



FINEST RIDING TECHNOLOGY



MIVICE

MANUAL

Display

D101

ENGLISH

SAFETY INSTRUCTIONS AND WARNINGS

-  **Read the Manual:** Before operating your eBike system, it is crucial to thoroughly review and adhere to all safety guidelines provided in the operating instructions. Additionally, ensure you carefully read and observe the safety information outlined in your eBike's operating manual. These instructions are designed to promote safe usage and prevent potential hazards. Keep the operating instructions in a safe place and have them readily available to consult. Pass these instructions on if you provide your e-bike for someone else's use.
-  **Installation:** Ensure that the display is securely installed on your ebike according to the manufacturer's instructions. Improper installation can lead to malfunctions or accidents.
-  **Use:** Only operate the display or control unit when you have full control of your bike. In difficult riding situations, letting go of the handlebars can lead to a fall with serious consequences, including death. Do not let the messages on the display screen distract you. If you do not focus solely on traffic on the road, you risk being involved in an accident. Familiarize yourself with the functions and settings of the eBike display before riding.
-  **Walk assist mode:** The walk assistance is intended exclusively to support you when pushing the ebike. Both wheels of the bike must be on the ground. By using the walk assistance, the rear wheels turn without pedaling. Depending on the product, the pedals may also turn. Take care of your legs, otherwise there is a risk of injury.
-  **Water Resistance:** While the display is designed to be water-resistant, avoid exposing it to high pressure cleaners or submerging it in water. Moisture can damage electronic components and affect functionality.
-  **Protection:** Handle the display and remote with care to prevent damage from accidental drops or impacts. Protect them from excessive vibration, shocks, or pressure, as these can affect their performance. Do not place the bike upside down (handlebars and saddle), as this can damage the display (control unit).
-  **Bluetooth:** When utilizing the operating element with Bluetooth functionality, exercise caution as it may potentially interfere with other devices and equipment, including aircraft and medical devices such as pacemakers and hearing aids. Additionally, there is a possibility of causing harm to individuals and animals in close proximity. To mitigate risks, avoid prolonged operation of the operating element close to your body. It is imperative to adhere to local regulations regarding Bluetooth usage, especially in environments such as aircraft, hospitals, or near medical devices, as well as in areas with potential hazards such as filling stations, chemical plants, blasting zones, and explosion-prone areas.
-  **Emergency Protocol:** In the event of an emergency or malfunction, immediately cease operation of the ebike. Safely pull over and assess the situation before attempting to continue riding. If necessary, seek professional assistance to address any issues with the display or remote.
-  **Maintenance:** Regularly inspect the display and remote for signs of wear, damage, or malfunction. Clean them gently with a soft, dry cloth to remove dust and debris. Avoid using harsh chemicals or abrasive materials. Do not attempt to disassemble or modify the eBike display. Any servicing should be performed by qualified personnel.
-  **Follow Traffic Laws:** Always obey traffic laws and regulations while operating your ebike. Pay attention to your surroundings and ride defensively to ensure your safety and the safety of others.
-  **Contact Manufacturer:** If you encounter any problems or have questions about the display and remote, contact the manufacturer or authorized dealer for assistance. Do not attempt to repair or modify the equipment yourself, as this can void the warranty and compromise safety.
-  **Disposal:** The components of the drive system must not be disposed of in the residual waste garbage can. Dispose of electrical components in accordance with country-specific regulations. In EU countries, for example, observe the national implementations of the Waste Electrical and Electronic Equipment Directive 2012/19/EU (WEEE). Observe additionally the regulations and laws of your country for disposal.
-  **Maximum Speed Limit:** In most regions, the maximum allowable speed for eBikes is set at 25 km/h (15.5 mph). However, it's important to note that speed regulations may vary in different markets and countries. Before operating your eBike, we strongly recommend verifying the maximum allowable speed limit in your specific region or country. In some areas, such as the United States, the maximum allowable speed for eBikes may be set at 20 mph (32 km/h) according to local regulations. If your bike does not comply with the legal requirements of your country, immediately cease use and contact your manufacturer. Failure to adhere to local speed limits may result in legal consequences or fines. Excessive speed can lead to falls and severe injuries, even death.
-  **Safety Gear Recommendation:** To ensure your safety while riding your eBike, we strongly recommend the use of appropriate safety gear. This includes: Helmet, reflective clothing, lights, gloves and closed-toe shoes. Failure to follow safety recommendations can result in severe to fatal injuries in the event of a fall.

