

## RIB RIB2401B

# Functional Devices RIB2401B Power Relay Instruction Manual

Model: RIB2401B | Brand: RIB (Functional Devices, Inc.)

## 1. INTRODUCTION

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This manual provides essential information for the safe and effective installation, operation, and maintenance of the Functional Devices RIB2401B Power Relay. Please read these instructions thoroughly before proceeding with any installation or operation procedures. Retain this manual for future reference.

## 2. PRODUCT OVERVIEW

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The RIB2401B is a robust 20 Amp Single Pole Double Throw (SPDT) power relay designed for various control applications. It features a versatile coil that can be activated by 24 Vac/dc or 120 Vac, housed in a durable NEMA 1 enclosure. An integrated LED indicates when the relay coil is activated.

### Key Features:

- **Relay Type:** 20 Amp SPDT (Single Pole Double Throw)
- **Coil Voltage:** 24 Vac/dc or 120 Vac
- **Enclosure:** NEMA 1 Housing
- **Indicator:** LED for relay activation status
- **Mounting:** Screw Mount

### Product Image and Diagram:



**Figure 1:** Functional Devices RIB2401B Power Relay. The label on the relay provides critical information including contact ratings, coil input ratings, and a simplified wiring diagram. The LED indicator is visible on the top right. The bottom features a threaded conduit connection for wiring.

The product label, as shown in Figure 1, details the following:

• **Contact Ratings:**

- 20 A Resistive @ 277 Vac
- 5 A Resistive @ 480 Vac
- 20 A Ballast @ 277 Vac
- 16 A Elect. Ballast @ 277 Vac (N/O)
- 10 A Tungsten @ 120 Vac (N/O)
- 1 HP @ 120 Vac
- 2 HP @ 277 Vac
- 770VA Pilot Duty @ 120Vac
- 1110VA Pilot Duty @ 277Vac

• **Coil Input Ratings:**

- 83 mA max @ 24 Vac or

- 47 mA max @ 20-30 Vdc or
- 47 mA max @ 120 Vac; 50-60 Hz

- **Wiring Diagram (Coil Side):**

- Wht/Blk: 120 Vac
- Wht/Blu: 24 Vac/dc
- Wht/Yel: Common

- **Wiring Diagram (Contact Side):**

- Blu: Normally Closed (N/C)
- Yel: Common
- Org: Normally Open (N/O)

- **Wire Recommendation:** For supply connections, use #12AWG wires or larger, rated for at least 75°C (167°F).

### 3. SPECIFICATIONS

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Specification	Detail
Model Number	RIB2401B
Product Type	Electromechanical Relay
Current Rating	20 Amps
Contact Type	SPDT (Single Pole Double Throw)
Coil Voltage Options	24 Vac/dc, 120 Vac
Enclosure Type	NEMA 1 Housing
Mounting Type	Screw Mount
Connector Type	Screw
Contact Material	Silver
Product Dimensions	4.4 x 2.5 x 6.6 inches
Item Weight	7.84 ounces (0.204 Kilograms)
Country of Origin	United States
Manufacturer	Functional Devices, Inc.

### 4. INSTALLATION (SETUP)

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Installation should only be performed by qualified personnel in accordance with all local and national electrical codes. Ensure power is disconnected before beginning installation.

#### 4.1 Mounting

- The RIB2401B is designed for screw mounting. Secure the relay to a suitable surface using appropriate fasteners through the mounting holes provided.
- The unit includes a threaded conduit connection for secure wiring entry into junction boxes or enclosures.

## 4.2 Wiring

Refer to the wiring diagram printed on the relay label (also detailed in Section 2) for correct connections. Use #12AWG wires or larger, rated for at least 75°C (167°F) for all supply connections.

1. **Coil Connections:** Connect the control voltage to the appropriate coil wires:
  - a. For 120 Vac control: Connect to **Wht/Blk** and **Wht/Yel (Common)**.
  - b. For 24 Vac/dc control: Connect to **Wht/Blu** and **Wht/Yel (Common)**.
2. **Contact Connections:** Connect the load circuit to the relay contacts. The relay provides Single Pole Double Throw (SPDT) contacts:
  - a. **Yel:** Common contact for the load circuit.
  - b. **Org:** Normally Open (N/O) contact. This contact closes when the coil is activated.
  - c. **Blu:** Normally Closed (N/C) contact. This contact opens when the coil is activated.
3. Ensure all connections are secure and insulated to prevent short circuits.

## 5. OPERATION

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Once properly installed and wired, the RIB2401B relay operates based on the control voltage applied to its coil.

- When the specified control voltage (24 Vac/dc or 120 Vac) is applied to the coil terminals (Wht/Blk or Wht/Blu, and Wht/Yel Common), the relay coil will energize.
- Upon coil energization, the Normally Open (N/O) contact (Orange wire) will close, and the Normally Closed (N/C) contact (Blue wire) will open.
- The red LED indicator on the relay housing will illuminate when the coil is activated, providing visual confirmation of the relay's state.
- When the control voltage is removed from the coil, the relay will de-energize, returning the contacts to their original state (N/O opens, N/C closes).

## 6. MAINTENANCE

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The RIB2401B Power Relay is designed for reliable, long-term operation with minimal maintenance. However, periodic inspection is recommended.

- **Visual Inspection:** Periodically inspect the relay and its wiring for any signs of damage, corrosion, or loose connections.
- **Cleaning:** Ensure the relay housing is free from dust and debris. Use a dry, soft cloth for cleaning. Do not use liquid cleaners.
- **Connection Integrity:** Verify that all wire connections remain tight and secure.

Always disconnect power before performing any maintenance or inspection.

## 7. TROUBLESHOOTING

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If the RIB2401B relay is not functioning as expected, consider the following troubleshooting steps:

- **No Relay Activation (LED Off):**

- Check if the correct control voltage is being applied to the coil terminals (Wht/Blk or Wht/Blu, and Wht/Yel Common).
- Verify that the control voltage source is active and providing the expected voltage.
- Inspect coil wiring for loose connections or breaks.

- **Relay Activated, but Load Not Operating (LED On):**

- Confirm that the load circuit is correctly wired to the appropriate relay contacts (Yel Common, Org N/O, Blu N/C).
- Check the load device itself for proper operation and power supply.
- Inspect load circuit wiring for loose connections or breaks.
- Ensure the load current does not exceed the relay's contact ratings (refer to Section 2).

- **Intermittent Operation:**

- Check for unstable control voltage.
- Inspect all wiring connections for looseness or corrosion.

If issues persist after performing these checks, contact Functional Devices, Inc. technical support.

## 8. WARRANTY AND SUPPORT

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For information regarding product warranty, technical support, or service, please contact Functional Devices, Inc. directly through their official website or customer service channels. Ensure you have your product model number (RIB2401B) available when seeking support.

**Manufacturer:** Functional Devices, Inc.

**Website:** [www.functionaldevices.com](http://www.functionaldevices.com)