

Gaderth EN06

Gaderth EN06 Electric Bicycle Display and Controller Kit User Manual

Model: EN06

1. INTRODUCTION

This manual provides detailed instructions for the installation, operation, and maintenance of your Gaderth EN06 Smart LCD Instrument. This display unit is designed for electric bicycles and scooters, compatible with 24V, 36V, and 48V systems. It features a waterproof LCD screen for clear data display and an ABS shell for durability.



Figure 1: Gaderth EN06 Smart LCD Instrument with connecting cable.

2. PRODUCT COMPONENTS

The Gaderth EN06 kit includes the LCD display unit, connecting cables, and a handlebar mounting bracket.



Figure 2: Overview of the EN06 display unit and its associated wiring.

3. INSTALLATION

3.1 Handlebar Mounting

The EN06 display is designed for easy installation on most handlebars with a diameter of 2.2 CM. The handlebar buckle can be opened directly for convenient mounting.



Figure 3: Dimensions of the handlebar mounting bracket. The inner diameter for the handlebar is 2.2 CM.

3.2 Wiring Connection

Connect the display unit to your electric bicycle's controller using the provided high-temperature resistant connecting wire with a waterproof head. Ensure simple and secure docking. Refer to the wiring diagram for correct connections.

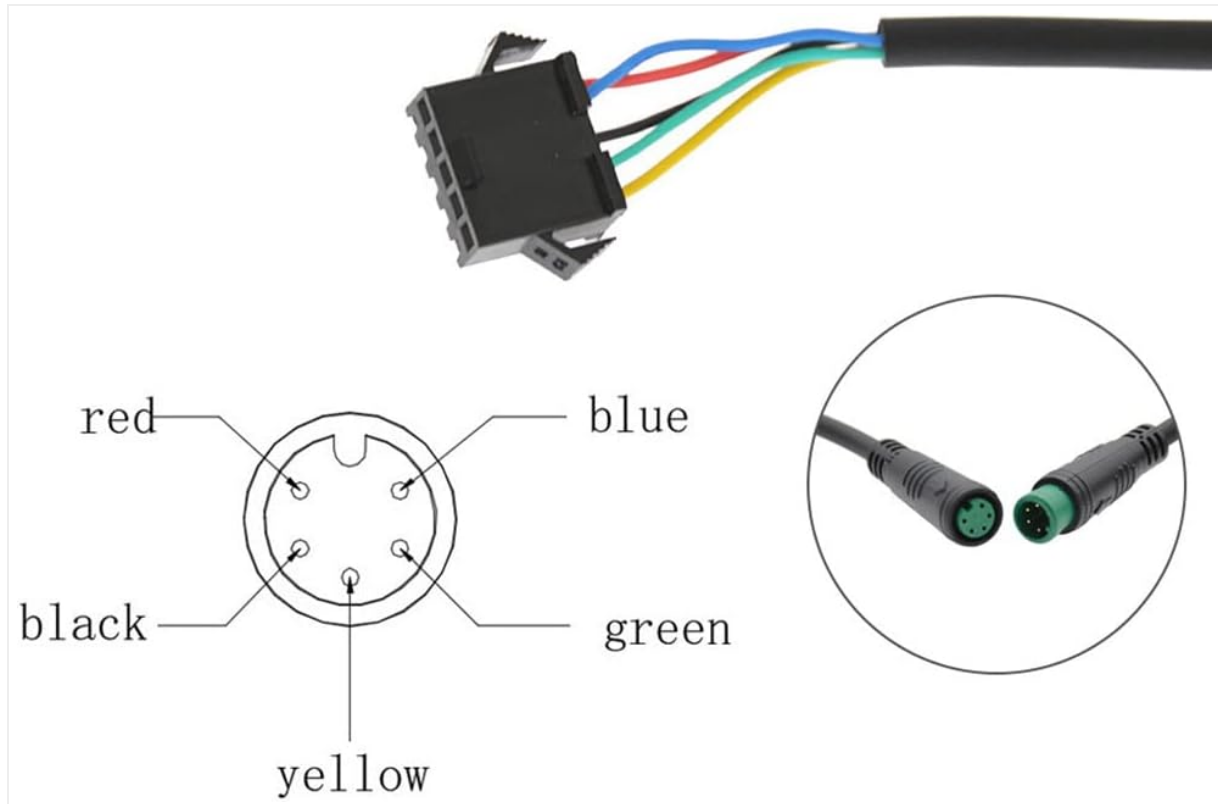


Figure 4: Wiring diagram showing the color-coded connections for the EN06 display. Ensure proper connection to avoid damage.



