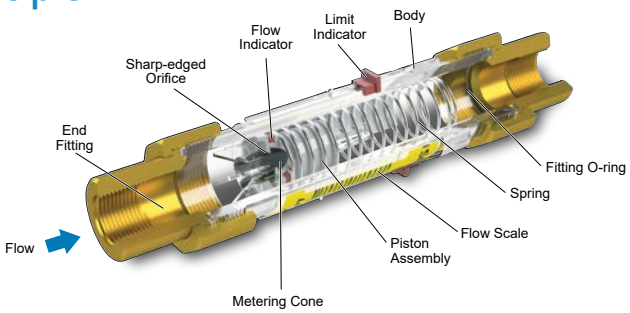
ProSense® FG1 Series Mechanical Variable Area Flow Meters

Overview

The ProSense FG1 Series of mechanical variable area flow meters provides visual indication of flow rate for water or petroleum based fluids. Constructed of high-impact polysulfone plastic, these flow meters are available with 1/2", 3/4" or 1" NPT process connections and several easy to read flow scales in both gallons per minute (GPM) and liters per minute (LPM). Their unique spring loaded variable area design allows the FG1 series flow meters to be installed in-line in any position without affecting accuracy and makes them relatively insensitive to shock and vibration. No special plumbing or accessories are required to stabilize turbulent flow because the FG1 series meters can be installed immediately adjacent to 90-degree elbows or other piping components allowing for system design flexibility. These meters provide +/-5% full scale accuracy when monitoring liquids with viscosity and specific gravity similar to the factory calibrated fluids and a repeatability of +/-1% that is important for cyclical applications requiring consistent readings. Two adjustable flow limit pointers are available to provide preset indication of high, low, or normal flow rates.

Variable Area Flow Meter Measuring Principle

The ProSense FG1 Series Flow Meter is a variable area instrument. A precision molded, sharp-edged Orifice, located within the Piston Assembly, forms an annular opening with the Metering Cone. Flow through the meter creates a pressure differential across the sharp-edged orifice, moving the piston against the Spring. The piston moves precisely, in direct proportion to the rate of flow. The calibrated spring opposes flow in the forward direction. This spring decreases viscosity sensitivity and allows the flow meters to be used in any position, including inverted. The indicated flow rate is measured by viewing the red Flow Indicator line on the piston relative to the numerical flow scale, mounted on the outer surface of the transparent flow meter body.



ProSense FG1 Series Mechanical Variable Area Flow Meter Selection

Part No.	Media Type	Process Connection	Measuring Range	Quantity	Weight (lbs)	Price
FG1W-50BP-4	Water	1/2 in female NPT	0.5 to 4 GPM (2 to 15 LPM)	1	1.0	Retired
FG1W-75BP-2		3/4 in male NPT	0.25 to 2.5 GPM (1 to 10 LPM)	1	1.0	Retired
FG1W-75BP-4			0.5 to 4 GPM (2 to 15 LPM)	1	1.0	Retired
FG1W-75BP-7			1 to 7 GPM (4 to 26 LPM)	1	1.0	Retired
FG1W-75BP-18			3 to 18 GPM (15 to 65 LPM)	1	1.0	Retired
FG1W-75BP-28			4 to 28 GPM (20 to 100 LPM)	1	1.0	Retired
FG1W-100PP-2		1 in male NPT	0.25 to 2.5 GPM (1 to 10 LPM)	1	0.5	Retired

