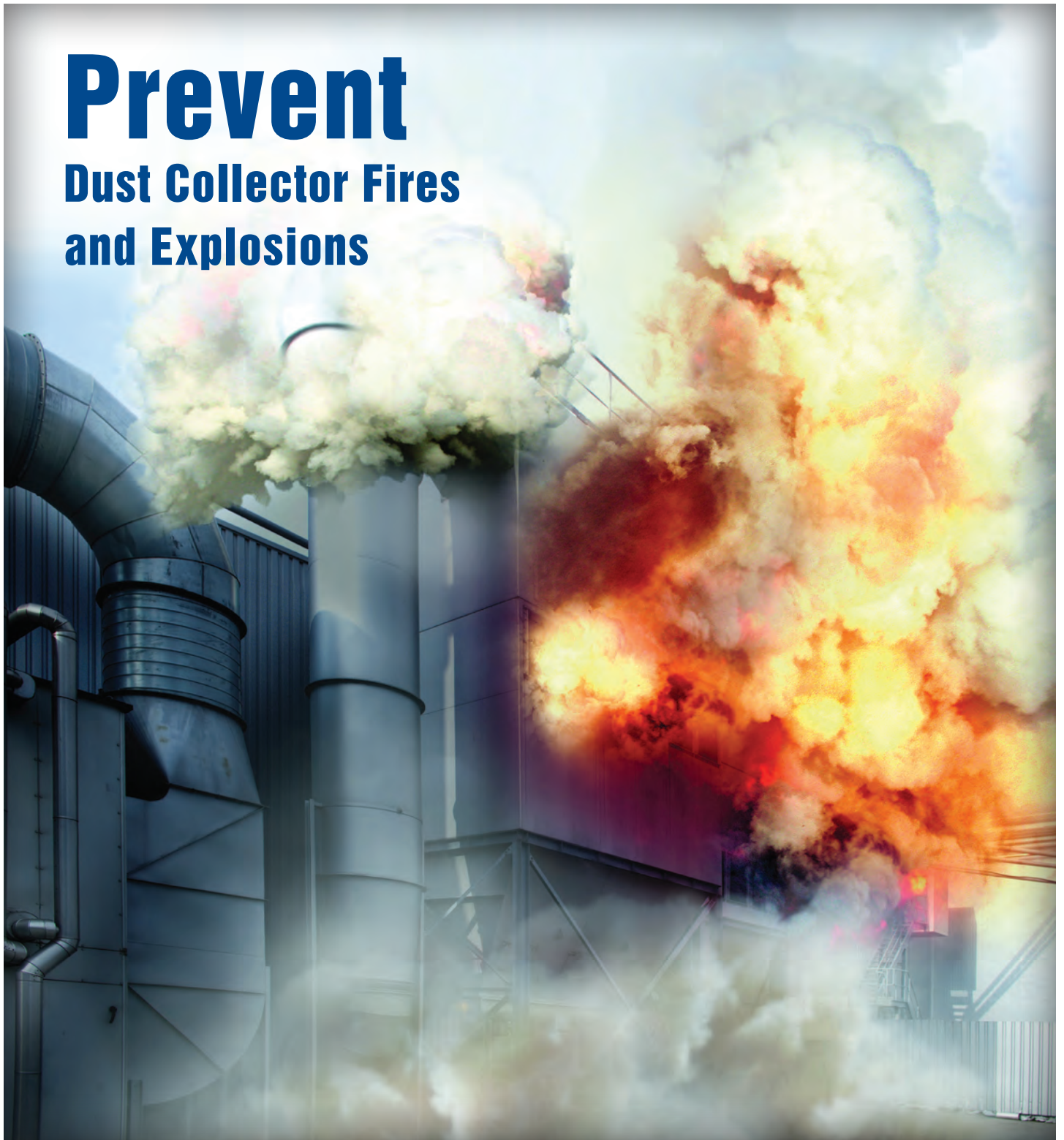


# Prevent

## Dust Collector Fires and Explosions



## A COMMON HAZARD

Dust fires are common occurrences in industries that handle combustible dusts. A typical dust collector operating under normal circumstances is at risk for a fire or even an explosion. In fact, more than one-half of all industrial explosions where combustible dusts are handled develop within a dust collector. This is because the airborne dust particulate inside of a dust collector can present a recipe for an explosion to occur. The only element missing is an ignition source that is typically sparks generated by upstream processing machinery. Processes involving size reduction, drying, heating, cutting, welding, sanding, planing, grinding and polishing are particularly conducive to the generation of dangerous sparks.



