DM05C Display

Functionality Introduction



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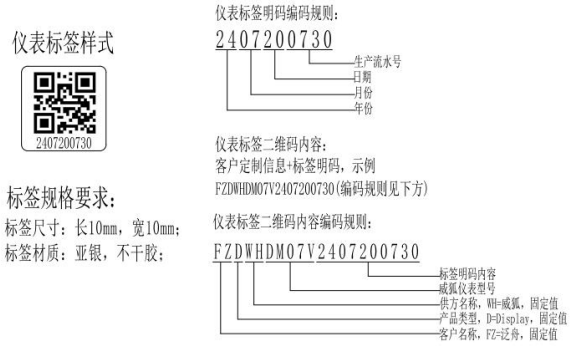
1.1 Important Notes

- If the error information displayed on the display cannot be corrected according to the operating instructions, please contact your retailer.
- This product is designed to be waterproof; however, it is strongly recommended that you avoid immersing the display in water.
- Do not use steam cleaners, pressure washers, or hoses to clean the display.
- Use this product with care.
- Do not use thinner or other solvents to clean the display; such substances may damage the display surface.
- No warranty service is provided for normal use and product aging.
- Any changes or modifications not expressly approved by the party responsible for compliance may void the user's authority to operate this equipment.
- This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference; (2) this device must accept any interference received, including interference that may cause undesired operation.
- This device has been tested and found to comply with the limits for a Class B digital device pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This device generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this device does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one of the following measures: (1) Reorient or relocate the receiving antenna; (2) Increase the separation between the equipment and receiver; (3) Connect the equipment to an outlet on a circuit different from that to which the receiver is connected; (4) Consult the Dealer or an experienced radio/TV technician for help.

1.2 Display Interface Overview



- Model: DM05C
- The housing is made of PC+ABS, and the viewing window uses high-hardness Imported tempered glass with a 2.5D rounded-corner Design.
- The product is compatible with ·22.2 mm, ·25.4 mm, and ·31.8 mm handlebar tubes.
- The label is shown below



1.3 Product Description

1.3.1 Specifications

- Power supply: DC24V/36V/48V
- Rated operating current: 42 mA
- Power-off leakage current: <1 μA
- Display specifications: 3.5-inch IPS high-brightness, high-resolution LCD, resolution 320 × 480
- Communication interface: UART/CAN-BUS optional
- Operating temperature: -10°C ~ 60°C
- Storage temperature: -20°C ~ 70°C
- Waterproof rating: IP65 or above

1.3.2 Function Overview

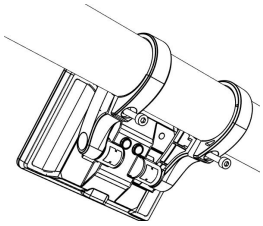
- Equipped with a separate left-side control unit with an ergonomic design
- Provides a customized interface at startup; UI customization supported
- Supports switching between metric and imperial units
- Standard display functions, including speed, mileage, battery level, and other indicators
- assist mode usage statistics function
- Walk-assist function
- Fault code display function
- Settings and Advanced Settings functions
- Range and battery level display (*supported when the battery BMS provides remaining-capacity information)
- Motor power and pedaling power statistics function (*pedaling power requires signal support from a torque sensor)
- Optional function: Bluetooth capability supporting Bluetooth data passthrough
- Optional function: Periodic vehicle maintenance reminder
- Optional function: RTC module providing real-time clock display

1.4 Display Installation

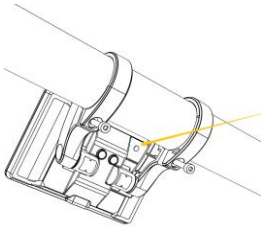
1. Select the rubber sleeve: Select the appropriate rubber sleeve according to the handlebar diameter (specifications: Ø22.2, Ø25.4, Ø31.8). Open the two HMI clamps, then insert the appropriate rubber sleeves into the clamps.

