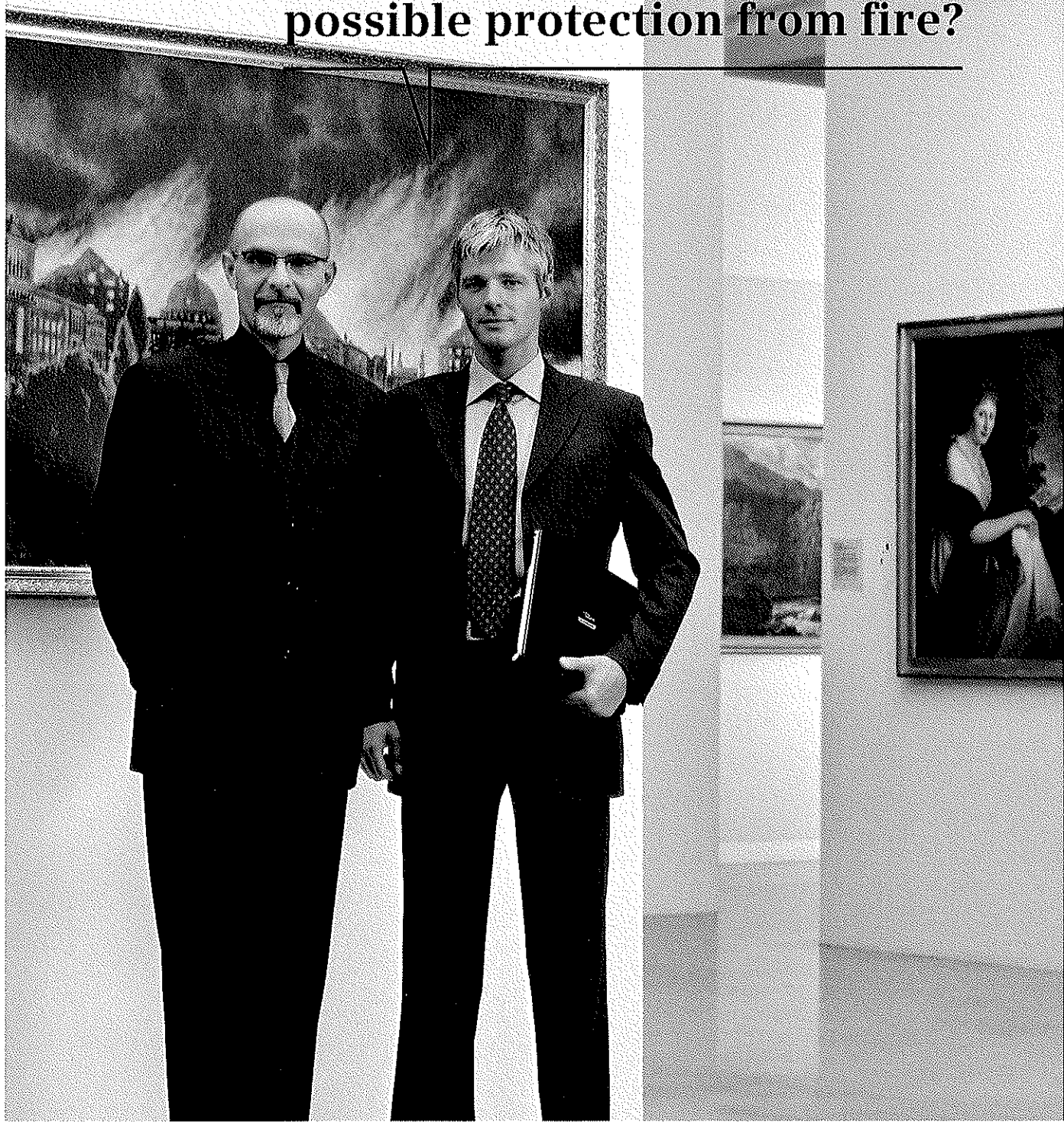
What provides highest possible protection from fire?



Intelligent extinguishing solutions from Siemens.
Sinorix N_2 • Ar • CO_2 – natural, flexible, and reliable.

