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## GODIYMODULES SMC05

# GODIYMODULES SMC05 Stepper/Servo Motor Driver Controller User Manual

Model: SMC05

## 1. INTRODUCTION

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The GODIYMODULES SMC05 is an integrated stepper and servo motor driver controller designed for precise control of motor rotation, speed, and angle. Featuring a 1.8-inch color screen and intuitive knob operation, this module supports a wide range of applications requiring accurate motor positioning and speed regulation. It offers multiple control modes and communication options for versatile integration into various systems.



Figure 1: The SMC05 Stepper/Servo Motor Driver Controller, highlighting its 1.8-inch color screen, knob operation, and shortcut buttons.

## 2. PRODUCT FEATURES

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- **Integrated Control:** Combines stepper motor driver and servo motor control functionalities.
- **Wide Voltage Range:** Operates with a working voltage of 12-24V.
- **Compact Design:** Product dimensions are 83x48x35.5mm.
- **Output Signals:** Features 4 output channels with 0V output voltage.
- **Input Signals:** Includes 4 limit inputs and 3 extended key interfaces.
- **High Pulse Frequency:** Supports motor pulse frequencies from 1Hz to 200,000Hz.
- **Color Display:** Equipped with a 1.8-inch color screen for clear information display.
- **Pulse Voltage:** Motor pulse voltage is 0V output, collector output form.
- **Communication:** Supports Modbus protocol via serial port/485.
- **Multiple Modes:** Supports 20 different motion control modes.
- **Language Support:** Display in both Chinese and English.

# Stepper/servo motor controller

- ✓ Supports 20 sports modes (supports upper computer upgrade)
- ✓ Expansion button    ✓ Limit switch    ✓ Output control
- ✓ Display in both Chinese and English



Figure 2: Key features of the SMC05 controller, including support for various modes and input/output capabilities.

## 3. SETUP AND INSTALLATION

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### 3.1 Power Supply and Connections

Ensure the working voltage is within the specified range of 12-24V DC. Connect the power supply to the designated terminals. The controller features various input and output interfaces for connecting limit switches, expansion buttons, and motor drives.

