

Hilitand Hilitandf9kcg5xue4

Hilitand DC 5V-36V 15A 3-Phase Brushless Motor Speed Controller User Manual

Model: Hilitandf9kcg5xue4

1. INTRODUCTION

This manual provides essential information for the safe and effective use of your Hilitand DC 5V-36V 15A 3-Phase Brushless Motor Speed Controller. Please read these instructions carefully before installation and operation to ensure proper functionality and to prevent damage to the device or connected equipment.

2. SAFETY INFORMATION

- **Power Supply:** The input voltage for this DC motor governor is DC 5V-36V. It cannot be directly connected to AC power (e.g., 220V AC household current), as this will cause irreparable damage.
- **Polarity:** Ensure correct polarity when connecting the DC power supply. Reversing positive and negative connections will damage the governor.
- **Current Limit:** The maximum output current is 15A. Do not exceed this limit to prevent overheating and damage. The device includes a protective current design that will shut down if overcurrent occurs.
- **Environment:** Operate the controller in a dry, well-ventilated area, away from flammable materials and excessive moisture.
- **Handling:** Avoid touching the circuit board components while the device is powered on, as some parts may become hot.

3. PRODUCT OVERVIEW

The Hilitand DC 5V-36V 15A 3-Phase Brushless Motor Speed Controller is designed for controlling the speed and direction of 3-phase brushless DC motors. It features a potentiometer for speed adjustment and

a switch for changing the motor's rotation direction (CW/CCW).

