

YC Yier TD228+TD552

YC Yier Brushless Motor Controller with Speed Control Knob User Manual

Model: TD228+TD552

1. INTRODUCTION

This manual provides detailed instructions for the installation, operation, and maintenance of your YC Yier Brushless Motor Controller with Speed Control Knob. Please read this manual thoroughly before installation and use to ensure proper function and safety.

Safety Note: Always disconnect power before performing any installation, maintenance, or troubleshooting. Incorrect wiring can cause damage to the controller, motor, or battery, and may pose a safety risk.

2. PRODUCT OVERVIEW

The YC Yier Brushless Motor Controller is designed for various electric vehicles, including electric bicycles, scooters, ATVs, Go Karts, and Golf Carts. It features a wide voltage compatibility and includes a speed control knob for precise motor speed adjustment.



Image 2.1: The YC Yier Brushless Motor Controller and accompanying speed control knob.

Key Features:

- Application: Compatible with Electric Bicycles, e-scooters, e-ATVs, Quads, Go Karts, Golf Carts, and other E-Bikes.
- Voltage Range: Supports 36V, 48V, 52V, 60V, 64V, 72V, and 84V systems.
- Current & Power: Operates at 45A-60A, suitable for 350W-3000W motors.
- Phase Identification: Automatic identification for both 60° and 120° phase angles.
- MOS Tube: Equipped with 18 double-row MOS tubes for efficient power handling.
- Package Contents: Includes 1x controller and 1x speed switch.

3. COMPONENTS AND CONNECTIONS

Understanding the various connections is crucial for correct installation. The controller features multiple labeled wires for different functions.

