



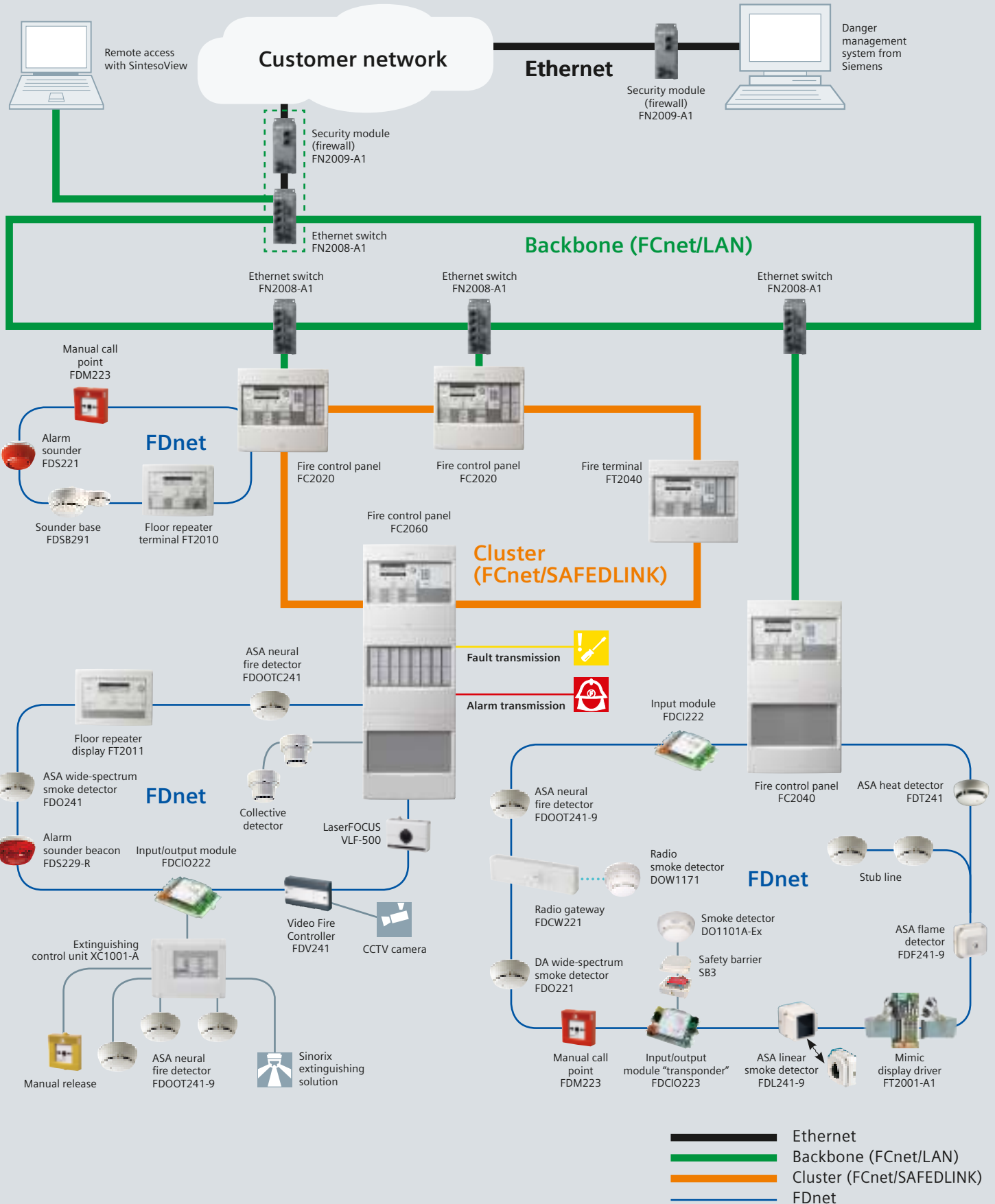
Sinto – panels, network, and accessories

Planning Tool

Answers for infrastructure.

