

P210 Series

Glass Tube Variable Area Flow Meter



The P210 Series flow meters are designed for low flow rates of both liquids and gases.

They cover a broad range of applications, from purging to monitoring of industrial processes.

The P210 Series offers 316 Stainless Steel construction for all wetted parts.

For challenging corrosive applications, the P210 offers PTFE seals as an option.



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Product Features:

- Ideal for general purpose use, as well as use for field test equipment
- Suitable for both liquids and gases
- 316 Stainless Steel construction for all wetted parts
- PTFE seals are available as an option
- Front panel mounting hardware
- Easy-to-read scale
- Scale tube length of 45mm
- Optional alarm output



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Specifications

Materials of Construction

Wetted	
Body	Standard: 316 Stainless Steel
Tapered Tube	Heat-resistant Glass
Float	316 Stainless Steel, Glass, PTFE or Ruby
Packing	Standard: NBR (Nitrile Rubber) Optional: <ul style="list-style-type: none"> FPM (Fluorinated Propylene Monomer) CR (Neoprene) PTFE (Polytetrafluoroethylene)
Fitting	Standard: <ul style="list-style-type: none"> 316 Stainless Steel
Valve	Standard: 316 Stainless Steel
Non-wetted	
Cover	Polycarbonate
Support	Aluminum
Connection Size and Type	Standard: NPT or RC 1/4" with locknuts for front panel mounting

Performance

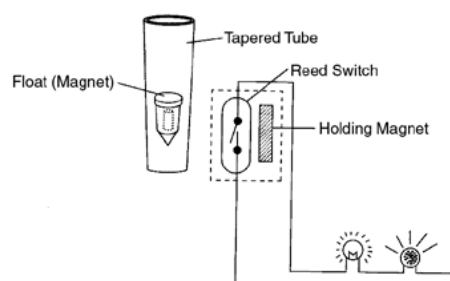
Flow Rate Scale Ranges		
Water ¹	Minimum	0.1 - 0.8 Gal/h (0.3 - 3 L/h)
	Maximum	6.3 - 32 Gal/h (24–120 L/h)
Air ²	Minimum	0.01 - 0.04 ft ³ /h (0.2 - 1.2 L/h) (nor)
	Maximum	11 - 106 ft ³ /h (300 - 3000 L/h) (nor)
Turndown		10:1
Accuracy		±5% F.S.
Approx. Weight		1.1 lbs. (0.5 kg)
Flow Direction		Bottom rear to top rear
Alarm Type		Self-holding Reed Switch
Operating Conditions		
Max. Operating Pressure		116 psig (8 barg) (72.5 psig) (5 barg) when PTFE packing material is used
Max. Operating Temperature		
• NBR (Nitrile Rubber)		176°F (80°C)
• CR (Neoprene)		176°F (80°C)
• PTFE		248°F (120°C)
(Polytetrafluoroethylene)		
• FPM (Fluorinated Propylene Monomer)		248°F (120°C)

¹Liquid equivalent to water density 1.0g/cm³, viscosity 1.0cp

²Gases equivalent to Air @ 0°C 1 atm

Reed Switch Specification

Number of Point	1 point (High or Low) 2 point alarm also available as an option Consult factory for details
Alarm Setting Range	Standard 20% to 80% of full scale (H: 50% to 80%, L: 20% to 50%)
Contact	Reed switch(Self-holding type) Max. contact capacity: AC10VA, DC10W Max. voltage: AC125V, DC100V Max. current: 0.5A
Connection	Lead wire connection of 50cm (2m is also available)
Reset-Span	25% Full Scale
Ambient Temperature	-10°C to 60°C



Caution must be taken when mounting multiple alarmed meters. Close proximity may cause interference with alarm signal.

⚠ WARNING – USER RESPONSIBILITY

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The user, through its own analysis and testing, is solely responsible for making the final selection of the system and components and assuring that all performance, endurance, maintenance, safety and warning requirements of the application are met. The user must analyze all aspects of the application, follow applicable industry standards, and follow the information concerning the product in the current product catalog and in any other materials provided from Parker or its subsidiaries or authorized distributors.

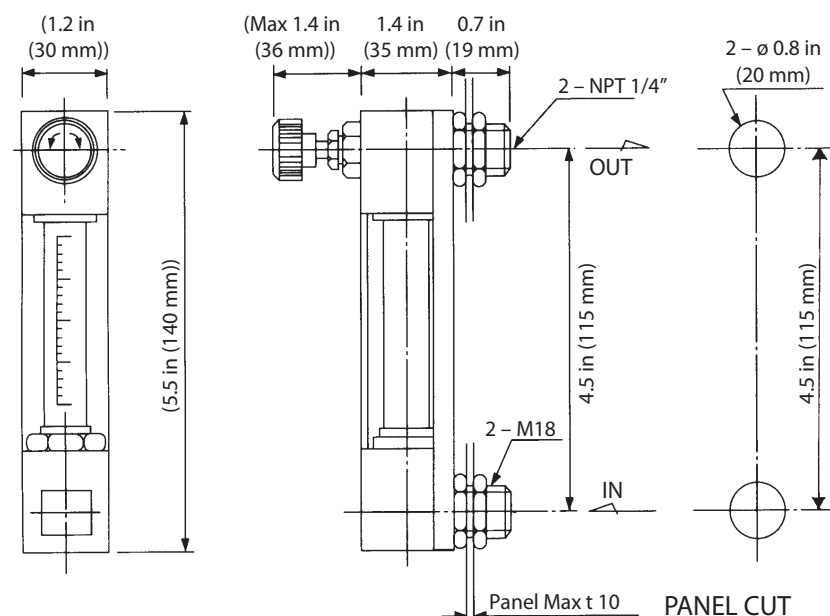
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Dimensional Drawing

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



Use non-magnetized material for panel with Reed Switch alarm output

Panel Cut Dimensions		
Connection Size	Hole Diameter	
	in	mm
1/4" NPT or RC	ø 0.8	ø 20.0
1/8" NPT or RC	ø 0.6	ø 16.0

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:
Other Options

Use this Application Information form in conjunction with the Ordering Information on the following page.

