

PCD/PCD3 Series Digital Absolute or Gauge Pressure Control for Closed Systems

alicat.com/pcd

Series Overview

Alicat Scientific PCD-Series digital pressure controllers precisely and rapidly control absolute or gauge pressure within closed systems via dual customized high-speed proportional control valves. This dual-valve design pairs a dedicated inlet valve with a dedicated exhaust valve, eliminating the need for bleed valves and costly continuous outgasing. Alicat's PCD3-Series pressure controllers further incorporate a remote pressure sense port for maintenance of pressure in volumes that are distant from the controller.



The PCD and PCD3 Series are also available with corrosion-resistant wetted materials and stainless steel flow bodies in the PCDS and PCD3S Series. All pressure instruments come with NIST-traceable calibration sheets. Alicat backs every PCD-Series pressure controller with generous customer support, including free technical phone support, prompt recalibration service and a lifetime warranty.

Alicat PCD-Series pressure controllers feature large integrated displays with touchpads that enable setpoint control access and PID valve tuning. The PCD Series comes with both analog and RS-232 digital communications. Extensive customizations are available, including Class 1, Div 2 ATEX/CSA ratings for use in hazardous environments.

Applications

Alicat Scientific PCD-Series digital pressure gauges and controllers are used in a variety of industries, from leak checking and fuel cell testing to fluid dispensing and process control. A low 200:1 turndown ratio, available 0.125% accuracy, 0.2% full-scale repeatability and <100 ms control response times ensure optimal performance of pressure control processes.

The PCD Series is available in full-scale absolute pressure ranges from 0-30 psia to 0-500 psia, and in fullscale gauge pressure ranges from 0-1 psig to 0-500 psig.

Technical Data for Alicat PCD and PCDR Dual Valve Pressure Controllers

Alicat's PCD and PCDR Dual Valve Pressure Controllers accurately and efficiently control pressure within a closed system with a minimum loss of expensive gases through the exhaust process.



PCDR-Series pressure controllers are best for flows greater than 20 lpm.

Standard Specifications (Contact Alicat for available options.)

Performance	PCD Controllers	PCDR Controllers
Full scale pressure < 2" H2O Accuracy	Consult Factory	
Full scale pressure ≥ 2" H2O Standard Accuracy	± 0.25%	
Full scale pressure ≥ 2" H2O High Accuracy Option	± 0.125%	
Repeatability	± 0.08% Full Scale	
Zero Shift and Span Shift	0.02% Full Scale / °Celsius	
Operating Range / Turndown Ratio	0.5% to 100% Full Scale / 200:1 Turndown	
Excess Pressure	102.4% FS Controllable	
Burst Pressure	3 X Full Scale	
Typical Response Time ¹	100 ms (Adjustable)	
Warm-up Time	< 1 Second	
. Volumes, feed pressures, exhaust pressures and line sizing will determine the limits of response times.		

Operating Conditions	PCD Controllers	PCDR Controllers
Gas Compatibility	Compatible with all non-corrosive gases ¹	
Operating Temperature	-10 to +50 °Celsius	
Common Mode Pressure (Differential Pressure Units Only)	150 psig	
Mounting Attitude Sensitivity	None	Mount with valve cylinders vertical & upright
Valve Type	Normally Closed	
Ingress Protection	IP40	
Wetted Materials	302 & 303 Stainless Steel, Viton®, Silicone RTV, Brass, 400 Series Stainless Steel, Silicon, Glass. If your application demands a different material, please contact Alicat.	
1. For aggressive gases, please see our PCDS and PCRDS-Series pressure controllers. For use with water or other liquids please contact Alicat		

Communication / Power	PCD Controllers	PCDR Controllers
Monochrome LCD or Color TFT Display with integrated touchpad	Displays Pressure	
Digital Output Signal ¹ Options	RS-232 Serial / RS-485 Serial / PROFIBUS ³	
Analog Output Signal ² Options	0-5 Vdc / 1-5 Vdc / 0-10 Vdc / 4-20 mA	
Optional Secondary Analog Output Signal ²	0-5 Vdc / 1-5 Vdc / 0-10 Vdc / 4-20 mA	
Electrical Connection Options	8 Pin Mini-DIN / 9-pin D-sub (DB9) / 15-pin D-sub (DB15) / 6 pin locking	
Supply Voltage	12-30 Vdc (15-30 Vdc for 4-20 mA outputs)	24-30 Vdc
Supply Current	0.250 Amp	0.750 Amp

The **Digital Output Signal** communicates Pressure

 The Analog Output Signal and Optional Secondary Analog Output Signal communicate Pressure
If selecting PROFIBUS, no analog signal is available. PROFIBUS units do not have the display. See PROFIBUS specifications for PROFIBUS supply voltages and currents. (www.alicat.com/profibus)

Mechanical Specifications

Dual Valve Controllers	Mechanical Dimensions	Process Connections ¹
PCD All Standard Ranges	4.1"H x 4.8"W x 1.1"D	1/8" NPT Female
PCRD All Standard Ranges	5.5"H x 10.6"W x 2.3"D	3/4" NPT Female
1. Compatible with Swagelok® tube, Parker®, face seal, push connect and compression adapter fittings. VCR and SAE connections upon request.		

Standard Available Ranges

PCD and PCRD Pressure Controllers			
-15 psig to 0 psig			
2 inH ₂ OD	2 inH ₂ OG		
4 inH₂OD	4 inH ₂ OG		
1 psid	1 psig		
5 psid	5 psig		
15 psid	15 psig	15 psia	
30 psid	30 psig	30 psia	
100 psid	100 psig	100 psia	
150 psid	300 psig	300 psia	
	500 psig*	500 psia*	
*Not available on PCRD Other ranges available. Please contact Alicat			

Select One Unit of Measure when Ordering		
PSIA	inHG	Atm
PSIG	inH ₂ O	Torr
mmHG	mBar	kPa