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

ChongXiao Universal Brushless Controller Instruction Manual

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

1. Product Overview

The ChongXiao Universal Brushless Controller is an electronic device designed for brushless motors, enabling precise control over speed and direction. This controller supports a wide range of voltages from 36V to 84V and current limits from 40A to 50A, suitable for motors with power ratings between 1500W and 2500W. Its brushless design ensures smooth operation, enhanced stability, and extended lifespan.

This controller is compatible with various brushless motor brands and models, offering versatility for different user requirements. It incorporates advanced technology to deliver reliable performance and durability.

Figure 1: Overview of the ChongXiao Universal Brushless Controller and its wiring harness.

2. Specifications

Key technical specifications for the controller are detailed below:

Feature	Value
Power Range	1500W-2000W-2500W
Voltage Range	36V-84V (Automatic Identification)
Current Limit	40A-50A
MOS Tube Quantity	18 MOS
Phase Angle	Automatic Identification (60° / 120°)

Feature	Value
Brakes	Low Brake / High Brake
Material	Aluminum
Color	Blue
Item Package Dimensions (L x W x H)	10 x 3.5 x 2 inches
Package Weight	1.8 pounds

Figure 2: Controller label displaying nominal voltage, maximum current, and brake type.

Figure 3: Physical dimensions of the controller, showing length, width, and height measurements.

3. Setup and Installation

Follow these steps carefully to connect your brushless controller. Refer to the wiring diagram (Figure 4) for visual guidance.

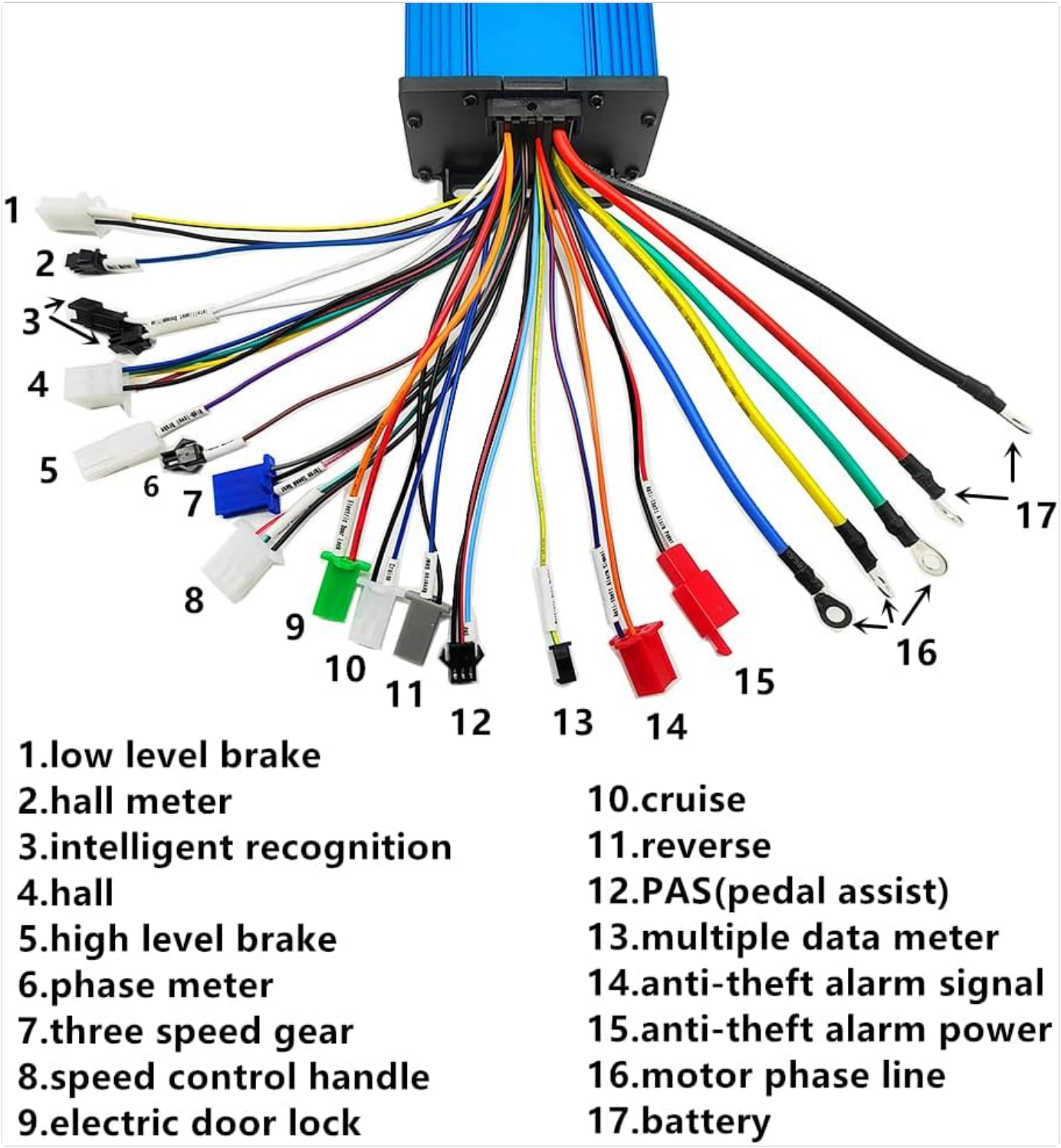

Figure 4: Detailed wiring diagram for the controller, indicating connections for motor, battery, throttle, and other functions.

