

# Planning Tool – fire safety solutions for data centers

Answers for infrastructure.

## Fire safety solutions for data centers

Planning Tools

Answers for infrastructure.

[www.siemens.com/datacenters](http://www.siemens.com/datacenters)

Our world is undergoing changes that force us to think in new ways: demographic change, urbanization, global warming and resource shortages. Maximum efficiency, energy-efficient, safe and secure buildings and infrastructure.”

“We are the trusted technology partner for infrastructure.”

In addition, we need to increase control for the well-being of users. Also, our need for safety and security is constantly growing. For our customers, success is defined by how well they manage these challenges. Siemens has the answers.

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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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**Fire control panels**



The Sinteso fire control panels convert a fire alarm into actions for alarm notification, evacuation, and extinguishing. The simple user interface with prompting texts lets users quickly check the system status, either locally or by remote access.

**Video surveillance**




The video surveillance system monitors critical zones such as the entrance area, etc. to record incidents before and after an event.

**Access control**




The access control system provides safe and flexible access authorization, time recording, and badge issuing.

**Intrusion detection**



Detection of unauthorized access. Siemens offers a complete range of devices for each kind of risk and application. For the protection against flooding, a special flood detector enables the alarm system to detect water leaks.

**Aspirating smoke detection**



The highly sensitive system – with Genuine Alarm Guarantee – for the earliest possible fire detection in highly ventilated data centers minimizing the risk of fire damage. It is typically applied in closed server racks, false floors, and ceilings, cable ducts and air in- and outputs.

**Point type fire detectors**



ASATechnology offers unsurpassed detection reliability with high immunity to deception. Therefore, a Genuine Alarm Guarantee can be offered.

**Extinguishing control panels**



XC10 combines fire detection and extinguishing control – either for a single-sector or a multi-sector application. All relevant incidents are forwarded to connected fire control panels. It also interfaces with ventilation systems.

**Alarm indicators**




If a fire detector that is not easily visible triggers an alarm, the alarm indicator will quickly identify the area in danger.

**Sounder and sounder beacon**




In a data center, the alarm sounder FDS221 and alarm sounder beacon FDS229 are recommended to alert the occupants acoustically and optically.

**Voice alarm system**



In case of a fire, the voice alarm system E100 is automatically activated by the fire detection system. It ensures that the data center and neighboring areas are evacuated before the discharge of an extinguishing agent.


**Sinorix Silent Nozzle**



Sinorix Silent Nozzle is designed for quiet extinguishing in data centers and server rooms – resulting in disturbance-free operation of hard disk drives during the extinguishing process.




**Extinguishing with Sinorix CDT**



Recommended for medium- to large-sized data centers, Sinorix CDT technology discharges nitrogen or argon into the flooding zone at constant mass flow throughout the entire flooding time. This eliminates the peak at the beginning of the discharge and thus lowers the maximum noise level, in addition the size of the overpressure flaps can be reduced by up to 70%.

**Extinguishing with Sinorix H<sub>2</sub>O Gas**



In critical applications uninterrupted power supply (UPS) systems ensure continuity in case of power cuts. For those systems representing a thermal risk, Sinorix H<sub>2</sub>O Gas, based on nitrogen and water, combines highly efficient nitrogen extinguishing with a cooling water mist.

**Extinguishing with Sinorix 1230**



For small- to medium-sized data centers, Siemens recommends Sinorix 1230 based on 3M™ Novec™ 1230 Fire Protection Fluid. It floods the room within 10 seconds and starts extinguishing before any electronic equipment is severely damaged.

**Ex zone devices**



To guarantee continuity in case of power failure, a data center is always connected to an uninterruptible power supply (UPS). In some of these explosion-hazard areas, such as battery rooms or gas generators, Ex devices have to be used.







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## Complete solutions for a safe data center – with a single partner

Data centers are critical as the heart of many companies' information infrastructures. No company can accept the failure of its networks and servers because no business can afford downtimes or the loss of irreplaceable data and market presence. For some industries, even one or two hours of downtimes can be devastating. That's why it's important to provide your data center with the highest level of safety.