Handlebar diameter	Rubber sleeve diameter
Ø35	Ø35
Ø31.8	Ø31.8
Ø25.4	Ø31.8 + Ø25.4

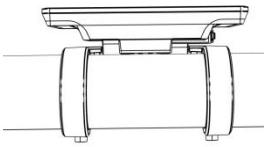
2. Temporarily install the HMI: mount the two clamps with rubber sleeves onto the handlebar, then use an M3 hex key to temporarily tighten the M3*12 mounting screws.



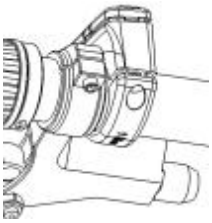
Note: The Ambient Light Sensor is located on the back of the HMI. Do not cover this area, as this may affect light transmission.



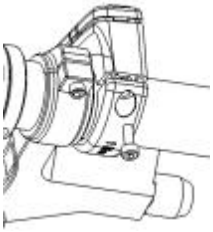
3. Mount the HMI: Adjust the angle of the HMI for a clearer view of the screen while riding; then tighten the screw to a tightening torque of 1 N·m.



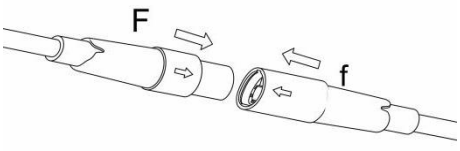
4. Temporarily mount the Control unit: Open the Control unit clamp, then place the clamp with the Rubber sleeve in a suitable position; adjust the angle of the Control unit for ease of operation. (Note: The Control unit diameter is Ø22.2 mm.)



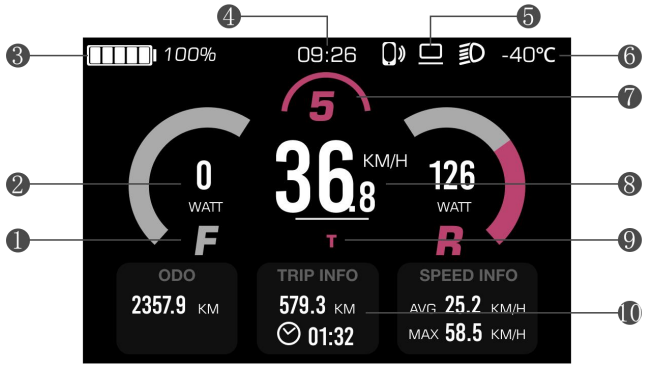
5. Mount the Control unit: Use an M3 hex key to tighten the M3*12 fixing screw to a tightening torque of 1 N·m.



6. Connect the connectors: Connect the male connector of the HMI (F) to the female connector of the EB-BUS (f).



1.5 Display



（1Display for front and rear drive

（2Front and rear drive power display

（3Battery level indicator

（4Clock display

（5Function icon display

（6Temperature display

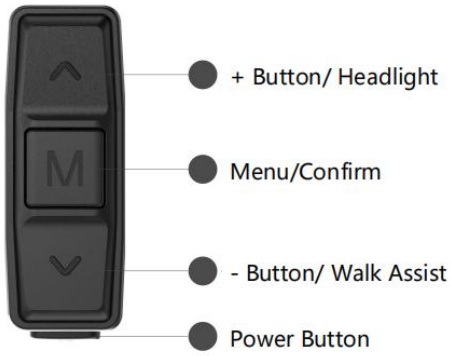
（7Power-assist mode display

（8real-time speed display

（9Torque mode

10Multifunction information display (ODO, TRIP, TIME, AVG SPEED, MAX SPEED)

1.6 Button Definitions



1.7 Settings

1.7.1 Power switch

Press Hold (>2 seconds) to power on. The HMI will display the startup logo. Press the button. Press and hold again (>2 seconds) to turn off the HMI.



