

# Mainline Propeller Meters

Models 119/120 – Welding Saddle Type meter

**150 psi (10 bar) Working Pressure, 300 psi (20 bar) Working Pressure,  
Magnetic Drive Sealed Gear Type, Sizes 4" through 72" (DN 100mm—DN 1800mm)**

## DESCRIPTION

**Application:** Sensus Propeller Meters are intended for accountability measurement of potable or non-potable cold (to 100°F/38°C) water where flow is in only one direction. The meters can be installed at any convenient angle from horizontal to vertical; in discharge, suction or pressurized lines; within stated pressure ratings. For accurate measurement, a full flow of water through the meter and stated minimum flow rates are required. Because all appropriate parts are sealed for protection, the meters can be used with water containing articulate solids (as sand), without causing undue wear.

**Magnetic Drive:** Eliminates mechanical packings and stuffing boxes. A sleeve-type ceramic magnet in the propeller assembly drives a follower magnet located within the sealed gear box.

**Right Angle Gearing:** The brass bevel gears which drive the register shaft, operate within a factory-sealed, oil-filled, one-piece cast bronze gear box, providing lubrication for the life of the meter.

**Ceramic Bearing And Shaft:** The double land ceramic bearing retained in the propeller assembly rotates on a ceramic sleeved shaft. The high purity ceramic provides exceptionally good wear characteristics, even in water containing entrained solids.

**Registers:** Sensus Propeller Meters are available with a standard sealed mechanical register (Model 119) or a sealed Electronic Rate of Flow Instrument and Transmitter—E-ROFI (Model 120).

**Installation:** The meter is installed by cutting a hole in the pipeline; welding the saddle on the line, and then securing the meter head to the saddle. Using appropriate welding procedures, the cast steel welding saddle permits installation on a wide range of steel, ductile or cast iron pipe. To insure proper calibration and clearances for the propeller, when ordering, it is essential to specify the I.D. and O.D. and material of the pipe on which the meter is to be installed. Straightening vanes should be installed upstream of the meter. Valves, fittings and other equipment that may create a flow disturbance, should be at least five times the diameter of the pipe upstream, and three to five times the diameter downstream from the meter.



Model 119



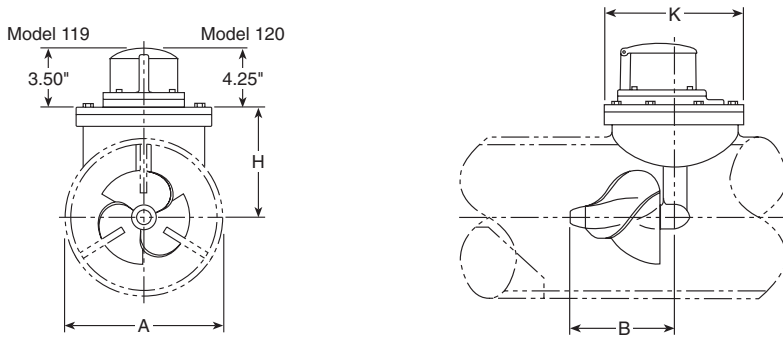
Standard Sealed Register

E-ROFI Register

**Gaskets:** A flat gasket is used at the connection of the meter head to the body on 4" (DN 100mm) through 8" (DN 200mm). An "O" ring is used on 10" (DN 250mm) and larger sizes.

**Instrumentation Capabilities:** The E-ROFI or High-Speed Pickup Registers are available for interfacing with Sensus Act-Pak Instruments. Refer to Bulletin E-1116 for HSPU and Bulletin E-1110 for E-ROFI Register.

**Maintenance:** Should maintenance or testing be needed, the meter head can be removed without disturbing the tube body in the pipeline. Cover plates are available for maintaining service or flushing of lines when the meter head is removed.



