

# POSITIVE DISPLACEMENT HIGH FLOWMETERS FOR VISCOUS FLUIDS

## FPD1004



- ✓ 0 to 1000 cP Viscosity Standard, 1,000,000 cP Viscosity Rotor Also Available
- ✓ Compact, Durable, and Serviceable On-Site
- ✓ Extremely Accurate Even with Viscous Fluids
- ✓ Meter Design Minimizes the Number of Wearable Parts—Extending Product Life
- ✓ Reed Switch or Hall Effect Sensor
- ✓ Handles Particle Sizes to 0.28 mm (0.011")

### SPECIFICATIONS

**Accuracy:** ±0.5% rdg

**Repeatability:** ±0.03%

**Fitting Type:** FNPT, flange and tri-clover sanitary fittings optional on some models

**Sensor Options:** Reed switch (2-wire SPST reed switch N/O, 3 watts rated, 150 Vdc max) or hall effect sensor (25 mA NPN open collector)

**Hall Effect Sensor—Power**

**Requirements:** Dedicated 4.5 to 24 Vdc (4.6 to 9 mA)



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

FPD1004, shown smaller than actual size.

**Maximum Viscosity:** 1000 cP

**Body:** Aluminum; not recommended for water applications

**Strainer Size:** 60 mesh [handles particle sizes to 0.28 mm (0.011")]

**Mounting:** Shafts must be in a horizontal plane; cap screws should not point up or down

Meter Size	Length mm (inch)	Height mm (inch)
1/2"	100.0 (3.94)	96.0 (3.78)
3/4"	133.0 (5.24)	126.0 (4.96)
1" PPS	107.9 (4.25)	100.0 (3.94)
1" AL/SS	170.1 (6.70)	112.0 (4.41)
1 1/2"	212.0 (8.35)	144.0 (5.67)
2"	240.0 (9.45)	178.0 (7.01)

Wetted Materials			
Housing	Aluminum (Std)	Stainless Steel	PPS
Bearings for 1" units	Carbon/graphite	Carbon/graphite	PPS
Bearings for 1/2" to 2" units	PPS	PPS	N/A
Shaft	316 SS	316 SS	Hastelloy C
Rotor for 1/2", 3/4", 1 1/2", 2"	PPS	PPS	N/A
Rotor for 1" units	316 SS	316 SS	PPS
O-ring	FKM	FKM	PTFE

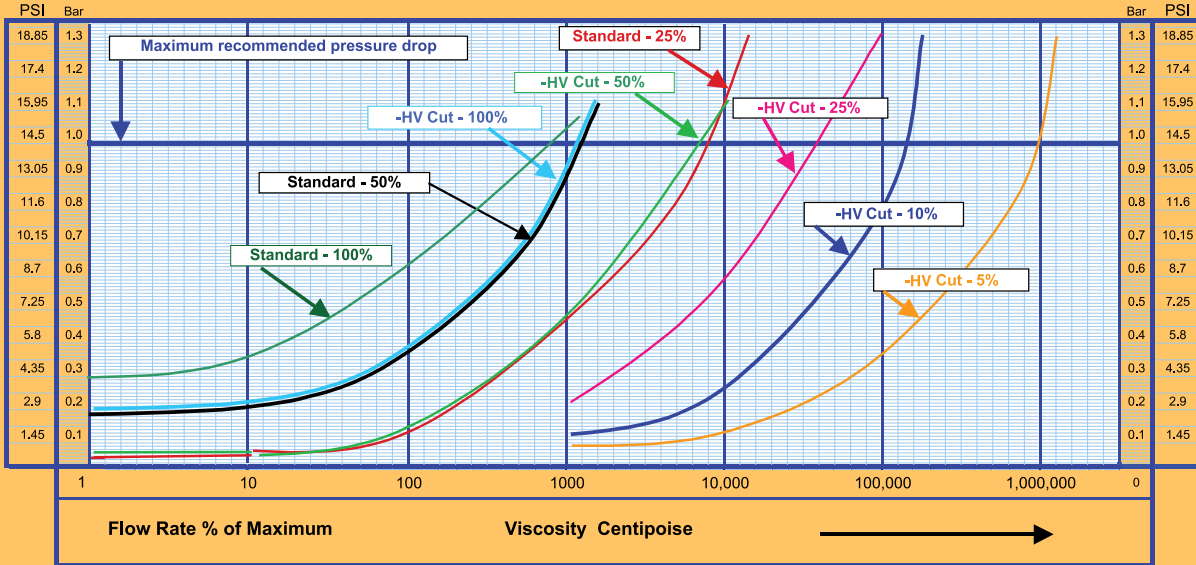
Meter Size	Weight kg (lb)	Max Temp °C (°F)	Max Pressure bar (psi)	Typical K Factors (PPG)	Frequency Range (Hz)
1/2" Aluminum	1.50 (3.25)	80 (176)	55 (800)	424.0	1.8 to 55.8
1/2" SS	2.70 (6.0)	120 (248)	55 (800)	424.0	1.8 to 55.8
3/4" Aluminum	1.9 (4.3)	80 (176)	55 (800)	197.0	2.6 to 51.9
1" PPS body	1.30 (1.3)	80 (176)	10 (150)	197.0	2.6 to 69.0
1" Aluminum	2.20 (4.9)	80 (176)	55 (800)	136.3	3.6 to 72.7
1" Al w/150# flange	2.90 (6.6)	80 (176)	Flange Rule	136.3	3.6 to 72.7
1 SS	5.70 (12.7)	120 (248)	55 (800)	136.3	3.6 to 72.7
1 SS w/150# flange	6.60 (14.6)	120 (248)	Flange Rule	136.3	3.6 to 72.7
1 SS w/tri-clover fittings	4.90 (10.8)	120 (248)	55 (800)	136.3	3.6 to 72.7
1 1/2" Aluminum	4.50 (10.0)	80 (176)	55 (800)	54.9	2.4 to 60.4
1 1/2" Al w/150# flange	5.40 (12.0)	80 (176)	Flange Rule	54.9	2.4 to 60.4
2" Aluminum	7.80 (17.1)	80 (176)	55 (800)	25.3	1.7 to 39.0
2" Al w/150# flange	9.10 (20.1)	80 (176)	Flange Rule	25.3	1.7 to 39.0



