

# BAFANG

## Manual

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### C965



## **1 Product Name**

1.1 The Middle install intelligent LCD Display

1.2 Model:APT12LCD800U

## **2 Type**

2.1 C965

## **3 Electrical Parameters**

- ✧ 24V/36V battery supply
- ✧ Rated operating current : 10mA
- ✧ Max operating current : 30mA
- ✧ Off leakage current < 1uA
- ✧ Buzzer tone > 55db ( 20cm )
- ✧ Output current to the controller : 50mA
- ✧ Operating temperature : -18~60°C
- ✧ Storage temperature : -30~70°C

## **4 Dimensions & Material**

4.1 Product shell is ABS, transparent window is made with high strength Acrylic, the stiffness equals the tempered glass.

4.2 Dimensions : host/L90mm\*W54mm\*H13.3mm

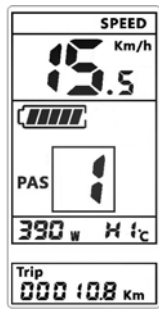




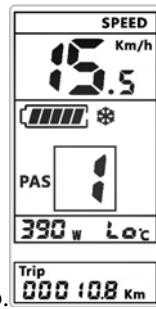
## 5 Features

5.1 Two-way serial communication, 5-way button, very easy to operate.

- ✧ **Speed display** : AVG SPEED, MAX SPEED, real time SPEED.
- ✧ **Kilometer / Mile** : Can be set according to customers' habits.
- ✧ **Smart battery indicator** : Provide a reliable battery indicator, it will not fluctuate with the motor on/off.
- ✧ **Automatic headlamps & background light** : 800U can automatically open/close the headlamps & backlight according to the external light.
- ✧ **Buzzer remind** : Built-in buzzer, sound alert in multi-state, such as Key tone / Low temperature warning / Low battery indicator / Failure warning...
- ✧ **Temperature display** : Indicate ambient temperature, indication range is -20°C~50°C, higher than 50°C will display **HI**, lower than -20°C will display **Lo**.

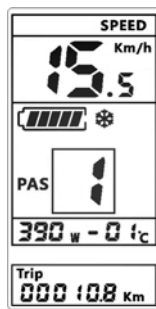


a.  $>50^{\circ}\text{C}$



b.  $<-20^{\circ}\text{C}$

- ✧ **Maintain remind** : 800U can indicate the maintain information according to the battery cycle times and the riding mileage(ODO). 800U can estimated the battery cycle life .
- ✧ **Low temperature warning** : 800U can alarm the user by LCD&BUZZER when the temperature is below freezing.

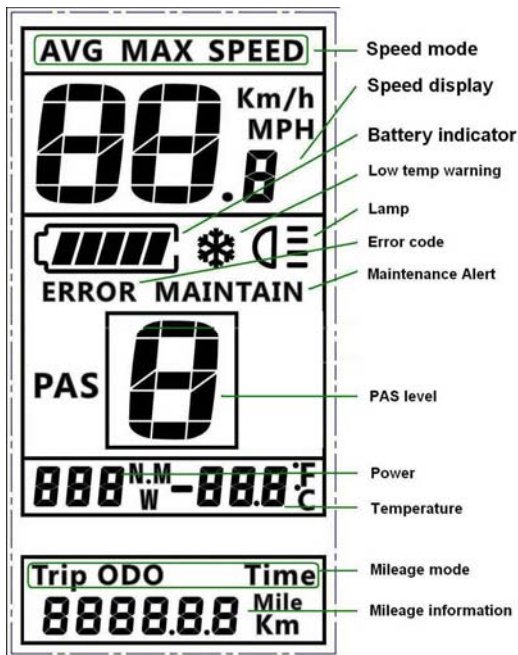


Low temperature warning

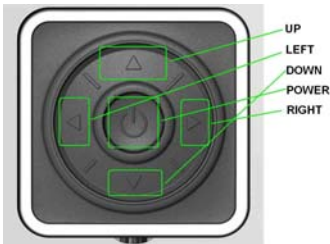
- ✧ **The brightness of the backlight adjustable** : 5-sections
- ✧ **9-level ASSIST** : 3-ASSIST/5-ASSIST/6-ASSIST/9-ASSIST optional
- ✧ **Power indicator** : Real-time battery output power indication
- ✧ **Mileage indicator** : Odometer/Trip distance/ Riding time
- ✧ **Error code indicator**
- ✧ **Parameter settings** : Multiple parameter can be set through computer USB port, including ASSIST level / Wheel diameter / Voltage / Speed limit / Magnetic steel / Number of halls...

