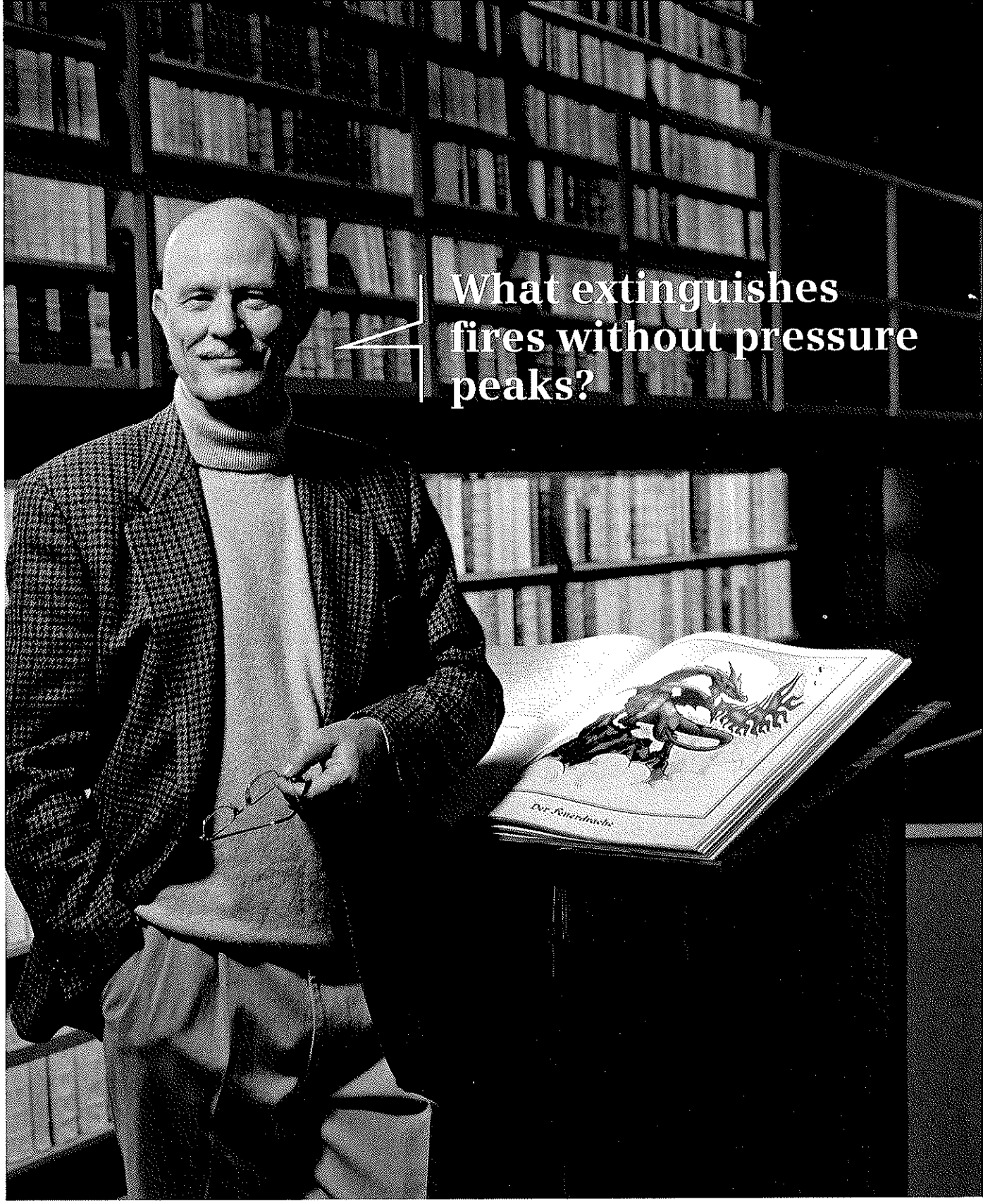


Intelligent extinguishing solutions from Siemens.
Sinorix CDT – innovative, sustainable, and safe.