Warnings indicate hazardous situations and actions. You will find the following warnings in the operating instructions:



DANGER

May lead to serious or even fatal injuries if ignored. High-risk hazard



CAUTION

May lead to minor or moderate injuries if ignored. Low-risk hazard



NOTE

May lead to material damage if ignored

USER MANUAL

Product: D101 Display



Contents

I. Product introduction	4
1. Product name, model and range of application	4
2. Product introduction	4
3. Appearance and size	4
4. Instrument coding rules	4
II. Product description	5
1. Specification parameter	5
2. Functional overview	5
3. Installation	5
4. Display interface	6
4.1. Basic interface and operation buttons	6
4.2. Introduction of power-on interface and function Interface	6
Power-on interface and basic function interface	6
Other function interfaces	7
Setting interface	7
5. Definition of buttons	8
5.1. Button name definition	8
5.2. Button operation definition	8
6. General operation	8
6.1. Power on/off & auto sleep	8
6.2. Display information switching	9
6.3. Headlight control function	9
6.4. Speed display switching	10
6.5. Walk assist function	10
6.6. Battery SOC display and corresponding power output	10
7. Basic setting function	11
8. Data clearing	12
9. Error information	13

I. Product introduction

Product model: D101
D101 includes CANBUS & UART communication.
D101 series products are equipped with Bluetooth functions.
Supports E-bikes of the new and old European standard versions.

2. Features

- 1.44-inch TFT LCD screen with a resolution of 240*240.
- Enlarged operating position, and the buttons combine ergonomic design.
- Excellent outdoor waterproof design, which can reach the waterproof ability IP67.
- Built-in Bluetooth chip, with Bluetooth data transparent transmission function and UART/CANBUS communication
- Supports OTA upgrade, which can quickly realize firmware upgrade and parameter setting, and easy for maintenance.

3. Appearance and size

The shell material of D101 product is flame-retardant ABS+PC, flame-retardant PA66 and flame-retardant PC, and the window is made of high-hardness tempered glass.
Combined with 2.5D chamfering process, the product is suitable for installing $\phi 22.0\text{mm}$ handlebar, as shown in the following figure:



 **NOTE:** Locking torque 0.6 Nm

4. Instrument coding rules

D	1	01	-	CAN/URT	-	01
				Only represents the specification difference		
				CANBus or UART protocol		
				Serial number: 01 ~ 99		
				Instrument identification code: 1: Small instrument, UART version; 2: Central instrument, UART version; 3: Central instrument, CAN version; 4: Small instrument, CAN version;		
				D instrument code		

II. Product description

1. Specification parameter

- 1Power supply: DC 36V/48V.
- 36V boot current: <40mA, 48V boot current: <30mA.
- Off leakage current: <1uA.
- Screen specification: 1.44 TFT display.
- Communication mode: UART/CAN communication.
- Operating temperature:-20 C ~ 65 C (48h)
- Storage temperature:-20 C ~ 70 C (48h)
- Waterproof grade: IP67

 **NOTE:** Before operating your eBike, it is essential to verify if the maximum speed setting complies with the legal requirements of your specific country. The maximum allowable speed may vary, with some countries permitting a maximum speed of 25 km/h (15.5 mph) and others allowing up to 20 mph (32 km/h). To ensure compliance with local regulations and promote safe riding practices, please confirm the maximum speed limit applicable to your area. Failure to comply with local speed regulations may result in fines or penalties. If unsure, consult local authorities or legal resources for guidance on maximum speed limits for eBikes in your region. If your e-bike does not comply with the legal speed limit and exceeds it, you must stop using it immediately and contact your bike manufacturer.

