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› Brushless Motor Controller User Manual

VINGVO VINGVO7w6gzyog34-03

Brushless Motor Controller User Manual

Model: 48V/60V 450W (VINGVO7w6gzyog34-03)

1. INTRODUCTION

This manual provides detailed instructions for the installation, operation, and maintenance of your VINGVO Brushless Motor Controller. Designed for electric bicycles and scooters, this controller ensures stable speed, quiet operation, and sensitive control. Please read this manual thoroughly before use to ensure proper function and safety.



Figure 1: VINGVO Brushless Motor Controller (48V/60V 450W)

This image displays the VINGVO Brushless Motor Controller, showcasing its compact aluminum alloy casing and the array of color-coded wires extending from one end, ready for connection.

2. PRODUCT FEATURES

- **Robust and Heat Dissipating:** The aluminum alloy shell protects internal circuits and facilitates efficient heat dissipation, preventing thermal overloading.

- **Steady Speed and Silent Operation:** Provides consistent speed control with quiet performance, offering sensitive braking and direction changes.
- **Energy-efficient:** Automatically identifies the phrase angle and rated voltage of the electric bike for optimized efficiency and power saving.
- **User-friendly Wiring:** Wires and interfaces are designed for durability and low malfunction. Each interface is color-coded for easy and straightforward installation.
- **Versatile Use:** Suitable for a wide range of electric bicycles and scooters.

3. SPECIFICATIONS

Parameter	Value
Rated Power	450W
Current Limit	23A
Phrase Angle	60°/120°
Dimensions (Approx.)	110 x 84 x 44mm (4.33 x 3.31 x 1.73 inches)
Cable Length (Approx.)	15cm (5.91 inches)
Weight (Approx.)	447g (15.8 ounces)
Rated Voltage Options	24V/36V; 36V/48V; 48V/60V (This model: 48V/60V)
Under-Voltage Protection	48V/60V-42V/52V
Manufacturer	VINGVO
Model Number	VINGVO7w6gzyog34-03

4. SAFETY INFORMATION

- Always disconnect power before installing or performing maintenance on the controller.
- Ensure all connections are secure and correctly wired to prevent short circuits or damage.
- Do not expose the controller to water or excessive moisture.
- Avoid physical impact or dropping the controller.
- Operate the controller within its specified voltage and current limits.
- If you are unsure about any installation steps, consult a qualified technician.

5. PACKAGE CONTENTS

The package typically includes:

- 1 x VINGVO Brushless Motor Controller (48V/60V 450W)

Note: The product is not designed to be connected to an LCD screen cable.

6. SETUP AND INSTALLATION

Carefully follow these steps for proper installation. Refer to the wiring diagram below for visual guidance.

