

ANKROYU SSR40AA

ANKROYU SSR40AA Solid State Relay Module Instruction Manual

Model: SSR-40AA

1. INTRODUCTION

This manual provides essential information for the safe and effective use of the ANKROYU SSR40AA Solid State Relay Module. The SSR40AA is a high-performance AC to AC single-phase relay switch designed for automatic control systems, temperature controllers, and mechanical control applications. It offers reliable, noiseless, and spark-free switching for various industrial and commercial uses.

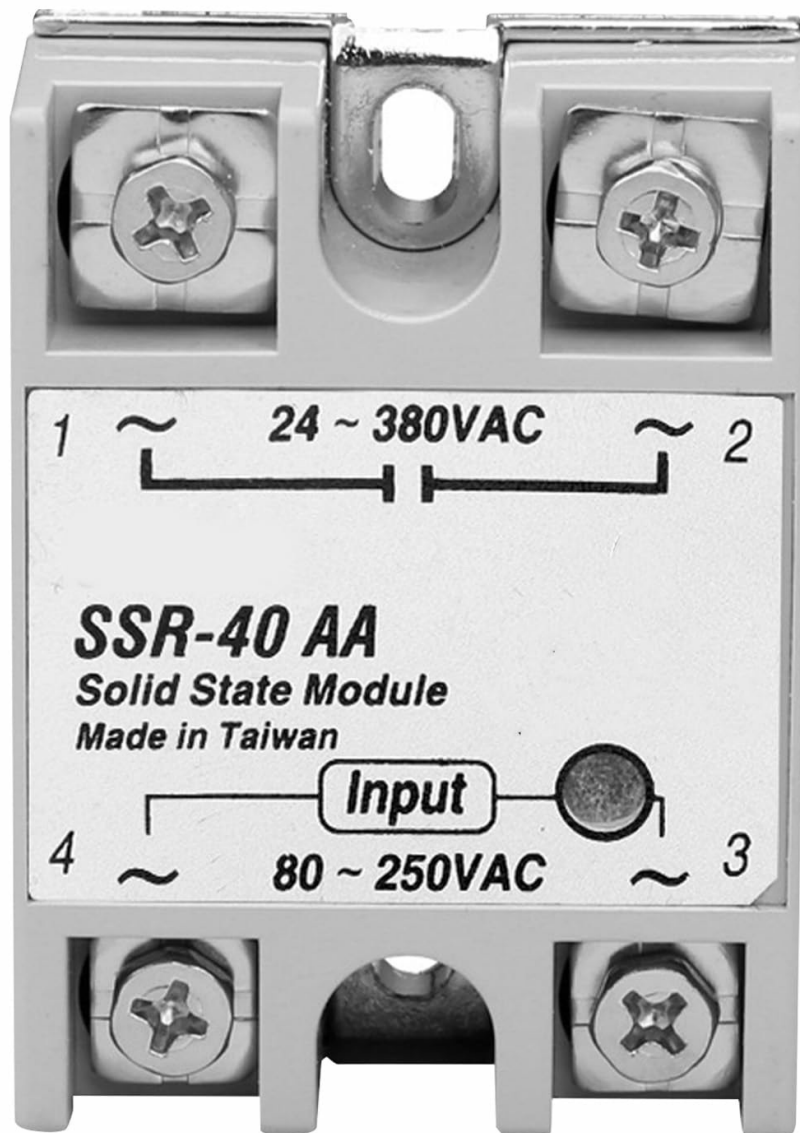


Figure 1: ANKROYU SSR40AA Solid State Relay Module

2. SAFETY INFORMATION

Please read and understand all safety instructions before installation and operation. Failure to follow these instructions may result in electric shock, fire, or serious injury.

- **Electrical Hazard:** Always disconnect power before installing, wiring, or servicing the relay module.
- **Qualified Personnel:** Installation and wiring should only be performed by qualified electricians or technicians.
- **Voltage and Current Ratings:** Do not exceed the specified input voltage (80-250V AC), output voltage (24-380V AC), or rated current (40A). Overloading can cause damage or fire.
- **Heat Dissipation:** Solid state relays generate heat during operation. Ensure adequate heat sinking and ventilation, especially for high current applications, to prevent overheating.
- **Proper Wiring:** Ensure all connections are secure and correct according to the wiring diagram. Loose connections can cause arcing and fire.
- **Environmental Conditions:** Avoid exposing the module to excessive moisture, dust, corrosive gases, or

extreme temperatures.