Is this a  
**Risk**  
you are willing  
to take?



...“Any time a combustible dust is processed or handled, a potential for deflagration exists.”...

-NFPA 654 A.3.3.5 2017 Edition

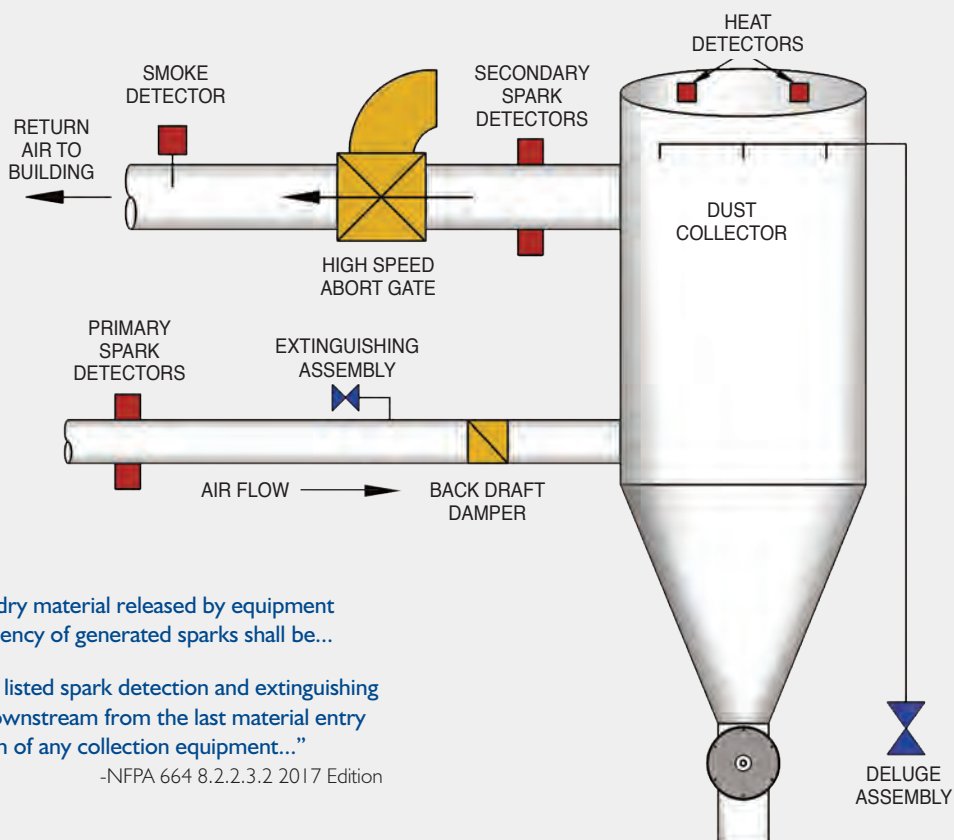


“If combustible dusts are collected, there is a fire and explosion hazard in the collector, regardless of bag construction.”

FM Global Property Loss Prevention Data Sheet  
7-73, Dust Collectors and Collection Systems  
(Rev. 2016)



# THE SOLUTION



The flexibility of the FLAMEX System allows us to create a protection design which will utilize the components necessary to best address the requirements of the specific application.



## FLAMEX SPARK DETECTION AND SUPPRESSION: THE FIRST LINE OF DEFENSE

Protection of downstream dust collectors and air filtration equipment is achieved by the elimination of the possible ignition source. Airborne sparks are both detected and extinguished as they are conveyed through the pneumatic duct before reaching the dust laden environment inside of a dust collector, bin or silo. Highly sensitive IR Spark Detectors are flush mounted on dust extraction piping to scan the material flow. Upon detection of a spark, the system reacts immediately to produce a curtain of water across the duct for effective suppression. The short spray duration uses a minimal amount of water so no downtime or clean up is required. Equipment shutdown and activation of alarms, deluge valves and Abort Gates can also be initiated upon detection.