Figure 5: Close-up of the mounting bracket, showing the model number (LCD-EN06) and a voltage label (36V).

4. OPERATING INSTRUCTIONS AND SETTINGS

The EN06 display allows for various parameter settings to customize its operation according to your electric bicycle or scooter's specifications and your preferences.

P01: backlight brightness, with the darkest level 1 and the brightest level 3;

P02: mileage unit, 0: km; 1: MILE;

P03: Voltage level: 24V, 36V, 48V, 36V by default;

P04: hibernation time: 0, no hibernation; Other figures are sleep time, ranging from 1 to 60; Unit minute;

P05: Power-assisted gear: 0,3 gear mode: 1 gear 2V, 2 gear, 3V, 3 gear, 4V;
1, 5-speed mode: 1-speed 2V,2-speed, 2.5V,3-speed, 3V,
4th gear, 3.5V, 5th gear, 4V;

P06: Wheel diameter: unit, inch; ; Accuracy: 0.1; P07: Number of magnetic steels for speed measurement: range: 1-100;

P08: speed limit: the range is 0-50km/h, and 50 means no speed limit.

1. Non-communication state (instrument control): When the speed is greater than the set speed, turn off PWM.
Output: When the speed drops to less than the set speed, the PWM output is automatically turned on, and the driving speed is 1 km/h at the current speed; (Speed limit for power assist only, speed limit for turning handle is not limited)
2. Communication state (controller control): the driving speed is maintained at the set value,
Error: 1 km/h; (Speed limit for power assist and turn)

Note: The value here is based on kilometers. When the unit setting is changed from kilometers to miles, the speed value in the display interface will be automatically converted into the correct mileage value, but the speed limit value data set in this menu under the mile interface will not be converted, which is inconsistent with the actual displayed mileage speed limit value;

P09: zero startup, non-zero startup setting, 0: zero startup; 1: non-zero startup;

P10: Drive mode setting 0: Power-assisted drive (how much power is output is determined by the power-assisted gear, at this time,
The handle is invalid).

- 1: electric drive (driven by turning the handle, at this time, the power-assisted gear is invalid).
2. Power-assisted drive and electric drive coexist at the same time (the electric drive is invalid in zero-start state).

P11: setting range of boost sensitivity: 1-24;

P12: Setting range of power-assisted starting strength: 0-5;

P13: The type of booster magnetic steel disc is set to three types: 5, 8 and 12 pieces of magnetic steel.

P14: Default setting of controller current limit value is 12A. Range: 1-20A.

P15: The function has not been enabled yet.

P16:ODO reset setting. Press the up key for 5 seconds to clear ODO.

Figure 6: A visual representation of the EN06 display settings menu.

Accessing Settings:

Typically, settings are accessed by pressing and holding specific buttons (e.g., power and mode buttons) simultaneously. Refer to the display's physical buttons for navigation.

Parameter Settings:

- **P01: Backlight Brightness**
 - Range: 1 (darkest) to 3 (brightest).
- **P02: Mileage Unit**
 - 0: Kilometers (KM)
 - 1: Miles (MILE)

- **P03: Voltage Class**

- Options: 24V, 36V, 48V. Set according to your battery voltage.

- **P04: Auto-Sleep Time**

- 0: Never sleep.
- Other values: Display sleep interval in minutes.

- **P05: Power Assist Gear Mode**

- **0/3 Gear Mode:** Gear 1: 2V, Gear 2: 3V, Gear 3: 4V
- **1/5 Gear Mode:** Gear 1: 2V, Gear 2: 2.5V, Gear 3: 4V, Gear 4: 3.5V, Gear 5: 4V

- **P06: Wheel Diameter**

- Unit: Inches. Precision: 0.1. Set accurately for correct speed and distance readings.

- **P07: Magnet Steel Number (for Speed Test)**

- Range: 1-100. This setting is for the speed sensor.

