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## S25HH0 SMC01

# SMC01 Stepper Motor Driver and Controller Instruction Manual

Model: SMC01 | Brand: S25HH0

## 1. PRODUCT OVERVIEW

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The S25HH0 SMC01 is a versatile stepper motor driver and controller designed for precise motor control applications. It features reverse pulse speed control, programmable logic controller (PLC) capabilities, and serial communication for integration into various systems. This manual provides essential information for the proper installation, operation, and maintenance of the SMC01.



Figure 1: SMC01 Stepper Motor Controller (top view, bottom view, and included cable).

## 2. FEATURES

- **Reverse Pulse Speed Control:** Allows for precise control over motor speed and direction.
- **Programmable PLC Functionality:** Enables custom control sequences and automation.
- **Serial Communication:** Facilitates integration with external control systems.
- **CW/CCW Direction Control:** Dedicated buttons for clockwise and counter-clockwise rotation.
- **RUN/STOP Functionality:** Button for starting and pausing motor operation.
- **Encoder Setting Knob:** For adjusting parameters and speed.
- **LCD Display:** Provides real-time status and parameter feedback.

## 3. SPECIFICATIONS

- **Model Number:** SMC01
- **Brand:** S25HH0
- **Item Weight:** Approximately 1.76 ounces (50 grams)
- **Package Dimensions:** 1.18 x 0.79 x 0.39 inches (30 x 20 x 10 mm)
- **Product Dimensions (Approximate):**
  - Length: 79mm
  - Width: 43mm
  - Depth (excluding knob): 26mm
  - Mounting Cutout Length: 71mm
  - Mounting Cutout Width: 39mm
- **ASIN:** B0DSJCKTJY
- **Date First Available:** January 8, 2025

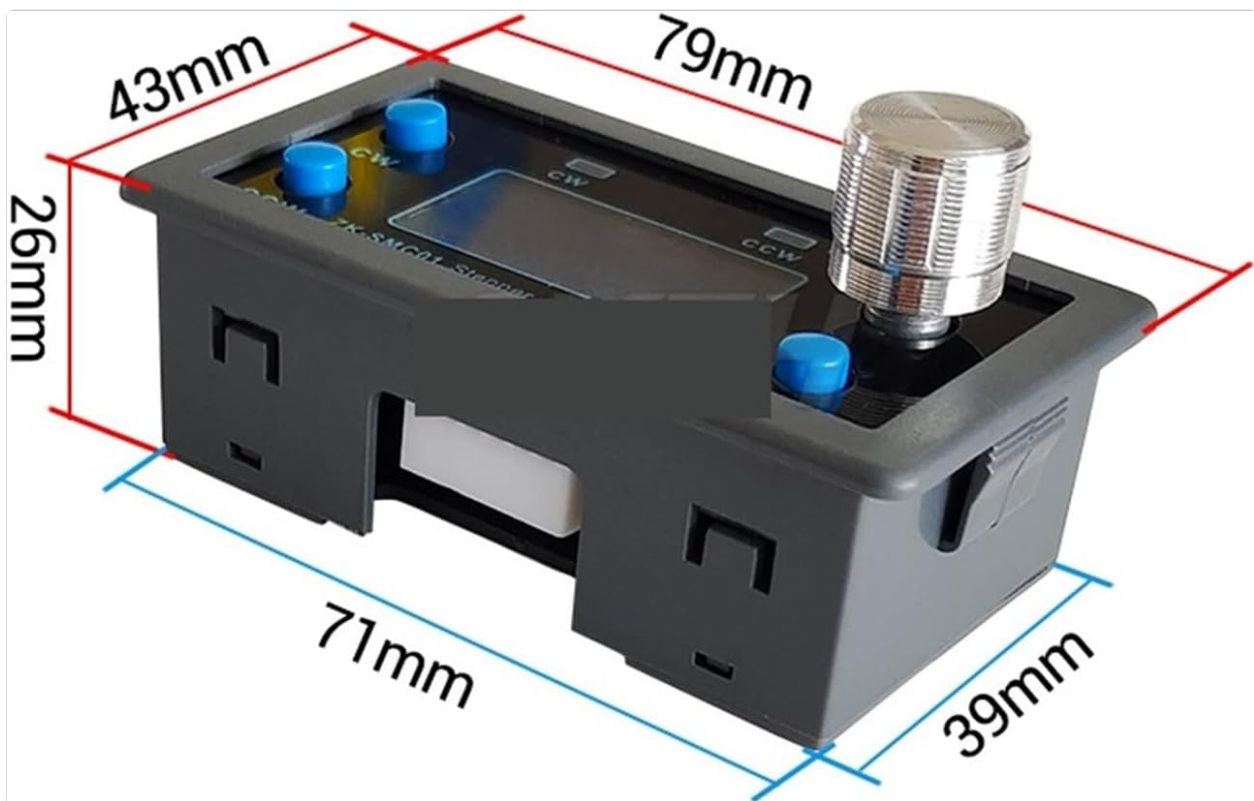


Figure 2: SMC01 Stepper Motor Controller with key dimensions.

