#### Megatrends driving the future The megatrends – demographic change, urbanization, climate change, and globalization – are shaping the world today. Building Technologies offers intelligent These have an unprecedented impact on our lives and on vital sectors of our

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

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

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.

www.siemens.com/XC10





XC10 – combined fire detection and extinguishing control

Planning Tool for single-sector applications

Answers for infrastructure.

**SIEMENS** 





with the latest international standards.

a matter of course that all products comply in Siemens' own test laboratories. And it's

scientific institutes. This includes testing

business continuity – all from one source.

automated intervention and ensure

art products and systems that provide

from Siemens, you receive state-of-the-

You see, with the wide fire safety portfolio

and can be tailored to individual needs.

the latest technologies in extinguishing

intelligent extinguishing systems that offer

devices. The Sinorix<sup>™</sup> portfolio comprises

with selectable parameter sets, special

ing powerful panels, clever detectors

PRO is a smart fire safety system includ-

range of peripheral devices. Cerberus®

and extinguishing systems

easy-to-operate control panels, and a wide

detectors, and a wide range of peripheral

oilottroq əviznəhərqmoz A 🔳



cooperation with fire departments and products are continuously developed in cation know-how and experience. New international standards XC10 control panels comply with from Siemens are based on in-depth appli-The high-quality products and systems based on expertise and experience from Siemens

safety system alone or integrated into a larger fire single- and multi-sectors, stand-Broad range of installations possible

Backed by decades of know-how

and costs for extinguishing cylinders larger applications that saves space ■ New multi-sector control panel for

extinguishing systems of detectors and automated Functions with different types

vation of the extinguishing process and alarming as well as for the acti-

Advanced control panels for detection including deception-free fire detectors, is our comprehensive fire safety system detection and extinguishing: Sintesom Siemens also provides all you need for and extinguishing control. What's more, control panels that combine fire detection fire safety system. With XC10, you receive to have a fast, reliable, and comprehensive second counts. That's why it's important need to be optimally protected in case of When it comes to fire safety, every

received a fire alarm from the connected the extinguishing process after having XC10 control panels immediately trigger sate, and automated interventions. The family of control panels – enables rapid, business continuity. XC10 - with a new system thus are essential and can ensure ing, and activation of an extinguishing a fire incident. Fast fire detection, alarm-

People, assets, and business processes

der battery is needed to protect several advantage: only one extinguishing cylinseveral extinguishing sectors. Another

ideal choice for large applications with

With up to 16 flooding zones, XC10 is the

ample large data centers or archives, etc.

used for multi-sector applications, for ex-

can protect a room or an object, such as

Used for a single-sector application, XC10

single-sector or a multi-sector application.

XC10 panel family can protect either a

Whether independent or integrated, the

multi-sector applications a ldeal choice for single- and

an II room or a turbine. It can also be

Easy combination of fire detection Ensuring business continuity with advanced control panels Covering sophisticated requirements

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

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

Protecting people and assets, business processes and continuity are

and extinguishing control Compact panels for fire detection



# XC10 Planning Tool – single sector

Answers for infrastructure.

