

MULTIPLE HYDROZONE SYSTEM – MHS



The Multiple Hydrozone System (MHS) allows independent moisture control of valve groups when all valves share a common ground. The MHS interfaces with any 24 VAC irrigation controller for soil moisture automation. Valves are grouped together into hydrozones based on that location's specific irrigation needs. As many as eight independent moisture sensing locations can be managed with sensors directly wired to the control panel. Each Hydrozone will interrupt the irrigation cycle based on plant's demand for that location. Each Hydrozone can be independently programmed for the desired moisture level.

WATERMARK Multiple Hydrozone System — MHS

OPERATING PRINCIPLE: The Multiple Hydrozone System works in conjunction with a conventional 24 volt AC irrigation controller and automates the programmed irrigation schedule based on soil moisture status. This control maximizes the irrigation system efficiency by allowing irrigation to occur only when the soil moisture is sufficiently depleted, providing for optimum plant health while conserving irrigation water.

The irrigation valves are grouped together into two or more "Hydrozones" or groups with similar watering demand, with two Watermark Soil Moisture Sensors located in representative areas of the root zone for the last valve to run in each grouping. These sensors are wired to the control panel for each Hydrozone. The common ground of the irrigation system runs through this panel and returns to the irrigation controller so that the Multiple Hydrozone System acts as a switch on the common ground to allow irrigation only when necessary, based on the selected moisture levels for each valve grouping. Any number of valves can be assigned to a Hydrozone by attaching a small jumper pin connector to the appropriate Hydrozone position on the wiring circuit board. Each Hydrozone is individually adjustable by keypad entry on the MHS faceplate.

Unique to moisture manager systems, the MHS displays and records system status including current moisture status, last allowed watering and percentage of bypassed programmed irrigations (water savings).

SPECIFICATION INFORMATION: The irrigation system will divide the irrigated area into (up to 8) moisture control areas (Hydrozones) based on similar water requirements, controlling the (up to 48) irrigation valves operated by the controller so irrigation will occur only when soil moisture is sufficiently depleted. Each Hydrozone's moisture status is independently adjustable. Each Hydrozone will contain two (2) Watermark Soil Moisture Sensors placed in the active root zone of the plant material being monitored in the last irrigation zone to run for that Hydrozone. Watermark Sensor locations will have two (2) wires (AWG-UF #18 or larger) which run from the sensor location to the Watermark Soil Moisture Control System. All wire connections will be waterproof. All installation and wiring will be in accordance with the Watermark Soil Moisture Control System installation instructions, which are supplied from the manufacturer. A copy of these instructions will be included in the master operations and maintenance manual turned over to the maintenance contractor or the owner at the completion of construction and acceptance of the system.

This Watermark Multiple Hydrozone System (MHS) will be supplied from the manufacturer as a Factory Wired and Mounted assembly, installed in a rainproof stainless steel locking enclosure measuring 9.5" x 12.25" x 5" with a deadfront door for access to all wiring connections. The soil moisture manager shall be the model #MHS WATERMARK Multiple Hydrozone System as manufactured by the IRROMETER Company, Inc. of Riverside, California.

FEATURES –

- **Easy to Install – New or Retrofit**
- **Individual Area Moisture Control – Reads, Reports, Adjusts**
- **Multiple Manual Operation Overrides**
- **No Maintenance**

BENEFITS –

- **Saves Money, Water and Energy**
- **Automatically Reports Watering History and Irrigation Water Savings**
- **Data can be Downloaded for Analysis**
- **Supports Healthier Turf and Plant Growth**
- **Reduces Runoff**

Specifications –

COMPATIBILITY: The MHS is compatible with any irrigation controller supplying 24 volt AC to the connected valves. It can also provide a dry contact switch closure to a controller's sensor connection.

POWER REQUIREMENTS: Powered by the irrigation controller's 24 volt AC transformer.

MATERIALS: Components are factory wired and mounted in a rainproof stainless steel enclosure.

DIMENSIONS: 9.5 in x 12.25 in x 5 in [24.1 x 31 x 12.7 cm]

200SS-5 Sensor Specifications –

MATERIALS: ABS plastic caps with stainless steel body over a hydrophilic fabric covered granular matrix.

DIMENSIONS – DIAMETER: .875 in (22 mm)

LENGTH: 3.00 in (76 mm)

WIRE LEADS: 20AWG x 5 ft (1.5 m) (2) leads

Nomenclature for ordering:

MHS - 4 - 1

Number of **Sensor pairs** ——— ↑
Number of **Expansion Boards** if needed ——— ↑
(1 or 2)

Base unit handles up to 16 stations/valves. Add 1 or 2 expansion boards for each additional 16 valves (48 max).

CATALOG NUMBER: Catalog #MHS Multiple Hydrozone System (Wired Base Unit)

WATERMARK

WIRELESS MULTIPLE HYDROZONE SYSTEM – W-MHS



The Wireless Multiple Hydrozone System (W-MHS) allows independent moisture control of valve groups when all valves share a common ground. The W-MHS interfaces with any 24 VAC irrigation controller for soil moisture automation. Valves are grouped together into hydrozones based on that location's specific irrigation needs. As many as eight independent moisture sensing locations can be managed with sensors wirelessly reporting to the control panel. Each Hydrozone will interrupt the irrigation cycle based on plant's demand for that location. Each Hydrozone can be independently programmed for the desired moisture level.

