



Improving Signal Detection In Analytical Instrumentation Using VSO[®] LowPro GC



ENGINEERING YOUR SUCCESS.

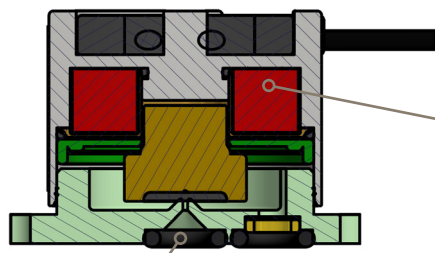
Improving Signal Detection in your Next Generation Analytical Instrument – using VSO® LowPro GC

VSO® LowPro GC Low Profile Proportional Valve



Parker Hannifin Precision Fluidics Division is excited to introduce, the VSO® LowPro GC, a new proportional valve featuring miniaturized internal components and a supercharged magnetic circuit resulting in a fast response valve.

At 50% the size and weight of comparable valves, the VSO® LowPro GC design incorporates integrated filtration and provides lower leak rates, power consumption, and heat generation to reduce your sample noise and improve signal detection capabilities. Partner with us and capitalize on our heritage in Gas Chromatography, Mass Spec and other analytical equipment, to redefine your next flow controller circuit with VSO® LowPro GC.



Control Large and Small Molecules at your critical flow and pressures

- Orifice options of 0.007" (0.18mm) / 0.011" (0.28mm)

Designed to Control Carrier Gas, Sample Stream, Ionization Modules and Detectors

- Fewer, smaller, and lighter internal components
- Optimized proportional spring balancing fluid flow forces and solenoid forces.
- Enhanced magnetic field focus and uniformity

Resulting in a higher performing, faster responding valve with consistent flow control reducing flow overshooting – especially at low flow ranges

Reach, RoHS, ISO 15001, IP65, and CE compliant.
Patent Pending



VSO® LowPro GC Low Profile Proportional Valve

Decrease your Cost of Ownership

- 50% smaller and lighter proportional valve
- Easy to integrate on a manifold
- Extended temperature range for location flexibility
- Minimize the size of your multi-channel gas control module

Reduction of O₂ Permeation

Ultra-thin o-ring design protects against sample contamination and degradation of the GC Column.



Minimize determination and quantification errors with Low Leak Rate

- 0.03 SCCM Leak Rate of Helium at maximum pressure throughout 100 Million Cycles.

Integrated Filter decreases particulate risk



Low Power profile is power budget friendly

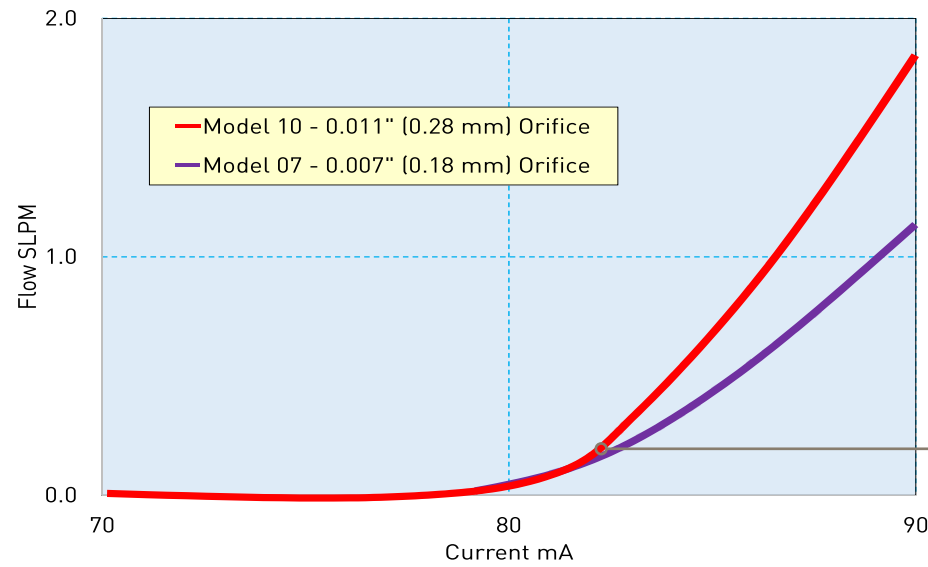
Minimal heat generated from actuation power