#### 4. SETUP

Before connecting the SMC01, ensure all power sources are disconnected. Refer to the wiring diagram in Section 5 for correct connections. The controller comes with a matching plug cable for convenience.

1. **Mounting:** Install the SMC01 into a suitable enclosure or panel using the provided mounting dimensions.
2. **Power Supply Connection:** Connect a compatible DC power supply to the designated power input terminals. Observe correct polarity.
3. **Motor Connection:** Connect your stepper motor to the A+, A-, B+, B- terminals. Ensure correct phase wiring for your specific motor.
4. **Control Signal Connections:** If using external control signals (e.g., STOP, FORWARD, REVERSE),

connect them to the appropriate terminals as shown in the wiring diagram.

5. **Initial Power-Up:** After all connections are secure, apply power to the controller. The LCD display should illuminate.

## 5. WIRING DIAGRAM

The following diagram illustrates the typical wiring connections for the SMC01 controller. Ensure all connections are made securely to prevent damage to the device or motor.

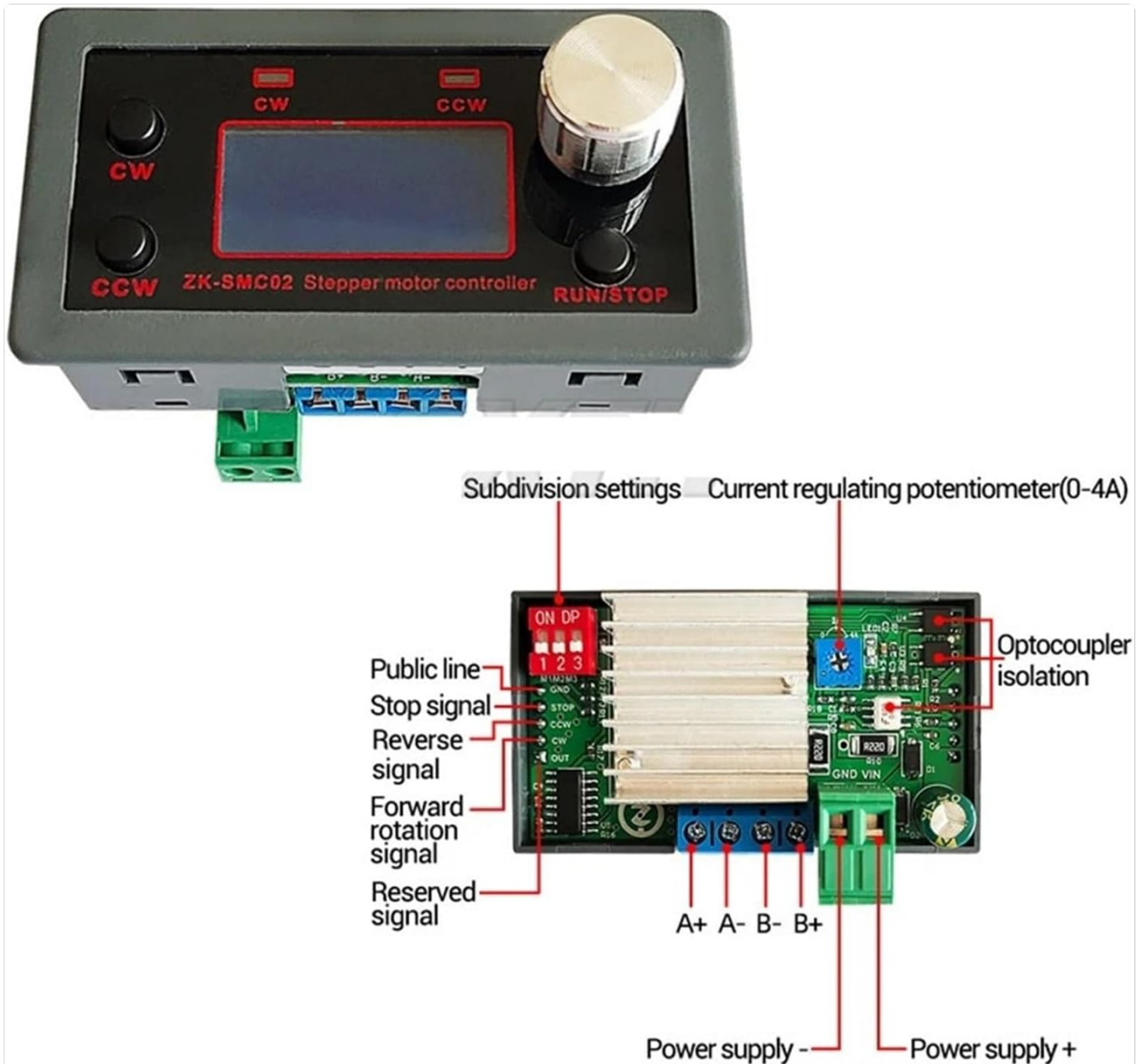


Figure 3: Wiring diagram for the SMC01/SMC02 controller (SMC01 wiring is similar).

### Terminal Descriptions:

- **Power Supply:** Input terminals for DC power.
- **A+, A-, B+, B-:** Stepper motor phase connections.
- **STOP Signal:** Input for external stop command.
- **REVERSE Signal:** Input for external reverse rotation command.
- **FORWARD Rotation Signal:** Input for external forward rotation command.
- **Public Line:** Common ground for control signals.
- **Reserved Signal:** For future expansion or specific functions.
- **Subdivision Settings (DIP Switches):** Used to configure micro-stepping resolution.

- **Current Regulating Potentiometer (0-4A):** Adjusts the motor drive current.
- **Optocoupler Isolation:** Provides electrical isolation for control signals.

## 6. OPERATING INSTRUCTIONS

The SMC01 features an intuitive interface for controlling stepper motor movement.