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ProSense FG1 Series Mechanical Variable Area Flow Meter Selection (continued)						
Part No.	***Media Type***	***Process Connection***	***Measuring Range***	***Quantity***	***Weight (lbs)***	***Price***
FG1P-50BP-2	Oil	1/2 in female NPT	0.25 to 2.5 GPM (1 to 10 LPM)	1	1.0	Retired
FG1P-50BP-4			0.5 to 4 GPM (2 to 15 LPM)	1	1.0	Retired
FG1P-50BP-7			1 to 7 GPM (4 to 26 LPM)	1	1.0	Retired
FG1P-50BP-10			1 to 10 GPM (4 to 35 LPM)	1	1.0	Retired
FG1P-50BP-16			1 to 16 GPM (5 to 60 LPM)	1	1.0	Retired
FG1P-75BP-2		3/4 in male NPT	0.25 to 2.5 GPM (1 to 10 LPM)	1	1.0	Retired
FG1P-75BP-4			0.5 to 4 GPM (2 to 15 LPM)	1	1.0	Retired
FG1P-75BP-7			1 to 7 GPM (4 to 26 LPM)	1	1.0	Retired
FG1P-75BP-10			1 to 10 GPM (4 to 35 LPM)	1	1.0	Retired
FG1P-75BP-16			1 to 16 GPM (5 to 60 LPM)	1	1.0	Retired
FG1P-75BP-18			3 to 18 GPM (15 to 65 LPM)	1	1.0	Retired
FG1P-75BP-28			4 to 28 GPM (20 to 100 LPM)	1	1.0	Retired
FG1P-100PP-2		1 in male NPT	0.25 to 2.5 GPM (1 to 10 LPM)	1	0.5	Retired
FG1P-100PP-4			0.5 to 4 GPM (2 to 15 LPM)	1	0.5	Retired
FG1P-100PP-7			1 to 7 GPM (4 to 26 LPM)	1	0.5	Retired
FG1P-100PP-10			1 to 10 GPM (4 to 35 LPM)	1	0.5	Retired
FG1P-100PP-16			1 to 16 GPM (5 to 60 LPM)	1	0.5	Retired
FG1P-100PP-18			3 to 18 GPM (15 to 65 LPM)	1	0.5	Retired
FG1P-100PP-28			4 to 28 GPM (20 to 100 LPM)	1	0.5	Retired

ProSense FG1 Series Mechanical Variable Area Flow Meter Specifications			
Accuracy	±5% of full scale		
Repeatability	±1%		
Pressure Rating	325 psi (22.4 bar) Maximum		
Temperature Range	32…250° F (0…121° C)		
Fittings/Threads	NPT ANSI/ASME B1.20.3		
Materials	Wetted	Body	Polysulfone
		Piston	Polysulfone
		Cone	Polysulfone
		Spring	T300 Stainless Steel
		Retaining Rings	PH15-7MO Stainless Steel
		Seals	Buna-N
		Indicator Ring	Buna-N
		Fittings (1/2 and 3/4 NPT models)	C360 Brass
	Non-wetted	Limit Indicator	Polypropylene
		Scale	Polyester
Calibration Fluid	Oil	0.876 specific gravity, 32 cSt viscosity	
	Water	1.0 specific gravity, 1.0 cSt viscosity	

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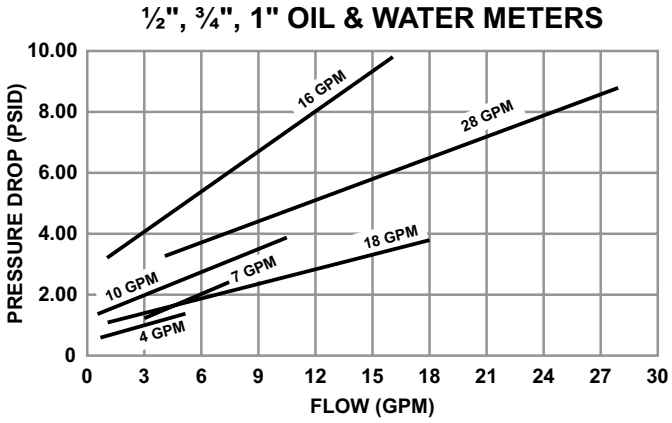
Pressure Drop/Flow Rate

