Learn more at: https://universalvacuumtech.com/products/fast-pressure-controllers-and-transducers

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.

ALICAT SCIENTIFIC
+1 (888) 290-6060
alicat.com/pc

SENSOR AND CONTROL PERFORMANCE	
Accuracy at Calibration Conditions[1]	±0.25% of full scale
High Accuracy Option[1]	±0.125% of full scale
Repeatability (2σ)[1]	±0.08% of full scale
Steady State Control Range	0.01–100% of full scale
Typical Control Response Time	As fast as 30 ms, flow rate and valve size dependent, user adjustable
Valve Function	Normally closed
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 (expanded range available)
Sensor Response Time	<1 ms
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	
Sensor Burst Pressure	**0.07–100 PSI models:** 3× full scale range **500–3000 PSI models:** 1.5× full scale range
Maximum Common Mode Usage Pressure for Differential Pressure Models	**≤100 PSID models:** 200 PSIG **500 PSID models:** 750 PSIG
Mounting Attitude Sensitivity	**PCR-Series (Rolamite valves):** Mount with valve cylinders vertical and upright **All others:** None
Ingress Protection	IP40 (consult Alicat for weatherproofing options)
Humidity Range	0–95%, non-condensing

COMMUNICATIONS AND ELECTRICAL	
Monochrome LCD or Color TFT Display with Integrated Touchpad	Simultaneously displays pressure and setpoint
Display Update Rate	10 Hz
Digital I/O Options	RS-232 Serial and Modbus RTU (default) RS-485 Serial and Modbus RTU, Modbus TCP/IP, DeviceNet, EtherCAT, EtherNet/IP, Profibus
Digital Data Update Rate[3]	40 Hz at 19200 Baud
Analog I/O Options	4–20 mA, 0–5 Vdc, 1–5 Vdc, 0–10 Vdc
Analog Data Update Rate[3]	1 kHz
Analog Signal Accuracy	±0.1% of full scale additional uncertainty
Electrical Connection Options	8-pin mini-DIN, 6-pin locking, 8-pin M12, DB-9, DB-15
Power Requirements[3]	**PC, PCS, PCP, models:** 12–24 Vdc, 250 mA **PCR, PCRS, models:** 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_2O)	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_2O)	✓		✓		✓	✓	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.

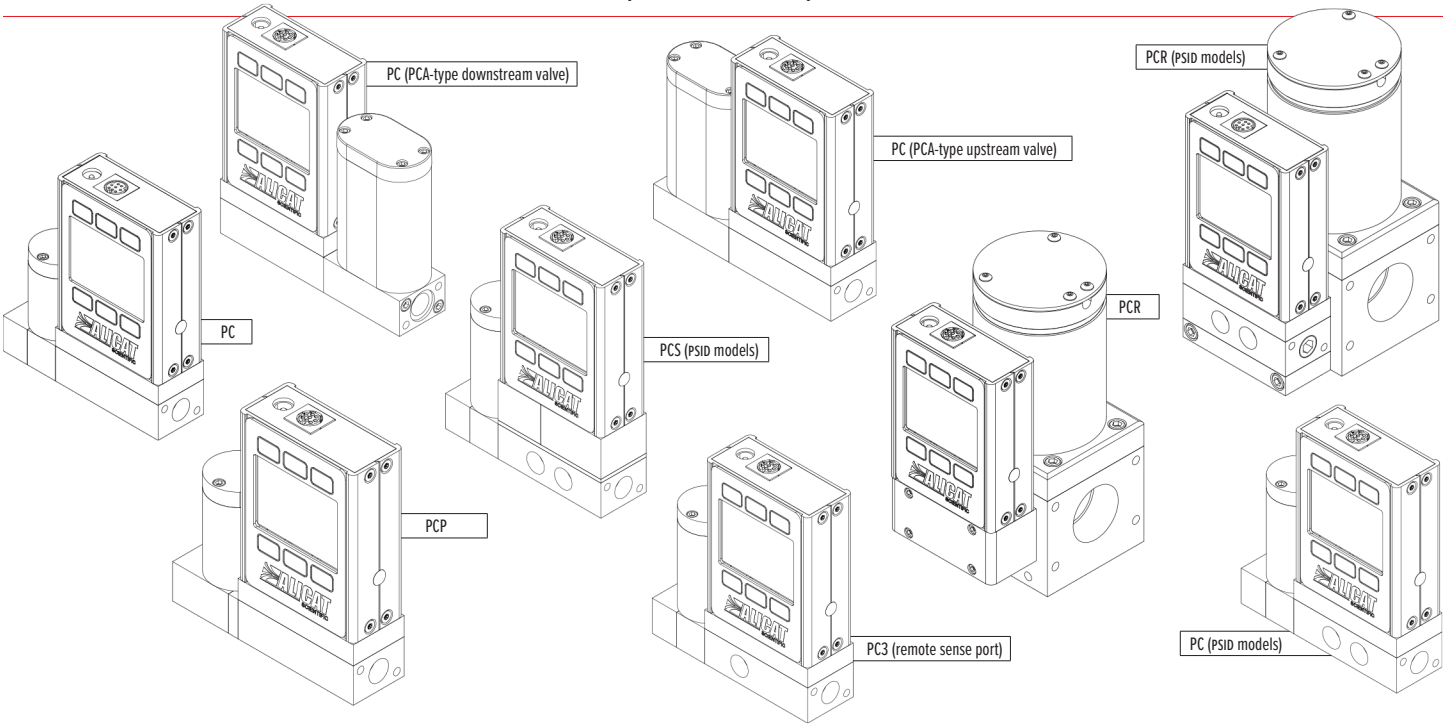
4 Not all valves are available at all pressure ranges. Consult Alicat for details.