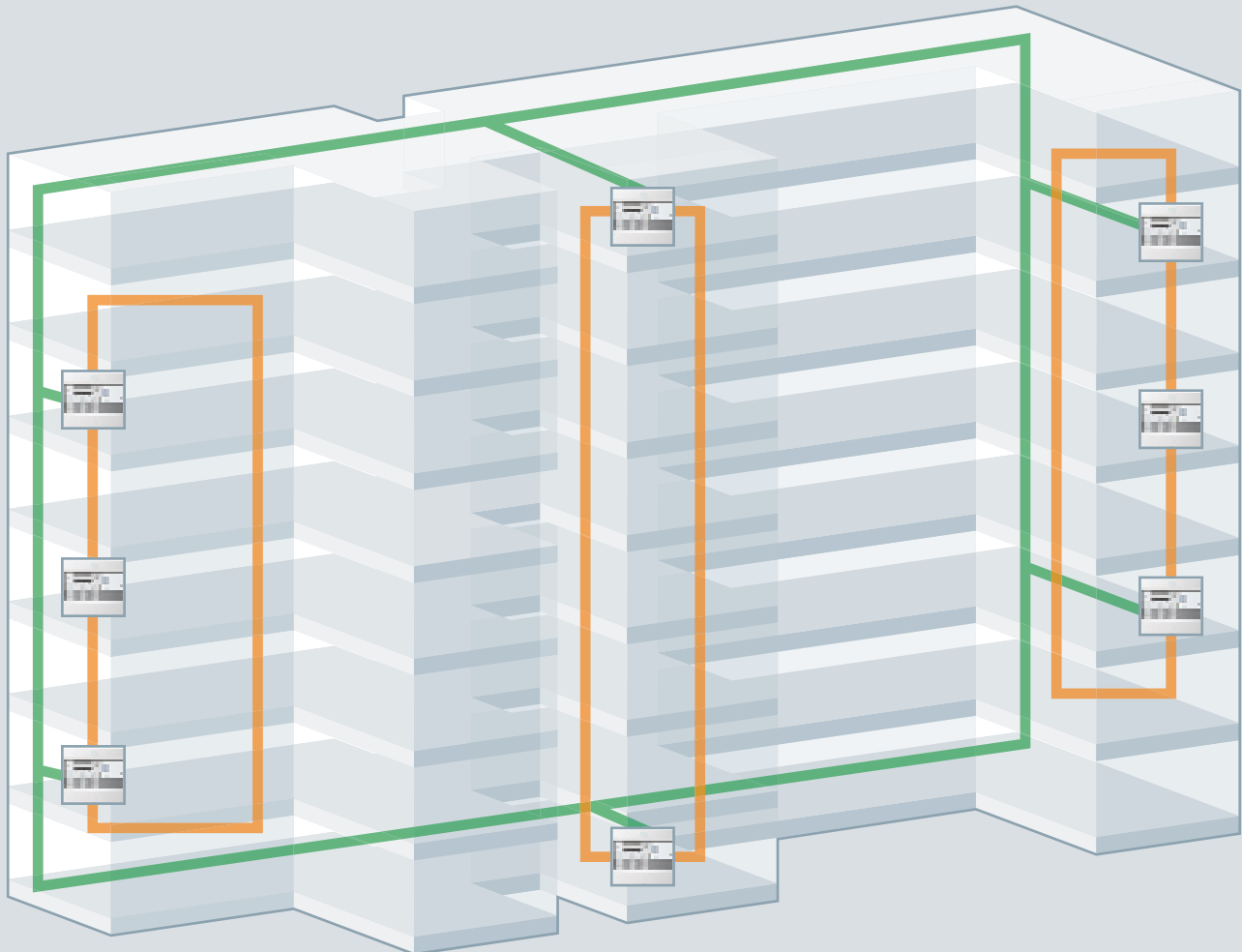
SIEMENS

Your system for fire detection, alarming, and control: Sinteso



Application: complex building

Network in a complex building, for example a hospital.



Description

In complex buildings, the fire safety system can be adapted to local circumstances. The control panels as well as fire terminals are networked together via clusters (FCnet/SAFEDLINK). These clusters are interconnected via industrial LAN technology per backbone (FCnet/LAN) to create an EN 54-compliant overall system.

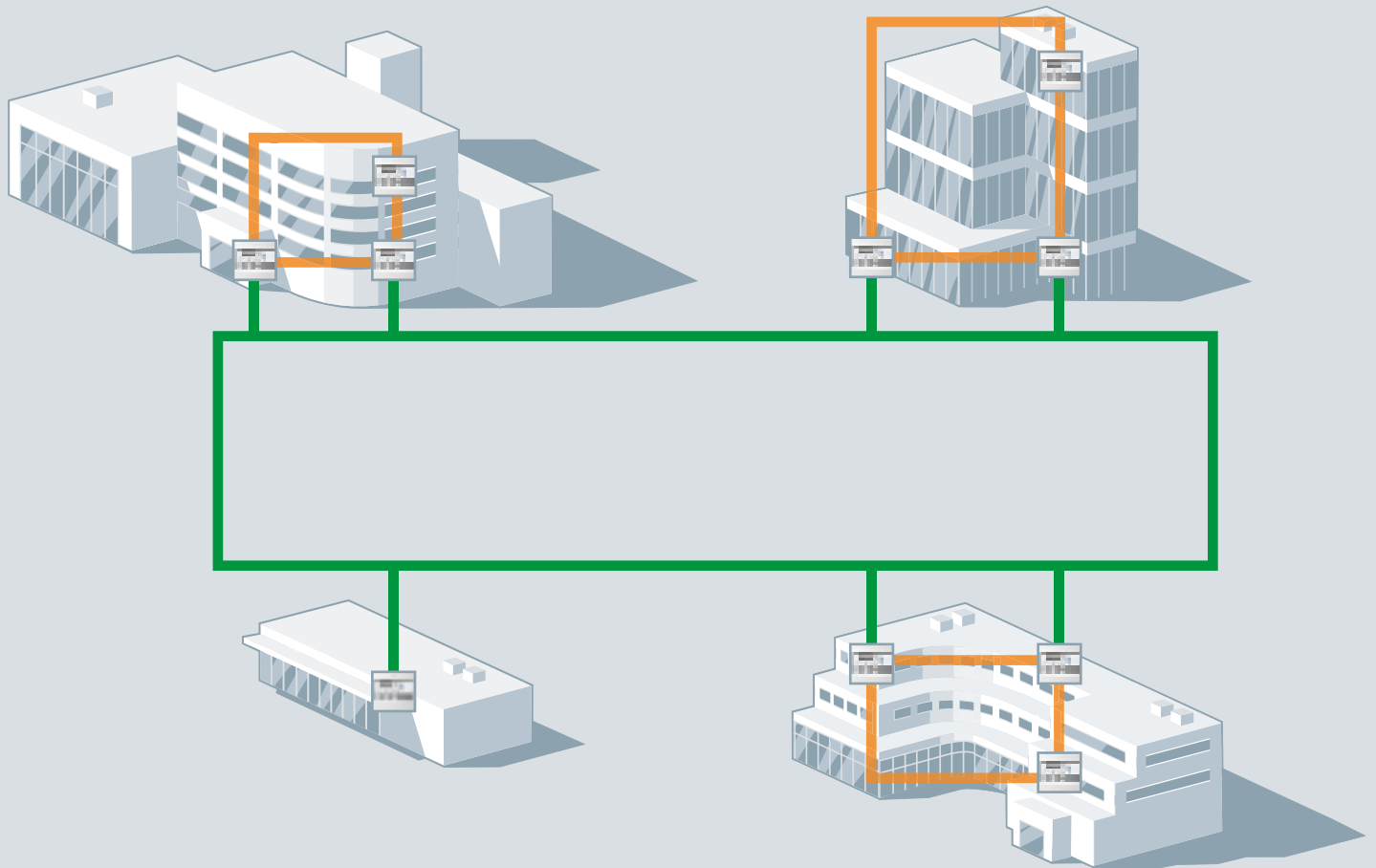
Benefits

- Only one remote transmission to fire brigade necessary for entire system
- One interface to common pager system
- Overview of entire system from any configured terminal
- Fiber-optic backbone with high immunity to electromagnetic disturbance
- System-wide EN 54-compliant operation
- Timely hand-over thanks to parallel commissioning of individual panels or clusters
- Distributed intelligence: complete control in the event of a fire is mapped in a cluster; this enables ideal adaptation to structural as well as process requirements

— Backbone (FCnet/LAN)
— Cluster (FCnet/SAFEDLINK)

Application: large campus

Extensive network spanning large distances, for example a production plant in the pharmaceutical industry.



