SIEMENS

FC72x / FT724

Fire control panel / fire terminal

Installation (short)

MP1XS

Building Technologies

Fire Safety & Security Products

Technical specifications and availability subject to change without notice.

Table of contents

1 About this document

Goal and purpose

These brief instructions aim to provide experienced and qualified installers with a guide on how to assemble, install, commission and repair the system.

Scope

These brief instructions are supplements to the documents provided for the Cerberus FS720 fire detection system and apply for the following products:

- Cerberus FC722 and FC724 fire control panels
- FT724 fire terminal

The information contained in this document is valid for the market package MP1XS.

Target groups

The information in this document is intended for the following target groups:

Target group	Activity	Qualification
Installation personnel	• Assembles and installs the product components at the place of installation. • Carries out a performance check following installation.	• Has received specialist training in the area of building installation technology or electrical installations.
Operating personnel	• Carries out procedures to correctly operate the product.	• No particular basic training is needed. • Has been instructed by the commissioning personnel.

Reference document

The reference version of this document is the international version in English. The international version is not localized.

The reference document has the following designation:

ID_x_en_--

x = modification index, en = English, -- = international

Document identification

Position	Information
Title page	• Product type • Product designation • Document type
Last page, bottom left	• Document ID ID_ModificationIndex_Language_COUNTRY • Edition date
Last page, bottom right-hand side	• Manual • Register

Conventions for text marking

Markups

Special markups are shown in this document as follows:

▷	Requirement for a behavior instruction
⇨	Intermediate result of a behavior instruction
⇨	End result of a behavior instruction
'Text'	Quotation, reproduced identically
<Key>	Identification of keys

Supplementary information

The  symbol identifies supplementary information such as a tip for an easier way of working.

Supplementary information is labelled with the 'i' symbol.

Reference documents

Document ID	Title
A6V102110355	Description
A6V102110362	Planning
A6V102110390	Installation incl. assembly
A6V102110416	Commissioning / maintenance / repairs
A6V102110424	Configuration
A6V10229261	List of compatibility for Cerberus FD720
A6V1021 0368	Characteristic product data

History of changes

Document ID	Edition date	Brief description
A6V10211094_a_en_--	05.2009	Brief instructions FC722, FC724, FT724

2 Safety notices

The safety notices must be observed in order to protect people and property.

The safety notices in this document contain the following elements:

- Symbol for danger
- Signal word
- Nature and origin of the danger
- Consequences if the danger occurs
- Measures or prohibitions for danger avoidance

Symbol for danger

	This is the symbol for danger. It warns of **risks of injury**. Follow all measures identified by this symbol to avoid injury or death.

Additional danger symbols

These symbols indicate general dangers, the type of danger or possible consequences, measures and prohibitions, examples of which are shown in the following table:

 General danger

 Voltage/electric shock

 Battery

 Explosive atmosphere

 Laser light

 Heat

Signal word

The signal word classifies the danger as defined in the following table:

Signal word	Danger level
DANGER	DANGER identifies a dangerous situation, which **will result directly in death or serious injury** if you do not avoid this situation.
WARNING	WARNING identifies a dangerous situation, which **may result in death or serious injury** if you do not avoid this situation.
CAUTION	CAUTION identifies a dangerous situation, which **could result in slight to moderately serious injury** if you do not avoid this situation.
NOTICE	*NOTICE* identifies possible damage to property that may result from non-observance.

How risk of injury of presented

Information about the risk of injury is shown as follows:

	⚠ **WARNING**
	Nature and origin of the danger Consequences if the danger occurs ● Measures / prohibitions for danger avoidance

How possible damage to property is presented

Information about possible damage to property is shown as follows:

	***NOTICE***
	Nature and origin of the danger Consequences if the danger occurs ● Measures / prohibitions for danger avoidance

2.1 Safety regulations for the method of operation

National standards, regulations and legislation

Siemens products are developed and produced in compliance with the relevant European and international safety standards. Should additional national or local safety standards or legislation concerning the planning, assembly, installation, operation or disposal of the product apply at the place of operation, then these must also be taken into account together with the safety regulations in the product documentation.

Electrical installations

⚠ WARNING

Electrical voltage

Electric shock

- Work on electrical installations may only be carried out by qualified electricians or by instructed persons working under the guidance and supervision of a qualified electrician, in accordance with the electrotechnical regulations.

- Wherever possible disconnect products from the power supply when carrying out commissioning, maintenance or repair work on them.
- Lock volt-free areas to prevent them being switched back on again by mistake.
- Label the connection terminals with external external voltage using a 'DANGER External voltage' sign.
- Route mains connections to products separately and fuse them with their own, clearly marked fuse.
- Fit an easily accessible disconnecting device in accordance with IEC 60950-1 outside the installation.
- Produce earthing as stated in local safety regulations.

