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› SPEDWHEL Zero 10X/Speedual 52V Electric Scooter Front Brushless Motor Controller User Manual (Model: QS-C52-17601-A)

SPEDWHEL QS-C52-17601-A

SPEDWHEL Zero 10X/Speedual 52V Electric Scooter Front Brushless Motor Controller User Manual

Model: QS-C52-17601-A

1. INTRODUCTION

This manual provides comprehensive instructions for the installation, operation, and maintenance of the SPEDWHEL Front Brushless Motor Controller, designed for Zero 10X and Speedual 52V electric scooters. Please read this manual thoroughly before installation and use to ensure proper function and safety.

2. SAFETY INFORMATION

- Always disconnect the scooter's battery before performing any installation or maintenance.
- Ensure all connections are secure and correctly matched to prevent electrical damage.
- Consult a qualified technician if you are unsure about any installation steps.
- Keep the controller dry and protected from moisture and extreme temperatures.
- Do not attempt to modify the controller, as this may void the warranty and cause damage.

3. PACKAGE CONTENTS

Verify that all items are present in the package:

- 1x SPEDWHEL Front Brushless Motor Controller (Model: QS-C52-17601-A)
- *(Note: Additional accessories or tools may be required for installation, not included.)*

4. PRODUCT OVERVIEW

The SPEDWHEL Front Brushless Motor Controller is a critical component for your electric scooter,

managing power delivery to the motor. Below are images illustrating the controller and its various connections.



Figure 4.1: SPEDWHEL Front Brushless Motor Controller. This image shows the complete controller unit with all its wiring harnesses extending from one end, ready for connection to the scooter's various components.

