



## **C500B-LCD Instructions**



**Nanjing Bigstone Electronic & Technology co.,Ltd**

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## About the User Manual

Dear users,

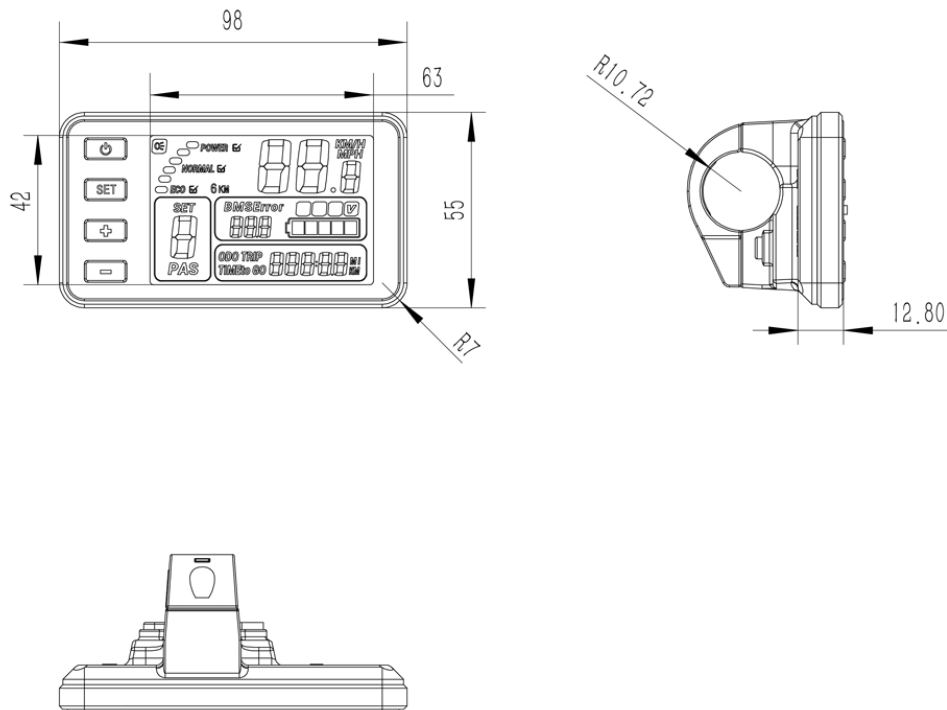
To ensure better performance of your e-bike, please read through the C500B product introduction carefully before using it. We will inform you all the details concisely ( including hardware installation, setting and normal operations ) when using our display. Meanwhile, the introduction will also help you solve possible confusion and malfunction.

## Outlook and Size

### Material and Color

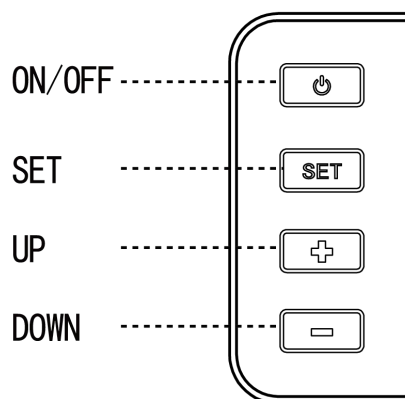
C500B products are made of black ABS material and the bracket is made of nylon material. Under the temperature of -20 to 60℃, the shell material can ensure normal usage and good mechanical performance of the products.

Dimension figure (unit: mm)



## Button Definition

C500B has four buttons including ON/OFF 、 SET 、 UP and DOWN. “ON/OFF” names to “”, “SET” names to “SET”; “UP” names to “+” and “DOWN” names to “—”.



# Function Summary

## Function Summary

C500B provides a wide range of functions and indicators to fit the users' needs. The indicated contents are as below.

1. ON/OFF
2. Current display
3. Speed display
4. KM/H & MPH
5. Backlight indicator
6. 6KM/H work
7. PAS selection
- 8 PAS level selection.
9. Error code indicator
10. SET operation
11. Distance indicator
  - 11.1 Total distance (ODO)
  - 11.2 Trip
  - 11.3 Remaining distance (**without this function by default**)
12. Trip time indicator
13. Battery indicator
  - 13.1 Battery residual capacity indicator

- 13.2 Battery voltage
- 13.3 Battery capacity percentage (**without this function by default**)
- 13.4 Battery charging and discharging times (**without this function by default**)
- 14. Mobile phone charging indicator
- 15. Cable definition
- 16. Auto sleep after 5 minutes

