

INTERCEPTOR[®]-VE[™]

EXPLOSION ISOLATION SYSTEM



The Purpose

The **INTERCEPTOR[®]-VE[™]** is designed to prevent explosion propagation from one vessel to another through interconnected piping. It can also be used to prevent hot particles, glowing embers, or flames from reaching a vessel and igniting a deflagration or a fire.

The Problem

In process systems there are situations where a deflagration can propagate from the initiating site to connected machinery through interconnected piping. In some applications it may be feasible and desirable to detect, isolate, and quench prior to ignition. In both situations, a fast response explosion isolation valve offers the best means to accomplish these objectives.

Principle of Operation

The **INTERCEPTOR[®]-VE[™] Valve** is normally open. Upon receiving a signal from either a pressure responder or an optical sensor the **INTERCEPTOR[®]-VE[™] Controller** will respond by sending a signal to the **INTERCEPTOR[®]-VE[™] Valve**. The **INTERCEPTOR[®]-VE[™] Valve** will close in milliseconds to prevent passage of hot particles, glowing embers, flames, or pressure from continuing to flow through the pipe. The medium for actuation is plant compressed-air stored in a tank at the valve to ensure the fastest response possible under any plant conditions. The valve closure principle is a rubber bladder pinch valve and is a fail safe design.

Advantages of the *Interceptor System*

The **INTERCEPTOR[®]-VE[™]** requires little vendor support. The pinch bladder has little mass and, therefore, does not impart shock to the valve, the seats, or the piping upon closure. To illustrate this advantage, it can, and in fact should be routinely tested. There is a test button for this purpose and a re-set button. This is a monthly check performed by qualified plant personnel. The test function is PIN Code protected to prevent unauthorized tampering.

The **INTERCEPTOR[®]-VE[™] Valve** has a wear indicator in the bladder. If the bladder is exposed to abnormal wear, the Liner Wear Alert will activate a message on the **INTERCEPTOR[®]-VE[™] Controller**. The bladder is replaceable with the valve body opening in a clamshell fashion.

The **INTERCEPTOR[®]-VE[™] Controller** is ultra fast and ensures the quickest response possible at the current state of the art. Fast response allows the shortest possible distance between a protected vessel and the **INTERCEPTOR[®]-VE[™] Valve**.



Specifications

Valve:

Power	24VDC, supplied by Controller
Dimensions	See Drawing
Air Supply	Filtered, oil/residue/water free air, regulated to a minimum pressure of 80 psig
Weight	See chart below

Controller:

Power	120VAC/60 Hz
Inputs (Qty., type)	1, Input from FSC module
Outputs (Qty., type)	1, Output to Interceptor Valve 3, Dry relay contact (120VAC/10A) 2, 24VDC/100ma each
Display	Monochrome touch screen
Dimensions	22.75" x 16.88" x 11.77"
Environmental	NEMA 4x
Weight	30 pounds (13.5 kg)

FSC Module:

Power	Supplied by Controller
Inputs (Qty., type)	1, input from dry contact trigger source
Outputs (Qty., type)	1, Output to Controller
Display	2 LEDs (RED = Fault, Green = OK)
Dimensions	4.88" x 2.88" x 2"
Environmental	NEMA 4x
Weight	8 ounces

Valve Dimensional Drawings

Model	A	B	C	D	E	F	G	Weights
IV-4	20	4	18	7.9	9	6	21	55 lbs
IV-5	26	5	20	9	10	6	23	75 lbs
IV-6	27	6	24	9.3	11	7	29	110 lbs
IV-8	29	8	26	17	18	9	35	153 lbs
IV-10	38	10	27	20	21	12	43	297 lbs
IV-12	41	12	29	23	24	14	49	391 lbs

All Dimensions Are In Inches +/- .25"