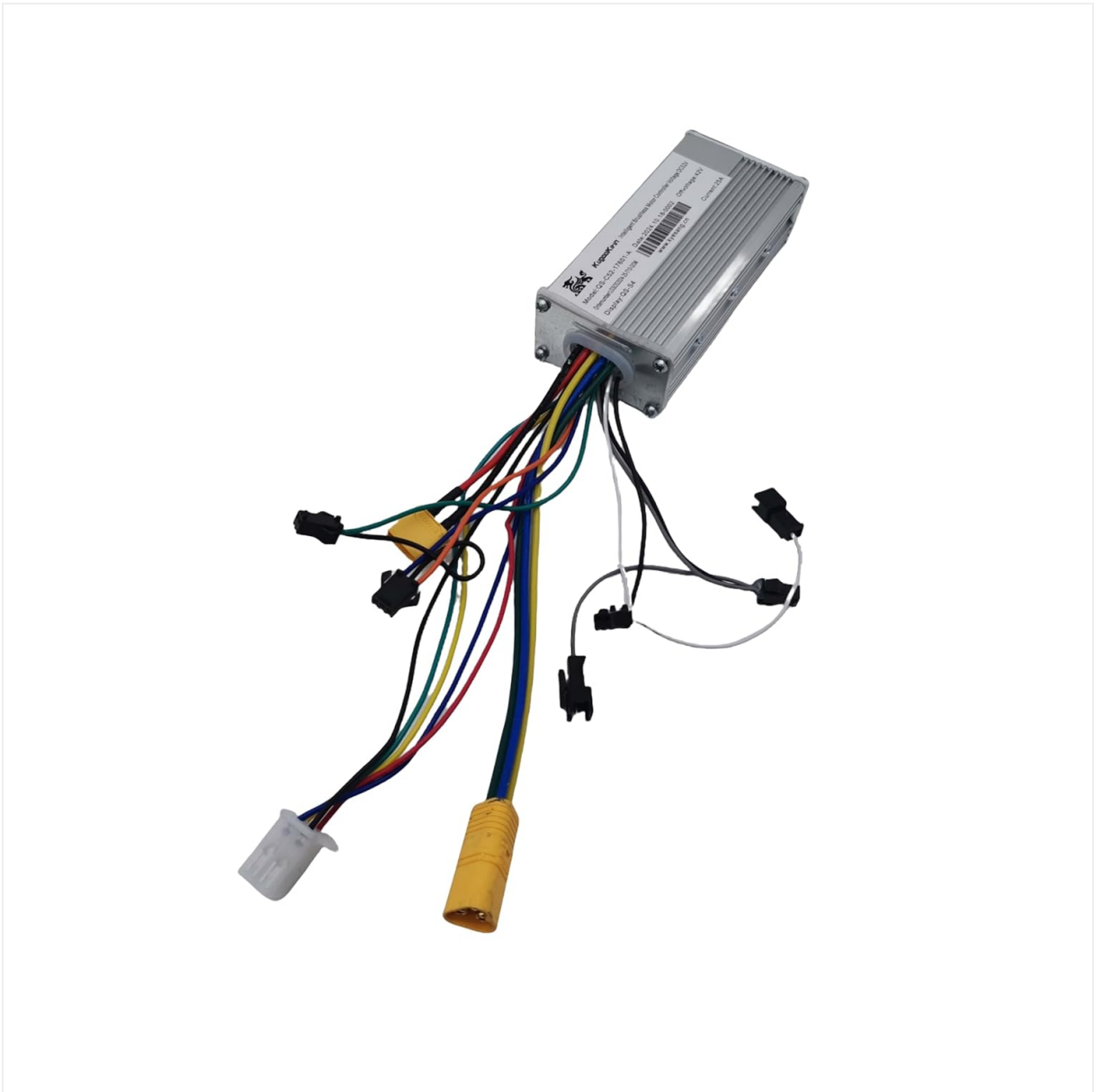


Figure 4.2: Angled view of the controller. This perspective highlights the compact design of the controller and the organized arrangement of its multiple colored wires, which are essential for connecting to the scooter's electrical system.

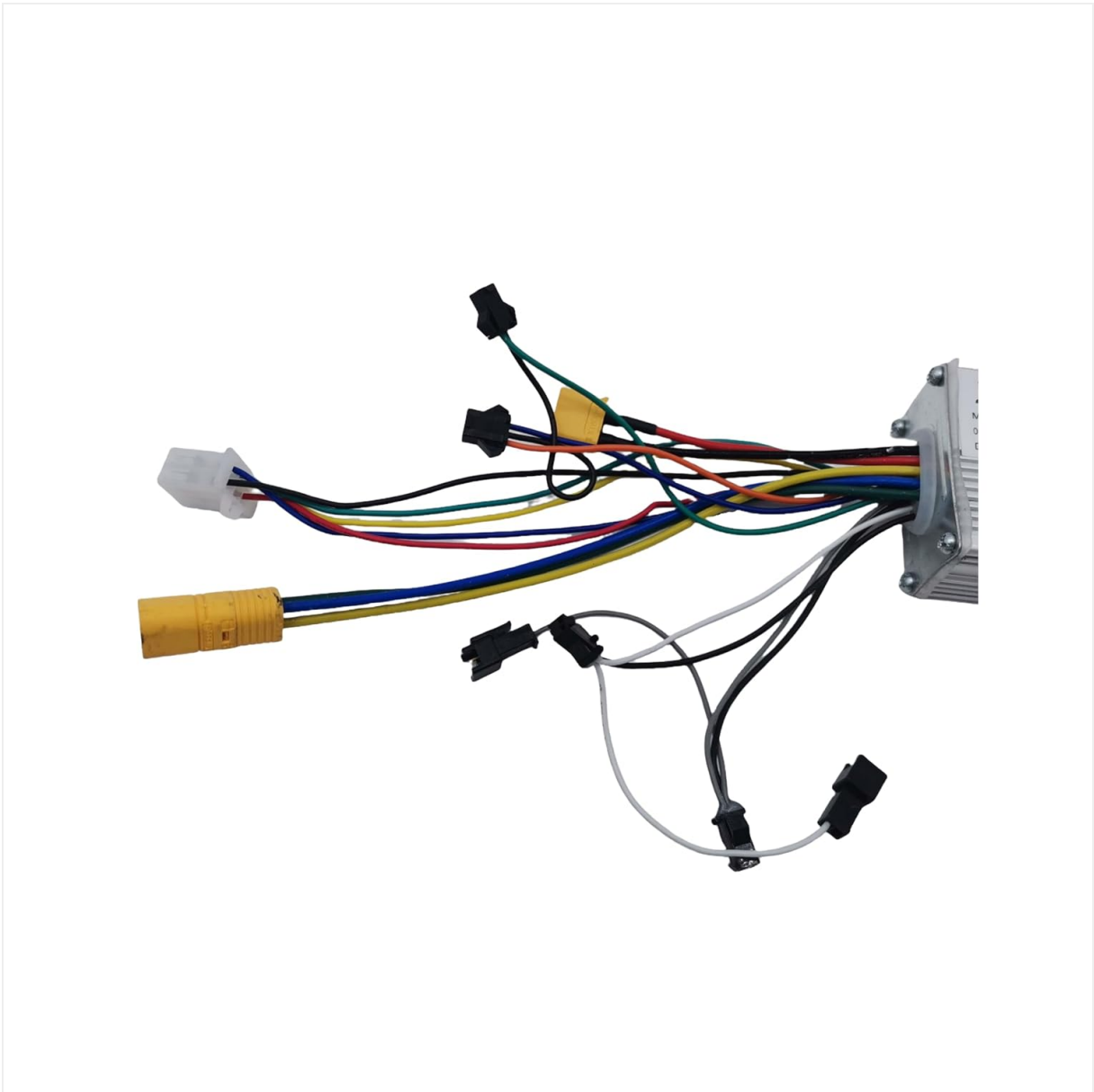


Figure 4.3: Detailed view of the controller's wiring. This close-up shows the various connectors and their color coding, which are crucial for correct installation. Key connectors include the main power input (yellow), motor phase wires, and signal wires for display and other functions.