Assembly, installation, commissioning and maintenance

- If you require tools such as a ladder, these must be safe and must be intended for the work in hand.
- When starting the fire control panel ensure that unstable conditions cannot arise.
- Ensure that all points listed in the 'Testing the product operability' section below are observed.
- You may only set controls to normal function when the product operability has been completely tested and the system has been handed over to the customer.

Testing the product operability

- Prevent the remote transmission from triggering erroneously.
- If testing building installations or activating devices from third-party companies, you must collaborate with the people appointed.
- The activation of fire control installations for test purposes must not cause injury to anyone or damage to the building installations. The following instructions must be observed:
  - Use the correct potential for activation; this is generally the potential of the building installation.
  - Only check controls up to the interface (relay with blocking option).
  - Make sure that only the controls to be tested are activated.
- Inform people before testing the alarming control devices and allow for possible panic responses.
- Inform people about any noise or mist which may be produced.
- Before testing the remote transmission, inform the corresponding alarm and fault signal receiving stations.

Modifications to the system layout and products

Modifications to the system and to individual products may lead to faults, malfunctioning and safety risks. Written confirmation must be obtained from Siemens and the corresponding safety bodies for modifications or additions.

Modules and spare parts

- Components and spare parts must comply with the technical specifications defined by Siemens. Only use products specified or recommended by Siemens.
- Only use fuses with the specified fuse characteristics.
- Wrong battery types and improper battery changing lead to a risk of explosion. Only use the same battery type or an equivalent battery type recommended by Siemens.
- Batteries must be disposed of in an environmentally friendly manner. Observe national guidelines and regulations.

Disregard of the safety regulations

Before they are delivered, Siemens products are tested to ensure they function correctly when used properly. Siemens disclaims all liability for damage or injuries caused by the incorrect application of the instructions or the disregard of danger warnings contained in the documentation. This applies in particular to the following damage:

- Personal injuries or damage to property caused by improper use and incorrect application
- Personal injuries or damage to property caused by disregarding safety instructions in the documentation or on the product
- Personal injury or damage to property caused by poor maintenance or lack of maintenance

Disclaimer

We have checked that the content of this document matches the hardware and software described. Despite this, we cannot rule out deviations and cannot therefore assume liability for them matching completely. The details in this document are checked regularly and any corrections needed included in subsequent editions.

We are grateful for any suggestions for improvement.

2.2 Standards and directives complied with

A list of the standards and directives complied with is available from your Siemens contact.

2.3 Responsibility of the operator

A fire detection installation is a piece of safety engineering equipment designed to protect people, buildings and equipment through early detection of fires and alarming.

The fire detection installation has to be maintained in order to satisfy this requirement. Within the European Union, the maintenance intervals are defined in the EN 54 standard and/or are also governed by national and local requirements.

Maintenance is required in order for the fire detection installation to function correctly. The fire detection installation consists of components the function of which may be impaired by ambient conditions and aging.

Maintenance of a fire detection installation is governed by the EN54 standard.

Manufacturer's recommendations

The following work should be carried out at regular intervals to maintain the fire detection system:

