Technical Data for PC-Series Pressure Controllers

0.07–3000 PSI full scale in absolute, gauge , or differential pressure applications

Standard specifications. Consult Alicat for available options.

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SENSOR AND CONTROL PERFORMANCE	
Pressure accuracy[1]	**Standard accuracy:** ± 0.25% of full scale **High-accuracy option:** ± 0.125% of full scale
Pressure repeatability (2σ)[1]	± 0.08% of full scale
Steady state control range	0.01 – 100% of full scale (10,000:1 turndown ratio)
Temperature sensitivity	**Zero shift:** 0.02% full scale per °C from tare temperature[2] **Span shift:** 0.02% full scale per °C from calibration temperature
Operating temperature range	−10 – 60°C
Valve function	Normally closed
Sensor response time	< 1 ms
Typical control response time	As fast as 30 ms, flow rate and valve size dependent, user-adjustable
Typical indication response time	< 10 ms
Typical warm-up time	< 1 s

1 Stated accuracy is after tare under equilibrium conditions; includes repeatability and linearity. Please consult an application engineer when full scale is ranged below 2 inH_2O (0.07 PSI).

2 Tare not available on absolute pressure devices without the optional integrated barometer.

MECHANICAL	
Fluid compatibility	**PC-Series:** Compatible with all non-corrosive gases; check wetted materials **PCS-Series:** Compatible with all non-corrosive gases and liquids, and many corrosive gases; check wetted materials
Sensor burst pressure	**0.07 – 100 PSI models:** 3× full scale range **500 – 3000 PSI models:** 1.5× full scale range
Maximum common mode pressure for differential pressure models	**≤ 100 PSID models:** 200 PSIG **500 PSID models:** 750 PSIG
Relative humidity range	0 – 95%, non-condensing
Ingress protection	IP40 (consult Alicat for weatherproofing options)
Mounting orientation sensitivity	**PC-Series:** None **PCR-Series:** Rolamite valves must be upright
Mounting holes	**PC-Series:** 2× 8-32 UNC threaded ↧ 0.250" [6.35 mm] **PCR-Series:** 4× 8-32 UNC threaded ↧ 0.250" [6.35 mm]

POWER AND COMMUNICATION	
Digital input and output options	RS-232 Serial and Modbus RTU (default) RS-485 Serial and Modbus RTU, Modbus TCP/IP, DeviceNet, EtherCAT, EtherNet/IP®, Profibus, PROFINET®, IO-Link
Digital data update rate[3]	40 Hz at 19200 Baud
Analog input and output options	4 – 20 mA, 0 – 5 Vdc, 1 – 5 Vdc, 0 – 10 Vdc
Analog data update rate	1 kHz
Analog signal accuracy	± 0.1% of full scale additional uncertainty
Interactive display	Monochrome LCD or color TFT display with integrated touchpad; simultaneously displays setpoint and pressure.
Display update rate	10 Hz
Electrical connection options	8-pin mini-DIN, 6-pin locking, 8-pin M12, DB-9, DB-15
Power requirements[3]	**PC, PCS and PCP:** 12 – 24 Vdc, 250 mA **PCR and PCRS:** 24 Vdc, 1 A Add 40 mA if equipped with 4 – 20 mA output

3 For specific industrial protocol models' power requirements and data transmission specifications, please consult their individual operating bulletins.

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STANDARD AVAILABLE RANGES[4]											
Model	0.07 PSI (2 inH$_2$O)	1 PSI	5 PSI	15 PSI	30 PSI	100 PSI	500 PSI	1000 PSI	1500 PSI	2000 PSI	3000 PSI
PC-Series PSIA				✓	✓	✓	✓	✓	✓	✓	✓
PC-Series PSIG	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
PC-Series PSID	✓	✓	✓	✓	✓	✓	✓				
PCS-Series PSIA[5]				✓	✓	✓	✓	✓	✓	✓	✓
PCS-Series PSIG[5]			✓	✓	✓	✓	✓	✓	✓	✓	✓
PCS-Series PSID[5]			✓	✓	✓	✓	✓				

