

Product Specification

05/2021

Product TFT LCD Display

Mode

Abbreviation 860C

Client

Customer

audit

1. Product Name

- ✧ TFT LCD display
- ✧ Model : 860C

2. Suppliers

- ✧ ACCOLMILE Co., Ltd.

3. Electrical Parameters

- ✧ 3.5inch IPS screen
- ✧ 24V/36V/48V/52V battery supply
- ✧ Rated operating current : 40mA
- ✧ Max operating current : 100mA (36V battery, with USB equipment changed)
- ✧ USB changing port : 5V 500mA
- ✧ Off leakage current < 1uA
- ✧ Max output current to controller : 100mA
- ✧ Operating temperature : -20~70°C, Storage temperature : -30~80°C

4. Dimensions & Material

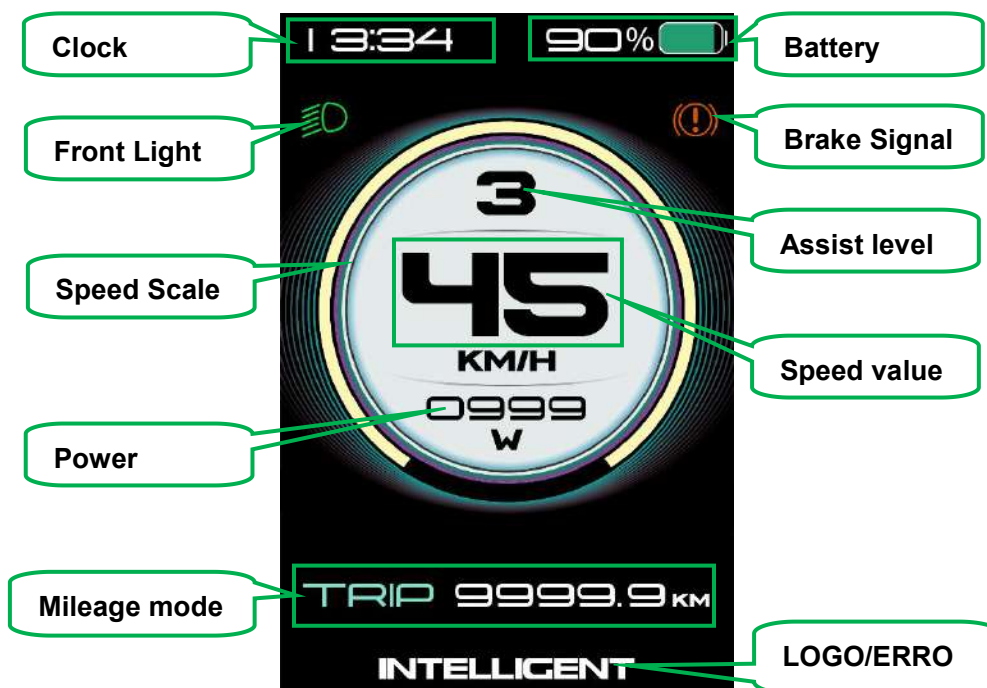
- ✧ Product shell is ABS+PC, LCD transparent window is imported super tempered glass, full bonding process.
- ✧ Dimensions : host/L96.6mm*W71.6mm*H6.1mm



5. Features

- ✧ High-contrast 3.5inch IPS colorful matrix screen.
 - ✧ Suitable for low temperature, Max -20°C.
 - ✧ Ergonomic external button design, easy to operate.
 - ✧ **Speed display:** AVG SPD, MAX SPD, SPEED(Real-time).
 - ✧ **Kilometer / Mile:** Can be set according to customers' habits.
 - ✧ **Smart battery indicator:** Provide a reliable battery indicator.
 - ✧ **Brightness:** Set the backlight brightness according to customers' usage habits, I is darkness, IIIII is brightness.
 - ✧ **9-level Assist :** 3-level/5-level/9-level/UBE optional.
 - ✧ **Mileage indicator:** Odometer/Trip distance/ Range/ Riding time.
 - ✧ **Clock:** Built in battery, keep off time.
 - ✧ **Light sensor (Optional) .**
 - ✧ **6km walking.**
 - ✧ **USB charging port:** 5V/500mA.
 - ✧ **Error code indicator.**
 - ✧ **Software upgraded:** Software can be upgraded through UART.
-

6. TFT screen instructions



7. Functional Description



7.1 Power On/Off

Press and hold **Power** button for 2 seconds can turn on/off the display. The Display can automatically shut down when there is no operate & ride for X minutes (X could be 1~10) .

*If the display has been set password power on, you need to input the right password before start.

7.2 Assist level operating

Short press **UP/DOWN** button can change the assist level. Top assist level is 9, 0 for neutral. Level quantities can be adjusted according to the customer requirements.



7.3 Speed & Mileage mode switch

Short press **MENU** button can change the speed and mileage mode, TRIP→TIME→ODO→RANGE→MAX→AVG.

