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Miniature Electronic Pressure Controllers

Precision Fluidics



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When you partner with the global leader in motion and control technologies, expect to move your business and the world forward. From miniature solenoid valves to highly integrated automation systems, our innovations are critical to life-saving medical devices and scientific instruments used for drug discovery and pathogen detection. Not to mention, critical to decreasing time to market and lowering your overall cost of ownership. So partner with Parker, and get ready to move, well, anything.



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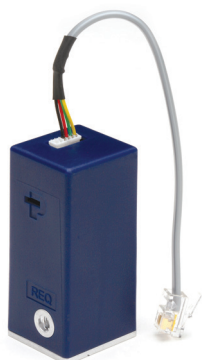
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OEM-EP


Miniature Electronic Pressure Controller

Pressure Controllers



The OEM-EP Miniature Electronic Pressure Controller converts a variable electrical control signal into a variable pneumatic output. Sized to minimize internal volume and ease integration, the OEM-EP is an ideal replacement for manual regulators, needle valves and vent orifices where precise pressure control is critical. Using Parker Hannifin's patented VSO® proportional valve and integral closed loop control, the OEM-EP is the perfect choice for carrier gas flow control, micro-fluidic flow control, vacuum pump control and aspirate/dispense applications.

Features

- Silent operation to reduce system noise levels
- High accuracy and unparalleled resolution for improved results
- Tested for long life to improve system availability
- Integral closed loop control to minimize system development time
- Low internal volume to improve efficiency
- Analog control for added design flexibility
- RoHS compliant 

Typical Applications

- Carrier Gas Pressure Control
- Air over Liquid Flow Control
- Mass Spectrometer Process Gas Supply Pressure Control

Product Specifications

Physical Properties

Valve Technology:
Thermally compensated VSO® proportional valves.
Media:
Non-corrosive gases
Operating Environment:
32 to 131°F (0 to 55°C)
Storage Temperature:
-40 to 149°F (-40 to 65°C)
Length:
1.16 in (29.4 mm)
Width:
1.08 in (27.5 mm)
Height:
2.44 in (61.9 mm)
Weight:
5.6 oz (158.8 g)
Porting:
10-32 female ports
Metric adaptor available

Electrical

Main Voltage:
24 VDC \pm 10%
Input Control Signal:
0-5 VDC standard
Monitor Output Voltage:
0-5 VDC
Maximum Current Requirement:
< 400 mA
Electrical Connection:
Molex 6 pin miniature connector

Wetted Materials

Manifold:
AL 6061-T6, FKM, 302 Series SS
Valve:
FKM, 300 Series SS
Brass 36000HT
Sensor:
Glass, Silicon, Silicone, Polyphenylene Sulfide

Performance Characteristics

Pressure Ranges:
0-2 psig (0-0.14 bar)
0-5 psig (0-0.35 bar)
0-15 psig (0-1.03 bar)
0-50 psig (0-3.45 bar)
0-100 psig (0-6.89 bar)
<i>(Effective control range is 10%-100% of full scale)</i>
Pressure Accuracy:
\pm 1.5% Full Scale maximum
Response:
<15 ms
<i>(Response time to target pressure is output volume dependent)</i>
Linearity:
\leq +1.5% Full Scale

VSO is a registered trademark of Parker Hannifin Corporation.



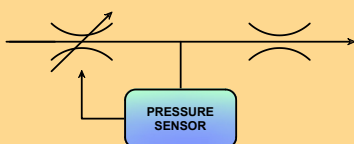
OEM-EP Miniature Electronic Pressure Controllers

OEM-EP Flow Capability Sizing Charts

How Flow Effects Pressure Control

The flow curves illustrate the flow capabilities of the two models of pressure controllers.

Pressure control using a constant flow approach requires the system to manage pressure drops across a variable orifice and a fixed orifice (see below).



Choosing the Right Model

In many cases, the fixed orifice is the cumulative restriction of the application system consuming gas. That fixed restriction and the inlet supply pressure level are key factors when selecting the correct model number for the OEM-EP.

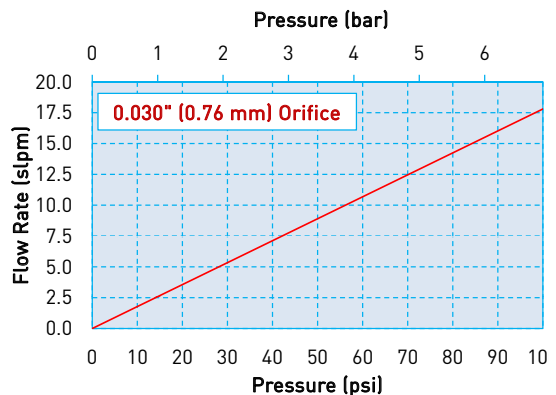
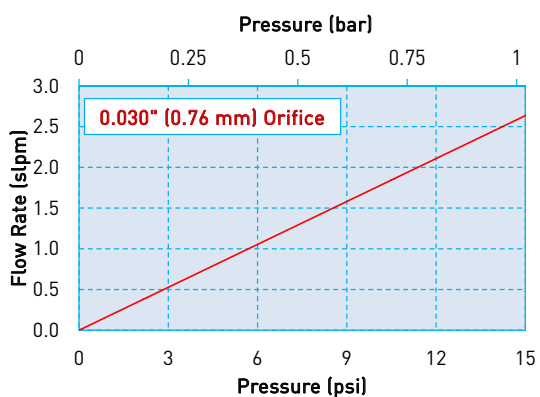
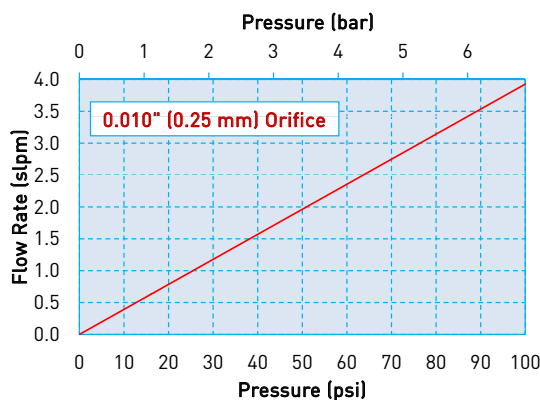
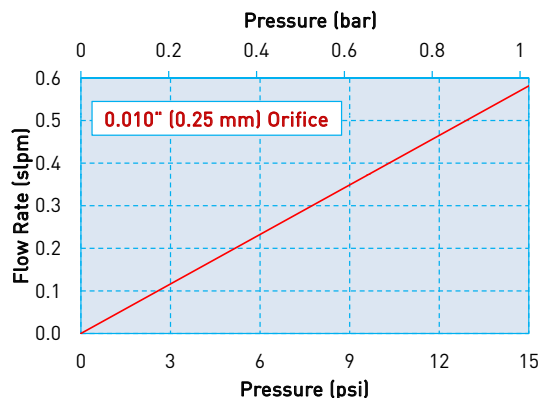
If the orifice is too small, it may fail to generate enough flow to drop the required pressure across the fixed orifice. If the orifice is too large, the Pressure Controller can become unstable. When considering orifice size please remember that the effective control range is 10%-100% of full scale.

EXAMPLE:

Please refer to flow chart labeled 0.010" (0.25mm) orifice. If your application requires 40 PSIG of pressure at 1 SLPM of flow, you would need a 0.010" orifice pressure controller.

This graph shows that a 0.010" orifice will flow up to 1.5 SLPM at 40 PSIG making it the right choice for your application.

Typical Flow vs Pressure @ 25°C



Mechanical Integration

OEM-EP Basic Dimensions



Metric Adaptor (available option)

Technical drawing of the fastener assembly showing side and end views with dimensions:

- Side View (Left):**
 - Thread specification: 10-32 THREAD
 - Dimension 1: .281 [7.14] (Total length)
 - Dimension 2: .156 [3.96] (Thread length)
 - Dimension 3: .438 [11.13] (Overall length)
- End View (Right):**
 - Thread specification: M5 X 0.8 THREAD
 - Dimension 4: .313 [7.95] (Hexagonal base diameter)

Diagram illustrating the cable assembly. The cable is shown with a connector on the left and a 6" (152.4) length indicated by a dimension line.

OEM-EP Miniature Electronic Pressure Controllers

Installation Guide

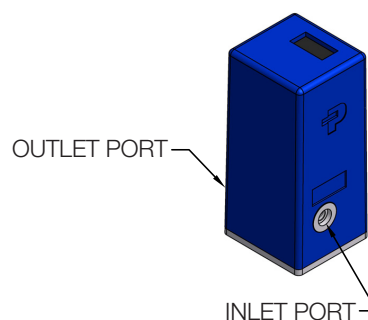
The OEM-EP is a dynamic pressure controller that uses proportional valve technology to supply an accurate and stable pressure source for a variety of application requirements. Installation of this device requires the completion of a few easy steps.

They are as follows:

- Ensure that the gas is non corrosive, clean and dry.
- Connect the gas supply to the Inlet Port on the OEM-EP.
- Connect a line requiring the controlled pressure to the Outlet Port on the OEM-EP.
- Pneumatic ports are 10-32 UNF-2B Female. Metric Adaptor option is available.
- The EPC effective control range is 10%-100% of full scale.
- Electrical connections are made through the connector at the top of the unit.

They are as follows:

Molex, 874380642 Connector (included)		
Signal	Conn. Pin No.	Color
Main Power, 24 VDC	1	Yellow
Input Control Signal, 0-5 VDC	2	Green
Monitor Signal Output, 0-5 VDC	3	Red
System Ground	4	Black
N/A	5	No Connection
N/A	6	No Connection



Key Things to Remember:

The pressure controller requires downstream restriction to build pressure. There are two ways to accomplish this:

- Use a venting controller: The venting controller is configured with an internal vent orifice that is roughly 40% of the controller orifice size. This configuration of controller can supply pressure to an application with a effective downstream restriction that represents 30% of the controller orifice size down to a completely restricted application.
- Use of a non-venting controller: The non-venting controller does not incorporate an internal vent orifice and will require a downstream restriction of roughly 20% to 60% of the controller's orifice size.

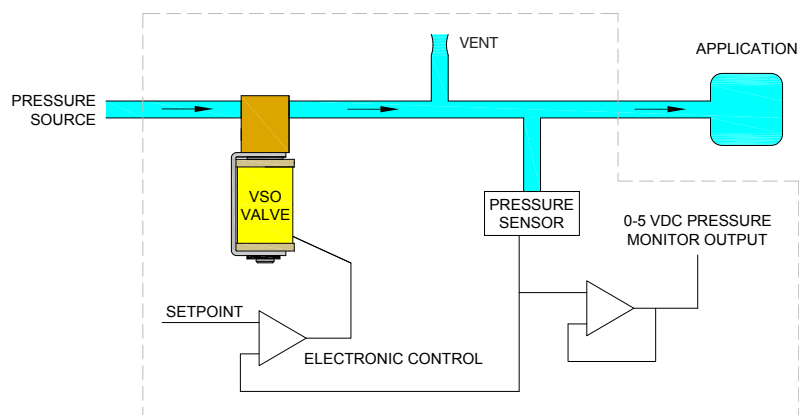
For example:

A non-vented controller with an orifice size of 0.010" should have 0.002" to 0.006" effective downstream restriction.

OEM-EP Miniature Electronic Pressure Controllers

Configurations

Pressure Controller with Internal Vent



With Internal Vent.

A vent is required when the application does not consume any gas. For example, pressurizing a piloted regulator.

Ordering Information

Part Number	990-005101-002	990-005101-015	990-005101-100	990-005103-002
Series	OEM-EP	OEM-EP	OEM-EP	OEM-EP
Configuration	Internal Vent	Internal Vent	Internal Vent	Internal Vent
Effective Orifice	0.010" (0.25 mm)	0.010" (0.25 mm)	0.010" (0.25 mm)	0.030" (0.76 mm)
Main Voltage	24 VDC	24 VDC	24 VDC	24 VDC
Control Voltage	0-5 VDC	0-5 VDC	0-5 VDC	0-5 VDC
Pressure Range	0-2 psig	0-15 psig	0-100 psig	0-2 psig

Part Number	990-005103-005	990-005103-015	990-005103-050	990-005103-100
Series	OEM-EP	OEM-EP	OEM-EP	OEM-EP
Configuration	Internal Vent	Internal Vent	Internal Vent	Internal Vent
Effective Orifice	0.030" (0.76 mm)	0.030" (0.76 mm)	0.030" (0.76 mm)	0.030" (0.76 mm)
Main Voltage	24 VDC	24 VDC	24 VDC	24 VDC
Control Voltage	0-5 VDC	0-5 VDC	0-5 VDC	0-5 VDC
Pressure Range	0-5 psig	0-15 psig	0-50 psig	0-100 psig

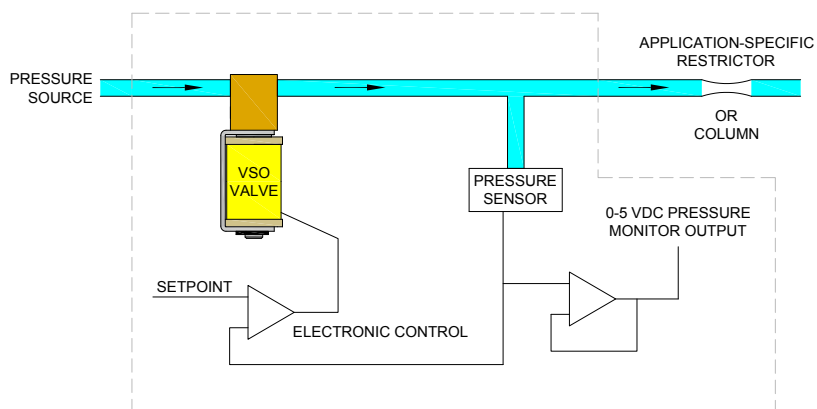
Accessories	
Part Number	190-008246-001
Configuration	10-32 Male to M5 x 0.8 mm Female Adaptor w/O-ring
Wetted Materials	FKM & Brass



OEM-EP Miniature Electronic Pressure Controllers

Configurations

Pressure Controller with No Internal Vent



With No Internal Vent.

