



**KEY-DISP**

eBike Display

User Manual

**KD686**

## Product name and model number

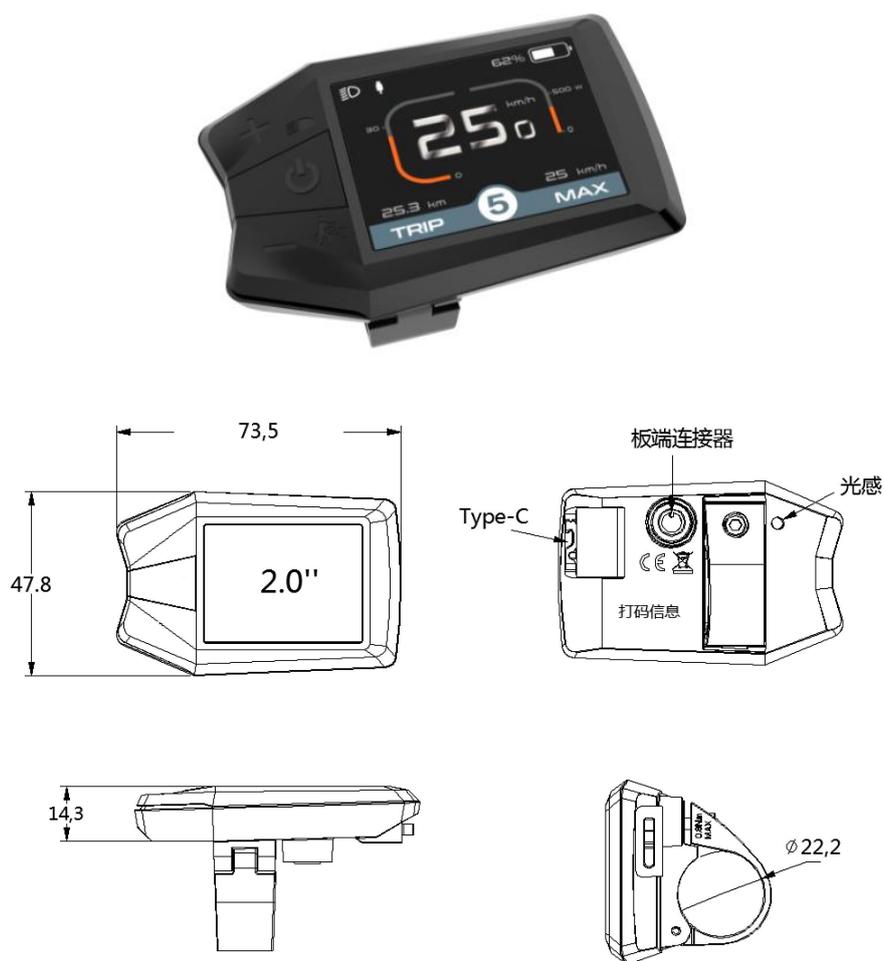
Intelligent ebike color display; Model: **KD686 (CAN BUS)**

## Specification parameters

- 2.0"IPS color screen
- 36V/48V/52V power supply
- Rated operating current of the display: 22mA
- Shutdown leakage current: <1uA
- Operating temperature:-1-10~60℃
- Storage temperature:-2-20~70℃℃

## Appearance size

Physical drawing and dimensional drawing of the display (unit: mm)



The KD686 display provides a variety of functions to meet your riding needs, including:

