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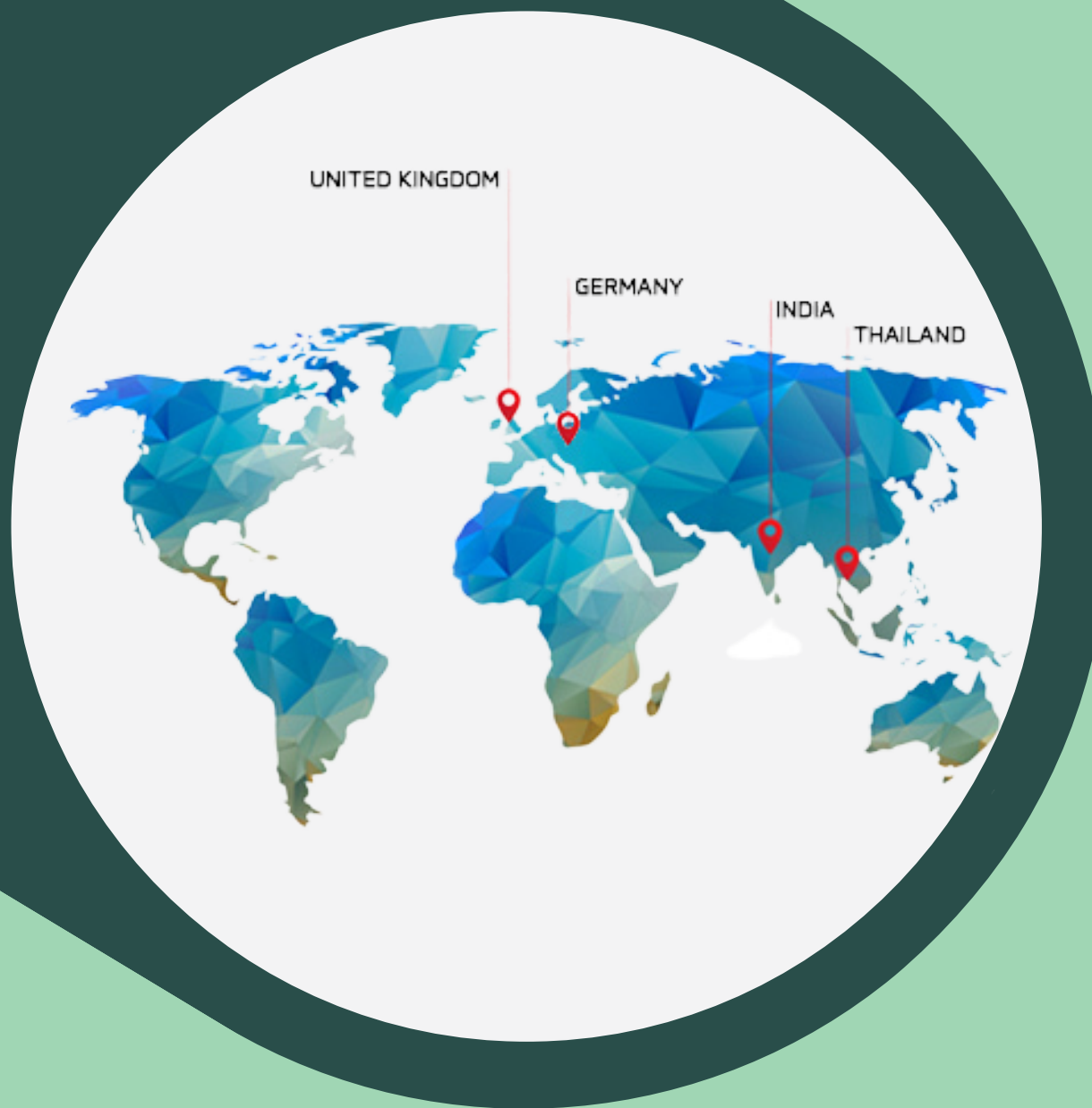
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● MANUFACTURING

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Hero Nagar, Cycle Valley, Ludhiana, India
- 📍 HERO EDU SYSTEMS PRIVATE LIMITED.
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ESYNC is a part of the Hero Motors Company (HMC) Group, a diversified conglomerate with interests in automotive components, e-mobility, cycles, real estate and premium retail. The HMC Group has a \$1.2bn asset base and employs over 7,500 people across the globe.

The parent company HMC's business area extends its expertise across the entire mobility landscape, from designing streamlined bicycles to engineering complex automotive technologies. HMC is leading the global e-mobility transformation effort with auto parts manufacturing companies such as Hewland, Hero Motors Thai, ZF Foxconn Hero Chassis Systems, Munjal Kiriu, global eBike brands such as HNF, Insync, Firefox and Hero lectro.



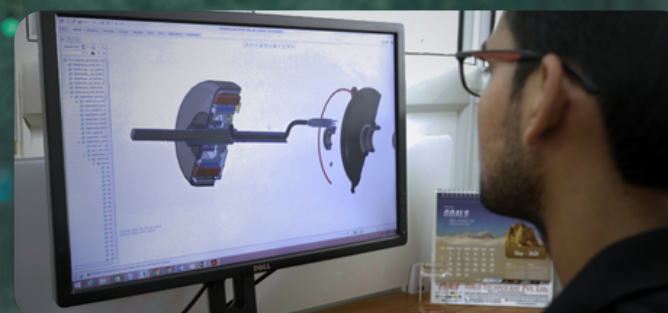
ESYNC's Pillars of Strength



1

Mobility Experience

In bicycle industry since 1956 &
Powertrain & Transmission
Design-Development-
Manufacturing for global OEMs



Engineering & Innovation

Strategic JV with
YAMAHA MOTOR, Japan

2

3

Infrastructure

R&D, design & development,
testing & validation and
manufacturing facilities,
supported by an advanced
mobility research center



Global Talent

Pool of R&D, engineering,
sourcing teams, driven by
global industry experts

4



Solutions For Sustainable Future of Mobility

Comprehensive e-System solutions, products and service offerings, engineered, tested and manufactured to meet the needs of everyday riders and all those dedicated to making cycling more accessible.



eBIKE SYSTEMS

Comprehensive EDU systems complete with range of Motors, Controllers, Batteries, HMI's, Sensors and accessories to choose from.



