XC10 – combined fire detection and extinguishing control

Planning Tool for single-sector applications

Answers for infrastructure.

SIEMENS

Compact panels for fire detection and extinguishing control

Protecting people and assets, business processes and continuity are core aspects of fire safety. With XC10, Siemens offers a family of control panels for comprehensive fire safety: the panel family combines both fire detection and extinguishing control. After receiving a fire alarm from the connected fire detectors, the combined XC10 panels trigger the extinguishing process.

XC10 panels are the ideal choice for protecting valuable objects, a single sector (one room) or multi sectors (multiple rooms) with sophisticated requirements. XC10 can be installed as an independent control panel or be integrated into a larger fire safety system.

Covering sophisticated requirements with advanced control panels

Ensuring business continuity

People, assets and business processes need to be optimally protected in case of a fire incident. Fast fire detection, alarming and activation of an extinguishing system thus are essential and can ensure business continuity. XC10 – with a new family of control panels – enables rapid, safe and automated interventions. The XC10 control panels immediately trigger the extinguishing process after having received a fire alarm from the connected detectors.

Ideal choice for single- and multi-sector applications

Whether independent or integrated, the XC10 panel family can protect either a single-sector or a multi-sector application. Used for a single-sector application, XC10 can protect a room or an object, such as an IT room or a turbine. It can also be used for multi-sector applications, for example large data centers or archives, etc. With up to 16 flooding zones, XC10 is the ideal choice for large applications with several extinguishing sectors. Another advantage: only one extinguishing cylinder battery is needed to protect several sectors.

Easy combination of fire detection and extinguishing systems

When it comes to fire safety, every second counts. That's why it's important to have a fast, reliable and comprehensive fire safety system. With XC10, you receive control panels that combine fire detection and extinguishing control. What's more, Siemens also provides all you need for detection and extinguishing: Sinteso™ is our comprehensive fire safety system including deception-free fire detectors, easy-to-operate control panels and a wide range of peripheral devices. Cerberus® PRO is a smart fire safety system including powerful panels, clever detectors with selectable parameter sets, special detectors, and a wide range of peripheral devices. The Sinorix™ portfolio comprises intelligent extinguishing systems that offer the latest technologies in extinguishing and can be tailored to individual needs. You see, with the wide fire safety portfolio from Siemens, you receive state-of-the-art products and systems that provide automated intervention and ensure business continuity – all from one source.

A comprehensive portfolio based on expertise

The high-quality products and systems from Siemens are based on in-depth application know-how and experience. New products are continuously developed in cooperation with fire departments and scientific institutes. This includes testing in Siemens' own test laboratories. And it's a matter of course that all products comply with the latest international standards.

Highlights

- Advanced control panels for detection and alarming as well as for the activation of the extinguishing process
- Functions with different types of detectors and automated extinguishing systems
- New multi-sector control panel for larger applications that saves space and costs for extinguishing cylinders
- Broad range of installations possible – single- and multi-sectors, stand-alone or integrated into a larger fire safety system
- Backed by decades of know-how and experience from Siemens
- XC10 control panels comply with international standards

XC10 Planning Tool – single sector

Answers for infrastructure.

