

Walfront Walfrontefqz5urhxn

Walfront DC PWM Motor Controller User Manual

Model: CCM6Ds-B (Walfrontefqz5urhxn)

1. INTRODUCTION

This manual provides detailed instructions for the installation, operation, and maintenance of the Walfront DC PWM Motor Controller. This high-power speed controller is designed for precise regulation of DC motor speed through pulse-width modulation, featuring a reversible function with a forward/off/reverse switch.



Figure 1: Walfront DC PWM Motor Controller with connected potentiometer and reversing switch.

2. PRODUCT FEATURES

- Regulates DC motor speed using Pulse-Width Modulation (PWM) across a wide range.
- High-power design for enhanced adaptability.
- Easy-to-use reversible speed controller switch with three positions: Forward, Off, and Reverse.
- Equipped with two built-in 80 Amp large current relays for improved regulation and stability.
- Wide input voltage range from DC 10V to 50V.
- Continuous current capability of 40A, with an instantaneous peak current of up to 60A.

3. TECHNICAL SPECIFICATIONS

Specification	Value
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Input Voltage	DC 10V to 50V
Output Voltage	Linear with load
Max Current	60A (Instantaneous)
Continuous Current	40A
Speed Range	0% to 100%
Forward & Reverse	Supported
Regulation Method	Potentiometer with switch
Regulation Type	Regulating Current
Dimensions (L x W x H)	110 x 90 x 78 mm (4.33 x 3.54 x 3.07 inches)
Material	Metal plastic
Item Weight	0.01 Kilograms

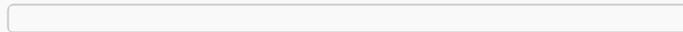


Figure 2: Dimensions of the Walfront DC PWM Motor Controller.

4. IMPORTANT SAFETY INFORMATION

WARNING: Electrical shock hazard. Always disconnect power before making any connections or performing maintenance.

- Ensure the input voltage is within the specified range (DC 10V to 50V). Exceeding this range can damage the device.
- Do not exceed the maximum continuous current of 40A.
- Properly insulate all connections to prevent short circuits.
- Install the controller in a well-ventilated area to prevent overheating.
- This device is not waterproof. Avoid exposure to moisture or liquids.
- Only qualified personnel should perform installation and wiring.

5. SETUP AND WIRING

Before beginning installation, ensure all power sources are disconnected. Refer to the wiring diagram below for proper connections.

1. **Power Input:** Connect your DC power supply to the terminals labeled 'POWER +' (positive) and 'POWER -' (negative). Ensure correct polarity.
2. **Motor Output:** Connect your DC motor to the terminals labeled 'MOTOR +' (positive) and 'MOTOR -' (negative).

3. **Potentiometer Connection:** The speed control potentiometer is pre-wired. Connect its cable to the corresponding port on the controller board.
4. **Reversing Switch Connection:** The forward/off/reverse switch is pre-wired. Connect its cable to the corresponding port on the controller board.