2. Functional overview

- Four buttons, ergonomic buttons
- Unit: Metric/imperial, Wheel diameter and limit speed display
- Speed display: real-time speed/maximum speed/average speed
- Battery level is indicated on percentage display
- Cruising range display (* shown when battery BMS provides residual information)
- Headlight control and status indication
- Mileage display: subtotal mileage (TRIP) and total mileage (ODO)
- Walk assist function
- Parameter setting function
- Error code indication

3. Installation

- Open the instrument's locking clamp and set it on the left handlebar (standard handlebar specification: $\Phi 22.0\text{mm}$, adjust it to an easy-to-operate position, use m3 hexagonal fix and tighten the fixing screw, locking torque: 0.6 Nm.

 **NOTE:** Instrument damage caused by excessive torque is not covered by the warranty.

- Connect the instrument 5pin plug-in with the controller docking connector as indicated.

4. Display interface

4.1. Basic interface and operation buttons



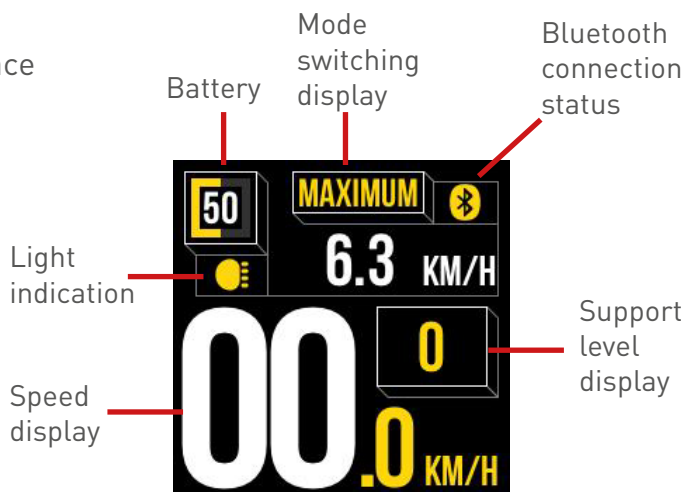
- The instrument has 4 buttons, including power, mode, $\triangle$ and ∇ adjustment button.
- The standard wiring mode is direct wiring.
- The screen adopts a 1.44 inch TFT LCD screen. Customization is available for the power-on interface.

4.2. Introduction of power-on interface and function Interface

Power-on interface and basic function interface



Power-on logo interface

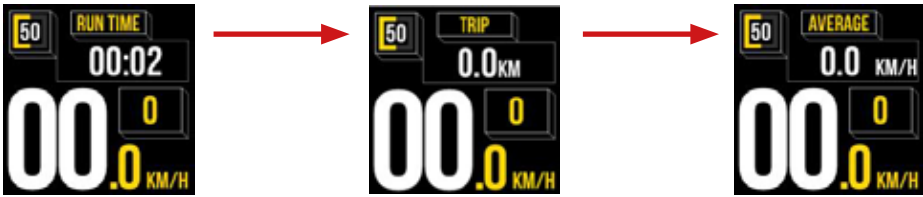


The power-on logo interface will be displayed for 3 seconds after power on, and then the normal riding display interface will be shown after the instrument establishes communication and obtains information normally. The instrument reads the relevant information stored by the controller according to the communication protocol for display (the displayed data information is implemented according to the communication protocol provided by the customer), and reads the battery BMS information for display (If the system has no BMS information, the instrument will not display battery percentage. However if the controller sends the percentage, then it still can be displayed.) The rest information is displayed in real time.

Other function interfaces

Function interface

The function interface mainly displays speed information, including average speed, maximum speed and single mileage, in which the single mileage information TRIP is the same as the main interface. The speed is displayed with 3 digits, the maximum value is 99.9KM/H, including one decimal place. The subtotal mileage value is usually 4 digits including 1 decimal point. After exceeding 9999.9KM, the decimal point will not be displayed, but 5 digits are displayed directly, with the maximum value of 99999KM. After exceeding the maximum value, the number displayed will be the actual mileage value minus 100,000. The function interface can clear data by operating the buttons.



Pedal assistant display interface

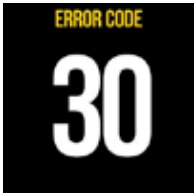
Long press the ▽ button to enter the WALK ASSIST mode, and the instrument display interface is as follows:



CAUTION: Both wheels of the bike must be on the ground. The pedals may also turn. Take care of your legs, otherwise there is a risk of injury.