SIEMENS

Compatibility chart for fire detection

Fire detectors	Conventional line SynoLINE300	Collective line SynoLINE600	Detector base						Alarm indicators			
			SO320 BPZ:5085990001	DB1101A BPZ:4863650001	FDB221 A5Q00001664	FDB222 S54319-F1-A1	FDFB291 A5Q00003310	FDLB291 A5Q00003941	AI320 (frame mounting) BPZ:5163030001 AI322 (surface mounting) BPZ:5163160001	AI300 (frame mounting) BPZ:4930280001 AI340 (surface mounting) BPZ:4930440001	DJ1191 BPZ:4783280001	DJ1192 BPZ:4783310001
Multi-sensor detectors												
OH320C BPZ:5364190001	Yes	Yes	Yes	–	–	–	–	–	Yes	–	–	–
FDOOT241-9 A5Q00004813	Yes	Yes	–	–	Yes	Yes	–	–	Yes	–	Yes	Yes
Optical detectors												
OP320C BPZ:5081460001	Yes	–	Yes	–	–	–	–	–	Yes	–	–	–
DO1101A BPZ:4930020001	–	Yes	–	Yes	–	–	–	–	–	Yes	–	–
DO1104A BPZ:5090640001	–	Yes	–	Yes	–	–	–	–	–	Yes	–	–
Heat detectors												
HI320C (rate of rise and maximum) BPZ:5081590001	Yes	–	Yes	–	–	–	–	–	Yes	–	–	–
HI322C (maximum) BPZ:5316470001	Yes	–	Yes	–	–	–	–	–	Yes	–	–	–
DT1101A (rate of rise) BPZ:4931700001	–	Yes	–	Yes	–	–	–	–	–	Yes	–	–
DT1102A (rate of rise and maximum) BPZ:4931830001	–	Yes	–	Yes	–	–	–	–	–	Yes	–	–
Special detectors												
Flame detector FDF221-9/FDF241-9 A5Q00003902 A5Q00003006	Yes	Yes	–	–	–	–	Yes	–	Yes	Yes	Yes	Yes
Linear smoke detector FDL241-9 A5Q00002298	Yes	Yes	–	–	–	–	–	Yes	Yes	Yes	Yes	Yes

For further products please see Cerberus PRO and Sinteso planning poster

Fire detectors	Sinteso FDnet	Cerberus PRO C-NET	Detector base					Alarm indicators	
			DB720 S54319-F4-A1	FDB221 A5Q00001664	FDB222 S54319-F1-A1	FDFB291 A5Q00003310	FDLB291 A5Q00003941	DJ1191 BPZ:4783280001	DJ1192 BPZ:4783310001
Multi-sensor detectors									
FDOOT241-9 A5Q00004813	Yes	–	–	Yes	Yes	–	–	Yes	Yes
FDOOT221 A5Q00016442	Yes	–	–	Yes	Yes	–	–	Yes	Yes
OH720/S54310-F1-A1	–	Yes	Yes	–	–	–	–	Yes	Yes
Optical detectors									
OP720/S54310-F1-A1	–	Yes	Yes	–	–	–	–	Yes	Yes
FDO221/A5Q00016440	Yes	–	–	Yes	Yes	–	–	Yes	Yes
FDO241/A5Q00016441	Yes	–	–	Yes	Yes	–	–	Yes	Yes
Heat detectors									
HI722/S54310-F3-A1	–	Yes	Yes	–	–	–	–	Yes	Yes
HI720/S54310-F4-A1	–	Yes	Yes	–	–	–	–	Yes	Yes
FDT221/A5Q00016444	Yes	–	–	Yes	Yes	–	–	Yes	Yes
FDT241/A5Q00016445	Yes	–	–	Yes	Yes	–	–	Yes	Yes
Special detectors									
Flame detector FDF221-9/FDF241-9 A5Q00003902 A5Q00003006	Yes	Yes	–	–	–	Yes	–	Yes	Yes
Linear smoke detector FDL241-9 A5Q00002298	Yes	Yes	–	–	–	–	Yes	Yes	Yes
Aspirating smoke detection LaserFOCUS VLF-250/VLF-500/VLF-250-SIE/VLF-500-SIE	Yes	Yes	–	–	–	–	–	Yes	Yes

For further products please see Cerberus PRO and Sinteso planning poster

Worth knowing when planning extinguishing systems

When planning an extinguishing system for an object or a room (or several), there are some basic aspects which are worthwhile to consider as they greatly influence the choice of the right system and agent. Some of these aspects are:

Applications/risks of fire
Depending on the type of application, e.g. data center, archives, turbines, etc., different risks of fire occur. Such risks of fire can be open fires, smoldering fires, deep-seated fires, etc. They influence the choice of extinguishing system and agent.

