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Bosch 0332207402

BOSCH 0332207402 Changeover Micro Relay User Manual

Model: 0332207402

1. Introduction

This manual provides essential information for the proper installation, operation, and maintenance of the Bosch 0332207402 Changeover Micro Relay. Designed for automotive and other applications, this relay offers reliable switching operations with a compact design.

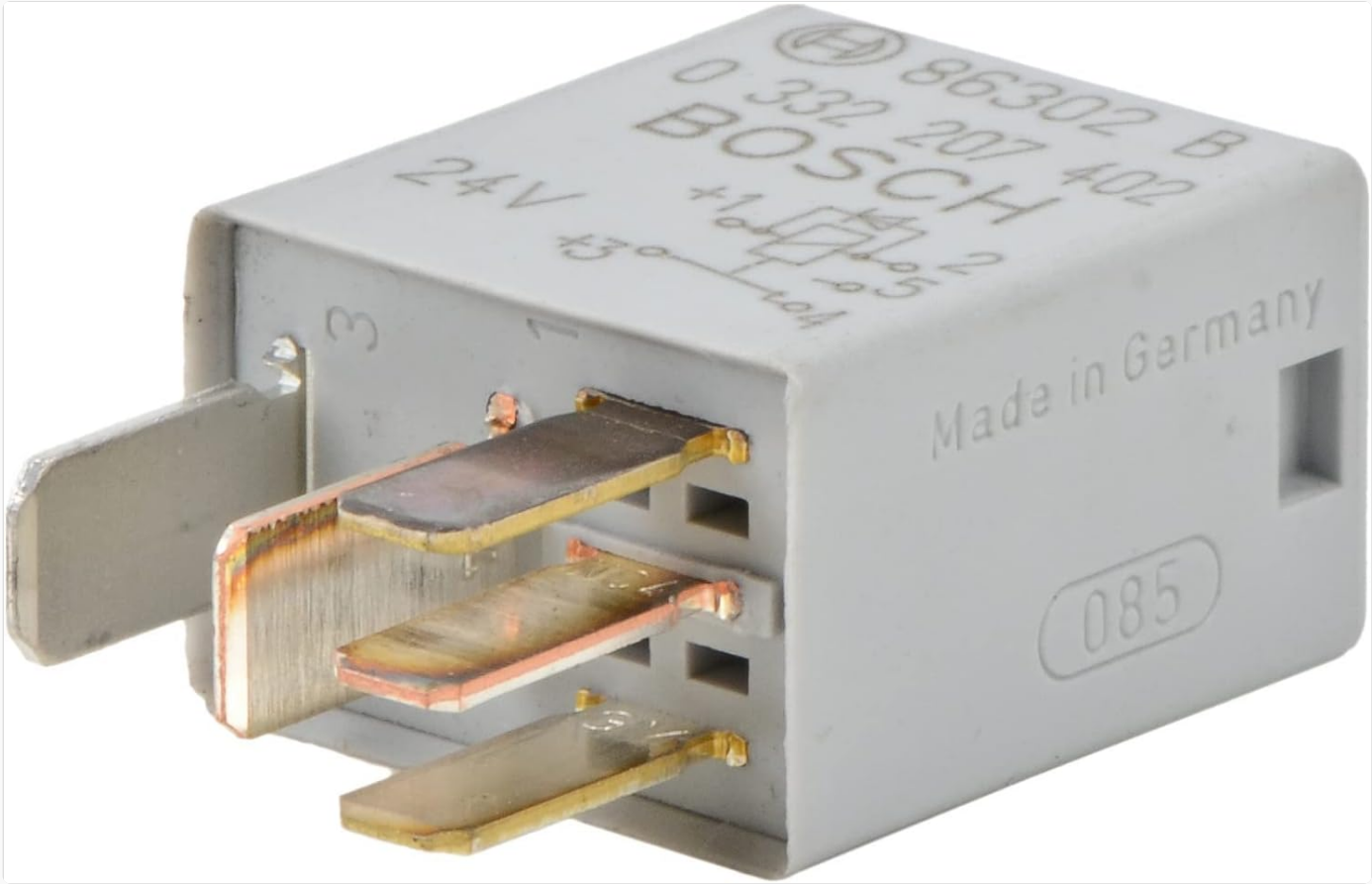


Image 1.1: Bosch 0332207402 Changeover Micro Relay, showing its compact form factor and pin configuration.