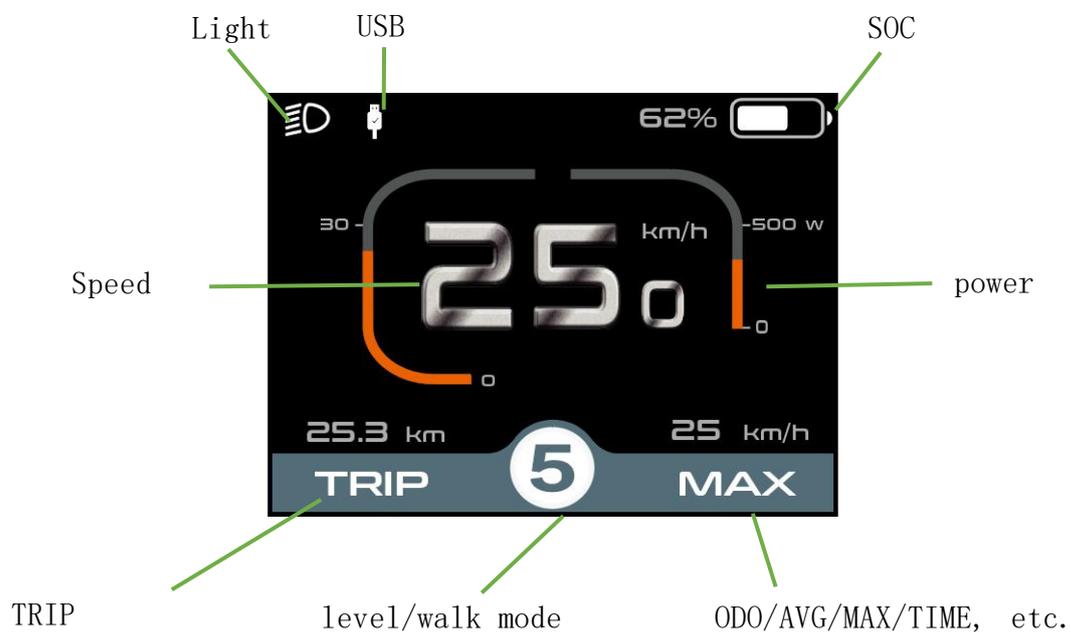
- Smart battery indicator: real-time voltage/battery percentage
- Intelligent display: single mileage TRIP, total mileage ODO, real-time

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SPEED, maximum speed MAX, average speed AVG, riding time, remaining mileage (km), calories (KCal)

- Motor output power display
- Assist level adjustment and display
- Backlight control and headlight display
- Walk mode
- Type-C charging function
- Light sensing function
- Multiple parameter settings (such as: single mileage clear, backlight, metric and inch system, power setting, gear setting, wheel diameter speed limit setting, boot password setting, etc.)
- Restore the factory default settings
- Error code display
- Bluetooth function (optional)

## Display area



### ◆ Button definition

THERE are 3 buttons on the KD686 display, including: on/off button, plus button/headlight button, minus button/boost button; IN the subsequent instructions, the on/off button is replaced by the word "ON/OFF"; the plus button/headlight button is replaced by the word "UP"; minus button/headlight button is replaced by the word "UP".The key/booster key is replaced by the word "DOWN".

## General operation

### ◆ Power on/off

After long-pressing the power button, the display starts to work and provides the working power of the controller. In the boot state, press and hold the power button to turn off the power of the electric vehicle. In the shutdown state, the display no longer uses the battery power supply, and the leakage current of the display is less than 1uA.

■ If the electric vehicle is not used for more than 5 minutes, the display will automatically turn off.

### ◆ Display interface

After the display is turned on, the display displays real-time speed, single mileage, total mileage, power, battery, and gear by default.

Press the "ON/OFF" button to switch between the total mileage ODO (km), the maximum speed MAX (km/h), the average speed AVG (km/h), the time (min), the remaining mileage (km), and the calories (KCal).



Display interface switching

### ◆ Walk mode

Short press the "DOWN" button to the booster gear "🚲", press and hold the "DOWN" button, and after 2 seconds, the electric vehicle will enter the electric booster state. Electric vehicles travel at a uniform speed of not more than 6Km/h. Release the "DOWN" button and the electric vehicle will immediately stop the power transmission and return to 0 gear.



Walk mode

◆ **Light sensing function, and manually turn on/off the backlight**

The display has a photosensitive function, which can sense the light and dark conditions of external light, and automatically turn on/off the headlights. When the external light is insufficient or when driving at night, the backlight of the display **dims**, and the controller is notified to turn on the headlights at the same time; when the external light is sufficient, the backlight of the display **turns on**, and the controller is notified to turn off the headlights at the same time.

Manually press **and hold the UP** button for more than 2 seconds, the display performs the function of turning on/off the headlights, and the light sensing function fails at the same time.



Turn on the backlit display interface

◆ **Assist level selection**

Short press **the "UP" or "DOWN"** button to switch the PAS level of the ebike and change the motor output power. The default output power range of the display is PAS level 0-5 , 0- zero power output, 1- the lowest power, and 5- the highest power.