- 9. Error code indicator
- 13. Battery indicator
  - 13.1 Battery residual capacity indicator
  - 13.2 Battery voltage
  - 13.3 Battery capacity percentage (without this function by default)
  - 13.4 Battery charging and discharging times (without this function by default)
- 14. Mobile phone charging indicator
- 15. Cable definition
- 16. Auto sleep after 5 minutes

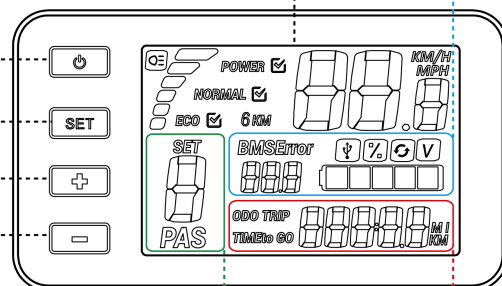
- 3. Riding mode selection
- 4. Speed display
- 5. KM/H & MPH
- 6. Backlight indicator
- 7. 6KM/H work

ON/OFF

SET

UP

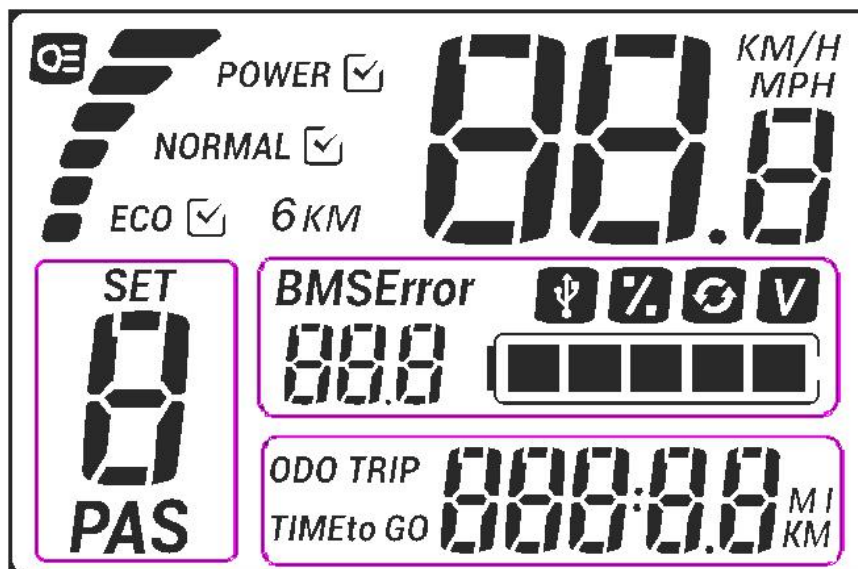
DOWN



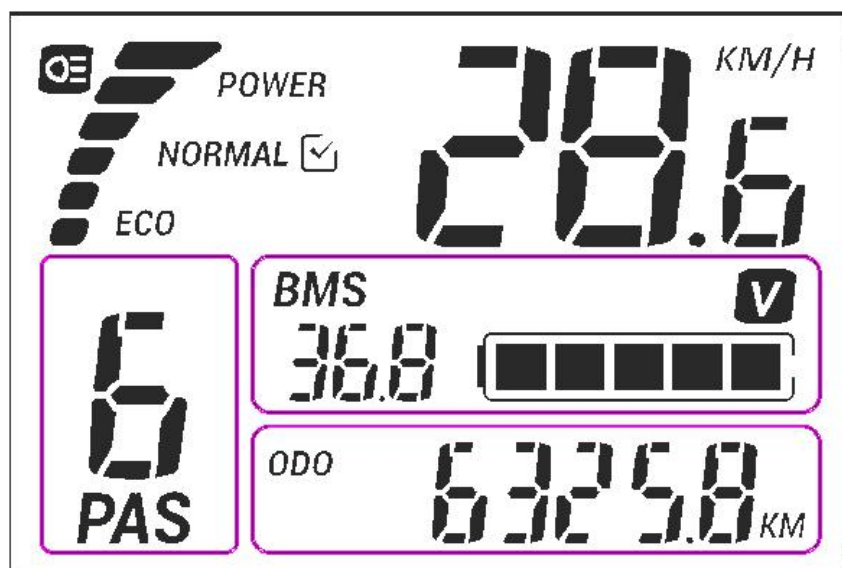
- 8. PAS level selection
- 10. SET operation

- 11. Distance indicator
  - 11.1 Total distance (ODO)
  - 11.2 Trip distance
  - 11.3 Remaining distance (without this function by default)
- 12. Trip time indicator

