

Water Specialties LP Series 150 psi Strap-On Saddle Meter Sizes 6" to 20"

DESCRIPTION

LP SERIES STRAP-ON SADDLE METERS are designed for irrigation or other low pressure service up to 150 PSI working pressure.

The stainless steel saddle and u-straps permit installation on a wide range of steel, cast-iron, plastic (3/16" PVC wall minimum), asbestos, and other pipe materials for each nominal meter size.

It is necessary upon ordering to furnish the I.D. dimension of the pipe the meter is to mounted on, for calibration purposes. The pipe O.D. dimension (20" max.) or wall thickness must also be furnished for proper sizing of the U-straps.

NOTE: Consult factory for O.D. larger than 20".

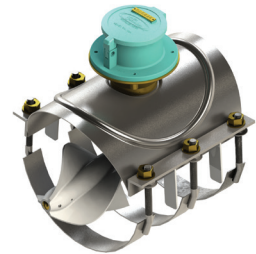
PROPELLER is magnetically coupled with the electronic sensor through the sealed gearbox. This completely eliminates water entering the meter assembly, and eliminates all moving parts except for the propeller. The propeller is a conical shaped three bladed propeller, injection molded of thermoplastic material resistant to normal water corrosion and deformity due to high flow velocities.

BEARING in propeller is a water lubricated ceramic sleeve and spindle bearing system with a ceramic/stainless steel spindle. Dual ceramic thrust bearings, standard on all meters, handle flows in both forward and reverse directions. The bearing design promotes extended periods of maintenance free propeller operation.

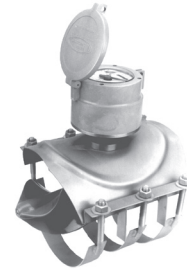
CHANGE GEARS may be easily exchanged in the field when changing the dial, or when recalibrating for different pipe sizes. It is not necessary to remove pressure from the line for these changes.

O-RING SEALS are used at the meter head and all points where seals are required, making the meter mechanism completely immune to any

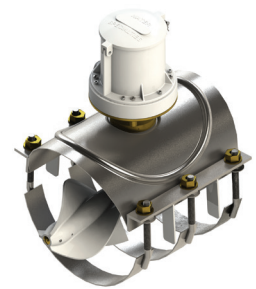
Totalizer



Indicator- Totalizer



FlowCom Register



of the corrosive effects of atmospheric moisture or the liquids measured by the meter assembly.

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 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.

INDICATOR-TOTALIZER is mechanically driven by the meter mechanism and features a full 4" diameter, 250 degree sweep dial with a six digit, straight reading type totalizer and sweep test hand. The indicator drive mechanism is temperature compensated so the indicator will be accurate at all points on the dial when operated between 32° and 140° F. The indicator dial



Specification Sheet

LP Series Strap-on Saddle Flow Meter

can be furnished in GPM, CFS, MGD or any standard liquid measuring units with choice of standard totalizer measuring units. The bonnet, with padlock hasp, is O-ring sealed to the meter head.

DIGITAL INDICATOR-TOTALIZER 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.



Part Numbers, Digital Registers

LP	XX					-		-		-	
METER SIZE											
6" Saddle Meter	06										
8" Saddle Meter	08										
10" Saddle Meter	10										
12" Saddle Meter	12										
14" Saddle Meter	14										
16" Saddle Meter	16										
18" Saddle Meter	18										
20" Saddle Meter	20										
OD Range Options											
5.5"-5.89"	A										
5.9"-6.75"	B										
6.76"-7.49"	C										
7.5"-7.79"	D										
7.8"-8.93"	E										
8.95"-9.19"	F										
9.2"-9.69"	G										
9.7"-10.94"	H										
10.95"-11.29"	I										
11.3"-11.69"	J										
11.7"-12.94"	K										
12.95"-13.39"	L										
13.4"-14.44"	M										
14.44"-15.39"	N										
15.4"-16.44"	O										
16.45"-17.49"	P										
17.5"-18.44"	Q										
18.45"-19.19"	R										
19.2"-20.38"	S										
20.39"-20.97"	T										
20.98"-22.04"	U										
Propeller Options											
Standard	1										
High Velocity	2										
Register Options											
Flowcom	D										
Flowcom Non Programmable	N										
Flowconnect (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



Specification Sheet LP Series Strap-on Saddle Flow Meter

Part Numbers, Digital Registers (cont.)