## 6 LCD instructions

The figure of LCD display see below:



## 7 Functional Description

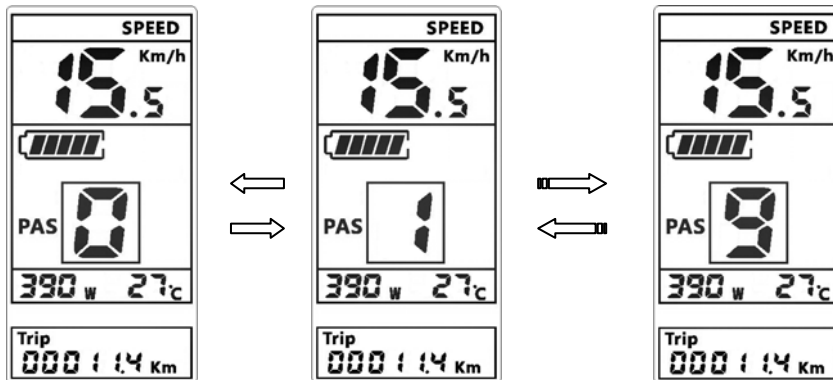


### 7.1 Power On/Off

Press and hold **Power** button for 1 second can turn on/off the Display. The Display will automatically shut down when there is no operate & ride for 5 minutes.

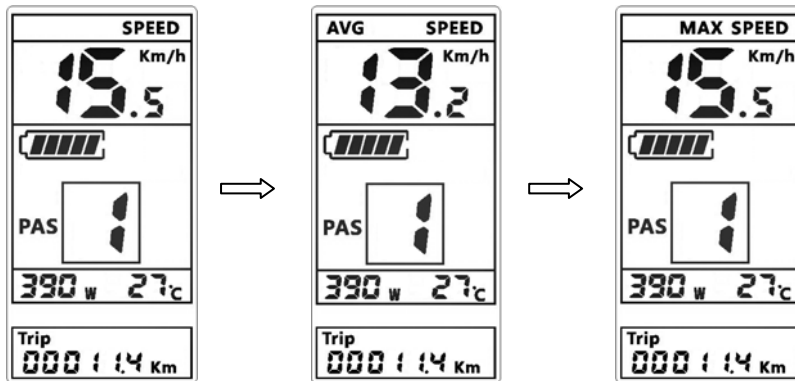
### 7.2 ASSIST operating

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 mode switch

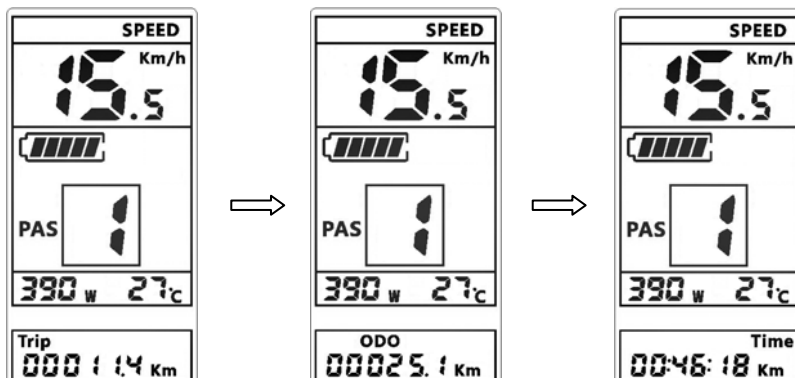
Short press **LEFT** button can change the speed mode, **Speed->AVG Speed->MAX Speed**.



