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› [Walfront DC 5V 12V 24V Adjustable Cycle Delay Timing Timer Relay On/Off Switch \(DC12V 0-24hr Adjustable\)](#)

Walfront Walfrontafg3g8tdsy-04

Walfront DC 5V 12V 24V Adjustable Cycle Delay Timing Timer Relay On/Off Switch

Model: Walfrontafg3g8tdsy-04

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1. INTRODUCTION

This manual provides detailed instructions for the Walfront Adjustable Cycle Delay Timing Timer Relay On/Off Switch. This module is designed for precise timing control in various applications, offering both single (mon) and continuous cycle modes. It utilizes an MCU as its main chip, ensuring high accuracy and stable performance for tasks requiring repetitive power on/off cycles or timed operations.

The module is suitable for a wide range of voltages including DC 5V, 12V, and 24V, with adjustable timing ranges to meet diverse operational requirements.

2. SAFETY INFORMATION

Please read all safety instructions carefully before installation and operation to prevent injury or damage to the device.

- **Power Supply:** Ensure the power supply voltage matches the module's specifications (DC 5V, 12V, or 24V). Connecting an incorrect voltage can damage the module.
- **Polarity:** Always observe correct polarity when connecting the power supply. Reversing positive and negative connections can cause irreversible damage.
- **Load Capacity:** Do not exceed the maximum load capacity of 10A (AC 0-250V, DC 0-30V). Overloading can lead to overheating and failure.
- **Wiring:** All wiring should be performed by a qualified individual. Ensure all connections are secure and insulated to prevent short circuits.
- **Environment:** Operate the module in a dry environment, away from moisture, dust, and extreme temperatures.

- **Disassembly:** Do not attempt to disassemble or modify the module. Unauthorized modifications will void the warranty and may pose safety risks.

3. SPECIFICATIONS

Feature	Description
Type Options	DC5V, 0-30min / DC5V, 0-24hr / DC12V, 0-120min / DC12V, 0-24hr / DC24V, 0-15min / DC24V, 0-30min
Quiescent Current	<10mA
Dynamic Current	45mA@12V; 90mA@5V; 30mA@24V
Relay Output	1 group NO+NC (Normally Open + Normally Closed)
Load Capacity	10A (AC 0-250V, DC 0-30V)
Dimensions (L×W×H)	70 × 20 × 18mm / 2.75 × 0.78 × 0.7 inches
Time Accuracy	Value × 0.001
Material	PCB
Item Weight	0.704 ounces
Mounting Type	DIN Rail Mount (Note: This is from product specs, but the image doesn't clearly show DIN rail clips. It's a PCB module.)

4. PRODUCT OVERVIEW AND COMPONENTS

The Walfront Timer Relay Module is a compact circuit board designed for precise timing applications. Familiarize yourself with its key components:

Adjustable Cycle On/Off Switch Module

Trigger Control Cycle/single Mode

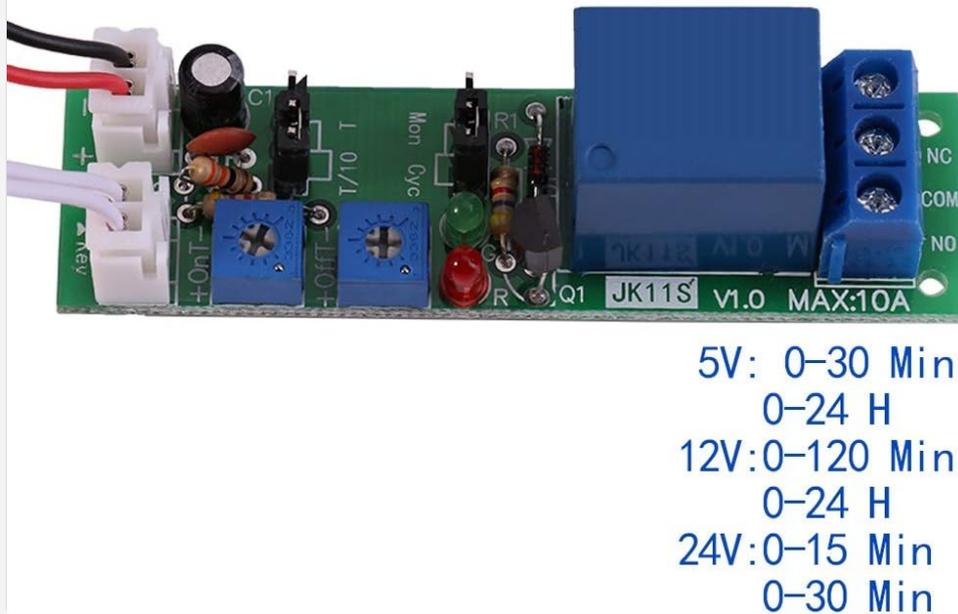


Figure 4.1: Overview of the Walfront Timer Relay Module with key components labeled. This image shows the relay, power indicator, switch indicator, and the two adjustment potentiometers.