Space requirements
In some cases, space plays a major role (e.g. due to space restrictions) when choosing the appropriate system and agent. Chemical agents usually require less space than natural agents, high-pressure systems may also influence the space requirements.

Overpressure flaps
Overpressure flaps can be quite complex to implement due to structural conditions. Systems that provide constant gas discharge or systems using chemical agents offer significant advantages.

Personnel safety implications
Some systems require special personnel safety measures. They are necessary if the oxygen concentration drops below 10 vol-% in the protected area at complete flooding or due to some extinguishing agents, e.g. CO_2. These measures ensure that the required evacuation time is met.

Approvals & regulations
Some national regulations and approval requirements can influence the choice of system and agent, e.g. the required amount of agent can vary from regulation to regulation. Furthermore, systems with specially approved components usually offer higher reliability.

Code of practice
Differences in calculations can occur due to different code of practices in the countries, e.g. false ceiling
– USA: A false ceiling is not incorporated in the protected area
– Europe: A false ceiling has to be incorporated in the protected area

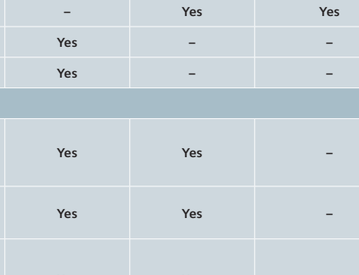
Sinorix extinguishing systems from Siemens

Automated extinguishing systems are designed on the basis of the following principle: Every fire needs three elements – oxygen, heat and a combustible. If only one of these elements is removed, a fire cannot spread and will inevitably go out.

Siemens offers Sinorix – a comprehensive range of automated extinguishing systems based on natural and chemical agents as well as gas/water-combined and water mist systems. They can all be tailored to individual customer requirements.

Systems with natural agents

Systems with inert gases work principally by displacing the oxygen, inerting the protected area, they thus extinguish the fire.

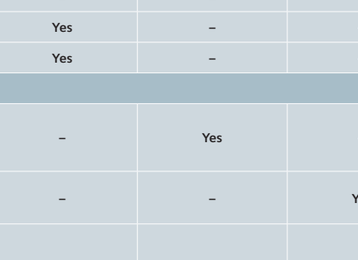


Sinorix N_2 • Ar • CO_2
Extinguishing systems with natural agents for maximum flexibility in system design and engineering.

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

Systems with chemical agents

Systems with chemical gases absorb heat from a fire, leaving it without energy, they thus extinguish the fire.

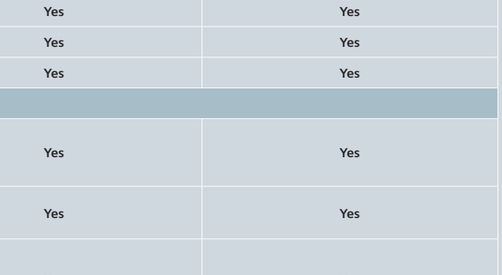


Sinorix 1230
System based on the environmentally friendly extinguishing agent 3M™ Novec™ 1230 Fire Protection Fluid with 42-bar technology that enables highest extinguishing efficiency and flexibility in engineering.

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

Gas/water-combined system

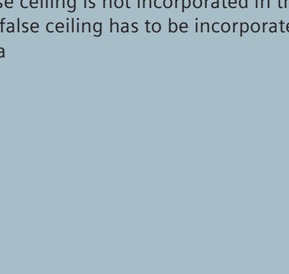
Gas/water-combined systems basically combine the displacing of oxygen with the positive cooling effect of water.



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.

Water mist system

Water mist systems absorb heat from a fire. Leaving it without energy, they thus extinguish the fire.

