

FIREFLY WOODWORKING

Fire protection solutions for the woodworking industry



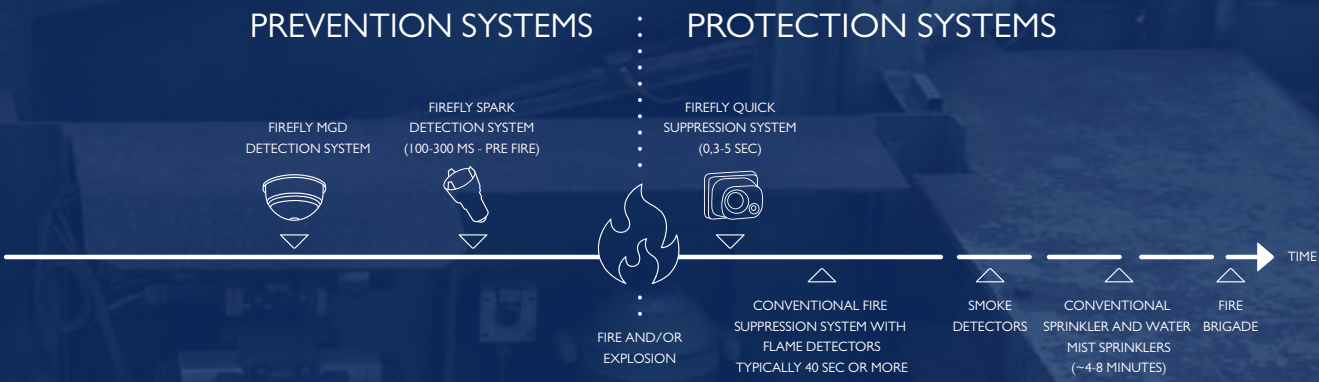
PREVENT FIRES AND DUST EXPLOSIONS IN THE WOOD INDUSTRY

FIRES – LEADING CAUSE OF FINANCIAL LOSS
Fires and explosions are the most significant causes of loss in a majority of property insurance claims in the wood processing and furniture manufacturing industry. According to a 10-year study conducted by leading insurance consultancy Risk Logic, these claims account for almost 75% of the accumulated financial losses in the wood processing and furniture manufacturing industry.

In a furniture manufacturing plant, wood dust and oxygen is always present. In case of a mechanical failure in a machine or a fan the wood dust can easily be ignited, resulting in a fire or worst case a dust explosion.

Firefly's **preventive** and **protective** solutions for the woodworking industry help detect the first signs of ignition and suppress fire at an early stage, avoiding costly downtime and damage to machinery.

Don't wait until it's too late – contact Firefly today to learn more about our solutions for the woodworking industry.



SPARK DETECTION SYSTEM FIRE PREVENTION

Firefly's Spark Detection System will, in milliseconds, detect and extinguish ignition sources inside the process, before they cause fire or dust explosion.

Firefly's unique TrueDetect™ technology enables detection of all type of ignition sources such as hot friction particles, sparks and flames. All our detectors are insensitive to ambient light, to avoid unnecessary detections or false positives.

The Spark Detection System is typically combined with a water extinguishing zone, based on Firefly's high-speed and powerful full-cone water spray system. This unique extinguishing concept is designed to cover the entire cross section of a duct or a chute and to penetrate the material flow and air flow.

The Firefly True IR Spark Detection and Extinguishing System is certified according to Factory Mutual (FM)* and Schadenverhütung GmbH (VdS)*.

* FM certificate no. 3060012, Vds approval no. S6990002.



QUICK SUPPRESSION SYSTEM FIRE PROTECTION

The Firefly Quick Suppression System is designed for extremely quick detection and suppression of flames or fires in and around machinery and in high-risk areas or volumes. The system has been fire tested with the test protocol DFL TM1 70307-1261 and verified by the DNV.

Firefly's Quick Suppression System operates with high performance flame detectors and efficient water mist suppression. The Firefly water mist system has remarkable fire suppression capabilities, utilizing a very small amount of water.

The purpose of the Firefly Quick Suppression System is to act quick enough to avoid or significantly reduce damages and production downtime as well as avoiding a fire from escalating and spreading into other areas. Conventional extinguishing methods, for example sprinklers, need large flames generating a high amount of heat to react and an extensive amount of water is needed to extinguish a fire.



