DESCRIPTION

All Mc Propeller flow meters are manufactured to comply with the applicable provisions of AWWA standard No. C704-02 and latest revisions for propeller type flow meters.

FEATURES

Saddle

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

Impellers

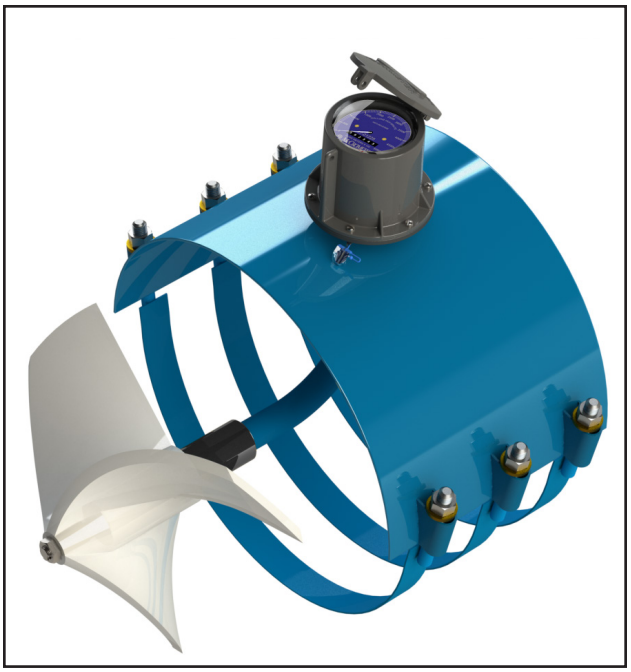
- Impellers are manufactured of high-impact plastic, capable of retaining their shape and accuracy over the life of the meter.
- Each impeller is individually calibrated at the factory to accommodate the use of any standard McCrometer register, and since no change gears are necessary, the M14 can be field-serviced without the need for factory recalibration.

Bearings

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

Register

- An instantaneous flowrate indicator is standard and available in gallons per minute, cubic feet per second, liters per second and other units.



Typical Applications

The McCrometer propeller meter is the most widely used flowmeter for agricultural and turf irrigation measurement. Typical applications include:

- Golf course and park water management
- Gravity turnouts for underground pipelines
- Pump stations
- Water and wastewater management
- Sprinkler irrigation systems
- Drip irrigation systems

- 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.

Part Numbers, Digital Registers

M14						-		-		-		-		-	
METER SIZE															
18" Saddle Meter	18														
20" Saddle Meter	20														
22" Saddle Meter	22														
24" Saddle Meter	24														
30" Saddle Meter	30														
36" Saddle Meter	36														
42" Saddle Meter	42														
48" Saddle Meter	48														
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												
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								

Part Numbers, Digital Registers (cont.)

M14	-	-	-	-	-
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**				
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					
Surface Water Installation (Up to 30" Sizes)			**SW**		
No Batteries, Battery Tray Options					
Includes Batteries (*Standard*)					
No Batteries (Alkaline Tray)					**NBA**
No Batteries (Lithium Tray)					**NBL**

Part Numbers, Mechanical Registers

M14						-		-	
METER SIZE									
18" Saddle Meter	18								
20" Saddle Meter	20								
22" Saddle Meter	22								
24" Saddle Meter	24								
30" Saddle Meter	30								
36" Saddle Meter	36								
42" Saddle Meter	42								
48" Saddle Meter	48								
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									
Please select a value									
Standard			1						
Marathon			2						
SS316			3						
SS316 Marathon			4						
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" Long Extension							006		
1" Increments for Extensions Lengths							XXX		
150" Maximum extension length							150		
SPECIAL OPTIONS									
Surface Water Installation (Up to 30" Sizes)									SW

SPECIFICATIONS

Performance

Accuracy / Repeatability	• ±2% of reading guaranteed throughout full range • ±1% over reduced range • Repeatability 0.25% or better
Range	18" to 48"
Maximum Temperature	(Standard Construction) 160°F constant
Pressure Rating	75 psi

