DESCRIPTION

The Mc Propeller M03 series uses a flexible drive-train and sealed ball bearings. Its unique design makes it easy to service in the field and requires no external power or batteries. Standard features include an instantaneous flow rate indicator and six-digit totalizer.

The reverse-helix surface water option is designed to shed debris often associated with surface water applications. It features a meter body turned 180 degrees from normal with a propeller installed nose-first on the bearing shaft and a reverse flow style bearing assembly. This configuration allows the ell to curve with the flow, allowing grass or other debris to shed off with ease. The assembly design also reduces the ability of sand and silt to accumulate in the bearing.

All Mc Propeller flow meters are manufactured to comply with applicable provisions of NSF 61 / NSF 372 and AWWA Standard No. C704-02 for propeller-type flow meters.

FEATURES

Saddle

- The fabricated stainless steel saddle eliminates the fatigue-related breakage common to cast iron and aluminum saddles and provides unsurpassed corrosion protection.
- Fabricated stainless steel construction offers the additional advantage of being flexible enough to conform to out-of-true pipe.

Impellers

- Impellers are manufactured of high-impact plastic, capable of retaining their shape and accuracy over the life of the meter.
- Each impeller is individually calibrated at the factory to accommodate the use of any standard McCrometer register, and since no change gears are used, the M0300 can be field-serviced without the need for factory recalibration.

Typical Applications

- Center pivot systems
- Sprinkler irrigation systems
- Drip irrigation systems
- Golf course and park water management
- Gravity turnouts from underground pipelines
- Commercial nurseries
- Water and wastewater management

Bearings

- Factory lubricated, stainless steel bearings are used to support the impeller shaft.
- The shielded bearing design limits the entry of materials and fluids into the bearing chamber providing maximum bearing protection.

Register

- The instantaneous flowrate indicator is standard and available in gallons per minute, cubic feet per second, liters per second and other units.
- The register is driven by a flexible steel cable with a magnetically coupled drive, encased within a protective vinyl liner.
- The register housing protects both the register and cable drive system from moisture while allowing clear reading of the flowrate indicator and totalizer.

PART NUMBERS, DIGITAL REGISTERS

M03						-		-		-		-		-	
METER SIZE															
4" Saddle Meter	04														
5" Saddle Meter	05														
6" Saddle Meter	06														
8" Saddle Meter	08														
10" Saddle Meter	10														
12" Saddle Meter	12														
14" Saddle Meter	14														
16" Saddle Meter	16														
Mating Pipe or Tube Options															
Tube Style Saddle (Nominal Inch OD)		T													
Pipe (IPS, PVC, HDPE) Style Saddle (Nominal Pipe OD)		P													
Ductile Iron/ C900 Standards Style Saddle		A													
PIP Standard Style Saddle		B													
Non Standard OD Style Saddle (In available Sizes)		X													
Bearing Options															
Standard			1												
Marathon			2												
SS316			3												
SS316 Marathon			4												
SS316 Ceramic			5												
Register Options															
Flowcom (FC200)				F											
Flow Connect (FC Smart Part on 2nd Line)				T											
Output Options															
No Outputs															
Open Collector Pulse					1										
4-20mA Analog Only					2										
4-20mA Analog + Open Collector Pulse					3										
Output Cable Options															
No Output Cables															
6 ft							C1								
15 ft							C2								
25 ft							C3								
50 ft							C4								
75 ft							C5								
100 ft							C6								
150 ft							C8								

