

IRROMETER Soil Moisture Indicators



IRROMETER

All Products Made in U.S.A.

EFFECTIVE JANUARY 1, 2011

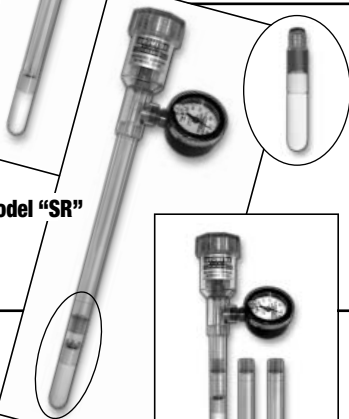
Model "R"



IRROMETER Model "R" — our standard model, for general use with row, tree, and field crops. Shorter lengths for greenhouse and pots. *

Includes reservoir, air free gauge chamber and hermetically sealed IRROMETER vacuum gauge with dual scale of centibars and kilopascals (0-100 cb [kPa] range).

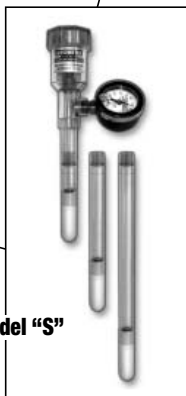
Model "SR"



IRROMETER Model "SR" — has threaded replaceable tip, for general use with row, tree and field crops. *

Includes reservoir, air free gauge chamber and hermetically sealed IRROMETER vacuum gauge with dual scale of centibars and kilopascals (0-100 cb [kPa] range).

Model "S"



IRROMETER Model "S" — has a threaded connection at the top of the tube. Designed for research work where change in instrument length is required for different experiments, and for general use with row, tree, and field crops. When ordering, select Extension Tip(s) in combination with the Reservoir Section. *

Includes reservoir, air free gauge chamber and hermetically sealed IRROMETER vacuum gauge with dual scale of centibars and kilopascals (0-100 cb [kPa] range).

(Indicate Reservoir Section# plus tip# when ordering. EXAMPLE: 200-E12)

Model "LT"



IRROMETER Model "LT" (Low Tension) — is designed for situations where tensions above 30 cb (kPa) are rarely expected. Ideal for very coarse soils and non-soil container-media or where rapidly changing soil water status needs to be observed. Incorporates a replaceable "Quick-Flo" tip (blue color), and low tension vacuum gauge. *

Includes reservoir, air free gauge chamber and hermetically sealed IRROMETER vacuum gauge with dual scale of centibars and kilopascals (0-40 cb [kPa] range).

Model "MLT"



IRROMETER Model "MLT" (Miniature Low Tension) — designed for applications similar to the Model "LT" above. Ideal for use with very coarse soils and non-soil container-media. Its compact size and replaceable "Quick-Flo" tip make it the best choice for greenhouse applications. *

Model "R" (Agriculture)

CAT. NO.	LENGTH
106	6" (15 cm)
112	12" (30 cm)
118	18" (45 cm)
124	24" (60 cm)
136	36" (90 cm)
148	48" (120 cm)

(Longer lengths available)

Model "SR" (Replaceable Tip)

CAT. NO.	LENGTH
206	6" (15 cm)
212	12" (30 cm)
218	18" (45 cm)
224	24" (60 cm)
236	36" (90 cm)
248	48" (120 cm)

(Longer lengths available)

SRT Replacement Tip

Model "S" (Research)

CAT. NO.	LENGTH
200	Reservoir Section
EXTENSION TIPS:	
E6	6" (15 cm)
E12	12" (30 cm)
E18	18" (45 cm)
E24	24" (60 cm)
E36	36" (90 cm)
E48	48" (120 cm)

Model "LT" (Low Tension)

CAT. NO.	LENGTH
506	6" (15 cm)
512	12" (30 cm)
518	18" (45 cm)
524	24" (60 cm)
536	36" (90 cm)

Longer lengths available

QFSRT Replacement Tip

Model "MLT" (Miniature Low Tension)

CAT. NO.	LENGTH
MLT	6" (15 cm)
1007	MLT Service Unit
MLT-TIP	Replacement Tip

Model "TG" (Turf)

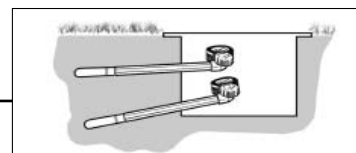
CAT. NO.	LENGTH
312	12" (30 cm)
318	18" (45 cm)



Model "TG"

IRROMETER Model "TG" — for shallow rooted applications such as turf, where installation requires horizontal placement of the sensing tip. *

Includes hermetically sealed IRROMETER vacuum gauge with dual scale of centibars and kilopascals (0-100 cb [kPa] range).



