

ChongXiao 36V/48V/52V/60V/72V/84V 40A-50A 1500W-2000W-2500W Universal Brushless Controller

ChongXiao Universal Brushless Controller User Manual

Model: 36V/48V/52V/60V/72V/84V 40A-50A 1500W-2000W-2500W

1. INTRODUCTION

This manual provides detailed instructions for the installation, operation, and maintenance of your ChongXiao Universal Brushless Controller. This electronic device is designed for electric scooters and electric bicycles, enabling precise control over speed and direction. Its brushless design ensures smooth operation, high stability, and extended lifespan. Please read this manual thoroughly before installation and use to ensure safe and optimal performance.

2. PRODUCT FEATURES

- **Universal Compatibility:** Supports 36V, 48V, 52V, 60V, 72V, and 84V systems.
- **High Power Output:** Handles current limits of 40A-50A and power outputs of 1500W-2000W-2500W.
- **Brushless Design:** Ensures smoother operation, higher stability, and a longer lifespan compared to brushed controllers.
- **Advanced Technology:** Incorporates advanced technology for excellent performance and durability.
- **Automatic Phase Identification:** Automatically identifies 60°/120° phase angles.
- **Dual-Mode Operation:** Intelligent dual-mode functionality.
- **Multiple Functions:** Includes Hall, Cruise, Hall Meter, Intelligent Recognition (Self-Learning), High/Low Level Brake, Phase Meter, PAS (Pedal Assist), Reverse, Multiple Data Meter, Speed Control Handle (Throttle), Electric Door Lock, Three Speed, Anti-theft Alarm Signal, and Anti-theft Alarm Power.

3. SPECIFICATIONS

Name	Intelligent Dual-Mode Brushless Controller
Power	1500W-2000W-2500W
Voltage	36V-84V
Current Limit	40A-50A
Undervoltage	Automatic Identification

MOS Tube	18mos
Phase	Automatic Identification (60° / 120°)
Brakes	Low Brake / High Brake
Material	Aluminum
Color	Blue (Controller Casing)
Dimensions (L x W x H)	Approximately 10.75 x 5.08 x 2.13 inches (273 x 129 x 54 mm)
Weight	Approximately 0.83 Kilograms

Note: Dimensions are approximate and may vary slightly.

4. PACKAGE CONTENTS

The package includes:

- 1 x ChongXiao Universal Brushless Controller

5. INSTALLATION GUIDE

Before beginning installation, ensure the power is off and the battery is disconnected. Refer to the wiring diagram and follow these steps carefully.

5.1 Controller Overview and Dimensions



Figure 5.1: Controller with key dimensions.

The controller features a robust aluminum casing with heat dissipation fins. Mounting brackets are integrated for secure attachment to your electric scooter or bike frame.