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

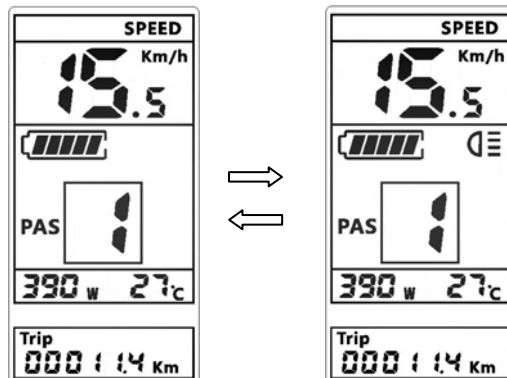
### 7.4 Mileage mode switch

Short press **RIGHT** button can change the mileage mode, Trip->ODO-> Time.



### 7.5 Headlight/backlight On/Off

Press and hold **UP** button for 1 seconds can turn on/off the headlight/backlight.

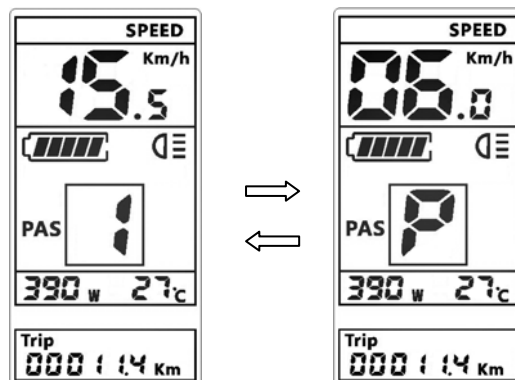


The motor does not work when the battery voltage is low, display still can keep the headlight on for a while when E-bike is in riding.

\*At the automatic light sensor mode, press and hold the **UP** button can turn on the backlight / headlights. If automatic light sensor had opened the backlight / headlight, press and hold the **UP** button can not turn it off. First you should turn off the automatic sensor mode in display settings, and then turn off the light manually.

## 7.6 6km walk

Press and hold **DOWN** button for 1 seconds can get into 6km walk mode, out of the mode when release the button.



## 7.7 Data cleanup

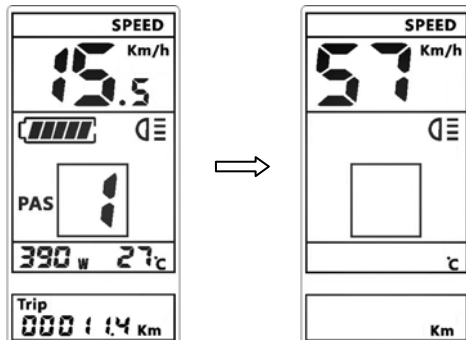
Press and hold **RIGHT** button for 1 seconds can cleanup the several temporary data, the temporary data include **AVG Speed / MAX Speed / Trip / Time**.

## 8 Parameter settings

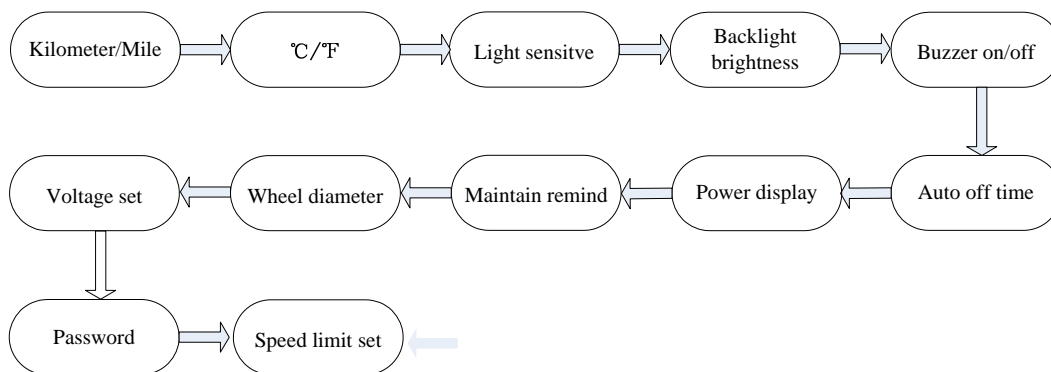
Double press **POWER** button (press interval less than 0.3 second), the Display get into parameter setting state, the current parameter flashing, short press **UP/DOWN** buttons to



