

ProFlapPlusIII Passive Isolation Valve

Explosion Protection System Components

Advantages:

- Passive design with no triggering sensors
- Applicable for dusts with Kst values up to 300 bar m/s for duct sizes from 5" to 12" (140mm to 315mm) and Kst values up to 200 bar-m/s for duct sizes from 14" to 40" (355mm to 1000mm)
- Fully compliant with NFPA 69-2014 continuous dust accumulation monitoring, flap blade locking, and process shut down requirements
- Low cost explosion isolation
- Operational conditions monitored via integrated sensors, thus allowing longer maintenance intervals
- Rugged, durable design requires minimal maintenance
- Easy access for inspection via inspection cover
- Short mounting distances
- ATEX certified according to the latest standard, prEN16447

Application

For end-users and OEMs requiring a low cost and reliable explosion isolation solution to mitigate explosion propagation risks to upstream equipment and to meet the requirements of OSHA Combustible Dust Directive, NFPA 654, and NFPA 69, IEP Technologies ProFlapPlusIII passive isolation valve is an effective, self-actuating device providing inlet explosion isolation to protected vessels handling combustible dusts. The ProFlapPlusIII is 3rd party certified as a protective system according to EU Guideline 94/9/EC (ATEX 95) and is approved for isolation of organic and inorganic dust explosions.

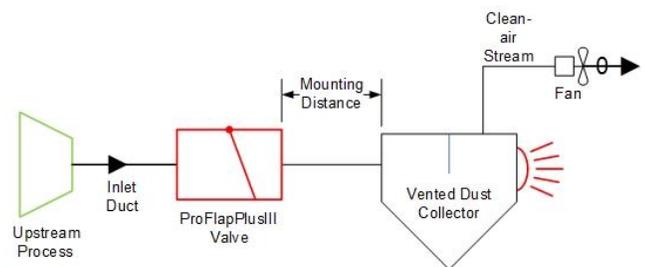
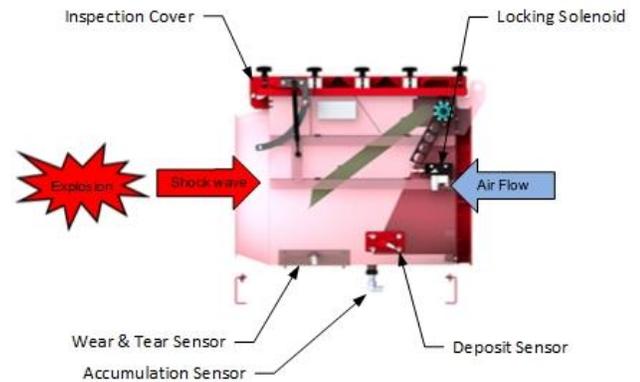
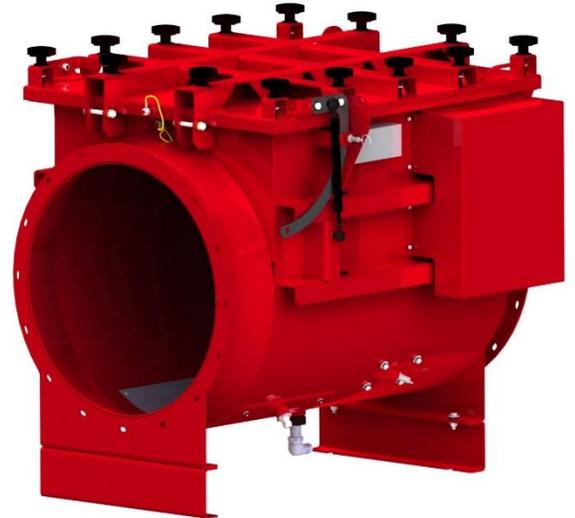
Typical applications for the IEP Technologies ProFlapPlusIII valve include inlet explosion isolation of dust collectors, cyclones, and other process equipment.

Description

The IEP Technologies ProFlapPlusIII backpressure flap valve has a carbon steel body incorporating a stainless steel flap. The valve is designed to withstand pressures up to the maximum reduced pressure (Pred, max) listed in the specifications section below.

During operation, the downstream mounted backpressure flap is kept open by means of the airflow. At standstill, the flap closes due to its own weight.

In the event of an explosion within a protected system, the flap closes due to the pressure front propagating within the duct and mitigates propagation of the flame and pressure to upstream equipment. Wear, accumulation, and deposit sensors increase the reliability of this passive isolation technique, and increase the intervals between inspections.



IEP Technologies ProFlapPlusIII Isolation Valve Application Example

Specifications

Mounting Position: Horizontal, pull-flow applications (fan behind ProFlapPlusIII)

Air Flow Velocity: 2950 ft/min to 5900 ft/min (15.0 m/s to 30 m/s)