FIREFLY EXIMIO™

INTELLIGENT SYSTEM ARCHITECTURE

The Firefly EXIMIO™ system is an intelligent and decentralized system with a modular system architecture. Detectors and extinguishing equipment are connected to local EXIMIO™ hub, thus making cable routing and overall installation more efficient and less expensive. It is also easy to add on to the existing system and extend to cover new risk zones as desired.

Operators will control the system via a 12" color touch screen via the IntuVision™ panel - operators interface, that comes as standard in every Firefly EXIMIO™ System. IntuVision™ is easy to use and includes numerous of features and functions, for example ApplicationView™ is where a drawing of the zone will be shown on the screen.

By using IntuVision™ - Desktop, the customer can connect the system to an external computer, for example in the control room.

The system is OPC-UA compatible for connection to the customer SCADA system.

The Firefly System can be connected via an Ethernet cable or a modem to enable remote help and service.

CONTROL UNIT BENEFITS

The unique EXIMIO™ 12" touch screen ensures quick and easy access to IntuVision™ user interface.

IP65 rated, dust and waterproof, that allows the flexibility for the control unit location with tough environments.

Touch Screen & IntuVision™ (operator's interface)
Included as standard in a Firefly EXIMIO™ system.

Clear, informative and user friendly interface.

Modular and decentralized system architecture
– easy to expand the system.

System can be connected for remote support.



FILTER AND SILO PROTECTION

The bag house filter is considered as one of the most dangerous equipment in a wood working facility. The fine dust particulates inside the filter, in combination with large airflows, creates the perfect conditions for a rapid fire or a dust explosion, in case an ignition source will enter.

Silos can in some ways be even worse. Extinguishing a silo fire is a very difficult and dangerous task. It is not unusual that it takes days or even weeks to extinguish a large silo fire and the risk for an explosion is always present.

A good way to minimize the risk for fires or dust explosion is to take care of the ignition sources before they enter the filter or silo, by an appropriate spark detection and extinguishing system.

FILTER PROTECTION

In order to protect a filter, Firefly uses its unique True-IR detector HD400 that can detect sparks and hot dark particles with a temperature down to 400°C (752°F). The detectors will be located in the extraction duct before the filter and at a certain distance after the detector(s), a powerful full cone extinguishing zone is located.

SILO PROTECTION

In order to protect a silo, Firefly uses its unique True-IR detector HD250 that can detect sparks and hot dark particles with a temperature down to 250°C (482°F). The detectors will be located in the extraction duct before the silo or if material is fed to the silo mechanically, it will be located in a drop chute before the silo. At a certain distance after the detector(s), a powerful full cone extinguishing zone is located.



NOTE THAT A PARTICLE BELOW 650°C IS BLACK.

MINIMUM IGNITION TEMPERATURE (MIT) FOR WOOD DUST	
Cloud	470°C / 878°F
Layer	260°C / 500°F
Source: NFPA (National Fire Protection Association)	



PLANER PROTECTION

A planer is one of the largest and most important investments. Unforeseen interruptions in production due to fire are often very costly. Planers can generate large amounts of inflammable material as they are high speed machines with many moving parts. A planer can generate dangerous ignition sources in the form of sparks and hot particles.

Accumulation of shavings or oil can cause violent fires. The situation is aggravated by the high air flow within the machine. Automation of the planing process as well as general conditions in the production areas dictate that the machine is often installed remote from operators stations. As a consequence, fires can go undetected for some time.

RISK ZONES IN PLANERS

- ⦿ Friction
- ⦿ Machinery breakdown
- ⦿ Electrical problems
- ⦿ Human factor



FIREFLY PlanerGuard™

PROTECTION OF HIGH SPEED PLANER

Planing at high speeds leads to an increase in friction heat, making the process vulnerable to fire. Firefly's Quick Suppression System PlanerGuard™ solution for high speed planers focuses on detecting ignition sources at an early stage. Non-invasive water mist suppression is used to quickly and effectively suppress the fire with the aim to avoid costly downtime and damage to the planer.