* **IMPORTANT NOTICE** — Service Unit should be purchased with initial order, (see page 2) only one Service Unit is necessary to service all of your IRROMETERS. Please order by Catalog Number.

— Options and Accessories on Page 2 —

951/689-1701



www.IRROMETER.com

IRROMETER Service Units

A Service Unit is necessary for proper operation of the IRROMETER instrument and should be included on initial orders. One unit will service all of your IRROMETERS.

The **Standard Service Unit** is used during initial installation and then periodically for removal of air from instrument to ensure maximum sensitivity and accuracy. The **Test Pump Service Unit** serves the dual purpose of removing air and testing the gauge in one operation.

Standard Service Unit

- CAT. NO. 1001
Includes:
1 hand vacuum pump
1 bottle IRROMETER fluid
25 monthly chart forms
1 reference book
(available in Spanish on request)



Test Pump Service Unit

- CAT. NO. 1002
Includes:
Same items as #1001, except hand vacuum pump is equipped with test gauge.



MLT Service Unit – CAT. NO. 1007 — Includes: Same items as #1001, except vacuum pump is syringe style.

IRROMETER Automation and Output Options

These options provide automation for irrigation valves and electronic output for use with automatic data collection systems. They can be added at the factory when purchased (as shown here) or added to your existing instruments in the field (as accessory items, see below).

-A — Automatic Gauge

For Models R, S, SR, TG, LT

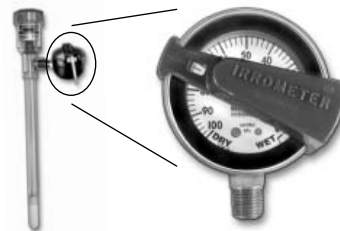
SUFFIX

- AAS** w/AC switch closed past setting
- AAR** w/AC switch open past setting
- ADS** w/DC switch closed past setting
- ADR** w/DC switch open past setting

This suffix must be added to the catalog number, and price must be added to your choice of IRROMETER when ordering to receive a complete instrument.

(add suffix to IRROMETER choice when ordering. EXAMPLE: 212-AAS)

Option "A" – Automatic Gauge – provides direct switching capabilities in addition to indicating available soil moisture. Soil water tension readings above the moisture setting can activate an irrigation valve solenoid, time clock or warning device. A switch mechanism (available for AC or DC) is mounted on the gauge and can be rotated to desired setting. The gauge reads in centibars (cb) and kilopascals (kPa) of soil water tension.

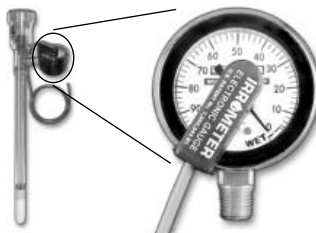


-E — Electronic Gauge

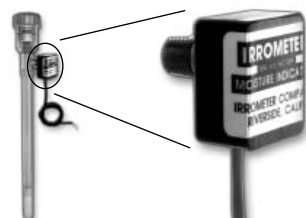
SUFFIX FOR MODELS
-E R, S, SR, TG, LT

This suffix must be added to the catalog number, and price must be added to your choice of IRROMETER when ordering to receive a complete instrument.

(add suffix to IRROMETER choice when ordering. EXAMPLE: 224-E)



Option "E" – Electronic Gauge – is unique in that it can record soil tension readings automatically and can also be read manually. The analog magnetic degree sensor provides a voltage output directly proportionate to the reading shown on the gauge. This signal can be read by most types of data-logging equipment. The gauge reads the soil water tension in centibars (cb) and kilopascals (kPa).



-RSU — Remote Sensing Unit

- | SUFFIX | FOR MODELS |
|----------------------|-------------------------------|
| -RSU-93 | (0-93 kPa) R, S, SR, TG |
| -RSU-16 | (0-16 kPa) LT |
| -RSU-32 | (0-32 kPa) LT |
| -RSU-16 | (0-16 kPa) MLT |
| -RSU-32 | (0-32 kPa) MLT |

This suffix must be added to the catalog number, and price must be added to your choice of IRROMETER when ordering to receive a complete instrument.