WETTED MATERIALS: MEASUREMENT HEAD									
	Pressure range	Stainless steels		Heat-cured epoxy and silicone rubber, alumina, gold, silicon, glass	Polyamide	Glass-reinforced polyphenylene sulfide	FKM	FFKM	EPDM
		300 Series	316L[6]						
PC-Series	0.07 PSI (2 inH$_2$O)	✓		✓		✓	✓	Opt.	Opt.
	1–100 PSI	✓		✓	✓		✓	Opt.	Opt.
	500–3000 PSI	✓	✓				✓	Opt.	Opt.
PCS-Series[5]	5–3000 PSI		✓				Opt.	✓	Opt.

WETTED MATERIALS: CONTROL VALVE											
	Valve type[4]	Stainless steels			Sandvik proprietary metals, Elgiloy	Delrin	Brass	USP Class VI PTFE	FKM	FFKM	EPDM
		300 series	316L[5]	430FR							
PC-Series	PCV	✓		✓			✓		✓		
	PCA	Opt.[7]	✓		✓					✓	Opt.[7]
	P	✓		✓			✓		✓		
	R	✓				✓			✓	Opt.	Opt.
PCS-Series[6]	PCV-SS	✓		✓						✓	
	PCA	Opt.[7]	✓		✓					✓	Opt.[7]
	R	✓						✓	Opt.	✓	Opt.

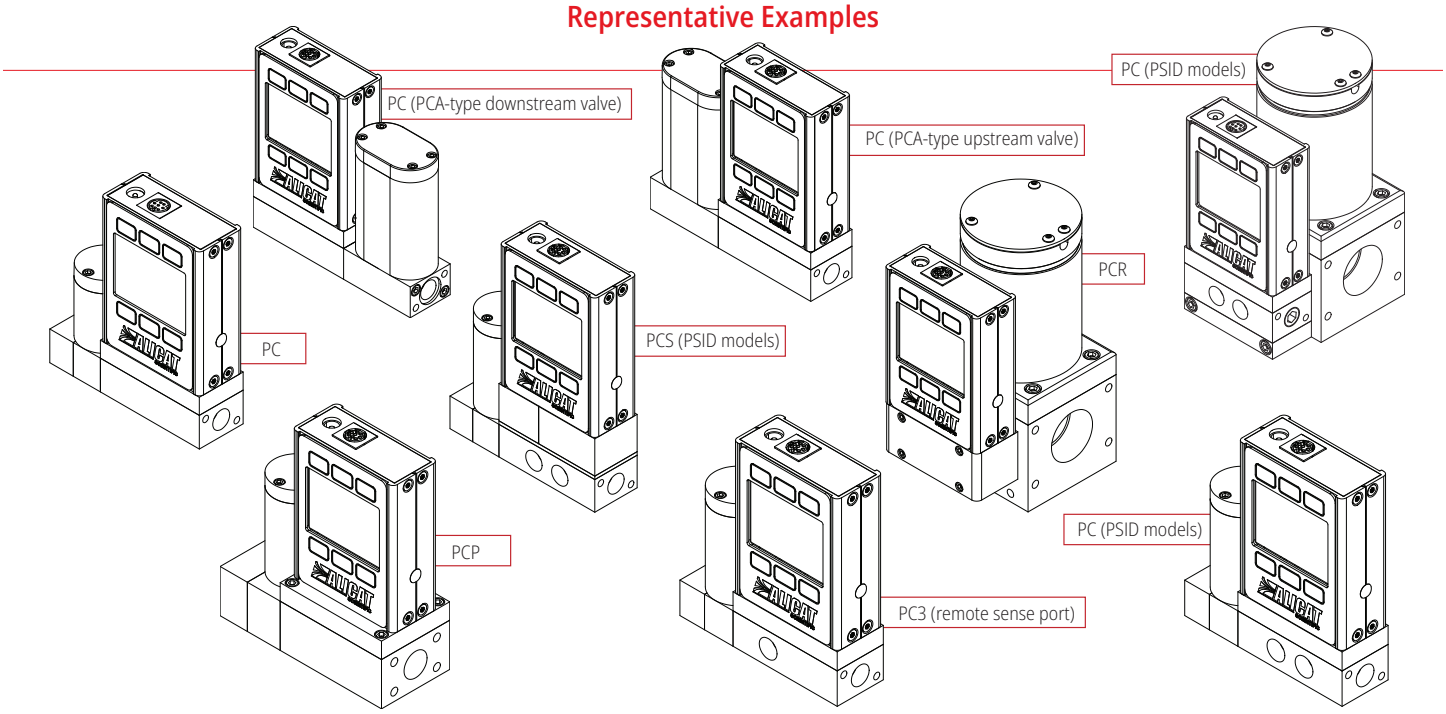
4 Not all valves are available at all pressure ranges. Consult Alicat for details.