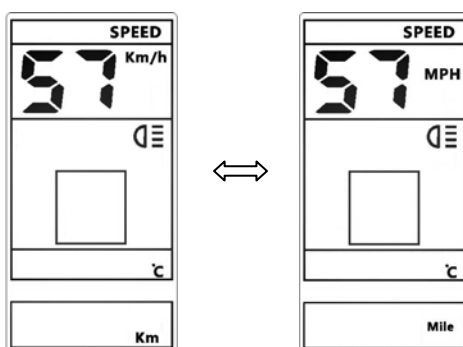
set the parameter values, short press **LEFT/RIGHT** buttons to switch the parameters, short press **POWER** button to exit the parameter setting state. The display will automatically exit the parameter setting state when there is no operation for 10 seconds.



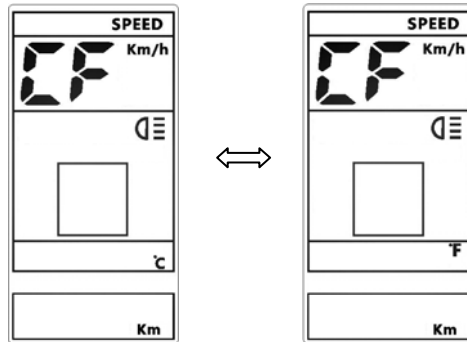
The order of parameter settings are as follows



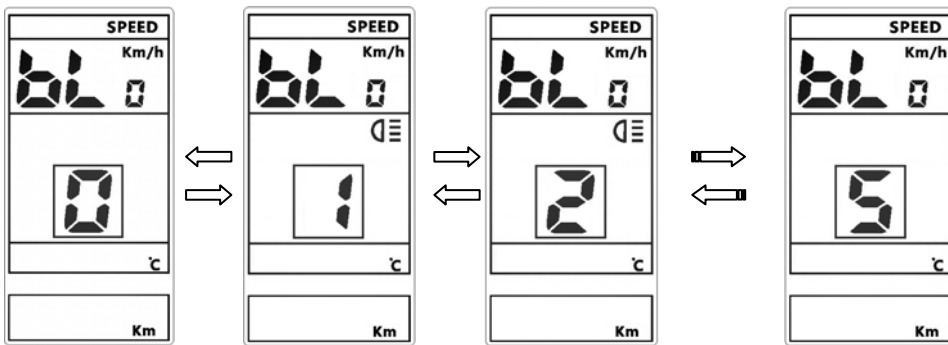
**8.1 Kilometer / Mile** : The location of speed display symbol **S7**, press **UP/DOWN** button rotate display the symbol **km/h / MPH (Km / Mile)**.



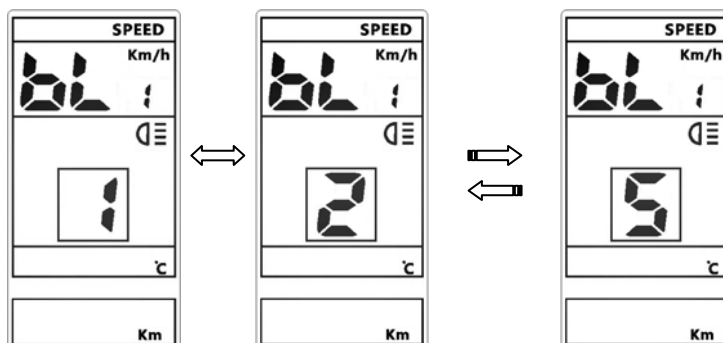
**8.2 °C/°F** : the location of speed display symbol **CF**, press **UP/DOWN** button rotate display the symbol **°C / °F**.



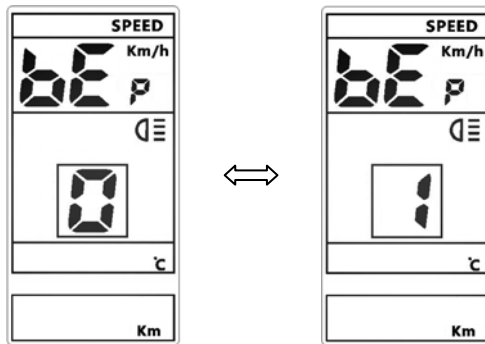
**8.3 Light sensitive** : The location of speed display symbol **bL0**, press **UP/DOWN** button display symbol **0~5** , **0** indicate automatic headlight/backlight OFF. **1~5** indicate automatic headlight/backlight ON. **1** indicates the brightest on (auto turn on the backlight at bright environment), **5** indicates the darkest on (auto turn on the backlight at dark environment).