Included universal Molex Connector



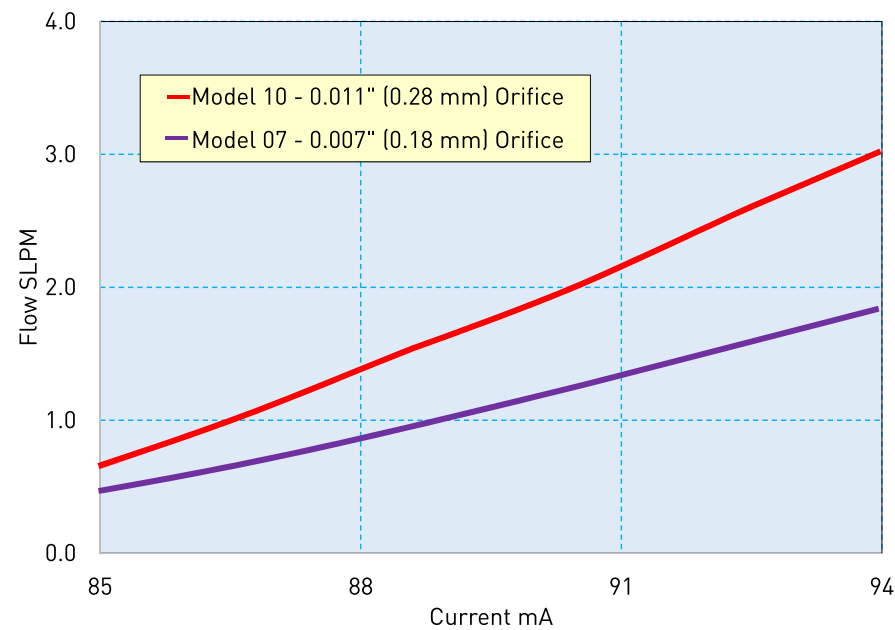
VSO® LowPro GC Low Profile Proportional Valve