Answers for infrastructure.

SIEMENS



Experience – the basis for intelligent fire safety

Efficient extinguishing solutions optimally protect people, assets, and processes from fire. Sinorix™ N_2 • Ar • CO_2 bundle the long-term know-how from Siemens in integrated solutions from one source that also comprise a comprehensive service offering – from risk assessment, system design, installation, and commissioning to maintenance.

Sinorix N_2 • Ar • CO_2 extinguishing solutions use pure natural gases as well as state-of-the-art technology for fast and reliable extinguishing without harming the environment. In addition, the extinguishing solutions with natural agents can be precisely tailored to the existing building structure, requirements, and risks of fire thanks to their high flexibility regarding system planning and design.



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 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.

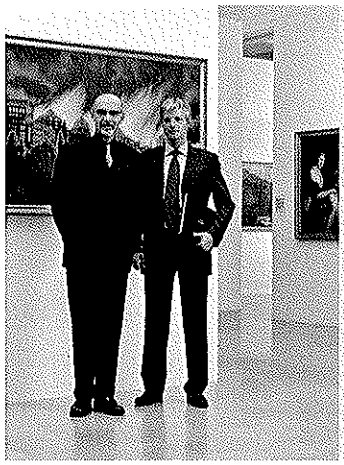
Sinorix N_2, N_2/Ar, CO_2
Extinguishing solutions with natural agents for maximum flexibility in design and engineering of systems.

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.

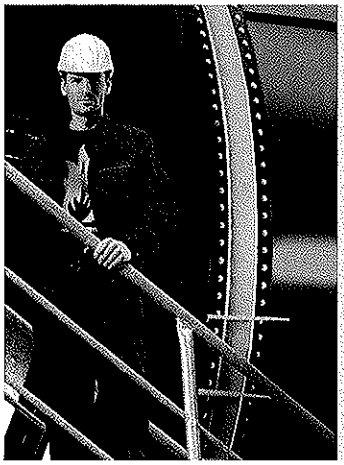
Sinorix Door-Fan-Test
The Door-Fan-Test from Siemens offers a simple, cost-effective, and environmentally friendly method for measuring room tightness and can also be used to directly locate leaks.

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



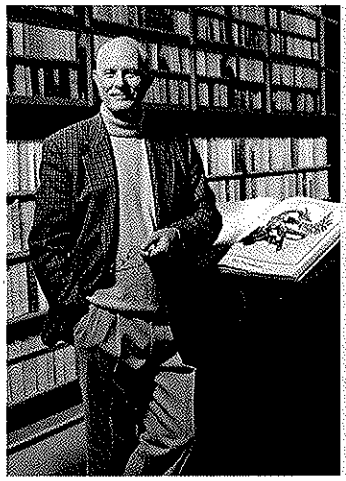
With Sinorix, you benefit from a global partner with extensive experience in fire protection – for example, Siemens already offered innovative extinguishing solutions 100 years ago. In addition, we support you with a comprehensive range of services that are tailored to your needs.

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



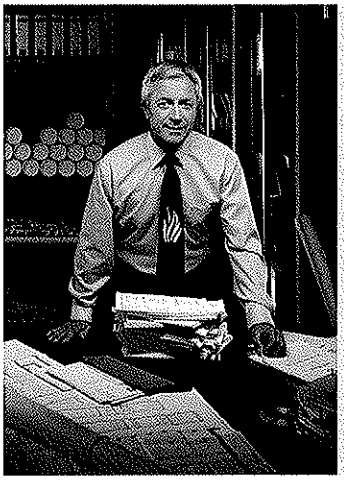
Sinorix offers solutions for every risk of fire and can be adapted to your specific object or room protection requirements in a flexible way.

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



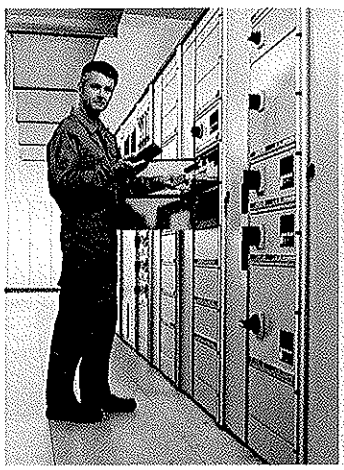
Sinorix innovative extinguishing solutions are based on new insights and inventions and thus deliver cutting-edge technologies with the highest effectiveness. Our expertise and innovative strength are at your disposal around the world.