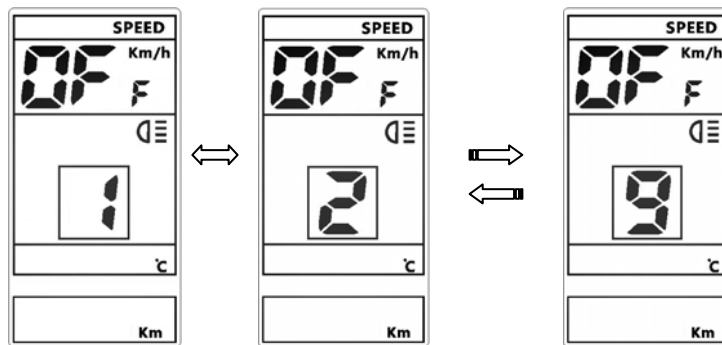
**8.4 Backlight brightness** : The location of speed display symbol **bL1**, press **UP/DOWN** button display symbol **1~5** to change the brightness of the backlight.



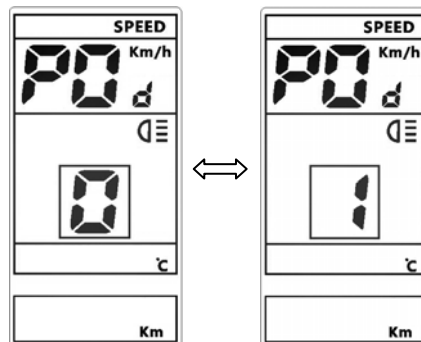
**8.5 Buzzer on/off** : The location of speed display symbol **bEP**, press **UP/DOWN** button rotate display symbol **0/1**, **0** indicates buzzer off, **1** indicates buzzer on.



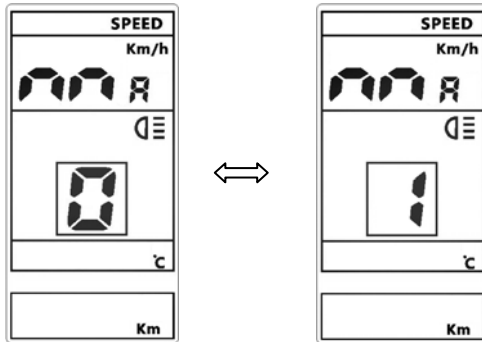
**8.6 Auto off time** : The location of speed display symbol **OFF**, press **UP/DOWN** button display symbol **1-9**, represent automatically shutdown delay time (minutes), default value is 5 minutes.



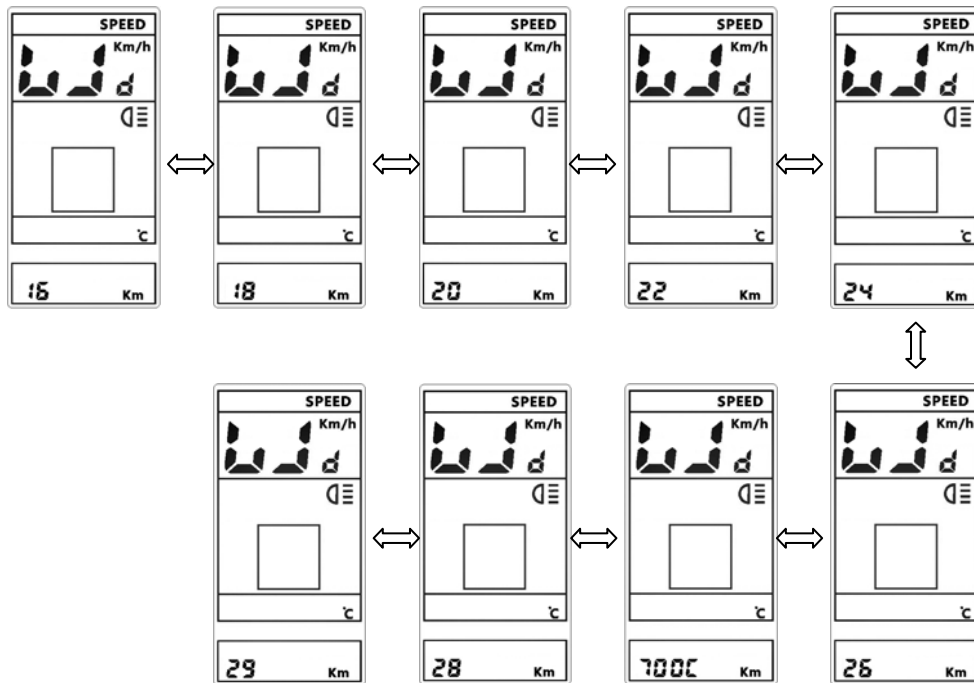
**8.7 Power display** : The location of speed display symbol **Pod**, press **UP/DOWN** button display symbol **0/1**, represent whether to show the power indicate on LCD.



