

INSTALLATION AND OPERATING INSTRUCTIONS

WATERMARK Soil Moisture Sensor and Switch

**Automates your Irrigation Controller
to Water ONLY when Necessary**



For Residential use in landscape with any 24 volt AC irrigation controllers with sensor (rain switch) connections.

View the WaterSwitch Installation video at:

www.IRRMETER.com

1. Soak the WATERMARK sensor in water before installation.
Always install a "wet" sensor.
2. Locate a representative spot in an area of the landscape that will determine if irrigation is necessary. This area should be evenly watered by the sprinklers with good sun exposure.
3. Cut out a small section of soil exposing the roots. (Figure 1)
4. Excavate a hole about 3" to 6" deep for the sensors to be installed. If the soil is hard, use a piece of 1/2" pipe to make an access hole. Fill the bottom of the hole with a thick slurry made of soil removed from the hole and water, then firmly push the sensor down into the mud in the bottom of the hole.



FIGURE 1

This will "grout-in" the sensor to ensure maximum surface contact between the sensor surface and the surrounding soil. Alternately the sensor can be firmly pushed to the bottom of the access hole as long as it is a tight enough fit to ensure adequate contact. A snug fit is absolutely necessary. Insert the sensor into the root area at a 45° angle. (Figure 1). Pack the soil tightly around the sensor.

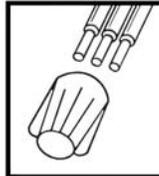
Note: Sensors must be firmly contacting the soil within the root area.

5. Dig a narrow trench to route the sensor wires back to the controller location.
6. Splice the sensor wires on to additional wire **1**

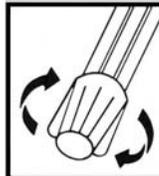
Instructions for using enclosed wire connectors:

IMPORTANT: Turn off power before installing or removing connector.

Product to be used in accordance with local and national codes.



- a. Strip #22 - 18 wires 1/2" (12.7 mm) and #16 - 12 wires 3/8" (9.5mm).
- b. Align any frayed strands or conductors.
- c. Pretwisting is unnecessary. Place stripped wires together with ends of insulation even.



- d. Twist connector onto wires pushing firmly until hand-tight. Do not over torque.
- e. Wipe sealant in and around conductors and connector opening while tightening. **Do not reuse.**

(minimum AWG 18-2 UF direct burial type) as needed with enclosed waterproof wire connectors to go all the way back to the controller location.

7. Backfill the trench to bury the wire.
8. Mount the WaterSwitch module next to or inside the irrigation controller. Cut out the Quick Reference Card and attach nearby so anyone servicing the system will know it is moisture controlled.
9. Attach switch wires to the sensor connections on the controller (may be labeled rain sensor) (Figure 2). Brown & Yellow = closed switch to irrigate, Blue & Yellow = open switch to irrigate.
Note: The WaterSwitch, a rain switch and a freeze switch can all be wired in series to the sensor connections (see diagram on back).
10. Attach Black and White power wires to the 24 Volt AC supply connections from the transformer (Figure 2). Attach sensor wires (Green) to the wires coming from the sensor in the lawn.
11. **Be sure the area where the sensor is located is irrigated by the last valve to operate. You may have to change the sequence of the valves in order to water this area last. (All valves must have the opportunity to be watered before the area where the sensor is located is watered).**
12. Select a moisture setting representative for your lawn (see Quick Reference Card). When selecting a moisture setting, always pick a wetter setting and observe the landscape for at least two irrigation cycles before adjusting up to a drier setting. If dry spots appear in the lawn, adjust the sprinklers to give more uniform coverage. If the entire lawn appears dry, then select a wetter moisture setting.