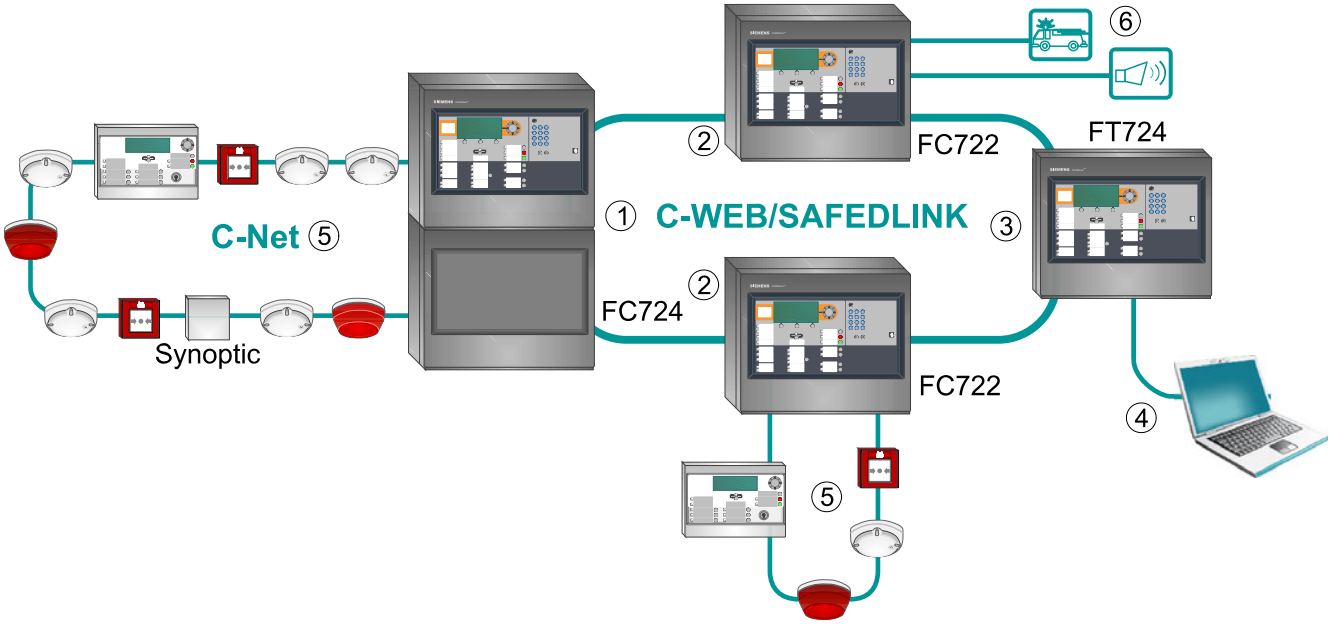
- Visual check for damage on the devices or possible sources of error
- Quarterly inspection of system parts including test triggering of fire alarm
- Annual maintenance including inspection work, checking the power supply and emergency power supply
- Replacement of batteries by the date stated by the battery manufacturer at the latest (printed on battery)
- Keep a logbook to document system messages, isolations and maintenance work.

The frequency of inspections and service work is dependent on the ambient conditions.

If using fire detection systems in critical ambient conditions, e.g. in rooms with a high concentration of dust, high air humidity or large temperature fluctuations, shorter inspection intervals may be needed.

3 System overview

The FC720 Cerberus fire control panels can be operated as standalone panels or extended into a fire detection system which can be networked. A Cerberus fire control panel supports operation of the C-NET detector line. Up to 16 Cerberus stations (fire control panels, fire terminals) are networked via the C-WEB.



1 FC722 or FC724 fire control panel in Comfort housing

2 FC722 fire control panel in the Standard housing

3 FT724 fire terminal

4 Laptop or PC with Cerberus Engineering Tool software

5 C-NET detector line

6 Periphery (e.g. RT alarm transmission installation or acoustic signal transmitter etc.)

C-NET (loop / stub line)

The C-NET is a monitored bus line using 2-wire technology. Up to 126 devices per loop or 32 devices per stub can be connected to this. C-NET line devices are automatic fire detectors, manual call points, I/O components, transponders and indication and operating devices such as floor repeater operating terminals. With the exception of the FDCIO223 transponder, which requires its own power supply, all C-NET devices are also supplied with operating voltage via the C-NET. There is a line separator integrated in each line device. In the event of a C-NET fault (short-circuit/wire break), the defective line segment is isolated by two neighboring line separators. When using a loop, the connected devices remain ready to detect. With a stub, the faulty line segment is isolated after the line separator. The fault is displayed on the station.

C-WEB /SAFEDLINK (network)

Up to 16 Cerberus stations can be networked via the C-WEB to form a fire detection network. Redundant operations are guaranteed by the network's ring topology. Thanks to the C-WEB, system-wide alarming and access to individual fire detection system devices is possible. There may be a distance of up to 1,093.61 yd between two network users. At greater distances, special repeaters or even optical waveguide connections can be used. A second network card can also be fitted for stricter fail-safe requirements. The network connection can also be realized by an Ethernet®. However this does not satisfy the requirements of EN54.

More details of networking can be found in the system documentation.

3.1 Cerberus system components and options

	FC722 fire control panel (2 loops)	FC724 fire control panel (4 loops)	FT724 fire terminal
Max. C-NET addresses	252 *	504 *	–
without loop extension	2 loops *	4 loops *	–
with loop extension	4 loops *	8 loops *	–
Supply			
Power supply	70/150 W	150 W	optional (70 W)
Batteries (capacity)	max. 2x 26 Ah	max. 2 x 26 Ah	optional (7 Ah)
external 24 V DC supply	–	–	redundant
Operating unit	integrated	integrated	integrated
Inputs and outputs			
RT alarm, relay	1	1	–
RT fault, relay	1	1	–
RT alarm monitored	1	1	–
RT fault monitored	1	1	–
Outputs for monitored, acoustic signal transmitter	1	2	–
free configurable inputs/outputs	8	12	–
Options			
Loop extension (C-NET)	max. 1	max. 2	–
Networking module (SAFEDLINK)	max. 2	max. 2	max. 2
Repeater (SAFEDLINK)	max. 1*	max. 1*	max. 1*
RS232 / RS485 module	max. 2	max. 2	max. 2
Fire department periphery module [DE]	1	1	–
Event printer	1	1	1
LED indicator (internal); 24 yellow and red LEDs each	max. 5	max. 5	max. 5
EVAC-NL operating unit [NL]	max. 1	max. 1	max. 1
Sounder module	max. 2	max. 2	–
RT interface [NL]	max. 1	max. 1	–
License key (L1 or L2)	max. 1	max. 1	max. 1
Key switch (Kaba type)	max. 1	max. 1	max. 1