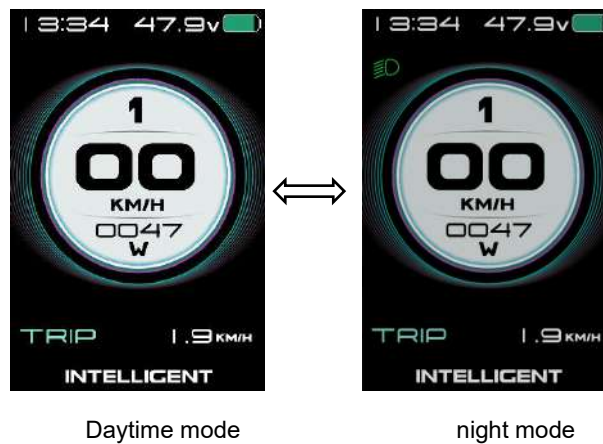


*Range need smart BMS support.

*In MAX or AVG modes ,If there is no operation for 5 seconds, display will return Speed (Real-Time) display automatically.

7.4 Headlight/backlight On/Off

Press and hold **UP** button for 2 seconds can turn on/off the headlight, and the screen will switch to the corresponding mode. Automatically turn on/off meter backlight and headlight when external light changes (need controller to add headlight module).



*The motor does not work when the battery voltage is low, Display still can keep the headlight on for a while when E-bike is in riding.

7.5 Walking mode (6km)

Press and hold **DOWN** button for 2 seconds can get into walking mode, out of the mode

when release the button.



* This feature needs to be supported by controller.

7.6 Data clean up

Press and hold **UP&DOWN** buttons together for 1 second can reset several temporary data, temporary data include **AVG / MAX / TRIP / TIME**.

* These temporary data can't be erased by power off.

7.7 USB port charging

The display provides USB charging port for mobile devices, and the charging parameters are DC 5V 500mA.

8. Parameter setting

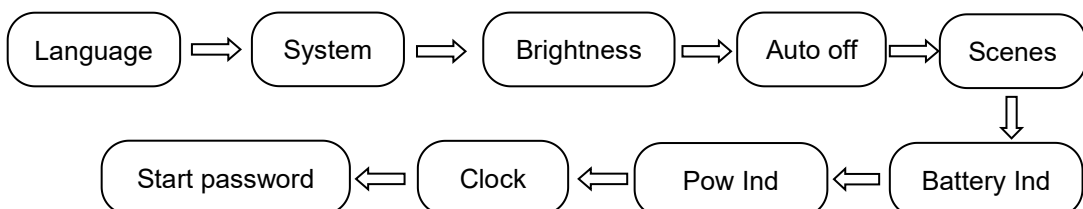
Double press **MENU** button (press interval less than 0.3 second) can get into setting menus, press **UP/DOWN** button to change the parameter setting, press **MENU** button can switch to next item. Double press **MENU** button will exit from menu.

* Display will automatically quit menu when there is no operation for 30 seconds.

* For safety reasons, display can't get into MENU when riding.

* Display will quit MENU when start riding.

The order of parameters are as follow:



8.1 Language: Default **EN**, Un adjustable.

MENU	
Display Setting	
→ Language	EN
System	Metric
Brightness	
Auto off	5min
Scenes	Analog
Battery Ind	Voltage
Pow Ind	Power
Clock	>
Start password	>
Basic Setting	
...	
EXIT	

8.2 System: Press **Up / Down** button to switch between **Metric / Imperial**.

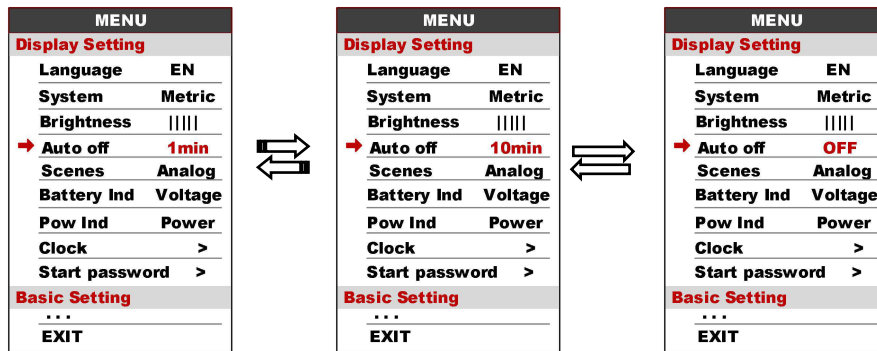
MENU		MENU	
Display Setting		Display Setting	
Language	EN	Language	EN
→ System	Metric	→ System	Imperial
Brightness		Brightness	
Auto off	5min	Auto off	5min
Scenes	Analog	Scenes	Analog
Battery Ind	Voltage	Battery Ind	Voltage
Pow Ind	Power	Pow Ind	Power
Clock	>	Clock	>
Start password	>	Start password	>
Basic Setting		Basic Setting	
...		...	
EXIT		EXIT	

8.3 Brightness: Press **Up / Down** button to change the brightness of the backlight, | is darkness, ||||| is brightness, default value is |.