Description

A campus comprises numerous, independent buildings. These have their own organization and structure that can be mapped ideally with a cluster of up to 16 panels. The backbone connects these clusters to an EN 54-compliant network.

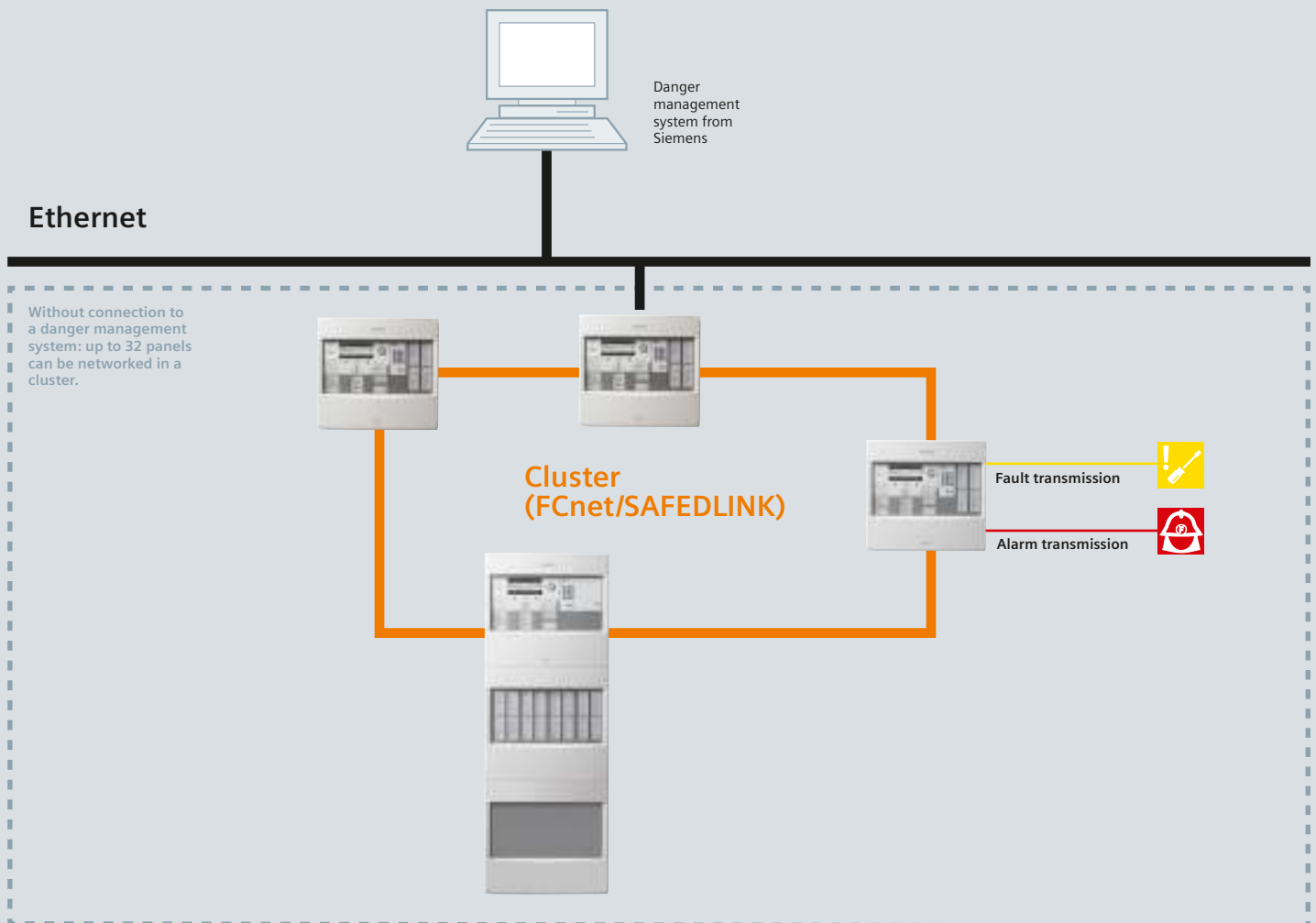
Benefits

- Intelligently arranged network structure with clearly defined clusters
- Only one control panel necessary to access entire system with all subnetworks
- Backbone is EMC protected and EN 54-compliant
- Commissioning is possible at several locations simultaneously (gain in time)
- Only one central connection to pager system for entire system
- Distributed intelligence: complete control in the event of a fire is mapped in a cluster; this enables ideal adaptation to structural and process conditions
- Security personnel has entire campus in view
- The right information at the right place: pre-defined views can be displayed according to customer requirements over the entire system; all controls can be configured to fulfill site-specific requirements

— Backbone (FCnet/LAN)
— Cluster (FCnet/SAFEDLINK)

Topology 1

Up to 16 panels can be networked in a cluster (FCnet/SAFEDLINK) – if connected to a danger management system. Without a danger management system, even up to 32 panels can be networked.