Answers for infrastructure.

SIEMENS



Innovative technology – the intelligent solution for reliable protection

Innovative extinguishing solutions optimally protect people, the environment, and business processes from fire. Sinorix™ CDT offers a unique extinguishing technology for especially constant gas discharge. It is the result of the extensive experience from Siemens in the field of extinguishing. In addition, Siemens provides a comprehensive service offering – from risk assessment, system design, and installation to commissioning and maintenance.

Sinorix CDT enables extremely effective protection against fire in areas where overpressure flaps are very difficult to install. Here, the unique, patented valve technology provides particularly effective, sustainable, and constant extinguishing. In addition, the solution is safe for people and the environment.



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 nitrogen to provide constant gas discharge that allows a reduction of overpressure flaps by up to 70%.

Sinorix 1230
Solutions based on the environmentally friendly extinguishing agent 3M™ Novec™ 1230 Fire Protection Fluid and low- or high-pressure technology for highest extinguishing efficiency and flexibility in engineering.

Sinorix H_2O Gas
Highly efficient combination of nitrogen and water extinguishing technology with an additional positive cooling effect – for secure extinguishing and reliable room protection.

Sinorix H_2O 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.

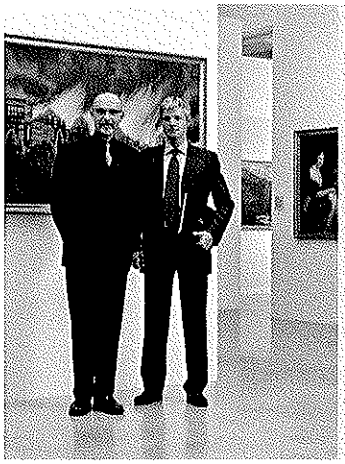
Sinorix N_2 • Ar • CO_2
Extinguishing solutions with natural agents for maximum flexibility in design and engineering of systems.

Sinorix 227
Extinguishing solutions based on the globally known HFC 227ea with low- or high-pressure technology for fast and reliable extinguishing.

Sinorix al-deco STD/ Sinorix al-deco PLUS
Two object protection systems for machine tools offering reliable fire detection and effective extinguishing. Sinorix al-deco PLUS additionally provides integrated personal protection.

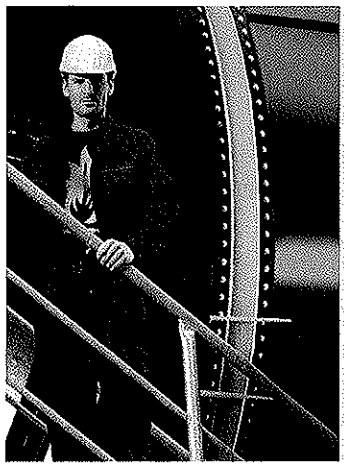
Sinorix Door-Fan-Test
The Door-Fan-Test from Siemens offers a simple, cost-effective, and environmentally friendly method for measuring room tightness and can also be used to directly locate leaks.

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



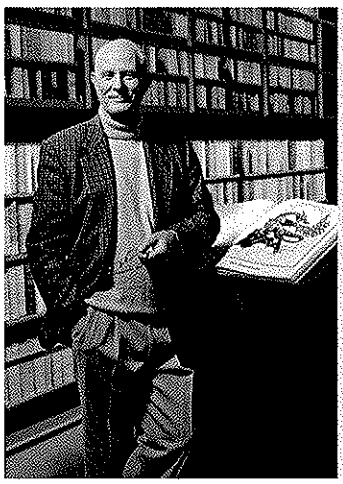
With Sinorix, you benefit from a global partner with extensive experience in fire protection – for example, Siemens already offered innovative extinguishing solutions 100 years ago. In addition, we support you with a comprehensive range of services that are tailored to your needs.