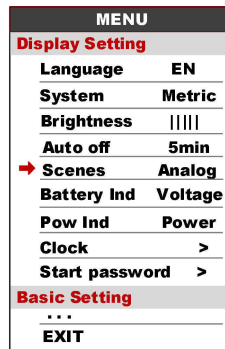
MENU		MENU	
Display Setting		Display Setting	
Language	EN	Language	EN
System	Metric	System	Metric
→ Brightness		→ Brightness	
Auto off	5min	Auto off	5min
Scenes	Analog	Scenes	Analog
Battery Ind	Voltage	Battery Ind	Voltage
Pow Ind	Power	Pow Ind	Power
Clock	>	Clock	>
Start password	>	Start password	>
Basic Setting		Basic Setting	
...		...	
EXIT		EXIT	

Note: You can set brightness independently between Daytime mode and Night mode.

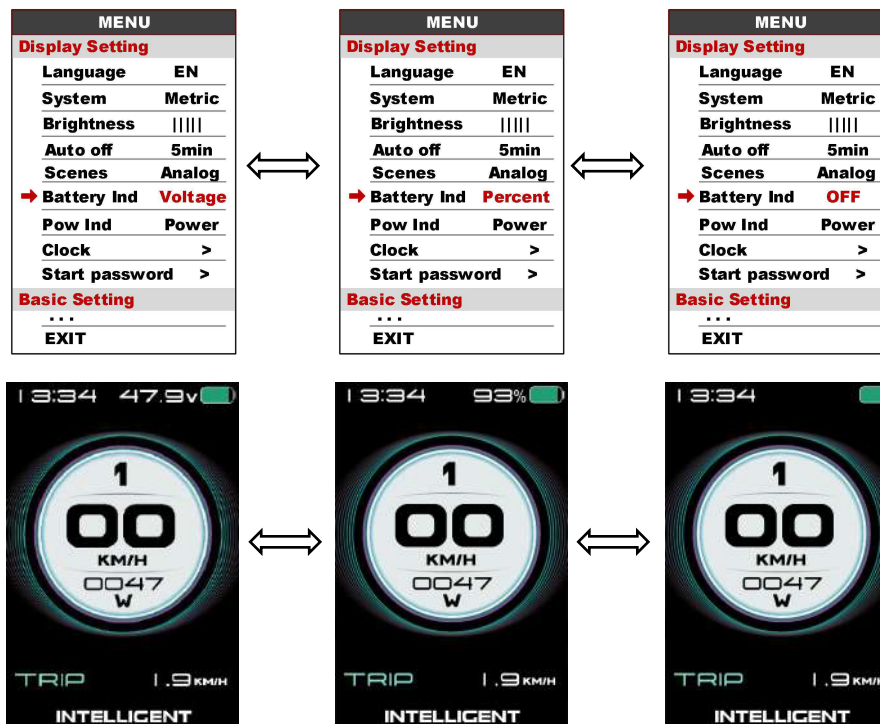
8.4 Auto off: Press **UP/DOWN** button to change the auto power off time, from **1** to **10/OFF**, the number represent minutes to shut down, OFF means disable auto off function, default value is **5** minutes.



8.5 Scenes: Default **Analog**, Un adjustable.



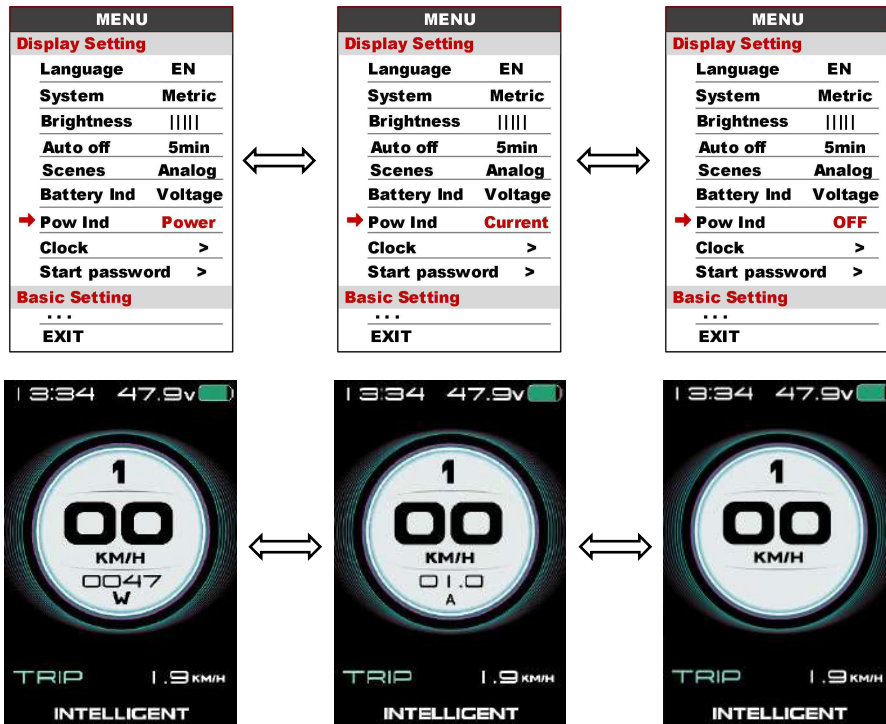
8.6 Battery Ind: Press **UP/DOWN** button to change the battery indicator, **Voltage/ Percentage/OFF**. OFF Indicates that the battery display is off.



