

Prevent

Dust Collector Fires and Explosions



 **FLAMEX[®] INC.**

Fire Protection Solutions for Industrial Processes

A COMMON HAZARD



**“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
(January 2012)

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.

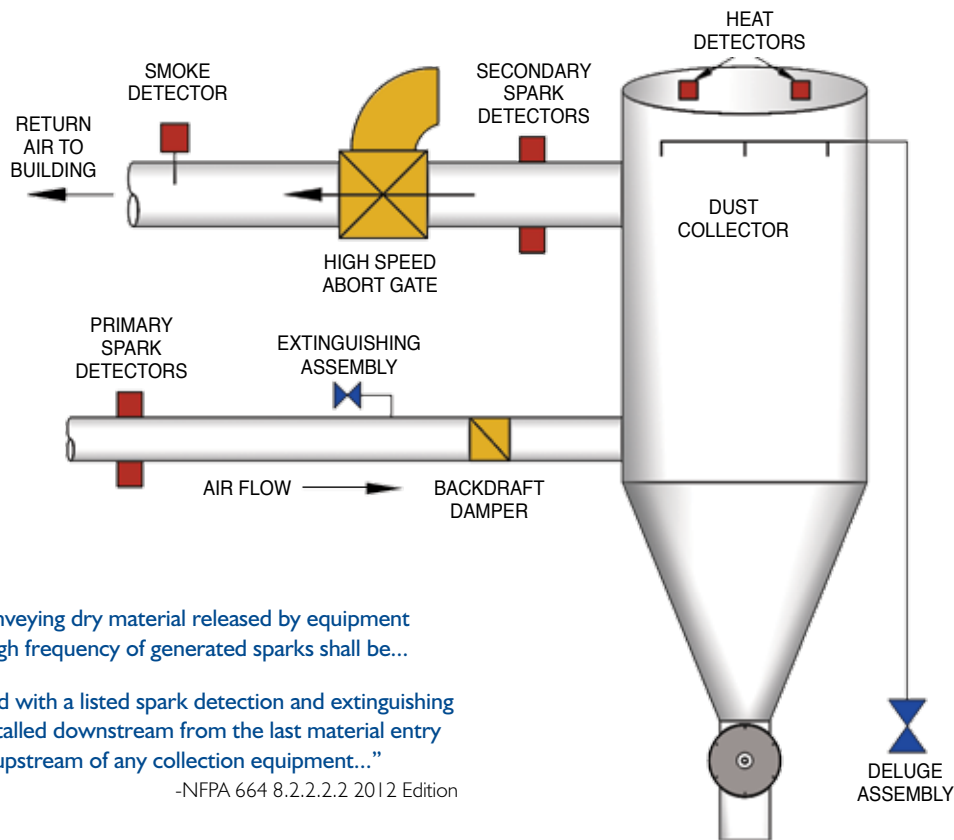


**...“Any time a combustible dust is
processed or handled, a potential
for deflagration exists.”...**

-NFPA 654 A.3.3.5 2013 Edition

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

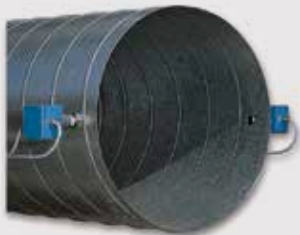
THE SOLUTION



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

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.

DETECTION COMPONENTS:

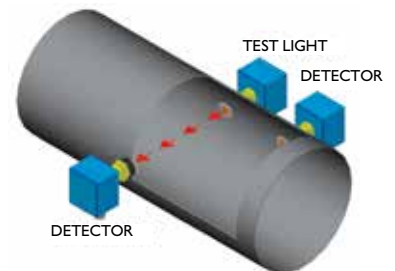
SPARK DETECTOR FUX 300I & FUX 300I-LI

This highly sensitive IR Detector is used in dark, closed environments such as pneumatic ducts. Features include a removable lens and external LED. The standard version is suitable for use in operating temperatures between -22 and 176 degrees F. For higher operating temperatures, a fiber optic assembly (L-1) can be utilized. Optional air flushing attachment for lens is available for special applications.



AUTOMATIC EXTERNAL TEST LIGHT

Spark Detectors can be tested automatically during operation with this special feature. The External Test Light emits an IR signal across the duct from a mounted detector. The detector must sense this simulated "spark" through the actual material flow thus providing a true test of detector response.



WMX 5000 HEAT DETECTOR

This Heat Detector is an advanced thermal sensor that will alarm when a pre-set temperature is exceeded or when an abnormal rate of rise is detected. Set points can be reprogrammed in the field. Each unit has a recording feature which tracks temperature history and alarm activity.



HOT PARTICLE DETECTOR FUX 300I-DL

The mid IR Detector can be used in certain applications where ambient light is present. It has the capability to detect hot particles that are not glowing. It is suitable for drop chutes, conveyors and certain duct work applications.



BMX 100I DUCT SMOKE DETECTOR

This sensor is used to detect smoke emanating from a dust collector fire. It uses air sampling tubes for monitoring in clean air ducts. Other models of smoke detectors are available including photoelectric and ionization. Some models feature automatic drift compensation and all are designed for industrial use. The specific model to be selected is determined by the application.

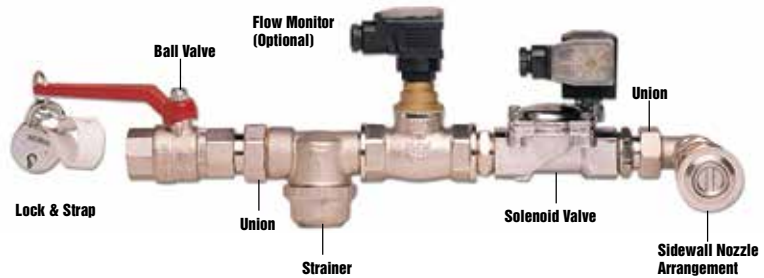


ADDITIONAL DETECTION COMPONENTS AVAILABLE

SUPPRESSION COMPONENTS

1" EXTINGUISHING ASSEMBLY

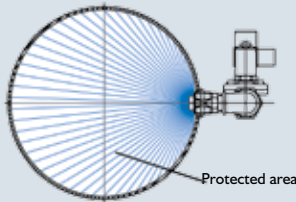
This pre-assembled unit can create a water spray pattern in less than 300 milliseconds. It can be used with flowing pressures as low as 44 psi thereby eliminating the need for booster pumps in many applications. The efficient design facilitates installation and maintenance. Removable Insulation Jackets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



FLOW MONITOR

A high-sensitivity Flow Monitor can be provided 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 2012 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 35 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

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.



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