PROTECTION OF OPEN PLANER

In many cases, large amounts of shavings are accumulated in and around the open planer. When ignited, these shavings can cause rapid fires resulting in considerable damage. Firefly's PlanerGuard™ solution for open planers monitors the machine by using flame detectors installed local to the area. Non-invasive water mist suppression aims at quick and effective suppression of the fire, even in the closed areas of an open planer.

PROTECTION OF MOULDER

A moulder is often installed in a production area adjacent to other machinery. The consequences of a fire in a moulder can therefore be extensive and damage surrounding equipment.

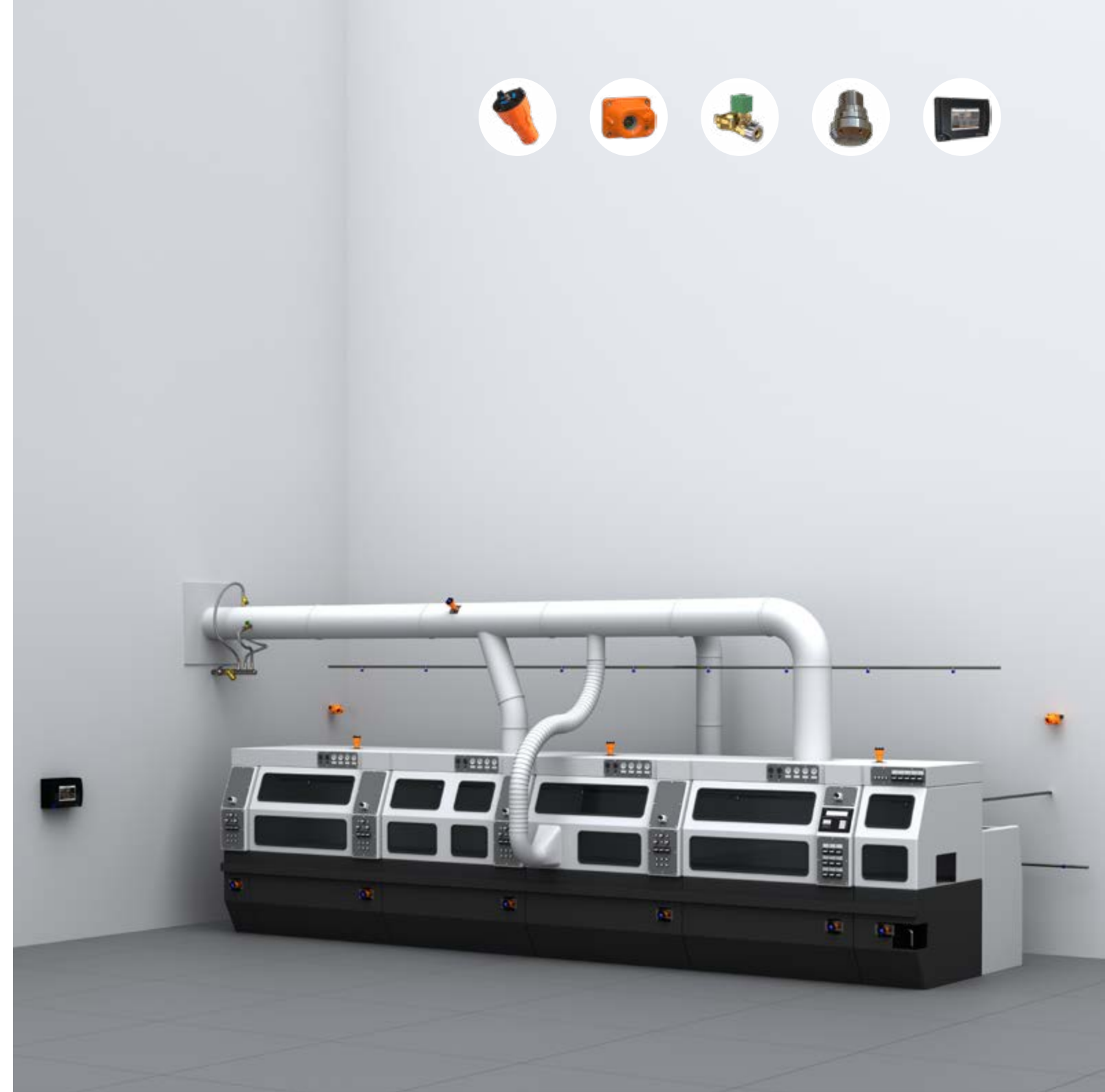
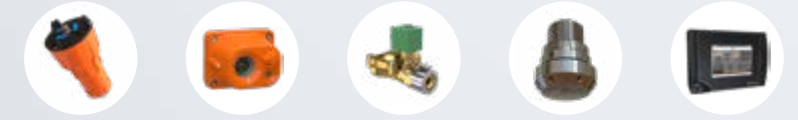
Firefly's PlanerGuard™ system detects sparks or incipient fire at a very early stage. The PlanerGuard™ system can be designed in a cost-efficient way due to the compact design of the moulder. Water mist will suppress quickly and efficiently, even in these closed areas. Water mist also ensures that your moulder isn't damaged by water.