** Note system limits!*
The description of system components and options does not form part of these brief instructions (For detailed information, refer to the system documentation).
[DE] option for Germany [NL] option for the Netherlands

4 Assembly

Before assembly and installation, check all the fire detection installation components visually for damage caused by improper transport and handling.

Unpacking and checking

Components with clear signs of damage must not be used in the station or operated as fire detection installation components. When assembling the station and its modules, observe national and local standards and requirements. The following assembly instructions refer to the specifications of the EN 54 standard and the manufacturer's recommendations. The site chosen to assemble the station and associated components must match the planning documents for the fire detection installation.

4.1 Installation instructions

The station's equipment pack contains an assembly model with the dimensions needed and details of the mounting points to assist with assembly.

The station must be assembled in a dry, clean and well vented room.

The station must be assembled at a distance of least one door leaf width from the room's entrance. Select the height of assembly such that the display and optical indications are approx. 1.6 -1.7m above where the observer stands.

The station and its components should be protected from dampness and interfering external influences such as dust, great temperature fluctuations and mechanical stress.

The station must be assembled in a place freely accessible to authorized staff and the emergency services.

A level, non-vibrating wall surface with load bearing capacity and suitable mounting materials (e.g. screws and plugs) are needed to secure the station to the wall.

The assembly surface and selected mounting must be suitable for the weight of the equipped station incl. the batteries used.

The station may only be fitted using the 19" method if using the associated components.

Assembly is not permitted in rooms with high levels of electromagnetic interference, e.g. control rooms or right next to power cables and inductive loads.

⚠ WARNING

Electric shock

Assembly and installation work may only be undertaken by qualified staff and when the system is de-energized.

NOTICE

Damage resulting from electrostatics

Take appropriate EMC protective measures when handling electronics modules.

5 Installation

The following installation instructions refer to the specifications of the EN 54 standard and the manufacturer's recommendations. The installation may only be undertaken by an electrician. Detailed instructions can be found in the system documentation.

- Use a suitable cable, e.g. NYM 3 x 2.5mm^2 (max. 2.5 mm^2) or a cable type with similar performance features to connect the AC voltage from the mains.
- The mains voltage fuse must be designed for a current level of 10A.
- The mains connection cable must be routed into the control panel housing from above or from the rear.
- Provide a suitable mains separator or an appropriately labeled automatic cutout for the mains voltage connection.
- The nominal voltage required (230 V AC or 115 V AC) is stated on the control panel's type plate.
- Use a separate residual current unit for residual current circuit breakers. Depending on the installation conditions, voltage surge protection (primary protection) is required for the mains connection.

Planning and system limits

Before the installation, check whether the system's planning is suitable for the system limits. This applies e.g. to all technical data and details of cable lengths, number of bus users, battery capacity and compliance with requirements from standards and national guidelines and local requirements.

Details of planning can be found in the system documentation.

Information about lightning protection

Further information and detailed specifications relating to producing a lightning protection concept can be found in the relevant literature and associated standards.