DIGITAL ECOSYSTEM

A complete ecosystem of digital solutions including ESYNC eBike App for end users and EoL service tool for OEMs, Dealers and Service Professionals.



ESYNC SERVICE

A comprehensive network of more than 5000+ touch points across Europe enables a quick and seamless service experience.

ESYNC's Micromobility Offerings



ESYNC eBike Systems



Comprehensive e-System solution with products and service offerings, engineered, tested and manufactured to meet the needs of urban riders and all those dedicated to making cycling more accessible.



ECz45 System



ECz45
eBike System



MOTOR45 Nm



SENSORCADENCE



BATTERY9.6 Ah



CHARGER2A



CONTROLLERCAN



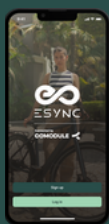
LIGHT



HMICAN



SERVICE TOOL



ESYNC eBIKE APP



CLOUD DATA ANALYSIS

Component	Parameter	Specifications
System Logic	Wake-up logic	Primary wake-up: Press power button on HMI
	System Operating voltage	Vbat (28-42V)
Motor	Rated Voltage	36 V
	Rated Power	250 W
	Maximum Torque	45 Nm
	Mounting	Rear Hub Motor with temperature sensing
	Maximum Speed	25 km/h
	IP Rating	IP65
	Operating Temperature	-10°C to +60°C
Battery	Battery mounting	Downtube integrated
	Rated Voltage	36 VDC
	Rated Capacity	345.6Wh
	Operating Voltage	28-42V
	IP rating	IP54
Controller	Operating Temperature	Charging: 0°C to +45°C Discharge: -20°C to +65°C
	Mounting Interfaces	Downtube Battery Integrated
	Operating voltage	30-42V
	Overcurrent protection	22A
	Rated Voltage	36V
	Rated Power	250W
	IP Rating	IP54
Charger	Operating Temperature	-20°C to +50°C
	Overtemperature Protection	> 50°C
	Rated Output Voltage	36 V
	Output Current Continuous	2 A
	Charging method	CC-CV
	Indication - LED Red ON	Charging
	Indication - LED Green ON	Full Charge
HMI	IP Rating	IP20
	Operating Temperature	0°C to +40°C
	Rated Voltage	Vbat
	Communication Protocol	CAN
Cadence Sensor	IP Rating	IP65
	Operating Temperature	-10°C to +50°C
	Mounting	Bottom Bracket Shell
Light	IP Rating	IP66
	Rated Voltage	12V
Connectivity	Bluetooth (HMI)	BLE Version 5.3
	ESYNC eBIKE App (Android / iOS)	Ride Data Access and Analysis (Cloud)
Compliances	EMI/EMC UN 38.3 EN15194 ISO 13849 EU Directive EN50604-1	



ECz45

eBike System

2025
User Manual



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1

Introduction

Thank you for choosing the ESYNC ECz45 System—a cutting-edge solution. This manual is your comprehensive guide to understanding, operating and maintaining your ESYNC system, ensuring performance, rider safety and long-term reliability.

At ESYNC, we envision a future where mobility is electric, intelligent and accessible. As an initiative of Hero Motors Limited, ESYNC is committed to developing smart, integrated solutions that transform personal transportation, particularly in urban and semi-urban settings.

Driven by the global shift towards clean energy and micro-mobility, our mission is to seamlessly integrate eBikes into everyday life. By providing modular, high-performance eBike systems, we aim to meet the expectations of OEMs, dealers and riders worldwide, ensuring a smarter, greener and more connected future.

1.1. System Manual Overview

The ECz45 System reflects ESYNC's commitment to providing integrated micromobility solutions from a single, trusted source. From motor control, user interaction, battery management to data connectivity, ESYNC systems are engineered to seamlessly work together. The systems offer a plug-and-play architecture that ensures flexibility, scalability and ease of use.

Our advanced facilities in India serve as the backbone of our innovation ecosystem. Ideas are transformed into tangible, high-performance products following modern design practices at ESYNC tech-center. State-of-the-art production facilities and rigorous testing ensure the products are made to global standards.

This manual includes detailed information about the following components of the ESYNC ECz45 System:

- Controller
- Motor
- HMI
- Cadence Sensor
- Battery Pack
- Charger
- eBus (Harness)

You will find technical specifications, installation instructions, safety guidelines and best practices for operation and maintenance. We would like you to read each section carefully and refer to the manual as needed to ensure safe and efficient use of your eBike system.

1.2. Important Guidelines

Your safety is our top priority. The ESYNC system has been thoroughly tested for quality, durability and safety compliance. To maintain the integrity of the system, always use original ESYNC components and consult certified service partners for repairs or upgrades. Unauthorised modifications or third-party interventions may compromise system performance, void warranties and pose safety risks.

If you have any questions, require technical support, additional documentation, or firmware updates, our support team and partner network are here to assist you every step of the way (Service only on EDU kit issues).

Do not open the Motor, Controller, or Battery Pack. The system is maintenance-free and must only be serviced by qualified personnel. Be cautious of hot surfaces during or after-use in order to prevent burns.

With both wheels on the ground, the walk-assist function must be used only when pushing the eBike. Use only original batteries and chargers to avoid fire or injury.

1.3 Safety Information

Please read this manual carefully before operating your ESYNC EN CAN System. Improper use, assembly, or maintenance may lead to serious injury, system damage, or a voided warranty.

This manual highlights **DANGER**, **WARNING**, **CAUTION** and **NOTICE** indicators to prevent improper use and risks with the ESYNC EN CAN System. Serious injury or death may result from hazardous situations if safety guidelines are ignored.

Safety warnings must be followed and kept for reference. Only qualified professionals with appropriate tools are recommended to service the system. Use ESYNC-approved components for replacements or upgrades. Unauthorised changes to the system can lead to performance issues, damage, or accidents.

WARNING:

Avoid direct contact with the motor surfaces due to potential high temperatures(note). Remove and replace the motor.

1.4 Maintenance and Storage

To ensure the longevity and optimal performance of your ESYNC ECz45 System, please follow the guidelines below for regular care and storage.

The recommended storage temperature of the eBike is $23 \pm 2^{\circ}\text{C}$, with an optimal relative humidity of $60 \pm 15\%$. If the battery is an SOC of more than 50% (Half-charged state), which helps preserve its health and longevity.