An internal vent may not be required when the application consumes a high rate of gas or the gas is coming from a limited source and/or is flammable.

Ordering Information

Part Number	990-005123-015	990-005123-050	990-005123-100
Series	OEM-EP	OEM-EP	OEM-EP
Configuration	No Internal Vent	No Internal Vent	No Internal Vent
Effective Orifice	0.030" (0.76 mm)	0.030" (0.76 mm)	0.030" (0.76 mm)
Main Voltage	24 VDC	24 VDC	24 VDC
Control Voltage	0-5 VDC	0-5 VDC	0-5 VDC
Pressure Range	0-15 psig	0-50 psig	0-100 psig

Accessories	
Part Number	190-008246-001
Configuration	10-32 Male to M5 x 0.8 mm Female Adaptor w/O-ring
Wetted Materials	FKM & Brass



NOTE: In order to provide the best possible solution for your application, please provide the following requirements when contacting Applications Engineering:

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

Please click on the Order On-line button (or go to www.parker.com/precisionfluidics/oemep) to configure your OEM-EP Miniature Electronic Pressure Controller. For more detailed information, visit us on the Web, or call and refer to Performance Spec. #790-002247-001 and Drawing #890-003082-001.

PPF-EPC-002/US July 2016

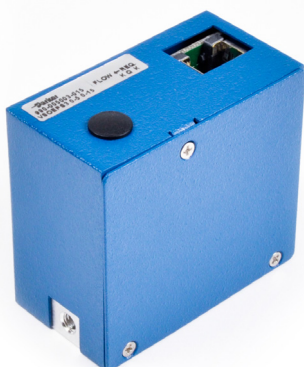
For more information call +1 603 595 1500 or email ppfinfo@parker.com
Visit www.parker.com/precisionfluidics



VSO®-GC


Miniature Electronic Pressure Controllers

Pressure Controllers



The VSO®-GC Miniature Electronic Pressure Controller converts a variable electrical control signal into a variable pneumatic output. The internal integration of the VSO®-GC has been optimized for low flow applications and applications requiring minimal volume. Used to control critical pressures and flows, the VSO®-GC replaces manual regulators, needle valves, flow controllers, and vent orifices, providing integral closed loop proportional control. Using Parker Hannifin's patented VSO® proportional valve for precise control, the VSO®-GC is an ideal choice for carrier gas flow control, microfluidic flow control and for aspirate/dispense applications.

Features

- Offers silent operation to reduce system noise levels
- Ensures high accuracy and unparalleled resolution for improved results
- Tested for long life to improve system availability
- Offers internal closed loop control to minimize system development time
- OEM application-specific configurations available
- Analog control for added design flexibility
- Optimized for stability at low flows
- RoHS compliant 

Typical Applications

- Volumetric Flow Control
- Carrier Gas Pressure Control
- Air over Liquid Flow Control
- Split Flow Control

Product Specifications

Physical Properties

Valve Technology:
Thermally compensated VSO® proportional valves.
Media:
Non-corrosive gases
Operating Environment:
32 to 131°F (0 to 55°C)
Storage Temperature:
-40 to 149°F (-40 to 65°C)
Length:
1.27 in (32.3 mm)
Width:
2.32 in (59.0 mm)
Height:
2.20 in (55.8 mm)
Weight:
5.6 oz (158.8 g)
Porting:
10-32 female ports
Metric adaptor available

Electrical

Main Voltage:
24 VDC \pm 10%
Input Control Signal:
0-5 VDC standard
Monitor Output Voltage:
0-5 VDC
Maximum Current Requirement:
< 400 mA
Electrical Connection:
RJ-45

Wetted Materials

Manifold:
AL 6061-T6, FKM, 302 Series SS
Valve:
FKM, 300 Series SS
Brass 36000HT
Tubing:
Ester Based Polyurethane
Sensor:
Glass, Silicon, Silicone, Polyphenylene Sulfide

Performance Characteristics

Pressure Ranges:
0-2 psig (0-0.14 bar)
0-15 psig (0-1.03 bar)
0-50 psig (0-3.45 bar)
0-100 psig (0-6.89 bar)
(Effective control range is 10%-100% of full scale)
Pressure Accuracy:
\pm 1.5% Full Scale maximum
Response:
<15 ms
(Response time to target pressure is output volume dependent)
Linearity:
\leq +1.5% Full Scale

VSO is a registered trademark of Parker Hannifin Corporation.



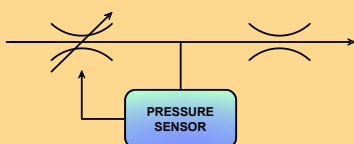
VSO®-GC Miniature Electronic Pressure Controllers

VSO®-GC Flow Capability Sizing Charts

How Flow Effects Pressure Control

The flow curves illustrate the flow capabilities of the three models of pressure controllers.

Pressure control using a constant flow approach requires the system to manage pressure drops across a variable orifice and a fixed orifice (see below).



Choosing the Right Model

In many cases, the fixed orifice is the cumulative restriction of the application system consuming gas. That fixed restriction and the inlet supply pressure level are key factors when selecting the correct model number for the VSO®-GC.

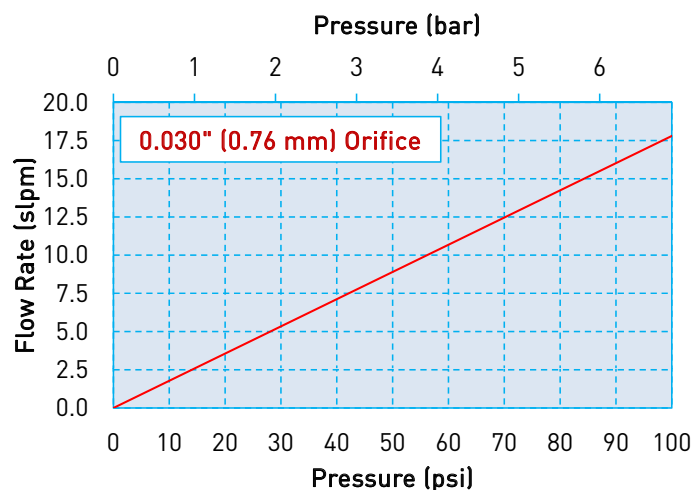
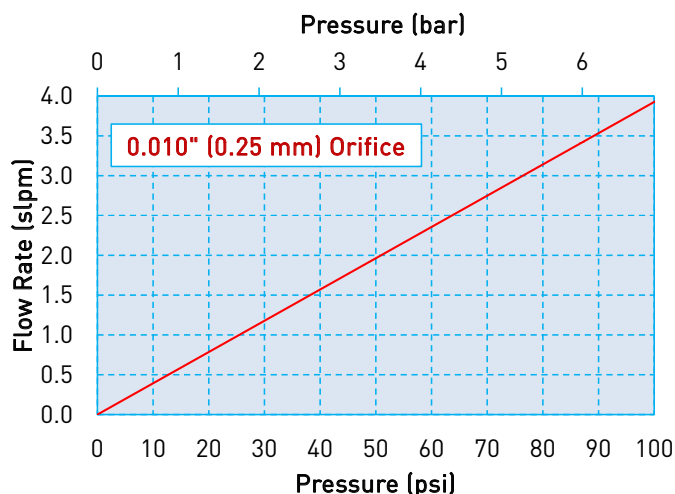
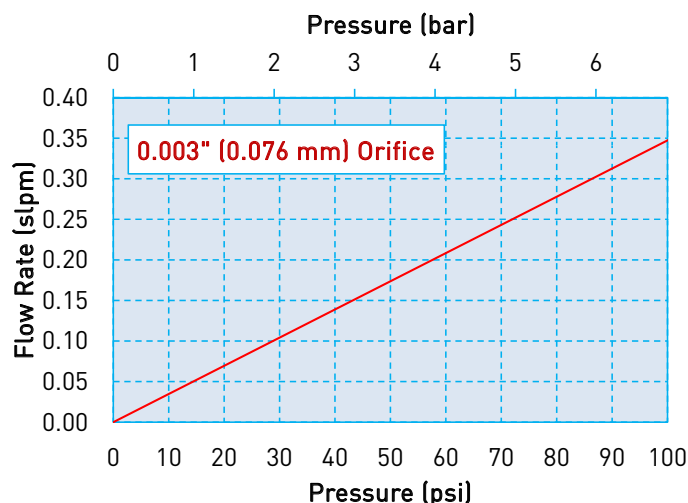
If the orifice is too small, it may fail to generate enough flow to drop the required pressure across the fixed orifice. If the orifice is too large, the Pressure Controller can become unstable. When considering orifice size please remember that the effective control range is 10%-100% of full scale.

EXAMPLE:

Please refer to flow chart labeled 0.010" (0.25mm) orifice. If your application requires 40 PSIG of pressure at 1 SLPM of flow, you would need a 0.010" orifice pressure controller.

This graph shows that a 0.010" orifice will flow up to 1.5 SLPM at 40 PSIG making it the right choice for your application.

Typical Flow vs Pressure @ 25°C

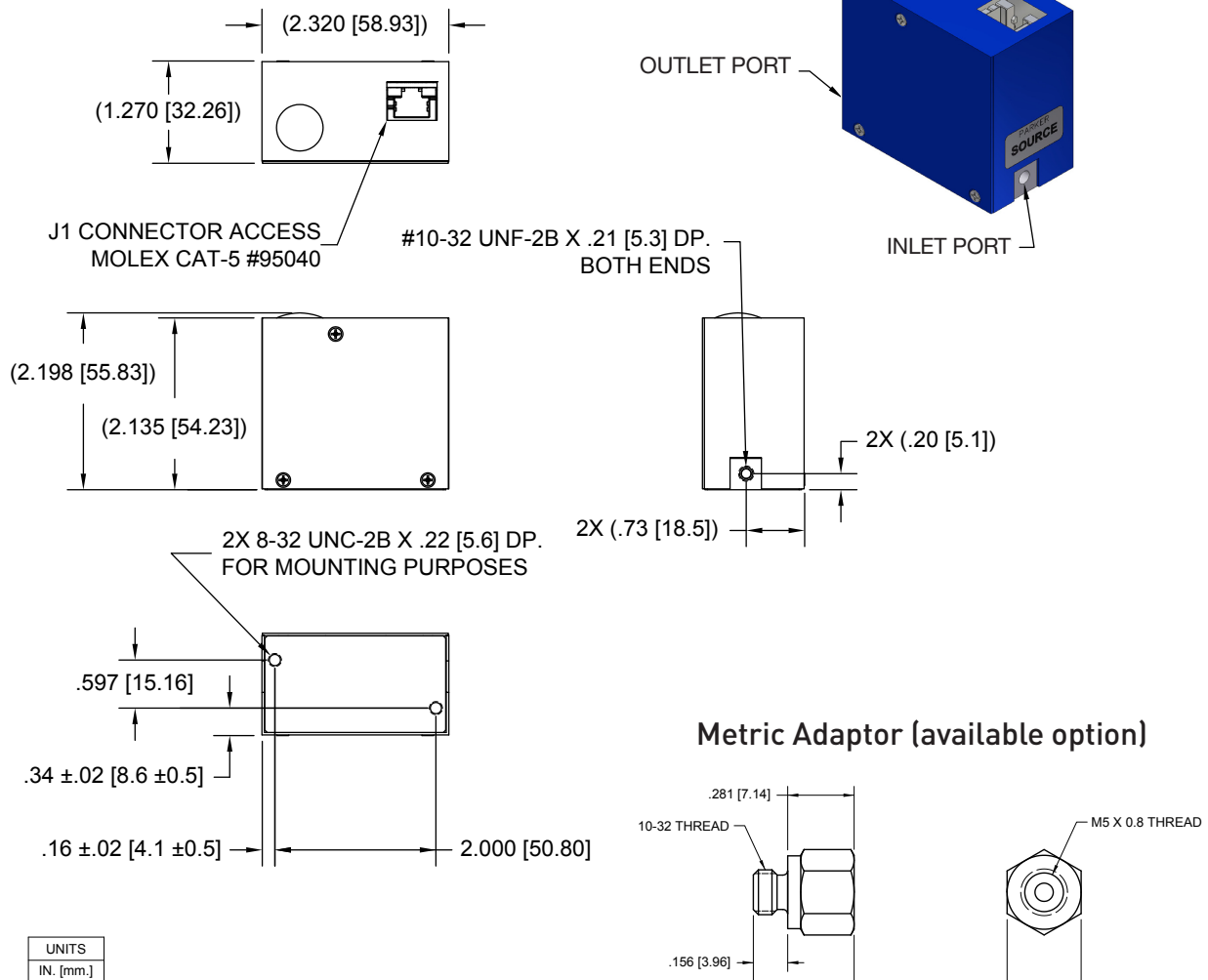


VS0®-GC Miniature Electronic Pressure Controllers

Mechanical Integration

Dimensions

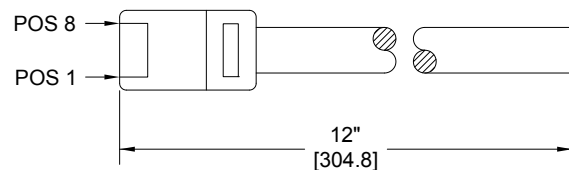
VS0-GC Basic Dimensions



Electrical Interface

CAT 5e Plug-in (RJ-45) Connector (included)	
Signal	RJ-45 Pin No. Color
Main Power, 24 VDC	1 White w/ Orange
Input Control Signal, 0-5 VDC	2 Solid Orange
Monitor Signal Output, 0-5 VDC	3 White w/ Green
System Ground	4 Solid Blue

CAT 5e to flying lead Plug-in Cable (included)



VSO®-GC Miniature Electronic Pressure Controllers

Installation Guide

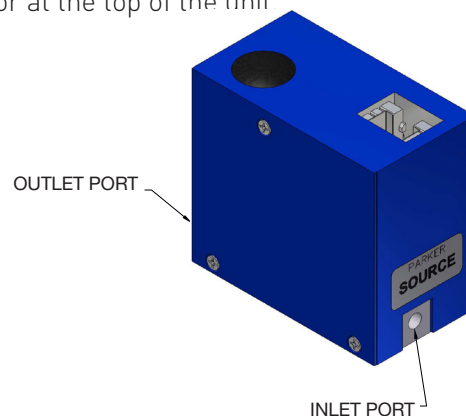
The VSO®-GC is a dynamic pressure controller that uses proportional valve technology to supply an accurate and stable pressure source for a variety of application requirements. Installation of this device requires the completion of a few easy steps.

