P230 Series

Glass Tube Variable Area Flow Meter

The P230 Series flow meters are highly reliable and accurate flow meters commonly used in industrial production processes.

They feature SCS14 (equivalent to 316 SS) construction for use with many types of corrosive gases and liquids, making them optimal for demanding industrial applications.

They are available in a variety of operating flow ranges.

Contact Information:

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Product Features:

- Standard construction utilizes SCS14 (equivalent to 316 SS) wetted parts for use in most applications, including corrosive applications
- Industry standard lay lengths for 65mm and 150mm scales
- CR (Neoprene) packing material available for ammonia gas

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Specifications

Materials of Construction

Wetted	
Body	Standard: • SCS14 (equivalent to 316 SS)
Tapered Tube	Heat-resistant Glass
Float	316 Stainless Steel, Glass, PTFE or Ruby
Packing	Standard: • FPM (Fluorinated Propylene Monomer) Optional: • CR (Neoprene)
Spindle	Standard: • 316 Stainless Steel
Fitting	Standard: • 316 Stainless Steel
Valve	Standard: • 316 Stainless Steel

Non-wetted	
Cover	Acrylic
Support	SPCC (cold rolled carbon steel sheets)
Connection Size and Type	Standard: • NPT or RC 1/4" with locknuts for front panel mounting

Performance

Flow Rate Scale Ranges	
Water[1] Minimum Maximum	 0.08 - 0.8 Gal/h (0.3 - 3 L/h) 6.3 - 32 Gal/h (24–120 L/h)
Air[2] Minimum Maximum	 0.01 - 0.04 ft^3/h (0.2 - 1.2 L/h) (nor) 25 - 127 ft^3/h (720 - 3600 L/h) (nor)
Turndown	10:1
Accuracy	±5% F.S. for 65mm tube ±3% F.S. for 150mm tube
Approx. Weight	1.3 lbs. (0.5 kg)
Flow Direction	Bottom to Top

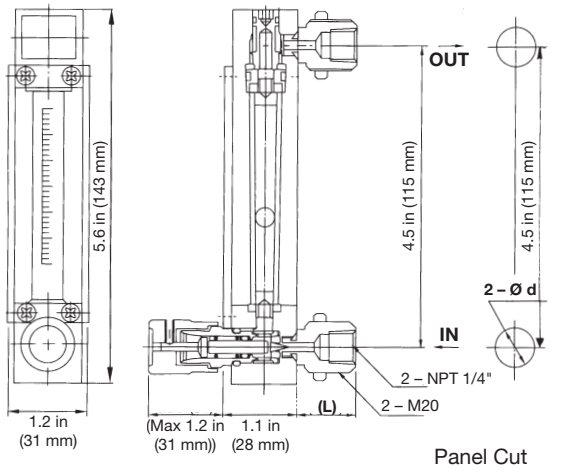
Operating Conditions	
Max. Operating Pressure	116 psig (8 barg)
Max. Operating Temperature • CR (Neoprene) • FPM (Fluorinated Propylene Monomer)	 176°F (80°C) 248°F (120°C)

[1] Liquid equivalent to water density 1.0g/cm3, viscosity 1.0cp
[2] Gases equivalent to Air @ 0°C 1 atm

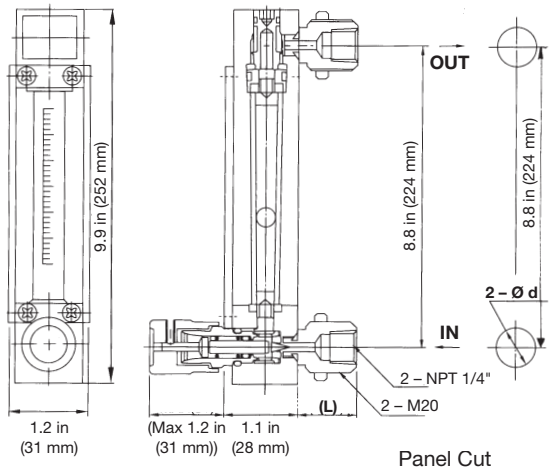
Dimensional Drawing

Standard valve provided at outlet, with locknuts for front panel mounting

65 MM



150 MM



Panel Cut Dimensions				
Connection Size	Hole Diameter (d)		Rear Length (L)	
	in	mm	in	mm
1/4" NPT	ø 0.9	ø 22.0	ø 0.9	ø 22.0

