Keenso CCM6DS-B

Keenso Motor Speed Controller (CCM6DS-B) User Manual

Model: CCM6DS-B

1. Product Overview

The Keenso CCM6DS-B is a Pulse Width Modulation (PWM) DC motor speed controller designed to regulate the speed and direction of a DC motor. It features a wide input voltage range and high current capacity, making it suitable for various industrial and hobby applications. The controller includes a potentiometer for precise speed adjustment and a switch for forward and reverse direction control.



Figure 1: Assembled Keenso CCM6DS-B Motor Speed Controller with potentiometer and direction switch.

2. Features

- **Wide Voltage Range:** Operates with DC 10V to 50V input.
- **High Current Capacity:** Supports up to 40A continuous current.
- **PWM Control:** Utilizes Pulse Width Modulation for efficient and stable motor speed regulation.
- **Forward/Reverse Function:** Integrated switch for easy direction change of the motor.
- **Adjustable Speed:** Equipped with a potentiometer for stepless speed adjustment.
- **Robust Design:** Housed in a durable metal casing for protection and heat dissipation.

3. Specifications

Parameter	Value
Model	CCM6DS-B
Input Voltage	DC 10V - 50V
Output Current	0 - 40A (Continuous)
Control Method	PWM (Pulse Width Modulation)
Speed Adjustment Range	0% - 100%
Direction Control	Forward / Reverse Switch
Main Unit Dimensions (L x W x H)	110mm x 78mm x 36mm (approx. 4.33" x 3.07" x 1.42")
Item Weight	11.3 ounces (approx. 320g)

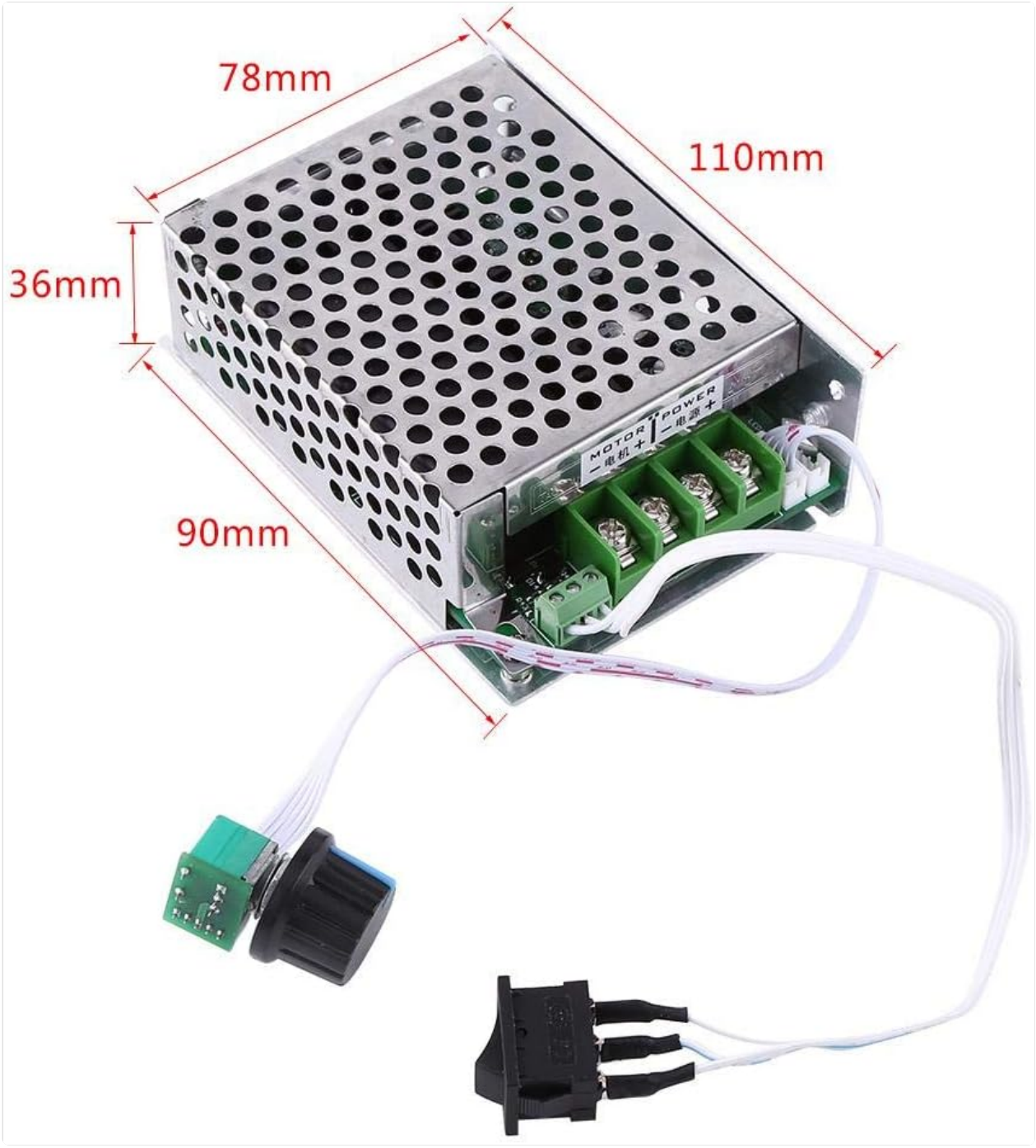


Figure 2: Approximate dimensions of the main controller unit.

