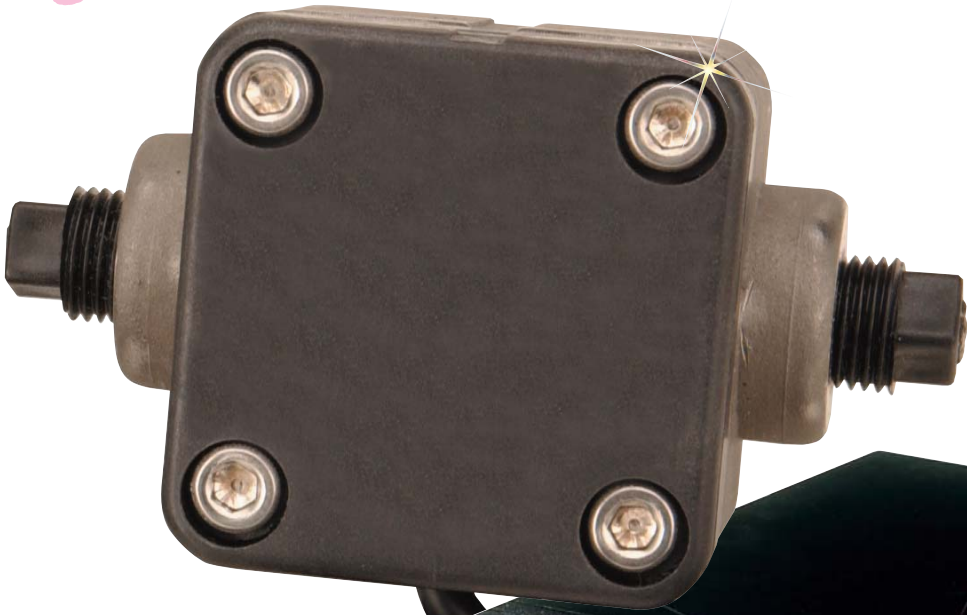




POSITIVE-DISPLACEMENT FLOWMETERS FOR VISCOUS FLUIDS



FPD1000 Series Starts at

£375



FPD1002, Hall-effect pulse output, £375, shown smaller than actual size.

DPF701, frequency input panel meter, £174, shown smaller than actual size. See page 524 for details.

- ✓ 0 to 1000 cps Viscosity Standard, 1,000,000 cps Viscosity Rotor Available on 500 LPH SS Model
- ✓ Compact, Durable, and Serviceable On Site
- ✓ Extremely Accurate, Even with Viscous Fluids
- ✓ Meter Design Minimises the Number of Wearable Parts—Extending Product Life
- ✓ Comes with Reed Switch or Hall-Effect Sensor
- ✓ Handles Particle Sizes to 0.127 mm
- ✓ 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
Sensor Options: Reed switch (2-wire SPST reed switch NO, 3 watts rated, 150 Vdc max) or 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 or local 4 to 20 mA transmitter

Display Options: Standard LCD or local 4 to 20 mA with standard display

Maximum Viscosity: 1000 cps, standard; optional 1,000,000 cps high-viscosity rotor (-HV) for 316 SS and aluminium models

Strainer Size: 200 mesh (handles particle sizes to 0.127 mm)

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

Battery-Powered Remote Display (Optional): Order model FPD1000D-BAT

Remote Transmitter (Optional): Order model FPD1000-TX or FPD1000D-TX

The FPD1000 Series is one of three compact meters in the oval gear meter line. Choose from an aluminium, 316 SS, or PPS (polyphenylene sulfide resins) body. The FPD1000 Series can handle a wide range of fluid viscosities.

