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> NULKOMMA X031-AB001E 48V 18A Brushless Motor Controller User Manual

NULKOMMA X031-AB001E

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User Manual

1. PRODUCT OVERVIEW

The NULKOMMA X031-AB001E is a 48V 18A brushless motor controller designed for electric bicycles and scooters. It provides stable speed control and sensitive response for braking and direction changes. The controller features a durable aluminum alloy shell with a groove design for efficient heat dissipation, protecting internal circuits from thermal overload. Its connectors are fully waterproof, ensuring reliable performance in various weather conditions and contributing to a low failure rate over long-term use. This controller is a customized model. To ensure compatibility with your specific electric bike, please respond promptly to any messages from the seller after placing your order.

2. KEY FEATURES

- **Model:** X031-AB001E
- **Voltage:** 48V
- **Current Limit:** 18A
- **Cutoff Voltage:** 39V
- **Display Meter Compatibility:** M5
- **Efficient Heat Dissipation:** Aluminum alloy shell with groove design prevents thermal overload.
- **Sensitive Control:** Provides stable speed and responsive braking and direction changes.
- **Durable and Waterproof:** High-performance wires and fully waterproof connectors ensure long-term reliability in all weather conditions.

3. PACKAGE CONTENTS

The package includes the following items:

- 1 x NULKOMMA X031-AB001E Brushless Motor Controller

4. SPECIFICATIONS

Model Name	NKM-X031-KONGZHIQI
Part Number	X031-AB001E
Battery Voltage	48V
Current Limit	18A
Cutoff Voltage	39V
Display Meter	M5
Material	Aluminum, Plastic
Color	Silver White
Item Package Dimensions	5.9 x 3.9 x 2.7 inches
Package Weight	10.08 ounces



Image: The NULKOMMA X031-AB001E controller showing its dimensions (3.86 inches length, 2.52 inches width) and the product label with model number, battery voltage, cutoff voltage, current limit, and display meter compatibility.

5. INSTALLATION GUIDE

The NULKOMMA X031-AB001E controller is designed for easy installation with clearly labeled interfaces. Before beginning installation, ensure your electric bicycle or scooter is powered off and the battery is disconnected.

1. **Identify Connectors:** Carefully examine all wires and connectors extending from the controller. Each connector is designed for a specific function and may have a label or distinct shape.
2. **Connect Power:** Locate the main power connector (often a T-type plug or similar high-current connector) and connect it to your e-bike's battery output. Ensure polarity is correct.
3. **Connect Motor:** Identify the motor phase wires (typically three thicker wires, often green, blue, yellow) and connect them to the corresponding motor wires.
4. **Connect Hall Sensors:** Connect the Hall sensor wires (usually a group of five thinner wires) to the motor's Hall sensor

input.

5. **Connect Display Meter:** Connect the display meter (M5 compatible) to its designated connector.
6. **Connect Other Components:** Connect other components such as throttle, brake levers, and pedal assist sensor (PAS) to their respective labeled connectors. Refer to the image below for common connector types.
7. **Secure Controller:** Mount the controller securely in a protected location on your e-bike or scooter, ensuring good airflow for heat dissipation.
8. **Initial Test:** After all connections are made, reconnect the battery and perform a low-speed test to ensure proper function of the motor, throttle, and brakes.