## Full View Area



## NORMAL VIEW AREA



## Normal Operation

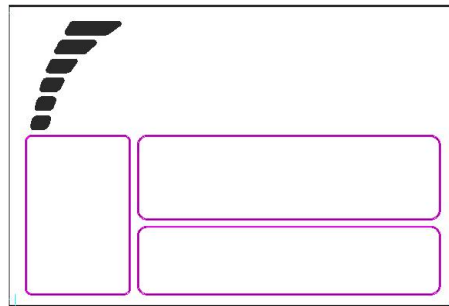
### 1. ON/OFF

Hold **ON/OFF** and start the display. The display will provide power for the controller. Hold **ON/OFF** again to open the backlight. With display on, press **ON/OFF** for 2 seconds to turn off the power. With the display off, there is no battery consumption. The leakage current is no more than  $2\mu\text{A}$ .

※ The panel will go to sleep when the speed is 0 km/h for 5 minutes.

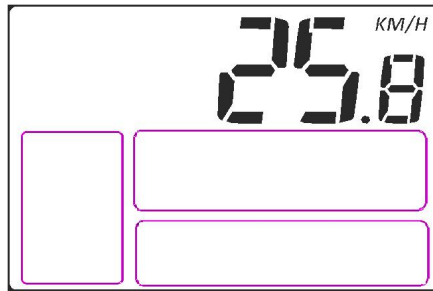
### 2. Current Display

That represents the discharging current of the controller currently, each mark is 2A, six segments is  $\geq 12\text{A}$ .



### 4. Speed Display

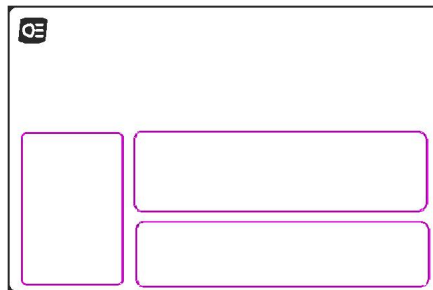
The speed is as below, and user can select KM/H or MPH in **SET4**.



## 5. Backlight Indicator

With the power on, click the **ON/OFF** and turn on the backlight.

Click it again and turn off the backlight.



※ If the e-bike has headlight, the controller will turn on/off the headlight at the same time of the backlight on/off (without this function by default).

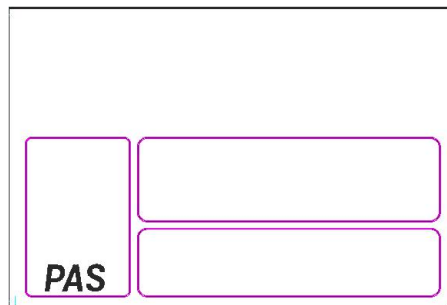
## 6. 6KM/H Work

Hold the **DOWN** for 2 seconds to get into 6km PAS work, and with your hand off, the 6km PAS work is released. The display is as below.



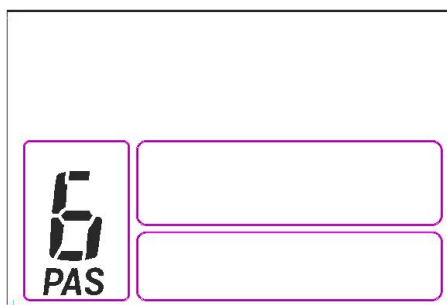
## 7. PAS Selection

With the power on, Hold the **UP** for 2 seconds and turn on the Power Assist System. Hold it again and turn off the Power Assist System.



## 8. PAS Level Selection

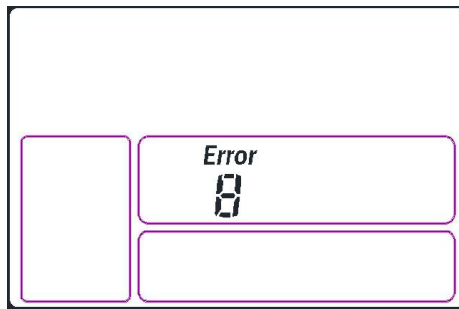
Click **UP** or **DOWN** to change the stages and output power ratio, the default mode is mode 9 and it's output power range from level 1 to level 9, the default value is level 0 .



## 9. Error Code Indicator

If there is something wrong with the electronic control system, the display will flash at 1 HZ and show the error code automatically. Different error code is corresponding with different error information.

See the last page Error code table for details.



