on the handlebar, the commands of button A/B and D/E could be interchanged.*
2. Safety Warnings

Read before starting any operation
Save all safety warnings and instructions for future reference.

- Failure to follow the warnings and instructions may result in electric shock, fire and/or serious injury.
- Save all safety warnings and instructions for future reference.
- The term “battery pack” used in these operating instructions, regardless of model, refers both to standard battery packs (battery packs with holder on the bike frame) and spare-type battery packs (removable battery packs with holder in the rear rack/carrier or on the bike frame).
- Make sure not to be distracted by the display of the on-board computer, remote information and Smartphone. Failure to focus exclusively on surrounding traffic may result in an accident.
- Read and observe the safety warnings and instructions in all operating instructions of the eBike system.
- The iWoc® remote is designed to support water splashes and riding in the rain under normal conditions. The design meets IP54 standards for electrical enclosures. The electronic remote also includes additional protection such as conformal coating, and sealed grommets to increase waterproof features. There are some important points and considerations for the care of your HIGO remote that you should keep in mind.

An eBike is similar to a conventional bike, but there are some components that include critical electronics components, such as the Motor, Battery and HMI (remotes and display). There are some basic principles that must be followed to respect the guarantee and extend the life of your eBike electronic components:

- Do not use immerse the electronic components in water (Especially with washing machines). If you are going to use washing machines it is important that you remove the battery and pack the HMI system (iWoc® remote). Do not apply pressurized water to any electronic component.
- Do not leave the eBike parked outside during winter or extreme rain conditions. The remote is designed to prevent water from getting inside, but may be compromised if subjected to these conditions over an extended period of time.
- Do not leave the iWoc® remote in wet climate conditions (rain or snow) for a long period of time.
- Remove or protect the remote if you are going to transport your eBike on your car in rainy conditions. The travelling speed of the car combined with the wet weather will increase the risk of breaking the waterproof protection.
- Keep the buttons of the remote clear of the dust and mud. If you break the cover ask to your distributor to replace it. It can be supplied as spare part.
The iWoc® is designed as a Human Machine Interface computer to control ebikemotion® propulsion systems (Motor, Battery Pack, etc.) as well as other specific, compatible eBike systems such as:

- EBIWOCCA: CAN BUS Part Number
- EBIWOCRS: RS485 Part Number

3.1 Intended of Use

The iWoc® is one of the most complex remotes that ebikemotion® Platform has introduced. The remote includes 7 white LEDs + 1 RGB LED, all of which are able to provide the user with visual information regarding:

- Battery charging level
- Motor Power level
- Bluetooth status
- eBike status
- eBike control
- Special events (incoming calls, confirmation of operations, etc.)

The iWoc® Standard wired also includes:

- Bluetooth® BLE module to establish wireless connection between the remote (eBike) and the ebikemotion® APPs (end user APP, Dealer APP, etc.).

- eBike control. The ebikemotion® standard remote includes CAN BUS communication, which allows it to fully control an eBike that uses the CAN communication system. Special series of the iWoc® standard designed ad-hoc are available for some manufacturers and may include other technology (RS-485 or UART). These models are not standard and may have some differences and limitations based in the technology and processors used in the development, as well as the speed of the SERIAL buses compared to those using CAN.

- Wired Connection: In order to replace the iWoc®, a special HIGO connector was designed to be placed outside of the eBike. If there is any problem in the remote, the iWoc® may be easily replaced without requiring access to the inner areas of the frame of the eBike.

3.2 Product Features

The iWoc® Standard is one of the most complex remotes that ebikemotion® Platform has introduced. The remote includes 7 white LEDs + 1 RGB LED, all of which are able to provide the user with visual information regarding:

3.3 Components

Refer to the beginning of the document to see the illustrations of the main components. Individual illustrations in these operating instructions may differ slightly from the actual device depending on the equipment of your eBike or new generations of the iWoc® Standard version.
Welcome to the ebikemotion® platform. This is the end user manual for the remote control iWoc®. iWoc is the acronym for Intelligent Wireless/Wire Operation Control. Within this family of remote controls there are different versions of remote:

- Standard (Wired version with 5 buttons and 8 LEDs)
- Wireless
- One (Wired version with 1 button and 1 RGB LED)
- Trio (Wired version with 3 buttons and 1 RGB LED)

Depending on the OEM integration, you can find one of these models with different functions in your eBike. One of the most important is the Bluetooth® function based on BLE (4.1 or 4.2 depending on the version and generation).

4.1 iWoc® Remote Standard, Connection

The iWoc® remote Standard is normally connected directly to the eBike using a 6 pin aerial HIGO connector.

This waterproof connector may be placed in different positions depending on the design of the eBike, but is most frequently located out of the eBike frame.