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



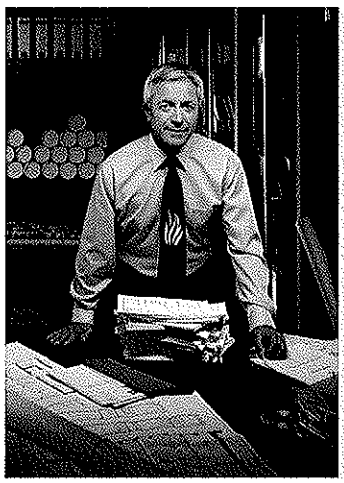
Sinorix offers solutions for every risk of fire and can be adapted to your specific object or room protection requirements in a flexible way.

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



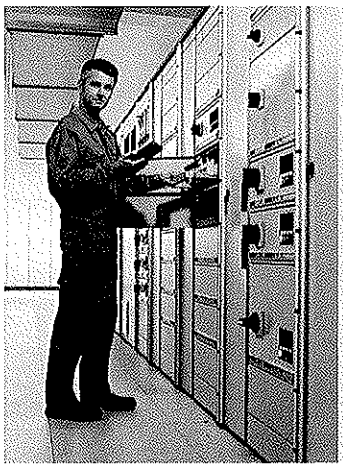
Sinorix innovative extinguishing solutions are based on new insights and inventions and thus deliver cutting-edge technologies with the highest effectiveness. Our expertise and innovative strength are at your disposal around the world.

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



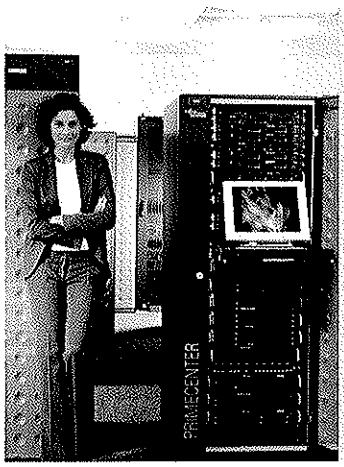
Sinorix extinguishing solutions are tailored to your individual applications. Whether an object or a room, a single or a multi sector needs to be protected, we support you in assessing the risk and selecting the best technology for your business.

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



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

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



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 CDT – effective extinguishing without pressure peaks

Innovative and sustainable
Sinorix CDT is based on a unique, innovative technology: the valve technology for constant gas discharge developed and patented by Siemens. In conjunction with the extinguishing agent nitrogen (N_2), it not only provides reliable extinguishing but also reduces the impact on the environment and surroundings. The pure natural gas is environmentally friendly and harmless for sensitive installations – optimal prerequisites for use in a wide range of application areas. In addition, Sinorix CDT extinguishing solutions can be flexibly adapted to the respective application and designed for one or more sectors.

Widely usable – even in structurally difficult areas
Sinorix CDT is suited for use in a wide range of application areas. Extinguishing occurs by reducing the oxygen concentration in the room. That extinguishes fires quickly and reliably, and reignitions are effectively prevented. Extinguishing without pressure peaks reduces the number of overpressure flaps required, so it is ideally suited for use in structurally difficult areas such as interior and thick-walled rooms and rooms in underground floors. Moreover, Sinorix CDT uses nitrogen as an extinguishing agent: the pure natural gas has no negative effects on the environment.

Integrated fire safety from an experienced partner
As one of the world's leading providers of fire safety technology, Siemens knows how fires work. After all, 100 years ago, we were among the first to provide innovative extinguishing solutions in combination with reliable fire detection technology. In fact, we have been further advancing fire safety technologies for 160 years.

Our innovative fire safety solutions are based on these many years of experience. Our solutions offer unique protection – integrated in a proven, comprehensive concept. For example, in combination with the most advanced fire detection systems, our Sinorix CDT extinguishing solutions provide optimal protection against risks of fire and allow fast, reliable extinguishing. And you get everything you need for comprehensive fire safety from a single source.