※ Display return to normal only after problem being fixed and e-bike will not run before fixing the problem.

## 10. User Setting Operation

### 10.1 General Project Setting

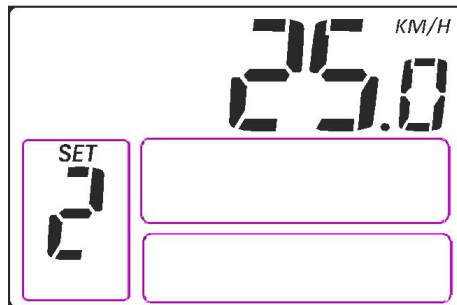
Hold the **SET** for 3 seconds and enter into the setting interface. Click the **SET** to cycle from 1 to 7 setting interface, press **UP** or **DOWN** to select the wanted parameter, and hold the **SET** for 6 second to exit.

#### 10.1.1、SET1: Reset Trip



Click the **DOWN** and reset the trip, then the **TRIP** icon will flash at 1 HZ, meanwhile the mileage will be cleared.

### 10.1.2、 SET2: Max Speed Setting



The max speed is 99.9 km/h for the default. In the SET 2 interface, user can modify the value of max speed, when the riding speed exceeds the set value, the controller will stop supplying power to the e-bike, in order to ensure the safety of rider.

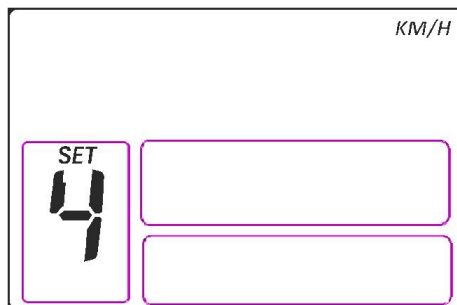
※ The max speed value range from 20 km/h to 99.9 km/h. The max speed displays in speed display area. When set max speed 99.9 km/h, there is no limit for riding speed.

### 10.1.3、 SET3: Wheel Diameter Setting



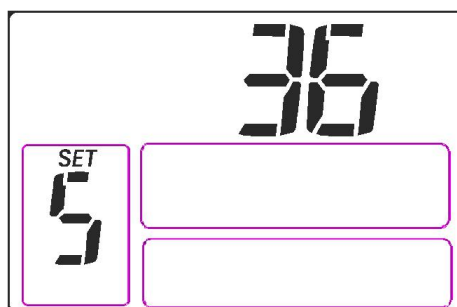
Select the accurate wheel diameter value to ensure the accuracy of display about speed and mileage.

#### 10.1.4、 SET4 : KM/H & MPH



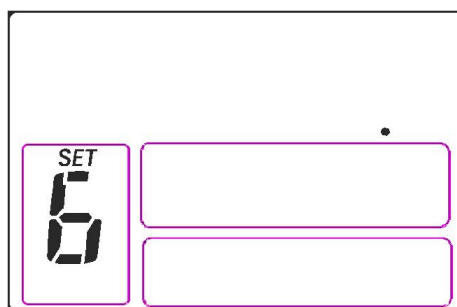
Select the accurate wheel diameter value to ensure the accuracy of display about speed and mileage. For the speed and mileage, display will be to the currently selected units display.

#### 10.1.5、 SET5: 36V/48V Choice



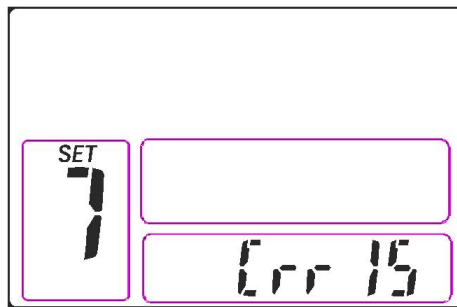
Click **UP** or **DOWN** to switch the 36V & 48V selection.

#### 10.1.6、 SET6: Cruise Setting



Click **UP** or **DOWN** to select cruise function. The point used for speed display shining means cruise, the default is not value.

#### 10.1.7、 SET7: Current \_Limit Setting

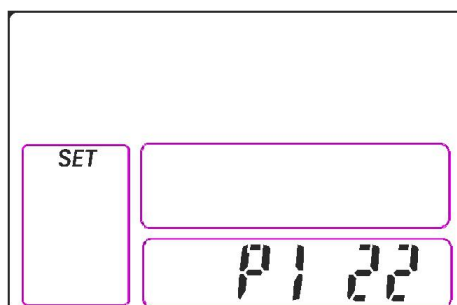


Click **UP** or **DOWN** to set current \_limit.