⚠ WARNING

Voltage

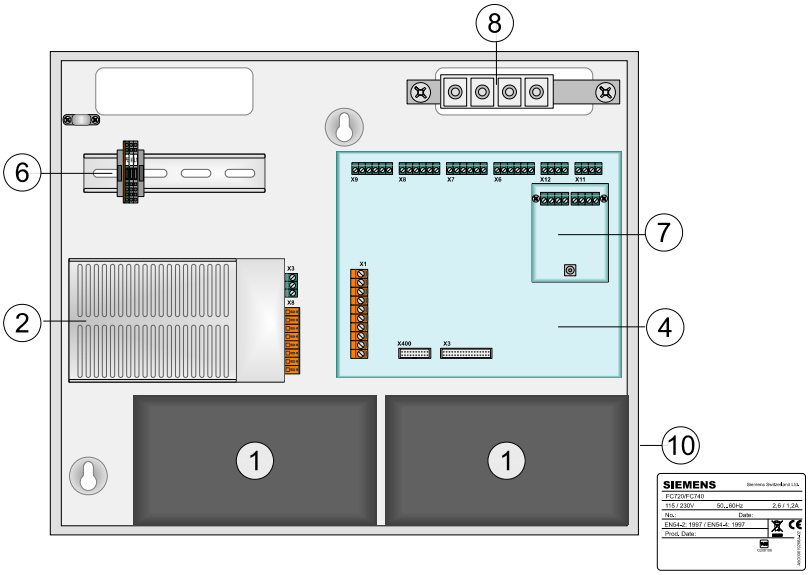
Electric shock

- Assembly and installation work may only be undertaken by qualified staff and when the system is de-energized.
- Only use cable openings or the edge protection strips provided to protect cables.

!	*NOTICE*
	Overvoltage Damage possible ● Observe the nominal voltage required (230 V AC) on the control panel's type plate! ● The fuses used and stated in the factory must not be bypassed or replaced with any type other than that stated. ● Take appropriate EMC protective measures when handling electronics modules.

5.1 Position of boards / components

Position of components in Standard housing (FC722)



1 Batteries

2 Power supply 70 W

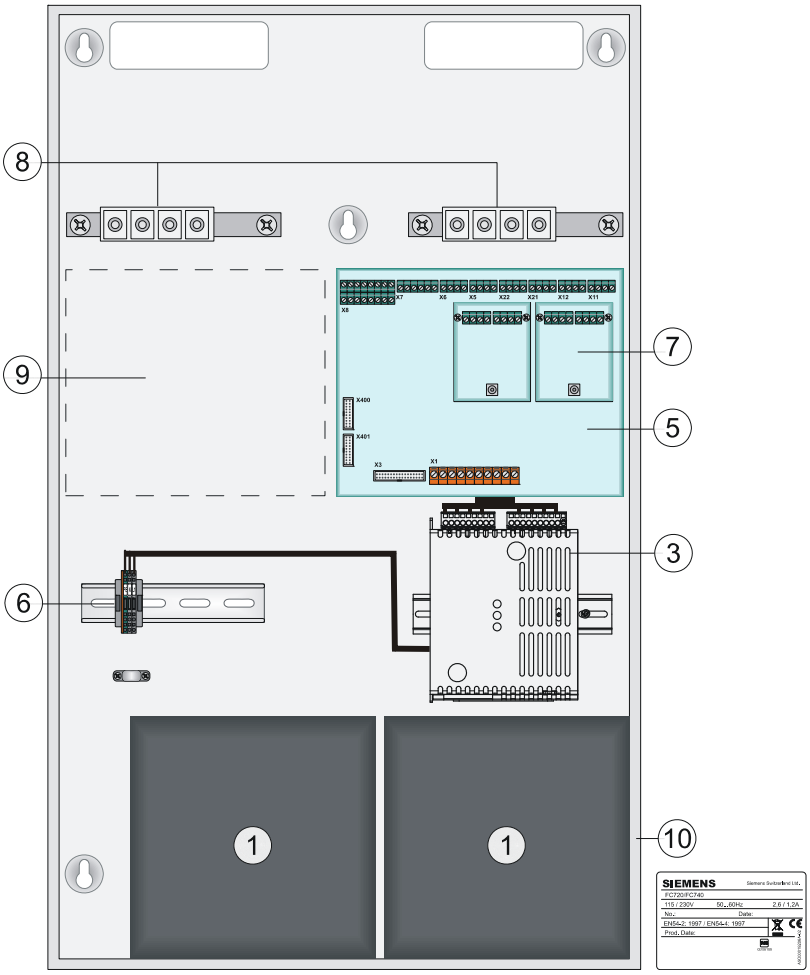
3 150W power supply

4 Periphery board (2 loops)

5 Periphery board
(2 loops or 4 loops)

6 Mains connection terminals
(L1,N,PE)

Position of components in Comfort housing (FC722 or FC724)



Options (extract)

7 Loop extension (C-NET)
1x loop extension
(for 2-loop periphery board)
2x loop extension
(for 4-loop periphery board)

8 Shield connection terminal blocks or cable set (communication)

9 Space for more options
(e.g. fire brigade periphery module)

10 Type plate
(enclosed, should be attached to the outside of the control panel housing at this point)

You will find further information on removing the FC722 and FC724 stations and the housings and options available in the system documentation.

