

### DESCRIPTION

Models MUR and MDR right angle meters have a standard coating of fusion-bonded epoxy.

These models are manufactured to comply with the applicable provisions of the American Water Works Association Standard No. C704-02 for propeller type flowmeters.

As with all McCrometer propeller flowmeters, standard features include a magnetically coupled drive, instantaneous flowrate indicator and straight-reading, six-digit totalizer. and since no change gears are used, models MUR and MDR can be field-serviced without the need for factory recalibration.

### FEATURES

#### 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,

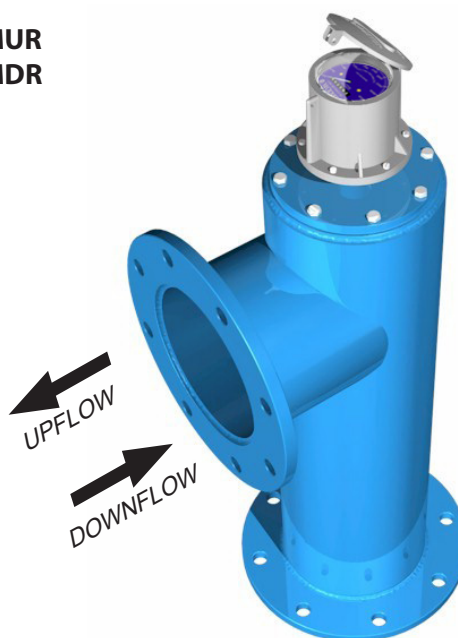
#### Bearings

- 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

- 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.

MUR  
MDR



### Typical Applications

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

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

### INSTALLATION

Meter may be mounted in any convenient position compatible with the balance of the system, as long as a full pipeline is assured. Specify direction of flow when ordering. Model MUR for up flow and model MDR for down flow.

### DESCRIPTION

Fabricated epoxy-coated steel top plate assembly, drilled to match ANSI B16.5 150 PSI standard steel flanges with stainless steel drop pipe to be used with customer-supplied cast iron tee is supplied with brass bearing housing, stainless steel bearings, polypropylene impeller, straightening vanes, magnetic drive, instantaneous flow indicator and straight reading six-digit totalizer.

### FEATURES

#### Impellers

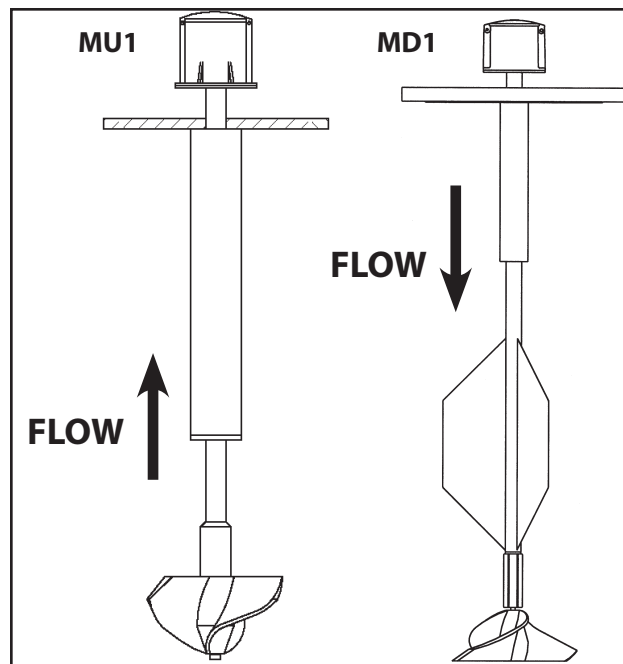
- Impellers are manufactured of high-impact plastic, capable of retaining their shape and accuracy over the life of the meter.
- Each impeller is individually calibrated at the factory to accommodate the use of any standard McCrometer register, and since no change gears are used, the MU1 and MD1 can 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

- 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.



### Typical Applications

The McCrometer propeller meter is the most widely used flowmeter for municipal and wastewater treatment applications as well as agricultural and turf irrigation measurement.

Typical applications include:

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

### INSTALLATION

Meter may be mounted in any convenient position compatible with the balance of the system, as long as full pipeline is assured.

