

# Instruction Manual

## Human-Machine Interface

### DF130



Read Carefully Before Handling and Keep Handy for Future Reference

Comprehend Completely with the Details Provided by Other cycle Part Manufacturers

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# 1. Introduction

## 1.1 About Ananda

"Ananda" is a Sanskrit word that means "peaceful bliss", which describes a state of inner joy and contentment that one may experience while riding.

As a brand, we are dedicated to electric drive systems and solutions, boasting reliability, efficiency, and quality.

## 1.2 About This Manual

- This manual aims to help you understand this product for various purposes, such as:
  - ◆ Knowing what to do and what should never be done with or to this product
  - ◆ Handling this product in the correct way at the appropriate time
  - ◆ Selecting or configuring other products to be used with this product
- This manual is **NOT** subject to pre-customization, i.e., customization of this product **BEFORE** manufacturing.
  - ◆ **ALL** specifications, illustrations, and other descriptions herein **ONLY** refer to this product in its **ORIGINALLY** designed state **WITHOUT** any **CUSTOM** parts or functions, i.e., the **NON-CUSTOM** version.
  - ◆ For any custom batches, refer to separate instructions provided in any form.
- Read this manual completely and carefully **BEFORE** handling this product.
- Pay particular attention to **ALL** safety instructions to prevent personal injury and property damage that may happen during setup, use, transit, etc.
- Be sure to clearly understand this manual for the best possible production, commercial, or user experience.
- This manual is primarily intended for e-cycle manufacturers, dealers, and users.
  - ◆ **EVEN** if you are professional, read and understand this manual to be better prepared for possible issues.
  - ◆ If you are non-professional, consult your e-cycle manufacturer, dealer, trained technicians, or experienced cyclists as needed.
- For **ANY** unclear or confusing point herein:
  - ◆ Contact Ananda if you are Ananda's corporate customer.
  - ◆ Contact your e-cycle manufacturer if you are a cycle dealer but **NOT** Ananda's customer.
  - ◆ Consult your e-cycle dealer or manufacturer if you are an end user.
- This manual is **NOT** a substitute for personal training.
- Keep this manual in a clean, safe, and convenient place so that you can easily find it if needed in the future.
- Hand over this manual if you give this product or your e-cycle equipped with this product to **ANY** third party.
- **ALL** illustrations herein **ARE** schematic, exemplary, and intended to help you understand this product more easily and clearly, which may appear slightly different from the actual product you received.
- **ALL** cycle parts shown herein may differ from those on your cycle.  
**HOWEVER**, they will be similar enough to assist you in understanding the instructions.

## 1.3 Additional Valid Instructions

- This manual can be part of the various forms of instructions related to this product.
- Pay attention to any other instructions that may appear on this product, its packaging, accessories (if any), and the Internet.
- Take notice of any additional or supplementary documents and media for this product, such as drawings, labels, notification cards, quick guides, and video tutorials.
- Be sure to thoroughly understand the instructions for any other Ananda products used with this product.
- Read, understand, and follow third parties' separate instructions for the following issues:
  - ◆ Other cycle parts used with this product
  - ◆ Accessories used with this product
  - ◆ Entire cycles using this product

## 1.4 Subject to Change

- The content of this manual reflects the information approved at the time of composition.
- Any significant changes will be included in future versions of this manual.
  - ◆ If you are Ananda's corporate customer, pay attention to notifications from Ananda via email, etc.
  - ◆ If you are an end user, pay attention to notifications in any form from your e-cycle dealer and to separate instructions updated by your e-cycle manufacturer.

## 1.5 Symbol Guide

The following symbols can be found on Ananda products or their packaging and/or in the accompanying papers.

**Note:** Batches can vary depending on product categories, pre-customization, as well as local authorities and regulations in different countries and regions.

Symbol	Indication
 <b>DANGER</b>	Indicates a hazardous situation which, if <b>NOT</b> avoided, <b>WILL</b> result in serious injury or even death and/or property damage.
 <b>WARNING</b>	Indicates a hazardous situation which, if <b>NOT</b> avoided, could result in serious injury or even death and/or property damage.
 <b>CAUTION</b>	Indicates a hazardous situation which, if <b>NOT</b> avoided, could result in minor or moderate injury and/or property damage.
	Indicates the importance of reading instructions thoroughly and attentively.
	Indicates the risk of electric shock.
	Indicates the risk of fire.
	Indicates the risk of explosion.
	Indicates the risk of getting injured by heat.
	Indicates electric grounding (earthing).
	Indicates the diameter of a round part.
	Indicates the depth of a hole.
	Indicates that electrical appliances <b>MUST NOT</b> be disposed of with unsorted municipal waste and <b>MUST</b> be discarded at suitable collection points for environment-friendly recycling.
	Indicates that a product meets all applicable requirements of the relevant European Union (EU) directives.
<b>RoHS</b>	Indicates that a product contains no restricted substances according to Restriction of Hazardous Substances Directive.
	Indicates that a product meets the EU's regulation concerning the Registration, Evaluation, Authorization, and Restriction of Chemicals (REACH) to ensure minimal risk to human health and the environment.
	Indicates that a product has been tested and meets specific standards set by Underwriters Laboratories (UL) for use in the United States and Canada, and has been evaluated for potential hazards related to electrical, fire, or mechanical safety.

## 2. Specifications

**Note:** These data and features **ONLY** aim to help you understand this product and may be important factors you need to consider when pairing other cycle parts with this product.

**HOWEVER,** technical data can vary depending on pre-customization.

- For specifics, refer to **ANY** additional valid instructions.
- If you are an end user, consult your e-cycle manufacturer and dealer.

### 2.1 Technical Data

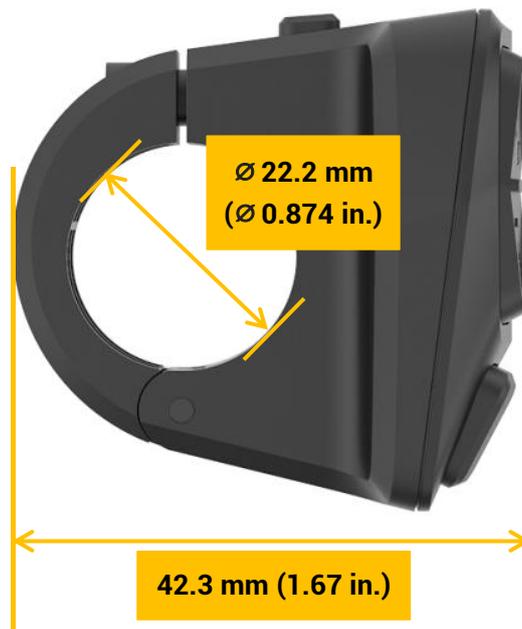
<b>Product</b>		Human-Machine Interface (HMI or Display) for Electric Cycles			
<b>Model Name</b>		DF130			
<b>Input Voltage</b>		24 V (DC)	36 V (DC)	48 V (DC)	52 V (DC)
<b>Rated Current</b>		46 mA	35 mA	28 mA	27 mA
<b>Storage Temperature Range</b>		-20 to 60 °C (-4 to 140 °F)			
<b>Weatherproof Rating</b>		IPX7			
<b>Compatible Handlebar Diameter</b>		22.2 mm (0.874 in.)			
<b>Screen Type</b>		Thin Film Transistor (TFT), 1.9 in.			
<b>Communication Protocol</b>	<b>Option 1</b>	Universal Asynchronous Receiver-Transmitter (UART)			
	<b>Option 2</b>	Controller Area Network (CAN)			
<b>USB Port</b>	<b>Type</b>	C			
	<b>Output</b>	5 V, ≤ 0.5 A			

## 2.2 Dimensions

### Front View



### Side View

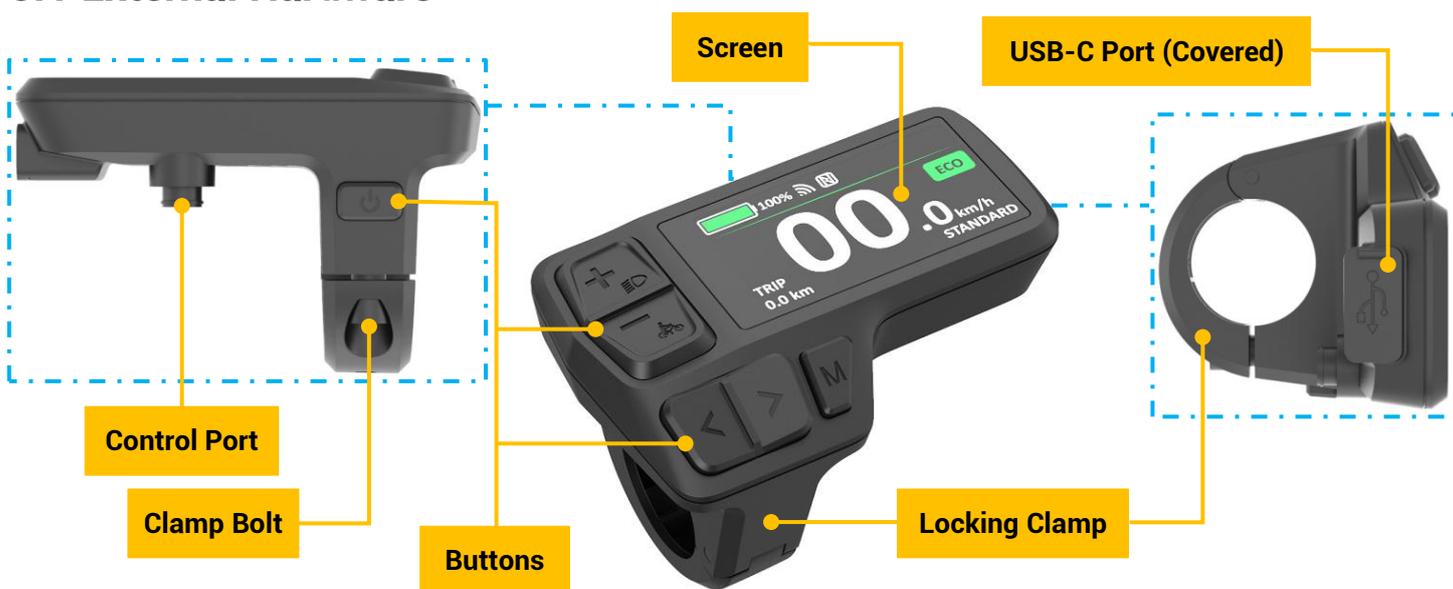


### 3. Product Diagrams

**Note:** These diagrams **ONLY** aim to help you understand this product.  
**HOWEVER**, the actual entity you received may differ depending on pre-customization.

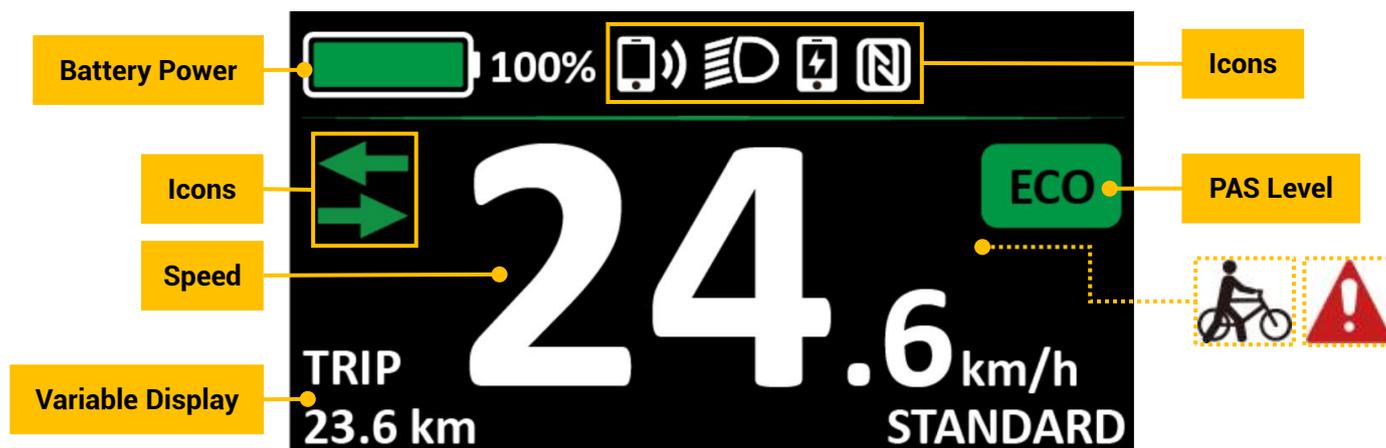
- For specifics, refer to **ANY** additional valid instructions.
- If you are an end user, consult your e-cycle manufacturer and dealer.

#### 3.1 External Hardware



Buttons	⏻		Toggles the various display when pressed.
	⏻		Activates or deactivates the HMI when held.
	+	☰	Upshifts the PAS level or moves up the highlight on a menu when pressed.
	☰		Activates or deactivates main lighting when held.
	-	🚲	Downshifts the PAS level or moves down the highlight on a menu when pressed.
	🚲		Activates the push assist when held.
	<		Activates a left turn signal for a short duration or deactivates it when pressed.
	<		Activates a left turn signal permanently when held.
Ports	>		Activates a right turn signal for a short duration or deactivates it when pressed.
	>		Activates a right turn signal permanently when held.
Screen	M		Opens a function menu or confirms your selection when pressed.
	M		Opens the main directory of the function menus when held.
Locking Clamp	USB-C		Charges mobile devices through a compatible USB cable.
	Control		Receives power from and exchanges data with your controller.
Screen			Shows the settings and status of the HMI and your e-drive system.
Locking Clamp			Locks the HMI on standard cycle handlebars (Ø 22.2 mm).
Clamp Bolt			Secures the clamp and matches 3 mm hex wrenches (Allen keys).

### 3.2 Digital Display



Display Areas	<b>Battery Power</b>	Shows the remaining battery power level in percentage (%).
	<b>Variable Display</b>	Shows your current trip distance ( <b>TRIP</b> ), total distance traveled ( <b>ODO</b> ), maximum speed ( <b>MAX</b> ), average speed ( <b>AVG</b> ), motor power ( <b>PWR</b> ), calories consumed ( <b>CAL</b> ), and length of time ( <b>TIME</b> ).
	<b>PAS Level</b>	Shows the current pedal assist level ( <b>OFF</b> , <b>ECO</b> , <b>TOUR</b> , <b>SPORT</b> , <b>TURBO</b> , or <b>BOOST</b> ).
	<b>Speed</b>	Shows your cycle's current speed or an error code.
Icons		Indicates a left turn signal is on.
		Indicates a right turn signal is on.
		Indicates wireless BT connectivity is available.
		Indicates wireless BT connectivity is active.
		Indicates main lighting is on.
		Indicates USB charging is operating.
		Indicates NFC (near-field communication) is available.
		Indicates the push assist is operating.
	Indicates an error code is displayed.	

### 3.3 Control Port

**Note:**

- The port type is determined by the pre-customized communication protocol.
- "Color" concerns the internal wire cable connected to a pin.

#### 3.3.1 UART Protocol

	Pin	Color	Definition	
	1	Red	VCC	Power Supply
	2	Blue	SW	Power Switch
	3	Black	GND	Ground (Earth)
	4	Green	RX	Data Receiver
	5	Yellow	TX	Data Transmitter

#### 3.3.2 CAN Protocol

##### 3.3.2.1 Five-Pin

	Pin	Color	Definition	
	1	Red	VCC	Power Supply
	2	Blue	SW	Power Switch
	3	Black	GND	Ground (Earth)
	4	Green	CAN H	Data Transmission with a High Voltage
	5	Yellow	CAN L	Data Transmission with a Low Voltage

### 3.3.2.2 Six-Pin

**Note:** This design enables your battery to activate the HMI directly.

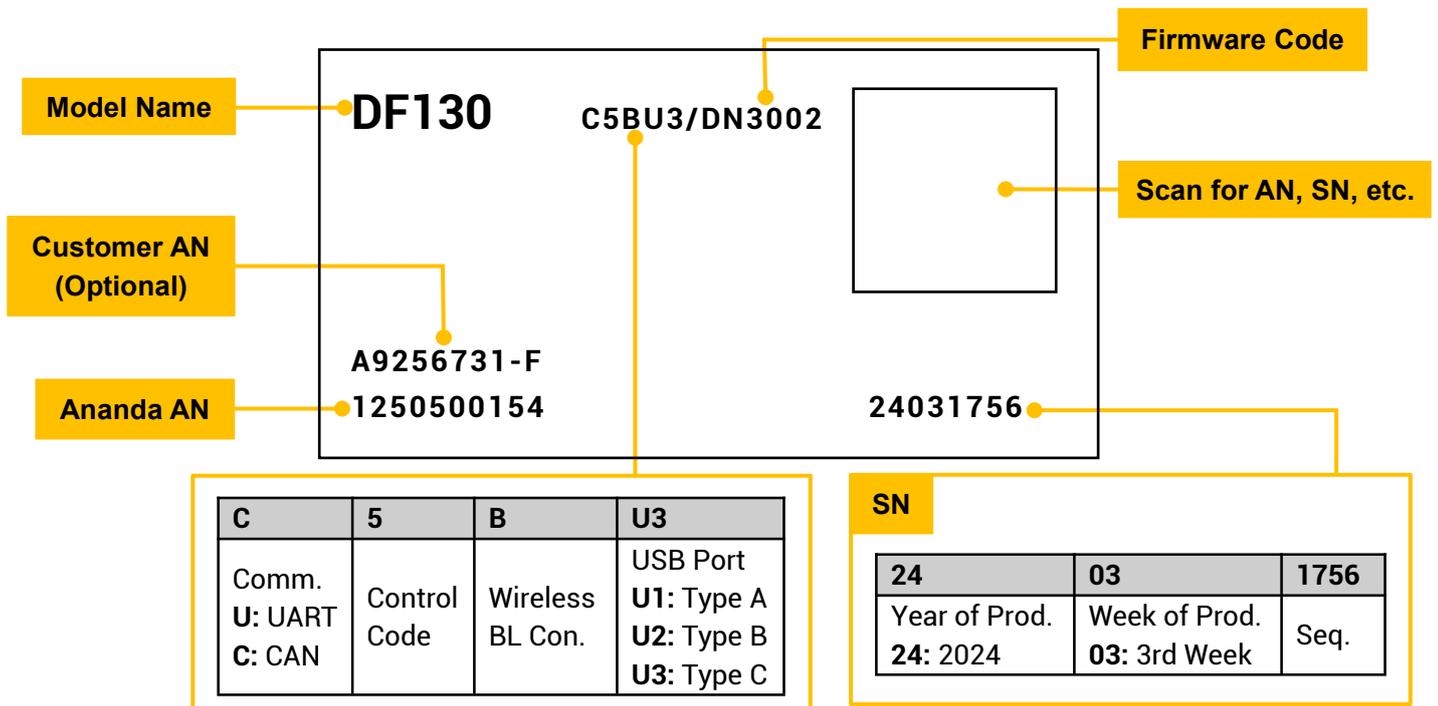
	Pin	Color	Definition	
	1	Red	VCC	Power Supply
	2	Blue	SW	Power Switch
	3	Black	GND	Ground (Earth)
	4	Green	CAN H	Data Transmission with a High Voltage
	5	Yellow	CAN L	Data Transmission with a Low Voltage
	6	White	Key	HMI Activation by Battery

### 3.4 Label

**Note:**

- **ALWAYS** maintain the label to be prepared for after-sales service specified in **Section 14**.
- **AN** and **SN** represent **Article Number** and **Serial Number** respectively.

