

MAINLINE PROPELLER METERS

MODELS 111/112 — PLAIN END TUBE TYPE

150 psi (10 bar) Working Pressure, 300 psi (20 bar) Working Pressure, Magnetic Drive Sealed



Standard Sealed Register



E-ROFI Register

DESCRIPTION

APPLICATION: Invensys 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 particulate solids (as sand), without causing undue wear.

CONSTRUCTION: The meters are produced of fabricated steel and protected internally by an epoxy paint.

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: Invensys Propeller Meters are available with a standard sealed mechanical register (Model 111) or a sealed Electronic Rate of Flow Instrument and Transmitter—E-ROFI (Model 112).

INSTALLATION: The meter is installed in the pipeline similar to placing a short length of plain end pipe in the line either by welding, brazing or using pipe couplings, such as Smith-Blair #411 flexible couplings. The meter must have a full flow of liquid to assure proper registration. Valves, fittings and other equipment which may create a flow disturbance, should be positioned at least five pipe diameters upstream, and three to five diameters downstream from the meter.

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 Invensys 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.

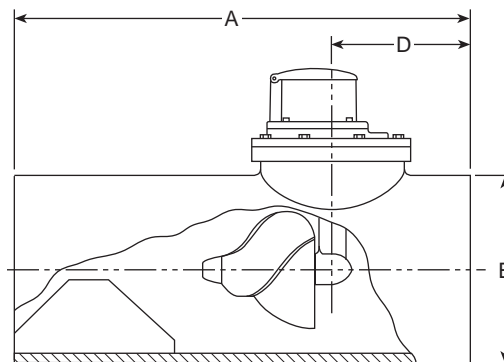
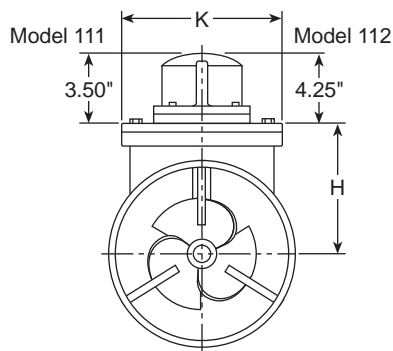


Model 111

SPECIFICATIONS

SERVICE	Where fluid flow is in one direction only.
ACCURACY	100 ± 2% of actual flow within specified normal and intermittent flow ranges. 95% minimum at low flow rate.
PRESSURE RATING	150 psi (10 bar) maximum working pressure; 300 psi (20 bar) maximum working pressure.
TEMPERATURE	100°F (38°C) maximum.
MAXIMUM FLOW	Maximum normal flow rates listed are for continuous service. See bulletin PM-725 for details.
INTERMITTENT FLOW	25% overrated capacity for 10% to 15% of the total operating time of the meter.
STANDARD REGISTER	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.
ELECTRONIC RATE OF FLOW INSTRUMENT/TRANSMITTER	The electronic rate of flow instrument (E-ROFI) registers are used to display and transmit volume and flow rate data from a Invensys Propeller Meter to various Invensys 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 Invensys Propeller Meter Head Assemblies using the sealed register type adapter plate assemblies.
MATERIALS	Tube Bodies: 4" (DN 100mm) through 36" (DN 900mm) Sizes: Fabricated steel body and straightening vanes coated internally and externally with epoxy paint. Meter Head: Ductile Iron Propeller and Nut: Polypropylene Propeller Spindle: Ceramic-Coated Stainless Steel Rotor Bearings: Ceramic Magnets: Permanent, Ceramic Sleeve Type Gear Housing: One-Piece Cast Bronze Shafts and Bolts: Stainless Steel
OPTIONAL EQUIPMENT	Blank covers, E-ROFI Registers and HSPU for use with Invensys Act-Pak Instruments.

Models 111 and 112



Meter Size	Low Flow GPM m ³ /h ①	Normal Range GPM m ³ /h ②	Dimensions					Shipping Weight Pounds kg
			A in mm	B in mm	D in mm	H in mm	K in mm	
4" DN 100mm	82 GPM 18.2 m ³ /h	125-500 GPM 28-114 m ³ /h	17" 432mm	4-1/2" 114mm	6-1/2" 165mm	3-7/8" 99mm	7-1/2" 190mm	45 lbs. 20 kg
6" DN 150mm	160 36.3	220-1200 50-273	21" 533mm	6-1/2" 168mm	8" 203mm	5" 127mm	9" 229mm	75 lbs. 34 kg
8" DN 200mm	190 43.2	250-1650 57-375	23" 584mm	8-5/8" 219mm	8" 203mm	6" 152mm	9" 229mm	100 lbs. 45 kg
10" DN 250mm	260 59.0	330-2500 75-568	25" 635mm	10-3/4" 273mm	9-1/2" 241mm	7-3/8" 187mm	11" 279mm	120 lbs. 54 kg
12" DN 300mm	257 62.4	350-3500 80-795	27" 686mm	12-3/4" 324mm	9-1/2" 241mm	8-3/8" 213mm	11" 279mm	160 lbs. 73 kg
14" DN 350mm	350 79.5	450-4500 102-1022	41" 1041mm	14" 356mm	11-1/2" 292mm	9-1/4" 235mm	13-1/2" 343mm	275 lbs. 125 kg
16" DN 400mm	450 102.2	550-5500 125-1249	47" 1194mm	16" 406mm	11-1/2" 292mm	10-1/4" 260mm	13-1/2" 343mm	340 lbs. 154 kg
18" DN 450mm	550 124.9	725-7250 165-1647	53" 1346mm	18" 457mm	14-1/2" 368mm	11-5/8" 295mm	13-1/2" 343mm	400 lbs. 181 kg
20" DN 500mm	700 159.0	850-9000 193-2044	59" 1499mm	20" 508mm	14-1/2" 368mm	12-5/8" 321mm	13-1/2" 343mm	500 lbs. 227 kg
24" DN 600mm	1000 227.1	1300-13000 295-2952	71" 1803mm	24" 610mm	17-1/2" 445mm	12-5/8" 321mm	13-1/2" 343mm	675 lbs. 306 kg
30" DN 750mm	1600 363.4	2100-18600 477-4224	83" 2108mm	30" 762mm	17-1/2" 445mm	12-5/8" 321mm	13-1/2" 343mm	950 lbs. 431 kg
36" DN 900mm	2400 545.0	3000-24000 681-5450	95" 2413mm	36" 914mm	19-1/2" 495mm	12-5/8" 321mm	13-1/2" 343mm	1250 lbs. 567 kg

① Low Flow — 95% minimum accuracy

② Intermittent Flow — 25% over maximum rated capacity



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