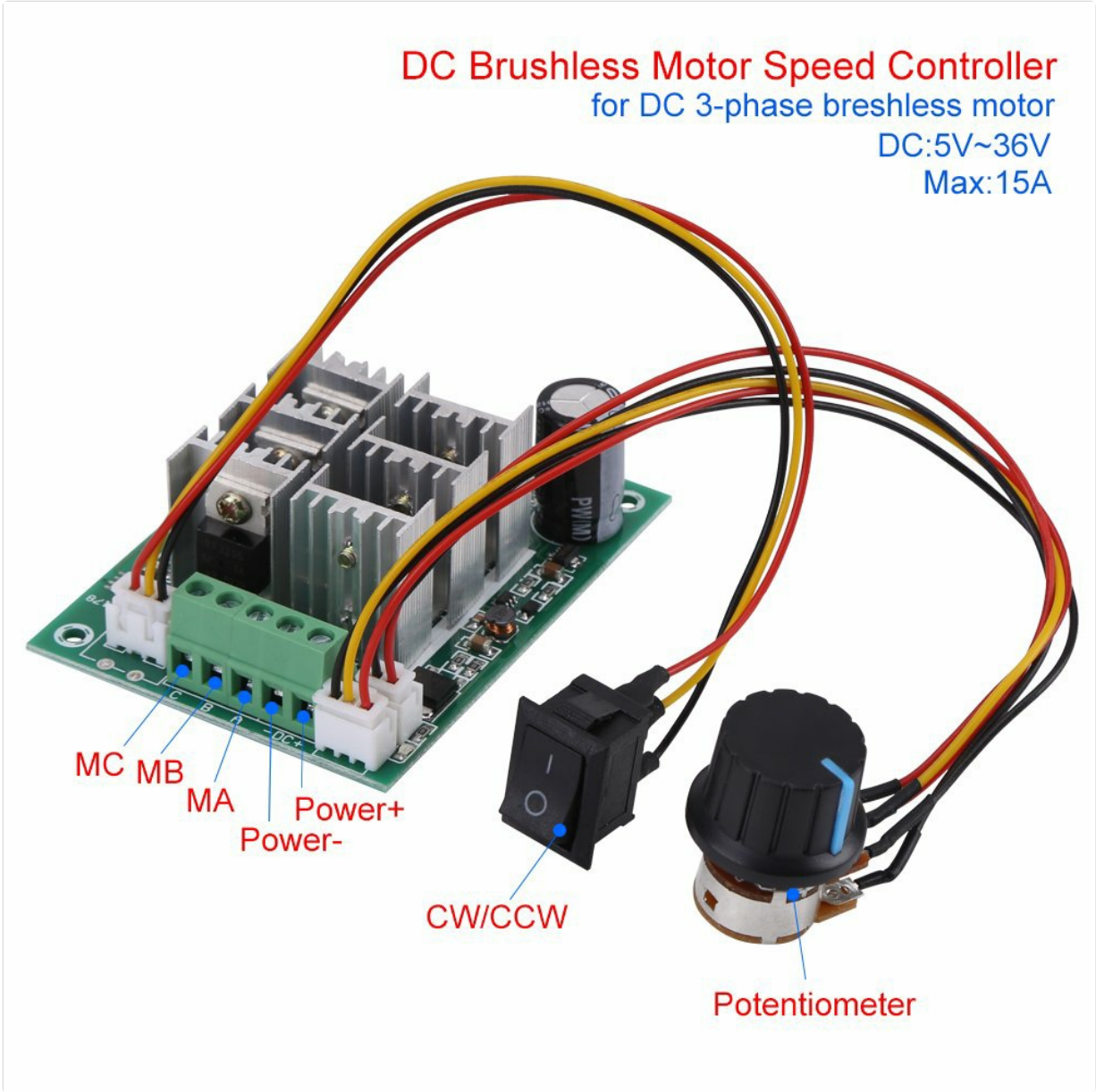


Image 3.1: Overview of the Hilitand DC 3-Phase Brushless Motor Speed Controller with labeled connections for power, motor phases (MA, MB, MC), CW/CCW switch, and potentiometer.



Image 3.2: Close-up view of the speed adjustment potentiometer (B100K) and the CW/CCW reversible switch.

4. SPECIFICATIONS

Feature	Specification
Input Voltage	DC 5V-36V
Output Current	<15A (Max)
Protective Current	15A
Motor Type Support	3-Phase Brushless Motor
Direction Control	CW/CCW (Clockwise/Counter-Clockwise)
Speed Regulating Mode	Potentiometer (270 degree linear)
Speed Adjustment Range	0-100%
Connection Type	Fence Type Terminal
Potentiometer Specification	100K (with switch)
Module Size	8 x 6 x 2.8 cm (3.15 x 2.36 x 1.1 in)
Weight	87g



Image 4.1: Physical dimensions of the Hilitand DC 3-Phase Brushless Motor Speed Controller.

5. SETUP AND INSTALLATION

Follow these steps for proper connection of the motor speed controller:

- Power Connection:** Connect your DC power supply (5V-36V) to the **DC+** (positive) and **DC-** (negative) terminals on the controller. Double-check polarity before applying power.
- Motor Connection:** Connect the three phase wires of your brushless DC motor to the **MA**, **MB**, and **MC** terminals on the controller. The order of these connections may affect the initial rotation direction.
- Potentiometer and Switch:** The potentiometer and CW/CCW switch are pre-wired and connect to the designated ports on the controller board.

