## Enclosure Protection Vents



# Model EPV


**Model EPV-1-SA-00**
**(Top Mount Configuration)**


**Model EPV-3-SA-90**
**(Side mount Configuration)**

## Vent Specifications

| | | | |
|---|---|---|---|
| Vent Dimensions: | | See Page 99 | |
| Shipping Weights (lb): | | -00 | -90 |
| | EPV-1: | 3 | 4 |
| -00: Top Mount | EPV-2: | 3 | 4 |
| -90: Side Mount | EPV-3: | 4 | 5 |
| | EPV-4: | 7 | 9 |
| | EPV-5: | 10 | 12 |
| Temp. Range: | | -20°F to +120°F (-29ºC to +59ºC) | |
| Normal Operating Pressure: | | * 2" to 5" (50.8mm to 127mm) of Water | |
| Maximum Operating Pressure: | | ** 5" to 7" (127mm to 177mm) of Water | |

* Normal operating pressure indicates average enclosure pressure when vent is used with a compatible Rapid Exchange® purging system.

** Maximum operating pressure indicates enclosure pressure when vent is used with compatible enclosure protection systems during simulated failure of all pressure control devices.

## Material Specifications

| | |
|---|---|
| **BODY COMPONENTS** | |
| Vent Body Cap: | 0.032" 3003 Drawn Alum. |
| Vent Base: | A.S.E. 306, 308 Cast Alum. |
| Vent Mounting Hub: | Zinc Plated Steel |
| Vent Pipe Fittings: | Schedule 40 3003 Alum. |
| Vent Nameplates: | Lexan® |
| Fastener Hardware: | 316 SS |
| **EXHAUST ELEMENTS** | |
| Spark Arrestor (SA): | 0.1" 100 Micron 316 SS |
| Element Cap: | 0.25" 6061 Alum. |
| **VALVE ASSEMBLY** | |
| Valve Base: | 14 Ga. Machined 316 SS |
| Valve Seat Disc: | 14 Ga. Machined 316 SS |
| Valve Hinge: | Zytel® 8018 - 14% Glass Fill |
| Valve Pin & Rivets: | 316 SS |
| Disc Adhesive: | Urethane Epoxy |

Lexan® is a registered trademark of the General Electric Company

Zytel® is a registered trademark of the DuPont Corporation

## Description

Model EPV enclosure protection vents are self-seating gravity controlled, low pressure relief valves designed to ventilate excessive enclosure pressures that are created by the Rapid Exchange® process, or the failure of enclosure pressure control devices. Each vent features a seamless cap, a spark arresting (SA) style exhaust element, a friction-free valve assembly, a base and a mounting hub. The mounting hub, along with associated pipe fittings, permits direct mounting through a round cutout on the top or side of a protected enclosure. This device functions in conjunction with Pepperl+Fuchs enclosure protection systems, to reduce the hazardous (classified) area rating within protected enclosure(s), in accordance with the NEC - NFPA 70, Article 500, NFPA 496 and ISA 12.4. In addition, this device protects enclosures from all limited sources of pressure relief, regardless of source - i.e. unrelated pneumatic equipment, such as analyzers or other process control or measurement instrumentation.

## Operation

Pepperl+Fuchs enclosure protection vents operate in a manner that similar to a self-closing swing-check valve, and must, therefore, be installed in a true vertical position. They begin operation when pressure within the protected enclosure exceeds 0.65 inches (16.5mm) of water ± 0.1 inch (2.5mm). When the valve seat cracks, pressure is immediately released, and the effects of gravity begin yielding to the forces of enclosure back-pressure. Each vent is designed to operate in specific conjunction with a cross-section of Pepperl+Fuchs Rapid Exchange® and pressurization/purging systems that exhibit similar flow characteristics, in order to ventilate their maximum (total failure condition) flowrate, while maintaining no more than 5 to 7 inches (127mm to 177mm) of water pressure within the protected enclosure(s).*

* Vent, Enclosure Protection System and protective gas supply must be sized, installed and operated in strict accordance with all related start-up instructions on the System, and with all related directives of the Installation and Operation Manual provided with the Enclosure Protection System.



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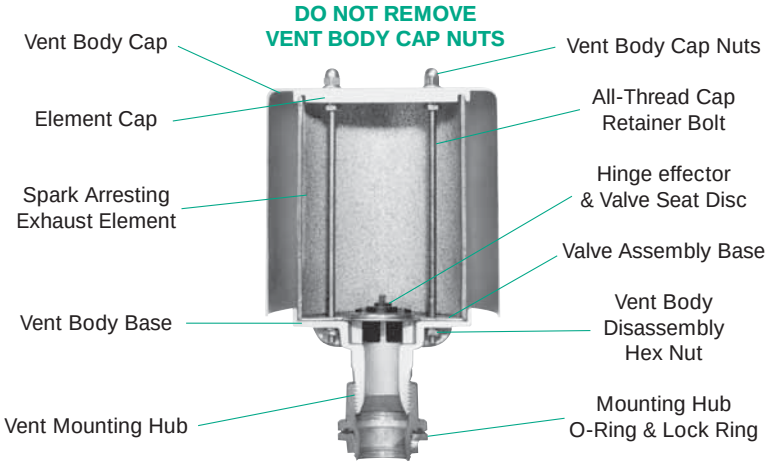