They are as follows:

- Ensure that the gas is non corrosive, clean and dry.
- Connect the gas supply to the Inlet Port on the VSO®-GC.
- Connect a line requiring the controlled pressure to the Outlet Port on the VSO®-GC.
- Pneumatic ports are 10-32 UNF-2B Female. Metric Adaptor option is available.
- The EPC effective control range is 10%-100% of full scale.
- Electrical connections are made through the connector at the top of the unit

They are as follows:

CAT 5e Plug-in (RJ-45) Connector (included)	
Signal	RJ-45 Pin No. Color
Main Power, 24 VDC	1 White w/ Orange
Input Control Signal, 0-5 VDC	2 Solid Orange
Monitor Signal Output, 0-5 VDC	3 White w/ Green
System Ground	4 Solid Blue



Key Things to Remember:

The pressure controller requires downstream restriction to build pressure.

- The VSO®-GC is a non venting controller. A non-venting controller does not incorporate an internal vent orifice and will require a downstream restriction of roughly 20% to 60% of the controller's orifice size.

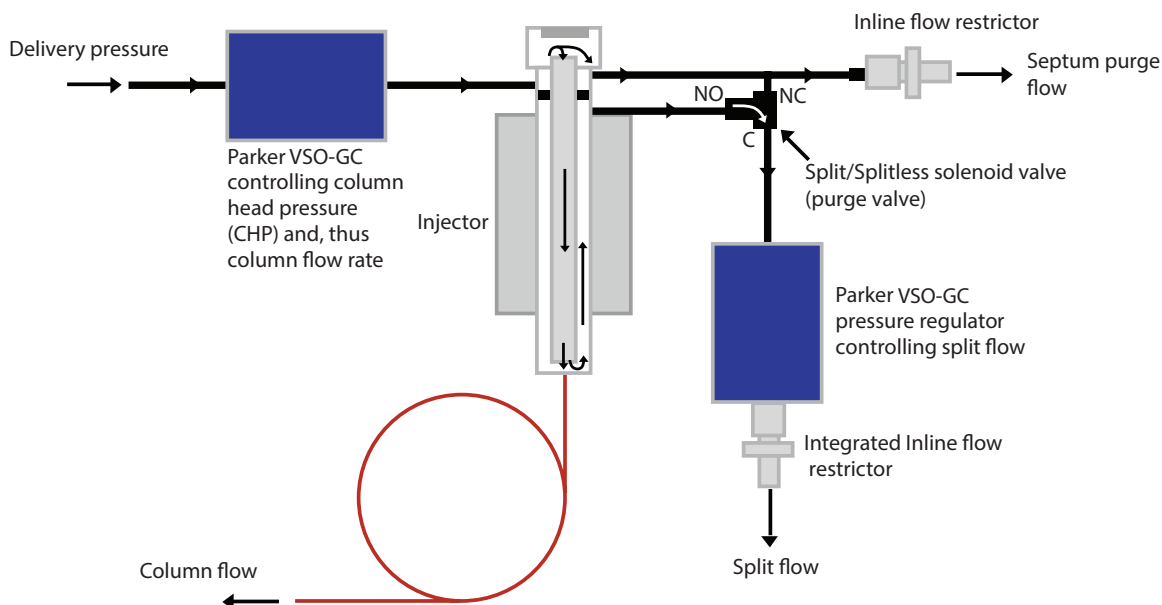
For example:

A non-vented controller with an orifice size of 0.010" should have 0.002" to 0.006" effective downstream restriction.

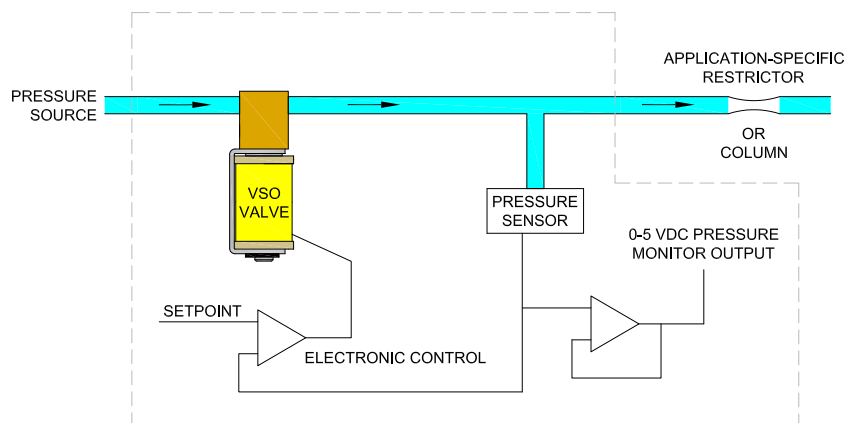
VSO®-GC Miniature Electronic Pressure Controllers

Configurations

Typical Gas Chromatograph Schematic



Pressure Controller with No Internal Vent



With No Internal Vent.

An internal vent may not be required when the application consumes a high rate of gas or the gas is coming from a limited source and/or is flammable.

VSO®-GC Miniature Electronic Pressure Controllers

Ordering Information

Part Number	990-005020-002	990-005021-015	990-005021-050	990-005021-100
Series	VSO-GC	VSO-GC	VSO-GC	VSO-GC
Configuration	No Internal Vent	No Internal Vent	No Internal Vent	No Internal Vent
Effective Orifice	0.003" (0.076 mm)	0.010" (0.25 mm)	0.010" (0.25 mm)	0.010" (0.25 mm)
Main Voltage	24 VDC	24 VDC	24 VDC	24 VDC
Control Voltage	0-5 VDC	0-5 VDC	0-5 VDC	0-5 VDC
Pressure Range	0-2 psig	0-15 psig	0-50 psig	0-100 psig

Part Number	990-005023-015	990-005023-050	990-005023-100
Series	VSO-GC	VSO-GC	VSO-GC
Configuration	No Internal Vent	No Internal Vent	No Internal Vent
Effective Orifice	0.030" (0.76 mm)	0.030" (0.76 mm)	0.030" (0.76 mm)
Main Voltage	24 VDC	24 VDC	24 VDC
Control Voltage	0-5 VDC	0-5 VDC	0-5 VDC
Pressure Range	0-15 psig	0-50 psig	0-100 psig

Accessories	
Part Number	190-008246-001
Configuration	10-32 Male to M5 x 0.8 mm Female Adaptor w/O-ring
Wetted Materials	FKM & Brass



NOTE: In order to provide the best possible solution for your application, please provide the following requirements when contacting Applications Engineering:

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

Please click on the Order On-line button (or go to www.parker.com/precisionfluidics/vsogc) to configure your VSO-GC Miniature Electronic Pressure Controller. For more detailed information, visit us on the Web, or call and refer to Performance Spec. #790-002202-002 and Drawing #890-003146-002.

PPF-EPC-002/US July 2016

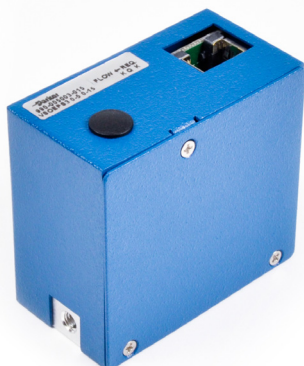
For more information call +1 603 595 1500 or email ppfinfo@parker.com
Visit www.parker.com/precisionfluidics



VSO®-EP

Miniature Electronic Pressure Controllers

Pressure Controllers




Typical Applications

- Volumetric Flow Control
- Carrier Gas Pressure Control
- Air over Liquid Flow Control
- Electronic Pressure Regulation
- Vacuum Generator Control

The VSO®-EP Miniature Electronic Pressure Control Unit converts a variable electrical control signal into a variable pneumatic output. Used to control critical pressure, the VSO®-EP replaces manual regulators, needle valves, flow controllers, and vent orifices; providing integral closed loop proportional control. This product uses Parker Hannifin's patented VSO® proportional valve and offers significant improvements over dual valve controllers. VSO®-EP is used for carrier gas flow control, microfluidic flow control, vacuum pump control, and for aspirate/dispense applications.

Features

- Offers silent operation to reduce system noise levels
- Ensures high accuracy and unparalleled resolution for improved results
- Tested for long life to improve system availability
- Offers internal closed loop control to minimize system development time
- OEM application-specific configurations available
- Analog control for added design flexibility
- RoHS compliant 

Product Specifications

Physical Properties

Valve Technology:
Thermally compensated VSO® proportional valves.
Media:
Non-corrosive gases
Operating Environment:
32 to 131°F (0 to 55°C)
Storage Temperature:
-40 to 149°F (-40 to 65°C)
Length:
1.27 in (32.3 mm)
Width:
2.32 in (59.0 mm)
Height:
2.20 in (55.9 mm)
Weight:
5.6 oz (158.8 g)
Porting:
10-32 female ports
Metric adaptor available

Electrical

Main Voltage:
24 VDC \pm 10%
Input Control Signal:
0-5 VDC standard
Monitor Output Voltage:
0-5 VDC
Maximum Current Requirement:
< 400 mA
Electrical Connection:
RJ-45

Wetted Materials

Manifold:
AL 6061-T6, FKM, 302 Series SS
Valve:
FKM, 300 Series SS
Brass 36000HT
Tubing:
Ester Based Polyurethane
Sensor:
Glass, Silicon, Silicone, Polyphenylene Sulfide

Performance Characteristics

Pressure Ranges:
0-5 psig (0-0.35 bar)
0-15 psig (0-1.03 bar)
0-30 psig (0-2.07 bar)
0-50 psig (0-3.45 bar)
0-100 psig (0-6.89 bar)
(Effective control range is 10%-100% of full scale)
Pressure Accuracy:
\pm 1.5% Full Scale maximum
Response:
<15 ms
(Response time to target pressure is output volume dependent)
Linearity:
\leq +1.5% Full Scale

VSO is a registered trademark of Parker Hannifin Corporation.



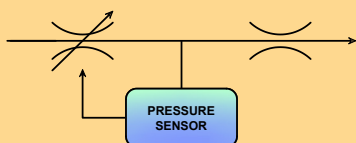
VSO®-EP Miniature Electronic Pressure Controllers

VSO®-EP Flow Capability Sizing Charts

How Flow Effects Pressure Control

The flow curves illustrate the flow capabilities of the three models of pressure controllers.

Pressure control using a constant flow approach requires the system to manage pressure drops across a variable orifice and a fixed orifice (see below).



Choosing the Right Model

In many cases, the fixed orifice is the cumulative restriction of the application system consuming gas. That fixed restriction and the inlet supply pressure level are key factors when selecting the correct model number for the VSO®-EP.