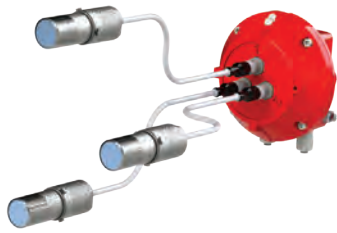
## HIGH SPEED ABORT GATES

Rapid diversion of burning material, sparks, smoke and flammable gases from the pneumatic system is accomplished with the use of a high speed Abort Gate. It is typically installed on return air ducting between an outdoor dust collector and the building. The primary purpose of an Abort Gate is to protect the occupants of the plant from the dangerous products of a dust collector fire. It can also be used downstream of positive pressure fans to divert sparks or burning embers from the material flow to protect air filtration equipment.



# CUSTOM DESIGNED SYSTEMS FOR EACH APPLICATION

## DETECTION COMPONENTS:



Whether you need protection for a small cabinet shop or a large industrial facility, a FLAMEX System can be designed to meet your needs. The broad range of available system components allow system designs to vary in terms of capacity, features and functions as desired.

### YMX 5000 DETECTORS



The UNIVARIO YMX 5000 Series of Infrared sensors represent a major technological advancement in the field of industrial fire detection. Each detector is provided with stainless steel housing. Up to three detectors can be connected to the Control Unit. Each detector utilizes a removable lens and mounts easily and securely to facilitate installation and inspection.

### CONTROL UNIT



Monitors essential functions of the detectors and provides status display and memory function. External LEDs indicate the functional status of each connected detector.

### SPARK DETECTOR FUX OS



Designed for use in pneumatic ductwork, this detector provides a "through the lens" self-testing feature to ensure optical integrity. Suitable for dark applications with operating temperatures ranging from -40 to 221 Degrees F.

### FLAME DETECTOR FMX



Designed to detect open flames based on a 3 channel IR analysis. Immune to false alarms caused by welding and flashing lights. Optical integrity feature notifies the user of any lens obscuration. Programmable sensitivity and internal memory function.

### WMX 5000 HEAT DETECTOR



A sophisticated thermal sensor that will alarm when a pre-set fixed temperature is exceeded and when an abnormal rate of heat rise is detected. This field programmable detector offers a data archive feature that can be used to record a history of temperatures and indicate function activity.

### EX SENSOR UNIT



CLASS II  
DIV II



CLASS II  
DIV I



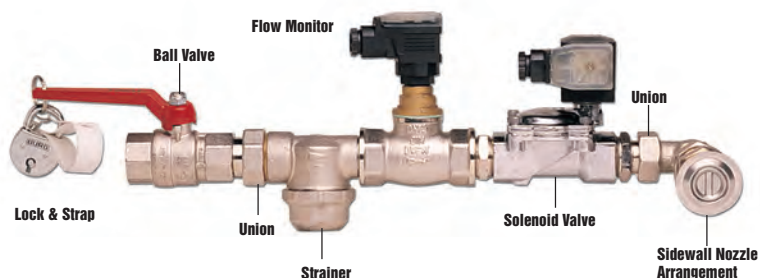
This version available for spark and flame detectors to allow use in hazardous locations. The design allows the control unit to be used in Class II, Division II EX zones 2 & 22 while the sensor can be installed in Class II, Division I areas / EX 1,2,20,21 & 22.

ADDITIONAL DETECTION COMPONENTS AVAILABLE

# SUPPRESSION COMPONENTS

## 1" EXTINGUISHING ASSEMBLY

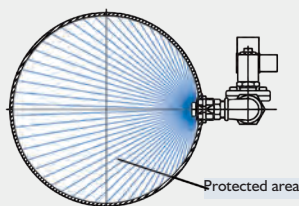
This pre-assembled unit can create a water spray pattern in less than 300 milliseconds. It can be used with flowing pressures as low as 44 psi thereby eliminating the need for booster pumps in most applications. The efficient design facilitates installation and maintenance. Removable Insulation Jackets can be provided for freeze protection where necessary.



## FLOW MONITOR

A high-sensitivity Flow Monitor is included on the extinguishing assembly to indicate a water flowing condition of 3 liters per minute or more through the solenoid valve.

## FI80 STAINLESS STEEL FLAT SPRAY NOZZLE



This self-closing flush mounted nozzle is designed specifically for effective suppression in pneumatic duct work. The nozzle emits a 180 degree fan pattern which creates a curtain of water that covers the entire cross section of the duct.