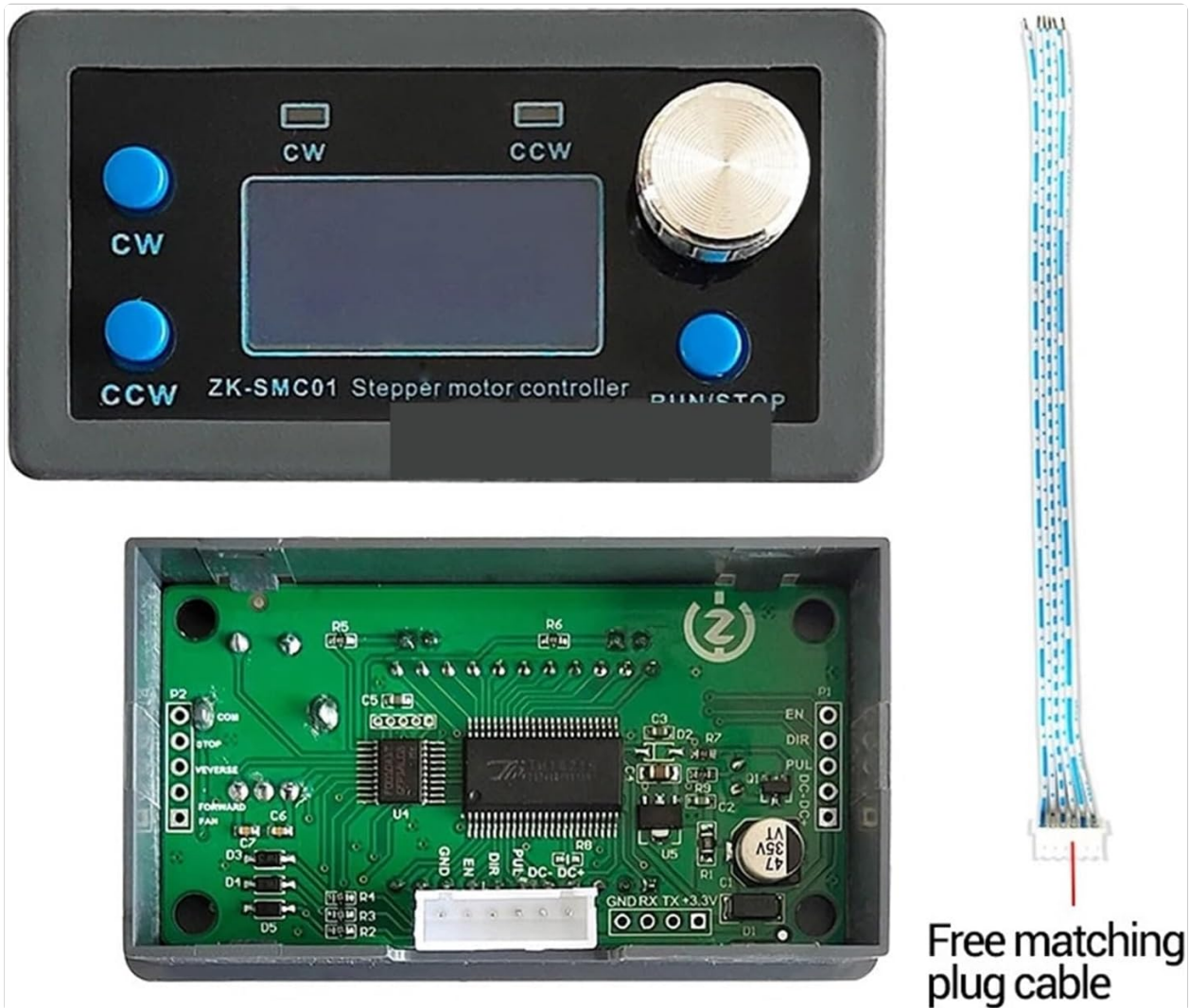


Figure 4: SMC01 Front Panel Controls.

1. **Power On:** Ensure the controller is properly wired and apply power. The LCD will display the current status.
2. **Direction Control:**
  - Press the **CW (Forward Rotation)** button to set the motor to rotate clockwise.
  - Press the **CCW (Reverse Rotation)** button to set the motor to rotate counter-clockwise.
3. **Speed/Parameter Adjustment:** Rotate the **Encoder Setting Knob** to adjust motor speed, steps, or other programmable parameters displayed on the LCD. Press the knob to confirm selections or enter menus.
4. **Start/Stop Operation:** Press the **RUN/STOP** button to start or pause the motor's operation. The motor will execute the programmed sequence or continuous rotation based on the current settings.
5. **Programmable Functions:** Refer to the detailed programming guide (if available separately) for advanced PLC functions and serial communication protocols.

## 7. MAINTENANCE

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To ensure the longevity and reliable operation of your SMC01 controller, follow these maintenance guidelines:

- **Keep Clean:** Regularly clean the exterior of the controller with a soft, dry cloth. Avoid using harsh chemicals or abrasive materials.
- **Avoid Moisture:** Protect the device from water, humidity, and condensation. Operate in a dry environment.
- **Proper Ventilation:** Ensure adequate airflow around the controller to prevent overheating, especially during prolonged operation.
- **Inspect Connections:** Periodically check all wiring connections for looseness or signs of wear. Tighten any loose terminals.
- **Firmware Updates:** Check the manufacturer's website for any available firmware updates that may improve performance or add features.