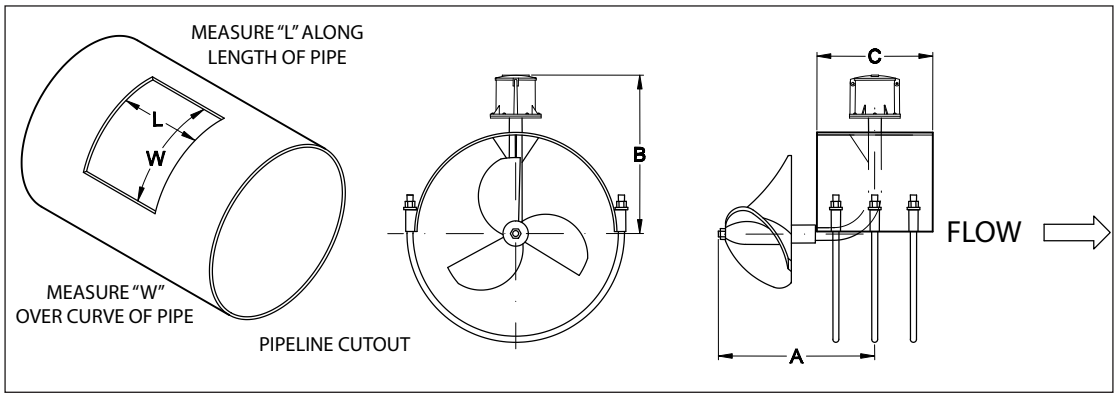
Materials

Bearing Assembly	• Impeller shaft is 316 stainless steel • Ball bearings are 440C stainless steel
Magnets	(Permanent type) Alnico
Bearing Housing	Brass standard, 316 stainless steel optional
Register	An instantaneous flowrate indicator and six-digit straight-reading register 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
- Saddle can be constructed to fit any outside diameter pipe dimensions, including metric sizes
- Can be used on a variety of pipe materials such as steel, plastic, cast iron, cement or asbestos cement
- Register extensions
- Marathon bearing assembly for higher than normal flowrates
- Digital register available in all sizes of this model
- A complete line of flow recording / control instrumentation
- Blank repair saddle
- Canopy boot

DIMENSIONS



M1400		DIMENSIONS											
Meter Size	inches	18	20	22	24	26	28	30	32	34	36	42	48
	mm	457	508	559	610	660	711	762	813	864	914	1067	1219
OD up to	inches	19.5	21 1/2	23.5	26.5			32.5			38.5	44.5	50.5
	mm	495	546	597	673			826			978	1130	1283
Minimum Flow	GPM	400	475	650	700	700	1200	1200	1200	1500	1500	2000	2500
	LPS	25.2	30.0	41.0	44.2	44.2	75.7	75.7	75.7	94.6	94.6	126.2	157.7
Maximum Flow	GPM	5000	6000	7000	8500	8500	12500	12500	12500	17000	17000	25000	30000
	LPS	315.5	378.5	441.6	536.3	536.3	788.6	788.6	788.6	1072.5	1072.5	1577.3	1892.7
Maximum Flow w/ Marathon Bearing	GPM	7500	9000	10500	12750			18750			25500	37500	45000
Approx. Head Loss in Inches at Max. Flow	inches	1.5	1.25	1	1	0.75	0.6	0.52	0.5	0.45	0.4	0.4	0.4
	mm	38.1	31.8	25.4	25.4	19.1	15.2	13.2	12.7	11.4	10.2	10.2	10.2
Standard Dial Face*	GPM/ Gal	10000/ 1000	10000/ 10000	10000/ 10000	15000/ 10000	15000/ 10000	15000/ 10000	15000/ 10000	15000/ 10000	30000/ 10000	30000/ 10000	35000/ 10000	Consult Factory
Approx. Shipping Weight, lbs.	lbs	55	65	73	80	100	100	110	110	130	140	200	200
	kg	25	29	33	36	45	45	50	50	59	64	91	91
A	inches	17	17	17	17	17	17	17	17	17	17	17	17
	mm	432	432	432	432	432	432	432	432	432	432	432	432
B	inches	14.375	16.375	16.375	18.375	20.375	20.375	20.375	22.375	23.375	24.375	30.375	36.375
	mm	365	416	416	467	518	518	518	568	594	619	772	924
C	inches	12	12	12	12	12	18	18	18	18	18	18	18
	mm	305	305	305	305	305	457	457	457	457	457	457	457
L	inches	9.5	9.5	9.5	9.5	9.5	9.5	9.5	9.5	12.0	12.0	12	12
	mm	241	241	241	241	241	241	241	241	305	305	305	305
W	inches	13.5	13.5	13.5	13.5	13.5	13.5	13 1/2	13 1/2	16	16	16	16
	mm	343	343	343	343	343	343	343	343	406	406	406	406