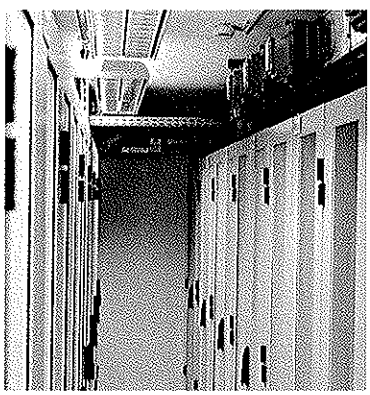
Naturally, your solution will be customized and adapted to your individual needs and risks and will include a comprehensive service offering – from risk assessment, application support, system design, installation, and commissioning to maintenance and modernization.

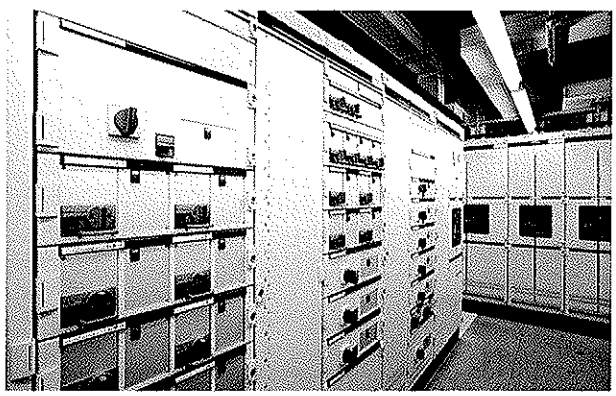
All our solutions comply with national and international standards and regulations. In addition, Sinorix CDT is the first and currently the only VdS-approved system with constant gas discharge.

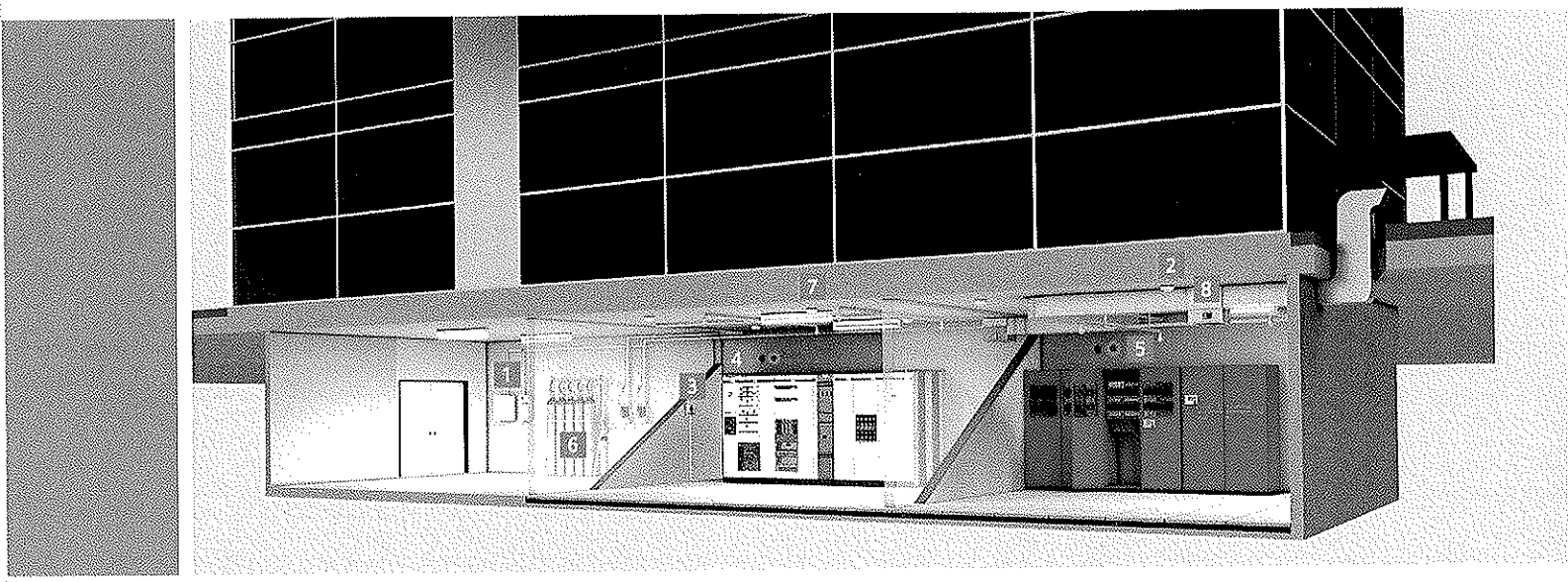
Typical applications
- Telecommunication systems
- Data centers and server rooms
- Cable ducts
- Electrical switching rooms
- Control rooms
- Technical and machine rooms
- Military depots