## Part Numbers, Digital Registers

M	XX	-	-	-	-	-	-	-	-	-
Vertical Flow Direction										
Up Flow (W)		U								
Down Flow (M)		D								
Configuration Type										
Right Angle Vertical Flow Tube		R								
Right Angle Tube (top plate only)		1								
Vertical Flow Top Plate (For Customer tubes only)		C								
Meter Size										
3" Top Plate Meter( R only)		03								
4" Top Plate Meter		04								
6" Top Plate Meter		06								
8" Top Plate Meter		08								
10" Top Plate Meter		10								
12" Top Plate Meter		12								
14" Top Plate Meter		14								
16" Top Plate Meter		16								
Assembly Component Options										
Standard Configuration		A								
Non Standard Configuration		X								
Bearing										
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								

**continued on next page**

M	XX	-	-	-
<b>Output Cable Options</b>				
No Outputs -				
6 ft <b>C1</b>				
15 ft <b>C2</b>				
25 ft <b>C3</b>				
50 ft <b>C4</b>				
75 ft <b>C5</b>				
100 ft <b>C6</b>				
125 ft <b>C7</b>				
150 ft <b>C8</b>				
7 pin Female pigtail Telemetry ready (Output Option 1 Only [Flowcom-05]) <b>T1</b>				
7 pin Male 25ft Telemetry ready (Output Option 1 Only) <b>T2</b>				
7 pin Male 50ft Telemetry ready (Output Option 1 Only) <b>T3</b>				
<b>Register Remote and Extension Options</b>				
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 Dlgital) <b>006</b>				
1" Increments for Extensions Lengths <b>XXX</b>				
150" Maximum extension length <b>150</b>				
<b>SPECIAL OPTIONS</b>				
High Temp Prop and Seals (Up to 18") <b>H</b>				

### Part Numbers, Mechanical Registers

<b>M</b>	<b>XX</b>	-	-	-	-	-	-	-	-
<b>Vertical Flow Direction</b>									
Up Flow (W)		U							
Down Flow (M)		D							
<b>Configuration Type</b>									
Right Angle Vertical Flow Tube		R							
Right Angle Tube (top plate only)		1							
Vertical Flow Top Plate (For Customer tubes only)		C							
<b>Meter Size</b>									
3" Top Plate Meter(R & C only)		03							
4" Top Plate Meter		04							
6" Top Plate Meter		06							
8" Top Plate Meter		08							
10" Top Plate Meter		10							
12" Top Plate Meter		12							
14" Top Plate Meter		14							
16" Top Plate Meter		16							
<b>Assembly Component Options</b>									
Standard Configuration		A							
Non Standard Configuration		X							
<b>Bearing</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							

**MODEL SIZES OFFERED:**

MUR	MDR	MU1	MD1	MUC	MDC
x	x	x	x		
x	x	x	x	x	x
x	x	x	x	x	x
x	x	x	x	x	x
x	x	x	x	x	x
x	x	x	x	x	x
x	x	x	x	x	x

continued on next page

Part Numbers, Mechanical Registers (cont.)

M			XX				-		-	
Extension Options										
Meter Mount (Standard) -										
6" Long Extension (Mech or Digital) 006										
1" Increments for Extensions Lengths XXX										
150" Maximum extension length 150										
SPECIAL OPTIONS										
High Temp Prop and Seals (Up to 18") H										

### SPECIFICATIONS

	MUR MDR	MU1 MD1 MUC MDC
<b>Performance</b>		
<b>Accuracy / Repeatability</b>	±2% of reading guaranteed throughout range	<ul style="list-style-type: none"> <li>• ±2% of reading guaranteed throughout full range</li> <li>• ±1% over reduced range</li> <li>• Repeatability 0.25% or better</li> </ul>
<b>Range</b>	3" to 24"	3" to 16"
<b>Maximum Temperature</b>	(Standard Construction) 160°F constant	(Standard Construction) 160°F constant
<b>Pressure Rating</b>	150 psi. Consult factory for special applications.	150 psi. Consult factory for special applications.

