

APC Low Power Flow Control Pressure Controllers



Compact, Low Power Module

Based on piezo actuator technology

Parker's Active Pressure Controller (APC) series is a family of compact, modular controllers. Based on piezo actuator technology, the APC consumes minimal power (<40 mA at 12 VDC) while offering exceptional response time (<20 ms). The onboard analog control electronics provide outstanding accuracy ($\pm 0.2\%$ FS typical). The APC control scheme enables "set and forget" operation for applications where stand-alone operation is desirable. Simply tune the APC's onboard pressure set point adjustment to the desired level and walk away. The onboard control loop will maintain pressure at the set-point indefinitely. If preferred, the APC can also be controlled through external control hardware.

Features

- Piezo-based pressure controller offers high accuracy control with minimal power consumption — less than 40 mA draw at 12 VDC.
- Available in 5 standard pressure ranges for precise control.
- High-efficiency device produces minimal heat — no impact on sensitive flow measurements.
- Can be operated in stand-alone mode to avoid the expense of an independent control system.
- Rapid response time (< 20 ms) gives high level of flow stability.
- Tailored to customer pressure/flow and mounting requirements.

Physical Properties

Technology:

Piezo Actuated Proportional Valve

Media:

Non-Corrosive and Mildly Corrosive Gases

Operating Environment:

0 to 55°C

Storage Environment:

-40 to 55°C

Dimensions:

Upright Configuration
 Length: 1.07" (22.3mm)
 Width: 1.50" (38.0mm)
 Height: 1.84" (45.6mm)

Manifold Configuration
 Length: 1.07" (22.3mm)
 Width: 2.52" (64.1mm)
 Height: 1.60" (40.6mm)

Porting:

Face seal, 10-32 Threads

Wetted Materials:

Viton, Teflon, Aluminum (Hard Coat anodized), 303 & 316 Stainless, BeCu, Kapton, Brass, Nylon

Multiple Product Configurations Available

Parker builds each APC around its customers' application requirements. Standard pressure ranges include 0–3.5 psid up to 0–145 psid; flow rates can be controlled in the range of 0–40 slpm of air. Two body styles are also available with 10-32 threaded ports featured on the Upright body and face sealing ports incorporated into the Manifold Mount body. Custom configurations are also possible. Please consult the factory for details.

Electrical

Main Power:

12 VDC +/- 15%

Input Control:

0-5 VDC standard
Consult factory for other options

Monitor Voltage:

0-5 VDC standard

Current Requirements:

< 40 mA

Electrical Requirements:

5 pin, 24" harness included

Performance Characteristics

Pressure Ranges:

0–3.5, 0–7.25, 0–14.7,
 0–29, 0–145

Accuracy:

+/- .2% FS Typical
 +/- 1.5% FS Max

Response:

< 20 msec (Output volume dependant)

Linearity:

< +/- 1% FS

Max. Supply Pressure:

200 PSI

Flow Rates:

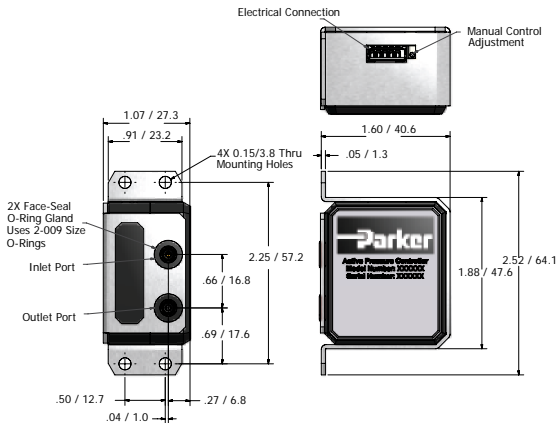
0–40 SLPM (Air)



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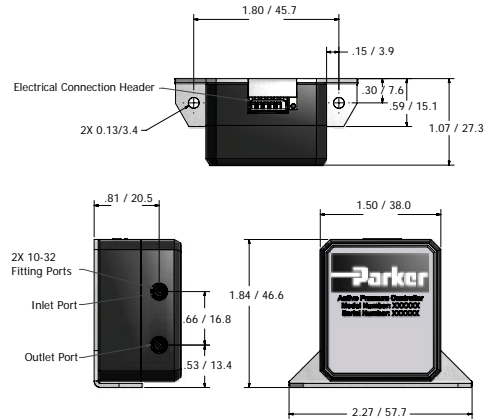
Dimensions

Manifold Mount Option

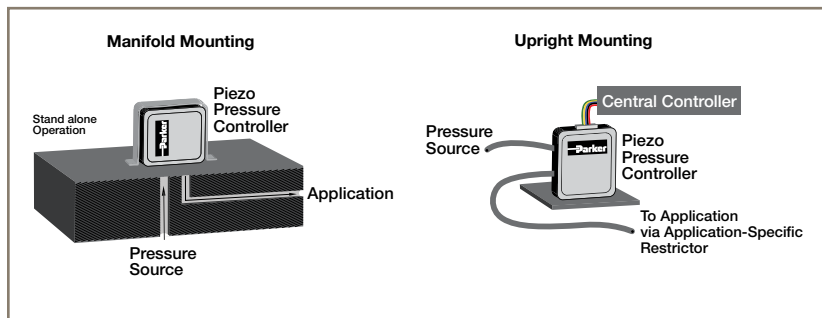


Dimensions shown are in inches/mm

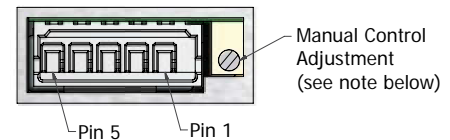
Upright Mount Option



Mounting



Electrical Connection Details



Connection Details			
Pin	Description	Header Wire Color	Notes
1	+VDC	Red	8-14 Volts DC Power
2	Common	Black	
3	Control Input	Blue	0-5 V or 4-20 mA DC Option (Specify when ordering)
4	Input Monitor	Yellow	
5	Output Monitor	Green	0-5 Volts DC

Note: To use Manual Control, short together pins 3 and 4. The pressure can then be manually set by turning the screw of the Manual Control to set the desired output pressure.

Ordering Information

part description	APC	APC	APC	APC	APC
Family	APC	APC	APC	APC	APC
Pressure Range	0-145 PSI	0-145 PSI	0-15 PSI	0-145 PSI	0-15 PSI
Material	Viton	Viton	Viton	Viton	Viton
Effective Orifice (in.)	0.065	0.010	0.030	0.003	0.010
Power	12 VDC	12 VDC	12 VDC	12 VDC	12 VDC
Mounting	Fittings	Fittings	Fittings	Fittings	Fittings
Control	0 - 5 volts	0 - 5 volts	0 - 5 volts	0 - 5 volts	0 - 5 volts
Bleed Orifice	None	None	None	None	None

¹ Standard Configurations have a slight constant bleed to atmosphere to accurately control pressure and are typically used to pressurize closed volumes of inert gasses. Alternate Configuration are typically selected for gas flow applications and do not have an internal bleed.

² Control starts at approximately 10% of full scale control voltage and pressure rating allowing for positive shutoff. Pressure control may not be possible below 10% of full scale rating.

NOTE: Please consult Parker Precision Fluidics for other considerations. For more detailed information, visit us on the Web.

To order, call 1 603 595 1500