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



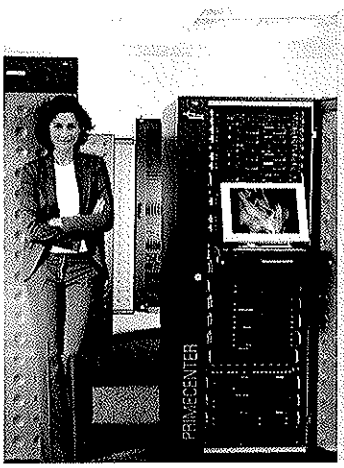
Sinorix extinguishing solutions are tailored to your individual applications. Whether an object or a room, a single or a multi sector needs to be protected, we support you in assessing the risk and selecting the best technology for your business.

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 N_2 • Ar • CO_2 – efficient extinguishing with pure natural gases

Highest efficiency
Sinorix N_2 • Ar • CO_2 uses pure natural gases for particularly reliable extinguishing – a study by CEA[1] shows that extinguishing systems with pure natural gases are superior to systems using a mixture of various gases. For optimal effectiveness, Sinorix N_2 • Ar • CO_2 extinguishing solutions can be individually tailored to meet your application. With high-pressure technology they can be designed for one or more sectors and the positioning of the cylinders can be centralized or decentralized.

Versatile in usage
Sinorix extinguishing solutions with pure natural gases are environmentally friendly and offer you state-of-the-art fire safety technology. They extinguish a fire by displacing the oxygen in the flooding zone. This ensures effective extinguishing of a fire and prevents reignition.

Tailored to the respective risks and individual requirements, one of the three natural gases will be used. Pure nitrogen (N_2) is the most commonly used agent. In special application areas, argon (Ar) or carbon dioxide (CO_2) are used. CO_2 is the most effective extinguishing agent of all natural gases. However, as the concentration required for extinguishing is hazardous for people, it is primarily used for unmanned zones or for areas where the risk of fire requires CO_2 as well as for object protection.

Fire safety from an experienced partner
As a leading international provider of fire safety technology, Siemens has learned how fires work. This knowledge has contributed to the development of innovative fire safety solutions, which provide unique protection, incorporated in a proven and integrated concept. You receive everything from one source, tailored to the specific applications and risks of fire, combined with a comprehensive service offering – from risk assessment, application support, system design, installation, and commissioning to maintenance and modernization. In addition, Siemens offers the Sinorix Door-Fan-Test, which tests a flooding zone for leakages and thus proves the extinguishing efficiency of the system.

Of course, all our solutions comply with international standards and regulations. Sinorix N_2 • Ar • CO_2 even has the VdS[2] system and installer approval as well as other approvals such as CNPP and LPCB.

Sinorix N_2 – typical applications
- Telecommunication systems
- Data centers
- Cable ducts
- Electrical switching rooms
- Closed transformers, turbines, engines, and generators
- Technical and machine rooms
- Control rooms
- Military depots
- Museums

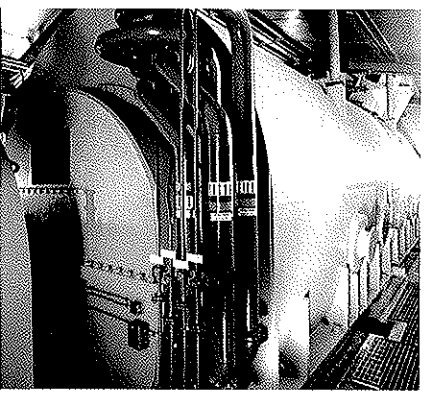
Sinorix Ar – additional applications
(additionally to the applications mentioned for N_2)
- Areas with the risk of metal fires
- Storage rooms for chemicals