Our fire safety solutions are tailored exactly to your data center's requirements. They offer you maximum safety against all risks of fire and ensure uptime and availability of service. Based on the concept of a single, innovative partner, we provide everything from fire detection to extinguishing, and from system design to installation and after-sales service.

## Integrated and innovative safety

**Identifying and preventing risks**  
Data center face many challenges – from managing complexity to improving energy efficiency and meeting safety, security and business regulatory requirements. The risk of fire is particularly high due to the presence of a constant ignition source (electricity) and plentiful supply of combustible materials. Short circuits, due to the extensive cabling, can have serious consequences. The need for a comprehensive air cooling results in a higher air exchange making early detection even more difficult. An integrated fire safety concept is therefore crucial to protect critical data and to ensure uptime.

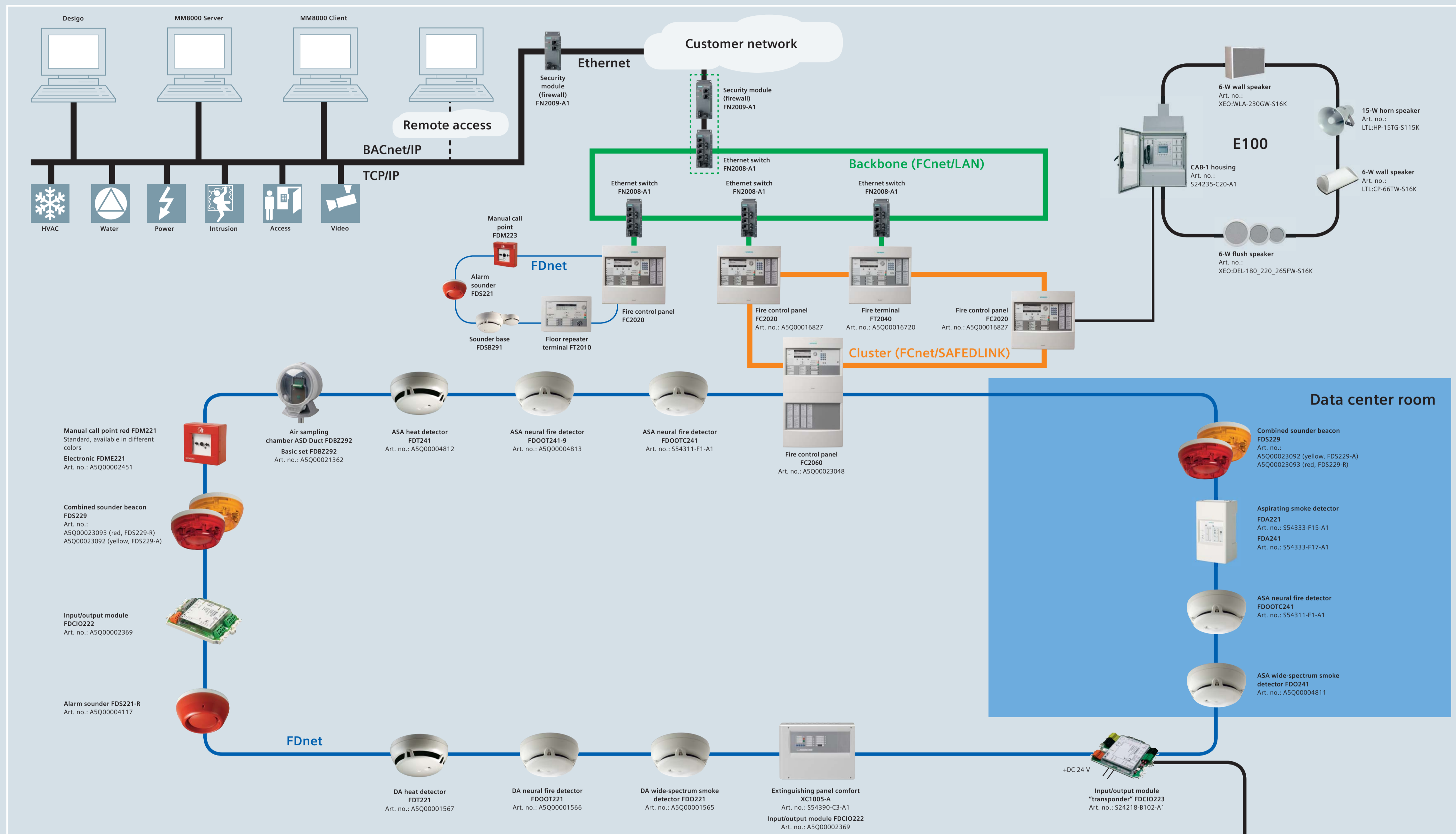
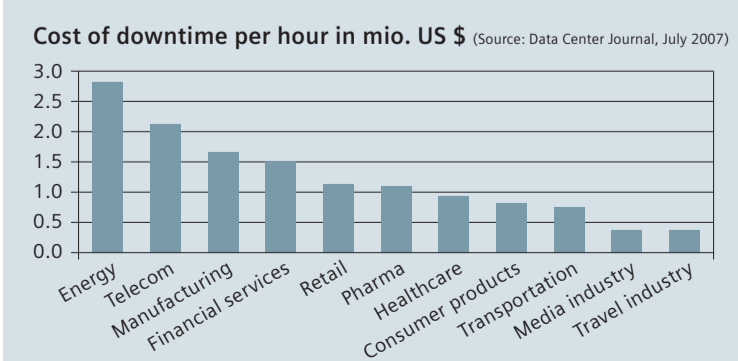
**Integrated concept for more safety**  
Analyses show that the no. 1 cause for fire safety system failure is the interface between detection, alarming, control, and extinguishing. Early and reliable fire detection and the initiation of appropriate extinguishing measures are critical factors in an effective protection concept. Our comprehensive, one-stop fire safety solutions ensure a perfect interaction of fire detection, evacuation, and extinguishing. Plus, we take care of your system throughout its life cycle, including risk analysis, project management, and choosing the right systems and the best service concept. For an overall secure and energy-efficient