LP	XX					-		-		-	
Output Cable Options											
No Outputs											
6 ft											
15 ft											
25 ft											
50 ft											
75 ft											
100 ft											
125 ft											
150 ft											
7 pin Female pigtail Telemetry ready (Output Option 1 Only [Flowcom-05])											
7 pin Male 25ft Telemetry ready (Output Option 1 Only)											
7 pin Male 50ft Telemetry ready (Output Option 1 Only)											
Register Remote and Extension Options											
Meter Mount (Standard)											
6 ft Cable Remote Mount (Flowcom only)											
25 ft Cable Remote Mount (Flowcom only)											
50 ft Cable Remote Mount (Flowcom only)											
6" Long Extension (Mech or Digital)											
7" Long Extension (Mech or Digital)											
8" Long Extension (Mech or Digital)											
1" Increments for Extensions Lengths											
150" Maximum extension length											
High Temp Option											
High Temp Prop and Seals											
H											

* 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

LP	XX					-		-	
METER SIZE									
6" Saddle Meter	06								
8" Saddle Meter	08								
10" Saddle Meter	10								
12" Saddle Meter	12								
14" Saddle Meter	14								
16" Saddle Meter	16								
18" Saddle Meter	18								
20" Saddle Meter	20								
OD Range Options									
5.5"-5.89"	A								
5.9"-6.75"	B								
6.76"-7.49"	C								
7.5"-7.79"	D								
7.8"-8.93"	E								
8.95"-9.19"	F								
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14.44"-15.39"	N								
15.4"-16.44"	O								
16.45"-17.49"	P								
17.5"-18.44"	Q								
18.45"-19.19"	R								
19.2"-20.38"	S								
20.39"-20.97"	T								
20.98"-22.04"	U								
Propeller Options									
Standard	1								
High Velocity	2								
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								

continued on next page



Part Numbers, Mechanical Registers (cont.)

LP	XX					-		-	
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		
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 9.</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 9 and/or when longer operating periods are required.

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
Vertical Shaft Bearing	Shielded stainless steel
Propeller Bearing	Ceramic sleeve type
Propeller Spindle	Ceramic sleeve/stainless steel
Propeller	Injection molded thermoplastic
Gearbox	Stainless steel
Separator	Stainless steel
Shafts and Bolts	Stainless steel
Saddle	Stainless steel (4" - cast iron)
Lug Strips	Stainless steel
U-Straps	Stainless steel

Optional Equipment

- Totalizer extensions and a wide range of controls and instruments for indicating, totalizing and recording flow data for each meter
- Remote mounting kit with up to 50 feet of cable, digital transmitter, 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.

