

## CARLO GAVAZZI RM1E48AA50

# CARLO GAVAZZI RM1E48AA50 Solid State Relay User Manual

Model: RM1E48AA50 | Brand: CARLO GAVAZZI

## 1. INTRODUCTION

This manual provides essential information for the safe and effective installation, operation, and maintenance of the CARLO GAVAZZI RM1E48AA50 Solid State Relay (SSR). Please read this manual thoroughly before attempting to install or operate the device. Retain this manual for future reference.

## 2. PRODUCT OVERVIEW

The CARLO GAVAZZI RM1E48AA50 is a single-phase solid state relay designed for panel mounting, capable of switching AC loads up to 50 Amperes at voltages up to 550VAC. It features an analogue switching mode and screw terminals for secure connections. This SSR is suitable for various industrial applications requiring reliable and silent switching.

### Key Features:

- Operating Voltage Range: 90VAC to 550VAC
- Control Voltage DC Max: 10VDC
- Contact Configuration: SPST (Single Pole Single Throw)
- Load Current: 50A
- Switching Mode: Analogue
- Terminals: Screw type
- Mounting: Panel Mount



Figure 2.1: Representative image of a CARLO GAVAZZI Solid State Relay. Note that the label on this specific unit indicates model RM1E48AA25 (25A), while this manual pertains to the RM1E48AA50 (50A) model. The physical appearance and connection points are generally similar across the series.

### 3. SAFETY INFORMATION

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Always observe the following safety precautions to prevent personal injury or damage to the equipment:

- Installation and maintenance should only be performed by qualified personnel.
- Disconnect all power sources before installing, wiring, or performing any maintenance on the SSR.
- Ensure proper grounding of the system.
- Verify that the voltage and current ratings of the SSR match the application requirements.
- Use appropriate wire gauges for the load current to prevent overheating.
- Install the SSR in an environment free from excessive moisture, dust, corrosive gases, and vibrations.
- Provide adequate heat sinking for the SSR, especially for high current applications, to dissipate heat effectively.

## 4. SPECIFICATIONS

| Specification          | Value         |
|------------------------|---------------|
| Brand                  | CARLO GAVAZZI |
| Model                  | RM1E48AA50    |
| Operating Voltage Min  | 90VAC         |
| Operating Voltage Max  | 550VAC        |
| Control Voltage DC Max | 10VDC         |
| Load Current           | 50 Amps       |
| Contact Type           | SPST          |
| Switching Mode         | Analogue      |
| Mounting Type          | Panel Mount   |
| Connector Type         | Screw         |
| Item Weight            | 2.4 ounces    |

## 5. INSTALLATION AND SETUP

### 5.1 Mounting

The RM1E48AA50 is designed for panel mounting. Ensure the mounting surface is flat and provides adequate heat dissipation. For optimal performance and longevity, especially in high-current applications, consider using a heatsink.

1. Select a suitable location on the panel, ensuring sufficient clearance for wiring and airflow.
2. Mark and drill mounting holes according to the SSR's dimensions.
3. Secure the SSR to the panel using appropriate screws and torque settings to ensure good thermal contact if a heatsink is used.

### 5.2 Wiring

All wiring should comply with local electrical codes and standards. Use insulated tools and wear appropriate personal protective equipment.

1. **Load Connection (Power Terminals L1, T1):** Connect the AC load circuit to the power terminals (L1 and T1) of the SSR. L1 is typically connected to the AC line, and T1 to the load. Ensure the load current does not exceed 50A and the voltage is within 90-550VAC. Use appropriately sized wires for the 50A load.
2. **Control Connection (Input Terminals):** Connect the DC control signal (up to 10VDC) to the input terminals. Observe polarity if indicated on the device. The SSR will switch the AC load when the control voltage is applied.
3. **Grounding:** Ensure the system is properly grounded according to safety standards.
4. **Verification:** Double-check all wiring connections for tightness and correctness before applying power.

## 6. OPERATING INSTRUCTIONS

The CARLO GAVAZZI RM1E48AA50 operates by switching an AC load in response to a DC control signal.

1. **Apply Power to Load Circuit:** Ensure the AC load circuit is powered and connected to the L1 and T1 terminals. The SSR will remain in an OFF state until a control signal is applied.
2. **Apply Control Signal:** Apply a DC control voltage (within the specified range, up to 10VDC) to the control input terminals. The SSR will turn ON, allowing current to flow through the load.
3. **Remove Control Signal:** When the DC control voltage is removed, the SSR will turn OFF, interrupting the current to the load.
4. **Monitoring:** Observe the load operation to ensure proper switching.

## 7. MAINTENANCE

The RM1E48AA50 Solid State Relay is designed for long-term, maintenance-free operation. However, periodic inspection can help ensure optimal performance and longevity.

- **Visual Inspection:** Periodically inspect the SSR for any signs of physical damage, discoloration, or loose connections.
- **Terminal Tightness:** Check that all screw terminals are securely tightened. Loose connections can lead to overheating and device failure.
- **Cleanliness:** Ensure the SSR and its surrounding area are free from dust, dirt, and debris, which can impede heat dissipation. Use a soft, dry cloth for cleaning.
- **Heat Sink Performance:** If a heatsink is used, ensure it is free from obstructions and that airflow is not restricted.

## 8. TROUBLESHOOTING

If the SSR is not functioning as expected, refer to the following troubleshooting guide:

| Problem                | Possible Cause                                       | Solution                                                                                                                 |
|------------------------|------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------|
| SSR does not turn ON   | No control signal or incorrect control voltage.      | Verify control voltage is applied and within the 10VDC maximum. Check control wiring for breaks or loose connections.    |
| SSR does not turn ON   | No power to the load circuit.                        | Check the AC power supply to the L1/T1 terminals.                                                                        |
| SSR does not turn OFF  | Control signal not removed or internal fault.        | Ensure the control signal is completely removed. If the problem persists, the SSR may be faulty and require replacement. |
| SSR overheats          | Insufficient heat sinking or excessive load current. | Ensure adequate heatsink is used. Verify load current does not exceed 50A. Check ambient temperature.                    |
| Intermittent operation | Loose wiring connections or unstable control signal. | Tighten all screw terminals. Stabilize the control signal.                                                               |

## 9. WARRANTY AND SUPPORT

CARLO GAVAZZI products are manufactured to high-quality standards. For specific warranty terms and conditions, please refer to the official CARLO GAVAZZI website or contact your authorized distributor. Technical support and service information can also be found through these channels.

For further assistance, please visit the [CARLO GAVAZZI official website](#).

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

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