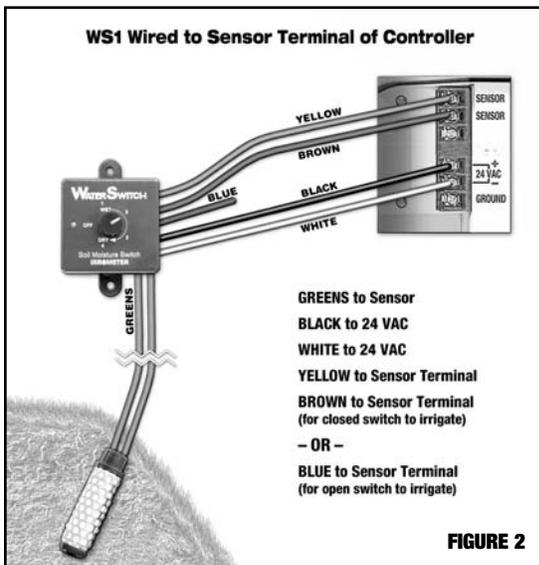
13. Program your controller with multiple start times to deliver the desired amount of water. The moisture switch will read the sensor hourly and activate to allow watering only when the soil is at, or drier, than the setting. This allows only the necessary irrigation cycles to occur. Shady areas and shrub or tree zones can be adjusted to water less frequently than the lawn by programming their start and run times accordingly. For instance, program the shrub zones to have half as many start times as the turf zones, since they do not need watering as frequently. However, the shrub zone run times can be longer so watering is sufficient for their deeper rooting depth. No run times should be so long that excessive run-off occurs.

14. A software program, called WaterPerfect, is available to download from:

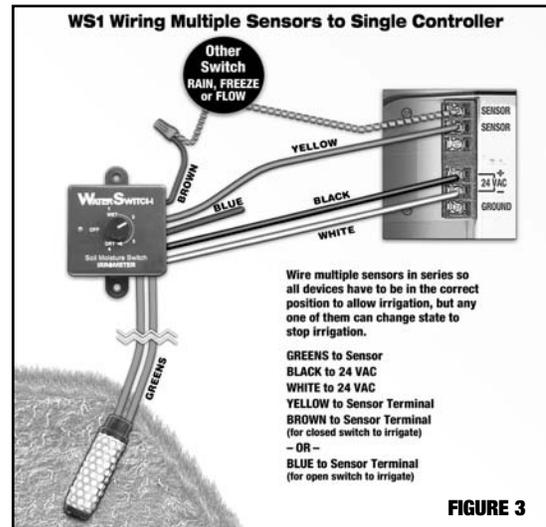
<http://portal.irrometer.com/waterperfect.php>

This program is a Microsoft® Excel® workbook program that creates a recommended irrigation schedule to program into your controller, based on the characteristics of your landscape. This software is available to download free of charge with your purchase. When downloading, use “conserve” for both the login and password to gain access to the program. You must have Microsoft® Excel® to open the program.

15. Water saving indicator light shows when watering is not necessary.



Wire multiple sensors in series so all devices have to be in the correct to allow irrigation, but any one of them can change state to stop irrigation. (Figure 3)



Testing Your System

1. Set Moisture Control dial to “OFF” position. All valves should operate on a manual controller/time clock sequence.
2. Set Moisture Control dial to a “DRY” position. Sensors will override valve (prevent operation) when soil is wet.
3. Set Moisture Control dial in the “WET” range. When soil has been allowed to dry sufficiently, sensors will allow valves to operate on the programmed controller/time clock sequence.
4. Verify soil water status in sensor area with a soil probe.

WARRANTY: The IRROMETER COMPANY warrants its products against defective workmanship or materials under normal use for one year from date of purchase. Defective parts will be replaced at no charge for either labor or parts if returned to the manufacturer during the warranty period. The seller’s or manufacturer’s only obligation shall be to replace the defective part and neither seller nor manufacturer shall be liable for any injury, loss or damage, direct or consequential, arising out of the use of or inability to use the product. This warranty does not protect against abuse, shipping damage, neglect, tampering or vandalism, freezing or other damage whether intentionally or inadvertently caused by the user.

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