# **SIEMENS**

## Compatibility chart for fire detection

Fire detectors	Conventional line SynoLINE300	Collective line SynoLINE600							Alarm indicators			
			SO320 BPZ:5085990001	DB1101A BPZ:4863650001	FDB221 A5Q00001664	FDB222 S54319-F1-A1	FDFB291 A5Q00003310	FDLB291 A5Q00003941	Al91C (frame mounting) S54370-F7-A1 Al92C (surface mounting) S54370-F8-A1	FDAI91 (frame mounting) S54370-F9-A1	FDAI92 (surface mounting) S54370-F3-A1	FDAI93 (flush mounting) S54370-F5-A1
Multi-sensor detectors												
OH320C BPZ:5364190001	Yes	Yes	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	Yes	Yes
DO1104A BPZ:5090640001	-	Yes	-	Yes	-	-	-	-	-	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	Yes	Yes
DT1102A (rate of rise and maximum) BPZ:4931830001	-	Yes	-	Yes	-	-	-	-	-	Yes	Yes	Yes
Special detectors												
Flame detector FDF221-9/FDF241-9 A5Q00003902 A5Q00003006	Yes	Yes	-	-	-	-	Yes	-	-	Yes	Yes	Yes
Linear smoke detector FDL241-9 A5Q00002298	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				
			DB721 S54319-F11-A1	FDB221 A5Q00001664	FDB222 S54319-F1-A1	FDFB291 A5Q00003310	FDLB291 A5Q00003941	FDCAI221 (addressable) S54370-F10-A1	FDAI91 (frame mounting) S54370-F9-A1	FDAI92 (surface mounting) S54370-F3-A1	FDAI93 (flush mounting) S54370-F5-A1	
Multi-sensor detectors												
FDOOT241-9 A5Q00004813	Yes	-	-	Yes	Yes	-	-	Yes	Yes	Yes	Yes	
FDOOT221 A5Q00016442	Yes	-	-	Yes	Yes	-	-	Yes	Yes	Yes	Yes	
OH720/S54310-F1-A1	-	Yes	Yes	-	-	-	-	Yes	Yes	Yes	Yes	
Optical detectors												
OP720/S54310-F1-A1	-	Yes	Yes	-	-	-	-	Yes	Yes	Yes	Yes	
FDO221/A5Q00016440	Yes	-	-	Yes	Yes	-	-	Yes	Yes	Yes	Yes	
FDO241/A5Q00016441	Yes	-	-	Yes	Yes	-	-	Yes	Yes	Yes	Yes	
Heat detectors												
HI722/S54310-F3-A1	-	Yes	Yes	-	-	-	-	Yes	Yes	Yes	Yes	
HI720/S54310-F4-A1	-	Yes	Yes	-	-	-	-	Yes	Yes	Yes	Yes	
FDT221/A5Q00016444	Yes	-	-	Yes	Yes	-	-	Yes	Yes	Yes	Yes	
FDT241/A5Q00016445	Yes	-	-	Yes	Yes	-	-	Yes	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	
Aspirating smoke detection LaserFOCUS VLF-250/VLF-500/VLF- 250-SIE/VLF-500-SIE	Yes	Yes	-	-	-	-	-	Yes	Yes	Yes	Yes	

# 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 require-

### 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<sub>2</sub>. 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 pro-

## For further products please see Cerberus PRO and Sinteso planning poster

# 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.

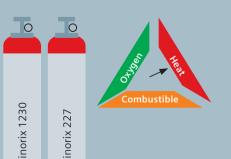
## Systems with natural agents Systems with chemical agents

Systems with inert gases work principally by displacing the Systems with chemical gases absorb heat from a fire,

Sinorix N<sub>2</sub> • Ar • CO<sub>2</sub> 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%.



### 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

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

and flexibility in engineering.

# Sinorix H<sub>2</sub>O Gas

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

Gas/water-combined system

of oxygen with the positive cooling effect of water.

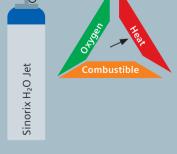
without energy, they thus control or extinguish the fire.

Water mist system

Gas/water-combined systems basically combine the displacing Water mist systems absorb heat from a fire. Leaving it