The remote connector includes a small protuberance inside and close to the signal pins. The exterior side also includes 2 arrows that show the point of interconnection of both connectors (male and female). It is very important to ensure that the 2 arrows are facing each other when you connect both plugs.

4.2 iWoc® Remote Technical Data

<table>
<thead>
<tr>
<th>Element</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>iWoc® Remote Control</td>
<td>Standard</td>
</tr>
<tr>
<td>Article number (CAN BUS)</td>
<td>EBIWOCBCA</td>
</tr>
<tr>
<td>Article number (RS485)</td>
<td>EBIWOCR5</td>
</tr>
<tr>
<td>Operating Temperature</td>
<td>C -30 to +85</td>
</tr>
<tr>
<td>Storage Temperature</td>
<td>C -40 to +85</td>
</tr>
<tr>
<td>Humidity</td>
<td>% 10 to 90 non-condensing*</td>
</tr>
<tr>
<td>Weight, approx</td>
<td>Grs 85 (with connector)</td>
</tr>
<tr>
<td>Protection Type</td>
<td>IP 54 (Dust and splash water protected)</td>
</tr>
<tr>
<td>Wire Length</td>
<td>mm 12</td>
</tr>
<tr>
<td>Connection (Black)</td>
<td>HIGO Mini B Female (6 pin -</td>
</tr>
</tbody>
</table>

*Most values are limited by the Bluetooth® BLE electronic components
5. Main Operation

5.1 Requirements

Remember to start operating your eBike you will need to check that:

- You have a sufficiently charged Battery Pack inserted or connected to your eBike. For further information, check the Battery Pack instructions from your eBike manufacturer.

- The iWoc® Remote wire is properly connected to the eBike Display bus connection.

5.2 Starting (Switching ON/OFF eBike)

**eBike Switching ON**

To switch ON your eBike system short press (press once) on button “C”. You will see that the LED lights on the iWoc® initiate a sequence while checking the system, and will then show the status:

Checking Sequence LED lights:

1. Battery LED panel starts to switch on progressively [3]
2. Assist LED panel starts to switch on progressively [1]
   a. If everything is okay, RGB LED lights turn GREEN and switch OFF. Remote shows battery level and puts assist at level 1
   b. If there is something wrong the RGB LED light turns RED and starts to blink

Remember that the drive will be activated as soon as you start to pedal. If you activate the “Walk Mode” the drive will also start to push assistance. You must have any LED light ON in the power assist LED indicator [1] to push assistance. Motor assistance will depend on the level selected in the remote.

**Push Assistance Motor power ON/OFF**

Once the eBike is switched ON you can control the power assist level of the system to push assistance or not. To control this feature, use buttons [A] and [B] to increase or decrease the power of the drive.

Each time you change the power assist you can modify the power or modify the assistance motor map depending on the motor controller integration and performance of the eBike System.

Increased power assist will be represented in the LED power assist panel with 1, 2 or 3 LED lights ON. If power assist LED lights are OFF, it means that motor will not push. If LED lights are blinking, it means that you are running in one special map, for example CUSTOM MAP, with a special configuration.

**eBike Switching OFF**

To switch OFF your eBike system long press (press and hold) button “C”. You will see that the RGB LED lights turn green, blue, red and finally white before switching off. All LED lights of the remote will switch off and the eBike system will be OFF.

**Speed limits for the eBike operation**

As soon as you have reached a speed of 25 km/h or stop pedalling in normal operation, the assistance from the eBike drive is switched off. The drive is automatically re-activated as soon you start pedalling again if the speed is below 25 km/h.
In addition to the LED information system that may be integrated in your battery pack, the battery charge-control LED panel indicator (number “3” in the illustration) also displays the charge level of the eBike battery pack. The Battery pack information may also be checked in the ebikemotion® APP with the exact amount remaining, the capacity, and a detailed prediction of range and riding time.

The LEDs of the charge-control indicator on the battery will turn off. The capacity for assisting the drive has been used up, and assistance is gently switched off. The remaining capacity is made available for the lighting.

Remember that we use 4 LEDs in the battery panel to show the battery level. Between one level and the next one there is another intermediate level. To indicate this state, the LED for the higher of the two levels will flash. Please check this diagram for a full explanation.

Automatic Switch OFF
If the eBike is not moved and no button on the on-board computer is pressed for 5 minutes, the eBike system will shut down automatically to save energy.

5.3 Battery Pack Charge control indicator

In addition to the LED information system that may be integrated in your battery pack, the battery charge-control LED panel indicator (number “3” in the illustration) also displays the charge level of the eBike battery pack. The Battery pack information may also be checked in the ebikemotion® APP with the exact amount remaining, the capacity, and a detailed prediction of range and riding time.

The LEDs of the charge-control indicator on the battery will turn off. The capacity for assisting the drive has been used up, and assistance is gently switched off. The remaining capacity is made available for the lighting.