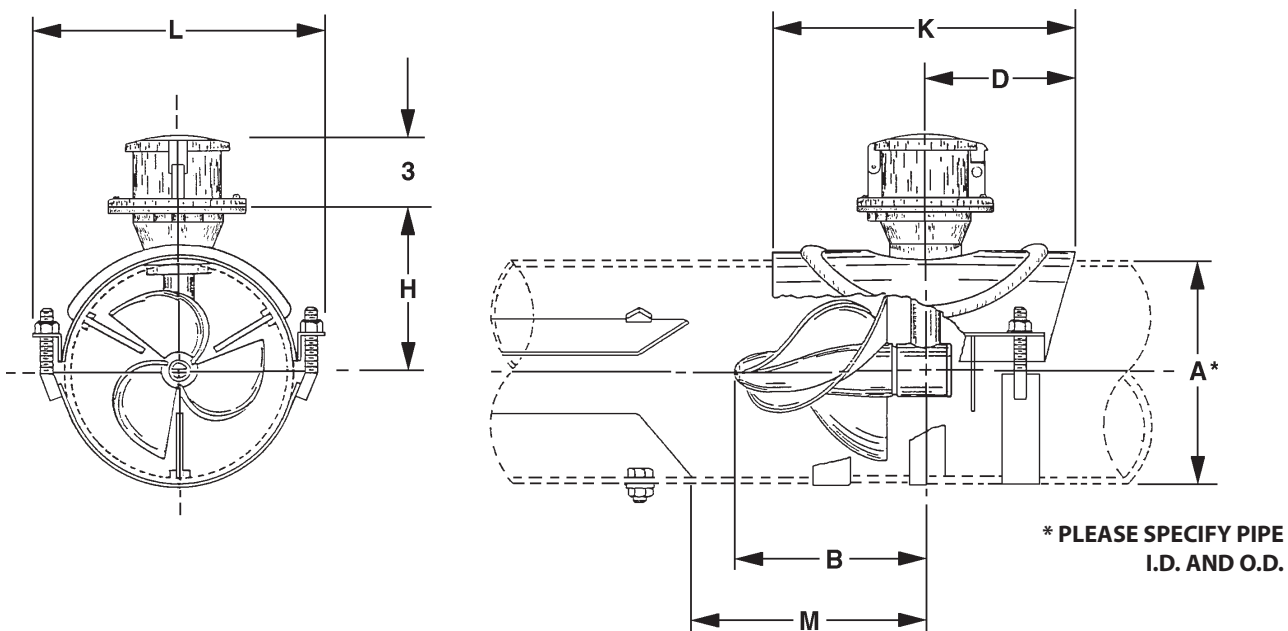


ORDERING INFO

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

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	D	H	K	L	M	
6	200 - 1200 - 1500	1200/1000	6 5/8	8	6	5 1/4	12	13	10	20
8	250 - 1500 - 2000	1500/1000	8 5/8	8	6	6 1/4	12	12 1/2	10	25
10	300 - 2000 - 3000	2000/1000	10 3/4	8	6	7 3/8	12	13 1/4	10	28
12	350 - 3000 - 3500	3000/1000	12 3/4	8	6	8 3/8	12	15 1/4	10	32
14	450 - 4000 - 4500	4000/1000	14	8	6	9 1/4	12	15 1/2	10	35
16	500 - 5000 - 6000	5000/1000	16	8	6	10 1/4	12	17 1/2	10	38
18	800 - 6000 - 7500	6000/1000	18	8	6	11 1/4	12	19 1/2	10	43
20	950 - 8000 - 9000	8000/10000	20	8	6	12 1/4	12	21 1/2	10	49

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

‡ 4" METER MUST BE 4.5" O.D. FOR PROPER SEALING OF THE SADDLE

INSTALLATION

The saddle assembly is attached to the tube as follows:

