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› Aprilaire 8024 24V Universal SPDT Isolation Relay Card User Manual

Aprilaire DH80240

Aprilaire 8024 24V Universal SPDT Isolation Relay Card User Manual

Model: DH80240

1. INTRODUCTION

This manual provides comprehensive instructions for the installation, operation, and maintenance of the Aprilaire 8024 24V Universal SPDT Isolation Relay Card. Please read this manual thoroughly before using the product to ensure proper function and safety.

2. PRODUCT OVERVIEW

The Aprilaire 8024 24V Relay Card is a general-purpose, three-relay, 24-volt, dry contact switching device. It is designed to provide isolated switching capabilities in various control applications.

Key features include three SPDT (Single-Pole, Double-Throw) relays that can be switched independently. The coils of these relays share a common connection, simplifying wiring for certain control schemes.

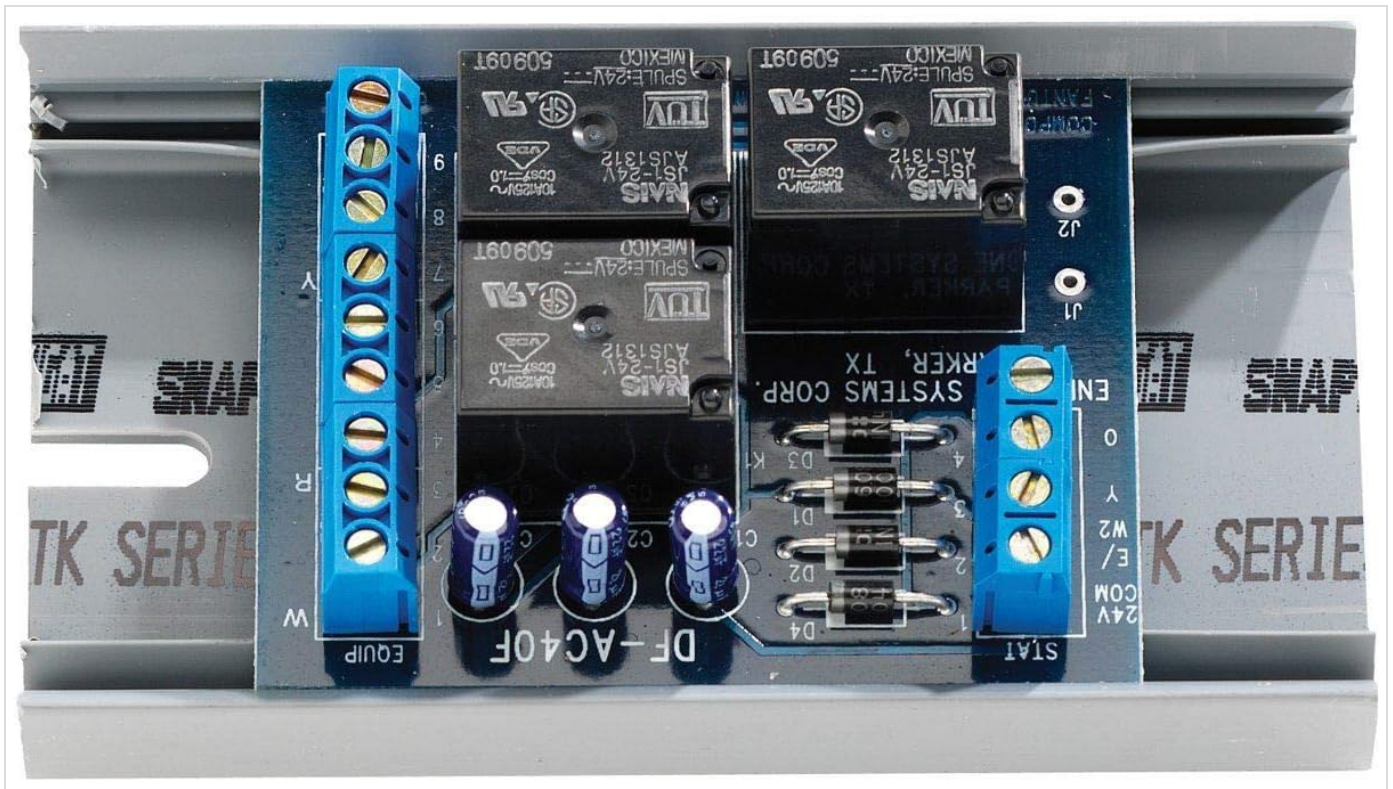


Figure 2.1: Aprilaire 8024 24V Universal SPDT Isolation Relay Card.