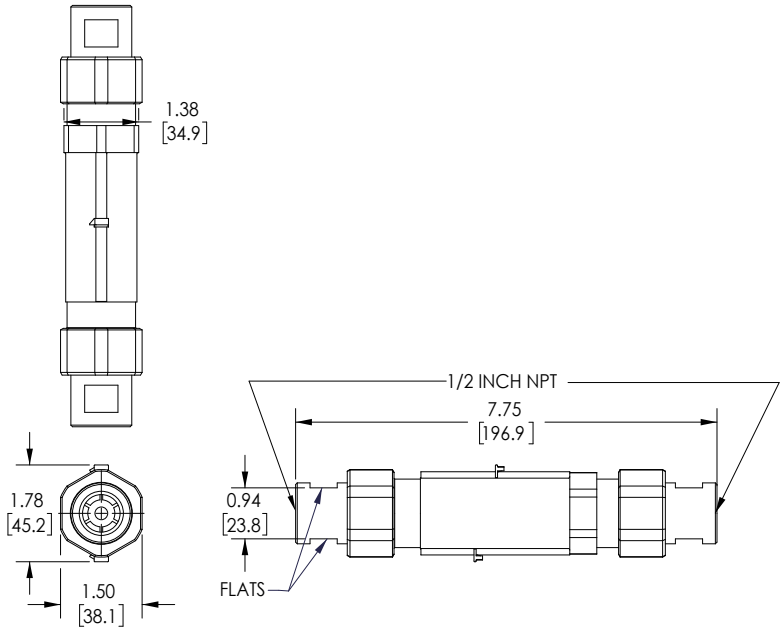
The pressure drop curve is valid for fluids with density and viscosity similar to factory calibration fluids. Fluids with higher viscosity than these test fluids yield a higher pressure drop through the flow meter and piping system per a given flow volume.



Click or scan the above QR code to be taken to the installation insert for the FG1 Series Variable Area Flow Meters

Dimensions

inches [mm]



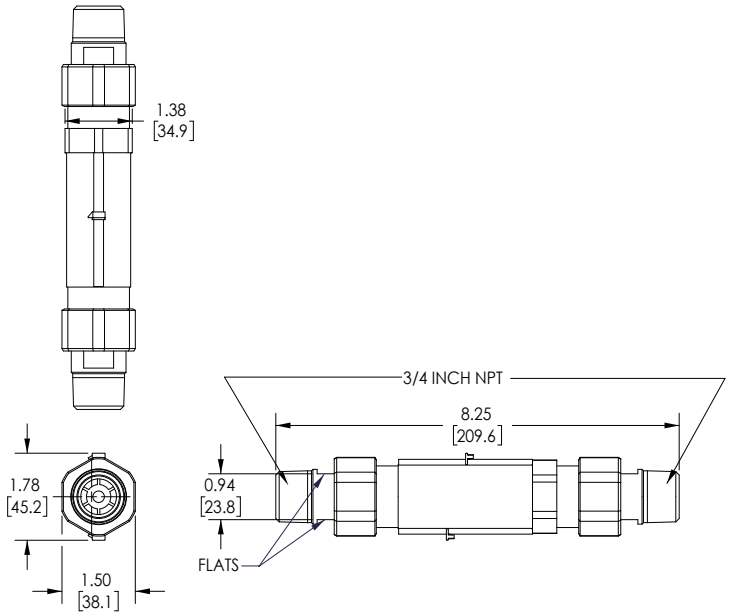
FG1x-50BP-x Models

See our website www.AutomationDirect.com for complete Engineering drawings.

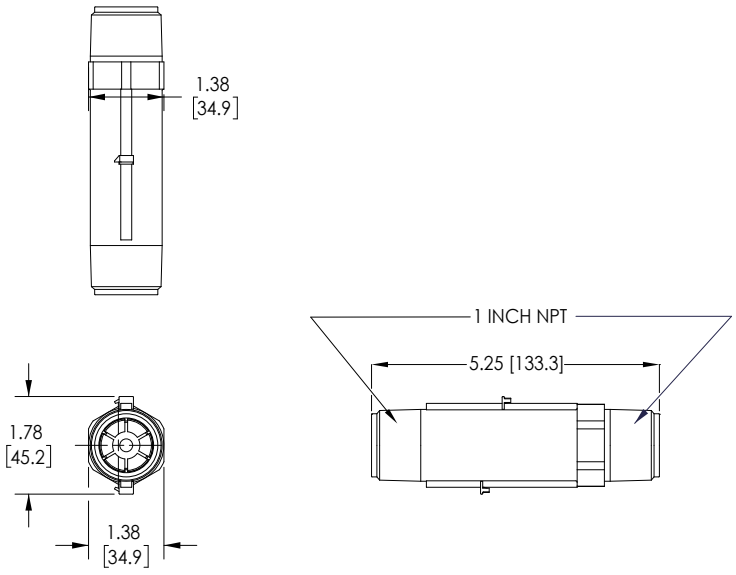
FG1 Series Mechanical Variable Area Flow Meters

Dimensions

inches [mm]



FG1x-75BP-x Models



FG1x-100PP-x Models

See our website www.AutomationDirect.com for complete Engineering drawings.