Error code display interface

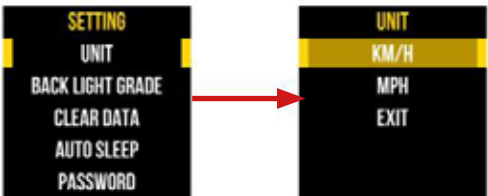
After receiving the fault information returned by the controller, the instrument will display the error code interface, alert the user about the fault information with a full screen pop-up window.



Setting interface

Within 10s after power-on, long press the Mode button to enter the setting interface, and press △ and ▽ buttons to choose the setting options cyclically. Then press the Mode button to confirm entering the parameter editing status. There are two status modes in the parameter editing interface: picking and selecting.

The picking status is indicated by the rectangular cursor on the right, and the selected status is indicated by the parameter value on the yellow background. When the parameters are selected, press the △ and ▽ buttons to modify and edit the parameters. To return to the setting interface, some menus need to long press Mode to confirm and exit from the editing status, and some menus need to select EXIT and short press Mode to confirm and exit from the editing status. After returning to the setting interface, select EXIT to return to the main interface.



For the interface operation definition of the above function settings, please refer to the operating instructions for setting functions in Part 7.

5. Definition of buttons

5.1. Button name definition



Power button: for power-on and power-off operation
 Adjustment button: adjust the power gear during riding and selection during setting. Long press the adjustment button to perform the corresponding specific function operation.
 Function button/mode: switch the function display interface and enter the parameter setting interface.

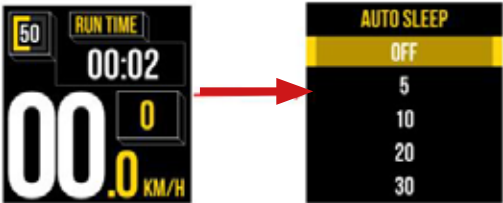
5.2 Button operation definition

OPERATION TYPE	DESCRIPTION
Short press	Short press refers to pressing the button and then releasing it immediately, which triggers the corresponding function when the button pops up.
Long press	Long press means that the button is pressed and kept pressed. The corresponding function is triggered when the button press duration exceeds the set time (usually 2s).

6. General operation

6.1. Power on/off

Ensure the connection between the instrument and the controller, long press the POWER button when the instrument is off, then the instrument display power-on LOGO and enter the basic interface and start the operation; During power-on state, long press the POWER button to shut down the instrument. Set AUTO SLEEP time: if the rider does not perform any operation on the instrument within 5 minutes, it will automatically turn off. The user can disable the AUTO SLEEP function or change the shutdown time in the setting interface.
 As shown in the following figure: first, long press the MODE button to enter the setting mode, press the ▽ button to select AUTO SLEEP, and then press the MODE button to confirm, select OFF to disable AUTO SLEEP, or select the numbers to change the AUTO SLEEP time.



6.2. Display information switching

Short press the Mode button to switch the display information. Long press the Mode button to enter the setting mode. If the user does not press the button for more than 30S in the setting mode, it will automatically return to the main display interface.

The function display interface displays single riding time, average speed, maximum speed, single riding mileage, remaining mileage and total mileage.

The switching process of each interface is shown in the following figure:

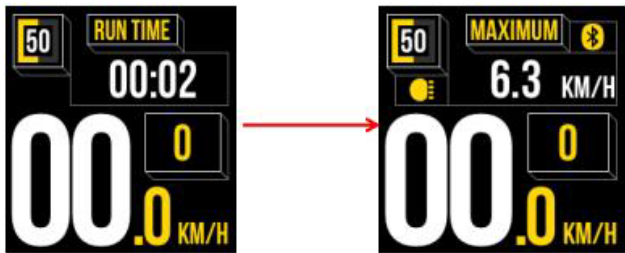


 **NOTE:** If the system doesn't support BMS communication function, the instrument can't obtain accurate RANGE information, and the RANGE item value on the instrument is displayed as ---KM.

 **DANGER:** Only operate the display or control unit when you have full control of your bike. In difficult riding situations, letting go of the handlebars can lead to a fall with serious consequences, including death. Do not let the messages on the display screen distract you. If you do not focus solely on traffic on the road, you risk being involved in an accident.

