

SPEDWHEL T10DDM-A 60V30A

SPEDWHEL Front Brushless Motor Controller User Manual

For Zero 10X / Speedual 60V Electric Scooters

1. INTRODUCTION

This manual provides essential information for the safe and effective installation, operation, and maintenance of your SPEDWHEL Front Brushless Motor Controller. This controller is specifically designed for Zero 10X and Speedual 60V electric scooters. Please read this manual thoroughly before attempting any installation or operation to ensure proper function and safety.

2. SAFETY INFORMATION

- **Professional Installation Recommended:** Due to the electrical nature of this component, installation should ideally be performed by a qualified technician. Incorrect wiring can lead to damage to the controller, scooter, or personal injury.
- **Power Disconnection:** Always disconnect the scooter's battery power before performing any installation, maintenance, or repair work on the controller or any electrical components.
- **Voltage Compatibility:** Ensure the controller's voltage (60V) matches your scooter's battery system. Using an incompatible voltage can cause severe damage.
- **Water and Moisture:** Keep the controller dry and protected from water and excessive moisture. Water ingress can cause short circuits and component failure.
- **Secure Connections:** Ensure all electrical connections are tight and properly insulated to prevent short circuits and intermittent operation.
- **Heat Dissipation:** Ensure the controller is mounted in a location that allows for adequate airflow and heat dissipation. Overheating can reduce performance and lifespan.

3. PACKAGE CONTENTS

- 1 x SPEDWHEL Front Brushless Motor Controller (Model: T10DDM-A 60V30A)

4. PRODUCT OVERVIEW

The SPEDWHEEL Front Brushless Motor Controller is a critical component for managing the power delivery to your electric scooter's front motor. It features a robust aluminum casing for heat dissipation and multiple wire harnesses for various connections.