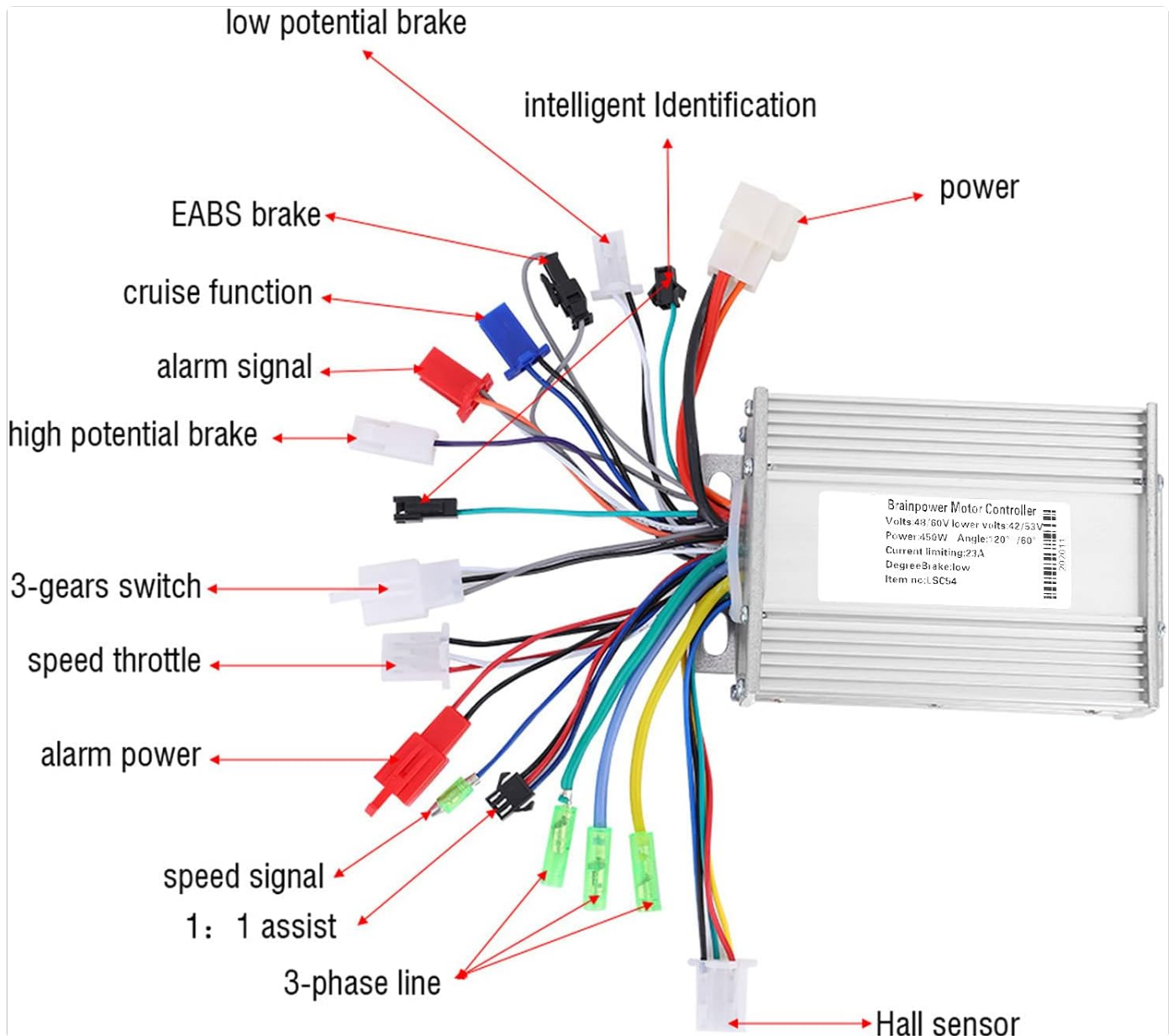


Figure 2: Brushless Motor Controller Wiring Diagram

This diagram illustrates the various color-coded wires and their corresponding functions for connecting the brushless motor controller to an electric bike or scooter system.

Wiring Connections:

- Power (Thick Red/Black Wires):** Connect the thick red wire to the positive (+) terminal of your battery and the thick black wire to the negative (-) terminal.
- 3-Phase Line (Thick Yellow/Green/Blue Wires):** Connect these three wires to the corresponding phase wires of your brushless motor. Ensure correct color matching (Yellow to Yellow, Green to Green, Blue to Blue).
- Hall Sensor (Thin Red/Black/Yellow/Green/Blue Wires):** Connect these wires to the Hall sensor wires of your brushless motor. The thin red wire is typically +5V, thin black is ground, and the others are signal wires.
- Speed Throttle:** Connect the throttle wires (typically red, black, green) to the speed throttle input.
- Brake Signals (Low Potential Brake / High Potential Brake):** Connect your brake levers' signal wires to these inputs. The controller supports both low and high potential brake signals.
- Alarm Signal / Alarm Power:** If your system includes an alarm, connect the alarm signal and power wires here.

- 7. **Cruise Function:** Connect wires for cruise control functionality if available on your system.
- 8. **EABS Brake:** Connect for Electronic Anti-lock Braking System functionality.
- 9. **3-Gears Switch:** If your system has a multi-gear switch, connect it here.
- 10. **1:1 Assist (PAS - Pedal Assist System):** Connect the pedal assist sensor wires to this input.
- 11. **Intelligent Identification:** This wire is used for automatic identification of motor parameters. Follow specific instructions for your motor if applicable.

Ensure all connections are firm and insulated to prevent short circuits. Double-check all wiring before applying power.

7. OPERATING INSTRUCTIONS

Once the controller is correctly installed and all connections are secure:

- **Power On:** Turn on the main power switch of your electric bike or scooter. The controller will initialize.
- **Automatic Identification:** The controller is designed to automatically identify the phase angle and rated voltage of your electric bike. This process typically occurs upon initial power-up or when the motor is first engaged.
- **Speed Control:** Use the speed throttle to control the motor's speed. Apply the throttle gradually for smooth acceleration.
- **Braking:** Engage the brake levers to activate the braking function. The controller provides sensitive control for safe stopping.
- **Direction Changes:** The controller manages direction changes based on motor input and system design.
- **Cruise Function (if connected):** Activate the cruise function as per your bike's specific instructions to maintain a constant speed.
- **Gear Switching (if connected):** Utilize the 3-gears switch to select different power modes or speed limits.

Always operate your electric bike or scooter responsibly and in accordance with local regulations.

8. MAINTENANCE

Regular maintenance helps ensure the longevity and optimal performance of your brushless motor controller:

- **Keep Clean:** Periodically wipe the controller's exterior with a dry, soft cloth to remove dust and dirt. Avoid using harsh chemicals or abrasive materials.
- **Check Connections:** Regularly inspect all wire connections to ensure they are secure and free from corrosion or damage. Loose connections can lead to intermittent operation or component failure.
- **Heat Dissipation:** Ensure the controller's aluminum casing is not obstructed, allowing for proper airflow and heat dissipation. Avoid covering the controller with insulating materials.
- **Environmental Protection:** Protect the controller from direct exposure to rain, snow, or extreme temperatures. While the casing offers protection, it is not fully waterproof.
- **Avoid Overloading:** Do not exceed the controller's rated power and current limits, as this can lead to overheating and permanent damage.

9. TROUBLESHOOTING

If you encounter issues with your brushless motor controller, refer to the following common problems and solutions:

Problem	Possible Cause	Solution
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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 charge level. Verify all wiring connections are secure. Test throttle functionality. Inspect motor and Hall sensor wires for damage.
Erratic motor behavior / Intermittent power	Loose or corroded connections; Damaged wires; Controller overheating.	Inspect and secure all connections. Check wires for cuts or fraying. Ensure controller has adequate ventilation and is not overloaded.
Controller gets excessively hot	Overloading the motor; Insufficient ventilation; Short circuit in motor or wiring.	Reduce load on the motor. Ensure controller is in an open area for airflow. Check motor and wiring for any short circuits.
Brakes not working	Brake lever sensor not connected or faulty; Controller brake input issue.	Verify brake lever wiring. Test brake lever sensor.

If the problem persists after attempting these solutions, contact customer support or a qualified technician.

10. WARRANTY AND SUPPORT

For information regarding warranty coverage, returns, or technical support, please refer to the documentation provided with your purchase or contact the retailer/manufacturer directly. Specific warranty terms and support channels are typically provided by VINGVO or the authorized seller.

You can visit the VINGVO store for more information:[VINGVO Store on Amazon](#)

