

# P430 Series

## Glass Tube Variable Area Flow Meter

Parker P Series glass tube flowmeters deliver unsurpassed performance and value in a wide variety of gas and liquid applications.

P430 Series flow meters feature borosilicate glass tubes with stainless steel frames and horizontal connections and are available with 65mm and 150mm scale sizes.

Available fiber optic or inductive ring sensor alarms, as well as integrated metering valves, provide the needed versatility for many industrial process and sample handling applications.



### Contact Information:

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### Product Features and Options:

- Borosilicate glass metering tube
- Max temperature:  
250°F (121°C) for gases  
200°F (93°C) for liquids
- Max Pressure: 200 PSIG  
(see specifications)
- Optional inductive ring and fiber optic alarm sensors available
- Certified calibrations conforming to ISA RP 16.6 available
- Direct reading detachable scales available in any volumetric unit



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# Specifications

## Materials

<b>Metering Tube</b>	Borosilicate Glass
<b>Internal Components</b>	316L Stainless Steel, Black Glass, Sapphire, Carboly, Tantalum
<b>Inlet/Outlet Fittings</b>	1/8" and 1/4" FNPT, Horizontal Control Valve Optional
<b>Fitting Material</b>	316L Stainless Steel
<b>Elastomers</b>	Standard: Viton® Optional: Buna, EPR, and Kalrez®

## Options

<b>Alarm</b>	Fiber Optic or Inductive Ring Sensor (see details)
<b>Certified Calibrations</b>	Conform to ISA RP 16.6
<b>Scales</b>	Can be produced in any volumetric unit

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## Performance

<b>Capacities</b>	Water .72 to 1,800 cc/mn Air 66 to 70,000 cc/mn
<b>Scale</b>	65mm, 150mm Direct reading, detachable
<b>Accuracy</b>	65mm ±6% of Full Scale Flow 150mm ±4% of Full Scale Flow
<b>Turndown</b>	10:1 to 12.5:1, unless otherwise indicated
<b>Repeatability</b>	1%
<b>Maximum Temperature</b>	Gases 250°F (121°C) Liquids 200°F (93°C)
<b>Maximum Pressures</b>	316L SS Fittings 200 psig PVC Fittings 130 psig PVDF Fittings 150 psig
<b>Ambient Temperature</b>	33°F to 125°F (1°C to 52°C)

## Alarm Options:

### Inductive Ring Sensor

Inductive ring sensors are designed to be used with a remote intrinsic safety barrier/switch isolator. These sensors are able to detect the metal float by producing an electromagnetic field within the ring. Ring sensors are available in either proximity or latching format for the P430 Series.

### Sensor Specifications

<b>Power Supply</b>	5-25 VDC (from Switch Isolator)
<b>Maximum Current</b>	Target Present: 1 mA Target Absent: 15 mA
<b>Temperature Limits</b>	Tubes A1–A4 and B1–B5: -14°F to +105°F (-26°C to +40°C) Tubes A5–A6 and B6–B8: -14°F to +158°F (-26°C to +70°C)
<b>Output</b>	NAMUR
<b>Repeatability</b>	0.01mm
<b>Switching Frequency</b>	2 kHz (.125"), 1.5 kHz (.25")
<b>Sensor Approvals</b>	UL Listed: General Purpose FM Approved: Intrinsically Safe* CSA Certified: Intrinsically Safe* Cenelec: Intrinsically Safe*

\*Additional cost, call for pricing

### Float/Sensor Compatibility

Type	Tube Sizes	Float Material
<b>Proximity</b>	.125" .25"	SS, CB
<b>Latching</b>	.125" .25"	SS, CB

### Fiber Optic Sensor

The fiber optic sensor is housed in a junction box attached to the side of a P430 Series flowmeter. The sensor uses a pair of fiber optic cables, an emitter and receiver to transmit the light across the metering tube and back to the sensor. If the light beam is blocked by the float, the sensor output will change. The sensor provides a transistor output that switches the common or negative voltage (NPN) or positive voltage (PNP) to the load. The fiber optic sensor is compatible with all P430 Series float types.