1.7.2 Power-Assist Mode Selection

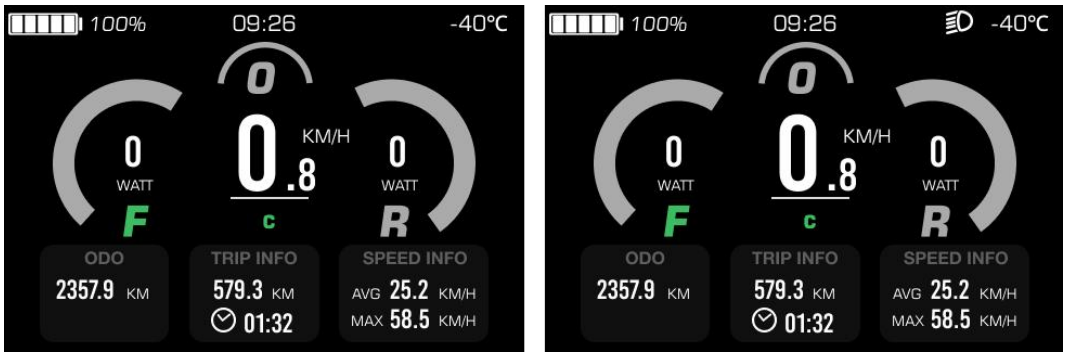
When the HMI is powered on, Short-press or (<0.5 seconds) to select the Power-Assist mode; adjust the motor output power; Selectable operating modes include Mode 1 as the lowest and Mode 5 as the highest. After the HMI is powered on, the default mode is 0; Mode 0 indicates that the power-assist function is not used.



1.7.3 Headlight/Taillight

The headlight is turned on manually. Press and hold (>2S) to turn on the headlight and reduce the backlight brightness.

Press and hold (>2S) again to turn off headlight (Note:The headlight can automatically switch according to ambient light; however, if the user manually turns the headlight on or off, this automatic headlight function will be disabled. It will return to normal after restarting the HMI.)

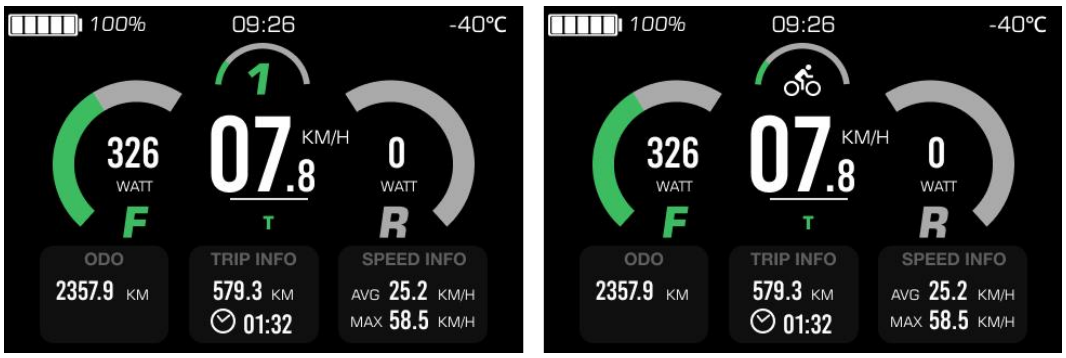


1.7.4 Walk-Assist

Note: The Walk-Assist function can only be activated when using a stand-up electric bicycle.

Short press button (<0.5 seconds) until this symbol appears. Then press and hold the button.

Press and hold the button until the Walk-Assist function is activated and the symbol is flashing. (When the real-time speed is less than 2.5 km/h, the speed indicator displays 2.5 km/h.) Once released the system will exit the Walk-Assist function. The symbol stops flashing; If no operation is performed within 5 seconds, the HMI will automatically return to "Off" mode.



1.7.5 Drive Switching Selection

When the display is powered on, Short-press the M Button to switch sequentially among main drive, auxiliary drive, and dual drive. Each Short-press of the M Button cycles through the drive modes.

The drive display switching process is shown in the figure below:



MAIN CONTROLLER　　SLAVE CONTROLLER　　DUAL-DRIVE WITH MAIN-SLAVE CONTROLLERS

1.7.6 Torque Mode Switching

In Advanced Settings, the current sensor mode can be set to Torque Sensor mode or Speed sensor mode.

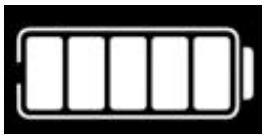
The sensor mode switching is as follows:



Sensor Mode Setting　　Speed Sensor Mode　　Torque Sensor Mode

1.7.7 Battery Level Display

The HMI can display the battery level in real time (from 100% to 0%). When the battery level is below 5%, the indicator will flash at 1 Hz to remind the user to charge the battery promptly.