- **P08: Speed Limit**

- Range: 0-50 km/h.
- Parameter 50 indicates no speed limit.
- **Non-communication state (instrument control):** If speed exceeds set limit, PWM output turns off. If speed drops below limit, PWM output automatically turns on. Driving speed is 1 km/h at current speed. Speed limit for power assist only; speed limit for turning handle is not limited.
- **Communication state (controller control):** Driving speed is maintained at the set value. Error: 1 km/h. Speed limit applies for power assist and throttle.
- *Note: If mileage unit is changed from kilometers to miles, the speed value in the display interface will be automatically converted. However, the speed limit value set in this menu will not be converted, which may lead to inconsistency with the actual displayed mileage speed limit value.*

- **P09: Direct Start / Kick-to-Start Setting**

- 0: Direct Start (zero startup)
- 1: Kick-to-Start (non-zero startup)

- **P10: Drive Mode Setting**

- 0: **Power Assist Mode** - The power assist gear determines the power value. The throttle (handlebar) does not work in this mode.
- 1: **Throttle Mode** - The vehicle is driven by the throttle. The power assist gear does not work in this mode.
- 2: **Power Assist + Throttle** - Electric drive does not work in zero-start status.

- **P11: Power Assist Intensity**

- Range: 0-5.

- **P12: Power Magnet Steel Number**

- Options: 5, 8, or 12 pieces.

- **P13: Current Limit Value**

- Default: 12A. Range: 1-20A.

- **P14: Under-voltage**

- Choose according to your set voltage (P03).

- **P15: ODO Reset**

- Press the UP key for 5 seconds to clear the Odometer (ODO).

Communication Protocol: The smart LCD instrument uses Protocol No. 2. Non-Protocol No. 2 systems are not compatible.

5. MAINTENANCE

To ensure the longevity and optimal performance of your Gaderth EN06 display, follow these maintenance guidelines:

- **Cleaning:** Wipe the display screen and body with a soft, damp cloth. Avoid using abrasive cleaners or solvents that could damage the screen or casing.
- **Water Exposure:** While the unit is waterproof, avoid prolonged submersion. Ensure all connections are secure to maintain water resistance.
- **Temperature:** The unit is designed to operate between -20°C to 60°C. Avoid storing or operating in extreme temperatures outside this range.
- **Cable Inspection:** Periodically check all cables and connectors for signs of wear, damage, or loose connections. Secure or replace as necessary.
- **Storage:** When not in use for extended periods, store the unit in a cool, dry place away from direct sunlight.

6. TROUBLESHOOTING

If you encounter issues with your Gaderth EN06 display, refer to the following common troubleshooting steps:

- **Display Not Turning On:**

- Check all power connections to ensure they are secure and properly seated.
- Verify that your e-bike battery is charged and providing power.
- Confirm the voltage class (P03) setting matches your battery.

- **Incorrect Speed or Distance Readings:**

- Ensure the wheel diameter (P06) is set correctly according to your bicycle's wheel size.
- Verify the magnet steel number (P07) setting is accurate for your speed sensor.
- Check the speed sensor for proper installation and alignment.

- **Power Assist or Throttle Not Working:**

- Check the drive mode setting (P10) to ensure it is configured as desired (Power Assist, Throttle, or both).
- For Power Assist, verify the power assist intensity (P11) and magnet steel number (P12) settings.

- Ensure the direct start/kick-to-start setting (P09) is appropriate for your riding style.
- Inspect all motor and controller connections.

- **Error Codes:**

- If an error code appears on the display, consult your e-bike controller's manual for specific error code definitions, as the EN06 display primarily communicates these from the controller.
- Common error codes often relate to motor, controller, or battery issues.

- **Display Freezing or Unresponsive:**

- Try turning the e-bike power off and then on again to reset the display.
- Ensure the communication protocol is compatible (Protocol No. 2).

If these steps do not resolve the issue, please contact the seller or a qualified technician for further assistance.

7. SPECIFICATIONS

Key specifications for the Gaderth EN06 Smart LCD Instrument:

Feature	Specification
Brand	Gaderth
Model Number	EN06
Item Weight	3.46 Ounces (approx. 98g)
Screen Size	2.2 Centimeters (diagonal)
Display Type	LCD
Sensor Type	Speed Sensor
Mounting Type	Handlebar Mount
Human Interface Input	Buttons
International Protection Rating	IPX7 (Waterproof)
Operating Temperature	-20°C to 60°C
Compatible Voltage	24V/36V/48V



Figure 7: Dimensions of the EN06 display unit (approx. 6 CM width, 4.6 CM height, 2.5 CM depth).

8. WARRANTY AND SUPPORT

8.1 Warranty Information

Specific warranty details for the Gaderth EN06 display are not provided in this manual. Please refer to the product packaging or contact your point of purchase for warranty terms and conditions.

8.2 Customer Support

For technical assistance, troubleshooting beyond the scope of this manual, or inquiries regarding your product, please contact the seller directly through the platform where you purchased the Gaderth EN06 display.