Jekewin SSR-25 AA

Jekewin SSR-25AA Solid State Relay Instruction Manual

Model: SSR-25 AA

1. Introduction

This manual provides essential information for the safe and effective installation, operation, and maintenance of the Jekewin SSR-25AA Solid State Relay. Please read this manual thoroughly before using the product to ensure proper function and to prevent potential hazards.

2. Product Overview

The Jekewin SSR-25AA is a 25 Amp Solid State Relay designed for various automatic control systems. It offers high reliability, efficiency, and a long lifespan due to its non-contact switching mechanism. This relay operates without electric sparks or noise, making it suitable for environments requiring fine electromagnetic interference control. Its low drive voltage and fast switching speed contribute to its versatility. The SSR-25AA is particularly effective in harsh environments, including those with corrosion, moisture, or dust.

Key Features:

- High reliability and efficiency
- Long lifespan
- No electric spark, no noise, and no contact operation
- Fine electromagnetic interference characteristics
- High sensitivity and fast switching speed
- Low drive voltage and current requirements
- Suitable for corrosive, moist, and dusty environments

Figure 1: Top view of the Jekewin SSR-25AA Solid State Relay, showing input and output terminals.

3. Safety Information

WARNING: Electrical components can cause serious injury or death. Installation and maintenance should only be performed by qualified personnel. Always disconnect power before working with electrical circuits.

- Ensure all wiring conforms to local and national electrical codes.
- Verify that the voltage and current ratings of the relay match your application requirements.
- Do not exceed the maximum current or voltage ratings.
- A suitable heatsink is **required** for proper operation, especially when switching high currents, to prevent overheating and potential damage or fire.
- Protect the relay from direct exposure to water, excessive humidity, and extreme temperatures.
- Ensure proper insulation and grounding.

4. Specifications

Specification	Value
Model	SSR-25 AA
Type	Solid State Module
Current Rating	25 Amps
Contact Type	Normally Open
Maximum Switching Current	25 Amps
Maximum Switching Voltage	250 Volts
Coil Voltage (Control Voltage)	3-32V DC (Typical for AA type)
Load Voltage	24-380V AC (Typical for AA type)
Operation Mode	Automatic
Connector Type	Screw Terminals
Number of Terminals	4
Mounting Type	DIN Rail Mount (with appropriate adapter)
Material	Aluminum and Plastic (Housing), Silver (Contact Material)
Product Dimensions	2.28 x 1.77 x 1.1 inches
Item Weight	3.52 ounces

5. Installation and Setup

Proper installation is critical for the safe and reliable operation of the SSR-25AA relay.

5.1 Mounting

The SSR-25AA is designed for DIN rail mounting, typically requiring a compatible mounting bracket (not included). Ensure the mounting location provides adequate ventilation and is free from excessive vibration.

Figure 2: Bottom view of the SSR-25AA, showing the heatsink fins. A larger external heatsink is often required.

5.2 Wiring Connections

The SSR-25AA has four screw terminals:

- **Input Terminals (Control Side):** Typically labeled 3 and 4 (or + and -). These terminals connect to your control signal (e.g., from a microcontroller or switch). Ensure the control voltage (3-32V DC) and polarity are correct.
- **Output Terminals (Load Side):** Typically labeled 1 and 2. These terminals connect to the AC load you wish to switch. Connect the load in series with the AC power source through these terminals.

Figure 3: Side view of the SSR-25AA, illustrating the screw terminals for input and output connections.

Wiring Diagram (General Example):

1. Connect the positive (+) terminal of your DC control signal to the positive input terminal of the SSR.
2. Connect the negative (-) terminal of your DC control signal to the negative input terminal of the SSR.
3. Connect one side of your AC power source (e.g., Line) to one of the output terminals (e.g., Terminal 1).
4. Connect the other output terminal (e.g., Terminal 2) to one side of your AC load.
5. Connect the other side of your AC load to the neutral side of your AC power source.

Important: Always double-check all connections before applying power. Incorrect wiring can damage the relay or connected equipment.

5.3 Heatsink Requirement

Solid State Relays generate heat during operation, especially when switching high currents. For the SSR-25AA, a heatsink is essential to dissipate this heat and prevent thermal runaway, which can lead to premature failure or fire. Ensure the heatsink is adequately sized for your application's current load and operating environment. Thermal paste or pads should be used between the relay and the heatsink for optimal heat transfer.

6. Operation

The Jekewin SSR-25AA operates as a simple ON/OFF switch for AC loads, controlled by a low-voltage DC signal. When a DC control voltage (within the specified range of 3-32V DC) is applied to the input terminals, the relay switches its output to the ON state, allowing AC current to flow through the load. When the control voltage is removed, the relay switches to the OFF state, interrupting the AC current.

- **ON State:** Control voltage applied (3-32V DC). Output terminals 1 and 2 are connected, allowing AC current to flow.
- **OFF State:** Control voltage removed. Output terminals 1 and 2 are disconnected, blocking AC current.

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