Fafeicy Delay Timer Relay Module

Fafeicy Delay Timer Relay Module User Manual

Models: DC 5V, DC 12V, DC 24V

1. Introduction

This manual provides detailed instructions for the Fafeicy Delay Timer Relay Module. This versatile module offers multiple timing and control functions, including delay ON, delay OFF, self-locking, and level-triggered modes. It is available in 5V, 12V, and 24V DC versions to suit various application requirements. Please read this manual thoroughly before operation to ensure correct usage and optimal performance.

2. Safety Information

- Ensure the correct operating voltage (5V, 12V, or 24V DC) is applied to prevent damage to the module.
- Observe proper polarity when connecting the DC power supply (DC+ to positive, DC- to negative). The module includes anti-reverse protection.
- Do not exceed the specified load capacity for the relay contacts (DC 0-30V/10A, AC 0-250V/10A for normally open; DC 0-28V/10A, AC 0-125V/10A for normally closed).
- Disconnect power before making any wiring changes or adjustments.
- This module is intended for use by individuals familiar with basic electronics and electrical safety procedures.
- Operate within the specified temperature range of -20°C to 60°C.

3. Product Overview

The Fafeicy Delay Timer Relay Module is a compact and versatile control unit. It features a single-pole double-throw (SPDT) relay, a potentiometer for time adjustment, and a button for function selection. The module is designed for easy integration into various electronic projects and automation tasks.

Module Components:

- **Power Input Terminals (DC+, DC-)**: For connecting the DC power supply.
- **Input Detection Interface (X1)**: For external trigger signals.
- **Relay Output Terminals (COM, NO, NC)**: Common, Normally Open, and Normally Closed contacts for controlling external loads.

- **Potentiometer**: Used to adjust the delay time (0.1 to 120 seconds).
- **SET Button**: For selecting operating functions (F1, F2, F3, F4).
- **LED Indicator**: Indicates relay status (typically ON when relay is energized).