WARNING:

To prevent fire, injury, or electric shock, avoid using components in explosive, flammable, or wet locations. Ensure all wiring, inspection and installation are performed by a professional and never touch connection terminals while current is applied.

General Precautions

Keep all components clean and dry. Avoid high-pressure washing. Never disassemble or modify any part of the system. Use only a soft, dry cloth for cleaning. Don't use abrasive Cleaning Agents that can damage the surface and internal parts of the components. Avoid thinners or harsh chemicals. Components should not be submerged in water. Avoid repeated plugging/unplugging of connectors to prevent wear. Children should not handle or play with the system. Cleaning and maintenance must be done under adult supervision. Do not tamper with connections.

WARNING:

Do not use the kit components in extreme environments, such as exposure to extreme temperatures or humidity can damage the kit components.

The operating temperature of the System ranges from -10°C to $+50^{\circ}\text{C}$ during the riding conditions.

Component Care

- Motor, HMI & Accessories:

Wipe mud or dust using a soft cloth. Do not use water jets.

NOTICE:

Do not use the kit components in extreme environments, such as exposure to extreme temperatures or humidity can damage the kit components.

- Battery Packs:

Do not remove internal batteries unless for replacement by authorised service. To ensure safe use and extend the lifespan of the battery, always operate it within the recommended temperature and humidity conditions.

Do not submerge the battery in water or expose it to moisture, as this may damage the protective circuits and trigger dangerous chemical reactions.

DANGER:

Keep the battery away from fire sources and areas where temperatures exceed 80°C, as excessive heat may cause internal short circuits, overheating, deformation, or even fire.

• Charger:

Unplug the charger before cleaning the eBike. Designed for indoor use only—keep away from rain or snow. Only use the ESYNC designated charger and follow the recommended charging procedures. Avoid leaving the battery alone connected to the charger for more than 8 hours and if it is not fully charged within the expected time, discontinue charging immediately to prevent potential hazards (contact if it takes more than 12).

It is essential to charge the battery in a safe environment, away from fire sources and direct sunlight, as excessive heat can compromise the battery's protective circuits and lead to dangerous malfunctions. Ensuring proper charging practices will help maintain battery efficiency, enhance system performance and prevent unnecessary risks.

CAUTION:

Charging should always be done within the specified temperature range of 0°C to 45 °C, with a relative humidity of $\leq 60\pm 15\%$ to prevent degradation of battery performance and lifespan.

• eBike System:

Cold temperatures below 0°C reduce battery efficiency, causing faster drainage and potential long-term damage. Keeping devices warm helps maintain battery health.

1.5 Troubleshooting guide

Phenomenon	Possible Cause	Solution
Bike doesn't work	Insufficient battery power	Charge the battery
	Loose electrical connections	Contact Service partner
	Component failure	
Motor does not respond when powered ON	Loose or damaged motor cable	Contact Service partner
	Battery connected to the Charger	Disconnect the Charger
Irregular acceleration and/or reduced top speed	Insufficient battery capacity	Charge the battery
Reduced Range	Low tyre pressure	Check and inflate the tyres to the recommended pressure
	Low battery voltage	Charge the battery
	Driving with too many braking or excessive load	Assist with pedaling or adjust the riding route or reduce the load
Charger power indicator does not light up	Input AC plug of the charger disconnected with power supply	Connect the charger input plug securely to the outlet according to the manual instructions
	Output DC plug not connected with the battery pack	Connect charger properly using PokaYoke
	Components (Battery or Charger) failure	Contact Service partner

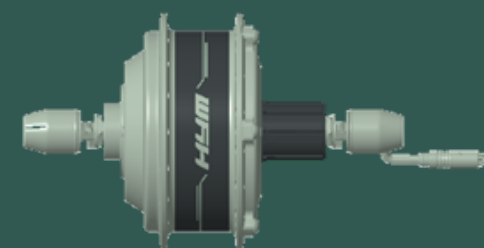
Please contact the service partner for any further questions.

2

System Overview

Your eBike is equipped with ESYNC ECz45 System. The system is designed to provide a smooth and powerful ride performance. This section gives as overview of the components integrated into the system.





1 Motor



2 Battery



3 Controller



4 Cadence Sensor



5 Charging Port



6 HMI / Display



7 eBus / Harness



8 Charger *

* Charger is available with the kit



3

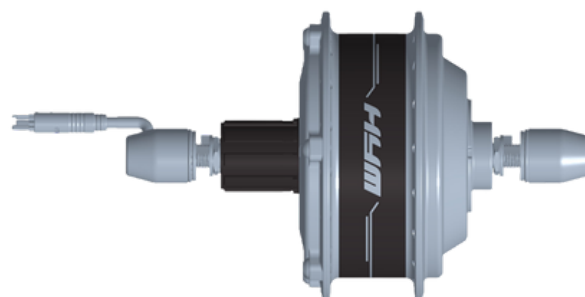
Technical Specifications

ESYNC ECz45 components are integrated into the system to provide a seamless experience. Each component is rigorously tested at ESYNC's state-of-the-art facilities before it reaches you. In this section, you will find details of their technical parameters.

3.1

MOTOR

Maximum Torque	45 Nm
Rated Voltage	36 V
Rated Power	250 W
Maximum Speed	25 km/h
Mounting	Rear hub
Operating Temperature Range	-10° C to +60°C
IP Classification	IP65
Weight	< 3 kg



3.3

CONTROLLER

Rated Voltage	36 V
Max. Input Current	18 A
Walk Assist	≤ 6 km/h
Operating Temperature Range	-20° C to +50° C
IP Classification	IP54
Weight	≤ 400 g



3.2

BATTERY

Capacity	346 Wh
Rated Voltage	36 V
Maximum Charge Current	4 A
Standard Charge Current	2 A
Weight	< 2.2 kg
IP Classification	IP55
Storage Temperature	0° C to 25° C



Battery mounting: Downtube Integrated

Operating temperature:
Charging: 0° C to +45° C
Discharging : -20° C to +65° C

3.4

SENSOR

Type	Cadence
Voltage Supply	3.3 ~ 5.5 V
Rated Power	250 W
Operating Temperature Range	-20° C to +60° C
Electronic IP Rating	IP66
Weight	256 g



Sensor Mounting: Bottom bracket Shell

3.5

CHARGING PORT

ESYNC exclusive 4 Pin Charging port with Poka-yoke connection

Magnetic flap charging Port

Weight

100 g



3.7

HMI / DISPLAY

Type	0.75" b&w LCD
Ride Assist	3 Modes
Operating Voltage	12 ~ 36 V
Connectivity	Android / IOS
Operating Temperature Range	-10°C to 50°C
IP Classification	IP65
Weight	40g



Features: Battery SOC, Speed, Assist Level, Lights function, Current Trip, Total trip and Turn by turn navigation, Bluetooth pairing with app

3.6

eBUS / HARNESS

Battery main Cable to Front light & HMI

Weight

44 g



DANGER:

Do not use Damaged Cables or Connectors: Damaged cables or connectors can cause electrical hazards and damage to the kit.