## BOOSTER PUMP

Where plant water supply is insufficient to meet the minimum requirements of the FLAMEX system, Booster Pump Units can be provided. Each unit comes with an expansion tank to ensure immediate suppression and is supplied pre-wired, assembled and painted. Various models are available.



## DELUGE SYSTEMS

In applications where a greater concentration of water is necessary to quell a fire in a collector, bin or machine, FLAMEX can supply Deluge Assemblies in various sizes as necessary for the application in accordance with NFPA 15.



## FMZ 5000 CONTROL PANELS

Models are selected based upon zone capacity requirements and desired features. All units offer advanced capabilities for supervision of FLAMEX systems.

Sophisticated system monitoring alternatives include lifetime data logging and networking. PC and web based options are available.



# PREVENTION: THE LOGICAL CHOICE

Far too many incidences of fires and explosions have occurred because of a lack of any prevention measures. Prevention of an event is far less expensive and much less disruptive to your operation than having to deal with an incident in progress. The FLAMEX Spark Detection and Extinguishing System is a common sense and cost-effective solution to these everyday hazards.

**"A fire hazard shall be deemed to exist  
in the system wherever dry wood  
particulate is collected or conveyed..."**  
-NFPA 664 8.2.1.4 2017 Edition

## OUR COMPANY AND EXPERIENCE



FLAMEX Inc. is a leading supplier of customized industrial process fire prevention and protection equipment. We specialize in the protection of facilities that handle combustible dusts that utilize pneumatic dust collection and air filtration systems. To combat the common problem of dust collector fires and explosions, our company helped pioneer a new technology in North America by introducing the FLAMEX Spark Detection and Extinguishing System in 1977. It soon became the first system of its type to gain FM Approval. Since that time, thousands of FLAMEX Systems have been installed in numerous industries across North America and beyond. For over 40 years our company has been committed to protecting the lives and property of our customers.

## UNPARALLELED SERVICE CAPABILITIES

Our staff of factory-trained technicians are uniquely qualified to commission, inspect, service and repair FLAMEX systems and components. They possess the experience and expertise to provide a high level of technical support for your installation. We offer specially priced service agreements so that service inspections can be pre-scheduled to ensure an optimum level of system reliability.



VR Card



Website URL

**Let us help you create a safer workplace, comply with codes  
and regulations, protect your assets, reduce downtime, lower  
insurance premiums and increase your peace of mind.**



4365 Federal Drive, Greensboro, NC 27410-8116  
ph. 336.299.2933 fx. 336.299.2944  
flamex@sparkdetection.com



[www.sparkdetection.com](http://www.sparkdetection.com)



## PRODUCTS:

### *Gaseous Suppression*



Inert Gas (IG-01, IG-55, IG-100, IG-541)  
Novec 1230™ Fluid (FK-5-1-12)  
FM-200® / NAF S 227 (HFC-227ea.)  
Ecaro 125® / NAF S 125 (HFC-125)  
Carbon Dioxide (CO<sub>2</sub>)  
Hybrid Systems (N<sub>2</sub> / Water)  
Pressure Relief Vents  
Enclosure Integrity Testing Equipment  
Pipe & Fittings

### *Water Suppression*



Water Mist - High Pressure  
Water Mist - Intermediate Pressure  
Water Mist - Low Pressure  
Hybrid Systems (Water / N<sub>2</sub>)  
Monitors & Delivery Systems  
High Speed Deluge

### *Foam Suppression*



Foam Concentrates  
Foam Proportioning  
Foam Delivery Systems  
Foam Concentrate Testing

### *Explosion Protection*



Explosion Suppression  
Explosion Isolation  
Explosion Vents & Pressure Relief  
Spark Suppression  
Explosibility Testing

### *Fire Detection*



Linear Heat Detection - Digital  
Linear Heat Detection - Fibre Optic  
Linear Heat Detection - Micro Chip  
Flame Detection  
Video Imaging Detection  
Spark Detection  
Control & Indicating Equipment  
Thermal Imaging Detection  
Aspirating Smoke Detection

### *Military & Defence*



Military Vehicles  
Naval Vessels

### *Special Applications*



Micro Environment  
Oxygen Reduction  
Kitchen Protection Systems  
Dry Chemical  
Vehicle Systems  
Compressed Air Foam  
Marine & Offshore  
Vapour Mitigation

### *Support Services*



Design / Engineering  
Technical Support  
Services & Testing

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**‘Every solution for your special hazard problems’**