

Youmile JK-YM-349

Youmile Stepping Motor Drive Board

INSTRUCTION MANUAL

1. PRODUCT OVERVIEW

1.1. Introduction

The Youmile Stepping Motor Drive Board (Model: JK-YM-349) is a versatile pulse generation module designed to control stepping motor drivers. It simplifies the process of setting up and operating stepping motors by providing the necessary control signals. This module, when combined with a stepping driver, a stepping motor, and a DC power supply, forms a complete and easy-to-use control platform.

1.2. Key Features

- **Pulse Generation:** Generates pulse signals for stepping motor control.
- **PWM Signal Output:** Capable of generating PWM signals, selectable via jumpers.
- **Adjustable Frequency:** Offers three frequency ranges: High (5.4kHz ~ 160kHz), Medium (540Hz ~ 16.6kHz), and Low (80Hz ~ 2.4kHz).
- **Simple Control Platform:** Designed for easy integration with stepping drivers and motors.
- **Compact Size:** Approximately 38.6 x 58 mm (1.5 x 2.3 inches).

1.3. Package Contents

- 1x Stepping Motor Control Board
- 1x 5-pin Male to Male Dupont Cable
- 1x Screwdriver
- 1x Knob Cover

2. SETUP AND CONNECTIONS

2.1. Component Identification

Familiarize yourself with the various components and connection points on the control board. The image below illustrates the key functional areas of the board, including the frequency adjustment knob, motor reverse switch, motor start/stop switch, power input, signal selection jumpers, and speed range selection jumpers.