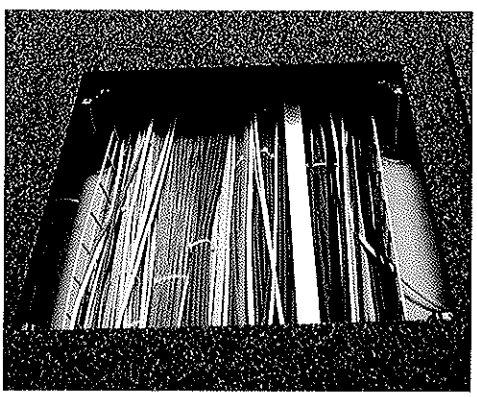
Sinorix CO_2 – typical applications
- Storage for flammable liquids
- Unmanned generator and transformer stations
- Local applications such as oil baths, turbines or machines

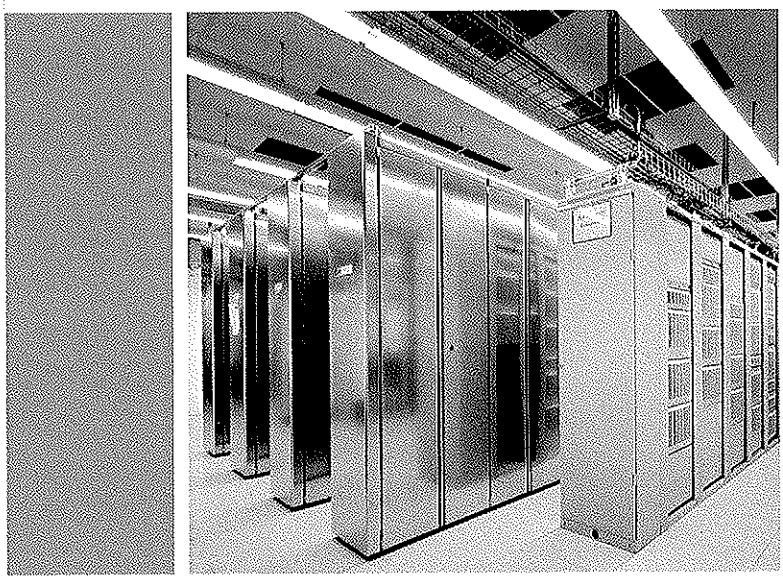
Highlights
- Integral solutions from one source, from risk assessment to maintenance
- Tailored to individual applications and risks of fire
- High flexibility in system planning and engineering
- Excellent extinguishing properties for all applications
- Environmentally friendly thanks to usage of natural gases
- Proven system with a wide installed base

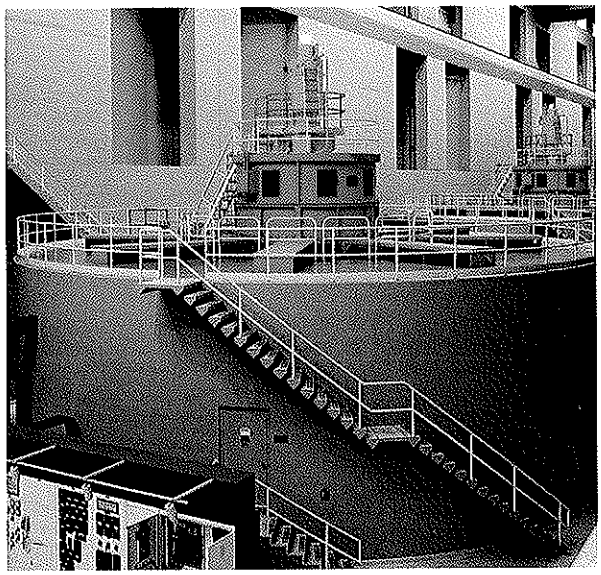
[1] CEA (Comité Européen des Assurances) Analysis and Development Project "Extinguishing Behavior of Inert Gases" CEA, 75009 Paris

[2] VdS Schadenverhütung GmbH (damage prevention) is a member of the Association of German Insurers









Sinorix extinguishing solutions with natural gases can be tailored to existing building structures and requirements.