The risk for fire caused by frictional heat or problems at the feeding rolls isn't as significant for moulders compared to other types of machines as speeds are relatively low. Our experience shows that the most common causes of fire in a moulder are due to overheating of motors and driving mechanisms, as well as spark generation at the machining heads.

INTELLIGENT FIRE PROTECTION

To detect and suppress a fire and to stop the planer, as quickly as possible are important parts of the Firefly PlanerGuard™ solution. This is why a Firefly safety system always consists of three main integrated functionalities: detection, suppression and control.

By integrating different techniques into one solution, Firefly provides increased safety for the protection of planers.



TRIM SAW PROTECTION

The trimming process is one of the final processes implemented at the saw mill and involves removing low-quality parts and cutting the timber into its final length. The rapid spinning of the circular saws used for trimming often produces sparks. These sparks can cause a local fire inside the blades' housing that then can advance into the dust extraction system.

INTELLIGENT FIRE PROTECTION

It is important to detect and suppress a fire and to stop the trim saw, as quickly as possible. This is why a Firefly safety system always consists of three main integrated functionalities: detection, suppression and control.

By integrating different techniques into one solution, Firefly provides increased safety for the protection of trim saws.



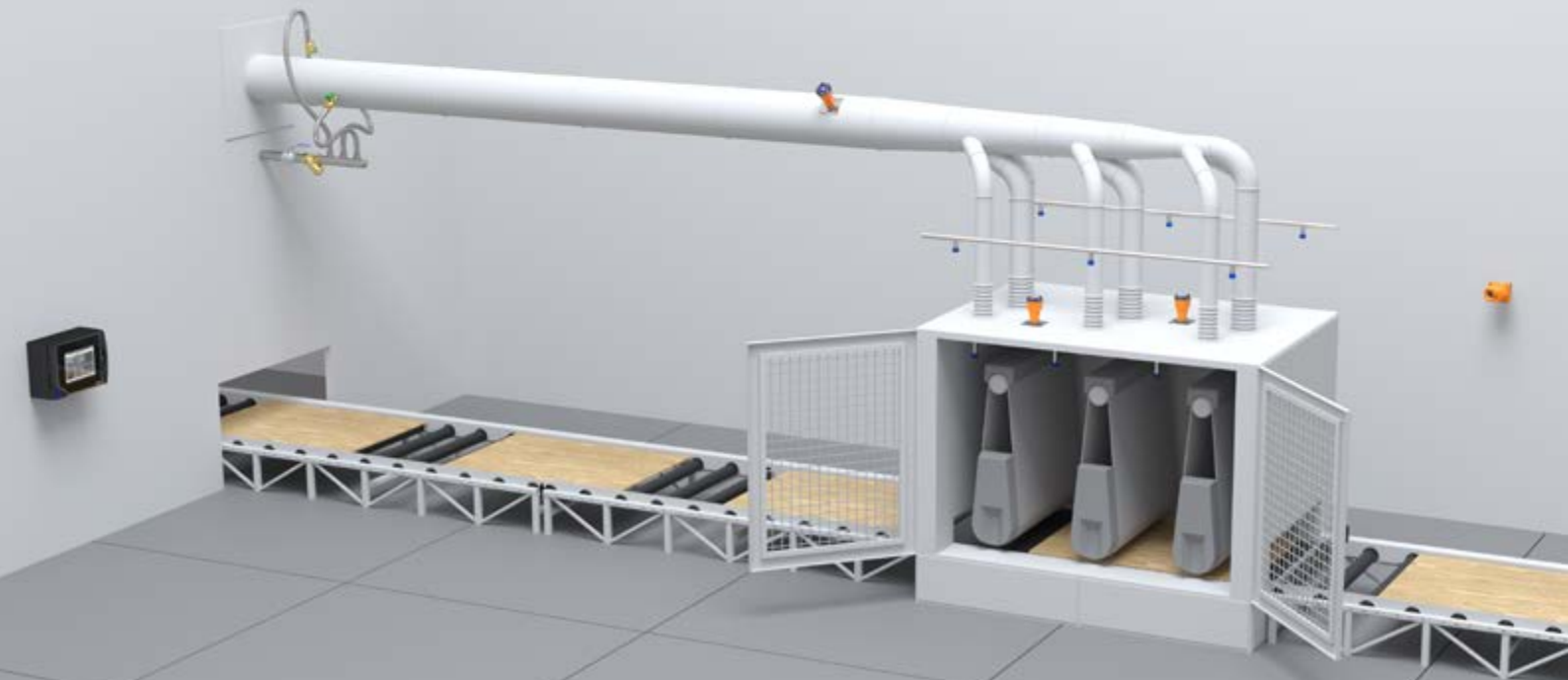
OTHER PROTECTION SOLUTIONS FOR THE WOODWORKING INDUSTRY

FIREFLY SanderGuard™
The fine dust generated by a sanding machine can, when ignited, give rise to severe dust explosions and rapid spread of fire. Firefly's SanderGuard™ system solution is designed for all types of sanders. Firefly's SanderGuard™ includes quick flame detection inside the sanding machine and water mist suppression, providing increased protection of this important link in the production chain.

Firefly's SanderGuard™ is designed to quickly indicate a failure inside the machine and, before a fire can take hold, suppress by using a water mist system. Firefly's Quick Suppression System is designed to quickly cover the enclosed area. It is important to use detectors that are insensitive to daylight since sanders are regularly inspected for purposes of maintenance. Firefly's detectors only detect hot particles such as sparks and glowing particles.

FIREFLY SOLUTION FOR BAND SAW