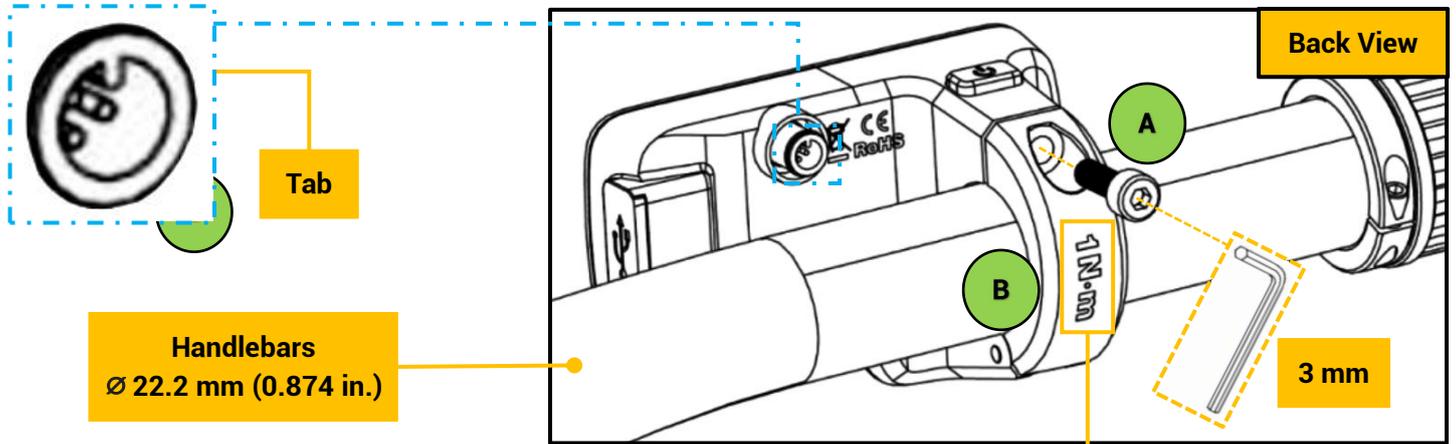
#### Example



# 4. Installation

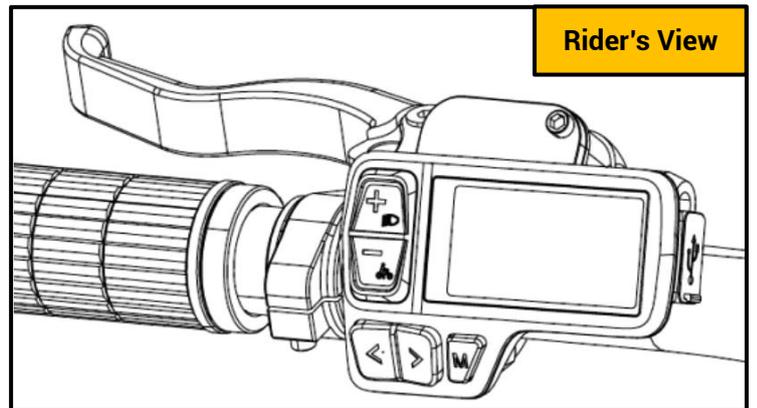
**⚠ WARNING**

Read and follow **ALL** related instructions in **Safety Information**.



**⚠ CAUTION**

**Torque Capacity: 1 N·m (8.8 in-lbf)**



1. Loosen the M4 bolt (A) on the locking clamp (B).
2. Open the clamp and wrap it around your handlebars.

**Note:** Make sure the HMI is in a convenient position that makes it easy to view and operate.

3. Close the clamp and retighten the bolt **SLOWLY** and **CAREFULLY**.

**⚠ WARNING**

Take care **NOT** to get injured by **ANY** pinch points.

**⚠ CAUTION**

**DO NOT** overtighten the bolt, which may damage the threads and void **ALL** warranties.

4. **GENTLY** rotate, push, and pull the HMI, testing that it is locked in place.
5. **FIRMLY** push your correct controller wiring onto the control port (C).

**Tip:** Align the port's tab with your plug's groove **BEFORE** connection.

## 5. Operation

### ⚠ WARNING

Read and follow **ALL** related instructions in **Safety Information**. In particular:

- Make sure **ALL** your e-cycle components **ARE** compatible with the HMI.
- **ALL** electronic components display **NO** signs of damage or electrical hazards.

**Note:** The following instructions are **ONLY** an introduction to the HMI in a **NON-CUSTOM** state.

**HOWEVER**, steps, parameters, and functions can vary depending on pre-customization and your e-cycle.

- For specifics, refer to **ANY** additional valid instructions.
- If you are an end user, refer to the separate instructions provided by your e-cycle manufacturer or dealer.

### 5.1 Turning ON/OFF the HMI

#### 5.1.1 Standard Procedures

- To turn on the HMI and your e-cycle:
  1. Ensure that power is enabled for the HMI:
    - ◆ Your battery remains in place on your e-cycle.
    - ◆ Your battery has sufficient power.
    - ◆ Your battery and other required parts are active.
    - ◆ All wiring is intact and securely connected.
  2. Hold  until the screen lights up.

**Note:** For some batches, including custom ones:

- Simply turning on your battery can activate the HMI directly. (See **Section 3.3.2.2** on **Page 9**.)
- You need to enter the default or your customized password as allowed by pre-customization.

Follow separate instructions provided by Ananda or your e-cycle dealer/manufacturer if any.



- To turn off the HMI and your e-cycle, hold  until the screen shuts down.

### WARNING

- **ALWAYS** turn off the HMI **BETWEEN** uses, especially **BEFORE** performing maintenance.  
*Failure to do so **WILL** cause unintentional motor start, posing various risks that could invite accidents.*
- It is strongly recommended to turn off the HMI **AFTER** you have properly parked your e-cycle.  
**NEVER** do so to deactivate **ANY** HMI functions **WHILE** you need to continue your e-drive on the way.  
*Failure to follow this **WILL** cause unintentional motor shutoff, risking accidents, injuries, and damages.*

### CAUTION

**DO NOT** turn off the HMI in **EITHER** way:

- Unplug the control port.
- Deactivate or remove your battery.

*Such abrupt cut of power risks damaging the circuits of the HMI and other e-drive parts.*

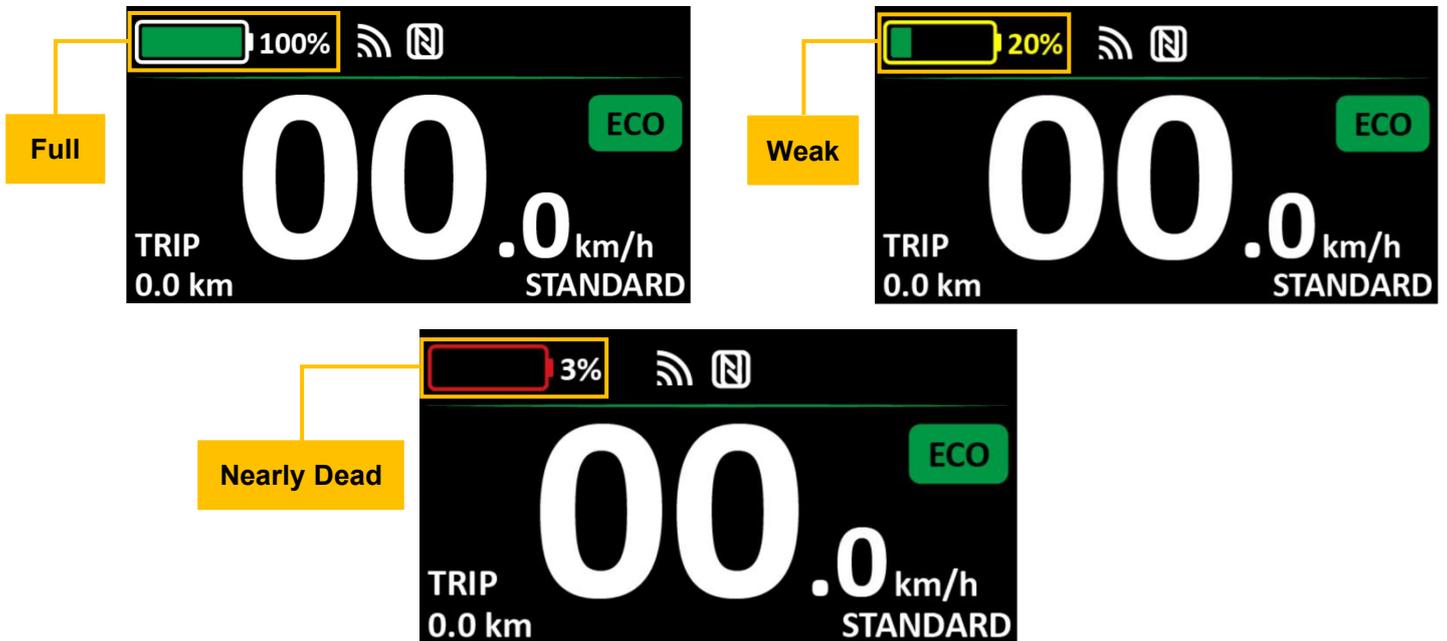
## 5.1.2 Automatic Shutdown

**Note:** Automatic shutdown is **NOT** adjustable **UNLESS** pre-customized.

- After a period of idleness, the HMI will automatically enter sleep mode.
  - ◆ The display should turn off **WHILE** other functions remain on standby.
  - ◆ To waken the HMI, hold  until the screen lights up again.
- After a longer period of idleness, the HMI will automatically shut down.
  - ◆ Such a shutdown means a **COMPLETE** cease of operation.
  - ◆ Some batches may allow batteries to automatically deactivate at the same time.  
(See **Section 3.3.2.2** on **Page 9**.)
  - ◆ To reactivate the HMI, simply reactivate your battery **OR** hold  again after battery reactivation.

## 5.2 Checking the Battery Power

When your battery system functions, you can check the current power level at the screen's upper left corner.



**Note:**

- Properly recharge your battery if its remaining power may **NOT** sustain your ride.  
Follow **ALL** separate instructions provided by your battery manufacturer or e-cycle manufacturer/dealer.
- **DO NOT** allow your battery to ever drain **COMPLETELY**, which can reduce its lifespan and **EVEN** make it hard to reactivate, **THUS** disabling the HMI and your e-drive system.

## 5.3 Turning ON/OFF Lighting

### 5.3.1 Main Lighting

**Note:** Such lighting typically refers to front and/or rear lights depending on your e-cycle.

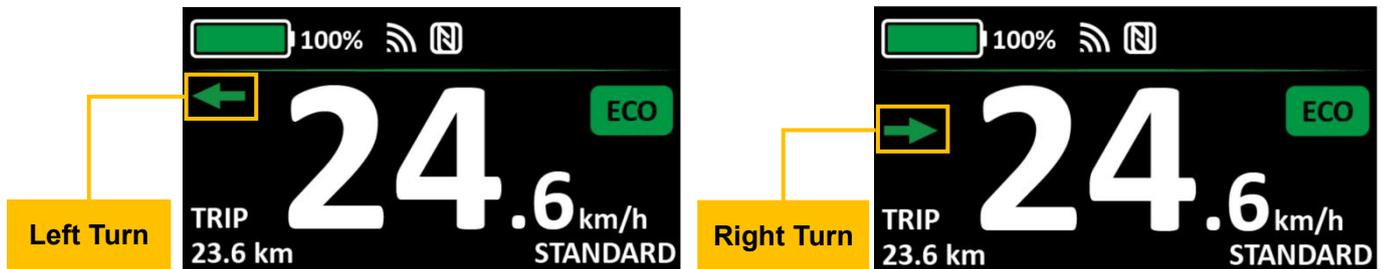
- To turn on lights, hold  (+) until they come on.  
The  icon should be present on the top display.
- To turn off lights, hold  (+) again until they go off.  
The  icon should disappear.



### 5.3.2 Turn Signals

To indicate a left or right turn on your e-cycle, use < or > to activate the turn signal on the side you intend to turn.

- Select < for the **LEFT** side and > for the **RIGHT** side.



- For temporary illumination, press < or > to turn on the signal. The corresponding icon should begin to flash. 10 seconds of no operation will cause the signal to go off automatically.
- For continuous illumination, hold < or > until the signal comes on. The corresponding icon should appear and remain on the screen. To turn off the signal, simply hold < or > again until it goes off.

### 5.4 Turning ON/OFF the Push Assist

The push assist system provides additional strength as you push your e-cycle for a walk or climb.

- To turn on the push assist, hold  (-) while pushing your e-cycle forward.
  - ◆ The  icon should be present on the screen.
  - ◆ Your motor should run at a very low speed around **6 km/h (4 mph)**.
- To turn off the push assist, simply release  (-).



#### WARNING

- Stand beside your e-cycle, **FIRMLY** grasping the handlebars with **BOTH** hands **THROUGHOUT** the process.
- **NEVER** activate your throttle (if available) while using the push assist to prevent unintentional switch to throttle control, **UNLESS** the throttle is superseded by the push assist.
- Push assist control is **NOT** recommended in the following conditions:
  - ◆ You are going down steep inclines.
  - ◆ You are going up inclines exceeding your e-cycle's capacity.
  - ◆ You are navigating through crowded or confined areas.
  - ◆ You are walking over rough terrains or obstacles.
  - ◆ You are walking near precipices or waters (whether fenceless or not).

## 5.5 Selecting a PAS Level

The pedal assist system (PAS) requires you to continue using the pedals to keep your motor active while providing additional speed and strength as your ride.

- The PAS has 5 effective levels from low to high: **ECO**, **TOUR**, **SPORT**, **TURBO**, and **BOOST**.
- Press + (E) for **HIGHER** levels and - (A) for **LOWER** levels.

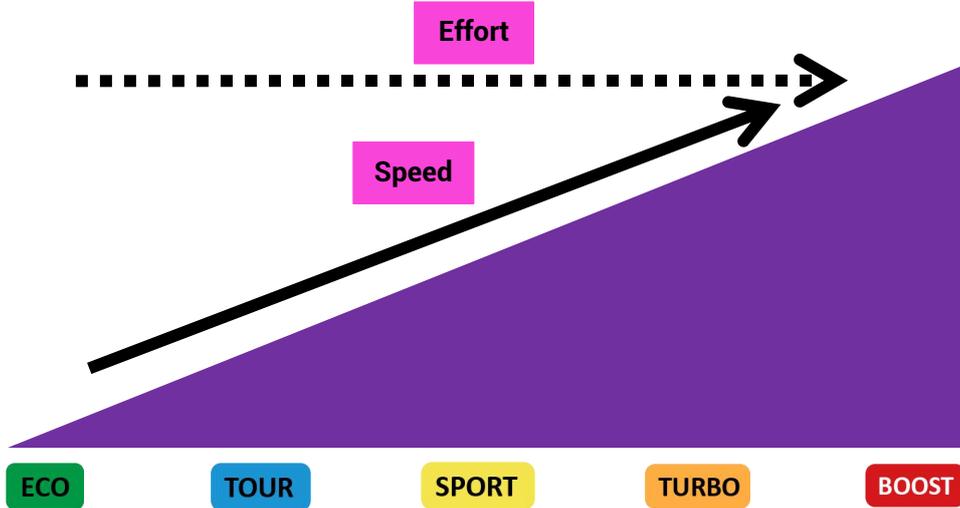
**Note:** *DO NOT* hold either button for one more second, which can activate main lighting or the push assist.



