

TFCFL 48V 2000W Electric Brushless DC Motor Complete Kit

TFCFL 48V 2000W Electric Brushless DC Motor Kit Instruction Manual

Model: 48V 2000W Electric Brushless DC Motor Complete Kit

1. INTRODUCTION

This manual provides detailed instructions for the installation, operation, and maintenance of your TFCFL 48V 2000W Electric Brushless DC Motor Kit. This kit is designed for converting or upgrading electric scooters, motorcycles, e-bikes, go-karts, and other electric vehicles, offering high performance and efficiency. Please read this manual thoroughly before installation and use to ensure safe and optimal performance of your motor kit.

2. PRODUCT COMPONENTS

The TFCFL 48V 2000W Electric Brushless DC Motor Kit includes the following main components:

- 1x 48V 2000W Brushless DC Motor
- 1x 48V 2000W 18 Mosfet 45A Brushless Motor Speed Controller
- 1x Pair of LCD Handlebar Throttle Twist Grips with Battery Indicator and Ignition Lock
- 1x T8F Crankset and T8F Chain
- Necessary wiring and connectors



Figure 2.1: Overview of the TFCFL 48V 2000W Electric Brushless DC Motor Kit components.

3. TECHNICAL SPECIFICATIONS

Feature	Specification
Motor Type	Brushless DC High Speed Motor
Voltage	48V
Power	2000W Max
Current	45A
Rated Speed	4300 RPM
Controller Type	18 Mosfet 45A Brushless Motor Speed Controller
Controller Features	Hall Sensor, E-Brake, 3-Speed (Low, Mid, High), Reverse, Indicator Light, Power Lock

Feature	Specification
Throttle Type	LCD Screen Handlebar Twist Grips with Battery Indicator, Ignition Lock
Motor Construction	Aluminum Body, Full Copper Coil, Heat Resistant, Naturally Air Cooled, Low Noise
Material	Aluminum, Rubber



Figure 3.1: Dimensions of the 48V 2000W Brushless DC Motor.

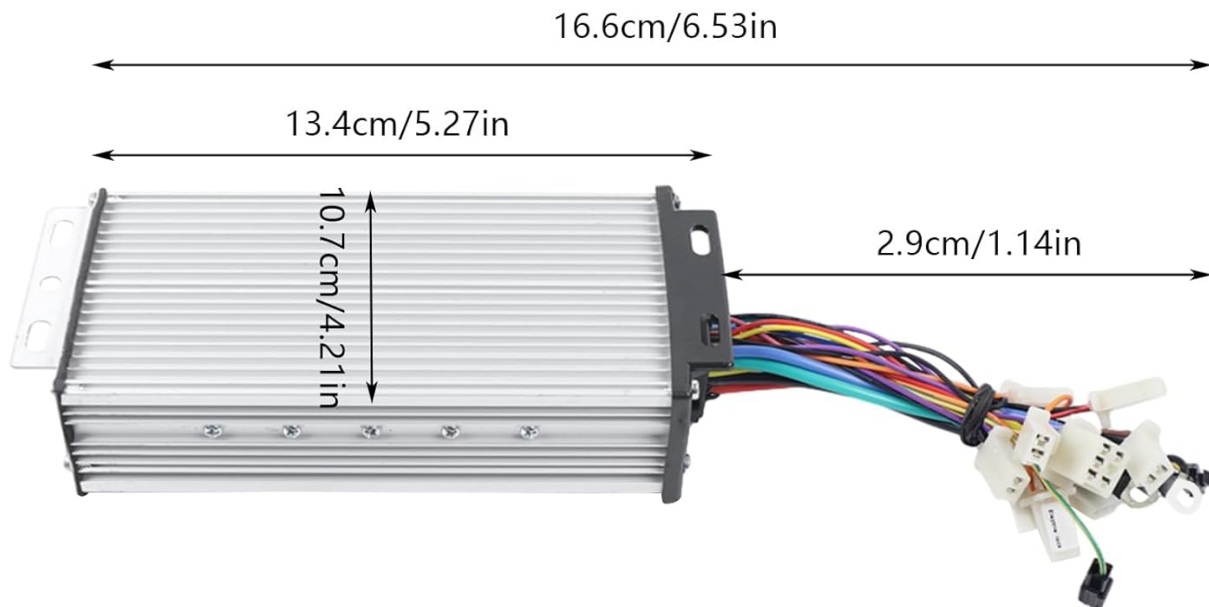


Figure 3.2: Dimensions of the 48V 2000W Brushless Motor Speed Controller.

4. SAFETY INSTRUCTIONS

- Always wear appropriate safety gear, including a helmet, gloves, and protective clothing, when operating any vehicle equipped with this motor kit.
- Ensure all electrical connections are secure and properly insulated to prevent short circuits and electrical hazards.
- Do not operate the motor kit in wet conditions or near flammable materials.
- Keep hands and loose clothing away from moving parts, such as the chain and sprocket, during operation.
- Regularly inspect all components for wear, damage, or loose connections. Replace damaged parts immediately.
- Installation should be performed by individuals with adequate technical knowledge and experience in electrical systems.
- Disconnect the power source before performing any maintenance or adjustments.