(add suffix to IRROMETER choice when ordering. EXAMPLE: 512-RSU-32)

Option "RSU" – Remote Sensing Unit – is designed to show soil moisture levels by converting the reading to a 4-20 mA loop current signal. Built-in pressure transducer improves accuracy. All electronics are sealed in a potted, waterproof housing. Signal can be read by a data logging device or an A/D card designed to read voltage. *(Requires 12-24 VDC excitation current.)*

IRROMETER Accessory Items

CAT. NO.

- 1003 Test Pump Adapter
- 1004 IRROMETER Fluid (1 oz. concentrated)
- 1004-L IRROMETER Fluid (6 oz. concentrated)
- 1005 Chart Forms (MONTHLY)
- 1006 Chart Forms (ANNUAL)
- 1101 Turf Box with locking lid for Model TGA
- P-2001 Model "P" Portable IRROMETER
12" with handle for easy removal (other lengths avail.)

IRROMETER Vacuum Gauges

- 1008 Replacement Gauge (0-100 cb[kPa])
- 1008-A * * Automatic Gauge (0-100 cb[kPa])
with switching capabilities (specify as listed above)
- 1008-E Electronic Gauge (0-100 cb[kPa])
with voltage output (see specifications above)

CAT. NO.

- 1008-LT Replacement Gauge – Model LT (40 cb [kPa])
- 1008-LT-A * * Automatic Gauge – Model LT (40 cb [kPa])
with switching capabilities (specify as listed above)
- 1008-LT-E Electronic Gauge – Model LT (40 cb [kPa])
with voltage output (see specifications above)
- 1008-MLT Replacement Gauge – Model MLT (40 cb [kPa])
- 1009- * * Replacement Solid State Switch only
for Automatic Gauges (specify as listed above)

RSU Remote Sensing Unit (4-20 mA transducers)

- RSU-16-1/8 0-16 cb (kPa) for use with Model MLT (1/8 NPT)
- RSU-16-1/4 0-16 cb (kPa) for use with Model LT (1/4 NPT)

CAT. NO.

- RSU-32-1/8 0-32 cb (kPa) for use with Model MLT (1/8 NPT)
- RSU-32-1/4 0-32 cb (kPa) for use with Model LT (1/4 NPT)
- RSU-93-1/4 0-93 cb (kPa) for use with Model R, S, SR & TG (1/4 NPT)

Replacement Tips & Other Items

- SRT "SR" Replacement Tip (threaded bushing)
- RTWOT Replacement Tip (without threads)
- QFSRT "LT" Replacement Tip
- MLT-TIP "MLT" Replacement Tip
- CAP IRROMETER Cap and Stopper Assembly
- STOP Stoppers (1 doz.)
- SR-O O-Ring – Model SR/LT (1 doz.)

* Refer to Automation and Output Options (above) for appropriate suffix.



IRROMETER Soil Solution Access Tube

Model SSAT (Complete) — For easy extraction of soil solution samples for testing salinity levels or plant nutrients in soil water. Tube complete with suction line, stopper and clamp as pictured. Clear butyrate tubing is used, assuring leak-proof tip connection. Requires vacuum source. (see options below)

NOTE: Add "LT" suffix to catalog number for "Quick-Flo" tip. EXAMPLE: A6C-LT



Model SSAT (Complete)

CAT. NO.	LENGTH
A6C	6" (15 cm)
A12C	12" (30 cm)
A18C	18" (45 cm)
A24C	24" (60 cm)
A36C	36" (90 cm)
A48C	48" (120 cm)
A60C	60" (150 cm)
A72C	72" (180 cm)

Longer lengths available

IRROMETER Vacuum Pump for Model SSAT

The DS-50CC Disposable Syringe is used primarily to extract soil solution from SSAT tube and can also be used to create a partial vacuum on shorter tubes [12 in. (30 cm) or less]. For SSAT tubes longer than 12 in. (30 cm), the SSAT Vacuum Pump (CAT. NO. 1002-SSAT) is required to create a sufficient vacuum.



Analysis kits and meters are available from Spectrum Technologies, Plainfield, IL 800-248-8873 / 815-436-4440 or Hach Company, Loveland, CO 800-227-4224, Int'l: 970-669-3050.