Standard Flow Capacity Ranges

Air[1] Flow Rate Table

Air		Air	
ft³/h	L/h (nor)	ft³/h	L/h (nor)
0.01 - 0.04*	0.2 - 1.2	0.4 - 4.2	12 - 120
0.01 - 0.06	0.4 - 1.8	0.6 - 6.4	18 - 180
0.02 - 0.1	0.6 - 3	1.1 - 11	30 - 300
0.02 - 0.2*	0.6 - 6*	2.1 - 21***	60 - 600***
0.04 - 0.4	1.2 - 12	4.2 - 42	120 - 1200
0.06 - 0.6	1.8 - 18	6.4 - 64**	180 - 1800**
0.1 - 1.1	3 - 30	21 - 106	600 - 3000
0.2 - 2.1	6 - 60	25 - 127	720 - 3600

[1] Air measured at 0 psig and 32°F (0°C)
* 10:2 if range is less than 0.2 ft³/h (6 L/h) (nor)
** 10:2 if range is more than 64 ft³/h (1800 L/h) (nor)
*** 10:2 if range is more than 21 ft³/h (600 L/h) (nor)

Water[2] Flow Rate Table

Water	
Gal/h	L/h
0.08 - 0.8	0.3 - 3
0.2 - 1.6	0.6 - 6
0.3 - 3.2	1.2 - 12
0.5 - 4.8	1.8 - 18
0.8 - 7.9	3 - 30
1.6 - 16	6 - 60
4.8 - 24*	18 - 90*
6.3 - 32**	24 - 120**

[2] Liquid equivalent to water density 1.0g/cm³, viscosity 1.0 cp
* 10:2 if range is more than 24 Gal/h (90 L/h)
** 10:2 if range is more than 16 Gal/h (60 L/h)

Ordering Information

Use the following guide to determine the specific product number you require.
The following example describes a P230 65mm tube flow meter with air equivalent flow rates from 0.24-1.2 nL/hr[1] up to 0.6-6 nL/hr[1], no valve or alarm, wetted parts of SCS14 (equivalent to 316 SS), FPM/FKM packing material and 1/4" NPT thread connection with standard front panel mounting

Example: P231A1B1A2A

Model Number, Example and Options									Description	
									Size	Range
P23	**1**	**A**	**1**	**B**	**1**	**A**	**2**	**A**		
Flow / Direction	1								65 mm	Air equivalent flow rates from 0.24-1.2 nL/hr[1] up to 0.6-6 nL/hr[1]
	2								65 mm	Air equivalent flow rates from 1.2-12 nL/hr[1] up to 600-3000 nL/hr[1] Water equivalent flow rates from 0.3-3 L/hr up to 18-90 L/hr[2]
	3								65 mm	Air equivalent flow rates 3600 nL/hr[1] Water equivalent flow rates 120 L/hr[2]
	4								150 mm	Air equivalent flow rates from 0.24-1.2 nL/hr[1] up to 0.6-6 nL/hr[1]
	5								150 mm	Air equivalent flow rates from 1.2-12 nL/hr[1] up to 240-2400 nL/hr[1] Water equivalent flow rates from 0.3-3 L/hr[2] up to 6-60 L/hr[2]
	6								150 mm	Air equivalent flow rates up to 3600 nL/hr[1] Water equivalent flow rates up to 120 L/hr[2]
	Z								Special	
Valve		A							None	
		B							Precision Valve - Bottom	
		C							Precision Valve - Top	
		D							Standard Valve - Bottom	
		E							Standard Valve - Top	
		Z							Special	
Alarm Output			1						None	
			Z						Special	
Wetted Parts				B					SCS14 (Equivalent to 316 SS)	
				Z					Special	
Packing Material					1				Fluorinated Propylene Monomer (FPM/FKM)	
					3				Chloroprene Rubber (CR)	
					Z				Special	
Connection Type						A			NPT thread (Standard)	
						B			RC thread (Typical for non-USA market)	
						Z			Special	
Connection Size							2		1/4"	
							Z		Special	
Mounting Options								A	None (Standard with locknuts for front panel mounting)	
								Z	Special	

Application Information

Fluid Name:
Operating Density or Specific Gravity:
Viscosity:
Flow Rate
Maximum:
Operating or Normal:
Scale Range:
Pressure
Maximum:
Operating or Normal:
Temperature
Maximum:
Operating or Normal:
Alarm Settings
Alarm 1:
Alarm 2:

[1]Gases equivalent to Air @ 21.1°C 1 atmos (Standard)
[2]Liquid equivalent to water density 1.0 g/cm^3, viscosity 1.0cp

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