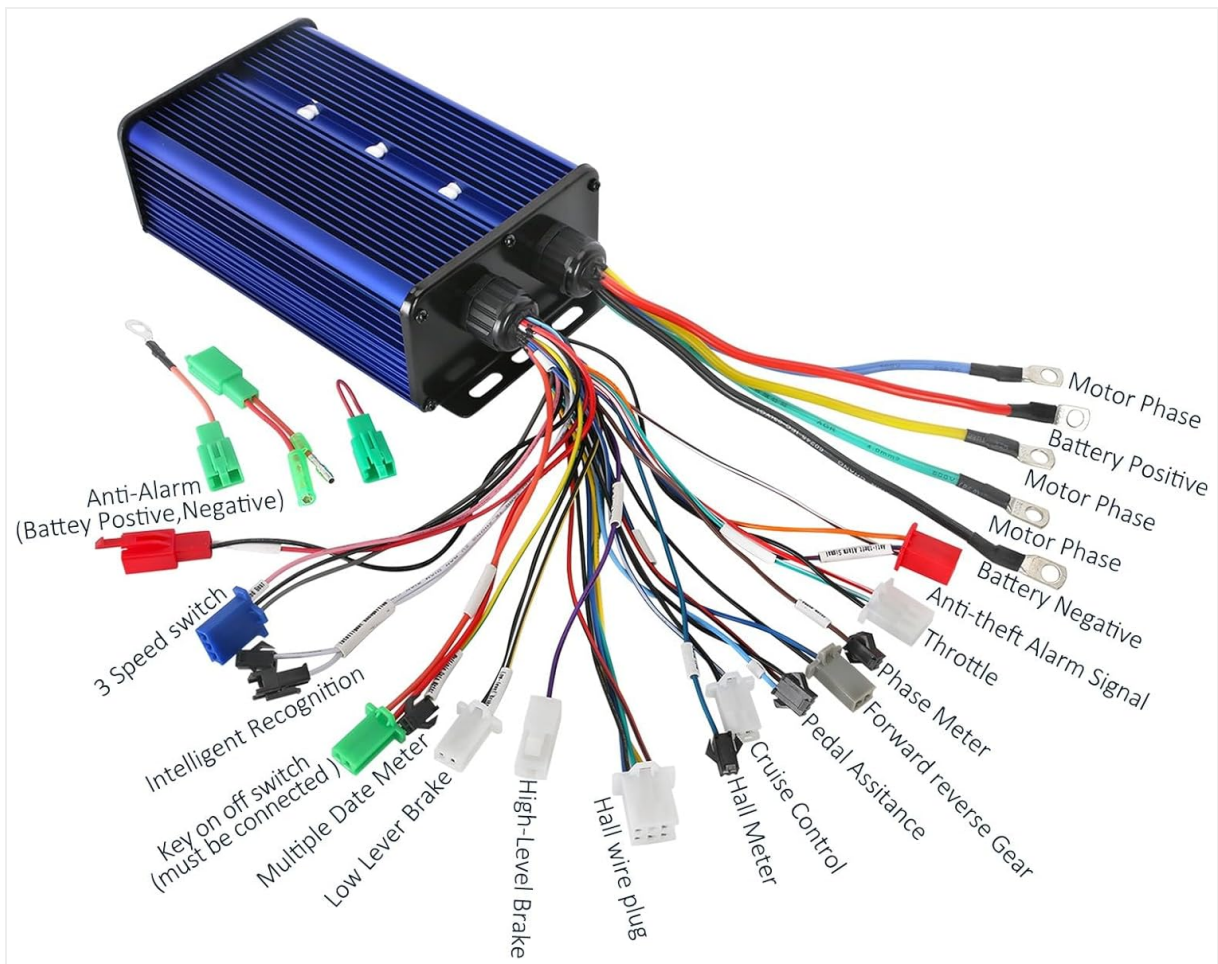


Image 3.1: Detailed labeled wiring diagram of the brushless motor controller, showing connections for motor, battery, throttle, brakes, and other functions.

The diagram above illustrates the various connections on the controller, including Motor Phase, Battery Positive/Negative, Anti-Alarm, 3 Speed Switch, Intelligent Recognition, Key On/Off Switch, Multiple Date Meter, Low/High Level Brake, Hall Wire Plug, Cruise Control, Hall Meter, Pedal Assistance, Forward/Reverse Gear, and Anti-Theft Alarm Signal.

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Video 3.1: This video demonstrates the basic wiring connections and functions of the motor controller, providing a visual guide for installation.

Controller Label Details:



Image 3.2: Close-up view of the controller's label, displaying nominal voltage, maximum current, brake type, and motor phase angle information.

The label on the controller provides essential technical specifications such as nominal voltage range (36V/42V/48V/52V/58V/60V/64V/72V/84V), maximum current (45A-60A), brake type (Low/High Electrical Level), and motor phase angle (Automatic Identification).

Speed Control Knob:

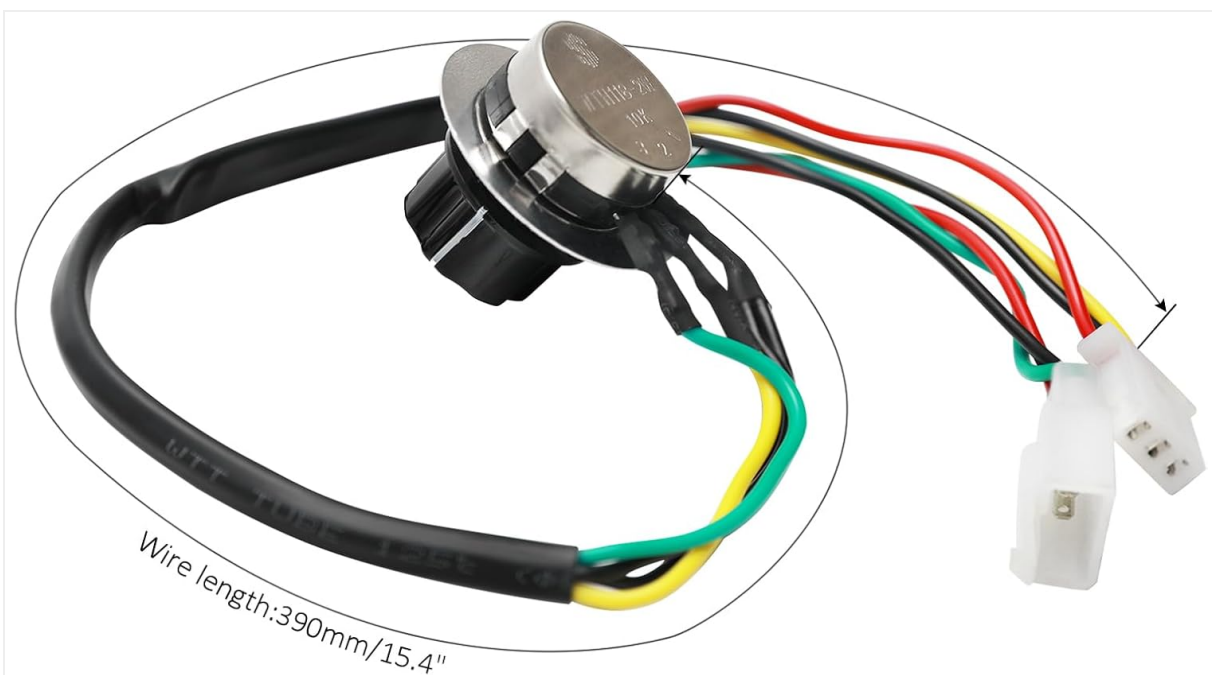


Image 3.3: The speed control knob, showing its design and a wire length of approximately 390mm (15.4 inches).