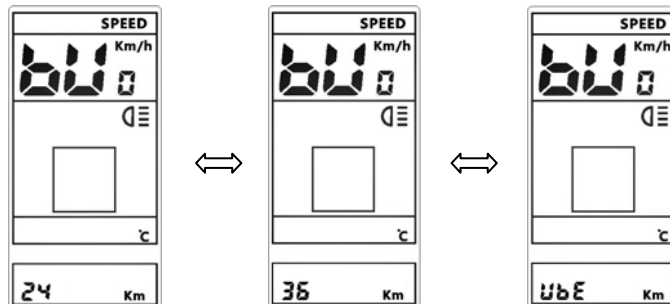
**8.8 Maintain remind** : The location of speed display symbol **nnA(ma)**, press **UP/DOWN** button rotate display symbol **0/1**, 0 represent maintain reminding off, 1 represent maintain reminding on.



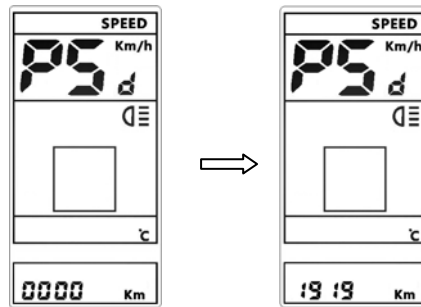
**8.9 Wheel diameter** : The location of speed display symbol **Wd**, press **UP/DOWN** button rotate display the symbol **16/18/20/22/24/26/700C/28/29**, value represents the diameter of the wheel (inch). Wrong wheel diameter setting will cause speed abnormal.



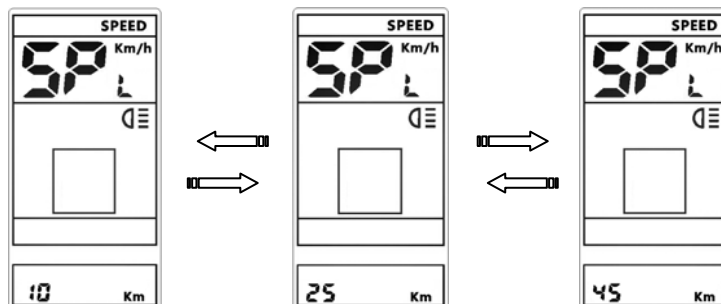
**8.10 Voltage set** : The location of speed display symbol **bU0**, press **UP/DOWN** button rotate display the symbol **24V/36V/UbE**, **UbE** means user-defined voltage setting, this parameter can be set by computer.



**8.11 Password/Speed limit set** : The location of speed display symbol **PSd**, remind to input passwords, press **UP/DOWN** buttons to setup password value (0~9), press **LEFT/RIGHT** buttons to switch the password item, password is 4 digits, the default password is "1919". Press **POWER** button when password adjustment is completed. Display will return to the **Voltage set** item if the password is incorrect. Correct password will enter the **Speed limit set** item.