5 For aggressive gases, use PCS-Series pressure controllers. For use with water and other liquids, please contact Alicat.

6 For applications that require predominately 316L construction, a PCS-Series model paired with the PCA-type control valve must be selected.

7 When EPDM is selected for the PCA-type valve, 300 Series Stainless Steel will also be present in the valve.

Representative Examples



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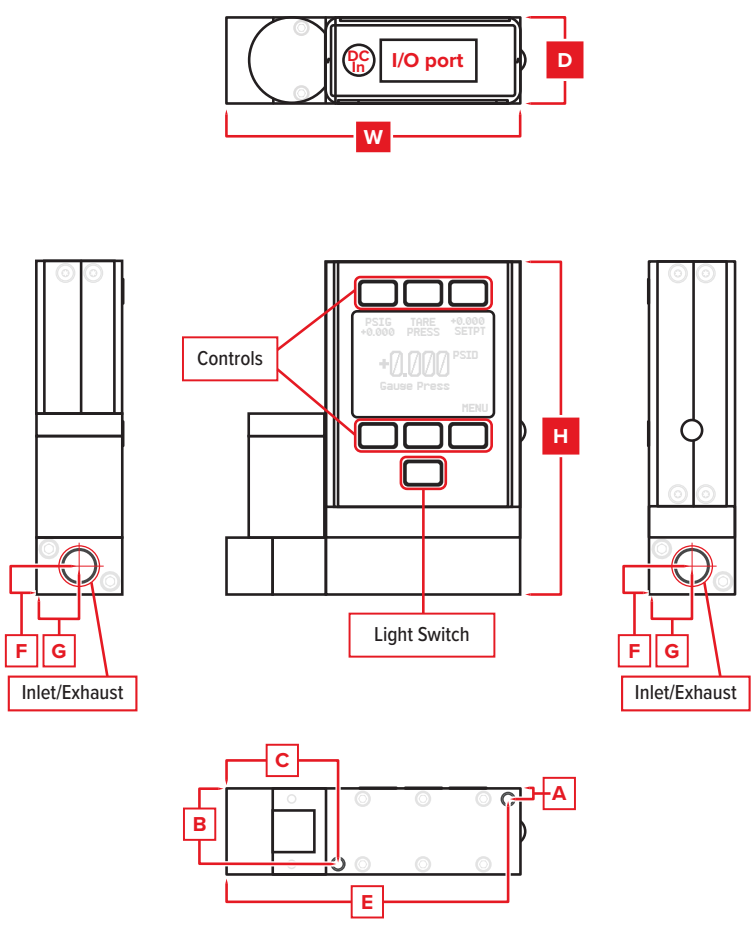
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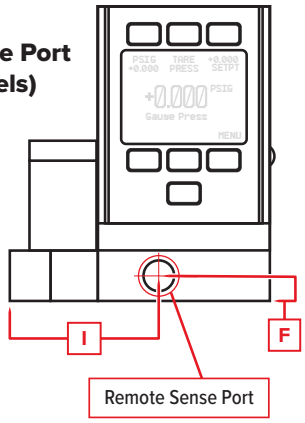
PC-SERIES, PCS-SERIES DIMENSIONS AND THREADED MOUNTING LOCATIONS								WEIGHT
Valve configuration	Width	Depth	Height[8]	A	B	C	E	
PC, PCS Single PCV valve	3.59"	1.05"	4.08"	0.13"	0.93"	1.36"	3.44"	≈ 1.2 lb
	91.1 mm	26.7 mm	103.7 mm	3.2 mm	23.5 mm	34.6 mm	87.3 mm	≈ 0.5 kg
PC, PCS Single PCA valve	4.13"	1.05"	4.08"	0.13"	0.93"	1.90"	3.98"	≈ 1.5 lb
	104.8 mm	26.7 mm	103.7 mm	3.2 mm	23.5 mm	48.3 mm	101.0 mm	≈ 0.7 kg
PCP Single P valve	3.69"	1.60"	4.46"	0.18"	1.43"	1.88"	3.13"	≈ 1.2 lb
	93.7 mm	40.6 mm	113.2 mm	4.4 mm	36.2 mm	47.6 mm	79.4 mm	≈ 0.5 kg