The included speed control knob allows for variable speed adjustment. It connects to the controller via a 2-plug, 6-wire configuration.

4. SETUP AND INSTALLATION

Follow these steps for proper installation of the controller and speed control knob:

1. **Mount the Controller:** Securely mount the controller in a protected area on your vehicle, away from direct water exposure and excessive vibration.
2. **Connect Motor Phase Wires:** Connect the three thick motor phase wires (typically green, yellow, blue) from the controller to the corresponding motor phase wires.
3. **Connect Hall Sensor Wires:** Connect the smaller Hall sensor wires (typically five wires) from the controller to the motor's Hall sensor connector. Ensure correct color matching.
4. **Connect Battery Power:** Connect the thick red wire from the controller to the battery's positive terminal and the thick black wire to the battery's negative terminal.
5. **Connect Throttle/Speed Control:** Connect the speed control knob's wires to the throttle input on the controller. Refer to Image 3.1 for specific wire labels.
6. **Connect Brake Levers:** Connect the brake lever wires to the controller's low-level or high-level brake inputs as required by your system.
7. **Connect Other Functions:** Connect any other desired functions such as the 3-speed switch, intelligent recognition, key on/off switch, or anti-theft alarm according to the wiring diagram.
8. **Automatic Phase Identification:** After all connections are made, power on the system. The controller will automatically identify the motor's phase angle (60°/120°). If the motor spins in the wrong direction, swap two of the motor phase wires and two of the Hall sensor wires (e.g., swap green and yellow).
9. **Test Operation:** Carefully test the throttle and brake functions before full operation.

5. OPERATING INSTRUCTIONS

Once installed, operating the controller is straightforward:

- **Power On:** Turn on the vehicle's main power switch (if applicable) or the controller's key on/off switch.
- **Speed Control:** Use the speed control knob to adjust the motor's output speed. Turning the knob clockwise typically increases speed, while counter-clockwise decreases it.
- **Braking:** Engaging the brake levers will cut power to the motor, providing a safety stop.
- **3-Speed Switch (if connected):** If a 3-speed switch is connected, it allows you to select between different preset speed modes (e.g., low, medium, high).

6. MAINTENANCE

Regular maintenance helps ensure the longevity and reliable performance of your controller:

- **Keep Clean:** Periodically clean the exterior of the controller to prevent dust and debris buildup, which can affect heat dissipation. Use a dry, soft cloth.
- **Inspect Connections:** Regularly check all wire connections to ensure they are secure and free from corrosion or damage. Loose connections can lead to intermittent operation or component failure.

- **Avoid Water Exposure:** While the controller is designed for outdoor use, avoid direct exposure to heavy rain or submersion in water. Ensure all cable glands are properly tightened.
- **Temperature Management:** Ensure the controller has adequate airflow for cooling. Avoid covering it with insulating materials during operation.

7. TROUBLESHOOTING

Refer to the table below for common issues and their potential solutions:

Problem	Possible Cause	Solution
Motor does not run	No power to controller; Loose connections; Faulty throttle; Motor or Hall sensor issue.	Check battery connection and voltage; Verify all wiring is secure; Test throttle function; Inspect motor and Hall sensors.
Motor runs in reverse	Incorrect motor phase or Hall sensor wiring.	Swap two motor phase wires and two Hall sensor wires.
Intermittent power/speed	Loose connections; Damaged wiring; Overheating controller.	Check all connections; Inspect wiring for damage; Ensure adequate cooling for the controller.
Controller gets hot	Overload; Insufficient cooling; Short circuit.	Reduce load; Ensure proper ventilation; Check for short circuits in motor or wiring.

8. TECHNICAL SPECIFICATIONS

Feature	Specification
Brand	YC Yier
Model Name	TD228+TD552
Nominal Voltage	36V / 48V / 52V / 60V / 64V / 72V / 84V
Maximum Current	45A-60A
Power Range	350W-3000W
Phase Angle	Automatic Identification (60°/120°)
MOS Tube Quantity	18 (double row)
Included Components	Speed controller, Speed switch
Suggested Users	Unisex-adult

9. WARRANTY INFORMATION

The YC Yier Brushless Motor Controller comes with a 90-day warranty from the date of purchase. This warranty covers manufacturing defects under normal use. It does not cover damage resulting from improper installation, misuse, accidents, or unauthorized modifications. Please retain your proof of purchase for warranty claims.

10. CUSTOMER SUPPORT

For further assistance, technical support, or warranty inquiries, please contact your retailer or the manufacturer directly. When contacting support, please have your product model number (TD228+TD552) and purchase information ready.