Sinorix N_2 • Ar • CO_2 – reliable solutions, tailored to your needs

In the event of fire, extinguishing must be effected fast and reliable in order to prevent damages and business interruptions. Sinorix N_2 • Ar • CO_2 efficiently extinguishes fire with pure nitrogen, argon or carbon dioxide and can be flexibly tailored to the respective application.

Reliable extinguishing

The extinguishing properties of Sinorix extinguishing solutions with natural gases are based on displacing oxygen in the protected area (inertization): Flooding the area with nitrogen, argon or carbon dioxide lowers the percent by volume of oxygen to typically 13.8 vol-% to 10 vol-% depending on the risk of fire and displaces the oxygen needed for the combustion process. This reliably extinguishes the fire and prevents reignition.

Depending on the risk of fire and national regulations, Sinorix inert gas extinguishing solutions are designed to be safe for people. This means that during extinguishing the oxygen will be reduced to a value between 13.8 vol-% and 10 vol-%.

Tailored and exact calculation

A minimal nozzle pressure of 10 bar can be ensured for all extinguishing agents thanks to a hydraulic calculation software. The software is licensed by VdS and considers the specific hydraulic parameters that were defined in the VdS approval tests. This assures a homogeneous displacement of oxygen, with which the design concentration in the flooding zone is reached quickly.

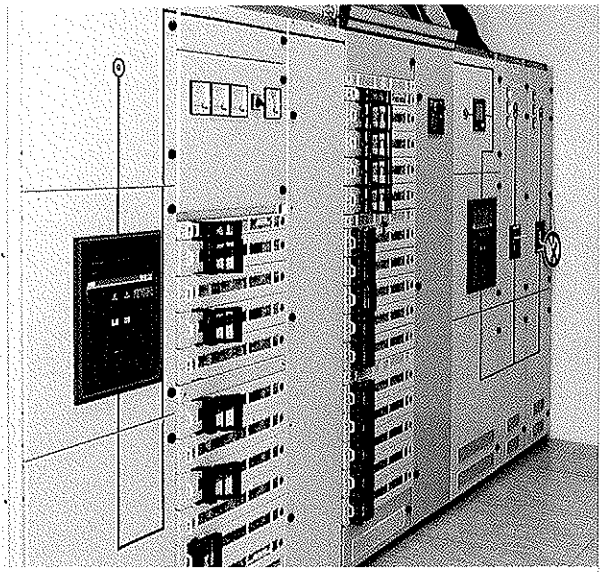
In combination with state-of-the-art fire detection systems, Sinorix N_2 • Ar • CO_2 extinguishing systems offer the optimal solution for fast and reliable extinguishing of fires.

High flexibility

Sinorix extinguishing solutions with natural gases provide high planning and engineering flexibility. The systems can be designed for nitrogen and argon in 200- and 300-bar and for carbon dioxide in 56-bar technology. In addition, single-sector or multi-sector solutions with respective cylinder batteries and selector valves can be realized for all three inert gases. A centralized or decentralized positioning of the cylinders is possible.