Key Features:

- **Bosch Expertise:** Developed with over 40 years of experience in relay production, ensuring optimal performance.

- **Compact Design:** Micro relay form factor suitable for a wide range of vehicle applications.
- **Premium Performance:** Constructed with high-quality materials for reliable, long-term operation and a 250,000 switching cycle capability.
- **Superior Engineering:** Engineered to withstand temperatures from -40°F to +212°F (-40°C to +100°C).
- **Specifications:** 5 pins, 24V, 10/15A rating.

2. Product Specifications

Specification	Detail
Brand	Bosch
Model Number	0332207402
Pin Configuration	5 Pins
Coil Voltage	24 Volts
Current Rating	10/15 Amps (10A normally closed, 15A normally open)
Contact Type	Changeover (SPDT - Single Pole Double Throw)
Contact Material	Silver
Connector Type	Solder
Mounting Type	Pole
Operating Temperature	-40°F to +212°F (-40°C to +100°C)
Switching Cycles	250,000 capability
Product Dimensions	1.57 x 1.57 x 2.36 inches
Item Weight	0.705 ounces

3. Installation and Wiring

Proper installation is crucial for the reliable operation of the Bosch micro relay. Refer to the diagrams below for pin identification and typical wiring configurations.

3.1 Pin Identification

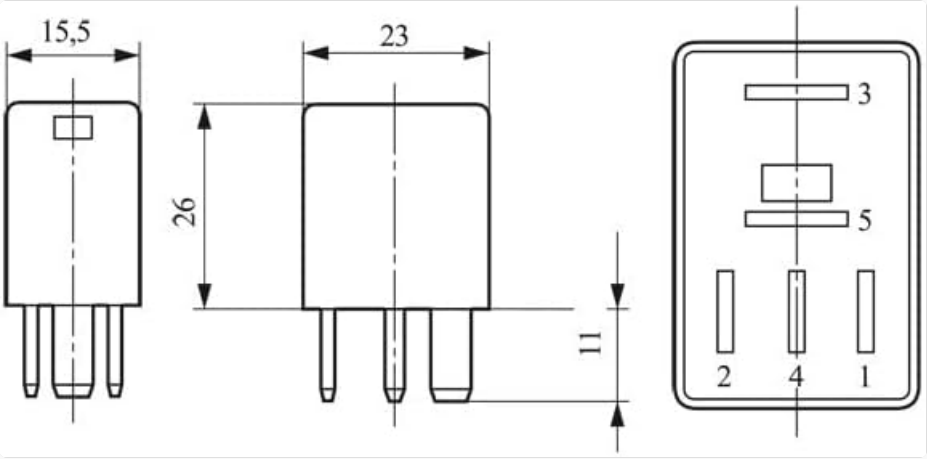


Image 3.1: Pin layout diagram for the Bosch 0332207402 relay, showing dimensions and pin numbers.

The relay features 5 pins, typically identified as follows:

- **Pin 30:** Power input from battery (constant 24V).
- **Pin 85:** Coil ground (connected to chassis ground or control circuit ground).
- **Pin 86:** Coil positive (connected to 24V switched by a control signal).
- **Pin 87:** Normally Open (NO) contact. Connects to Pin 30 when the coil is energized.
- **Pin 87a:** Normally Closed (NC) contact. Connects to Pin 30 when the coil is de-energized.