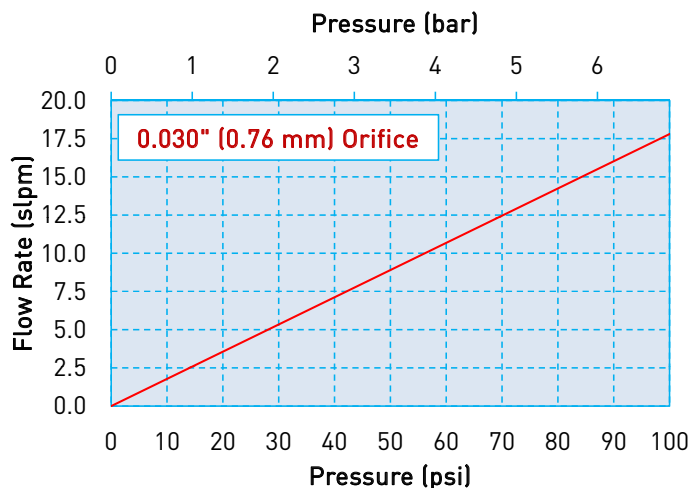
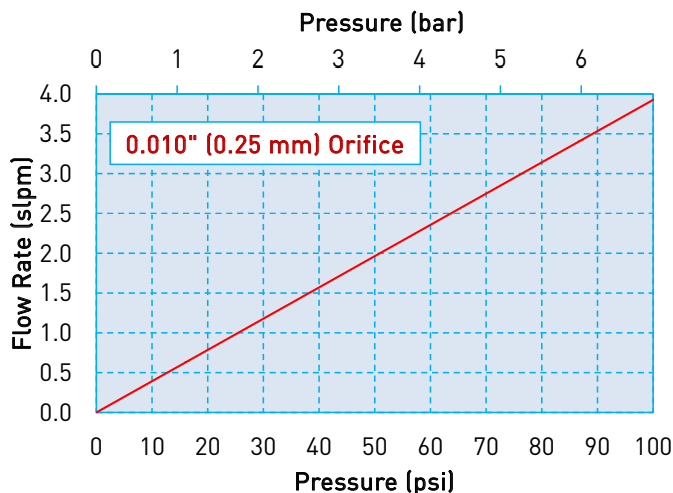
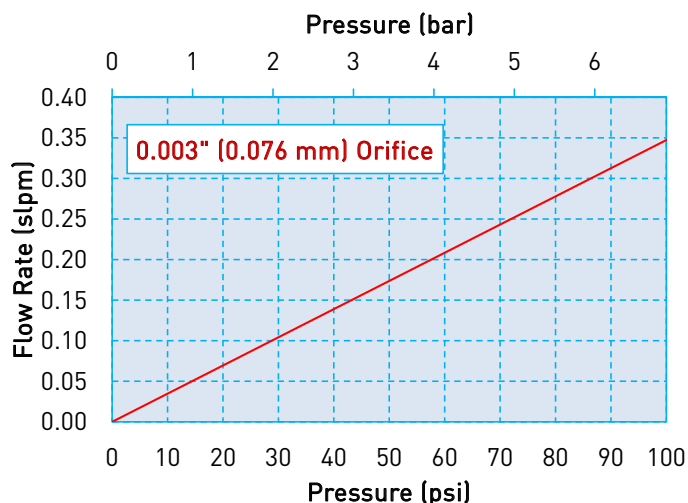
If the orifice is too small, it may fail to generate enough flow to drop the required pressure across the fixed orifice. If the orifice is too large, the Pressure Controller can become unstable. When considering orifice size please remember that the effective control range is 10%-100% of full scale.

EXAMPLE:

Please refer to flow chart labeled 0.010" (0.25mm) orifice. If your application requires 40 PSIG of pressure at 1 SLPM of flow, you would need a 0.010" orifice pressure controller.

This graph shows that a 0.010" orifice will flow up to 1.5 SLPM at 40 PSIG making it the right choice for your application.

Typical Flow vs Pressure @ 25°C

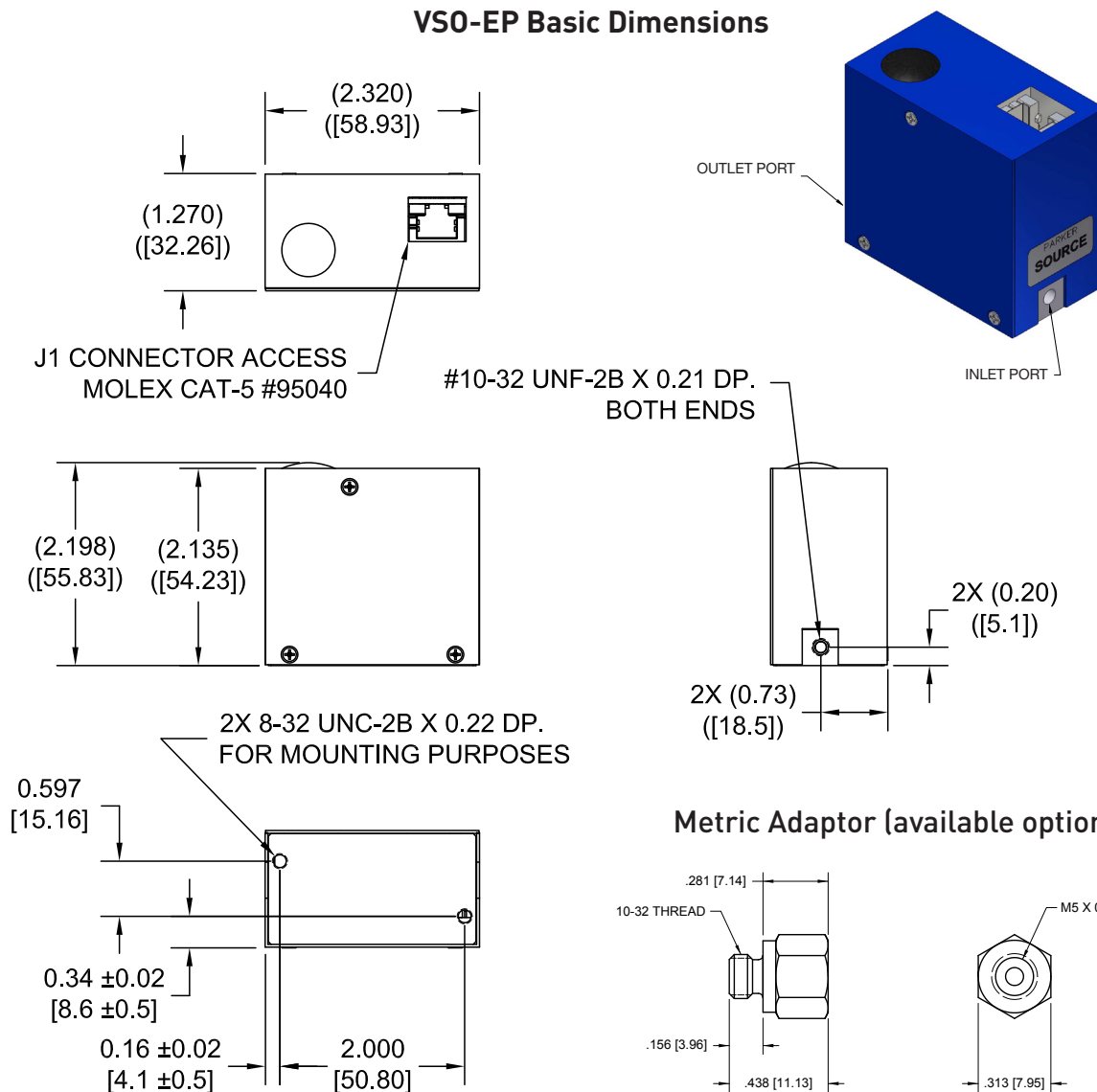


VS0®-EP Miniature Electronic Pressure Controllers

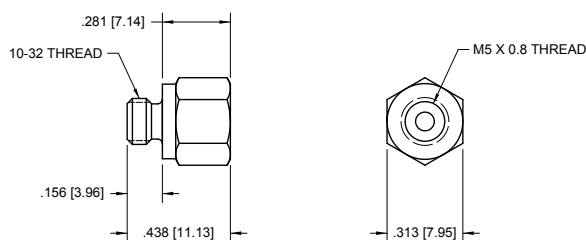
Mechanical Integration

Dimensions

VS0-EP Basic Dimensions



Metric Adaptor (available option)

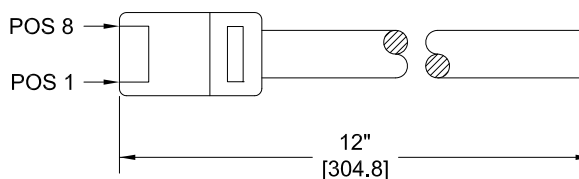


UNITS
IN. [mm.]

Electrical Interface

CAT 5e Plug-in (RJ-45) Connector (included)	
Signal	RJ-45 Pin No. Color
Main Power, 24 VDC	1 White w/ Orange
Input Control Signal, 0-5 VDC	2 Solid Orange
Monitor Signal Output, 0-5 VDC	3 White w/ Green
System Ground	4 Solid Blue

CAT 5e to flying lead Plug-in Cable (included)



VSO®-EP Miniature Electronic Pressure Controllers

Installation Guide

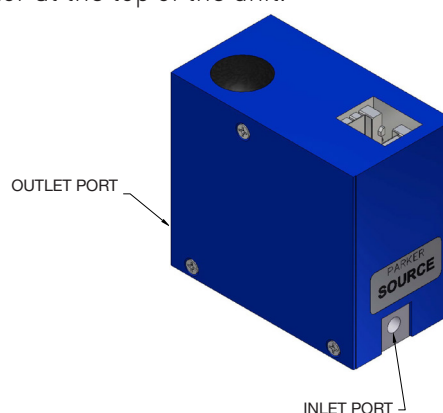
The VSO®-EP is a dynamic pressure controller that uses proportional valve technology to supply an accurate and stable pressure source for a variety of application requirements. Installation of this device requires the completion of a few easy steps.

They are as follows:

- Ensure that the gas is non corrosive, clean and dry.
- Connect the gas supply to the Inlet Port on the VSO®-EP.
- Connect a line requiring the controlled pressure to the Outlet Port on the VSO®-EP.
- Pneumatic ports are 10-32 UNF-2B Female. Metric Adaptor option is available.
- The EPC effective control range is 10%-100% of full scale.
- Electrical connections are made through the connector at the top of the unit.

They are as follows:

CAT 5e Plug-in (RJ-45) Connector (included)	
Signal	RJ-45 Pin No. Color
Main Power, 24 VDC	1 White w/ Orange
Input Control Signal, 0-5 VDC	2 Solid Orange
Monitor Signal Output, 0-5 VDC	3 White w/ Green
System Ground	4 Solid Blue



Key Things to Remember:

The pressure controller requires downstream restriction to build pressure. There are two ways to accomplish this:

- Use a venting controller. The venting controller is configured with an internal vent orifice that is roughly 40% of the controller orifice size. This configuration of controller can supply pressure to an application with a effective downstream restriction that represents 30% of the controller orifice size down to a completely restricted application.
- Use of a non-venting controller. The non-venting controller does not incorporate an internal vent orifice and will require a downstream restriction of roughly 20% to 60% of the controller's orifice size.

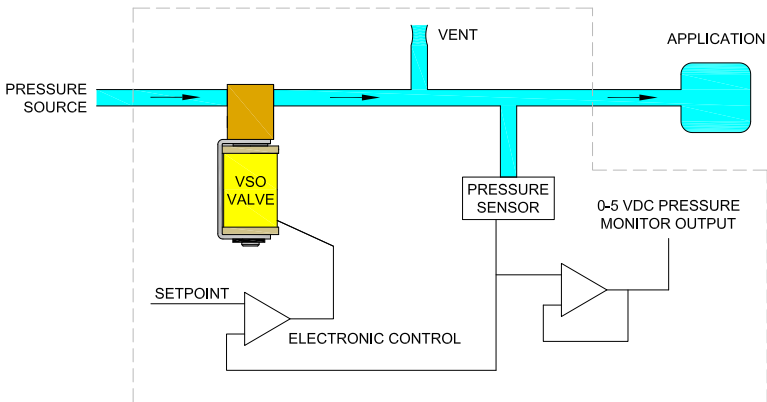
For example:

A non-vented controller with an orifice size of 0.010" should have 0.002" to 0.006" effective downstream restriction.

VSO®-EP Miniature Electronic Pressure Controllers

Configurations

Pressure Controller with Internal Vent



With Internal Vent.
A vent is required when the application does not consume any gas. For example, pressurizing a piloted regulator.

Ordering Information

Part Number	990-005001-015	990-005001-050	990-005001-100	990-005003-005
Series	VSO-EP	VSO-EP	VSO-EP	VSO-EP
Configuration	Internal Vent	Internal Vent	Internal Vent	Internal Vent
Effective Orifice	0.010" (0.25 mm)	0.010" (0.25 mm)	0.010" (0.25 mm)	0.030" (0.76 mm)
Main Voltage	24 VDC	24 VDC	24 VDC	24 VDC
Control Voltage	0-5 VDC	0-5 VDC	0-5 VDC	0-5 VDC
Pressure Range	0-15 psig	0-50 psig	0-100 psig	0-5 psig

Part Number	990-005003-015	990-005003-050	990-005003-100
Series	VSO-EP	VSO-EP	VSO-EP
Configuration	Internal Vent	Internal Vent	Internal Vent
Effective Orifice	0.030" (0.76 mm)	0.030" (0.76 mm)	0.030" (0.76 mm)
Main Voltage	24 VDC	24 VDC	24 VDC
Control Voltage	0-5 VDC	0-5 VDC	0-5 VDC
Pressure Range	0-15 psig	0-50 psig	0-100 psig

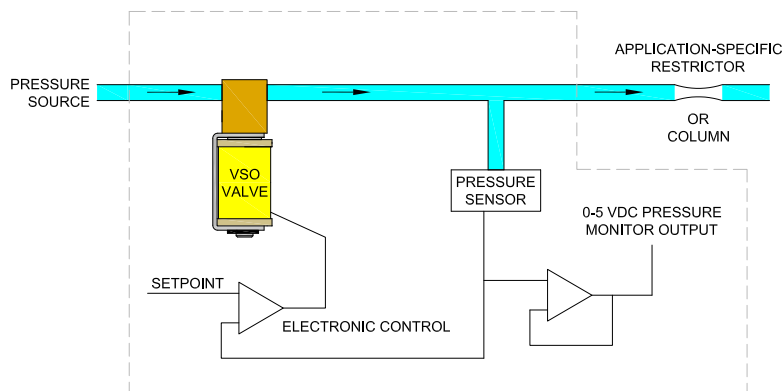
Accessories	
Part Number	190-008246-001
Configuration	10-32 Male to M5 x 0.8 mm Female Adaptor w/O-ring
Wetted Materials	FKM & Brass



VSO®-EP Miniature Electronic Pressure Controllers

Configurations

Pressure Controller with No Internal Vent



With No Internal Vent.

An internal vent may not be required when the application consumes a high rate of gas or the gas is coming from a limited source and/or is flammable.