Figure 4.4: Controller label with specifications. This image displays the label on the controller casing, indicating the model number (QS-C52-17601-A), voltage (DC52V), off-voltage (42V), and current (25A). It also shows the display type (QS-S4) and a manufacturing date.

5. SETUP AND INSTALLATION

Installing the SPEDWHEEL Front Brushless Motor Controller requires careful attention to wiring. Ensure the scooter's power is OFF and the battery is disconnected before proceeding.

1. **Locate Existing Controller:** Identify the current motor controller in your Zero 10X or Speedual 52V electric scooter. Note its mounting position and cable routing.
2. **Disconnect Old Controller:** Carefully disconnect all wires from the old controller. Take photos if necessary to remember the connections.
3. **Mount New Controller:** Securely mount the new SPEDWHEEL controller in the same location as the old one, ensuring it is protected from vibrations and moisture.
4. **Connect Wires:**
 - **Battery Power:** Connect the main power wires (usually thick red and black) from the scooter's battery to the corresponding connectors on the controller. Ensure correct polarity.
 - **Motor Phase Wires:** Connect the three thick motor phase wires (usually green, blue, yellow) from the motor to the controller.

- **Hall Sensor Wires:** Connect the smaller Hall sensor wires from the motor to the controller. These are typically a bundle of five wires.
 - **Display/Throttle:** Connect the wires for the display unit and throttle. Refer to your scooter's wiring diagram for specific connections (e.g., QS-S4 display).
 - **Brake Levers:** Connect the brake lever wires.
 - **Other Accessories:** Connect any other accessories such as lights, horn, or key switch, if applicable.
5. **Secure Connections:** Double-check all connections to ensure they are tight and properly insulated.
 6. **Test Functionality:** Reconnect the battery and perform a low-speed test in a safe environment to verify proper operation of the motor, throttle, and brakes.

6. OPERATING INSTRUCTIONS

Once the controller is correctly installed, its operation is integrated with your scooter's existing display and throttle system. The controller manages the power output based on your throttle input and selected speed modes.

- **Power On:** Turn on your scooter using the main power switch or key. The display (e.g., QS-S4) should illuminate.
- **Throttle Control:** Gently twist the throttle to engage the motor. The controller will regulate the power to the motor based on the throttle position.
- **Speed Modes:** Use your scooter's display unit to select desired speed modes (if available). The controller will adjust power delivery accordingly.
- **Braking:** When brake levers are engaged, the controller will cut power to the motor, and if equipped, activate regenerative braking.

7. MAINTENANCE

Regular maintenance ensures the longevity and optimal performance of your motor controller.

- **Keep Clean:** Periodically clean the exterior of the controller to remove dust and debris. Use a dry cloth.
- **Inspect Connections:** Regularly check all wire connections for tightness and signs of wear or corrosion.
- **Avoid Moisture:** Ensure the controller remains dry. Water ingress can cause severe damage.
- **Temperature Management:** Avoid operating the scooter in conditions that cause the controller to overheat. Ensure adequate airflow if possible.

8. TROUBLESHOOTING

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

Problem	Possible Cause	Solution
Motor not responding to throttle	Loose throttle connection, faulty throttle, controller error, disconnected motor wires.	Check throttle wiring. Inspect motor phase and Hall sensor connections. Power cycle the scooter.

Problem	Possible Cause	Solution
Scooter powers on but no motor movement	Brake levers engaged, Hall sensor issue, motor phase wire issue.	Ensure brake levers are not stuck. Check Hall sensor and motor phase wire connections.
Intermittent power or stuttering	Loose battery connection, damaged wiring, overheating controller.	Check all power connections. Allow controller to cool down. Inspect wiring for damage.
Controller gets excessively hot	Overload, poor ventilation, internal fault.	Reduce load on the scooter. Ensure controller has adequate airflow. If problem persists, seek professional help.

If troubleshooting steps do not resolve the issue, contact SPEDWHEL customer support or a qualified scooter technician.

9. SPECIFICATIONS

Feature	Detail
Model	QS-C52-17601-A
Brand	SPEDWHEL
Compatibility	Zero 10X / Speedual 52V Electric Scooters
Type	Front Brushless Motor Controller
Voltage	DC 52V
Off-Voltage	42V
Current	25A
Display Type	QS-S4
UPC	774144805455

10. WARRANTY AND SUPPORT

For warranty information and technical support, please refer to the retailer where the product was purchased or visit the official SPEDWHEL website. Keep your purchase receipt as proof of purchase. For further assistance, you may contact SPEDWHEL customer service via their official channels. Always provide your product model number (QS-C52-17601-A) when seeking support.