Materials: Housing: Carbon Steel*, Flap: Stainless Steel

ProFlapPlusIII Specifications												
Type	Dust Explosion Class	Kst (max)	Nominal Diameter (NW)	Length (L)	Width (W)	Height (H)	Door Clearance Height (S)	Weight	Pressure Loss @ 3940 ft/min (in H ₂ O)	Pred (max)	Minimum Mounting Distance	Maximum Mounting Distance
ProFlapPlusIII 140	St1	200 bar.m/s	5" (14 cm)	16.5" (42 cm)	15.0" (38 cm)	22.0" (56 cm)	15.4" (39 cm)	79.4 lbs (36 kg)	1.6	10.2 psi (0.7 bar)	8.6 ft (2.6 m)	21.6 ft (6.6 m)
	St2	300 bar.m/s									11.8 ft (3.6 m)	22.9 ft (7.0 m)
ProFlapPlusIII 160	St1	200 bar.m/s	6" (16 cm)	18.5" (47 cm)	15.7" (40 cm)	22.8" (58 cm)	16.5" (42 cm)	90.4 lbs (41 kg)	1.6		8.6 ft (2.6 m)	21.6 ft (6.6 m)
	St2	300 bar.m/s									11.8 ft (3.6 m)	22.9 ft (7.0 m)
ProFlapPlusIII 200	St1	200 bar.m/s	8" (20 cm)	20.9" (53 cm)	17.3" (44 cm)	24.0" (61 cm)	18.1" (46 cm)	101.4 lbs (46 kg)	1.6		8.6 ft (2.6 m)	21.6 ft (6.6 m)
	St2	300 bar.m/s									11.8 ft (3.6 m)	22.9 ft (7.0 m)
ProFlapPlusIII 250	St1	200 bar.m/s	10" (25 cm)	23.2" (59 cm)	19.3" (49 cm)	26.0" (66 cm)	18.9" (48 cm)	121.3 lbs (55 kg)	1.3		8.6 ft (2.6 m)	21.6 ft (6.6 m)
	St2	300 bar.m/s									11.8 ft (3.6 m)	22.9 ft (7.0 m)
ProFlapPlusIII 280	St1	200 bar.m/s	11" (28 cm)	24.8" (63 cm)	20.5" (52 cm)	27.2" (69 cm)	20.5" (52 cm)	132.3 lbs (60 kg)	1.3		8.6 ft (2.6 m)	21.6 ft (6.6 m)
	St2	300 bar.m/s									11.8 ft (3.6 m)	22.9 ft (7.0 m)
ProFlapPlusIII 315	St1	200 bar.m/s	12" (31.5 cm)	26.0" (66 cm)	22.4" (57 cm)	29.1" (74 cm)	21.3" (54 cm)	152.1 lbs (69 kg)	1.4		8.6 ft (2.6 m)	21.6 ft (6.6 m)
	St2	300 bar.m/s									11.8 ft (3.6 m)	22.9 ft (7.0 m)
ProFlapPlusIII 355	St1	200 bar.m/s	14" (35.5 cm)	28.7" (73 cm)	24.8" (63 cm)	31.1" (79 cm)	23.2" (59 cm)	196.2 lbs (89 kg)	1.5	7.3 psi (0.5 bar)	8.6 ft (2.6 m)	21.6 ft (6.6 m)
ProFlapPlusIII 400	St1	200 bar.m/s	16" (40 cm)	29.5" (75 cm)	26.8" (68 cm)	32.7" (83 cm)	25.4" (65 cm)	218.3 lbs (99 kg)	1.6			
ProFlapPlusIII 450	St1	200 bar.m/s	18" (45 cm)	31.9" (81 cm)	28.7" (73 cm)	34.6" (88 cm)	27.6" (70 cm)	246.9 lbs (112 kg)	1.7			
ProFlapPlusIII 500	St1	200 bar.m/s	20" (50 cm)	34.3" (87 cm)	31.1" (79 cm)	36.6" (93 cm)	29.9" (76 cm)	280 lbs (127 kg)	1.8			
ProFlapPlusIII 560	St1	200 bar.m/s	22" (56 cm)	36.6" (93 cm)	33.5" (85 cm)	39.0" (99 cm)	32.3" (82 cm)	319.7 lbs (145 kg)	1.8			
ProFlapPlusIII 630	St1	200 bar.m/s	25" (63 cm)	42.9" (109 cm)	43.3" (110 cm)	43.7" (111 cm)	34.6" (88 cm)	562.2 lbs (255 kg)	2.0			
ProFlapPlusIII 710	St1	200 bar.m/s	28" (71 cm)	46.9" (119 cm)	46.5" (118 cm)	47.2" (120 cm)	37.4" (95 cm)	650.4 lbs (295 kg)	2.0		9.9 ft (3.0 m)	22.9 ft (7.0 m)
ProFlapPlusIII 800	St1	200 bar.m/s	32" (80 cm)	52.0" (132 cm)	49.6" (126 cm)	50.0" (127 cm)	41.7" (106 cm)	736.3 lbs (334 kg)	2.0			
ProFlapPlusIII 900	St1	200 bar.m/s	36" (90 cm)	57.9" (147 cm)	53.5" (136 cm)	54.3" (138 cm)	46.9" (119 cm)	870.8 lbs (395 kg)	2.0			
ProFlapPlusIII 1000	St1	200 bar.m/s	40" (100 cm)	64.2" (163 cm)	57.5" (146 cm)	59.1" (150 cm)	51.6" (131 cm)	1003.1 lbs (455 kg)	2.0			

*Stainless steel versions of the IEP Technologies ProFlapPlusIII back pressure flap valve are available upon request. Please contact IEP Technologies for further information.

** For minimum installation distances where an elbow is required between the IEP Technologies ProFlapPlusIII and the protected vessel inlet, refer to the IEP Technologies ProFlapPlusIII Back Pressure Flap Valve Installation, Operation, and Maintenance Manual.

Note: IEP Technologies ProFlapPlusIII isolation valves are not designed for applications requiring full explosion pressure confinement. They are designed to withstand pressures up to the maximum reduced pressure listed in the "Specifications" section above (10.2 psi or 7.3 psi). It is important that the Pred value of the protected vessel is known before specifying IEP Technologies ProFlapPlusIII passive isolation valves.

Contact Information

Text For additional information, please contact one of the following locations:

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