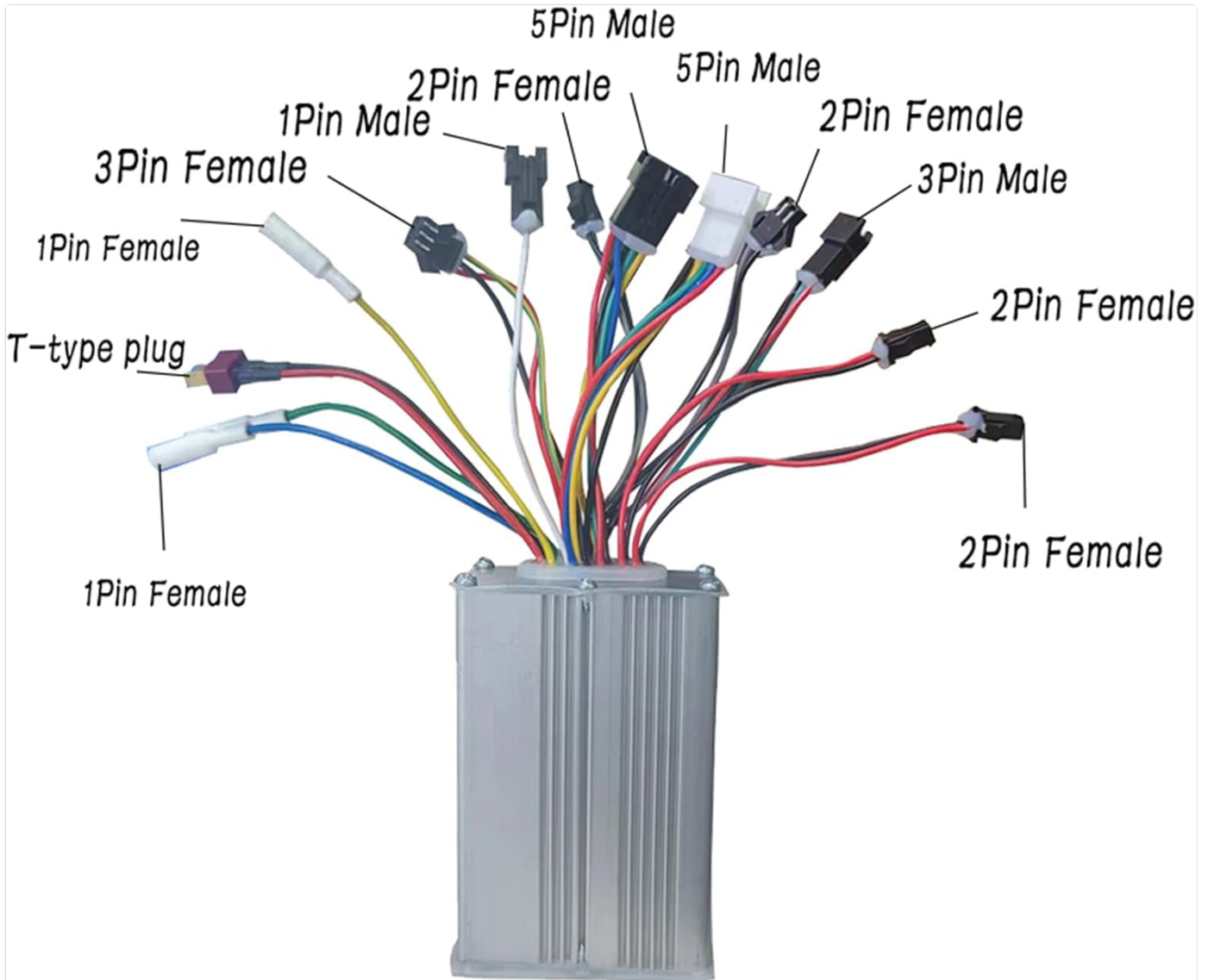


Image: The NULKOMMA X031-AB001E controller showing its array of wires and connectors, including 5Pin Male, 2Pin Female, 3Pin Female, 1Pin Male, 1Pin Female, and T-type plug, each for specific connections.

