ChongXiao Sine Controller 36V 48V 60V 72V 84V 2000W

ChongXiao Intelligent Brushless Sine Controller User Manual

Model: Sine Controller 36V 48V 60V 72V 84V 2000W

1. Product Overview

The ChongXiao Intelligent Brushless Sine Controller is designed for electric bicycles and scooters, offering efficient and smooth power delivery. This controller supports a wide voltage range and power output, making it versatile for various e-bike and scooter applications. Its design incorporates hidden interfaces for power and phase lines to enhance safety and prevent short circuits from environmental exposure.

Key Features:

- **Universal Voltage Compatibility:** Operates across 36V, 48V, 60V, 72V, and 84V systems. The controller automatically identifies the voltage after connecting the learning line.
- **High Power Output:** Supports motors from 1000W to 2000W.
- **Robust Current Limit:** Rated current of 40A, with a maximum output of 50A.
- **Durable Construction:** Made from aluminum alloy and plastic, designed for longevity.
- **Enhanced Safety:** Features hidden power and phase line interfaces to protect against rain and short circuits.

Specifications:

Voltage Range	36V - 84V (Universal)
Power Output	1000W - 2000W
Current Limit	Rated 40A, Maximum 50A
Material	Aluminum Alloy and Plastic
Dimensions (Approx.)	180mm x 93mm x 60mm (Length x Width x Height)
Weight	0.9 Kilograms

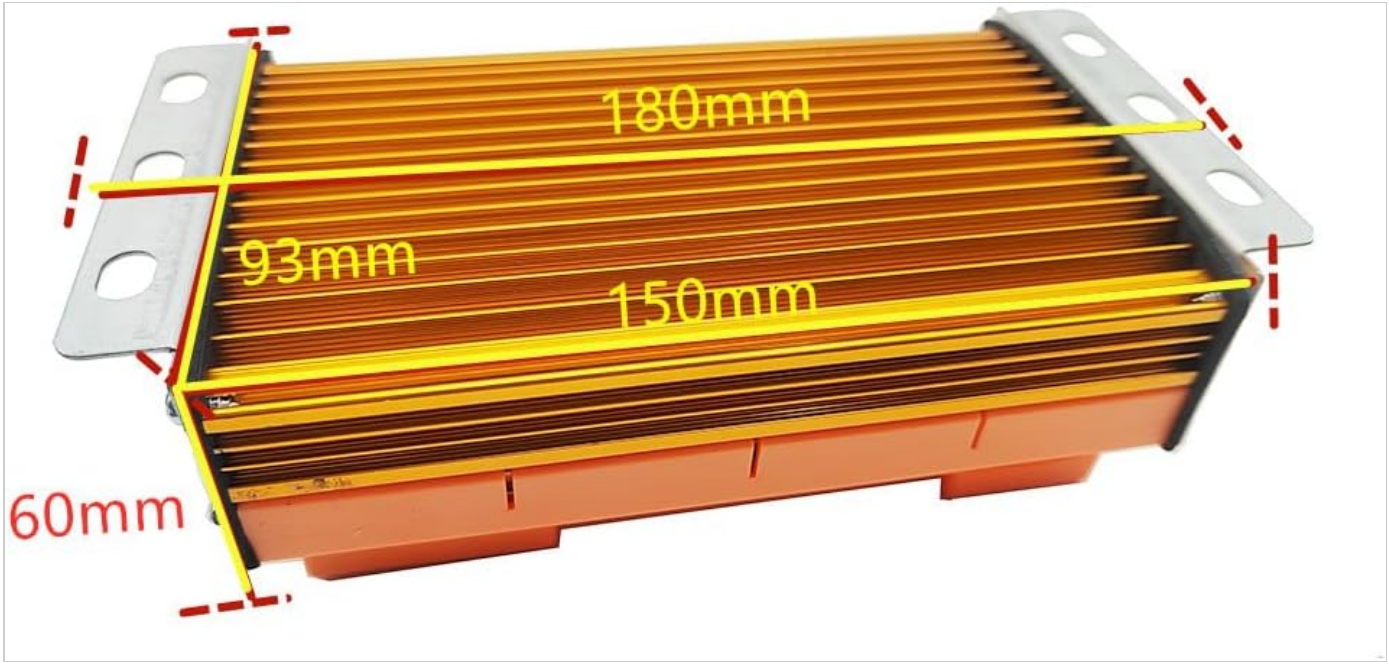


Figure 1: Approximate dimensions of the ChongXiao Intelligent Brushless Sine Controller (180mm length, 93mm width, 60mm height).