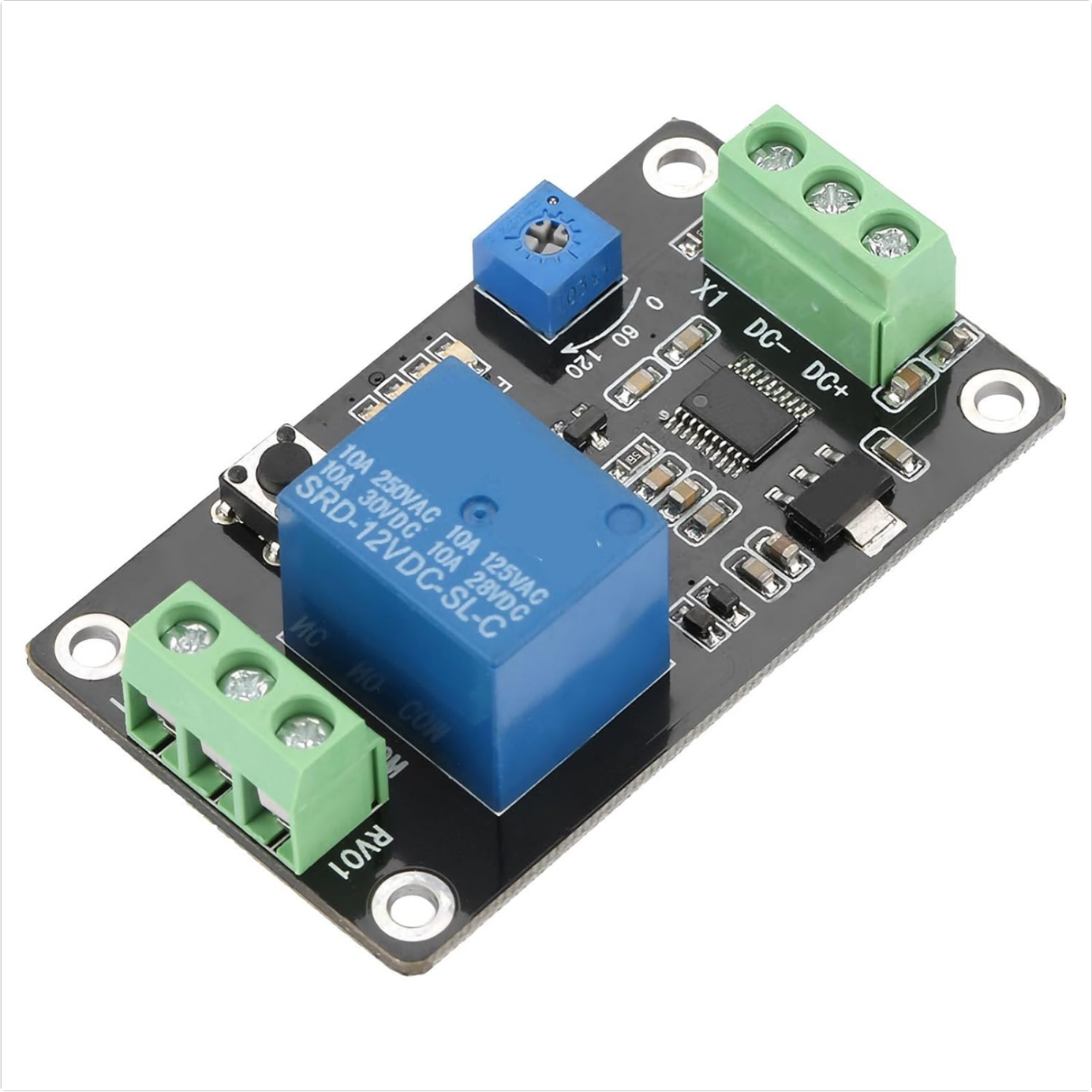

Figure 1: Top view of the Fafeicy Delay Timer Relay Module, showing the relay, potentiometer, SET button, and screw terminals for power input and relay output.

Figure 2: Overhead view highlighting the function selection labels (F1, F2, F3, F4) and the time adjustment potentiometer markings (0, 60, 120 seconds).

4. Specifications

Parameter	Value
Working Voltage Options	DC 5V, DC 12V, DC 24V
Working Current (Relay OFF)	<1mA
Working Current (Relay ON, 5V)	<80mA
Working Current (Relay ON, 12V)	<35mA
Working Current (Relay ON, 24V)	<18mA
Load Capacity (Normally Open)	DC 0-30V/10A, AC 0-250V/10A

Parameter	Value
Load Capacity (Normally Closed)	DC 0-28V/10A, AC 0-125V/10A
Delay Time Range	0.1 seconds to 120 seconds
Working Temperature	-20°C to 60°C (Limit range -30°C to 70°C)
Dimensions (L x W x H)	60mm x 35mm x 20mm (2.36in x 1.38in x 0.79in)
Contact Material	Silver Alloy
Connector Type	Screw Terminals

5. Setup and Wiring

Proper wiring is essential for the safe and correct operation of the module. Refer to the diagrams and instructions below.

5.1 Power Supply Connection

- Connect the positive terminal of your DC power supply to the **DC+** terminal on the module.
- Connect the negative terminal of your DC power supply to the **DC-** terminal on the module.
- Ensure the input voltage matches the module's specified voltage (5V, 12V, or 24V DC).

5.2 Load Connection

The relay has three output terminals for connecting your load:

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

Connect your load according to whether you need it to be ON or OFF when the relay is in its default (de-energized) state.

5.3 Trigger Input (X1)

The **X1** terminal is used for external trigger signals, typically a high-level pulse, depending on the selected function mode.