Notes on the battery level display function:

When a battery communication fault occurs:

1. The display will estimate the battery level based on voltage and show the corresponding battery level bars;

2. The battery percentage will not be displayed;

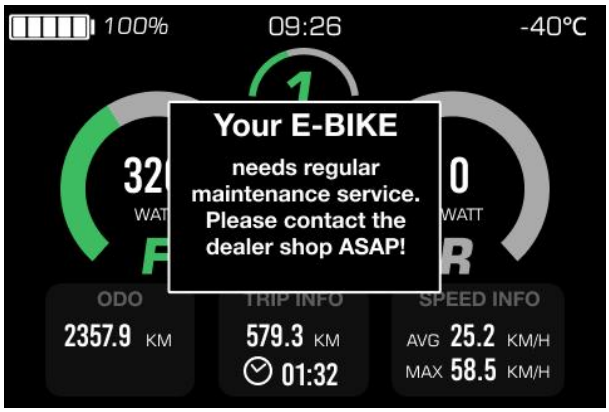
3. The remaining Mileage will not be displayed;

4. When the voltage is below the undervoltage threshold, the effect of current on voltage must be considered and converted to the voltage value at zero current.

1.7.8 Service and maintenance reminder Interface

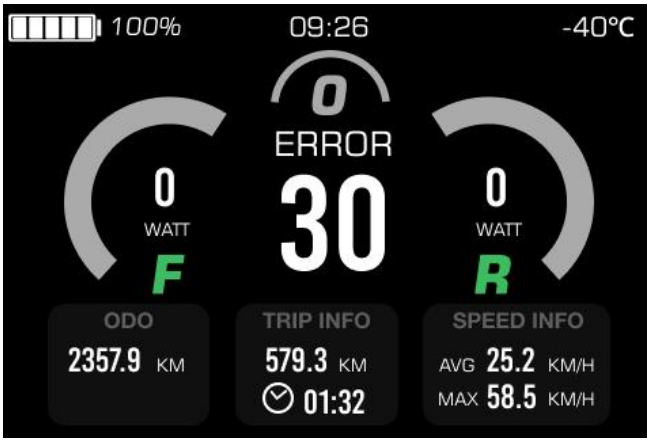
The display can be set with periodic maintenance reminders. When the user's vehicle reaches the preset mileage value, the display notifies the user through a maintenance reminder. When the maintenance reminder mileage is reached, the display will show a reminder interface each time the user powers on the vehicle normally, prompting the user to perform routine vehicle maintenance. Short-press the M Button to manually cancel the current reminder. After connecting the dedicated Service Tool, the

maintenance reminder can be reset using the after-sales diagnostic tool, and the user's vehicle maintenance record can also be registered.



1.7.9 Fault Code Display Interface

After the display receives fault information returned by the Controller, it displays the fault code interface to notify the user of relevant electrical system fault information. The fault code is displayed numerically in the speed value area.



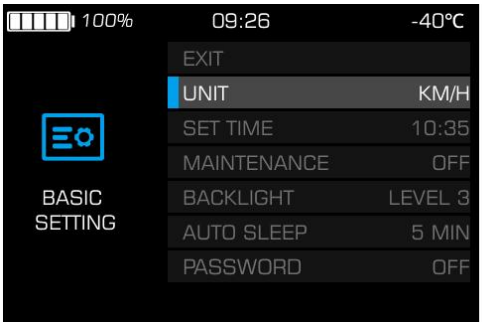
1.8 Settings

1.8.1 "Settings" Screen

On the main screen, press and hold the M Button to enter the "Settings" screen. On the "Settings" screen, short-press the buttons and to navigate the settings pages. Short-press the M Button to enter parameter editing mode. On the parameter editing screen, the selected item is highlighted. In the selected state, a blue icon indicates the selected item, and the selected options and parameter values are displayed with a gray background and white text. When a parameter is selected, short-press the button and to edit the parameter. Press and hold M to confirm and exit editing mode. Press and hold M again to return to the previous menu screen.

