

NETAFIM WATER METERS

MEASUREMENT IS THE KEY TO GOOD, EFFECTIVE WATER MANAGEMENT

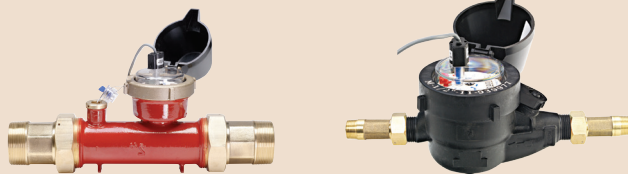
It is a fact that all landscapes are affected if irrigation is not consistent and accurate. The use of water meters ensures professionals are able to measure and effectively manage the watering of their landscapes. Netafim Water Meters provide the confidence and assurance that the correct amount of water and fertilizer (nutrients) are delivered to the landscape maximizing results and reducing energy costs.

- Measuring your irrigation water with a Water Meter is a more accurate way to deliver water.
- Water Meters monitor system performance and record total water applied.
- Water Meters ensure verification of water received versus water pumped or purchased.
- Provide accurate water measurement if required by private or governmental agency.
- Some models read flow rate and can function as a flow meter.

NETAFIM FAMILY OF WATER METERS

'M' AND 'WMR' WATER METERS

Industry's smallest water meters. They offer the best cost, performance and long life. Wide clearances in the measuring chamber and negligible area of contact between static moving parts are the main reasons for the high reliability of this design, even in hard water.
 'M' Sizes: 3/4", 1", 1/2" (cast iron or plastic body)
 'WMR' Size: 2" (cast iron body)



'IRT' WATER METERS

Ideal for moderate to dirty water conditions. The specially designed paddle wheel measuring device provides a free water passage resulting in low headloss and the ability to accurately measure water with high levels of impurities or debris. Accuracy is achieved over a wide range of flows.
 Sizes: 3", 4", 6", 8" and 10" (cast iron body)



'WST' WATER METERS

A double magnetic transmission which drives the register and a unique design enables these water meters to handle high loads of sand since only the impeller is in contact with the water. Cast iron body
 Sizes: 3", 4", 6", 8", 10" and 12" (cast iron body)



HYDROMETERS

A hydraulic valve and water meter combined in a single unit saving space and installation costs. The valve is double-chambered for quick action and positive opening/closing. Adding pilot valves and solenoids enables remote and automatic operation. Requires no straight pipe installation requirements.
 Sizes: 1 1/2", 2", 3", 4", 6", and 8" (cast iron body)



OCTAVE ULTRASONIC WATER METERS

Double beam ultrasonic sensors provide highly accurate flow data with $\pm 1.5\%$ accuracy. There are no moving parts in the flow path for precise measurements, and a multi-line readout screen provides immediate reporting. Lithium batteries provide a 10 year life expectancy. Octave also offers a 5 year pro-rated warranty - the industry's longest.
 Sizes: 2", 3", 4", 6", 8", 10" and 12" (cast iron body)



APPLICATION & INSTALLATION CONSIDERATIONS

Determining the appropriate water meter for your application involves several requirements: Water Quality, Flow Range and Straight Pipe Installation Requirement. The following information will help with the selection of the right water meter for your site requirements.

WATER QUALITY

The quality of irrigation water is an important consideration when choosing the right water meter for your system. Netafim has a full line of water meters for accurate measuring in good or poor water conditions.

GOOD WATER CONDITIONS

- Water with minimal organic materials
- Well water with minimal sand

A water meter with a full diameter impeller is recommended for good water conditions.

POOR WATER CONDITIONS

- Water with moderate organic materials
- Well water with sand

A water meter with a paddle wheel is recommended for poor water conditions. The water is measured with a paddle wheel located at the top of the water passage providing a free water passage eliminating clogging from debris. Paddle wheel water meters can also be used in good water conditions. However, water meters should always be installed downstream of a filter.