3. PRODUCT OVERVIEW

The ANKROYU SSR40AA is a single-phase AC to AC solid state relay module designed for robust and reliable switching. Its durable ABS plastic shell provides excellent toughness, wear resistance, and impact resistance, ensuring long-lasting performance in various industrial environments.

Key Features:

- **High Performance:** Wide input range of 80-250V AC and robust output of 24-380V AC with a 40A current rating.
- **Advanced Technology:** Noiseless, spark-free operation with high switching speed and electromagnetic compatibility.
- **Versatile Application:** Ideal for automatic control systems, temperature controllers, and mechanical control.
- **Durable Construction:** Built with high-quality ABS material for enhanced protection.
- **Compact Design:** Lightweight and space-saving for flexible installation.

Components:

- **Input Terminals (3, 4):** For connecting the control signal (80-250V AC).
- **Output Terminals (1, 2):** For connecting the load circuit (24-380V AC, 40A max).
- **Indicator LED:** Illuminates when the input control signal is applied, indicating the relay is active.



Figure 2: Angled view of the SSR40AA module

4. INSTALLATION AND WIRING

Proper installation and wiring are crucial for the safe and correct operation of the SSR40AA module. Refer to the diagram below for connection details.

Wiring Diagram:

- **Input Control (Terminals 3 & 4):** Connect your AC control signal (80-250V AC) to terminals 3 and 4. The polarity for AC input does not matter.
- **Load Connection (Terminals 1 & 2):** Connect the AC load circuit to terminals 1 and 2. Terminal 1 is typically connected to one side of the AC line, and terminal 2 is connected to the load, which then connects to the other side of the AC line. Ensure the load voltage (24-380V AC) and current (up to 40A) are within the relay's specifications.
- **Heat Sink:** For currents exceeding 10A, a heat sink is highly recommended to dissipate heat and prevent damage to the relay. Securely mount the relay to an appropriate heat sink using thermal paste for optimal heat transfer.

- **Mounting:** The module can be mounted using the central mounting hole. Ensure it is securely fastened to a stable surface or heat sink.

