# Product Specification

2/2021

<table>
<thead>
<tr>
<th>Product</th>
<th>LCD Display</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mode</td>
<td>LCD 500S</td>
</tr>
<tr>
<td>Abbreviation</td>
<td>500S</td>
</tr>
<tr>
<td>Email</td>
<td><a href="mailto:info@eunorau-ebike.com">info@eunorau-ebike.com</a></td>
</tr>
</tbody>
</table>
1. **Product Name**
   - LCD display
   - Model: LCD 500S

2. **Electrical Parameters**
   - 24V/36V/48V/52V/COn battery supply
   - Rated operating current: 40mA
   - Off leakage current < 1uA
   - Max output current to controller: 100mA
   - Operating temperature: -20 ~ 70°C, Storage temperature: -30 ~ 80°C

3. **Dimensions & Material**
   - Product shell is ABS, transparent window is made with high strength Acrylic.
   - Dimensions: host/L 79mm*W 40mm*H 18mm

4. **Features**
   - Suitable for low temperature, Max -20°C.
   - Ergonomic external button design, easy to operate.
   - **Speed display:** AVG SPEED, MAX SPEED, SPEED (Real-time).
   - **Kilometer / Mile:** Can be set according to customers' habits.
   - **Assist level:** 3-level/5-level/9-level/UbE optional.
   - **Mileage indicator:** Odometer/Trip distance/Riding time.
   - **Error code indicator.**
   - **Software upgraded:** Software can be upgraded through UART.
5. LCD screen instructions

![LCD Screen](image)

6. Functional Description

### 7.1 Power On/Off

Press and hold the **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 0~15).

### 7.2 Assist level operating

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

*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.

*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. Parameter setting

Press and hold **MODE** button for 2 seconds can get into/ exit setting menu, press **UP/DOWN** button to change the parameter setting, press **MODE** button can switch to next
item.

* Display will automatically quit menu when there is no operation for 10 seconds.

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

* Display will quit MENU when start riding.

The order of parameters is as follow.

```
Data clean up  System  Brightness  Auto off  Wheel
         Assist  Battery  Speed limit  Password
```

**8.1 Data clean up(Cr):** Press [Up/Down] button to change no/yes.

![Data clean up](image)

**8.2 System (S7):** Press [Up/Down] button to switch between Metric/Imperial.

![System](image)

**8.3 Brightness (bl):** Press [Up/Down] button to change the brightness of the backlight, 1 is darkness, 5 is brightness.

![Brightness](image)

**8.4 Auto off (OF):** Press [Up/Down] button to change the auto power off time, from 0~15, the number represent time (minutes) to shut down, 0 means disable auto off function, default value is 5 minutes.
8.5 Wheel (Hd): Press [Up/Down] can change the wheel setting, optional wheel diameter is 6–34 inch.

8.6 Password (Pd): Press [MODE] button can get into the advance setting menu, default password is ‘1919’.

8.7 Speed limit (SL): Press [Up/Down] button will change speed limit, range 10km–100km.


8.9 Assist levels (PS): This parameter can customize assist levels, options are UbE/3/5/9. UbE means user-defined assist levels setting.
8. Error Code define

500S can show warning message, icon shows on the screen, and show error code at the bottom of the screen, error code is from 01 E~0nE, and the definition see the table below.

<table>
<thead>
<tr>
<th>Error Code</th>
<th>Error description</th>
<th>Handle</th>
</tr>
</thead>
<tbody>
<tr>
<td>0x04</td>
<td>Throttle turn back fault</td>
<td>Check throttle and connection.</td>
</tr>
<tr>
<td>0x05</td>
<td>Throttle error</td>
<td>Check throttle and connection.</td>
</tr>
<tr>
<td>0x06</td>
<td>Under voltage protection</td>
<td>Charge the battery</td>
</tr>
<tr>
<td>0x07</td>
<td>Overvoltage protection</td>
<td>Charge the battery</td>
</tr>
<tr>
<td>0x08</td>
<td>Hall error</td>
<td>Check the hall connection</td>
</tr>
<tr>
<td>0x09</td>
<td>three-phase power error</td>
<td>Check three-phase power line connection</td>
</tr>
<tr>
<td>0x10</td>
<td>The controller is overheated</td>
<td>Stop using 10 minutes to restart</td>
</tr>
<tr>
<td>0x11</td>
<td>Motor overheating</td>
<td>Stop using 10 minutes to restart</td>
</tr>
<tr>
<td>0x12</td>
<td>Sensor error</td>
<td>Check the sensor connection</td>
</tr>
<tr>
<td>0x13</td>
<td>battery temperature abnormality</td>
<td>Stop using 10 minutes to restart</td>
</tr>
<tr>
<td>0x14</td>
<td>Motor temperature sensor is abnormal</td>
<td>Check the sensor</td>
</tr>
<tr>
<td>0x15</td>
<td>Controller temperature sensor failure</td>
<td>Check the sensor</td>
</tr>
<tr>
<td>0x21</td>
<td>Speed sensor fault</td>
<td>Check the sensor</td>
</tr>
<tr>
<td>0x22</td>
<td>BMS Communication Error</td>
<td>Check the cable connection</td>
</tr>
<tr>
<td>0x23</td>
<td>Headlight error</td>
<td>Check the cable connection</td>
</tr>
<tr>
<td>0x24</td>
<td>Headlight sensor error</td>
<td>Check the cable connection</td>
</tr>
<tr>
<td>0x25</td>
<td>Torque signal error</td>
<td>Contact the supplier</td>
</tr>
<tr>
<td>0x26</td>
<td>Torque sensor speed error</td>
<td>Contact the supplier</td>
</tr>
<tr>
<td>0x30</td>
<td>Communication Error</td>
<td>Check the cable connection</td>
</tr>
</tbody>
</table>
9. Assembly instructions

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

10. Connector descriptions

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

11. Certification

CE / IP65 (water proof) / ROHS.