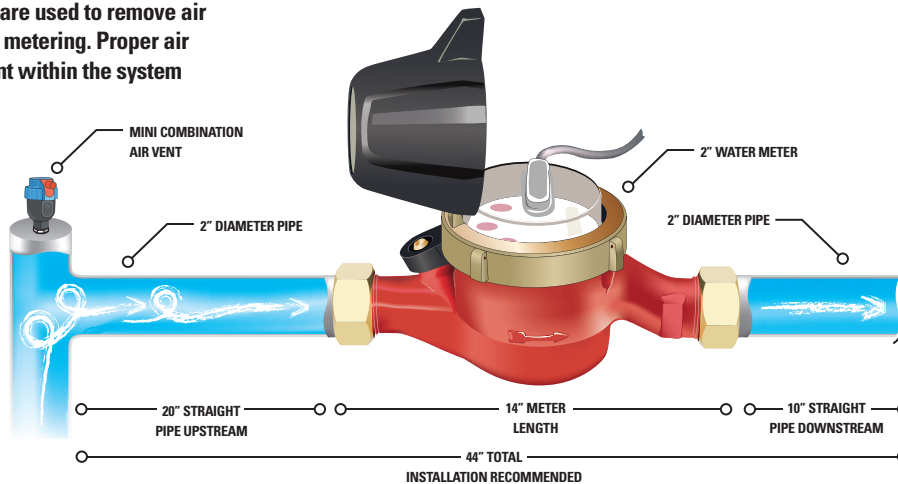
FLOW RANGE

Water meter functionality and accuracy is dependent on minimum and maximum flow ranges. Netafim water meters accurately measure water from a minimum of 0.06 GPM up to a maximum of 5,500 GPM.

STRAIGHT PIPE INSTALLATION REQUIREMENT

When water flows through a pipe, any transition through a fitting, elbow or change in pipe size causes turbulence in the water. In order to eliminate water turbulence, some water meters require straight pipe before and after the water meter. Straight pipe installation refers to the length of straight pipe needed before (upstream of the water meter) and after (downstream of the water meter). When the straight pipe installation requirement refers to D (diameter), this is the size of the water meter.

Continuous Acting Air Vents are used to remove air from the system for accurate metering. Proper air vent selection and placement within the system is required.



CONFIGURING STRAIGHT PIPE INSTALLATION EXAMPLE:

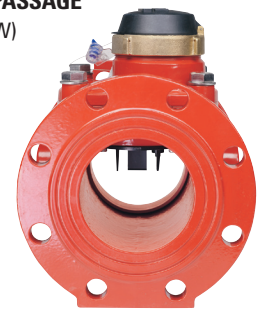
Water Meter:	2"
Upstream:	10 x 2" diameter meter = 20" (10 x D) 20" of straight pipe required upstream of the meter
Downstream:	5 x 2" diameter meter = 10" (5 x D) 10" of straight pipe required downstream of the meter
Meter Length:	14"
Total:	44" total installation requirement



CLEAR WATER PASSAGE
(SIDE VIEW)



FULL DIAMETER IMPELLER
(SIDE VIEW)




PADDLE WHEEL
(SIDE VIEW)

WATER METER SELECTION

For specific ordering information including Model Numbers, refer to the Landscape & Turf Price Catalog or contact Netafim USA Customer Service at (888) 638-2346.

'M' WATER METERS


STRAIGHT PIPE REQUIREMENT: 0 D X 0 D



SIZE	MINIMUM FLOW RATE	MAXIMUM FLOW RATE	INSTALLATION REQUIREMENT *
3/4" PLASTIC	0.9 GPM	14 GPM	11 1/4" TOTAL
3/4" IRON	0.9 GPM	14 GPM	11 1/4" TOTAL
1" PLASTIC	1.2 GPM	20 GPM	14 3/4" TOTAL
1" IRON	1.2 GPM	20 GPM	14 3/4" TOTAL
1 1/2" IRON	3.5 GPM	55 GPM	17 1/4" TOTAL

'IRT' WATER METERS

STRAIGHT PIPE REQUIREMENT: 10 D X 5 D



SIZE	MINIMUM FLOW RATE	MAXIMUM FLOW RATE	INSTALLATION REQUIREMENT *
3"	45 GPM	500 GPM	54" TOTAL
4"	50 GPM	688 GPM	70" TOTAL
6"	65 GPM	1,375 GPM	102" TOTAL
8"	130 GPM	2,475 GPM	134" TOTAL
10"	300 GPM	4,125 GPM	166" TOTAL