**Model EPV-3-SA-00**
**Cut-Away**

## Model Number Designations

**EPV - 1 - SA - 90**

**Series Model Number**

**Vent Size ***
- **1** - 1/2"
- **2** - 3/4"
- **3** - 1 1/4"
- **4** - 1 1/2"
- **5** - 2"

**Element Style**
- **SA** - Spark Arresting

**Mounting Configuration**
- **00** - Top Mount — top of enclosure
- **90** - Side Mount — side of enclosure

* Vent Size indicates standard trade conduit size.
See Overall Vent Dimensions for actual hub diameter

## FRICTION-FREE VALVE ASSEMBLY

Pepperl+Fuchs Enclosure Protection Vent Valve Assemblies are constructed from three major parts: the valve base, valve hinge and valve seat disc. The valve base is a machine ported flat plate which rests between the vent body base and exhaust element. The valve hinge is rivet fastened to the base and its effector extends over the valve port. The valve seat disc is screw fastened to the effector, under controlled, hand-fitted conditions, to obtain optimum valve seating characteristics.

## Special Note

CUSTOM FINISHES ARE AVAILABLE FOR ALL ALUMINUM PARTS UPON REQUEST & INCLUDE, BUT ARE NOT LIMITED TO, EPOXY OR POWDER COATING & CLEAR ANODIZE FINISHES.

REQUIRED USE INDICATES RAPID EXCHANGE® SYSTEMS THAT REQUIRE A VENT FOR PROPER OPERATION

OPTIONAL USE INDICATES SYSTEMS THAT REQUIRE A VENT OR REDUNDANT SUPPLY REGULATOR

## Classification Notes

U.L. CLASSIFICATION & F.M. CERTIFIED APPLIES TO SPARK ARRESTING VENTS FOR USE IN CLASS I, DIVISION 1, GROUP A-D LOCATIONS, AS SPARK ARRESTING DEVICES.

F.M. CERTIFIED APPLIES TO SA STYLE VENTS FOR USE AS ENCLOSURE OVER PRESSURIZATION PROTECTION DEVICES.

U.L. CLASSIFICATION & F.M. CERTIFIED APPLIES TO SPARK ARRESTING VENTS, WITHOUT VENT VALVE ASSEMBLIES, FOR USE IN DILUTION APPLICATIONS.

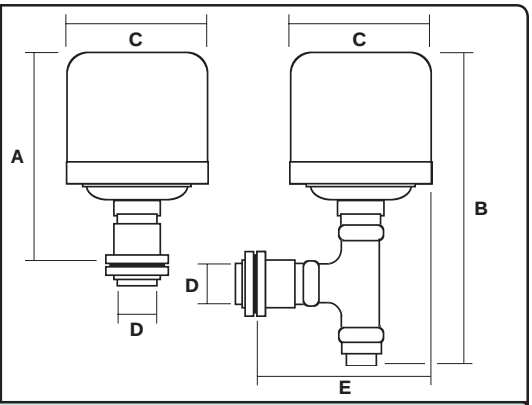
## Vent Compatibility & Flow Rate Chart

| Vent Model | Required Use | Optional Use | SCFH (l)/hr @ 3" (76.2mm) | SCFH (l)/hr @ 7" (177.8mm) |
|---|---|---|---|---|
| EPV-1-SA | | 11, 1011, 1001A & 2001A | 568 (16086) | 1044 (29566) |
| EPV-2-SA | 1012, 1002 & 2002 | | 685 (19399) | 1202 (16086) |
| EPV-3-SA | 1003,2003 3003 & 4003 | 1001B & 2001B | 1143 (32370) | 1971 (55819) |
| EPV-4-SA | 1004,2004 3004 & 4004 | 1001C & 2001C | 2510 (71083) | 4387 (124240) |
| EPV-5-SA | 1005 & 2005 | | 4280 | 4479 |

Normal SCFH measured with enclosure pressure @ 3" (76.2 mm) of water
Max SCFH measured @ 7" (177.8 mm)

## Overall Vent Dimensions

| Vent Model | EPV-1 | EPV-2 | EPV-3 | EPV-4 | EPV-5 |
|---|---|---|---|---|---|
| Hub Size | 1/2" | 3/4" | 1 1/4" | 1 1/2" | 2" |
| A - Top Mnt. Hgt. | 4.75 (120.7) | 4.88 (123.8) | 5.25 (133.4) | 7 (177.8) | 7 (177.8) |
| B - Side Mnt. Hgt. | 7 (177.8) | 7.36 (187.3) | 8 (203.2) | 11 (279.4) | 11.5 (292.1) |
| C - Cap Diameter | 4 (101.6) | 4.63 (117.5) | 5 (127) | 8 (203.2) | 8 (203.2) |
| D - Hub Diameter | 0.88 (22.2) | 1.13 (28.6) | 1.75 (44.5) | 2 (50.8) | 2.5 (63.5) |
| E - Overall Width | 4.25 (108) | 5.25 (133.4) | 5.5 (139.7) | 9 (228.6) | 9 (228.6) |




Hub Size indicates standard trade conduit size. All other dimensions indicate in inches (mm).
All vents require 4" to 7" (101.6 mm to 177.8 mm) underside clearance for testing.