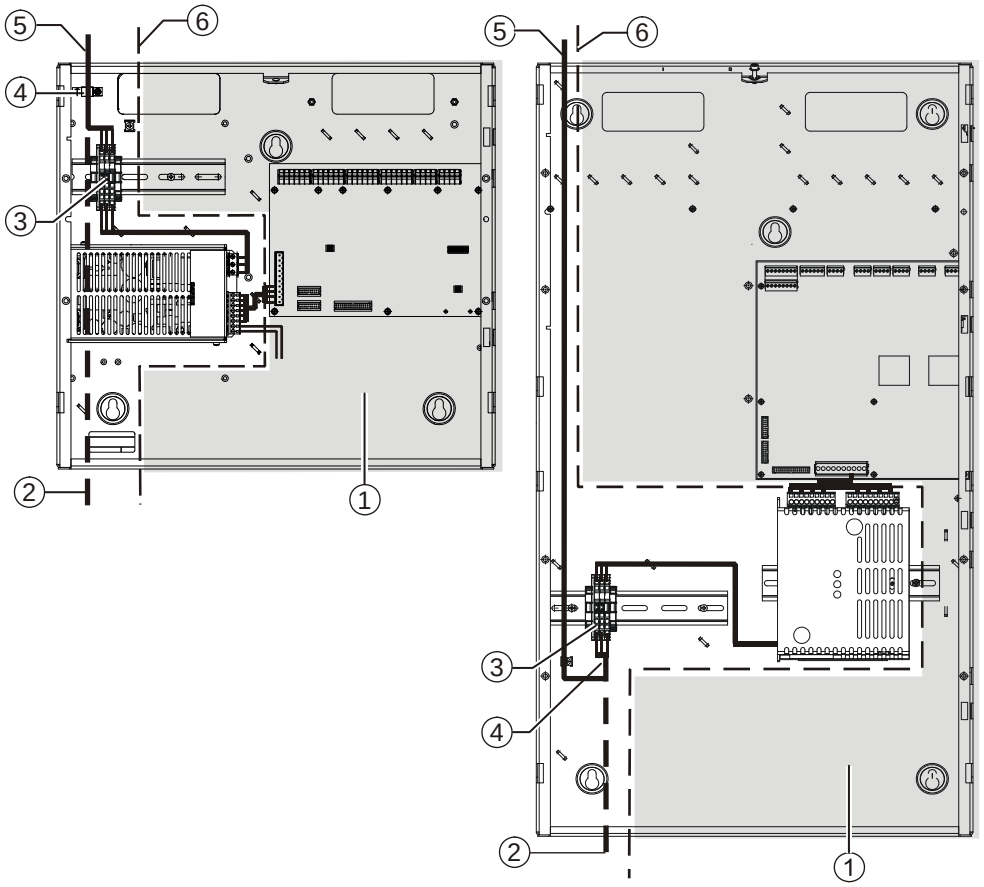
5.2 Power supply - mains voltage connection

When supplied from the factory, the power supply's internal cabling is already connected.

Power units available

24V DC /2.5A, power 70W, max. battery capacity which can be connected 17Ah

24V DC /5A, power 150 W, max. battery capacity which can be connected 45Ah



Mains connection in Standard and Comfort housings

1	EMC-critical zone (no high-voltage power permitted)	4	Cable strain relief for mains supply line
2	Mains connection from below (not permitted when batteries are fitted)	5	Mains connection from above (recommended)
3	Disconnect terminal blocks	6	EMC boundary

- The network cables must be inserted from above.
- The mains lead must be placed along the left side of the housing (observe EMC zone boundary).
- Signal and control lines must only be fed into the housing on the right from above or from the rear.
- Batteries must be installed in the correct positions.

- No cable openings should be made in the base of the housing, unless an additional empty housing is mounted below the station to accommodate the batteries.
- The mains connection voltage needed (230V AC / 115V AC) can be found on the station's type plate.