Booster gear selection interface

◆ **Battery display**

display battery voltage 36V; 36V voltage segmentation:31.5 V-34.5 V-35.6 V-37.4 V-39.2V



Battery SOC Interface

◆ **Motor power indication**

The motor output power is shown in the figure below.



Motor power display interface

◆ **Error code display**

When the electric vehicle's electronic control system fails, the display will display an error code. For the definition of the error code, please refer to **Appendix 1** for details.



Error code display interface

■ When the error code is displayed, please resolve the fault in time. After the fault occurs, the ebike will not be able to travel normally.

## General parameter settings

In the turned-on state, the vehicle is stationary, and at the same time press and hold the “UP” and “DOWN” buttons for more than 2 seconds, the display enters the setting interface;



### ● Display Setting

#### ◆ TRIP RESET

Short press “UP” or “DOWN” to switch “NO (not clear)” and “YES (clear)”; (Clear data includes maximum speed (MAX), average speed (AVG), single mileage (TRIP), riding Time (Time)), after confirming, short press “ON/OFF” again, save and exit to “Trip reset”, the display defaults to “Trip reset-NO”.

Display Setting	
Trip reset	No
Unit	Metric
Brightness	100%
SOC View	percent
Auto Off	5Min
AL Sensitivity	5
Set Voltage	36V
BACK	



Display Setting	
Trip reset	YES
Unit	Metric
Brightness	100%
SOC View	percent
Auto Off	5Min
AL Sensitivity	5
Set Voltage	36V
BACK	

Single mileage clear setting

◆ unit

Short press“UP”or“DOWN”to select "UNIT", short press“ON/OFF”to enter the settings,“UP” 或 “DOWN”select "Metric" (kilometer)/"Imperial (mile)" by short press "UP" or "DOWN", short press“ON/OFF”to save and exit to“Unit”.

Display Setting	
Trip reset	No
Unit	Metric
Brightness	100%
SOC View	percent
Auto Off	5Min
AL Sensitivity	5
Set Voltage	36V
BACK	



Display Setting	
Trip reset	No
Unit	Imperial
Brightness	100%
SOC View	percent
Auto Off	5Min
AL Sensitivity	5
Set Voltage	36V
BACK	

Imperial and metric unit conversion setting interface

◆ Brightness

Short press“UP”or“DOWN”to select “Brightness”, short press“ON/OFF”to enter the settings, by short press“UP”or“DOWN”,the backlight brightness range is“100%-75%-50%-30%-15%” 5 levels of brightness, 100% corresponding to the highest brightness, 15% corresponds to the lowest brightness; short press“ON/OFF”to save and exit to "Brightness".The default backlight brightness of the display is “100%”.

Display Setting	
Trip reset	No
Unit	Metric
Brightness	100%
SOC View	percent
Auto Off	5Min
AL Sensitivity	5
Set Voltage	36V
BACK	



Display Setting	
Trip reset	No
Unit	Metric
Brightness	75%
SOC View	percent
Auto Off	5Min
AL Sensitivity	5
Set Voltage	36V
BACK	

backlight brightness setting interface

◆ SOC View

Short press“UP”or“DOWN”to select "SOC View", short press“ON/OFF”to enter the settings, and short press“UP”or“DOWN”to switch to: "Voltage (voltage display)"; the display defaults to “Percentage”, short press“ON/OFF”Save and exit to "SOC View”.

Display Setting	
Trip reset	No
Unit	Metric
Brightness	100%
SOC View	percent
Auto Off	5Min
AL Sensitivity	5
Set Voltage	36V
BACK	



Display Setting	
Trip reset	No
Unit	Metric
Brightness	100%
SOC View	Voltage
Auto Off	5Min
AL Sensitivity	5
Set Voltage	36V
BACK	

Battery percentage/voltage display setting interface

◆ **Auto OFF**

“Auto Off” means that the display is automatically turned off when the time is set. Short press “i” to enter the settings, select the automatic shutdown time by short pressing “UP” or “DOWN”, the range is “OFF, 1-99(Min)”, short press “i” to save and exit to “Auto Off”. The default automatic shutdown time of the display is 5 minutes.

