Irritrol RS500

Irritrol RS500 Wired Rain Sensor Instruction Manual

1. Introduction

The Irritrol RS500 Wired Rain Sensor is designed to prevent irrigation during or after sufficient rainfall, thereby conserving water and optimizing your irrigation schedule. This manual provides detailed instructions for the proper installation, operation, and maintenance of your RS500 rain sensor.

2. Safety Information

Please read all instructions carefully before installation and operation. Failure to follow these instructions could result in property damage or personal injury.

- Always disconnect power to the irrigation controller before performing any wiring.
- Ensure all electrical connections are secure and protected from moisture.
- Mount the sensor in a location where it is exposed to unobstructed rainfall but protected from physical damage.
- Do not attempt to modify the sensor or its components.

3. Package Contents

Verify that all components are present before beginning installation:

- Irritrol RS500 Wired Rain Sensor Unit
- Adjustable Mounting Bracket
- Quick-Clip Gutter Bracket
- 1/2" Conduit Adapter
- Two-conductor Wire (integrated)

This image displays the Irritrol RS500 Wired Rain Sensor unit, including its main housing, adjustable mounting bracket, a coiled length of two-conductor wire with stripped ends, and a small cylindrical component, likely a cap or additional sensor part.

4. Setup and Installation

4.1 Mounting the Sensor

The RS500 offers versatile mounting options. Choose a location that receives unobstructed rainfall and is not affected by overhangs, trees, or sprinkler spray. The sensor should be easily accessible for maintenance.

1. **Gutter Mounting:** Use the provided Quick-Clip gutter bracket to attach the sensor to the edge of a gutter. Ensure the sensor is level.
2. **Conduit Mounting:** The 1/2" conduit adapter allows for mounting on a standard conduit pipe. Secure the sensor to the adapter and then to the conduit.
3. **Surface Mounting:** The adjustable mounting bracket can be screwed directly to a flat surface, such as a fence post or wall.

4.2 Wiring to the Irrigation Controller

The RS500 connects to your irrigation controller using a two-conductor wire. Most irrigation controllers have dedicated sensor terminals (typically labeled 'Sensor', 'Rain', or 'R').

1. **Disconnect Power:** Turn off the power to your irrigation controller at the main breaker.
2. **Locate Sensor Terminals:** Refer to your irrigation controller's manual to identify the correct sensor input terminals.
3. **Connect Wires:** Connect the two wires from the RS500 sensor to the designated sensor terminals on your controller. The RS500 is typically a normally closed (NC) device, meaning it completes the circuit when dry and breaks it when wet. Some controllers may require specific wiring configurations (e.g., bypassing a jumper wire). Consult your controller's manual for details.
4. **Secure Wiring:** Route the wire neatly and secure it to prevent damage. Ensure connections are tight and protected from environmental elements.
5. **Restore Power:** Once wiring is complete and verified, restore power to the irrigation controller.

5. Operation

5.1 Rain Detection

The Irritrol RS500 uses hygroscopic discs that expand when exposed to rainfall. This expansion activates a switch, which signals the irrigation controller to suspend watering. Once the rain stops and the discs dry out, they contract, resetting the switch and allowing the controller to resume its scheduled program.

5.2 Dry-Out Rate Adjustment

The sensor features a dry-out rate adjustment mechanism, typically a vent ring or cap, that controls how quickly the hygroscopic discs dry after rainfall. This adjustment allows you to set the ideal reset delay, determining how long irrigation remains suspended after rain has ceased.

- **Faster Dry-Out:** Open the vents more to allow quicker drying and a shorter delay before irrigation resumes.
- **Slower Dry-Out:** Close the vents more to slow down drying and extend the delay before irrigation resumes.

Experiment with the settings to find the optimal dry-out rate for your local climate and soil conditions.

6. Maintenance

Regular maintenance ensures the longevity and proper functioning of your RS500 rain sensor.

- **Annual Inspection:** At least once a year, inspect the sensor for any debris (leaves, dirt, insects) that

might obstruct the rain-sensing discs. Gently clean the sensor housing and disc stack if necessary.

- **Wiring Check:** Periodically check the wiring for any signs of wear, damage, or loose connections.
- **Functionality Test:** During dry weather, manually wet the sensor discs to simulate rain. Verify that your irrigation system suspends operation. Once the sensor dries, confirm that the system resumes normal operation.

7. Troubleshooting

If your Irritrol RS500 rain sensor is not functioning as expected, consider the following:

Problem	Possible Cause	Solution
Irrigation system runs during rain.	Sensor not wired correctly; sensor bypass switch engaged on controller; sensor discs obstructed or damaged.	Check wiring connections; ensure controller's sensor switch is 'ON' or 'ACTIVE'; clean or inspect sensor discs.
Irrigation system does not run when dry.	Sensor discs are still wet; wiring issue; controller fault.	Allow sensor to dry completely (adjust dry-out rate if needed); check wiring for continuity; consult controller manual.
Sensor appears damaged.	Physical impact; environmental exposure.	Inspect for cracks or breaks. If severely damaged, replacement may be necessary.

8. Specifications

- **Model:** RS500
- **Material:** Engineered Polymer
- **Product Dimensions (L x W x H):** 3.75 x 1.75 x 1.5 inches
- **Item Weight:** 11.8 ounces
- **Connection Type:** Wired (Two-conductor)
- **Compliance:** CSA, ULC

9. Warranty and Support

For warranty information or technical assistance, please contact Irritrol customer support. Keep your purchase receipt as proof of purchase.
Irritrol Customer Support: Refer to the official Irritrol website or product packaging for current contact information.