Connecting mains voltage

⚠ WARNING

Voltage

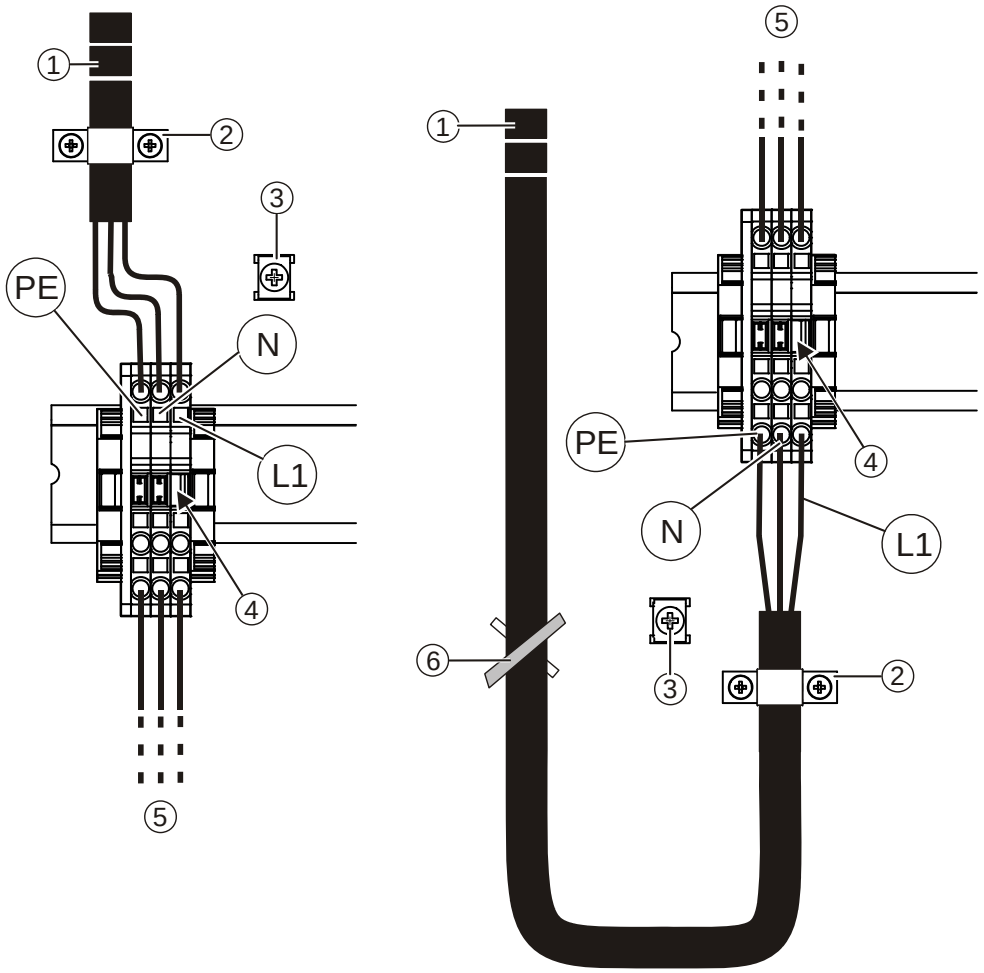
Electric shock

- Before connecting the mains voltage ensure that it is not energized and is locked to prevent it being activated.

1. Lay the mains cable (5) along the left side of the housing.
2. Insulate the mains cable as needed and connect it to the disconnect terminal blocks (3). Use cable end sleeves for wires.
3. Fixate the cable with the strain relief clamp (4).

- Secure the cable with cable ties.

Detailed diagram



Mains connection for Standard and Comfort housings

1	Mains cable (supplied from above), 3 x 1.5mm² e.g. NYM cable type	6	Cable tie
2	Strain relief clamp	PE	Protective conductor (terminal on the left)
3	Ground on the rear panel	N	Neutral conductor (terminal in the middle)
4	Disconnect terminal	L1	External conductor (terminal on the right, with mains disconnector)
5	Primary cabling for power supply		

5.2.1 Emergency power supply

Should the AC mains voltage fail, the emergency power supply will be provided by the connected batteries with no interruptions. The emergency power bridging time depends on the control panel's quiescent and alarm current and the battery capacity used. Once the emergency power bridging time has lapsed, it must be possible for the external signal transmitters to be activated in the event of an alarm. This activation must also be ensured at a battery final voltage of 21.2 V DC.

!	*NOTICE*
	Error during configuration detection Additional effort for troubleshooting ● Only connect up the battery connection cables once all installation work is complete because the station will start as soon as the batteries are connected.