Meter Size	Low Flow GPM m <sup>3</sup> /h 1	Normal Range GPM m <sup>3</sup> /h 2	A in mm	B in mm	H in mm	K in mm	Shipping Weight Pounds kg
4" DN 100mm	82 18.2	125-500 28-114 m	4-1/2" 114mm	7-1/2" 190mm	3-7/8" 99mm	7-1/2" 190mm	30 lbs. 13.6 kg
6" DN 150mm	160 36.3	220-1200 50-273	6-5/8" 168mm	7-1/2" 190mm	5" 127mm	9" 229mm	140 lbs. 18.1 kg
8" DN 200mm	190 43.2	250-1650 57-375	8-5/8" 219mm	7-1/2" 190mm	6" 152mm	9" 229mm	40 lbs. 18.1 kg
10" DN 250mm	260 59.0	330-2500 75-568	10-1/2" 267mm	7-1/2" 190mm	7-3/8" 187mm	11" 279mm	55 lbs. 25 kg
12" DN 300mm	257 62.4	350-3500 80-795	12-3/4" 324mm	7-1/2" 190mm	8-3/8" 213mm	11" 279mm	55 lbs. 25 kg
14" DN 350mm	350 79.5	450-4500 102-1022	14" 356mm	7-1/2" 190mm	9-1/4" 235mm	13-1/2" 343mm	100 lbs. 45.5 kg
16" DN 400mm	450 102.2	550-5500 125-1249	16" 406mm	7-1/2" 190mm	10-1/4" 264mm	13-1/2" 343mm	100 lbs. 45.5 kg
18" DN 450mm	550 124.9	725-7250 165-1647	18" 457mm	7-1/2" 190mm	11-5/8" 295mm	13-1/2" 343mm	100 lbs. 45.5 kg
20" DN 500mm	700 159.0	850-9000 193-2044	20" 508mm	7-1/2" 190mm	12-5/8" 321mm	13-1/2" 343mm	100 lbs. 45.5 kg
24" DN 600mm	1000 227.1	1300-13000 295-2952	24" 610mm	7-1/2" 190mm	12-5/8" 321mm	13-1/2" 343mm	100 lbs. 45.5 kg
30" DN 750mm	1600 363.4	2100-18600 477-4224	30" 762mm	7-1/2" 190mm	12-5/8" 321mm	13-1/2" 343mm	100 lbs. 45.5 kg
36" DN 900mm	2400 545.0	3000-24000 681-5450	36" 914mm	7-1/2" 190mm	12-5/8" 321mm	13-1/2" 343mm	100 lbs. 45.5 kg
42" DN 1050mm	2800 635.9	3500-28000 795-6364	42" 1067mm	7-1/2" 190mm	12-5/8" 321mm	13-1/2" 343mm	100 lbs. 45.5 kg
48" DN 1200mm	3500 794.9	4400-35000 1000-7955	48" 1219mm	7-1/2" 190mm	12-5/8" 321mm	13-1/2" 343mm	100 lbs. 45.5 kg
54" DN 1350mm	5000 1135.5	6300-50000 1432-11364	54" 1372mm	7-1/2" 190mm	12-5/8" 321mm	13-1/2" 343mm	100 lbs. 45.5 kg
60" DN 1500mm	6000 1362.6	7500-60000 1705-13636	60" 1524mm	7-1/2" 190mm	12-5/8" 321mm	13-1/2" 343mm	100 lbs. 45.5 kg
66" DN 1650mm	7500 1703.3	9400-75000 2136-17045	66" 1676mm	7-1/2" 190mm	12-5/8" 321mm	13-1/2" 343mm	100 lbs. 45.5 kg
72" DN 1800mm	9000 2043.9	11000-90000 2500-20455	72" 1829mm	7-1/2" 190mm	12-5/8" 321mm	13-1/2" 343mm	100 lbs. 45.5 kg

<sup>1</sup> Low Flow — 95% minimum accuracy

<sup>2</sup> Intermittent Flow — 25% over maximum rated capacity

## SPECIFICATIONS

<b>SERVICE</b>	Where fluid flow is in one direction only.
<b>ACCURACY</b>	100 ± 2% of actual flow within specified normal and intermittent flow ranges. 95% minimum at low flow rate.
<b>PRESSURE RATING</b>	150 psi (10 bar) maximum working pressure; 300 psi (20 bar) maximum working pressure.
<b>TEMPERATURE</b>	100°F (38°C) maximum.
<b>MAXIMUM FLOW</b>	Maximum normal flow rates listed are for continuous service. See bulletin PM-725 for details.
<b>INTERMITTENT FLOW</b>	25% overrated capacity for 10% to 15% of the total operating time of the meter.
<b>STANDARD REGISTER</b>	Six-digit straight reading type with full 3" (75mm) diameter, 100-division dial and center sweep test hand. Registration available in gallons, cubic feet, acre feet, litres, cubic meters, miners inch hours, barrels and other standard units.

<b>ELECTRONIC RATE OF FLOW INSTRUMENT/ TRANSMITTER</b>	The electronic rate of flow instrument (E-ROFI) registers are used to display and transmit volume and flow rate data from a Sensus Propeller Meter to various Sensus Act-Pak Electronic Instruments which are used to monitor, control, record volume, and rate of flow. Act-Paks are normally located apart from the meter. The instrument is mounted on Sensus Propeller Meter Head Assemblies using the sealed register type adapter plate assemblies.
<b>MATERIALS—</b>	Meter Head: Ductile Iron with Epoxy Paint Propeller and Nut: Polypropylene Propeller Spindle: Ceramic-Coated Stainless Steel Welding Saddle: Cast Steel with Epoxy Paint Rotor Bearings: Ceramic Magnets: Permanent, Ceramic Sleeve Type Gear Housing: One-Piece Cast Bronze Shafts and Bolts: Stainless Steel
<b>OPTIONAL EQUIPMENT</b>	Blank covers, E-ROFI Registers and HSPU for use with Sensus Act-Pak Instruments.



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