Specification

01/2021

Product	TFT LCD Display
Mode	
Abbreviation	860C

1. Product Name

- ✧ TFT LCD display
- ✧ Model : 860C

2. Suppliers

- ✧ Flycutycat.com

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℃, Storage temperature : -30～80℃

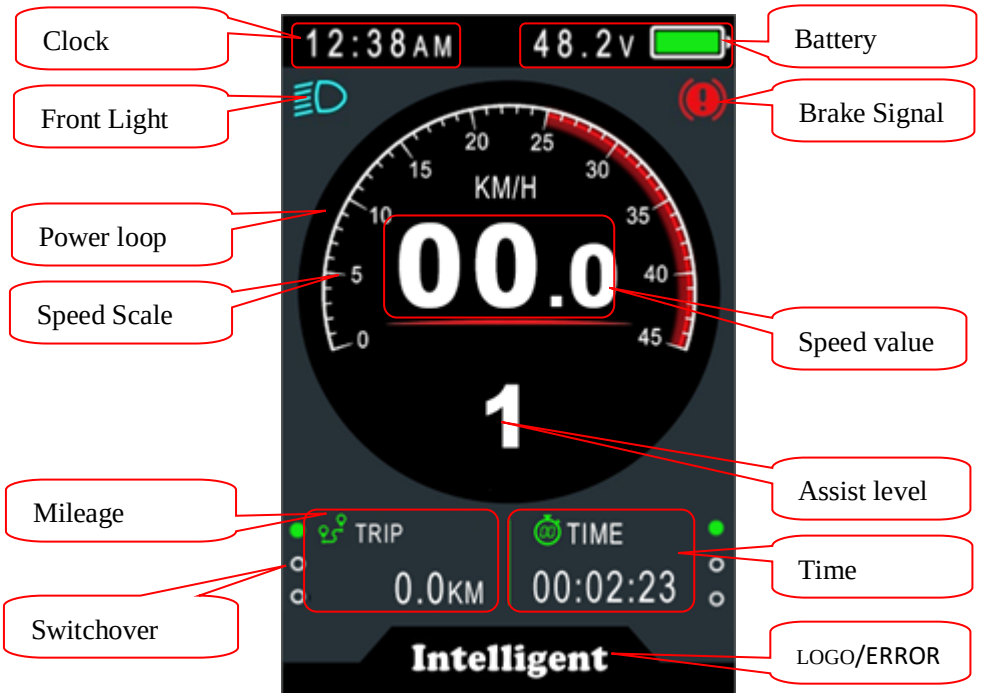
4. Dimensions & Material

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

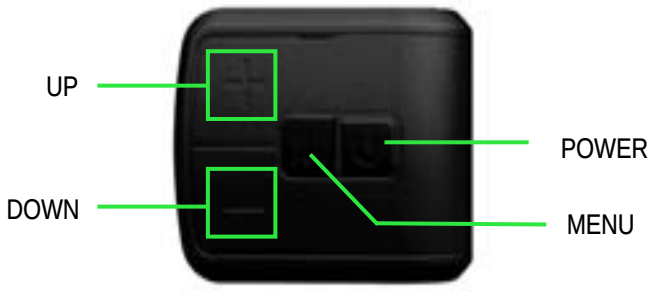
5. Features

- ✧ High-contrast 3.5inch IPS colorful matrix screen.
- ✧ Suitable for low temperature，Max -20℃.
- ✧ 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.
- ✧ **5-level Assist :** 3-level/4-level/5-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



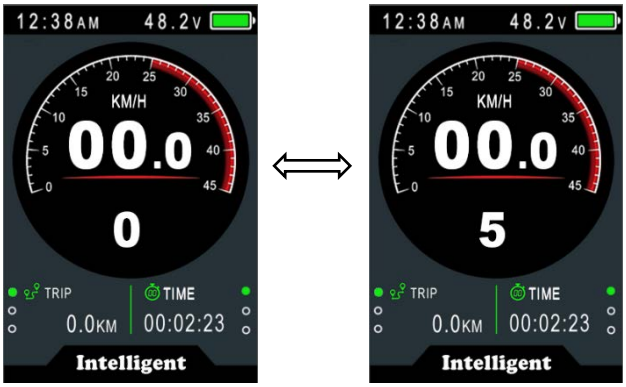
7.1 Power On/Off

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 0~9）.

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

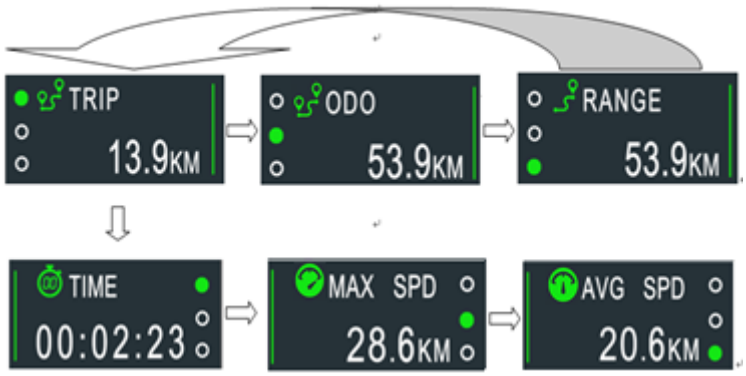
7.2 Assist level operating

Short press UP/DOWN button can change the assist level. Top assist level is 5, 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→ODO→RANGE→TRIP→TIME→MAX SPD→AVG SPD.



