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briidea LD-205

Briidea 12V/24V 50A DC Motor Speed Controller with Handle Control User Manual

Model: LD-205

Introduction

This manual provides detailed instructions for the installation, operation, and maintenance of your Briidea 12V/24V 50A DC Motor Speed Controller with Handle Control. This device is designed to offer precise and smooth speed adjustment for DC motors, particularly suitable for trolling motors up to 55 lbs. Please read this manual thoroughly before use to ensure proper function and safety.

Safety Information

- **Electrical Safety:** Always disconnect power before making any electrical connections or disconnections. Ensure all wiring is correct and secure to prevent short circuits or damage.
- **Voltage Compatibility:** This controller is designed for 12V/24V DC systems. Do not connect to AC power or systems outside this voltage range.
- **Current Rating:** The controller supports up to 50A output. Ensure your motor's current draw does not exceed this limit.
- **Waterproof Rating (IP65):** The IP65 rating indicates protection against dust and low-pressure water jets from any direction. It is not designed for submersion. Ensure proper mounting and sealing to prevent water ingress, especially in marine environments.
- **Overheat Protection:** The unit features automatic overheat protection. If the temperature exceeds 175°F (79.4°C), the output will be reduced by 20%. Allow the unit to cool down if this occurs.
- **Cable Gauge:** Use appropriate cable gauges (e.g., 6AWG for 50A applications) for all connections to prevent overheating and ensure efficient power delivery.

Package Contents

Verify that all items are present in your package:

- Briidea DC Motor Speed Controller Unit
- Handle Control Unit
- Screw accessories kit



Figure 1: Included accessories, including the control unit, handle, and various screws for installation.

Product Features

- **Handle Speed Control:** Integrated control handle with a forward-brake-reverse switch for smooth and intuitive speed adjustment.
- **Precision Speed Adjustment:** Features 12 high-quality MOS tubes and 5% precision speed control for stable and fluid motor performance.
- **Dual Cooling Protection:** Automatic overheat protection reduces output by 20% above 175°F (79.4°C). An aluminum heat sink enhances cooling for extended operation.
- **IP65 Waterproof Design:** The IP65-rated enclosure protects against dust, water, rain, and spray, ensuring reliability in various outdoor and marine conditions.
- **Effortless Direction Control:** Supports both forward and reverse motor operation.
- **Compatibility:** Designed for 12V/24V systems with 50A output, compatible with trolling motors up to 55 lbs.



Figure 2: The handle control unit provides intuitive speed and direction adjustment.



Figure 3: Illustration of the precise speed control capability with 12 MOSFETs and 5% tuning.



Figure 4: The intelligent temperature control system with automatic output reduction and aluminum heat sink.



Figure 5: The IP65 waterproof design ensures protection against dust and water spray.

Setup and Installation

Follow these steps for proper installation of the Briidea DC Motor Speed Controller:

1. **Mounting the Handle Control:** Secure the handle control unit using the provided bracket and screws. Ensure it is mounted in a location that allows for comfortable and safe operation.
2. **Mounting the Main Controller Unit:** Choose a secure location for the main controller unit, away from direct impact and excessive vibration. While the unit is IP65 rated, avoid areas prone to standing water or submersion. Consider using taller spacers for increased clearance if mounting in a potentially wet area.
3. **Wiring Connections:**
    - Connect the power input cables (12V/24V DC) from your battery to the designated input terminals on the main controller unit. Observe correct polarity (+ and -).
    - Connect the motor cables to the output terminals on the main controller unit.

- Connect the handle control unit to the "Control Socket" on the main controller unit using the provided cable.

4. **Secure all connections:** Ensure all cable glands are tightened to maintain the IP65 rating.



Figure 6: Step-by-step installation guide for securing the handle and connecting cables.



Figure 7: Example wiring diagram showing connection of the controller to a battery and motor.

Operating Instructions

Once installed and powered, operate the controller as follows:

- **Power On:** Ensure all connections are secure before applying power.
- **Direction Control:** Use the forward-brake-reverse switch on the handle control to select the desired direction of motor rotation.
    - **Forward (FWD):** Moves the motor in the forward direction.
    - **Stop (STOP):** Disengages the motor.
    - **Reverse (REV):** Moves the motor in the reverse direction.

  Note: There may be a slight delay when switching between forward and reverse to prevent overloading the motor.
- **Speed Adjustment:** Rotate the handle control to adjust the motor speed. The controller offers 5% precision speed control for fine-tuning. The digital display on the handle control will show the output level.
- **Monitoring:** Observe the motor's performance and the controller's behavior during operation. If the unit becomes excessively hot, the overheat protection will activate, reducing output.



Figure 8: Close-up of the handle control unit showing the digital display and FWD/STOP/REV switch.

Maintenance

- **Regular Inspection:** Periodically check all electrical connections for tightness and signs of corrosion.
- **Cleaning:** Wipe the exterior of the controller and handle with a damp cloth. Do not use harsh chemicals or abrasive cleaners. Ensure all cable glands are clean and free of debris.
- **Water Protection:** While IP65 rated, avoid prolonged exposure to heavy rain or direct high-pressure water jets. Ensure the unit is not submerged. After use in wet conditions, allow the unit to air dry.
- **Heat Sink:** Ensure the aluminum heat sink on the main controller unit is free from obstructions to allow for proper heat dissipation.

Troubleshooting

Problem	Possible Cause	Solution
Motor does not operate.	No power, incorrect wiring, faulty connection, controller in STOP mode.	Check battery connection and charge. Verify all wiring connections are correct and secure. Ensure the handle control is set to FWD or REV.
Motor operates intermittently or at reduced power.	Low battery voltage, overheating, loose connections, motor overload.	Check battery voltage. Allow controller to cool down if it's hot. Inspect all wiring. Ensure motor load is within specifications.
Reverse function not working (e.g., displaying E2/E3 codes).	Internal fault, wiring issue to motor, water ingress.	Check motor wiring for reverse. If error codes persist, disconnect power, inspect the unit for any signs of damage or water ingress. If issues continue, contact customer support.
Controller unit is hot.	Normal operation under load, insufficient ventilation, prolonged high current draw.	Ensure the heat sink is clear. Reduce motor load or operating time if possible. The unit has automatic overheat protection.

Specifications

Feature	Detail
Model	LD-205
Brand	briidea
Voltage	12V/24V DC
Max Output Current	50A
Precision Speed Control	5%
Waterproof Rating	IP65
Overheat Protection Threshold	175°F (79.4°C)
Product Dimensions (Controller)	7.9"L x 6.4"W x 4.2"H
Material	Plastic
Compatible Trolling Motors	Up to 55 lbs



Figure 9: Dimensions of the main controller unit and the handle control unit.

Warranty Information

The Briidea DC Motor Speed Controller (Model LD-205) comes with a**2-year warranty** from the date of purchase. This warranty covers manufacturing defects and malfunctions under normal use. It does not cover damage caused by improper installation, misuse, accidents, unauthorized modifications, or natural disasters. Please retain your proof of purchase for warranty claims.

Customer Support

If you encounter any issues or have questions regarding your Briidea DC Motor Speed Controller that are not addressed in this manual, please contact Briidea customer support. For the most up-to-date contact information, please refer to the official Briidea website or your purchase documentation.

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