

MAINLINE PROPELLER METERS

MODELS 101/102

150 psi (10 bar) Working Pressure Magnetic Drive Flanged Tube Type



Standard Sealed Register



E-ROFI Register

DESCRIPTION

MODEL: Invensys 101/102 Propeller Meters are primarily intended for accountability measurement of potable and non-potable cold water with flow in one direction only. Registration accuracy is 100% \pm 2% of actual thruput within specified normal flow ranges. Because all appropriate parts are sealed for protection, the meters can be used in water containing particulate solids (such as sand), without causing undue wear.

PERFORMANCE: The design of the Invensys 101/102 Propeller Meters permits continuous operation up to the maximum rated flow capacity listed for each size, without affecting long term accuracy or causing undue wear. For accurate measurement, a full flow of water through the meter and stated minimum flow rates are required.

CONSTRUCTION: The meter consists of two basic assemblies—the meter tube body and the meter head assembly. Integral straightening vanes in the meter tube body minimize the swirl upstream of the meter so as to direct the flow evenly to the propeller. The 3" through 12" meter tube bodies are internally and externally protected by a superior fusion-bonded epoxy coating for use in potable water systems. The 14" and larger sizes are protected with an epoxy painted finish. The meter head assembly consists of the propeller, bronze gear box and sealed direct reading register.

MAGNETIC DRIVE: Direct magnetic drive eliminates mechanical gearing normally required to operate propeller meter type registers. A ceramic sleeve-type magnet in the propeller assembly drives a follower magnet located in a one piece, all bronze gear box. This gear box is oil filled and factory sealed to provide lubrication and long life to the register drive shaft.

PROPELLER: The propeller and nut are made of polypropylene and rotate on a ceramic coated stainless steel spindle.

REGISTERS: Invensys Model 101 Propeller Meters come equipped with a sealed direct reading (DR) register with low flow indicator. The Model 102 is equipped with an electronic rate of flow indicator (E-ROFI) register. The E-ROFI register is an hermetically sealed unit that electronically displays and transmits totalization and flow rate data to various Invensys act-pak instrumentation to monitor, control and record volume and rate of flow. Other register options available are the impulse contactor (IC) and high speed pickup (HSP). All registers can be positioned in any of four directions for reading ease. Refer to bulletin E-1116 for HSP and bulletin E-1110 for the E-ROFI register.

INSTALLATION: Invensys Propeller Meters can be installed in a horizontal, vertical or inclined position. Valves, fittings or other equipment that might create flow turbulence should be positioned at least 5 pipe diameters upstream of the meter and no less than 3 pipe diameters downstream.

MAINTENANCE: The meter head assembly can be removed, repaired and/or replaced without disturbing the meter tube body in line. A spare meter head assembly can be utilized in the event maintenance is required. Cover plates are also available for maintaining service or flushing of lines when the meter head assembly is removed. Factory testing, repair and meter head assembly

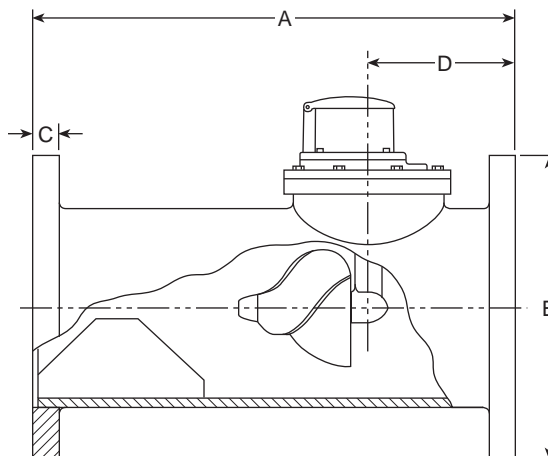
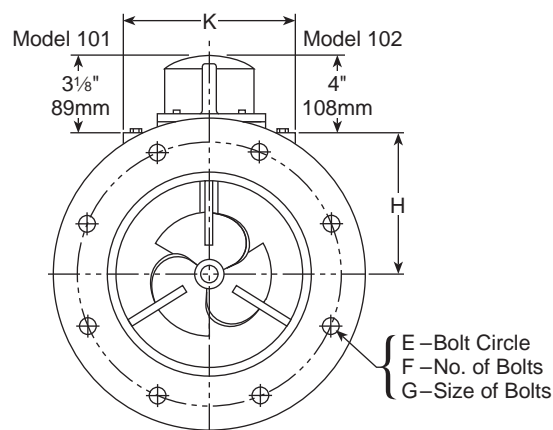


6" Model 101 Propeller Meter

SPECIFICATIONS

| | |
|-----------------------------------|---|
| SERVICE | Measurement of cold water (potable and non-potable) up to 100°F (38°C) with flow in one direction only. |
| OPERATING RANGE | Continuous Flows: Refer to the chart on next page Intermittent Flows: 25% over the maximum rated capacity of any given size. |
| ACCURACY | 100% \pm 2% of actual thruput |
| LOW FLOW | Refer to the chart on next page |
| MAXIMUM OPERATING PRESSURE | 150 psi (10 bar) |
| FLANGE | 3" Size: Round, AWWA 150 Class 4"-12" Sizes: Round, AWWA Class D 14"-36" Sizes: Round, AWWA 150 Class |
| REGISTER | Hermetically Sealed Direct Reading Register with Low Flow Indicator |
| METER REGISTRATION | Standard: Six digit, straight reading type with Low Flow Indicator. Full 3" dial face with 100 division increments and a center sweep hand. E-ROFI: Twin six digit, LCD totalizer and rate of flow display. Powered by a "C" size lithium battery factory sealed in an hermetically sealed register. Register replacement is recommended every five (5) years. |
| MATERIALS—METER TUBE BODY | 3" and 4" Size: Ductile Iron 6"-36" Sizes: Fabricated Steel |
| STRAIGHTENING VANES | Fabricated Steel |
| COATINGS | 3"-12" Sizes: Fusion-Bonded Epoxy 14"-36" Sizes: Epoxy Paint |
| METER HEAD | Ductile Iron |
| PROPELLER AND NUT | Polypropylene |
| PROPELLER SPINDLE | Ceramic Coated Stainless Steel |
| GEAR HOUSING | One Piece Cast Bronze |
| TRIM | Stainless Steel |
| MAGNETS | Ceramic |