4. Safety Information

Please read and understand all safety instructions before installation and operation. Failure to do so may result in injury, damage to the product, or damage to connected equipment.

- **Electrical Safety:** Always disconnect power before making any connections or adjustments. Work with DC power sources within the specified voltage range (10V-50V).
- **Current Rating:** Do not exceed the maximum continuous current of 40A. Overloading can cause damage to the controller and connected components.
- **Polarity:** Ensure correct polarity when connecting power and motor leads. Incorrect polarity can damage the unit.
- **Ventilation:** Ensure adequate ventilation around the controller, especially during high current operation, to prevent overheating.
- **Environment:** Do not expose the controller to moisture, dust, or extreme temperatures. Operate in a

clean, dry environment.

- **Professional Installation:** If you are unsure about any wiring or electrical procedures, consult a qualified electrician.

5. Setup and Installation

Follow these steps for proper installation of the motor speed controller.

5.1 Component Identification



Figure 3: Disassembled view showing the main circuit board, metal casing, potentiometer, and direction switch.

- **Main Controller Unit:** Contains the power terminals and control circuitry.
- **Potentiometer:** Used for adjusting motor speed. Connects to the main unit via a cable.
- **Direction Switch:** Used for changing motor rotation direction (Forward/Reverse). Connects to the main unit via a cable.

5.2 Wiring Instructions

Refer to the terminal labels on the main controller unit for correct connections. Ensure all connections are

secure before applying power.



Figure 4: Close-up view of the terminal block on the main controller unit, showing 'MOTOR' and 'POWER' labels.

1. **Power Input:** Connect your DC power supply (10V-50V) to the terminals labeled**POWER +** and **POWER -**. Ensure correct polarity.
2. **Motor Output:** Connect your DC motor to the terminals labeled**MOTOR +** and **MOTOR -**.
3. **Potentiometer Connection:** The potentiometer comes pre-wired with a connector. Plug this connector into the corresponding port on the main controller unit.
4. **Direction Switch Connection:** The direction switch also comes pre-wired. Plug its connector into the designated port on the main controller unit.

Note: The potentiometer and direction switch are typically connected via small white multi-pin connectors. Ensure they are fully seated.

6. Operating Instructions

Once the controller is correctly wired, you can begin operation.

1. **Initial State:** Before applying power, ensure the potentiometer is turned to its minimum position (fully counter-clockwise) and the direction switch is in a neutral or desired starting position.
2. **Apply Power:** Connect your DC power supply to the controller.
3. **Adjust Speed:** Slowly rotate the potentiometer clockwise to increase the motor speed. Rotate counter-clockwise to decrease the speed.
4. **Change Direction:** Use the direction switch to toggle between forward and reverse rotation of the motor. It is recommended to bring the motor to a stop (potentiometer at minimum) before changing direction to prevent sudden stress on the motor and controller.
5. **Power Off:** To stop operation, turn the potentiometer to its minimum position and then disconnect the power supply.

7. Maintenance

The Keenso CCM6DS-B motor speed controller is designed for durability and requires minimal maintenance. However, following these guidelines can help ensure its longevity:

- **Keep Clean:** Regularly clean the exterior of the controller to prevent dust and debris buildup, especially around the ventilation holes in the metal casing. Use a soft, dry cloth.
- **Check Connections:** Periodically inspect all wiring connections to ensure they are secure and free from corrosion. Loose connections can lead to poor performance or damage.
- **Environmental Conditions:** Ensure the operating environment remains within suitable temperature and humidity ranges. Avoid exposure to direct sunlight, excessive heat, or moisture.
- **Avoid Overload:** Do not continuously operate the controller at its maximum current limit. Provide a buffer to prevent overheating and premature component failure.

8. Troubleshooting

If you encounter issues with your Keenso CCM6DS-B motor speed controller, refer to the following common problems and solutions:

Problem	Possible Cause	Solution
Motor does not run	No power supply Incorrect wiring Faulty motor Potentiometer at minimum	Check power source and connections Verify all wiring according to Section 5.2 Test motor independently Rotate potentiometer clockwise
Motor runs but speed cannot be controlled	Potentiometer not connected or faulty Internal controller issue	Ensure potentiometer is securely connected Contact customer support if issue persists

Problem	Possible Cause	Solution
Motor direction cannot be changed	Direction switch not connected or faulty Internal controller issue	Ensure direction switch is securely connected Contact customer support if issue persists
Controller overheats	Overload Insufficient ventilation	Reduce motor load or operating time Ensure adequate airflow around the unit
Intermittent operation	Loose connections Unstable power supply	Check and secure all wiring connections Verify power supply stability

9. Warranty and Support

Specific warranty information for the Keenso CCM6DS-B Motor Speed Controller is not provided in the product data. For details regarding warranty coverage, returns, or technical support, please contact the seller or manufacturer directly through your purchase platform.

When contacting support, please have your product model (CCM6DS-B) and purchase details readily available.

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