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## Tomofree WZK4820A

# Tomofree S1 Electric Bike Brushless Controller User Manual

Model: WZK4820A

## 1. INTRODUCTION

This manual provides essential instructions for the installation, operation, maintenance, and troubleshooting of your Tomofree S1 Electric Bike Brushless Controller (Model WZK4820A). This controller is specifically designed for the Tomofree S1 E-Bike. Please ensure your electric bike model is compatible before proceeding with installation or use.

The brushless controller is a critical component of your electric bike's power system, managing the motor's speed and power output efficiently. Proper installation and understanding of its functions are vital for safe and optimal performance.

## 2. PRODUCT OVERVIEW

The Tomofree S1 Brushless Controller is a 1000W sine wave controller, designed for smooth and efficient power delivery to your e-bike motor. It features multiple connection points for various e-bike components.

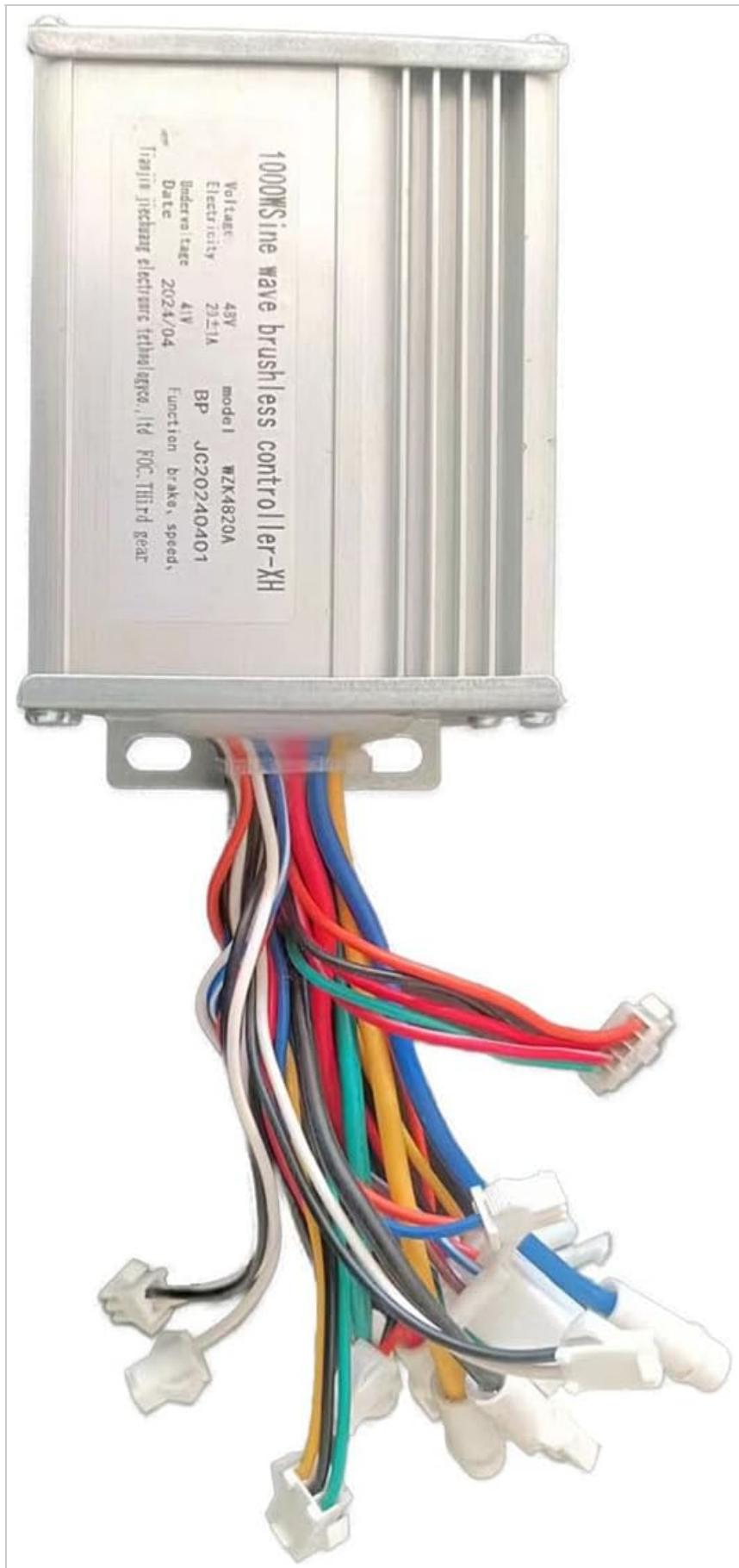


Figure 1: Tomofree S1 Electric Bike Brushless Controller (Model WZK4820A). This image displays the silver-colored controller unit with numerous multi-colored wires extending from one end, each terminating in a connector. The label on the controller indicates its model number, voltage, and other specifications.

### 3. SETUP AND INSTALLATION

**Safety First:** Before beginning any installation, ensure the e-bike's battery is disconnected. Wear appropriate safety gear.

