NULKOMMA X008-AAM003

NULKOMMA X008-AAM003 Electric Bicycle Controller Instruction Manual

Model: X008-AAM003

1. Introduction

This manual provides detailed instructions for the NULKOMMA X008-AAM003 DC48V18A Brushless Motor Controller, designed for electric bicycles and scooters. It covers product features, installation, operation, and maintenance to ensure optimal performance and longevity of your e-bike system.

Important Note: This is a customized product. After placing your order, please contact customer service promptly with your old product information to ensure compatibility and correct product matching for your bike.

2. Product Features

- **Sensitive Control:** Provides steady speed and sensitive control for braking and direction changes.
- **Efficient Heat Dissipation:** The controller shell is constructed from high-quality aluminum alloy with a groove design, effectively protecting internal circuits and preventing thermal overload.
- **Waterproof Connectors:** Equipped with fully waterproof connectors to ensure maximum durability and reliable performance in various weather conditions.
- **Durable Design:** High-performance wires and robust waterproof interfaces contribute to low malfunction rates and extended product lifespan.
- **Easy Installation:** Interfaces are clearly labeled with instructions for straightforward and correct connection.

3. Package Contents

The product package includes:

- 1 x NULKOMMA X008-AAM003 Electric Bicycle Controller

4. Specifications

Feature	Detail
Model Number	X008-AAM003
Battery Voltage	48V
Cutoff Voltage	39V
Current Limit	18A
Display Meter Compatibility	KDS
Package Dimensions	6.3 x 5.12 x 1.57 inches
Item Weight	6.35 ounces
Manufacturer	Nulkomma
Date First Available	September 18, 2024
Product Identifier	EB06A/X008-AAM003/48V/18A/KDS/PAS3S/20240419005

5. Setup and Installation

Proper installation is crucial for the safe and efficient operation of your electric bicycle. The NULKOMMA X008-AAM003 controller features clearly labeled interfaces to simplify the connection process. Always ensure the e-bike's power is off before making any connections.

5.1. Identifying Connections

The controller comes with various color-coded wires and connectors. Refer to the labels on each interface for correct identification. Common connections include:

- Motor Phase Wires (typically thick Yellow, Green, Blue)
- Hall Sensor Wires (smaller Yellow, Green, Blue, plus Red and Black)
- Battery Power (thick Red and Black)
- Display Meter (KDS compatible, multi-pin connector)
- Throttle
- Brake Levers (often with cut-off function)
- Pedal Assist Sensor (PAS)
- Other accessory connections (e.g., headlight, tail light, if applicable)

5.2. Connection Procedure

1. **Power Off:** Ensure the e-bike battery is disconnected before starting installation.
2. **Connect Motor Wires:** Connect the three thick motor phase wires (Yellow, Green, Blue) from the controller to the corresponding motor wires.
3. **Connect Hall Sensor Wires:** Connect the Hall sensor wires from the controller to the motor's Hall sensor wires. These are typically a set of five smaller wires.
4. **Connect Battery:** Connect the main power wires (thick Red for positive, thick Black for negative) from the controller to your 48V battery.
5. **Connect Display Meter:** Connect the KDS display meter to its designated multi-pin connector on the

controller.

6. **Connect Throttle:** Attach the throttle connector to the controller.
7. **Connect Brake Levers:** Connect the brake lever connectors. These typically cut off motor power when brakes are applied.
8. **Connect PAS Sensor:** If your e-bike uses a pedal assist system, connect the PAS sensor to the controller.
9. **Secure Connections:** Double-check all connections to ensure they are firm and correctly matched.
10. **Initial Test:** After all connections are made, carefully reconnect the battery and perform a low-speed test to verify functionality.

5.3. Visual Installation Guide

For a visual demonstration of the controller's connections, please refer to the video below:

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Video: Demonstrating the various wire connections on the NULKOMMA X008-AAM003 Brushless Motor Controller for e-bikes.

5.4. Product Images for Reference

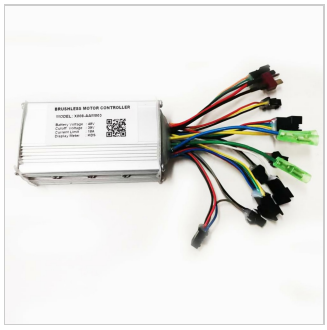

Image: NULKOMMA X008-AAM003 Electric Bicycle Controller showing the main unit and all connected wires.

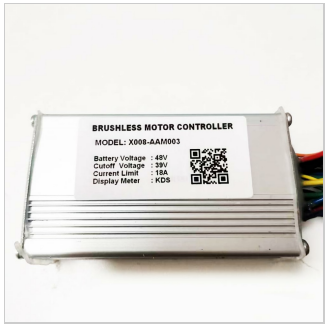

Image: Close-up view of the controller's label, detailing model number, battery voltage, cutoff voltage, current limit, and display meter type.