'WMR' WATER METERS


STRAIGHT PIPE REQUIREMENT: 10 D X 5 D



SIZE	MINIMUM FLOW RATE	MAXIMUM FLOW RATE	INSTALLATION REQUIREMENT *
2"	8.8 GPM	110 GPM	44" TOTAL

'WST' WATER METERS


STRAIGHT PIPE REQUIREMENT: 5 D X 2 D



SIZE	MINIMUM FLOW RATE	MAXIMUM FLOW RATE	INSTALLATION REQUIREMENT *
3"	4.0 GPM	660 GPM	30" TOTAL
4"	8.0 GPM	1,266 GPM	38" TOTAL
6"	15 GPM	1,431 GPM	54" TOTAL
8"	38 GPM	2,475 GPM	70" TOTAL

HYDROMETERS


STRAIGHT PIPE REQUIREMENT: 0 D X 0 D



SIZE	MINIMUM FLOW RATE	MAXIMUM FLOW RATE	INSTALLATION REQUIREMENT *
1.5"	4.4 GPM	55 GPM	6 15/16" TOTAL
2"	20 GPM	95 GPM	8 11/16" TOTAL
3"	53 GPM	220 GPM	11 1/4" TOTAL
4"	79 GPM	380 GPM	14 13/16" TOTAL
6"	198 GPM	860 GPM	9 11/16" TOTAL
8"	357 GPM	1,500 GPM	23 9/16" TOTAL

'WST' WATER METERS

STRAIGHT PIPE REQUIREMENT: 10 D X 5 D




SIZE	MINIMUM FLOW RATE	MAXIMUM FLOW RATE	INSTALLATION REQUIREMENT *
10"	44 GPM	4,125 GPM	168" TOTAL
12"	51 GPM	5,500 GPM	200" TOTAL

HYDROMETER (MASTER VALVE) CONTROL OPTIONS

MANUAL ELECTRIC
PRESSURE REDUCING MANUAL ELECTRIC
PRESSURE REDUCING MANUAL ELECTRIC HIGH PRESSURE (30-130 PSI)
PRESSURE REDUCING MANUAL ELECTRIC HIGH PRESSURE (100-285 PSI)

OCTAVE ULTRASONIC WATER METERS

STRAIGHT PIPE REQUIREMENT: 2 D X 2 D



SIZE	MINIMUM FLOW RATE	MAXIMUM FLOW RATE	INSTALLATION REQUIREMENT *
2"	0.25 GPM	250 GPM	16" TOTAL
3"	1 GPM	500 GPM	21" TOTAL
4"	1.5 GPM	1,000 GPM	25" TOTAL
6"	3 GPM	2,000 GPM	36" TOTAL
8"	5 GPM	3,500 GPM	46" TOTAL
10"	14 GPM	5,500 GPM	68" TOTAL
12"	14 GPM	5,500 GPM	68" TOTAL

* Installation Requirement = Straight Pipe Upstream + Meter Length + Straight Pipe Downstream

± 2% Accuracy Rate for Minimum and Maximum Flow Rates for: 'M', 'WMR', 'IRT' and 'WST' Water Meters

± 1.5% Accuracy Rate for Minimum and Maximum Flow Rates for: Octave Ultrasonic Water Meters

WATER METER REGISTERS

Netafim registers are simple to operate while providing reliable and accurate readings. Features include:

- Hermetically sealed - guaranteed not to accumulate moisture or fog.
- Mounted in a dry compartment - no contact with the water.
- Instantaneous readings - easy to read.
- Removable - even when the meter is operating.
- Electrical output - driven by a magnetic coupling that activates a reed switch creating a pulsed output for communicating with control and monitoring equipment.
- Interchangeable and easily replaced with common tools.