Remember that we use 4 LEDs in the battery panel to show the battery level. Between one level and the next one there is another intermediate level. To indicate this state, the LED for the higher of the two levels will flash. Please check this diagram for a full explanation.

5.4 Walk Mode

Walk mode is a special push-assistance feature of some eBike systems that work when you walk your eBike (walk alongside your bike while pushing it). This function will assist to you but it cannot exceed 6 km/m (max).

It is really important to remember that this function is normally designed for when you are pushing the eBike. Do not use this function if the eBike is not in direct contact with the ground.

Do not use this function for riding because speed is very low and you could have an accident. Also keep in mind that “Walk Mode” will push the drive in all assistance modes, including “ZERO or no one selected”.

To operate this function you will need to use button “A” of the remote and keep it pressed. The eBike drive must be switched on. The Walk mode will be automatically switched off if:

- Your speed exceeds 6 km/h.
- You release the “A” button.
If your eBike includes factory-installed lights you can control them using the iWoc® Remote. The manufacturer can include this function or not, depending on the eBike model. In order to switch the eBike lights, the iWoc® must be coded to support it (from factory or dealer network).

The button that controls that function is the “B” button. You will need to long press (press and hold) that button to switch on or off the lights. In order to show the user that the lights are ON or OFF, and to confirm the command to the user, the RGB light of the iWoc will flash in white each time the lights are switching.

If you are using the ebikemotion® APP the user will receive an alert on the phone to show the change of status of the lights. An icon will be permanently displayed when the lights are on.

In the iWoc® CAN version “EBIWOCCA” the brightness of the remote LED will be modified automatically if the user has the eBike lights switched on or off:

- eBike lights switched ON means lower illumination in remote LED
- eBike lights switched OFF means higher illumination in remote LED

5.6 Setting the Assistance level

Usually eBikes can push in different power levels. The rider must adjust the power level of the drive to the push and distance target needs. A higher more power level will result in lower range and greater battery consumption.

To increase and decrease the assistance level, use buttons “A” and “B”. The eBike manufacturer typically codes the upper button of the iWoc® to respond as an increase function and the lower button as a decrease function. (Keep in mind that the iWoc® is reversible)

Depending on the Motor integration of the eBike manufacturer, you might be able to have different power level systems:

- One single way to push with more or less power
- Each power level also represents a different way to push

The iWoc® remote will show you each level using the LED panel “D” that includes 3 LEDs. Most manufacturers include 3 power Assistance levels. iWoc® can support up to six power levels plus an additional level named CUSTOM LEVEL. Check your eBike specifications to know the configuration of your eBike system.

Usually eBike Power levels are represented following this schema:

If there are more than 3 power assistance levels, iWoc® uses a simple method with a flashing function to show indicate the intermediate power assistance level to the user. For example, one flashing LED means 1, two flashing LEDs 2, one LED ON + one LED flashing means 3, and so on.
5.7 Custom Assistance Level

This special motor map is integrated in some eBikes depending on performance and level of integration with ebikemotion® Technology. The custom map is a power assistance map adapted to special needs, for example the terrain or user preferences. If this feature is available in your eBike it will have an additional power assistance level.

Once the user reaches the maximum power assistance level (for example 3), if the UP button is pressed again, the user will see all the Power panel LED lights blinking, indicating that the custom map has been activated.

If your eBike includes CUSTOM MAP, check the ebikemotion® APP to know how to modify the Motor Map.

The Custom Motor Map can be linked with a recorded activity to recover and install the eBike when you are going to repeat the same track.

5.8 RGB LED Light

RGB LED light [2] is the special rounded light in the middle of the remote. This LED can represent different colours to inform the user of a different status or alert the user of any special event.

The functions that iWoc® can represent are:

- Initial Check Control
- Confirmation of Command
- eBike Status and Error Indication

The main colours represented by this LED light are: RED, GREEN, BLUE, WHITE and some combinations such as ORANGE or PURPLE.

The RGB LED can emit a steady or flashing light.

Initial Check Control

The Check Control is a special process that asks all components about the status and reports the current status. This process is automatically done each time you start the eBike. At the same time you will see that your remote checks the operation of all LED lights integrated by switching each on/off one at a time.
If the process is successful the RGB LED will flash one time in GREEN colour. If there is any error it will emit a steady RED light while the error persists.

**IMPORTANT**

If you are using the ebikemotion APP and there is any error in the eBike system, the APP will show an error in the screen with a code. While the error persists the APP will show a warning icon. Press on the icon to get extra information about the last error.

Please check your eBike manufacturer reference guide for more information about errors and solutions.

**Confirmation of Command**

Each time you press any button of the iWoc®, the remote will respond with a confirmation indicating receipt of the command. To do so the RGB LED [2] of the iWoc® will flash one time in GREEN.