1.8.1.1 Unit Settings

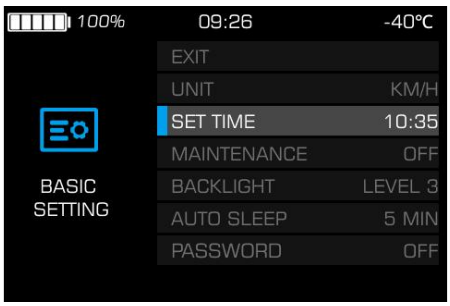
Short press or the button (<0.5 seconds) to select "UNIT", then short-press M to select the item value. Then press and hold M to save and exit, returning to the "Settings" screen. (Options are "KM/H" and "MPH"

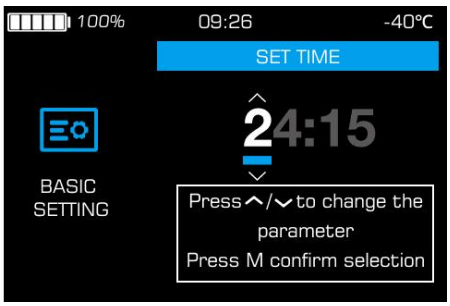




1.8.1.2 Clock Settings

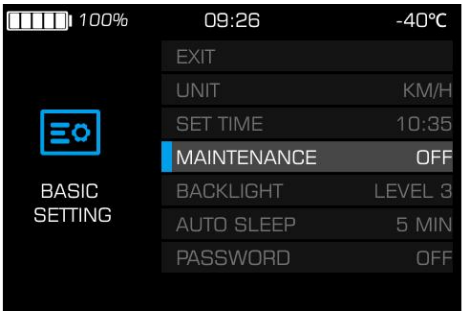
Short press or Press the button (<0.5 seconds) to select "SET TIME," then short-press M to enter the value selection. Press and hold M to save and exit, returning to the "Settings" screen.





1.8.1.2 maintenance reminder Settings

Short press or button (<0.5 seconds) to select "MAINTENANCE," then short-press M to enter the value selection. Press and hold M to save and exit, returning to the "Settings" screen.

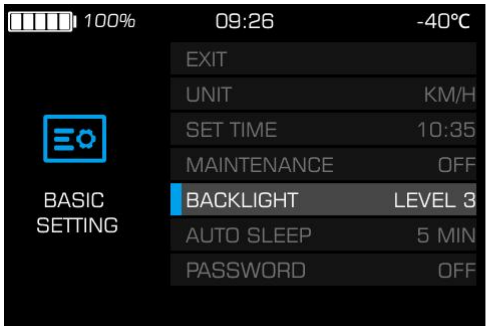


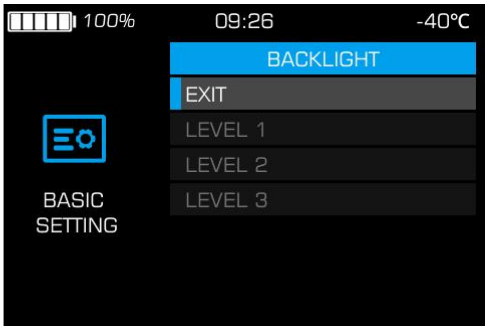


1.8.1.2 Backlight Brightness Settings

Short press or Press the button (<0.5 seconds) to select "BACK LIGHT," then short-press M to enter the value selection. Press and hold M to save and exit, returning to the "Settings" screen.

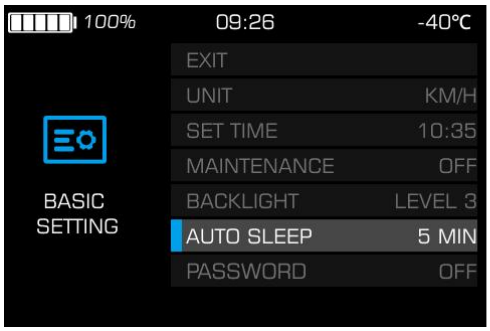
(Options are "LEVEL 1," "LEVEL 2," and "LEVEL 3")