Display Setting	
Trip reset	No
Unit	Metric
Brightness	100%
SOC View	percent
Auto Off	5Min
AL Sensitivity	5
Set Voltage	36V
BACK	



Display Setting	
Trip reset	No
Unit	Metric
Brightness	100%
SOC View	percent
Auto Off	8Min
AL Sensitivity	5
Set Voltage	36V
BACK	

Automatic shutdown time setting interface

◆ **AL sensitivity**

“AL Sensitivity” indicates the setting of light sensor sensitivity. Short press “i” to enter the settings, and select the light sensitivity value by short pressing the “UP” or “DOWN” button. The range is “5-4-3-2-1-OFF”, short press “i” to save and exit to “AL Sensitivity”. The default light sensitivity of the display is 5.

Display Setting	
Trip reset	No
Unit	Metric
Brightness	100%
SOC View	percent
Auto Off	5Min
AL Sensitivity	5
Set Voltage	36V
BACK	



Display Setting	
Trip reset	No
Unit	Metric
Brightness	100%
SOC View	percent
Auto Off	5Min
AL Sensitivity	3
Set Voltage	36V
BACK	

Light sensitivity setting interface

◆ **Set voltage**

Short press “UP” or “DOWN” to select “Set Voltage”, the default 36V voltage of the display cannot be changed.

Press and hold the “ON/OFF” button to return to the main interface or go BACK to the main interface via “BACK” →.

Display Setting	
Trip reset	No
Unit	Metric
Brightness	100%
SOC View	percent
Auto Off	5Min
AL Sensitivity	5
Set Voltage	36V
BACK	



Display Setting	
Trip reset	No
Unit	Metric
Brightness	100%
SOC View	percent
Auto Off	5Min
AL Sensitivity	5
Set Voltage	48V
BACK	

Battery voltage

## ●Advanced Setting

In the **DisPlay** Setting menu, select **EXIT**, short press **“ON/OFF”** to return to the main interface and select **“Advanced Setting”**, and short press **“ON/OFF”** to enter **Advanced Settings** menu;

### ◆Max pas

Short press **“ON/OFF”** to determine, short press **“UP”** or **“DOWN”** to switch gears **“0-3、0-5、0-7、0-9、”** 4In this mode, short press **“ON/OFF”** to save the settings, and return to the settings item selection interface.

Advanced Setting	
Max pas	0-5
Wheel size	28.0Inch
Speed Limit	25km/h
Current limit	15A
Speed sensor	6
Assistant Num	12
Throttle-6km	OFF
Throttle-PAS	OFF



Advanced Setting	
Max pas	0-3
Wheel size	28.0Inch
Speed Limit	25km/h
Current limit	15A
Speed sensor	6
Assistant Num	12
Throttle-6km	OFF
Throttle-PAS	OFF

Gear setting interface

### ◆Wheel size

**“Wheel”** represents the wheel diameter, the default is **“26Inch”**, which cannot be adjusted. Press and hold the **“ON/OFF”** button to return to the main interface or go **BACK** to the main interface via **“BACK”** →.

Advanced Setting	
Max pas	0-5
Wheel size	26.0Inch
Speed Limit	25km/h
Password	>
Battery info	>
Controller info	>
Language	English
BACK	

Wheel size

### ◆Speed limit setting

**“Speed Limit”** represents the speed limit, the default is **“25km/h”**, which cannot

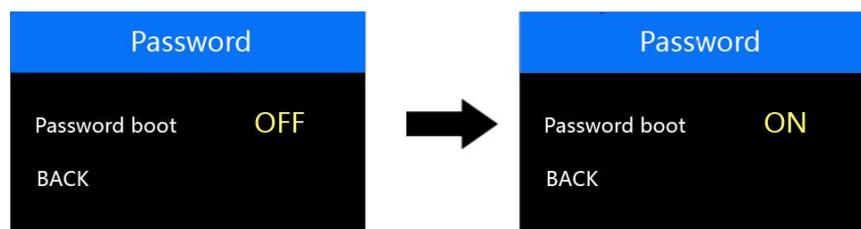
be adjusted. Press and hold the "ON/OFF" button to return to the main interface or go BACK to the main interface via "BACK"→.