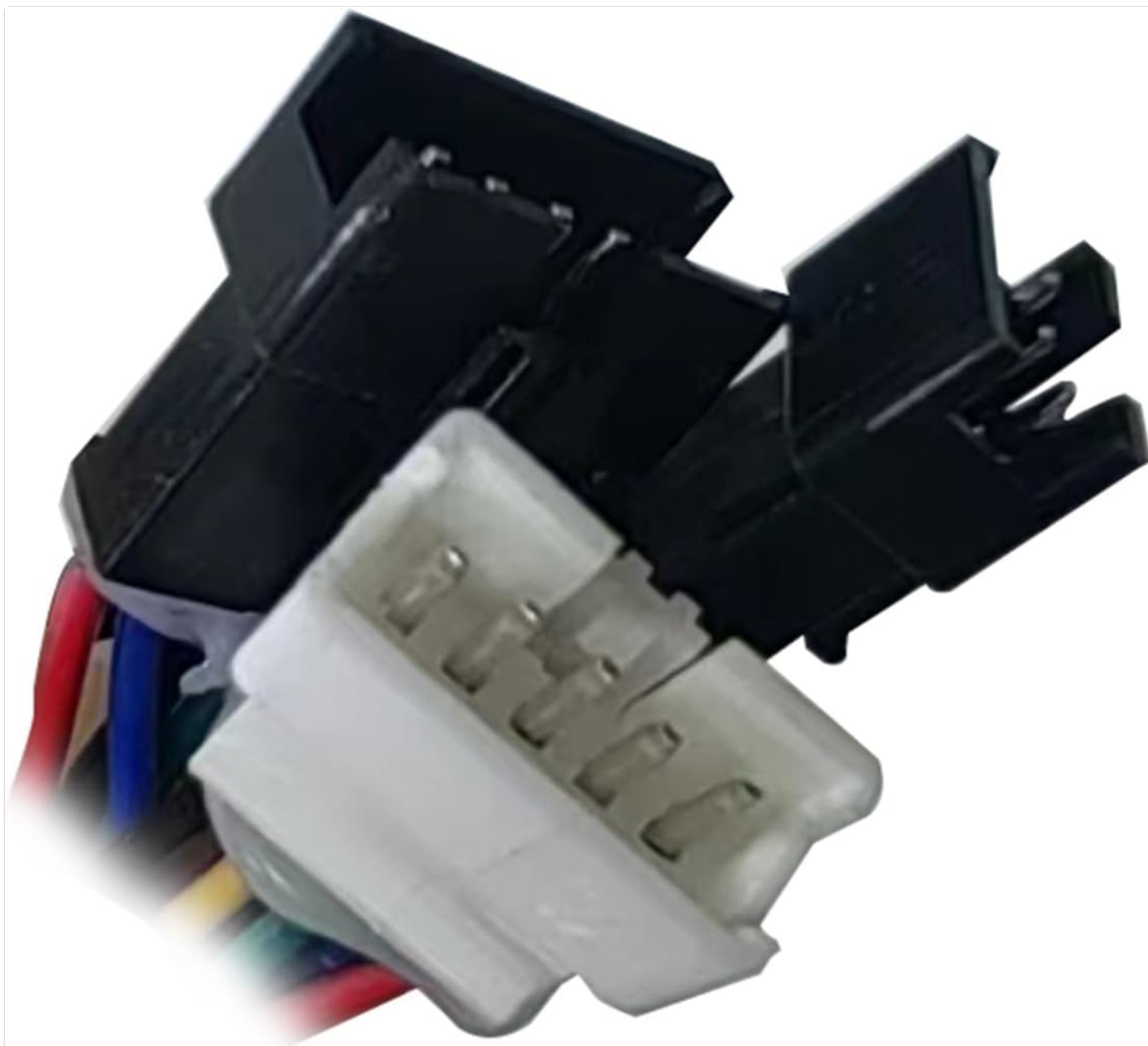


Image: A detailed view of several connectors from the NULKOMMA X031-AB001E controller, highlighting their distinct shapes and pin configurations for correct wiring.

