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## Air Products and Controls Inc. MR-101/C/R

# MR-101/C/R Relay Instruction Manual

Air Products and Controls Inc.

## 1. INTRODUCTION

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This manual provides essential information for the safe and effective installation, operation, and maintenance of the Air Products and Controls Inc. MR-101/C/R Single Pole Double Throw (SPDT) Relay. Please read this manual thoroughly before attempting to install or operate the device. Retain this manual for future reference.

## 2. SAFETY INFORMATION

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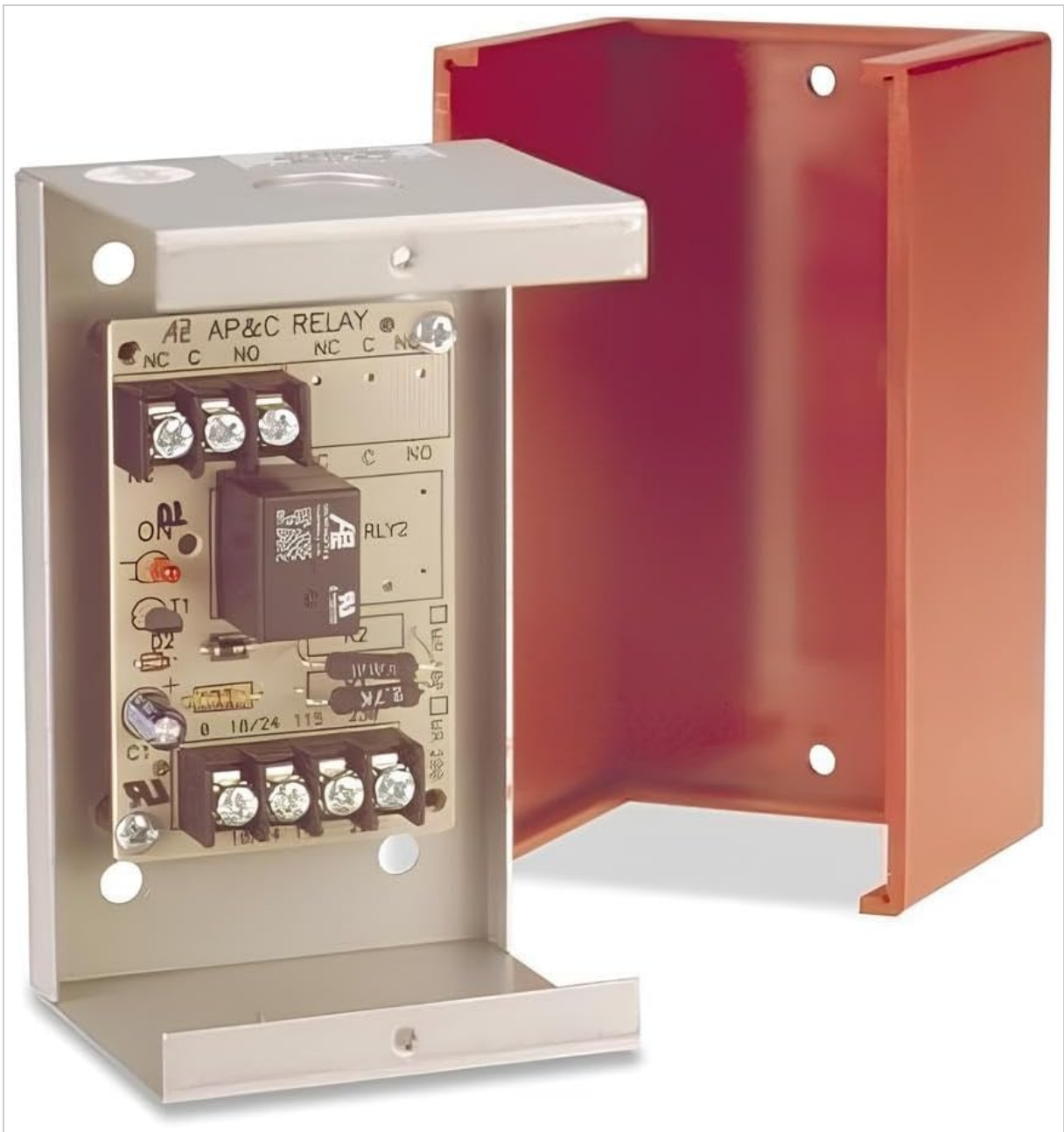
**WARNING:** Risk of electric shock. Installation and servicing must be performed by qualified personnel only. Disconnect power before installing or servicing this device.

- Always follow local and national electrical codes.
- Ensure proper grounding where required.
- Do not exceed the specified voltage and current ratings.
- Protect wiring from physical damage.
- Verify all connections are secure before applying power.

## 3. PRODUCT OVERVIEW

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The MR-101/C/R is a versatile Single Pole Double Throw (SPDT) relay designed for various control applications. It features a robust metal enclosure and supports dual input voltages of 24VAC and 120VAC. The relay provides a dry contact output for switching external circuits.