3.8

CHARGER

Input Voltage (AC)	100-240 V 50-60 Hz
Rated Output voltage/current	36V / 2A
Recommended temperature of use	0°C to 45°C
Protection against Water Ingress	IP20
Weight	340 g

WARNING:

Do not Overload the Equipment: Avoid exceeding the component's maximum capacity or power requirements.



LED status indicator:

Standby Mode Green
Full Mode Green
Charging Mode Red





4

Operational Guide

The ESYNC ECz45 System enhances the eBike experience with intelligent control and connectivity features. This section outlines proper usage of the system to ensure optimal performance and safety. Reviewing this information before use is essential.

4.1 Pre-ride Safety Check

Before using the eBike, ensure that all connections, including the rear wheel, motor, battery, controller and HMI, are properly installed and securely fastened. Always disconnect the charger before operating the system, as riding while charging is not recommended. For optimal performance, fully charge the battery before first use, keeping it connected for at least five hours. Before each ride, check the battery level to ensure sufficient charge. To turn on the system, press the power button on the HMI after unplugging the charger.

4.2 HMI / Display

HMI is the device that communicates between the system and the user. As seen in the image, HMI consists of an LCD display in the middle, a **power button** "○" and the arrows, ▼ and ▲.



Turning ON the System

Press and hold the power button on the HMI for more than 1 second. The display will turn ON in 3 seconds, indicating that the system is active. The eBike's lights will also turn ON, signalling that the system is ready for use.

Turning OFF the System

Press and hold the power button for 3 seconds until the display shows 'Bye!' and turns OFF. The system will power down and all electrical components will shut off. If the system remains inactive for 5 minutes, it will automatically turn OFF to conserve battery.

The HMI provides information about key system characteristics, including speed, assist level, battery percentage (State of Charge), range, error codes and light status.

4.3 Navigating the HMI Menu

- Pressing the "○" button again for 1 second will have two options: View and Settings.
- Initial display right after the power on will be the VIEW MENU. Pressing of the "○" button for 1 second opens the Settings menu.

View Mode

The View menu consists of five options. Navigate through them by pressing the "○" button:

- Speed:** Displays the current speed of the eBike.
- Trip:** Shows the distance travelled in the current trip. To reset the trip, long-press the ^ button for one second and follow the on-screen instructions.
- Total:** Displays the total distance travelled on the eBike. This value cannot be reset.
- SOC** (State of Charge): Indicates the battery level as a percentage. The battery level is also visible through the LED ring around the display.
- Range:** Estimates how far the eBike can travel before the battery is depleted. The range varies based on the selected assist level.



Assist modes

The system offers three assist levels, allowing riders to adjust power assistance according to their needs, up to a maximum speed of 25 km/h.

- **Level +1:** Provides low power assistance for a comfortable and energy-efficient ride.
- **Level +2:** Consistently delivers moderate power assistance, balancing efficiency and performance, making it ideal for urban commuting.
- **Level +3:** Offers high power assistance for quicker acceleration with minimal effort.



Use the ▼ and ▲ buttons in View mode to change the assist mode of the eBike.

Walk Assist Mode

When Walk Assist Mode is activated, the eBike moves at a speed of ≤ 6 km/h, with or without a rider. While in this mode, pedalling will not increase the motor assist speed, as Walk Assist Mode takes priority over the cadence sensor in the system.

Long pressing the ▼ button in any section will activate Walk Assist Mode.

Light Control

Long pressing the ▲ button in any section except Trip will turn the bike lights ON or OFF.

Settings

Navigate through the Settings menu using the ▼ and ▲ buttons. The Settings menu includes the following options:

- Contrast
- Brightness
- Unit Selection (km, °C / mi, °C / mi, °F)
- Placement
- Backlight
- Version
- Coin mV (Battery voltage monitoring)

All these settings can be modified using the ▼ and ▲ buttons.

4.4 Battery Charging

To ensure safe and efficient charging, follow these steps:

- Connect the charger's output to the battery, then plug the charger's input into the AC power supply.
- The indicator light will turn red during charging and switch to green once the battery is fully charged.
- Do not leave the battery charging for more than 12 hours. If the battery is not fully charged within the specified time, stop charging immediately.