continued on next page

PART NUMBERS, DIGITAL REGISTERS

Smart Output Protocol / Telemetry Options					
No AMI Outputs/Telemetry Options					
Sensus Protocol (6ft Open End Cable)	**SEN**				
Itron 6 digit Protocol (6ft Open End Cable)	**IT6**				
Itron 9 digit [100W] Protocol (6ft Open End Cable)	**IT9**				
Neptune Protocol (6ft Open End Cable)	**NEP**				
SmartTrax On-Board (Integrated Telemetry on FlowCom)	**STX**				
2 ft SmartTrax Standalone Unit ExactRead Cable	**S02**				
6 ft SmartTrax Standalone Unit ExactRead Cable	**S06**				
25 ft SmartTrax Standalone Unit ExactRead Cable	**S25**				
50 ft SmartTrax Standalone Unit ExactRead Cable	**S50**				
Register Remote and Extension Options					
Meter Mount (Standard)					
6 ft Cable Remote Mount (Flowcom only)		**R06**			
25 ft Cable Remote Mount (Flowcom only)		**R25**			
50 ft Cable Remote Mount (Flowcom only)		**R50**			
6" Long Extension (Mech or DIgital)		**006**			
1" Increments for Extensions Lengths		**XXX**			
150" Maximum extension length		**150**			
SPECIAL OPTIONS					
No Special Options					
F Style Saddles for FS Flow Straightener (6-12" standard saddles only)				**FS**	
Surface Water Installation				**SW**	
No Batteries, Battery Tray Options					
Includes Batteries (*Standard*)					
No Batteries (Alkaline Tray)					**NBA**
No Batteries (Lithium Tray)					**NBL**

PART NUMBERS, MECHANICAL REGISTERS

M03									
METER SIZE									
4" Saddle Meter	04								
5" Saddle Meter	05								
6" Saddle Meter	06								
8" Saddle Meter	08								
10" Saddle Meter	10								
12" Saddle Meter	12								
14" Saddle Meter	14								
16" Saddle Meter	16								
Mating Pipe or Tube Options									
Tube Style Saddle (Nominal Inch OD)		T							
Pipe (IPS, PVC, HDPE) Style Saddle (Nominal Pipe OD)		P							
Ductile Iron/ C900 Standards Style Saddle		A							
PIP Standard Style Saddle		B							
Non Standard OD Style Saddle (In available Sizes)		X							
Bearing Options									
Standard			1						
Marathon			2						
SS316			3						
SS316 Marathon			4						
SS316 Ceramic			5						
Register Options									
6 Wheel				1					
6 Wheel Anti Reverse				2					
6 Wheel with Index				3					
6 Wheel Anti Reverse & Index				4					
7 Wheel				5					
7 Wheel Anti Reverse				6					
7 Wheel with Index				7					
7 Wheel Anti Reverse & Index				8					
Output Options									
No Outputs									
4-20 Analog Only (E7000-000)					A				
Dry Contact Pulse & 4-20 Analog (E7000-001)					B				
Opto Isolated Pulse & 4-20 Analog (E7000-002)					C				
Mechanical Datalogger (MC20-D2)					E				
Non Powered Pulse (EA618-02)					G				
CMOS Square Wave Pulse (EA631-002)					J				
Sink to Ground Pulse (EA631-102)					K				
Dry Contact Pulse (SA100)					L				
Extension Options									
Meter Mount (Standard)									
6" Extension							006		
1" Increments for Extensions Lengths							XXX		
1" Increments up to 150 Max Length							150		
SPECIAL OPTIONS									
F Style Saddles for FS Flow Straightener (6-12" T or P saddles only)									FS
Surface Water Installation									SW

SPECIFICATIONS

Performance

Accuracy / Repeatability	• ±2% of reading guaranteed throughout full range • ±1% over reduced range • Repeatability 0.25% or better
Range	4" to 16"
Maximum Temperature	(Standard Construction) 160°F constant
Pressure Rating	150 psi. Consult factory for higher rated version.