Figure 2: Product label indicating nominal voltage (36V/48V/60V/72V/84V) and maximum current (40A-50A).

2. Safety Information

Always prioritize safety during installation and operation. Incorrect wiring can lead to damage to the controller, motor, battery, or personal injury. If you are unsure about any step, consult a qualified technician.

- Ensure the power is OFF before making any electrical connections.
- Verify all connections are secure and correctly matched (color-to-color where applicable).
- Protect wiring from sharp edges, heat, and moisture.
- Do not attempt to open or modify the controller casing, as this may void any implied warranty and pose electrical

hazards.

- Wear appropriate personal protective equipment (PPE) during installation.

3. Setup and Installation

The controller features hidden interfaces for power and phase lines. To access these, the back cover must be opened for wiring, then securely re-covered. This design protects against rain and short circuits.

Wiring Diagram and Connections:

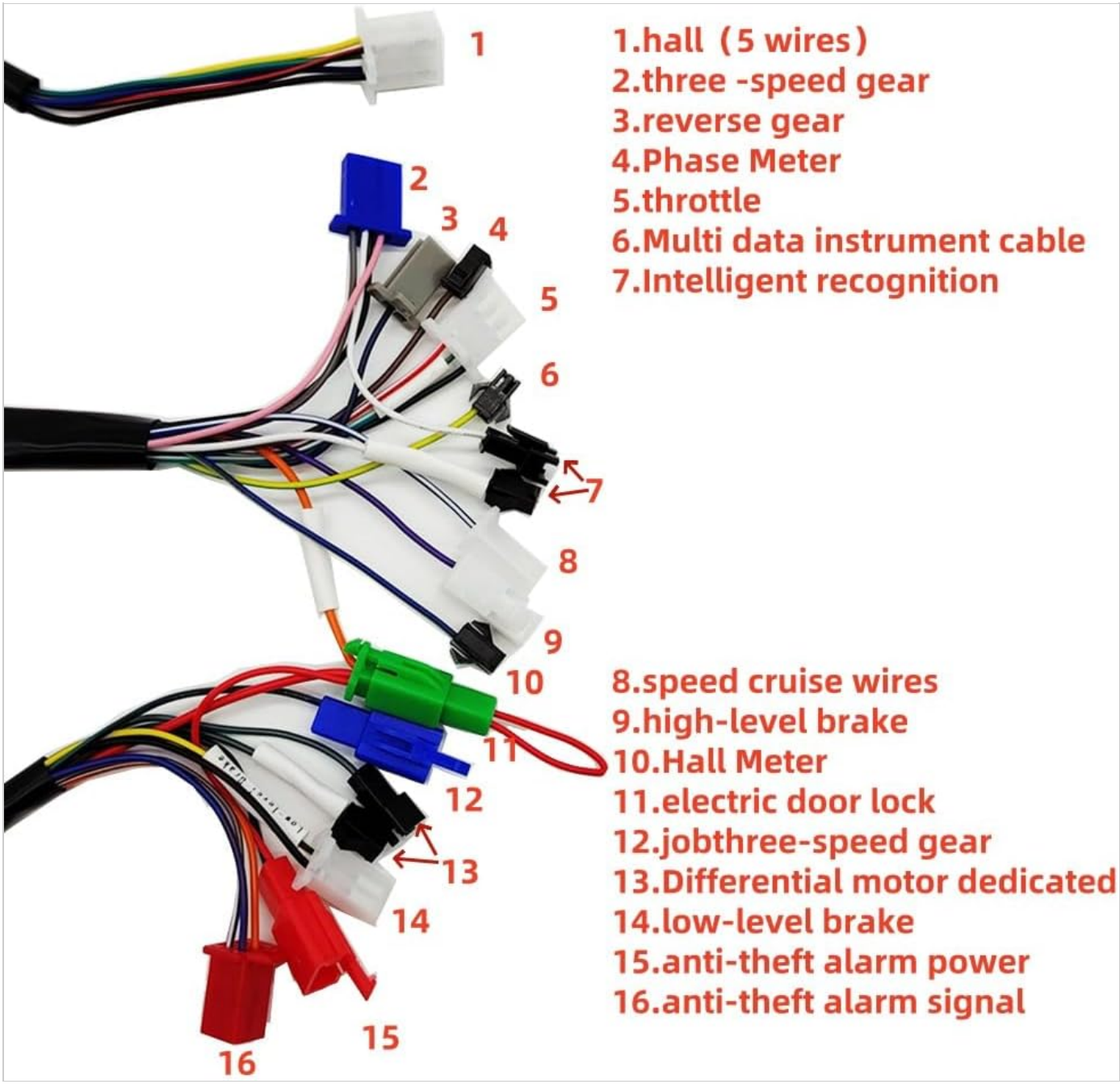


Figure 3: Detailed wiring harness showing various connections for the controller.

