

Water Specialties Model MLU 150 psi Weld-on Saddle Meter Sizes 4" to 72"

DESCRIPTION

MODEL MLU WELDING SADDLE METERS are manufactured to the highest standards. Materials used on all meters and flow ranges meet or exceed AWWA standard C704-02. The weld-on design permits use in a wide range of applications with up to 150 psi working pressure. It is necessary, upon ordering, to furnish the I.D. dimension of the pipe the meter is to be mounted on for calibration purposes. The O.D. dimension or wall thickness must also be furnished for proper fit of the saddle to the pipe.

FEATURES

PROPELLER is magnetically coupled with the drive mechanism through the sealed oil filled gearbox. This completely eliminates water entering the meter assembly, as well as the need for any packing gland. The propeller is a conical shaped three bladed propeller, injection molded of thermoplastic material resistant to normal water corrosion and deformity due to high flow velocities.

CHANGE GEARS may be easily exchanged in the field when changing the dial, or when recalibrating for different pipe sizes. It is not necessary to remove pressure from the line for these changes.

O-RING SEALS are used at the meter head and all points where seals are required, making the meter mechanism completely immune to any of the corrosive effects of atmospheric moisture or liquids.

TOTALIZER and INDICATOR-TOTALIZER is O-ring sealed and magnetically coupled with the driving mechanism, and features a six digit totalizer with a full 3" diameter, 100 division, center sweep dial that permits extremely accurate readings for timing purposes in determining flow rates. The totalizer dial can be furnished in

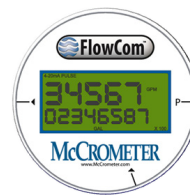
Totalizer



Indicator- Totalizer



FlowCom Register



gallons, cubic feet, acre feet, or any standard liquid measuring units. The bonnet, with padlock hasp, can be positioned in four different directions for the easiest possible reading when the meters are mounted in unusual positions.

DIGITAL REGISTER has a non-volatile EEPROM memory to store totalizer count (updated hourly while running). Features a large two line display. Five digit top line indicates flow rate, and eight digit bottom line provides volumetric flow data. Indicator is available in 22 different units, including GPM, CFS, MGD. Totalizer is available in 20 different units, including Gallons, AF, CF. Units of measurement are user-selectable. Battery life is 6-10 years. Housing is NEMA 4X rated.

Available with optional outputs: 4-20mA, pulse, Sensus, Itron, and Neptune.





* High temperature range is 140° - 250° F. High temperature prop meters must have at least a 12" register extension (included in price).



Part Numbers, Mechanical Registers

ML	XX								
CONNECTION OPTIONS:									
Weld on Saddle 150 PSI (ML19/ML20)		U							
METER SIZE									
2" Top Plate Meter	02								
3" Top Plate Meter	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								
18" Top Plate Meter	18								
20" Top Plate Meter	20								
24" Top Plate Meter	24								
30" Top Plate Meter	30								
36" Top Plate Meter	36								
42" Top Plate Meter	42								
48" Top Plate Meter	48								
Tube Options									
AWWA Class (D/F) Standard Tube Length		A							
ANSI Flange (150/300) Standard Tube Length		B							
Non Standard Tube		X							
Propeller Options									
Standard		1							
High Velocity		2							

continued on next page



Part Numbers, Mechanical Registers (cont.)

ML	XX				-		-	
Register Options								
Totalizer				1				
Indicator/Totalizer				2				
Output Options								
No Outputs				-				
4-20 Analog Only (TR15/TR16)				A				
Dry Contact Pulse & 4-20 Analog (TR04/TR12 + TR15/TR16)				B				
Dry Contact Pulse (TR04/TR12)				C				
Register Extension Options								
Meter Mount (Standard)				-				
6" Long Extension (Mech)				006				
7" Long Extension (Mech)				007				
8" Long Extension (Mech)				008				
1" Increments for Extensions Lengths				XXX				
144" Maximum extension length				144				
High Temp Option								
High Temp Prop and Seals								H



SPECIFICATIONS

Performance

Accuracy	Plus or minus 2% of actual flow within the range specified for each meter size.
Pressure Range	Up to 150 PSI maximum working pressure.
Temperature Range	140° F Maximum. Consult factory for special construction for higher temperatures.
Flow Ranges	<p>See Min-Max-Int Flow Ranges column in the table of meter specifications on page 8.</p> <ul style="list-style-type: none">• Size and construction are rated for continuous operation.• Min and max flow ranges will vary according to meter size and construction.• Min flow will be higher when auxiliary equipment is added.• Intermittent flow is rated for 10%-15% of the total time the meter is operating.• Consult factory for high velocity construction when intermittent flows are higher than shown in the table of meter specifications on page 3 and/or when longer operating periods are required.