Characteristics of topology example

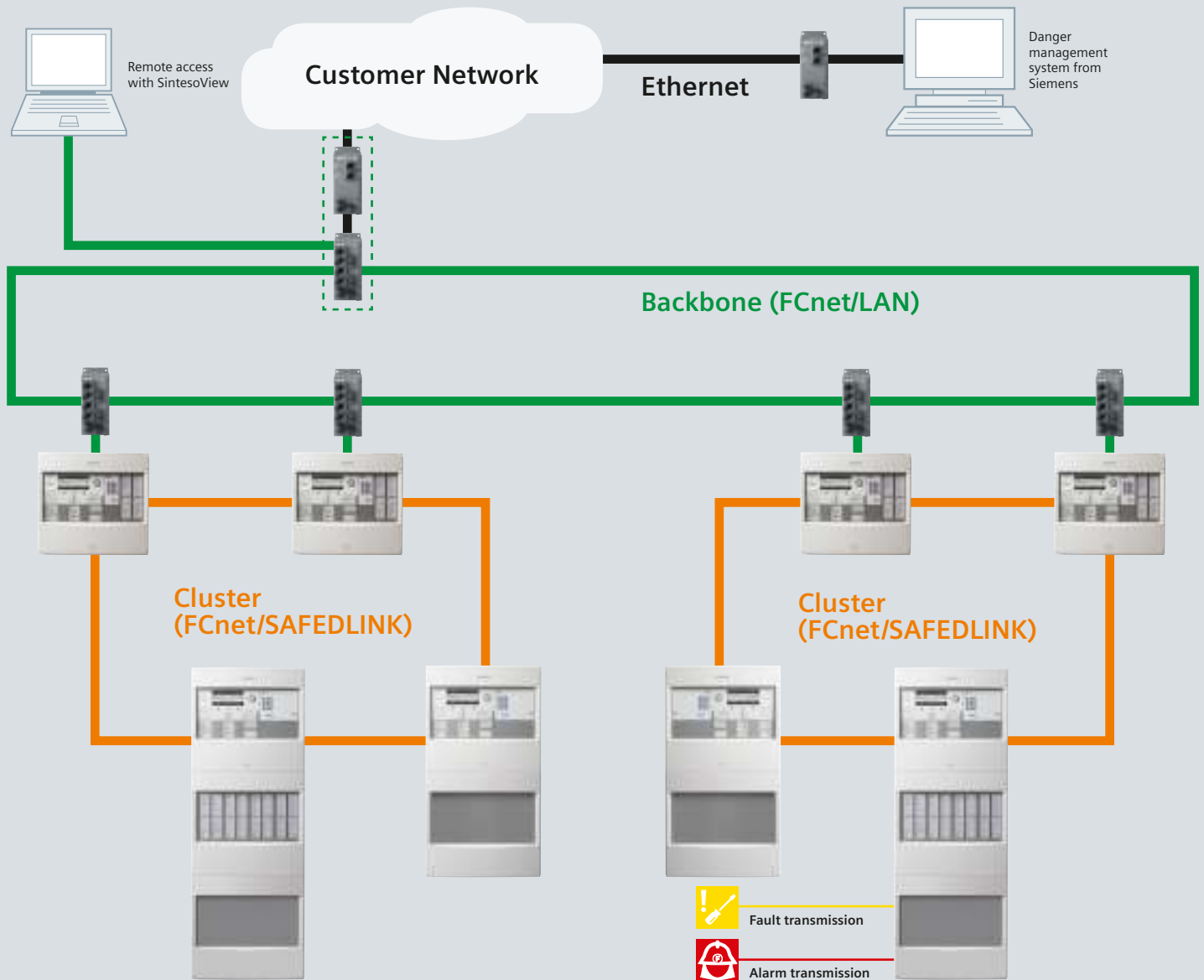
- Easy networking of panels
- Operation of panels as stand-alone solution or networked with a total length of up to 460 km
- Data rate can be adapted to line quality

Key data

- Max. number of networkable panels: 32
- Max. number of networkable panels if connected to a danger management system: 16
- Max. distance between panels with copper cable:
 - without repeater: 1,000 m
 - with repeater: 2,000 m
- Max. distance between panels with fiber-optic cable:
 - multi mode: 2,500 m
 - single mode: 15,000 m
- Max. number of panels with system-wide view: 5

Topology 2

Up to 64 panels in one EN 54-compliant system with widely varying combinations of clusters and backbone – and with connection to a danger management system via a customer network.



Characteristics of topology example

- EN 54-compliant networking of up to 64 panels via backbone
- Extensive networks spanning long distances
- Highest system availability thanks to system-wide redundancy
- Panels in different clusters can communicate with each other
- Only one remote transmission to fire brigade necessary for entire system
- Distributed building complexes can be ideally protected
- Backbone realized with fiber-optic cable

