

IsoFlap™ PASSIVE ISOLATION VALVE



PRODUCT INFORMATION SHEET

Description

The IEP Technologies range of passive isolation flap valves are low cost and reliable explosion isolation solutions which mitigate explosion propagation risks to upstream equipment. These passive isolation solutions are effective, self-actuating devices providing inlet explosion isolation to protected vessels handling combustible dusts such as dust collectors, cyclones, and other process equipment.

Available models include the IsoFlap™ and IsoFlap™-M passive isolation valve. The IsoFlap version is 3rd party certified as a protective system according to EU directive 2014/34/EU (ATEX Directive) and is approved for isolation of dust explosions. The IsoFlap-M has integrated monitoring of dust accumulation level in the valve body and the blade position which meets the requirements of OSHA Combustible Dust Directive, NFPA 654, and NFPA 69.

The IsoFlap and IsoFlap-M both have a durable carbon steel valve body and a flap blade of high quality stainless steel alloy. The valve is designed to withstand high maximum reduced explosion pressures (Pred) listed in the specification section below. During operation the flap blade is held open by the process airflow, in case of an explosion the pressure front closes and locks the blade in place, mitigating the propagation of the flame and pressure to the upstream equipment.

Available as an option is the IsoFlap-M Interface Module, a PCB based system monitoring device designed for use with the IsoFlap-M version of the flap valve. The Interface Module includes intrinsically safe barriers for monitoring the IsoFlap-M sensors, provides for process interlock functions, and includes diagnostic and maintenance functions. The Interface Panel operates on either 120 or 230 VAC.

Advantages

- Passive design without triggering sensors
- Certified according EN16447
- IsoFlap-M monitored version fully compliant to NFPA 69 with continuous dust accumulation and flap position monitoring
- Low pressure drop
- Short mounting distances
- Tested and approved to allow up to 2 elbows between IsoFlap and downstream vessel
- Easy access through hinged inspection cover with gas spring assisted cover opening for valves \geq DN630
- Leak tight design with bearing shaft internal to housing
- Cylindrical housing design reduces product build up
- Corrosion resistant design confirmed by salt spray corrosion test



IsoFlap Isolation Valve



IsoFlap-M Interface Module

Application

Wherever a passive explosion isolation device is suitable, the IEP Technologies valve series IsoFlap offer a very cost effective solution to mitigate the risk of explosion propagation to connected equipment.

When applying explosion protection methods such as venting or flameless venting it is also necessary to reduce the risk of explosion propagation between interconnected process vessels. Here the IsoFlap valves offer an effective, self actuating explosion isolation to protected vessel handling combustible dusts.

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

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Specifications

Nominal Diameter mm(in)	K _{st} max. bar m/sec	Minimum Vessel Volume m ³ (ft ³)	PRED max. bar (psi)	Minimum Mounting Distance with 0 or 1 Elbow m (ft)	Minimum Mounting Distance with 2 Elbows m (ft)	Maximum Mounting Distance m (ft)	Pressure Drop @ 20 m/s or 3950 ft/min Pa (in-H ₂ O)	
100 (4)	300 (ST1 & ST2)	0.46 (16.2)	1.0 (14.5)	1.5 (5.0)	2.6 (8.5)	7.0 (23)	200 (0.804)	
150 (6)			1.0 (14.5) for ST1 0.5 (7.25) for ST2	2.0 (6.6)	Elbows not allowed for ST2		190 (0.764)	
200 (8)							220 (0.884)	
250 (10)	200 (ST1)	1.7(60.0)	0.5 (7.25)	3.5 (11.5)	4.7 (15.4)	8.0 (26.2)	260 (1.045)	
315 (12)								280 (1.125)
355 (14)								300 (1.206)
400 (16)		1.6 (56.5)	5.0 (16.4)	6.4 (21.0)	240 (0.964)			
450 (18)					260 (1.045)			
500 (20)					280 (1.125)			
560 (22)					310 (1.246)			
630 (25)	6.0 (212.0)	0.45 (6.5)	6.1 (20.0)	330 (1.326)				
710 (28)				350 (1.407)				

* Dust Concentration in Piping of 200g/m³