Highlights

- First and currently only VdS-approved system with constant gas discharge
- Comprehensive solutions from a single source – from risk assessment to maintenance
- Environmentally friendly and safe for people thanks to the use of nitrogen
- No damage to the equipment thanks to residue-free extinguishing
- Customized to individual applications and risks of fire







Application example for rooms in underground floors

Sinorix CDT – innovative extinguishing technology for flooding at constant pressure

Sinorix CDT is an innovation based on extinguishing with nitrogen providing constant gas discharge. As a result, overpressure flaps can be reduced by up to 70%.

Fast, reliable extinguishing without pressure peaks

Sinorix CDT is the first and currently only system with VdS-approved valve technology for constant gas discharge. The unique valve technology was developed and patented by Siemens, and allows nitrogen to be introduced into the flooding zone at constant pressure during the flow time.

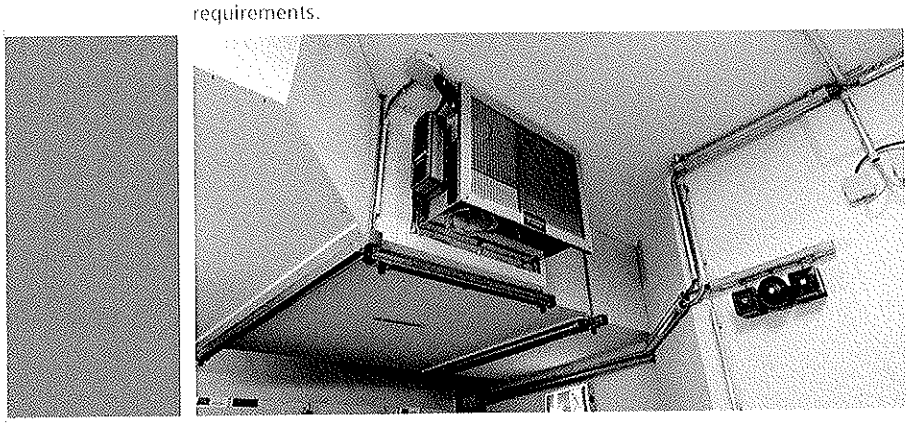
Sinorix CDT extinguishing solutions are based on a cylinder pressure of 300 bar. The innovative valve technology already limits the pressure at the cylinder valve to approximately 60 bar. In this way, it ensures that the extinguishing agent is distributed in the room constantly under consistently even pressure throughout the entire discharge time, allowing effective extinguishing without pressure peaks.

Thanks to the even flow, overpressure flaps can be reduced by up to 70%. Sinorix CDT is therefore particularly suited for rooms in which large overpressure flaps are very difficult to deploy because of structural conditions.

These include, for example, interior rooms or rooms with thick walls. With Sinorix CDT, overpressure flaps – which must be guided to the outdoors via a separate duct due to fire protection reasons – can be realized more cost-effectively thanks to a reduced cross-section.