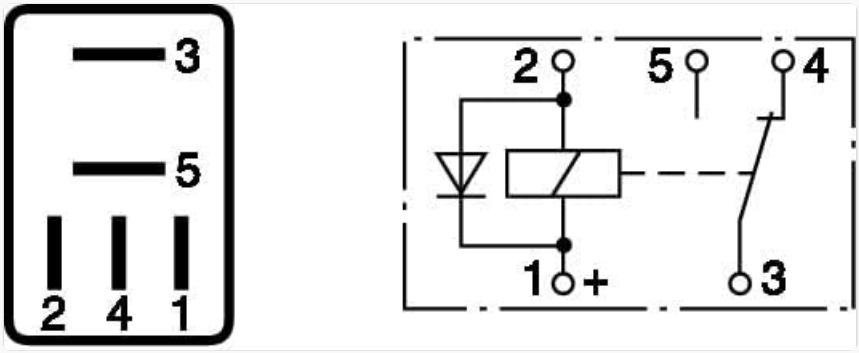


Image 3.2: Internal circuit diagram of the Bosch 0332207402 relay, illustrating the coil and switch contacts.

3.2 General Wiring Guidelines

1. Ensure the vehicle's power is disconnected before beginning any wiring.
2. Use appropriate gauge wires for the current draw of the connected load.
3. Connect Pin 30 to a fused 24V power source.
4. Connect Pin 85 to ground.
5. Connect Pin 86 to the control signal (e.g., a switch that provides 24V when activated).
6. Connect the device to be powered to either Pin 87 (for normally off operation) or Pin 87a (for normally on operation), and the other side of the device to ground.
7. Always use proper connectors and ensure secure connections to prevent shorts or intermittent operation.

