

POSITIVE-DISPLACEMENT FLOWMETERS FOR VISCOUS FLUIDS



FPD1002B, pulse output, shown smaller than actual size.

FPD1000B Series



FPD1000D-TX, remote 4 to 20 mA output with programmable display (loop powered), shown smaller than actual size.

- ✓ 0 to 1000 cP Viscosity Standard, 1,000,000 cP Viscosity Rotor Available on 1/4" SS Model
- ✓ Compact, Durable, and Serviceable On Site
- ✓ Extremely Accurate, Even with Viscous Fluids
- ✓ Meter Design Minimizes the Number of Wearable Parts—Extending Product Life
- ✓ Comes with Combined Reed Switch and Hall-Effect Sensor
- ✓ Handles Particle Sizes to 0.127 mm (0.005")
- ✓ Factory Calibrated
- ✓ Easy to Install
- ✓ Choose from a Variety of Output and Display Options
- ✓ Certificate of Accuracy Supplied with Meter

SPECIFICATIONS

Accuracy: ±1.0% of reading
Repeatability: ±0.03%
Fitting Type: NPT (female)
Dimensions: 65 L x 50 mm H (2.58 x 1.97")
Sensor Options: Reed switch (2-wire SPST reed switch NO, 3 watts rated, 150 Vdc max) and Hall-effect sensor (25 mA NPN open collector)
Hall-Effect Sensor Power Requirements: 4.5 to 24 Vdc (4.6 to 9 mA)

Output Options: Pulse output, standard; optional 4 to 20 mA transmitter (-A models)
Display: 6-Digit
Maximum Viscosity: 1000 cP, standard; optional 1,000,000 cP high-viscosity rotor (-HV) for 316 SS and aluminum models
Strainer Size: 200 mesh [handles particle sizes to 0.127 mm (0.005")]
Mounting: Shafts must be in a horizontal plane.

The FPD1000B Series is one of three compact meters in the oval gear meter line. Choose from an aluminum, 316 SS, or PPS (polyphenylene sulfide resins) body. The FPD1000B Series can handle a wide range of fluid viscosities.

Wetted Materials			
Housing	Aluminum	Stainless Steel	PPS
Bearings for 1/8" units	Sapphire	Sapphire	N/A
Bearings for 1/4" units	Bronze	Ceramic	PPS
Shaft	316 SS	316 SS	Hastelloy C
Rotor	316 SS	316 SS	PPS
O-ring	FKM (std)	FKM (std)	FKM (std)

Strain Relief: Hubble PG7

Electrical Connections:

Female 1/2-20 UNF-2B

Cable: Belden 9363

Cable Length: 6 m (20')

Mounting: Wall, panel or pipe

Power Supply:

-TX Models: 2-wire, loop powered

-BAT Models: 9 Vdc lithium battery

Configuration: 2 Totals (1 cumulative, 1 batch) Rate (GAL, LTR, 2 user-defined)

Operating Ambient: -18 to 60°C
(0 to 140°F)

Materials:

Enclosure: Acetal, amorphous nylon
(display units only), silicone,
polyester

Seals: FKM

Fasteners: Stainless steel

Cable Insulation: PVC

Shipping Weight: 0.9 kg (2 lb)

Enclosure: NEMA 4X (IP66)



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Meter Size	Weight kg (lb)	Max Temp °C (°F)	Max Pressure bar (psi)	Typical K Factors (PPG)	Frequency Range (Hz)
1/8" Aluminum	0.45 (1.0)	80 (176)	5 (75)	5855.4	0.2 to 21.5
1/8" 316 SS*	0.91 (2.0)	120 (248)	55 (800)	5855.4	0.2 to 21.5
1/4" Aluminum/PPS	0.45 (1.0)	80 (176)	5 (75)	3785.4	0.6 to 27.8
1/4" 316 SS*	0.91 (2.0)	120 (248)	55 (800)	1514.2	1.7 to 55.5
1/4" 316 SS High Flow	0.91 (2.0)	120 (248)	10 (150)	1514.2	1.7 to 55.5
1/4" 316 SS (-HP) High Flow	0.91 (2.0)	120 (248)	551 (8000)	1514.2	1.7 to 55.5
1/4" Aluminum/PPS High Flow	0.45 (1.0)	80 (176)	5 (75)	1514.2	1.7 to 55.5

* Standard (without "-IP" option) models delivered prior to January 1, 2017 have a maximum pressure of 10 bar (150 psi).

To Order							
Aluminum Model No.	Stainless Steel Model No.	PPS Model No.	Display	Analog Output	NPT Size	Flowrate GPH	Flow Rate <5 Centipoise
FPD1001B	FPD1201B	—	—	—	1/8	0.13 to 13.20	0.53 to 13.20
FPD1001B-D	FPD1201B-D	—	Y	—	1/8	0.13 to 13.20	0.53 to 13.20
FPD1001B-D-A	FPD1201B-D-A	—	Y	Y	1/8	0.13 to 13.20	0.53 to 13.20
FPD1001B-A	FPD1201B-A	—	—	Y	1/8	0.13 to 13.20	0.53 to 13.20
FPD1002B	FPD1202B	FPD1102B	—	—	1/4	0.53 to 26.40	1.32 to 26.40
FPD1002B-D	FPD1202B-D	FPD1102B-D	Y	—	1/4	0.53 to 26.40	1.32 to 26.40
FPD1002B-D-A	FPD1202B-D-A	FPD1102B-D-A	Y	Y	1/4	0.53 to 26.40	1.32 to 26.40
FPD1002B-A	FPD1202B-A	FPD1102B-A	—	Y	1/4	0.53 to 26.40	1.32 to 26.40
FPD1003B	FPD1203B	FPD1103B	—	—	1/4	4 to 132	6 to 132
FPD1003B-D	FPD1203B-D	FPD1103B-D5	Y	—	1/4	4 to 132	6 to 132
FPD1003B-D-A	FPD1203B-D-A	FPD1103B-D-A	Y	Y	1/4	4 to 132	6 to 132
FPD1003B-A	FPD1203B-A	FPD1103B-A	—	Y	1/4	4 to 132	6 to 132