5. SETUP AND INSTALLATION

Follow these steps for proper installation of your TFCFL 48V 2000W Electric Brushless DC Motor Kit. Refer to the wiring diagrams and videos for visual guidance.

5.1 Motor and Controller Wiring

1. **Connect Motor Phase Wires:** Connect the motor's power supply wires (Yellow, Green, Blue) to the corresponding color-coded terminals on the controller. Ensure secure connections.
2. **Connect Motor Hall Wires:** Plug the motor's Hall wire directly into the controller's Hall wire plug.
3. **Connect Power Lock:** Connect the power lock wires to the power lock connector on the controller.
4. **Connect Throttle:** The throttle has three connectors (Green, Red, Black). Connect these to the throttle connector of the controller.
5. **Connect 3-Speed Connector:** The 3-speed connector controls high, medium, and low speeds. Connect this to the designated 3-speed connector on the controller.
6. **Connect Reverse Connector:** The two yellow wires are reverse connectors. Connect these to the reverse connector on the controller.
7. **Connect Power Supply:** After all other connections are made, connect the main power supply (Red + / Black -) to the controller.
8. **Study Wire (Optional):** If the motor does not run smoothly or shakes after being connected, plug in the study wire. The motor will run automatically. After plugging it in, you can pull it out, as it identifies the signal after turning (under normal circumstances, the plug cannot be connected). The study wire can also adjust the direction of motor operation. When the study wire is plugged in and you turn the throttle, its direction of rotation will change. Rotate once to change one direction.

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Video 5.1: Detailed guide on how to connect the motor kit components, including motor phase wires, Hall wires, power lock, throttle, 3-speed, and reverse connectors. This video demonstrates the wiring process step-by-step.

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Video 5.2: Overview of the Kunray 2000W Kits, demonstrating the components and their general application in conversions. This video provides a broader context for the motor kit installation.

6. OPERATING INSTRUCTIONS

Once the motor kit is correctly installed and powered, follow these steps to operate your electric vehicle:

1. **Power On:** Insert the key into the ignition lock on the throttle and turn it to the ON position. The LCD display on the throttle will illuminate, showing the battery level.
2. **Throttle Control:** Gently twist the throttle grip to accelerate. The motor speed will increase proportionally to how much the throttle is twisted.
3. **Speed Modes:** Use the 3-speed switch (if connected) to select between Low, Medium, and High-speed modes. Adjust the speed mode according to terrain and desired performance.
4. **Reverse Function:** Activate the reverse function (if connected) for backing up. Note that reverse speed is typically limited for safety.
5. **Braking:** Apply the E-Brake (if connected) to slow down or stop the vehicle.
6. **Power Off:** Turn the ignition key to the OFF position to power down the system when not in use.



Figure 6.1: Close-up of the LCD throttle displaying battery level and the motor's cooling holes for efficient operation.

7. MAINTENANCE

Regular maintenance ensures the longevity and optimal performance of your motor kit:

- **Cleaning:** Keep the motor and controller free from dirt, dust, and moisture. Use a dry cloth to wipe down surfaces. Avoid using high-pressure water directly on electrical components.
- **Connections:** Periodically check all electrical connections for tightness and corrosion. Secure any loose connections and clean any corroded terminals.
- **Chain and Sprocket:** Lubricate the T8F chain regularly and inspect the sprocket for wear. Replace if excessive wear is observed.
- **Motor Inspection:** Check the motor for any unusual noises, vibrations, or excessive heat during operation. The motor features natural air cooling and low noise design.
- **Battery:** Follow the manufacturer's guidelines for battery charging and maintenance. Ensure the battery is compatible with a 48V system.
- **Storage:** When not in use for extended periods, store the vehicle in a dry, cool place. Disconnect the battery if recommended by the battery manufacturer.

8. TROUBLESHOOTING

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

Problem	Possible Cause	Solution
Motor not starting	No power, loose connections, faulty ignition, faulty throttle.	Check battery connection, ensure ignition is ON, inspect all wiring, test throttle.
Motor runs roughly or shakes	Incorrect Hall wire connection, motor phase wire issue, controller fault.	Verify Hall wire connection. Use the study wire to auto-identify motor phase. If issues persist, consult support.
Loss of power/speed	Low battery charge, worn motor/controller, incorrect speed mode.	Charge battery fully. Check speed mode setting. Inspect motor and controller for damage.
Motor overheating	Excessive load, prolonged high-speed use, insufficient cooling.	Reduce load or operating time. Ensure motor is not obstructed for natural air cooling.

9. WARRANTY AND SUPPORT

For warranty information, please refer to the product's purchase documentation or contact the seller directly. If you require technical assistance or have questions not covered in this manual, please contact TFCFL customer support through your retailer or the official brand channels.

Always provide your product model number and purchase date when contacting support for faster service.