CAT. NO.	Description
1002-SSAT	SSAT Vacuum Pump
DS-50CC	Disposable Syringe
FC	Finger Clamp
SLC-T	Suction Line Tubing (CFT)
SGL-STOP	Single Hole Stopper (1 doz.)
DBL-STOP	Double Hole Stopper (1 doz.)
SLA	Suction Line Assembly (to 24")

Longer lengths available

IRROMETER Pressure Gauges

Hermetically Sealed – (7 Series)

Hermetically sealed **pressure gauges** are water tight, dust proof, shock resistant, and have a 2 in. (51mm) shatterproof face, bottom connected gauge with 1/4 in. brass standard pipe thread stem (NPT). PSI outer scale & kPa inner circle.

OUTPUT OPTIONS:

Switching Gauge – is a **pressure gauge** with direct switching capabilities. Adjustable pressure selector may be set to any desired pressure. The switch will be closed past the setting to actuate connected device. Switch available for AC or DC power and also in reverse switch action (open past the setting). Switching position selected should fall in the center 1/3 of the gauge range.

Electronic Gauge – is a unique **pressure gauge** in that it can be manually read as well as automatically record pressure readings. It is an analog magnetic degree sensor that provides a voltage output directly proportional to the reading showing on the gauge. This signal can be read by most brands and types of data-logging equipment.

Liquid Filled – (7LF Series)

Glycerin filled **pressure gauges** feature stainless steel case with durable polycarbonate face. 2-1/2 in. (63mm) face, bottom connected gauge with 1/4 in. brass standard pipe thread stem (NPT). PSI outer scale & kPa inner scale.

For severe service conditions with pulsation and vibration.

Snubber – Factory installed snubber improves gauge life by absorbing surges. Snubber is threaded for removal and cleaning if gauge becomes plugged with debris.

Gauge part numbering nomenclature for ordering:

7 -100 -E -S

7 Series Gauge

Pressure Range:

- 15 psi – 100 kPa
- 30 psi – 200 kPa
- 60 psi – 400 kPa
- 100 psi – 700 kPa
- 200 psi – 1400 kPa
- 400 psi – 2800 kPa

Output Options (choose only one)

- w/AC switch closed past setting = **AAS**
- w/AC switch open past setting = **AAR**
- w/DC switch closed past setting = **ADS**
- w/DC switch open past setting = **ADR**
- w/electronic output = **E**

Snubber

w/Snubber = **S**

For example a 100 psi gauge with an Electronic Output and Snubber is 7-100-E-S.

Gauge part numbering nomenclature for ordering:

7LF -100 -S

7LF Series Gauge

Pressure Range:

- 60 psi – 400 kPa
- 100 psi – 700 kPa
- 200 psi – 1400 kPa
- 400 psi – 2800 kPa

Snubber

w/Snubber = **S**

For example a 100 psi gauge with a Snubber is 7LF-100-S.

PATENTED

SSAT

GAUGES

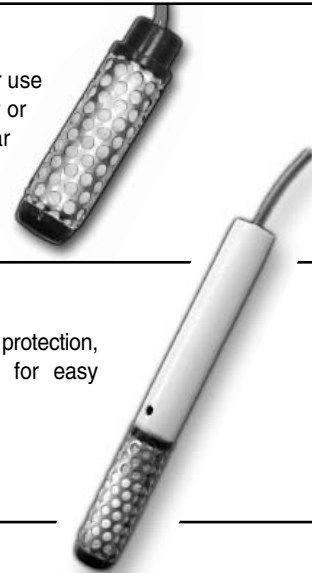
WATERMARK Soil Moisture Sensor

Model 200SS (Basic Sensor)

CAT. NO.	LENGTH
200SS-5	5' (1.5 m)
200SS-10	10' (3 m)
200SS-X	6" (15 cm)

(Longer lengths available)

Standard **WATERMARK Soil Moisture Sensor**. For use with all crops. To be used with **WATERMARK Meter** or **Monitor**. Reads electrical resistance in 0-200 centibar and kilopascal (cb [kPa]) range.



WATERMARK Soil Moisture Sensor — Voltage Version

CAT. NO.	LENGTH
200SS-V	10' (3 m)

Modified WATERMARK Soil Moisture Sensor. Provides sensor protection, automatic temperature compensation and linear voltage output for easy interfacing with other manufacturers' electronic reading devices.

WATERMARK Meter

CAT. NO.	Description
30-KTCD-NL	Digital Readout Meter
30-KTCD-Cable	Replacement Cable

(Only one meter is necessary to read multiple **WATERMARK Sensors**)



WATERMARK Meter — Solid state, hand-held, alternating current resistance bridge meter for reading standard **WATERMARK sensors**. Adjustable for soil temperature variations. Touch pad operating panel with LCD display. Includes durable case, 9 volt battery and field replaceable cable assembly.