data center, our integral concept also includes video surveillance, intrusion detection, and access control as well as building automation and energy management systems. All integrated and controlled by one management station.

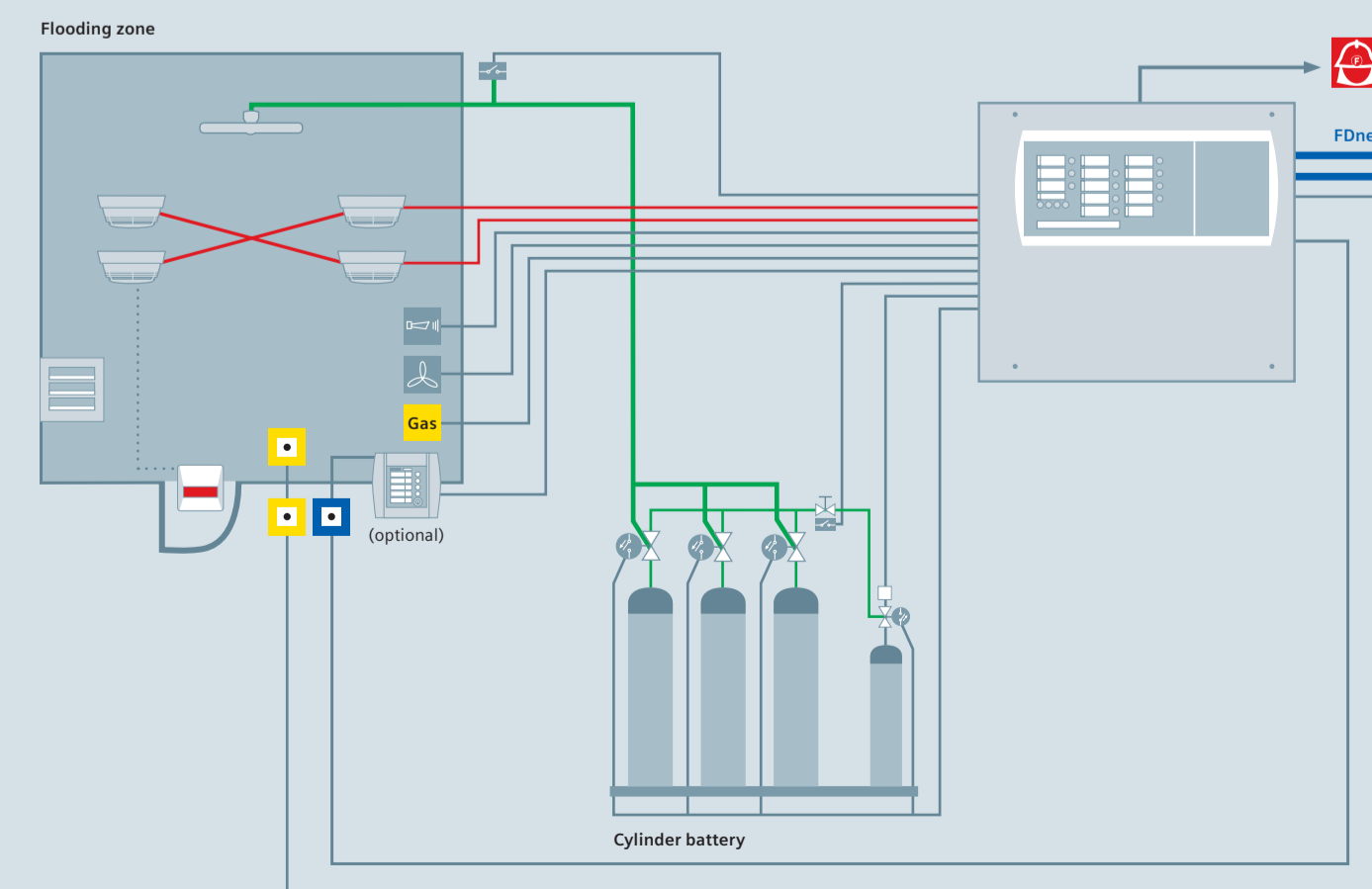
**Unique safety technology**  
Our solutions offer you the benefits of unique technologies like state-of-the-art Sinteso™ fire detectors and aspirating smoke detectors (ASD) for earliest possible warning, both with a Genuine Alarm Guarantee. The latest key innovation is the silent discharge nozzle technology, which is at the core of our new Sinorix™ Silent Nozzle. It ensures quiet and effective extinguishing in data centers, important for uninterrupted hard disk drive (HDD) operation. The Sinorix Silent Nozzle can be combined with our extinguishing solutions Sinorix N<sub>2</sub>, Sinorix Ar, and Sinorix CDT.

**Relying on an experienced partner**  
With more than 160 years of experience in fire safety, we understand your specific requirements in terms of prevention, detection, response, and recovery. Our tailored solutions and services comply with the highest safety standards, and incorporate products and systems that meet industry-specific requirements and regulations like e.g. VdS, LPCB, FM or UL.

- Highlights**
- Expert support by data center specialists with industry- and application-specific know-how
