Irritrol R811

Irritrol R811-24VACG Replacement Solenoid Instruction Manual

Brand: Irritrol | **Model:** R811

1. Introduction

This manual provides detailed instructions for the installation, operation, and maintenance of the Irritrol R811-24VACG Replacement Solenoid. This solenoid is designed for use with Irritrol, Hardie, and Richdel irrigation valves, facilitating the control of water flow in sprinkler systems. Proper installation and care will ensure optimal performance and longevity of the unit.

2. Safety Information

Please read and understand all safety instructions before installing or operating this product. Failure to follow these instructions may result in electrical shock, injury, or damage to the product or property.

- **Electrical Hazard:** This product operates on 24VAC. Always disconnect power to the irrigation controller and valve before performing any installation or maintenance.
- **Qualified Personnel:** Installation should be performed by individuals familiar with electrical wiring and irrigation systems.
- **Water and Electricity:** Exercise extreme caution when working with electrical components near water. Ensure all connections are waterproofed and protected from moisture.
- **Proper Tools:** Use appropriate tools for installation to prevent damage to the solenoid or wiring.

3. Product Overview and Features

The Irritrol R811-24VACG is a replacement solenoid designed for reliable operation in irrigation valve systems. Key features include:

- **Captive Hex Plunger:** Ensures secure and consistent operation.
- **Male Threaded Design:** Facilitates straightforward installation into compatible valve bodies.
- **Electrical Specifications:** Operates at 24VAC with a 40 amp inrush current and 20 amp holding current.
- **Compatibility:** Suitable for use with Irritrol, Hardie, and Richdel irrigation valves.

Image 1: The Irritrol R811-24VACG Replacement Solenoid. This image displays the black cylindrical solenoid body with its male threaded top, and two black electrical wires extending from the base, secured with a white tie.

4. Specifications

Attribute	Value
Brand	Irritrol
Model Number	R811
Electrical Rating	24VAC, 40 amp inrush, 20 amp holding
Inlet Connection Size	1 Inch
Inlet Connection Type	Threaded
Outlet Connection Type	NPT
Number of Ports	2
Product Dimensions (L x W x H)	2 x 1 x 1 inches (approximately)
Item Weight	0.353 ounces

5. Setup and Installation

Follow these steps to replace an existing solenoid or install a new one. Ensure all safety precautions are observed.

1. **Disconnect Power:** Locate your irrigation controller and turn off the power to the entire system or the specific zone you are working on. This is crucial to prevent electrical shock.

2. **Locate Valve:** Identify the irrigation valve where the solenoid needs to be replaced.
3. **Remove Old Solenoid:**
    - Carefully disconnect the two wires leading to the old solenoid. Note which wire connects to the common and which to the zone wire, if distinguishable.
    - Unscrew the old solenoid from the valve body by turning it counter-clockwise. Water may escape from the valve once the solenoid is removed.
    - Inspect the valve body for any remaining O-rings or plastic pieces from the old solenoid. Remove them to ensure a clean seating surface for the new solenoid. Some older Rain Bird or Richdel valves may require removing a plastic protrusion from the bottom of the new solenoid for proper fit.
4. **Prepare New Solenoid:** If necessary, and only if it obstructs proper seating in your specific valve model, carefully trim any excess plastic from the bottom of the new Irritrol R811 solenoid.
5. **Install New Solenoid:**
    - Thread the new Irritrol R811-24VACG solenoid into the valve body by turning it clockwise. Hand-tighten until snug. Do not overtighten, as this can damage the valve body or solenoid.
    - Connect the two wires from the irrigation system to the two wires of the new solenoid. It is generally not polarity-sensitive for AC solenoids, but ensure connections are secure. Use waterproof wire connectors (e.g., grease caps) to protect the connections from moisture and corrosion.
6. **Test System:** Restore power to the irrigation controller. Manually activate the zone associated with the newly installed solenoid to check for proper operation and any leaks.

6. Operation

The Irritrol R811-24VACG solenoid functions as an electromagnetic switch that controls the flow of water through an irrigation valve. When the irrigation controller sends a 24VAC electrical signal to the solenoid, it creates a magnetic field that lifts a plunger, opening a pilot port within the valve. This action releases pressure from the diaphragm, allowing the main valve to open and water to flow to the sprinkler zone. When the electrical signal is removed, the magnetic field collapses, the plunger returns to its resting position, and the valve closes, stopping water flow.

The solenoid's operation is entirely dependent on the electrical signals from your irrigation controller. Ensure your controller is programmed correctly for desired watering schedules.

7. Maintenance

The Irritrol R811-24VACG solenoid is designed for durability and typically requires minimal maintenance. However, periodic checks can help ensure long-term performance:

- **Inspect Wiring:** Annually check wire connections for corrosion or damage. Ensure waterproof connectors are intact and sealed.
- **Check for Leaks:** Periodically inspect the area around the valve and solenoid for any signs of water leaks. A leak might indicate an issue with the solenoid's seating or the valve diaphragm.
- **Debris Removal:** If the valve is exposed to significant debris, occasionally remove the solenoid and flush the valve body to clear any obstructions that might affect plunger movement.

8. Troubleshooting

If your irrigation zone is not operating correctly after solenoid replacement, consider the following:

Problem	Possible Cause	Solution
Valve does not open (no water flow)	◦ No power to controller/zone ◦ Faulty wire connection ◦ Solenoid not fully seated ◦ Debris in valve/solenoid	◦ Check controller power and programming. ◦ Inspect and secure wire connections, ensure waterproof. ◦ Hand-tighten solenoid into valve body. ◦ Remove solenoid, inspect for debris, flush valve.
Valve does not close (continuous water flow)	◦ Debris preventing plunger return ◦ Damaged solenoid or valve diaphragm	◦ Remove solenoid, clean thoroughly. ◦ Inspect solenoid plunger for damage. Check valve diaphragm for tears or obstructions.
Intermittent operation	◦ Loose or corroded wire connections ◦ Fluctuating power supply	◦ Re-secure and waterproof all wire connections. ◦ Consult an electrician to check power supply to controller.

9. Warranty and Support

For specific warranty information regarding your Irritrol R811-24VACG Replacement Solenoid, please refer to the documentation provided at the time of purchase or visit the official Irritrol website. If you require technical assistance or have questions not covered in this manual, please contact Irritrol customer support through their official channels.

Irritrol Official Website: www.irritrol.com (This is a placeholder link, please verify the actual official website for Irritrol for accurate support information.)