

What protects machine tools
uncompromisingly from fire?



Intelligent extinguishing solutions from Siemens.
Sinorix al-deco STD – reliable and effective all-around protection.

Answers for infrastructure.

SIEMENS



Without compromise – intelligent object protection for highest safety

The European Jurisdiction claims fire protection for machine tools and their equipment that have a high risk of a fire incident. Therefore, Siemens offers the right solution for your machine tools. The intelligent object protection system Sinorix™ al-deco STD uncompromisingly protects your equipment. Its main features: fire detection and extinguishing without requiring an electrical source, online monitoring, and automatic recording of all security-relevant functions.

As Sinorix al-deco STD ensures all-around protection, you can put your mind at ease. And with Siemens as a partner, you have the possibility to benefit from a comprehensive service offering including fast recommissioning after a discharge and maintenance appropriate to operation.



Sinorix – intelligent extinguishing solutions to keep fire virtual

■ Sinorix – fire protection from Siemens

A perfect fire protection solution requires technology and expertise. Sinorix, the intelligent extinguishing solutions, offer you the latest technologies based on

long-term know-how and experience in fire detection and extinguishing from a global partner. The solutions are tailored to your individual needs to maximize business continuity. Fires are detected early and extinguished quickly and reliably.

Sinorix high-quality solutions protect people, environment, processes, and assets. The solutions also comprise a comprehensive service portfolio – from risk assessment, system design, installation, and commissioning to maintenance.

Sinorix portfolio overview

■ Sinorix CDT (Constant Discharge Technology)

Innovation based on extinguishing with natural agents to provide constant gas discharge that allows a reduction of overpressure flaps by up to 70%.

■ Sinorix 1230

Solution based on the environmentally friendly extinguishing agent 3M™ Novec™ 1230 Fire Protection Fluid with 42-bar technology that enables highest extinguishing efficiency and flexibility in engineering.

■ Sinorix H₂O Gas

Highly efficient combination of nitrogen and water extinguishing technology with an additional positive cooling effect – for secure extinguishing and reliable room protection.

■ Sinorix H₂O Jet

Unique two-phase flow technology that generates fine water droplets at low hydraulic pressure – for efficient control of open fires as well as for accurate extinguishing in object protection.

■ Sinorix N₂ • Ar • CO₂

Extinguishing solutions with natural agents for maximum flexibility in design and engineering of systems.

■ Sinorix 227

Extinguishing solution based on the globally known HFC 227ea with 25- and 42-bar technology for fast and reliable extinguishing.

■ Sinorix al-deco STD

Object protection system for machine tools offering reliable fire detection and effective extinguishing.

■ Sinorix Door-Fan-Test

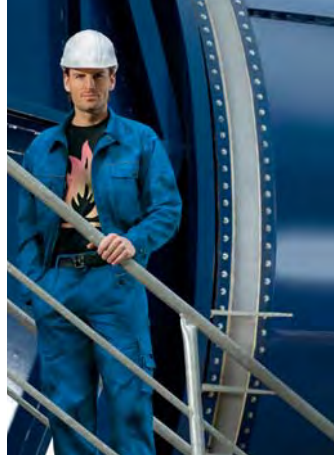
The Door-Fan-Test from Siemens offers a simple, cost-effective, and environmentally friendly method for measuring room tightness and can also be used to directly locate leaks.

Intelligent means: partnership.
Sinorix – long-term experience from a global partner.

Intelligent means: flexible.
Sinorix – adaptable for any risk of fire.



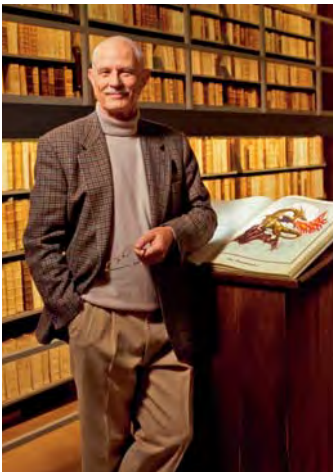
With Sinorix, you benefit from a global partner with extensive experience in fire protection – for example, Siemens already offered innovative extinguishing solutions 100 years ago. In addition, we support you with a comprehensive range of services that are tailored to your needs.