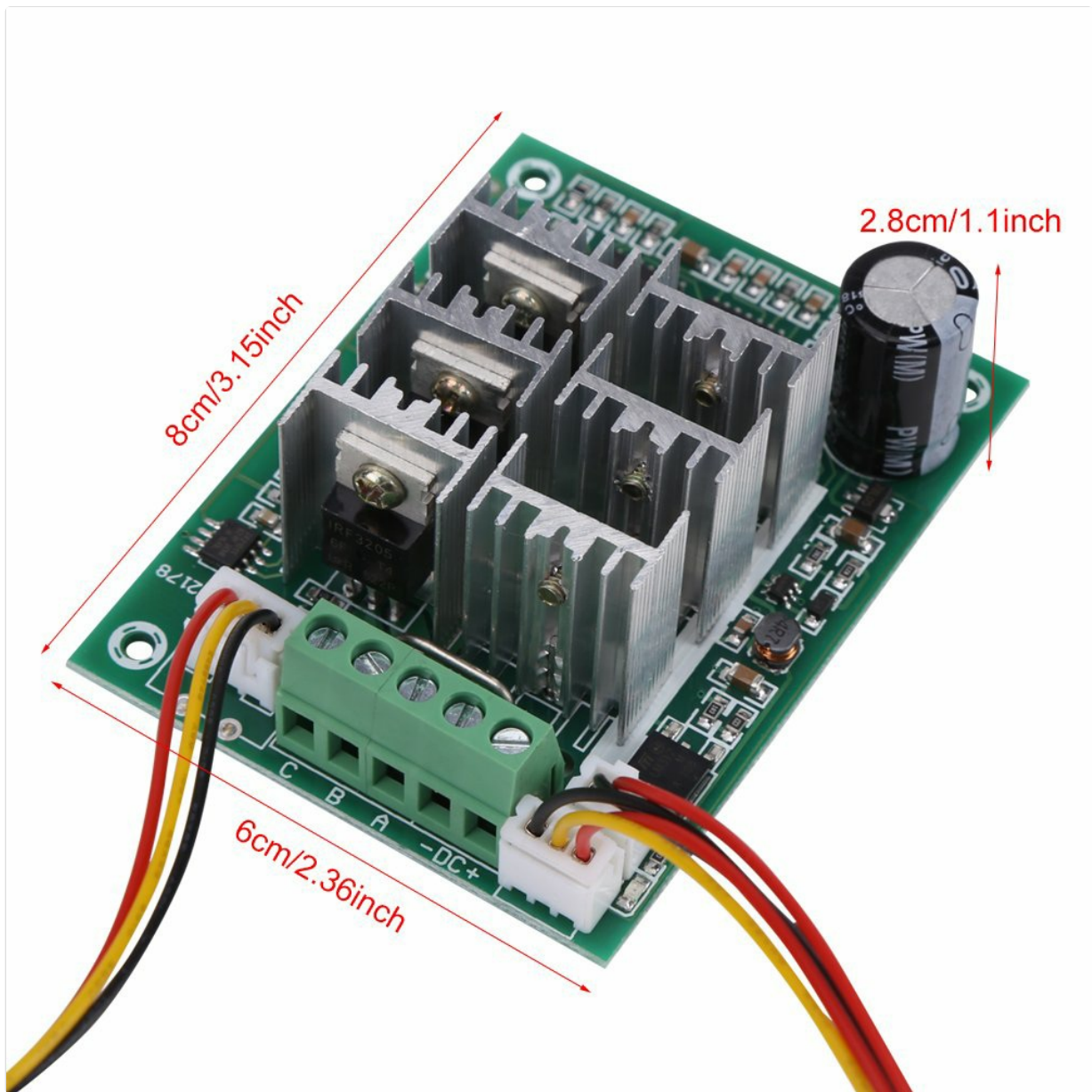


Image 5.1: Example of the Hilitand Motor Speed Controller with power, motor, potentiometer, and CW/CCW switch connected.

6. OPERATING INSTRUCTIONS

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

- **Power On:** Apply DC power within the 5V-36V range to the controller.
- **Speed Adjustment:** Rotate the potentiometer knob to adjust the motor speed. Turning the knob clockwise typically increases speed, while counter-clockwise decreases it. The speed adjustment range is 0-100%.
- **Direction Control:** Use the CW/CCW switch to reverse the motor's rotation direction. If the initial direction is not as expected, you can change the sequence of the MA, MB, MC motor wires or use the switch.
- **Motor Start:** In some cases, especially with certain motor types, a slight manual turn of the motor shaft might be required to initiate rotation at very low speeds or specific load conditions.

7. MAINTENANCE

The Hilitand Motor Speed Controller requires minimal maintenance. Follow these guidelines to ensure longevity:

- **Cleaning:** Keep the circuit board clean and free from dust and debris. Use a soft, dry brush or compressed air for cleaning. Do not use liquids or solvents.
- **Inspection:** Periodically inspect all connections to ensure they are secure and free from corrosion.
- **Storage:** When not in use, store the controller in a cool, dry place, away from direct sunlight and extreme temperatures.

8. TROUBLESHOOTING

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

- **Motor Not Starting:**
 - Check power supply connections for correct voltage (DC 5V-36V) and polarity.
 - Verify motor phase wire connections (MA, MB, MC).
 - Ensure the potentiometer is not set to 0% speed.
 - For some motors, a manual nudge may be required to start rotation.
- **Incorrect Rotation Direction:**
 - Use the CW/CCW switch to change direction.
 - If the switch does not correct it, try swapping any two of the motor phase wires (MA, MB, MC).
- **Intermittent Operation or Shutdown:**
 - Check for overcurrent conditions. The controller has a protective shutdown feature if current exceeds 15A. Reduce motor load or ensure the motor is within the controller's current capabilities.
 - Ensure adequate ventilation to prevent overheating.
 - Verify stable power supply.
- **No Speed Control:**
 - Ensure the potentiometer is correctly connected and functioning.

9. WARRANTY AND SUPPORT

For warranty information or technical support, please refer to the Hilitand official website or contact your retailer. Keep your purchase receipt for warranty claims.