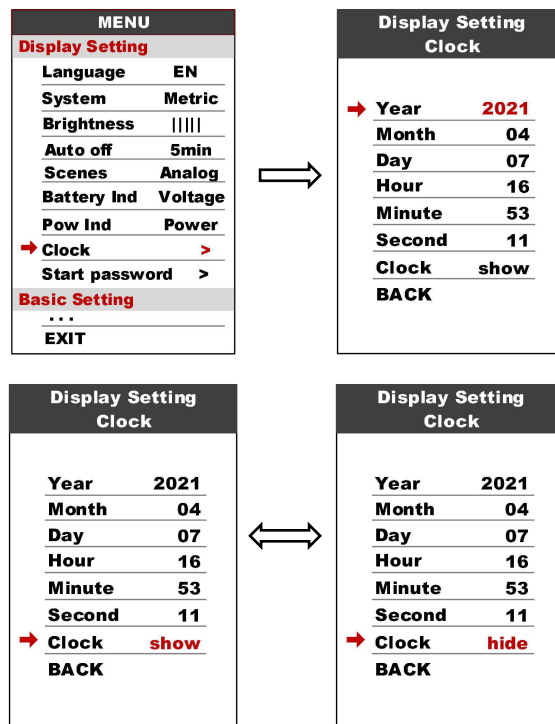
8.7 Pow Ind: Press **UP/DOWN** button to change the Power indicator, **Power /**

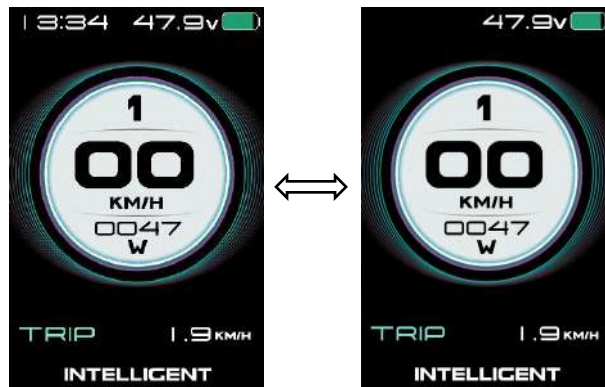
Current/OFF. OFF Indicates that the Power display is off.

* This data represent power output of the battery (not motor).



8.8 Clock: Press **MENU** button get into the clock setting menu, press **UP/DOWN** button to set **Year/Month/Day/Hour/Min/Sec**. Press **MENU** button get into the **Clock** menu, can show or hide the CLOCK display.



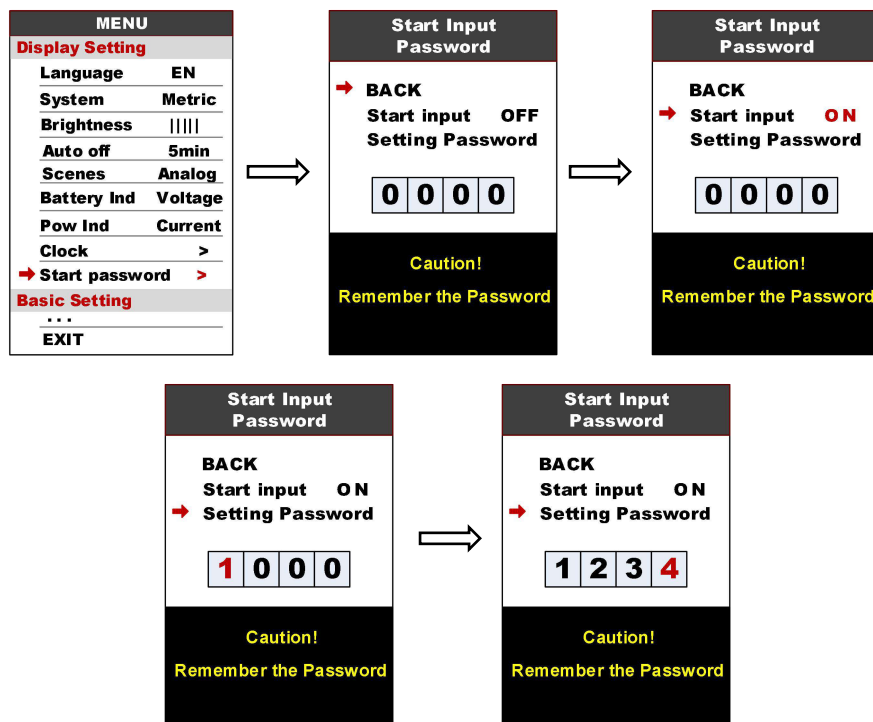


Note: There is a rechargeable battery inside display, it keeps the clock running when display is powered off. The battery can be charged by the external power when display is power on. This battery can maintain clock running for 100-120 days while it has not been charged. Battery may be exhausted after long time unused (after winter or transportation), you need to recharge the battery as below.