### Sensor Specifications

<b>Supply Voltage</b>	10-30 VDC
<b>Current Consumption</b>	25 mA
<b>Temperature Limits</b>	-14°F to +212°F (-26°C to +100°C)
<b>Offstate Leakage Current</b>	1 microamp at 30 VDC
<b>Output Saturation Voltage</b>	1 V at 10 mA DC < 1.5 V at 150 mA DC

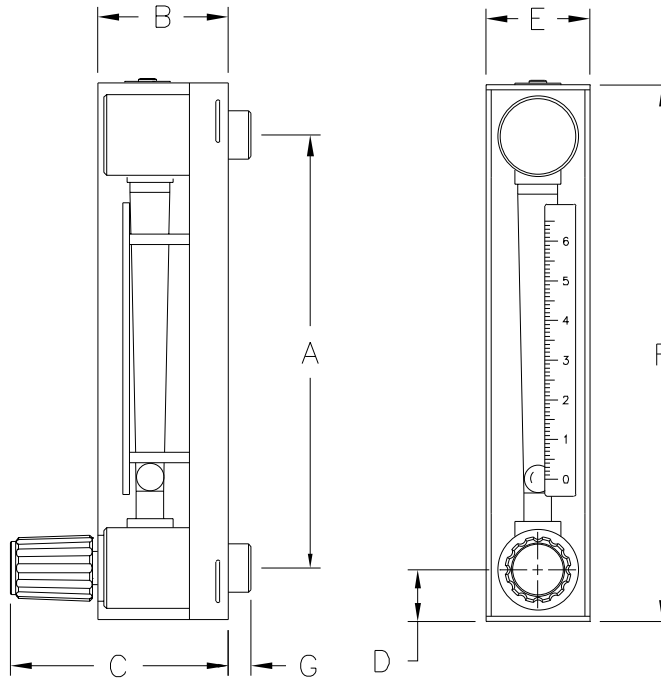
**Note:** Sapphire floats are not compatible with Fiber Optic Sensor

## Flow Ranges

65mm Scale Flow Ranges							
Tube Number	Float Material	Air (STP)			Water (70°F)		
		CC/MIN	SCFH	SLPH	CC/MIN	GPH	LPH
A1	Glass	66	.14	4.0	0.72	.011	.042
	Sapphire	105	.22	6.2	1.3	.021	.078
	Stainless Steel	200	.42	12.0	3.3	.052	.190
	Carboloy	340	.70	20.0	7.0	.110	.420
	Tantalum	350	.74	21.0	7.8	.125	.460
A2	Glass	76	.16	4.6	1.15	.018	.068
	Sapphire	120	.25	7.2	2.10	.032	.125
	Stainless Steel	230	.50	14.0	4.20	.068	.260
	Carboloy	400	.85	24.0	9.0	.145	.560
	Tantalum	440	.90	26.0	10.0	.165	.620
A3	Glass	525	1.1	31	9.0	.140	.540
	Sapphire	700	1.5	42	15.5	.240	.950
	Stainless Steel	1130	2.4	68	29.0	.460	1.7
	Carboloy	1600	3.4	95	46.0	.720	2.8
	Tantalum	1700	3.6	100	50.0	.780	3.0
A4	Glass	2000	4.2	120	44	.700	2.6
	Sapphire	2600	5.4	150	68	1.05	4.0
	Stainless Steel	3800	8.2	230	110	1.70	6.6
	Carboloy	5600	12.0	340	170	2.70	10.5
	Tantalum	6000	13.0	360	180	2.90	11.0
A5	Glass	6800	14.5	400	160	2.60	9.5
	Sapphire	9200	19.5	540	240	3.80	14.5
	Stainless Steel	13,000	28.0	800	400	6.40	24.0
	Carboloy	19,000	40.0	1100	600	9.50	36.0
	Tantalum	20,000	42.0	1200	640	10.00	38.0
A6	Glass	19,000	40.0	1150	520	8.25	31.0
	Sapphire	25,000	52.0	1500	740	11.50	44.0
	Stainless Steel	42,500	90.0	2550	1200	19.00	72.0
	Carboloy	60,000	125.0	3600	1700	27.00	105.0
	Tantalum	70,000	145.0	4200	1800	29.00	110.0