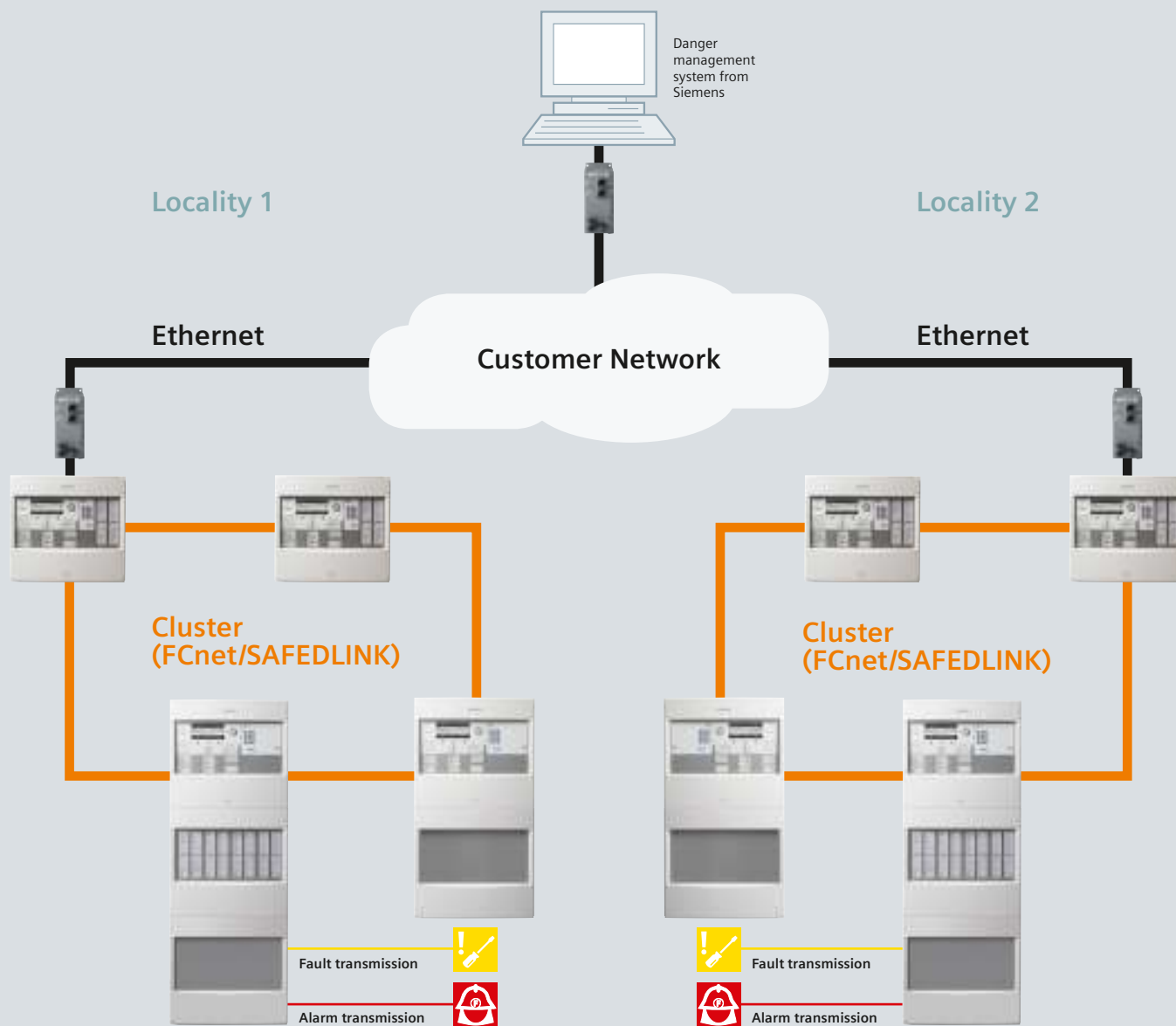
Key data

- Max. number of networkable panels incl. clusters (EN 54-compliant): 64
- Max. number of clusters: 14
- Max. number of networkable panels per cluster: 16
- Number of panels with system-wide view: 5*

* more with appropriate system topology

Topology 3

Use of a customer network to transmit relevant information from several locations to a central danger management station.



Characteristics of topology example

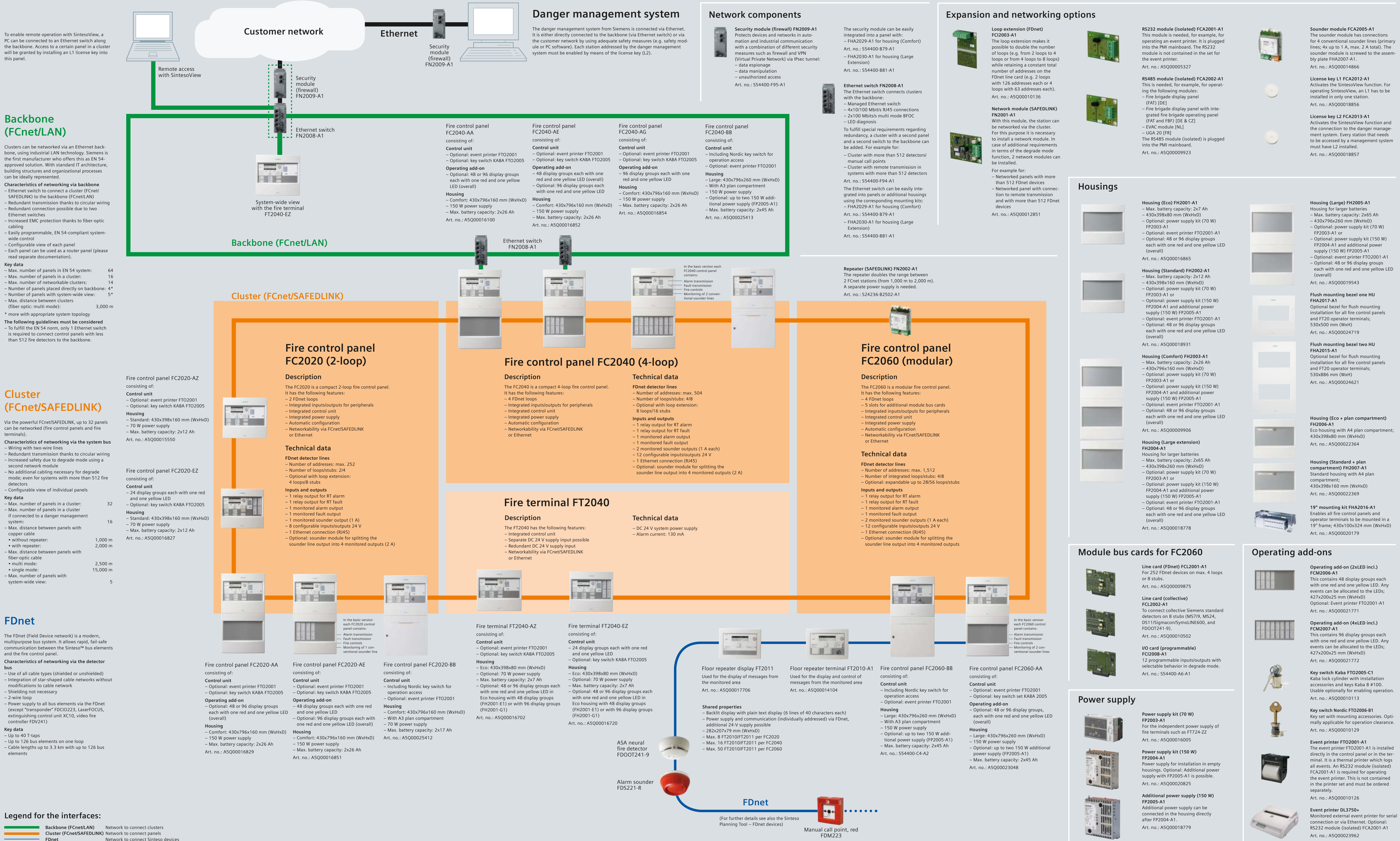
- Connection of independent location with a danger management station via IT network provided by the customer
- Reduced installation or maintenance costs thanks to usage of customer networks
- Autonomous clusters with their own remote transmission to fire brigade (to fulfill EN 54 regulations)

Key data

- Max. number of networkable panels per cluster: 16
- The maximum number of clusters, panels or data points is dependent on the management station.

