

Liquid Flowmeters

Sturdy in-line, metal construction and large easy to read dial calibrated in engineering units (GPM, LPM, & cc/m) available in Bronze, SST and Monel.

Features and Benefits

- 3.5" (90mm) 270° analog dial for reading at a glance
- Suitable for use with opaque and clear fluids.
- Measures 6:1 range with $\pm 3\%$ F.S. accuracy
- Dial and case factory configured for quick installation – but easily field re-configured if needed
- Liquid flow ranges from 4 GPH (15 l/h) in 1/2" flow meter to 3000 GPM (12000 l/m) in 8" flow meter.

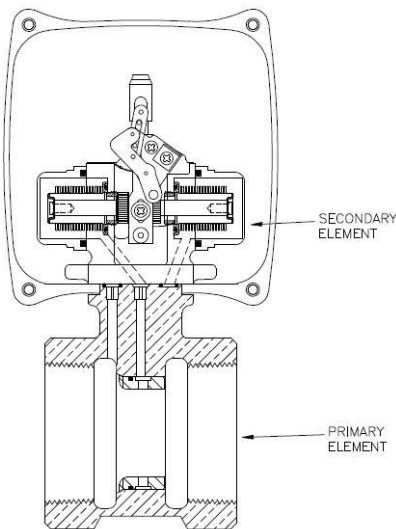
Applications

- Water
- Liquids with Viscosity up to 500 cps
- Saturated Steam Service
- 50% Water / 50% Glycol Mixture



Principle of Operation

Our differential pressure flow meters are based on the premise that the pressure drop across the meter is proportional to the square of the flow rate. The flow rate is obtained by measuring the pressure differential and extracting the square root.



Specifications

	Standard	Options
Housing Body	Polycarbonate Bronze	Aluminum Monel 316 SS
Bellows	Bronze	Monel 316 SS Inconel
Seals	Buna-N	Viton EPR Teflon
Crystal	Polycarbonate	Glass Plastic
Gear Movement	Bronze	316 SS
Accuracy	$\pm 3\%$ F.S.	
Repeatability	$\pm 1\%$ F.S.	
Pressure		
Maximum	180 psig	400 psig
Minimum	10 psig	10 psig
Temperature		
Maximum	212°F	350°F
Minimum	-30 °F	-80 °F

Model Number System

The example **1/2"-71-R-10-ADV** describes a 1/2" pipe size, 7000 series threaded connection, bronze material, flow from left to right, flow rate of 10 GPM, Options - Viton seals (A), Gasket case (D) and calibrated for high viscosity (V).

<u>1/2"</u>	-	<u>7</u>		<u>1</u>	-	<u>R</u>	-	<u>10</u>	-	<u>ADV</u>
Pipe Size		Series		Material		Flow Direction		Flow Rate		Options
1/4"	(8mm)	7000 Series		1 - Bronze		L – Right to Left		See Flow Chart		See Table
1/2"	(15mm)	8000 Series		2 - Monel		R – Left to Right				
3/4"	(20mm)			3 - SST		VUR - Vertical Up Flow Dial Right				
1"	(25mm)					VUL - Vertical Up Flow Dial Left				
1 1/2"	(40mm)					VDR - Vertical Down Flow Dial Right				
2"	(50mm)					VDL - Vertical Up Flow Dial Left				
2 1/2"	(65mm)									
3"	(80mm)									
4"	(100mm)									
5"	(125mm)									
6"	(150mm)									
8"	(200mm)									

Flow Ranges – Series 7000 & 8000

Table of Options

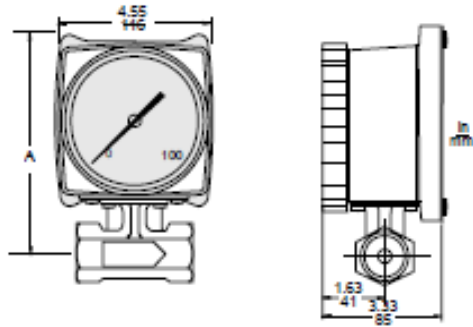
		Size	GPM	LPM	Size	GPM	LPM
A	Viton Seals	1/4	2	8	2 1/2	60	240
B	EPR Seals	1/4	3	10	2 1/2	100	400
B2	Teflon Seals	1/4	4	15	2 1/2	150	600
C	Calibrated for Specific Gravity				2 1/2	200	800
D	Gasketed Case	1/2	2	8	3	200	800
E	Non-Standard Flow Rate	1/2	3	10	3	300	1000
ES	Low Flow Rate (Below 2 GPM)	1/2	4	15	3	400	1500
F	Aluminum Housing with Plastic Dial Crystal	1/2	6	25	3	500	2000
F2	Aluminum Housing with Glass Dial Crystal	1/2	10	40			
G	Custom Scales and Dials	3/4	6	25	4	300	1000
H	High Pressure Service (400 psig max.)	3/4	10	40	4	400	1500
P	Panel Mount	3/4	15	60	4	600	2400
R2	Remote Readout, Brass (Mechanical Indication)	3/4	20	80	4	800	3000
R3	Remote Readout, 316 SS (Mechanical Indicator)						
T	Expanded Temperature (-80°F to 350°F max.)	1	15	60	5	300	1000
V	High Viscosity Service (5-500 cps)	1	20	80	5	400	1500
		1	30	120	5	600	2400
		1	40	150	5	800	3000
		1 1/2	30	120	6	600	2400
		1 1/2	40	150	6	800	3000
		1 1/2	60	240	6	1000	4000
		1 1/2	100	400	6	2000	8000