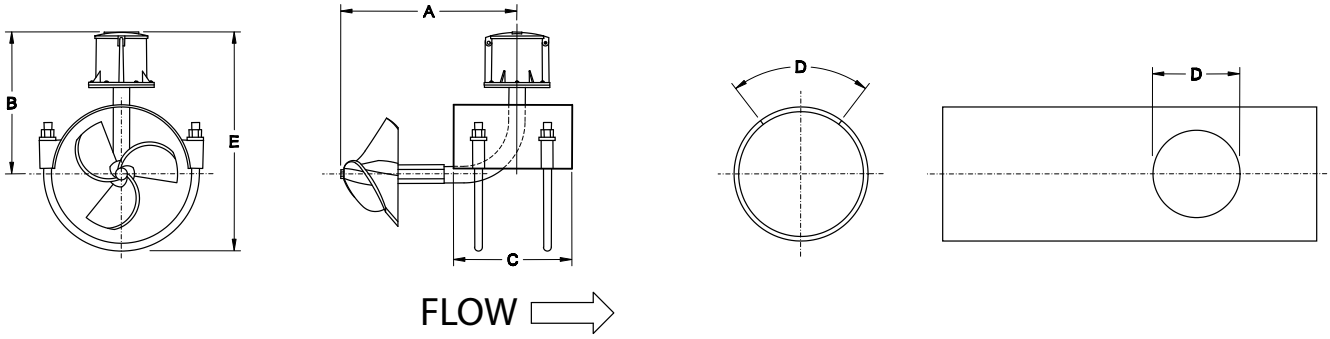
Materials

Saddle	304 stainless steel construction
Bearing Assembly	Impeller shaft is 316 stainless steel. Ball bearings are 440C stainless steel
Magnets	(Permanent type) Alnico
Bearing Housing	304 stainless steel standard, 316 stainless steel optional
Register	An instantaneous flowrate indicator and six-digit straight-reading totalizer are standard. The register is hermetically sealed within a die cast aluminum case. This protective housing includes a domed acrylic lens and hinged lens cover with locking hasp.
Impeller	Impellers are manufactured of high-impact plastic, retaining their shape and accuracy over the life of the meter.

Options

- Extended warranty
- Register extensions
- High temperature construction, 180°F max
- Marathon bearing assembly for higher than normal flowrates 4" and larger
- Digital register available in all sizes of this model
- A complete line of flow recording / control instrumentation
- Canopy boot
- SmartTrax on Board integrated telemetry for digital register option
- Saddle can be constructed to fit any outside diameter pipe dimensions, including metric sizes.
- Blank repair saddle
- Can be used on a variety of pipe materials such as steel, plastic, cast iron, cement or asbestos cement
- Straightening vanes

DIMENSIONS - M0300

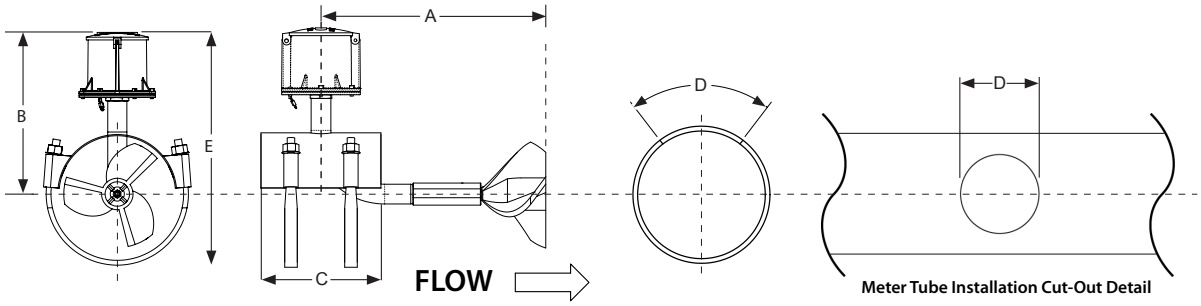


M0300		DIMENSIONS						
Meter and Nominal Pipe Size	in.	4	6	8	10	12	14	16
	mm	101.6	152.4	203.2	254	304.8	355.6	406.4
OD up to	in.	5.5	7.5	9.5	11.5	13.5	15.5	17.5
	mm	139.7	190.5	241.3	292.1	342.9	393.7	444.5
Minimum Flow	GPM	50	90	100	125	150	250	275
	LPS	3.2	5.7	6.3	7.9	9.5	15.8	17.3
Maximum Flow	GPM	600	1200	1500	1800	2500	3000	4000
	LPS	37.9	75.7	94.6	113.6	157.7	189.3	252.4
Max. Flow w/ Marathon Bearing	GPM	900	1800	2250	2700	3750	4500	6000
Approx. Head Loss in Inches at Max. Flow	in.	23	17	6.75	3.75	2.75	2	1.75
	mm	584	432	171	95	70	51	44
Standard Dial Face *	GPM/ Gal	1000/ 100	1800/ 100	2500/ 100	3K/ 1000	4K/ 1000	6K/ 1000	8K/ 1000
Approx. Shipping Weight-lbs.	lbs	12	17	21	24	28	28	30
	kg	5.4	7.7	9.5	10.9	12.7	12.7	13.6
A	in.	7.625	15	15	15	15	15	15
	mm	194	381	381	381	381	381	381
B	in.	8.25	10.75	10.75	10.75	11.75	13.75	13.75
	mm	210	273	273	273	298	349	349
C	in.	7	8	8	9.5	9.5	9.5	9.5
	mm	178	203	203	241	241	241	241
D	in.	4**	5.125**	6**	7**	7.25	7.25	7.25
	mm	101.6	130.2	152.4	177.8	184.2	184.2	184.2
E	in.	10.75	14	15	17	19	20.625	21.625
	mm	273	356	381	432	483	524	549