Sinteso Planning Tool – panels, network, and accessories

Answers for infrastructure.



To enable remote operation with SintesoView, a PC can be connected to an Ethernet switch along the backbone. Access to a certain panel in a cluster will be granted by installing an L1 license key into this panel.

Backbone (FCnet/LAN)

Clusters can be networked via an Ethernet backbone, using industrial LAN technology. Siemens is the first manufacturer who offers this as EN 54-approved solution. With standard IT architecture, building structures and organizational processes can be ideally represented.

Characteristics of networking via backbone

- Ethernet switch to connect a cluster (FCnet/SAFEDLINK) to the backbone (FCnet/LAN)
- Redundant transmission thanks to circular wiring
- Redundant connection possible due to two Ethernet switches
- Increased EMC protection thanks to fiber-optic cabling
- Easily programmable, EN 54-compliant system-wide control
- Configurable view of each panel
- Each panel can be used as a router panel (please read separate documentation).

Key data

- Max. number of panels in EN 54 system: 64
- Max. number of panels in a cluster: 16
- Max. number of networkable clusters: 14
- Number of panels placed directly on backbone: 4*
- Number of panels with system-wide view: 5*
- Max. distance between clusters (fiber optic; multi mode): 3,000 m

* more with appropriate system topology

The following guidelines must be considered

- To fulfill the EN 54 norm, only 1 Ethernet switch is required to connect control panels with less than 512 fire detectors to the backbone.

Cluster (FCnet/SAFEDLINK)

Via the powerful FCnet/SAFEDLINK, up to 32 panels can be networked (fire control panels and fire terminals).

Characteristics of networking via the system bus

- Wiring with two-wire lines
- Redundant transmission thanks to circular wiring
- Increased safety due to degrade mode using a second network module
- No additional cabling necessary for degrade mode; even for systems with more than 512 fire detectors
- Configurable view of individual panels

Key data

- Max. number of panels in a cluster: 32
- Max. number of panels in a cluster if connected to a danger management system: 16
- Max. distance between panels with copper cable: 1,000 m
- with repeater: 2,000 m
- Max. distance between panels with fiber-optic cable: 2,500 m
- multi mode: 15,000 m
- single mode: 15,000 m
- Max. number of panels with system-wide view: 5

FDnet

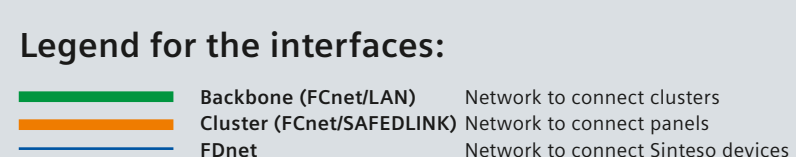
The FDnet (Field Device network) is a modern, multipurpose bus system. It allows rapid, fail-safe communication between the Sinteso™ bus elements and the fire control panel.

Characteristics of networking via the detector bus

- Use of all cable types (shielded or unshielded)
- Integration of star-shaped cable networks without modifications to cable network
- Shielding not necessary
- 2-wire loop
- Power supply to all bus elements via the FDnet (except "transponder" FDCIO223, LaserFOCUS, extinguishing control unit XC10, video fire controller FDV241)

Key data

- Up to 40 T-taps
- Up to 126 bus elements on one loop
- Cable lengths up to 3.3 km with up to 126 bus elements



Danger management system

The danger management system from Siemens is connected via Ethernet. It is either directly connected to the backbone (via Ethernet switch) or via the customer network by using adequate safety measures (e.g. safety module or PC software). Each station addressed by the danger management system must be enabled by means of the license key (L2).

Network components

Security module (firewall) FN2009-A1
Protects devices and networks in automation and industrial communication with a combination of different security measures such as firewall and VPN (Virtual Private Network) via IPsec tunnel:
– unauthorized access
– data espionage
– data manipulation
Art. no.: S54400-F95-A1

The security module can be easily integrated into a panel with:
– FHA209-A1 for housing (Comfort)
Art. no.: S54400-879-A1
– FHA203-A1 for housing (Large Extension)
Art. no.: S54400-881-A1

Ethernet switch FN2008-A1
The Ethernet switch connects clusters with the backbone:
– Managed Ethernet switch
– 4x10/100 Mbit/s RJ45 connections
– 2x100 Mbit/s multi mode BFOC
– LED diagnosis
To fulfill special requirements regarding redundancy, a cluster with a second panel and a second switch to the backbone can be added. For example for:
– Cluster with more than 512 detectors/manual call points
– Cluster with remote transmission in systems with more than 512 detectors
Art. no.: S54400-F94-A1

The Ethernet switch can be easily integrated into panels or additional housings using the corresponding mounting kits:
– FHA209-A1 for housing (Comfort)
Art. no.: S54400-879-A1
– FHA203-A1 for housing (Large Extension)
Art. no.: S54400-881-A1

Expansion and networking options

Loop extension (FDnet) FC2003-A1
The loop extension makes it possible to double the number of loops (e.g. from 2 loops to 4 loops or from 4 loops to 8 loops) while retaining a constant total number of addresses on the FDnet line card (e.g. 2 loops with 126 addresses each or 4 loops with 63 addresses each).
Art. no.: ASQ00010136

Network module (SAFEDLINK) FN2001-A1
With this module, the station can be networked via the cluster. For this purpose it is necessary to install a network module. In case of additional requirements in terms of the degrade mode function, 2 network modules can be installed.
For example for:
– Networked panels with more than 512 FDnet devices
– Networked panel with connection to remote transmission and with more than 512 FDnet devices
Art. no.: ASQ00012851

RS232 module (isolated) FCA2001-A1
This module is needed, for example, for operating an event printer. It is plugged into the PM1 mainboard. The RS232 module is not contained in the set for the event printer.
Art. no.: ASQ00005327