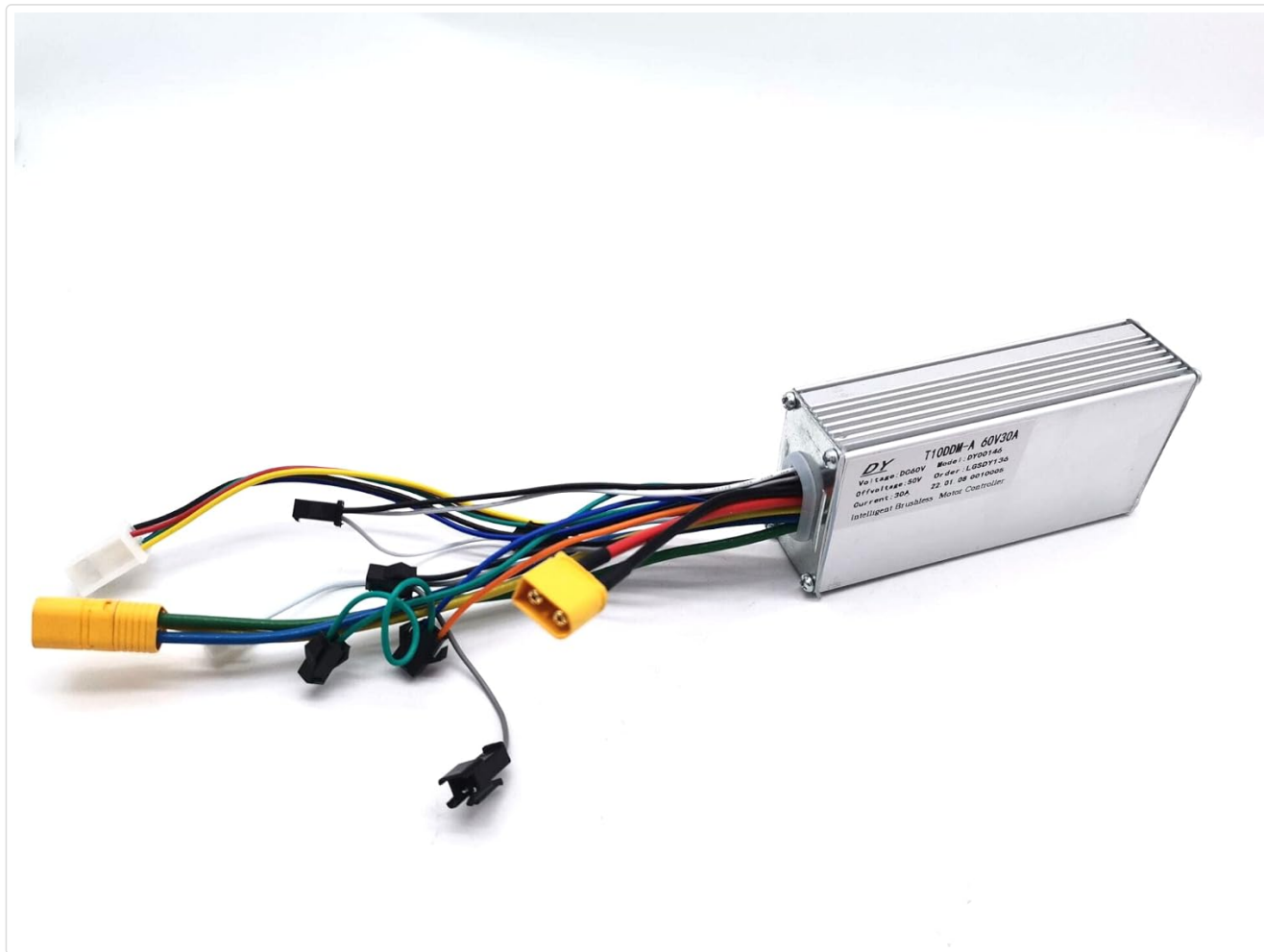


Figure 4.1: Overview of the SPEDWHEEL Front Brushless Motor Controller, showing its compact design and numerous color-coded wire connections for integration into the scooter's electrical system.

For ZERO 10X Scooter
Front Controller
60V



Figure 4.2: The controller with an overlay indicating its compatibility with Zero 10X scooters and its 60V operating voltage, confirming its intended application.

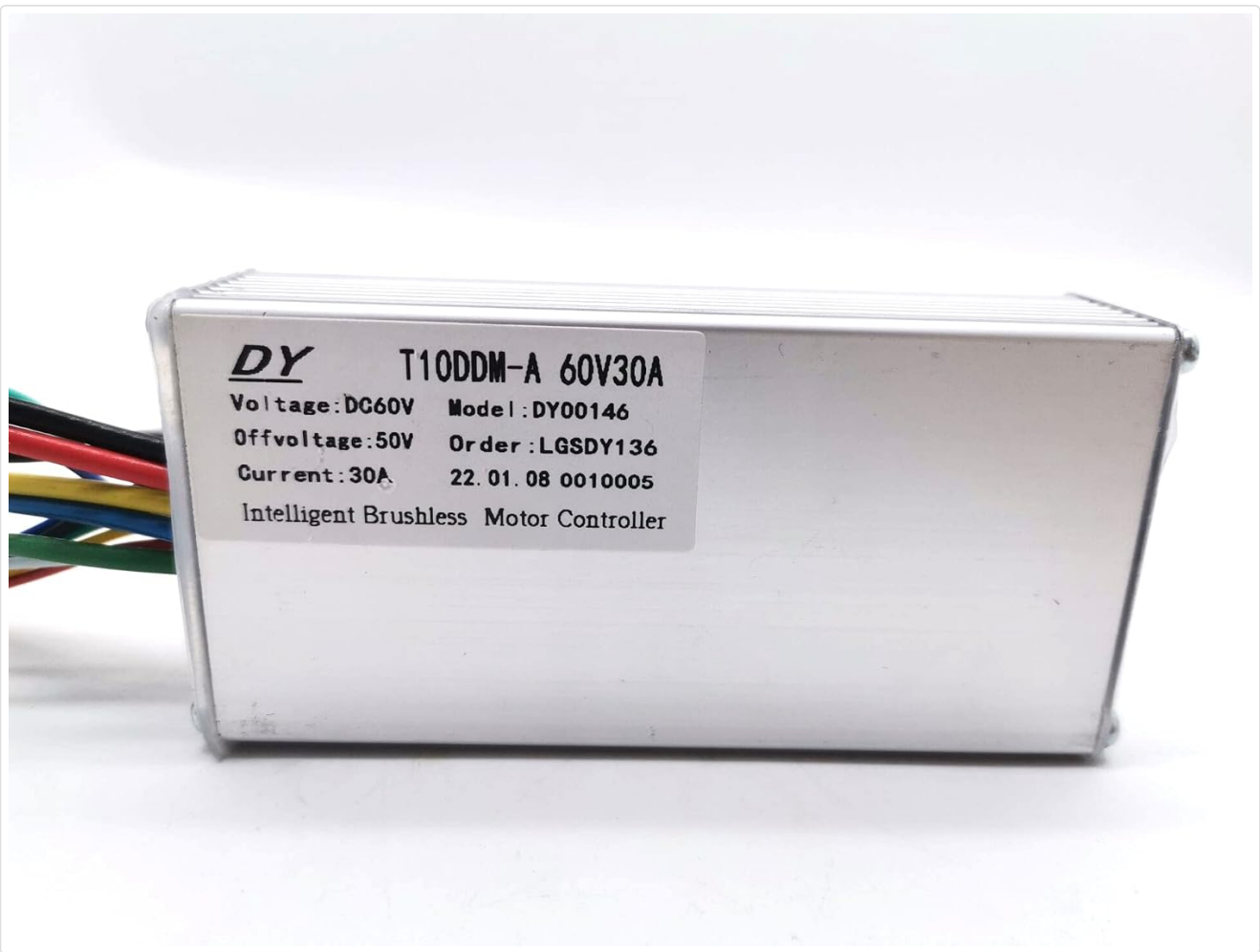


Figure 4.3: A detailed view of the controller's identification label, displaying key specifications such as model number (T10DDM-A 60V30A), voltage (DC60V), off-voltage (50V), and current (30A), along with the description 'Intelligent Brushless Motor Controller'.

