

ExPinch - Active Isolation System

ExPinch is an **active explosion isolation system** designed to prevent the propagation of a deflagration between interconnected equipment, ducts, or pneumatic conveying systems. The rapid response of the system enables the isolation of the explosive pressure wave at an early stage, thereby protecting the rest of the installation.

System activation is actuated by a pressure detector signal processed by a line controller, which commands the immediate closure of the ExPinch valve. The ultra-fast isolation effectively prevents the transmission of pressure and flame to connected units, ensuring the continuity and integrity of the process.

Key Advantages

- Ultra-fast closure: millisecond response ensuring immediate system isolation.
- Continuous monitoring: permanent process monitoring via pressure detector.
- Flexible control: one controller supports up to four valves with independent logic.
- Flexible installation: horizontal, vertical, or inclined mounting; installation distances up to 9 m, depending on DN.
- Food-industry suitability: sleeve available in food-contact-certified elastomer.
- ATEX certified in accordance with European explosion isolation regulations.

Standards & Certification

- ATEX Certification: LOM 14ATEX7089X in accordance with EN 15089:2009 – Explosion isolation systems
- ATEX Marking: Ex II D

Applications

The ExPinch isolation system is intended for industrial installations with a risk of dust explosion, where ducts and connections between interconnected equipment must be isolated to prevent the propagation of a deflagration to other areas of the process.

Typical applications:

- Filters, dust collectors, and cyclones
- Pneumatic conveying systems
- Bucket elevators
- Storage silos and process vessels
- Mills, dryers, and other equipment connected in series
- Process lines with multiple interconnected units
- Installations in the food, chemical, wood, paper, biomass, and metallurgical industries



Dimensions

Diameter DN (mm)	50	65	80	100	125	150	200
Installation distance (m)	4 - 5 m				8 - 9 m		

Main Characteristics

Dust type	Organic and inorganic dusts, up to St2
Material of valve	Aluminium
Material of sleeve	Rubber / Food Rubber
Nominal duct diameter	DN50 to DN200 mm
Main Supply	230 V CA -10 % to +15 %
Output Voltage	24 V CC max. 2 A
Time battery power	24 V CC max. 2 A
Current operating	200 mA
Pred max.	1 bar
Installation configuration	Horizontal, vertical, or inclined
Working temperature	-20°C to + 90°C

Components

> Detection system – SUDetP Explosion Detector.

High-sensitivity pressure sensor designed to detect, within milliseconds, the characteristic overpressure of an incipient explosion. It continuously monitors the process and is compatible with explosion suppression and isolation systems (chemical or mechanical).
Certified for explosive gas and dust atmospheres.



> Control Unit – SUCDL.

The control unit manages the detection of incipient deflagrations and the immediate activation of the ExPinch valve. Allows up to four independent protection zones to be managed, with continuous monitoring, alarm management, and event logging. Its modular and configurable design adapts to different risk levels and process architectures.



> Isolation Valve – ExPinch.

The pneumatic ExPinch valve features an internal rubber sleeve that ensures ultra-fast duct closure by pinching. Designed to effectively block both the pressure wave and flame, it includes a simple manual reset system and allows flexible installation in various process configurations.



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