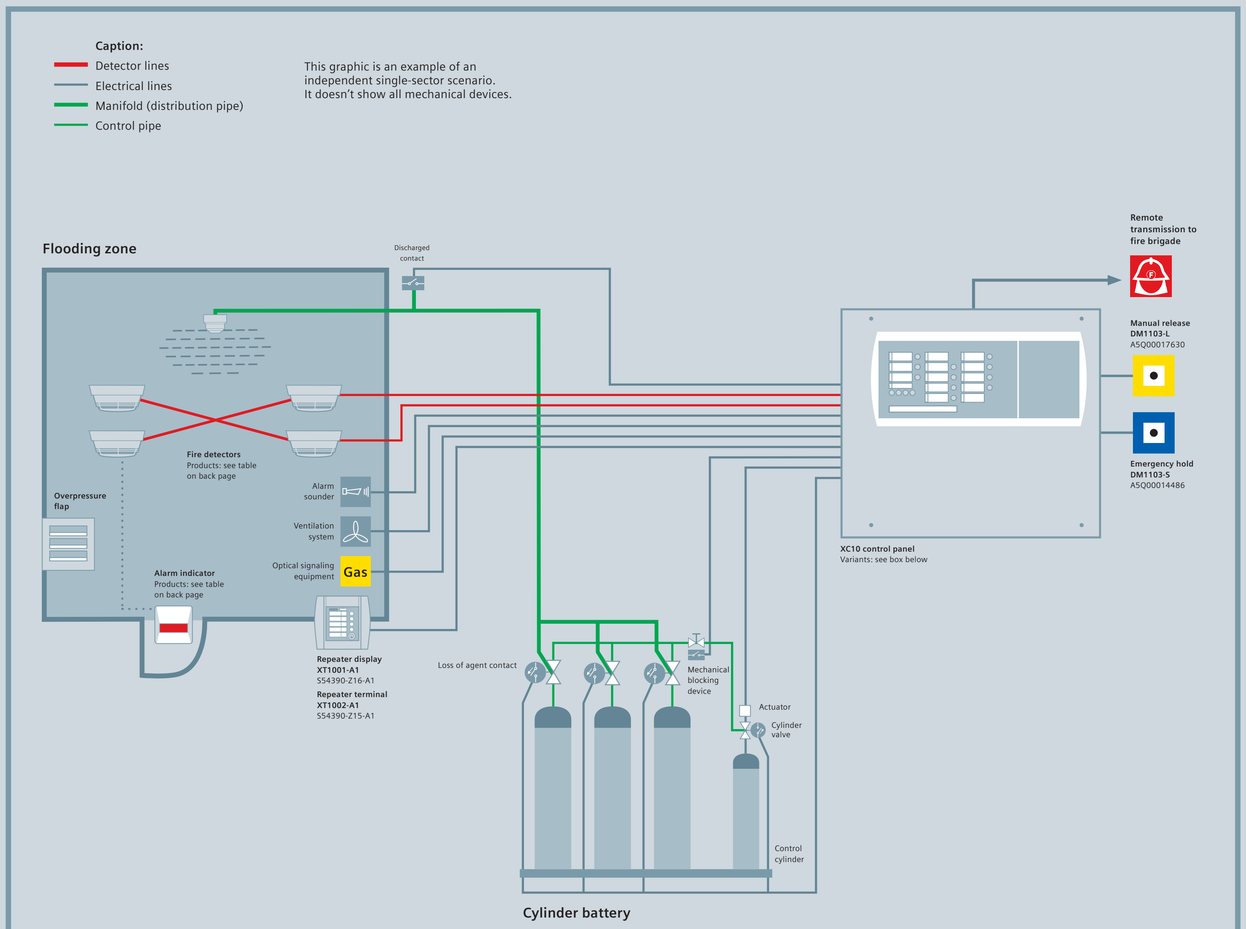


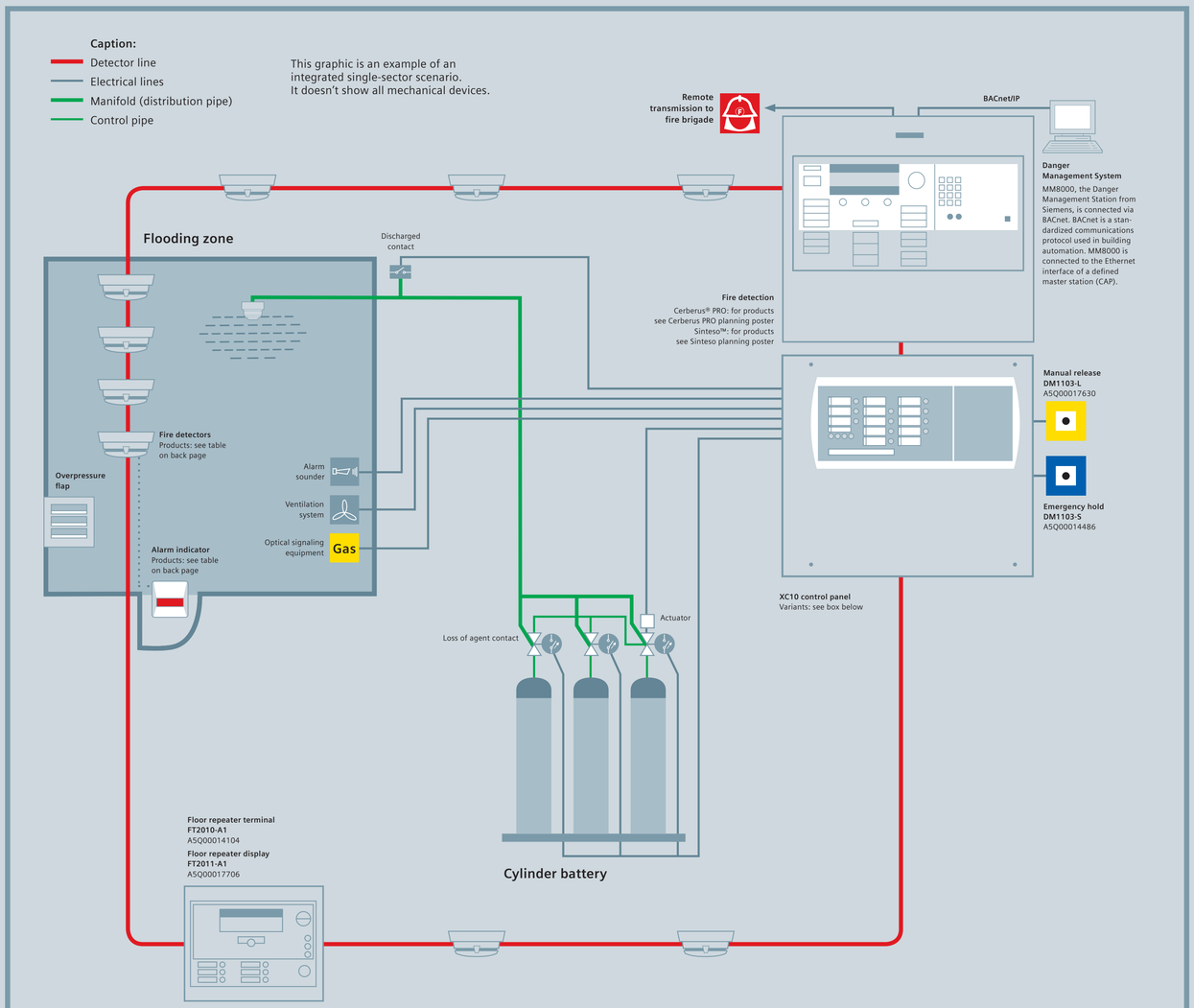
Sinorix H_2O Jet
Unique two-phase flow technology that generates ultrafine water droplets at low hydraulic pressure – for efficient control of open fires as well as for effective object protection thanks to accurate extinguishing.