Ordering Information

Part Number	990-005010-100	990-005011-015	990-005011-050	990-005011-100	990-005013-030
Series	VSO-EP	VSO-EP	VSO-EP	VSO-EP	VSO-EP
Configuration	No Internal Vent	No Internal Vent	No Internal Vent	No Internal Vent	No Internal Vent
Effective Orifice	0.003" (0.076 mm)	0.010" (0.25 mm)	0.010" (0.25 mm)	0.010" (0.25 mm)	0.030" (0.76 mm)
Main Voltage	24 VDC	24 VDC	24 VDC	24 VDC	24 VDC
Control Voltage	0-5 VDC	0-5 VDC	0-5 VDC	0-5 VDC	0-5 VDC
Pressure Range	0-100 psig	0-15 psig	0-50 psig	0-100 psig	0-30 psig

Accessories	
Part Number	190-008246-001
Configuration	10-32 Male to M5 x 0.8 mm Female Adaptor w/O-ring
Wetted Materials	FKM & Brass



NOTE: In order to provide the best possible solution for your application, please provide the following requirements when contacting Applications Engineering:

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

Please click on the Order On-line button (or go to www.parker.com/precisionfluidics/vsoep) to configure your VSO-EP Miniature Electronic Pressure Controller. For more detailed information, visit us on the Web, or call and refer to Performance Spec. #790-002202-001 and Drawing #890-003146-001.

PPF-EPC-002/US July 2016

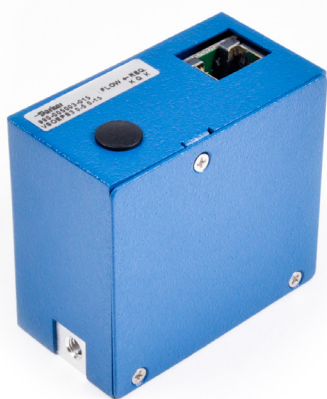
For more information call +1 603 595 1500 or email ppfinfo@parker.com
Visit www.parker.com/precisionfluidics



VSO®-EV


Miniature Electronic Vacuum Controller

Vacuum Controllers



The VSO®-EV is a Miniature Electronic Vacuum Controller specifically configured and optimized for precise vacuum control. The VSO®-EV converts a variable electrical control signal into a closed-loop, tightly regulated pneumatic output. Often used for aspirating liquid samples for pipette dispensers, the VSO®-EV offers closed loop control around critical system parameters through the use of an internal vacuum sensor. The VSO®-EV is well suited for high precision automated laboratory instruments, meeting the most stringent separation and detection requirements.

Features

- Low power consumption reducing heat generation
- Ensures high accuracy and unparalleled resolution for improved results
- Tested for long life to improve system availability
- Offers an internal vacuum sensor for closed loop control capability to ease integration
- Analog control for added design flexibility
- RoHS compliant 

Typical Applications

- Sample aspiration
- Liquid dispense meniscus pressure control
- Component pick and place

Product Specifications

Physical Properties

Valve Technology:
Thermally compensated VSO® proportional valve
Media:
Non-corrosive gases
Operating Environment:
32 to 131°F (0 to 55°C)
Storage Temperature:
-40 to 149°F (-40 to 65°C)
Length:
1.27 in (32.3 mm)
Width:
2.32 in (59.0 mm)
Height:
2.20 in (55.9 mm)
Weight:
5.6 oz (158.8 g)
Porting:
10-32 female ports Metric adaptor available

Electrical

Main Voltage:
24 VDC \pm 10%
Input Control Signal:
0-5 VDC standard
Monitor Output Voltage:
0-5 VDC
Current Requirement:
Maximum <400 mA
Electrical Connector:
RJ-45

Wetted Materials

Manifold:
AL 6061-T6, FKM, 302 Series SS
Valve:
FKM, 300 Series SS
Brass 36000 HO2
Tubing:
Esther-based Polyurethane
Sensor:
Glass, Silicon, Silicone, Polyphenylene sulfide

Performance Characteristics

Vacuum Ranges:
863-1013 mBar *
668-1013 mBar *
530-1013 mBar *
<i>(Effective control range is 10%-100% of full scale)</i>
Pressure Accuracy:
\pm 1.5% Full Scale maximum
Response:
<15 ms
<i>(Response time to target pressure is output volume dependent)</i>
Linearity:
< \pm 1.5% Full Scale

* All pressure in mBar absolute

VSO is a registered trademark of Parker Hannifin Corporation.

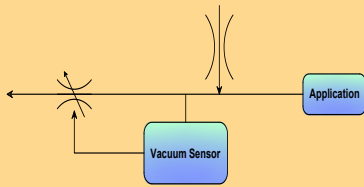


VSO®-EV Miniature Electronic Vacuum Controllers

How Flow Effects Vacuum Control

The flow curves illustrate the flow capabilities of the two models of vacuum controllers.

Vacuum control using a constant flow approach requires the system to manage pressure drops across a variable orifice and a fixed orifice (see below).



Choosing the Right Model

In some cases, the fixed orifice is the cumulative restriction of the application system requiring the vacuum. That fixed restriction, combined with atmosphere vented in through the internal fixed venting orifice, must be balanced against the sources vacuum level and its ability to generate flow. These are key factors in selecting the correct model of VSO®-EV.

If the orifice is too small, it may fail to generate enough flow to drop the required pressure across the fixed orifice. If the orifice is too large, the Vacuum Controller can become unstable. When considering orifice size please remember that the effective control range is 10%-100% of full scale.

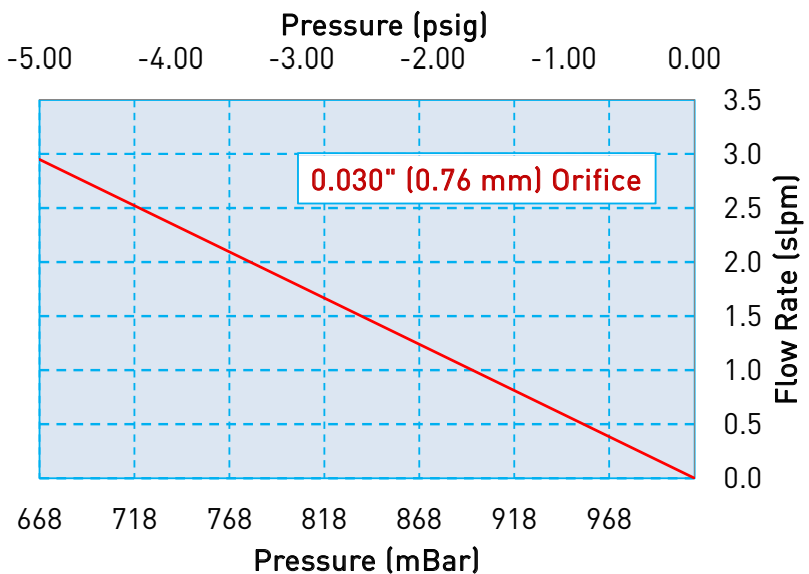
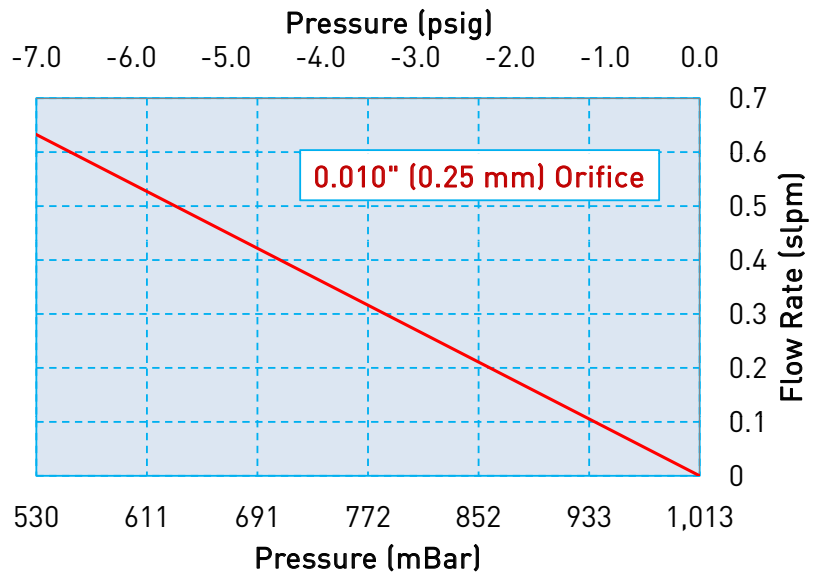
EXAMPLE:

Please refer to flow chart labeled 0.010" (0.25mm) orifice. If your application requires 713 mBar of vacuum at 0.3 SLPM of flow, you would need a 0.010" orifice vacuum controller.

This graph shows that a 0.010" orifice will flow up to 0.4 SLPM at 713 mBar of vacuum making it the right choice for your application.

VSO®-EV Flow Capability Sizing Charts

Typical Flow vs Vacuum @ 25°C

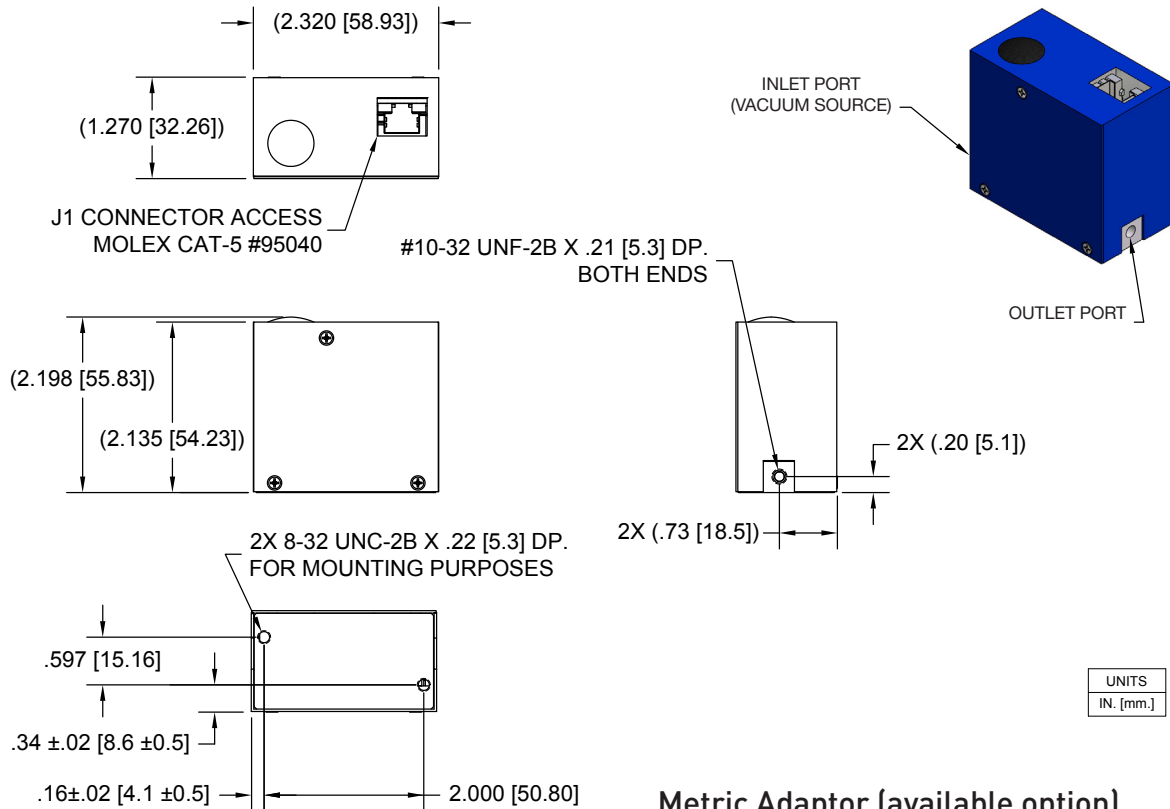


VSO®-EV Miniature Electronic Vacuum Controllers

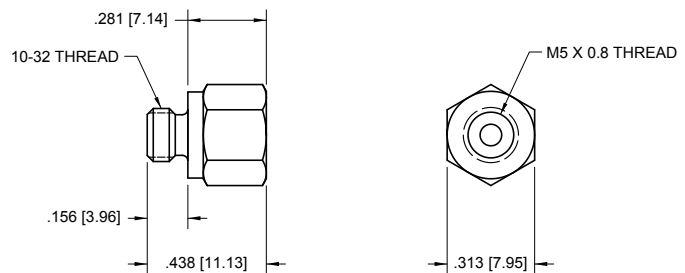
Mechanical Integration

Dimensions

VSO-EV Basic Dimensions



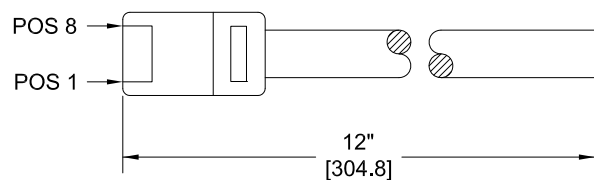
Metric Adaptor (available option)



Electrical Interface

CAT 5e Plug-in (RJ-45) Connector (included)	
Signal	RJ-45 Pin No. Color
Main Power, 24 VDC	1 White w/ Orange
Input Control Signal, 0-5 VDC	2 Solid Orange
Monitor Signal Output, 0-5 VDC	3 White w/ Green
System Ground	4 Solid Blue

CAT 5e to flying lead Plug-in Cable (included)



VSO®-EV Miniature Electronic Vacuum Controllers

Installation Guide

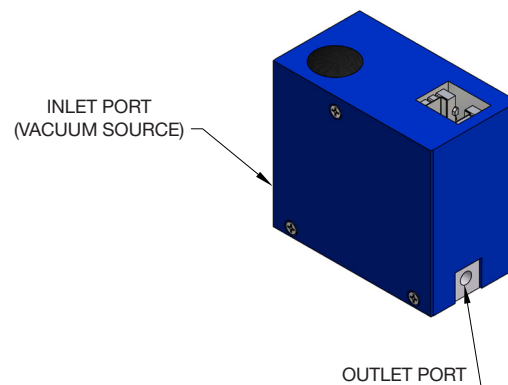
The VSO®-EV is a dynamic vacuum controller that uses proportional valve technology to supply an accurate and stable vacuum source for a variety of application requirements. Installation of this device requires the completion of a few easy steps.