*Range need smart BMS support.

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

7.4 Headlight/backlight On/Off

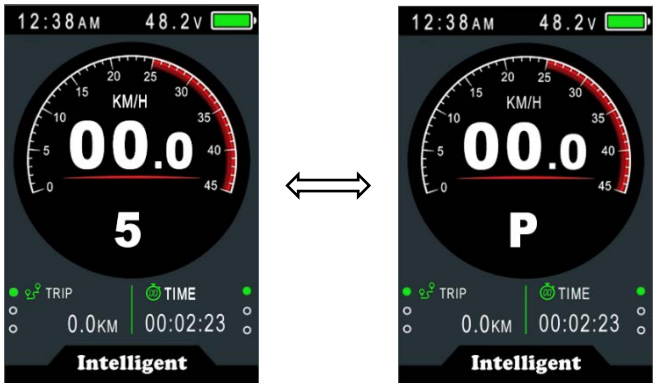
Press and hold UP button for 2 seconds can turn on/off the headlight, and the screen will switch to the corresponding mode. Automatically turn on/off meter backlight and headlight when external light changes (need controller to add headlight module).

Daytime mode night mode

*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 SPD / MAX SPD / 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

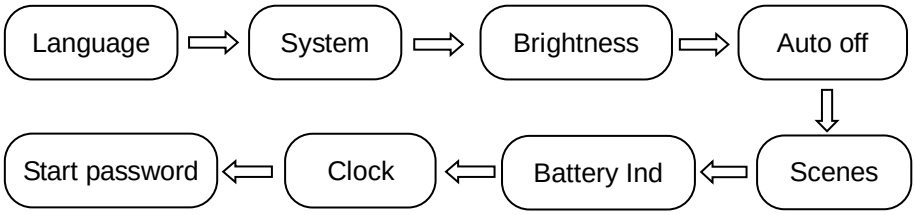
Double press MENU button (press interval less than 0.3 second) can get into setting menus, press UP/DOWN button to change the parameter setting, press MENU button can switch to next item. Double press MENU button will exit from menu.

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

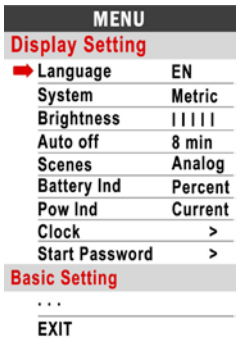
* For safety reasons, display can't get into MENU when riding.

* Display will quit MENU when start riding.

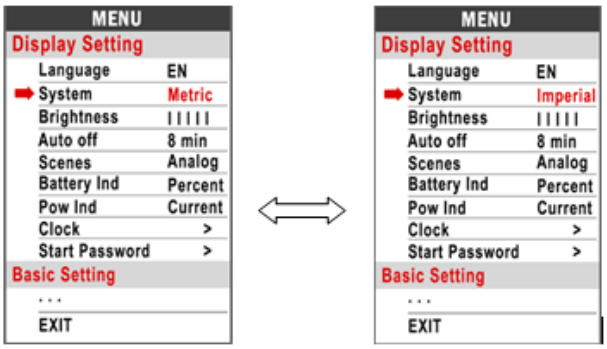
The order of parameters are as follow:



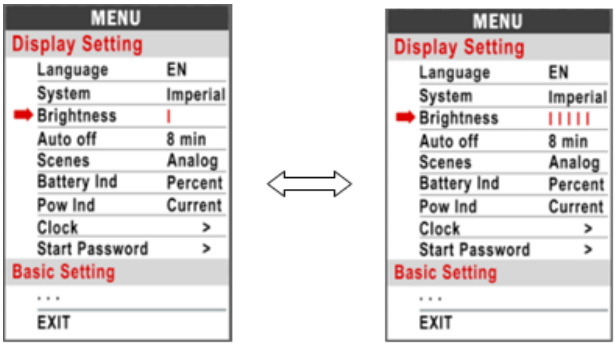
8.1 Language: Default **EN**, Un adjustable.