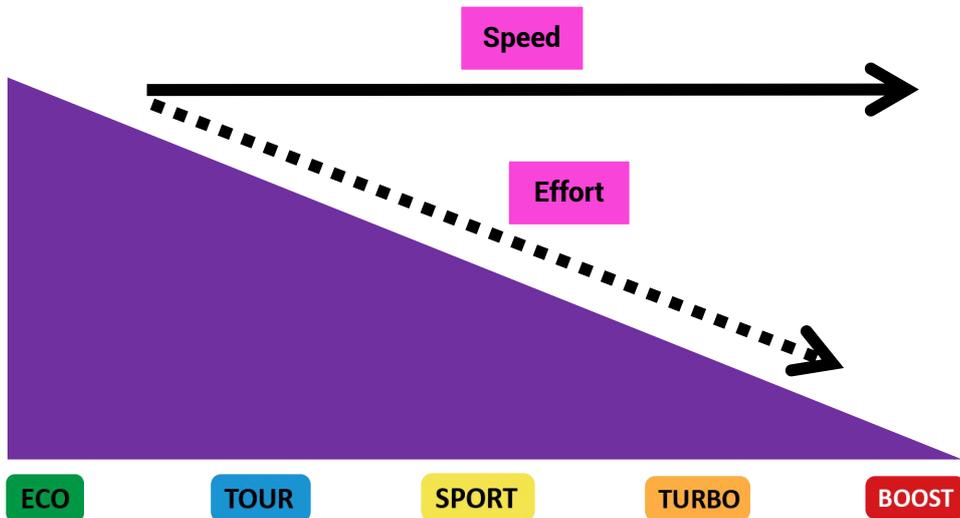
- Configure your controller to define different levels that bring different riding experiences.

**Note:** Consider various factors such as assistance ratios, power output settings, current limiting, torque response, cadence detection, battery management system (BMS), and software algorithms.

- ◆ (Outcome 1) The **HIGHER** the level, the **FASTER** your e-cycle will go with the same effort.



- ◆ (Outcome 2) The **HIGHER** the level, the **LESS** pedaling will be required to activate the PAS and the **EARLIER** your e-cycle will achieve the target speed.



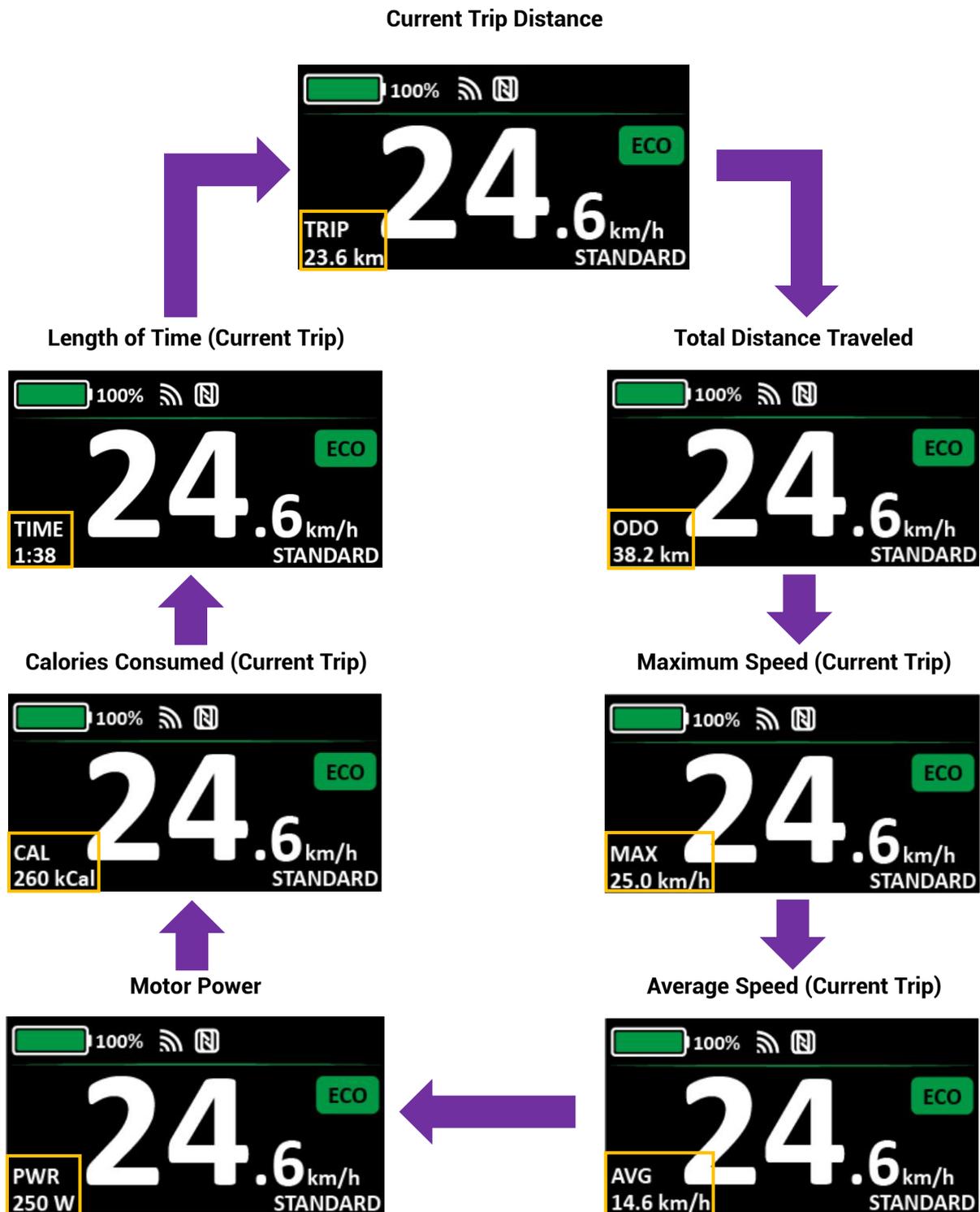
- Downshifting the PAS to OFF disables the PAS and enables manual riding only.



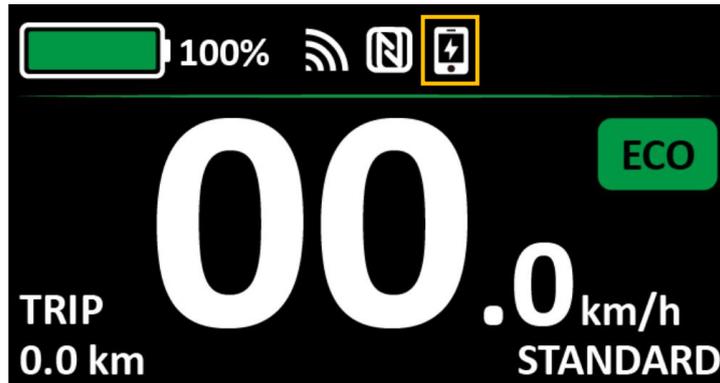
## 5.6 Toggling the Variable Display

Press  to toggle among the following parameters in sequence.

**Note:** *DO NOT* hold  for one more second, which **WILL** turn off the HMI.



## 5.7 Charging Your Device



1. Pull open the cover of the USB-C port.
2. Connect your device to the port using a compatible USB cable.  
 should be present and charging begin.
3. When finished, simply unplug your device from the HMI.  
 should disappear.
4. Replace the port cover for complete sealing.

### WARNING

- **NEVER** charge **NON-RECHARGEABLE** devices, as this can lead to fires or explosions.
- **DO NOT** overcharge **ANY** devices, as this can cause equipment damage and safety hazards.
- **DO NOT** connect or disconnect USB devices while riding, as this can invite accidents.

### CAUTION

Failure to cover the USB port when it is idle may cause liquid or foreign objects to enter the HMI, posing the risk of equipment damage.

### **Note:**

Ensure that **USB Charge** is selected in **USB Mode** if USB data transfer is available.

For details, refer to **Section 6.2.2 on Page 20**.

## 6. Function Menus

### ⚠ WARNING

Read and follow **ALL** related instructions in **Safety Information**.

In particular:

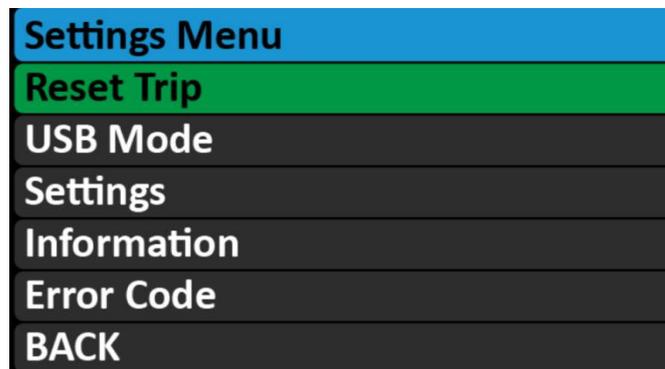
- **DO NOT** use settings that are **NOT** compatible with your e-cycle, including both hardware and software.
- If you are an end user, **NEVER** adjust **ANY** default settings that are **NOT** allowed for random adjustment. For specifics, refer to the separate instructions provided by your e-cycle manufacturer and dealer.

**Note:** The following instructions are **ONLY** an introduction to the HMI in a **NON-CUSTOM** state.

**HOWEVER**, displayed content and available functions can vary depending on pre-customization.

- For specifics, refer to **ANY** additional valid instructions.
- If you are an end user, refer to the separate instructions provided by your e-cycle manufacturer or dealer.

### 6.1 Operational Guide



1. When the HMI is active, hold **M** until the **Settings Menu** directory is accessed.
2. Press **+** or **-** to select a menu (**Reset Trip**, **USB Mode**, **Settings**, **Information**, or **Error Code**) or **BACK**.
3. Press **M** again to open the selected menu or to leave the directory.

**Note:** After opening a menu:

- a. Press **+** or **-** to select your desired setting, a submenu, or **BACK**.
- b. Press **M** again to confirm your change, open the submenu, or leave the menu for the directory.

## 6.2 Menu Guide

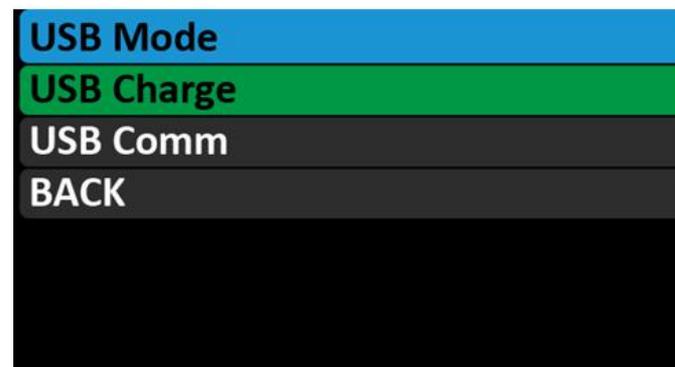
### 6.2.1 Current Trip Distance



Open the **Reset Trip** menu, which concerns your current trip distance (**TRIP**) in the various display.

- To clear the reading, select **Yes**.
- To save the reading, select **No**.

### 6.2.2 USB Functions



Open the **USB Mode** menu, which selects the function of the USB port.

- To enable charging, select **USB Charge**.
- To enable data transfer, select **USB Comm**.

#### WARNING

- **DO NOT** apply either to **NON-RECHARGEABLE** devices.
- **ALWAYS** ensure **NO** computer viruses for data transfer if enabled.

**Note:** Data transfer is **NOT** available **UNLESS** pre-customized.

### 6.2.3 Various Settings



Open the **Settings** menu, which contains two submenus: **Brightness** and **Wheel Size**.

#### 6.2.3.1 Backlight

Open the **Brightness** submenu, which adjusts the luminance of the TFT screen's backlight.

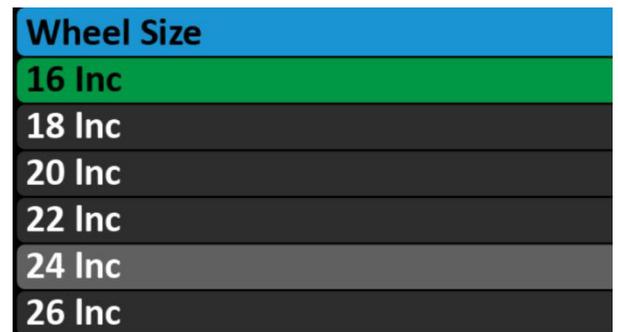
- Setting **20%** is the dimmest.
- Setting **100%** is the brightest.



**Tip:** Use the minimum setting that is clearly visible, prolonging your battery life and contributing to minimal distraction in low light conditions.

#### 6.2.3.2 Wheel Diameter

Open the **Wheel Size** submenu, which modifies your e-drive system to accommodate motorized wheels with different diameters **INCLUDING** tires.



**Example:**

$$22'' \text{ (Wheel Outer Dia.)} + 2'' \text{ (Tire Outer Dia.)} = 24'' \text{ (Total Dia.)}$$

#### CAUTION

**DO NOT** use settings that are **NOT** compatible with your wheels.

They can cause **FAULTY** speed readings and control, leading to misjudgment and posing various risks.

### 6.2.4 Component Information



Open the **Information** menu.

All items are **ONLY** for viewing and **NOT** adjustable.

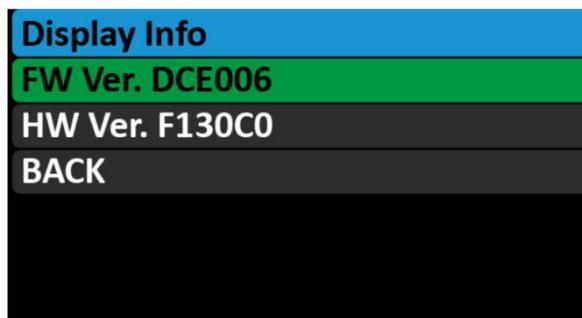
#### 6.2.4.1 Controller Information



Open the **Controller Info** submenu, which concerns your controller connected to the HMI.

- **FW Ver.** refers to the firmware.
- **HW Ver.** refers to the hardware.

#### 6.2.4.2 HMI Information



Open the **Display Info** submenu, which concerns the HMI itself.

- **FW Ver.** refers to the firmware.
- **HW Ver.** refers to the hardware.

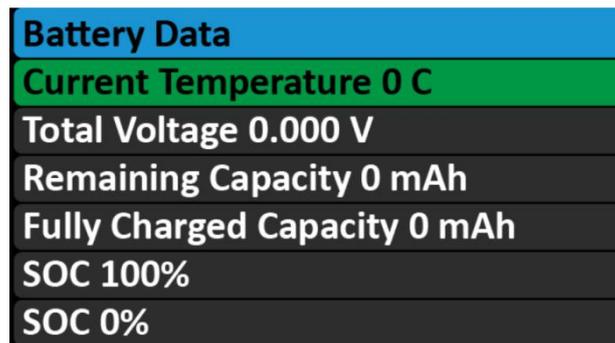
### 6.2.4.3 Battery Information



Open the **Battery Info** submenu, which concerns your battery as the power source.

- **FW Ver.** refers to the firmware.
- **HW Ver.** refers to the hardware.

### 6.2.4.4 Battery State



Open the **Battery Data** submenu, which concerns the current state of your battery.

- **Current Temperature** indicates the temperature detected at your battery.
- **Total Voltage** indicates the operating voltage measured across your battery.
- **Remaining Capacity** indicates how much energy available for use in your battery.
- **Fully Charged Capacity** indicates the total amount of charge your battery can hold.
- **SOC** stands for **State of Charge**, indicating how much charge remains in your battery relative to its fully charged capacity.
  - ◆ **100%** indicates a full charge.
  - ◆ **20%** indicates a low charge.
  - ◆ **0%** indicates no battery or a dead one.

**Note:** The **SOC** value in the lower place is available in the case of a dual-battery system.

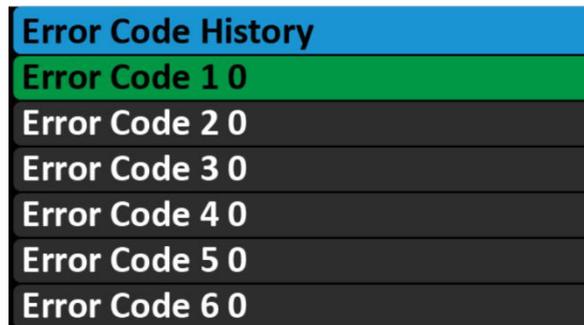
## 6.2.5 Error Codes



Open the **Error Code** menu.

Errors detected by the HMI are recorded in numeric code and clearable.

### 6.2.5.1 Reading the History



Open the **Error Code History** submenu.

The recorded errors should be displayed in chronological order.

**Note:** Refer to **Section 9.2 on Pages 39–43** for the implication and solutions of each code.

### 6.2.5.2 Clearing the History



Open the **Error Code Reset** submenu.

- To clear the history, select **Yes**.
- To save the history, select **No**.

# 7. Near-Field Communication

## 7.1 Introduction

Near-field communication (NFC) is a convenient and secure technology designed to activate the HMI.

By simply tapping an NFC card on the HMI, you can quickly gain access without any activation button or traditional password.

**Note:**

- NFC is usable **ONLY** after at least one **Master Card** and one **User Card** are bound.
- Clearing either **Master Cards** or **User Cards** disables NFC.
- Seek professional service if you cannot activate the HMI due to **ALL** cards being lost, damaged, or faulty.

## 7.2 Physical Cards

Physical cards refer to tangible and handheld cards, such as **MASTER KEY** and **USER KEY** mentioned below.

