VIGI-SPARK

SPARK EXTINGUISHING SYSTEM



STUVEX By STIF

STUVEX is part of the STIF Group

English

STUVEX, a company specialized in protection against active and passive explosion risks, headquartered in Kontich, Belgium, is pleased to present its new range of product dedicated to spark and fire extinguishing systems.

Under the new brand name **VIGI-SPARK**, the company unveils a line of products specifically designed to reduce the risk of fire and explosion in dust filtration and pneumatic conveying systems.

We can install the **VIGI-SPARK** system in all processes where dust is a part of the process:

- Grain dryers
- Dust collectors
- Filters
- Cyclones
- Hammer mills
- Shredders
- Conveying lines
- Silos

The **VIGI-SPARK** fire and extinguishing system is not just a product line of **STUVEX**, but a dedicated division within **STUVEX**, with its own R&D, technical, sales, and marketing teams.

Our goal is to develop this product line internationally and for the **VIGI-SPARK** to become the benchmark in this market.

We protect: People, Equipment, Facilities Worldwide.

VIGI-SPARK

Spark Detection & Extinguishing System

The **VIGI-SPARK** Spark Detection and Extinguishing System is designed to detect sparks and embers that may become ignition sources for fires or explosions if allowed to travel through ducts, conveyors, or pneumatic transport systems toward downstream equipment or storage areas.

In industrial environments handling combustible dust or materials, a single spark entering a dust collector is enough to trigger a dust explosion. Likewise, smoldering particles conveyed into a silo or storage unit can develop into a severe and uncontrolled fire.

The purpose of the **VIGI-SPARK** system is early intervention. By detecting and extinguishing ignition sources at the earliest possible stage, **VIGI-SPARK** prevents fires and explosions before they occur rather than attempting to contain them once damage to equipment, infrastructure, or personnel has already begun.

This is prevention by design to real industrial environments.

Minimize Fire and Explosion Risks

Using advanced infrared spark detectors, the **VIGI-SPARK** system continuously monitors material flows for high-temperature particles. Maximum detection sensitivity is achieved in dark environments, such as enclosed ductwork. For applications exposed to ambient light, daylight-resistant detectors are available.

When a spark or ember is detected, the **VIGI-SPARK** system immediately initiates protective actions to eliminate the ignition risk:

- Automatic water extinguishing through high-speed spray nozzles installed downstream of the detection point
- Automated process shutdown to stop the flow of combustible material
- Activation of external safety devices, such as shut-off valves or additional protection systems

Reliable, Continuous Protection

VIGI-SPARK operates in a fully automatic, continuous monitoring mode. All critical system components and circuits are permanently supervised, ensuring that any malfunction triggers an immediate alarm. This guarantees maximum system reliability and constant protection of personnel, equipment, and production processes.

Applications

VIGI-SPARK

The **VIGI-SPARK** spark detection and extinguishing system is designed to protect industrial processes where sparks or hot particles may occur and lead to fires or dust explosions. By detecting ignition sources at an early stage and automatically activating a water extinguishing system, **VIGI-SPARK** helps prevent incidents before they escalate.

The system is suitable for all processes where dust is part of the production process or generated as a waste product.

VIGI-SPARK can be installed on a wide range of process equipment and material handling systems, including:

- Grain dryers
- Dust collectors and filters
- Cyclones
- Hammer mills
- Shredders
- Pneumatic and mechanical conveying lines
- Silos and storage systems

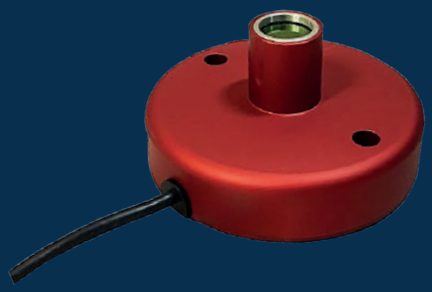
These installations are commonly found in industries such as food processing, animal feed, recycling, wood processing, chemicals, and biomass, where combustible dust and hot particles can pose significant fire and explosion risks.

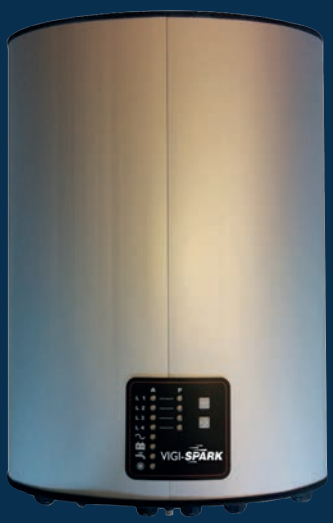
With its fast detection and automatic extinguishing capabilities, **VIGI-SPARK** provides reliable protection for critical equipment and ensures safer industrial operations.