This image shows the Aprilaire 8024 24V Universal SPDT Isolation Relay Card. It is a blue circuit board with three black relays, several capacitors, and two blue screw terminal blocks for electrical connections. The board is mounted on a grey DIN rail, indicating its intended installation method in control panels or enclosures. Markings like 'SPULE:24V~', 'NAIS', 'TUV', and 'DF-AC40F' are visible on the components and board.

3. SETUP AND INSTALLATION

The Aprilaire 8024 Relay Card is designed for DIN rail mounting, allowing for easy integration into standard electrical enclosures and control panels. All electrical connections are made via screw terminals.

3.1 Mounting

1. Ensure the power supply to the installation area is disconnected before mounting.
2. Locate a suitable DIN rail within your control panel or enclosure.
3. Align the relay card's DIN rail clip with the DIN rail and press firmly until it clicks into place.
4. Verify that the relay card is securely fastened to the DIN rail and does not wobble.

3.2 Electrical Connections

The relay card operates on a 24-volt coil voltage. Ensure all wiring adheres to local electrical codes and safety standards. The screw terminals provide secure points for connecting control and load circuits.

- **Power Input:** Connect the 24V AC/DC power supply to the designated coil input terminals. The coils share a common connection.
- **Relay Outputs (SPDT):** Each of the three relays provides Single-Pole, Double-Throw contacts. This means each relay has a Common (COM), Normally Open (NO), and Normally Closed (NC) terminal.
 - Connect the load to be switched to the appropriate NO or NC terminal, with the power source connected to the COM terminal.
 - Ensure the maximum switching voltage of 24 Volts is not exceeded for any connected load.
- **Wiring Security:** Use appropriate wire gauges for your application and ensure all screw terminals are tightened securely to prevent loose connections.

4. OPERATION

The Aprilaire 8024 Relay Card operates in an automatic mode, responding to control signals applied to its coil inputs. When a 24V signal is applied to a relay's coil, the corresponding relay will energize, changing the state of its SPDT contacts.

- When a relay coil is **de-energized** (no 24V signal), the common (COM) terminal is connected to the Normally Closed (NC) terminal.
- When a relay coil is **energized** (24V signal applied), the common (COM) terminal switches its connection to the Normally Open (NO) terminal.

This allows for flexible control of various devices, such as pumps, fans, or other low-voltage equipment, based on the control logic of your system.

5. MAINTENANCE

The Aprilaire 8024 Relay Card is designed for reliable, long-term operation with minimal maintenance. However, periodic inspection can help ensure continued performance.

- **Visual Inspection:** Periodically inspect the relay card for any signs of physical damage, discoloration, or loose connections.
- **Cleaning:** If necessary, gently clean the surface of the relay card with a soft, dry cloth. Do not use liquid cleaners or solvents.
- **Connection Check:** Ensure all screw terminal connections remain tight and secure. Loose connections can lead to intermittent operation or overheating.

Always disconnect power to the relay card before performing any maintenance or inspection.

6. TROUBLESHOOTING

If the Aprilaire 8024 Relay Card is not functioning as expected, consider the following common troubleshooting steps:

- **No Relay Activation:**
 - Verify that the 24V coil voltage is correctly applied to the relay's input terminals.
 - Check for proper polarity if using a DC control signal.
 - Ensure all wiring connections are secure and free from breaks or shorts.
- **Intermittent Operation:**
 - Inspect all screw terminal connections for tightness.
 - Check the stability of the 24V power supply.
- **Load Not Switching:**
 - Confirm that the load is correctly wired to the Common (COM) and either Normally Open (NO) or Normally Closed (NC) terminals.
 - Ensure the load itself is functional and within the relay's switching capacity (24 Volts maximum switching voltage).

If issues persist after following these steps, contact Aprilaire customer support or a qualified technician.

7. SPECIFICATIONS

Feature	Specification
Model Number	DH80240
Brand	Aprilaire
Connector Type	Screw
Contact Material	Silver
Contact Type	SPDT (Single-Pole, Double-Throw)
Mounting Type	DIN Rail Mount
Operation Mode	Automatic
Coil Voltage	24 Volts
Maximum Switching Voltage	24 Volts
Product Dimensions	7 x 3 x 5 inches
Item Weight	5.6 ounces
Manufacturer	Anden / Aprilaire
UPC	686720802409

8. WARRANTY AND SUPPORT

For information regarding the product warranty, please refer to the documentation included with your purchase or visit the official Aprilaire website. For technical support or further assistance, please contact Aprilaire customer service directly.

You can find contact information and additional resources on the Aprilaire official website.