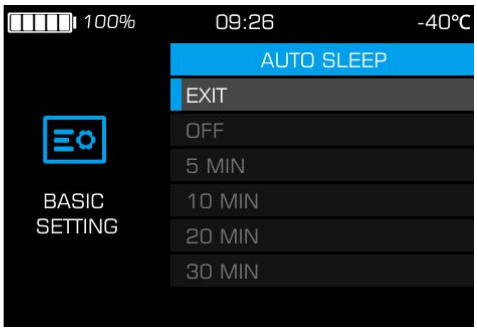




1.8.1.1 Auto Power-Off Time Setting

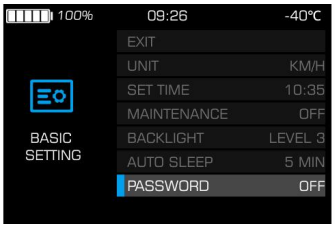
Short press ▲ or ▼ Press the button (<0.5 seconds) to select "Auto Sleep," then short-press M to select the item value. Press and hold M to save and exit, returning to the "Settings" screen. (Options are "OFF," "5 MIN," "10 MIN," "20 MIN," and "30 MIN")

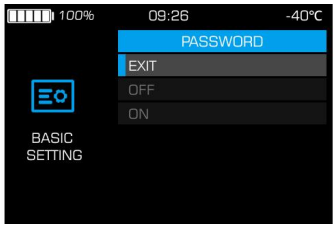


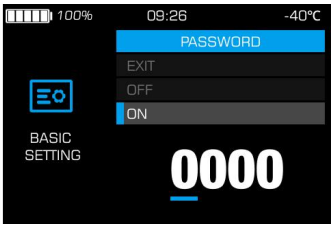


1.8.1.2 Power-On Password Setting

Short-press ▲ or ▼ Press the button (<0.5 seconds) to select "Password," then short-press M to select the item value. Press and hold M to save and exit, returning to the "Settings" screen. (Options are "OFF " and "ON." When the parameter value is ON, the user may set password with it.

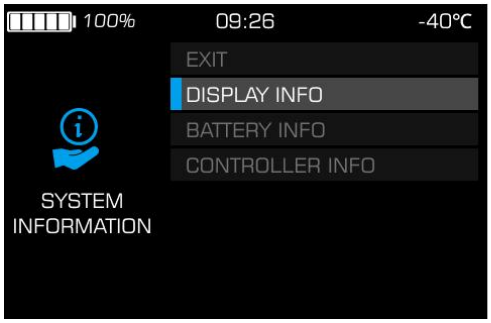


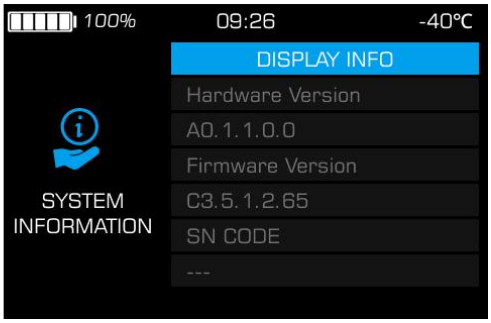




1.8.1.2 Display Information

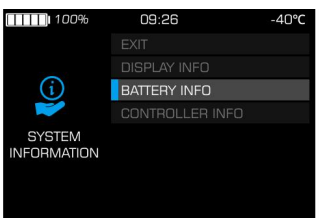
Short press ▲ or ▼ Press the button (<0.5 s) to select "Display information," then short-press M to view the item value. Press and hold M to save and exit, returning to the "Settings" screen.



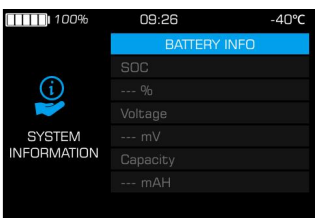


1.8.1.2 Battery Information

Short press ▲ or ▼ Press the button (<0.5 s) to select "Battery information," then short-press M to view the item value. Press and hold M to save and exit, returning to the "Settings" screen.



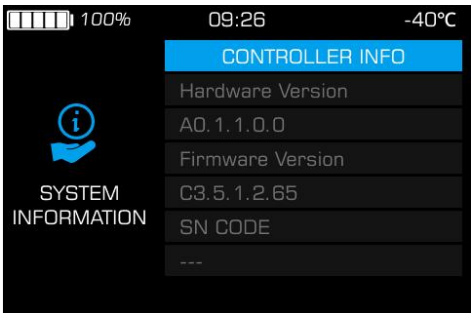




1.8.1.2 Controller Information

Short-press or Press the button (<0.5 s) to select "Controller information," then short-press M to view the item value. Press and hold M to save and exit, returning to the "Settings" screen.





