XY-WJ01

Generic XY-WJ01 DC12V LED Digital Time Delay Relay Module User Manual

Model: XY-WJ01

1. Introduction

The Generic XY-WJ01 is a versatile DC12V LED Digital Time Delay Relay Module designed for precise timing control in various applications. It features a clear liquid crystal display, making parameter viewing and operation straightforward. This module supports multiple trigger control methods, including high-level, low-level, and switching control, accommodating a wide range of uses.

Key features include a wide voltage power supply range (6V to 30V), UART data upload and parameter settings, a pause function, and reverse polarity protection. For energy efficiency, it incorporates a sleep mode that automatically turns off the LCD backlight after approximately 5 minutes of inactivity, with any key press waking it up. All configured parameters are automatically saved upon power down.

Figure 1: Front view of the XY-WJ01 Digital Time Delay Relay Module, showing the LCD screen and control buttons.

2. Product Specifications and Parameters

Parameter	Value
Working Voltage	6V to 30V DC
Trigger Signal Source	High-level (3.0V~24V), Low-level (0.0V~0.2V), Switching Control (Passive Switch)
Output Capacity	DC 30V 10A or AC 220V 5A (within equipment limits)
Static Current	15mA
Working Current	50mA
Service Life	> 100,000 times
Working Temperature	-40°C to 85°C

Parameter	Value
Timing Range	0.01 seconds to 9999 minutes
Dimensions (L*W*H)	7.1cm * 3.9cm * 2.5cm (approximate)
Weight	45g
Mounting Type	Surface Mount
Contact Type	Normally Open
Connector Type	Screw Terminals

3. Setup and Wiring

Proper wiring is crucial for the safe and correct operation of the XY-WJ01 module. Ensure all connections are secure before applying power.

3.1 Power Supply Connection

Connect a DC power source within the 6V to 30V range to the module's power input terminals. Observe polarity: **V+** for positive and **V-** for negative. The module includes reverse polarity protection.

3.2 Trigger Signal Connection

The module supports three types of trigger signals:

- **High-level Trigger:** Apply a voltage between 3.0V and 24V to the trigger input.
- **Low-level Trigger:** Apply a voltage between 0.0V and 0.2V to the trigger input.
- **Switching Control (Passive Switch):** Connect a momentary switch across the trigger input and ground.

3.3 Output Load Connection

The relay output can control loads up to DC 30V 10A or AC 220V 5A. Connect your load to the Normally Open (NO) and Common (COM) terminals of the relay. Ensure the load's power requirements do not exceed the module's output capacity.

Figure 2: Rear view of the XY-WJ01 module, showing the screw terminal block for power and relay connections.

4. Operating Instructions

The XY-WJ01 module features an LCD display and four control buttons for easy parameter configuration and operation.

4.1 Controls Overview

- **SET Button:** Used to enter and exit parameter setting modes.
- **UP Button:** Increases parameter values or navigates menus.
- **DOWN Button:** Decreases parameter values or navigates menus.
- **Power Button:** Toggles power or pause function.

Figure 3: Top view of the XY-WJ01 module, highlighting the LCD screen and the four control buttons.

4.2 Timing Parameters (OP, CL, LOP)

The module allows setting independent timing parameters for various operational modes:

- **OP (On-time Parameter):** Defines the duration the relay remains ON after being triggered.
- **CL (Off-time Parameter):** Defines the duration the relay remains OFF before the next cycle or action.
- **LOP (Loop Count Parameter):** Specifies the number of times the OP and CL cycle will repeat. Set to '---' for infinite loop.

These parameters can be configured through the SET button. Refer to the detailed operating instructions provided with the product for specific mode configurations and parameter adjustments.

4.3 Sleep Mode

To conserve power, the module enters a sleep mode after approximately 5 minutes of inactivity, turning off the LCD backlight. Pressing any button will wake the module and restore the display.

5. Maintenance

The XY-WJ01 module is designed for durability and requires minimal maintenance. Follow these guidelines to ensure optimal performance and longevity:

- **Cleaning:** Use a soft, dry cloth to clean the module's exterior. Avoid using abrasive cleaners or solvents, which can damage the casing or display.
- **Environmental Conditions:** Operate the module within the specified working temperature range (-40°C to 85°C). Avoid exposure to excessive moisture, dust, or corrosive environments.
- **Connections:** Periodically check all wiring connections to ensure they remain secure and free from corrosion.

6. Troubleshooting

If you encounter issues with your XY-WJ01 module, refer to the following common troubleshooting steps:

- **Module Not Powering On:**
  - Verify the power supply voltage is within the 6V-30V range.
  - Check power supply polarity (V+ and V-).
  - Ensure power connections are secure.
- **Relay Not Activating:**
  - Confirm the trigger signal is correctly applied (high-level, low-level, or switch).
  - Check the configured OP (On-time) parameter.
  - Ensure the load is correctly wired to the relay output (NO and COM).
  - Verify the load's current and voltage requirements do not exceed the relay's capacity.
- **Incorrect Timing:**
  - Review the OP, CL, and LOP parameters to ensure they are set as intended.
  - Ensure the timing unit (seconds, minutes) is correctly selected if applicable.
- **Display Issues:**
  - If the display is blank, check if the module is in sleep mode (press any button to wake).
  - Ensure the power supply is stable.

If problems persist after following these steps, consult the detailed product documentation or contact customer support.

7. Warranty and Support

This product is covered by a standard manufacturer's warranty against defects in materials and workmanship. Please retain your proof of purchase for warranty claims. For technical support, troubleshooting assistance, or warranty inquiries, please contact the retailer or manufacturer directly.

For further information or detailed operational guides, please refer to the official product page or contact customer service.