## 8. TROUBLESHOOTING

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If you encounter issues with your SMC01 controller, consider the following troubleshooting steps:

- **No Power/Display Off:**
  - Check the power supply connection and ensure it is providing the correct voltage.
  - Verify that the power supply is switched on.
- **Motor Not Moving:**
  - Ensure the motor is correctly wired to the A+, A-, B+, B- terminals.
  - Check if the RUN/STOP button has been pressed to initiate movement.
  - Verify that the current regulating potentiometer is set appropriately for your motor.
  - Confirm that the subdivision settings are compatible with your motor and application.
- **Incorrect Motor Direction:**
  - Press the appropriate CW or CCW button to change direction.
  - If the motor still rotates incorrectly, check the motor phase wiring.
- **Erratic Movement/Stalling:**
  - Reduce the set speed using the encoder knob.
  - Increase the motor drive current via the potentiometer, if safe for your motor.
  - Check for mechanical obstructions or excessive load on the motor.
- **Communication Issues:**
  - Verify serial communication settings (baud rate, parity, data bits, stop bits).
  - Check the physical serial connection cable.

If problems persist after attempting these steps, contact customer support for further assistance.

## 9. WARRANTY AND SUPPORT

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This product is covered by a limited warranty against defects in materials and workmanship. The specific terms and duration of the warranty may vary. Please retain your proof of purchase for warranty claims.

For technical support, warranty inquiries, or service, please contact the seller or manufacturer directly. Refer to your purchase documentation for contact information.