Typical Air Flow with 9 VDC Coil @ 150 psid (10.3 bar) @ 22C



Consistent lift off point and shape valve-to-valve

Typical Air Flow with 9 VDC Coil @ 150 psid (10.3 bar) @ 22C

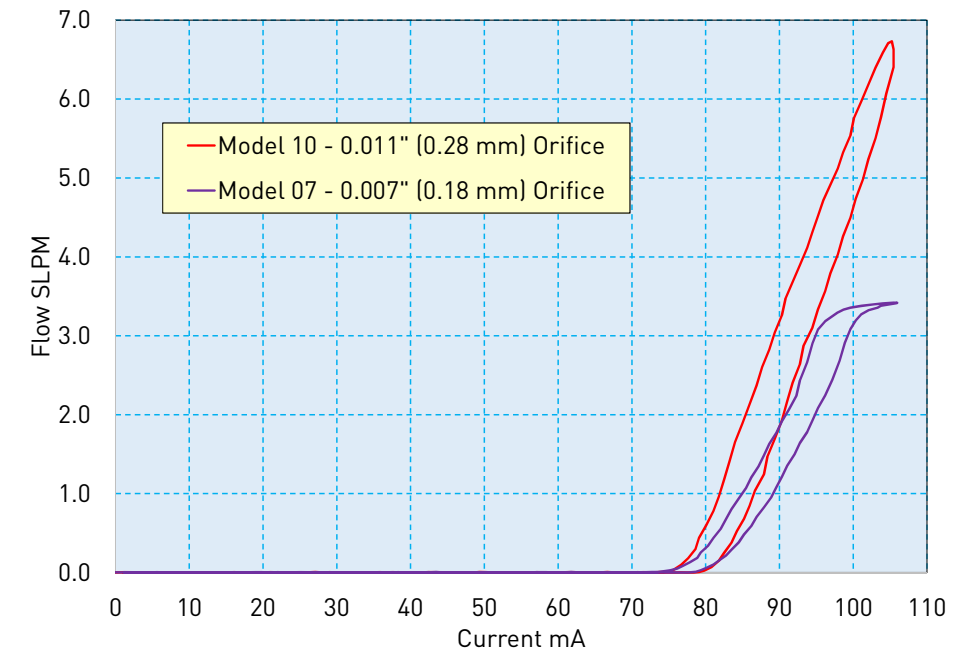


Stable, Linear and Reliable Low Flow Control

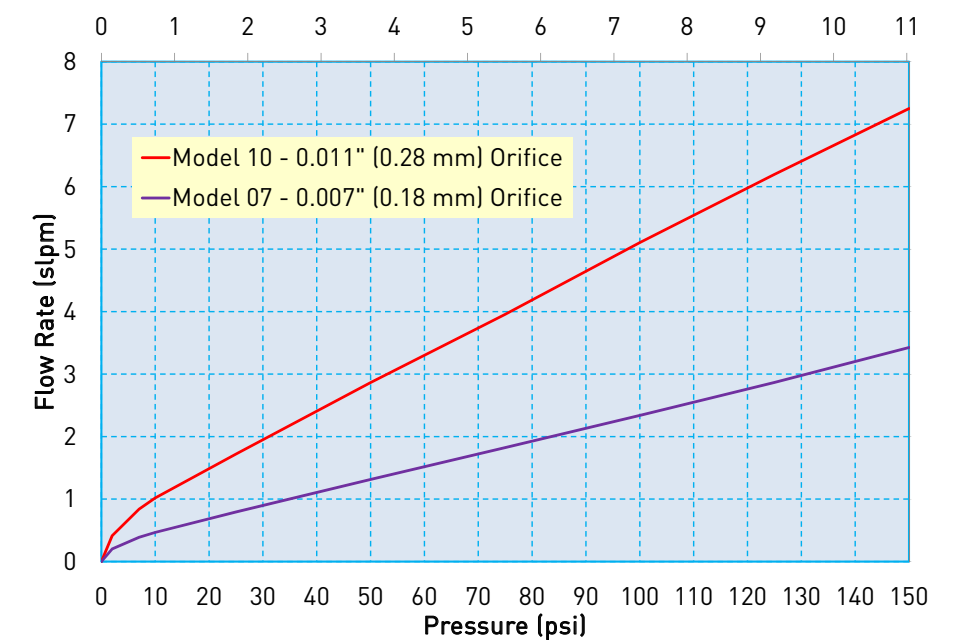
Utilize VSO® LowPro GC's Full Range of Flow Control

VSO® LowPro GC Low Profile Proportional Valve
Typical Flow Curve

Typical Air Flow with 9 VDC Coil @ 150 psid (10.3 bar) @ 22C



Pressure vs Flow Curve



VSO® LowPro GC Low Profile Proportional Valve

Product Specifications

Physical Properties

Valve Type:
2-Way Normally Closed
Media:
Air, Argon, Helium, Hydrogen, Nitrogen <i>(Others, consult factory)</i>
Operating Environment:
-4 to 185°F (-20°C to 85°C)
Storage Temperature:
-40 to 185°F (-40 to 85°C)
Length:
0.80 in (20 mm)
Width:
0.63 in (16 mm)
Height:
0.53 in (13.5 mm)
Porting:
Face Seal to Manifold with integrated FKM seal
Weight:
0.56 oz (16 g)

Electrical

Power:
0.7 Watt (Nominal) @ 20 °C (See Electrical Table 2)
Voltage:
3, 9 and 16 VDC See Table 2
Electrical Termination:
4.5" (114 mm) Wire leads [26 AWG] with Molex 50-57-9402 connector
Wetted Materials
Body & Cover:
C36000 Brass, 400 Stainless Steel
Armature & Spring:
Carbon Steel (Nickel Plated) Stainless Steel
All Others:
FFKM* or FKM (plunger seal), Loctite 648 and bonding agent. <i>(*FFKM plunger seal option uses FKM static seals)</i>
Regulatory:
Compliant with RoHS directive (2011/65/EU), REACH EC 1907/2006, ISO 15001, IP65(IEC/EN 60529), and CE (EN 61010-1:2010)