WATERMARK Monitor

All Monitor products come complete with **WaterGraph** software that provides for downloading and graphic functions. No additional software is required for operation.

Battery operated data-logger that automatically reads as many as eight sensors. User can view readings on the screen, download data to a laptop computer, or use our Data Shuttle to transport the information to a computer. When combined with one of our Remote Data Access Options data can be viewed from a remote location. Monitor accepts **WATERMARK** soil moisture, soil temperature, and switch closure sensors. See Monitor Packages for sensor combination options.

POPULAR MONITOR PACKAGES:

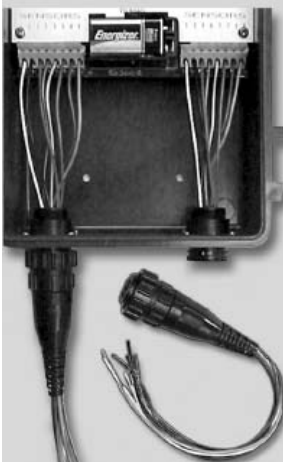
CAT. NO.	Description	900M-1-6-PSI 60
900M	Monitor (with sensors) includes: one temperature and seven WATERMARK Sensors , each with 15' (4.5 m) wire leads	WATERMARK Monitor with one Soil Temperature Sensor, six 200SS-15 Soil Moisture Sensors and one 60 psi switching pressure gauge. Provides temperature compensated WATERMARKS and a switching gauge for recording irrigation events.
900M-8	WATERMARK Monitor with eight 200SS-15 soil moisture sensors.	

COMPONENTS:

900M-O	Monitor only (without sensors)	200TS	Temperature Sensor
200SS-15	WATERMARK Sensor (15' [4.5 m] wire lead with tinned ends)	200TSX	Temperature Sensor extended range
		200SC	Serial Cable



Options for Model 900 Monitor —



RSU Wiring Adapter — (not shown) for reading **IRROMETER** Option "RSU" transducers. One adapter required per "RSU" to convert the sensor wiring. (Requires 12-24 VDC excitation current).

E Wiring Adapter — (not shown) for reading **IRROMETER** Option "E" Gauge. One adapter accepts eight "E" inputs.

CAT. NO.	Description
-QD	-QD Quick Disconnect (order as 900M-QD)
QD-Cable	Cable End Only
900M-RSU	"RSU" Wiring Adapter
900M-RGA	Rain Gauge Adapter
900M-E	"E" Wiring Adapter

Quick Disconnect — makes Monitor easily removable from the field location with two multi-pin quick disconnect cable connections for sensor wiring. Comes pre-installed in the Monitor enclosure and provides a 12" (30 cm) wire tail.



Rain Gauge Adapter — converts 950RG Rain Gauge information to a readable signal for the **WATERMARK Monitor**. Comes in an outdoor mountable housing with a 9-volt battery. Includes its own **WaterGraph** software that will display periodic or daily rainfall totals.

Wireless Monitor



950 Wireless Components

- 950R Receiver Module (with solar panel and battery)
- 950R-O Receiver Module only (w/o solar panel and battery)
- 950T-O Transmitter Module only
- 950R-OE Orchard Extension (extension serial cable and enclosure for use when 950R must be mounted high to establish good signal)

Popular Transmitter Packages

- 950T-TW Transmitter Module Package (with 1 Temp + 3 WATERMARKS)
- 950T-W Transmitter Module Package (with 4 WATERMARKS)

Battery operated data-logger automatically reads up to 64 sensors. Provides **wireless** transmission of data from sensor transmitter to receiver. Line of sight rural transmission range up to 1500' (457m). Reading can be viewed on the screen, downloaded to a laptop computer, or use our Data Shuttle to transport the information to a computer. When combined with one of our Remote Data Access Solutions, data can be viewed remotely. Complete system includes Receiver Module plus desired number of Transmitter Modules and sensors. Up to 16 transmitters (each with four sensor inputs) can be used per Receiver Module. Transmitter Module accepts soil moisture and temperature sensors or Model E Electronic Gauge. Receiver module accepts switch closure sensor or Rain Gauge input. See *Popular Transmitter Packages* for sensor combination options.

Options for Model 900 & 950 Monitors —



7- * -ADS — Switching Gauge can be read by WATERMARK Monitors to indicate when an irrigation system turns on and off.



