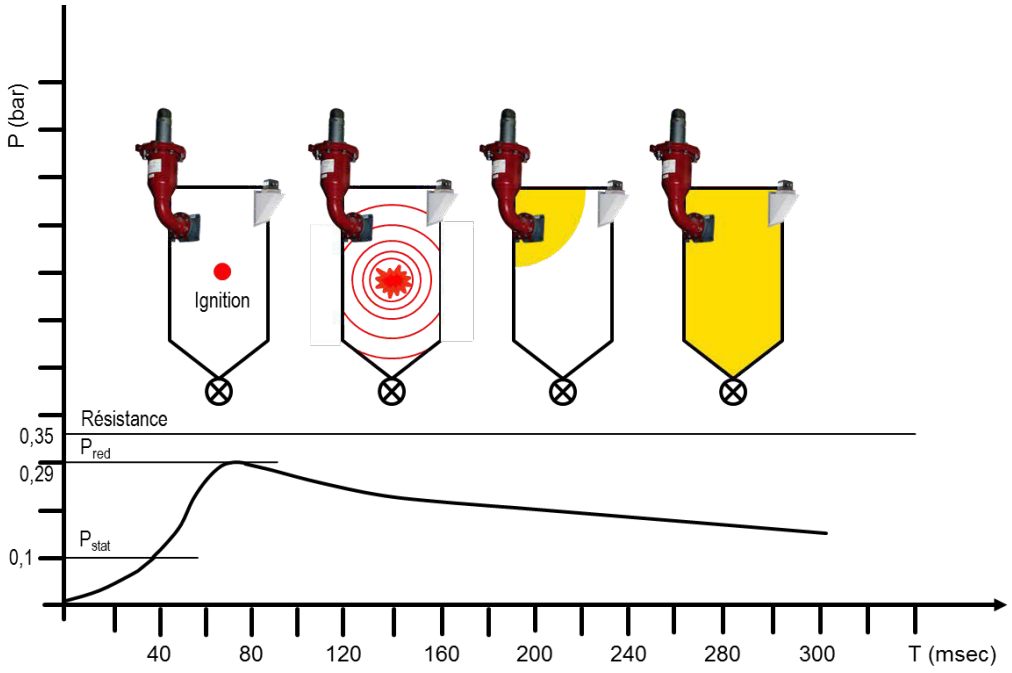
RAPTOR X® EXPLOSION SUPPRESSION SYSTEM

General overview

Dust explosions are rapid combustions of dust-air mixtures that can occur within enclosed vessels. These events generate an almost instantaneous rise in temperature and pressure, often exceeding the structural limits of process equipment—posing serious risks to safety and operations.

The Raptor X® explosion suppression system is engineered to detect and suppress dust explosions at their earliest stage by injecting a high-speed suppressant powder directly into the affected vessel.



SYSTEM COMPONENTS

Raptor X® systems are composed of three main elements:

1. **Explosion Detectors:**
   Monitor for rapid increases in static pressure, dynamic pressure, or light intensity.
2. **Control Unit:**
   Coordinates the system's operation, processing signals from detectors and activating suppression.
3. **Suppression Bottles:**
   Rapidly discharge suppressant powder into the vessel to stop the explosion in milliseconds.

Explosion Suppression System Configuration

Explosion detectors

PDP

PDS

CU-P03-B

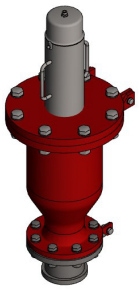
CU-P03-E

CU-P03-S

CU-P03-P

Control units

EAB10-V



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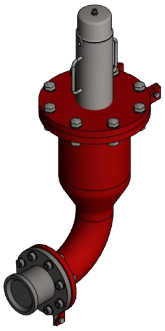

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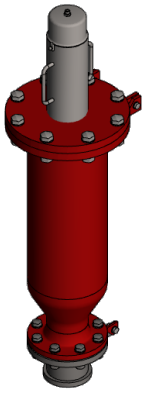

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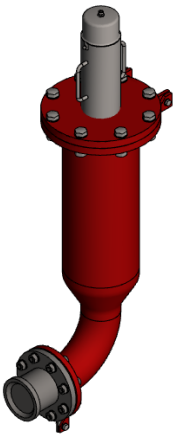
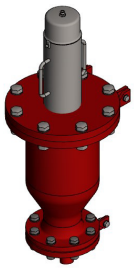
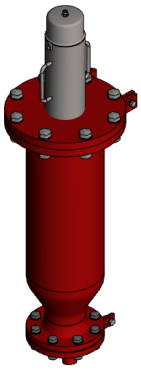


MP10-2E



MP20-3E



Suppression bottles

RAPTOR X

APPLICATIONS

Raptor X Explosion Suppression Systems are designed for environments where explosion-resistant construction or explosion venting is not feasible. These systems offer reliable protection for equipment and processes at high risk of combustible dust or gas explosions.

- Bucket elevators
- Fluidized bed dryers
- Spray drying towers
- Filters and cyclones
- Mills
- Silos, hoppers, and conveyors

ADVANTAGES

Raptor X systems are designed for high performance, ease of integration, and user-friendly operation.

Key benefits include:

- **PED-Exempt Suppression Bottles**
  Bottles are not permanently pressurized, making them exempt from the Pressure Equipment Directive (PED).
- **Easy Installation**
  Bottles can be mounted on welded or bolted brackets, allowing seamless integration with existing process equipment.
- **Modular Design**
  Each suppression bottle features a steel body, powder cartridge, and gas generators, enabling quick and cost-effective maintenance or replacement.
- **Food-Grade Suppressant**
  Uses sodium bicarbonate powder, compliant for use in food industry applications.
- **Scalable Control Units**
  Modular control systems support up to 16 zones, offering flexibility for small or large-scale protection needs.
- **High Capacity per Zone**
  Each zone can manage up to 4 detectors and 16 suppression bottles, ensuring comprehensive coverage.
- **Integrated Event Logging**
  Automatically records events and system activity for diagnostics and traceability.
- **Application-Specific Adaptations**
  Custom configurations are available for specialized equipment such as spray drying towers and fluidized beds.