**Note: MASTER KEY and USER KEY are examples but NOT the exclusive ones.**

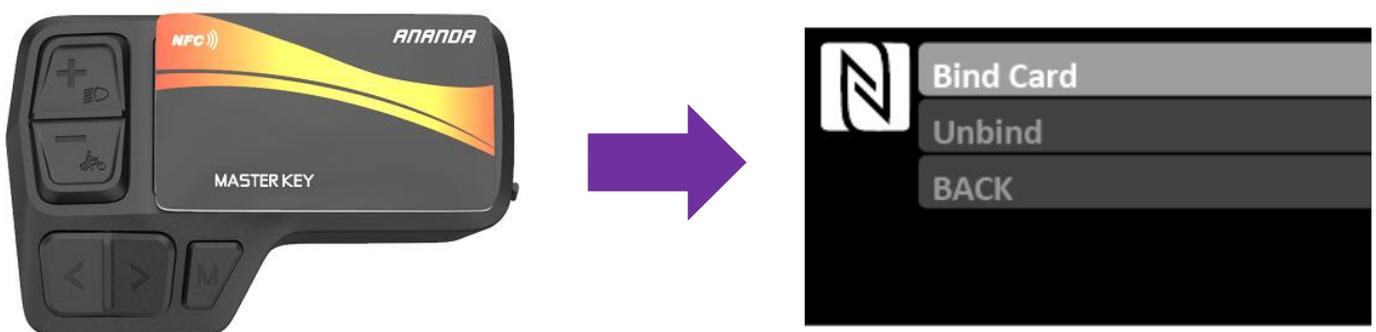
### 7.2.1 Enabling NFC by Physical Card

#### 7.2.1.1 Binding a Master Card (Required)

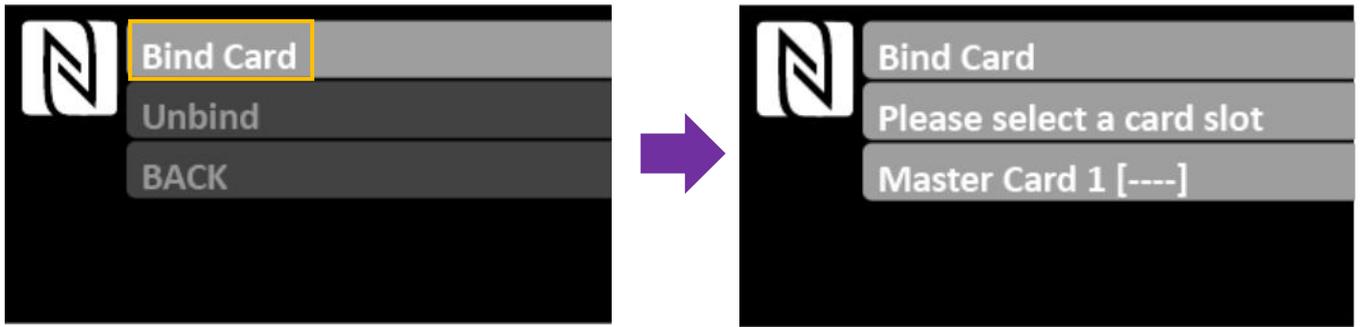
1. Make sure the HMI is active **WITHOUT** any function menu open.



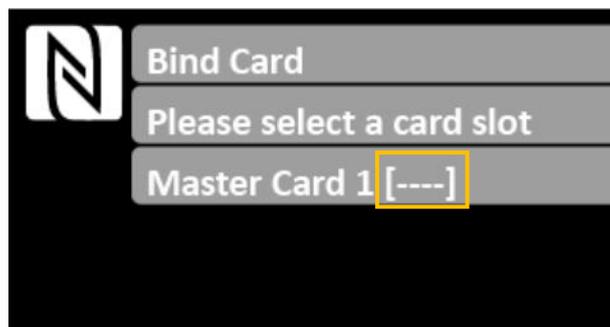
2. Place your **MASTER KEY** on the screen until the following menu is open.



3. Use + or - to select **Bind Card** and then press **M** to open.



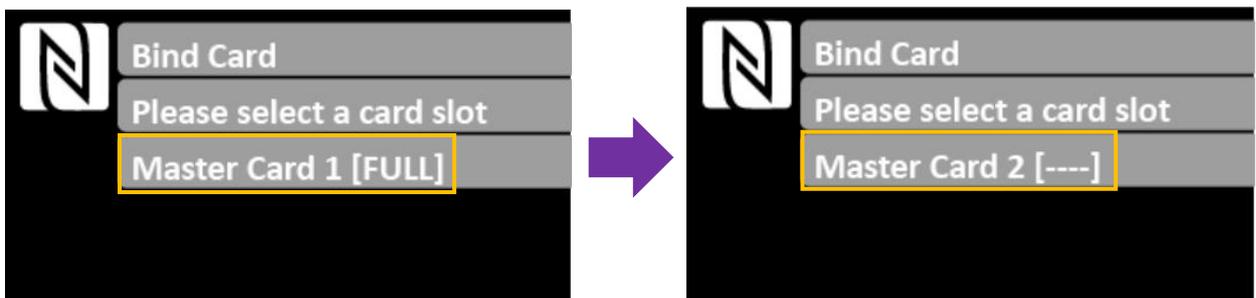
4. Check that [----] goes with **Master Card 1**, which indicates a vacant space.



**Note:** If **[FULL]** is displayed, **Master Card 1** is already bound with another card.

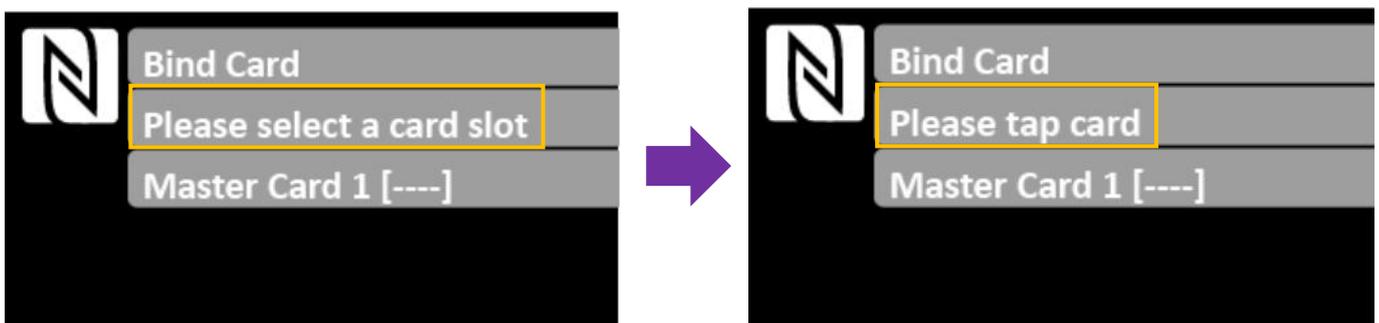
To continue for **MASTER KEY**:

- Press + or - until **Master Card 2, 3, or 4** is fulfilled.



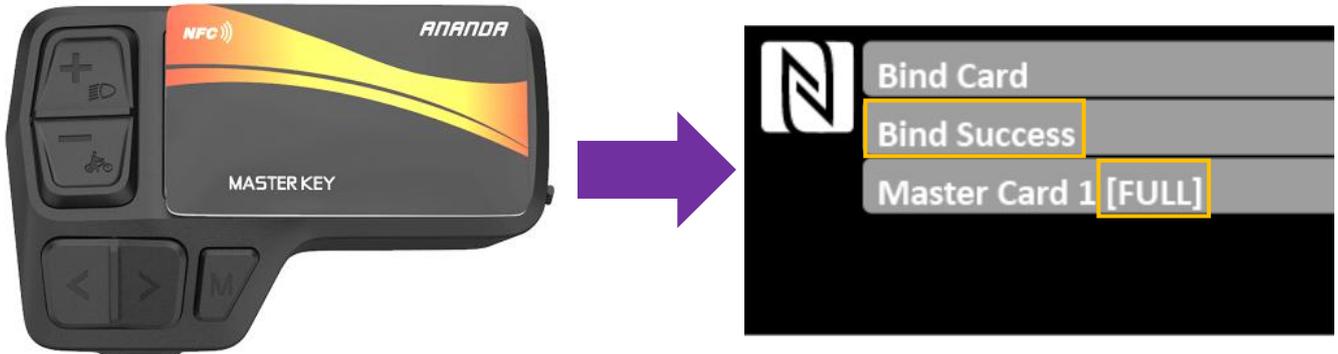
- Unbind **Master Card 1** as described in **Section 7.2.3** on **Pages 31–33**.

5. Press **M** again, toggling to **Please tap card**.

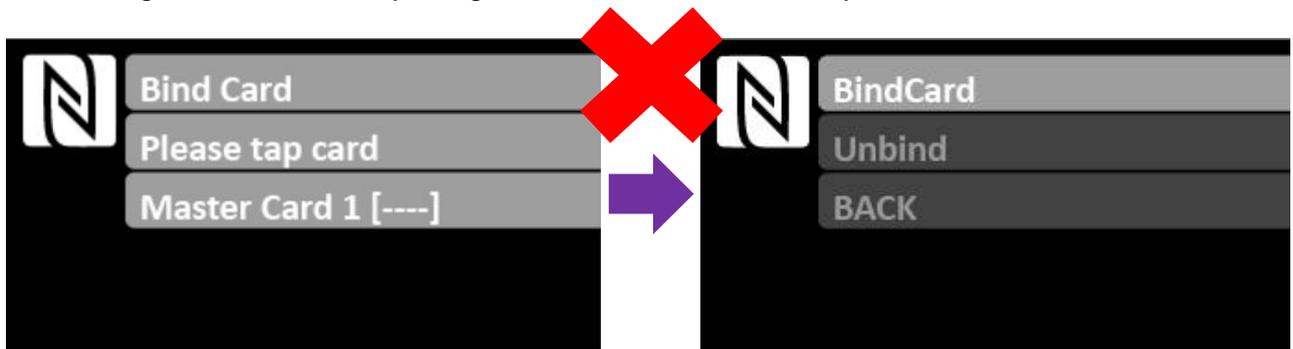


- Place your **MASTER KEY** on the screen again until **Bind Success** and **FULL** are displayed.

**MASTER KEY** should be successfully bound to the HMI.

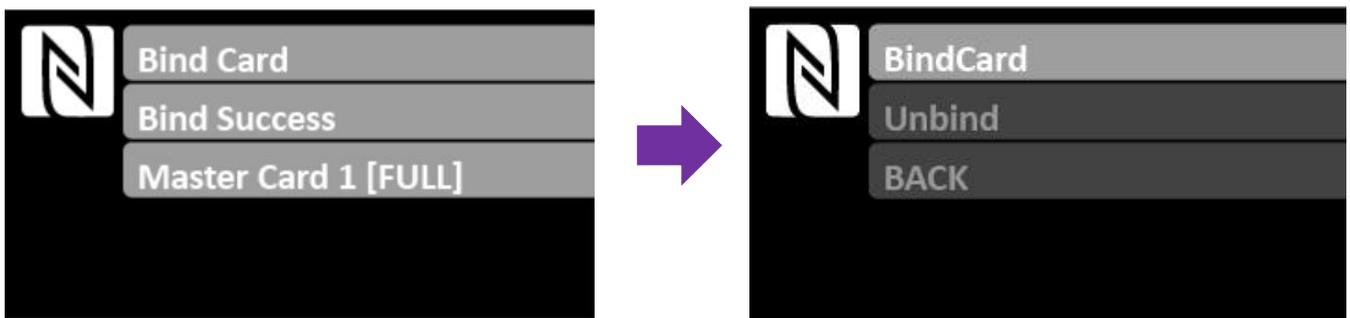


**Note:** Pressing **M**, **+**, or **-** **BEFORE** placing **MASTER KEY** returns to the previous menu.

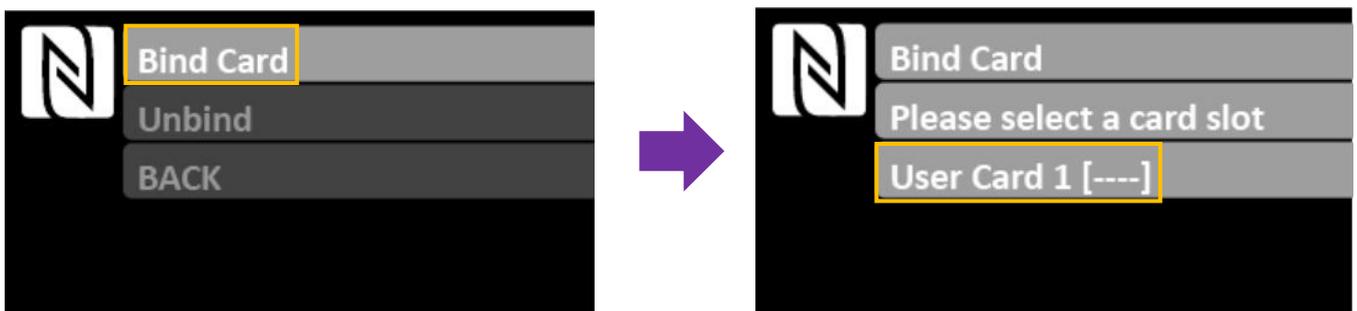


### 7.2.1.2 Binding a User Card (Required)

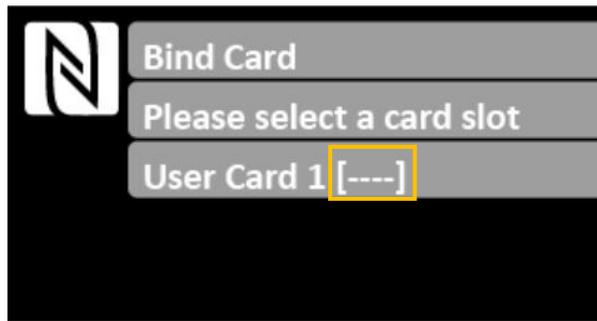
- Press **M**, **+**, or **-**, returning to the previous menu.



- Reopen **Bind Card** and then use **+** or **-** to select **User Card 1**.



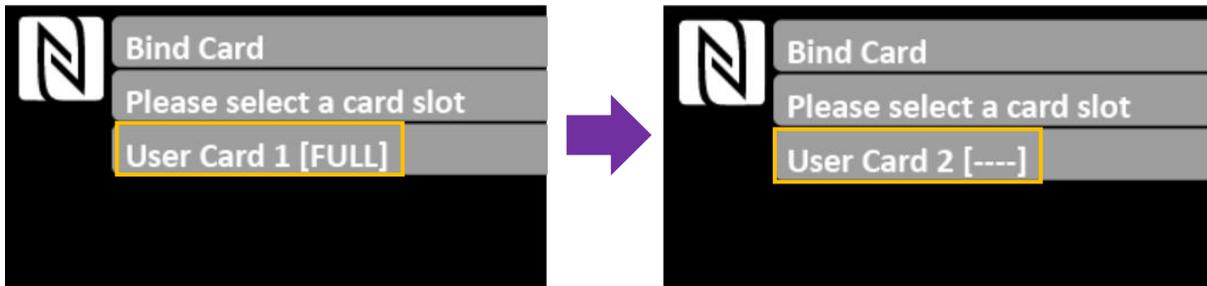
3. Check that [----] goes with **User Card 1**, which indicates a vacant space.



**Note:** If [FULL] is displayed, **User Card 1** is already bound with another card.

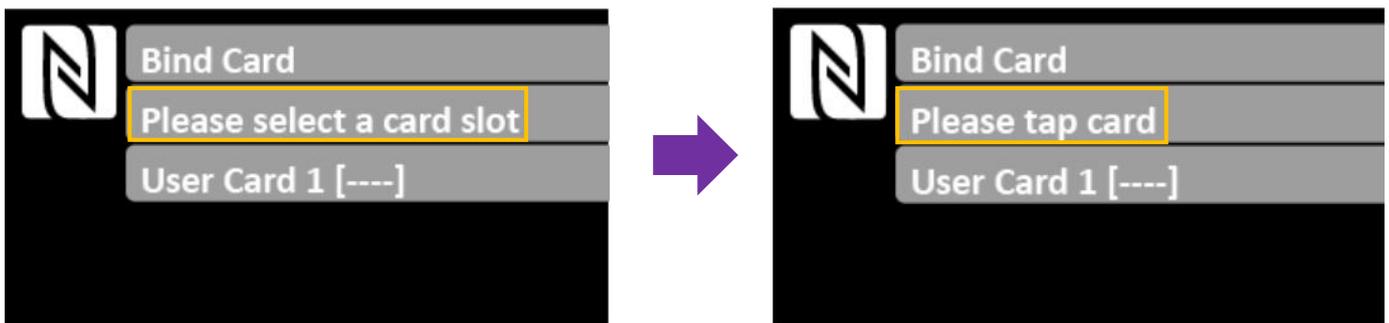
To continue for **USER KEY**:

- Press + or - until **User Card 2, 3, or 4** is fulfilled.



- Unbind **User Card 1** as described in **Section 7.2.3** on **Pages 31–33**.

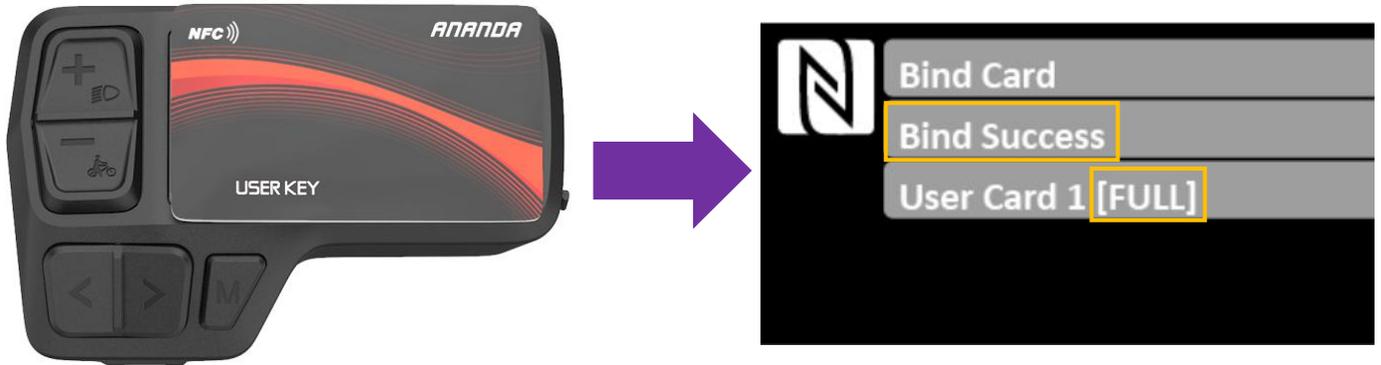
4. Press **M** again, toggling to **Please tap card**.