*Indicates the dial face range and multiplier
**Standard pipe only. For other than standard pipe, consult factory for cutout dimensions.

For larger sizes see Model M1400.
McCrometer reserves the right to change design or specification without notice.
Please specify the inside diameter of the pipe when ordering.

DIMENSIONS - M0300SW



M0300		DIMENSIONS						
Meter and Nominal Pipe Size	in.	4	6	8	10	12	14	16
	mm	101.6	152.4	203.2	254	304.8	355.6	406.4
OD up to	in.	5.5	7.5	9.5	11.5	13.5	15.5	17.5
	mm	139.7	190.5	241.3	292.1	342.9	393.7	444.5
Minimum Flow	GPM	50	90	100	125	150	250	275
	LPS	3.2	5.7	6.3	7.9	9.5	15.8	17.3
Maximum Flow	GPM	600	1200	1500	1800	2500	3000	4000
	LPS	37.9	75.7	94.6	113.6	157.7	189.3	252.4
Max. Flow w/ Marathon Bearing	GPM	900	1800	2250	2700	3750	4500	6000
Approx. Head Loss in Inches at Max. Flow	in.	23	17	6.75	3.75	2.75	2	1.75
	mm	584	432	171	95	70	51	44
Standard Dial Face *	GPM/ Gal	1000/ 100	1800/ 100	2500/ 100	3K/ 1000	4K/ 1000	6K/ 1000	8K/ 1000
Approx. Shipping Weight-lbs.	lbs	12	17	21	24	28	28	30
	kg	5.4	7.7	9.5	10.9	12.7	12.7	13.6
A	in.	7.625	15	15	15	15	15	15
	mm	194	381	381	381	381	381	381
B	in.	8.25	10.75	10.75	10.75	11.75	13.75	13.75
	mm	210	273	273	273	298	349	349
C	in.	7	8	8	9.5	9.5	9.5	9.5
	mm	178	203	203	241	241	241	241
D	in.	4**	5.125**	6**	7**	7.25	7.25	7.25
	mm	101.6	130.2	152.4	177.8	184.2	184.2	184.2
E	in.	10.75	14	15	17	19	20.625	21.625
	mm	273	356	381	432	483	524	549

*Indicates the dial face range and multiplier
**Standard pipe only. For other than standard pipe, consult factory for cutout dimensions.