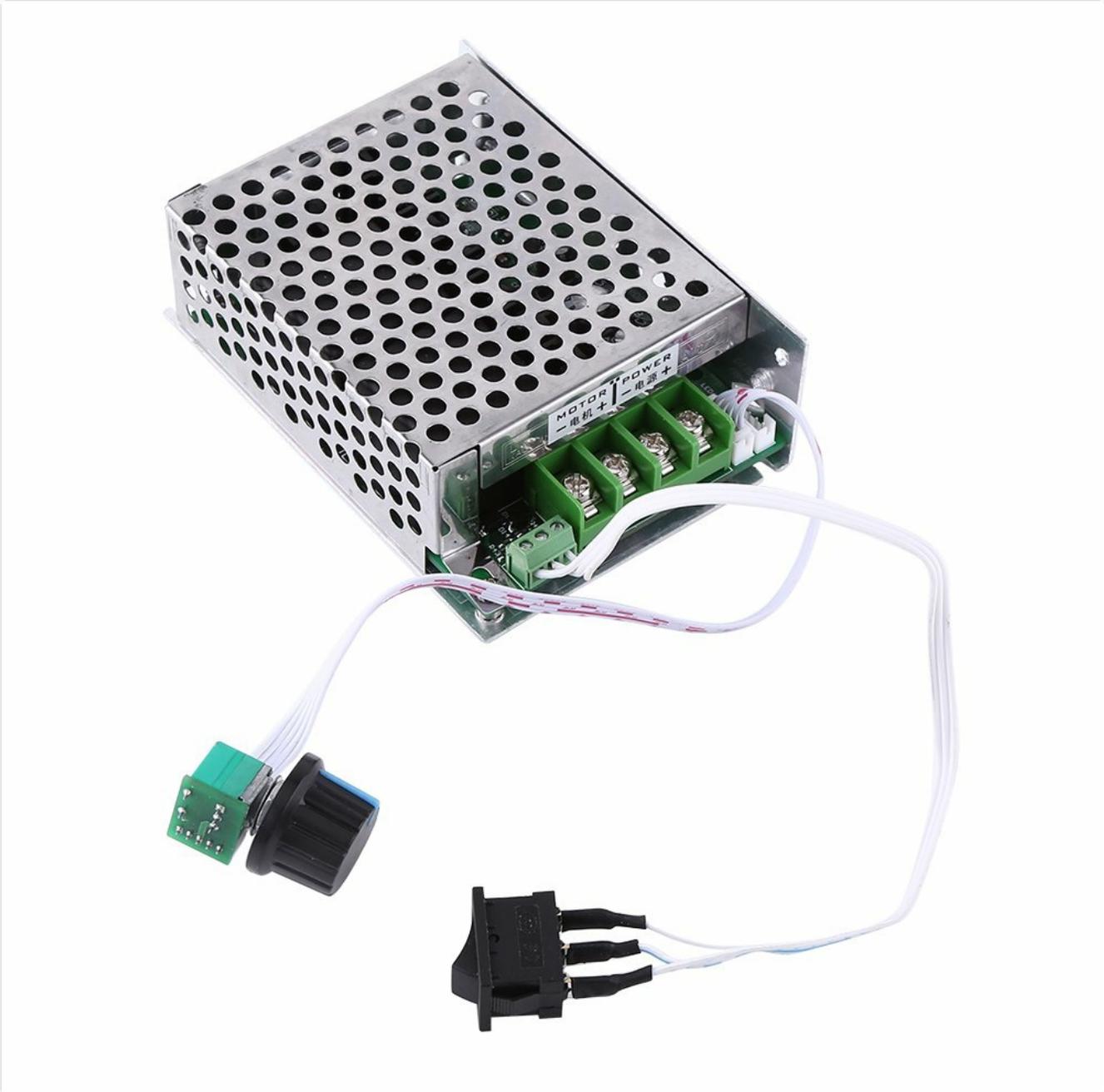


Figure 3: Connection terminals for power and motor on the controller unit.

