Fafeicy JZ-801

Fafeicy JZ-801 Relay Module: User Manual

Delay Power Off, Disconnect, and Cycle Timing Circuit Switch

1. Introduction

This user manual provides comprehensive instructions for the Fafeicy JZ-801 Relay Module. This versatile module is designed for various timing control applications, including delay power off, disconnect, and cycle timing functions. It features a wide voltage power supply, optocoupler isolation for enhanced anti-interference, and a user-friendly interface for easy parameter setting.

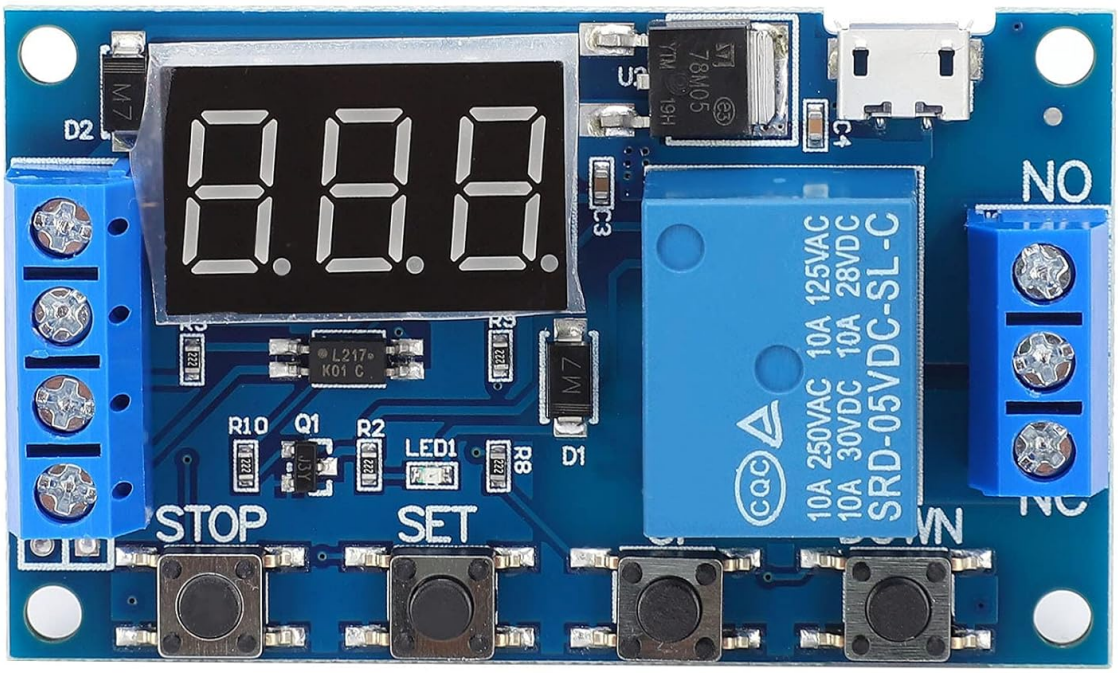


Image 1.1: Front view of the Fafeicy JZ-801 Relay Module, showing the digital display, buttons, and terminal blocks.

2. Safety Information

- Always disconnect power before making any wiring connections to prevent electric shock.
- Ensure proper voltage and current ratings are observed to avoid damage to the module or connected equipment.
- The relay output is a passive switch; it does not provide power. Ensure external power is supplied to the load.
- Avoid exposing the module to moisture, extreme temperatures, or corrosive environments.
- Handle the circuit board with care to prevent damage to components.
- The module includes reverse connection protection, but always double-check polarity during wiring.

3. Product Overview

3.1 Key Features

- **Optocoupler Isolation:** Enhances anti-interference ability for stable operation.

- **Industrial Grade Circuit Board:** Designed for reliability and durability.
- **Parameter Memory:** All set parameters are automatically saved and remembered after power failure.
- **Sleep Mode:** Automatically turns off the display after 5 minutes of inactivity to save power. Any key press wakes the display.
- **Wide Voltage Power Supply:** Operates from 6V to 30V DC, with support for micro USB 5.0V power supply.
- **Emergency Stop Function:** A dedicated STOP key allows for immediate cessation of operation.
- **Reverse Connection Protection:** Prevents damage to the module if power polarity is accidentally reversed.
- **Clear Interface:** Simple and intuitive interface for easy understanding and operation.

