

Mc Propeller Flow Meter







55 Years of Experience

- Founded in 1955 by brothers Floyd and Lloyd McCall, and brother-in-law Art Crom
- Designed a superior flow meter for irrigation
- Floyd McCall, designed the V-Cone in 1985



Located in Hemet, California USA



See McCrometer

The Present

- Flow Measurement Specialist
- Portfolio of technologies: dP, electromagnetic, propeller
- Markets Served
 - Agriculture (Irrigation)
 - Chemical
 - Electric Power Generation
 - Food and Beverage
 - HVAC
 - Institutional Facilities
 - Metals/Mining
 - Oil and Gas (Production, Refining, Distribution)
 - Pharmaceuticals
 - Plant and Facilities (Air, Gas, HVAC, Water)
 - Pulp, Paper and Wood Products
 - Water and Wastewater (Municipal and Industrial)







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Strength of DBS

- Subsidiary of Danaher Corp.
- Values & foundation provided by Danaher Business Systems (DBS)
- DBS- management model based on continuous improvement in quality, delivery, cost and innovation



48,000 employees, \$13.2 billion in revenue 2010



McCROMETER Locations & Test Facilities

McCrometer's headquarters is located in Hemet, California, USA, the original location of the company. The entire team works to design, manufacture and test our innovative, precision flow meters. We focus on improving the customer experience for our worldwide customers.

> The Hemet Facility features a robust Calibration Test Lab that enables production of the most accurate and precise flow instrumentation. The test facility utilizes two gravimetric systems and one volumetric system with a maximum rate of 4,000 gpm.

McCrometer also has a large volume test facility in Porterville, California. The Porterville Facility is one of the world's largest volumetric test facilities owned by a meter manufacturer, and offers accuracy and calibration tests of flow meters from 5/8" to 72" DIAMETER, with flow rates up to 60,000 gpm.





How It Works

- The Mc Propeller consists of a rotating device, a helical-shaped impeller, positioned in the flow stream.
- When fluid passes through the meter, it contacts the impeller causing it to spin.
- The impeller's rotational velocity is directly proportional to the velocity of the flow.
- The rotation is translated through a magnetic coupling and flexible drive system to the register, which calculates the flow rate by multiplying the flow velocity with the cross-sectional area of the meter tube.







Features

- Designed for clean and dirty flows
- Easy to install and operate
- Easy to service in the field
- Accuracy of +/- 2% of reading
- Repeatability of +/- 0.25%
- Self-clearing design
- Instantaneous flow rate
- Indicator & totalizer on every model
- Flow range of up to 15:1

Best selling irrigation meter in the United States for agriculture and turf irrigation applications





Product Features





Why Competition Can't Compete

There are a variety of insertion flowmeters in the market today:

- Paddlewheel
- Shedding Vortex
- Magnetic Insertion

A common claim among these manufacturers is that their flowmeters are inexpensive and easy to install; yet they <u>neglect</u> to tell you what's not included in the price or what features you're not getting that should be standard on any unit.





Feature Comparison

Flowmeter Type	Requires less than 10 dia. of Upstream Pipe Length	Samples at least 70% of Crosss Section of Pipe	All Metal Enclosure	Requires Electrical Power to Operate	Resistance to Debris and Contaminants	Total and Instantaneous Rate of Flow
Mc Propeller Meter	Yes	Yes	Yes	No	High	Standard
Insertion Meters						
Vortex	No	No	No	Requires AC/DC Power	Low	Optional (when available)
Paddle Wheel	No	No	No	Requires Batteries	Low	Optional (when available)
Magmeter	No	No	No	Requires AC/DC Power	Low	Optional (when available)
Other						
Propeller Meters	Yes	Yes	No	No	High	Optional









Higher accuracy at all operating ranges



McCrometer's "Percent of Reading Accuracy" vs. other Flowmeter's "Percent of Full Scale Accuracy"





Proven Value

Unlike insertion flowmeters, the Mc Propeller measures almost all of the cross-sectional area of the pipe with an accuracy of ±2% of rate and ±.25% repeatability.

Because of its high accuracy rate, it can be used as a water "management tool"— helping reduce water costs, preventing over irrigation, and reducing the leaching of chemical fertilizers into the ground.