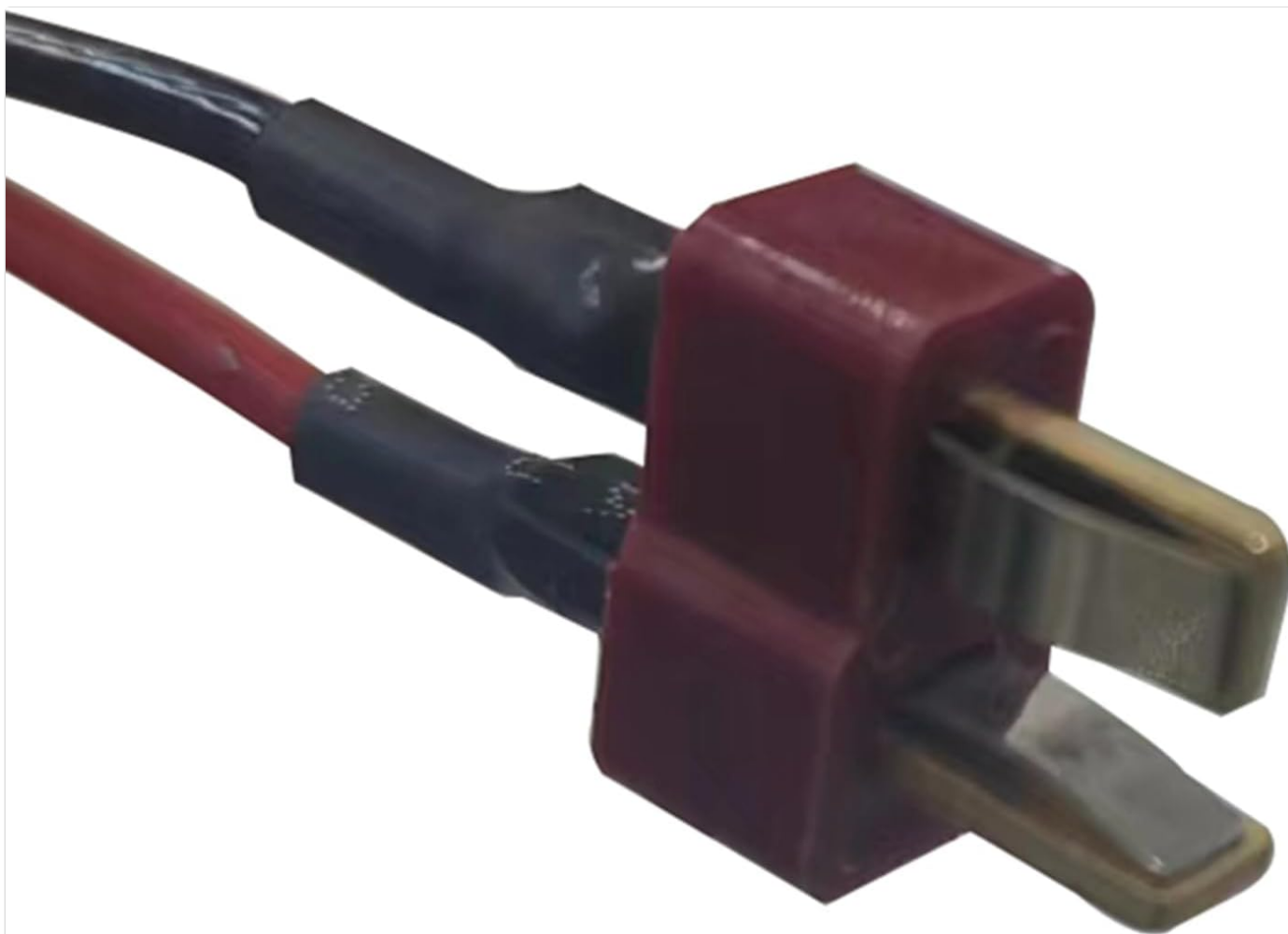


Image: A close-up of the T-type power connector, typically used for connecting the controller to the battery, showing its robust design.

Your browser does not support the video tag.

Video: An official NULKOMMA video demonstrating the physical appearance and various connectors of the 48V Motor Speed Brushless Controller for Electric Bicycle, providing a visual guide to its components.

6. OPERATION

Once correctly installed, the controller manages the power delivery to your e-bike's motor based on inputs from the throttle, pedal assist sensor, and brake levers. The M5 display meter, if connected, will provide real-time information such as speed, battery level, and assist mode. Ensure all components are functioning correctly before riding.

7. CARE AND MAINTENANCE

- **Regular Inspection:** Periodically check all connections to ensure they are secure and free from corrosion.
- **Cleaning:** Keep the controller housing clean and free of dirt or debris. Use a soft, dry cloth for cleaning. Avoid using harsh chemicals or excessive moisture.
- **Protection:** Although the connectors are waterproof, avoid submerging the controller in water. Protect it from direct impacts.
- **Heat Dissipation:** Ensure the controller's fins are not obstructed to allow for proper heat dissipation.

8. TROUBLESHOOTING

If you experience issues with your controller, consider the following basic troubleshooting steps:

- **No Power:** Check battery connection, battery charge level, and main power switch.
- **Motor Not Responding:** Verify all motor and Hall sensor connections. Ensure the throttle is correctly connected and functioning.
- **Intermittent Operation:** Inspect all wiring for loose connections or damage. Ensure waterproof connectors are fully seated.
- **Error Codes on Display:** Consult your M5 display meter manual for specific error code meanings and troubleshooting steps.

If problems persist, contact NULKOMMA customer support for further assistance.

9. WARRANTY AND SUPPORT

The NULKOMMA X031-AB001E Brushless Motor Controller comes with a **180-day warranty** from the date of purchase. This warranty covers manufacturing defects and material faults under normal use.

For warranty claims, technical support, or any inquiries regarding your product, please contact NULKOMMA customer service. Ensure you have your purchase details and product model number (X031-AB001E) ready when contacting support.