Performance Characteristics

Leak Rate: *
Internal: 0.030 SCCM of Helium at pressure of 150 psid (10.3 bar) [consult factory for details] External: 0.020 SCCM of Helium at pressure of 150 psid (10.3 bar) <i>* The leakage shall not exceed the above values.</i>
Operating Pressure: See Table 1
0 - 150 psi (0 - 10.3 bar)
Vacuum:
0-27 in Hg (0-686 mm Hg)
Proof Pressure:
300 psi (20.7 bar)
Orifice Sizes:
0.007 in (0.18 mm) Model 07 0.011 in (0.28 mm) Model 10
Hysteresis:
6% of full scale current (Typical) 15% of full scale current (Maximum)
Recommended Filtration:
17 µm (Included)
Response Time:
10 msec Typical
Reliability:
100 Million Cycles 0.95 Reliability Factor 97% Confidence

Ordering Information

Sample Part ID	93	6	-	07	0	03	1	-	01	0	
Description	Family	Isolation	Model Number: Orifice Size	Elastomer	Coil Voltage	Body Material	Pneumatic Interface	Electrical Interface			
Options	93	6: Isolated	07: 0.007 in (0.18 mm) 10: 0.011 in (0.28 mm)	0: FKM 1: FFKM	03: 3 VDC 09: 09 VDC 16: 16 VDC	1: Brass	01: Manifold Mount w/ Filter	0: Wire Leads, w/Connector			

Accessories	
290-006061-003: 12.5 in (318 mm) Adapter Wire Leads	**Not supplied with the valve.
890-009042-001: Manifold, Single Station, 1/8 in NPT	**Not supplied with the valve.
890-009042-002: Manifold, Single Station, M5	**Not supplied with the valve.
190-007059-001: Manifold O-Ring (FKM)	**Supplied with the valve.
191-000112-404 Screw#2-56 x 2/16 in Socket Head Cap Screw	**Not supplied with the valve. See Valve Mounting Recommendations above

Volume Pricing is available



VSO® LowPro GC Low Profile Proportional Valve

Complimentary Products

Our service to Analytical Instrumentation spans multiple product technologies including solenoid valves, broad range of proportional valves, pressure reducing regulators, and mass flow controllers.

Gas Chromatography & Mass Spectrometry

	GAS CHROMATOGRAPHY PRECISION GAS CONTROL AND REGULATION	IONIZATION NEBULIZING AND DRYING GAS CONTROL	MASS SPEC CURTAIN AND COLLISION GAS CONTROL CALIBRATION AND BACK FILL GAS CONTROL	
	PNEUMATIC SOLENOID VALVES	SERIES 11		SERIES 4, 9, 99
PROPORTIONAL VALVE	VSO® LOWPRO GC	VSO	VSO® LOWPRO GC	
PRESSURE REGULATION	8311, 8310	8320	VSO-EP	
MASS FLOW CONTROLLER	SERIES II		SERIES II	

Analytical Instrumentation Expertise

Analytical Cleanliness

Reduction of hydrocarbon content and particulates via a proven proprietary ultrasonic cleaning process for Analytical Service Clean applications.



Proportional Valves

Invented the original VSO proportional and continued to expand flow rates from 0.1LPM to 500 LPM range



Material Science – Sealing Elastomers

Reduce outgassing from base material, curing agents selection, and curing processes.



Customization for OEM Projects

As valve engineers we can optimize valve performance to suit your OEM application



VSO[®] LowPro GC Low Profile Proportional Valve

Serving a broad spectrum of life science OEM fluidic needs



Providing Pressure and Vacuum:
Broad range of diaphragm pumps for Gas and Liquid



Gas Flow Control:
High to Low Flow Proportional Valves



On/Off & Channel Selection Capabilities:
Gas and Liquid Solenoid Valves



High Precision Thermal Flow Control:
Mass Flow Controllers and Meters

Learn More and Buy Online at: solutions.parker.com/VSOLowProGC

Please reach out to our technical team to find out more on how we can help increase the sensitivity of your next analytical instrument.

Below are some common specifications that are helpful to have on hand to accelerate your product selection:

- Media, Inlet & Outlet Pressures
- Minimum Required Flow Rate
- System Supply Voltage
- Media & Ambient Temperature Range

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Recommendations on application design and material selection are based on available technical data and are offered as suggestions only. Each user should conduct their own tests to determine the suitability for their own use. Parker offers no express or implied warranties concerning the form, fit, or function of a product in any application.

VSO LowPro GC is Patent Pending