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



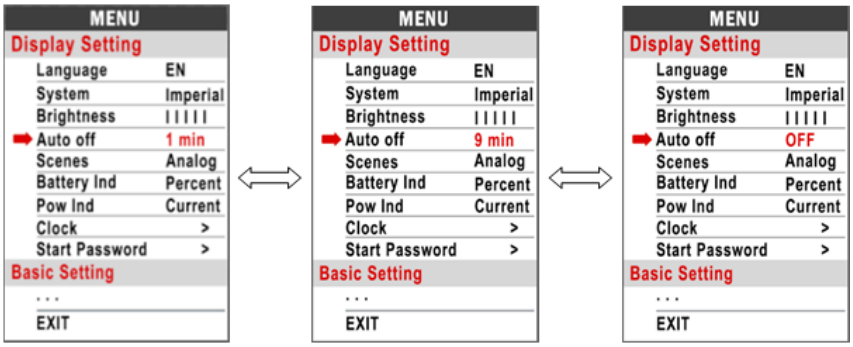
8.3 Brightness: Press Up / Down button to change the brightness of the backlight, I is darkness，IIIII is brightness, default value is I.



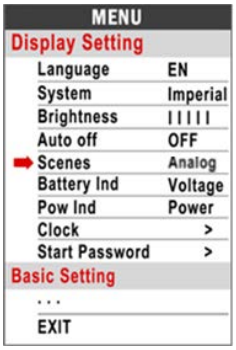
Note: You can set brightness independently between Daytime mode and Night mode.

8.4 Auto off: Press UP/DOWN button to change the auto power off time, from **1 to**

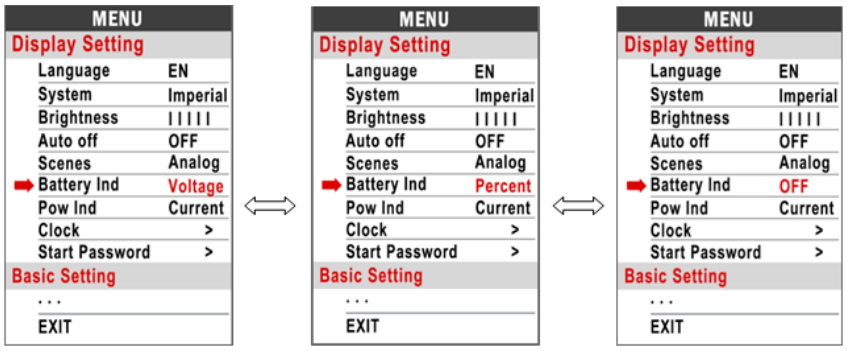
9/OFF, the number represent minutes to shut down, OFF means disable auto off function, default value is 5 minutes.



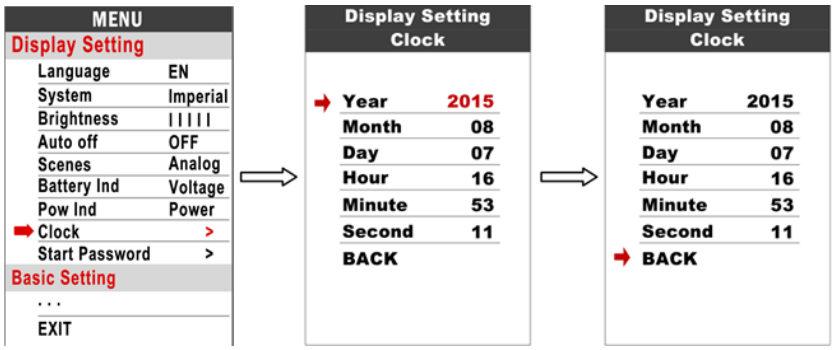
8.5 Scenes: Analog only.



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



8.7 Clock: Press MENU button get into the clock setting menu, press UP/DOWN button to set **Year/Month/Day/Hour/Min/Sec**.

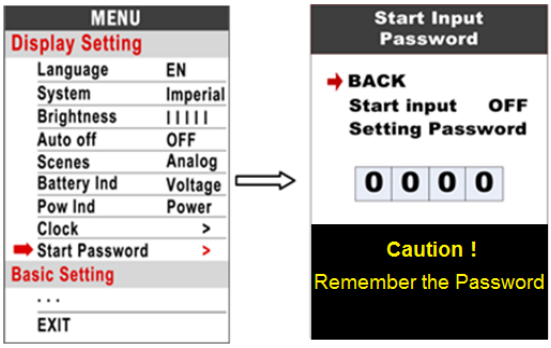


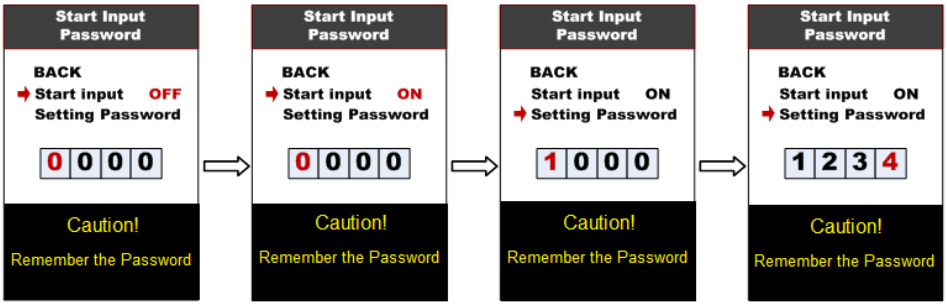
Note: There is a rechargeable battery inside display, it keeps the clock running when display is powered off. The battery can be charged by the external power when display is power on. This battery can maintain clock running for 100-120 days while it has not been charged. Battery may be exhausted after 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).