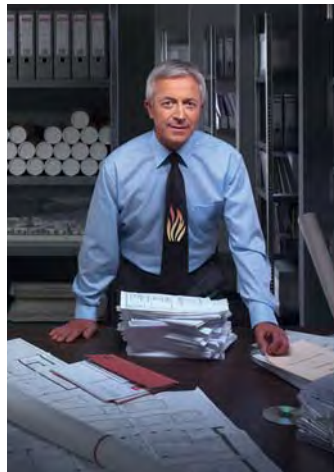
Sinorix offers solutions for every risk of fire and can be adapted to your specific object or room protection requirements in a flexible way.

Intelligent means: innovative.
Sinorix – most advanced technologies for highest effectiveness.

Intelligent means: tailored.
Sinorix – customized for your unique requirements.



Sinorix innovative extinguishing solutions are based on new insights and inventions and thus deliver cutting-edge technologies with the highest effectiveness. Our expertise and innovative strength are at your disposal around the world.



Sinorix extinguishing solutions are tailored to your individual applications. Whether an object or a room, a single or a multi sector needs to be protected, we support you in assessing the risk and selecting the best technology for your business.

Intelligent means: reliable.
Sinorix – for optimized business continuity.

Intelligent means: sustainable.
Sinorix – to protect people, environment, processes, and assets.



Long-term experience and integrated solutions tailored to your requirements ensure reliable fire protection that supports the continuity of your business processes.



Siemens offers you a comprehensive range of extinguishing solutions to protect people, environment, processes, and assets. Siemens supports you today and for years to come to make your investment a long-term win.

Sinorix al-deco STD – all-around protection for machine tools

■ Protecting your investment and business continuity

Machine tools with non-hydrinous coolants and high cutting velocities have a high risk of fire. In case of a fire incident in such a machine, the whole production site is at risk. Statistics show that approximately 10 percent of those installed machine tools burn within two to five years. In the event of a fire, valuable machines and infrastructure can be severely damaged. Even worse are the considerable economical disadvantages such as down times and thus delivery failures, which might lead to severe damage on the image or even to the loss of customers. These consequences cannot be insured and might result in a total loss of business at worst. These are reasons why approximately 43 percent of all companies with a major fire incident file immediately for bankruptcy, further 27 percent within the first three years after an incident. Therefore, reliable fire safety is essential.

■ Cost efficiency that really counts

The Sinorix al-deco STD object protection system distinguishes itself with an unparalleled price-performance package that offers uncompromising protection. It requires only an investment of about 1.5 to 2.5 percent of the total value of a machine tool. A worthwhile investment in proportion to the damages that could occur.

■ Highly reliable and effective

Sinorix al-deco STD covers everything from fire detection, alarming, monitoring to extinguishing. As the detection of a fire as well as the activation of the extinguishing process are based on pneumatic functions, Sinorix al-deco STD is able to detect and extinguish a fire without needing an electrical source. Therefore, the system is insensitive to all kinds of technical interferences. This makes Sinorix al-deco STD highly reliable.