1. **Hall Sensor (5 wires):** Connect the motor's Hall sensor wires, matching colors. If your motor does not have Hall lines, this connection is not required, but the motor may produce noise during operation.
2. **Three-Speed Gear:** For speed selection.
3. **Reverse Gear (1 wire):** This is a signal wire. If your system uses a 2-wire reverse, the other wire can be connected to any common negative wire of the controller.
4. **Phase Meter:** For phase signal input.

5. **Throttle:** Connect the throttle wires, ensuring color-to-color matching.
6. **Multi Data Instrument Cable:** For connecting to a compatible display or instrument.
7. **Intelligent Recognition (Self-Learning Line):** Used for initial motor parameter learning.
8. **Speed Cruise Wires:** For cruise control functionality.
9. **High-Level Brake:** Connect for high-level brake signal input.
10. **Hall Meter:** Another Hall signal input.
11. **Electric Door Lock:** Connect the controller's electric door lock wire to the throttle's electric door lock. If the throttle does not have an electric door lock, short the controller's electric door lock wires.
12. **Job Three-Speed Gear:** If your throttle's 3-speed plug has only 2 wires, connect it here. If not, no connection is needed.
13. **Differential Motor Dedicated (2 wires):** If you wish to use the square wave function, connect these two wires together, and the controller will switch to square wave mode.
14. **Low-Level Brake:** Connect for low-level brake signal input.
15. **Anti-Theft Alarm Power:** For connecting an anti-theft alarm power supply.
16. **Anti-Theft Alarm Signal:** For connecting an anti-theft alarm signal.



Figure 4: Connection points for battery positive (+), battery negative (-), and motor phase wires (U, V, W).

4. Operating Instructions

Initial Motor Learning Procedure:

This procedure allows the controller to learn your motor's parameters for optimal performance.

1. **Connect Motor Phase Lines:** Connect the motor phase lines (usually three thick wires) to the controller, matching colors.

2. **Connect Hall Lines:** Connect the Hall sensor lines (usually five thinner wires), matching colors. If your motor lacks Hall lines, skip this step; however, the motor may operate with some noise.
3. **Connect Battery Lines:** Connect the battery positive (+) and negative (-) terminals to the controller. Ensure correct polarity.
4. **Initiate Intelligent Recognition (Self-Learning):**
    - Turn OFF the power.
    - Connect the two "Intelligent Recognition" (self-learning) wires together.
    - Turn ON the power.
    - Observe the wheel:
        - If the wheel rotates forward, separate the intelligent recognition wires.
        - If the wheel rotates in reverse, separate the intelligent recognition wires, then connect them together again. If the wheel now rotates forward, separate the intelligent recognition wires.
    - *Note: 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.*
5. **Connect Throttle and Electric Door Lock:**
    - Connect the controller's throttle wires to the throttle, ensuring color-to-color matching.
    - Connect the controller's electric door lock wire to the throttle's electric door lock wire. If your throttle does not have an electric door lock, short the controller's electric door lock wires.

IMPORTANT: When using the throttle to control speed, the two intelligent recognition wires must be separated.