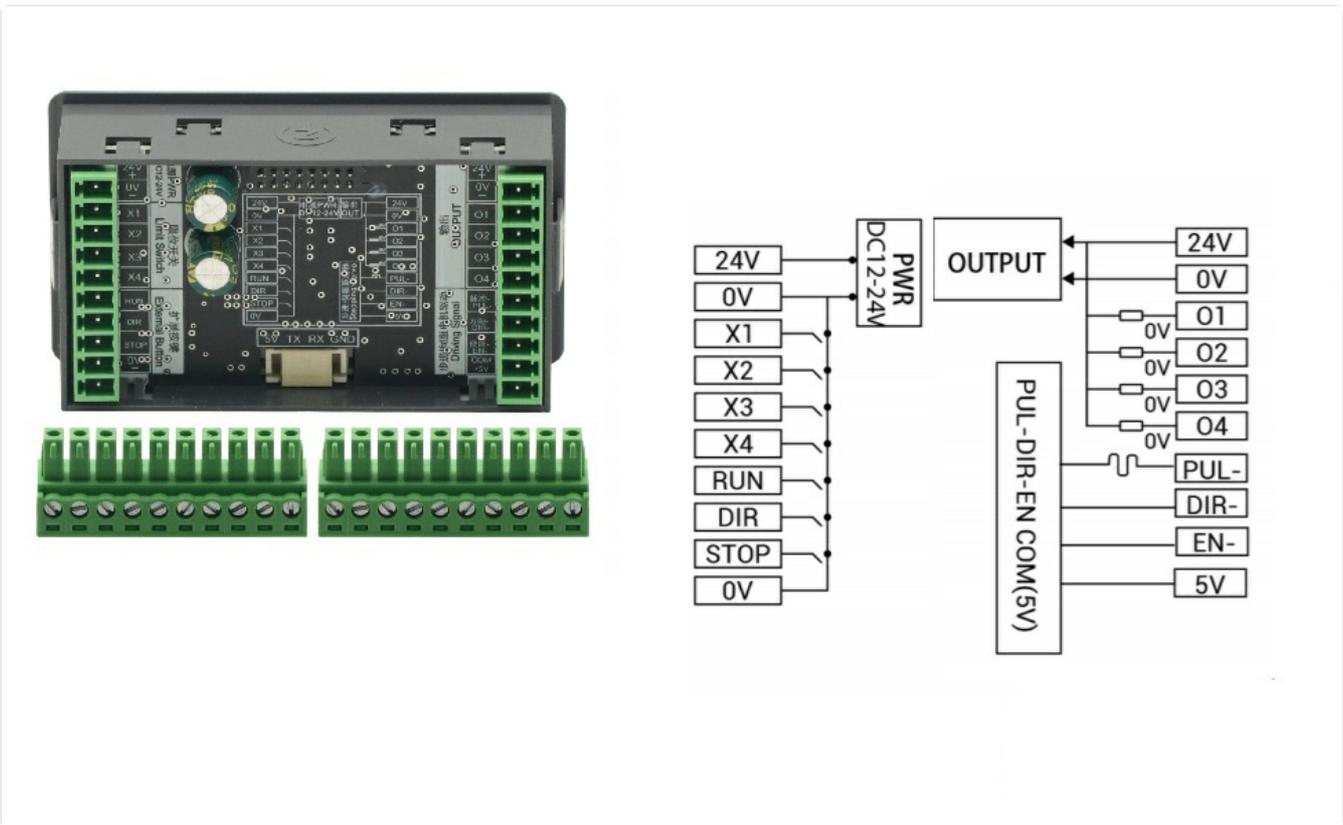


Figure 3: Detailed view of the SMC05 controller's extension interface, indicating connections for power, limit switches, expansion buttons, communication, and motor outputs.

### 3.2 Motor Wiring

Proper wiring of the stepper or servo motor drive is crucial for correct operation. Refer to the wiring diagrams provided to ensure all connections are secure and correctly aligned with the motor and power source.

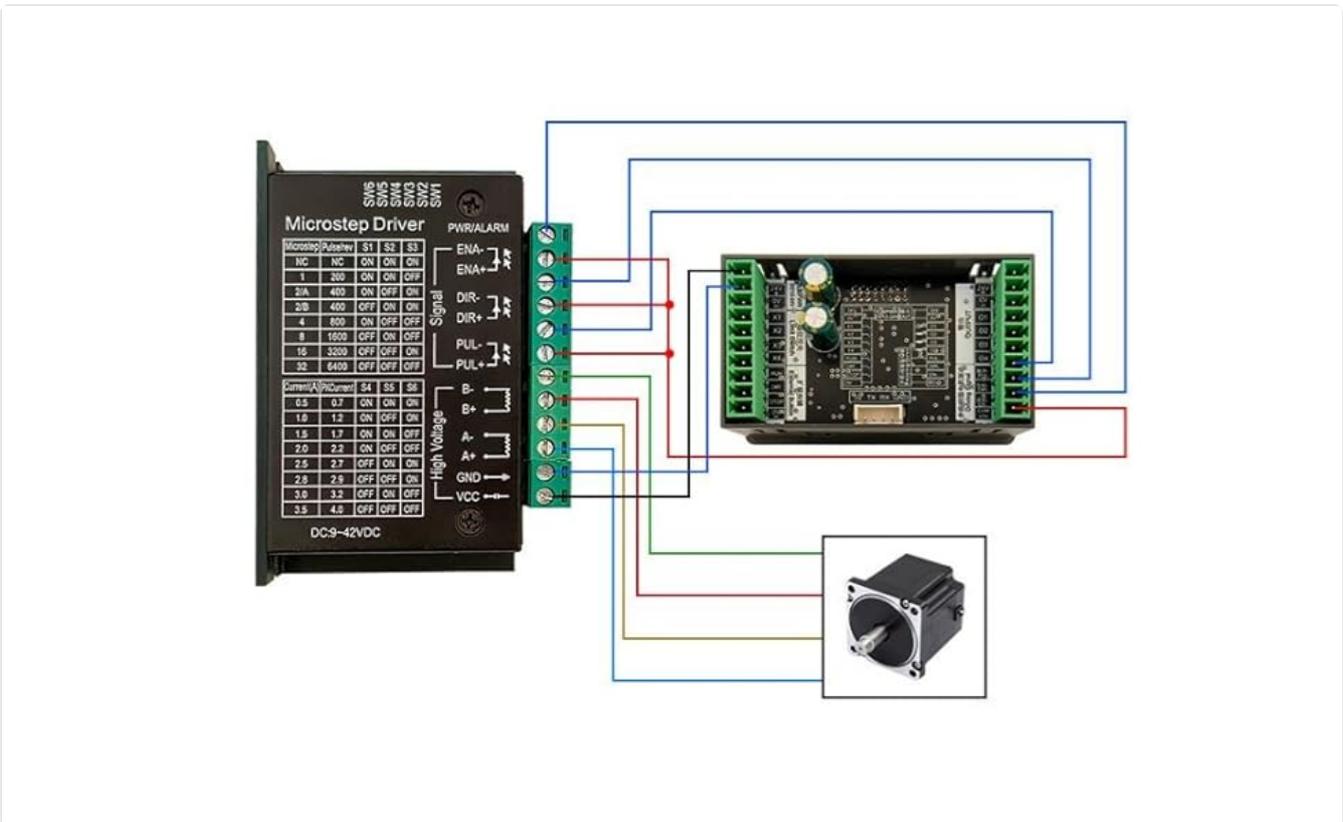


Figure 4: Example wiring diagram for connecting the SMC05 controller to a microstep driver and a stepper motor.