- **Relay:** The blue rectangular component responsible for switching the load on and off. It has NO (Normally Open), COM (Common), and NC (Normally Closed) terminals.
- **Power Indicator (Green LED):** Illuminates when the module is powered on.
- **Switch Indicator (Red LED):** Illuminates when the relay is activated (switched on).
- **"On" Time Adjustment Potentiometer:** Used to set the duration for which the relay remains ON.
- **"Off" Time Adjustment Potentiometer:** Used to set the duration for which the relay remains OFF (in cycle mode).
- **Mode Jumper (Mon./Cycle):** A small jumper pin that allows selection between single (Mon.) and continuous cycle (Cycle) modes.
- **Input Terminals (+, -):** For connecting the DC power supply to the module.
- **Key Input Terminal:** For connecting an external start/stop button.

5. SETUP AND INSTALLATION

Before proceeding with installation, ensure the power supply is disconnected. Refer to the wiring diagrams below for correct connections.

5.1. Wiring Diagram 1: Separate Power Supplies for Module and Load

This configuration is used when the module and the load are powered by different power sources, or when the load requires an AC power supply.

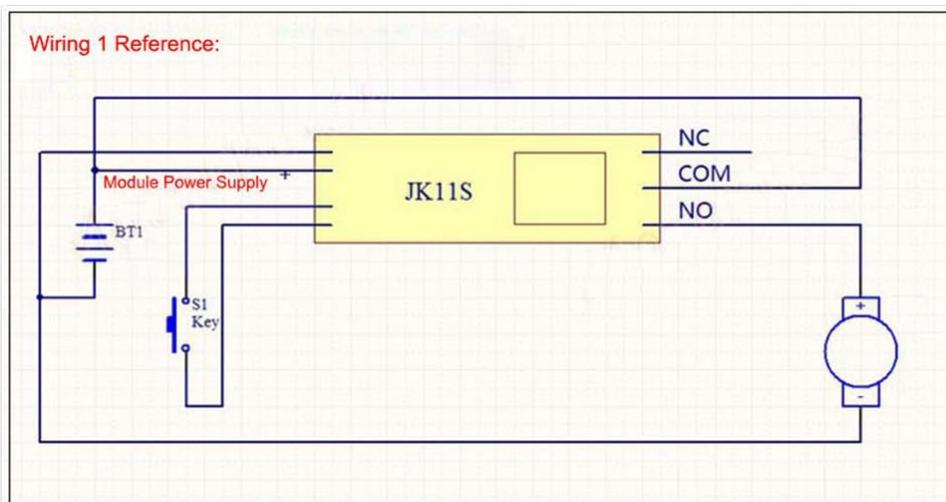


Figure 5.1: Wiring diagram showing separate power supplies for the module (BT1) and the load. The module's power input is connected to BT1, and the load's power is connected through the relay's COM and NO terminals.

1. Connect the module's power input (labeled '+' and '-') to your DC power supply (BT1), ensuring correct polarity.
2. Connect the load's power supply (Power 2) to one side of the load.
3. Connect the other side of the load to the **NO (Normally Open)** terminal of the relay.
4. Connect the **COM (Common)** terminal of the relay to the other side of the load's power supply (Power 2).
5. Optionally, connect an external start/stop button (S1 Key) to the 'Key' input terminals.

Important: Do not reverse the positive and negative of the power supply. If you need to power on and cycle immediately without an external button, short the start button wire directly.

5.2. Wiring Diagram 2: Shared Power Supply for Module and Load

This configuration is used when the module and the load share the same DC power source.