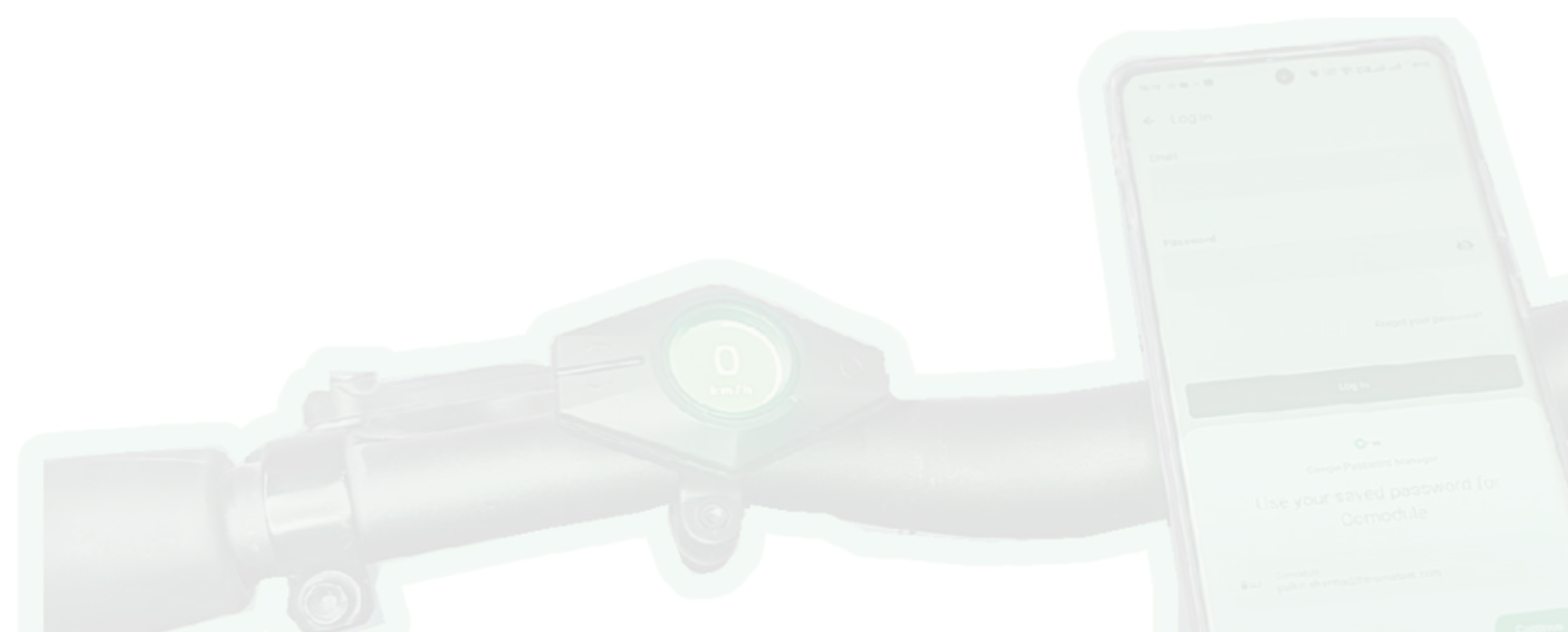




5

ESYNC eBIKE APP

The user-centric ESYNC eBike app is engineered to connect you directly to your eBike's core. Whether you are riding through city streets, countryside trails, or your daily commute, stay informed, efficient and in command with real-time data at your fingertips.



The ESYNC eBike system is designed to seamlessly integrate with the ESYNC eBike App, allowing users to connect their smart devices to the eBike system via Bluetooth. The app enhances the overall riding experience with:

- Real-time ride data
- System customization
- Remote diagnostics

The app offers an idea, the flexibility to

- Monitor key riding parameters such as speed, distance, battery status and assist level
- Track and record ride history for performance analysis
- Customise assist levels that match individual riding preferences
- Receive firmware updates to ensure optimal system performance

The ESYNC eBike App is available for both iOS and Android platforms and is compatible with a wide range of devices. Additionally, a web-based dashboard is available for accessing ride statistics and system insights.

For professional diagnostics and servicing, an exclusive dealer application, 'Service Tool', is available for use by authorised service centres. The Service Tool enables

- Component traceability
- Errors & Remedies
- Firmware Update & Tool update
- Battery Health monitoring
- CAN Logs
- Real Time Data Analysis

The Service Tool allows for in-depth troubleshooting and system calibration.

NOTICE:

To keep your ESYNC system optimised, we strongly recommend downloading the ESYNC eBike App and connecting your eBike regularly. This will ensure that your system remains updated with the latest software enhancements and smart features.

5.1 Creating Account on ESYNC App

New Users : Sign-up :-

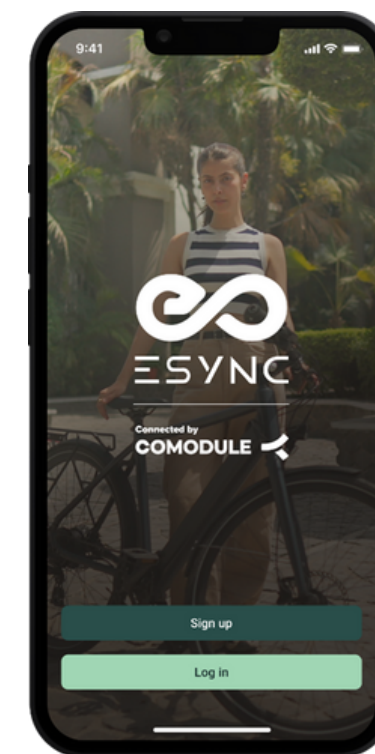
If you are using the app for the first time, a 'new user sign-up' is required. There are three available sign-up methods:

- 1.E-mail & Password (Mandatory)
- 2.Apple Sign-In (Mandatory for iOS users)
- 3.Facebook Sign-In (Optional)

Returning Users : Log In :-

If you have already created an account, simply log in using your registered credentials.

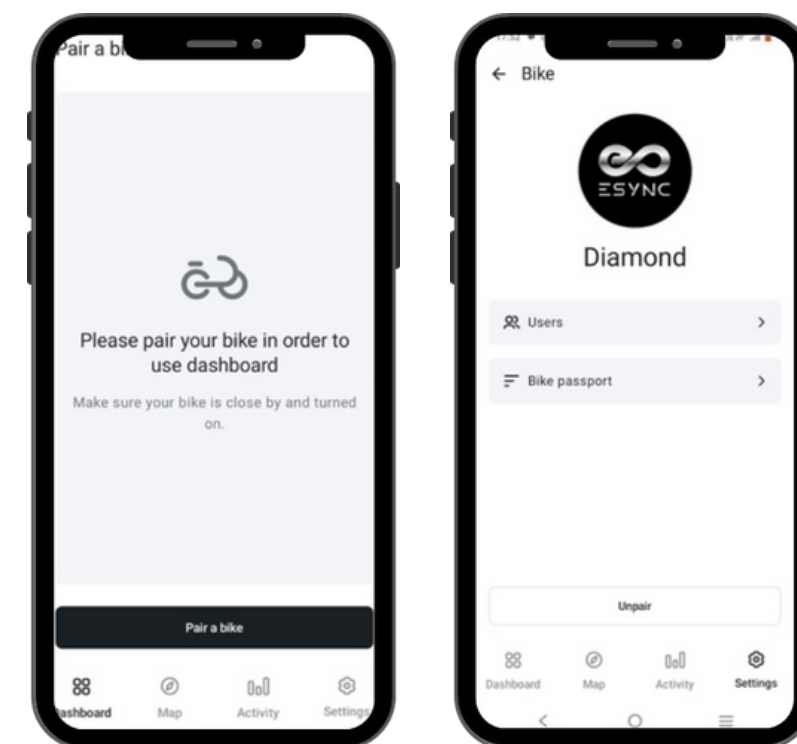
In case you forget your password, you can use the "Forgot Password" option on the login screen to reset it.