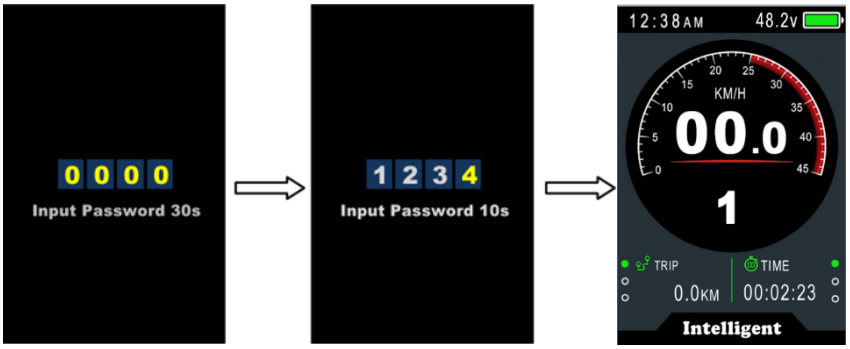
Keep the display power on for 72 hours, it can charge the battery.

8.8 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.

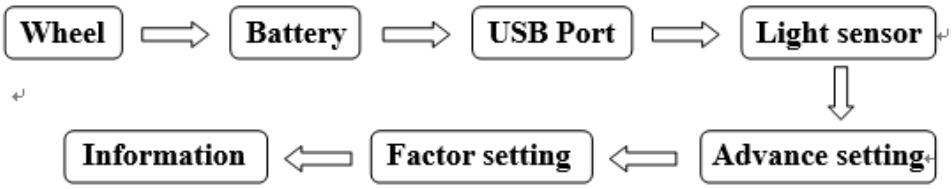




You need to input the right password before start with 30 seconds, display will power off automatically if the password was wrong.

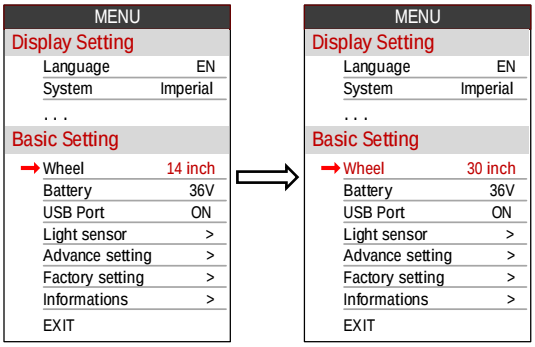


■ Basic Setting:

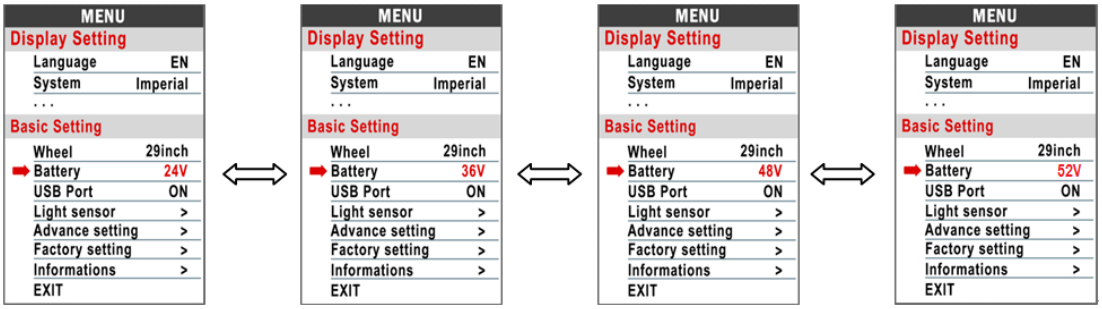


*Press DOWN button to move the red arrow to Basic Setting, press MENU button can show all items of the Basic Setting.

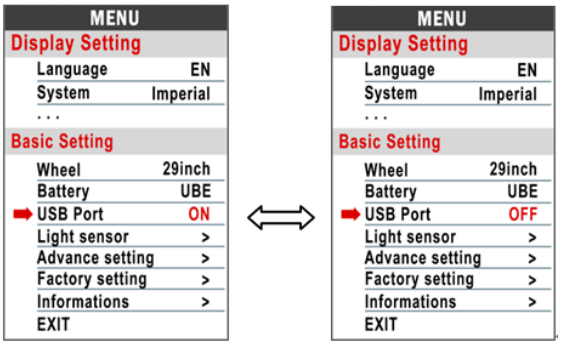
8.9 Wheel: Press UP/DOWN can change the wheel setting, optional wheel diameter is **14~30**inch (this needs controller support).