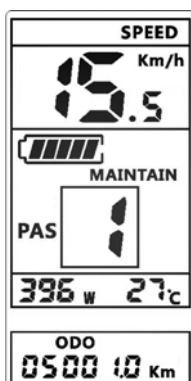
**8.12 Speed limit set** : The location of speed display symbol **SPL**, the location of mileage display speed limit value, the default value is **25km/h**. Press **UP/DOWN** buttons to adjust the speed limit value, speed limit value can be adjust from 10 to 45km/h. Press **POWER** button to confirm when you finish the adjustment.



The maximum speed is restrict by the motor and controller, probably can't reach the set value.

## 9 Maintain reminded (This function is optional)

The display can remind maintain information, according to mileage (ODO) and battery cycle times.



**9.1** Display will display symbol **MAINTAIN** when the ODO accumulated more than setting mileage (this parameter can be set by dealers), the mileage symbol will flash for 4 seconds when the display power on, the buzzer beep for 2 seconds at the same time.

**9.2** Display will display symbol **MAINTAIN** When the battery cycle over setting times, the symbol of battery will flash for 4 seconds when the display power on, the buzzer beep for 2 seconds at the same time.

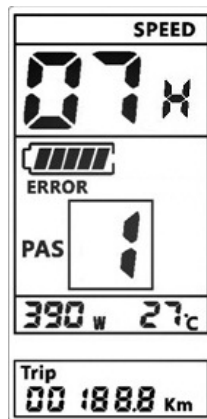
You can shutdown maintain reminding message by parameter setting. Parameter setting ->Maintain reminded ( MA ) ->0

## 10 Error Code define

800U can give warning when E-bike has error, LCD display **error** icon and error code in speed position, Error code from **01H~30H**, definition see the table below.

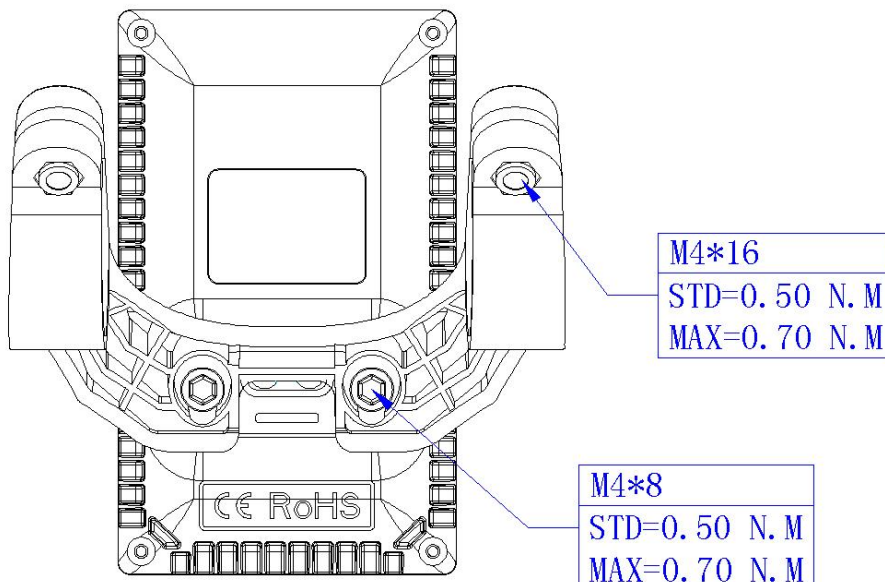
Error Code	Error description	Error display
0x01	Normal	No error
0x03	Brake signal	No error
0x04	Throttle on high position	Beep for 1 second, display <b>04H</b> on speed position
0x05	Throttle error	Beep for 1 second, display <b>05H</b> on speed position
0x06	Low voltage protection	Beep for 1 second, display <b>06H</b> on speed position
0x07	High voltage protection	Beep for 1 second, display <b>07H</b> on speed position
0x08	Line of the Hall on motor error	Beep for 1 second, display <b>08H</b> on speed position
0x09	Phase line of the motor error	Beep for 1 second, display <b>09H</b> on speed position
0x10	High temperature of controller	Beep for 1 second, display <b>10H</b> on speed position
0x11	Controller's temperature sensor error	Beep for 1 second, display <b>11H</b> on speed position
0x12	Current sensor error	Beep for 1 second, display <b>12H</b> on speed position
0x13	Battery's temperature sensor error	Beep for 1 second, display <b>13H</b> on speed position
0x14	Motor's temperature sensor	Beep for 1 second, display <b>14H</b> on speed position