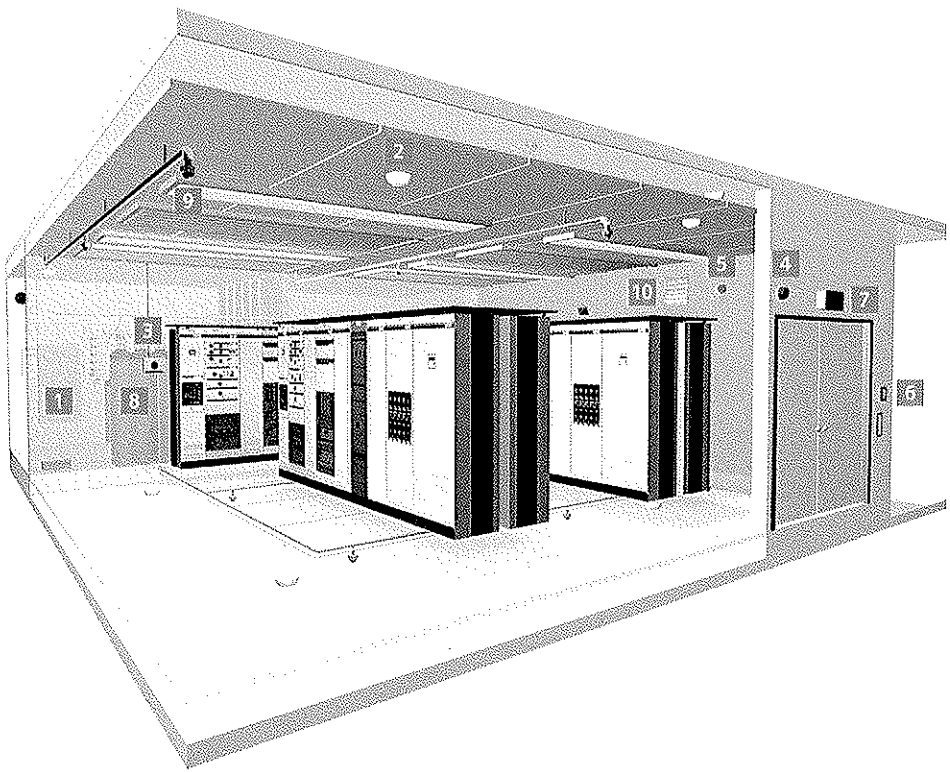
Based on this flexibility, inert gas extinguishing solutions can be optimally tailored to existing building structures, requirements, and risks of fire, so they provide optimum protection. In addition, our solutions also comprise a broad service and maintenance portfolio to ensure smooth operation.





Highlights

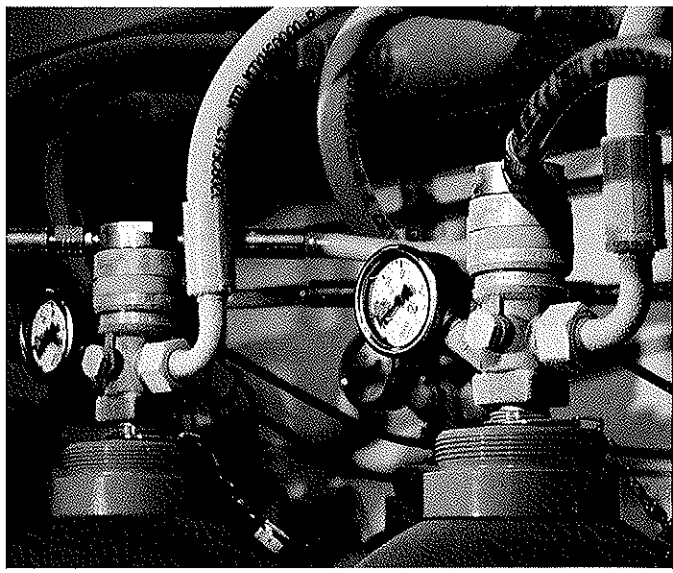
- Reliable extinguishing due to efficient displacement of oxygen
- Design concentration can be reached quickly thanks to tailored and exact calculation
- Optimal adaptation to existing building structure and requirements



Legend

1 Fire detection and extinguishing control panel
2 Fire detector
3 Aspirating smoke detector
4 Alarm sounder
5 Combined sounder beacon
6 Manual release for extinguishing system
7 Warning display
8 Extinguishing agent cylinders
9 Piping network with nozzles
10 Overpressure flap





Depending on the application, nitrogen, argon or carbon dioxide is the optimal extinguishing agent.

Natural, pure, and efficient – nitrogen, argon, and carbon dioxide

Sinorix N_2 • Ar • CO_2 solutions extinguish fire efficiently and environmentally friendly using pure natural gases. In addition, nitrogen, argon, and carbon dioxide extinguish fires without damaging any equipment within the protected area. Even after the extinguishing process, the usage of natural gases proves to be beneficial thanks to easy refilling, which results in a fast recommissioning of the system.

Environmentally friendly and residue-free

The natural gases used with Sinorix N_2 • Ar • CO_2 extinguishing solutions present no environmental hazards. This allows not only environmentally friendly extinguishing, but also to quickly resume operation within the extinguished zones after a flooding thanks to simple overpressure ventilation. In addition, the extinguishing agents have poor electric conductive properties and are chemically inert. This means that there will be no harmful reaction products when they come into contact with fire, preventing damage to your equipment.