5.2 Wiring Diagram and Connector Identification

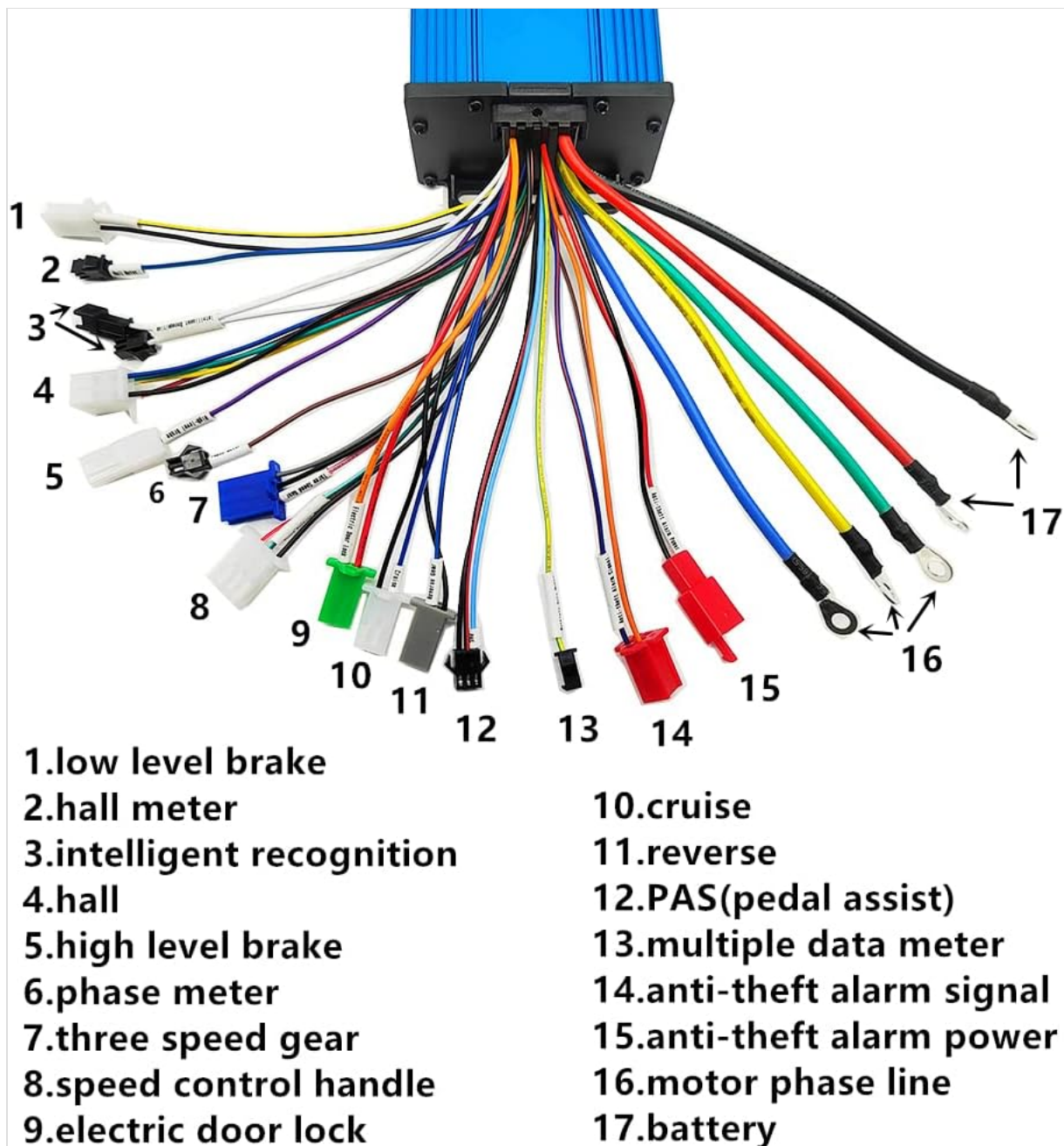


Figure 5.2: Comprehensive wiring diagram with labeled connectors.

This image illustrates all the wires and their corresponding functions. Each wire is labeled for easy identification during the connection process.

5.3 Connection Steps

1. **Connect Motor Phase Lines:** Connect the motor phase lines (usually three thick wires) color to color.
2. **Connect Battery Line:** Connect the battery line. Ensure correct polarity: red wire to battery positive (+), black wire to battery negative (-).
3. **Connect Throttle and Electric Door Lock:** Connect the controller's throttle wire to the throttle unit, matching colors. If your throttle does not have an electric door lock, the two electric door lock wires from the controller need to be shorted together.
4. **Connect Hall Lines (if applicable):** Connect the Hall sensor wires (usually five thinner wires) color to color. If your motor does not have Hall wires, this connection is not required. Note that motors without Hall wires may produce noise during operation.
5. **Intelligent Recognition (Self-Learning):**
 - Ensure the power is off.
 - Connect the two intelligent recognition (self-learning) wires together.
 - Turn on the power. The wheel will either move forward or reverse.