### 10.2 P Parameter Setting

In the General Project Settings interface, hold the **SET** for 3 seconds and enter into the **P** parameter setting interface. Click the **SET** to cycle from **P1** to **P6** setting interface, press **UP** or **DOWN** to select the wanted parameter, and hold the **SET** for 6 second to exit.

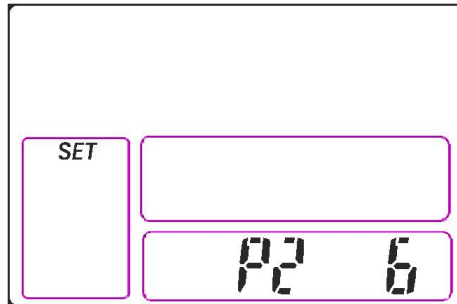
#### 10.2.1、 P1: Motor Characteristic Parameter Setting



**P1** is motor characteristic parameter setting, **P1** = motor gear

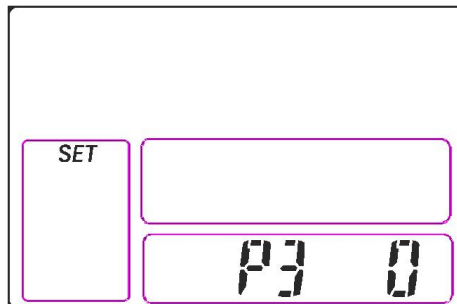
reduction ratio× number of rotor magnet pieces, just rounding if there's any decimal.

### 10.2.2、 P2: Wheel Speed Pulse Signal Setting



**P2** is wheel speed pulse signal setting, if wheel generated 1 pulse signal by a revolution, **P2** should be set as 1. If wheel generated 6 pulse signals by a revolution, **P2** should be set as 6.

### 10.2.3、 P3: Power Assist Control Mode Setting



**P3** is power assist control mode setting, when **P3** parameter setting is 1, power assist control mode is gear 9 of "imitation torque control" mode, when **P3** parameter setting is 0, power assist control mode is gear 9 of "speed control" mode. **P3** parameter needs to be determined according to the distributed function of the controller, its setting range is

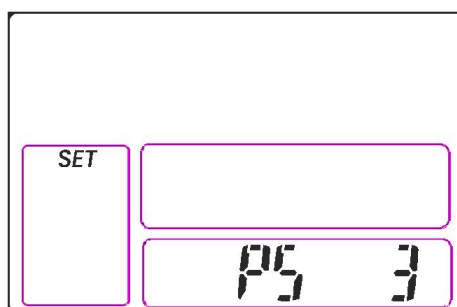
0 or 1.

#### 10.2.4、 P4: Handlebar Startup Setting



**P4** is handlebar startup setting, when **P4** setting is 1, indicating the handlebar is under "non-zero startup" mode, namely, the handlebar can be effective only after startup the foot power assist. When **P4** setting is 0, indicating the handlebar is under "zero startup" mode, the motor can be startup by the handlebar directly.

#### 10.2.4、 P5: Handlebar Startup Setting



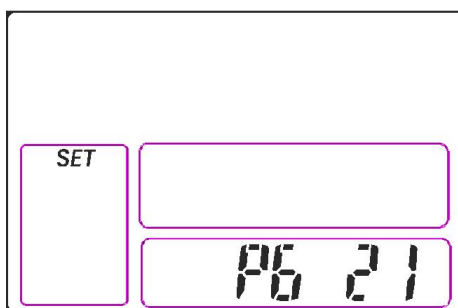
**P5** is handlebar function setting, the setting range is 0-4, hold **UP** or **DOWN** for selection.

P5 parameter definition table:

| P5 value | P4=0 | P4=1 |
|----------|------|------|
|----------|------|------|

|   |                                                                  |                                                                                                                                                                     |
|---|------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 0 | zero startup handlebar                                           | Non-zero startup handlebar                                                                                                                                          |
| 1 | Zero startup, handlebar speed limit is 6Km/h                     | Before power assist, the handlebar speed limit is 6Km/h, after power assist, handlebar is full speed.                                                               |
| 2 | Zero startup, handlebar speed limit is specified                 | Non-zero startup, handlebar is specified speed limit.                                                                                                               |
| 3 | Zero startup, Zero gear effectively                              | Before power assist, the handlebar speed limit is 6Km/h, after power assist, handlebar is full speed. Stop power assist, return the handlebar speed limit is 6Km/h. |
| 4 | Handlebar gears is distinguished according to the display meter. | Non-zero startup handlebar, Handlebar gears is distinguished according to the display meter.                                                                        |