5.2 Pairing/unpairing your eBike with the bike

After logging in, you need to pair your eBike with the app via Bluetooth. Once the eBike is successfully connected, the app will display the Dashboard.

You can also unpair your bike by going in vehicle section and click Unpair.

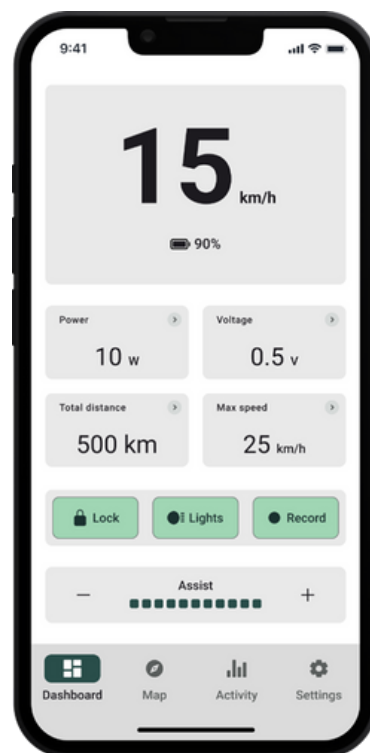


5.3 App Features

Dashboard Overview:

The Dashboard provides real-time information and control options for your eBike. It consists of the following sections:

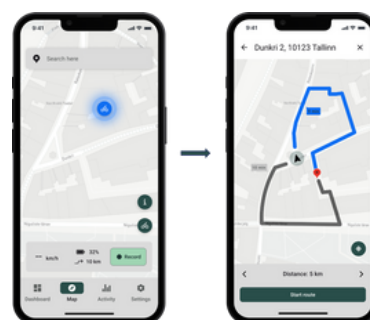
- **Main Metric Container:** Displays the current speed and battery state of charge (SOC) during the ride.
- **Secondary Metric Containers:** Users can customize which metrics they want to display in these sections by clicking on the specific field.
- **Light Controls:** Controls for turning lights ON/OFF and adjusting the assist level.
- **Ride Recording:** Start tracking your ride by clicking the Record Ride button.
- **Assist Modes:** Change the motor assist level using the plus (+) and minus (-) buttons.



Maps & Navigation :

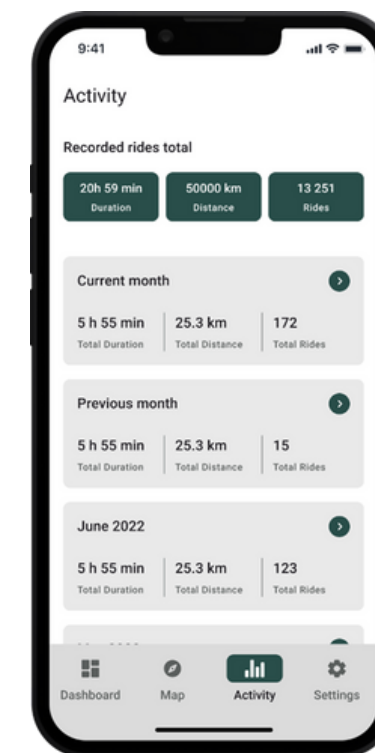
The app offers a seamless navigation experience with turn-by-turn directions to your destination.

- **Searching for Locations & Routes:** Use the search bar to find locations and plan routes. Once the route is selected, the app provides real-time turn-by-turn navigation.
- **During Navigation:** Users can view their chosen live main metric on the same screen. Easily switch between Map View and Dashboard for better visibility.
- **After Reaching Your Destination:** The app prompts the user to save the completed ride to their activity feed.



Activity & Trip Summary :

The Activity section allows users to review their past rides with detailed insights. It includes a Ride History, where users can view and analyse previous rides in a detailed activity log. Additionally, the Trip Summary provides key ride data such as duration, distance, average speed, max speed & current helping users track their riding performance effectively.



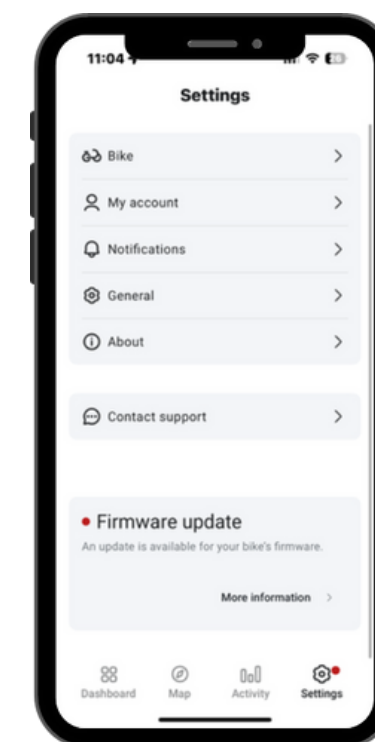
5.4 Settings

Personalise your app experience through the Settings section. This includes:

1. **Bike:** You can pair/unpair your bike by selecting the option shown.
2. **My Account:** To manage your personal information, including your name and email address from here, you can also log out of the app or permanently delete your account. Please note that deleting your account will remove all associated data and cannot be undone.

3. Notification:

- **Bike Settings:** Displays key bike information and allows configuration of bike-specific parameters
- **Additional Features:**
 - Unlock your bike remotely
 - Share your bike with others securely



4. General: To customise the general appearance and behaviour of the app:

- Home Screen Selection: Select the default landing screen after app launch (e.g., Dashboard, Ride Summary, Map).
- Units Configuration: Allows you to choose how distance and temperature are displayed in the app. Distance can be shown in kilometres (km) or miles (mi), while temperature can be set to Celsius (°C) or Fahrenheit (°F) for user convenience.
- Language Support: Choose your preferred app language.
- Always-On Display: Lets you control when the screen stays active. You can choose to keep the display on always, only while navigating or recording a trip, or never, depending on your preference and battery-saving needs.

5. FAQs: Contain a list of questions and answers curated within the app. These FAQs are designed to address the most important and relevant topics for your vehicle and brand, offering you quick access to essential information and troubleshooting tips.