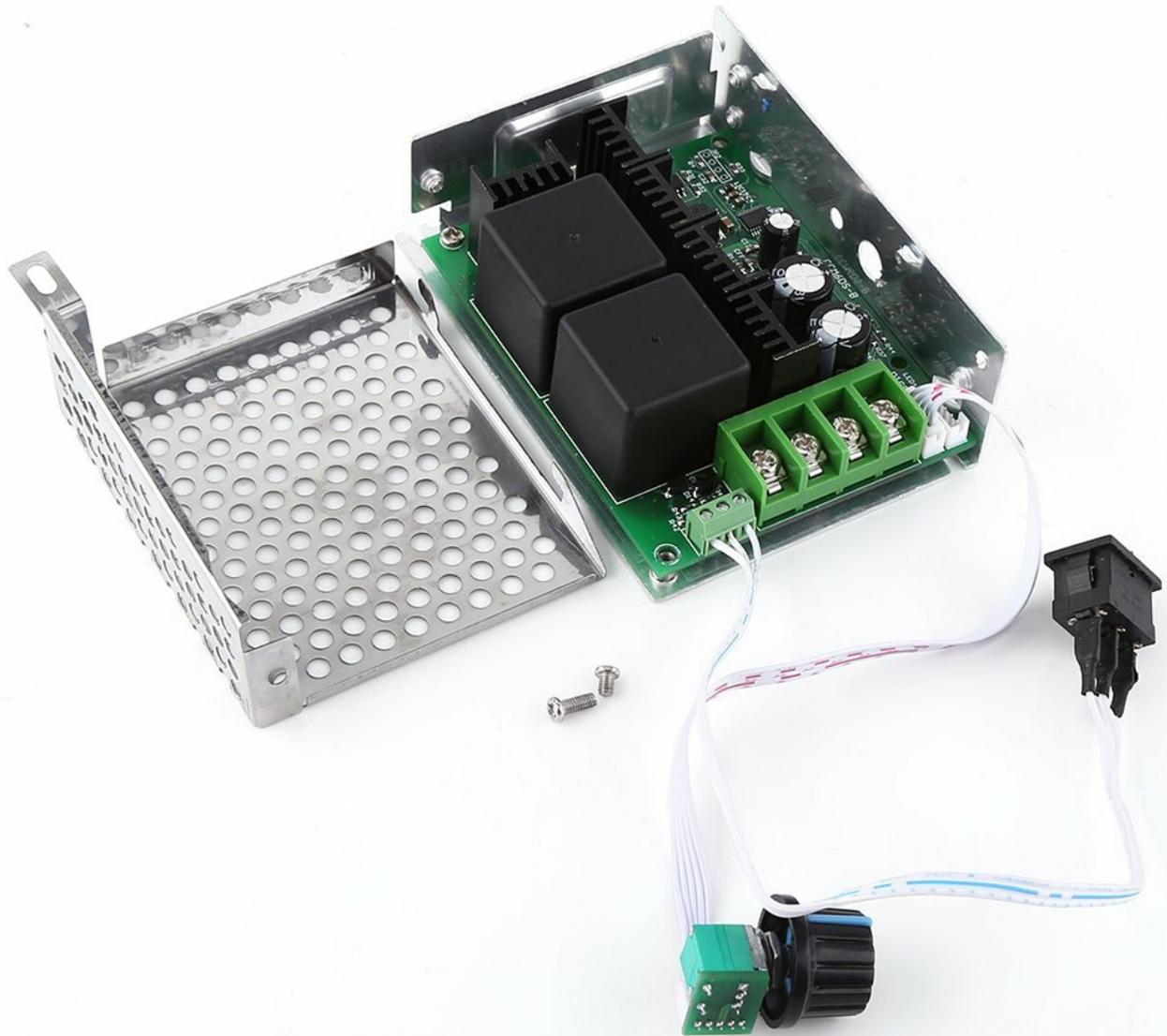


Figure 4: Internal view of the controller, showing the two 80A relays and circuit board.

6. OPERATING INSTRUCTIONS

Once the controller is properly wired and secured, you can begin operation.

1. **Power On:** Apply DC power to the controller.
2. **Select Direction:** Use the three-position reversing switch to select the desired motor rotation direction:
 - **Forward:** Moves the switch to the 'I' position.
 - **Off:** Moves the switch to the 'O' (center) position to stop the motor.
 - **Reverse:** Moves the switch to the 'II' position.
3. **Adjust Speed:** Rotate the potentiometer knob to adjust the motor speed. Turning the knob clockwise will increase the speed, while turning it counter-clockwise will decrease the speed. The speed can be adjusted from 0% to 100%.
4. **Power Off:** To stop operation, first set the reversing switch to the 'Off' position, then disconnect the main DC power supply.



Figure 5: Close-up view of the speed control potentiometer and the forward/off/reverse switch.

7. MAINTENANCE AND CARE

To ensure the longevity and optimal performance of your Walfront DC PWM Motor Controller, follow these maintenance guidelines:

- **Cleaning:** Periodically clean the exterior of the controller with a dry, soft cloth. Do not use liquid cleaners or solvents. Ensure the ventilation holes are free from dust and debris.
- **Inspection:** Regularly inspect all wiring connections to ensure they are secure and free from corrosion or damage.
- **Environment:** Operate the controller in a clean, dry, and well-ventilated environment. Avoid extreme temperatures and humidity.
- **Storage:** If storing the controller for an extended period, disconnect it from all power sources and store it in a cool, dry place.

8. TROUBLESHOOTING

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

Problem	Possible Cause	Solution
Motor does not run	No power supply Incorrect wiring Reversing switch in 'Off' position Potentiometer set to 0% speed	Check power connections and source Verify all wiring according to Section 5 Move reversing switch to 'Forward' or 'Reverse' Rotate potentiometer clockwise to increase speed
Motor runs intermittently or erratically	Loose connections Overload Faulty motor	Check and secure all wiring connections Reduce load on the motor; ensure current does not exceed 40A continuous Test motor independently to confirm functionality
Speed control is not responsive	Potentiometer not connected properly Damaged potentiometer	Ensure potentiometer cable is securely connected If issue persists, the potentiometer may need replacement
Motor does not reverse direction	Reversing switch not functioning Incorrect motor wiring for reversal	Check reversing switch connection and functionality Verify motor is a reversible DC motor and wired correctly for reversal

9. WARRANTY AND SUPPORT

Walfront products are designed for reliability and performance. Specific warranty details for this product are not provided in the available information. For any technical support or inquiries regarding your Walfront DC PWM Motor Controller, please contact your retailer or the Walfront customer service department through their official channels. Please retain your purchase receipt as proof of purchase for any warranty claims or support requests.