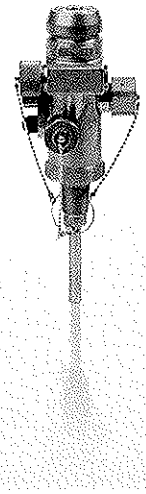
In addition, the piping networks can be smaller in size compared to standard extinguishing systems. The use of low-pressure range selector valves saves costs especially in larger multi-sector systems.

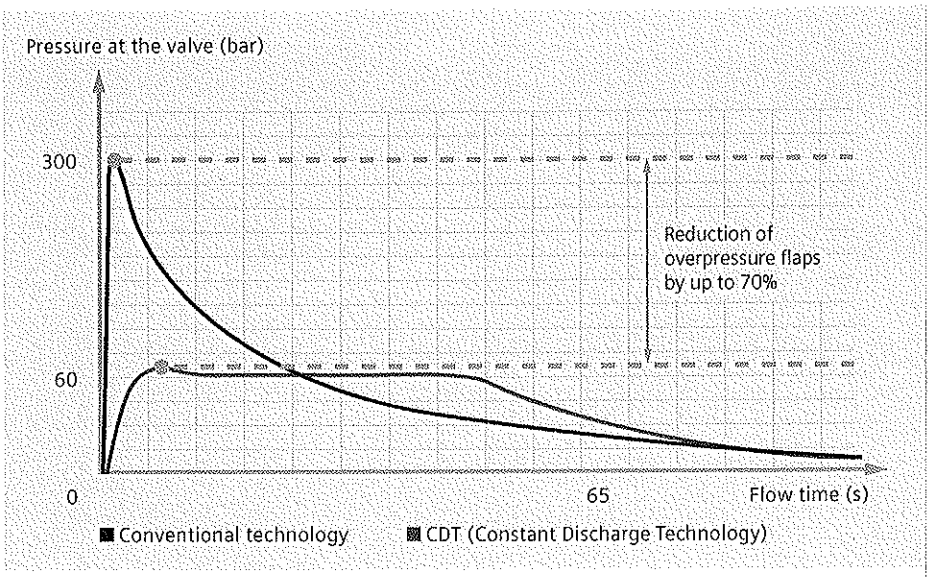
Sinorix CDT is particularly suited for areas with demanding overpressure flap requirements.



Legend:

1. Fire detection and extinguishing control panel
2. Fire detector
3. Aspirating smoke detector
4. Alarm sounder
5. Combined sounder beacon
6. Extinguishing agent cylinders
7. Piping network with nozzles
8. Overpressure duct





Thanks to the patented valve technology, the extinguishing agent is introduced into the flooding zone at constant pressure during the entire discharge time.

Customized design thanks to precise calculation

The extinguishing system is designed using a calculation program developed especially for this purpose. This program has been tested and approved by VdS as part of the system approval process. Depending on the respective risk of fire and the individual requirements, the quantity of extinguishing agent, the piping dimensions, the nozzles, the range, the flow and holding times, etc. are sized precisely to the specific application.

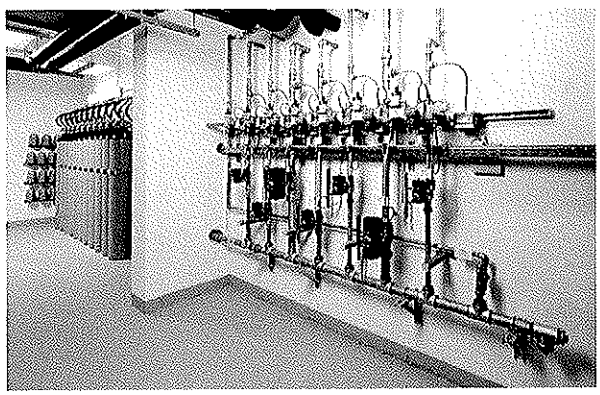
Great flexibility in planning and system design

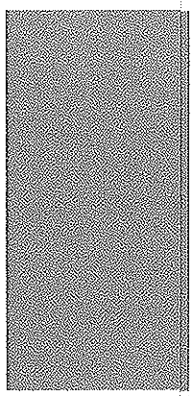
Depending on what the application requires, both single- and multi-sector systems can be realized using Sinorix CDT. The arrangement of the cylinders is also variable: they can be positioned either centrally or decentrally.