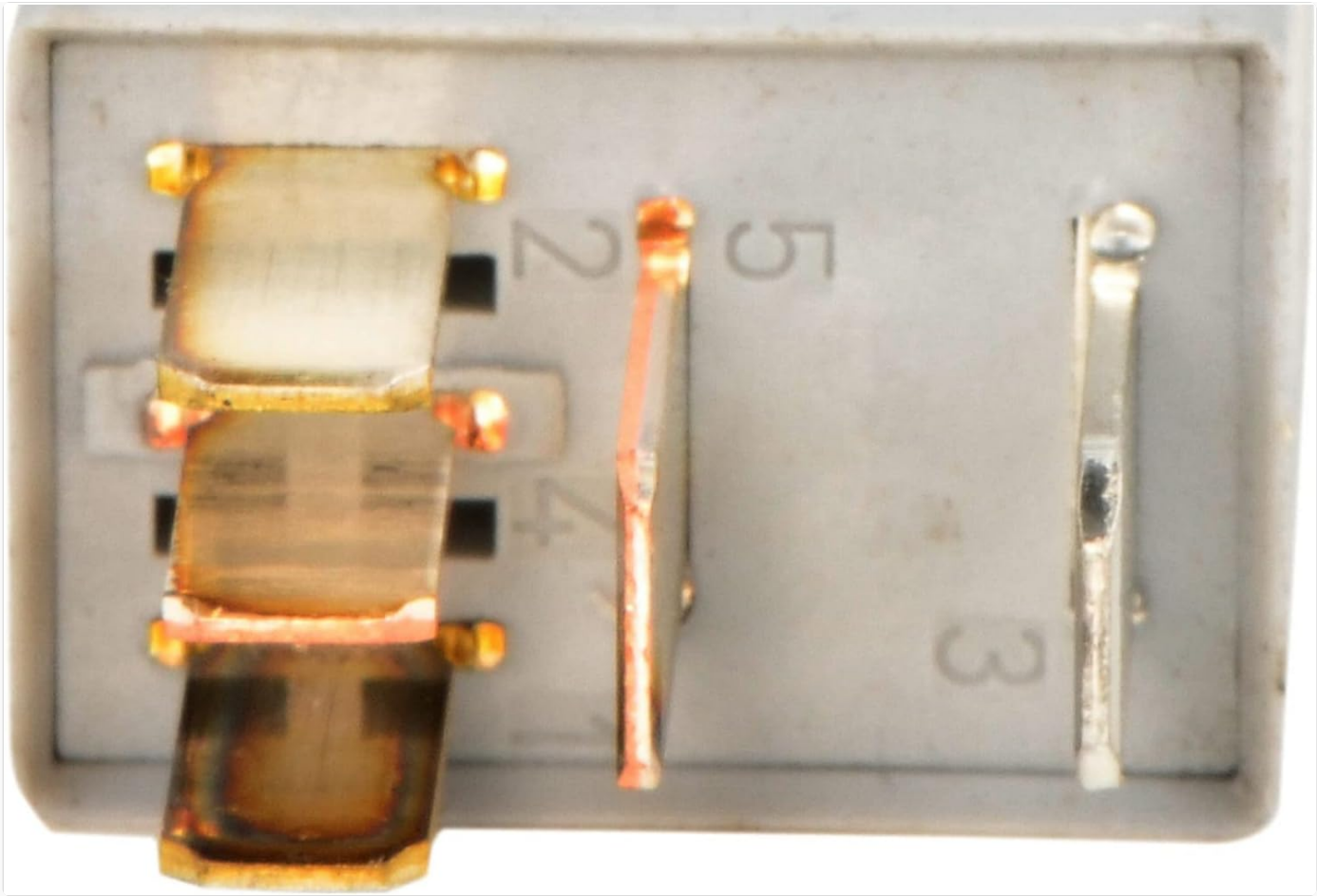


Image 3.3: Bottom view of the relay, showing the five metal pins for electrical connections.

4. Operating Principle

The Bosch 0332207402 is a changeover (SPDT) micro relay. Its operation is based on an electromagnetic coil that, when energized, switches a set of contacts.

- **De-energized State:** When no voltage is applied to the coil (Pins 85 and 86), the common contact (Pin 30) is connected to the Normally Closed (NC) contact (Pin 87a).
- **Energized State:** When 24V is applied across the coil (between Pins 85 and 86), an electromagnetic field is created. This field pulls the armature, causing the common contact (Pin 30) to switch from Pin 87a to the Normally Open (NO) contact (Pin 87).
- This allows the relay to control a high-current circuit (Pins 30, 87, 87a) using a low-current control signal (Pins 85, 86).

5. Maintenance and Care

Bosch relays are designed for long-term, maintenance-free operation. However, adhering to these guidelines can help ensure optimal performance and longevity:

- **Environmental Protection:** While engineered for harsh conditions, avoid exposing the relay to excessive moisture, corrosive chemicals, or extreme physical impact.
- **Connection Integrity:** Periodically inspect wiring connections for corrosion, looseness, or damage. Ensure all connections are clean and secure.
- **Overload Prevention:** Do not exceed the specified current ratings (10/15A) for the relay contacts. Overloading can lead to premature failure.
- **Temperature Range:** Operate the relay within its specified temperature range of -40°F to +212°F (-40°C to

+100°C).

- **Cleaning:** If necessary, gently clean the exterior of the relay with a dry, soft cloth. Do not use harsh solvents or abrasive cleaners.

6. Troubleshooting

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

- **No Click Sound:**
  - Check for 24V at Pin 86 when the control signal is active.
  - Verify good ground connection at Pin 85.
  - Inspect the coil for damage or open circuit (can be tested with a multimeter).
- **Click Sound, but No Power to Load:**
  - Check for 24V at Pin 30 (constant power input).
  - Verify continuity between Pin 30 and the appropriate output pin (87 or 87a) when the relay is energized/de-energized.
  - Inspect the load device and its wiring for faults.
  - Check for corroded or loose connections at the relay terminals.
- **Intermittent Operation:**
  - Check for loose wiring connections or poor crimps.
  - Ensure the relay is securely mounted and not subject to excessive vibration.
  - Verify stable voltage supply to the coil and contacts.

If troubleshooting does not resolve the issue, consider replacing the relay with a new Bosch 0332207402 unit.

7. Additional Information

For further technical details or support, please refer to the official Bosch automotive components documentation or contact a certified automotive electrician.