The band saw is often the first stage in the production process. A failure of the band saw means that the flow of material to the rest of the production stops. Large amounts of waste material often accumulates around the band saw due to its design. This accumulation together with high speed rotating mechanical parts and powerful motors creates a large risk for fire.

Protection of Band Saw includes a combinad protection solution of preventive and protective fire protection. Firefly's Quick Suppression System will protect Band Saw using flame detection in combination with water mist suppress around the machine. Our unique flame detectors are designed to only detect flames, but no other disturbances such as sunlight. Water mist suppression is effective in open as well as closed areas without damage to the machine. Firefly's Band Saw protection also comprises -extraction system with Firefly Spark Detection System.



ABOUT FIREFLY

Firefly is a Swedish company that provides industrial fire prevention and protection systems to the process industry worldwide. Since 1973, Firefly has specialized in creating customized system solutions of the highest technical standards and quality. Based on customer needs and research, Firefly has developed and patented products and solutions, creating a unique portfolio of innovative products and system solutions to increase the level of safety.

The Firefly quality management system is certified according to ISO 9001 and EN ISO/IEC 80079-34. Firefly's products hold national and international third party certifications through FM, VdS, CSA, DNV, LCIE Bureau Veritas, Delta and RISE among others.

For more information on our certifications and approvals, please visit: www.firefly.se/about-us/certifications-approvals/

Do you have questions about fire and explosion risks? Our fire preventive experts will be happy to share our knowledge and experience.

AS A FIREFLY CUSTOMER YOU RECEIVE



A partnership with our fire prevention teams around the world.



Technical innovation in fire prevention and protection.



Digital progression based on robust safety systems.



Fire protection through certified technology.



The Firefly Circle of Safety

JOIN THE FIREFLY CIRCLE OF SAFETY

WE HAVE FIREFLY USERS FROM MULTIPLE INDUSTRIES ALL OVER THE WORLD



Firefly users in over 80 countries



Firefly users

Firefly's products are available with the following certifications and approvals:



For information on the certifications and approvals each product holds please visit:

www.firefly.se/about-us/certifications-approvals/



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