一、Appearance size and material

The outer shell of the product is ABS, the transparent window of liquid crystal is imported high-hardness acrylic, and the hardness value is equivalent to tempered glass.

二、Working voltage and wiring method

1. Operating voltage: DC24V, 36V, 48V, 60V compatible, Other voltages can be customized.
2. Wiring
### Cable Serial Number and Color Table

<table>
<thead>
<tr>
<th>Serial Number</th>
<th>Cable Color</th>
<th>Function</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Red(VCC)</td>
<td>Instrument power cord</td>
</tr>
<tr>
<td>2</td>
<td>Blue(K)</td>
<td>Controller power control line</td>
</tr>
<tr>
<td>3</td>
<td>Black(GND)</td>
<td>Instrument ground</td>
</tr>
<tr>
<td>4</td>
<td>Green(RX)</td>
<td>Instrument’s data receiving line</td>
</tr>
<tr>
<td>5</td>
<td>Yellow(TX)</td>
<td>Instrument’s data transmission line</td>
</tr>
</tbody>
</table>

### Features:

1. **Display Function**
   - Speed display
   - Battery indicator
   - Fault prompt
   - Total mileage
   - Single mileage

2. **Control, Setting Function**
   - Power switch control
   - Wheel diameter setting
   - Idle automatic sleep time setting
   - Backlight brightness setting
   - Start mode setting
   - Drive mode setting
   - Voltage level setting
   - Controller current limit value setting

3. **Communication Protocol**: UART

The entire content of the display (full display in the boot)
Display content

3.1 Battery level display

3.2 Multi-function display

Total mileage ODO, single mileage DST (unit: mile, km), battery voltage VOL, single power-on time TM, CUR operating current, WATT instantaneous power, fault code (see Table 1);

3.3 Speed display area

AVG: average speed, MAX: maximum speed, CUR: current speed; unit Mp/h, km/h

The speed signal is taken from the Hall signal in the motor and sent to the meter via the controller. (The time of a single Hall cycle, unit: 1MS) The meter will calculate according to the wheel diameter and signal data (the motor Hall also needs to set the number of magnets) The true speed.

3.4 Vehicle power steering gear adjustment, 0-9 digital display;

3.5 Vehicle status display area

:Communication failure; 6km/h Booster; :定 Speed cruise tips;

:Brake reminder; :Headlight opening prompt;

Table 1: Fault code and meaning

<table>
<thead>
<tr>
<th>Fault code (decimal)</th>
<th>Fault status</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>normal status</td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>Reserved</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>---</td>
<td>---</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>brake</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Power sensor failure (ride sign) Not implemented here</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>6KM/H cruise</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>Real-time cruise</td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>Battery undervoltage</td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>Motor failure</td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>Turn fault</td>
<td></td>
</tr>
<tr>
<td>9</td>
<td>Controller failure</td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>Communication reception failure</td>
<td></td>
</tr>
<tr>
<td>11</td>
<td>Communication failure</td>
<td></td>
</tr>
<tr>
<td>12</td>
<td>BMS communication failure</td>
<td></td>
</tr>
<tr>
<td>13</td>
<td>Headlight failure</td>
<td></td>
</tr>
</tbody>
</table>

4. Setting

P01: backlight brightness, level 1 is the darkest, level 3 is the brightest;
P02: mileage unit, 0: KM; 1: MILE;
P03: Voltage level: 24V, 36V, 48V, 60V, 64V Default 36V;
P04: Sleep time: 0, no sleep; other numbers are sleep time, range: 1-60; unit minutes;
P05: Power assist position: 0, 3 file mode:
1, 5 file mode:
P06: Wheel diameter: unit, inch; accuracy: 0.1;
This parameter is related to the display speed of the meter and needs to be entered correctly.
P07: Number of speed magnets: Range: 1-100;
This parameter is related to the display speed of the meter and needs to be entered correctly.
If it is a normal hub motor, directly input the number of magnetic steel;
If it is a high speed motor, it is also necessary to calculate the reduction ratio, input data = number of magnets × reduction ratio;
For example: motor magnet steel number 20, reduction ratio 4.3: input data: 86=20×4.3

P08: Speed limit: the range is 0-100km/h, 100 means unlimited speed.
The input data here indicates the maximum running speed of the vehicle: for example, input 25, indicating that the maximum running speed of the vehicle does not exceed 25km/h; the driving speed is maintained at the set value.
Error: ±1km/h; (both assist and speed limit)
Note: The value here is based on kilometers. When the unit setting is converted from kilometer to mile, the speed value of the display interface will be automatically converted to the correct mileage value, but the speed limit value data set at this menu under the mile interface. No conversion, inconsistent with the actual display mile speed limit value;

Note: The P09-P15 menu is only valid in the communication state.
P09: zero start, non-zero start setting, 0: zero start; 1: non-zero start;
P10: Drive mode setting 0 : Power drive (the booster position determines how much power is output, and the switch is invalid).
1 : Electric drive (driven by the rotary handle, the power assist position is invalid at this time).
2 : Power assist drive and electric drive coexist simultaneously

P11: Boost sensitivity setting Range: 1-24;
P12: Boost start strength setting Range: 0-5;
P13: Power magnetic steel disc type setting 5, 8, 12 magnetic steel three types
P14: Controller current limit value setting Default 12A Range: 1-20A
P15: Controller undervoltage value
P16: ODO clear setting Long press the up button for 5 seconds ODO clear
P17:0: cruise is not enabled, 1: cruise is enabled; auto cruise is optional (only valid for protocol 2)
P18: Display speed ratio adjustment range: 50%~150%,
P19: 0 gear enable bit, 0: 0 gear, 1: 0 gear
P20:0: Protocol No. 2 1: 5S Protocol 2: Alternate 3: Alternate

四、Introduction to buttons and display interface:

![Interface 1](image1)
![Interface 2](image2)
![Interface 3](image3)

1、In the off state, long press Bond to boot; After booting, display interface 1.

Short press bond, switch to display interface 2, Short press again Bond to Switch to display interface 3. Short press again Bond to Return to display interface 1:

2、In the power on state, long press Bond to shut down, Short press Bond, Power-assisted gear +1. Short press Bond, Power-assisted gear -1:

3、long press +Bond to Enter mode setting

Parameter value modification: under a certain parameter state, Short press Bond to switching parameters. Short press Bond to increase the value, Short press Bond to decrease the value, After the modification, Short
press + Bond to switch to the next parameter. And save the previous parameter value. Long press after the parameter is modified + Bond to exit the settings interface. If not, wait for 8 seconds to automatically exit and save the parameters.

4. long press + Bond to enter mode setting

In a certain parameter state, long press and hold at the same time + to Enter the password setting interface, Short press + to switch password digits. Short press + and to Modify current value. After the password is modified, long press and hold at the same time + to exit the password setting interface to the menu interface. Save the last set password at the same time (Note: You will need to enter this password for the next boot). Long press again + to Exit the settings interface to the normal interface. If you do not press, wait for 8 seconds to automatically exit to the normal interface and save the parameters.

5. the operation of the alternate “3745” password

If you forget the password when you turn it on, enter the “3745” alternate password, press and hold the button for 10 seconds to enter the normal interface.