RS485 module (isolated) FCA2002-A1
This is needed, for example, for operating the following modules:
– Fire brigade display panel (FAT) [DE]
– Fire brigade display panel with integrated fire brigade operating panel (FAT and FBR) [DE & CZ]
– EVAC module [NL]
– UCA 20 [FR]
The RS485 module (isolated) is plugged into the PM1 mainboard.
Art. no.: ASQ00009923

Sounder module FCA2005-A1
The sounder module has connections for 4 conventional sounder lines (primary lines 4x up to 1 A, max. 2 A total). The sounder module is screwed to the assembly plate FHA2007-A1.
Art. no.: ASQ00014866

License key L1 FCA2012-A1
Activates the SintesoView function. For operating SintesoView, an L1 has to be installed in only one station.
Art. no.: ASQ00018856

License key L2 FCA2013-A1
Activates the SintesoView function and the connection to the danger management system. Every station that needs to be accessed by a management system must have L2 installed.
Art. no.: ASQ00018857

Housings

Housing (Eco) FH2001-A1
– Max. battery capacity: 2x7 Ah
– 430x398x80 mm (WxHxD)
– Optional: power supply kit (70 W) FP2003-A1
– Optional: event printer FTO2001-A1
– Optional: power supply kit (150 W) FP2004-A1 and additional power supply (150 W) FP2005-A1
Art. no.: ASQ00016865

Housing (Standard) FH2002-A1
– Max. battery capacity: 2x12 Ah
– 430x398x160 mm (WxHxD)
– Optional: power supply kit (70 W) FP2003-A1 or
– Optional: power supply kit (150 W) FP2004-A1 and additional power supply (150 W) FP2005-A1
– Optional: event printer FTO2001-A1
– Optional: 48 or 96 display groups each with one red and one yellow LED (overall)
Art. no.: ASQ00019543

Flush mounting bezel one HU FHA2017-A1
Optional bezel for flush mounting installation for all fire control panels and FT20 operator terminals; 530x500 mm (WxH)
Art. no.: ASQ00024719

Flush mounting bezel two HU FHA2015-A1
Optional bezel for flush mounting installation for all fire control panels and FT20 operator terminals; 530x886 mm (WxH)
Art. no.: ASQ00024621

Housing (Large extension) FH2004-A1
Housing for larger batteries
– Max. battery capacity: 2x65 Ah
– 430x398x260 mm (WxHxD)
– Optional: power supply kit (70 W) FP2003-A1 or
– Optional: power supply kit (150 W) FP2004-A1 and additional power supply (150 W) FP2005-A1
– Optional: event printer FTO2001-A1
– Optional: 48 or 96 display groups each with one red and one yellow LED (overall)
Art. no.: ASQ00009906

Housing (Eco + plan compartment) FH2006-A1
Eco housing with A4 plan compartment; 430x398x80 mm (WxHxD)
Art. no.: ASQ00022364

Housing (Standard + plan compartment) FH2007-A1
Standard housing with A4 plan compartment; 430x398x160 mm (WxHxD)
Art. no.: ASQ00022369

19" mounting kit FHA2016-A1
Enables all fire control panels and operator terminals to be mounted in a 19" frame; 430x100x324 mm (WxHxD)
Art. no.: ASQ00020179

Module bus cards for FC2060

Line card (FDnet) FCL2001-A1
For 252 FDnet devices on max. 4 loops or 8 stubs.
Art. no.: ASQ00009875

Line card (collective) FCL2002-A1
To connect collective Siemens standard detectors on 8 stubs (MS79, MS24, DS11/Sigmaconi/SymolNE600, and FDOOT41-9).
Art. no.: ASQ00010502

I/O card (programmable) FCL2008-A1
12 programmable inputs/outputs with selectable behavior in degrade mode.
Art. no.: ASQ00011772

Operating add-ons

Operating add-on (2xLED incl.) FCM2006-A1
This contains 48 display groups each with one red and one yellow LED. Any events can be allocated to the LEDs; 427x200x25 mm (WxHxD).
Optional: Event printer FTO2001-A1
Art. no.: ASQ00021771

Operating add-on (4xLED incl.) FCM2007-A1
This contains 96 display groups each with one red and one yellow LED. Any events can be allocated to the LEDs; 427x200x25 mm (WxHxD).
Art. no.: ASQ00010113

Key switch KABA FTO2005-C1
Kaba lock cylinder with installation accessories and keys Kaba 8 #100. Usable optionally for enabling operation.
Art. no.: ASQ00010113

Key switch Nordic FTO2006-B1
Key set with mounting accessories. Optimally applicable for operation clearance.
Art. no.: ASQ00010129

Event printer FTO2001-A1
The event printer FTO2001-A1 is installed directly in the control panel or in the terminal. It is a thermal printer which logs all events. An RS232 module (isolated) FCA2001-A1 is required for operating the event printer. This is not contained in the printer set and must be ordered separately.
Art. no.: ASQ00010126

Event printer DL3750+
Monitored external event printer for serial connection or via Ethernet. Optional: RS232 module (isolated) FCA2001-A1
Art. no.: ASQ00023962

Power supply

Power supply kit (70 W) FP2003-A1
For the independent power supply of fire terminals such as FT24-ZZ.
Art. no.: ASQ00016005

Power supply kit (150 W) FP2004-A1
Power supply for installation in empty housings. Optional: Additional power supply with FP2005-A1 is possible.
Art. no.: ASQ00020825

Additional power supply (150 W) FP2005-A1
Additional power supply can be connected in the housing directly after FP2004-A1.
Art. no.: ASQ00018779

Fire control panel FC2040-AA
consisting of:
– Control unit
– Optional: event printer FTO2001
– Optional: key switch KABA FTO2005
Operating add-on
– Optional: 48 or 96 display groups each with one red and one yellow LED (overall)
Housing
– Comfort: 430x796x160 mm (WxHxD)
– 150 W power supply
– Max. battery capacity: 2x26 Ah
Art. no.: ASQ00016100

Fire control panel FC2040-AE
consisting of:
– Control unit
– Optional: event printer FTO2001
– Optional: key switch KABA FTO2005
Operating add-on
– 48 display groups each with one red and one yellow LED (overall)
Housing
– Comfort: 430x796x160 mm (WxHxD)
– 150 W power supply
– Max. battery capacity: 2x26 Ah
Art. no.: ASQ00016852