### 10.2.4、 P6: Handlebar Speed Setting



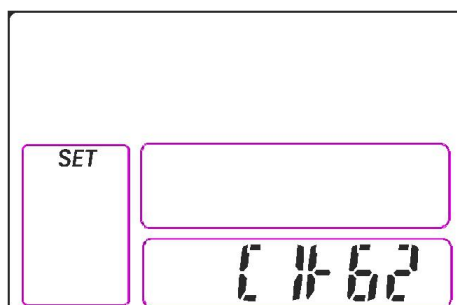
Select the accurate handle speed limit value to ensure current speed

is no more than top speed at current handle level.

### 10.3 C Parameter Setting

In the P parameter Settings interface, hold the **SET** for 3 seconds and enter into the **C** parameter setting interface. Click the **SET** to cycle from **C1** to **C7** setting interface, press **UP** or **DOWN** to select the wanted parameter, and hold the **SET** for 6 second to exit.

#### 10.3.1、C1: Power-Assist Sensor and Parameter Select Setting



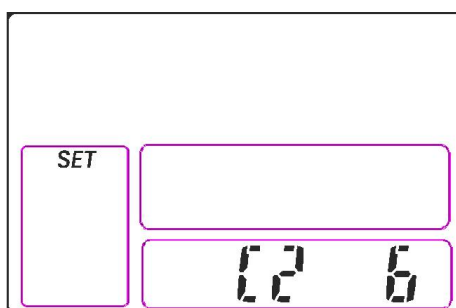
**C1** is power-assist sensor and parameter select setting, its definition is shown in following table.

**C1** parameter definition table:

| power assist sensors | Start Sensitivity | meter display | power assist sensors | Start Sensitivity | meter display |
|----------------------|-------------------|---------------|----------------------|-------------------|---------------|
| Reverse 5 Signal     | Lower             | [ 1-51 ]      | Forward 5 Signal     | Lower             | [ 1-51 ]      |
|                      | Standard          | [ 1-52 ]      |                      | Standard          | [ 1-52 ]      |
|                      | Higher            | [ 1-53 ]      |                      | Higher            | [ 1-53 ]      |
| Reverse 6 Signal     | Lower             | [ 1-61 ]      | Forward 6 Signal     | Lower             | [ 1-61 ]      |
|                      | Standard          | [ 1-62 ]      |                      | Standard          | [ 1-62 ]      |

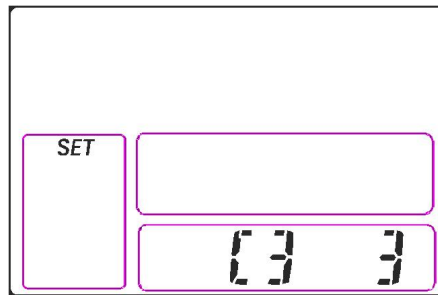
|                   |          |        |                   |          |        |
|-------------------|----------|--------|-------------------|----------|--------|
|                   | Higher   | [ 1-63 |                   | Higher   | [ 1-63 |
| Reverse 8 Signal  | Lower    | [ 1-81 | Forward 8 Signal  | Lower    | [ 1-81 |
|                   | Standard | [ 1-82 |                   | Standard | [ 1-82 |
|                   | Higher   | [ 1-83 |                   | Higher   | [ 1-83 |
| Reverse 10 Signal | Lower    | [ 1-A1 | Forward 10 Signal | Lower    | [ 1-A1 |
|                   | Standard | [ 1-A2 |                   | Standard | [ 1-A2 |
|                   | Higher   | [ 1-A3 |                   | Higher   | [ 1-A3 |
| Reverse 12 Signal | Lower    | [ 1-C1 | Forward 12 Signal | Lower    | [ 1-C1 |
|                   | Standard | [ 1-C2 |                   | Standard | [ 1-C2 |
|                   | Higher   | [ 1-C3 |                   | Higher   | [ 1-C3 |

### 10.3.2、 C2: Gear mode Setting



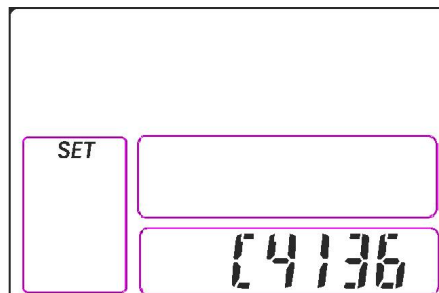
C2 is Gear mode Setting, If the maximum gear is 3, C2 should be set as 3. If the maximum gear is 6, C2 should be set as 6.

