

### 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

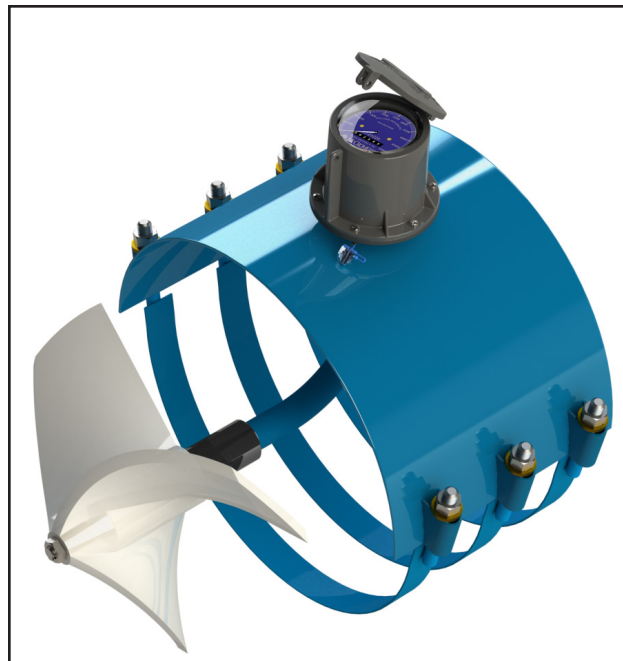
- Impellers are manufactured of high-impact plastic, capable of retaining their shape and accuracy over the life of the meter.
- Each impeller is individually calibrated at the factory to accommodate the use of any standard McCrometer register, and since no change gears are necessary, the M14 can be 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.

M14		XX	-	-	-	-	-	-	-
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								
SS316 Ceramic	5								
Register Options									
Flowcom	D								
Flowcom Non Programmable	N								
Flow Connect (FC Smart Part on 2nd Line)	T								
Output Options									
No Outputs	-								
Open Collector Pulse(Flowcom 01)	1								
Opto Isolated Pulse & 4-20 Analog (Flowcom 02)	2								
Dry Contact Pulse & 4-20 Analog (Flowcom-03)	3								
Sensus Only (Flowcom 06)	6								
OC Pulse & Sensus (Flowcom-07)	7								
Opto Isolated Pulse & 4-20 Analog & Sensus (Flowcom-08)	8								
Dry Contact Pulse & 4-20 Analog & Sensus (Flowcom-09)	9								
Output Cable Options									
No Outputs	-								
6 ft	C1								
15 ft	C2								
25 ft	C3								
50 ft	C4								
75 ft	C5								
100 ft	C6								
125 ft	C7								
150 ft	C8								
7 pin Female pigtail Telemetry ready (Output Option 1 Only [Flowcom-05])	T1								
7 pin Male 25ft Telemetry ready (Output Option 1 Only)	T2								
7 pin Male 50ft Telemetry ready (Output Option 1 Only)	T3								

### Part Numbers, Digital Registers (cont.)

<b>M14</b>	<b>XX</b>				-		-		-
Register Remote and Extension Options									
Meter Mount (Standard) -									
6 ft Cable Remote Mount (Flowcom only) <b>R06</b>									
25 ft Cable Remote Mount (Flowcom only) <b>R25</b>									
50 ft Cable Remote Mount (Flowcom only) <b>R50</b>									
6" Long Extension (Mech or Digital) <b>006</b>									
7" Long Extension (Mech or Digital) <b>007</b>									
8" Long Extension (Mech or Digital) <b>008</b>									
1" Increments for Extensions Lengths <b>XXX</b>									
150" Maximum extension length <b>150</b>									
<b>SPECIAL OPTIONS</b>									
Surface Water Installation <b>SW</b>									

Saddle OD Dimensions					
Type	18	20	22	24	30
T	18.0"	20.0"	22.0"	24.0"	30.0"
P	18.0"	20.0"	22.0"	24.0"	30.0"
A	19.5"	21.6"	N/A	25.8"	32.0"
B	18.7"	N/A	22.05"	24.8"	27.95"

### Part Numbers, Mechanical Registers

M14	XX								
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								
<b>Mating Pipe or Tube Options</b>									
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								
<b>Bearing Options</b>									
Standard	1								
Marathon	2								
SS316	3								
SS316 Marathon	4								
SS316 Ceramic	5								
<b>Register Options</b>									
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								
<b>Output Options</b>									
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								

### Part Numbers, Mechanical Registers (cont.)

<b>M14</b>	<b>XX</b>					-		-	
Extension Options									
Meter Mount (Standard) -									
6" Long Extension (Mech or Digital) 006									
7" Long Extension (Mech or Digital) 007									
8" Long Extension (Mech or Digital) 008									
1" Increments for Extensions Lengths XXX									
150" Maximum extension length 150									
<b>SPECIAL OPTIONS</b>									
Surface Water Installation SW									

