

ProFlapPlusII Passive Isolation Valve

Explosion Protection System Components

Advantages:

- Passive design with no triggering sensors
- Applicable for organic and inorganic dusts with K_{st} values of 200 bar.m/s for duct sizes of 5" to 40" and K_{st} values of 300 bar m/s for duct sizes of 5" to 12"
- Low cost explosion isolation
- Monitors its operational conditions via integrated sensors, thus allowing longer maintenance intervals
- Rugged, durable design requires minimal maintenance
- Easy access for inspection via door
- Short mounting distances
- ATEX certified according to the latest standard, CEN/TC 305/WG3 N457



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 and NFPA 654, Fenwal's ProFlapPlusII passive isolation valve is an effective, self-actuating device providing inlet explosion isolation to protected vessels handling combustible dusts. The ProFlapPlusII 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.

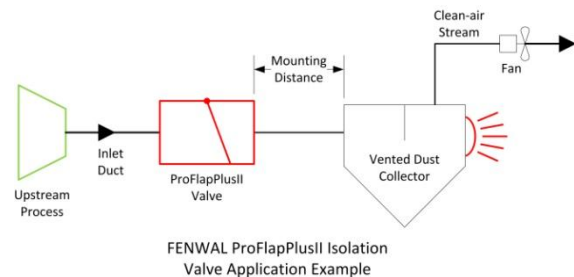
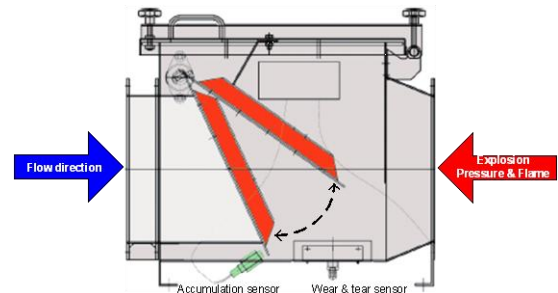
Typical applications for the ProFlapPlusII valve include inlet explosion isolation of dust collectors, cyclones, and other process equipment.

Description

The ProFlapPlusII 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 ($P_{red, max}$) listed in the specifications section below.

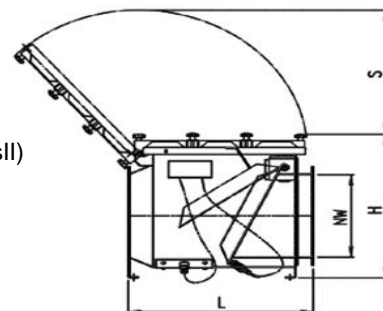
During operation, the downstream mounted backpressure flap is kept open by means of the airflow. At standstill, the flap closes due to its own weight.

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 and deposit sensors increase the reliability of this passive isolation technique, and increase the intervals between inspections.



Specifications

Mounting Position: Horizontal, pull-flow applications (fan behind ProFlapPlusII)
 Air Flow Velocity: 2950 ft/min to 5900 ft/min
 Process Operating Temp.: 14°F to 140°F
 Materials: Housing: Carbon Steel*, Flap: Stainless Steel