## Sinorix H<sub>2</sub>O Jet

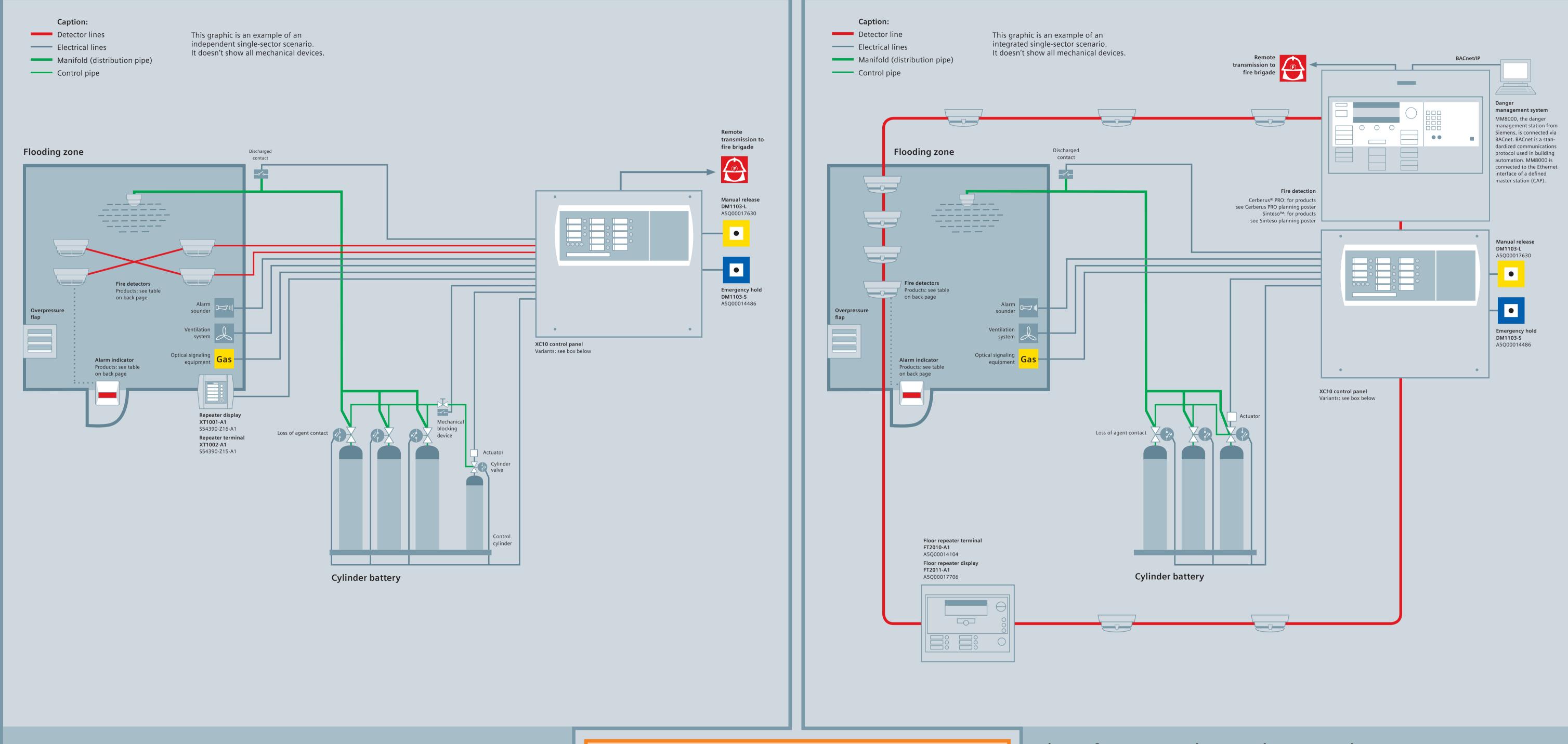


Unique two-phase flow technology that generates fine water droplets at low hydraulic pressure – for efficient control of open fires as well as for effective object protection thanks to accurate extinguishing.

# XC10 Planning Tool – single sector

Answers for infrastructure.





# Stand-alone scenario

This graphic shows the combined fire detection A single-sector installation consists of a single set Advantages of this kind of application: directly connected to XC10. You can choose from there by the nozzles. a wide range of conventional and collective fire object protection.

and extinguishing control panel XC10 operating of cylinders placed in a storage area. In case of as an independent (stand-alone) system. The fire a fire, the extinguishing agent flows through the detectors as well as the peripheral devices are manifolds to the protected room and is distributed

detectors as well as special detectors. The detectors A single actuator (electromagnetic or pyrotechniare mounted in a cross-zoning. XC10 works with cal) triggers a pilot cylinder which then activates most types of extinguishing systems for room or 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.

 Simple planning as few cabling is needed XC10 control panel monitors and controls all

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

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

### 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

2 detector lines for automated activation

– 1 line for manual activation

1 additional detector line

Shared properties:

Extinguishing panel comfort XC1005-A Order no. S54390-C3-A1 Extinguishing panel standard XC1001-A For medium to large installations – Power supply: 3.5 A/105 W For small to medium installations - Max. battery back-up time: 72 h - Power supply: 3.5 A/105 W Max. battery capacity: 2x 17 Ah Max. battery back-up time: 12 h - Housing: 505x375x125 mm (WxHxD) Max. battery capacity: 2x 4.5 Ah Up to 6x relais modules Z3B171 (BPZ:4843830001) - Housing: 370x286x90 mm (WxHxD) - Up to 2x relais modules Z3B171 (BPZ:4843830001)

Extinguishing panel rack XC1003-A

For medium to large installations

Max. battery back-up time: 72 h

– Max. battery capacity: 2x 17 Ah

- Housing: 482.6 (19")x177.8 (4 U)x187 mm

– Power supply: 3.5 A/105 W

Order no. S54390-C2-A1

# Fire safety system integration scenario

XC10 control panels can be easily integrated into **Advantages of this kind of application:** 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 — Connection of Cerberus PRO/Sinteso control 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.

- You can use XC10 together with existing fire
- safety systems - Flexible integration ensures minimal cabling for
- a wide application range
- 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