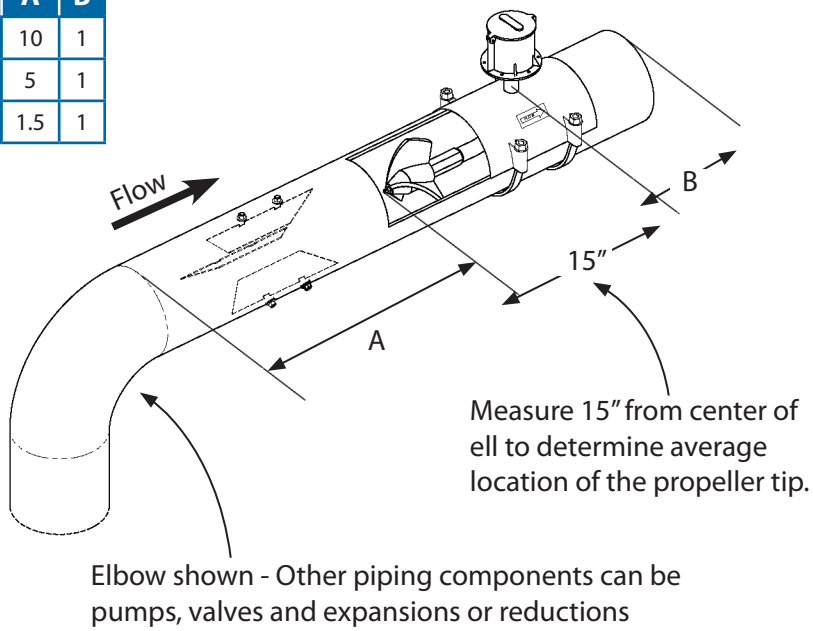
*Indicates the dial face range and multiplier

INSTALLATION

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

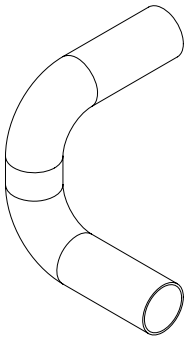
PIPE RUN REQUIREMENTS

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

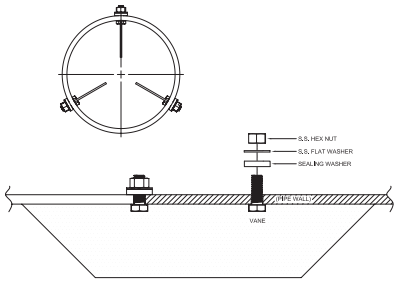


STRAIGHTENING VANES

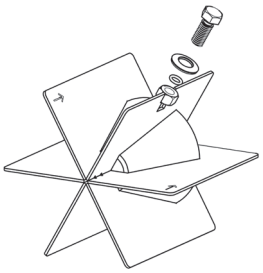
Special attention should be given to systems using two elbows "out of plane" or devices such as a centrifugal sand separator. These cause swirling flow in the line that affect propeller meters. Well developed swirls can travel up to 100 diameters downstream if unobstructed. Since most installations have 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.

Wireless Telemetry

The optional FlowConnect is designed specifically for wireless telemetry via either satellite or cellular data service. Manual meter reading is never required. It uses either the mechanical register or the digital register (both shown above).

You can determine how often readings are made and transmitted to the cloud database, which you can view on a PC or on a cell phone. The viewing utility provides data tools that can analyze flow rate, consumption, and possible anomalies in an irrigation system.

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