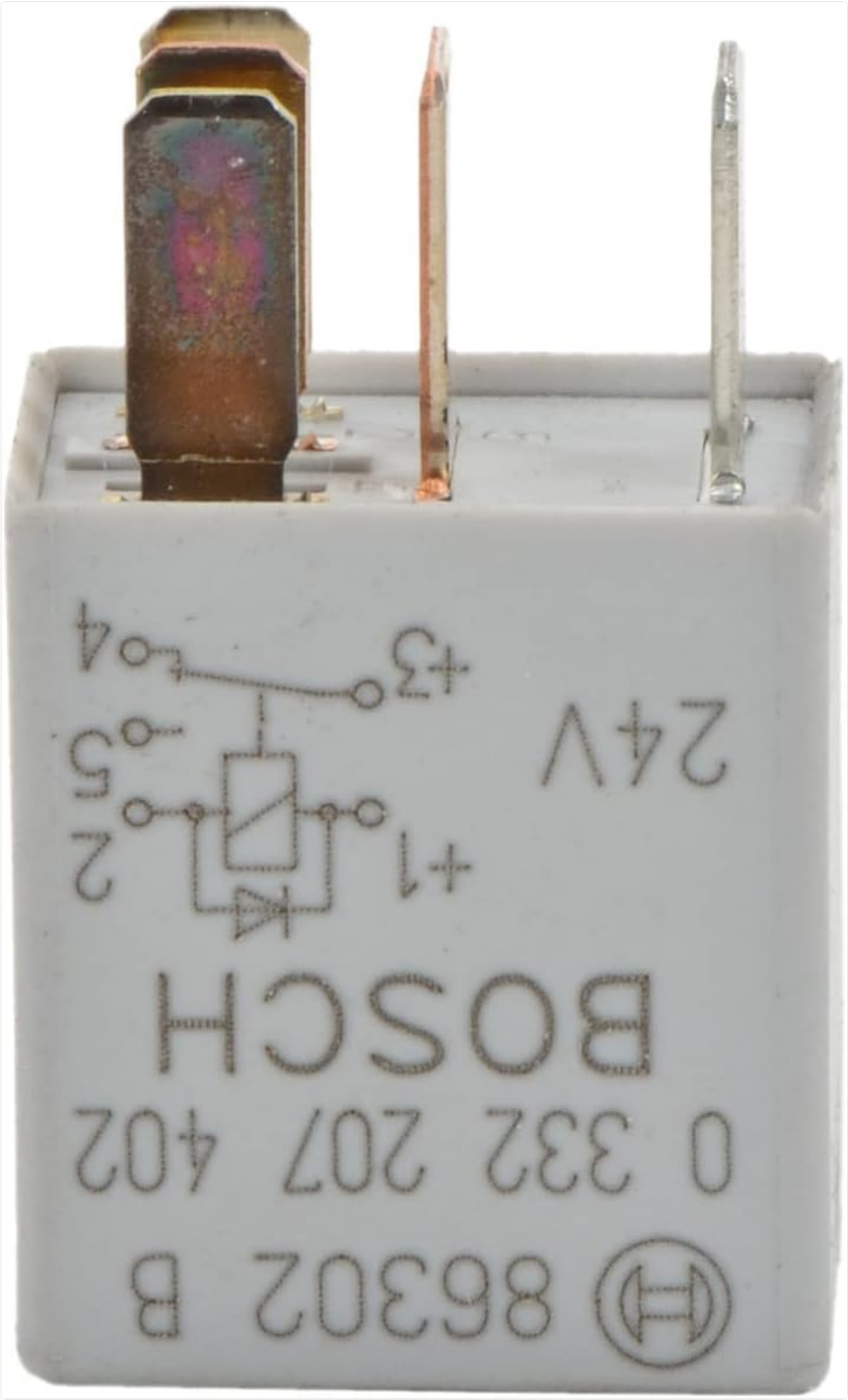


Image 7.1: Top view of the relay, displaying model number and voltage specifications.

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