There is only one exception in this operation: Press and hold (long press) buttons [A] and [B]. These types of special operations use the LED of the iWoc® as follows:

- Long press button [A] - Walk mode: Power Assist level 1 will be blinking during the push-assistance operation.

**eBike Status and Error Indication**

During all operation of the eBike, the iWoc® remote is checking the appropriate operation of all components. LED lights and APP are used to represent information to the user about any malfunction in the system.

The iWoc® will indicate any error by flashing the RGB LED in RED. Please connect your smartphone and open ebikemotion® APP to get a detailed description of the error.

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

**Bluetooth Operation**

Once the iWoc® is paired with a smartphone, iWoc® notifies the user that the process has been successfully completed. It will do so by switching on the RGB LED in BLUE for a few seconds. In the APP you will also see one alert in the screen for a few seconds as well as a rounded antenna icon in the left bottom corner.

Bluetooth communication is used for 2 important functions:

- Communication with the ebikemotion® end user APP. This allows you to use your smartphone as a cycling computer
- Communication with the ebikemotion® Dealer APP. This can be used for any support and repair in the eBike.

**REMEMBER**

Remember the ebikemotion APP is one of the most interesting features of your eBike and iWoc®. Please go to Google Play or Apple Store to download the latest version of the ebikemotion® APP, install in your smartphone, download the maps of your area and enjoy all functions of your eBike System.
Call Reception

iWoc® includes a function to inform the user of incoming calls. If your smartphone is paired with the APP and you are receiving an incoming call, the RGB light of the remote will flash a GREEN light.

- If you answer the call (using your smartphone or headset) the green light of the remote will switch on for the duration of the call.

- When you hang up the call, the RGB of the iWoc® will flash in RED for several seconds.

Note: It is not possible to use the remote to answer or hang up the phone. iWoc® uses BLE for the communication and the protocol does not support A2DP.

Switching Off eBike, Check Control

When the eBike switches off, an automatic check control process is performed in order to report to the APP, for example, that the eBike is OFF. This will stop the current recording, and save the current position and last status of the eBike.

When you switch OFF the eBike system by long pressing button "C", you will see that the RGB LED lights in this sequence turn green, blue, red and finally white before finally switching off. All LED lights of the remote will switch off and the eBike system will be switched OFF.
6. Operation with APP

ebikemotion® APP is one of the most advanced eBike cycling APPs of the market. It includes off-road navigation, tracking, routing, eBike information on route, eBike status and a large etc. You will discover a new and different way of riding if you are using the ebikemotion® APP. Some of its premium features like maps are included with your eBike because your eBike integrates the iWoc® remote.

Using the APP is the best way to keep your eBike updated because you can receive updates and notifications based on the information that your eBike reports to the system about your status. The Ebikemotion® APP is TOTALLY FREE and will allow you the possibility of using it in a normal or professional way, depending on your preferences, including full integration with other systems like Facebook®, Twitter®, or STRAVA® integration, using just one APP for everything.

You can choose to place your smartphone on the handlebar (using any standard holder in the market) or leave your smartphone in a safe place like your pocket. If you decide to use your smartphone on your handlebar, remember that you will be able to control the APP by the iWoc® remote using the buttons [D] and [E] while you see all the information of your eBike displayed on the screen of your smartphone.

- Call Reception
- Switching Off eBike, Check Control

6.1 Bluetooth® Pairing Process

If you have a compatible smartphone (more information in the ebikemotion® APP User Manual) with the eBike, you will be able to start the Bluetooth pairing process. Ensure that you have your Bluetooth started in your smartphone.

1. Install the ebikemotion® APP on your smartphone and complete the Registration or Login process. (Search in Google Play or Apple Store ebikemotion® APP)

2. Switch on the POWER button [C] of the iWoc® (Remote Control) to start the eBike.

3. Open your ebikemotion® APP.

   a) If the smartphone is automatically paired you will see the following message on the screen: “pairing with the eBike complete”

   b) If the iWoc® is not paired, the eBike may be paired with another Smartphone. In this case, switch off the eBike and restart it by long pressing (press and hold) the button [C] to delete any previous smartphone paired. RGB light [2] will start to flash in BLUE

   c) When the eBike and Smartphone are paired you will see an ALERT in the top of the screen with the message “pairing with the eBike complete”. Your eBike and your Smartphone are now paired and it will not be necessary to pair again. The eBike will be paired with your last paired smartphone and will not be visible for other Smartphones.

   d) Each time you switch-off your eBike, you will receive a top screen alert in the APP with the message: “bike pairing – connection with the bike lost”.

1. REMEMBER

   To force a new Bluetooth® pairing from the APP, go to the MAIN MENU / SETTINGS / and press in the option “Pair with new EBM Bike”.