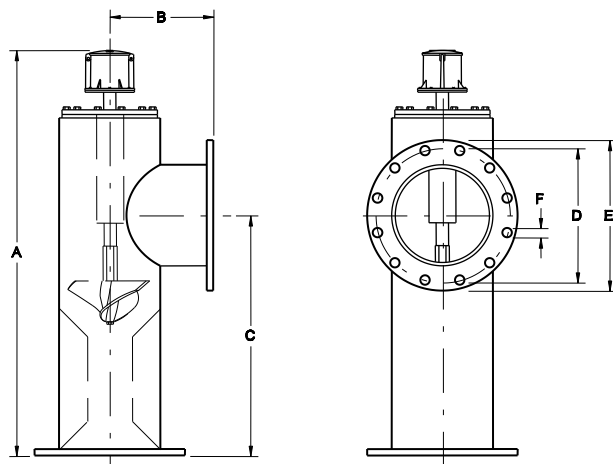
<b>Materials</b>		
<b>Top Plate</b>	Stainless steel (2" to 4") or fusion-bonded epoxy coated carbon steel (6" and larger)	Stainless steel (2" to 4") or fusion-bonded epoxy coated carbon steel (6" and larger)
<b>Drop Pipe</b>	304 stainless steel	n/a
<b>Spool</b>	Carbon steel standard, stainless steel optional	n/a
<b>Coating</b>	Fusion-bonded epoxy	n/a
<b>Body</b>	Epoxy-coated carbon steel pipe conforming to A.S.A pipe schedules	n/a
<b>Bearing Assembly</b>	Impeller shaft is 316 stainless steel. Ball bearings are 440C stainless steel.	Impeller shaft - 316 stainless steel. Ball bearings - 440C stainless steel
<b>Bearing Housing</b>	<ul style="list-style-type: none"> <li>• For models 2" to 16": 304 stainless steel standard, 316 stainless steel optional</li> <li>• For models 18" and larger: Brass standard, 316 stainless steel optional</li> </ul>	<ul style="list-style-type: none"> <li>• For models 2" to 16": 304 stainless steel standard, 316 stainless steel optional</li> <li>• For models 18" and larger: Brass standard, 316 stainless steel optional</li> </ul>
<b>Magnets</b>	(Permanent type) Alnico	Permanent type; cast or sintered alnico
<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 cover with locking hasp.	An instantaneous flowrate indicator and six-digit straight-reading totalizer is standard. The register is hermetically sealed within a die cast aluminum case. This protective housing includes a domed acrylic lens and hinges 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.	Impellers are manufactured of high-impact plastic, retaining their shape and accuracy over the life of the meter.

### Options

<ul style="list-style-type: none"> <li>• Can be fitted with any flange standard including common international standards</li> <li>• Register extensions available</li> <li>• High temperature construction</li> <li>• Extended warranty</li> <li>• All stainless steel construction</li> <li>• A complete line of flow recording/control instrumentation</li> <li>• “Over Run” bearing assembly for higher than normal flowrates</li> <li>• Certified calibration test results</li> <li>• Digital register</li> <li>• Marathon bearing assembly for higher than normal flowrates 4” and above</li> <li>• Canopy boot</li> </ul>	<ul style="list-style-type: none"> <li>• Can be fitted with any flange standard including common international standards</li> <li>• Register extensions available</li> <li>• High temperature construction</li> <li>• Extended warranty</li> <li>• All stainless steel construction</li> <li>• A complete line of flow recording/control instrumentation</li> <li>• “Over Run” bearing assembly for higher than normal flowrates</li> <li>• Certified calibration test results</li> <li>• Digital register</li> <li>• Marathon bearing assembly for higher than normal flowrates 4” and above</li> <li>• Canopy boot</li> </ul>
---	---