Type	Saddle OD Dimensions				
	18	20	22	24	30
T	18.0"	20.0"	22.0"	24.0"	30.0"
P	18.0"	20.0"	22.0"	24.0"	30.0"
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### SPECIFICATIONS

#### Performance

<b>Accuracy / Repeatability</b>	<ul style="list-style-type: none"> <li>• <math>\pm 2\%</math> of reading guaranteed throughout full range</li> <li>• <math>\pm 1\%</math> over reduced range</li> <li>• Repeatability 0.25% or better</li> </ul>
<b>Range</b>	18" to 48"
<b>Maximum Temperature</b>	(Standard Construction) 160°F constant
<b>Pressure Rating</b>	75 psi

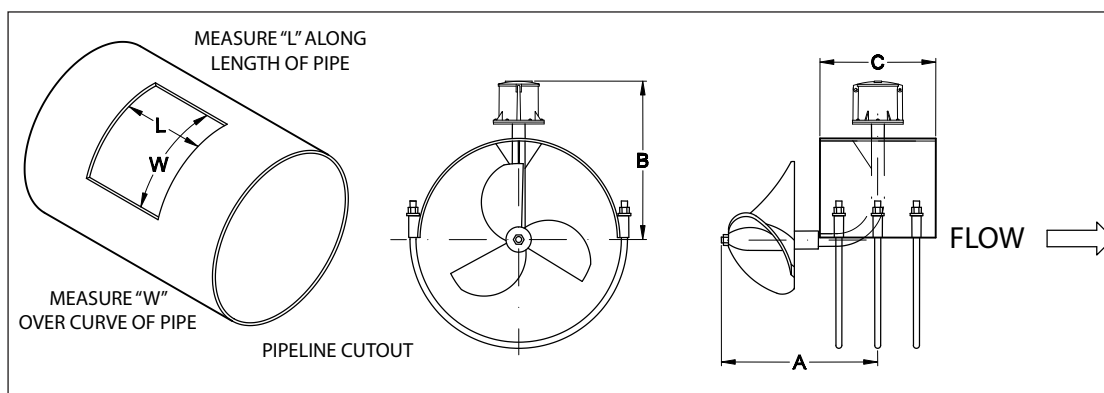
#### Materials

<b>Bearing Assembly</b>	<ul style="list-style-type: none"> <li>• Impeller shaft is 316 stainless steel</li> <li>• Ball bearings are 440C stainless steel</li> </ul>
<b>Magnets</b>	(Permanent type) Alnico
<b>Bearing Housing</b>	Brass standard, 316 stainless steel optional
<b>Register</b>	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.
<b>Impeller</b>	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



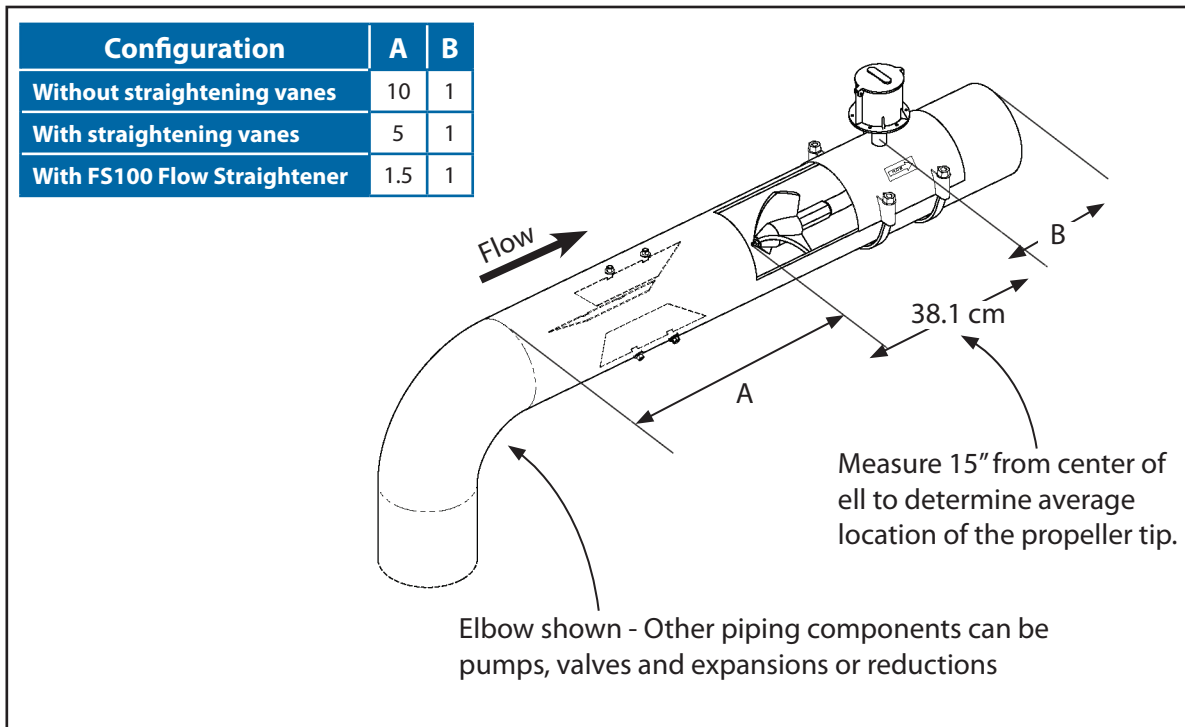
M1400	DIMENSIONS												
Meter Size	inches	18	20	22	24	26	28	30	32	34	36	42	48
	mm	457	508	559	610	660	711	762	813	864	914	1067	1219
OD up to	inches	19.5	21 1/2	23.5	26.5				32.5				50.5
	mm	495	546	597	673				826				1283
Minimum Flow	GPM	400	475	650	700	700	1200	1200	1200	1500	1500	2000	2500
	LPS	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	45000
	LPS	472.5	562.5	656.25	796.875				1171.875			1593.75	2812.5
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
	lbs	55	65	73	80	100	100	110	110	130	140	200	200
Approx. Shipping Weight, lbs.	kg	25	29	33	36	45	45	50	50	59	64	91	91
	mm	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