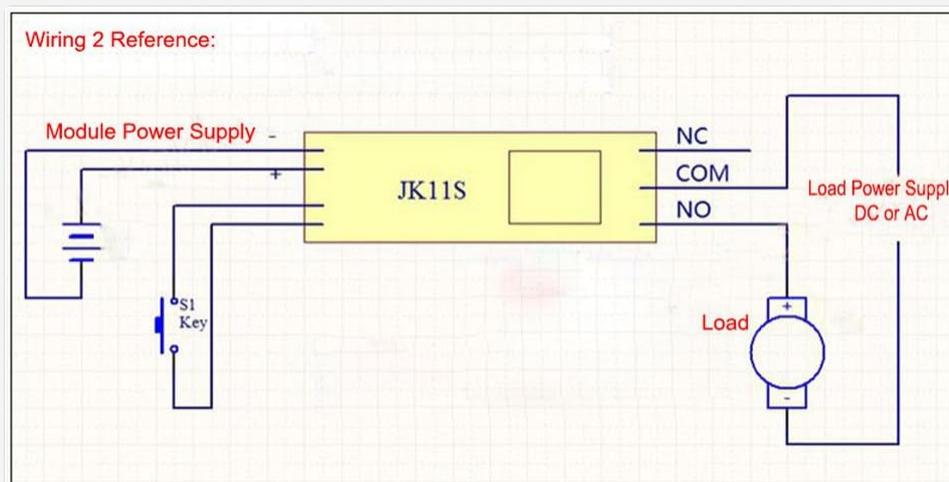


Figure 5.2: Wiring diagram showing a shared power supply for both the module and the load. The module's power input and the load's power are derived from the same source, with the load connected through the relay's COM and NO terminals.

1. Connect the module's power input (labeled '+' and '-') to your DC power supply, ensuring correct polarity.
2. Connect the positive (+) terminal of the power supply to one side of the load.
3. Connect the other side of the load to the **NO (Normally Open)** terminal of the relay.
4. Connect the **COM (Common)** terminal of the relay to the negative (-) terminal of the power supply.
5. Optionally, connect an external start/stop button (S1 Key) to the 'Key' input terminals.

Important: Ensure the shared power supply can handle the current draw of both the module and the load without exceeding its capacity.

6. OPERATING INSTRUCTIONS

6.1. Mode Selection (Mon./Cycle)

The module supports two operating modes: Single (Mon.) and Continuous Cycle (Cycle). Select the desired mode using the jumper pin on the board.

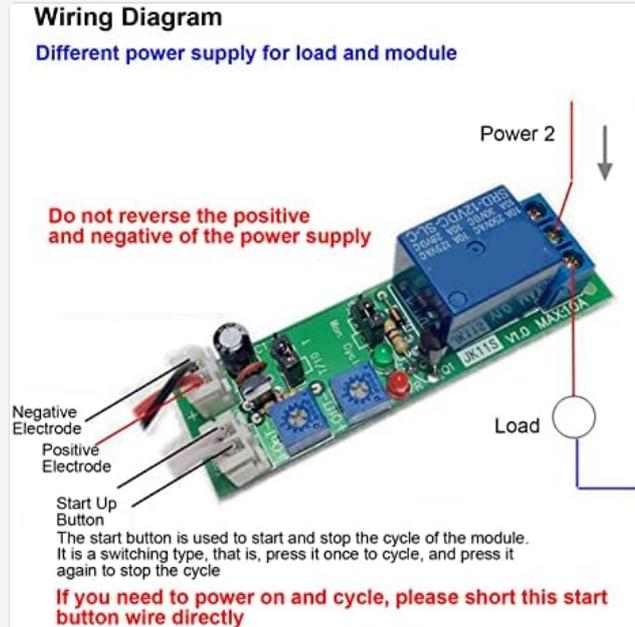


Figure 6.1: Close-up view of the mode selection jumper. The jumper can be placed in either the 'Mon.' position for single operation or 'Cycle' for continuous cycling.

- **Mon. (Single Mode):** In this mode, the relay will activate for the set "On" time once triggered, then remain off until triggered again.
- **Cycle (Continuous Cycle Mode):** In this mode, after being triggered, the relay will continuously cycle between the set "On" time and "Off" time until stopped.

6.2. Time Adjustment

Use the two potentiometers on the board to adjust the "On" and "Off" times. These are typically blue square components with a screw slot for adjustment.