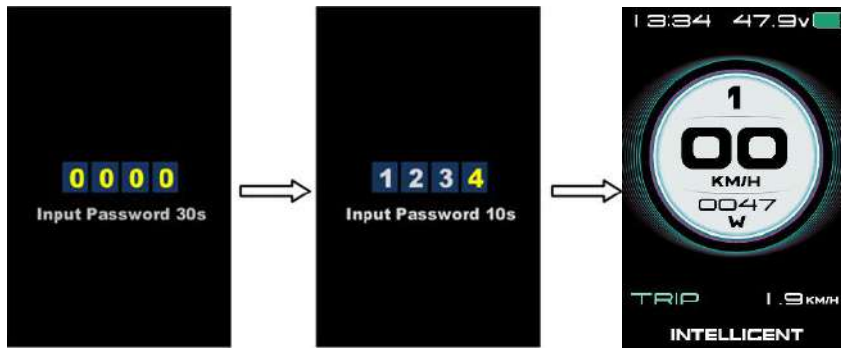
Set Menu: Auto off -> OFF (make display can't power off automatically).

Keep the display power on for 72 hours, it can charge the battery.

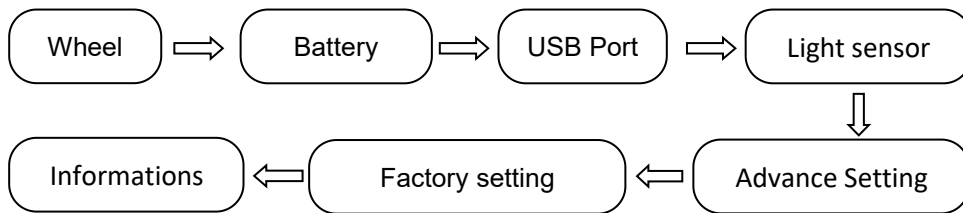
8.9 Start password: Press **MENU** button get into the password setting menu. If you had set Start input **ON**, you must input right password before power on, password is accorded to your setting.



You need to input the right password before start with 30 seconds, display will power off automatically if the password was wrong.

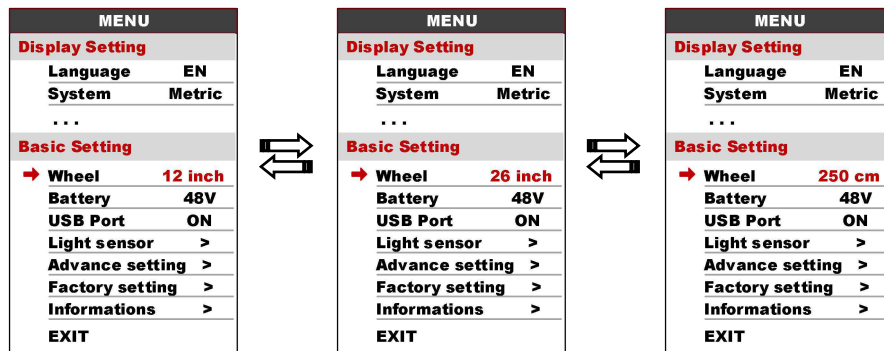


■ **Basic Setting:**

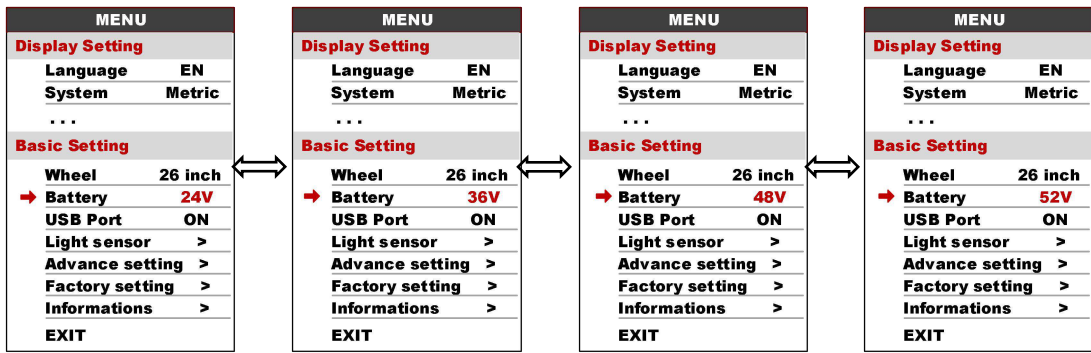


*Press **DOWN** button to move the red arrow to → ..., press **MENU** button can show all items of the Basic Setting.

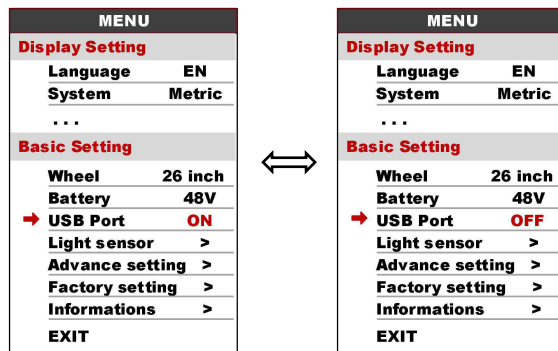
8.10 Wheel: Press **UP/DOWN** can change the wheel setting, optional wheel diameter is 12/14/16/18/20/22/24/26/27/27.5/28/29/30/31inch, 51 to 250cm (this needs controller support).