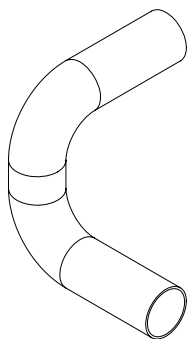
Standard installation is horizontal mount. If the meter is to be mounted in the vertical position, please advise the factory.

### PIPE RUN REQUIREMENTS

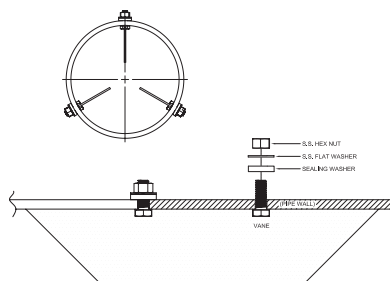


### STRAIGHTENING VANES

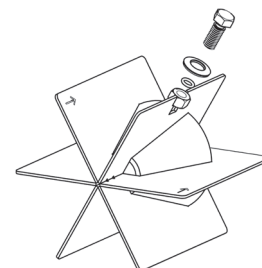
Special attention should be given to systems using two elbows "out of plane" or devices such as a centrifugal sand separator. These cause swirling flow in the line that affect propeller meters. Well developed swirls can travel up to 100 diameters downstream if unobstructed. Since most installations have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



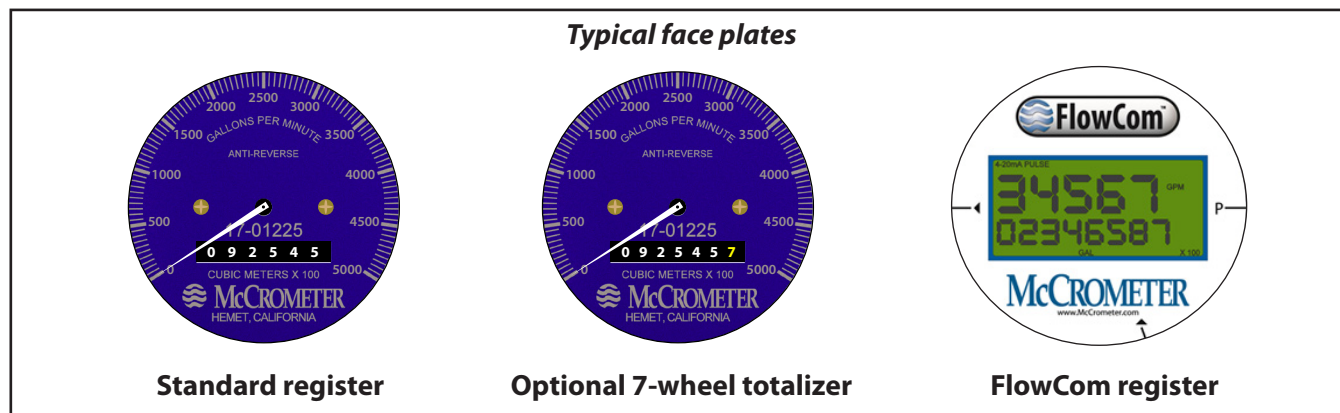
Bolt-in straightening vanes



FS100 Flow Straightener



### TOTALIZERS



### Mechanical Totalizer

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 Totalizer

The optional FlowCom register displays a flowmeter's flowrate and volumetric total. Available are optional outputs: scaled pulse and/or industry standard 4-20mA signal. The FlowCom can be fitted to any new or existing McCrometer propeller flowmeter.



### 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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