8 Differential pressure models for aggressive gases are 0.500" [12.7 mm] taller.

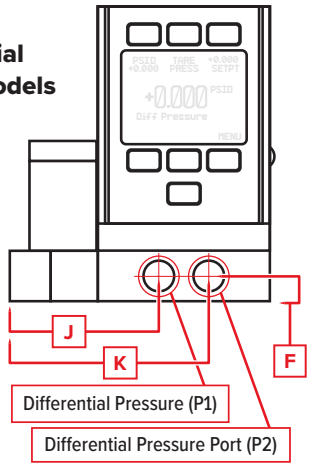
PC & PCP Models



Remote Sense Port (PC3 Models)



Differential Pressure Models



PC-Series, PCS-Series Port Dimensions[10]						
Valve type	Port size	Inlet & outlet ports		Remote sensor	Differential port (P1)	Differential port (P2)
		F	G	I	J	K
PCV	⅛" NPT	0.350 in	0.525 in	2.013 in	2.080 in	2.721 in
		8.89 mm	13.34 mm	51.13 mm	52.83 mm	69.11 mm
PCA	⅛" NPT	0.350 in	0.525 in	2.525 in	2.617 in	3.258 in
		8.89 mm	13.34 mm	64.14 mm	66.47 mm	82.75 mm
P	⅛" NPT	0.500 in	0.800 in	2.113 in	2.113 in	2.888 in
		12.70 mm	20.32 mm	53.67 mm	53.67 mm	73.36 mm

10 Consult Alicat for available connection options, such as: compression, face seal, push-to-connect, BSPP, SAE, or Swagelok®-compatible (VCO® and VCR®).