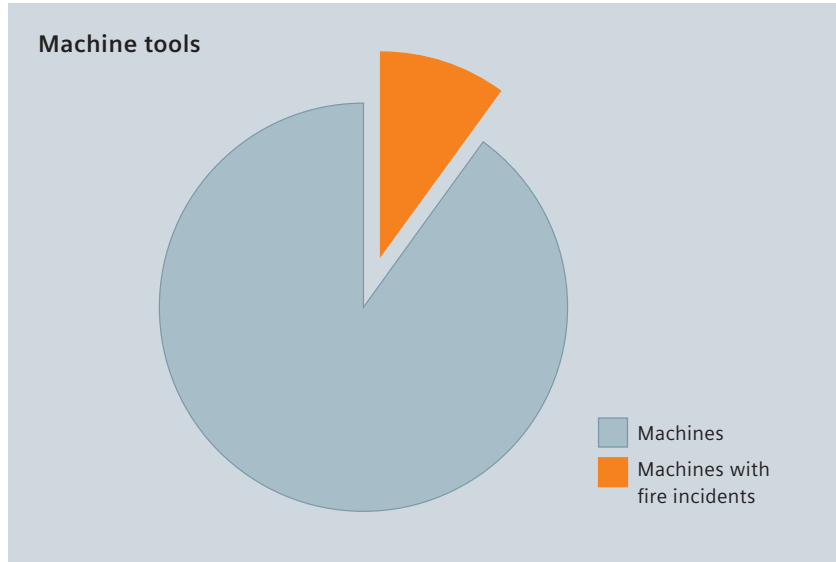
Furthermore, all security-relevant functions are monitored online and indicated in case of an incident. The incidents as well as these functions are automatically recorded in a long-term memory and are available via the USB interface.

Highlights

- Ideal solution for the protection of machine tools
- Profitable investment of only 1.5 to 2.5 percent of the total value of a machine tool
- Highest operating safety
- Comprehensive online monitoring and recording
- Integrated service offering
- Safety through testing and CE certification by TÜV

Sinorix al-deco STD object protection systems have already been installed into several thousand machine tools.





Approximately 10 percent of all installed machines, which are cooled with non-hydrus coolants, experience a fire incident within 2 – 5 years.

Sinorix al-deco STD – reliable and effective protection

The Sinorix al-deco STD object protection system can be easily tailored to individual requirements. Thus, reliable and effective all-around protection for machine tools is ensured.

■ Detection and extinguishing

The heart is a patented tube-shaped linear fire sensor, produced with a high-molecular polymer, named Lifdes™ (Linear fire detection source). This sensor is stressed by a pressure of 15 bar. Connected to a fire extinguishing bottle via a valve, it is permanently under this pressure and will burst if its ambient temperature rises above 110 °C. In this way, it acts like a linear sensor that will always be activated right where the activation temperature has been reached first.

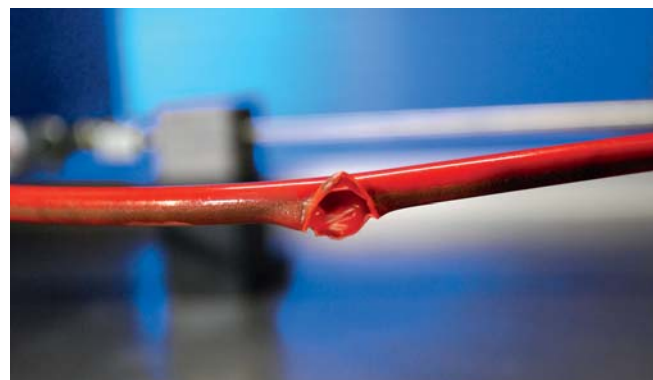
Practically at the same time as the pressure drops in the burst fire sensor Lifdes, the valve of the bottle will be opened and the machine is switched to “EMERGENCY STOP”. The extinguishing agent is introduced via a separate extinguishing line and appropriately arranged extinguishing nozzles. The system requires no external power for the detection and extinguishing of fire. This happens pneumatically, and is therefore insensitive to all kinds of technical interferences. Incorrect activation of the system is virtually impossible.