Fire control panel FC2040-AG
consisting of:
– Control unit
– Including Nordic key switch for operation access
– Optional: event printer FTO2001
Operating add-on
– 96 display groups each with one red and one yellow LED
Housing
– Comfort: 430x796x160 mm (WxHxD)
– 150 W power supply
– Max. battery capacity: 2x26 Ah
Art. no.: ASQ00016854

Fire control panel FC2040-BB
consisting of:
– Control unit
– Including Nordic key switch for operation access
– Optional: event printer FTO2001
Housing
– Eco: 430x398x80 mm (WxHxD)
– Max. battery capacity: 2x7 Ah
– Optional: 48 or 96 display groups each with one red and one yellow LED in Eco housing with 48 display groups (FH2001-E1) or with 96 display groups (FH2001-G1)
Art. no.: ASQ00016702

Fire control panel FC2020 (2-loop)
Description
The FC2020 is a compact 2-loop fire control panel. It has the following features:
– 2 FDnet loops
– Integrated inputs/outputs for peripherals
– Integrated control unit
– Integrated power supply
– Automatic configuration
– Networkability via FCnet/SAFEDLINK or Ethernet

Technical data
FDnet detector lines
– Number of addresses: max. 252
– Number of loops/stubs: 2/4
– Optional with loop extension: 4 loops/8 stubs

Inputs and outputs
– 1 relay output for RT alarm
– 1 relay output for RT fault
– 1 monitored alarm output
– 1 monitored fault output
– 1 monitored sounder output (1 A)
– 8 configurable inputs/outputs (24 V)
– 1 Ethernet connection (RJ45)
– Optional: sounder module for splitting the sounder line output into 4 monitored outputs (2 A)

Fire control panel FC2040 (4-loop)
Description
The FC2040 is a compact 4-loop fire control panel. It has the following features:
– 4 FDnet loops
– Integrated inputs/outputs for peripherals
– Integrated control unit
– Integrated power supply
– Automatic configuration
– Networkability via FCnet/SAFEDLINK or Ethernet

Technical data
FDnet detector lines
– Number of addresses: max. 504
– Number of loops/stubs: 4/8
– Optional with loop extension: 8 loops/16 stubs

Inputs and outputs
– 1 relay output for RT alarm
– 1 relay output for RT fault
– 1 monitored alarm output
– 1 monitored fault output
– 2 monitored sounder outputs (1 A each)
– 12 configurable inputs/outputs 24 V
– 1 Ethernet connection (RJ45)
– Optional: sounder module for splitting the sounder line output into 4 monitored outputs (2 A)

Fire terminal FT2040
Description
The FT2040 has the following features:
– Integrated control unit
– Separate DC 24 V supply input possible
– Redundant DC 24 V supply input
– Networkability via FCnet/SAFEDLINK or Ethernet

Technical data
– DC 24 V system power supply
– Alarm current: 130 mA

Fire terminal FT2040-AZ
consisting of:
– Control unit
– Optional: event printer FTO2001
– Optional: key switch KABA FTO2005
Housing
– Eco: 430x398x80 mm (WxHxD)
– Max. battery capacity: 2x7 Ah
– Optional: 48 or 96 display groups each with one red and one yellow LED in Eco housing with 48 display groups (FH2001-E1) or with 96 display groups (FH2001-G1)
Art. no.: ASQ00016702

Fire terminal FT2040-EZ
consisting of:
– Control unit
– 24 display groups each with one red and one yellow LED
– Optional: key switch KABA FTO2005
Housing
– Eco: 430x398x80 mm (WxHxD)
– Optional: 70 W power supply
– Max. battery capacity: 2x7 Ah
– Optional: 48 or 96 display groups each with one red and one yellow LED in Eco housing with 48 display groups (FH2001-E1) or with 96 display groups (FH2001-G1)
Art. no.: ASQ00016720

Shared properties
– Backlit display with plain text display (6 lines of 40 characters each)
– Power supply and communication (individually addressed) via FDnet, additional 24-V supply possible
– 282x207x79 mm (WxHxD)
– Max. 8 FT2010/FT2011 per FC2040
– Max. 16 FT2010/FT2011 per FC2040
– Max. 50 FT2010/FT2011 per FC2060

ASA neural fire detector FDOOT241-9
Alarm sounder FDS212-R

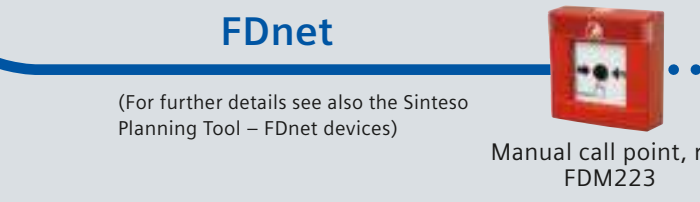
Floor repeater display FT2011
Used for the display of messages from the monitored area
Art. no.: ASQ00017706

Floor repeater terminal FT2010-A1
Used for the display and control of messages from the monitored area
Art. no.: ASQ00014104

Fire control panel FC2060-BB
consisting of:
– Control unit
– Including Nordic key switch for operation access
– Optional: event printer FTO2001
Housing
– Large: 430x796x260 mm (WxHxD)
– With A3 plan compartment
– Optional: up to two 150 W additional power supply (FP2005-A1)
– Max. battery capacity: 2x45 Ah
Art. no.: S54400-C4-A2

Fire control panel FC2060-AA
consisting of:
– Control unit
– Optional: event printer FTO2001
– Optional: key switch KABA FTO2005
Operating add-on
– Optional: 48 or 96 display groups, each with one red and one yellow LED (overall)
Housing
– Large: 430x796x260 mm (WxHxD)
– 150 W power supply
– Optional: up to two 150 W additional power supply (FP2005-A1)
– Max. battery capacity: 2x45 Ah
Art. no.: ASQ00023048

Repeater (SAFEDLINK) FN2002-A1
The repeater doubles the range between 2 FCnet stations (from 1,000 m to 2,000 m). A separate power supply is needed.
Art. no.: S24236-B2502-A1



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, 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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