Summary

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VIGI-SPARK DETECTORS

SDN SPARK DETECTOR

APPLICATIONS

Our **SDN spark detectors** are designed to monitor and register sparks in completely dark areas. This makes them highly suitable to monitor ventilation and material transport. Our **SDN** is manufactured with reliability and dependability in mind. That is why it is constructed from a single solid metal piece. Ensuring exceptional robustness and enabling it to withstand demanding industrial production environments.



SDD SPARK DETECTOR

APPLICATIONS

Our **SDD spark detectors** are designed to monitor and register sparks in areas lit by daylight or electrical lights. This makes them highly suitable to monitor conveyor belts. Our **SDD** is manufactured with reliability and dependability in mind. That is why it is constructed from a single solid metal piece. Ensuring exceptional robustness and enabling it to withstand demanding industrial production environments.



TECHNICAL INFORMATION

SDN SPARK DETECTOR & SDD SPARK DETECTOR	
DIMENSIONS	115 x 31 mm
VOLTAGE	+20 VDC ± 10 % (supplied by spark detection central)
CURRENT	10 mA ± 10 %
OPERATING TEMPERATURE	-40°C to +50°C (can be exceeded if used in conjunction with optional fiber optic cables)



CONTROL UNIT

DC1 CONTROL UNIT

APPLICATIONS

The **Spark Detection and Extinguishing System** is used as a preventive fire and explosion protection solution in industrial environments where sparks, hot particles, or embers can be generated and transported through ducts, conveyors, or material handling systems. The system continuously monitors for ignition sources and acts before a fire or dust explosion can occur by detecting sparks early and triggering suppression actions. This makes it especially valuable for processes such as dust collectors, pneumatic conveying lines, silos, filters, and other areas where combustible dust or materials are present protecting equipment, facilities, and personnel from damage and hazards.

CONTROL UNIT

The **DC1 control unit** is designed for installation in environments where **explosive dust concentrations may occur**.

Each **DC1** unit can connect and control **up to four spark detectors** and **two automatic extinguishing modules,** allowing it to monitor **one installation or two independent installations**. The control unit features a **two-step alarm and control logic.**

Step 1 is activated when irregularities are detected, triggering immediate suppression and visual/audible alarms.

Step 2 is fully configurable, enabling automatic shutdown of ventilation, filtration, or production equipment according to user-defined safety requirements.



Flash and Sounder



Service Switch



Shutdown Relay

System management

The DC1 is capable of managing:

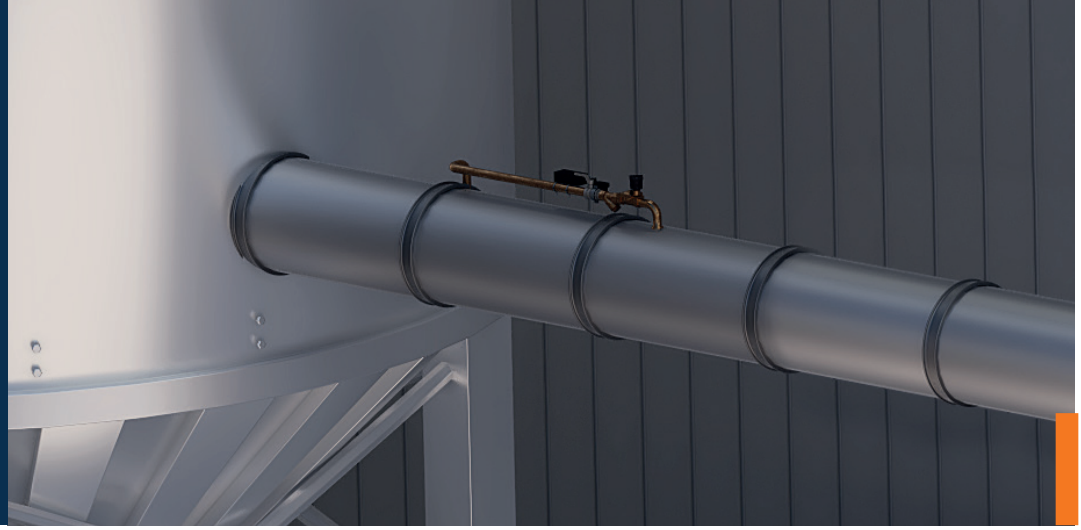
- Up to 4 SDN or SDD spark detectors
- 2 automatic extinguishing units
- Monitoring of heat tracing cables
- Monitoring of water flow, pressure, and valve status

TESTING & RELIABILITY

- For maximum reliability, the spark detection system performs automatic self-tests every two minutes, with the option for manual testing at any time.