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

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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

F-X

To Order						
Aluminum Body with FKM O-Ring Model No. Size	NPT	Sensor Type	Display	4 to 20 mA Analog Output	Flow Rate, GPM	
					Standard Viscosity (5 to 1000 cP)	Low Viscosity (< 5 cP)
FPD1004	1/2	Hall effect	—	—	0.26 to 7.9	0.80 to 6.6
FPD1004-R		Reed switch	—	—		
FPD1004D-R		Reed switch	Y	—		
FPD1004D-R-A		Reed switch	Y	Y		
FPD1004-R-A		Reed switch	—	Y		
FPD1034	3/4	Hall effect	—	—	0.8 to 15.8	2.1 to 14
FPD1034-R		Reed switch	—	—		
FPD1034D-R		Reed switch	Y	—		
FPD1034D-R-A		Reed switch	Y	Y		
FPD1034-R-A		Reed switch	—	Y		
FPD1005	1	Hall effect	—	—	1.6 to 32.0	2.6 to 26
FPD1005-R		Reed switch	—	—		
FPD1005D-R		Reed switch	Y	—		
FPD1005D-R-A		Reed switch	Y	Y		
FPD1005-R-A		Reed switch	—	Y		
FPD1006	1 1/2	Hall effect	—	—	2.6 to 66.0	4.0 to 62
FPD1006-R		Reed switch	—	—		
FPD1006D-R		Reed switch	Y	—		
FPD1006D-R-A		Reed switch	Y	Y		
FPD1006-R-A		Reed switch	—	Y		
FPD1007	2	Hall effect	—	—	4 to 92	9 to 79
FPD1007-R		Reed switch	—	—		
FPD1007D-R		Reed switch	Y	—		
FPD1007D-R-A		Reed switch	Y	Y		
FPD1007-R-A		Reed switch	—	Y		
<b>PPS Body with PTFE O-rings</b>						
FPD1105	1	Hall effect	—	—	0.8 to 21.0	2.1 to 18.5
FPD1105-R		Reed switch	—	—		
FPD1105D-R		Reed switch	Y	—		
FPD1105D-R-A		Reed switch	Y	Y		
FPD1105-R-A		Reed switch	—	Y		

Stainless Steel Body Option Model No.	NPT Size	Flow Rate, GPM	
		Standard Viscosity (5 to 1000 cP)	Low Viscosity (<5 cP)
Change from FPD1004 to FPD1204	1/2	0.26 to 7.9	0.80 to 6.6
Change from FPD1005 to FPD1205	1	1.6 to 32.0	2.6 to 26

### Options (for additional cost)

Description	Order Suffix	Availability
PTFE O-rings	-T	FPD1004, 1034, 1204
		FPD1005, 1205
		FPD1006
		FPD1007
1,000,000 cP high viscosity rotor	-HV	FPD1004, 1005, 1006, 1007
		FPD1204
		FPD1205
150# flange fittings	-F	FPD1005, 1006, 1007, 1205

### Accessories

Model No.	Description
FPD1000-TX	Remote 4 to 20 mA output—loop powered
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 meter, visit <a href="http://omega.com/dpf700">omega.com/dpf700</a> for complete details

Comes complete with operator's manual.

Ordering Examples: FPD1005, 1" AL meter.

FPD1204-T, 1/2" 316 SS meter with PTFE O-rings.