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



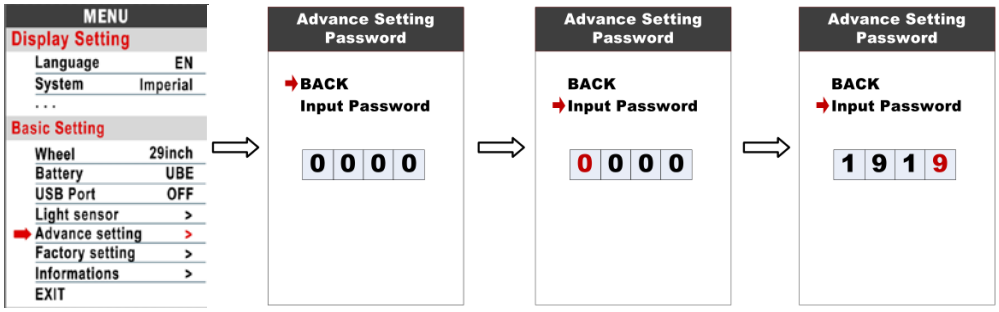
8.11 USB Port: Press UP/DOWN level, select press **OFF**/**ON**, will be no **Voltage**/**Current** output after switching off.



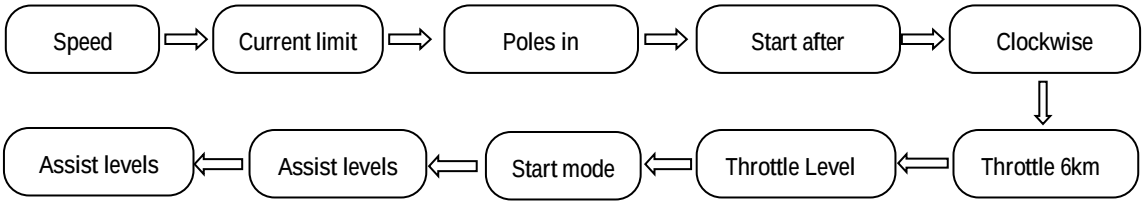
8.12 Light sensor: Press MENU Button, enter into **Light sensor interface**; Press UP/DOWN button select **OFF**/**ON**; Select **Sensitivity**, press UP/Down select sensitivity of light sensation **HI**/**MID**/**LO**.

8.13 Advance setting: Press MENU button can get into the advance setting menu,

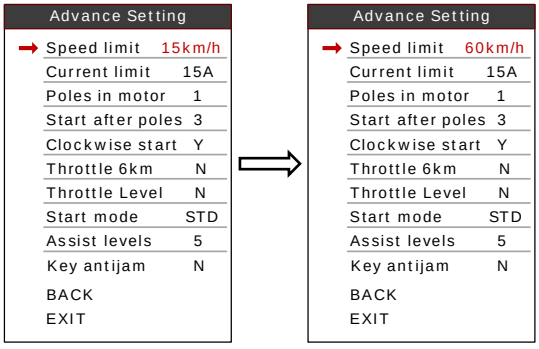
default password is '1919'.



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

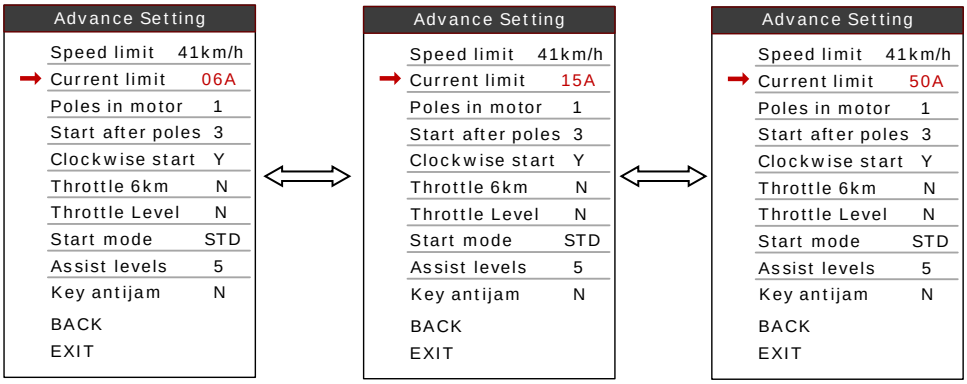


8.14 Speed limit: Press UP/DOWN will change speed limit, range **15km/h**~**60km/h**. Default value is **60km/h**.



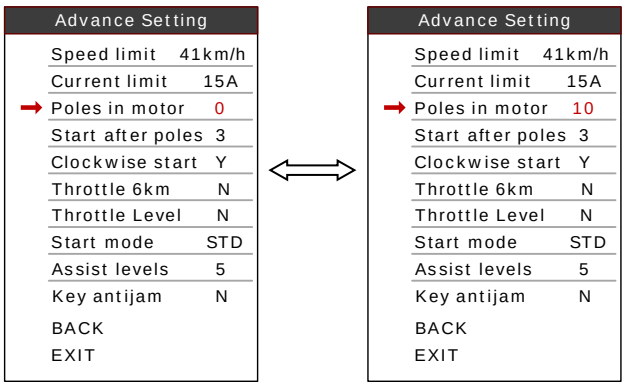
*Speed limit and current limit are restricted by controller and motor.