*This image displays the Air Products and Controls MR-101/C/R relay. The main component is a circuit board mounted within a grey metal enclosure. The enclosure's red cover is shown open, revealing the internal components. The circuit board features a black relay component, screw terminals for wiring connections (labeled NC, C, NO for the relay contacts, and 0, 10/24, 115 for power input), and an indicator light. The overall design emphasizes a robust, enclosed unit suitable for industrial applications.*

## 4. SETUP AND INSTALLATION

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**Before You Begin:** Ensure all power to the circuit is disconnected at the main breaker or fuse box.

- Mounting:** Securely mount the MR-101/C/R enclosure to a stable surface using appropriate fasteners through the pre-drilled holes. Ensure the mounting location is free from excessive vibration, moisture, and extreme temperatures.
- Wiring Input Power:** Connect the appropriate power source (24VAC or 120VAC) to the input terminals labeled '0', '10/24', and '115'.
  - For 24VAC operation, connect the 24VAC supply to terminals '0' and '10/24'.
  - For 120VAC operation, connect the 120VAC supply to terminals '0' and '115'.
- Wiring Relay Contacts:** Connect the circuit to be controlled to the relay output terminals labeled 'NC'

(Normally Closed), 'C' (Common), and 'NO' (Normally Open).

- When the relay is de-energized, the Common (C) terminal is connected to the Normally Closed (NC) terminal.
- When the relay is energized, the Common (C) terminal is connected to the Normally Open (NO) terminal.

4. **Secure Connections:** Ensure all wire connections are tight and secure to prevent loose contacts or short circuits.
5. **Close Enclosure:** Once wiring is complete and verified, securely close the metal enclosure cover.
6. **Apply Power:** Restore power to the circuit. The relay's indicator light should illuminate when the coil is energized.

## 5. OPERATING INSTRUCTIONS

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The MR-101/C/R relay operates by energizing its internal coil, which causes the contacts to switch from their normally closed (NC) position to their normally open (NO) position. When power to the coil is removed, the contacts return to their NC position.

- **Energizing the Relay:** Apply the specified input voltage (24VAC or 120VAC) to the appropriate input terminals. The relay will click, and the indicator light will illuminate, signifying that the coil is energized and the contacts have switched.
- **De-energizing the Relay:** Remove the input voltage from the relay. The relay will click again, and the indicator light will turn off, indicating that the contacts have returned to their default (NC) state.

## 6. MAINTENANCE

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The MR-101/C/R relay is designed for long-term, reliable operation with minimal maintenance. Periodic inspection is recommended.

- **Visual Inspection:** Periodically inspect the relay and its wiring for any signs of damage, corrosion, or loose connections.
- **Cleaning:** If necessary, gently clean the exterior of the enclosure with a dry, soft cloth. Do not use abrasive cleaners or solvents. Ensure no moisture enters the enclosure.
- **Power Disconnection:** Always disconnect power before performing any inspection or cleaning.

## 7. TROUBLESHOOTING

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If the MR-101/C/R relay is not functioning as expected, consider the following:

Problem	Possible Cause	Solution
Relay does not energize (no click, no indicator light)	No input power; Incorrect voltage connection; Faulty wiring; Damaged relay.	Verify power supply to input terminals. Ensure correct voltage (24VAC or 120VAC) is applied to the corresponding terminals. Check all wiring for continuity and secure connections. If issues persist, the relay may be faulty and require replacement.
Relay energizes but controlled device does not operate	Incorrect wiring of controlled device; Faulty controlled device; Overload on relay contacts.	Verify wiring to the NC/C/NO terminals. Test the controlled device independently. Ensure the current draw of the controlled device does not exceed the relay's contact rating.

Problem	Possible Cause	Solution
Relay makes buzzing noise	Loose connections; Incorrect AC voltage (e.g., DC applied to AC coil); Coil damage.	Check all input power connections for tightness. Ensure an AC voltage is supplied to the AC coil. If buzzing persists, the relay coil may be damaged.

If troubleshooting steps do not resolve the issue, contact a qualified electrician or the manufacturer for assistance.

## 8. SPECIFICATIONS

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Feature	Specification
Model	MR-101/C/R
Brand	Air Products and Controls Inc.
Relay Type	SPDT (Single Pole Double Throw)
Input Voltage	24VAC / 120VAC
Enclosure Material	Metal (Red)
Phase Type	Single Phase
Certifications	UL Listed
Product Dimensions	66 x 42 x 36 inches
Item Weight	12.8 ounces

## 9. WARRANTY AND SUPPORT

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For specific warranty information regarding the MR-101/C/R relay, please refer to the documentation provided at the time of purchase or contact Air Products and Controls Inc. directly. Warranty terms typically cover defects in materials and workmanship under normal use.

For technical support or further assistance, please contact your distributor or the manufacturer:

**Air Products and Controls Inc.**

*(Contact information typically found on manufacturer's website or product packaging)*

Website: [www.ap-c.com](http://www.ap-c.com) (Example link, verify actual manufacturer website)