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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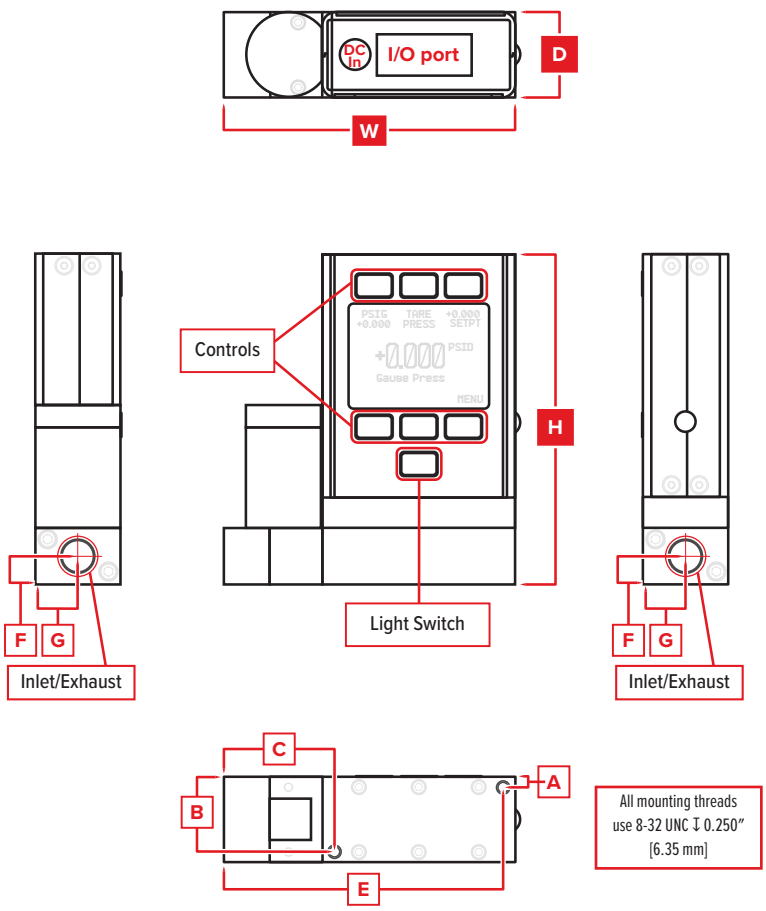
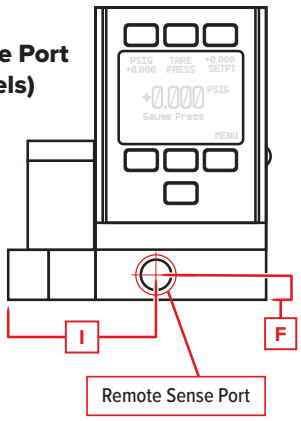
PC-SERIES, PCS-SERIES DIMENSIONS AND THREADED MOUNTING LOCATIONS								WEIGHT
Valve configuration	Height[8]	Width	Depth	A	B	C	E	
PC, PCS Single PCV Valve	4.083 in	3.588 in	1.050 in	0.125 in	0.925 in	1.363 in	3.438 in	≈ 1.2 lb
	103.71 mm	91.14 mm	26.67 mm	3.18 mm	23.50 mm	34.62 mm	87.33 mm	≈ 0.5 kg
PC, PCS Single PCA Valve	4.083 in	4.125 in	1.050 in	0.125 in	0.925 in	1.900 in	3.975 in	≈ 1.5 lb
	103.71 mm	104.78 mm	26.67 mm	3.18 mm	23.50 mm	48.26 mm	100.97 mm	≈ 0.7 kg
PCP Single P Valve	4.458 in	3.688 in	1.600 in	0.175 in	1.425 in	1.875 in	3.125 in	≈ 1.2 lb
	113.23 mm	93.68 mm	40.64 mm	4.45 mm	36.20 mm	47.63 mm	79.38 mm	≈ 0.5 kg

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

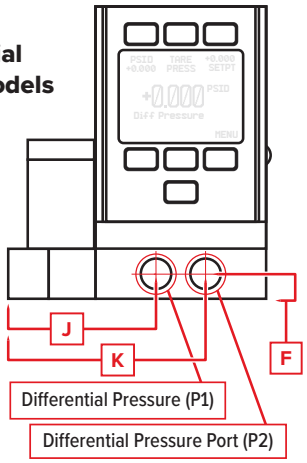
PC & PCP Models



Remote Sense Port (PC3 Models)