7- * -E — Electronic Gauge can be read by WATERMARK Monitors To indicate irrigation system pressure readings at the point of gauge connection.

* See pg. 3 for catalog # and prices.



Data Shuttle — is used to collect data from the 900M and 950R Monitor. Stores data on a multi media card which is then transferred to the user's computer using the included card reader. Includes Data Shuttle with battery, cable, storage pouch, instructions, multi media card, card reader and software.



Data Shuttle —

- 900DS Shuttle, cable, multimedia card
- USB to Serial Adapter (converts a USB port on a laptop to DB9 serial)
- 950RG Rain Gauge
- 900AC AC Transformer



Rain Gauge



Data Access Options for both the 900 and 950 Monitors improve productivity by bringing important soil moisture information to you. Remote areas and multiple crop locations can be monitored from a central location. Complimentary hardware can be combined to suit your application. Long Range Radios have a range of several miles. Extended Range options include Cellular Gateway (for 900 or 950) and Satellite Modem (for 900 only) which provides world-wide coverage via the internet.

NOTE: High gain directional antennas are available to enhance transmission for difficult or long range site conditions. Please consult factory for recommendations and pricing.

Remote Data Access Options

Hardware —

- 900M-FR Field Radio
- 900M-BR Base Radio (Indoor)
- 900M-FR2BR Field to Base Converter
- 900M-ER Ethernet Radio Gateway
- 900M-CG Cellular Gateway
- 900M-SAT Satellite Modem
- 900M-BP-5W Battery Pack — 5 watt
- 900M-BP-10W Battery Pack — 10 watt
- 900M-BP-10W-LB Battery Pack — 10 watt (large)
- 900M-BP-20W Battery Pack — 20 watt

WATERMARK



Let **IRRROMETER** collect the data for you!!

Viewing soil moisture data on the internet is easy with IRRROMETER's Web Based Services. Provides the user with secure web access to automatically collected data anytime and anywhere. Choose from plans listed below.

Cellular Data Service (CDS) — provides automatic collection and viewing of data from one (1) Monitor (models 900 or 950) via IRRROMETER supplied GPRS internet connection. Works well in applications that have a good network of cellular radio towers. Expansion of additional Monitors is possible using appropriate Field Radio hardware and adding WRS service from below.

Satellite Data Service (SDS) — provides automatic collection and viewing of data from one (1) Monitor (model 900 only) via IRRROMETER supplied ORBCOMM® satellite connection. Works well in applications where cellular service is limited.

Web Reporting Service (WRS) — allows automatic collection and viewing of data from as many as five (5) Monitors (models 900 or 950) via **existing** broadband internet connection. Can be added to CDS when customer wants to access multiple Monitors. Does not include Internet connection.

Web Based Services

CAT. NO.	Web Reporting Service
WRS	Web Reporting Service
USA & EU*	CDS-2 Cellular Data Service (2 mb per mo.)
	CDS-5 Cellular Data Service (5 mb per mo.)
	CDS-20 Cellular Data Service (20 mb per mo.)
INT'L*	CDS-2-INTL Cellular Data Service (2 mb per mo.)
	CDS-5-INTL Cellular Data Service (5 mb per mo.) (Coverage in over 80 countries.)
SDS	Satellite Data Service

*Contact IRRROMETER for specific country coverage and availability
(WEB BASED SERVICES ARE BILLED ANNUALLY.)

951/689-1701



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LANDSCAPE AUTOMATION PRODUCTS

WATER SWITCH

CAT. NO.

WS1 (includes 1 sensor)

For Residential Systems – Overrides entire irrigation controller operation when soil becomes wetter than the moisture setting. Connects to the sensor input connections of an AC irrigation controller.



WS-1 Module takes hourly readings from a single sensor, which is buried in the root zone of turf grass. Select from four moisture levels or the bypass position for sensor control override. Includes WS-1 control module, one WATERMARK #200SS-X sensor, and 2 direct burial wire nuts. Weather resistant solid state electronics. Packaged for display.

WATERMARK Electronic Module

CAT. NO.

WEM (includes 2 sensors)

For Valve Control – Overrides valve operation when soil becomes wetter than the moisture setting. Allows any 24 VAC solenoid valve to be controlled individually by two moisture sensors located in the soil at different depths of the irrigated area. Takes a reading each time the

NOTE: Dry contact version available for non-common interrupt applications.



valve is programmed to operate. Also used to interrupt controller master valve circuit or common, to override entire irrigation controller. Select from 11 moisture levels or bypass position for sensor control override. Includes WEM control module and two WATERMARK #200SS-5 sensors. Weather resistant solid state electronics. Packaged for display

WATERMARK Battery WEM

CAT. NO.