Materials

Materials used in construction are chosen to minimize the corrosive effects of the liquids measured by the meter assembly.

Magnets	Anticorrosive aluminized barrier coated magnets; Everlube 6155
Interior Bearings	Shielded stainless steel
Propeller Bearing	4" - 54" Ceramic sleeve type 60" - 72" Sealed stainless steel ball type
Propeller Spindle	4" - 54": Ceramic sleeve/stainless steel 60" - 72": Stainless steel
Propeller	Injection molded thermoplastic
Gearbox	4" - 54": Stainless steel
Separator	Stainless steel
Shafts	Stainless steel
Meter Head Bolts	4" - 20: Stainless steel 24" - 72": Plated steel
Meter Head	Cast iron or fabricated steel, NSF approved fusion epoxy coated.

Optional Equipment

Totalizer Extensions and a wide range of controls and instruments for indicating, totalizing and recording flow data for each meter. Special constructions and materials are available upon request.

FCC CERTIFICATION: The digital indicator-totalizer has been tested and found to comply with the limits for Class A digital device pursuant to Part 15 of the FCC Rules.

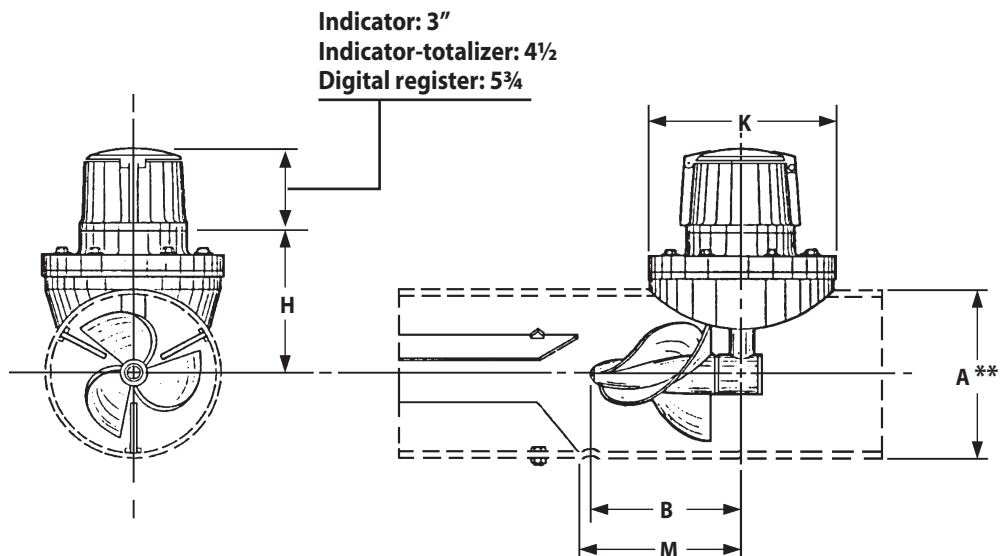


ORDERING INFO

Meters must be specified by the customer and includes:

- Meter size
- Model number
- Serial number of the meter it is replacing
- Minimum & maximum flow ranges
- Temperature of meter environment
- Indicator scale & units
- Totalizer dial units
- Type of materials and construction
- Optional equipment desired
- Specify plain, grooved, or threaded end
- Installation requirement - Horizontal or vertical