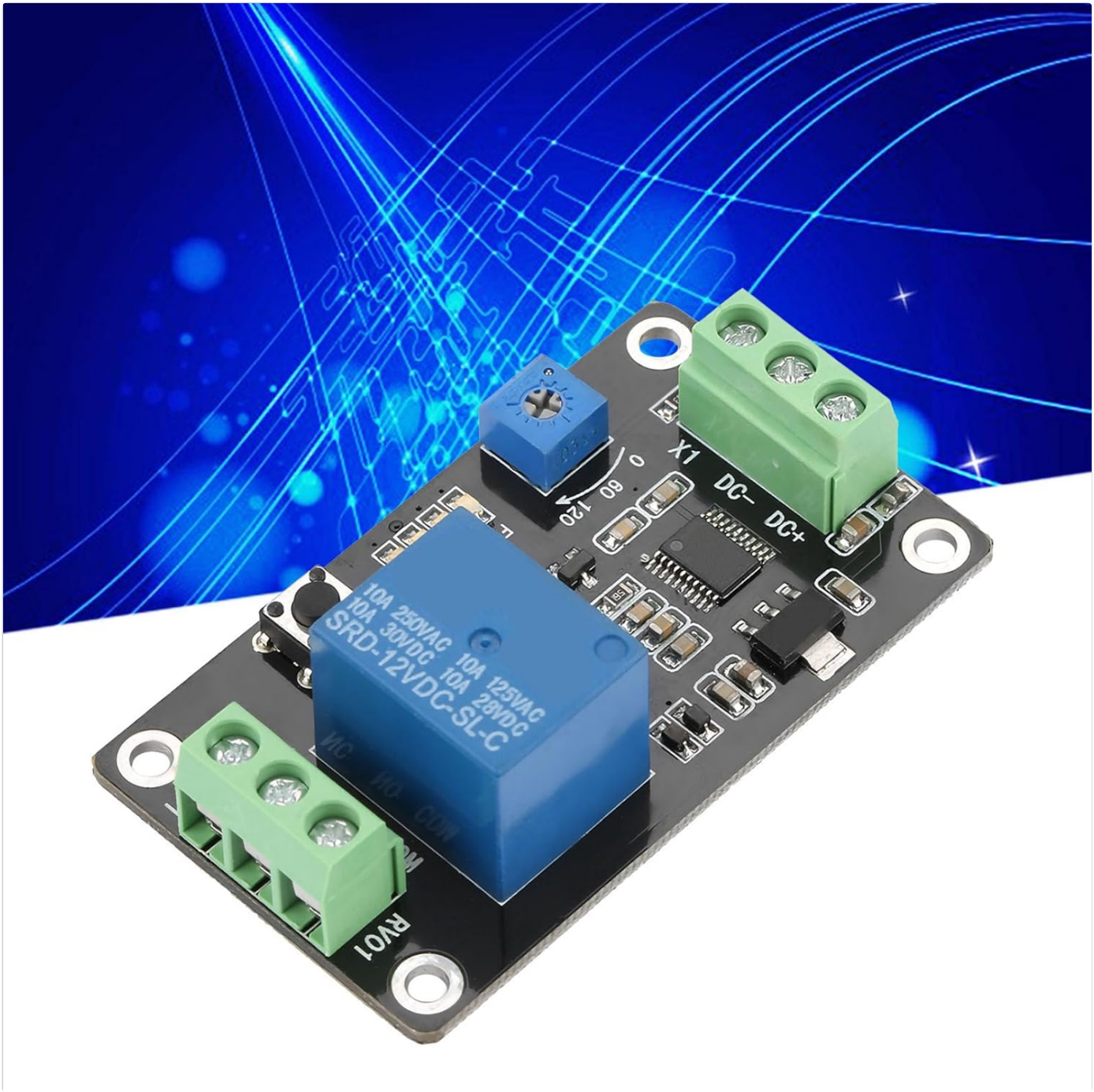

Figure 3: Side view showing the power input (DC+, DC-, X1) and relay output (NC, NO, COM) screw terminals for wiring connections.

6. Operating Instructions

The module offers four distinct operating functions (F1-F4), selectable via the SET button. The delay time (T1) is adjustable using the onboard potentiometer.

6.1 Setting the Delay Time (T1)

1. Locate the blue potentiometer on the module.
2. Use a small screwdriver to rotate the potentiometer. Turning it clockwise increases the delay time, and counter-clockwise decreases it.
3. The delay time can be set from 0.1 seconds to 120 seconds.

6.2 Selecting Operating Functions (F1-F4)

Press the **SET** button to cycle through the four functions. The selected function is indicated by the corresponding LED (F1, F2, F3,

F4) next to the button. The module saves the last selected function even after power-off.

Function F1: Power-on Delay Pull-in

Upon power-on, the relay remains de-energized. After the set delay time T1, the relay energizes (pulls in). Sending a high-level pulse to the X1 interface at any time will reset the timer and restart the delay sequence.

Function F2: Power-on Delay Disconnect

Upon power-on, the relay immediately energizes (closes). After the set delay time T1, the relay de-energizes (disconnects). Sending a high-level pulse to the X1 interface at any time will reset the timer and restart the delay sequence.

Function F3: Self-locking Relay Mode

In this mode, the relay acts as a toggle switch. A high-level pulse sent to the X1 interface will energize the relay. Another high-level pulse to X1 will de-energize the relay.

Function F4: Level Mode

Upon power-on, the relay is de-energized. When a high-level signal is applied to the X1 interface, the relay immediately energizes. The relay remains energized even if the X1 signal disappears. After the set delay time T1 from the moment the X1 signal disappears, the relay de-energizes.

7. Maintenance

- Keep the module clean and free from dust and moisture.
- Avoid exposing the module to extreme temperatures or direct sunlight.
- Regularly check wiring connections to ensure they are secure.
- No user-serviceable parts inside. Do not attempt to disassemble the module.

8. Troubleshooting

Problem	Possible Cause	Solution
Module does not power on.	Incorrect power supply voltage or polarity; loose connections; faulty power supply.	Verify power supply voltage matches module (5V/12V/24V). Check DC+ and DC- connections for correct polarity. Ensure power supply is functional and connections are secure.
Relay does not energize/de-energize as expected.	Incorrect function selected; incorrect delay time setting; faulty trigger signal (X1); relay overload.	Check the selected function (F1-F4) using the SET button. Adjust the potentiometer for the desired delay time. Verify the X1 trigger signal is correct for the chosen function. Ensure the load current/voltage does not exceed relay specifications.
Delay time is inconsistent.	Potentiometer not set firmly; unstable power supply.	Ensure the potentiometer is set firmly and not loose. Use a stable and regulated DC power supply.
Module gets excessively hot.	Overload on relay contacts; incorrect input voltage.	Reduce the load connected to the relay. Verify the input voltage is correct for the module. Disconnect power immediately if overheating occurs.

9. Warranty and Support

Fafeicy products are designed for reliability and performance. For warranty information or technical support, please refer to the retailer where the product was purchased or visit the official Fafeicy brand store on Amazon: Fafeicy Store.

When contacting support, please provide your product model (Fafeicy Delay Timer Relay Module) and the ASIN (B08C4R943P) for faster assistance.