3.2 Components

The JZ-801 Relay Module consists of the following main components:

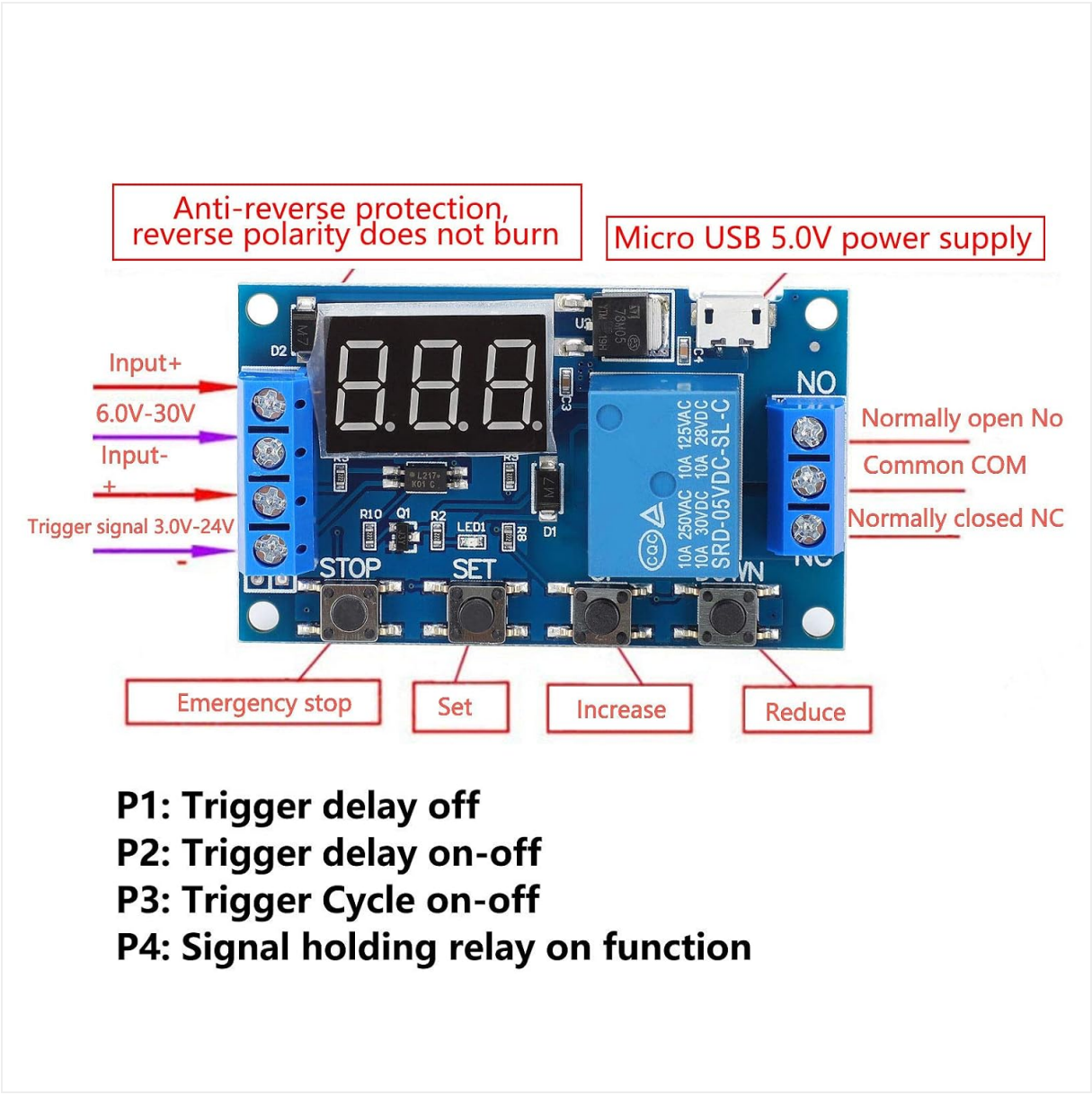


Image 3.1: Labeled diagram showing input terminals, micro USB port, digital display, control buttons, and relay output terminals.

- **Digital Display:** Shows current time settings and operating mode.
- **Input Terminals (Input+, Input-):** For 6V-30V DC power supply.
- **Micro USB Port:** Alternative 5.0V DC power supply input.

- **Trigger Signal Input:** Accepts a high-level trigger signal (3.0V-24V).
- **Control Buttons:**
  - **STOP:** Emergency stop function.
  - **SET:** Enters parameter setting mode.
  - **Increase (Up Arrow):** Increases parameter values.
  - **Reduce (Down Arrow):** Decreases parameter values.
- **Relay Output Terminals:**
  - **NO (Normally Open):** Connects to COM when the relay is active.
  - **COM (Common):** Common terminal for the relay switch.
  - **NC (Normally Closed):** Connects to COM when the relay is inactive.