They are as follows:

- Ensure that any gas drawn into the unit is non corrosive, clean and dry.
- Connect the vacuum source to the Inlet Port on the VSO®-EV.
- Connect a line requiring the controlled vacuum to the Outlet Port on the VSO®-EV.
- Pneumatic ports are 10-32 UNF-2B Female. Metric Adapter option is available.
- The EPC effective control range is 10%-100% of full scale.
- Electrical connections are made through the connector at the top of the unit.

They are as follows:

CAT 5e Plug-in (RJ-45) Connector (included)	
Signal	RJ-45 Pin No. Color
Main Power, 24 VDC	1 White w/ Orange
Input Control Signal, 0-5 VDC	2 Solid Orange
Monitor Signal Output, 0-5 VDC	3 White w/ Green
System Ground	4 Solid Blue



Key Things to Remember:

The vacuum controller requires downstream restriction to build vacuum. There are two ways to accomplish this:

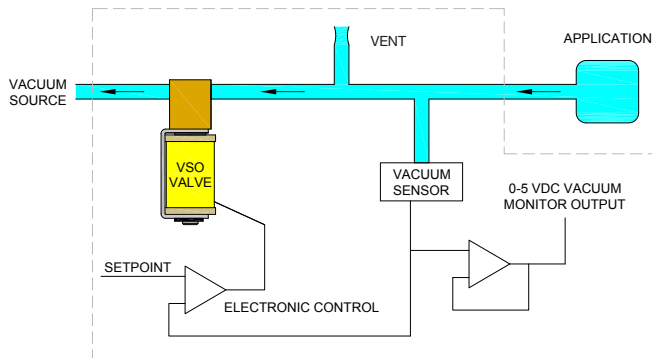
- Use a venting controller. The venting controller is configured with an internal vent orifice that is roughly 40% of the controller valve orifice size. This configuration of controller can supply vacuum to an application with a effective downstream restriction that represents 30% of the controller orifice size down to a completely restricted application.
- Use a non-venting controller. The non-venting controller does not incorporate an internal vent orifice and will require a downstream restriction of roughly 20% to 60% of the controller's orifice size.

For example:

A non-vented controller with an orifice size of 0.010" should have 0.002" to 0.006" effective downstream restriction.

VSO®-EV Miniature Electronic Vacuum Controllers Configurations

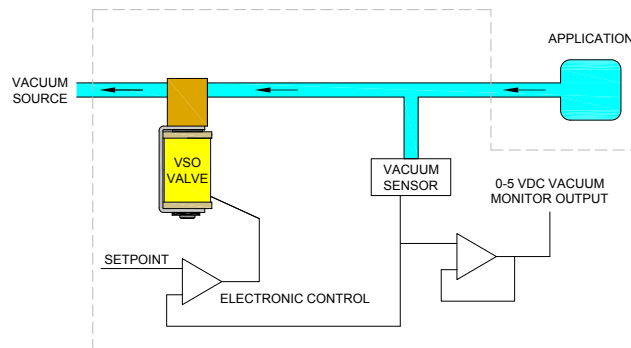
Vacuum Controller with Internal Vent



With Internal Vent.

An internal vent constantly draws air from atmosphere into the system.

Vacuum Controller with No Internal Vent



With No Internal Vent.

An internal vent may not be required when the application vents some air into the vacuum controller.

Ordering Information

Part Number	990-005203-005	990-005201-002	990-005211-007
Series	VSO-EV	VSO-EV	VSO-EV
Configuration	Internal Vent	Internal Vent	No Internal Vent
Effective Orifice	0.030" (0.76 mm)	0.010" (0.25 mm)	0.010" (0.25 mm)
Main Voltage	24 VDC	24 VDC	24 VDC
Control Voltage	0-5 VDC	0-5 VDC	0-5 VDC
Pressure Range	668-1013 mBar	863-1013 mBar	530-1013 mBar

Accessories	
Part Number	190-008246-001
Configuration	10-32 Male to M5 x 0.8 mm Female Adaptor w/O-ring
Wetted Materials	FKM & Brass



NOTE: In order to provide the best possible solution for your application, please provide the following requirements when contacting Applications Engineering:

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

Please click on the Order On-line button (or go to www.parker.com/precisionfluidics/vsoev) to configure your VSO-EV Miniature Electronic Vacuum Controller. For more detailed information, visit us on the Web, or call and refer to Performance Spec. #790-002219-001 and Drawing #890-003153-001.

PPF-EPC-002/US July 2016

For more information call +1 603 595 1500 or email ppfinfo@parker.com

Visit www.parker.com/precisionfluidics



VSO®-HP


High Performance Miniature Pressure Controllers

Pressure Controllers



Used in analytical and OEM instrument applications, the VSO®-HP High Performance Pressure Controller delivers integral closed loop proportional control with the highest level of accuracy and stability. With an extra internal exhaust valve, the VSO®-HP provides rapid depressurization and response for precise pressure control. The VSO®-HP offers the flexibility to control pressure or flow, replacing manual regulators, flow controllers, and needle valves. This product uses Parker Hannifin's patented VSO® proportional valve for precise and consistent performance.

Features

- Integrated exhaust valve provides rapid depressurization and response
- Tested for long life to improve system availability
- Low power consumption reducing heat generation
- Customer configurable for pressure control or flow control
- Offers silent operation to reduce overall system noise
- Analog control for added design flexibility
- RoHS compliant 

Typical Applications

- Medical Training Devices
- Gas Over Liquid Flow Control
- HPLC Gas to Liquid Pressure Amplifiers

Product Specifications

Physical Properties

Valve Technology:
Thermally compensated proportional valve, solenoid exhaust valve
Media:
Non-corrosive gases
Operating Environment:
32 to 131°F (0 to 55°C)
Storage Temperature:
-40 to 149°F (-40 to 65°C)
Length:
1.53 in (38.9 mm)
Width:
1.64 in (41.7 mm)
Height:
2.84 in (72.1 mm)
Weight:
6.2 oz (183.4 g)
Porting:
10-32 female ports
Metric adaptor available

Electrical

Power:
24 VDC \pm 10%
Input Control Signal:
0-5 VDC standard
Monitor Output Voltage:
0-5 volts
Current Requirement:
<550 mA
Electrical Connector:
Molex 6 pin miniature connector

Wetted Materials

Manifold:
AL 6061-T6, FKM, 302 Series SS
Valve:
FKM, 300 Series SS
Brass 36000HT
Tubing:
Esther-based Polyurethane
Sensor:
Glass, Silicon, Silicone, Polyphenylene sulfide

Performance Characteristics

Pressure Ranges:
0-5 psig (0-0.35 bar)
0-7 psig (0-0.48 bar)
0-15 psig (0-1.03 bar)
0-100 psig (0-6.89 bar)
(Effective control range is 10%-100% of full scale)
Pressure Accuracy:
\pm 1.5% Full Scale max
Response:
<15 ms
(Response time to target pressure is output volume dependent)
Linearity:
< \pm 1.5% Full Scale

VSO is a registered trademark of Parker Hannifin Corporation.

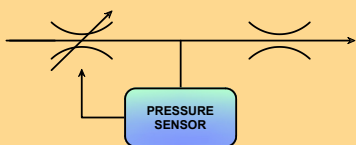


VSO®-HP High Performance Miniature Pressure Controllers

How Flow Effects Pressure Control

The flow curves illustrate the flow capabilities of the two models of pressure controllers.

Pressure control using a constant flow approach requires the system to manage pressure drops across a variable orifice and a fixed orifice (see below).



Choosing the Right Model

In many cases, the fixed orifice is the cumulative restriction of the application system consuming gas. That fixed restriction and the inlet supply pressure level are key factors when selecting the correct model number for the VSO®-HP.

If the orifice is too small, it may fail to generate enough flow to drop the required pressure across the fixed orifice. If the orifice is too large, the Pressure Controller can become unstable. When considering orifice size please remember that the effective control range is 10%-100% of full scale.

The VSO®-HP makes use of a secondary pressure release valve. This valve is an "off and on" valve and is used to depressurize the controlled pressure upon a pressure reduction requested through the lowering of the set point. This valve does not effect the pressure control while the unit is in the stable state of pressure regulation.

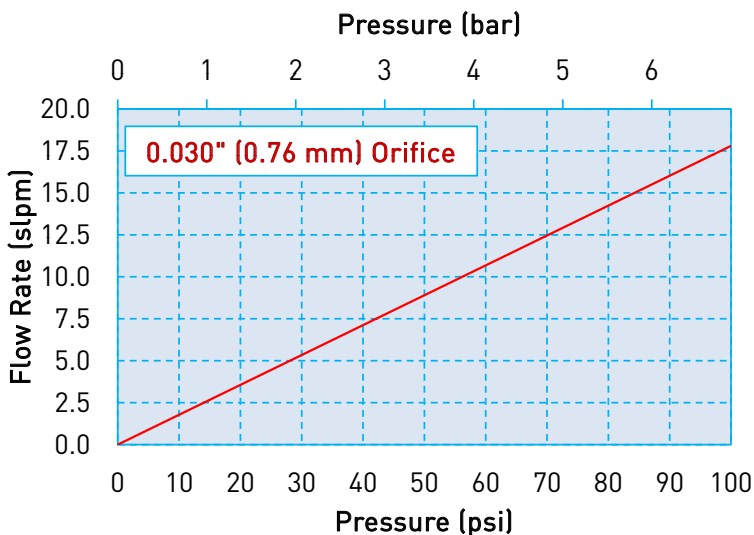
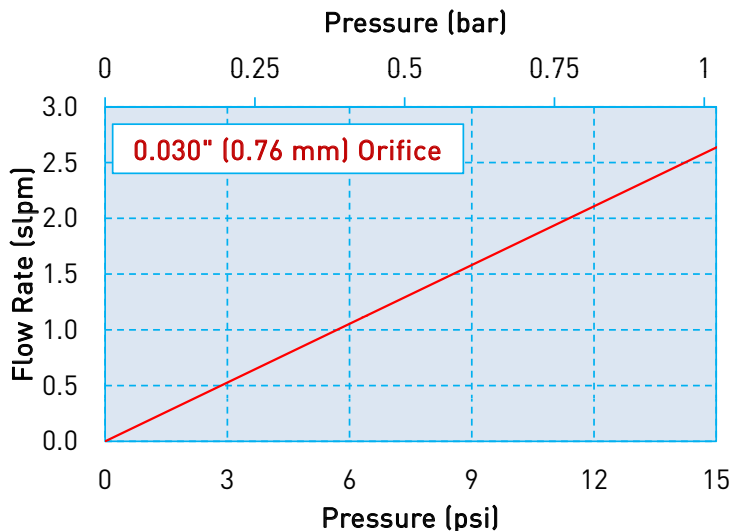
EXAMPLE:

Please refer to flow chart labeled 0.030" (0.75mm) orifice. If your application requires 40 PSIG of pressure at 5 SLPM of flow, the 0.030" orifice VSO®-HP would be the correct device for your application.

This graph shows that a 0.030" orifice will flow up to 7.5 SLPM at 40 PSIG making it the right choice for your application.