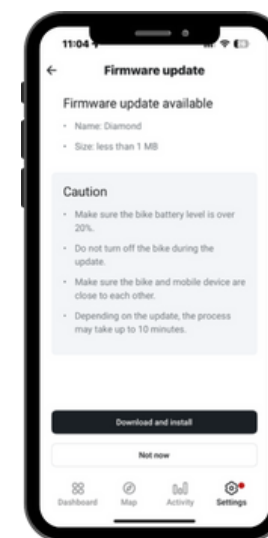
6. About us: Offers direct links to the OEM's official social media pages, allowing you to connect and stay updated with the brand. It also provides access to legal documents, including the Terms & Conditions and Privacy Policy.

7. Contact Support: If the FAQ section doesn't resolve your query, you can use the Contact Support feature for further assistance. This feature automatically generates an email containing all the essential details of your bike, making it easier and faster for the support team to assist you.

8. Firmware (OTA) Updates: The app serves as a gateway to the cloud, allowing for remote updates to key components like Battery, Controller and other system components. The benefits include the convenience of upgrading directly from home through the app, eliminating the need for manual updates via dealers or service providers. This allows users to save time and effort while keeping their systems updated seamlessly.

Two types of updates are available

- HMI update:
 - a.Updating Firmware will be seen on the App
 - b.HMI will get soft reset
- MCU/BMS update:
 - a.Receiving Firmware will be seen on the App.
 - b.Soft Reset will happen (HMI ON & OFF)
 - c.Bike Update will be seen after 1% to 100%



5.5 Error Codes & Remedies

Active report on errors of the system will be displayed on the screen of diamond HMI. Also, will be displayed on the app dashboard under secondary metrics, as alphanumeric codes defined by the controller's CANbus protocol. Refer to the error codes and remedies below:

ERROR CODES & REMEDIES FOR MCU	Displayed on HMI	Error Message	Remedies
	E01	Phase short Circuit Fault	Step 1: Switch OFF the HMI and turn it ON after 30 seconds. Step 2: If the Error still persists, repeat step 1 and kindly look for updates in your companion app. Step 3: If still error is not resolved kindly contact the Dealer.
	E02	Under Voltage -Input Failure	
	E03	Over Voltage-Input Failure	
	E04	Over Current-Input Failure	
	E05	Controller Operating Temp. Failure	
	E06	Motor RPM Out of Range	
	E07	Hall Sensor failure (Any out of 3)	
	E08	Pedal Assist Failure	
	E09	PAS output1 fault	
	E10	PAS output2 fault	
	E11	Head-lamp & rear lamp Failure	
	E12	Reserved for Sensor and Components - Error Status bits (HMI or IOT Module)	
	E13	Communication Error - HMI	
	E14	Motor Speed Signal Error	
	E15	MCU 12V Supply Signal Error for Head Lamp	
	E16	MCU 12V Supply Signal Error for Rear Lamp	
	E17	MCU 12V Supply Signal Error for HMI(Display)	
	E18	MCU 12V Supply Signal Error for other System available.(reserve)	

ERROR CODES & REMEDIES FOR BMS	Displayed on HMI	Error Message	Remedies
	E19	Short circuit	Step 1: Switch OFF the HMI and turn it ON after 30 seconds. Step 2: If the Error still persists, repeat step 1 and kindly look for updates in your companion app. Step 3: If still error is not resolved kindly contact the Dealer.
	E20	Over current discharge stage 1	
	E21	Discharge overcurrent stage 2 (over current discharge stage 2)	
	E22	Over current charge	
	E23	overvoltage	
	E24	Under voltage	
	E25	Over temperature discharge	
	E26	Under temperature discharge	
	E27	Over temperature charge	
	E28	Under temperature charge	
	E29	NTC1 is damaged (test ntc1 failure)	
	E30	NTC2 is damaged (test ntc2 failure)	
	E31	NTC3 is damaged (test ntc3 failure)	
	E32	NTC4 is damaged (test ntc4 failure)	
	E33	Charging MOSFET is damaged (test charge mosfet failure)	
	E34	Discharge MOSFET is damaged (test discharge mosfet failure)	
	E35	AFE damage (test afe failure)	
	E36	Test secondary over voltage failure	
	E37	CRC check failed (test crc failure)	
	E38	AFE parameter error (test afe paramater failure)	
	E39	RTC crystal oscillator is damaged (test rtc crystal failure)	
	E40	RTC configuration error (test rtc config failure)	
	E41	Test sampling wire failure	
	E42	CAN communication error (test can communication failure)	

6**WARRANTY**

At ESYNC, we stand behind the quality and performance of our integrated eBike systems with a comprehensive warranty designed to provide confidence and peace of mind. Please refer to the specific warranty terms and procedures outlined in this manual for detailed coverage and support information.



ESYNC PRODUCTS WARRANTY

WARRANTY PERIOD

ESYNC warrants that the ESYNC Product is free from non-conformities in materials and workmanship under normal conditions and reasonable use:

- For two years, for all ESYNC Products excluding HMI- Display & Charger from the date of sales invoice to OEM.



Our Service Partner in Europe

SES-Sandmann Ersatzteil Service, Hagen, Germany
Tel.: 02337 911905 | Website: ses-sandmann.de

WARRANTY EXCLUSIONS

This warranty does not cover:

- The ESYNC Product, if it has been modified or repaired by a person other than an authorised ESYNC service partner
- The ESYNC Product, if it has been used for rental or commercial purposes
- The ESYNC Product if ESYNC 's mark or serial number has been defaced or removed from the product.
- Damage resulting from causes other than non-conformities in materials and workmanship, including but not limited to accident, abuse, misuse, neglect, improper assembly, improper repair, improper maintenance, alteration, modification or other abnormal, excessive or improper use
- Damage occurring during shipment of the ESYNC Product
- Products that are not manufactured by or for ESYNC (whether or not packaged or sold with the ESYNC Product at the time of purchase)
- Damage resulting from the use of products that are non-conforming or incompatible with the ESYNC Product
- Damage resulting from normal wear and tear, including but not limited to damage or deterioration to the surface finish, aesthetics or appearance of the ESYNC Product

This warranty expressly provides for the repair or replacement of a non-conforming ESYNC Product and is the sole remedy of the warranty. Any and all other remedies and damages that may otherwise be applicable are excluded, including but not limited to, incidental and consequential damages.