8.15 Current limit: Press UP/DOWN will change current limit, range **6A~50A**. Default value is **15A**.

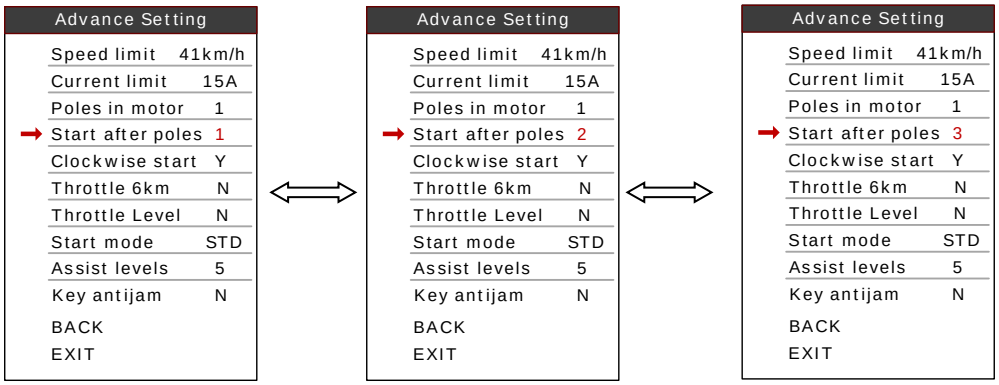


*Speed limit and current limit are restricted by controller and motor.

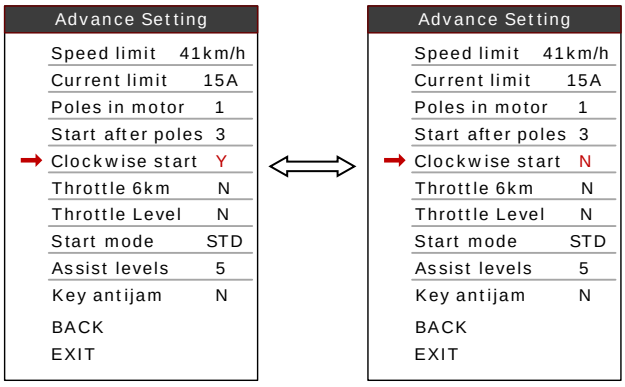
8.16 Poles in motor: Magnetic poles inside the motor, press UP/DOWN will change pole number, range **0~10**, Default value is **1**.



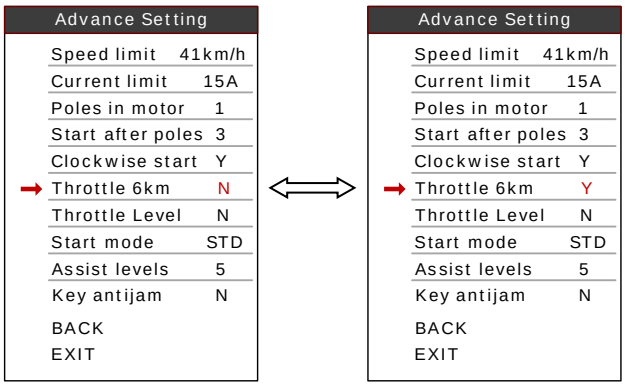
8.17 Start after poles: How many poles (speed sensor) need to be detected by controller before starting motor，range **1/2/3**. Default value is **3**.



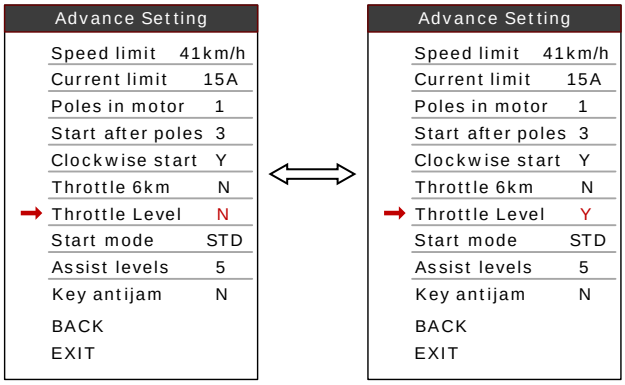
8.18 Clockwise start: This parameter represent speed sensor turn direction, default value is **Y** (forward).