VSO®-HP Flow Capability Sizing Chart

Typical Flow vs Pressure @ 25°C

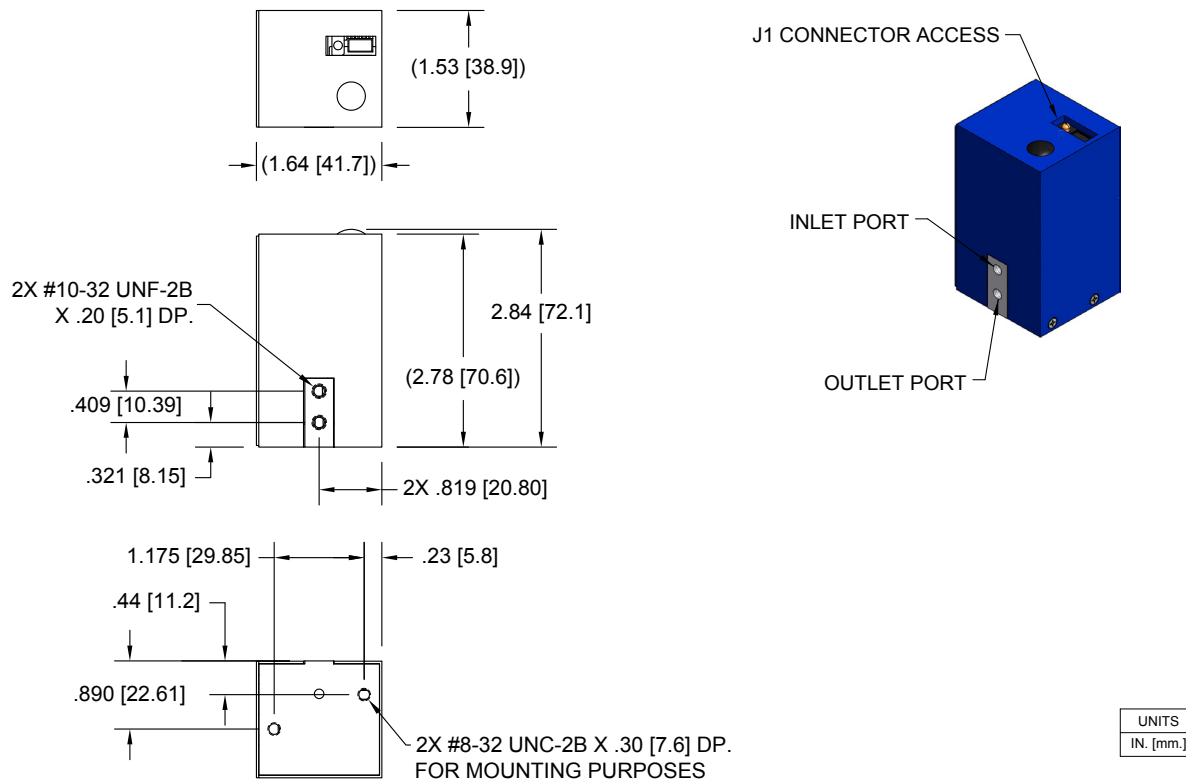


VSO®-HP High Performance Miniature Pressure Controllers

Mechanical Integration

Dimensions

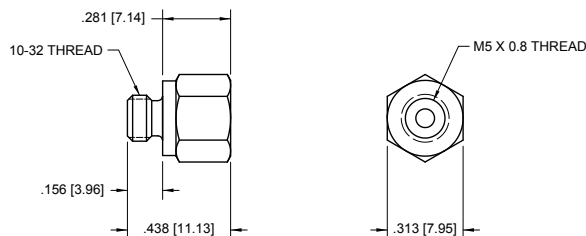
VSO-HP Basic Dimensions



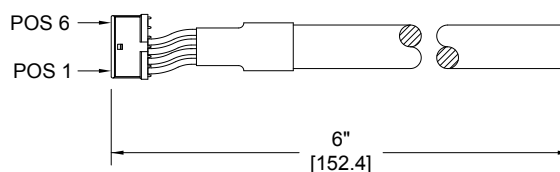
Electrical Interface

Molex, 874380642 Connector (included)		
Signal	Conn. Pin No.	Color
Main Power, 24 VDC	1	Yellow
Input Control Signal, 0-5 VDC	2	Green
Monitor Signal Output, 0-5 VDC	3	Red
System Ground	4	Black
N/A	5	No Connection
N/A	6	No Connection

Metric Adaptor (available option)



Molex #874380642 to flying lead Plug-in Cable (included)



VSO®-HP High Performance Miniature Pressure Controllers

Installation Guide

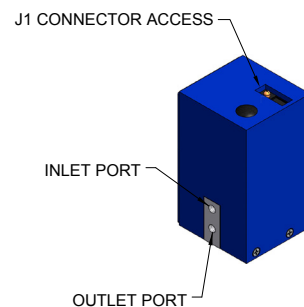
The VSO®-HP is a dynamic pressure controller that uses proportional valve technology to supply an accurate and stable pressure source for a variety of application requirements. It also incorporates a secondary pressure release valve that automatically reduces the pressure rapidly by venting it to atmosphere as required. Installation of this device requires the completion of a few easy steps.

They are as follows:

- Ensure that the gas is non corrosive, clean and dry.
- Connect the gas supply to the Inlet (Top) Port on the VSO®-HP.
- Connect a line requiring the controlled pressure to the Outlet (Bottom) Port on the VSO®-HP.
- Pneumatic ports are 10-32 UNF-2B Female. Metric Adapter option is available.
- LED indicator lights when unit is in control.
- The EPC effective control range is 10%-100% of full scale.
- Electrical connections are made through connection at the top of the unit.

They are as follows:

Molex, 874380642 Connector (included)	
Signal	Conn. Pin No. Color
Main Power, 24 VDC	1 Yellow
Input Control Signal, 0-5 VDC	2 Green
Monitor Signal Output, 0-5 VDC	3 Red
System Ground	4 Black
N/A	5 No Connection
N/A	6 No Connection



Key Things to Remember:

The pressure controller requires downstream restriction to build pressure. There are two ways to accomplish this:

- Use a venting controller. The venting controller is configured with an internal vent orifice that is roughly 40% of the controller orifice size. This configuration of controller can supply pressure to an application with a effective downstream restriction that represents 30% of the controller orifice size down to a completely restricted application.
- Use of a non-venting controller. The non-venting controller does not incorporate an internal vent orifice and will require a downstream restriction of roughly 20% to 60% of the controller's orifice size.

For example:

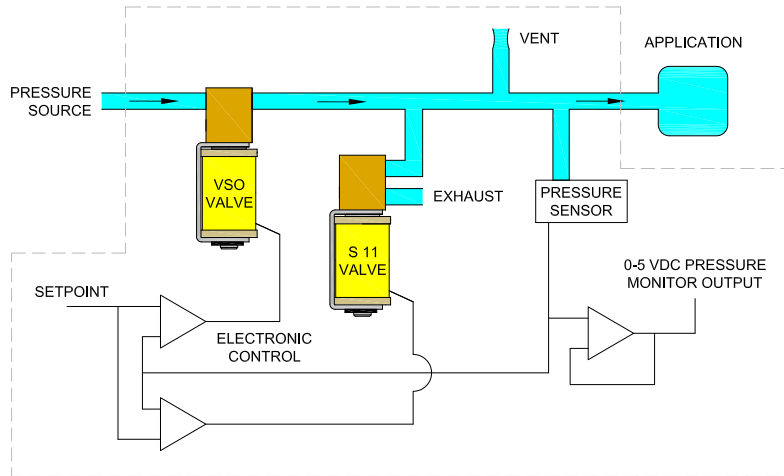
A non-vented controller with an orifice size of 0.030" should have 0.006" to 0.018" effective downstream restriction.

Note: The secondary depressurization valve does not effect the VSO®-HP's ability to control pressure and is not taken into account while estimating the application flow requirements versus the unit's ability to supply flow for the purpose of selecting the correct proportional valve size. On a venting unit, it works in parallel with the venting orifice.

VSO®-HP High Performance Miniature Pressure Controllers

Configuration

Pressure Controller with Internal Vent



With Internal Vent.

A vent is required when the application does not consume any gas. For example, pressurizing a piloted regulator.

Ordering Information

Part Number	990-005303-001	990-005303-005	990-005303-015
Series	VSO-HP	VSO-HP	VSO-HP
Configuration	Internal Vent	Internal Vent	Internal Vent
Effective Orifice	0.030" (0.76 mm)	0.030" (0.76 mm)	0.030" (0.76 mm)
Relief Valve Orifice	0.030" (0.76 mm)	0.030" (0.76 mm)	0.030" (0.76 mm)
Main Voltage	24 VDC	24 VDC	24 VDC
Control Voltage	0-5 VDC	0-5 VDC	0-5 VDC
Pressure Range	0-1 psig	0-5 psig	0-15 psig

Accessories

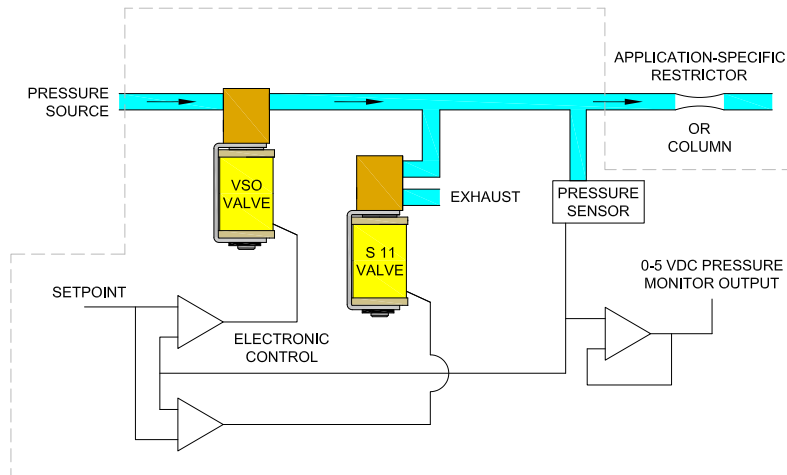
Part Number	190-008246-001
Configuration	10-32 Male to M5 x 0.8 mm Female Adaptor w/O-ring
Wetted Materials	FKM & Brass



VSO®-HP High Performance Miniature Pressure Controllers

Configuration

Pressure Controller with No Internal Vent



With No Internal Vent.

An internal vent may not be required when the application consumes a high rate of gas or the gas is coming from a limited source and/or is flammable.

Ordering Information

Part Number	990-005313-007	990-005313-015	990-005313-100
Series	VSO-HP	VSO-HP	VSO-HP
Configuration	No Internal Vent	No Internal Vent	No Internal Vent
Effective Orifice	0.030" (0.76 mm)	0.030" (0.76 mm)	0.030" (0.76 mm)
Relief Valve Orifice	0.030" (0.76 mm)	0.030" (0.76 mm)	0.030" (0.76 mm)
Main Voltage	24 VDC	24 VDC	24 VDC
Control Voltage	0-5 VDC	0-5 VDC	0-5 VDC
Pressure Range	0-7 psig	0-15 psig	0-100 psig

Accessories	
Part Number	190-008246-001
Configuration	10-32 Male to M5 x 0.8 mm Female Adaptor w/O-ring
Wetted Materials	FKM & Brass



NOTE: In order to provide the best possible solution for your application, please provide the following requirements when contacting Applications Engineering:

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

Please click on the Order On-line button (or go to www.parker.com/precisionfluidics/vsohp) to configure your VSO-HP Miniature Electronic Pressure Controller. For more detailed information, visit us on the Web, or call and refer to Performance Spec. #790-002250-001 and Drawing #890-003186-001.

PPF-EPC-002/US July 2016

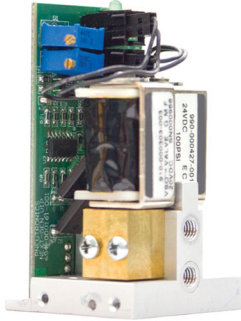
For more information call +1 603 595 1500 or email ppfinfo@parker.com
Visit www.parker.com/precisionfluidics



VSO®-LP


Pressure Controllers

Long Performance Miniature Pressure Controllers



Designed for industrial and OEM instrument applications, the VSO®-LP Long Performance Pressure Controller delivers integral closed loop proportional control with the highest level of accuracy and stability. With an extra internal exhaust valve, the VSO®-LP provides rapid depressurization and response for precise pressure control. The VSO®-LP offers the flexibility to control pressure or flow, replacing manual regulators, flow controllers, and needle valves. This product uses Parker Hannifin's patented VSO® proportional valve for precise and consistent performance.

Features

- Integrated exhaust valve provides rapid depressurization and response
- Tested for long life to improve system availability
- Low power consumption reducing heat generation
- Customer configurable for pressure control or flow control
- Offers silent operation to reduce overall system noise
- Analog control for added design flexibility
- RoHS compliant 

Typical Applications

- Pneumatic Motion Control
- Industrial Process Pressure Supply
- Pilot Pressure Generation

Product Specifications

Physical Properties

Valve Technology:
Thermally compensated proportional valve, solenoid exhaust valve
Media:
Non-corrosive gases
Operating Environment:
32 to 131°F (0 to 55°C)
Storage Temperature:
-40 to 149°F (-40 to 65°C)
Length:
1.49 in (37.8 mm)
Width:
1.58 in (40.1 mm)
Height:
2.78 in (70.6 mm)
Weight:
6.2 oz (183.4 g)
Porting:
10-32 female ports
Metric adaptor available

Electrical

Power:
24 VDC \pm 10%
Input Control Signal:
0-5 VDC standard
Monitor Output Voltage:
0-5 VDC
Current Requirement:
<550 mA
Electrical Connector:
Molex 6 pin miniature connector

Wetted Materials

Manifold:
AL 6061-T6, FKM, 302 Series SS
Valve:
FKM, 300 Series SS
Brass 36000HT
Tubing:
Ester Based Polyurethane
Sensor:
Glass, Silicon, Silicone, Polyphenylene Sulfide

Performance Characteristics

Pressure Ranges:
0-15 psig (0-1.03 bar)
0-100 psig (0-6.89 bar)
<i>(Effective control range is 10%-100% of full scale)</i>
Pressure Accuracy:
\pm 1.5% Full Scale max
Response:
<15 ms
<i>(Response time to target pressure is output volume dependent)</i>
Linearity:
< \pm 1.5% Full Scale

VSO is a registered trademark of Parker Hannifin Corporation.

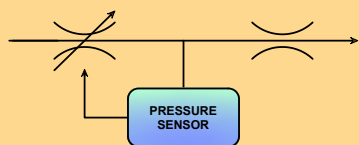


VSO®-LP Long Performance Miniature Pressure Controllers

How Flow Effects Pressure Control

This flow curve illustrates the flow capability of the VSO®-LP pressure controller.

Pressure control using a constant flow approach requires the system to manage pressure drops across a variable orifice and a fixed orifice (see below).



Choosing the Right Product

In many cases, the fixed orifice is the cumulative restriction of the application system consuming gas in parallel with the venting orifice. That fixed restriction and the inlet supply pressure level are key factors when determining if the VSO®-LP is the right solution for your application.

If the orifice is too small, it may fail to generate enough flow to drop the required pressure across the fixed orifice. If the orifice is too large, the Pressure Controller can become unstable. When considering orifice size please remember that the effective control range is 10%-100% of full scale.