## 4. OPERATING INSTRUCTIONS

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The SMC05 controller features a user-friendly interface with a 1.8-inch color screen, a rotary knob, and several control buttons for easy operation and parameter adjustment.

### 4.1 Control Panel Overview

Figure 5: Front panel layout of the SMC05 controller with labels for all buttons, the rotary knob, and display indicators.

- **FWD Button:** Initiates forward rotation.
- **REV Button:** Initiates reverse rotation.
- **SET Button:** Enters the settings menu or exits current settings.
- **ENT Button:** Confirms selections or enters sub-menus.
- **Rotary Knob:** Adjusts parameters such as speed, pulse count, and navigates menus.
- **Start/Stop Button:** Starts or stops motor operation.
- **Display Screen:** Shows current speed, pulse count, motion mode, and various indicators.

### 4.2 Basic Operation

1. **Power On:** Connect the 12-24V DC power supply. The screen will light up.
2. **Setting Parameters:** Press the **SET** button to enter the settings menu. Use the rotary knob to navigate through options like *Action*, *Motor*, and *System*. Press **ENT** to select.
3. **Adjusting Speed/Pulse:** Within the *Action* or *Motor* settings, you can adjust parameters such as forward pulse, forward speed, reverse pulse, and reverse speed using the rotary knob.
4. **Starting Motor:** Once parameters are set, press the **Start/Stop** button to begin motor operation. The motor will rotate according to the configured speed and direction.
5. **Changing Direction:** Use the **FWD** and **REV** buttons to change the motor's rotation direction during operation.
6. **Stopping Motor:** Press the **Start/Stop** button again to halt motor movement.

### 4.3 Advanced Features Demonstration

The following video demonstrates various operational aspects and advanced features of the SMC05 controller, including interface navigation, stepper motor control, use of expansion buttons, limit switches, and output control, as well as servo motor drive integration.

Your browser does not support the video tag.

Video 1: Demonstration of the SMC05 controller's interface, stepper motor drive, expansion button functionality, limit switch activation, output control, and servo motor drive operation.

## 5. SPECIFICATIONS

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Feature	Specification
Product Dimensions	3.27 x 1.89 x 1.4 inches (83x48x35.5mm)
Item Weight	3.27 ounces
Working Voltage	12-24V DC
Output Signal	4 channels, 0V output voltage

Input Signal	4 limit inputs, 3 extended key interfaces
Motor Pulse Frequency	1Hz - 200,000Hz
Display Type	1.8-inch Color Screen
Motor Pulse Voltage	0V output, collector output form
Communication Protocol	Modbus (serial port/485)
Included Components	1PCS SMC05 Controller

## 6. MAINTENANCE

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To ensure the longevity and optimal performance of your SMC05 controller, follow these maintenance guidelines:

- Keep the device clean and free from dust and debris. Use a soft, dry cloth for cleaning.
- Avoid exposing the controller to extreme temperatures, humidity, or direct sunlight.
- Ensure all connections are secure and free from corrosion. Periodically check wiring for any signs of wear or damage.
- Do not attempt to open the casing or modify the internal components, as this may void the warranty and cause damage.

## 7. TROUBLESHOOTING

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If you encounter issues with your SMC05 controller, refer to the following common troubleshooting steps:

- **No Power:** Check the power supply connection and ensure it provides the correct voltage (12-24V DC). Verify the power adapter is functioning.
- **Motor Not Moving:**
  - Ensure the motor is correctly wired to the driver and the driver to the controller.
  - Check if the motor parameters (speed, pulse) are set correctly on the controller.
  - Verify that the Start/Stop button has been pressed to initiate movement.
  - Check for any active limit switch inputs that might be preventing movement.
- **Incorrect Speed/Direction:** Review the speed and direction settings in the controller's menu. Ensure the FWD/REV buttons are used appropriately.
- **Display Issues:** If the screen is blank or shows errors, try restarting the device. If the problem persists, contact support.
- **Communication Errors (Modbus):** Verify the serial port/485 connections and ensure the communication parameters (baud rate, parity, etc.) are correctly configured on both the controller and the connected device.

For persistent issues not resolved by these steps, please contact GODIYMODULES customer support.

## 8. WARRANTY AND SUPPORT

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Information regarding specific warranty terms for the GODIYMODULES SMC05 controller is not available in the provided product data. Please refer to the product packaging or the manufacturer's official website for detailed warranty information.

For technical support, troubleshooting assistance, or inquiries about the product, please contact GODIYMODULES customer service through their official channels.