4. Specifications

Parameter	Value
Working Voltage	6-30V DC (supports micro USB 5.0V)
Trigger Source	High-level (3.0V-24V)
Output Capacity	DC 30V 5A or AC 220V 5A
Quiescent Current	20mA
Working Current	50mA
Timing Range	0.1 seconds - 999 minutes (continuously adjustable)
Service Life	>100,000 times
Working Temperature	-40°C to 85°C
Connector Type	USB (for power)
Contact Material	Silver
Contact Type	Normally Open
Mounting Type	PCB Mount

Special Attention: The relay output is a passive switch, meaning it provides no voltage or current itself. It functions solely to control the on-off state of an external circuit. Ensure your load has its own power source.

5. Setup and Wiring

5.1 Power Supply Connection

The module can be powered in two ways:

- **Terminal Block:** Connect a DC power supply (6V to 30V) to the "Input+" and "Input-" terminals. Observe correct polarity.
- **Micro USB:** Connect a 5.0V micro USB cable to the micro USB port.

The module features anti-reverse protection, preventing damage from incorrect polarity, but it is always best practice to connect correctly.

5.2 Trigger Signal Connection

Connect your trigger signal source (3.0V-24V high-level signal) to the "Trigger" input terminal. The ground of the trigger source should ideally be separate from the module's ground to improve anti-interference, but can also be shorted to common ground if necessary.

5.3 Load Wiring (Relay Output)

The relay acts as a switch for your external load. It has three terminals:

- **NO (Normally Open):** This terminal is open (disconnected) from COM when the relay is off, and closed (connected) to COM when the relay is on.
- **COM (Common):** This is the common terminal for the switch.
- **NC (Normally Closed):** This terminal is closed (connected) to COM when the relay is off, and open (disconnected) from COM when the relay is on.

To control a load, connect one side of your load to the external power source and the other side to either NO or NC, depending on your desired behavior. Then, connect the COM terminal to the other side of your external power source (or the return path of your load circuit). Remember, the relay itself does not supply power to the load.

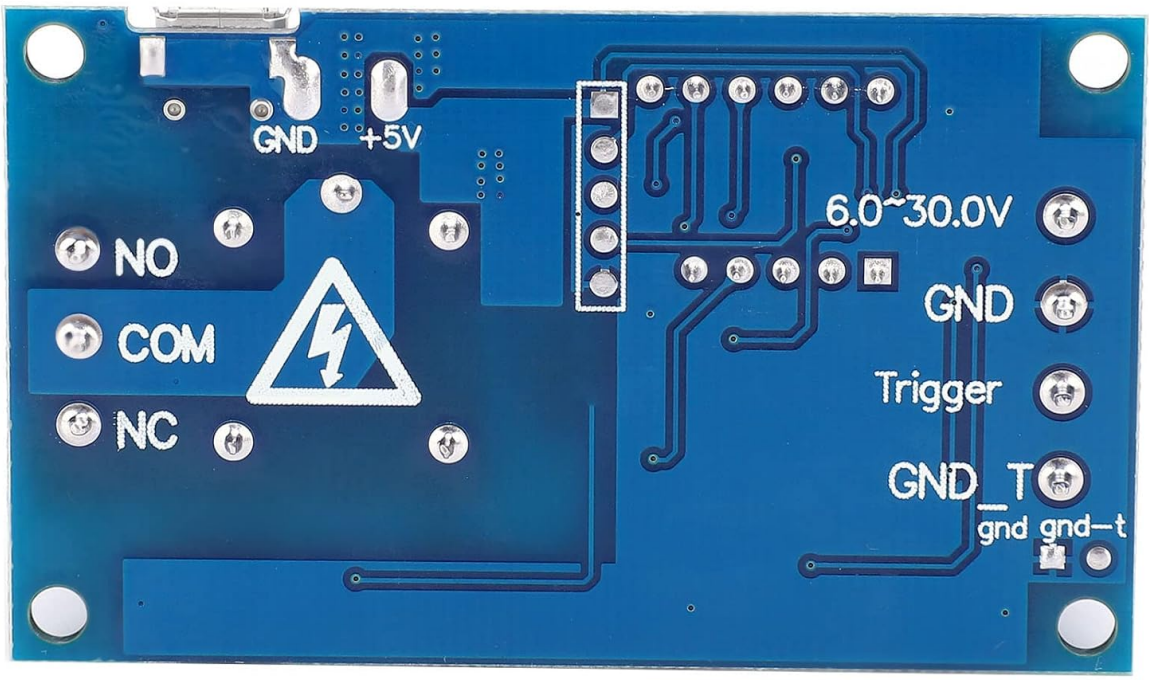


Image 5.1: Bottom view of the module, illustrating the PCB layout and power input points.