6.3. Headlight control function

If the bike's battery is sufficiently charged and the system is active, long press the  button to turn on the headlight. At the same time, the light-on icon  is displayed, and the instrument displays the normal function state. Long press the  button again to turn off the headlight.



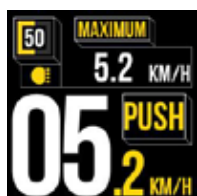
6.4. Speed display switching

The instrument provides a speed display function. Under normal conditions, the instrument interface displays real-time speed, average speed (AVG) and maximum speed (MAX). The user can switch by pressing the MODE button. For details, refer to 6.3 Display Information Switching.

6.5. WALK ASSIST mode

UART: When the speed is zero, long press the ∇ button to enter the WALK ASSIST mode, and the motor will output power according to the set pedal assistant speed value and control the actual walking speed; the instrument displays the actual walking speed and WALK ASSIST icon **PUSH** in the power gear display area. Releasing the ∇ button to exit the pedal assistant mode, the motor will cut off the output, and the instrument will return to the normal display mode.

CANBUS: To use the walk assist mode, you must first select the push level. To do this, press the ∇ button several times until **PUSH** appears on the display. The walk assistance can then be activated by pressing and holding the ∇ button. When you release the icon, the walk assistance stops.



CAUTION: Both wheels of the bike must be on the ground. The pedals may also turn. Take care of your legs, otherwise there is a risk of injury.

6.6. Battery SOC (Status of capacity)

The battery SOC display is indicated by battery bar and remaining battery percentage. When the battery power is normal, according to the change in battery capacity, the battery SOC display is divided into 1-11 levels. Before communication is established with the controller at startup, the percentage is not displayed.

Error code 30 will be displayed if communication is not successful after 10 seconds of power-on.

The corresponding table of remaining battery percentage is as follows (BMS or controller is required to provide power percentage):

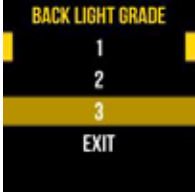
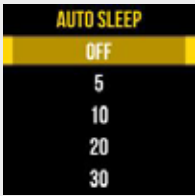
BATTERY SOC INFORMATION	BATTERY BAR INDICATION
100% ≤ SOC	FULL
90% ≤ SOC < 100%	95
80% ≤ SOC < 90%	85
70% ≤ SOC < 80%	75
60% ≤ SOC < 70%	65
50% ≤ SOC < 60%	55

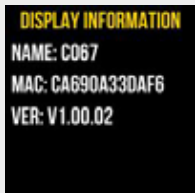
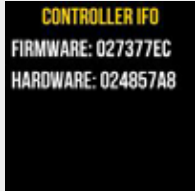
BATTERY SOC INFORMATION	BATTERY BAR INDICATION
40% ≤ SOC < 50%	
30% ≤ SOC < 40%	45
20% ≤ SOC < 30%	35
10% ≤ SOC < 20%	25
0% ≤ SOC < 10%	15
	

7. Basic setting function

Long press the MODE button to enter the setting interface, and press the Δ and ∇ adjustment button to switch the setting interface cyclically. In any selected setting interface, short press Mode for confirmation to enter the parameter editing state. On the right side of the screen, a rectangular cursor indicates that the parameter is picked up. When entering the parameter editing setting state, the selected parameter is displayed in white on a yellow background. As shown in the figure:

At this point, short press Δ and ∇ to modify the parameters. Short press MODE to confirm the parameter selection and edit the status. To exiting the editing status, some menus require the user to select EXIT and press MODE to exit from the editing status; for some menus, the user needs to long press MODE again to exit the current configuration interface and return to the superior menu interface. After power-on, long press the Mode button to enter the setting mode interface, and the description of each parameter setting interface are as follows:

SETTING ITEMS	INTERFACE CONTENT	Parameter value definition	Remarks
Unit setting		Value= KM/H MPH	Default Value=KM/H KM/H- metric MPH- imperial
Backlight grade setting		Value= 1, backlight grade 60% Value= 2 Backlight grade 80% Value= 3 backlight grade 100%	Default Value= 1
Auto sleep time setting		Value=OFF,5-30 min	Default value= 5min Step =5 min. OFF means not to shut down automatically.
Power-on password setting		Value= OFF and ON When the parameter value is ON, the user is allowed to set a 4-digit password.	The default value is: OFF

SETTING ITEMS	INTERFACE CONTENT	Parameter value definition	Remarks
Instrument information reading		Read only	Displayed according to the content of communication protocol.
Battery information reading		Read only	Displayed according to the content of communication protocol.
Controller information reading		Read only	Displayed according to the content of communication protocol.
Reset default settings		Restore factory settings	All parameters will be restored to default settings.

