

**VSO®**



**Miniature Proportional Valve**

The VSO®, Voltage Sensitive Orifice, is a miniature solenoid valve that controls the flow of gas in proportion to input current. You can drive the valve with either DC current or pulse width modulation and use closed loop feedback to deliver optimal system performance. Medical and analytical OEMs worldwide choose VSO as their preferred miniature proportional valve.

**Features**

- ◆ Offers operating pressure up to 150 psig and a range of orifice sizes.
- ◆ Satisfies a 0.2 sccm leakage specification of He for 100 million life cycles and offers high repeatability.
- ◆ Provides computer-automated calibrations and full calibration traceability.
- ◆ Uses either DC current or pulse width modulation with closed loop feedback to deliver optimal system performance.
- ◆ Maintains ideal flow through thermal compensation.

**Physical Properties**

**Valve Type:**

2-Way Normally Closed

**Media:**

Air, argon, helium, hydrogen, methane, nitrogen, oxygen, & others

**Operating Environment:**

0 to 55°C

**Storage Temperature:**

-40 to 70°C

**Length:**

1.785 in (45.34 mm)

**Width:**

0.625 in (16.51 mm)

**Height:**

0.67 in (17.02 mm)

**Porting:**

Barbs or 10-32 female; manifold mount with screens

**Weight:**

2.2 oz (62.86 grams)

**Internal Volume:**

0.031 in<sup>3</sup> (.508 sccm)

**Filtration:**

Types 1 & 2: 17 micron  
Types 3, 4, 5, & 6: 40 micron

**Lubrication:**

None required

**Oxygen Clean:**

Available

**Electrical**

**Power:**

2.0 Watts maximum

**Voltage:**

See Coil Selection under Ordering Information

**Oxygen and analytically clean:**

Standard

**Performance Characteristics**

**Leak Rate:**

≤0.2 sccm of helium  
(bubble tight)

**Response:**

≤30 msec cycling (2 Watts)

**Pressure:**

0 to 150 psig

**Vacuum:**

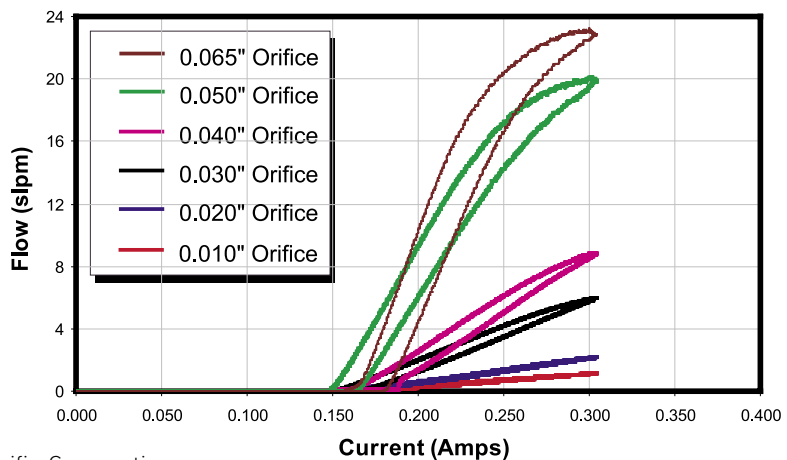
0-27 in Hg

**Effective Orifice Sizes:**

(See Ordering Info.)  
0.010" (0.254 mm)  
0.020" (0.510 mm)  
0.030" (0.762 mm)  
0.040" (1.016 mm)  
0.050" (1.270 mm)  
0.065" (1.651 mm)

**Flow**

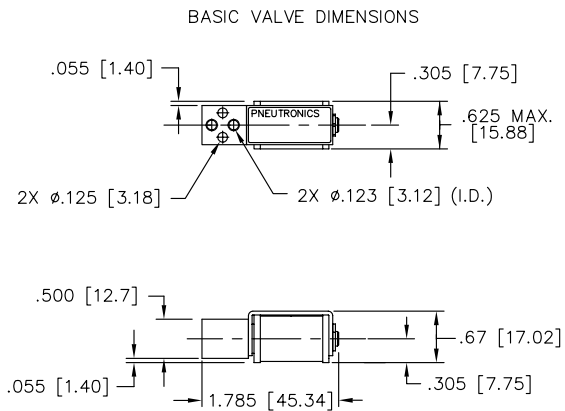
**VSO Typical Air Flow  
25 psid**



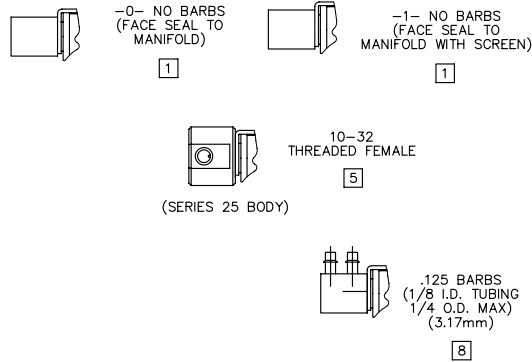
VSO is a registered trademark of Parker Hannifin Corporation.



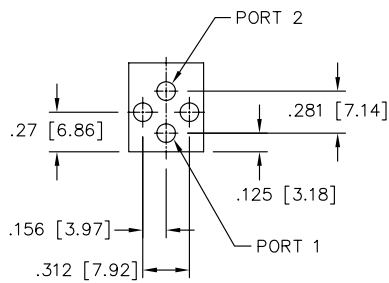
Dimensions



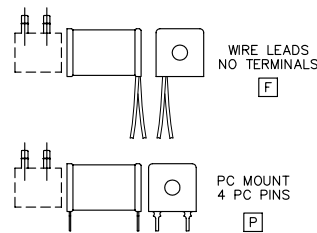
PNEUMATIC INTERFACE OPTIONS



PORT AND MOUNTING HOLE DIAGRAMS



ELECTRICAL INTERFACE OPTIONS



NOTES:  
1. DIMENSIONS IN [ ] ARE IN MM.

Ordering Information

Sample Part ID	VSONC	1	S	11	V	A	F	8
Description	Standard	Model Number	Series	Body Series	Elastomer	Coil Selection	Electrical Interface	Pneumatic Interface [Series 11 only except with Option 5]
Options		#: Max. Operating Pressure/Orifice 1: 150 psid/0.010" 2: 150 psid/0.020" 3: 150 psid/0.030" 4: 75 psid/0.040" 5: 100 psid/0.050" 6: 50 psid/0.065"		11: Series 11 25: Series 25 (available in nickel-plated brass only)	V: FKM/Brass C: FFKM*/Brass I: FKM/Stainless Steel H: FFKM*/Stainless Steel  *Selection of this option affects the valve price; consult factory for details	X: Max Voltage* A: 5.5 VDC B: 8 VDC C: 11.5 VDC D: 13.5 VDC E: 20 VDC F: 29 VDC  * Max Voltage for continuous full flow, ambient temperature 55°C	F: Wire Leads, 18" P: PC Board Mount, 4 PC Pins	0: Manifold Mount 1: Manifold Mount with Screens* (this option will affect price) 5: 10-32 Threaded Female (Series 25) 8: 1/8" Barbs

NOTE: Please consult Parker Life Sciences for other considerations. For more detailed information, visit us on the Web, or call and refer to Performance Spec. #790-002115-001 and Drawing #890-003022-001.

To order, please call 1.603.595.1500