6. Operating Modes and Programming

The module supports various operating modes, each with specific timing parameters. The parameters are displayed as OP (On-time), CL (Off-time), and LOP (Cycle count).

6.1 Setting Parameters

1. **Enter Setting Mode:** Press and hold the **SET** button for a few seconds until the display flashes.
2. **Select Mode:** Short press the **SET** button to cycle through the operating modes (P1.1, P1.2, P1.3, P2, P3, P4).
3. **Adjust Parameters:** Once a mode is selected, use the **Increase** and **Reduce** buttons to adjust the values for OP, CL, and LOP.
    - **OP:** On-time (relay active duration).
    - **CL:** Off-time (relay inactive duration).
    - **LOP:** Cycle count (number of repetitions). "---" indicates infinite loop.
4. **Select Time Unit:** While adjusting OP or CL, short press the **STOP** button to switch the time unit:

- **XXX.** (decimal point in the hundred's place): 0.1 seconds to 99.9 seconds.
- **XXX** (no decimal point): 1 second to 999 seconds.
- **X.X.X.** (decimal points in ten's and hundred's place): 1 minute to 999 minutes.

5. **Save Settings:** After setting all parameters for the chosen mode, press and hold the**SET** button until the display stops flashing. The settings are now saved.

6.2 Operating Modes

The module offers several operational modes:

- **P1.1: Trigger Delay Off**
  Upon receiving a trigger signal, the relay turns on for the duration of OP, then turns off. The trigger signal is ignored during the OP period.
- **P1.2: Trigger Delay On-Off**
  Upon receiving a trigger signal, the relay turns on for the duration of OP, then turns off. If a new trigger signal is received during the OP period, the timing resets.
- **P1.3: Trigger Cycle On-Off**
  Upon receiving a trigger signal, the relay turns on for OP, then off for CL, repeating LOP times. If a new trigger signal is received during the cycle, the timing resets.
- **P2: Signal Holding Relay On Function**
  If the trigger signal is present, the relay remains on. When the trigger signal disappears, the relay turns off after the OP delay. If the signal reappears during the delay, the timing resets.
- **P3: Trigger Cycle On-Off (Advanced)**
  Upon power-on, the relay turns on for OP, then off for CL, repeating LOP times. This mode does not require an external trigger signal to start the cycle.
- **P4: Signal Holding Relay On Function (Advanced)**
  If the trigger signal is present, the relay remains on. When the trigger signal disappears, the relay turns off after the OP delay. This mode is similar to P2 but may have different reset behavior depending on the specific firmware version.



Image 6.1: Overview of the relay board highlighting key features and operational modes.

6.3 Emergency Stop (STOP Button)

In any operating mode, a short press of the**STOP** button will immediately stop the current operation and turn off the relay. Pressing it again will resume operation according to the set mode.

6.4 Sleep Mode

The module features a sleep mode to conserve power. If no operation is performed for 5 minutes, the digital display will automatically turn off. Any button press will wake the display without affecting the ongoing timing process.

6.5 Video Demonstration

For a visual guide on the module's functionality, please refer to the video below:

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Video 6.1: A brief demonstration of the Fafeicy JZ-801 Relay Module's basic operation and features.

7. Troubleshooting

- **Module not powering on:**
  - Check power supply voltage (6-30V DC or 5V micro USB).
  - Verify power connections are secure and correct polarity is observed.
- **Relay not activating:**
  - Ensure the trigger signal is within the specified range (3.0V-24V high-level).
  - Check if the operating mode and timing parameters (OP, CL, LOP) are set correctly.
  - Verify the load is properly wired to the NO/NC and COM terminals and has its own power source.
  - Confirm the STOP function is not active (display should not show "OFF").
- **Display is off:**
  - The module might be in sleep mode. Press any button to wake it up.
  - Check power supply if the display remains off after pressing a button.
- **Parameters not saving:**
  - Ensure you press and hold the **SET** button after adjusting parameters until the display stops flashing to save them.

8. Maintenance

- Keep the module clean and free from dust and debris.
- Avoid physical shock or excessive vibration.
- Do not attempt to repair the module yourself if it is damaged. Contact support.
- Ensure proper ventilation if operating in an enclosed space to prevent overheating.

9. Warranty and Support

For warranty information or technical support regarding your Fafeicy JZ-801 Relay Module, please refer to the documentation provided at the point of purchase or contact Fafeicy customer service directly. Please have your product model number (JZ-801) and purchase details ready when contacting support.