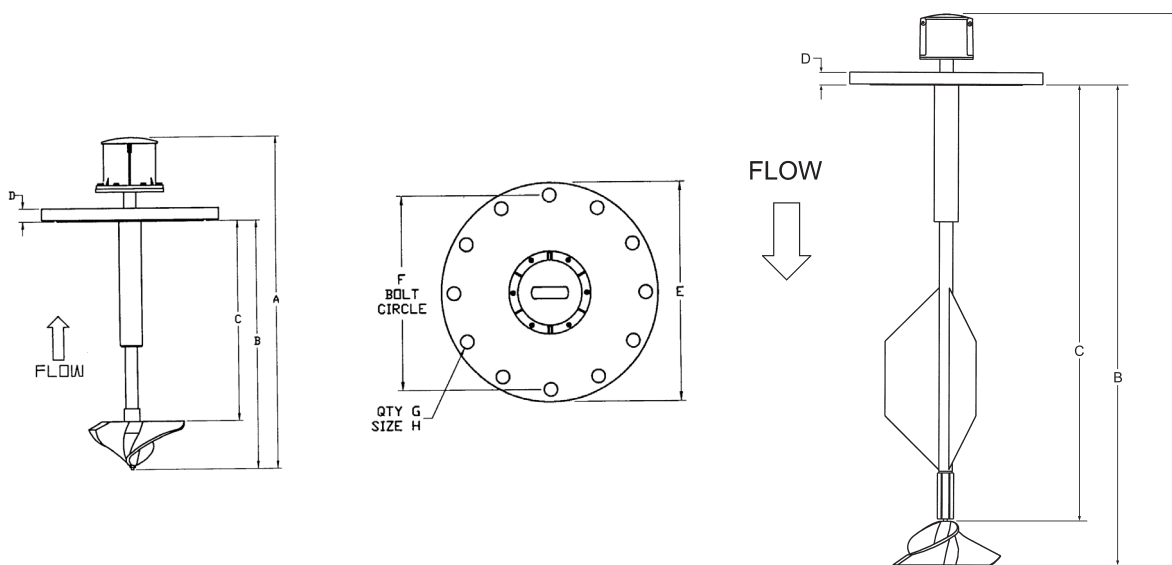
### DIMENSIONS - MUR MDR



MW800 (UP FLOW) MM800 (DOWN FLOW)	DIMENSIONS											
Meter Size	inches	3	4	6	8	10	12	14	16	18	20	24
	mm	76	102	152	203	254	305	356	406	457	508	610
Minimum Flow	GPM	40	50	90	100	125	150	250	275	400	475	700
	LPS	2.5	3.2	5.7	6.3	7.9	9.5	15.8	17.3	25.2	30.0	44.2
Maximum Flow	GPM	250	600	1200	1500	1800	2500	3000	4000	5000	6000	8500
	LPS	15.8	37.9	75.7	94.6	113.6	157.7	189.3	252.4	315.5	378.5	536.3
Maximum Flow w/ Marathon Bearing	GPM		900	1800	2250	2700	3750	4500	6000	7500	9000	12750
Approx. Head Loss in Inches at Max. Flow	inches	29.50	23.00	17.00	6.75	3.75	2.75	2.00	1.75	1.50	1.25	1.00
	mm	749	584	432	171	95	70	51	44	38	32	25
Standard Dial Face*	GPM/ Gal		800/ 100	1300/ 100	2500/ 100	3K/ 1K	4K/ 1K	6K/ 1K	8K/ 1K			
Approx. Shipping Weight, lbs.	lbs	50	87	128	182	272	370	519	601	814	976	1293
	kg	23	39.5	58.1	82.6	123.4	167.8	235.4	272.6	369	443	586
A	inches	22.5	27.875	39.875	36.375	42.375	48.375	54	60	66	72.5	84.5
	mm	572	708	1013	924	1076	1229	1372	1524	1676	1842	2146
B	inches	22.5	27.875	39.875	36.375	42.375	48.375	54	60	66	72.5	84.5
	mm	572	708	1013	924	1076	1229	1372	1524	1676	1842	2146
C	inches	12.25	16.625	18	23	28	33	38	43	48	53.5	63.5
	mm	311	422	457	584	711	838	965	1092	1219	1359	1613
D	inches	6	7.5	9.5	11.75	14.25	17	18.75	21.25	22.75	25	29.5
	mm	152	191	241	298	362	432	476	540	578	635	749
E	inches	7.5	9	11	13.5	16	19	21	23.5	25	27.5	32
	mm	191	229	279	343	406	483	533	597	635	699	813
F	inches	.75	.75	.875	.875	1	1	1.125	1.125	1.25	1.25	1.375
	mm	19	19	22	22	25	25	29	29	32	32	35
No. of Bolts Per Flange		4	8	8	8	12	12	12	16	16	20	20

\*Indicates the dial face range and multiplier  
 Flanges in accordance with A.S.A. B16.5, A.S.T.M. A181 Grade I.  
 Larger flowmeters on special order.  
 Contact the factory for MM800 (downflow) meter dimensions.

