

Fike I-FLEx™ Explosion Isolation Valve

Description

The Fike I-Flex™ Valve, used in conjunction with other Fike Explosion Protection System components, is designed to provide a user friendly and cost effective means to prevent deflagration propagation through interconnecting pipes or conveying lines to other process equipment or operating locations.

This novel Explosion Protection System is purposely built to meet and exceed users' expectations and industry standards. It is the most compact explosion isolation system available in today's market. The valve is simply connected to the standard plant air system and wired to a Fike explosion protection controller. Although simple in operation, the I-Flex™ Valve is designed to provide the highest reliability and meet the most stringent standards with respect to hygiene and safety.



Data Sheet

Features and Benefits

- Stops flame, pressure, sparks and embers
- Fast closure
- Reduced installation distance from vessel
- Explosive-free activation
- Uses readily available plant air
- Reset and re-use by plant personnel within seconds
- Can be used as a process valve
- Compact and lightweight
- Proven concept, third party tested and certified (CE, ATEX)
- Wetted parts in conformity with Food Contact Materials Directive

Safety Function

The Fike I-Flex™ Valve consists of a heavy duty valve body containing a rugged though flexible elastomer process section. Upon explosion detection, compressed plant air is released at high speed into the valve body such that the process section is fully closed within milliseconds. This full closure provides a mechanical block to flame and pressure, thereby stopping explosion propagation beyond the valve. The full-port design prevents pressure drop and clogging under the most difficult conditions. All wetted parts are of food grade quality and conductive to prevent build up of electrostatic charges by the flow.

Specifications

Type	I-Flex™ Explosion Isolation Valve			
Available sizes	DN80	DN100	DN125	DN150
Explosion hazard	Combustible dust, $K_{St} \leq 250 \text{ bar.m/s}$, $P_{max} \leq 10 \text{ bar}$			
Ambient temperature	-15 °C to 50 °C			
Operating temperature	-20 °C to 80 °C			
Operating pressure ⁽¹⁾	-140 mbar to 70 mbar			
Air supply pressure	6.5 bar (± 0.5 bar) (2.5 bar for process valve function)			
Ingress protection degree	IP66 (IP65 when used as process valve)			
Hazardous area classification	ATEX II 3 G/D			
Body Material	Aluminium 6082 T6 (3.2315)			
Wetted parts	Conductive food grade EPDM (FDA) / 1.4404 (316L SST)			
Options	Remote reset (standard: manual reset) Process valve execution Valve closed indication pressure switch			

(1) Use the vacuum compensation for deeper vacuum applications

Note: If compressed air temperature is below 0°C, make sure that the compressed air is completely void of humidity using appropriate dryers.

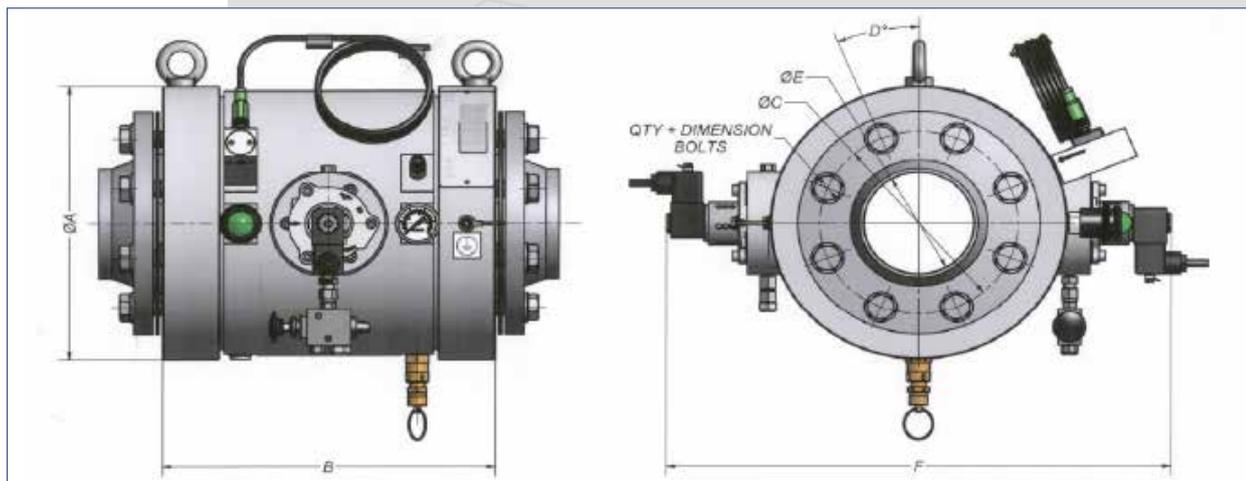
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Dimensions



I-Flex™		Dimensions					Bolts		Weight (kg)
Pipe Size	Ø A (mm)	B (mm)	Ø C (mm)	D°	Ø E (mm)	F (mm)	Dim.	Qty.	Cast Aluminium Body
DN80	250	250	160	22.5°	93	439	M16	8	24
DN100	270	301	180	22.5°	100	459	M16	8	30
DN125	359	377	210	22.5°	120	628	M16	8	53
DN150	395	441	240	22.5°	145	664	M20	8	60

Standard flange rating: PN 10 (EN 1092-1).

Ancillary equipment, control and detection

The E1 controller combines all required electronic components in a single, compact, industrial quality housing. The controller continuously monitors the protected hazard, reacts to incipient explosions, and instantaneously actuates the I-Flex™ Valve. Interlocks are provided to interface with the protected process to initiate a warning signal or to stop the process in case of an explosion. The process can be immediately re-started after an activation ⁽¹⁾ by a single turn of the reset key ⁽²⁾.

(1) An explosion event may require an investigation before system restart.

(2) Requires the remote reset option.

Larger systems may include additional explosion protection systems such as suppression and other means of explosion isolation. In that case the I-Flex™ Valve can be connected to the larger common explosion protection control system (Fike EPACO) without the need for any additional interface.



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