- 1. Mounting the Controller:** Securely mount the controller unit to the e-bike frame using appropriate fasteners. Ensure it is protected from direct water exposure and physical impact.
- 2. Wiring Connections:** The controller features various color-coded wires for different functions. Refer to the wiring diagram provided with your Tomofree S1 E-Bike for precise connections. Common connections include:
  - Motor Phase Wires:** Typically thicker wires (e.g., green, blue, yellow) connecting directly to the motor.
  - Hall Sensor Wires:** Thinner wires (e.g., red, black, yellow, green, blue) for motor position sensing.
  - Battery Power Wires:** Thicker red (+) and black (-) wires connecting to the e-bike battery.
  - Throttle Wires:** For speed control input.
  - Brake Lever Wires:** For motor cut-off when brakes are applied. The controller supports brake function.
  - Display/Control Panel Wires:** For communication with the e-bike's display unit.
  - Pedal Assist Sensor (PAS) Wires:** For pedal-assisted riding.
  - Light Wires:** For connecting headlights or taillights (if supported).
- 3. Double-Check Connections:** Verify all connections are secure and correctly matched according to the wiring diagram. Incorrect wiring can damage the controller or other components.
- 4. Initial Power-Up:** Reconnect the battery. Turn on the e-bike's power. Observe for any unusual sounds or smells. Test basic functions like throttle response and brake cut-off at a low speed in a safe environment.

## 4. OPERATING INSTRUCTIONS

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Once installed and tested, the controller operates in conjunction with your e-bike's display and throttle/PAS system.

- Power On/Off:** Use the main power button on your e-bike's display or battery to activate/deactivate the system.
- Speed Control:** The controller manages motor speed based on throttle input or pedal assist level. The controller supports multiple speed gears, including a third gear function as indicated by its specifications.
- Brake Cut-off:** Applying the brakes will signal the controller to cut power to the motor, ensuring safe stopping.
- Error Codes:** If an issue occurs, your e-bike's display may show an error code. Refer to your e-bike's main manual for error code interpretations.

## 5. MAINTENANCE

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

- Keep Clean and Dry:** Periodically clean the exterior of the controller to remove dirt and debris. Ensure it remains dry and protected from moisture.
- Inspect Wiring:** Regularly check all wire connections for signs of wear, corrosion, or looseness. Secure any loose connections.
- Avoid Overheating:** Ensure the controller has adequate ventilation. Avoid operating the e-bike in

conditions that could lead to excessive heat buildup.

- **Professional Inspection:** If you suspect any internal issues or damage, consult a qualified e-bike technician for inspection and repair.

## 6. TROUBLESHOOTING

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If you encounter issues with your e-bike's electrical system, consider the following common troubleshooting steps:

- **No Power:**

- Check battery charge level.
- Verify battery connections to the controller are secure.
- Ensure the e-bike's main power switch is on.

- **Motor Not Responding:**

- Check throttle or PAS sensor connections.
- Inspect motor phase and Hall sensor wires for damage or loose connections.
- Ensure brake levers are not engaged, as they cut motor power.

- **Intermittent Power:**

- Examine all wiring for loose connections or frayed insulation.
- Check for signs of water ingress or corrosion on connectors.

- **Unusual Noises or Smells:**

- Immediately power off the e-bike.
- This may indicate a serious electrical fault. Seek professional assistance.

If troubleshooting steps do not resolve the issue, contact Tomofree customer support or a certified e-bike technician.

## 7. SPECIFICATIONS

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Feature	Specification
Brand	Tomofree
Model Name	WZK4820A (S1 Accessories)
Wattage	1000 watts
Voltage	48V
Undervoltage Protection	41V
Electricity	20±1A
Function	Brake, Speed, FOC, Third Gear
Manufacturer	Tianjin Xinhe Hengye Intelligent Technology Co., Ltd
ASIN	B0F8TPJRS5

Feature	Specification
Date First Available	May 16, 2025

## 8. WARRANTY AND SUPPORT

**Warranty:** The Tomofree S1 Electric Bike Brushless Controller comes with a 1-year warranty from the date of purchase. This warranty covers manufacturing defects under normal use. Please retain your proof of purchase for warranty claims.

**Exclusions:** The warranty does not cover damage resulting from improper installation, misuse, accidents, unauthorized modifications, or normal wear and tear.

**Customer Support:** For technical assistance, warranty claims, or further inquiries, please contact Tomofree customer support through their official channels or visit the [Tomofree Store on Amazon](#).

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### Related Documents - WZK4820A

	<p><a href="#">Tomofree DK200 Electric Bike User Manual</a></p> <p>Comprehensive user manual for the Tomofree DK200 electric bike, covering assembly, operation, maintenance, warranty, and safety instructions.</p>
	<p><a href="#">Tomofree T1PRO Electric Bike User Manual and Safety Guide</a></p> <p>Comprehensive user manual and safety guide for the Tomofree T1PRO Electric Bike, covering specifications, assembly, operation, maintenance, troubleshooting, and warranty information. Learn how to safely operate and maintain your e-bike.</p>
	<p><a href="#">TOMOFREE S1PRO Electric Bike User Manual</a></p> <p>Comprehensive user manual for the TOMOFREE S1PRO electric bicycle, covering specifications, package contents, installation, operation, battery care, maintenance, troubleshooting, and warranty information.</p>
	<p><a href="#">Tomofree XT200 Electric Bike User Manual and Specifications</a></p> <p>Comprehensive user manual for the Tomofree XT200 Electric Bike, covering specifications, assembly, operation, safety, maintenance, troubleshooting, and warranty information.</p>
	<p><a href="#">TOMOFREE T1 16-inch Electric Bicycle User Manual</a></p> <p>Comprehensive user manual for the TOMOFREE T1 16-inch electric bicycle, covering specifications, operation, battery care, maintenance, troubleshooting, and warranty information.</p>



### [Tomofree Model T1 Foldable Electric Bike User Manual - Specifications, Installation, and Maintenance](#)

This comprehensive manual provides detailed information for the Tomofree Model T1 foldable electric bike, including specifications, package contents, overview, installation steps, dashboard and remote functions, battery care, maintenance guidelines, and warranty details.