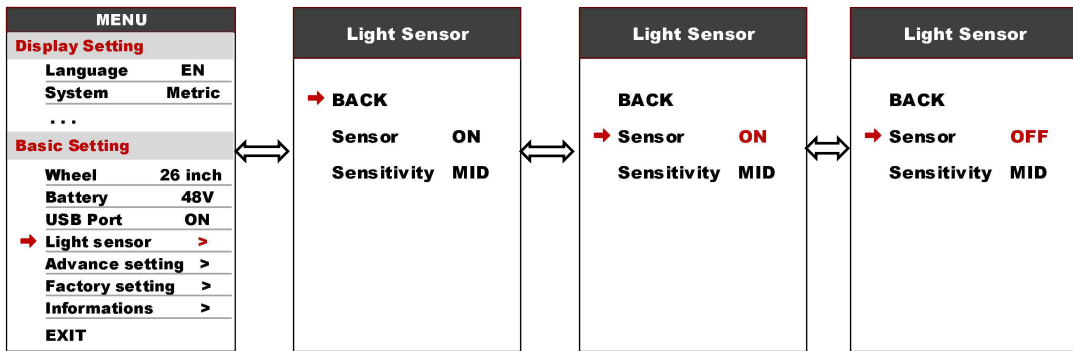
8.11 Battery: Press **UP/DOWN** will change battery voltage setting; optional value is 24V/36V/48V/52V.

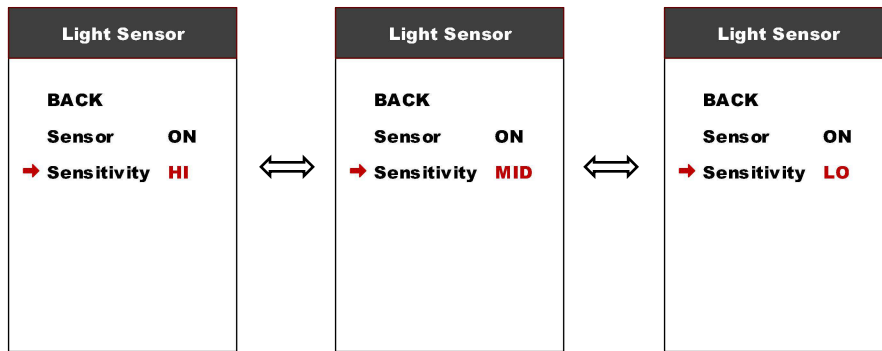


8.12 USB Port: Press **UP/DOWN** level, select press **OFF/ON**, will be no Voltage/Current output after switching off.

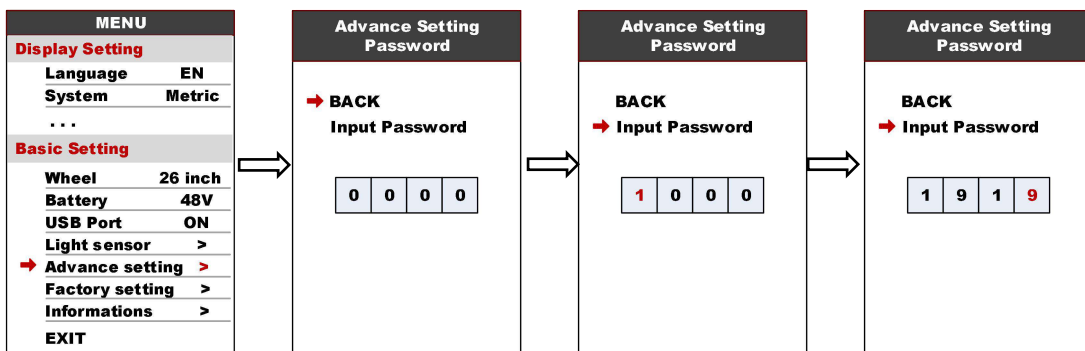


8.13 Light sensor: Press **MENU** Button, enter into Light sensor interface; Press **UP/DOWN** button select **OFF/ON**; Select Sensitivity, press **UP/Down** select sensitivity of light sensation **HI/MID/LO**.