Low Flow Rates – Option ES

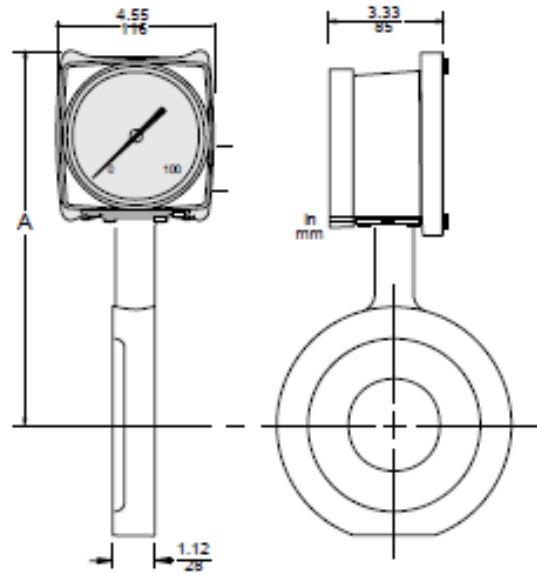
Size	GPH	l/h	cc/m				
1/2	4	15	200				
1/2	6	20	300				
1/2	10	40	400	2	40	150	8
1/2	15	60	600	2	60	240	8
1/2	20	80	1000	2	100	400	8
1/2	30	120	2000	2	150	600	8
1/2	40	150	3000	2	200	800	
1/2	60	240	4000				
1/2	100	400	6000				

Note: Available with 1/2" 7000 Series Only

7000 Series – 1/4" to 3" Connections



8000 Series – 1/2" to 8" Connection



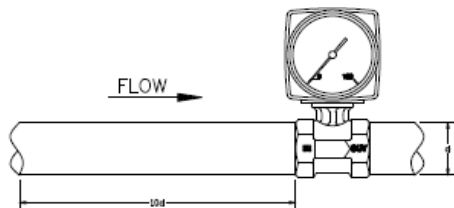
Dimensions

Nominal Sizes		Series 7000 – A		Series 8000 - A	
In	mm	In	mm	in	mm
1/4	08	5.95	151	n/a	n/a
1/2	15	5.95	151	6.62	168
3/4	20	5.95	151	7.06	179
1	25	6.07	154	7.25	184
1 1/2	40	6.39	162	7.81	198
2	50	6.80	172	8.00	203
2 1/2	65	n/a	n/a	8.54	217
3	80	7.48	190	8.87	225
4	100	n/a	n/a	9.95	252
5	125	n/a	n/a	10.36	263
6	150	n/a	n/a	11.05	280
8	200	n/a	n/a	12.30	311

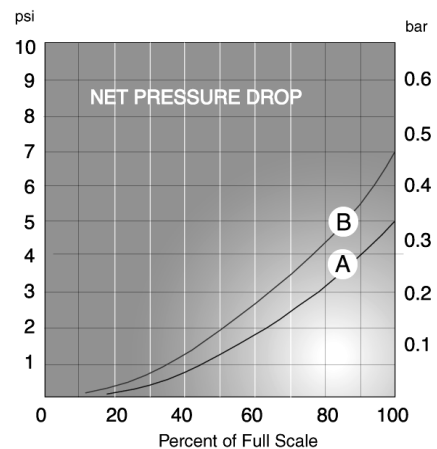
Note: Dimensions are based on bronze meters.

Piping Requirements

The site selected should provide at least 10 pipe diameters of straight meter sized pipe between the meter inlet and any upstream fitting such as elbow, tee or valve.



Pressure Drop Characteristics



Curve A – Bronze Bellows

Curve B – Monel, SS, Inconel Bellows

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