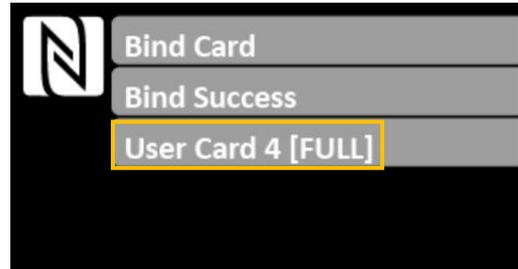
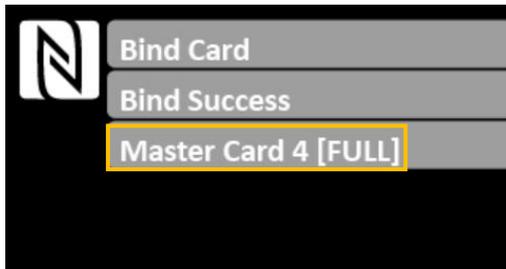
5. Place your **USER KEY** on the screen until **Bind Success** and **FULL** are displayed.

**USER KEY** should be successfully bound to the HMI.

NFC should be successfully enabled with your **MASTER KEY** and **USER KEY**.



**Note:** If needed, repeat the above steps to bind additional **Master Cards** and **User Cards**.

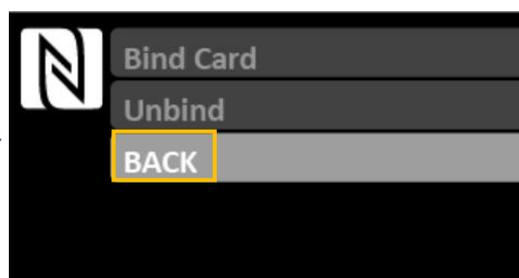
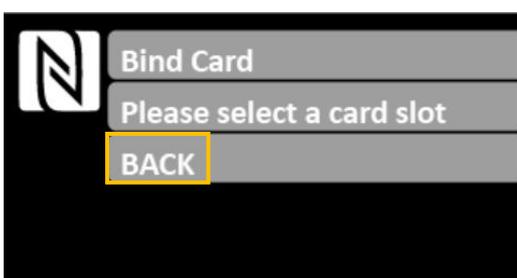
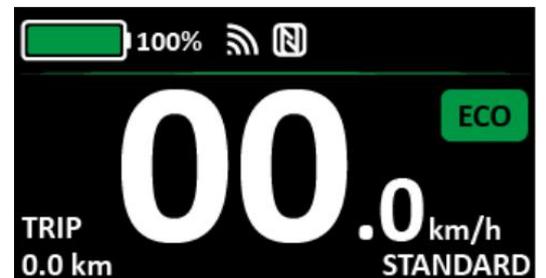


Binding more cards can be helpful in case:

- You forgot your original cards.
- You lost your original cards.
- You cannot find your original cards at once.
- You want to share the HMI and your e-cycle with more people.

6. To leave the submenu,

- Use **+** or **-** to select **BACK**.
- Press **M**, returning to the previous menu.
- Use **+** or **-** to select **BACK**.
- Press **M** again, resuming the initial display.



### 7.2.2 Activating the HMI by NFC

1. Turn off and reactivate the HMI.

The digital display should require an NFC card you have already bound.



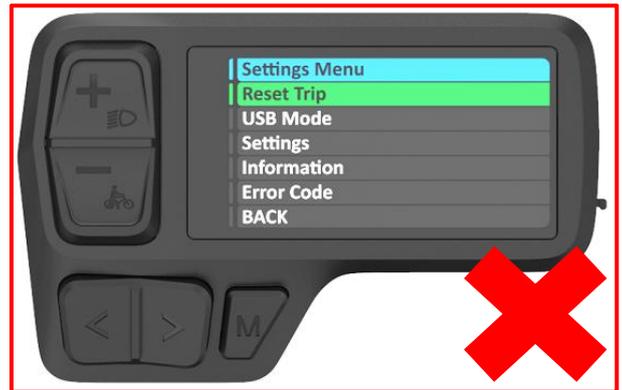
2. Place your **MASTER KEY** or **USER KEY** on the screen.

The display should be unlocked and ready for use.



### 7.2.3 Disabling NFC by Physical Card

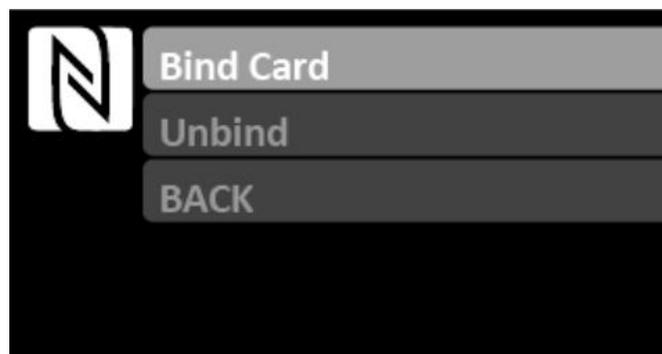
1. Make sure the HMI is active **WITHOUT** any function menu open.



2. Place your **MASTER KEY** or **USER KEY** on the screen until the following menu is open.

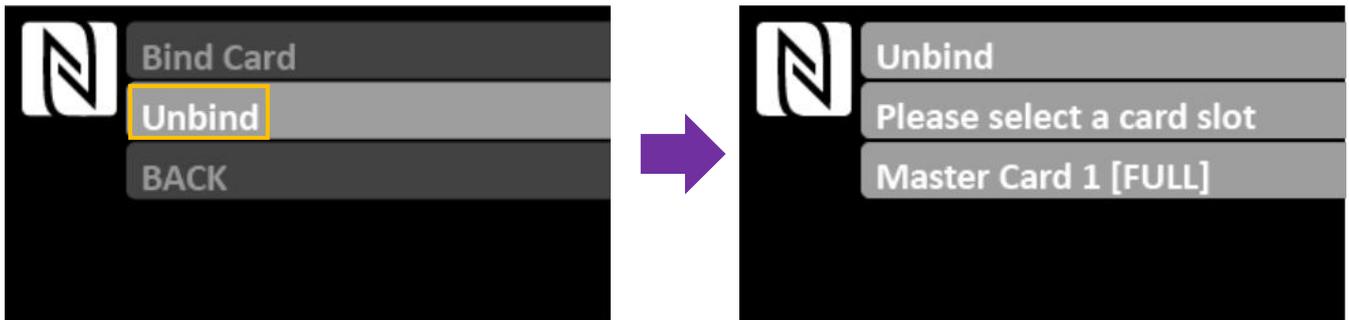


OR



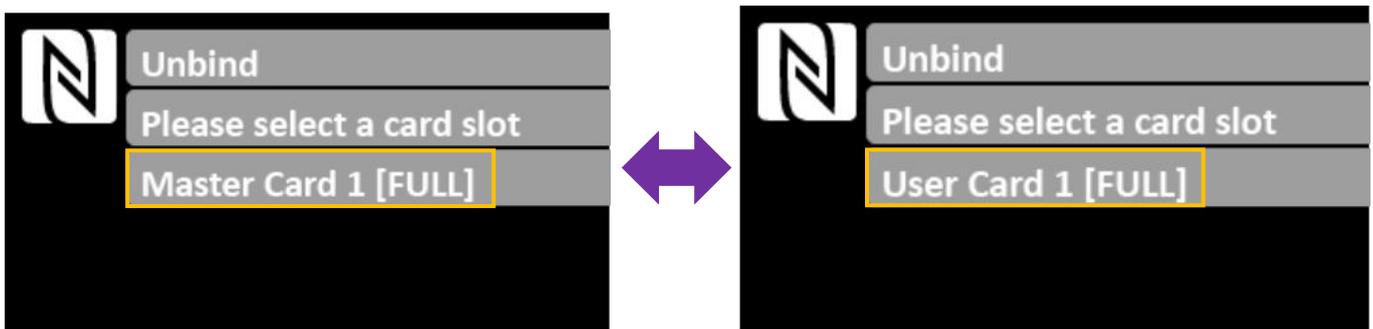
- Use + or - to select **Unbind** and then press **M** to open.

The display should start with **Master Card 1**.



- Use + or - to select the **Master Card** or **User Card** that you desire to unbind.

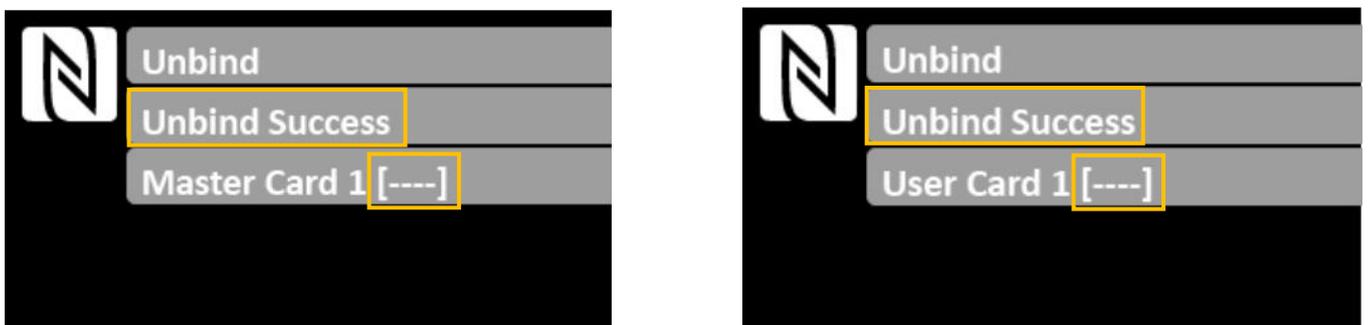
**Note:** *ONLY* select one going with **[FULL]**.



- Press **M** again.

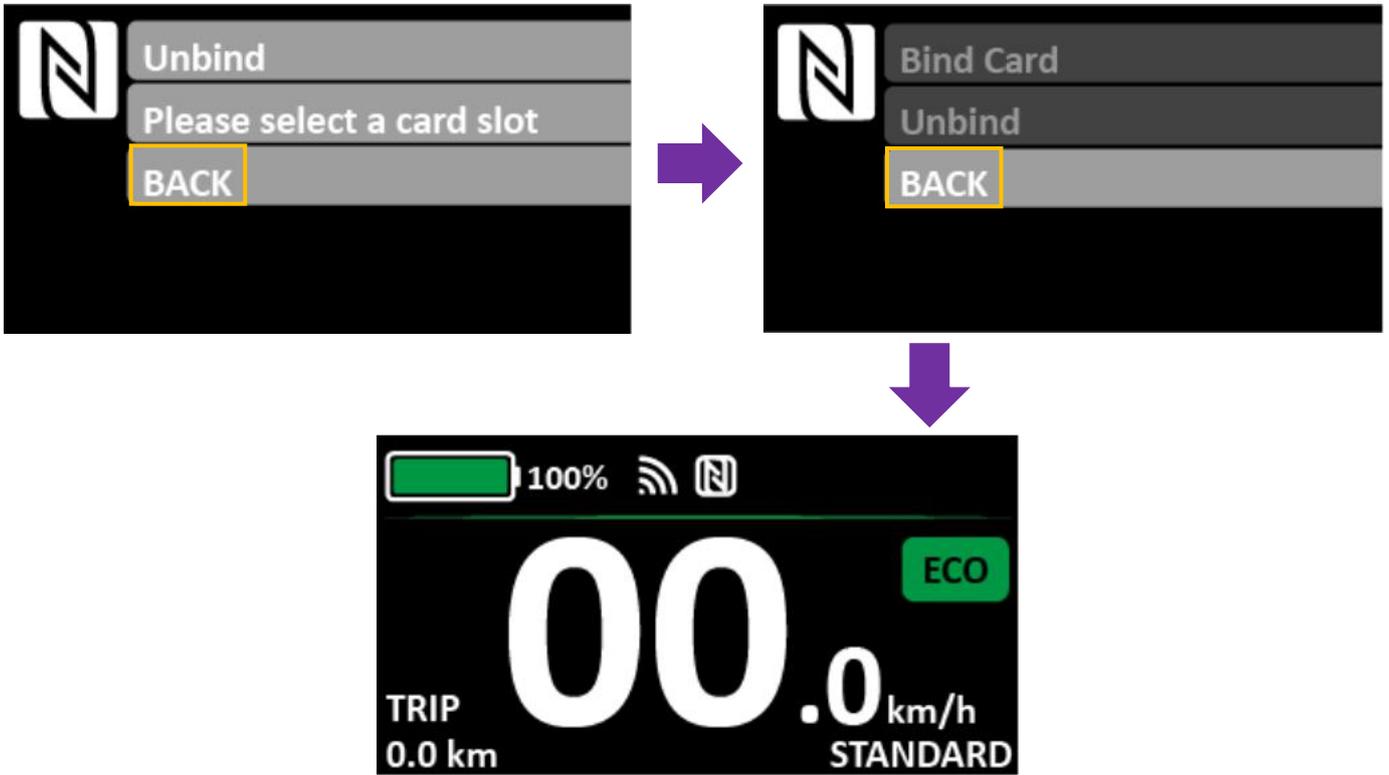
**Unbind Success** should be displayed and **[FULL]** shift to **[----]**.

The selected card should be successfully unbound.



- Repeat **Steps 4–5** until either **Master Cards** or **User Cards** are **COMPLETELY** cleared.

7. To leave the submenu,
  - a. Use + or - to select **BACK**.
  - b. Press **M**, returning to the previous menu.
  - c. Use + or - to select **BACK**.
  - d. Press **M** again, resuming the initial display.



8. Turn off and reactivate the HMI, testing that the display lights up as usual.



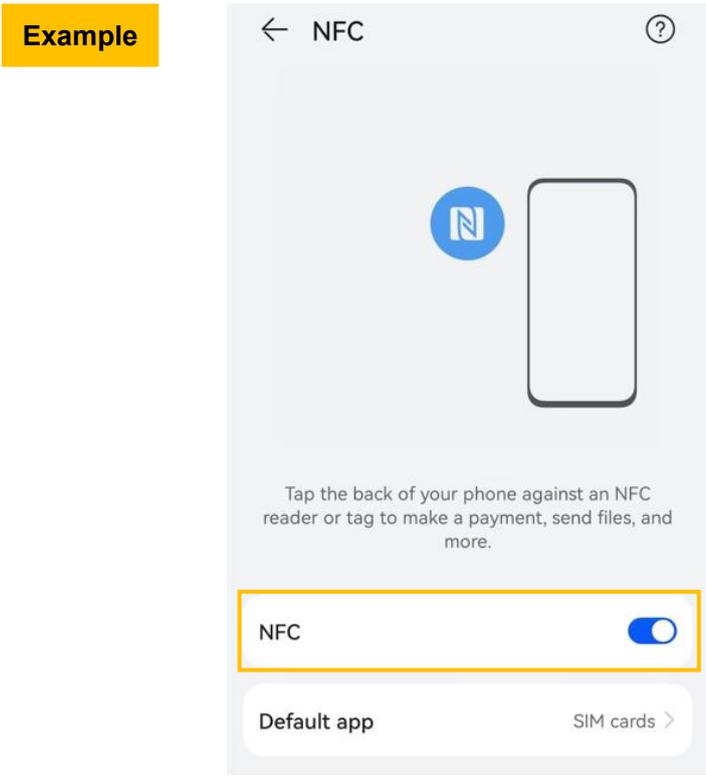
### 7.3 Digital Cards

Digital cards are a virtual representation of physical cards, which can be stored and accessed on electronic devices such as smartphones.

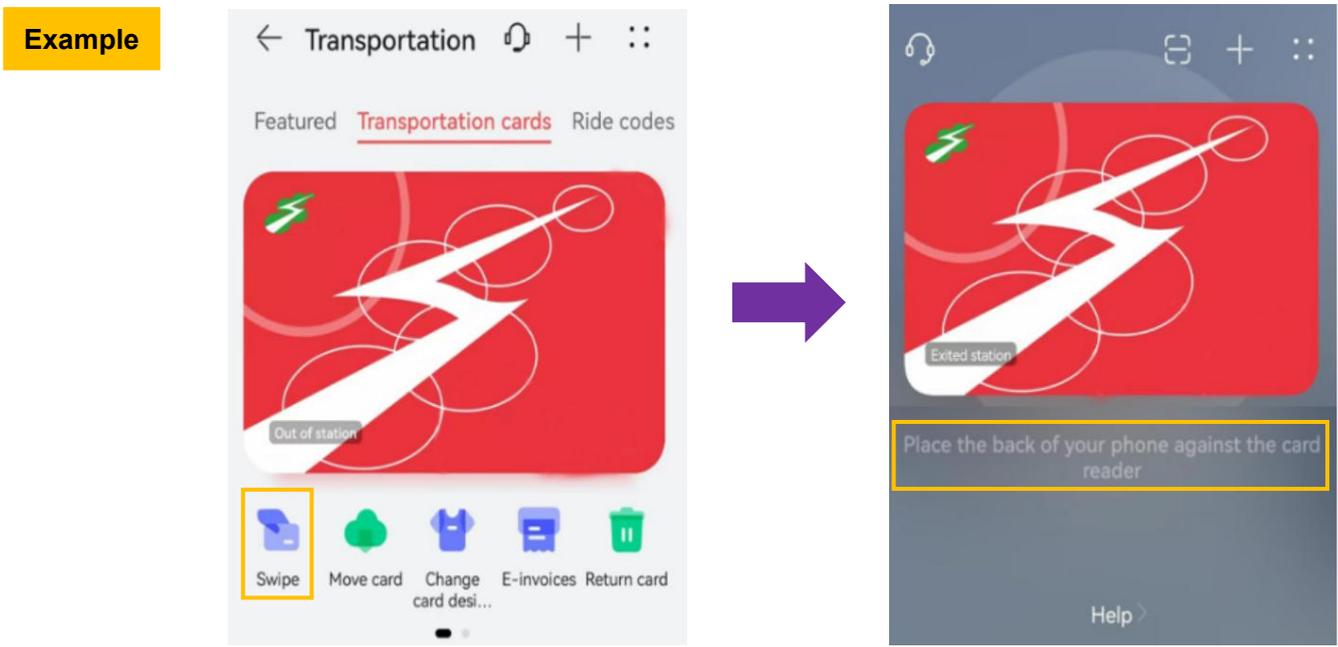
The principles and steps are the **SAME** for enabling, disabling, and using NFC between digital and physical cards.