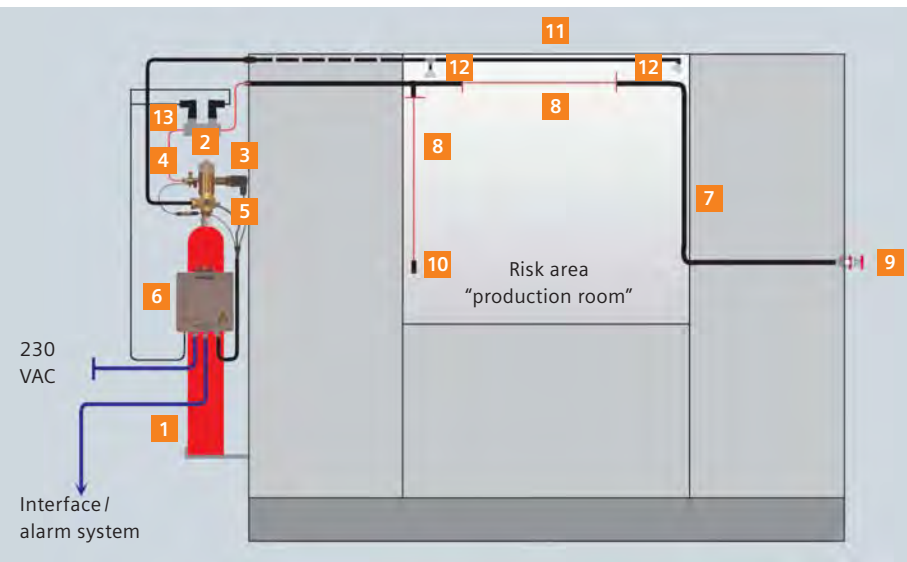
■ Measurement

The Sinorix al-deco STD object protection system measures the quantity of the extinguishing agent online, monitors the pressure of the detection line, the operating as well as the main power status. The interface displays all functions optically/acoustically, for example an alarm is activated when the loss of extinguishing agent exceeds 20% as well as in case of a fire incident. In case of a power outage,

the functions of the interface will be held up by means of a battery. The system can be reset in a controlled manner with the key switch. Therefore, it is possible to instantly put the machine tools into operation again after a fire incident. However, the fact that the Sinorix al-deco STD object protection system is not yet operational will be clearly communicated and recorded.

Activation and measuring unit Patented tube-shaped linear fire sensor Lifdes





Legend for the key components

- 1 CO₂ extinguishing agent cylinder
- 2 CO₂ valve (IHP)
- 3 Pressure switch, potential-free
- 4 Ball valve for the activation/deactivation of the extinguishing system (with status monitoring)
- 5 Activation and measuring unit (integrated into the valve) for checking the CO₂ quantity
- 6 Alarm interface
- 7 Detection line, steel, D=6x4 mm
- 8 Detection line, fire sensor Lifdes (flexible)
- 9 Manual release with pressure gauge
- 10 End stops for detection line
- 11 Extinguishing line for CO₂
- 12 Extinguishing nozzles
- 13 Distribution unit with pressure switch 2 and 3

Sinorix al-deco STD concept example for machine tools.

■ Alarming

An alarm is given optically/acoustically (fire alarm) through the interface. A connection to an existing fire control panel is possible. Additional signals such as loss of extinguishing agent, "ON/OFF" of the extinguishing system, fire alarm etc. can be used via potential-free contacts for other applications as well.

■ Monitoring

All security-relevant functions of the Sinorix al-deco STD object protection system are monitored online and indicated acoustically and optically in case of an incident – enabling quick intervention.

The operating data as well as these functions are automatically recorded in a long-term memory and can be readout via a USB interface. Thus, events can be easily reconstructed after an incident and liability issues clarified.

Highlights

- Effective fire detection with the patented fire sensor Lifdes
- Pneumatic detection and activation of extinguishing process
- Insensitive to all kinds of technical interferences
- Online monitoring and activation of an alarm in case of a fire incident
- Comprehensive monitoring with recording of security-relevant data
- Availability of the data via the USB interface

Interface displays all functions optically/acoustically.





Fully equipped machine tool, TAC*, Siemens, Erlangen, Germany

Sinorix al-deco STD – for safe operation

Sinorix al-deco STD is a highly reliable object protection system. In case of a fire incident, it protects valuable machines and infrastructure and ensures business continuity.