FUNCTION DIAGRAM

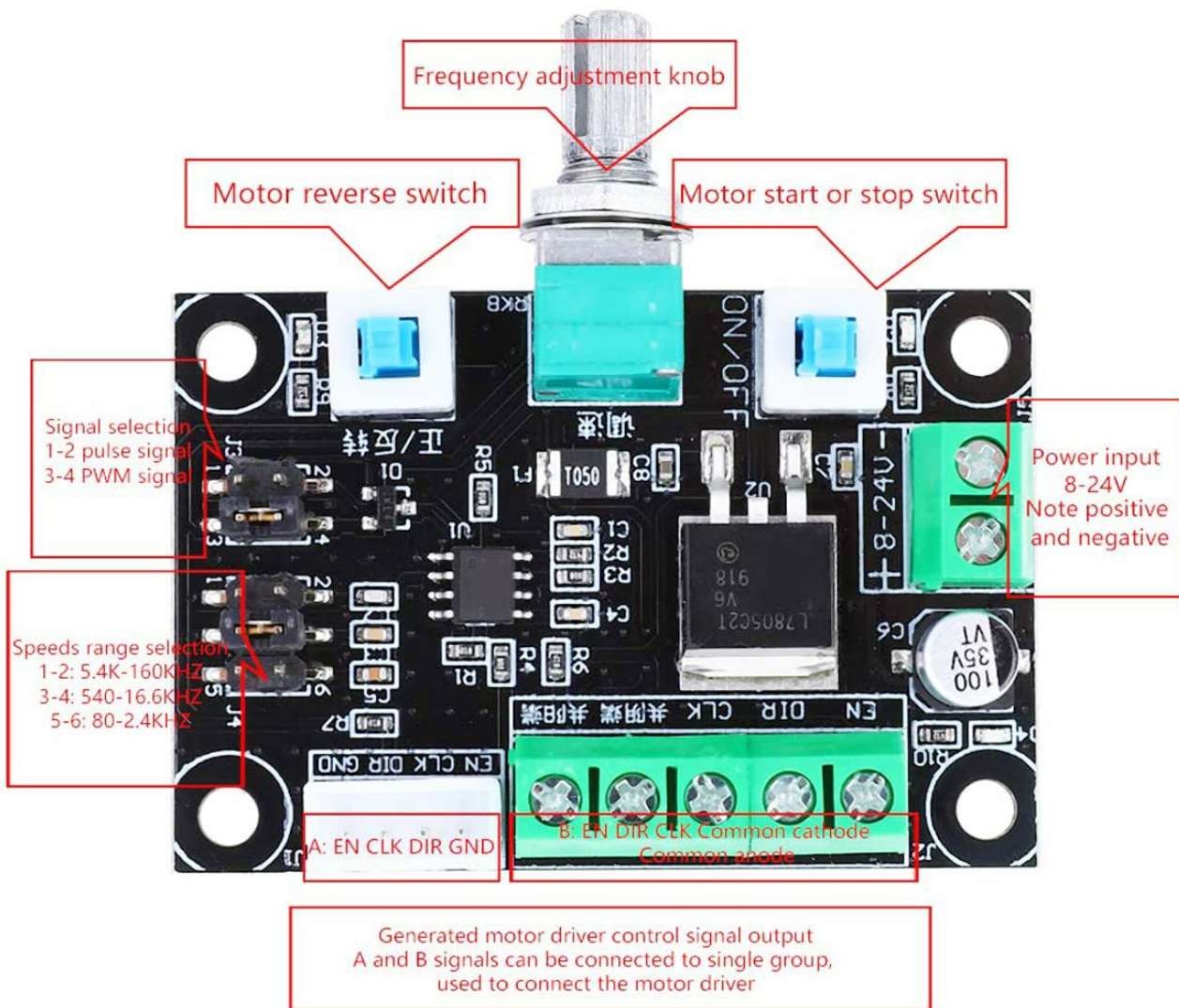


Image Description: A top-down view of the Youmile Stepping Motor Drive Board with labels pointing to its various components. These include the frequency adjustment knob, motor reverse switch, motor start or stop switch, power input terminals (8-24V), signal selection jumpers (1-2 pulse signal, 3-4 PWM signal), speed range selection jumpers (1-2: 5.4K-160KHz, 3-4: 540-16.6KHz, 5-6: 80-2.4KHz), and common mode connection points (Common Anode and Common Cathode).

2.2. Wiring Diagram

The control board can be connected to a stepping motor driver using either a common anode or common cathode configuration. Ensure your driver supports the chosen connection method.

Common Anode Connection Method:

Connect EN+, PUL+, DIR+ to COM+.
Connect EN- to EN.
Connect PUL- to CLK.
Connect DIR- to DIR.

Common Cathode Connection Method:

Connect EN-, PUL-, DIR- together to COM-.
Connect EN+ to EN.

Connect PUL+ to CLK.
Connect DIR+ to DIR.