**HOWEVER**, perform the following measures to ensure successful operation:

- Make sure your card supports NFC as confirmed by the card operator.
- Enable NFC on your smartphone **BEFOREHAND**.

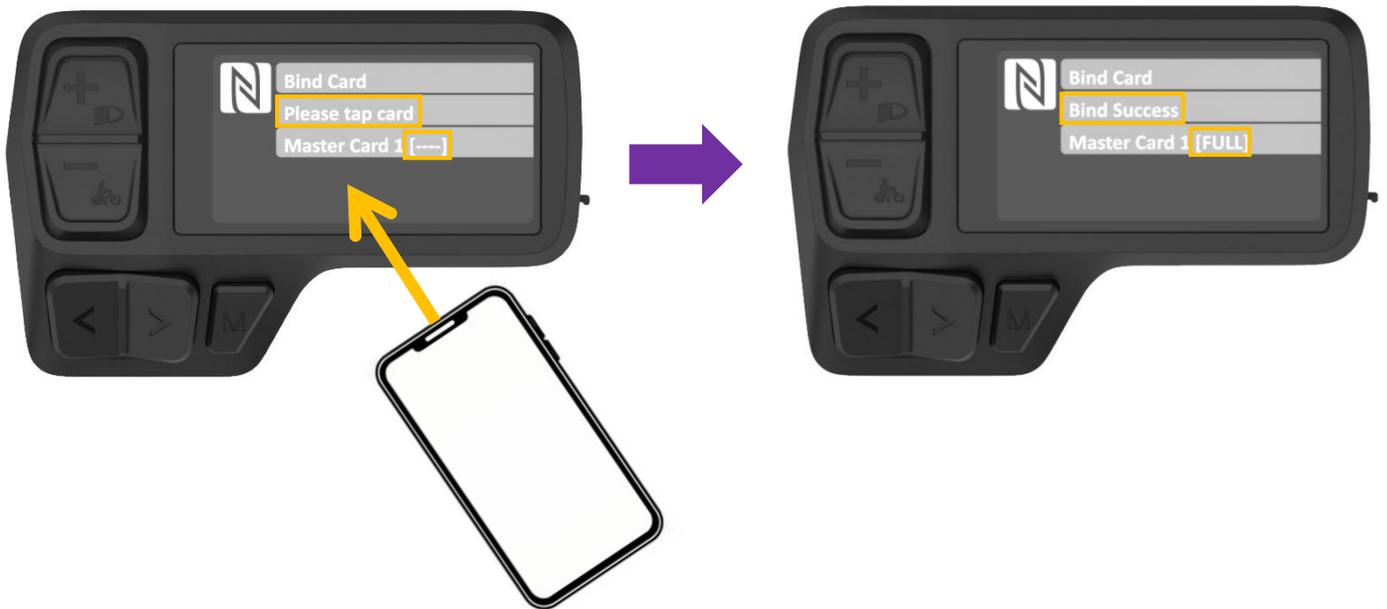


- Activate your card's **Swipe** or any other similar function **BEFORE** binding it to or using it to activate the HMI.

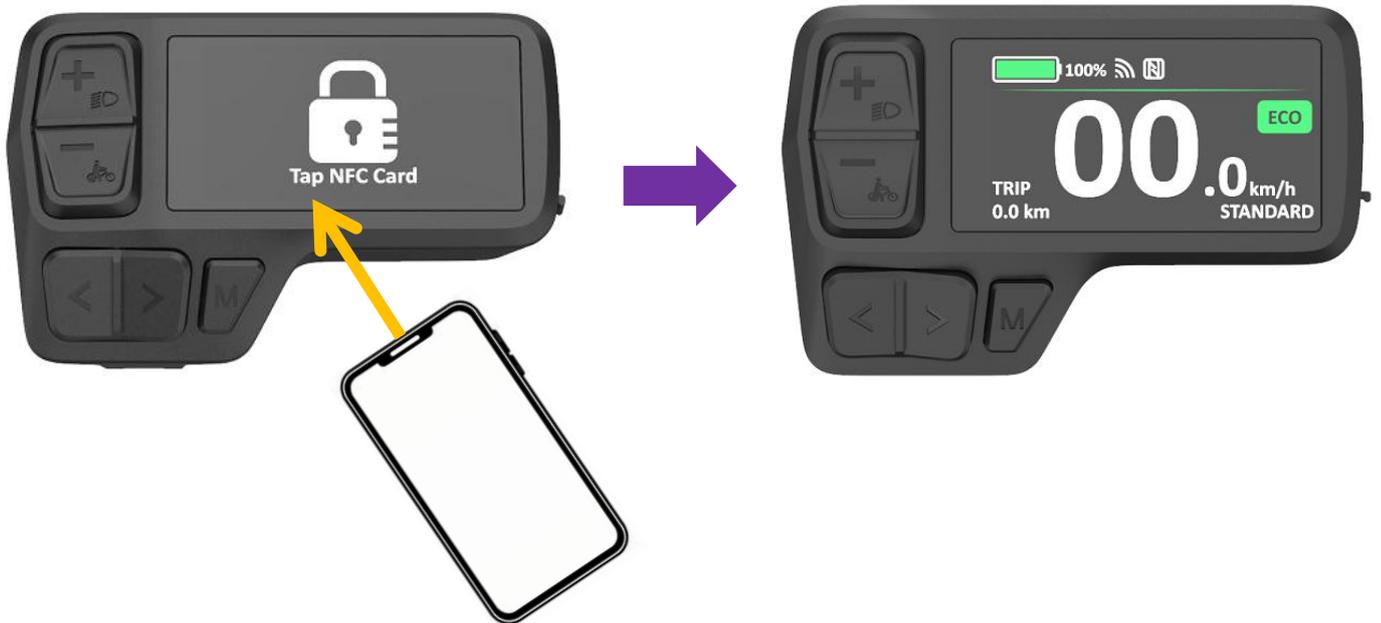


- Like a physical card, simply place your smartphone on the screen until NFC works.

**Enabling NFC by Digital Card**



**Activating the HMI by Digital Card**



# 8. App Control

## 8.1 Introduction

Ananda Ride is a mobile app for e-cycle management, offering custom configuration, real-time status monitoring, precise location tracking, troubleshooting assistance, and access to essential documents and updates, while enhancing e-cycle performance and user experience through seamless integration and comprehensive features.

It is highly recommended to download **Ananda Ride** for optimized riding.

Android



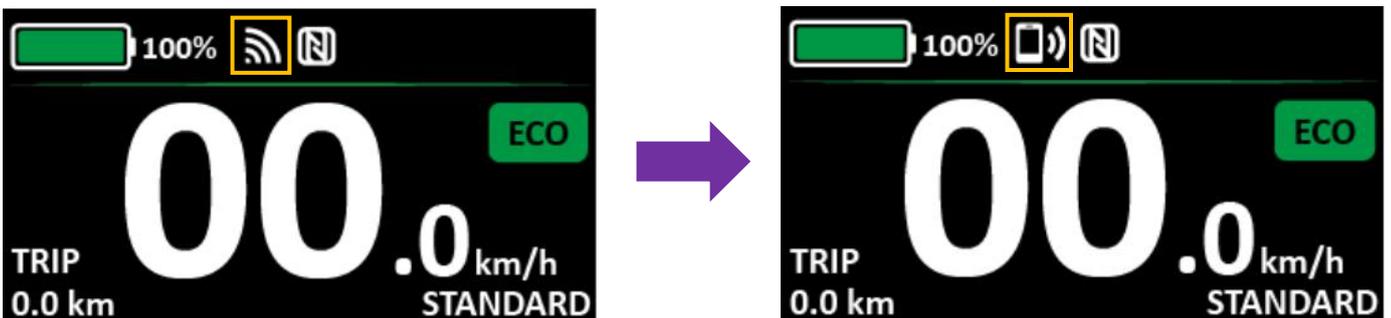
iOS



## 8.2 User Guide

- Before each use, activate the wireless BT connectivity of your smartphone and then place it close to the HMI.

When  shifts to , your phone should be successfully connected to the HMI, enabling **Ananda Ride** to work with your e-cycle.



- For detailed instructions:
  - ◆ Contact Ananda if you are Ananda's corporate customer.
  - ◆ Contact your e-cycle dealer if you are an end user.

# 9. Troubleshooting

**⚠ WARNING**

- Read and follow **ALL** related instructions in **Safety Information**.
- Seek professional assistance from authorized trained technicians as needed, **ESPECIALLY** if you are an end user and **EVEN** if you are professional **BUT** unfamiliar with the HMI's philosophy.
- If you are an end user, stop using the HMI **UNTIL** any problem is **FULLY** addressed.

**Note:** Ananda's corporate customers can try **EITHER** method for self-service support on **SOFTWARE** issues.

- Use Ananda ADST tool if available for firmware upgrade, etc.
- Visit **Ananda Link** mentioned in **Section 14.2.1** on **Page 57**.

**Ananda  
ADST Tool**



## 9.1 Common Problems

**Note:**

The following solutions are for reference only and may **NOT** address all causes listed herein or otherwise. Use your judgment, knowledge, and common sense at **ALL** times and seek professional service as needed.

Problem	Possible Causes	Recommended Solutions
HMI Looseness	<ul style="list-style-type: none"> <li>● Locking Clamp Loose</li> <li>● Handlebar Issues</li> </ul>	<ul style="list-style-type: none"> <li>● Retighten the HMI's clamp bolt.</li> <li>● Ensure your handlebars suit the HMI's clamp.</li> <li>● Fill in the clamp gaps with proper materials.</li> </ul>
Startup Failure	<ul style="list-style-type: none"> <li>● Power Supply Issues</li> <li>● External Wiring Issues</li> <li>● Software/Hardware Issues</li> </ul>	<ul style="list-style-type: none"> <li>● Use an intact battery compatible with the HMI.</li> <li>● Reinstall or reactivate your battery.</li> <li>● Recharge your battery and try again.</li> <li>● Clear debris or dirt inside the control port.</li> <li>● Clean or retighten the wire connection to the HMI.</li> <li>● Seek professional service.</li> </ul>
Sudden Shutdown	<ul style="list-style-type: none"> <li>● Auto Shutoff for Idleness</li> <li>● Power Supply Issues</li> <li>● External Wiring Issues</li> <li>● Software/Hardware Issues</li> </ul>	<ul style="list-style-type: none"> <li>● Reactivate the HMI.</li> <li>● Reinstall, reactivate, recharge, or replace your battery.</li> <li>● Clean or retighten the wire connection to the HMI.</li> <li>● Seek professional service.</li> </ul>
Display Ghosting or Image Retention	<ul style="list-style-type: none"> <li>● Extreme Ambient Temperature</li> <li>● Hardware Issues</li> </ul>	<ul style="list-style-type: none"> <li>● Use in warmer or cooler conditions.</li> <li>● Seek professional service.</li> </ul>
Button Failure	<ul style="list-style-type: none"> <li>● Obstruction Interference</li> <li>● Software/Hardware Issues</li> </ul>	<ul style="list-style-type: none"> <li>● Clear debris or dirt around the problematic button.</li> <li>● Seek professional service.</li> </ul>

Problem	Possible Causes	Recommended Solutions
USB Charging Failure	<ul style="list-style-type: none"> <li>● Incorrect Settings</li> <li>● Obstruction Interference</li> <li>● Power Supply Issues</li> <li>● Software/Hardware Issues</li> </ul>	<ul style="list-style-type: none"> <li>● Ensure <b>USB Mode</b> is set to <b>USB Charge</b>.</li> <li>● Clear debris or dirt inside the charging port.</li> <li>● Ensure the HMI is active.</li> <li>● Ensure sufficient battery power.</li> <li>● Ensure your device is chargeable.</li> <li>● Retighten the USB cable connections to your device and the HMI.</li> <li>● Replace your damaged USB cable.</li> <li>● Seek professional service.</li> </ul>
Lighting Failure Despite Correct Icon Display	<ul style="list-style-type: none"> <li>● Lighting Fixture Issues</li> <li>● External Wiring Issues</li> <li>● Software/Hardware Issues</li> </ul>	<ul style="list-style-type: none"> <li>● Ensure your lighting is functional.</li> <li>● Clean, correct, or retighten your lighting wire connection(s).</li> <li>● Seek professional service.</li> </ul>
Incorrect Speed or Distance Readings	<ul style="list-style-type: none"> <li>● Incorrect Settings</li> <li>● Software/Hardware Issues</li> </ul>	<ul style="list-style-type: none"> <li>● Ensure the <b>Wheel Size</b> setting matches your wheels' total diameter including the tires'.</li> <li>● Upgrade the HMI's firmware using Ananda ADST tool if available.</li> <li>● Seek professional service.</li> </ul>
NFC Failure	<ul style="list-style-type: none"> <li>● NFC Card Binding Fault</li> <li>● NFC Device Misplaced</li> <li>● NFC Device Fault</li> <li>● Magnetic Interference</li> <li>● Software/Hardware Issues</li> </ul>	<ul style="list-style-type: none"> <li>● Ensure both <b>Master Card</b> and <b>User Card</b> have been successfully bound.</li> <li>● Ensure your card supports NFC.</li> <li>● Reposition your physical card or smartphone to the HMI.</li> <li>● Unbind your card and try a new one.</li> <li>● Ensure NFC is working on your smartphone if using a digital card.</li> <li>● Re-enable NFC on your smartphone and try again.</li> <li>● Avoid sources of electromagnetic interference.</li> <li>● Contact your digital card operator.</li> <li>● Seek professional service from Ananda.</li> </ul>
Ananda Ride App Control Failure	<ul style="list-style-type: none"> <li>● BT Connectivity Failure</li> <li>● Smartphone Issues</li> <li>● Magnetic Interference</li> <li>● App Issues</li> <li>● Software/Hardware Issues</li> </ul>	<ul style="list-style-type: none"> <li>● Ensure wireless BT connection is successful between the HMI and your smartphone.</li> <li>● Reactivate your smartphone or its BT.</li> <li>● Have your smartphone repaired.</li> <li>● Avoid sources of electromagnetic interference.</li> <li>● Reinstall Ananda Ride.</li> <li>● Seek professional service.</li> </ul>

## 9.2 Error Codes

Your e-drive parts are automatically and continuously monitored as long as the HMI is active.

When a fault is detected,  will be displayed, along with an error code listed below.