### 10.3.3、 C3: Power Assist Ratio Gear Initialization Setting



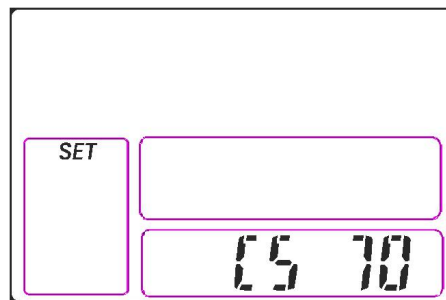
**C3** is Power Assist Ratio Gear Initialization Setting, If the meter is powered on and the power assist ratio is at gear 1, **C3** should be set as 1. If the meter is powered on and the power assist ratio is at gear 5, **C3** should be set as 5.

### 10.3.4、 C4: Motor Operating Temperature Display

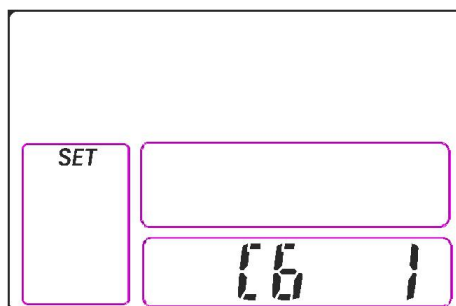


The operating temperature of the motor shows there should be a temperature sensor installed in the Inner motor to output the temperature for signal detection simultaneously.

### 10.3.5、 C5: Meter Attribute Display

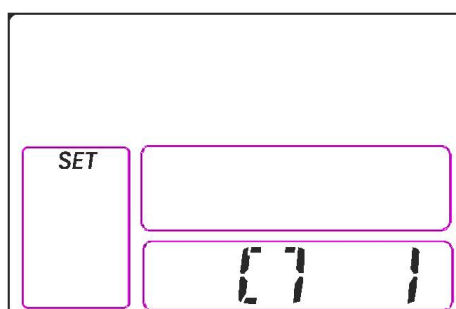


### 10.3.6、 C6: ABS Brakes of the Controller Setting



**C6** is ABS brakes of the controller setting, the default value is 0 with the setting range between 0-5, press **UP** or **DOWN** to make selection.

### 10.3.7、 C7: Power-assist Tuning Parameters Setting



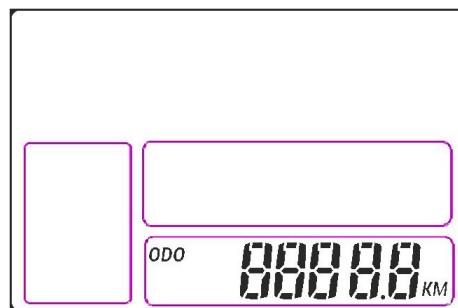
**C7** is the parameters of power-assist tuning setting, with the default value of 1. The setting range 0-2, and press **UP** or **DOWN** for short to make selection.

※ Press **UP** or **DOWN** to select parameter, hold the SET for 6 second to save and exit.

## 11. Distance Indicator

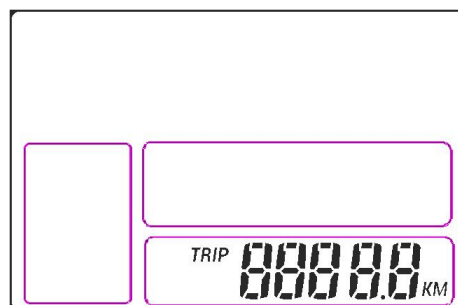
With the display on, press SET to switch the display information. In turn shows: **ODO**, **Trip**.

### 11.1 ODO



The **ODO** records the driving mileage from using, the accumulated value cannot be cleared.

### 11.2 Trip



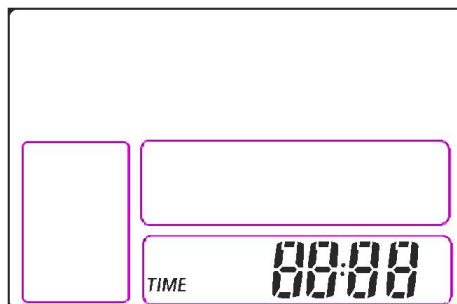
**Trip** is can be reset by hand in the **SET 1** interface. (when the riding mileage  $\geq 500\text{km}$ , it will be reset automatically. The value will be

accumulated without resetting.)