Advanced Seeying	
Max pas	0-5
Wheel size	26.0Inch
Speed Limit	25km/h
Password	>
Battery info	>
Controller info	>
Language	English
BACK	

Speed limit

#### ◆ Power-on password setting

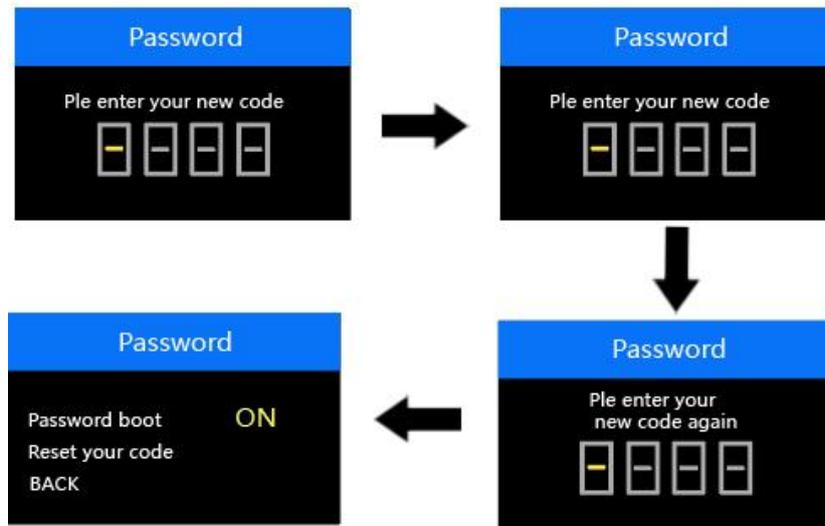
Short press "UP" or "DOWN" to select "Password", short press "ON/OFF" to enter setting. Enter setting, select Start PassWord by short press "UP" or "DOWN", short press "ON/OFF" to switch between "PassWord" and "Password". Short press "ON/OFF" to switch "OFF"/"ON", the following is the specific switching method. There is no power-on password by default.



Power-on password setting screen

#### ◆ Power-on password enable

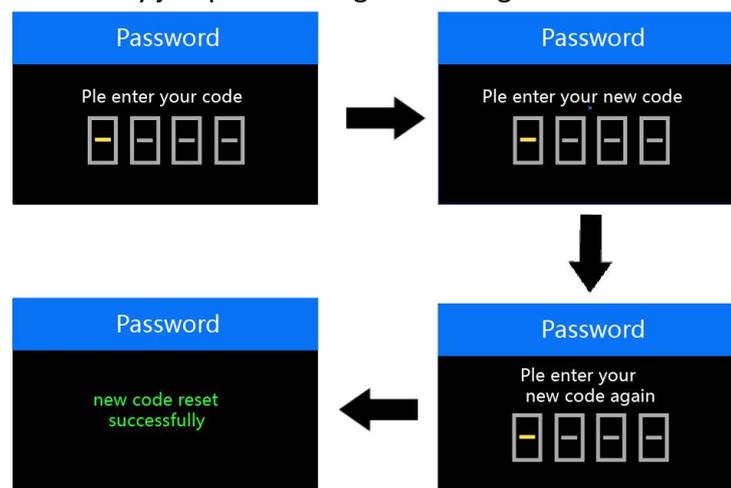
In the "PassWord boot" interface, select "ON", press "ON/OFF" to confirm, the interface prompts to enter the password, press "UP" or "DOWN" to increase/decrease the input value, press "ON/OFF" to shift the value, after the 4-digit password input, press "ON/OFF" to shift the value. UP" or "DOWN" key to add/subtract the input value, short press "ON/OFF" key to shift the value, after 4-digit password input, short press "ON/OFF". "ON/OFF" to confirm; the interface prompts to enter the password again, after the two inputs are the same, the system prompts the password set successfully, if the two inputs are not the same, then you need to repeat the first step to enter a new password and then confirm that the password is set successfully, the 2S interface automatically jumps to the original setup interface.



Password Enable Confirmation Screen

◆ **Power-on password change**

After opening the password, "Pass word" interface will add "Reset your code" option, short press "UP" or "DOWN" to select "Reset Password", short press "ON/OFF" again to make sure. Short press "UP" or "DOWN" to select "Reset Password", short press "ON/OFF" again to make sure, at this time, the interface prompts you to enter the current password, the password is entered correctly, the interface prompts you to enter the new password. The interface prompts you to input the new password after the password is input correctly, and the operation will be the same as the new password, after the password is modified successfully, the 2S interface will automatically jump to the original setting interface.



Password change screen

◆ **Disable Password**

After selecting "OFF" in the "PassWord" interface, press "ON/OFF" briefly to make sure, at this time, the interface prompts you to input the password, after the

password is correctly input, the interface prompts you that the password function is successfully turned off. After the password is correctly entered, the interface prompts that the password function is closed successfully, and the interface automatically jumps to the original setting interface after 2S.