150mm Scale Flow Ranges							
Tube Number	Float Material	Air (STP)			Water (70°F)		
		CC/MIN	SCFH	SLPH	CC/MIN	GPH	LPH
B1	Glass	54	.114	3.2	.56	.0088	.033
	Sapphire	82	.175	4.9	1.04	.0160	.062
	Stainless Steel	160	.340	9.8	2.25	.0350	.135
	Carboloy	280	.580	16.5	5.00	.0780	.300
	Tantalum	300	.620	17.5	5.20	.0840	.320
B2	Glass	106	.225	6.4	1.24	.0195	.074
	Sapphire	165	.35	10	2.35	.0380	.145
	Stainless Steel	320	.68	19	5.60	.0900	.340
	Carboloy	540	1.14	32	12.4	.1950	.740
	Tantalum	580	1.24	35	13.5	.2100	.820
B3	Glass	350	.74	21	4.7	.074	.28
	Sapphire	500	1.06	30	10.0	.160	.60
	Stainless Steel	820	1.75	50	20.5	.330	1.25
	Carboloy	1,250	2.6	76	34.0	.540	2.05
	Tantalum	1,350	2.9	80	36.0	.560	2.15
B4	Glass	850	1.8	50	16.5	.26	1.0
	Sapphire	1,100	2.3	66	27.0	.42	1.6
	Stainless Steel	1,600	3.4	100	46.0	.72	2.7
	Carboloy	2,300	4.9	140	72.0	1.15	4.4
	Tantalum	2,450	5.2	155	80.0	1.25	4.8
B5	Glass	2,150	4.6	130	52	.84	3.1
	Sapphire	2,800	6.0	170	78	1.24	4.7
	Stainless Steel	4,400	9.2	260	130	2.05	7.8
	Carboloy	6,200	13.5	380	205	3.20	12.5
	Tantalum	6,750	14.0	400	210	3.30	12.5
B6	Glass	3,800	8.2	230	86	1.35	5.2
	Sapphire	5,000	10.6	300	130	2.05	7.8
	Stainless Steel	7,500	16.0	450	220	3.40	13.0
	Carboloy	10,600	22.5	640	330	5.20	20.0
	Tantalum	11,500	24.0	680	360	5.60	21.5
B7	Glass	9,000	19.0	540	215	3.40	13.0
	Sapphire	11,400	24.5	700	320	5.00	19.0
	Stainless Steel	17,000	36.0	1,000	520	8.20	31.0
	Carboloy	24,000	50.0	1,450	760	12.2	46.0
	Tantalum	25,000	54.0	1,500	820	13.0	49.0
B8	Glass	20,500	43.0	1,220	470	7.5	28.0
	Sapphire	26,000	56.0	1,550	700	11.0	42.0
	Stainless Steel	38,000	82.0	2,300	1120	18.0	68.0
	Carboloy	54,000	116.0	3,300	1650	26.0	100.0
	Tantalum	60,000	125.0	3,500	1750	28.0	106.0

## Dimensions



### Dimensions (inches)

	Scale Length	
	65mm	150mm
<b>A*</b>	4.53	8.826
<b>B</b>	1.56	1.56
<b>C</b>	2.90	2.90
<b>D</b>	0.73	0.73
<b>E</b>	1.50	1.50
<b>F</b>	6.05	10.25
<b>G</b>	0.50	.05

\*The FNPT fittings have a 3/4 – 16 O.D. thread with mounting nuts installed.

# Ordering Information

Use the following guide to determine the specific product number you require.

The following example describes a P430 series flow meter, with 65MM tubes, for air @ 66 SCCM or water at 0.72 CCM; glass float; 316 SS - 1/8" FNPT fitting material; EPR O-ring; millimeter packing material, Inlet 316L SS connection with no connection alarm.

**Example:** P430A1111110

Model Number, Example and Options							Description
<b>P430</b>	<b>A1</b>	<b>1</b>	<b>1</b>	<b>1</b>	<b>1</b>	<b>1</b>	<b>0</b>
Tube Number	A1 to A6						65MM Tubes   See Flow Capacities tables on previous pages
	B1 to B8						150MM Tubes   See Flow Capacities tables on previous pages
Float Material		1					Glass
		2					Sapphire
		3					316 SS
		4					Carboloy
		5					Tantalum
Fitting Material		1					316L SS – 1/8" FNPT
		2					316L SS – 1/4" FNPT
		3					PVC – 1/4" FNPT
		4					PVC – 1/8" FNPT
		5					PVDF – 1/4" FNPT
		6					PVDF – 1/8" FNPT
		7					Hastelloy C-276® – 1/4" FNPT
		8					Hastelloy C-276® – 1/8" FNPT
O-Ring Material		1					Ethylene Propylene Rubber (EPR)
		2					Nitrile Rubber (NBR)
		3					Fluorinated Propylene Monomer (FPM/FKM)
		4					Kalrez® with no valve
		5					Kalrez® with valve
Scale Type		1					Millimeter
		2					GPH Water @ 70°F (21°C)
		3					LPH Water @ 70°F (21°C)
		4					CC/MIN Water @ STP
		5					SCFH Air @ STP
		6					SLPH Air @ STP
		7					SCCM Air @ STP
		8					Non-Standard
Valve Option		1					Inlet 316L SS
		2					Outlet 316L SS
		3					No Valve
		4					Inlet PVC
		5					Outlet PVC
		6					Inlet PVDF
		7					Outlet PVDF
		8					Inlet Hastelloy C-276®
		9					Outlet Hastelloy C-276®
Optional Alarm Switch		0					No Alarm
		1					Fiber Optic NPN(Proximity)
		2					Fiber Optic PNP(Proximity)
		3					Inductive Ring Sensor(Proximity)
		4					Inductive Ring Sensor(Latching)

Gases equivalent to Air @ 21.1°C 1 atmos (Standard)

Liquid equivalent to water density 1.0 g/cm³, viscosity 1.0cp

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