4.1. Wire Harness Identification

The controller features various color-coded wires for specific functions. Refer to the following general guide. **Note:** Actual wiring may vary slightly. Always consult your scooter's specific wiring diagram or a professional technician.

- **Thick Red/Black Wires:** Battery power input (Red: Positive, Black: Negative).
- **Thick Yellow/Green/Blue Wires:** Motor phase wires.
- **Thin Red/Black/Yellow/Green/Blue Wires:** Hall sensor wires for the motor.
- **Thin Red/Black/White/Green Wires:** Throttle connection.
- **Other Wires (various colors):** May include connections for display, brake sensors, lights, anti-theft, cruise control, etc.

5. SETUP AND INSTALLATION

Warning: Incorrect installation can lead to serious damage or injury. If you are not confident in your electrical skills, seek professional assistance.

1. **Disconnect Power:** Ensure the scooter's battery is completely disconnected before starting.
2. **Locate Old Controller:** Identify the existing front motor controller on your scooter.
3. **Document Connections:** Take clear photos or make a diagram of all existing wire connections before disconnecting them. This will serve as a reference for installing the new controller.
4. **Remove Old Controller:** Carefully disconnect all wires from the old controller and remove it from its mounting.

location.

5. **Mount New Controller:** Securely mount the SPEDWHEEL controller in the same or a suitable location, ensuring it is protected from physical damage and has adequate ventilation.
6. **Connect Wires:** Connect the new controller's wires to the corresponding scooter components. Follow your documented connections and the general guide in Section 4.1. Pay close attention to:
 - **Battery Wires:** Connect the thick red wire to battery positive (+) and the thick black wire to battery negative (-).
 - **Motor Phase Wires:** Connect the thick yellow, green, and blue wires to the corresponding motor phase wires.
 - **Hall Sensor Wires:** Connect the thin Hall sensor wires (usually 5 wires: red, black, yellow, green, blue) to the motor's Hall sensor connector.
 - **Throttle Wires:** Connect the throttle wires (typically 3 wires: power, signal, ground).
 - **Other Wires:** Connect brake sensors, display, lights, etc., as per your scooter's configuration.
7. **Initial Test:** Once all connections are made and secured, reconnect the scooter's battery. Perform a low-speed test in a safe environment to ensure the motor responds correctly to the throttle and brakes.
8. **Final Securement:** After confirming proper operation, ensure all wires are neatly routed, secured, and protected from abrasion or pinching.

6. OPERATING INSTRUCTIONS

Once the controller is correctly installed, its operation is integrated with your scooter's existing controls (throttle, display, brakes). The controller manages the power flow to the front motor based on your input.

- **Power On:** Turn on your scooter's main power switch. The display should illuminate.
- **Throttle Control:** Gently apply the throttle. The front motor should engage smoothly, providing propulsion.
- **Braking:** When the brake levers are engaged, the controller should cut power to the motor, and if equipped, activate regenerative braking.
- **Speed Modes:** If your scooter has multiple speed modes, the controller will adjust power output accordingly.

7. MAINTENANCE

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

- **Visual Inspection:** Periodically inspect the controller and its wiring for any signs of damage, corrosion, loose connections, or frayed wires.
- **Cleanliness:** Keep the controller's exterior clean and free from dirt, dust, and debris. Use a dry cloth for cleaning.
- **Connection Checks:** Ensure all connectors are securely seated and free from oxidation.
- **Heat Management:** Verify that the controller's mounting location allows for proper airflow and that it is not covered by anything that could impede heat dissipation.

8. TROUBLESHOOTING

If you encounter issues with your scooter's front motor, consider the following troubleshooting steps:

- **No Power to Motor:**

- Check battery charge level.
- Verify all battery and motor phase wire connections are secure.
- Inspect the main power fuse (if applicable) on the scooter.
- **Motor Not Responding to Throttle:**
 - Check throttle wire connections.
 - Ensure brake levers are not engaged (some scooters cut motor power when brakes are applied).
 - Verify Hall sensor wire connections.
- **Motor Runs Intermittently or Jerkily:**
 - Check for loose or corroded connections on motor phase wires and Hall sensor wires.
 - Inspect motor for physical damage.
- **Controller Overheating:**
 - Ensure adequate ventilation around the controller.
 - Avoid prolonged heavy loads or steep inclines if the issue persists.

If these steps do not resolve the issue, it is recommended to consult a professional electric scooter technician.

9. SPECIFICATIONS

Feature	Specification
Brand	SPEDWHEEL
Model	T10DDM-A 60V30A
Voltage	DC 60V
Off-voltage	50V
Current	30A
Compatibility	Zero 10X / Speedual 60V Electric Scooters
Type	Intelligent Brushless Motor Controller
UPC	774144805806

10. WARRANTY AND SUPPORT

For warranty information and technical support, please contact the seller or manufacturer directly. Keep your purchase receipt as proof of purchase. Specific warranty terms may vary depending on the retailer and region.

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