 **WARNING**

- *If your e-drive is disabled automatically, you can continue to ride manually **BUT MUST** have your e-cycle checked **BEFORE** a new trip.*
- *If your e-drive continues operating, it is recommended to park in a safe location and address the issue as soon as possible.*

*If necessary, continue to ride manually and have repairs performed by authorized trained technicians as instructed by your cycle dealer.*

**Note:**

- **ALL** error codes listed herein are applicable to systems using **ANANDA CONTROLLERS** only.  
*If the HMI is used with a third-party controller, refer to the separate third-party instructions.*
- *The following solutions are for reference only and may **NOT** be executable by non-professional end users **OR** technicians unfamiliar with the HMI and related cycle parts.*  
*Use your judgment, knowledge, and common sense at **ALL** times and seek professional service as needed.*
- *Reconfigurations and repairs to **ANY** Ananda products used with the HMI **WITHOUT** Ananda's prior authorization **WILL** void **ALL** warranties stated or implied, including but not limited to Ananda controllers.*

Code	Implication	Recommended Solutions
01	Phase Overcurrent	<ul style="list-style-type: none"> <li>● Avoid prolonged high-load conditions, such as climbing steep hills, running over rough terrain, and carrying heavy loads.</li> <li>● Correct or retighten <b>ALL</b> external wire connections.</li> <li>● Address damaged controller or motor wiring.</li> <li>● Eliminate short circuit and ground faults.</li> </ul>
02	Bus Overcurrent	<ul style="list-style-type: none"> <li>● Ensure your battery remains intact, supplies stable voltage, and matches your controller and motor.</li> <li>● Equip your battery with an advanced BMS.</li> <li>● Realign, recalibrate, repair, or replace your controller and motor, ensuring integrity, compatibility, and sufficient ratings.</li> </ul>

Code	Implication	Recommended Solutions
03	Hall Effect Fault	<ul style="list-style-type: none"> <li>● Clean, correct, or retighten <b>ALL</b> external wire connections.</li> <li>● Address damaged controller or motor wiring.</li> <li>● Avoid sources of electromagnetic interference.</li> <li>● Eliminate short circuit and ground faults.</li> <li>● Realign, recalibrate, repair, or replace your controller and motor, ensuring integrity, compatibility, and sufficient ratings.</li> </ul>
04	Brake Fault	<ul style="list-style-type: none"> <li>● Clean or retighten the wire connection between your brakes and controller.</li> <li>● Clean or readjust your brake components.</li> <li>● Replace your worn or damaged brake components.</li> </ul>
05	Controller Overheating	<ul style="list-style-type: none"> <li>● Allow your e-drive system to rest and cool down before reactivation.</li> <li>● Avoid riding in extremely hot weather.</li> <li>● Avoid prolonged high-load conditions, such as climbing steep hills, running over rough terrain, and carrying heavy loads.</li> <li>● Address damaged controller or motor wiring.</li> <li>● Eliminate short circuit and ground faults.</li> <li>● Ensure your battery remains intact, supplies stable voltage, and matches your controller and motor.</li> </ul>
06	Motor Overheating	<ul style="list-style-type: none"> <li>● Clean the external surface of your controller and motor.</li> <li>● Ensure adequate ventilation or cooling for your controller and motor.</li> <li>● Reconfigure your controller, reducing power output when necessary.</li> <li>● Realign, recalibrate, repair, or replace your controller and motor, ensuring integrity, compatibility, and sufficient ratings.</li> <li>● Equip your e-drive system with temperature sensing.</li> <li>● Address mechanical resistance within your drivetrain.</li> </ul>
08	Controller Communication Fault	<ul style="list-style-type: none"> <li>● Ensure your controller and battery support <b>UART</b> or <b>CAN</b> in compliance with the HMI.</li> <li>● Ensure your controller and battery match the HMI's <b>Input Voltage</b>.</li> <li>● Turn off and reactivate the HMI and your e-drive system.</li> <li>● Clean, correct, or retighten your controller's external wire connections.</li> <li>● Address your damaged controller wiring.</li> <li>● Avoid sources of electromagnetic interference.</li> <li>● Reconfigure, repair, or replace your controller.</li> </ul>

Code	Implication	Recommended Solutions
09	Mild Undervoltage	<ul style="list-style-type: none"> <li>● Ensure your battery remains intact, supplies stable voltage, and matches your controller's rated voltage.</li> <li>● Equip your battery with an advanced BMS.</li> <li>● Recharge your battery if it is low.</li> <li>● Clean, correct, or retighten <b>ALL</b> external wire connections.</li> <li>● Address your damaged external wiring.</li> <li>● Reconfigure or replace your controller, ensuring integrity, compatibility, and sufficient ratings.</li> </ul>
20	Push Assist or Power Button Fault	<ul style="list-style-type: none"> <li>● Turn off and reactivate the HMI and your e-drive system.</li> <li>● Seek authorized professional service for the HMI.</li> </ul>
30	HMI Communication Fault	<ul style="list-style-type: none"> <li>● Ensure your controller and battery support <b>UART</b> or <b>CAN</b> in compliance with the HMI.</li> <li>● Turn off and reactivate the HMI and your e-drive system.</li> <li>● Clean or retighten your wire connection to the HMI.</li> <li>● Replace the damaged wiring to the HMI.</li> <li>● Avoid sources of electromagnetic interference.</li> <li>● Repair or replace your damaged or faulty controller.</li> <li>● Have the HMI serviced by authorized trained technicians.</li> </ul>
31	Controller Reference Voltage Fault	<ul style="list-style-type: none"> <li>● Repair or replace your damaged or faulty controller.</li> </ul>
36	Torque Circuit Fault	<ul style="list-style-type: none"> <li>● Ensure your torque sensor and controller match each other.</li> <li>● Clean, correct, or retighten the wire connection between your torque sensor and controller.</li> <li>● Repair or replace your damaged torque sensor, motor, or controller.</li> </ul>
37	Speed Sensing Fault	<ul style="list-style-type: none"> <li>● Ensure your speed sensor and controller match each other.</li> <li>● Try magnet rearrangements for your speed sensor.</li> <li>● Clean, correct, or retighten the wire connection between your speed sensor and controller.</li> <li>● Repair or replace your damaged speed sensor or controller.</li> </ul>
38	Controller Temperature Sensing Fault	<ul style="list-style-type: none"> <li>● Repair or replace your controller's temperature sensor.</li> </ul>

Code	Implication	Recommended Solutions
39	Mild Overvoltage	<ul style="list-style-type: none"> <li>● Ensure your battery matches your controller's rated voltage.</li> <li>● Equip your battery with an advanced BMS.</li> <li>● Eliminate short circuit and ground faults.</li> <li>● Clean, correct, or retighten <b>ALL</b> external wire connections.</li> <li>● Address your damaged external wiring.</li> <li>● Reconfigure or replace your controller, ensuring integrity, compatibility, and sufficient ratings.</li> </ul>
40	Current Feedback System Fault	<ul style="list-style-type: none"> <li>● Turn off and reactivate the HMI and your e-drive system.</li> <li>● Reconfigure, repair, or replace your battery, controller, motor, etc.</li> </ul>
41	Motor Drive Voltage Fault	<ul style="list-style-type: none"> <li>● Ensure your battery remains intact, supplies stable voltage, and matches your controller and motor.</li> <li>● Equip your battery with an advanced BMS.</li> <li>● Eliminate short circuit and ground faults.</li> <li>● Clean or retighten your motor's external wire connection.</li> </ul>
42	Motor Drive Current Fault	<ul style="list-style-type: none"> <li>● Address damaged motor wiring.</li> <li>● Reconfigure, repair, or replace your motor, ensuring integrity, compatibility, and sufficient ratings.</li> <li>● Reconfigure your controller, enhancing motor power regulation.</li> </ul>
43	Motor Phase Loss	<ul style="list-style-type: none"> <li>● Allow your e-drive system to rest and cool down before reactivation.</li> <li>● Ensure adequate ventilation or cooling for your motor.</li> <li>● Clean or retighten your motor's external wire connection.</li> <li>● Address damaged motor wiring.</li> <li>● Realign, recalibrate, repair, or replace your controller and motor, ensuring integrity, compatibility, and sufficient ratings.</li> </ul>
44	Motor Temperature Sensing Fault	<ul style="list-style-type: none"> <li>● Ensure your motor's temperature sensor and controller match each other.</li> <li>● Realign or recalibrate your controller with your temperature sensor.</li> <li>● Repair or replace your motor's temperature sensor or controller.</li> </ul>

Code	Implication	Recommended Solutions
45	Severe Undervoltage	<ul style="list-style-type: none"> <li>● Repair or replace your battery, controller, motor, etc.</li> </ul>
46	Severe Overvoltage	<ul style="list-style-type: none"> <li>● Eliminate short circuit and ground faults.</li> <li>● Replace your battery, controller, motor, etc.</li> </ul>
47	Controller MOSFET Failure	<ul style="list-style-type: none"> <li>● Repair or replace your damaged controller.</li> </ul>
50	Throttle Fault	<ul style="list-style-type: none"> <li>● Ensure your throttle and controller match each other.</li> <li>● Clean, correct, or retighten the wire connection between your throttle and controller.</li> <li>● Repair or replace your damaged throttle or controller.</li> </ul>
60	HMI Reference Voltage Fault	<ul style="list-style-type: none"> <li>● Seek authorized professional service for the HMI.</li> </ul>
70	HMI-IoT Communication Fault <b>(Applicable to Some Custom Batches Only)</b>	<ul style="list-style-type: none"> <li>● Reactivate, repair, or replace your IoT device.</li> <li>● Avoid sources of electromagnetic interference.</li> </ul>

## 10. Maintenance

### WARNING

- Read and follow **ALL** related instructions in **Safety Information**.
- Pay particular attention to the safety details listed below.
- If you are an end user, be sure to follow these instructions, which can be more closely related to you.

### 10.1 Cleaning

Clear any dust or stains off the HMI's external surface as needed.

- Make sure the screen is so clean that **ALL** displayed content is visible.
- Remove **ANY** foreign objects that interfere with the buttons or ports.
- Recommended Tools:
  - ◆ Soft dry cloth
  - ◆ Cool compressed air at levels compliant with your local authorities (incl. ANSI, OSHA, BSI, CE, etc.)

### WARNING

- To prevent electric shock, turn and power off the HMI **BEFOREHAND**.
- **DO NOT** get the HMI wet, which may damage the electronic components and pose various electrical hazards. In particular:
  - ◆ **DO NOT** use direct pressurized spray.
  - ◆ **DO NOT** flush or soak the HMI in **ANY** cleaning fluid.
  - ◆ If a damp cloth is necessary, **ONLY** use water and wring it out **BEFOREHAND**.
  - ◆ If any e-components accidentally become wet, allow them to **FULLY** dry **BEFORE** resuming use.



### CAUTION

- **DO NOT** apply abrasive or caustic chemicals, which can cause irreparable damage.
- **DO NOT** blow the HMI with hot or high-pressure air.

## 10.2 Checks

- Check that the HMI remains tightly secured to your e-cycle **BETWEEN** uses.

Properly retighten its clamp bolt with a **3 mm** hex wrench (**not included**) as needed.

### CAUTION

- **ALWAYS** be gentle and slow when applying **ANY** force.
- If the clamp bolt is missing, **ONLY** use an identical **M4** replacement.  
*For details, consult with your e-cycle dealer.*

- Check **ALL** external parts of the HMI for any loss, wear, and damage **BETWEEN** uses.

Replenish, repair, or replace any problematic parts **BEFORE** further use.

In particular:

- ◆ Inspect the screen and housing for **ANY** cracks.
- ◆ Test all buttons, seeing that they can be pressed smoothly.
- ◆ Examine the power connection, ensuring **NO** looseness or breakage.

### CAUTION

- **ONLY** use identical and authorized replacements.
- **DO NOT** dismantle the HMI to reach its internal components.
- **DO NOT** attempt to modify the HMI's appearance or structure.
- Have the issues addressed by authorized trained technicians as needed.  
*For details, consult with your e-cycle dealer.*

- If the HMI has been and is to be idle for an extended period, **PERIODICALLY** reactivate it and check **ALL** functions.

Make sure the display is clear and **ALL** buttons operate the system correctly.

### CAUTION

- **ALWAYS** remember to deactivate and power off the HMI **AFTER** check.
- Have the issues addressed by authorized trained technicians as needed.  
*For details, consult with your e-cycle dealer.*

## 10.3 Storage

If the HMI is not to be used for a prolonged period, you can:

- Leave the HMI on your e-cycle if the e-cycle is also to be stored.
- Remove the HMI from your e-cycle if required to do so for the use of another HMI.

Obey the following requirements to ensure optimal safety and further use.

### CAUTION

**ALWAYS** avoid storing the HMI inside a plastic bag, which might allow humidity to build up over time.

### 10.3.1 On-Board Requirements

- The USB port is **COMPLETELY** closed.
- The HMI has been **FULLY** powered off.
- The HMI is dust-free and properly covered.
- The HMI remains secured and load-free.
- The HMI is adequately protected against abrasions and impacts.
- Your battery has been deactivated or removed.
- Your e-cycle has been securely parked.
- Your e-cycle is placed in a clean, cool, and dry location.
- Your e-cycle is far away from flammables, explosives, and caustics.
- Your e-cycle is **ENTIRELY** well protected from the elements.
- Your e-cycle is inaccessible to children or pets and against unauthorized adult use.

### 10.3.2 Off-Board Requirements

- The USB port is **COMPLETELY** closed.
- The control port is **FULLY** disconnected from your e-drive system.
- The clamp bolt remains on the locking clamp to prevent loss.
- The HMI remains load-free.
- The HMI is dust-free and properly covered.
- The HMI is placed in a clean, cool, and dry location.
- The HMI is in an area clear of clutter.
- The HMI is easy to be found for further use.
- The HMI is far away from flammables, explosives, and caustics.
- The HMI is **ENTIRELY** well protected from the elements.
- The HMI is inaccessible to children or pets and against unauthorized adult use.

# 11. Transport

## WARNING

- Read **ALL** related instructions in **Safety Information** carefully **BEFOREHAND**.
- **ALWAYS** obey **ALL** applicable laws and regulations **THROUGHOUT** the process.

## 11.1 On-Board Requirements

- The USB port is **COMPLETELY** closed.
- The HMI has been **FULLY** powered off.
- The HMI is dust-free and should be properly covered.
- The HMI is adequately protected against abrasions and impacts.
- The HMI remains secured and load-free.
- Your battery has been deactivated (if undamaged).
- Your battery has been removed (if your e-cycle is carried outside your vehicle, e.g., on a car rack).
- Your e-cycle has been properly secured to your vehicle and risks **NO** falls.
- Your e-cycle is **ENTIRELY** well protected from the elements.
- Your e-cycle is away from flammables, explosives, caustics, and other prohibited articles.

## 11.2 Off-Board Requirements

- The USB port is **COMPLETELY** closed.
- The control port is **FULLY** disconnected from your e-drive system.
- The carrying bag or box is intact, closed, clean, dry, robust, durable, and waterproof.
- The bag or box is firmly secured and risks **NO** falls.
- The bag or box is **ENTIRELY** well protected from the elements.
- The HMI is load-free and shockproof inside the bag or box.
- The HMI, bag, and/or box is away from flammables, explosives, caustics, and other prohibited articles.

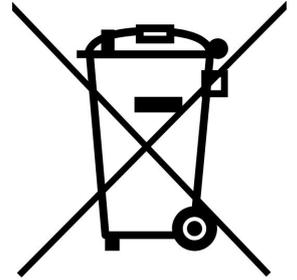
## 12. Disposal

Electrical and electronic products, including e-cycle drive units, should **NOT** be disposed of together with household waste.

In the EU and UK, the European Directive 2012/19/EU mandates that used electrical and electronic equipment (EEE) **MUST** be separately collected and disposed of at designated collection points.

Locations in Australia, Canada, and the United States of America may have similar regulations.

Contact your local authorities or dealer for disposal and recycling advice.



# 13. Safety Information

## 13.1 General Instructions

- Read **ALL** these instructions carefully and completely **BEFORE** handling this product.
- For **ANY** unclear or confusing point, consult Ananda or your e-cycle dealer or manufacturer.
- Save these instructions properly for future reference.
- Provide these instructions to anyone who will install, operate, maintain, or service this product.
- Provide these instructions with this product if it is ever given or sold to a third party.
- **ONLY** install, operate, and maintain this product in accordance with these instructions.



Failure to do so may lead to property damage and personal injury, voiding **ALL** warranties stated or implied.

- If this product is to be used with **ANY** other products, read and follow separate instructions while receiving local or online training as needed.
- Use of electrical and electronic equipment carries inherent risks.
  - ◆ It might be impossible for these instructions to cover all safety precautions.
  - ◆ Use your common sense and good judgment at **ALL** times.
  - ◆ Seek professional assistance as needed.

## 13.2 Default Settings

### WARNING

**NEVER** attempt to adjust the default settings for **ANY** parameters that **ARE** required or recommended **NOT** to be adjusted **WITHOUT** prior authorization or professional guidance.

- **ANY** random adjustment can cause your e-cycle to perform abnormally or **EVEN** break, posing a series of risks and voiding **ALL** warranties stated or implied.
- If **ANY** random adjustment happens accidentally:
  - ◆ Resume the default settings **IMMEDIATELY** as instructed herein **OR** under professional guidance from authorized personnel.
  - ◆ **NEVER** continue to ride your e-cycle until such an issue is **FULLY** addressed.

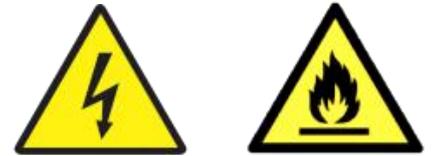
Failure to follow the above can invite accidents, posing various safety hazards and voiding **ALL** warranties stated or implied.

## 13.3 Electricity

### ⚠ WARNING

**ALWAYS** be aware of electrical safety when handling the HMI.

Failure to obey the following instructions can result in corrosion, short circuits, electric shock, and/or **EVEN** fire, causing the HMI to malfunction or break while posing the risks of personal injury and property damage.



- **ONLY** use the HMI with compatible batteries in terms of voltage, current, communication protocol, etc.
- **NEVER** connect HMI to incompatible power sources including but not limited to:
  - ◆ Batteries of incompatible voltages, currents, communication protocols, etc.
  - ◆ Alternators, solar panels, wind generators, and other non-designated or inappropriate direct current (DC) power sources or devices that are providing DC
  - ◆ Alternating current (AC) power sources such as wall outlets (sockets), power strips, and extension cords
  - ◆ Power distribution units (PDU) of all kinds
- **ONLY** make the electrical connection for the HMI according to the separate instructions provided by your cycle manufacturer or dealer if you are an end user and required to make the connection by yourself.
- **ONLY** use the HMI **AFTER** checking that **ALL** electrical wiring is correct, intact, and firmly connected.
- If **ANY** electrical wiring is damaged, stop use and disconnect power until such an issue is **FULLY** addressed.
- **NEVER** abuse **ANY** electrical wiring connected to the HMI in **ANY** way.
  - ◆ **NEVER** attempt to disconnect **ANY** wiring that is permanently preconnected.
  - ◆ **DO NOT** relocate the HMI by pulling on **ANY** wiring.
  - ◆ **DO NOT** hang **ANY** objects on **ANY** wiring.
  - ◆ **ALWAYS** keep **ALL** wiring away from heat, fire, oil, sharp edges, and moving parts.
- **DO NOT** power off the HMI **BEFORE** turning it off completely.
- **DO NOT** use the USB port to charge **ANY** non-rechargeable devices.
- **DO NOT** use the USB port to overcharge **ANY** rechargeable devices.
- **NEVER** attempt to dismantle the HMI **OR** modify its internal electronic components for **ANY** reason.
- **ONLY** allow authorized trained technicians to access and service the electronic components inside the HMI when inspection or repair is necessary.
- **NEVER** touch **ANY** electronic components exposed due to housing or screen breakage with bare skin or conductors while the HMI is connected to power.
- Despite the weatherproof rating, take **ALL** necessary measures to prevent liquid from entering the HMI.
  - ◆ **NEVER** submerge the HMI in water or other liquids for **ANY** reason.
  - ◆ **NEVER** rinse the HMI with **ANY** cleaning fluid.
  - ◆ **NEVER** wipe the HMI with a damp cloth that has **NOT** been wrung out.
  - ◆ **NEVER** operate the HMI with wet hands or equipment.
  - ◆ **NEVER** connect any wiring to the USB **OR** control port when it is wet.
  - ◆ **ALWAYS** avoid direct pressurized spray towards **ANY** part of the HMI.
  - ◆ **ALWAYS** avoid exposing the HMI to rain, snow, or other highly humid conditions for prolonged periods.
  - ◆ **ALWAYS** stop use and seek appropriate remedies if the screen or housing is broken and exposing **ANY** internal electronic components.