WEM-B (includes 2 sensors)

For Battery Controllers – Battery powered version of the WATERMARK Electronic Module (WEM) for use with battery powered (DC) irrigation controllers that have sensor input connections. Every few minutes module reads two sensors, which are in the soil at



different depths of the irrigated area. Overrides controller operation when soil is wetter than the setting. Select from nine moisture levels or bypass position for sensor control override. Includes WEM-B control module, two #200SS-5 sensors and 9-volt battery. Weather resistant solid state electronics. Packaged for display.

WATERMARK Soil Moisture Manager

This system allows independent moisture control of valve groups when all valves share a common ground. The MHS (Multiple Hydrozone System) module interfaces multiple WEMs (WATERMARK Electronic Module) 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 8 independent moisture sensing locations can be managed. The individual WEM assigned to a hydrozone will interrupt irrigation cycle based on plant's demand for that location. Each WEM can be independently adjusted for desired moisture level. Jumper Cables (JC) signal the system to operate the active hydrozone only.

Components can be ordered individually for installation in existing controller enclosure, factory wired and mounted on a backpanel for installation in an enclosure, or can be factory wired and mounted in our non-metallic (ABS) or stainless steel enclosures. This flexibility allows the user to specify the configuration based on their application.

Nomenclature for ordering a complete system:

MHS - 6 - 24 - PE

Model MHS (one required per controller) →
 # of WEMs (one required per hydrozone) →
 # of Jumper Cables (one required per valve) →
 Type of mounting – select FW, PE or SE →

FOR EXAMPLE – a system with 6 hydrozones, and 24 valves in a plastic enclosure is MHS + 6 WEMs + 24 JC + PE mounting.

Components –

CAT. NO.

MHS Multiple Hydrozone System Module
 The brain of the system – allows WEMs to control valves independently.

WEM WATERMARK Electronic Module
 interrupts valve operation based on soil moisture setting.

JC Jumper Cable signals active valve

Mounting Options –

-FW Factory Wired & Mounted on aluminum backpanel (11"x16") for mounting in your enclosure. Maximum of 8 hydrozones/WEMs.

-PE NEMA 3R ABS Plastic wall mount lockable enclosure, comes factory wired and mounted. Maximum of 6 hydrozones/WEMs.

-SE NEMA 3R Stainless Steel wall mount locking enclosure, comes factory wired and mounted. Maximum of 8 hydrozones/WEMs.



WEM



JC



MHS



-FW



-PE

-SE

IRROMETER, SSAT or WATERMARK Installation Tools

IRROMETER

SSAT

WATERMARK

Slide Hammer — Steel slide hammer with 7/8" (22mm) diameter x 48" (120 cm) long insertion tip, calibrated every 12" (30 cm).

Top of tool is sliding hammer that drives tip into, and back out of, the ground, leaving a smooth borehole for sensor insertion.

CAT. NO. 1012



Coring Tool Kit — Nickel Plated 7/8" (22 mm) soil coring tool. Comes as a kit in fabric storage pouch with two 12" (30 cm) extensions and handle for making up to a 36" (90 cm) access hole. Can also be used for soil sampling.

CAT. NO. 1013



Auger Tool Kit — Nickel Plated 1" (25 mm) soil auger. Makes oversize hole for grout style sensor installation in hard or rocky soils. Comes as a kit in fabric storage pouch with two 12" (30 cm) extensions and handle for making up to a 36" (90 cm) access hole.

CAT. NO. 1014

Specialty accessories available for deep installations, consult factory for pricing and availability.



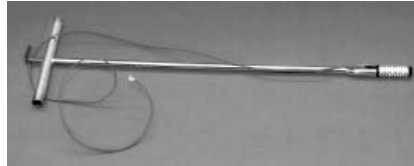
Extension Rod — 12" (30 cm) extension rod for #1013 or #1014 (above) for making deeper access holes.

CAT. NO. 1015



Turf Coring Tool — Turf style installation tool for shallow sensor installation depths, to 12" (30 cm). Nickel plated 7/8" (22 mm) soil coring tool with integral handle. Can also be used for soil sampling.