1.8.2 "Advanced Settings" Screen

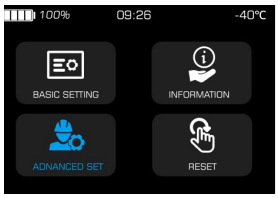
*Warning

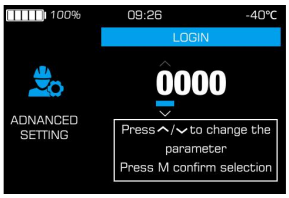
The Advanced Settings function is based on specific protocol requirements and allows controller and system parameters to be modified and configured through the display. This function is available only to specific parties, such as vehicle manufacturers, dealers, and others with professional technical capabilities.

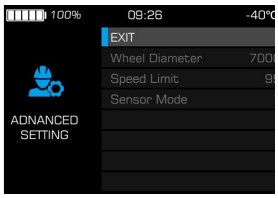
The Advanced Settings function may be used to perform necessary system commissioning and maintenance. Improper parameter configuration or other setting issues may cause the vehicle system to malfunction or even result in other faults. Please carefully select the parties authorized to access this function!

Access to the Advanced Settings function requires a specific password. If you need to use this function, please promptly contact our sales and technical support teams to verify whether the current product hardware and software versions support this function. You must also confirm with our sales and technical support teams that you have the maintenance capability required for this function and obtain the password.

After selecting Advanced Settings function from the first-level menu, Short-press the M Button to enter the password entry window. Short-press the M Button to select the corresponding password digit in the 4-digit password field. The selected digit is highlighted with a white background. Short-press . orto change the password value, and Short-press the M Button to confirm the entry. The password entry screen shown below



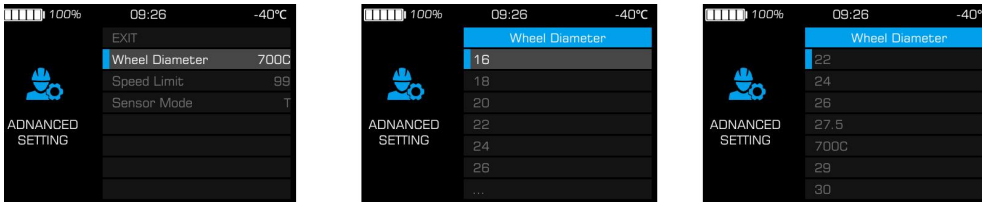




After the password is entered correctly, the Advanced Settings screen appears. The menu items in this function are divided into two pages. Short-press . to select each parameter item.

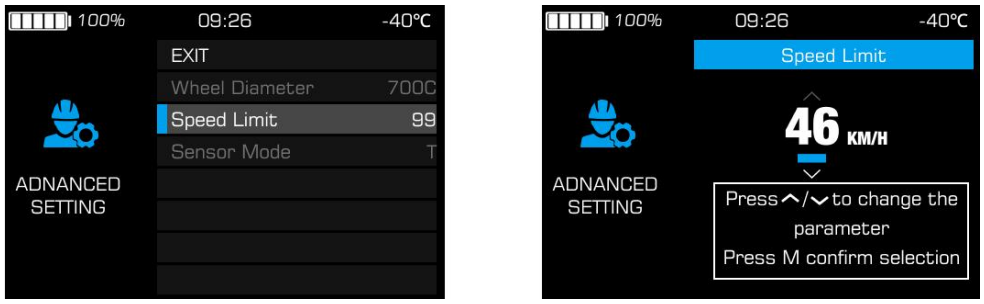
1.8.2.1 Wheel Diameter Setting

Short-press or Press the button (<0.5 seconds) to select "Wheel diameter", then short-press M to enter the item value selection. Then press and hold M to save and exit, returning to the "Settings" screen. (Options: "16," "18," "20," "22," "24," "26," "27.5," "700C," "29," "30")