Adjustable Cycle On/Off Switch Module

Trigger Control Cycle/single Mode

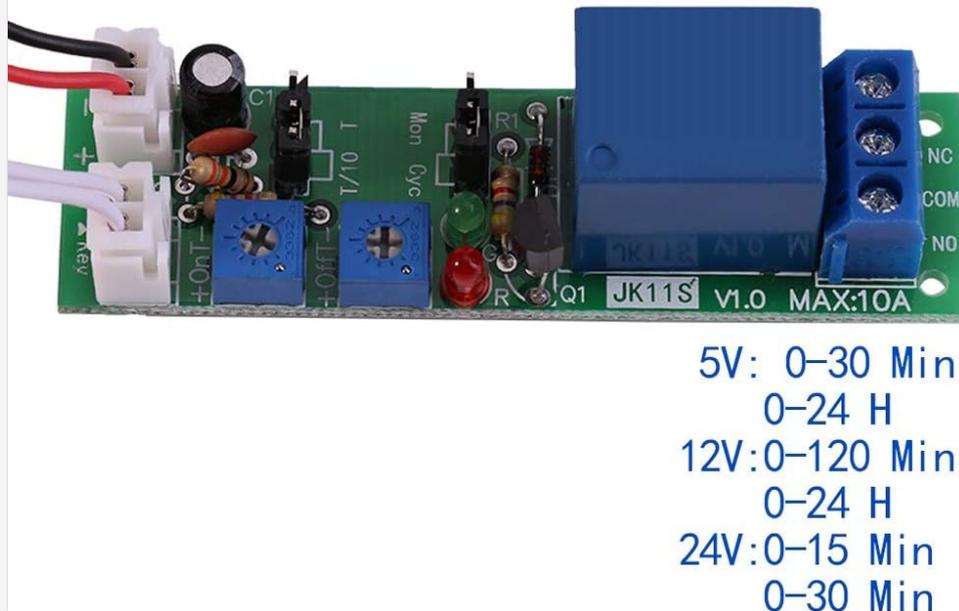


Figure 6.2: The two potentiometers for adjusting the 'On' and 'Off' durations. Rotate them clockwise to increase time and counter-clockwise to decrease time.

- **"On" Time Potentiometer:** Adjusts the duration the relay is active (load is ON).
- **"Off" Time Potentiometer:** Adjusts the duration the relay is inactive (load is OFF). This is primarily used in Cycle mode.

The timing range depends on the specific model variant (e.g., 0-30 minutes, 0-24 hours). Refer to the specifications for your module's exact range.

6.3. Starting and Stopping Operation

- **Using an External Button:** If an external start/stop button is connected to the 'Key' terminals, press it once to start the timing cycle. Press it again to stop the cycle.
- **Automatic Start:** If no external button is connected and you wish for the module to start immediately upon power-up, short the 'Key' input terminals. This will simulate a button press.

7. MAINTENANCE

The Walfront Timer Relay Module is designed for reliable operation with minimal maintenance. Follow these guidelines to ensure its longevity:

- **Keep Clean:** Periodically inspect the module for dust or debris accumulation. Use a soft, dry brush or compressed air to gently clean the circuit board. Do not use liquids or solvents.
- **Environmental Control:** Ensure the operating environment remains within specified temperature and humidity ranges. Avoid exposure to direct sunlight, excessive heat, or moisture.
- **Connection Integrity:** Occasionally check all wiring connections to ensure they are secure and free from corrosion. Loose connections can lead to intermittent operation or damage.

- **Avoid Physical Stress:** Do not bend, drop, or apply excessive force to the module. Handle with care to prevent damage to components or solder joints.

8. TROUBLESHOOTING

If you encounter issues with your Walfront Timer Relay Module, refer to the following common problems and their solutions:

Problem	Possible Cause	Solution
Module does not power on (Green LED off)	<ul style="list-style-type: none"> • No power supply. • Incorrect power supply voltage. • Reversed polarity. • Loose power connections. 	<ul style="list-style-type: none"> • Verify power supply is connected and active. • Ensure power supply voltage matches module (5V, 12V, or 24V). • Check and correct power supply polarity. • Secure all power connections.
Relay does not activate/switch (Red LED off when expected on)	<ul style="list-style-type: none"> • Module not triggered. • Incorrect mode selection (Mon./Cycle). • "On" time set to zero or very low. • Faulty relay. 	<ul style="list-style-type: none"> • Ensure the start button is pressed or 'Key' terminals are shorted for auto-start. • Check the jumper position for Mon. or Cycle mode. • Adjust the "On" time potentiometer. • If all else fails, the relay might be faulty and require replacement.
Timing is inaccurate or inconsistent	<ul style="list-style-type: none"> • Potentiometers not set precisely. • Power supply fluctuations. • Environmental factors (extreme temperature). 	<ul style="list-style-type: none"> • Carefully adjust potentiometers. Note that precise settings can be challenging due to analog adjustment. • Use a stable and regulated power supply. • Ensure the module is in a stable environment.
Load does not turn on/off with relay activation	<ul style="list-style-type: none"> • Incorrect load wiring. • Load exceeding relay capacity. • Faulty load. 	<ul style="list-style-type: none"> • Review wiring diagrams (Figure 5.1, 5.2) and ensure load is connected to COM and NO terminals correctly. • Verify load current/voltage does not exceed 10A (AC 0-250V, DC 0-30V). • Test the load independently to ensure it is functional.

9. WARRANTY AND SUPPORT

Walfront products are manufactured to high-quality standards. For specific warranty information, please refer to the documentation provided with your purchase or contact Walfront customer support directly.

For technical assistance, troubleshooting beyond this manual, or inquiries regarding replacement parts, please visit the official Walfront store on Amazon or contact their customer service through the provided channels.

Walfront Store Link: [Visit the Walfront Store on Amazon](#)