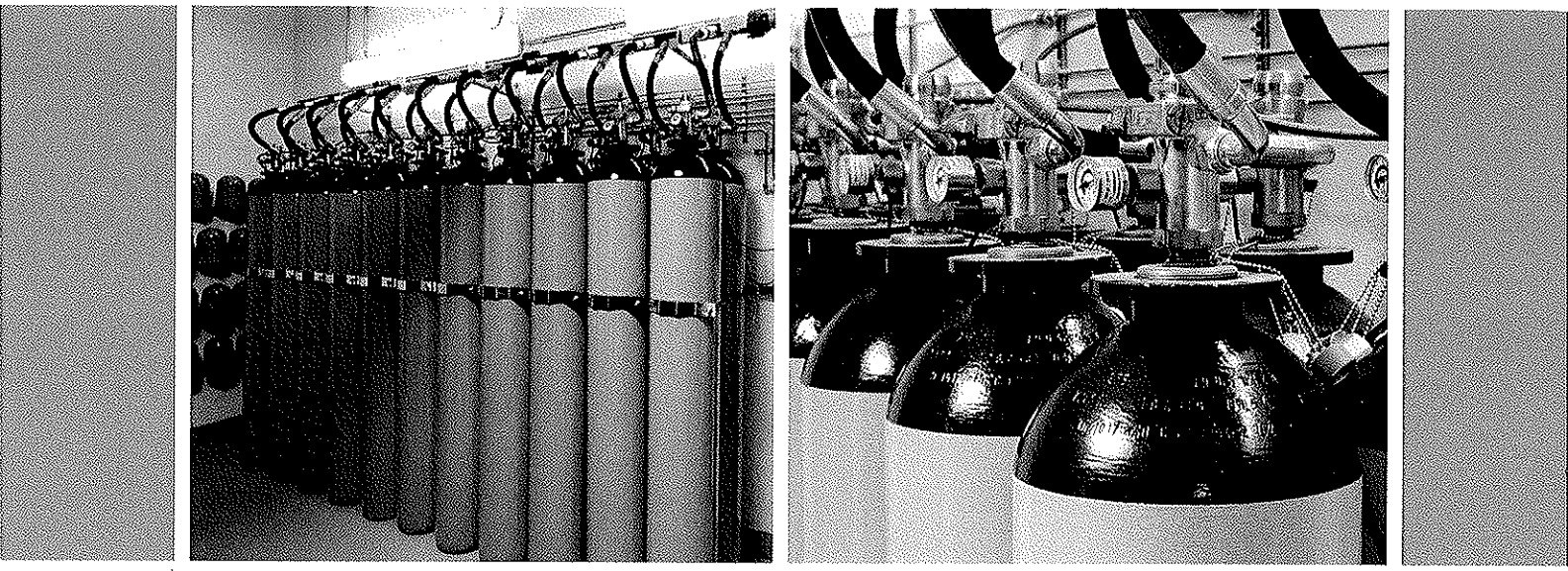
Thanks to this flexibility, Sinorix CDT extinguishing solutions can be optimally adapted to existing buildings, requirements, and risks of fire, thereby ensuring optimal protection. Moreover, our solutions also include a comprehensive service and maintenance offering for seamless operation.

Highlights

- Valve technology patented by Siemens and tested by VdS
- Reduction of overpressure flaps by up to 70%
- Lower hardware costs
- Great flexibility in planning and system design
- Optimal adaptation to existing buildings and requirements







Sinorix CDT uses pure, environmentally friendly nitrogen as extinguishing agent.