In the event that the Product supplied by ESYNC is connected to, integrated with, or used in conjunction with any third-party product, and such third-party product fails or causes failure, ESYNC shall bear no responsibility or liability. Any warranty provided by ESYNC shall not apply to failures, damages, or defects arising from or caused by the use of the ESYNC Product with other products.

WARRANTY HANDLING

To make a valid claim under this warranty, please return the ESYNC Product to an authorised ESYNC dealer / Service partner, preferably the dealer it was purchased from, together with the original, dated invoice or receipt.

If, having inspected the ESYNC Product, ESYNC accepts that the ESYNC Product is non-conforming, ESYNC will (in its sole discretion) either repair or replace the ESYNC Product without charge.

GENERAL PROVISIONS

This warranty only applies in Europe and India. This warranty is governed by and construed under the laws of the country or state in which the ESYNC Product was purchased. This warranty gives you specific legal rights and those rights may vary from country to country, or state to state. Ask your dealer / Service partners for details of any warranty terms that apply specifically to the country where you purchased your ESYNC Product.

This warranty does not affect your statutory rights.

Hero EDU Pvt. Ltd. (ESYNC) reserves the right to revise this limited warranty without notice.

7

FAQs



Connectivity

Q What to do if the system cannot be turned on?

A If your system does not power on, connect the charger to the bike and let it charge for 3–4 hours. If the issue persists, please contact your authorised dealer for further assistance.

Q What to do if the system suddenly stops providing assist?

A If the assist function stops unexpectedly, switch off the HMI and turn it back on after 30 seconds. If the assist still does not resume, check the app for any available updates. If the issue persists, please contact your authorised dealer for further support.

Q I am getting Error code E0X, what to do next?

A If Error Code E0X appears, press the power button once. If the error disappears, it was likely a temporary issue, you can switch off the HMI, wait for 15 seconds, turn it back on and continue riding. If the error remains, check for any available updates in the app. Should the issue continue, contact your authorised dealer for assistance. You can check the issues by visiting the remedies centre at:

<https://www.esync-eBike.com/esyncapp/remedies-center/>

Q Can I change my HMI to another one?

A Yes, you can change the HMI but if only it is made by the ESYNC, Also you'll need to unpair your current HMI from app following, "Settings" > "Bike" > "Unpair" Bike to do so.

Q Why is my bike not found while pairing?

A If Bike is not found, make sure the e-System is turned ON and Bluetooth is ON in mobile device. If both are ON and if the bike is still not connecting with the app, go to Settings > Bike > Unpair Bike > Pair a Bike. Wait for few seconds, your HMI will appear with Esync name and HMI ID.

Q How to add a new user to the Bike?

A To add a new user, go to "Settings" > "Bike" > "Share a Bike" > "Add new User", a pair code along with QR will be visible. On the other mobile device, open the app and click on "Pair a Bike" > "Pair with Access code". You can either scan the code or enter it manually. The new user can also connect to the eBike, when you are not connected through the app (you can turn off your Bluetooth or app to break connectivity).

OTA Updates

Q The update failed. What to do now?

A If the update failed, the app will try to reconnect to update it, You can also manually restart the update through the app.

Q The update failed but HMI is still showing "Firmware Updating", what to do now?

A If the Update failed, HMI will remain in that state for 1-2 mins, after that HMI will auto restart and work normally.

Q I clicked on "Download and install" but the installation doesn't start. What can I do?

A If the installation doesn't start, check for app updates on playstore / app store. If there's none, turn off and restart the HMI after 30 secs and refresh the app, after that retry doing the update.

Q I get the message "Update failed" and I am repeatedly asked to restart the update but each time it fails.

A If the update is failing, it is best to turn OFF the bike and start again. If it still fails, then go to Settings > Bike > Unpair Bike > Pair a Bike, After this the update will be completed smoothly.

Q My eBike has turned Off or lost connection to my mobile, is this a problem?

A No, If your Ebike turns Off or mobile device loses connection while the update is happening, there's no problem, You can just turn ON the HMI and after it gets connected to the app, the update will automatically begin.

Activity

Q How can I share a Ride?

A To share a particular Ride, Go to activity > navigate to the activity you want to delete. Now, on the Ride page click on the 3 dots and select Share Option. Now, you can share the particular Ride to your desired person.

Q My activities are not recorded or are only recorded incompletely. What can I do?

A Enable app permissions to run in the background in Mobile Settings > App Permissions. This is a necessary step as your mobile device may cut off the app from recording when you turn your screen Off. Also, check your connectivity while saving the Ride.

For IOS please ensure:

- The authorisation for location detection is set to "Always"

For Android please ensure:

- Battery optimisation is disabled for the ESYNC eBike App
- The authorisation for location detection is set to "Always allow"

Q Why are there deviations or data Difference between the display and the ESYNC eBike app?

A There can be a little delay while sending the data in the app, that is why a data difference maybe be seen in the HMI and app.

Q No elevation was recorded for my activity. What could be the reason for this?

A If no ascent or descent was recorded for your bike,

For IOS:

- Please ensure the authorisation for location detection is set to "Always"

For Android:

- Please ensure the battery optimisation is disabled for the Esync app

The authorisation for location detection is set to "Always allow"

Navigation

Q What is special about maps and routes in esync app?

A The routes in the ESYNC eBike app are specifically tailored for eBike riders, prioritizing bike-friendly paths and avoiding conventional car or motorcycle routes. This ensures a safer, more efficient and enjoyable riding experience.

Battery

Q How far can I ride with my eBike battery?

A The ranges are offered depending on your assist mode:

For mode:

- +1: ~60 km
- +2: ~48 km
- +3: ~42 km

Strava

Q How can I enable and disable Strava connection?

A You can log in with your Strava ID in your ESYNC eBike App.

Q Can I upload activities manually to Strava?

A Once logged in using Strava ID, rides will be synced automatically.

Q Can I upload my past activities to Strava?

A No, as data is automatically fed based on the Strava ID.

Account & security

Q What to do if I can't log in to my account

A Tap on "Forgot Password" on the login screen and follow the steps to reset your password.

Q How does ESYNC handle personal data?

A Your data is stored in a highly secure cloud managed by ESYNC's capable team.

Q Why did the bike shut down in the middle of the ride?

A This is probably be due to battery running low. If this happens, try restarting the HMI after 30 secs and check for updates. If error repeats multiple times, contact your Dealer.