   When your smartphone is paired with an eBike you will see two elements on the monitor that will indicate the pairing is complete:

   - The panel to indicate the Power Assistance level will show a number or the letter N “neutral”.

   - You will see an alert in the screen in the APP for a few seconds and a rounded antenna icon in the left bottom corner of the screen.
6.2 iPhone and Android pairing process

The pairing process in iPhone and Android are totally different.

- **iPhone**: The process is fully transparent. You will not need to go to any menu to establish the Bluetooth® link. The ebikemotion® APP will find the closest compatible device that answers to the iWoc® call for pairing.

- **Android**: In these smartphones you will have to go to the SETTINGs and select the option for Bluetooth® pairing process with iWoc®. You will see a list of nearby devices and you will need to select one of them.

6.3 Pairing Process with HR Monitor

You can also use Heart Rate Monitors connected to the smartphone. The ebikemotion® APP will use this information to complete the information of your activity, which will be displayed on the Monitor APP while you are riding.

The ebikemotion® APP is even able to automatically control the Power Assistance system of your eBike, adapting to your heartbeats and keeping under a maximum value using the current beats supplied by your Heart Rate monitor as a reference.

You will find a full description of ebikemotion® APP configuration and pairing process with Heart Rate monitors in the ebikemotion® APP User Manual. Please check it. Keep in mind that if you manually modify the Power assist level by the iWoc® remote, you will deactivate the function when the HR Auto-Assist based system has been activated.

6.4 Remote control of the APP by iWoc®

It is possible to control the ebikemotion® APP using the buttons [E] and [D] of the iWoc® remote. The main functions that you can control of the ebikemotion® APP are:

- Remove the menu
- Change the Monitor view between Speed / Map / Range Map
- Change the Auxiliary Monitor Components between (Weather, Music, Bike)
- Modify the ZOOM level of the Maps
- If you are listening to music: Play, Pause and Next Song
- List a Voice Command (Actual information status)

In order to control the ebikemotion® APP you must use the buttons [E] and [D]. You can use long or short press, and the command will be different depending of type of information that you see in the monitor.

Remove the MAIN MENU

When the MAIN MENU is deployed, the user may want to see the full view of the Monitor without the menu information. To release the menu, simply touch any button of the iWoc® remote.

**REMEMBER**

There are many Bluetooth® HR Monitors in the market. Some manufacturers modify some information in the Bluetooth® BLE Standard protocol to protect the use of the HR monitors only with their devices. Ensure that you are using and HR standard Bluetooth® BLE sensor. ebikemotion® APP it is only compatible with them.
The ebikemotion® APP divides the information into 2 big categories:
- Monitor
- Aux Components
In the monitor area it is possible to see:
- Speed Monitor
- Map Monitor (Navigation, tracking, guiding or map location)
- Range Map Monitor (Same maps as Map Monitor but with additional Range area and Range information)
To change between these monitors, short press (press once) the [E] button.

The AUX components can represent information for Weather, “Music” and Bike. Keep in mind that music windows only appears if the smartphone is playing music from its own music player.

To change between these monitors short press (press once) the [E] button.

The information that you will be able to see in the AUX component is:
- Weather
  Wind Speed, Humid, Current Temperature and Weather forecast for the next 1-4 hours.
- Music
  Function (Play/Pause), Picture of the song or disk Name of Disk, Name of song, Remaining time Progress
While your Smartphone is running the ebikemotion® APP you can place your phone in different places, including the handlebar or in your pocket. There is a command that asks the ebikemotion® APP to tell you the current most important information, which can differ according to the current AUX components that the smartphone is showing.

All the Aux screens in the monitor contain different information.

- Press and hold button [D] to see the current speed, level of battery, altitude, HR, etc.

ebikemotion APP is fully integrated with Android Wear and Apple watch. So after installing your APPs, remember that you can also activate the APP in your watch.
### 7. Error Codes. Reference

#### REMEMBER

If there is any error, the iWoc® will show you by flashing the RGB LED in RED colour flashing. Please connect your smartphone and open ebikemotion® APP to get a detailed description about the error.