Differential Pressure Models



PC-SERIES, PCS-SERIES PORT DIMENSIONS[9]						
Valve type	Port size	Inlet & outlet ports		Remote sensor	Differential port (P1)	Differential port (P2)
		F	G	I	J	K
PCV	⅛ in 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 in 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	¼ in 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

9 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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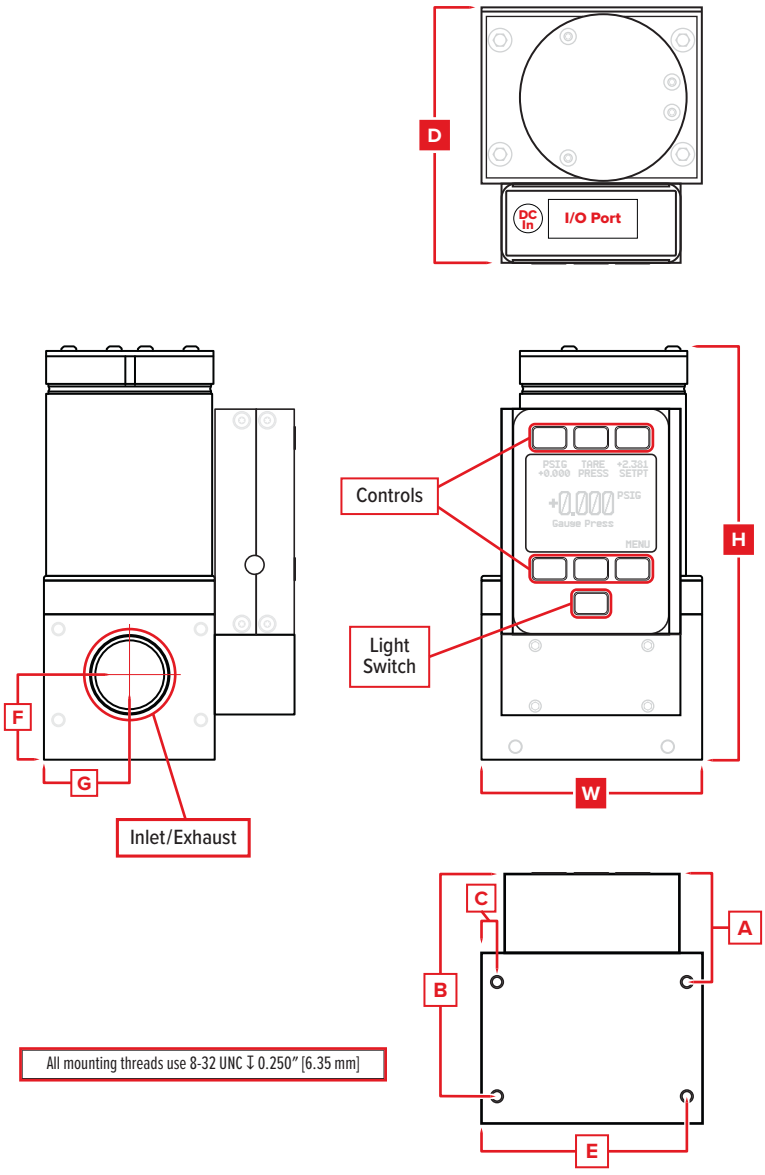
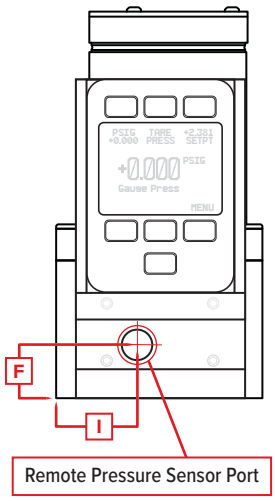
PCR-SERIES, PCRS-SERIES DIMENSIONS AND THREADED MOUNTING LOCATIONS							WEIGHT
Height	Width	Depth	A	B	C	E	
5.442 in	2.900 in	3.300 in	0.375 in	1.875 in	0.200 in	2.700 in	≈ 9.0 lb
138.23 mm	73.66 mm	83.82 mm	9.53 mm	47.63 mm	5.08 mm	68.58 mm	≈ 4.1 kg

Pressure Controllers (PCR Models)

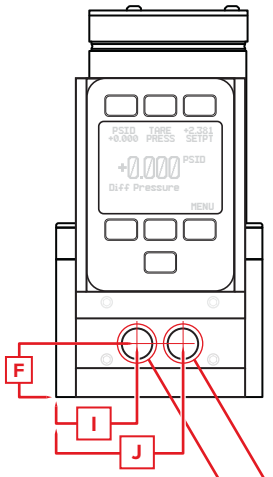


All mounting threads use 8-32 UNC ↧ 0.250″ [6.35 mm]

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
¾ in NPT	⅛ in 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®).