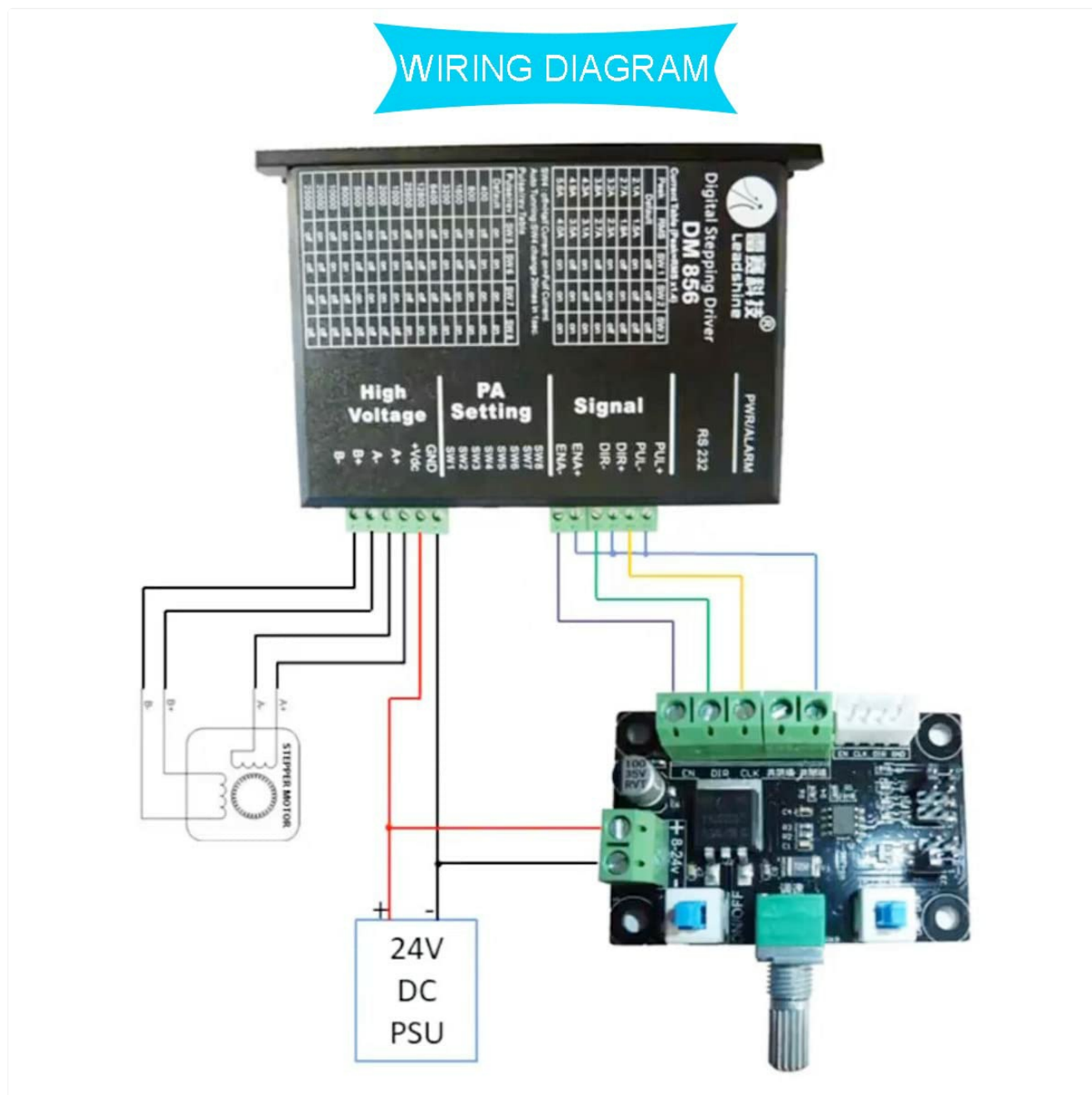


Image Description: A detailed wiring diagram showing the Youmile Stepping Motor Drive Board connected to a digital stepping driver (DM 836) and a stepper motor. The diagram illustrates the power supply connection (24V DC PSU) to the driver, and the signal connections (PUL+, PUL-, ENA+, ENA-, DIR+, DIR-) from the driver to the control board's EN, DIR, CLK terminals. The stepper motor is shown connected to the driver's A+, A-, B+, B- terminals.

2.3. Power Supply

The board requires a DC power input of 8-24V. Ensure correct polarity when connecting the power supply to the designated terminals on the board. Incorrect polarity can damage the module.

3. OPERATION

3.1. Frequency Adjustment

The rotational speed of the stepping motor is controlled by the frequency of the pulse signal. Use the large knob on the board to adjust the output frequency. Turning the knob clockwise increases the frequency, and counter-

clockwise decreases it.

3.2. Signal Selection

The board can output either a pulse signal or a PWM signal. Use the jumpers labeled 'Signal selection' (J3 on the board, referring to the function diagram) to select the desired output type:

- **1-2 Jumper:** Selects pulse signal output.
- **3-4 Jumper:** Selects PWM signal output.

3.3. Motor Control

The board features two switches for basic motor control:

- **Motor Start or Stop Switch:** This switch controls whether the motor is running or stopped.
- **Motor Reverse Switch:** This switch changes the direction of the motor's rotation.

4. MAINTENANCE

To ensure the longevity and optimal performance of your Youmile Stepping Motor Drive Board, follow these maintenance guidelines:

- **Keep Clean:** Regularly clean the board with a soft, dry brush or compressed air to remove dust and debris.
- **Avoid Moisture:** Protect the board from moisture and humidity, which can cause short circuits and corrosion.
- **Temperature Control:** Operate the board within its specified temperature range. Avoid extreme heat or cold.
- **Handle with Care:** Avoid dropping or subjecting the board to physical shocks.
- **Power Off Before Connecting:** Always disconnect power before making or changing any connections to prevent damage to the board or other components.

5. TROUBLESHOOTING

If you encounter issues with your Youmile Stepping Motor Drive Board, refer to the following table for common problems and their solutions:

Problem	Possible Cause	Solution
Motor not moving	No power to the board or driver Incorrect wiring Motor start/stop switch is OFF Incorrect signal selection (Pulse/PWM)	Check power supply and connections Verify all wiring according to the diagram Ensure motor start/stop switch is ON Confirm jumper setting for signal type
Motor moving erratically	Loose connections Interference Frequency too high/low for motor	Check all connections for secure fit Ensure proper shielding and grounding Adjust frequency knob to a suitable range
No frequency adjustment	Faulty knob Incorrect jumper setting for frequency range	Inspect knob for physical damage Verify speed range selection jumpers (J4 on the board) are correctly set

Problem	Possible Cause	Solution
Board not powering on	No power input Incorrect power polarity Damaged board	Check power source and cable Ensure positive and negative terminals are correctly connected Contact support if board is damaged

6. TECHNICAL SPECIFICATIONS

Specification	Value
Model Number	JK-YM-349
Item Type	Stepping Motor Drive Controller
Size	Approx. 38.6 x 58 mm / 1.5 x 2.3 inches
Power Input	DC 8-24V
High Frequency Range	5.4kHz ~ 160kHz
Medium Frequency Range	540Hz ~ 16.6kHz
Low Frequency Range	80Hz ~ 2.4kHz
Signal Output	Pulse, PWM (selectable)
Product Weight	Approx. 40 g
Package Dimensions	Approx. 11.7 x 9.2 x 3.2 cm

7. WARRANTY AND SUPPORT

Youmile products are manufactured to high-quality standards. For any technical assistance, troubleshooting not covered in this manual, or warranty inquiries, please contact Youmile customer support through your purchase platform. Please have your product model number (JK-YM-349) and purchase details ready when contacting support.