#### Alert of error in the APP

#### Alert of error in iWoc®

**ERROR 4**

**LOW-VOLTAGE-PROTECTION**

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
<th>Corrective Measure</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>NO ERROR</td>
<td>Not needed</td>
</tr>
<tr>
<td>1</td>
<td>THROTTLE-NO-GO-BACK</td>
<td>Switch off the eBike System. Ensure that the throttle is released and try again.</td>
</tr>
<tr>
<td>2</td>
<td>THROTTLE-FAULT</td>
<td>Throttle damaged or out of operation specifications. Contact your eBike dealer.</td>
</tr>
<tr>
<td>3</td>
<td>TORQUE-FAULT</td>
<td>Torque damaged or out of operation specifications. Contact your eBike dealer.</td>
</tr>
<tr>
<td>4</td>
<td>LOW-VOLTAGE-PROTECTION</td>
<td>Battery Pack voltage too low. Please charge the battery Pack.</td>
</tr>
<tr>
<td>5</td>
<td>OVER-VOLTAGE-PROTECTION</td>
<td>The Battery Pack voltage is not correct for this system. Please install the specific Battery Pack for your eBike System.</td>
</tr>
<tr>
<td>6</td>
<td>HALL-SENSORS-FAULT</td>
<td>Check the motor wire connection. Restart the eBike System. If the problem persists, contact your eBike dealer.</td>
</tr>
<tr>
<td>7</td>
<td>OVER-TEMPERATURE-PROTECTION</td>
<td>The eBike is outside of the permissible temperature range. Switch off the eBike and allow the drive unit to either cool down or heat up to the permissible temperature. Restart the system. If the problem persists, contact your eBike dealer.</td>
</tr>
<tr>
<td>8</td>
<td>TEMPERATURE-SENSOR-FAULT</td>
<td>Temperature sensor damaged. Contact your eBike dealer.</td>
</tr>
<tr>
<td>9</td>
<td>CURRENT-SENSOR-FAULT</td>
<td>Current sensor damaged. Contact your eBike dealer.</td>
</tr>
<tr>
<td>10</td>
<td>BMS-COMMUNICATION-FAULT</td>
<td>Error in the communication with the Battery Pack. Please check the battery Pack connector. If the problem persists, contact your eBike dealer.</td>
</tr>
<tr>
<td>Code</td>
<td>Description</td>
<td>Corrective Measure</td>
</tr>
<tr>
<td>------</td>
<td>------------------------------------------</td>
<td>---------------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>11</td>
<td>COMMUNICATION-FAULT-LOST-FRAME-JOB</td>
<td>Error in the communication with the Remote control. Please check the remote connector. If the problem persists, contact your eBike dealer.</td>
</tr>
<tr>
<td>12</td>
<td>DRIVER-ERROR-VG-UNDERVOLTAGE</td>
<td>Battery Pack voltage too low. Please charge the battery Pack</td>
</tr>
<tr>
<td>13</td>
<td>DRIVER-ERROR-OVERTEMPERATURE</td>
<td>The eBike is outside of the permissible temperature range. Switch off the eBike and allow the drive unit to either cool down or heat up to the permissible temperature. Restart the system. If the problem persists, contact your eBike dealer.</td>
</tr>
<tr>
<td>14</td>
<td>DRIVER-ERROR-OVERCURRENT</td>
<td>Current supplied by the Battery Pack is too high. Please reduce the demand. If the system locks, please restart the eBike System. If the problem persists, contact your eBike dealer.</td>
</tr>
<tr>
<td>15</td>
<td>DRIVER-ERROR-VDD-UNDERVOLTAGE</td>
<td>Battery Pack voltage too low. Please charge the battery Pack</td>
</tr>
<tr>
<td>16</td>
<td>PHASEI-SCG</td>
<td>Check the motor wire connection. Restart the eBike System. If the problem persists, contact your eBike dealer.</td>
</tr>
<tr>
<td>17</td>
<td>PHASEII-SCG</td>
<td>Check the motor wire connection. Restart the eBike System. If the problem persists, contact your eBike dealer.</td>
</tr>
<tr>
<td>18</td>
<td>PHASEIII-SCG</td>
<td>Check the motor wire connection. Restart the eBike System. If the problem persists, contact your eBike dealer.</td>
</tr>
<tr>
<td>19</td>
<td>PHASEI-SCS</td>
<td>Check the motor wire connection. Restart the eBike System. If the problem persists, contact your eBike dealer.</td>
</tr>
<tr>
<td>20</td>
<td>PHASEII-SCS</td>
<td>Check the motor wire connection. Restart the eBike System. If the problem persists, contact your eBike dealer.</td>
</tr>
<tr>
<td>21</td>
<td>PHASEIII-SCS</td>
<td>Check the motor wire connection. Restart the eBike System. If the problem persists, contact your eBike dealer.</td>
</tr>
<tr>
<td>22</td>
<td>PHASEI-CONNECTION-ERROR</td>
<td>Check the motor wire connection. Restart the eBike System. If the problem persists, contact your eBike dealer.</td>
</tr>
<tr>
<td>23</td>
<td>PHASEII-CONNECTION-ERROR</td>
<td>Check the motor wire connection. Restart the eBike System. If the problem persists, contact your eBike dealer.</td>
</tr>
<tr>
<td>24</td>
<td>PHASEIII-CONNECTION-ERROR</td>
<td>Check the motor wire connection. Restart the eBike System. If the problem persists, contact your eBike dealer.</td>
</tr>
<tr>
<td>25</td>
<td>COMPONENT-PROTECTION</td>
<td>New component detected not associated to this eBike system. Please contact your eBike Dealer to activate it.</td>
</tr>
<tr>
<td>26</td>
<td>NVM-ERROR-PARMS-TO-DEFAULT</td>
<td>Default System Parameters established.</td>
</tr>
<tr>
<td>27</td>
<td>NVMI-ERROR-SAVED-ERRORS-LOST</td>
<td>Error in the Error Database System. Restart the eBike System. If the problem persists, contact your eBike dealer.</td>
</tr>
<tr>
<td>28</td>
<td>EMN-ERROR-IMPOSSIBLE-SAVE-ERRORS</td>
<td>Error Database System full. Restart the eBike System. If the problem persists, contact your eBike dealer.</td>
</tr>
<tr>
<td>29</td>
<td>BATTERY-VOLTAGE-SENSOR-FAULT</td>
<td>Battery Pack sensor damaged. Restart the eBike System. If the problem persists, contact your eBike dealer.</td>
</tr>
<tr>
<td>Code</td>
<td>Description</td>
<td>Corrective Measure</td>
</tr>
<tr>
<td>------</td>
<td>------------------------------</td>
<td>-----------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>30</td>
<td>OVER-CURRENT-PROTECTION</td>
<td>Current supplied by the Battery Pack is too high. Please reduce the demand. If the system locks, please restart the eBike System. If the problem persists contact your eBike dealer.</td>
</tr>
<tr>
<td>31</td>
<td>PEAK-OVER-CURRENT-PROTECTION</td>
<td>Current supplied by the Battery Pack is too high. Please reduce the demand. If the system locks, please restart the eBike System. If the problem persists, contact your eBike dealer.</td>
</tr>
<tr>
<td>32</td>
<td>COMM-FATAL-ERROR</td>
<td>Fatal Error. Restart the eBike System. If the problem persists, contact your eBike dealer.</td>
</tr>
<tr>
<td>33</td>
<td>CURRENT-NO-SPEED</td>
<td>Locked Motor. Check that WALK mode works fine. If the problem persists, contact your eBike dealer.</td>
</tr>
<tr>
<td>34</td>
<td>ACC-VOLTAGE-ERROR</td>
<td>Power supply problem in the HMI bus. If the problem persists, contact your eBike dealer.</td>
</tr>
<tr>
<td>35</td>
<td>SENSORS-4V3-ERROR</td>
<td>Power supply problem in sensors. Check the wires of the pedaling sensor (PAS) and Motor Sensor. If the problem persists, contact your eBike dealer.</td>
</tr>
<tr>
<td>36</td>
<td>LIGHTS-V-ERROR</td>
<td>Power Output Failure in the lights line. Check wiring and the accessory connected to the light line. If the error persists, disconnect the accessory. Check that with the accessory disconnected there is no error. In this case your accessory exceeds the specifications of our output. If the error persists go to the official service</td>
</tr>
</tbody>
</table>
8. Accessories