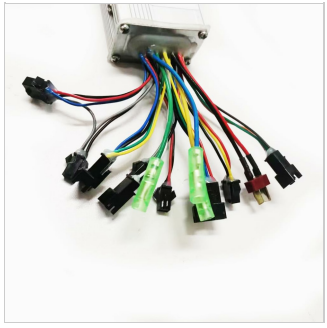

Image: The controller with its numerous color-coded wires fanned out, illustrating the various connection points.

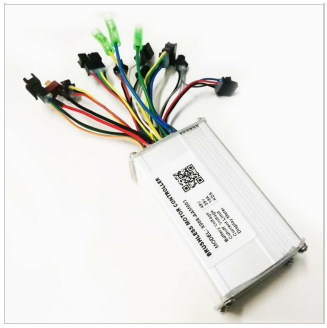

Image: An angled perspective of the NULKOMMA controller, highlighting the compact design and wire organization.

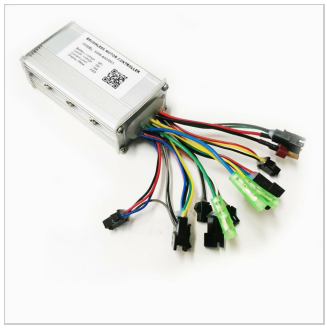

Image: Another angled view of the controller, providing a different perspective on its form factor and wire egress.

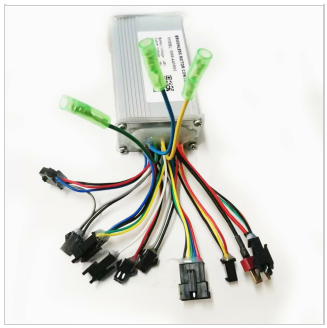

Image: A top-down view focusing on the array of wires extending from the controller, useful for identifying individual connectors.

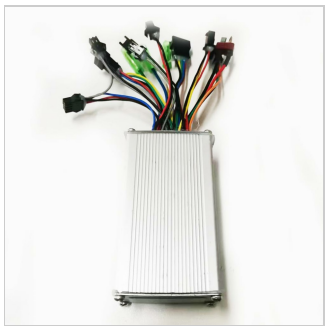

Image: Rear view of the NULKOMMA controller, showcasing its aluminum alloy

casing and heat dissipation fins.

6. Operation

Once the NULKOMMA X008-AAM003 controller is correctly installed and connected to your e-bike system, follow these general operating guidelines:

1. **Power On:** Turn on your e-bike's battery and then the display meter (if applicable). The controller will initialize.
2. **Throttle Control:** Gently twist the throttle to engage the motor. The controller provides sensitive speed control based on throttle input.
3. **Pedal Assist (PAS):** If a PAS sensor is installed, pedaling will activate motor assistance, providing power proportional to your pedaling effort (depending on display settings).
4. **Braking:** Applying the brake levers will typically cut off power to the motor, ensuring safe stopping.
5. **Display Functions:** Refer to your KDS display meter's manual for specific functions, settings, and error codes.
6. **Power Off:** Always turn off the display meter and then the battery when you are finished riding to conserve power.

7. Maintenance

To ensure the longevity and optimal performance of your NULKOMMA X008-AAM003 controller, adhere to the following maintenance practices:

- **Keep Clean and Dry:** Regularly wipe the controller's exterior with a soft, dry cloth. Avoid exposing it to excessive moisture or direct water spray.
- **Inspect Connections:** Periodically check all wire connections for tightness and signs of wear or corrosion. Ensure waterproof connectors are properly sealed.
- **Avoid Extreme Temperatures:** Do not expose the controller to prolonged periods of extreme heat or cold, as this can affect electronic components.
- **Handle with Care:** Avoid dropping or subjecting the controller to strong impacts, which could damage internal circuitry.

8. Troubleshooting

If you encounter issues with your NULKOMMA X008-AAM003 controller, consider the following common troubleshooting steps:

- **No Power:**
  - Check battery charge level.
  - Verify all power connections (thick Red and Black wires) are secure.
  - Ensure the display meter is properly connected and powered on.
- **Motor Not Responding:**
  - Check motor phase wire connections (Yellow, Green, Blue).
  - Verify Hall sensor wire connections.
  - Ensure throttle is correctly connected and functioning.
  - Check if brake levers are engaged, as they may cut motor power.

- **Intermittent Operation:**
    - Inspect all connectors for loose connections or corrosion.
    - Ensure wires are not pinched or damaged.
- **Error Codes on Display:**
    - Refer to your KDS display meter's specific manual for interpretation of error codes.

If troubleshooting steps do not resolve the issue, please contact customer support.

9. Warranty and Support

NULKOMMA offers a satisfaction guarantee for this product. If you are not satisfied with your purchase, you may apply for an unconditional return and refund within 180 days of receipt.

For any product-related issues, technical assistance, or warranty claims, please contact NULKOMMA customer service. When contacting support, please be prepared to provide your order details and any relevant information about your e-bike's existing components, especially if the product requires customization.