CAT. NO. 1016



WATERMARK Insertion Tool — WATERMARK sensor insertion tool. Tee handle style tool for inserting the WATERMARK sensor up to 30" (76 cm) into the borehole created by one of the tools shown here. Has internal ejection rod inside tube to push sensor off of tool once fully inserted into borehole.

CAT. NO. 1017



Hole Enlarger Kit — Includes 12" (30 cm) extension rod and three sizing tips to enlarge borehole in soils that shrink.

CAT. NO. 1018

Repair

● IN NORTH AMERICA ONLY ●

- R1 Recondition **IRROMETER** (R, SR, TG)
(includes new tip, stopper, complete cleaning and gauge check)
- R1-LT Recondition **IRROMETER LT** or **MLT**
(includes new tip, stopper, complete cleaning and gauge check)
- R2 Repair Gauge (R, SR, TG)
- R2-LT Repair Gauge (LT, MLT)
- R3 Re-Tip **IRROMETER** only
- 1008 New Gauge

- 1008-LT New LT Gauge
- 1008-MLT New MLT Gauge
- EXTEND Extend **IRROMETER**
- RHVP Recondition Hand Vacuum Pump (plus parts)
- TRADE-IN Trade-In Plan (exchange old for new) discount on new
- CONVERT Convert Model "R" to "SR" (replaceable tip)
(add to recondition or re-tip, see above)

Ship via **UPS** prepaid to: 8835 Philbin Ave., Riverside, CA 92503
NOTE: Do **NOT** use street address for any shipments via the U.S. Postal Service.

951/689-1701



www.IRROMETER.com

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Weight and Measurement Information

IRROMETER Net Weights

LENGTHS	6 in. (15 cm)	12 in. (30 cm)	18 in. (45 cm)	24 in. (60 cm)	36 in. (90 cm)	48 in. (120 cm)	60 in. (150 cm)
	.383 kg .844 lb.	.439 kg .968 lb.	.496 kg 1.09 lb.	.553 kg 1.22 lb.	.666 kg 1.47 lb.	.780 kg 1.72 lb.	.893 kg 1.97 lb.
SSAT Tubes	.080 kg .176 lb.	.115 kg .254 lb.	.150 kg .331 lb.	.185 kg .408 lb.	.255 kg .562 lb.	.325 kg .717 lb.	.395 kg .871 lb.

200SS	WATERMARK Sensor .....	.071 kg	.....	.157 lb.
30-KTCD-NL	WATERMARK Meter .....	.341 kg	.....	.752 lb.
MHS ___-FW	WATERMARK Multiple Hydrozone System (complete)	2.72 kg	.....	6 lb.
WEM, WS1 or WEM-B	WATERMARK Modules .....	.23 kg	.....	.5 lb.
900M	WATERMARK Monitor	2.16 kg	.....	4.76 lb.
950R	Wireless Monitor Receiver	3.63 kg	.....	8 lb.
950T-TW or 950T-W	Wireless Monitor Transmitter Bundle .....	.91 kg	.....	2 lb.

Accessory Net Weights

	KG.	LB.
1001 Service Unit .....	.484	1.07
1002 Test Pump Service Unit .....	.654	1.44
1004 IRROMETER Fluid .....	.085	.187
1005 Monthly Chart (100) .....	.128	.28
1006 Annual Chart (Doz.) .....	.113	.25
1012 Slide Hammer	14.97	33.00
1013 Coring Tool Kit	1.36	3.00
1014 Auger Tool Kit	1.36	3.00
1017 WATERMARK Insertion Tool	1.36	3.00
Gauge .....	.170	.375
Display Board	2.750	6.06

F.O.B. Riverside, California, and apply to North America. (U.S. Dollars)

Terms — Cash, VISA, MasterCard with order or C.O.D. Net 30 days with credit previously established.

Prices and specifications subject to change without notice.

Show catalog number on purchase order.



Available upon request.

Warranty: The IRROMETER COMPANY warrants its products against defective workmanship or materials under normal use for one year from the 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.

Optimizing Irrigation. . . Maximizing Conservation. . . Worldwide. . . Since 1951

IRROMETER COMPANY, INC.

Shipping Address:
8835 Philbin Ave.
Riverside, California 92503

Mailing Address:
P.O. Box 2424
Riverside, California 92516-2424

Phone: **951/689-1701**
Fax: **951/689-3706**
Email: **sales@IRROMETER.com**

LITHO U.S.A. (10/10) #9WO