The ebikemotion® Platform includes several accessories that you can add to your current iWoc® Remote. The most important ones are:

- USB on.wire
- GPS Tracker

**REMEMBER**

Some accessories may come with your eBike from the factory or may not be available depending on the model and specifications of the iWoc® remote. Check with your eBike Manufacturer for accessory availability.

8.1 USB on.wire

The charging point USB on.wire is the perfect solution to keep your Smartphone alive when you are using it as computer in ebikemotion® systems, and to connect any USB head lights or similar accessories.

- Some iWoc® remotes, like the part number EBIWOCCRS, includes the USB on.wire from factory in the same iWoc® Wiring.
- iWoc® part number EBIWOCCA, can integrate the USB on.wire as an accessory by simply plugging it in.

To install the USB on.wire:

1. Disconnect the 6-pin HIGO connector that interconnects the iWoc remote to the wiring of your e-bike.

2. Open the rubber protector of USB on.wire and insert the USB connector for the accessory. When the e-bike is switched on the white LED of the USB on.wire turns on. The maximum power charge supported is 500 mAh.

3. Interconnect the USB on.wire respecting the orientations of the connectors. Each connector has an arrow to guide the connection.

8.2 GPS Tracker Unit

The ebikemotion® GPS Tracking unit is only available for eBikes compatible with the ebikemotion® CAN BUS platform, for example eBikes that install the iWoc® with the “EBIWOCCA” part number. This unit will allow you to locate your eBike remotely from your Smartphone or using a computer with a browser from the Dashboard. The GPS Tracker is a unit that will be available to install as an accessory in summer of 2017.

8.3 Head and Rear Lights

It is possible than your eBike comes from Factory head and rear lights. The lights are a very important accessory that you need to maintain clean and operative. If your eBike installs lights from factory they will be connected directly to the motor control unit that usually, will supply power to them.

