Standard Motor Products RY12

Standard Motor Products RY12 Relay Instruction Manual

Model: RY12

1. Product Overview

The Standard Motor Products RY12 Relay is an electrical component designed for various automotive applications. It functions as an electrically operated switch, allowing a low-power signal to control a higher-power circuit. This relay features a normally open contact type and is designed for surface mounting.

1.1 Package Contents

- RY12 Relay (1 unit)

1.2 Product Dimensions

- **Height:** 2.41 inches (approximately 6.12 cm)
- **Length:** 2.62 inches (approximately 6.65 cm)
- **Width:** 2.48 inches (approximately 6.30 cm)
- **Weight:** 3.2 ounces (approximately 90.7 grams)

Figure 1: Standard Motor Products RY12 Relay with its corresponding wiring diagram. This image shows the physical appearance of the relay and a schematic illustrating its internal connections and contact configuration.

2. Safety Information

Always observe the following safety precautions when handling or installing electrical components:

- Disconnect the vehicle's battery or power source before installation to prevent electrical shock or damage to the vehicle's electrical system.
- Ensure the relay's specifications (voltage, current rating) match the requirements of the circuit it will control.
- Avoid touching electrical terminals with bare hands when power is connected.
- Consult a qualified automotive technician if you are unsure about any installation steps.
- Do not modify the relay or its terminals.

3. Setup & Installation

The RY12 Relay is designed for surface mounting and features screw-type connectors. Proper installation is crucial for reliable operation.

1. **Preparation:** Ensure the vehicle's ignition is off and the battery is disconnected. Identify the correct mounting location and wiring harness for the relay.
2. **Mounting:** Secure the relay to a suitable surface using appropriate fasteners through its mounting tabs. Ensure the mounting location is free from excessive heat, moisture, and vibration.
3. **Wiring:** Connect the electrical wires to the relay's three terminals. The relay has a "Normally Open" contact type. Refer to the vehicle's specific wiring diagram for correct terminal connections.
    - *Terminal 1:* Typically the coil input (control signal).
    - *Terminal 2:* Typically the coil ground.
    - *Terminal 3:* Typically the common terminal for the switched circuit.
    - *Terminal 4:* Normally Open (NO) contact.
    - *Terminal 5:* Not applicable for this 3-terminal relay, but often used for Normally Closed (NC) contact in 5-pin relays.

    Note: The provided image shows a 5-pin diagram, but the product specifications state "Number of Terminals: 3". Always verify the actual relay configuration and consult your vehicle's service manual for precise wiring instructions.
4. **Verification:** After wiring, double-check all connections for tightness and correct polarity.
5. **Power Restoration:** Reconnect the vehicle's battery and test the circuit controlled by the relay.

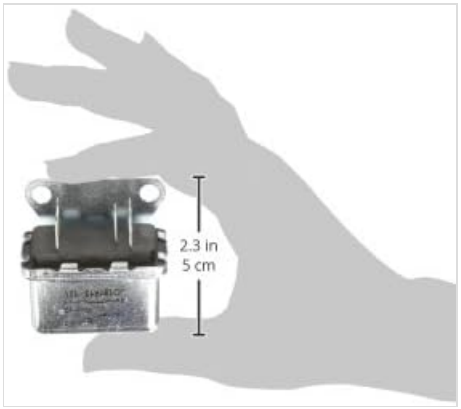

Figure 2: Side view of the Standard Motor Products RY12 Relay, illustrating its compact size and mounting bracket. The image includes measurements for height (2.3 inches / 5 cm).

4. Operation

The RY12 Relay operates automatically. When a control signal (typically 12 Volts) is applied to the relay's coil terminals, an electromagnetic field is generated. This field pulls the internal contact arm, closing the normally open circuit and allowing current to flow through the controlled device (e.g., horn, blower motor, AC compressor clutch). When the control signal is removed, the electromagnetic field collapses, and a spring returns the contact arm to its original normally open position, breaking the circuit.

- **Coil Voltage:** 12 Volts
- **Current Rating:** 12 Amps
- **Wattage:** 144 Watts
- **Contact Type:** Normally Open

5. Maintenance

The Standard Motor Products RY12 Relay is designed for long-term, maintenance-free operation. However, periodic inspection can help ensure its continued reliability:

- **Visual Inspection:** Periodically check the relay and its wiring for any signs of corrosion, loose connections, or physical damage.
- **Cleanliness:** Keep the relay and its terminals free from dirt, dust, and moisture.
- **Connection Integrity:** Ensure all screw connections remain tight.

If the relay shows signs of damage or malfunction, it should be replaced with an equivalent part.

6. Troubleshooting

If the circuit controlled by the RY12 Relay is not functioning correctly, consider the following troubleshooting steps:

Symptom	Possible Cause	Solution
Controlled device does not activate.	• No control signal to relay coil. • Faulty relay coil. • Loose or corroded connections. • Blown fuse in the controlled circuit.	• Check the control signal source (e.g., switch, ECU output). • Test relay coil for continuity and resistance. • Inspect and clean all connections; tighten screws. • Check and replace relevant fuses.
Controlled device remains on/off.	• Stuck relay contacts (on). • Open relay contacts (off).	• Replace the relay.
Relay makes clicking sound but device doesn't activate.	• High resistance in power circuit. • Faulty controlled device.	• Check power and ground connections to the controlled device. • Test the controlled device directly.

If troubleshooting steps do not resolve the issue, it is recommended to replace the relay or consult a professional.

7. Technical Specifications

Feature	Detail
Model Number	RY12
Brand	Standard Motor Products
Connector Type	Screw
Contact Material	Silver Alloy
Contact Type	Normally Open
Current Rating	12 Amps

Feature	Detail
Mounting Type	Surface Mount
Operation Mode	Automatic
Wattage	144 Watts
Coil Voltage	12 Volts
Number of Terminals	3
Item Weight	3.2 ounces (90.7 grams)
Product Dimensions (L x W x H)	3 x 3 x 3 inches (7.62 x 7.62 x 7.62 cm)
Country of Origin	China
UPC	091769023089

8. Warranty & Support

Information regarding the specific warranty terms and customer support for the Standard Motor Products RY12 Relay is not available in the provided product data. For warranty details or technical assistance, please refer to the official Standard Motor Products website or contact their customer service directly. *Note:* Always retain your proof of purchase for warranty claims.