

# WATER METERS

THE MOST RELIABLE AND ACCURATE WATER METERS

## MEASUREMENT IS THE KEY TO GOOD, EFFECTIVE WATER MANAGEMENT

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

- Measuring your irrigation water with a Water Meter is a more accurate way to deliver water to a crop.
- 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.

## NETAFIM FAMILY OF WATER METERS



**OCTAVE ULTRASONIC WATER METER**  
(CAST IRON BODY)



**SADDLE METER**  
(STAINLESS STEEL BODY)



**'IRT' WATER METER**  
(CAST IRON BODY)



**'WST' WATER METERS**  
(CAST IRON BODY)



**'WMR' WATER METER**  
(COPPER ALLOY BODY)



**HYDROMETER**  
(CAST IRON BODY)



**'M' WATER METER**  
(COPPER ALLOY BODY)



**'M' WATER METER**  
(PLASTIC BODY)



**FERTILIZER METER**  
(PVC BODY)



**FERTILIZER METER**  
(PLASTIC 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.



**FULL DIAMETER IMPELLER**  
(SIDE VIEW)



**PADDLE WHEEL**  
(SIDE VIEW)

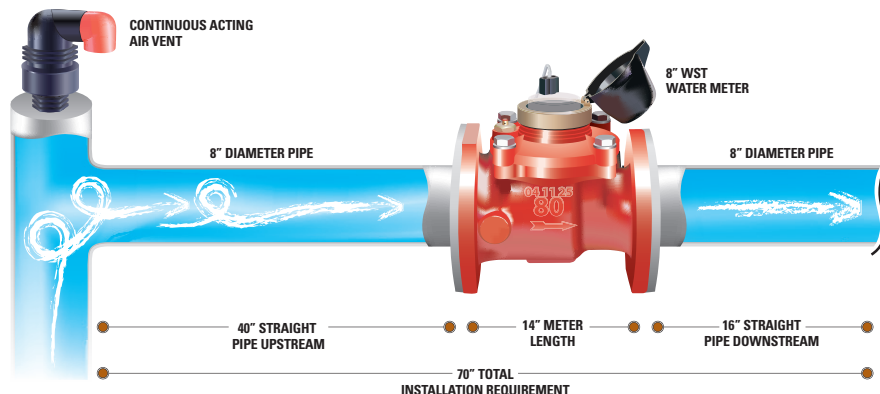
### FLOW RANGE

Water meter functionality and accuracy is dependent on minimum and maximum flow ranges. Netafim water meters accurately measure water from a minimum of 0.9 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:	8" WST
Upstream:	5 x 8" diameter meter = 40" (5 x D) 40" of straight pipe required upstream of the meter
Downstream:	2 x 8" diameter meter = 16" (2 x D) 16" of straight pipe required downstream of the meter
Meter Length:	14"
Total:	70" total installation requirement

# WATER METER SELECTION

## 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

## SADDLE METERS


STRAIGHT PIPE REQUIREMENT: 10 D X 5 D



SIZE	MINIMUM FLOW RATE	MAXIMUM FLOW RATE	INSTALLATION REQUIREMENT *
6"	88 GPM	1,805 GPM	101 3/4" TOTAL
8"	132 GPM	3,212 GPM	132 5/8" TOTAL
10"	176 GPM	6,160 GPM	162 5/8" TOTAL
12"	264 GPM	8,800 GPM	192 5/8" 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

## '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

## '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

## 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

## '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

## '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

## FERTILIZER METERS

STRAIGHT PIPE REQUIREMENT: 0 D X 0 D



SIZE	MINIMUM FLOW RATE	MAXIMUM FLOW RATE	INSTALLATION REQUIREMENT *
3/4"	0.3 GPM	2.2 GPM	4 3/8" TOTAL
1"	1.8 GPM	44 GPM	6" TOTAL

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

± 2% Accuracy Rate for Minimum and Maximum Flow Rates for: Saddle Meter, 'IRT', 'WST', 'WMR', 'M' and Fertilizer 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.

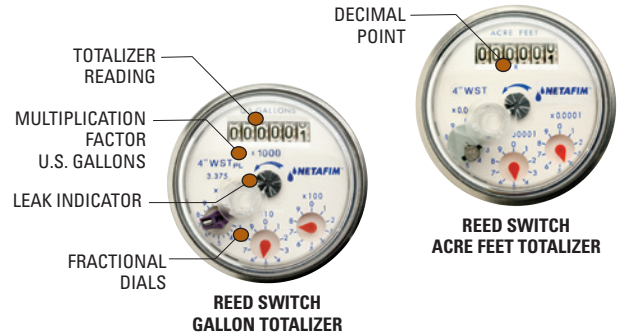
## REED SWITCH REGISTER

### 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



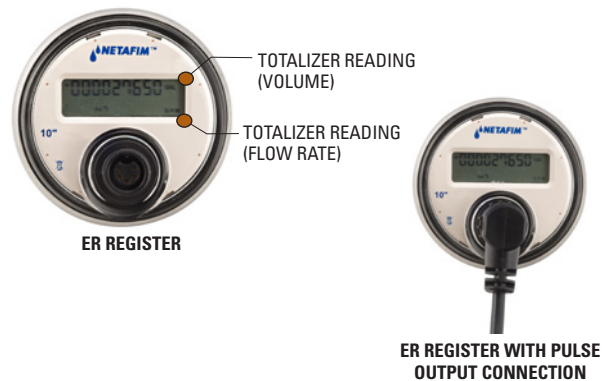
## ELECTRONIC (ER) DIGITAL REGISTER

### 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'



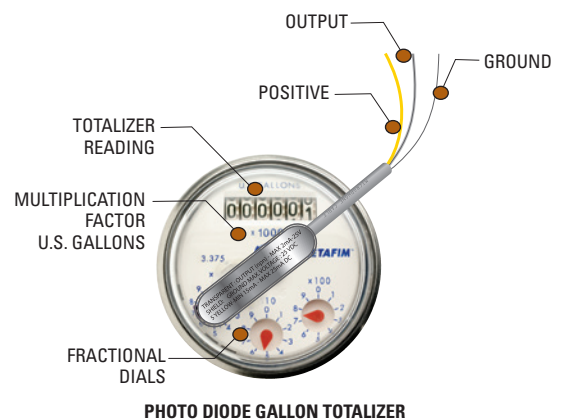
## PHOTO DIODE REGISTER

### 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.



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