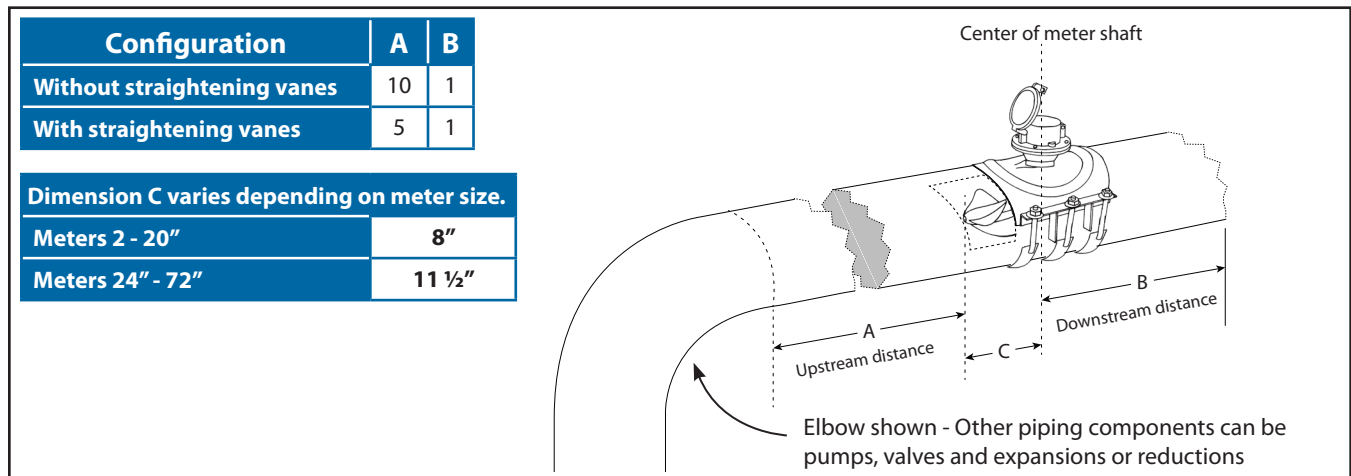
- For new installations: After a hole is cut in the pipe using the cutout template for the meter model's size, the saddle is attached to the pipe with the provided gasket.
- For replacements or retrofits: After the existing meter is removed, it is replaced with a replacement or retrofitted meter using the provided gasket. The replacement or retrofit must be suitable for the size of the existing hole.

U-straps for attaching the meter saddle to the line are furnished with each meter.

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

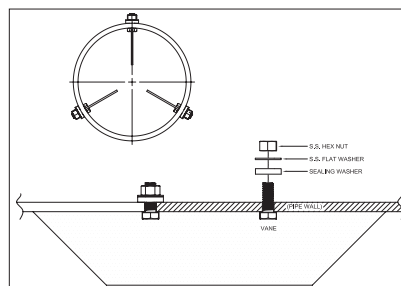
Fully opened gate valves, fittings or other obstructions that tend to set up flow disturbances should be a minimum of ten pipe diameters upstream and two pipe diameters downstream from the meter. Installations with less than ten pipe diameters of straight pipe require straightening vanes. Meters with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



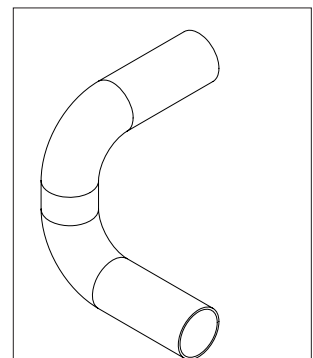
STRAIGHTENING VANES

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



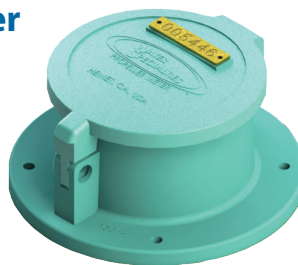
Elbows out of plane

REGISTERS AND TOTALIZERS

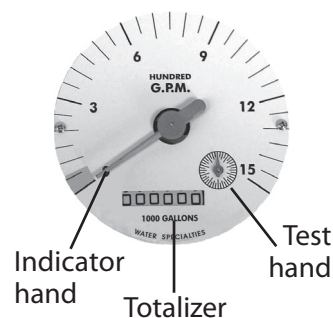
Mechanical Register and Indicator-Totalizer

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

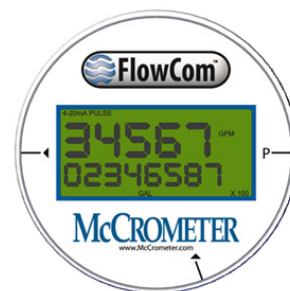


Indicator-totalizer

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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