8.19 Throttle 6KM: This parameter can set the throttle function, **N** represent max speed, **Y** represent 6Km.

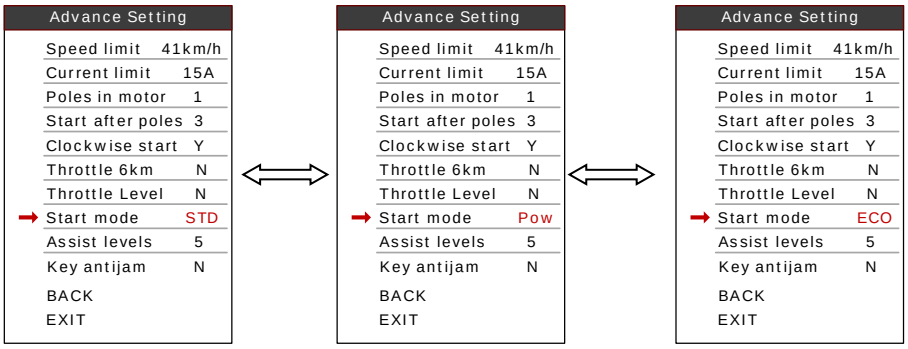


8.20 Throttle Level: This parameter is functional when Throttle 6KM set N, Press UP/DOWN will change **Y**/**N**, N represent Throttle start max speed, Y represent throttle's speed is accorded to the assist level.

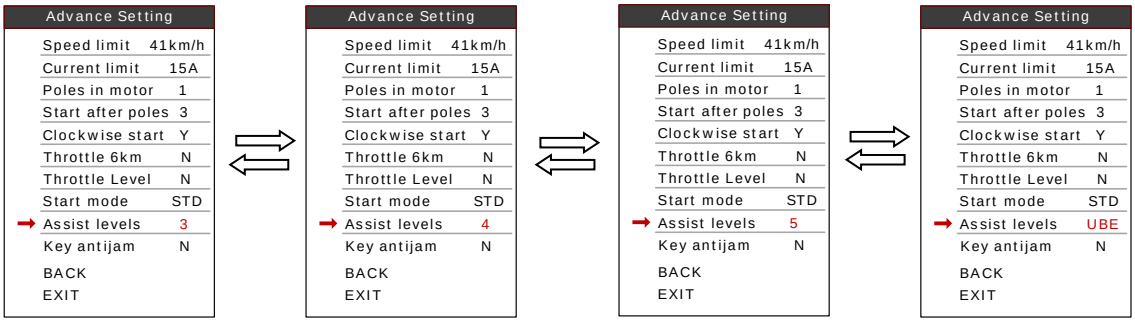


8.21 Start mode: **Pow**/**ECO**/**STD**(default) represent Power/ECO/Standard, Power mode means use maximum current when speed up, ECO mode means use minimum current.

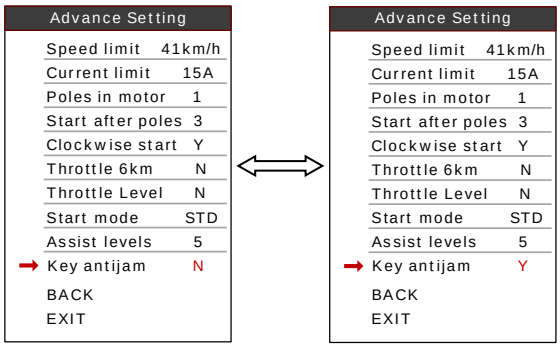
*This function is optional, may not supported by each mode.



8.22 Assist levels: This parameter can customize assist levels, options are **3**/**4**/**5**/**UBE**, UBE represent factory default settings.

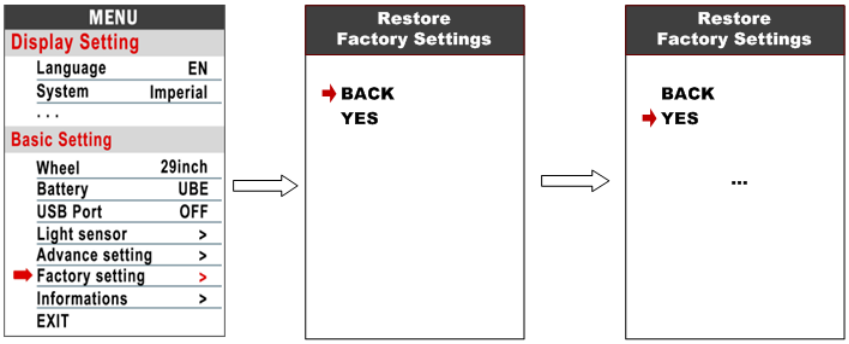


8.23 Key antijam: This parameter can customize Key antijam.

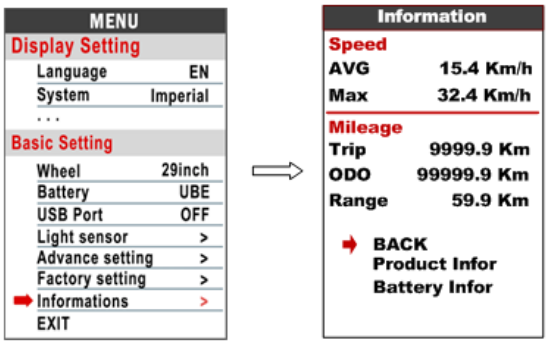


*Speed limit and current limit are restricted by controller and motor.