1. **Connect Motor Phase Lines:** Connect the motor phase lines to the controller, ensuring color-to-color matching. (Refer to connection 16 in Figure 4).
2. **Connect Battery Line:** Connect the battery line to the controller. The red wire is for battery positive (+), and the black wire is for battery negative (-). (Refer to connection 17 in Figure 4).
3. **Connect Throttle and Electric Door Lock:** Connect the controller's throttle wires to the throttle, matching colors. If your throttle does not have an electric door lock, the two electric door lock wires from the controller must be shorted together. (Refer to connection 11 for speed control handle/throttle and connection 9 for electric door lock in Figure 4).
4. **Connect Hall Line (Optional):** Connect the Hall sensor lines, matching colors. If your motor does not have Hall wires, this connection is not required. The controller can operate without Hall wires, though the motor may produce some noise. (Refer to connection 4 for Hall wires in Figure 4).

5. **Intelligent Recognition (Self-Learning) Procedure:**
    - Ensure the power is OFF.
    - Connect the two intelligent recognition lines together (Refer to connection 3 in Figure 4).
    - Turn the power ON. The wheel will begin to rotate, either forward or reverse.
    - If the wheel rotates **forward**, separate the intelligent recognition lines.
    - If the wheel rotates **reverse**, separate the intelligent recognition lines, then immediately connect them together again. The wheel should now rotate forward. Once it rotates forward, separate the intelligent recognition lines.
    - **Important:** This intelligent recognition step must be completed within 2 minutes after turning on the power. If the timeout occurs, turn off the power, then turn it back on and repeat these steps.
    - **Note:** When using the throttle for operation, the intelligent recognition lines must be separated.
6. **Connect Other Functions:** Connect any other desired functions as needed, such as cruise, pedal assist (PAS), meters, or anti-theft alarms. (Refer to Figure 4 for connections 1, 2, 5, 6, 7, 8, 10, 12, 13, 14, 15).

4. Operating Functions

The controller supports the following functions:

- **Hall Sensor (5 wires):** For motors equipped with Hall sensors.
- **Cruise Control:** Maintains a set speed.
- **Hall Meter:** Provides speed or distance data via Hall sensors.
- **Intelligent Recognition (Self-Learning):** Automatic motor parameter identification.
- **High Level Brake:** Brake signal input.
- **Phase Meter:** Provides motor phase data.
- **PAS (Pedal Assist System):** Assists motor power based on pedal input.
- **Reverse Function:** Allows the motor to operate in reverse.
- **Multiple Data Meter:** Supports various data displays.
- **Low Level Brake:** Alternative brake signal input.
- **Speed Control Handle (Throttle):** Controls motor speed.
- **Electric Door Lock:** Power control for the system.
- **Three Speed Gear:** Allows selection of different speed modes.
- **Anti-theft Alarm Signal:** Output for an alarm system.
- **Anti-theft Alarm Power:** Power supply for an alarm system.

5. Maintenance

To ensure optimal performance and longevity of your controller, consider the following maintenance guidelines:

- **Keep Clean:** Regularly clean the exterior of the controller to prevent dust and debris accumulation, which can affect heat dissipation.
- **Check Connections:** Periodically inspect all wiring connections to ensure they are secure and free from corrosion. Loose connections can lead to intermittent operation or damage.
- **Avoid Water Exposure:** While the controller is designed for outdoor use, prolonged exposure to heavy rain or submersion in water should be avoided to prevent internal damage.
- **Temperature Management:** Ensure the controller is mounted in a location with adequate airflow to prevent overheating, especially during high-power operation.

6. Troubleshooting

If you encounter issues with your controller, try the following basic troubleshooting steps:

- **No Power:** Check the battery connection and ensure the electric door lock wires are correctly connected or shorted if applicable. Verify battery charge level.
- **Motor Not Running:**
  - Confirm all motor phase lines are securely connected.
  - Perform the intelligent recognition (self-learning) procedure again.
  - Check Hall sensor connections if your motor uses them.
  - Ensure the throttle is functioning correctly.
- **Motor Runs with Noise (without Hall wires):** This is normal behavior if the motor does not have Hall wires and they are not connected.
- **Intermittent Operation:** Inspect all wiring for loose connections or damaged insulation.

If these steps do not resolve the issue, please contact customer support for further assistance.

7. Warranty Information

According to the product specifications, this controller does not include a manufacturer's warranty.

8. Support

For technical support, inquiries, or assistance with your ChongXiao Universal Brushless Controller, please refer to the seller's contact information or the platform where the product was purchased. Ensure you have your product model number and purchase details available when contacting support.

Model number, symptoms, what you tried, or the section of the manual you are using.

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