

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 outgassing. 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 full-scale 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.

Tel: 888-290-6060
www.alicat.com/pressure

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	0.05% 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	

1. 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	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 inH ₂ OD	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