Accessories

Model Number	Description
FPD1000-TX	Remote 4 to 20 mA output—loop powered, 8.5 to 35 Vdc, 25 mA
FPD1000D-TX	Remote 4 to 20 mA output with programmable display—loop powered
FPD1000D-BAT	Remote battery-powered programmable display
FPW-15	15V power supply
DPF701	Frequency-input panel meter for rate or totalization, see page M-5 for complete details
FPD-BAT	9V lithium battery replacement

Comes complete with operator's manual.

Aluminum models are not recommended for water applications.

For Perfluoroelastomer O-rings add suffix "-K" to model number, for additional cost.

For 1,000,000 cP high-viscosity rotor option add suffix "-HV" to model number, for additional cost (-HV option available on FPD1003B, FPD1203B and FPD1103B series only).

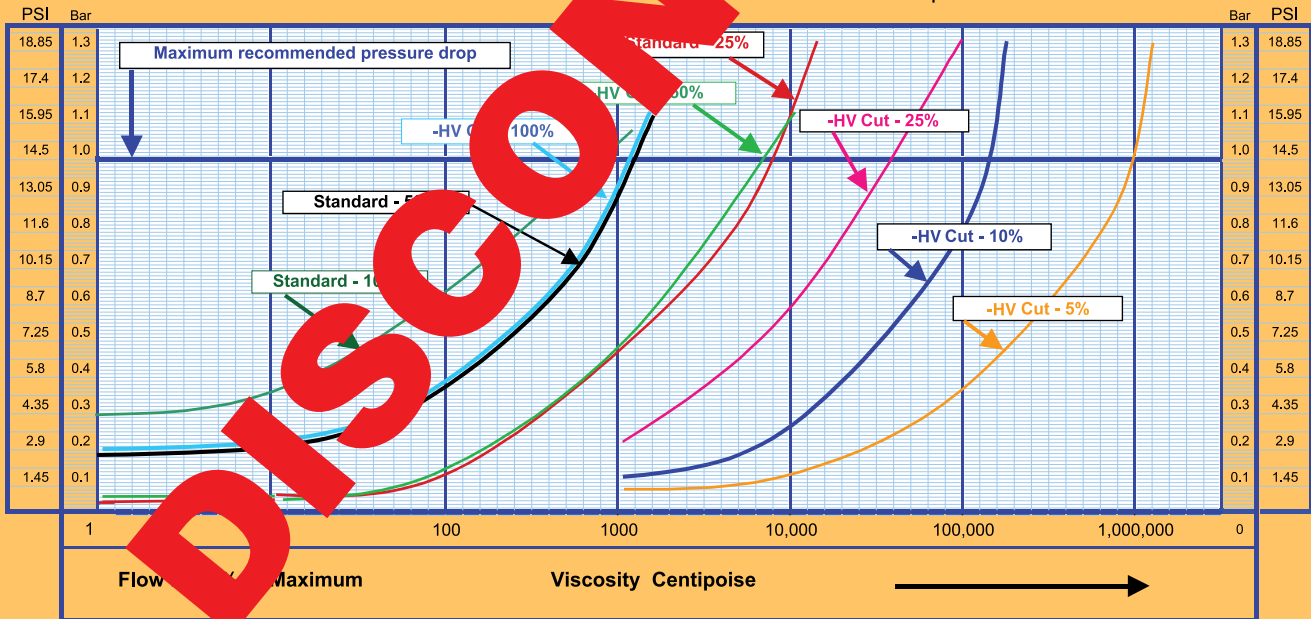
Ordering Examples: FPD1102B, PPS flowmeter, 0.53 to 26.40 GPH.

FPD1203B, 316 SS flowmeter, 4 to 132 GPH.



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FPD Series Standard and High-Viscosity Rotor Pressure Drop Curves



This graph is intended as an aid to determine the pressure drop of the measuring device as part of a system, allowing engineers to calculate the most economical components for their systems, i.e. pump selection would be determined on the total system pressure drop; the lower the pressure drop, the lower the cost of the pumping components.
 The graph above represents the pressure drop for standard and high-viscosity (special cut) rotors at various viscosities. Viscosities are in centipoise and the pressure drop is in psi and bar. As will be noted, the maximum pressure drop is shown at 14.5 psi (1 bar); although this is achievable, it is not recommended. The % of maximum flow rate represents the flow rate of any given meter model and can be applied to the above graph, i.e. 10% of the FPD-1005 model would be 3.2 gallons (12 liters).

ML-1653-1