  - Fully integrated solutions from fire safety, security, building automation to energy management – tailored to your needs
  - Less coordination and reduced costs of ownership thanks to one project responsible
  - Ensured safety and uptime due to reliable and integrated fire safety
  - Rapid response time thanks to a global service network – close to you
  - Green solutions thanks to innovative and environmental-friendly technologies



### Example of a stand-alone extinguishing system with an XC10 control unit



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**Ex zone**

**Power supply area**

Flame detector DF1101-Ex Art. no.: L24213-L8000-A108

Smoke detector DO1101A-Ex Art. no.: BPZ:5008010001

Heat detector DT1101A-Ex Art. no.: BPZ:4852140001

Heat detector DT1102A-Ex Art. no.: BPZ:4852270001

Line termination EQL22 (Ex) Art. no.: BPZ:5162220001

Housing DCA1191 Art. no.: BPZ:4588560001

Installation set Z311410 Art. no.: BPZ:4837660001

Shunt Zener diode barrier SB3 Art. no.: BPZ:4837400001

Alarm indicator AJUT24-Ex Art. no.: L24213-L8000-A179

Alarm indicator FDA192-Ex Art. no.: S54370-F4-A1

Manual call point DM110x (Ex) red Switching Unit (double action) DMA1103 (Ex) Art. no.: ASQ00004470

Switching Unit (single action) DMA1104 (Ex) Art. no.: ASQ00005925

Housing red DMA1192-AA Art. no.: BPZ:5222870001