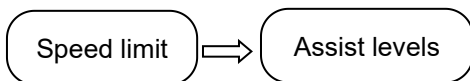




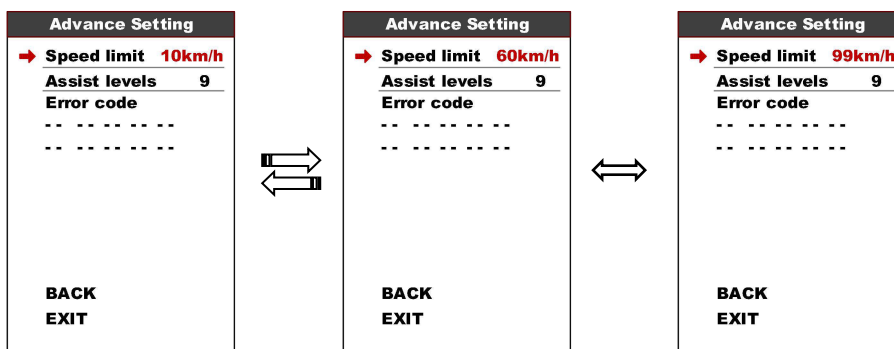
8.14 Advance setting: Press **MENU** button can get into the advance setting menu, default password is '1919'.



Password entered correctly into the **Advance Setting**, projects shown below:

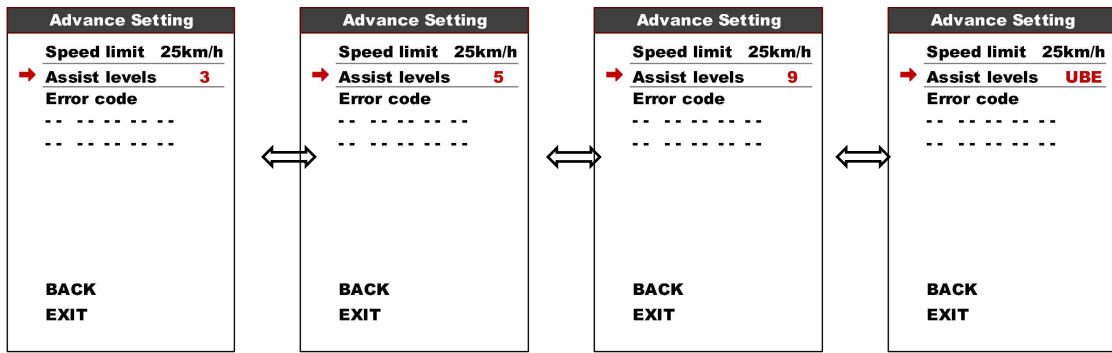


8.15 Speed limit: Press **UP/DOWN** will change speed limit, range **10km/h~60km/h/99 km/h**. Default value is **25km/h**.

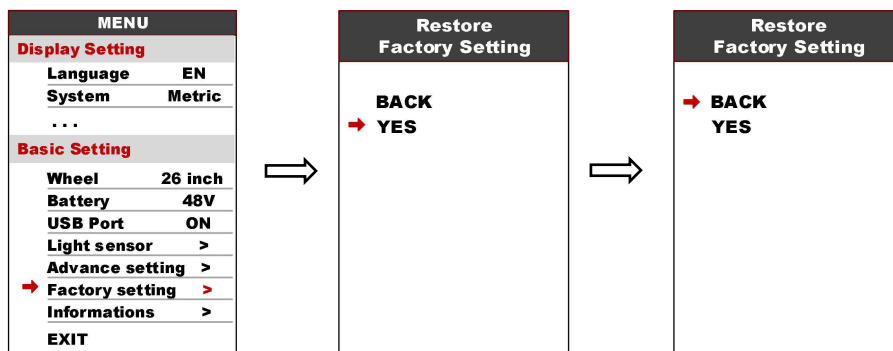


*Speed limit and current limit are restricted by controller and motor.

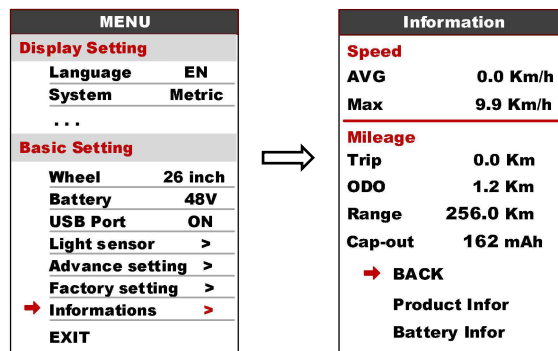
8.16 Assist levels: This parameter can customize assist levels, options are **3/5/9/UBE**, Default value is **5**. UBE represent factory default settings.



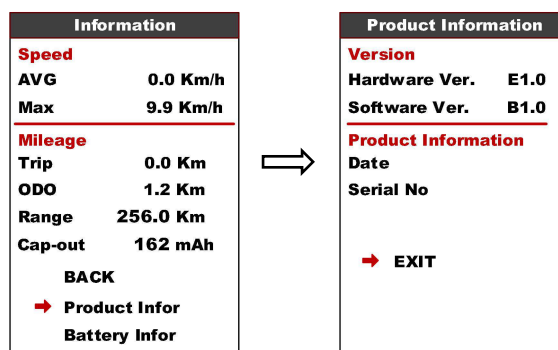
8.17 Factory setting: Press **MENU** button enter Restore Factory settings item, set YES will restore all parameter to factory settings.