### DIMENSIONS - MU1 MD1

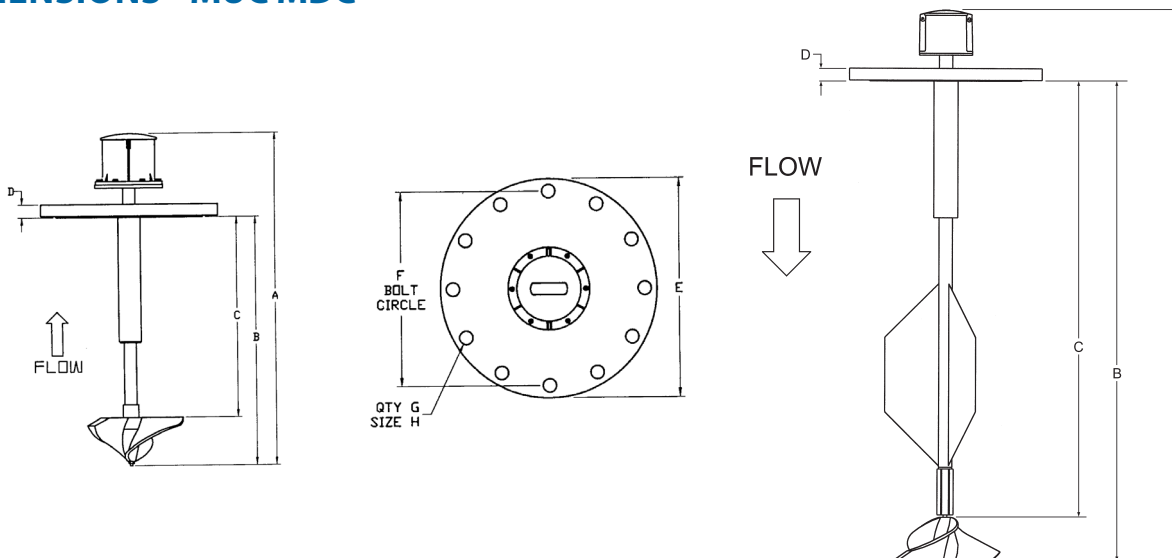


MWC00 (UP FLOW) / MWC00 (DOWN FLOW)	DIMENSIONS							
Meter and Nominal Pipe Size (inches)	3	4	6	8	10	12	14	16
Minimum Flow U.S. GPM	40	50	90	100	125	150	250	275
Maximum Flow U.S. GPM	250	600	1200	1500	1800	2500	300	4000
Maximum Flow w/ Marathon Bearing		900	1800	2250	2700	3750	4500	6000
Approx. Head Loss in Inches at Max. Flow	29.5	23	17	6.75	3.75	2.75	2	1.75
Standard Dial Face (GPM/ Gal)		800/100	1300/100	2500/100	3K/1K	4K/1K	6K/1K	8K/1K
Approx. Shipping Weight- lbs.	50	87	128	182	272	370	519	601
A (inches)	24	24 3/4	27 1/2	27 1/2	34 1/2	34 1/2	40 1/2	44 3/4
B (inches)	16	16 3/4	19 1/2	19 1/2	26 7/8	28 3/4	40 1/2	44 3/4
C (inches)	12 1/4	12 1/2	13 1/8	13 1/8	20 1/8	22 1/2	26 1/4	40 3/4
D (inches)	15/16	15/16	1	1 1/8	1 3/16	1 1/4	1 3/8	1 7/16
E (inches)	7 1/2	9	11	13 1/2	16	19	21	23 1/2
F (inches)	6	7 1/2	9 1/2	11 3/4	14 1/4	17	18 3/4	21 1/4
G (no. of bolt holes)	4	8	8	8	12	12	12	16
H (inches)	3/4	3/4	7/8	7/8	1	1	1 1/8	1 1/8

Flanges in accordance with A.S.A., B16.5, A.S.T.M. A181 Grade I.

Larger flowmeters on special order.