Long press "ON/OFF" to exit to the main interface or "BACK" to exit to the setting interface, short press "ON/OFF" to select EXIT to return to the main interface.



#### ◆ Battery information

“Battery info” stands for battery information. You can view the battery information by entering this page. Press and hold the "ON/OFF" button to return to the main interface or go BACK to the main interface via "BACK" →.



Battery information

#### ◆ Controller information query

“Controller info” represents controller information, and you can view controller information by entering this interface. Press and hold the "ON/OFF" key to exit to the main interface or through "BACK" → exit to the main interface.

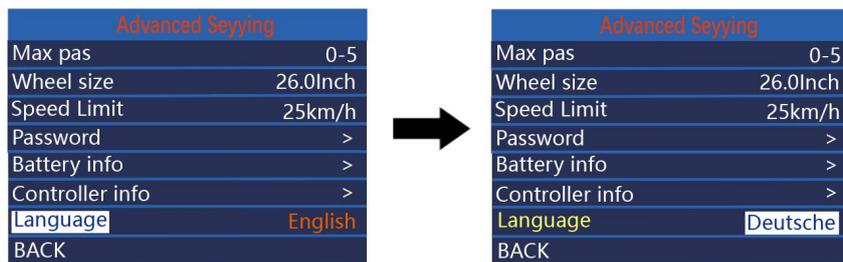


Controller information

#### ◆ Language selection

“Language” represents the language setting. Short press “UP” or “DOWN” 选 to select “Czech”, “French”, “German”, “English” and short press “ON/OFF” to confirm.

The default is English. Long press "ON/OFF" to exit to the main interface or exit through "BACK". Go to the settings interface.



Language selection

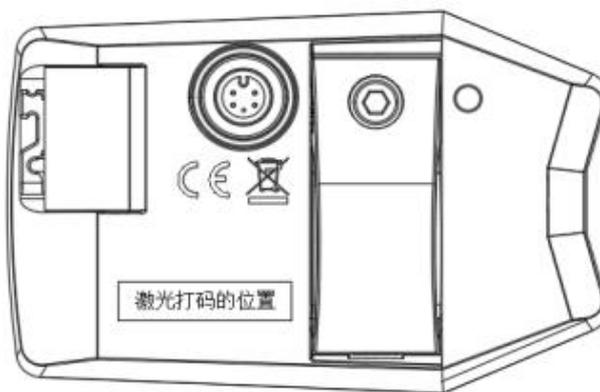
■ If no operation is performed within 1 minute, the display will automatically exit the setting state.

◆ display connector pinout:

Junlet 5-pin male, model: JL-F39-Z508JG



线色功能  
 红 电源正极  
 蓝 锁线  
 黑 电源负极  
 绿 通讯RX  
 黄 通讯TX



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display connector pinout table

Serial	Name	function
1	VCC	display power cord
2	KP	controller power supply control line
3	GND	display ground
4	CAN-H	CAN-H
5	CAN-L	CAN-L

**Appendix 1: Error Code Definition Table**

Error code	definition
31	low voltage protection
32	Over voltage protection
08	Motor hall failure
09	Motor phase line failure
25	torque sensor failure
30	Communication fault between the display and the controller

## Quality commitment and warranty scope

### 1. Warranty information:

1. For failures caused by quality problems of the product itself under normal use, the company will be responsible for granting a limited warranty during the warranty period.

2. The warranty period of the product shall be within 24 months from the time the display leaves the factory.

2. The following conditions are not covered by the warranty

1. The shell is opened

2. The connector is damaged

3. After the display leaves the factory, the shell is scratched or the shell is damaged.

4. The display pinout is scratched or broken

5. Failure or damage caused by force majeure (such as fire, earthquake, etc.) or natural disasters (such as lightning strikes, etc.)

6. The product is out of warranty

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## Warnings

Pay attention to the safety of use during use, and do not plug in and unplug the display while it is powered on.

- ◆ Try to avoid bumps on the display.
- ◆ Regarding the background parameter settings of the display, please do not change it at will, otherwise normal riding cannot be guaranteed.
- ◆ When the display cannot be used normally, it should be repaired as soon as possible.