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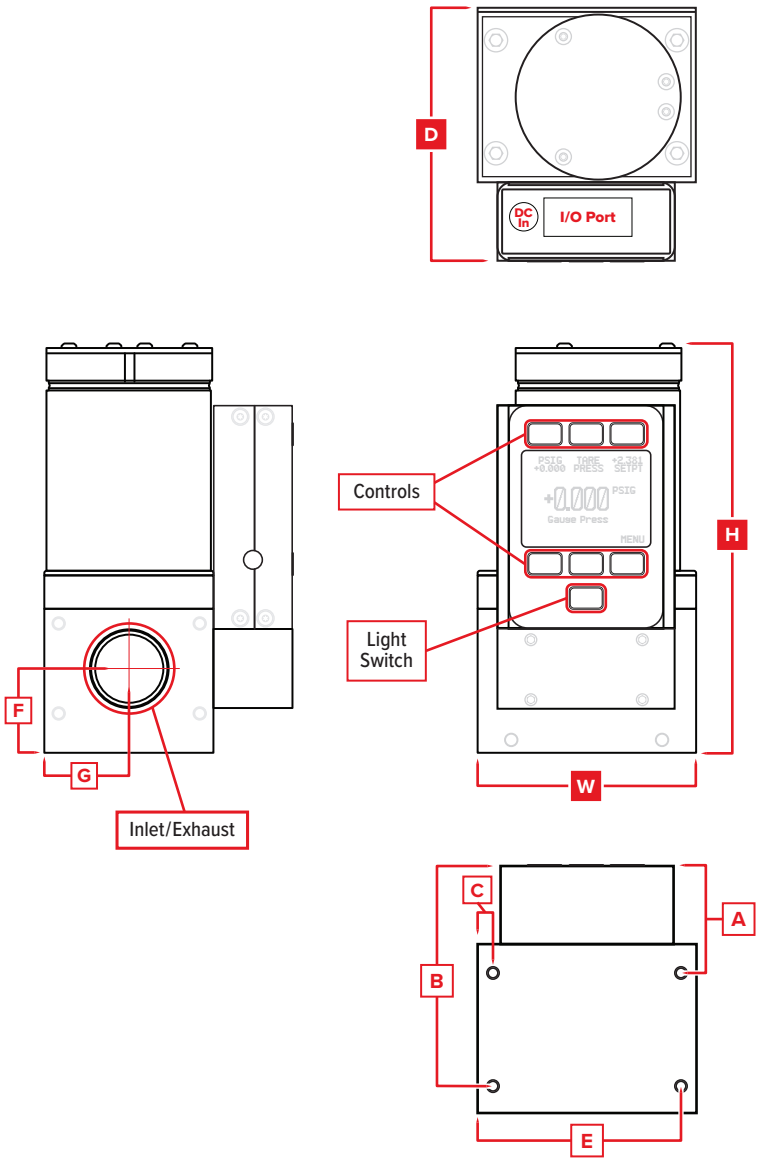
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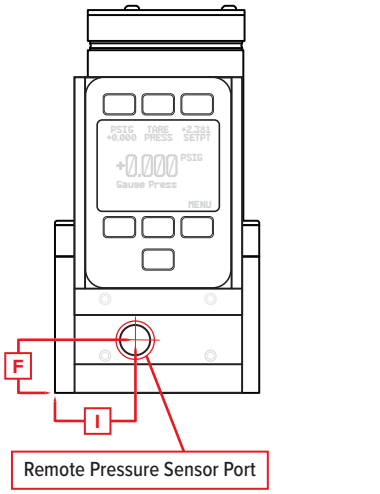
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PCR-SERIES, PCRS-SERIES DIMENSIONS AND THREADED MOUNTING LOCATIONS							WEIGHT
Height	Width	Depth	A	B	C	E	
5.44"	2.90"	3.30"	0.38"	1.88"	0.20"	2.70"	≈ 9.0 lb
138.2 mm	73.7 mm	83.8 mm	9.5 mm	47.6 mm	5.1 mm	68.6 mm	≈ 4.1 kg

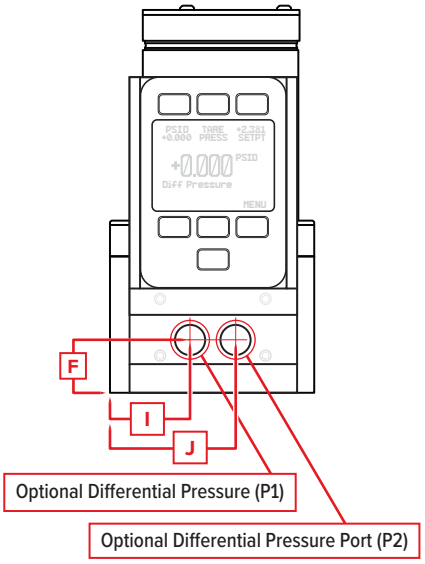
Pressure Controllers (PCR Models)



PCR Controllers with Remote Sensor (PCR3 Models)



PCR with Differential Pressure Control



PCR-SERIES, PCRS-SERIES PORT DIMENSIONS[9]					
Port size	Remote sensor or differential port size	Inlet and outlet ports		Remote sensor or differential port (P1)	Differential port (P2)
		F	G	I	J
3/4" NPT	⅛" NPT	1.120 in	1.125 in	1.130 in	1.771 in
		28.45 mm	28.58 mm	28.70 mm	44.98 mm

9 Consult Alicat for available connection options, such as: compression, face seal, push-to-connect, BSPP, SAE, or Swagelok®-compatible (VCO® and VCR®).