The VSO®-LP makes use of a secondary pressure release valve. This valve is an "off and on" valve and is used to depressurize the controlled pressure upon a pressure reduction requested through the lowering of the set point. This valve does not effect the pressure control while the unit is in the stable state of pressure regulation.

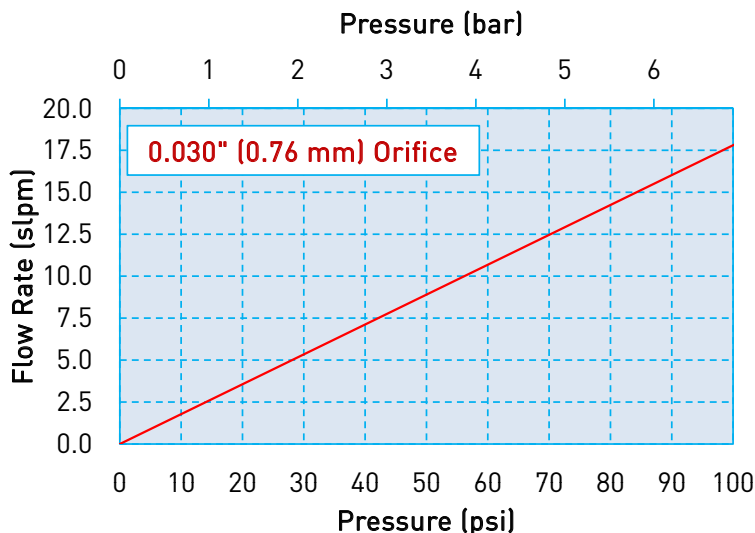
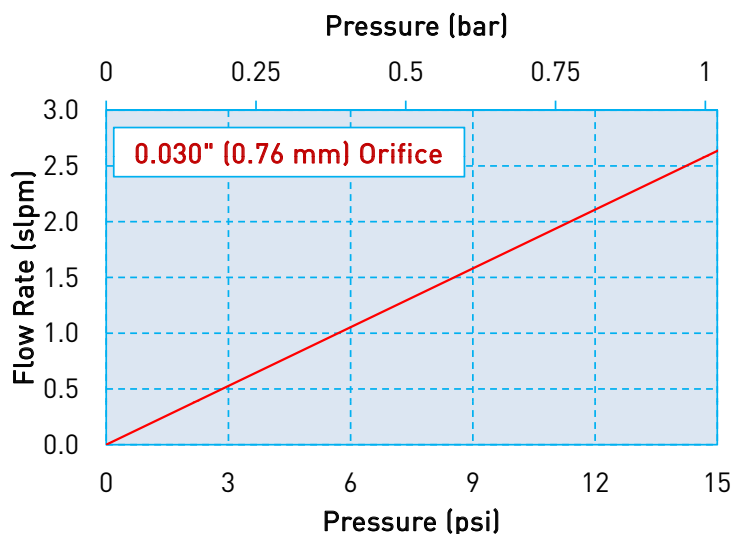
EXAMPLE:

Please refer to flow chart labeled 0.030" (0.75mm) orifice. If your application requires 40 PSIG of pressure at 5 SLPM of flow, the 0.030" orifice VSO-LP would be the correct device for your application.

This graph shows that the 0.030" orifice, 100 PSIG unit will flow up to 7.5 SLPM at 40 PSIG making it the right choice for your application.

VSO®-LP Flow Capability Sizing Charts

Typical Flow vs Pressure @ 25°C

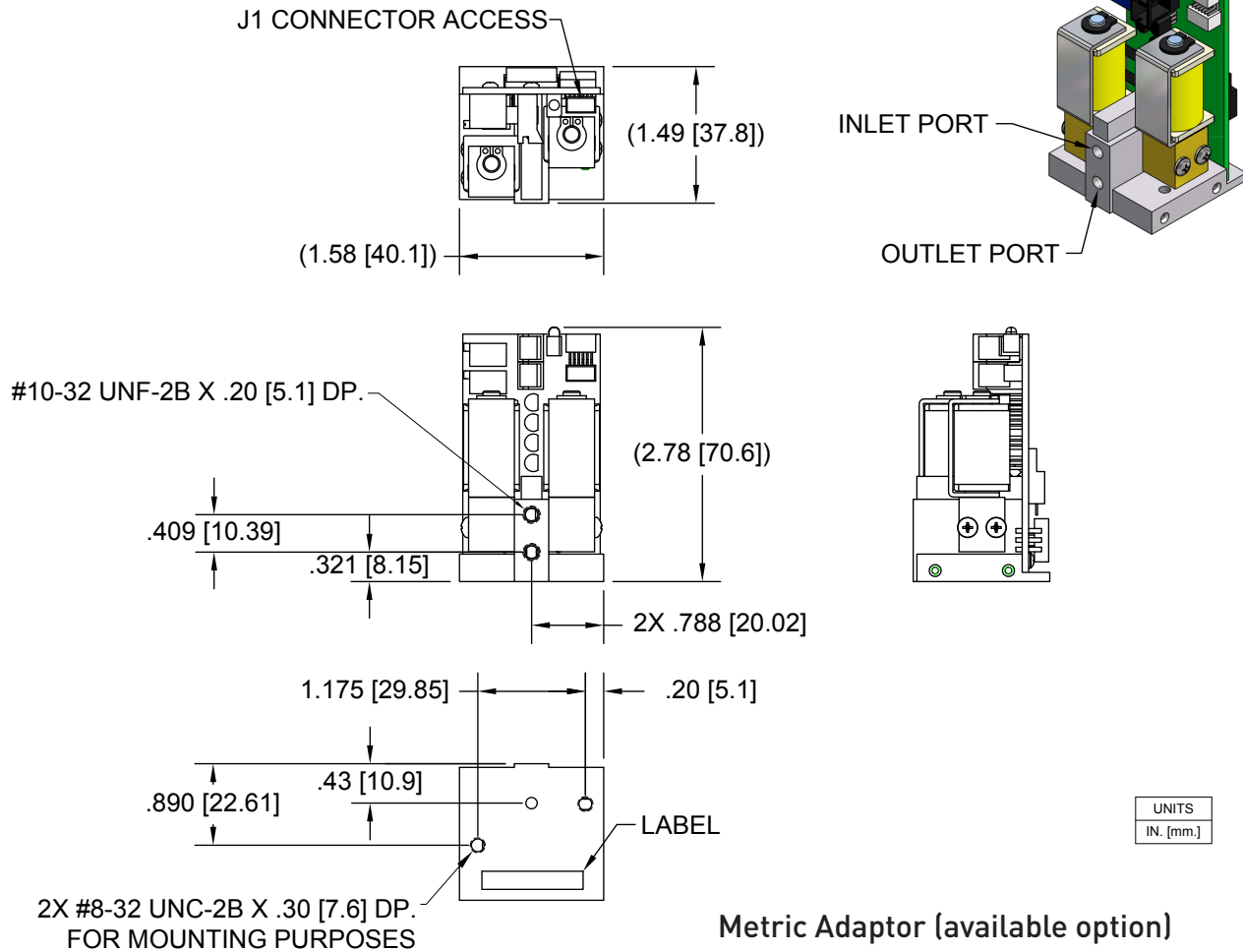


VSO®-LP Long Performance Miniature Pressure Controllers

Mechanical Integration

Dimensions

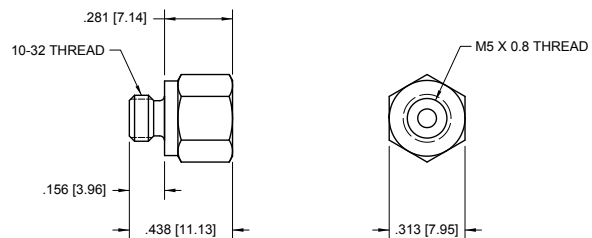
VSO-LP Basic Dimensions



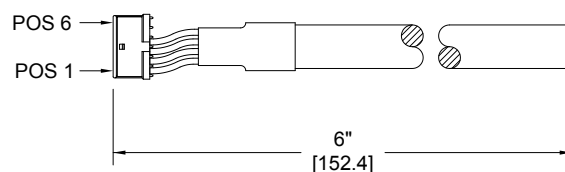
Electrical Interface

Molex, 874380642 Connector (included)		
Signal	Conn. Pin No.	Color
Main Power, 24 VDC	1	Yellow
Input Control Signal, 0-5 VDC	2	Green
Monitor Signal Output, 0-5 VDC	3	Red
System Ground	4	Black
N/A	5	No Connection
N/A	6	No Connection

Metric Adaptor (available option)



Molex #874380642 to flying lead Plug-in Cable (included)



VSO®-LP Long Performance Miniature Pressure Controllers

Installation Guide

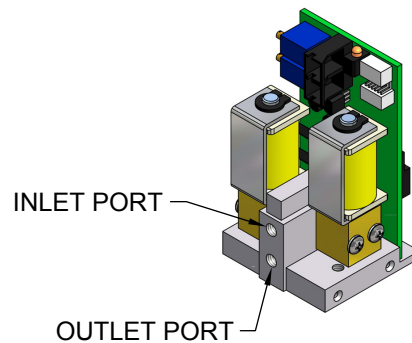
The VSO®-LP is a dynamic pressure controller that uses proportional valve technology to supply an accurate and stable pressure source for a variety of application requirements. It also incorporates a secondary pressure release valve that automatically reduces the pressure rapidly by venting it to atmosphere as required. Installation of this device requires the completion of a few easy steps.

They are as follows:

- Ensure that the gas is non corrosive, clean and dry.
- Connect the gas supply to the Inlet (Top) Port on the VSO®-LP.
- Connect a line requiring the controlled pressure to the Outlet (Bottom) Port on the VSO®-LP.
- Pneumatic ports are 10-32 UNF-2B Female. Metric Adapter option is available.
- LED indicator lights when unit is in control.
- The EPC effective control range is 10%-100% of full scale.
- Electrical connections are made through connection at the top of the unit.

They are as follows:

Molex, 874380642 Connector (included)		
Signal	Conn. Pin No.	Color
Main Power, 24 VDC	1	Yellow
Input Control Signal, 0-5 VDC	2	Green
Monitor Signal Output, 0-5 VDC	3	Red
System Ground	4	Black
N/A	5	No Connection
N/A	6	No Connection



Key Things to Remember:

The pressure controller requires downstream restriction to build pressure.

- The VSO-LP is a venting controller. The venting controller is configured with an internal vent orifice that is roughly 40% of the controller's variable orifice size. This configuration of controller can supply pressure to an application with a effective downstream restriction that represents 30% of the controller orifice size down to a completely restricted application.

For example:

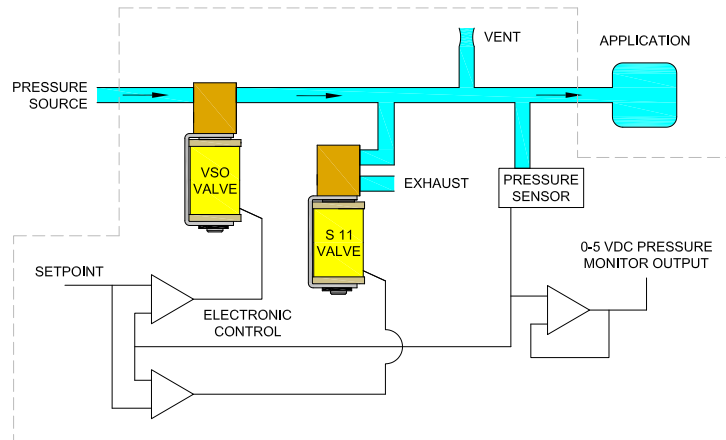
A vented controller with an orifice size of 0.030" should have 0.000" to 0.010" effective downstream restriction.

Note: The secondary depressurization valve does not effect the VSO®-LP's ability to control pressure and is not taken into account while estimating the application flow requirements versus the unit's ability to supply flow. On a venting unit, it works in parallel with the venting orifice.

VSO®-LP Long Performance Miniature Pressure Controllers

Configuration

Pressure Controller with Internal Vent



With Internal Vent.

A vent is required when the application does not consume any gas. For example, pressurizing a piloted regulator.

Ordering Information

Part Number	990-005403-015	990-005403-100
Series	VSO-LP	VSO-LP
Configuration	Internal Vent	Internal Vent
Effective Orifice	0.030" (0.76 mm)	0.030" (0.76 mm)
Relief Valve Orifice	0.030" (0.76 mm)	0.030" (0.76 mm)
Power	24 VDC	24 VDC
Control Voltage	0-5 VDC	0-5 VDC
Pressure Range	0-15 psig	0-100 psig

Accessories	
Part Number	190-008246-001
Configuration	10-32 Male to M5 x 0.8 mm Female Adaptor w/O-ring
Wetted Materials	FKM & Brass



NOTE: In order to provide the best possible solution for your application, please provide the following requirements when contacting Applications Engineering:

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

Please click on the Order On-line button (or go to www.parker.com/precisionfluidics/vsolp) to configure your VSO-LP Miniature Electronic Pressure Controller. For more detailed information, visit us on the Web, or call and refer to Performance Spec. #790-002272-001 and Drawing #890-003186-002.

PPF-EPC-002/US July 2016

For more information call +1 603 595 1500 or email ppfinfo@parker.com
Visit www.parker.com/precisionfluidics



NOTES



WARNING

FAILURE OR IMPROPER SELECTION OR IMPROPER USE OF THE PRODUCTS AND/OR SYSTEMS DESCRIBED HEREIN OR RELATED ITEMS CAN CAUSE DEATH, PERSONAL INJURY, AND PROPERTY DAMAGE.

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