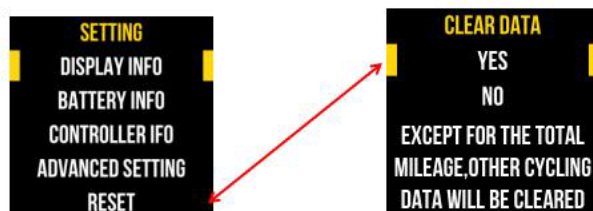


CAUTION: Do not change the bike settings while riding. This could lead to falls with serious injuries or even death.

8. Data clearing

Data clearing is mainly aimed at clearing data information such as single mileage, average speed and maximum speed.

1. In the setting mode, select the YES option after selecting RESET. It will return to the main interface if no button operation for 30 seconds.
2. After the data is cleared, the mileage, average speed, maximum speed and riding time also return to zero. The total mileage can not be cleared at the instrument end, and it needs professional maintenance tools to clear.



9. Error information

The instrument can prompt and warn of the vehicle’s fault. When the fault is detected, the instrument interface displays the error code. When the error code appears, the button function of the instrument is not affected, that is, when the error code is displayed, the button operation can return to the normal display interface. If there is no button operation, the instrument will return to the fault code display after 5S.

The error code interface is displayed as follows:



The error code comparison table for **UART** displays is as follows:

ERROR	REASON
Error 06	System under-voltage
Error 07	System over-voltage
Error 08	Hall fault of motor
Error 10	Controller temperature protection
Error 12	Controller current fault
Error 21	Speed sensor fault
Error 22	BMS fault
Error 25	Torque sensor torque signal fault
Error 30	Communication fault

The fault code comparison table for **MIVICE CAN-BUS** display is as follows:

ERROR	REASON
Error 48	Battery overvoltage
Error 49	Battery undervoltage
Error 50	Battery over temperature when charging
Error 51	Battery under-temperature when charging
Error 52	Battery over-temperature when discharging
Error 53	Battery under-temperature when discharging
Error 54	Battery discharge over-current
Error 55	Battery discharge under-current
Error 56	Battery cell voltage difference
Error 57	Battery communication break line
Error 58	Battery MOS over temperature
Error 59	Battery short circuit
Error 60	Fatal battery cell voltage difference
Error 61	MOS malfunction
Error 62	Fatal battery overvoltage
Error 63	Fatal battery undervoltage
Error 64	Temperature sensor malfunction
Error 65	AD break line
Error 66	AFE malfunction
Error 80	Communication break line
Error 81	Controller overcurrent

ERROR	REASON
Error 82	Motor Hall Sequence abnormal
Error 83	Torque input abnormality
Error 85	Brake position error
Error 86	System over-voltage
Error 87	System low-voltage
Error 88	Battery over-discharge
Error 89	Controller over-temperature
Error 90	Motor blocked
Error 91	Motor over-temperature
Error 92	Wheel speed sensor malfunction
Error 93	Transmission error
Error 94	Internal power supply
Error 96	Overcurrent
Error 97	Overvoltage
Error 98	Over-temperature
Error 99	Pre-charge timeout
Error 100	Charge time out
Error 101	Connection detection error



INFO: The corresponding error codes of different system protocols are different. If the error codes of instruments appear, please contact our sales and technical support team in time to verify!]



CAUTION: Even if no error code is displayed, there may be technical anomalies on your bike. If you notice abnormal riding behavior or anomalies, stop using your bike immediately and consult a qualified specialist dealer.



Thank you for choosing our product. We've thoroughly reviewed this publication to ensure it accurately reflects the described product. While we strive for complete accuracy, minor deviations may occur. Therefore, we cannot assume liability for absolute conformity and correctness. Rest assured, we regularly review and update the information in this publication. Any necessary corrections will be incorporated into future editions.

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