Type	Fenwal Part Number	Dust Explosion Class	Kst (max)	Nominal Diameter (NW)	Length (L)	Width (W)	Height (H)	Door Clearance Height (S)	Weight (lbs)	Pressure Loss @ 3940 ft/min (in H ₂ O)	Pred (max)	Minimum Mounting Distance**	Maximum Mounting Distance	
ProFlapPlusII 140	32-700003-001	St1	200 bar.m/s	5"	16.5"	11.0"	16.9"	15.4"	59.5	1.6	10.2 psi (0.7 bar)	8.6 ft (2.6 m)	21.6 ft (6.6 m)	
	32-700004-001	St2	300 bar.m/s									11.8 ft (3.6 m)	22.9 ft (7.0 m)	
ProFlapPlusII 160	32-700003-002	St1	200 bar.m/s	6"	19.3"	17.9"	18.2"	16.5"	68.3	1.6		8.6 ft (2.6 m)	21.6 ft (6.6 m)	
	32-700004-002	St2	300 bar.m/s									11.8 ft (3.6 m)	22.9 ft (7.0 m)	
ProFlapPlusII 200	32-700003-003	St1	200 bar.m/s	8"	20.9"	19.3"	19.9"	18.1"	83.8	1.6		8.6 ft (2.6 m)	21.6 ft (6.6 m)	
	32-700004-003	St2	300 bar.m/s									11.8 ft (3.6 m)	22.9 ft (7.0 m)	
ProFlapPlusII 250	32-700003-004	St1	200 bar.m/s	10"	23.2"	21.3"	20.9"	18.9"	101.4	1.3		8.6 ft (2.6 m)	21.6 ft (6.6 m)	
	32-700004-004	St2	300 bar.m/s									11.8 ft (3.6 m)	22.9 ft (7.0 m)	
ProFlapPlusII 280	32-700003-005	St1	200 bar.m/s	11"	24.8"	22.4"	21.7"	20.5"	110.2	1.3		8.6 ft (2.6 m)	21.6 ft (6.6 m)	
	32-700004-005	St2	300 bar.m/s									11.8 ft (3.6 m)	22.9 ft (7.0 m)	
ProFlapPlusII 315	32-700003-006	St1	200 bar.m/s	12"	26.4"	23.2"	23.2"	21.3"	119.0	1.4		8.6 ft (2.6 m)	21.6 ft (6.6 m)	
	32-700004-006	St2	300 bar.m/s									11.8 ft (3.6 m)	22.9 ft (7.0 m)	
ProFlapPlusII 355	32-700003-007	St1	200 bar.m/s	14"	29.5"	24.0"	25.3"	23.2"	180.8	1.5		7.3 psi (0.5 bar)	8.6 ft (2.6 m)	21.6 ft (6.6 m)
ProFlapPlusII 400	32-700003-008	St1	200 bar.m/s	16"	29.5"	26.4"	27.4"	25.4"	202.8	1.6				
ProFlapPlusII 450	32-700003-009	St1	200 bar.m/s	18"	32.3"	28.7"	28.7"	27.6"	218.3	1.7				
ProFlapPlusII 500	32-700003-010	St1	200 bar.m/s	20"	34.3"	31.5"	31.3"	29.9"	260.1	1.8				
ProFlapPlusII 560	32-700003-011	St1	200 bar.m/s	22"	36.6"	33.1"	33.3"	32.3"	335.1	1.8				
ProFlapPlusII 630	32-700003-012	St1	200 bar.m/s	25"	42.9"	41.3"	38.2"	34.6"	485.0	2.0				
ProFlapPlusII 710	32-700003-013	St1	200 bar.m/s	28"	46.9"	45.3"	41.7"	37.4"	573.2	2.0				
ProFlapPlusII 800	32-700003-014	St1	200 bar.m/s	32"	52.0"	48.4"	46.9"	41.7"	672.4	2.0				
ProFlapPlusII 900	32-700003-015	St1	200 bar.m/s	36"	58.2"	53.5"	51.0"	46.9"	793.7	2.0				
ProFlapPlusII 1000	32-700003-016	St1	200 bar.m/s	40"	64.0"	57.1"	55.1"	51.6"	925.9	2.0	9.9 ft (3.0 m)			

*Stainless steel versions of the ProFlapPlusII back pressure flap valve are available upon request. Please contact FENWAL Customer Service Department for further information.

** For minimum installation distances where an elbow is required between the ProFlapPlusII and the protected vessel inlet, refer to MC-570 Fenwal® ProFlapPlusII Back Pressure Flap Valve Installation, Operation, and Maintenance Manual.

Ordering Information

When ordering, please specify the Fenwal part number listed in the above charts.

Note: ProFlapPlusII 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 P_{red} value of the protected vessel is known before specifying ProFlapPlusII passive isolation valves.

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 This data sheet is for general information only. Actual system design will vary subject to specific process criteria.