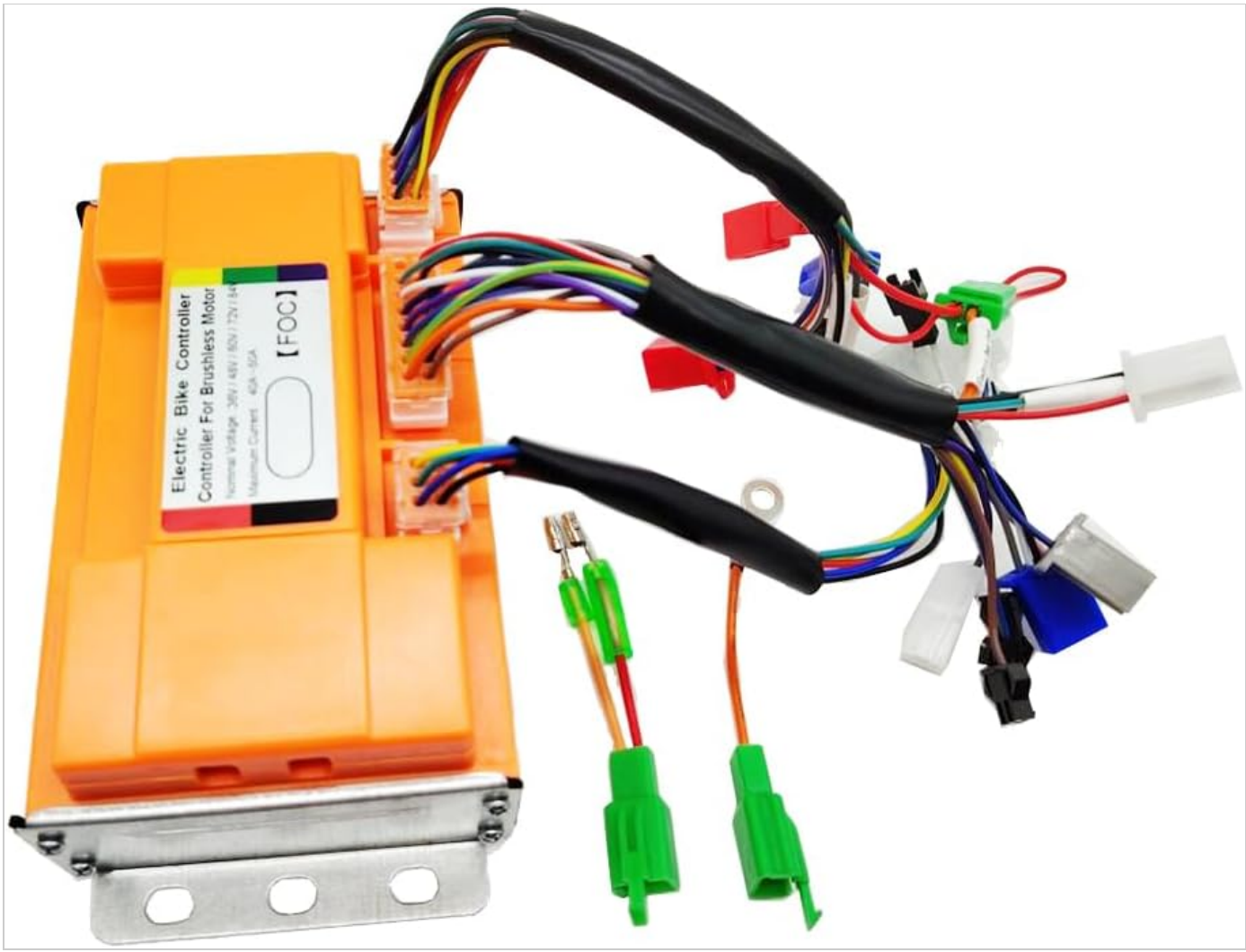


Figure 5: The controller showing the intelligent recognition (self-learning) wires, typically green, used for initial motor setup.

Additional Functions:

Other functions listed in the wiring diagram (e.g., speed cruise, brakes, anti-theft alarm) can be connected as needed based on your specific e-bike or scooter configuration.

5. Maintenance

- Regularly inspect all wiring connections for tightness and signs of wear or damage.
- Keep the controller clean and free from dust, dirt, and moisture.
- Ensure adequate ventilation around the controller to prevent overheating.
- Avoid exposing the controller to extreme temperatures or direct sunlight for prolonged periods.
- Do not use harsh chemicals or solvents for cleaning.

6. Troubleshooting

Problem	Possible Cause	Solution
Motor not running or running intermittently.	◦ Loose or incorrect wiring connections (battery, motor phase, Hall sensors, throttle). ◦ Intelligent recognition not completed or incorrect. ◦ Brake lever engaged. ◦ Faulty motor or controller.	◦ Check all wiring connections for security and correct matching. ◦ Repeat the Intelligent Recognition (self-learning) procedure. ◦ Ensure brake levers are not engaged. ◦ Test motor and controller components if possible.
Motor makes noise but does not run smoothly.	◦ Hall sensor wires not connected or faulty. ◦ Intelligent recognition not completed correctly.	◦ Ensure Hall sensor wires are connected and functional. ◦ Repeat the Intelligent Recognition (self-learning) procedure.
Wheel rotates in reverse during self-learning.	Normal behavior during initial learning.	Separate the intelligent recognition wires, then reconnect them. The wheel should then rotate forward. Separate the wires again.
Controller gets excessively hot.	◦ Overload (motor power exceeds controller capacity). ◦ Insufficient ventilation. ◦ Short circuit in motor or wiring.	◦ Verify motor power is within controller specifications. ◦ Ensure controller is mounted in a well-ventilated area. ◦ Inspect wiring and motor for any short circuits.

7. Warranty and Support

According to the product specifications, there is no explicit warranty provided for this item.
For technical support or inquiries, please refer to the seller or retailer from whom the product was purchased.

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