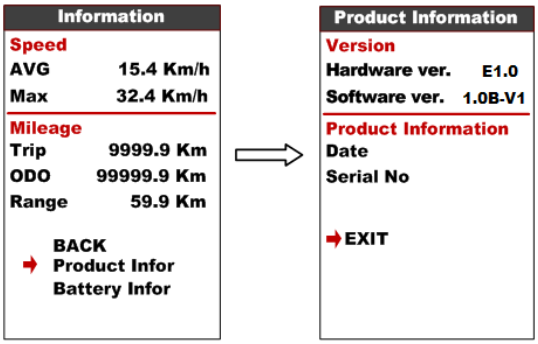
8.24 Factory setting: Press MENU button enter **Restore Factory settings** item, set **YES** will restore all parameter to factory settings.



8.25 Information: Show information of the E-bike.

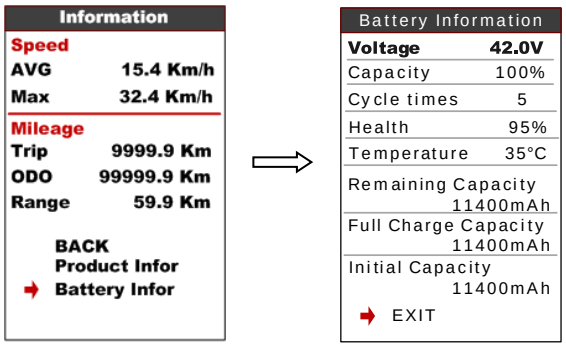


8.26 Product info: Get into this item can show hardware version software version…



8.27 Battery info: Get into this item can show all information of battery, including Voltage, Capacity, Cycle times, Health, Temperature, Remaining Capacity, Full Charge Capacity, Initial Capacity.

*These information needs to be supported by battery communication.



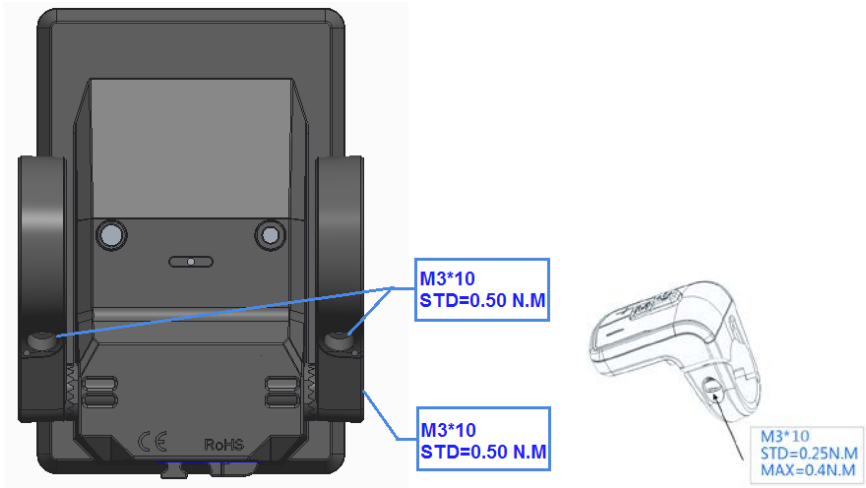
9. Error Code define

860C can show warning message,  icon shows on the screen, and show error code at the bottom of the screen, error code from 01/02~09, definition see the table below.

Error Code	Error description	Error display
01	Controller over temperature	Display **01H** on LOGO position
02	Short circuit protection	Display **02H** on LOGO position
04	Throttle error	Display **04H** on LOGO position
05	Phase line of motor error	Display **05H** on LOGO position
06	Torque sensor error-Torque	Display **06H** on LOGO position
07	Motor error	Display **07H** on LOGO position
08	Low voltage protection	Display **08H** on LOGO position
09	High voltage protection	Display **09H** on LOGO position

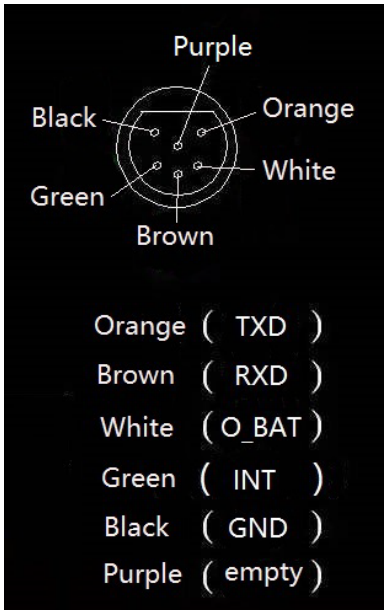
10. Assembly instructions

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 size 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. Green wire : Anode(24V/36V/48V/52V)
2. White wire : Power cord to the controller
3. Black wire : GND
4. Brown wire : RxD (controller -> display)
5. Orange wire : TxD (display -> controller)
6. Purple wire : empty

12. Certification

CE / IP65 (water proof) / ROHS.