WATERMARK Wireless Multiple Hydrozone System — W-MHS

OPERATING PRINCIPLE: The Wireless Multiple Hydrozone System works in conjunction with a conventional 24 volt AC irrigation controller and automates the programmed irrigation schedule based on soil moisture status. This control maximizes the irrigation system efficiency by allowing irrigation to occur only when the soil moisture is sufficiently depleted, providing for optimum plant health while conserving irrigation water.

The irrigation valves are grouped together into two or more "Hydrozones" or groups with similar watering demand, with two Watermark Soil Moisture Sensors located in representative areas of the root zone for the last valve to run in each grouping. These sensors are wired to solar powered radio transmitters that wirelessly send data to the control panel for up to two Hydrozones on each transmitter. The common ground of the irrigation system runs through this panel and returns to the irrigation controller so that the Multiple Hydrozone System acts as a switch on the common ground to allow irrigation only when necessary, based on the selected moisture levels for each valve grouping. Any number of valves can be assigned to a Hydrozone by attaching a small jumper pin connector to the appropriate Hydrozone position on the wiring circuit board. Each Hydrozone is individually adjustable by keypad entry on the W-MHS faceplate.

Unique to moisture manager systems, the W-MHS displays and records system status including current moisture status, last allowed watering and percentage of bypassed programmed irrigations (water savings).

SPECIFICATION INFORMATION: The irrigation system will divide the irrigated area into (up to 8) moisture control areas (Hydrozones) based on similar water requirements, controlling the (up to 48) irrigation valves operated by the controller so irrigation will only occur when soil moisture is sufficiently depleted. Each Hydrozone's moisture status is independently adjustable. Each Hydrozone will contain two (2) Watermark Soil Moisture Sensors placed in the active root zone of the plant material being monitored in the last irrigation zone to run for that Hydrozone. Watermark Sensor locations will have two (2) wires (AWG-UF #18 or larger) which run from the sensor location to the field radio transmitter that will wirelessly send data to a receiver radio connected to the WATERMARK Soil Moisture control panel. All wire connections will be waterproof. All radio communication must be line of sight and unobstructed, providing adequate signal quality to the receiver. All installation and wiring will be in accordance with the Watermark Soil Moisture Control System installation instructions, which are supplied from the manufacturer. A copy of these instructions will be included in the master operations and maintenance manual turned over to the maintenance contractor or the owner at the completion of construction and acceptance of the system.

This Watermark Wireless Multiple Hydrozone System (W-MHS) will be supplied from the manufacturer as a Factory Wired and Mounted assembly, installed in a rainproof stainless steel locking enclosure measuring 9.5" x 12.25" x 5" with a deadfront door for access to all wiring connections. It shall include 2.4 GHz radios for sensor data transmission, that are self powered with integral solar panels and super capacitors. The soil moisture manager shall be the model #W-MHS Wireless WATERMARK Multiple Hydrozone System as manufactured by the IRRROMETER Company, Inc. of Riverside, California.

FEATURES –

- **Easy to Install – New or Retrofit**
- **Individual Area Moisture Control**
– Reads, Reports, Adjusts
- **Multiple Manual Operation Overrides**
- **No Maintenance**

BENEFITS –

- **Wireless**
- **Solar Powered Radio Transmitter with 1500' (457 M) Line of Sight Range**
- **No Batteries Required**
- **Saves Money, Water and Energy**
- **Automatically Reports Watering History and Irrigation Water Savings**
- **Data can be downloaded for analysis**
- **Supports Healthier Turf and Plant Growth**
- **Reduces Runoff**
- **Saves Installation Labor – particularly useful in retrofit applications**

Specifications –

COMPATIBILITY: The W-MHS is compatible with any irrigation controller supplying 24 volt AC to the connected valves. It can also provide a dry contact switch closure to a controller's sensor connection.

POWER REQUIREMENTS: Base receiver and control panel powered by the irrigation controller's 24 volt AC transformer. Field Radio Transmitters are self powered by integral solar panels and super capacitors.

RADIO: 2.4GHz FCC/IC license free for the user.

MATERIALS: Control panel components are factory wired and mounted in a rainproof stainless steel enclosure. Radio components are in IP67 rated enclosures.

DIMENSIONS: Control panel measures 9.5 in x 12.25 in x 5 in [24.1 x 31 x 12.7 cm]. Radio modules fit inside standard 2 in. pipe.

200SS-5 Sensor

Specifications –

MATERIALS: ABS plastic caps with stainless steel body over a hydrophilic fabric covered granular matrix.

DIMENSIONS – DIAMETER: .875 in (22 mm); **LENGTH:** 3.00 in (76 mm)

WIRE LEADS: 20AWG x 5 ft (1.5 m) (2) leads

Nomenclature for ordering:

W-MHS – 4 – 1

Number of **Hydrozones**
(2, 4, 6 or 8)

Number of **Expansion Boards** if needed
(1 or 2)

Base unit handles up to 16 stations/valves. Add 1 or 2 expansion boards for each additional 16 valves (48 max).

CATALOG NUMBER: **Catalog #W-MHS**

Wireless Multiple Hydrozone System
(Wireless Base Unit)

WATERMARK

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