Highly effective, environmentally friendly, and safe – nitrogen

Sinorix CDT extinguishing solutions use nitrogen, a pure natural gas, to extinguish fires reliably and without harming the environment. The extinguishing agent is safe not only for the environment, but also for people and assets in the protected area.

Reliable extinguishing properties

The extinguishing properties of Sinorix CDT extinguishing solutions with pure nitrogen are based on oxygen reduction in the protected area (inertization): flooding the area with nitrogen lowers the volume content of oxygen to typically 13.8 vol.-% to 10 vol.-%, depending on the risk of fire, and displaces the oxygen that is required for the combustion process. In this way, the fire is reliably extinguished.

Environmentally friendly and safe extinguishing

The pure, color- and odorless natural gas nitrogen used by Sinorix CDT is environmentally friendly and forms neither residues nor decomposition products. This makes it possible to resume using the flooding zones quickly after flooding simply by venting the zones. Depending on the risk of fire and national guidelines, Sinorix inert gas extinguishing solutions are usually designed as people-safe systems.

Fast, easy refilling

Nitrogen is available everywhere, and refilling is therefore easier, cheaper, and faster than with technologies that use gas mixtures. The cylinders can be therefore refilled in a very short time. That minimizes downtime of the extinguishing system after activation and reduces costs. Our service offering includes especially fast and convenient refilling.

100 years of extinguishing from Siemens

We have not just set milestones in fire detection for 160 years – 100 years ago, Siemens & Halske also introduced an extinguishing solution that was far ahead of its time, and revolutionized extinguishing technology as one of the first providers of automatic CO_2 extinguishing solutions. The company set a standard that is still valid today – and this technology has been continually advanced since then. Today Siemens remains an innovative pioneer in this industry, for example with Sinorix CDT and Sinorix H_2O Gas.

Highlights

- Reliable extinguishing properties
- Environmentally friendly with natural gas
- Easy ventilation after flooding
- Minimized downtime and low costs thanks to fast, inexpensive refilling

Technical overview

Sinorix CDT extinguishing solution	
Extinguishing agent	Nitrogen: 300-bar technology
System	Sinorix CDT valve technology: ~60 bar
Patents	Sinorix CDT valve technology
Standards	– ISO 14520-1, ISO 14520-13, EN 15004-1, EN 15004-9 – VdS 2380
Approvals	– VdS system approval (S309001) – VdS-approved calculation program – CNPP system approval

Success story

University hospital Freiburg, Germany

The university hospital Freiburg is one of the largest medical institutions in Europe. All medical disciplines have their own specialist clinics and institutes and ensure patient care on the highest level. To guarantee a high, reliable availability of important data, such as electronic patient files, the university hospital expanded its data center and needed a comprehensive fire safety and security concept for its server and electrical switching rooms as well as for the other rooms of the data center.

In close cooperation with the customer, Siemens developed an integrated solution that also included an extensive service offering. For the seven flooding zones, a Sinorix CDT extinguishing solution was chosen. It excels through its unique CDT valve technology for especially constant gas discharge without pressure peaks and its safety for people. Overpressure flaps can thus be dimensioned considerably smaller in size compared to standard nitrogen extinguishing systems. This has decisive advantages, especially where overpressure flaps are hard to realize due to difficult structural conditions – such as in the case of the interior server and electrical switching rooms of the university hospital.

The extinguishing agent nitrogen that is used not only extinguishes reliably, but also reduces the impact on the environment and surroundings. It is also harmless for people as well as for sensitive installations and forms neither residues nor decomposition products. A cylinder battery and reserve battery ensure an uninterruptible fire safety after activation.



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.

Siemens Pte Ltd
Building Technologies
The Siemens Center
60 MacPherson Road
Singapore 348615

Tel +65 6490 8930
Fax +65 6490 8931
buildingtechnologies.sg@siemens.com

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.

© Siemens Switzerland Ltd, 2014

www.siemens.com/sinorix