- If the wheel moves forward, separate the intelligent recognition wires.
 - If the wheel moves in reverse, separate the intelligent recognition wires, then connect them together again.
- The wheel should now move forward. Once it moves forward, separate the intelligent recognition wires.

This self-learning step must be completed within 2 minutes after the power is turned on. If the timeout occurs, turn off the power, then turn it back on and repeat these steps. When using the throttle, the intelligent recognition wires must be separated.

6. **Connect Other Functions:** Connect any other desired functions (e.g., PAS, brake levers, display, anti-theft) as needed, referring to the wiring diagram (Figure 5.2) for specific connections.

5.4 Visual Installation Guide

For a visual demonstration of the connection process, please refer to the following videos:

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Video 5.1: Demonstration of connecting the controller wires. This video shows the general connection procedure for the controller.

Your browser does not support the video tag.

Video 5.2: Installation steps for a brushless controller, including display setup and self-learning process.

6. OPERATING INSTRUCTIONS

Once the controller is correctly installed and connected, you can operate your electric scooter or bike. The controller manages power delivery to the motor based on your input from the throttle and other connected accessories.

6.1 Basic Operation

- **Power On/Off:** Use the electric door lock or main power switch (if installed) to turn the system on or off.
- **Throttle Control:** Gently twist the speed control handle (throttle) to accelerate. Release to decelerate.
- **Braking:** Apply the brake levers. The controller supports both low and high-level brake signals to cut motor power.
- **Three Speed Gear:** If connected, use the three-speed switch to select different power/speed modes.
- **PAS (Pedal Assist):** If connected, the motor will provide assistance when you pedal.
- **Cruise Function:** If connected, activate the cruise function to maintain a constant speed without continuous throttle input.

6.2 Display Functions (if applicable)

If your system includes a compatible display unit, it will provide real-time information and allow for configuration. Refer to the display's specific manual for detailed parameter settings. Video 5.2 also demonstrates some display functions. The display typically shows speed, battery level, assist gear, and other riding data. Long-pressing specific buttons on the display or its remote may allow access to a settings menu (e.g., P01-P20 parameters) to adjust various aspects of the controller's behavior, such as battery voltage (P03).

7. MAINTENANCE

- **Keep Dry:** Protect the controller from water and excessive moisture. While the casing is robust, prolonged exposure to water can cause damage.
- **Cleanliness:** Periodically clean the exterior of the controller with a dry cloth to prevent dust and dirt buildup, which can affect heat dissipation.
- **Secure Connections:** Regularly check all wire connections to ensure they are secure and free from corrosion. Loose connections can lead to intermittent operation or damage.
- **Avoid Overheating:** Ensure the controller is mounted in a location with adequate airflow to prevent overheating, especially during prolonged high-power usage.
- **Inspect Wiring:** Periodically inspect the wiring harness for any signs of wear, fraying, or damage. Replace damaged wires immediately.

8. TROUBLESHOOTING

- **Motor Not Working:**
 - Check all power connections, including battery and motor phase lines.
 - Ensure the electric door lock wires are correctly connected or shorted if no lock is present.
 - Verify the intelligent recognition (self-learning) process was completed successfully.
 - If the motor has Hall sensors, ensure Hall wires are connected correctly. If the motor operates without Hall wires but makes noise, this is expected behavior.
- **Intermittent Power/Operation:**
 - Inspect all wire connections for looseness or corrosion.
 - Check battery charge level and connections.
- **Motor Noise (without Hall wires):** This is normal behavior for motors operating without Hall sensor connections. If noise is excessive or unexpected, re-check all connections.
- **Display Not Functioning:**
 - Ensure the display is correctly connected to the controller.
 - Check power supply to the display.
- **Incorrect Direction After Self-Learning:** Repeat the intelligent recognition (self-learning) process as described in Section 5.3, step 5.

9. WARRANTY AND SUPPORT

This product does not come with a manufacturer's warranty as per the product information provided. For technical support or inquiries, please contact your retailer or the point of purchase. Ensure you have your purchase details available when seeking assistance.