■ Maintenance and recommissioning

The maintenance of the system is displayed electronically and we will support you according to your operating schedule. The electronic supervision of both the pneumatic detection and the status of the extinguishing system allow maintenance with a minimum impact on business processes. Our service portfolio also includes the possibility of fast recommissioning after a discharge.

In addition, you can also perform maintenance and refilling after a fire incident yourself with the help of the corresponding documentation. The extinguishing agent cylinders are fitted with a special filling adaptor and can be refilled from any gas refilling station.

■ Live demonstrations

If you would like to witness a live demonstration of a Sinorix al-deco STD system and learn more about its advantages, please contact your local Siemens sales representative.

Highlights

- Maintenance appropriate to operation
- Possibility of fast recommissioning after a discharge
- Live demonstrations available

*TAC: Technology and Application Center

Exhibition model, Visitor Center, Siemens, Zug, Switzerland



Mobile unit for live demonstrations on site



Demo unit for local presentations



Technical overview

Sinorix al-deco STD

Interface	The USB interface allows the communication with a PC through the included software. Thereby all recorded data can be readout.
Approvals	<ul style="list-style-type: none"> – The system has been tested and certified according to the Type Test AISF-22-05-110 of the TÜV, Technische Überwachung Hessen GmbH (CE 0091). – The quantity calculation of the extinguishing agent is carried out according to the VdS 2093 directive. – The system has been constructed and installed based on DIN 14497 for small extinguishing systems. – The system fulfills the regulations of the Employers' Liability Insurance Association (Berufsgenossenschaftliche Regeln) BGR 134. – Maintenance takes place in accordance with DIN 14406 Part 4 Maintenance.

Success stories

■ Laubscher Präzision AG, Switzerland

The company Laubscher is active in different markets; one of them is the watch industry with globally known customers. For its machine tools, the company uses non-hydrous coolants which hold a higher risk of fire than water-based emulsions. Therefore, special object protection is essential.

Siemens installed numerous Sinorix al-deco STD object protection systems to protect the machines at risk.

At Laubscher, Sinorix al-deco STD has already successfully detected and extinguished several fires, thus ensuring the business continuity of the company. In addition, the machines were put back into operation within 24 hours. Thanks to Sinorix al-deco STD, Laubscher even profits from reduced insurance rates.

■ Synthes, Switzerland

Synthes is a leading global medical device company, specialized in the development, manufacturing, and marketing of orthopedic surgical implants and instruments. In the product manufacturing process with advanced machine tools, a high level of reliability and delivery dependability is very important.

That is why Synthes decided to introduce object protection systems to minimize the risk of fire and its consequences. With Sinorix al-deco STD, Synthes is convinced that quick detection and reliable extinguishing of a fire is ensured. This gives them and especially their customers the certainty that the availability of the products is secured at any time.

Laubscher Präzision AG, Täuffelen, Switzerland



Synthes, Grenchen, Switzerland



Answers for infrastructure.

■ Megatrends driving the future

The megatrends – demographic change, urbanization, climate change, and globalization – are shaping the world today. These have an unprecedented impact on our lives and on vital sectors of our economy.

■ Innovative technologies to answer the associated toughest questions

Throughout a 160-year history of proven research and engineering talent, with more than 50,000 active patents, Siemens has continuously provided its customers with innovations in the areas of healthcare, energy, industry, and infrastructure – globally and locally.

■ Increase productivity and efficiency through complete building life cycle management

Building Technologies offers intelligent integrated solutions for industry, commercial and residential buildings, and public infrastructure. Over the entire facility's life cycle, our comprehensive and environmentally conscious portfolio of products, systems, solutions, and services for low voltage power distribution and electrical installation technology, building automation, fire safety and security ensures the:

- optimum comfort and highest energy efficiency in buildings,
- safety and security for people, processes, and assets,
- increased business productivity.



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The information in this document contains general descriptions of technical options available, which do not always have to be present in individual cases. The required features should therefore be specified in each individual case at the time of closing the contract.

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