Flow Range Alarm Settings

Air¹ Flow Rate Table

If LO, LC, HO, or HC Alarm Output			
Air		Alarm Setting Range	
ft ³ /h	L/h (nor)	ft ³ /h	L/h (nor)
0.1 - 1.1*	3 - 30	0.2 - 0.8	6 - 24
0.2 - 2.1	6 - 60	0.4 - 1.7	12 - 48
0.4 - 4.2	12 - 120	0.8 - 3.4	24 - 96
0.6 - 6.4	18 - 180	1.3 - 5.1	36 - 144
1.3 - 13	36 - 360	2.1 - 11	60 - 300
2.1 - 21**	60 - 600**	4.2 - 17	120 - 480
6.4 - 32	180 - 900	6.4 - 25	180 - 720
13 - 64	360 - 1800	13 - 51	360 - 1440
17 - 85	480 - 2400	17 - 68	480 - 1920

¹ Air measured at 0 psig and 32°F (0°C)

When PTFE is used, a flow meter with a valve cannot be manufactured for a flow rate less than 2.1 ft³/h (60 L/h) (nor).

* 10:2 if range is less than 0.2 ft³/h (6 L/h) (nor)

** 10:2 if range is more than 21 ft³/h (600 L/h) (nor)

Water² Flow Rate Table

If LO, LC, HO, or HC Alarm Output			
Water		Alarm Setting Range	
Gal/h	L/h	Gal/h	L/h
0.1 - 0.8	0.3 - 3	0.2 - 0.6	0.6 - 2.4
0.2 - 1.6	0.6 - 6	0.3 - 1.3	1.2 - 4.8
0.8 - 3.2	3 - 12	1.3 - 2.5	4.8 - 9.6
0.5 - 4.8	1.8 - 18	1 - 3.8	3.6 - 14
0.8 - 7.9	3 - 30	1.6 - 6.3	6 - 24
1.6 - 16*	6 - 60	3.2 - 13	12 - 48

² Water measured with viscosity of 1 mPas

* 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 P210 bottom rear to top rear with air equivalent flow rates >27 nL/hr¹ up to 1200 nL/hr¹, water equivalent flow rates from 0.3 L/hr² to 24-120 L/hr², no valve or alarm, wetted parts of SUS 316 SS, FPM/FKM packing material and 1/8" NPT thread connection with standard front panel mounting.

Example: P211A1A1A1A

Model Number, Example and Options								Description
P21	1	A	1	A	1	A	1	A
Flow / Direction	1							Bottom rear to top rear Air equivalent flow rates >27 nL/hr ¹ up to 1200 nL/hr ¹ Water equivalent flow rates from 0.3 L/hr ² to 24-120 L/hr ²
	2							Bottom rear to top rear Air equivalent flow rates < 27 nL/hr ¹
	3							Bottom rear to top rear Air equivalent flow rates >1200 nL/hr ¹ up to 3000 nL/hr ¹
	Z							Special
Valve	A							None
	B							Bottom: For gas flows less than 60 nL/hr ¹ Air Equivalent
	C							Top: For gas flows less than 60 nL/hr ¹ Air Equivalent
	D							Bottom: Gas flow not less than 60 nL/hr ¹ to 2340 nL/hr ¹ Air Equivalent
	E							Top: Gas flow not less than 60 nL/hr ¹ to 2340 nL/hr ¹ Air Equivalent
	F							Bottom: For gas flow 2340 nL/hr ¹ to 3180 nL/hr ¹ , liquid flow up to 2 L/min ²
	G							Top: For gas flow 2340 nL/hr ¹ to 3180 nL/hr ¹ , liquid flow up to 2 L/min ²
Alarm Output	Z							Special
	1							None
	2							Reed Switch - Contact closes (becomes ON) when value is more than set point
	3							Reed Switch - Contact opens (becomes OFF) when value is more than set point
	4							Reed Switch - Contact closes (becomes ON) when value is less than set point
	5							Reed Switch - Contact opens (becomes OFF) when value is less than set point
Wetted Parts	Z							Special
	A							SUS 316 SS (Standard)
Packing Material	1							Fluorinated Propylene Monomer (FPM/FKM)
	2							Nitrile Rubber (NBR)
	3							Chloroprene Rubber (CR)
	4							Polytetrafluoroethylene (PTFE)
	Z							Special
Connection Type	A							NPT thread (standard)
	B							RC thread (typical for non-USA market)
	Z							Special
Connection Size	1							1/8"
	2							1/4"
	Z							Special
Mounting Options	A							None (Standard with locknuts for front panel mounting)
	Z							Special

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

²Liquid equivalent to water density 1.0 g/cm³, viscosity 1.0cp