

DB Electrical 240-12013

DB Electrical 240-12013 Solenoid Control Relay User Manual

MODEL: 240-12013

Brand: DB Electrical

Product Overview

The DB Electrical 240-12013 Solenoid Control Relay is a critical electrical component designed for use in 24-volt systems, commonly found in tractors and other heavy-duty equipment. This intermittent duty cycle relay is engineered to meet OEM specifications, ensuring reliable performance as a replacement for original equipment from manufacturers such as Delco and ZM Solenoids. Its primary function is to control the flow of high current to the starter motor, enabling the engine to crank and start.

This relay features 4 terminals, including two threaded tabs with screws and two 12-gauge wires with ring terminals for B+ and S connections, along with a ground lead for relay control. The contact material is copper, providing excellent conductivity and durability.

Safety Information

WARNING: Electrical components can cause serious injury or death if not handled properly. Always observe the following safety precautions:

- Always disconnect the vehicle's battery (negative terminal first) before attempting any installation, removal, or maintenance of electrical components.
- Wear appropriate personal protective equipment (PPE), including safety glasses and insulated gloves.
- Ensure the work area is dry and well-lit.
- Do not touch live electrical terminals or wires.
- If you are unsure about any step of the installation process, consult a qualified professional or a vehicle-specific service manual.
- Verify the correct voltage and polarity before making any connections. This relay is designed for 24-volt systems.

Specifications



Image: DB Electrical 240-12013 Solenoid Control Relay, showing its compact design with attached wiring and mounting tabs. The relay body is metallic with a green "24V" label.

Specification	Value
Description	Solenoid Control Relay
Volt	24 Volts
Duty Cycle	Intermittent
Number of Terminals	4
Contact Material	Copper
Connector Type	Screw
Mounting Type	Screw Mount
Operation Mode	Automatic

Specification	Value
Product Dimensions	2.75 x 7.25 x 2.75 inches
Item Weight	12.4 ounces
Replaces OEM Numbers	Arrowhead: 10-MIL415, D10511415, SDR6132; Delco: 10511415, 10518868; J&N Electrical Products: 240-12013, 240-12033; ZM Solenoids: ZM5-408

Setup and Installation

Installation of the solenoid control relay typically involves replacing an existing unit. Always refer to your vehicle's specific service manual for detailed instructions and wiring diagrams, as configurations may vary.

- Preparation:** Ensure the vehicle is turned off and the ignition key is removed. Disconnect the negative (-) battery terminal first, followed by the positive (+) terminal, to prevent accidental electrical shorts.
- Locate Old Relay:** Identify the existing solenoid control relay. It is usually mounted near the starter motor or in the engine compartment.
- Disconnect Old Relay:** Carefully disconnect all wires and mounting hardware from the old relay. Note the position and connection of each wire (e.g., battery positive, starter solenoid trigger, ground). The DB Electrical 240-12013 has two threaded tabs with screws (one with a ground lead for relay control) and two 12-gauge wires with ring terminals for B+ (Battery Positive) and S (Starter Solenoid) terminals.
- Mount New Relay:** Secure the new DB Electrical 240-12013 relay in the same location using appropriate mounting hardware.
- Connect Wiring:** Connect the wires to the new relay. Ensure all connections are clean, tight, and correctly matched to their respective terminals.
 - Connect the 12-gauge wire with a ring terminal to the B+ (Battery Positive) connection.
 - Connect the other 12-gauge wire with a ring terminal to the S (Starter Solenoid) connection.
 - Connect the ground lead from one of the threaded tabs to a suitable chassis ground point.
 - Connect any other necessary control wires as per your vehicle's wiring diagram.
- Reconnect Battery:** Once all connections are secure, reconnect the positive (+) battery terminal first, then the negative (-) battery terminal.
- Test Functionality:** Attempt to start the vehicle to confirm the relay is functioning correctly.

Operating Instructions

The DB Electrical 240-12013 Solenoid Control Relay operates automatically as part of the vehicle's starting system. There are no direct user controls for this component. When the ignition key is turned to the "START" position, a low-current signal is sent to the relay, which then closes its internal contacts, allowing a high current from the battery to flow directly to the starter motor. This high current engages the starter, cranking the engine. As an intermittent duty cycle relay, it is designed for short bursts of operation (during engine cranking) and is not intended for continuous power transmission.

Maintenance

The solenoid control relay is a sealed unit and generally requires minimal maintenance. However, periodic inspection can help ensure its longevity and reliable operation:

- **Visual Inspection:** Periodically check the relay and its connections for any signs of corrosion, loose wires, frayed insulation, or physical damage.
- **Terminal Cleanliness:** Ensure that the battery terminals and the relay's connection points are clean and free of dirt or corrosion. Clean with a wire brush and battery terminal cleaner if necessary.
- **Secure Mounting:** Verify that the relay is securely mounted and not vibrating excessively, which could lead to premature wear or connection issues.

Troubleshooting

If you experience issues with your vehicle's starting system, the solenoid control relay may be a contributing factor. Here are some common symptoms and troubleshooting steps:

- **Engine Does Not Crank (No Click):**
 - Check battery voltage. A low battery can prevent the relay from engaging.
 - Inspect battery cables and connections for corrosion or looseness.
 - Verify the ignition switch is sending a signal to the relay's trigger terminal when turned to "START." Use a multimeter to check for 24V at the trigger wire.
 - Check the ground connection of the relay.
- **Engine Does Not Crank (Clicking Sound Heard):**
 - A clicking sound indicates the relay is attempting to engage but may not be passing sufficient current to the starter. This could be due to a weak battery, corroded battery cables, or a faulty starter motor.
 - Check for voltage drop across the relay's main terminals when attempting to start. Significant voltage drop indicates internal resistance, suggesting a faulty relay.
- **Starter Stays Engaged After Engine Starts:**
 - This is a serious issue. Immediately disconnect the battery. This can indicate a "stuck" relay or a short in the control circuit.

If troubleshooting steps do not resolve the issue, it is recommended to have the component tested by a professional or consider replacement.

Warranty Information

DB Electrical provides a **1-year warranty** on this product from the date of purchase. This warranty covers defects in materials and workmanship under normal use. If the product fails to operate flawlessly within one year of your order, DB Electrical will replace it. For warranty claims or assistance, please contact DB Electrical customer support.

Customer Support

For further assistance, technical questions, or to report an issue, please contact DB Electrical customer support. You can find contact information on the official DB Electrical website or through your point of purchase. Visit the [DB Electrical Store](#) for more products and information.