KEY BENEFITS

- Decentralized monitoring
- Configurations tailored to specific processes
- Cost-effective solution with low installation costs



EXTINGUISHING DEVICE

EXTINGUISHING SA1 - SA2 - SA3 - SA4

APPLICATIONS

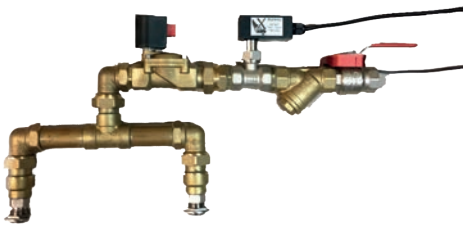
The Automatic Extinguisher SA1 – 4 is made of 5 parts: a nozzle, an electromagnet, a solenoid valve with high-speed opening technology, a stop valve and a filter. The Extinguisher's operating pressure is between 5 and 10 bar. This secures an effective water barrier for extinguishing the sparks.

The Auto Extinguisher is manufactured to cover all pipe or duct dimensions and shapes. An easy-to-mount adaptor is included. All sprinklers are delivered with seperate sole-noid valve, flow-switch, and a monitored lever-valve.



SA1

For up to 500 mm pipes



SA2

For up to 500-700 mm pipes



SA3

For up to 700-900 mm pipes



SA4

For over 900 mm pipes



BOOSTER SYSTEM

BOOSTER SYSTEM 150 L - 300L - 500L

APPLICATIONS

The **VIGI-SPARK** Booster are designet to supply the Spark Detection and Extinguishing system with water in the calculated amount and with the calculated pressure to the water nozzles.

THE BOOSTER SYSTEM CONTAINS

- Pump
- Relay power management
- Tank (150 L / 300 L / 500 L)
- Unit with a flush valve and pressure switch
- Pressure switch
- Manometer (10 bar, ½" x 80 mm)
- Overpressure valve
- Ball valve (1½")
- Standard strainer/standard filter (1½", brass)
- Service switch

AVAILABLE IN THREE SIZES



THE 150 L BOOSTER SYSTEM
is designed to support up to 3 sprinkler nozzles.



THE 300 L BOOSTER SYSTEM
is designed to support up to 5 sprinkler nozzles.



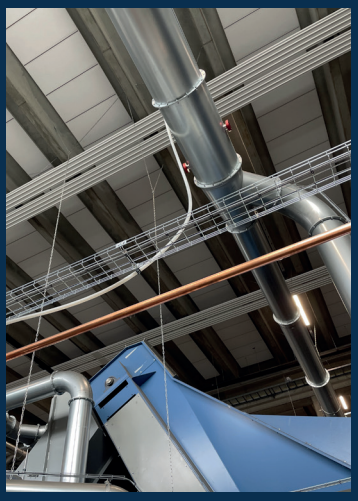
THE 500 L BOOSTER SYSTEM
is designed to support up to 7 sprinkler nozzles.

TECHNICAL INFORMATION

DIMENSIONS 150 L Tank	700 x 670 x 1200 mm
DIMENSIONS 300 L Tank	1400 x 670 x 1450 mm
DIMENSIONS 500 L Tank	1600 x 900 x 1800 mm
WEIGHT	150 L tank: 150 kg - 300 L tank: 200 kg
MAX PRESSURE	10 bar
PRECHARGE	3.6 bar
OPERATING TEMPERATURE	-10°C to +90°C
DISPOSAL	Motor and contacts: Electronic scrap - Tank and bottom plate: Metal scrap

Our **VIGI-SPARK** system installed









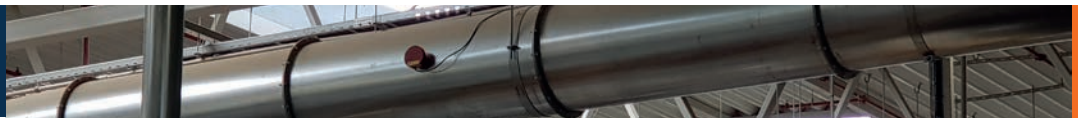






VIGI-SPARK

Accessories



OPTICAL FIBER CABLE

Optical Fiber Cable: For high-temperature applications exceeding the spark detectors' limit, optical fiber cables are used.

The cables mounts directly to the pipe to transmit light from sparks and embers, allowing the detectors to be installed safely within their temperature range.



MOUNTING BRACKET

Mounting bracket: When deploying the Optical Fiber Cable, these mounting brackets allow you to install the detectors in a separate, cooler location away from the duct.

Designed to match the detectors, they ensure a seamless and professional installation.



CABLE FOR DETECTOR AND SA

Cable for detector and sa: This industrial connection cable links the spark detector and suppression units to the control system.Designed for demanding environments, it ensures reliable communication, fast signal transmission, and safe operation of the **VIGI-SPARK** system.



JUNCTION BOX

Junction box: The junction box provides a safe and organized connection point for system wiring. It simplifies installation and maintenance while ensuring secure electrical connections and protection of cables in industrial environments.



AUTOMATIC AIR-CLEANING

Automatic air-cleaning: The automatic air-cleaning system continuously blows compressed air across the detector lens.This prevents dust accumulation and contamination, ensuring consistent detection performance and reducing maintenance requirements.



VIGI-SPARK



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