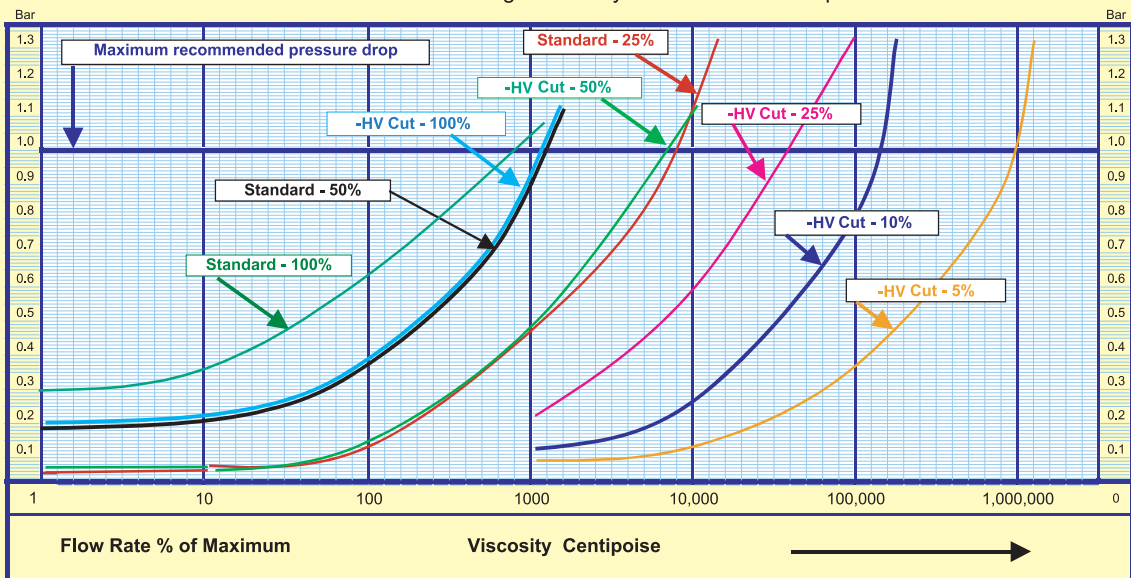
Housing	Wetted Materials		
	Aluminium	Stainless Steel	PPS
Bearings for 3.2 mm units	Sapphire	Sapphire	N/A
Bearings for 6.4 mm units	Bronze	Ceramic	PPS
Shaft	316 SS	316 SS	Hastelloy C (STD)
Rotor	316 SS	316 SS	PPS
O-ring	FKM (STD)	FKM (STD)	FKM (STD)



FPD1000D-TX, remote 4 to 20 mA output with programmable display (loop powered), £318, shown smaller than actual size.



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).

FLOW, LEVEL AND ENVIRONMENTAL



Specifications for Electronics FPD1000-TX Series

Model No.		FPD1000-TX and FPD1000D-TX	FPD1000D-BAT
Strain Relief		Hubble PG7	Hubble PG7
Electrical Connections	Strain Relief Thread	Female ½-20 UNF-2B	Female ½-20 UNF-2B
	Cable	Belden 9363	Belden 9363
	Cable Length	6 m	6 m
Mechanical Connections		Wall, panel or pipe mountable	Wall, panel or pipe mountable
Power Supply		2-wire, loop powered	9 Vdc lithium battery
	Burden (Minimum)	8.5 Vdc	
	Maximum	35 Vdc	
4 to 20 mA or 0 to 20 mA		Loop	
	Minimum	Approximately 1.5 mA	
	Maximum	Approximately 25 mA	
Auxiliary Outputs		Single ended	
	Minimum	0.1V	
	Maximum	4.9V	
Pulse Out	Maximum "OFF" Voltage	60V	60V
	Maximum "ON" Current	200 mA	200 mA
	Maximum "ON" Voltage Drop	<0.5 @ 200 mA	<0.5 @ 200 mA
Configuration		2 Totals (1 cumulative, 1 batch) Rate 3 cal/s (US GAL, LTR, 2 fields)	2 Totals (1 cumulative, 1 batch) Rate 3 cal/s (US GAL, LTR, 2 fields)
Input Signal		Open-collector NPN, Sine wave	Open-collector NPN
Operating Temperature Range	Celsius (°C)	-10 to 60	-10 to 60
Materials	Enclosure	Acetal, amorphous nylon, silicone, polyester Note: Non-display unit does not contain nylon	Acetal, amorphous nylon, silicone, polyester
	Seals	FKM	FKM
	Fasteners	Stainless steel	Stainless steel
	Cable Jacket	PVC	PVC
Frequency Inputs	Low-Level Coil (LLC)	0.25 to 1000 Hz	
	High-Level Low Frequency	0.25 to 150 Hz	0.25 to 150 Hz
	High-Level High Frequency	0.25 to 1200 Hz	
	Optically Isolated HLLF	HLLF w/2500V optical isolation	
	Optically Isolated HLHF	HLHF w/2500V optical isolation	
Shipping Weight	Kilograms	0.9	0.9
Enclosure		IP66	IP66



FPD1000D-TX, £318, shown smaller than actual size.

FPD1002, £375, shown smaller than actual size.