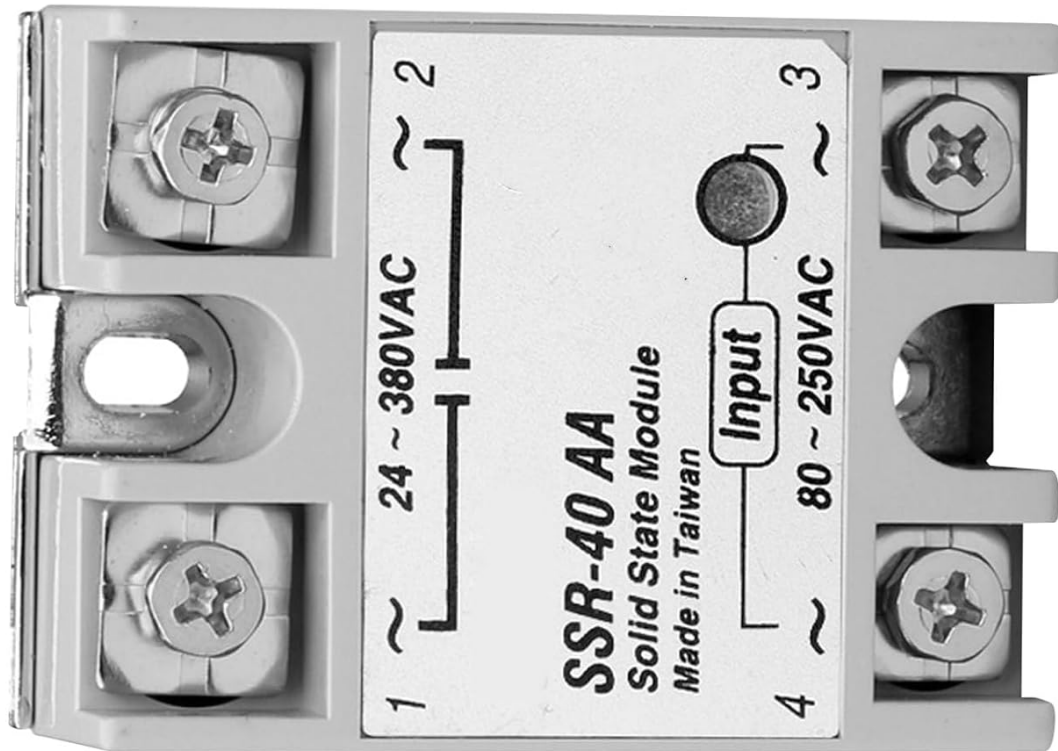


Figure 3: Terminal layout for wiring

WARNING: Always ensure power is OFF before making any connections. Incorrect wiring can damage the relay and connected equipment, and pose a severe safety risk.

5. OPERATING INSTRUCTIONS

Once the ANKROYU SSR40AA module is correctly installed and wired, operation is straightforward:

1. **Verify Connections:** Double-check all wiring to ensure it matches the diagram and all connections are secure.
2. **Apply Power:** Turn on the main power supply to the load circuit and the control circuit.
3. **Control Signal:** When the AC control signal (80-250V AC) is applied to terminals 3 and 4, the internal indicator LED will illuminate, and the relay will switch ON, allowing current to flow through the load connected to terminals 1 and 2.

4. **Switching OFF:** When the AC control signal is removed from terminals 3 and 4, the indicator LED will turn off, and the relay will switch OFF, interrupting the current to the load.

The SSR40AA provides rapid and reliable switching without mechanical wear, making it suitable for applications requiring frequent ON/OFF cycles.

6. MAINTENANCE

The ANKROYU SSR40AA Solid State Relay Module is designed for long-term, maintenance-free operation. However, periodic inspection can help ensure continued reliability:

- **Visual Inspection:** Periodically check the module for any signs of physical damage, discoloration, or loose connections.
- **Cleanliness:** Ensure the module and its surroundings are free from dust, dirt, and debris, which can impede heat dissipation.
- **Heat Sink Check:** Verify that the heat sink (if used) is clean and free of obstructions, allowing for proper airflow.
- **Connection Integrity:** Re-tighten terminal screws if necessary, especially after initial installation and during routine maintenance checks.

7. TROUBLESHOOTING

If the SSR40AA module is not functioning as expected, consider the following troubleshooting steps:

Problem	Possible Cause	Solution
Relay does not switch ON (LED off)	No control signal; Control signal voltage too low; Incorrect wiring of input terminals.	Verify control signal presence and voltage (80-250V AC); Check input wiring (Terminals 3 & 4).
Relay does not switch ON (LED on, but no output)	No power to load circuit; Load circuit open; Output terminals incorrectly wired; Damaged relay.	Check power supply to load; Verify load continuity; Check output wiring (Terminals 1 & 2); Replace relay if damaged.
Relay overheats	Insufficient heat sinking; Overcurrent; Poor ventilation.	Install or improve heat sink; Ensure current is within 40A rating; Provide adequate ventilation.
Relay switches erratically	Unstable control signal; Electromagnetic interference (EMI).	Ensure stable control signal; Shield control wiring from noise sources.

If problems persist after following these steps, contact a qualified technician or the manufacturer for assistance.

8. SPECIFICATIONS

Parameter	Value
Model	SSR-40AA
Item Type	Solid State Relay

Parameter	Value
Input Voltage	80-250V AC
Output Voltage	24-380V AC
Rated Current	40A
Frequency	50/60Hz
Material	ABS Plastic Shell
Control Type	AC Control AC
Manufacturer	ANKROYU
Part Number	ANKROYU2pbeszonx8

9. WARRANTY AND SUPPORT

Information regarding specific warranty terms and customer support for the ANKROYU SSR40AA Solid State Relay Module was not provided in the product details. For warranty claims or technical assistance, please refer to the retailer or manufacturer's official website where the product was purchased.

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Example: How do I reset this device or fix this error?

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