Check the specifications of the lights of your eBike and do not exceed the recommendations of your manufacturer for power output supply. Also you can connect external USB lights to the USB on.wire port.

- Connection of head lights to Smart Motor Controller
  1 device / 6V / 500 mAh / 3W
- Connection of head lights to USB on.wire port
  1 device / 5V / 500 mAh / 2,5W

**Example of Head Lights Line from the Motor Controller (also USB line)**
ebikemotion® Web Dashboard is a WEB SITE that combines all the user activity information together with the eBike data gathered by the iWoc® remote, and reports to the platform. It works in combination with STRAVA™ and Facebook® and Twitter® platforms. All the information of your eBike and activities can be checked in the dashboard user Web Site.

To enjoy this feature, just login with the same userid that you logged in with for the Smartphone APP, following this link:

https://ebikemotion.com/app/login.php

There is important information that is exclusively available in the Web Dashboard, as well as services that will only function in this media. We strongly recommend that you access Web Dashboard by using your Smartphone or your PC.

Web Dashboard is the protocol that the ebikemotion® APP uses to share all data & information. This simply means that when you share an activity, the link to open it will be shown in the Web Dashboard.

Username, password and User Identity are all exactly the same as those used in the ebikemotion® Smartphone APP. So if you are using Facebook® to log into the APP you will need to use that to log into in the Web Dashboard.

To access the ebikemotion® Web Dashboard, select WEB APP. In the SETTINGS select WEB APP, follow this link or use the special link that your OEM eBike provider has given to you to have one enhanced experience.

The login, users and password recovery systems are exactly the same as with the APP and will generate the same emails and messages. You will receive emails containing links to activate the accounts identically the way you activate and recover on the WEB APP.

Here are a few ways you can check basic functions of your eBike or conventional bicycle using the Web Dashboard, and the most important ones pertain to the ACTIVITIES as there is quite a bit of additional information found there.
10. Maintenance and Service

10.1 Cleaning

Your e-bike components are designed to be used outdoors. Do not immerse any components, including the drive unit, in water or clean them with pressurized water. Clean your onboard computer using a damp soft cloth. Have your eBike system checked by an expert at least once a year (including mechanical parts and system updates).

10.2 Disposal

The drive unit, iWoc® Remote, battery pack, speed sensor, accessories and packaging should be disposed of in an environmentally correct manner.

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

2012/19/EU, electrical devices/tools that are no longer usable, and according to the European Guideline 2006/66/EC, defective or used battery packs/batteries, must be collected separately and disposed of in an environmentally correct manner.

Please return battery packs and iWoc® remotes that are no longer usable to an authorised bicycle dealer.

10.3 Replacing the iWoc® remote

The iWoc® remote is an intelligent unit that connects the eBike with the rest of the world. One of the most important features of iWoc® remote is that it includes Bluetooth® communication. This way, when you connect your smartphone to the iWoc®, the remote reports any information related to your eBike status to the platform, and you can upload your activities automatically.

If for any reason you need to replace or change your iWoc® remote, it is very important that you notify the platform of the changes so the new iWoc® can be associated to your eBike.

If you connect a new iWoc® remote to the eBike, the iWoc® will not work until it has been associated to the eBike by the dealer. You can even have several remotes associated to the eBike to be used as spare parts if you need to replace one during your activity. Remember to always follow this process for new remotes.

- Go to your Authorized Dealer to get the new iWoc® Remote.

- Ensure that the new remote is the same Part Number that the old one (There are different technologies and protocols supported that aren’t compatible between them).

- Dealer must ASSOCIATE the new iWoc® remote to your eBike using ebikemotion DEALER APP, an special APP designed for Dealers.

- Once the new remote has been associated to your eBike, you will be able to operate with it.

10.4 After-sales Service

In case of questions concerning the eBike system and its components, please refer to an authorised centre or to your eBike Manufacturer. Also you can access to the support and download area of the ebikemotion® Web Site.

More technical information about system in:

https://ebikemotion.com

10.5 APP Support

case of questions concerning the eBike system and its components, please refer to an authorised centre or to your eBike Manufacturer. You can also access the support and download area of the ebikemotion® Web Site.

More technical information about system can be found at:

https://www.ebikemotion.com/web/download-center/
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UNE-EN 15194:2009+A1

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Why you must talk with us? ebikemotion® platform and solutions are built under 3 BIG PRINCIPLES:

- **Innovation**
- **Modularity**
- **Flexibility**

If you want to get the success you need to innovate. For the innovation with have a huge product portfolio with different solutions that will be able to give to you the possibility to create one e-bike for your customers that will be yours, including your own view of performance. Be different, that is the way to innovation, that is the way to success.