

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 2	
Shipping Weights (lb (kg)):	-00	-90
-00: Top Mount	EPV-1: 3 (1.36)	4 (1.81)
-90: Side Mount	EPV-2: 3 (1.36)	4 (1.81)
	EPV-3: 4 (1.81)	5 (2.27)
	EPV-4: 7 (3.18)	9 (4.08)
	EPV-5: 10 (4.54)	12 (5.44)
Temp. Range:	-20 °F to +120 °F (-29 °C to +49 °C)	
Normal Operating Pressure:	* 2" to 5" (50.8 mm to 127 mm) of Water	
Maximum Operating Pressure:	** 5" to 7" (127 mm to 177 mm) 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

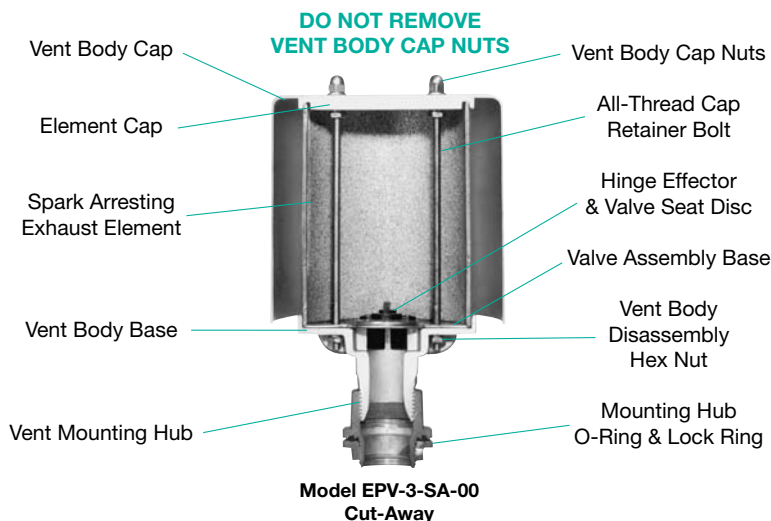
Description

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 the 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 purge 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 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 (16.5 mm) of water $\pm$ 0.1 inch (2.5 mm). 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) flow rate, while maintaining no more than 5 to 7 inches (127 mm to 177 mm) 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.



Model Number Designations

Series Model Number	EPV - 1 - SA - 90
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
90	- Side Mount

top of enclosure
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

Vent Compatibility & Flow Rate Chart

Vent Model	Required Use	Optional Use	SCFH (l)/hr @ 3" (76.2 mm)	SCFH (l)/hr @ 7" (177.8 mm)
EPV-1-SA		11, 1011, 1001A & 2001A	568 (16086)	1044 (29566)
EPV-2-SA	1012, 1002 & 2002		685 (19399)	1202 (34041)
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 (121210)	4479 (126845)

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

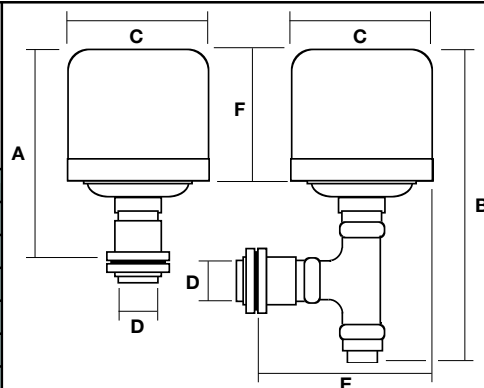
Classification Notes

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

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

UL CLASSIFICATION & FM CERTIFIED APPLIES TO SPARK ARRESTING VENTS, WITHOUT VENT VALVE ASSEMBLIES, FOR USE IN DILUTION APPLICATIONS.

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)
F - Cap Length	2.75 (69.9)	2.75 (69.9)	2.75 (69.9)	3.75 (95.3)	3.75 (95.3)



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