

# WaterSwitch

## WS-AC

Soil Moisture Sensor and Switch Installation and Operating Instructions

### Safety Information:

- Ensure the irrigation controller is de-energized before making wiring connections
- Do not allow the module to become submerged. Mount on the underside of the valve box lid or in a protected location

### Intended Use:

The WaterSwitch is designed for use with conventional irrigation controllers to reduce unnecessary irrigation based on soil moisture. For outdoor landscape use only. Not a safety device.

### Disposal:

This product must not be disposed of with household waste. It must be taken to a designated collection point for the recycling of electrical and electronic equipment. For more information, contact your local waste disposal authority or the retailer where the product was purchased.

### Warranty:

IRROMETER Company warrants this product against defective workmanship or materials under normal use for one year from date of purchase. Defective parts will be replaced at no charge if returned during the warranty period. This warranty does not cover abuse, shipping damage, neglect, tampering, vandalism, freezing, or user-caused damage. Neither seller nor manufacturer shall be liable for any injury, loss, or consequential damage.

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The WS-AC works with a WATERMARK soil moisture sensor to prevent unnecessary irrigation. It interrupts the common or sensor circuit of a conventional 24 VAC controller, allowing or blocking valve operation based on soil moisture. *The controller determines when and how long valves run. The WS-AC only prevents irrigation when soil is already wet enough.*

## 1. Sensor Installation

### Pre-soak

Soak sensor in water at least 30 minutes before installation. Always install a wet sensor. Install in the area of greatest water demand. Avoid low spots prone to pooling.

### Placement depth

Plant Type	Depth
Cool season turf	2-5"
Warm season turf	6-8"
Shrubs / ground cover	8-14"
Trees	16-24"

### Installation steps

1. Install splice box 2-3 ft from sensor location. Trench between them.
2. Excavate hole to required depth. Fill bottom with thick soil-water slurry.
3. Push sensor firmly into slurry. Full soil contact required – snug fit is critical.
4. Backfill firmly. Run wires to splice box.
5. Strip and splice sensor wires to cable running to WS-AC. Use waterproof splices.

Install vertically or up to 45° downward. Conduit acceptable. Sensor top fits 1/2" Cl.315 PVC or 3/4" SDR 11 CPVC.

## Wire sizing

Run Length	Gauge
Up to 1,000'	#18 AWG-UF
1,000'-2,000'	#16 AWG-UF

**Important:** Sensor must be in the area irrigated by the last valve to run. Re-sequence valves if needed. *If installing WS-AC inside of a valve box, mount on the underside of the box lid to prevent flooding*

## 2. Wiring

### To Control One Individual Valve

Connects in series with the valve solenoid, installed near valve:

**White / Red** → both connected to the controller common

**Black** → controller station wire, teed with valve solenoid wire 1

**Blue** → valve solenoid wire 2

### To Control Multiple Valves

Switches the field common, installed near the controller:

**White / Red** → both connected to the controller common

**Black** → master valve terminal on controller

**Blue** → field common to desired valve group

Individual valve station wires remain connected directly to controller as normal

### Controller Sensor Input (All valves, WS-AC-T version only)

Connects to controller sensor terminals in place of, or in series with a rain sensor

**Blue & White** = closed switch to irrigate

**Brown & White** = open switch to irrigate

## 3. Moisture Setpoint

Dial adjusts threshold from Position 1 (very wet) to Position 9 (very dry).

Position	Centibars	Typical Use
1-4	10-25 cb	Water-sensitive turf, shallow roots
5-8	35-70 cb	Shrubs, ground cover
9	~85 cb	Drought-tolerant only. Use with caution.

## To set

1. Rotate dial to desired position.
2. Hold 5 seconds. Wait for long red LED flash to confirm.

## 4. LED Indicators

LED Behavior	Meaning
Solid RED	Dry – irrigation allowed
Solid GREEN	Wet – irrigation blocked
2 quick GREEN flashes	Bypass active (60 min)
RED→GREEN sequence	Sensor wire short
GREEN→RED sequence	Sensor wire open

## 5. Bypass

BYPASS position allows irrigation for 60 minutes regardless of moisture, then reverts to saved setpoint.

**To reuse bypass:** Return dial to setpoint until it flashes, then turn to BYPASS.

For extended bypass (e.g., plant establishment), use the controller's built-in sensor bypass if available, or temporarily remove power from the WS-AC. Without power, the unit defaults to allowing irrigation.

## 6. Controller Programming

- Run the controller as often as possible – multiple start times per day.
- Use short run times per cycle to prevent runoff.
- Use repeat cycles rather than one long cycle.
- No seasonal reprogramming needed – the sensor adjusts automatically.

Fine-tune by adjusting setpoint, cycle duration, and number of repeat cycles until plants respond well and runoff is eliminated.

## 7. System Test

1. Set to BYPASS. All valves should run on controller schedule.
2. Set to a DRY position. If soil at sensor is wet, WS-AC will block valve operation.
3. Set to WET. Once soil dries below setpoint, valves should run on schedule.
4. Verify soil moisture at sensor with a soil probe.