AGRICULTURAL & TURF IRRIGATION

- Canal Laterals
- Center Pivot Systems
- Drip and Sprinkler Irrigation
- Golf Course and Park Water Management

WATER & WASTEWATER

- Back Wash
- Cooling Water
- Potable Water
- Pump Stations
- Filter & Pipe Galleries
- Pump Stations-Raw Water

- Rate-of-flow Controller- Raw Water
- Transmission Lines-Raw Water
- Truck Loading and Discharge
- Wastewater Management
- Water Well Production
- Wastewater Effluent











Flow & Installation Parameters

Types of flow measured:	Water & liquids with some suspended solids.
Flow range:	1–15 FPS typical
Operating temperature:	160° F maximum continuous operation
Operating pressure:	Up to 300 psi
Head loss:	(Very low)
Pipeline sizes:	2–96"
End fittings:	Threaded; flanged; grooved-end; weld-in; More options on request
Mounting:	Horizontally or vertically, as long as a full pipeline is assured (Vertical mountings must be specified at time of ordering.)
Upstream / downstream pipe runs:	5–10 diameters upstream; 1–2 diameters downstream *If a shorter pipe run is required, see the Mc SpaceSaver
Meter output:	Instantaneous flow indicator and total flow. Optional signal Outputs 4-20mA, 1-5V, dry contact relay, digital 0-12 pulse, open-collector, dual forward / reverse 4-20mA



Specifications

- Accuracy: +/-2%
- Repeatability: +/-0.25%
- **Turndown:** up to 15:1
- Register options: optional FlowCom electronic digital register available; forward/reverse flow; test hand/index wheel; anti-reverse totalizer; custom scale; extended digit totalizer
- Impeller options: high temperature resistant; acid and caustic resistant
- Line sizes: from 2" to 96"







Specifications (Cont.)

- Very low permanent head loss
- Mechanical instantaneous flow rate indicator and totalizer standard
- Unique magnetic coupling system, isolates register from flow
- Needs 5-10 diameters upstream, 1-2 diameter downstream (unless installed with straightening vanes or a flow straightener)
- Straightening vanes to generate optimum flow profiles
- Epoxy-coated carbon steel body; all stainless available
- Pre-calibrated, corrosion-resistant polymer impeller
- AWWA approved for cold water use





















- Stainless Bearing Assembly
- Marathon & reverse flow bearing assembly with UltraShield
- Food grade grease bearing assembly
- High temperature impeller (≤180°F)
- Register extensions
- Straightening vanes
- Certified test record
- Canopy Boot

- Index wheel test hand
- 7-digit totalizer



- Forward/reverse & anti-reverse flow register
- FC100 FlowCom digital register
- Transmitters
- Flow computer / power supply





Models: Removable ELL

The removable Ell allows the line to keep running when the meter is removed by replacing it with a blank plate. These are popular meters in water & wastewater applications.





MODELS	CONFIGURATION	SIZES
MW500	Top Plate Meters with AWWA Class D Flanged Ends	2" - 24"
QW500	All 304 Stainless Steel Top Plate Meters with AWWA Class D Flanged Ends	2" - 24"
MZ500	Top Plate Meters with ANSI Class 300 Flanged Ends	4" - 24"
QZ500	All 304 Stainless Steel Top Plate Meters with ANSI Class 300 Flanged Ends	4" - 24"
MW600	Weld-On Top Plate Saddle Meters	4" - 48"
MG900	Top Plate Meters with Grooved Ends	4" - 24"
MT900	Top Plate Meters with NPS Threaded Ends	2" - 6"
MM800	Right Angle Down-Flow Meters	3" - 24"
MW800	Right Angle Up-Flow Meters	3" - 24"





Models: Fixed ELL

The fixed Ell offers an economical choice in Mc Propeller meters for both municipal and agricultural applications.



MODELS	CONFIGURATION	SIZES
MF100	Fixed Ell Meters with AWWA Class D Flanged Ends	2" - 24"
MG100	Fixed Ell Meters with Grooved Ends	2" - 24"
MS100	Fixed Ell Meters with Smooth (Plain) Ends	2" - 24"
MT100	Fixed Ell Meters with NPS Threaded Ends	2" - 6"
ML100	Fixed Ell Irrigation Meters with Flanged Ends	6" - 12"

ML100

MT100







Models: Saddle

Mc Propeller Saddle Meters are designed for pressures of up to 150 psi, and are the top-selling flow meters in the U.S. for agriculture and turf irrigation applications.



M0300SW	Reverse Bolt-On Saddle Meters For Surface Water	4" – 12"
M1400	Bolt-On Saddle Meters	18" - 36"
M0300	Bolt-On Saddle Meters	6" - 16"
MODELS	CONFIGURATION	SIZES











Models: Special

Mc Propeller offers specialty meters for fire hydrant and open flow applications



Models	Configuration	Sizes	
M1104	Fire Hydrant Meter	4"	
M1700	Open Flow Meters	10" - 64"	



M1700





McCrometer stands alone as a name you can depend on.

- Proven Solution
- Product Reliability
- High Accuracy
- Low Maintenance
- Price Value



We have a knowledgeable team that can efficiently evaluate your flow application and specify the best metering technology to fit your flow condition needs.







Thank you for your time