XC10 Planning Tool – single sector

Answers for infrastructure.

SIEMENS





Stand-alone scenario

This graphic shows the combined fire detection and extinguishing control panel XC10 operating as an independent (stand-alone) system. The fire detectors as well as the peripheral devices are directly connected to XC10. You can choose from a wide range of conventional and collective fire detectors as well as special detectors. The detectors are mounted in a cross-zoning. XC10 works with most types of extinguishing systems for room or object protection.

A single-sector installation consists of a single set of cylinders placed in a storage area. In case of a fire, the extinguishing agent flows through the manifolds to the protected room and is distributed there by the nozzles.

A single actuator (electromagnetic or pyrotechnical) triggers a pilot cylinder which then activates the main cylinders pneumatically. In some countries, cylinders can be individually installed next to the protected zone. In such cases, there is no need for manifolds as the nozzle is directly connected to the top of each cylinder.

Advantages of this kind of application:
- Simple planning as few cabling is needed
- XC10 control panel monitors and controls all functions
- Especially suitable for small installations

XC10 panels

XC10 single-sector extinguishing panels for one flooding zone to control small- and medium-sized extinguishing installations. Self-contained control unit including fire detection and extinguishing control.

Two valve control lines, both compatible for activation of solenoids and pyrotechnical actuators.

Shared properties:
- 2 detector lines for automated activation
- 1 line for manual activation
- 1 additional detector line
- 4 monitored inputs
- 4 control inputs
- 2 monitored valve controls 24 V/2 A
- 3 monitored outputs 24 V/500 mA
- 5 outputs dry contact 30 V/1 A
- 8 open collector outputs 24 V/40 mA

Extinguishing panel standard XC1001-A
Order no. S54390-C1-A1
For small to medium installations
- Power supply: 3.5 A/105 W
- Max. battery back-up time: 12 h
- Max. battery capacity: 2x 4.5 Ah
- Housing: 370x286x90 mm (WxHxD)
- Up to 2x relais modules Z3B171 (BPZ:4843830001)

Extinguishing panel rack XC1003-A
Order no. S54390-C2-A1
For medium to large installations
- Power supply: 3.5 A/105 W
- Max. battery back-up time: 72 h
- Max. battery capacity: 2x 17 Ah
- Housing: 482.6 (19")x177.8 (4 U)x187 mm (WxHxD)

Extinguishing panel comfort XC1005-A
Order no. S54390-C3-A1
For medium to large installations
- Power supply: 3.5 A/105 W
- Max. battery back-up time: 72 h
- Max. battery capacity: 2x 17 Ah
- Housing: 505x375x125 mm (WxHxD)
- Up to 6x relais modules Z3B171 (BPZ:4843830001)

Fire safety system integration scenario

XC10 control panels can be easily integrated into a fire safety system as shown in the graphic. The fire detectors are part of the fire detection loop. You can choose from a wide range of addressable fire detectors as well as special detectors. Other commands from the fire detection control unit can also be transmitted to the extinguishing control panel (reset, acknowledge, etc.). In this application, the status of the extinguishing control panel is forwarded to the fire detection control unit.

Advantages of this kind of application:
- You can use XC10 together with existing fire safety systems
- Flexible integration ensures minimal cabling for a wide application range
- Connection of Cerberus PRO/Sinteso control panel to a danger management system possible. It provides remote status indication and allows to receive remote control operation
- Increased reliability due to advanced safety features, addressable fire control panels and fire detectors

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 Switzerland Ltd
Industry Sector
Building Technologies Division
International Headquarters
Gubelstrasse 22
6301 Zug
Switzerland
Tel +41 41 724 24 24

www.siemens.com/XC10