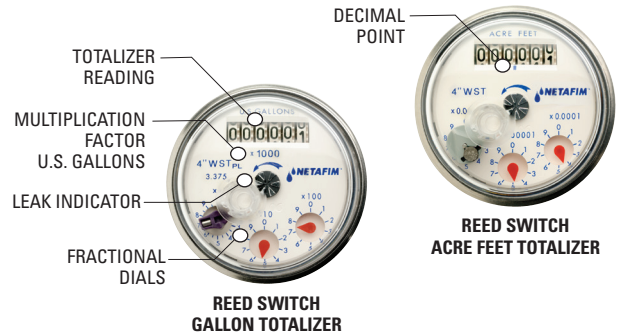
REED SWITCH REGISTER

GALLON OR ACRE FEET TOTALIZER

The Reed Switch Register has a low frequency pulse output for communicating with control and monitoring equipment. A leak indicator in the center of the dial registers the lowest flow through the meter. Flows are totalled in U.S. Gallons and each dial face indicates the multiplication factor (located directly under the totalizer reading) or flows are totalled in Acre Feet with the decimal point indicated in blue on the register. Three small fractional dials measure quantities smaller than the totalizer reading.

ELECTRICAL SPECIFICATIONS

- Maximum contact current: 50 mA
- Maximum contact voltage: 48 VDC



ELECTRONIC (ER) DIGITAL REGISTER

GPM RATE OF FLOW WITH GALLON OR ACRE FEET TOTALIZER

Combines standard digital register features with dry pulse output capabilities. Clearly displays the rate of flow and volume readings in Gallons or Acre Feet. Mounted inside an IP68 stainless steel glass encapsulated cap. Multi-line digital LCD readout displays 9 digits for Total Volume in U.S. Gallons (U.S.G.) or Acre Feet and 4 digits for Rate of Flow in Gallons per Minute (GPM). It's programmable to a wide variety of pipe sizes. Register is interchangeable with common tools.

ELECTRICAL SPECIFICATIONS

- Minimum voltage: 3.6 VDC
- Maximum contact current: 200 mA
- Maximum contact voltage: 40 VDC
- Maximum distance between meter and control board: 65'

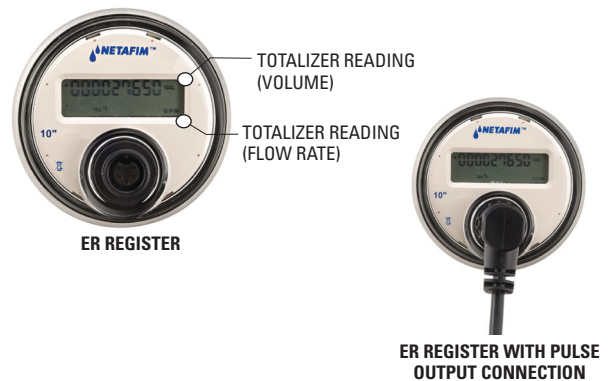


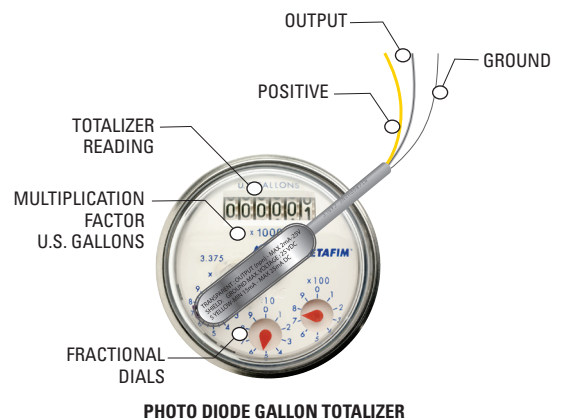
PHOTO DIODE REGISTER

GALLON TOTALIZER

A sensor combines an IR light source and a light sensitive diode in one package. Signals are created when the light beam created by the IR light is interrupted by a rotating element. The Photo Diode Register includes pulse output (open collector) for communicating with control and monitoring equipment. This register requires a constant supply of DC power. Flows are totalled in U.S. Gallons based on the multiplication factors indicated on the dial face.

ELECTRICAL SPECIFICATIONS

- Positive (Yellow wire): 20-30 mA through a resistor
- Output (Transparent wire): Open collector, max. load 2 mA
- Ground (Bare wire)



PULSE OUTPUT WITH PULSE REED SWITCH

The Pulse Reed Switch is activated by a magnet installed on a fractional dial. It acts as a 'dry contact' and consumes very little power. The reed switch sensor is installed in the transparent plastic cover over the register and can be mounted in any of three positions facing the pointer with the magnet.

