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0-1 to 0-30 GPM
1.5-10 to 1-100 SCFM
Variable-Area Flow for Liquids or Gases

Features

- **Large, easy-to-read dial**
- **Rugged, high line pressure design**
- **Vertical or horizontal mounting**



Our variable-area flowmeters are designed for liquid or gas applications where rotameters often fall short. These models have large dials with bold markings and characters that are easy to read from a distance. They also handle high line pressures and can be mounted in any orientation.

Like rotameters, they are mounted directly in the flow stream, but with bodies machined from solid blocks of metal, they handle high-pressure applications of up to 5000 psi (vs 150 psi for rotameters). This makes them a natural for hydraulic systems.

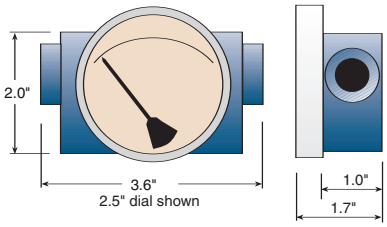
The variable-area sensor, a movable Delrin cone (2200 & 2300) or Teflon cone (2400), rests in a precision orifice. Fluid flow causes the sensor to move from the orifice and against a stainless steel spring while the flow rate is indicated on an easy-to-read dial face.

We offer them with pressure bodies (and wetted parts) of aluminum, stainless steel or brass. A variety of dial sizes are available, from 2.5 inch to 4.5 inch.

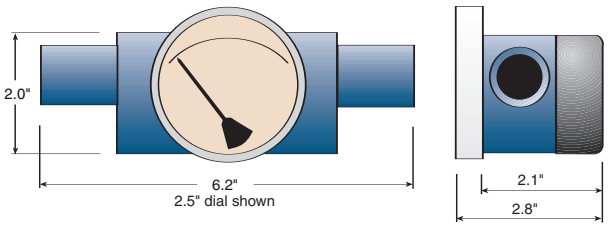
Choose from a wide selection of dial, porting, seal and calibration options. Switches, relays and transmitters are available with the dial or as stand-alone instruments. More details on these models can be found on our flow introduction pages 16-19. Electrical details are on pages 26-27.

Dimensions

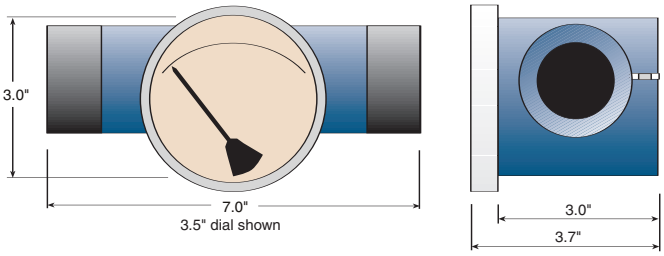
Detailed drawings on website.



2221FG



2323FGS



2421FG

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Specifications (Detailed Specification Sheets on Website)

Model	Flow range	Porting	Maximum line press./temp.	Accuracy (F.S.)/repeatability	Turndown*	Electrical Available**
2221FG/FGS/FS	Liquids 0-1 to 0-5 GPM (0-4 to 0-18 LPM) Air & Gas 1.5-10 to 3-25 SCFM (40-280 to 75-700 SLPM)	1/4" NPT	3000 psig (200 bar) 200°F (93°C)	Liquids 2%/1% Air & Gas 5%/1%	10:1	1 or 2 switches
2223FGS/FS/FGT/FT	Liquids 0-1 to 0-5 GPM (0-4 to 0-18 LPM) Air & Gas 1.5-10 to 3-25 SCFM (40-280 to 75-700 SLPM)	1/4" NPT	5000 psig (200 bar) 200°F (93°C)	Liquids 2%/1% Air & Gas 5%/1%	10:1	1 or 2 switches 1 relay transmitter NEMA 4X Class 1-Div. 2
2321FG/FGS/FS	Liquids 0-1 to 0-10 GPM (0-4 to 0-18 LPM) Air & Gas 4-30 to 10-100 SCFM (100 to 850 SLPM)	1/2" NPT	3000 psig (200 bar) 200°F (93°C)	Liquids 2%/1% Air & Gas 5%/1%	10:1	1 or 2 switches
2323FGS/FS/FGT/FT	Liquids 0-1 to 0-10 GPM (0-3.8 to 0-38 LPM) Air & Gas 4-30 to 10-100 SCFM (100-850 SLPM)	1/2" NPT	5000 psig (340 bar) 200°F (93°C)	Liquids 2%/1% Air & Gas 5%/1%	10:1	1 or 2 switches 1 relay transmitter NEMA 4X Class 1-Div. 2
2421FG/FGS/FS	Liquids Only 0-10 to 0-30 GPM (0-36 to 0-110 LPM)	1" NPT	1500 psig (100 bar) 200°F (93°C)	2%/1%	10:1	1 or 2 switches
2423FGS/FS	Liquids Only 0-10 to 0-30 GPM (0-36 to 0-110 LPM)	1" NPT	1500 psig (100 bar) 200°F (93°C)	2%/1%	10:1	1 or 2 switches 1 relay NEMA 4X

F-Flow G=Gauge S=Switch T=Transmitter

*Turndown results in 1st mark at approximately 10% of full scale
**NEMA 4X switch models have a 1/2 inch NPT conduit port as standard. A DIN 43650A-PG11 with mating connector is optional, rated IP65 & NEMA 4X

How to Order

Select from each of the applicable categories to construct a model number. Use the model number when ordering or obtaining additional information and pricing from Orange Research or your local distributor.
Reordering? You must supply the Part Number from your instrument label.

Sample Model Number

2221FGS – 1A – 2.5B – A 0-1 GPM-W, 5T

2221FGS	1A	2.5B	A	0-1 GPM	W	5T
Model	**Flow Body**	**Dial Case**	**Electrical**	**Range**	**Calibration**	**Options** (more on pg. X)
2221FG 2221FGS 2221FS 2223FGS 2223FS 2321FG 2321FGS 2321FS 2323FGS 2323FS ***More models above***	1A = aluminum 1C = 316 SS 1E = brass	2.5B = 2.5" basic 3.5B = 3.5" basic 4.5B = 4.5" basic ***Change "B" to "F" above for flanged dial case***	A = SPST, N.O. B = SPST, N.C. C = SPDT A-A = 2 ea. -A B-B = 2 ea. -B C-C = 2 ea. -C R2 = relay T2 - transmitter	Liquid 0-1, 0-2, 0-3, 04, 0-5, 0-8, 0-10, 0-15, 0-20, 0-25, 0-30 GPM Air & Gas ***2220 Series:*** 1.5-10, 2-15, 3-20, 3-25 SCFM ***2320 Series:*** 4-30, 4-40, 5-50, 5-75, 10-100 SCFM	W = std. calibr. -water O = std. calibr. -oil A = std. calibr. -air S= special calibr.* *Liquids: must specify specific gravity and viscosity *Gas: must specify gas, pressure and temperature ***See std. calibration conditions page 18***	5 = plastic lens 6 = liquid fill (glycerine) 8 = reverse flow 9 = vertical flow (specify direction – up or downward) Special Seals (Buna-N standard): T = Teflon V = Viton

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