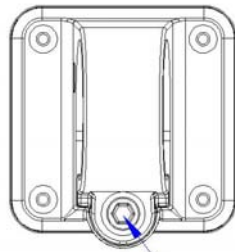
	error	
0x21	Motor's speed sensor error	Beep for 1 second, display <b>21H</b> on speed position
0x22	BMS communication error	Beep for 1 second, display <b>22H</b> on speed position
0x23	Head light error	Beep for 1 second, display <b>23H</b> on speed position
0x24	Head light sensor error	Beep for 1 second, display <b>24H</b> on speed position
0x30	Communication error	Beep for 1 second, display <b>30H</b> on speed position



## 11 Assembly instructions

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



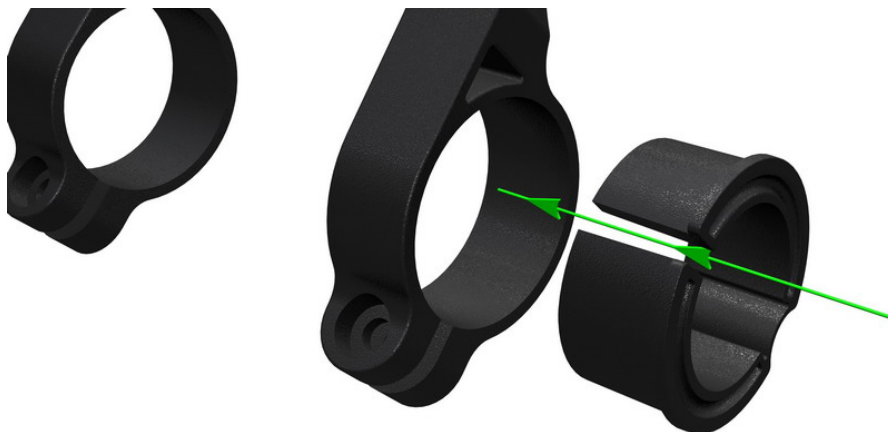


M3*7
STD=0.25 N.M
MAX=0.50 N.M

There are two installation methods for the clamp, forward or backward, according to user's demands. Different assembly methods will need different cable length.



Clamps suit for 3 size of handlebar diameter, 31.8mm, 25.4mm, 22.2mm, there are different transfer rings for 25.4mm and 22.2mm, transfer ring must assembly in right direction, see the figure below, pay attention to the green arrow position.





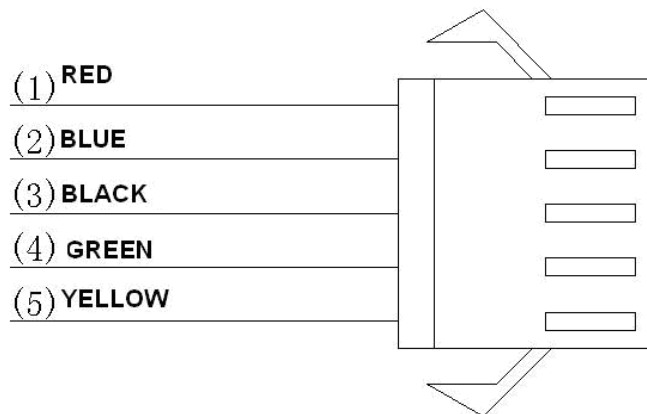
## 12 Warning

There is waterproof membrane inside the sound hole. Don't insert sharp object into the hole, it will causes waterproof failure.

Sun exposure may cause high temperature indicate, this is not display's failure.



## 13 Output wire instructions



- 1、 Red wire : Anode(24v/36v)
- 2、 Blue wire : Power cord to the controller
- 3、 Black wire : GND
- 4、 Green wire : RxD (controller -> display)
- 5、 Yellow wire : TxD (display -> controller)

## 14 PAS level instructions

PAS level can be customized, the highest level is 9, common used PAS level see the table below:

3 level	5 level	9 level	
0		0	No power assist
	1	1	
		2	
1	2	3	
		4	
	3	5	
2		6	
	4	7	
		8	
3	5	9	

## 15 Certification

CE / IP65 (water proof) / ROHS.