- In the event of signs indicating that **ANY** electronic component becomes wet accidentally:
  - ◆ Disconnect the HMI from power **IMMEDIATELY**.
  - ◆ Allow time for the component to **FULLY** dry **BEFORE** resuming use.
- In the event that the HMI accidentally drops into **ANY** liquid while being connected to power:
  - ◆ **NEVER** touch the HMI or liquid with bare skin or conductors.
  - ◆ Cut power **BEFORE** taking **ANY** countermeasures.
  - ◆ Wear **INSULATED** protection or use **INSULATED** tools if touch is necessary with power being left on.
- **DO NOT** leave the HMI connected to power when performing **ANY** maintenance tasks.
- For **ALL** authorized trained technicians:
  - ◆ **INSULATED** protection is required if it is necessary to access electronic components for **ANY** purposes requiring power connection.
  - ◆ Component replacement **MUST** be undertaken **AFTER** power is cut to the HMI.
- In the event of a severe electrical accident, seek **IMMEDIATE** assistance from your local medical and emergency services as soon as possible.

## 13.4 Surroundings

### DANGER

- **NEVER** operate the HMI in the presence of sparks and flammable or explosive gases.
- These dangerous gases include acetylene, hydrogen, methane, ethane, propane, flour, metal powders, etc.
- **ALWAYS** refrain from use in the vicinity of gas stations and chemical plants.
- **NEVER** use the HMI's wireless communication in airplanes or near medical devices **WHERE** signal interference can invite **FATAL** consequences.
- Pay attention to other hidden dangers that seriously preclude safe use of the HMI.



### WARNING

- **DO NOT** use the HMI with your e-cycle **WHERE** doing so violates laws and regulations, such as roads prohibited to e-cycles.
- **DO NOT** use the HMI with your e-cycle **WHERE** doing so is easy to invite accidents such as:
  - ◆ Crowded or confined areas
  - ◆ Locations near precipices
  - ◆ Rough terrains with obstacles
  - ◆ Steep downhill surfaces
  - ◆ Uphill slopes exceeding your e-cycle's capacity
- **DO NOT** use the HMI's wireless communication **WHERE** doing so could potentially harm or irritate humans or animals, especially those with medical or other specialized devices.
- Pay attention to other hidden hazards that preclude safe use of the HMI.

 CAUTION

- **DO NOT** expose the HMI to **OR** place it near radiation, excessive pressure, hard/sharp objects, corrosive substances, or sources of heat and ignition, such as:
  - ◆ Operating X-ray machines, microwave ovens, and strong radio transmitters
  - ◆ Body parts or heavy objects causing excess force or weight
  - ◆ Axes, knives, needles, saws, scissors, stones, swords, and thorns
  - ◆ Alcohol, diesel, gasoline (petrol), acids, bases, salt solutions, and strong solvents
  - ◆ Open flames, irons, firecrackers, fireplaces, fryers, griddles, and stoves
- **ALWAYS** take care to avoid incidental breakage if the above items **ARE** unavoidable.
- **DO NOT** use or place the HMI **WHERE** the ambient temperature is **BEYOND** the ranges specified in **Section 2.1** on **Page 4**.
- Pay attention to other hidden risks that could potentially damage the HMI.

## 13.5 Users Allowed

 WARNING

- **DO NOT** allow use of your e-cycle with the HMI by people who are:
  - ◆ Age-inappropriate as specified in laws and regulations
  - ◆ Possessing mental or physical impairments precluding safe use
  - ◆ Tired or under the influence of drugs, alcohol, or strong medication
  - ◆ Unfamiliar with these instructions, the HMI, or your e-cycle
- People with pacemakers, hearing aids, or other medical devices **MUST** obey the following instructions:
  - ◆ Consult a doctor **BEFORE** use.
  - ◆ **ALWAYS** avoid using alone.
  - ◆ Stop use **IMMEDIATELY** once feeling **ANY** discomfort.

## 13.6 Pre-Use Checks

### WARNING

- **ALWAYS** check that the HMI meets the following conditions **BEFORE** each ride:
  - ◆ Securely installed on your e-cycle
  - ◆ Compatible with other cycle parts
  - ◆ Clean, intact, uncovered, and accessible
  - ◆ Control port properly connected to the required cycle part
  - ◆ Responsive and correct for controlling your e-cycle
  - ◆ Displayed content visible and comfortable for your eyes
  - ◆ All settings compliant with laws and regulations and appropriate for your e-cycle and riding
- **DO NOT** ride your e-cycle if the HMI shows **ANY** signs of looseness, damage, or malfunction.
  - ◆ Refrain from using the HMI and your e-cycle **UNTIL** the issue is **FULLY** addressed.
  - ◆ Seek authorized professional assistance as needed.
- **DO NOT** ride your e-cycle with the HMI if the cycle is problematic.
  - ◆ Retighten **ANY** loose parts.
  - ◆ Readjust **ANY** unfitted parts.
  - ◆ Replenish **ANY** missing parts.
  - ◆ Repair or replace **ANY** broken parts.

## 13.7 Sensible Use

### WARNING

- **ONLY** use the HMI for its intended purpose, enabling and controlling the e-drive system for your cycle, which **MUST** be compatible with the HMI.
  - ◆ The HMI is **NOT** a toy and should **NOT** be used playfully or carelessly.
  - ◆ Any other use **NOT** specified herein could potentially pose risks, voiding **ALL** warranties stated or implied.
- **ALWAYS** familiarize yourself with **ALL** controls, functions, and indications on the HMI and your e-cycle **BEFORE** setting off.
- For optimal safety, take a **TEST** ride in a safe place **BEFORE** each real ride.
- **NEVER** activate your motor in **ANY** of the following ways while configuring the HMI.
  - ◆ Pedaling your e-cycle while the PAS is enabled
  - ◆ Initiating your throttle if available
  - ◆ Initiating the push assist

- **DO NOT** use higher PAS settings **UNTIL** you are **FULLY** familiar with your e-drive system, your cycle, and the area where you are going to ride.  
**EVEN** if you are familiar with everything, **ALWAYS** be mindful of your setting, being sure to be comfortable with your e-drive experience and/or have sufficient room to brake in an emergency.
- **ONLY** use the push assist to help push your e-cycle, typically when climbing a slope within the capacity.
  - ◆ When using the push assist, securely hold your e-cycle with **BOTH** hands **WHILE** keeping the wheels in contact with the ground and maintaining your balance.
  - ◆ The push assist is **NOT** recommended if you need to push your e-cycle for an extended period.
  - ◆ **DO NOT** propel yourself with the push assist while sitting on your e-cycle.
- **DO NOT** focus on the HMI for an extended period while riding, as such distraction can invite accidents.
- **DO NOT** adjust the HMI frequently while riding.
- For best results, park your e-cycle in a safe place **BEFORE** reconfiguring the settings.
- Despite the automatic shutdown, **DO NOT** leave the HMI unattended as long as it is activated or powered on.
- If an error code is displayed, refrain from riding **BEFORE** the code disappears with the issue **FULLY** addressed.
- In the event of a breakage on the HMI during use:
  - ◆ Discontinue use and have the HMI repaired or replaced.
  - ◆ Clear off fragments while exercising caution with sharp edges.
  - ◆ Avoid exposure to chemical materials posing health risks if inhaled or ingested.
  - ◆ Dispose of any wreckage according to laws and regulations.

#### CAUTION

- **DO NOT** twist or attempt to relocate the HMI **BEFORE** loosening or removing its clamp bolt.
- **DO NOT** exceed **1 N•m (8.8 in-lbf)** when tightening the clamp bolt.
- **DO NOT** abrade or impact the HMI in **ANY** way.
- **DO NOT** use the HMI as a handle to move your e-cycle.
- **DO NOT** use the HMI to support **ANY** body parts or other objects.
- **DO NOT** allow **ANY** foreign objects to enter the USB **OR** control port.
- **DO NOT** leave the USB port open when it is left idle.

## 13.8 After Use

### WARNING

- To prevent accidents due to unintentional motor start, turn and power off the HMI **BEFORE**:
  - ◆ Being finished with using your e-drive system
  - ◆ Parking your e-cycle and planning to keep it idle for an extended period
  - ◆ Cleaning or inspecting the HMI and/or your e-cycle
  - ◆ Disassembling, reassembling, or readjusting your e-cycle
  - ◆ Having your e-cycle components serviced, **EXCEPT** for tasks requiring reactivation
  - ◆ Transporting or storing your e-cycle with the HMI
- To prevent accidents due to unauthorized use:
  - ◆ Activate password protection (**NOT** available **UNLESS** pre-customized).
  - ◆ Securely lock your e-cycle to a permanent facility.
  - ◆ Store your e-cycle or the separate HMI in locations inaccessible to other people.
- Disposal of the HMI **MUST** comply with local and national laws and regulations.

### CAUTION

- **DO NOT** turn off the HMI by directly deactivating or removing your battery.  
Such an abrupt power cut may damage the HMI's electronic components or shorten their lifespans.
- **DO NOT** attempt to modify the HMI's physical appearance or structure.
- **ALWAYS** avoid leaving the HMI on your e-cycle during disassembly or reassembly.  
If it is necessary to do so, cover the HMI with sufficient protection **BEFOREHAND**.
- **DO NOT** invert your e-cycle with the HMI touching the ground or any other hard surfaces.
- **DO NOT** expose the HMI to direct sunlight for an extended period.
- **DO NOT** maintain the HMI with harsh abrasives or caustic chemicals.
- **DO NOT** use nonidentical or unauthorized replacements, including the main parts and fasteners.
- **ONLY** allow servicing by authorized trained technicians.
  - ◆ Consult Ananda if you are Ananda's corporate customer.
  - ◆ Consult your e-cycle dealer if you are an end user.

# 14. After-Sales Service

Thank you for choosing Ananda products!

We are pleased to address issues as soon as possible if you have questions or need help.

## 14.1 Policies

The after-sales policies are stated on Ananda's official website: <https://www.ananda-drive.com>.

1. Visit **Service Policy** in either way:
  - Click on <https://www.ananda-drive.com/service-policy>.
  - Scan the following QR code.



2. Select **Warranty, Warranty Exclusions, RMA**, or others as needed.

1. **Warranty**



2. **Warranty Exclusions**



3. **RMA(Return Material Authorization)**



4. **Important notice**



## 14.2 Purchasers and Dealers

Purchasers (brands) and dealers can file requests and receive online technical support on Ananda's official website: <https://www.ananda-drive.com>.

### 14.2.1 Ananda Link

Ananda Link is a comprehensive platform incorporating not only request collection but also product diagnoses, software upgrades, riding data analyses, etc.

1. Visit **Ananda Link** in either way:

- Click on <https://www.ananda-drive.com/innovative-R&D/ananda-link>.
- Scan the QR code on the right.



2. Log into your **Ananda Link** account and continue as instructed by the platform.

European countries users login service platform :

[Click to enter \(eu.ananda-service.com\)](https://eu.ananda-service.com)

China users login service platform :

[Click to enter \(cn.ananda-service.com\)](https://cn.ananda-service.com)

American countries users login service platform :

[Click to enter \(na.ananda-service.com\)](https://na.ananda-service.com)

Operating Instructions

Manual (EN) →

Manual (FR) →

Manual (IT) →

Video →

**Note:**

If you have no **Ananda Link** account, go down and file an application.

We will reach out to you as soon as possible and help you sign up.

#### Ananda link account application form

Company name*	Applicant name*
Choose a country*	Location*
Company Address*	
Email Address*	Phone number*
Bicycle manufacture (multiple)*	
Send request	

## 14.2.2 Service Support

You are also welcome to send a request more quickly on Ananda's official website, especially if you do not have an **Ananda Link** account or if the issue is straightforward to clarify.

1. Visit **Service Support** in either way:

- Click on <https://www.ananda-drive.com/service-support>.
- Scan the QR code on the right.



2. Fill in the blanks and upload necessary files as instructed by the system.

### APPLY FOR SERVICE

\*Ananda does not provide any after-sales service to the end customers. When you encounter problems, please contact Dealer or Brand from which you purchased our products.

Customer Name	Company Address
Company Website	Contact Person
E-mail	Tel
Defective phenomenon * <input type="button" value="Upload"/>	Label on motor or controller * <input type="button" value="Upload"/>

\* Multiple files can be uploaded simultaneously, with each uploaded picture and video having a maximum size limitation of 10MB.

\*Tips: How to find the SN and AN number, please [click here](#)

SN	AN
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Problem Description (ERROR)

## 14.3 End Users

Please note that Ananda does not offer after-sales service directly to end users.

Please contact the retailer from whom you purchased your Ananda product.

For more information about Ananda, please visit <https://www.ananda-drive.com> or simply scan this QR code.



## 15. Disclaimer

Read this disclaimer in its entirety and with careful attention.

### 15.1 As-Is

This Ananda product is sold "as is". Except as expressly required by laws and regulations, no guarantees or warranties beyond those explicitly specified in the accompanying manual are provided.

Ananda shall be liable only for damages caused by product quality defects in accordance with the applicable law.

### 15.2 Legal Compliance

Customers and users assume the responsibility and liability to ensure that the handling of Ananda products conforms to any and all applicable laws and regulations in their respective jurisdictions, including without limitation unpacking, assembly, installation, operation, maintenance, repair, transport, gifting, and disposal.

Ananda has ensured that Ananda products are compliant with the mandatory standards of the target countries or regions at the time of shipment.

Ananda shall not be held liable for any breaches of laws or regulations arising from unauthorized modifications, improper operation, or use outside the intended scope by customers or users.

### 15.3 Correct Handling

Ananda products shall be handled by a competent person in full compliance with the accompanying manuals or instructions in any forms published by Ananda, with respect to unpacking, assembly, installation, operation, maintenance, repair, transport, gifting, disposal, etc.

Customers and users assume the responsibility and liability to keep Ananda products operating as intended with proper utilization and necessary maintenance throughout their lifecycles.

Appropriate protective gear is required for any and all activities involving Ananda products, including without limitation unpacking, assembly, installation, operation, maintenance, repair, transport, gifting, and disposal.

Ananda has highlighted key risks through bold, italic, and/or underlined text and shall not be held liable for damage, injury, or loss arising from any negligent or improper handling of Ananda products, failure to use protective gear, or nonobservance of the accompanying instructions.

### 15.4 Product Modifications

Any arbitrary modifications to Ananda products without the prior written authorization of Ananda shall automatically render all original warranty provisions null and void. Ananda shall not be held liable for damage, injury, or loss arising from such unauthorized modifications.

Ananda reserves the exclusive right to make design changes, technical improvements, and other modifications to Ananda products.

In the event that Ananda implements substantial modifications to Ananda products, which may affect their performance, safety, and compatibility with third-party products, Ananda will publish notices through appropriate channels and will, within a reasonable period following the purchase, notify customers thereof via email, short message, or other means. Within the timeframes agreed upon with Ananda, customers will have the right to choose, based on their individual needs, whether to continue using the original Ananda products or to proceed with an upgrade or replacement in accordance with the solutions provided by Ananda.

## **15.5 Third-Party Products**

Before using Ananda products in conjunction with third-party products, customers and users shall carefully read the documentation and/or warranty terms (if any) published by the third parties with respect to such third-party products, and shall thoroughly understand the compatibility therebetween and potential risks pertaining thereto.

Ananda shall not be held liable for damage, injury, or loss arising from the involvement of any third-party products alongside Ananda products.

In the event of issues resulting from the use of third-party products with Ananda products, Ananda may provide assistance in identifying the causes thereof upon customer request, without prejudice to Ananda's exemption from any liability for damage, injury, or loss consequent thereupon.

## **15.6 Limitation of Liability**

Ananda shall not be held liable for any direct, indirect, punitive, incidental, special, or consequential harm to property or life, whatsoever arising out of or connected with: 1) force majeure including without limitation wars, civil disorders, pandemics, transit accidents, and natural disasters; 2) unpacking, assembly, installation, operation, maintenance, repair, transport, gifting, and disposal of Ananda products by customers or users in violation of Ananda's instructions; 3) inherent attributes or normal consumption of Ananda products.

In the event of damage or loss, Ananda's liability shall not exceed the value of the products sold.

In the event of injury caused by product quality defects, Ananda shall be liable for damages in accordance with the applicable law.

This disclaimer states Ananda's entire obligation with respect to Ananda products.

If any provision herein is determined to be null, invalid, unenforceable, or unlawful, including without limitation the warranty and liability terms set forth above, such provision will be deemed superseded by an effective, valid, enforceable, and lawful provision that most closely matches the intent of the original provision, while the remainder of this disclaimer shall continue in full force and effect.



<https://www.ananda-drive.com>