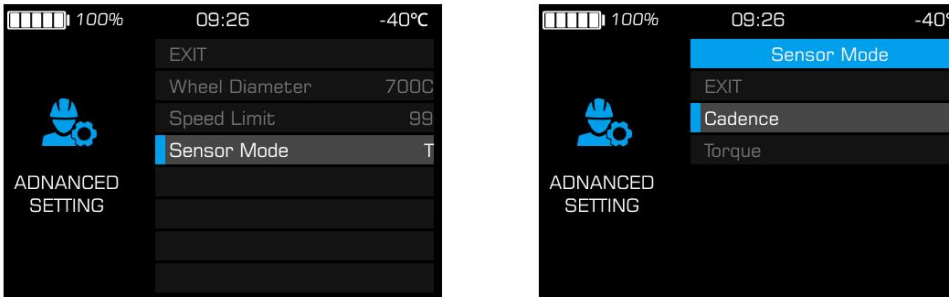
1.8.2.2 Speed Limit Setting

Short-press or Press the button (<0.5 seconds) to select "Speed limitation," then short-press M to select the value. Then press and hold M to save and exit, returning to the "Settings" screen. (Options: "5-46")



1.8.2.3 Sensor Setting

Short-press or Press the button (<0.5 seconds) to select "Speed limitation," then short-press M to select the value. Then press and hold M to save and exit, returning to the "Settings" screen. (Options: "Cadence" and "Torque")



1.8.3 Data Clearing

Data clearing is mainly used to clear data such as trip mileage, average speed, and maximum speed.

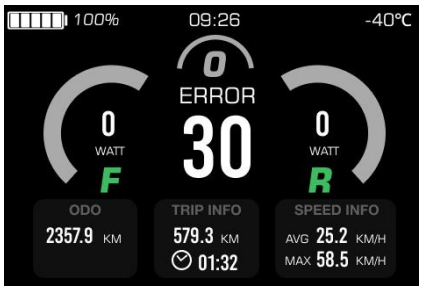
After the display has been powered on normally for 10 seconds, when the display is showing the basic function screen (non-basic screen), press and hold the M Button to enter the data-clearing prompt state, then Short-press . the button to select an operation in the pop-up dialog box, then Short-press the M Button to confirm and clear the data. If there is no operation in the data-clearing pop-up window within 30 seconds, or if the M Button is pressed and held, data-clearing mode will be exited.



After data clearing, the trip mileage is reset to zero; the average speed and maximum speed are also reset to zero; and the assist mode usage statistics are also reset to zero; The total mileage ODO value cannot be cleared through any operation on the display and requires professional maintenance tools to clear.

1.9 Error Code Definitions

The display can provide fault warnings for the vehicle. When a fault is detected, the display screen shows a fault code and flashes at 1 Hz. When a fault code appears, the display's button functions are not affected. That is, while a fault code is displayed, pressing any button can return to the normal display screen. If no buttons are pressed, the display will return to the fault code display after 5 s. The error code screen is shown below:



Fault Code Reference Table

No.	Status / Data	Meaning	Remarks
1	0x01	Normal status	Controller LED remains on
2	0x03	Brakes applied	Not displayed on the display
3	0x04	Throttle not returned to its neutral position (stuck in the high position)	
4	0x05	Throttle fault	
5	0x06	Low-voltage protection	
6	0x07	Overvoltage protection	
7	0x08	Motor Hall signal wire fault	
8	0x09	Motor phase wire fault	
9	0x10	Motor temperature has reached the protection point	
10	0x11	Motor temperature sensor fault	
11	0x12	Current sensor fault	
12	0x13	Battery internal temperature fault	
13	0x14	Controller temperature has reached the thermal protection threshold	
14	0x15	Controller internal temperature sensor fault	
15	0x21	Speed sensor fault	
16	0x22	BMS communication fault	

No.	Status / Data	Meaning	Remarks
17	0x23	Headlight fault	
18	0x24	Headlight sensor fault	
19	0x25	Torque sensor torque signal fault	
20	0x26	Torque sensor speed fault	
21	0x30	Communication fault	The display automatically detects a communication fault; the Controller does not upload this information