Excellent extinguishing properties

Whether nitrogen, argon or carbon dioxide – natural gases excel thanks to their excellent extinguishing properties for fire classes A (solids), B (flammable liquids), and C (flammable gases). Argon is also optimally suited for fire class D (metal fires).

Fast and easy refilling

Using pure natural gases instead of a mixture of different gases facilitates refilling because natural gases are available everywhere. Thus, you can always refill the cylinders within a very short period of time. This minimizes the downtime of the extinguishing system after a discharge and reduces costs. Our service offering ensures an especially fast and comfortable refilling.

100 years extinguishing from Siemens

100 years ago, Siemens was among the first to provide innovative solutions comprising CO_2 extinguishing systems combined with reliable fire detection technology. To this day, Siemens offers complete solutions with the latest technologies, tailored to your risks and requirements – all from one source.

Highlights

- Natural gases are harmless to the environment
- Easy ventilation after flooding
- No damage to equipment thanks to residue-free extinguishing
- Excellent extinguishing properties
- Low refilling costs thanks to easy and cost-efficient sourcing

Technical overview

Sinorix N_2 • Ar • CO_2 extinguishing solutions	
Extinguishing agent/system	– Nitrogen and argon: 200- and 300-bar technology – Carbon dioxide: 56-bar technology
Piping network	– Galvanized steel pipes
Storage of extinguishing agents	– Nitrogen and argon: gas – Carbon dioxide: liquid
Approvals	– VdS-approved system – VdS-approved calculation software – Additional approvals such as CNPP, LPCB

Success stories

Århus University Hospital, Århus, Denmark

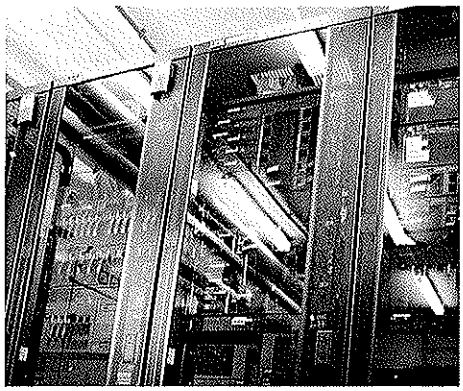
With 847 beds, the university hospital Århus is one of the largest hospitals in Denmark. It offers a broad portfolio of medical specialties and is also very active in research. Radiographies, electronic patient data, and documents are especially important and their loss could have considerable consequences. This is why the central server room, where the data is stored, needs reliable fire safety. With the intelligent Sinorix N_2 extinguishing system, an optimal solution was installed to protect the important data.

Internet PoP Hannover GmbH, Hanover, Germany

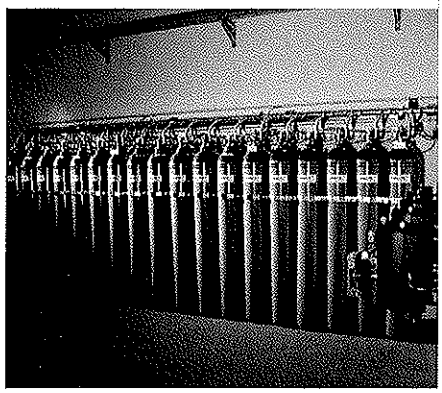
Internet PoP focuses on Internet, data center, and hosting services. Due to its successful growth, the company needed a new data center, dimensioned for uninterrupted operation of up to 5,000 Internet servers.

In close cooperation with Siemens, a comprehensive fire safety solution was developed. According to the customer's request, a Sinorix Ar extinguishing solution was installed. The large and complex multi-sector solution was exactly tailored to meet the specific application, the internal processes, and the structural conditions. Thus, it protects the highly sensitive server rooms optimally and effectively. This gives not only Internet PoP, but also its customers the reassurance that their data is safe and the business processes secure in case of a fire.

Århus University Hospital, Århus, Denmark



Internet PoP, Hanover, Germany



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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