8.18 Informations: Show information of the E-bike.

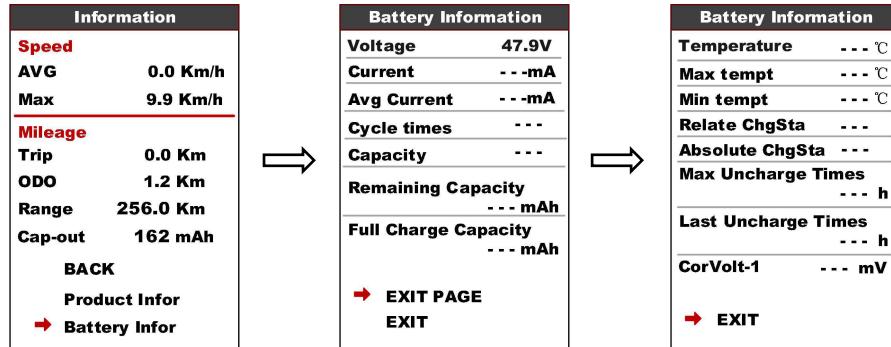


8.19 Product infor: Get into this item can show hardware version software version...



8.20 Battery info: Get into this item can show all information of battery, including Voltage, Current

*These information needs to be supported by battery communication.



9. Error Code define

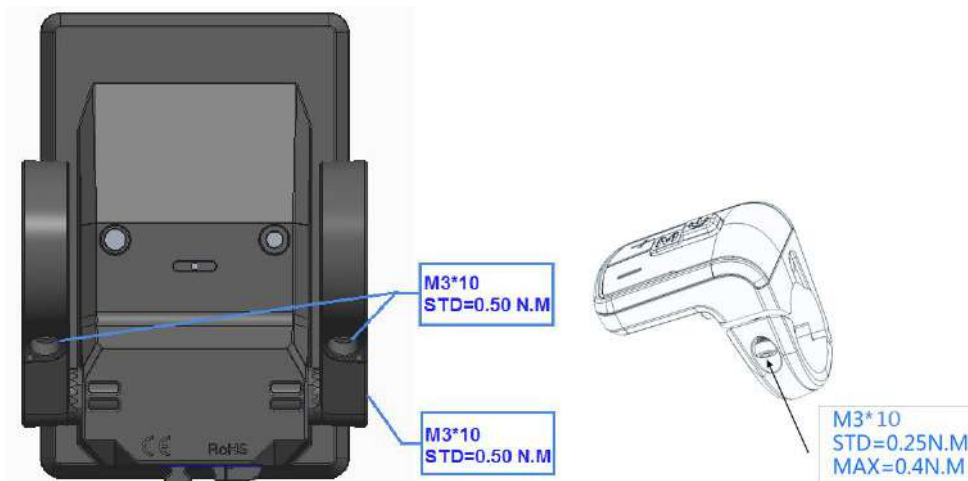
860C can show warning message, icon shows on the screen, and show error code at the bottom of the screen, definition see the table below.

Error Code	Error description	Error display
0x01	Normal	No error
0x03	Brake signal	No error
0x04	Throttle on high position	Display 04H on speed position
0x05	Throttle error	Display 05H on speed position
0x07	High voltage protection	Display 07H on speed position
0x08	Motor's hall sensor error	Display 08H on speed position
0x09	Phase line of motor error	Display 09H on speed position
0x10	Controller over temperature	Display 10H on speed position
0x11	Motor over temperature	Display 11H on speed position
0x12	Current sensor error	Display 12H on speed position
0x13	Battery's temperature sensor error	Display 13H on speed position
0x14	Motor's temperature sensor error	Display 14H on speed position
0x21	Speed sensor error	Display 21H on speed position
0x22	BMS communication error	Display 22H on speed position
0x23	Head light error	Display 23H on speed position
0x24	Head light sensor error	Display 24H on speed position
0x25	Torque sensor error-Torque	Display 25H on speed position
0x26	Torque sensor error-speed	Display 26H on speed position
0x30	Communication error	Display 30H on speed position



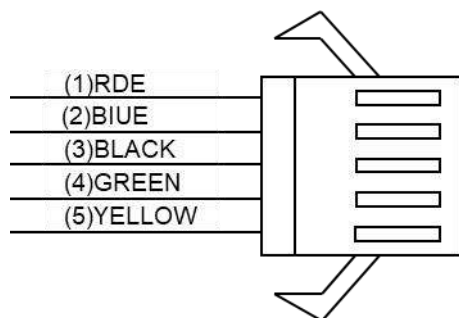
10. Assembly instructions

Please pay attention to the screw's torque value, damaged caused by excessive torque is not within the scope of the warranty.



Clamps suit for 3 sizes of handlebar, 31.8mm, 25.4mm, 22.2mm, there are transfer rings for 25.4mm and 22.2mm, transfer ring must be assembled with the special directions.

11. Connector descriptions



1、 Red wire : Anode(24v/36v/48v/52v)

- 2、 Blue wire : Power cord to the controller
- 3、 Black wire : GND
- 4、 Green wire : RxD (controller -> display)
- 5、 Yellow wire : TxD (display -> controller)

12. Certification

CE / IP65 (water proof) / ROHS.