MLU DIMENSIONS



Meter & Pipe size (inches)	Flow Ranges, GPM		Dimensions					Est. Shipping Weight (lbs.)
	Standard Construction Min - Max - Int	High Velocity Construction Min - Max	A	B	H	K	M	
4	55-500-700	200-700	4 1/2	8	5 3/16	9	10	55
6	120-1200-1500	300-1500	6 5/8	8	6 1/4	9	10	55
8	150-1500-2000	400-2500	8 5/8	8	7 1/4	9	10	55
10	180-2000-3000	500-3500	10 3/4	8	8 1/2	11	10	60
12	200-3000-3500	800-5000	12 3/4	8	9 1/2	11	10	70
14	300-4000-4500	1000-6000	14	8	10 1/2	13 1/2	10	75
16	400-5000-6000	1200-7500	16	8	11 1/2	13 1/2	10	75
18	700-6000-7500	1500-9000	18	8	12 1/2	13 1/2	10	75
20	850-8000-9000	2000-12000	20	8	13 1/2	13 1/2	10	75
24	1000-10000-13500	3000-15000	24	11 1/2	17 1/2	21	13 1/2	250
30	1800-15000-21000	4000-25000	30	11 1/2	20 1/2	21	13 1/2	250
36	2000-20000-30000	5000-35000	36	11 1/2	23 1/2	21	13 1/2	250
42	3000-30000-40000	6000-50000	42	11 1/2	27	32	13 1/2	525
48	5500-35000-50000	7000-60000	48	11 1/2	30	32	13 1/2	525
54	6500-45000-55000	8000-65000	54	11 1/2	33	32	13 1/2	525
60	7500-60000-80000	10000-90000	60	18‡	36	32	22‡	525
66	8500-75000-95000	12000-105000	66	18‡	39	32	22‡	525
72	9500-90000-115000	15000-125000	72	18‡	42	32	22‡	525

Standard construction will be supplied for all main line meters unless special flow range, materials, or construction are required.

* Low velocity (LV) construction has the same low and maximum flow rates as AWWA C704.

‡ On High Velocity Meters "B" Dimension is 11 1/2" and "M" dimension is 13 1/2".

PLEASE SPECIFY PIPE I.D. AND O.D.

INSTALLATION

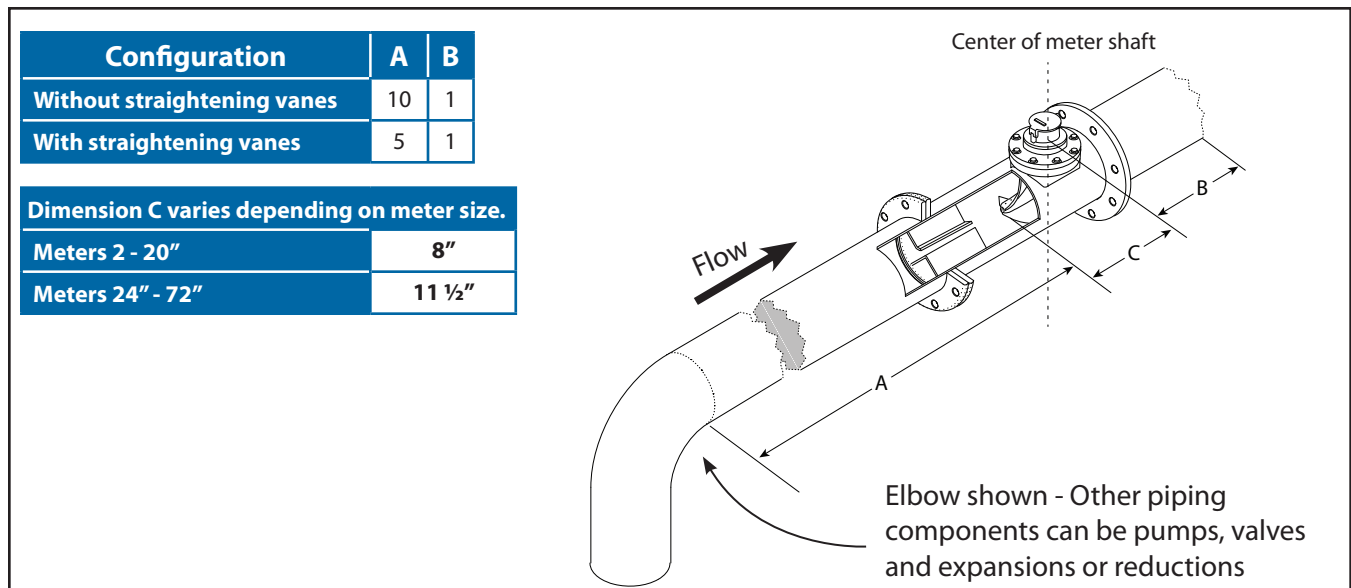
Flanged end meters: A tube is inserted into a section of open pipe and each flanged end is joined to the existing pipe using the provided gaskets and bolts.