Models 101 and 102 150 psi (10 bar)



| Meter Size | Low Flow GPM m³/h ① | Normal Range GPM m³/h ② | Dimensions | | | | | | | | | Shipping Weight Pounds kg |
|-----------------|---------------------------|-------------------------------|---------------|------------------|------------------|-----------------|-------------------|--------|----------------|------------------|------------------|------------------------------|
| | | | A in mm | B in mm | C in mm | D in mm | E in mm | F # | G in mm | H in mm | K in mm | |
| 3" DN 80mm | 80 GPM 18.2 m³/h | 100-250 GPM 23-57 m³/h | 16" 406mm | 7-1/2" 190mm | 3/4" 19mm | 6-1/2" 165mm | 6" 152mm | 4 | 5/8" 16mm | 3-3/8" 86mm | 5" 127mm | 70 lbs. 32 kg |
| 4" DN 100mm | 82 18.6 | 125-500 28-114 | 18" 457mm | 9" 229mm | 5/8" 16mm | 7-1/2" 190mm | 7-1/2" 190mm | 8 | 5/8" 16mm | 3-7/8" 99mm | 7-1/2" 190mm | 85 lbs. 39 kg |
| 6" DN 150mm | 160 36.3 | 220-1200 50-273 | 22" 559mm | 11" 279mm | 11/16" 17mm | 9" 229mm | 9-1/2" 241mm | 8 | 3/4" 19mm | 5" 127mm | 9" 229mm | 115 lbs. 52 kg |
| 8" DN 200mm | 190 43.2 | 250-1650 57-375 | 24" 610mm | 13-1/2" 343mm | 11/16" 17mm | 9" 229mm | 11-3/4" 298mm | 8 | 3/4" 19mm | 6" 152mm | 9" 229mm | 150 lbs. 68 kg |
| 10" DN 250mm | 260 59.0 | 330-2500 75-568 | 26" 660mm | 16" 406mm | 11/16" 17mm | 10" 254mm | 14-1/4" 362mm | 12 | 7/8" 22mm | 7-3/8" 187mm | 11" 279mm | 200 lbs. 91 kg |
| 12" DN 300mm | 275 62.4 | 350-3500 80-795 | 28" 711mm | 19" 483mm | 13/16" 21mm | 10" 254mm | 17" 432mm | 12 | 7/8" 22mm | 8-3/8" 213mm | 11" 279mm | 290 lbs. 132 kg |
| 14" DN 350mm | 350 79.5 | 450-4500 102-1022 | 42" 1067mm | 21" 533mm | 1-3/8" 35mm | 12" 305mm | 18-3/4" 476mm | 12 | 1" 25mm | 9-1/4" 235mm | 13-1/2" 343mm | 450 lbs. 204 kg |
| 16" DN 400mm | 450 102.2 | 550-5500 125-1249 | 48" 1219mm | 23-1/2" 597mm | 1-7/16" 37mm | 12" 305mm | 21-1/4" 504mm | 16 | 1" 25mm | 10-1/4" 260mm | 13-1/2" 343mm | 550 lbs. 249 kg |
| 18" DN 450mm | 550 124.9 | 752-7250 165-1647 | 54" 1372mm | 25" 635mm | 1-9/16" 40mm | 15" 381mm | 22-3/4" 578mm | 16 | 1-1/8" 29mm | 11-5/8" 295mm | 13-1/2" 343mm | 620 lbs. 281 kg |
| 20" DN 500mm | 700 159.0 | 850-9000 193-2044 | 60" 1524mm | 27-1/2" 699mm | 1-11/16" 43mm | 15" 381mm | 25" 635mm | 20 | 1-1/8" 29mm | 12-5/8" 321mm | 13-1/2" 343mm | 820 lbs. 372 kg |
| 24" DN 600mm | 1000 227.1 | 1300-13000 259-2592 | 72" 1829mm | 32" 813mm | 1-7/8" 48mm | 18" 457mm | 29-1/4" 749mm | 20 | 1-1/4" 32mm | 12-5/8" 321mm | 13-1/2" 343mm | 1000 lbs. 454 kg |
| 30" DN 750mm | 1600 363.4 | 2100-18600 477-4224 | 84" 2123mm | 38-3/4" 984mm | 2-1/8" 54mm | 18" 457mm | 36" 914mm | 28 | 1-1/4" 32mm | 12-5/8" 321mm | 13-1/2" 343mm | 1150 lbs. 522 kg |
| 36" DN 900mm | 2400 545.0 | 3000-24000 681-5450 | 96" 2438mm | 46" 1168mm | 2-5/8" 67mm | 20" 508mm | 42-3/4" 1086mm | 32 | 1-1/2" 38mm | 12-5/8" 321mm | 13-1/2" 343mm | 1350 lbs. 613 kg |

① Low Flow — 95% minimum accuracy

② Intermittent Flow — 25% over maximum rated capacity



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