Meter Size (mm)	Weight kg	Max Temp °C	Max Pressure bar	Typical K Factors (PPL)	Frequency Range (Hz)
3.2 Aluminium	0.45	80	5	1546	0.2 to 21.5
3.2 316 SS	0.91	120	10	1546	0.2 to 21.5
3.2 Intermed Press 316 SS (-IP)	0.91	120	55	1546	0.2 to 1.5
6.4 Aluminium/PPS	0.45	80	5	1000	0.6 to 27.8
6.4 316 SS	0.91	120	10	1000	0.6 to 27.8
6.4 316 SS High Flow	0.91	120	10	400	1.7 to 55.5
6.4 316 SS (-IP) High Flow	0.91	120	55	400	1.7 to 55.5
6.4 316 SS (-HP) High Flow	0.91	120	551	400	1.7 to 55.5
6.4 Intermed 316 SS (-IP)	0.91	120	55	1000	0.6 to 27.8
6.4 High-Pressure (-HP) SS	3.63	120	551	1000	0.6 to 27.8
6.4 Aluminium/PPS High Flow	0.45	80	5	400	1.7 to 55.5

MOST POPULAR MODELS HIGHLIGHTED!

To Order (Specify Model Number)

Aluminium	Price	Stainless Steel	Price	PPS	Price	Description	NPT	Flowrate LPH	Flow Rate <5 Centipoise
FPD1001	£375	FPD1201	£530	—	—	Hall-effect pulse output	1/8	0.5 to 50	2 to 50
FPD1001-R	505	FPD1201-R	565	—	—	Reed switch pulse output	1/8	0.5 to 50	2 to 50
FPD1001D-R	640	FPD1201D-R	790	—	—	Display w/reed switch	1/8	0.5 to 50	2 to 50
FPD1001D-R-A	665	FPD1201D-R-A	820	—	—	Display & 4 to 20 mA w/reed switch	1/8	0.5 to 50	2 to 50
FPD1001-R-A	535	FPD1201-R-A	690	—	—	4 to 20 mA w/reed switch	1/8	0.5 to 50	2 to 50
FPD1002	375	FPD1202	530	FPD1102	£373	Hall-effect pulse output	1/4	2 to 100	5 to 100
FPD1002-R	350	FPD1202-R	505	FPD1102-R	348	Reed switch pulse output	1/4	2 to 100	5 to 100
FPD1002D-R	640	FPD1202D-R	790	FPD1102D-R	635	Display w/reed switch	1/4	2 to 100	5 to 100
FPD1002D-R-A	665	FPD1202D-R-A	820	FPD1102D-R-A	665	Display & 4 to 20 mA w/reed switch	1/4	2 to 100	5 to 100
FPD1002-R-A	530	FPD1202-R-A	690	FPD1102-R-A	535	4 to 20 mA w/reed switch	1/4	2 to 100	5 to 100
FPD1003	405	FPD1203	575	FPD1103	419	Hall effect pulse output	1/4	15 to 500	22 to 500
FPD1003-R	380	FPD1203-R	550	FPD1103-R	395	Reed switch pulse output	1/4	15 to 500	22 to 500
FPD1003D-R	670	FPD1203D-R	840	FPD1103D-R	685	Display w/reed switch	1/4	15 to 500	22 to 500
FPD1003D-R-A	695	FPD1203D-R-A	870	FPD1103D-R-A	710	Display & 4 to 20 mA w/reed switch	1/4	15 to 500	22 to 500
FPD1003-R-A	565	FPD1203-R-A	735	FPD1103-R-A	580	4 to 20 mA w/reed switch	1/4	15 to 500	22 to 500

Accessories

Model Number	Price	Description
FPD1000-TX	£185	Remote 4 to 20 mA output—loop powered, 8.5 to 35 Vdc, 25 mA
FPD1000D-TX	318	Remote 4 to 20 mA output with programmable display—loop powered
FPD1000D-BAT	268	Remote battery-powered programmable display
PSU-UNIVERSAL	19	International power adaptor with 15 Vdc output
DPF701	174	Frequency-input panel meter for rate or totalisation (see page 524)
FPD-BAT	28	9V lithium battery replacement
CM-0498	67	Reference Book: Viscous Flow



Comes with complete operator's manual.

* Aluminium models are not recommended for water applications.

Add "IP" to 316 SS models for intermediate pressure of 55 bar option and add £53 to price.

Add "HP" to 316 SS models for high pressure of 550 bar option. Consult sales for price.

Add "-K" to model number for Kalrez® O-rings and add £57 to price.

Add "-HV" to model numbers for 1,000,000 cps high-viscosity rotor option and add £251 to price (-HV option available on FPD1003, FPD1203 and FPD1103 series only).

Ordering Examples: FPD1102, PPS flowmeter, 2 to 100 litres per hour, £373. FPD1203, 316 SS flowmeter, 15 to 500 litres per hour, £575.