Plain, grooved, or threaded end meters: A tube is inserted into a section of open pipe and each end is joined to the existing pipe as appropriate to its type.

The meter can be installed horizontally, vertically, or inclined on suction or discharge lines. The meter must have a full flow of liquid for proper accuracy. Complete installation, removal, and reinstallation instructions can be found in the meter's Installation, Operation, and Maintenance Manual.

PIPE RUN REQUIREMENTS

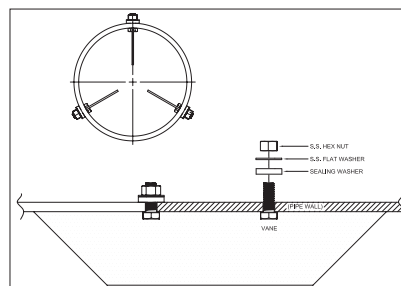
Fully opened gate valves, fittings or other obstructions that tend to set up flow disturbances should be a minimum of ten pipe diameters upstream and two pipe diameters downstream from the meter. Installations with less than ten pipe diameters of straight pipe require straightening vanes. Meters with straightening vanes require at least five pipe diameters upstream and two pipe diameters downstream of the meter.



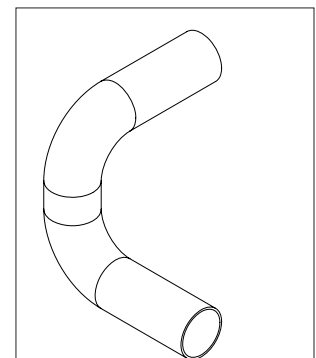
STRAIGHTENING VANES

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 and bolt-in.



Bolt-in straightening vanes



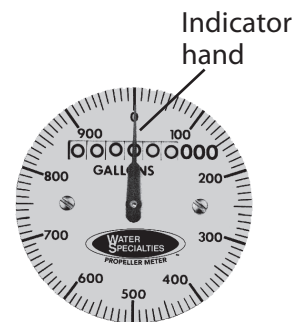
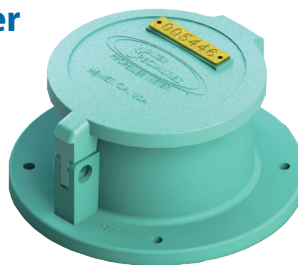
Elbows out of plane

REGISTERS AND TOTALIZERS

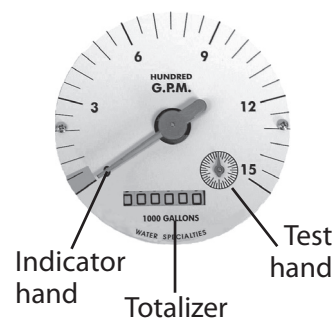
Mechanical Register and Indicator-Totalizer

The instantaneous flow rate indicator is standard and available in gallons per minute, cubic feet per second, liters per second and other units.

The register housing protects both the register and cable drive system from moisture while allowing clear reading of the flow rate indicator and totalizer.



Standard register

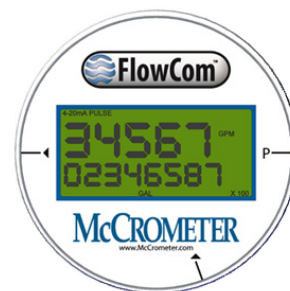


Indicator-totalizer

Digital Totalizer

The optional FlowCom register displays a flow meter's flow rate 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 flow meter.

Automated meter reading for the FlowCom register is available with the Smart Output transmitter option.



FlowCom register

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.



FlowConnect

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