### 11.3 Remaining distance (without this function by default)

This function need to be customized.

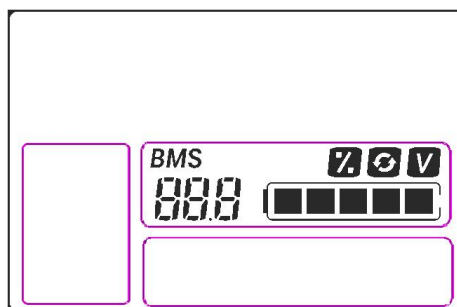
## 12. Trip Time Indicator



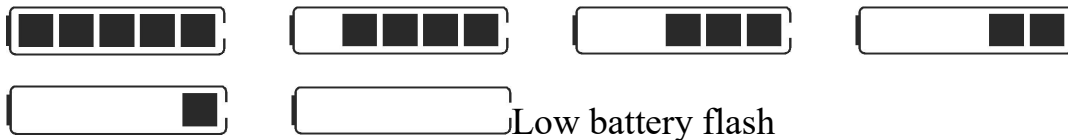
The riding time parameter is automatically reset after shut down.

## 13. Battery Indicator

### 13.1 Battery residual capacity indicator



The battery frame have five segments, each segment represent 20% battery capacity. When the capacity is full, the five segments are all light. In low battery, the battery frame will flash, it indicates that the battery is severely low and needs to be recharged immediately.



### 13.2 Battery voltage

It displays the current voltage of this battery.

### 13.3 Battery capacity percentage (without this function by default)

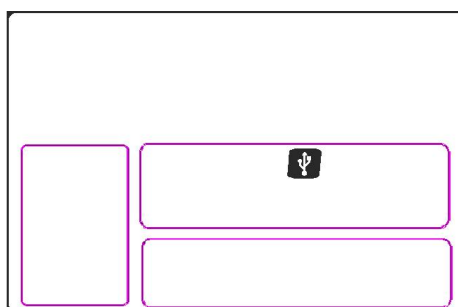
It displays the percentage of battery capacity. This function needs to be customized.

### 13.4 Battery charging and discharging times (without this function by default)

This function needs customization.

※ The panel displays the voltage for the default.

## 14. MOBILE PHONE CHARGING INDICATOR

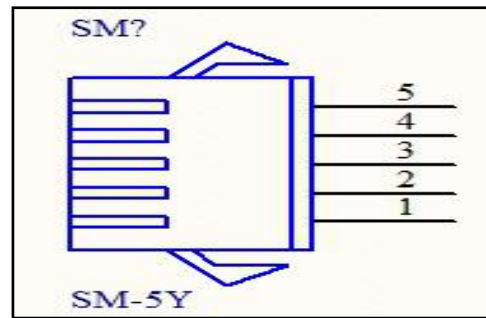


Press UP and SET for 2s and the USB icon will light.

## 15. Cable Definition

1 Red: Battery +

- 2 Blue: Lock
- 3 Black: Battery-
- 4 Green: UART-RECEIVE (RXD)
- 5 White: UART- SEND (TXD)



## 16. Auto Sleep after 5 Minutes

When the riding speed is 0 km/h for 5 minutes, the system will go to sleep automatically.

## Common Problems & Solutions

Q: Why the display is not able to start up?

A: Checking the connector that between display and controller.

Q: How to deal with the error code?

A: Fix it to the maintenance place immediately. If cannot be resolved, you can go to the electric vehicle repair points repair it in a timely manner.

## Quality & Warranty

### Quality & Warranty:

- 1、 Any quality problems in normal case and in guarantee period, our company will responsible for the warranty.
- 2、 The warranty time is 18 months from date of purchasing.

## Other Items:

The following items are not belong to warranty scope.

1. It can not be demolished.
2. The damage caused by wrong installation or operation.
3. Shell is broken when display is out of the factory.
4. Wire is broken.
5. Force disaster (such as fire, earthquake, etc.) or natural disasters like lightning, etc caused by fault or damage.
6. Beyond Warranty period.

## Error Code Table

The error code is corresponding with the fault definition.

| Error code | definition                               |
|------------|------------------------------------------|
| 0          | normal                                   |
| 1          | Current error or MOS damaged             |
| 2          | Throttle error(Start detection)          |
| 3          | motor no phase position                  |
| 4          | Hall error                               |
| 5          | Brake error(Start detection)             |
| 6          | Under voltage                            |
| 7          | Motor stalling                           |
| 8          | communication controller receiving error |
| 9          | communication display receiving error    |