

Product Data Sheet
PDS-102
2021-01-09

Series 102 Direct Drive Meters



Description

The Series 102 Direct Drive Meters are designed to provide accurate and reliable flow measurements where mainline service is required in the municipal and industrial areas. These meters have been used for over seventy years and have proven their reputation for rugged, continuous duty with minimum maintenance.

This meter can be easily maintained or repaired with standard tools. The mechanical worm and gear drive is positive and prevents the possibility of slippage and low readings.

The meter is available as a meterhead only or a meterhead complete with saddle or tube. See PDS-110.

Temperature Limits

Liquid working temperatures should not exceed 100°F. Propellers may be stored in air temperatures up to 175°F.

Principle of Operation

Sparling propeller meters utilize the simple principle of the screw propeller to register the total flow, much as an odometer registers auto mileage. The rotation of the propeller affords a basis for indicating and recording gallons per minute or other rates.

Installation

Meters must be installed in full flowing suction or discharge lines. Avoid valves, fittings or obstructions immediately upstream of the meter which may cause jetting or non-symmetrical flow profiles. It is recommended that a minimum of five straight pipe diameters be maintained upstream and one diameter downstream of the flow meter.

Certified Accuracy

Accuracy is within 2% of actual flow for the specified meter range. This accuracy is guaranteed by certified wet calibration at three test points in Sparling's NIST traceable primary flow laboratory. Each meter is tested at low flow, mid-range, and high flow. A test certificate is provided with each meter.

Flow Ranges

These meters measure accurately over a wide flow range of 10:1 or greater. The maximum flow ranges can be safely exceeded by 50% when used intermittently. Flow rates are provided in the table under specifications for each of the sizes.

Anticipated flow ranges and minimum and normal flow rates should always be specified on application sheets accompanying your order.

Options

High Velocity Flows - If the minimum actual flow rate exceeds the minimum published flow rate in Table 1, high velocity construction is required. Specially configured propellers and bearings are used.

When continuous flow rates exceed twice the minimum standard flow rate in Table 1, high velocity construction is required.

Anticipated flow ranges and minimum and normal flow rates should always be specified on application sheets accompanying your order. This information is required for proper evaluation of meter construction.

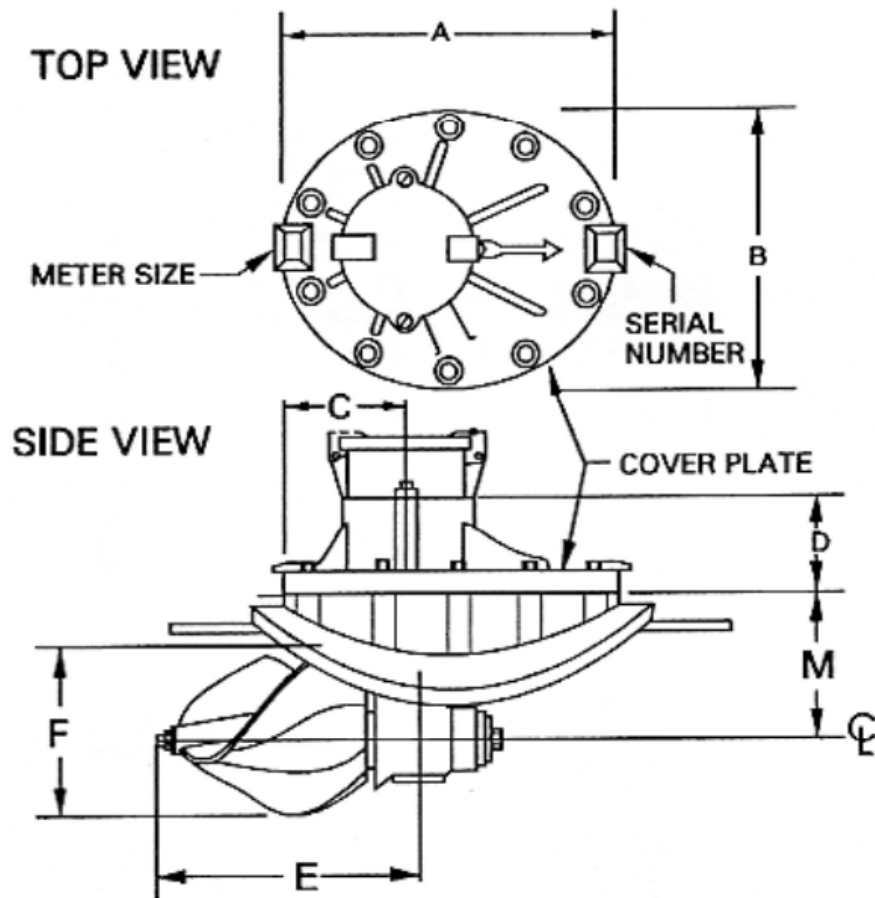
Transmitters - Electronic transmitters are available for installation on these meters. See PDS-190.

Rate-of-Flow Indicators - When continuous rate of flow indication is required, an optional rate-of-flow indicator and totalizer is available. See PDS-190.

Size	Flow Range (GPM)	
	Standard	High
2	30 - 80	60 - 150
3	35 - 200	70 - 360
4	60 - 400	120 - 600
6	100 - 900	200 - 1600
8	120 - 1200	240 - 2300
10	160 - 1600	320 - 3000
12	200 - 2200	400 - 4000
14	260 - 3000	520 - 5000

Table 1: Base Model Number FM102 - Direct Drive Meterhead					
	Table 2: Size				
	02 - 2"	0H - 2.5"	03 - 3"	04 - 4"	
	06 - 6"	08 - 8"	10 - 10"	12 - 12"	
	14 - 14"				
	Table 3: Pressure Rating				
	1 - 150 psi				
	2 - 250 psi				
	Table 4: Flow Range				
	1 - Standard Range				
	2 - High Range				
	Table 5: Readouts				
	0 - None				
		Table 6: Accessories			
		0 - None			
Model	Size	Pressure	Flow	Readouts	Access.
FM102	02	1	1	0	0

* If meter is operated continuously at flows above the mid-point of the standard flow range, rubber bearings are required.



Flow Rates & Dimensions

	Six-bladed propeller		Three-bladed propeller					
	2	3	4	6	8	10	12	14
Size (in)								
Weight* (lbs)	20	20	20	25	29	34	36	37
A	8.13	8.25	9.5	10.38	11	11	11	11
B	5.13	6.25	6.75	7.31	10.63	10.63	10.63	10.63
C	3.13	3.18	4.13	3.96	5.81	5.81	5.81	5.81
Min. D	Sparling Standard							
E	4	4	6.94	6.31	6.31	6.31	6.31	6.31
F	2.38	2.75	3.5	4.75	7	8	10	11
M	1.75	2.75	3.44	4.25	5.31	6.31	7.31	8
Size of Bolts	$\frac{7}{16}$	$\frac{7}{16}$	$\frac{3}{8}$	$\frac{7}{16}$	$\frac{7}{16}$	$\frac{7}{16}$	$\frac{7}{16}$	$\frac{7}{16}$
Length Of Bolts	1	1	1	1	1.25	1.25	1.25	1.25
Number Of Bolts	10	10	8	10	10	10	10	10

* Weight of complete meter less straightening vanes.

* Factory can advise Rates and Dimensions for meters up to 120" in size