### DIMENSIONS - MUC MDC

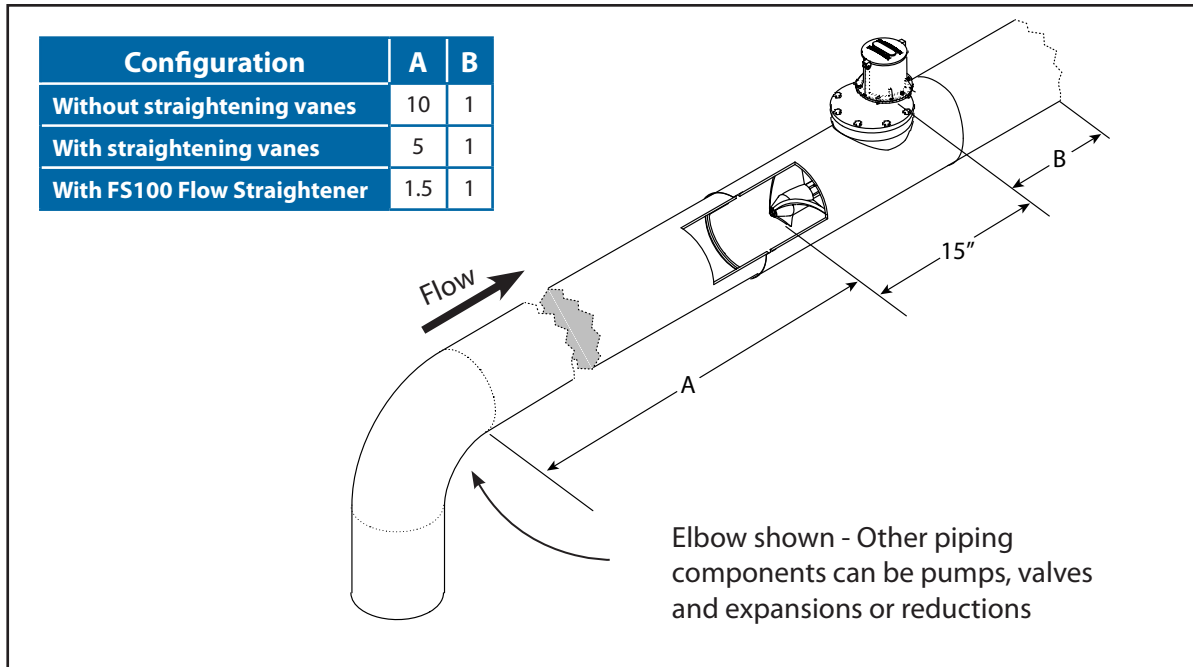


MMC00	DIMENSIONS							
Meter and Nominal Pipe Size (inches)	3	4	6	8	10	12	14	16
Minimum Flow U.S. GPM	40	50	90	100	125	150	250	275
Maximum Flow U.S. GPM	250	600	1200	1500	1800	2500	3000	4000
Maximum Flow w/ Marathon Bearing		900	1800	2250	2700	3750	4500	6000
Approx. Head Loss in Inches at Max. Flow	29.5	23	17	6.75	3.75	2.75	2	1.75
Standard Dial Face (GPM/ Gal)		800/100	1300/100	2500/100	3K/1K	4K/1K	6K/1K	8K/1K
Approx. Shipping Weight-lbs.	60	100	150	200	290	390	530	625
A (inches)	Per Customer Specifications							
B (inches)								
C (inches)								
D (inches)								
E (inches)	7.5	9	11	13.5	16	19	21	23.5
F (inches)	6	7.5	9.5	11.75	14.25	17	18.75	21.25
G (no. of bolt holes)	4	8	8	8	12	12	12	16
H (inches)	.75	.75	.875	.875	1	1	1.125	1.125

### INSTALLATION

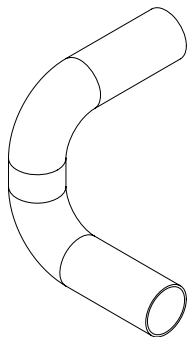
Standard installation is horizontal mount. If the meter is to be mounted in the vertical position, please advise the factory.

### PIPE RUN REQUIREMENTS

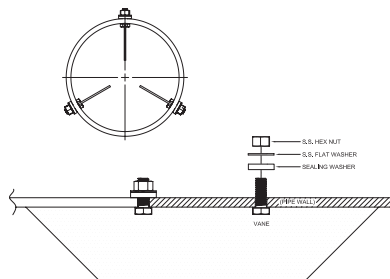


### STRAIGHTENING VANES

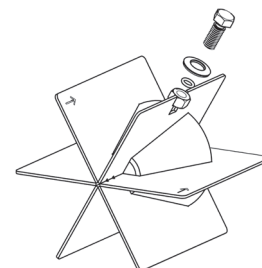
Special attention should be given to systems using two elbows “out of plane” or devices such as a centrifugal sand separator. These cause swirling flow in the line that affect propeller meters. Well developed swirls can travel up to 100 diameters downstream if unobstructed. Since most installations have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

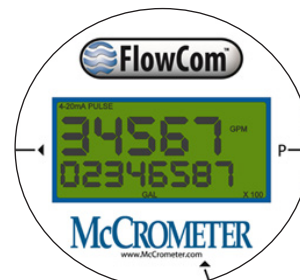
#### Typical face plates



Standard register



Optional 7-wheel totalizer



FlowCom register



### 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.

Copyright © 2001-2022 McCrometer, Inc. All printed material should not be changed or altered without permission of McCrometer. Any published pricing, technical data, and instructions are subject to change without notice. Contact your McCrometer representative for current pricing, technical data, and instructions.

3255 WEST STETSON AVENUE • HEMET, CALIFORNIA 92545 USA  
TEL: 951-652-6811 • 800-220-2279 • FAX: 951-652-3078  
www.mccrometer.com