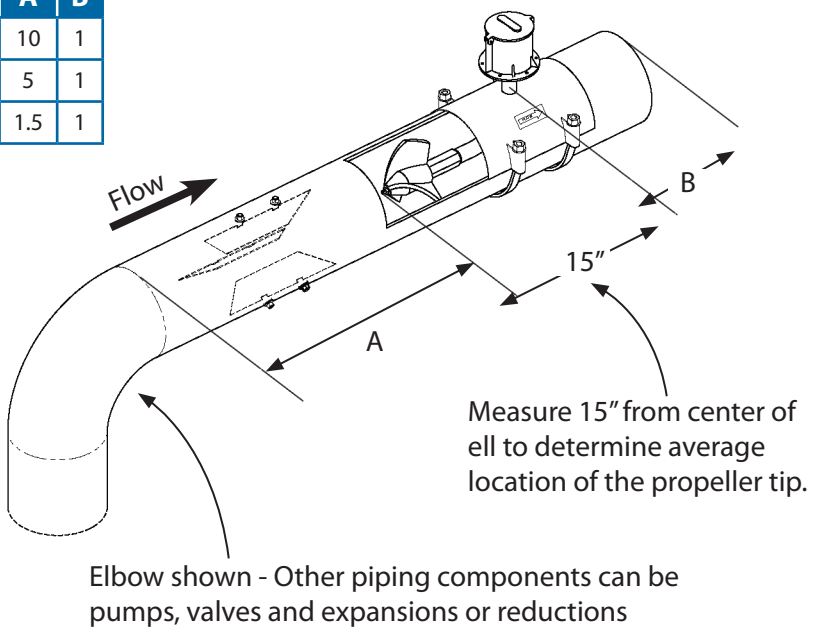
For larger sizes see Model M1400.
McCrometer reserves the right to change design or specification without notice.
Please specify the inside diameter of the pipe when ordering.

INSTALLATION

Standard installation is horizontal mount. If the meter is to be mounted in the vertical position, please advise the factory.

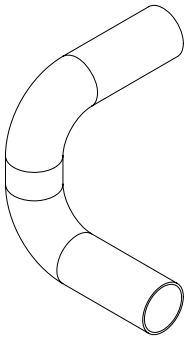
PIPE RUN REQUIREMENTS

Configuration	A	B
Without straightening vanes	10	1
With straightening vanes	5	1
With FS100 Flow Straightener	1.5	1

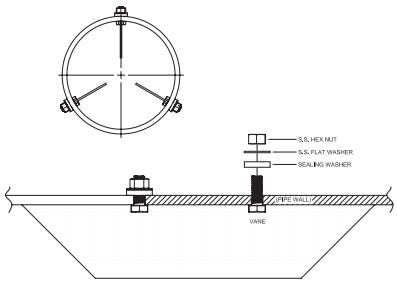


STRAIGHTENING VANES

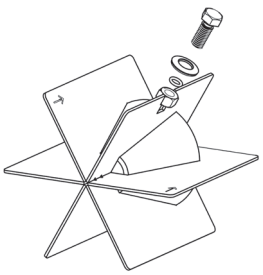
Special attention should be given to systems using two elbows "out of plane" or devices such as a centrifugal sand separator. These cause swirling flow in the line that affect propeller meters. Well developed swirls can travel up to 100 diameters downstream if unobstructed. Since most installations have less than 100 diameters to work with, straightening vanes become necessary to alleviate the problem. Straightening vanes will break up most swirls and ensure more accurate measurement. McCrometer actively encourages installing vanes just ahead of the meter. Straightening vanes are available in weld-in, bolt-in, and the FS100 Flow Straightener.



Elbows out of plane



Bolt-in straightening vanes



FS100 Flow Straightener

REGISTERS

Typical face plates

Standard register

Optional 7-wheel register

FlowCom register

Mechanical Register

The instantaneous flowrate indicator is standard and available in gallons per minute, cubic feet per second, liters per second and other units. The register is driven by a flexible steel cable encased within a protective vinyl liner. The register housing protects both the register and cable drive system from moisture while allowing clear reading of the flowrate indicator and totalizer.

Digital Register

The optional FlowCom digital register displays a flowmeter's flowrate and volumetric total. Available are four optional outputs: 4-20mA loop, open collector, optically isolated, and contact closure. Unique units of measurement for rate, total, 4-20mA, and pulse outputs. The FlowCom can be fitted to any new or existing McCrometer propeller flowmeter. The FlowCom also features a built-in data logger.

SmartTrax on Board

In addition to features mentioned on the FlowCom digital register, SmartTrax On Board integrated telemetry provide a streamlined, all-in-one flow measurement and telemetry system allowing growers and districts to remotely monitor water usage and manage allocations across their territories. This affects input costs such as chemigation, fuel and electricity costs, and most importantly - your time! For natural resource districts and the like, SmartTrax on Board removes the need to manually collect flow data from each metered well, freeing up personnel time.

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