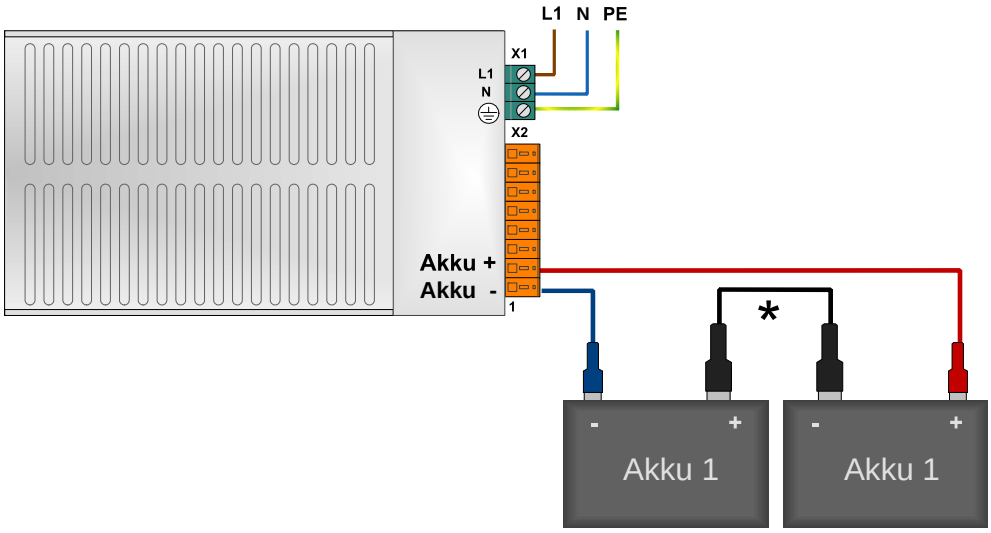


Diagram showing two batteries and connection to the 70W power unit

Emergency power bridging time

Depending on national and local requirements, a bridging time of 72 hours and more may be needed for the emergency power supply. The battery capacity needed must be calculated and the calculation checked by measuring the power consumed during an alarm (with mains voltage deactivated). The Quantities Tool software is available for calculating the battery capacity.

New batteries / initial commissioning

When using new batteries, they must be charged for at least 24 hours before commissioning. If the date of manufacture (printed on batteries) is more than nine months ago, they will need charging for at least 48 hours.

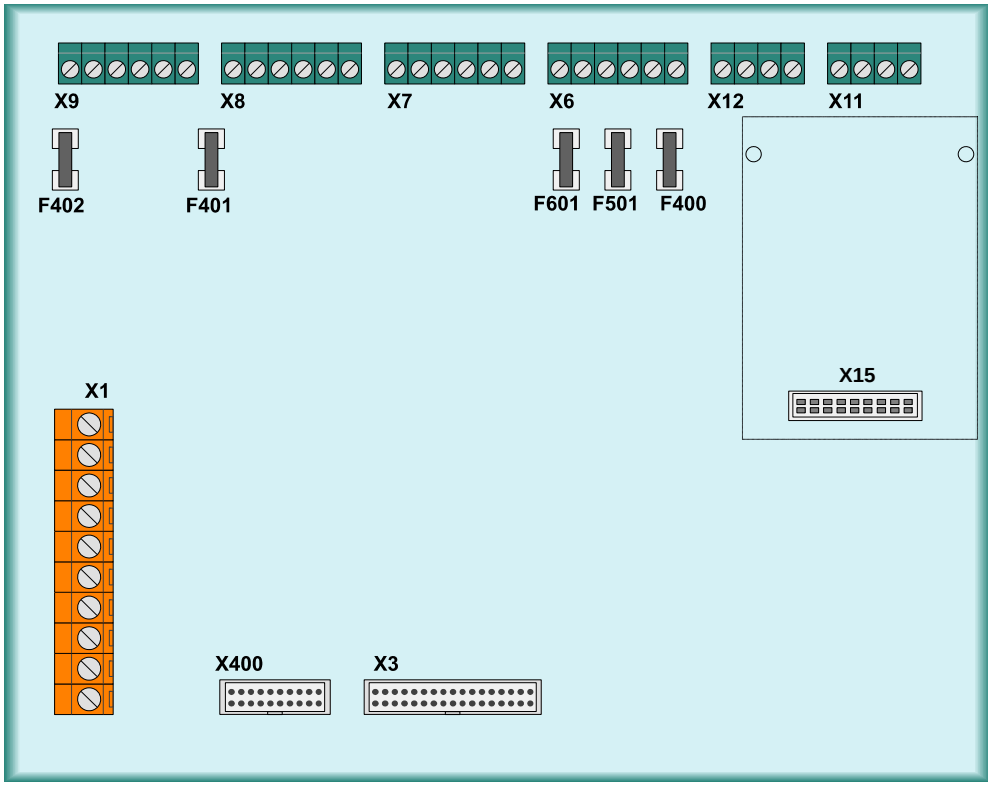
Total discharge

There is no guarantee that totally discharged batteries can be correctly charged again. Replace batteries that have been totally discharged with new ones. You may only use the approved battery types for the emergency power supply in fire detection systems. Also note the details provided by the battery manufacturer.

5.3 Hardware components

5.3.1 Periphery board

Position of connection terminals on periphery board (2-loop) of FC722 fire control panel



Periphery board, 2 loops (FC722)

X1 Connection of power unit

X3 Ribbon cable to PMI/mainboard (operating unit on pivot frame)

X6 Monitored outputs for acoustic signal transmitter, alarm and fault messages

X7 Changeover contacts for RT Alarm and RT Fault (remote transmission)

X8 Configurable inputs/outputs (1-4), supply voltage Ubexternal 1

X9 Configurable inputs/outputs (5-8), supply voltage Ubexternal 2

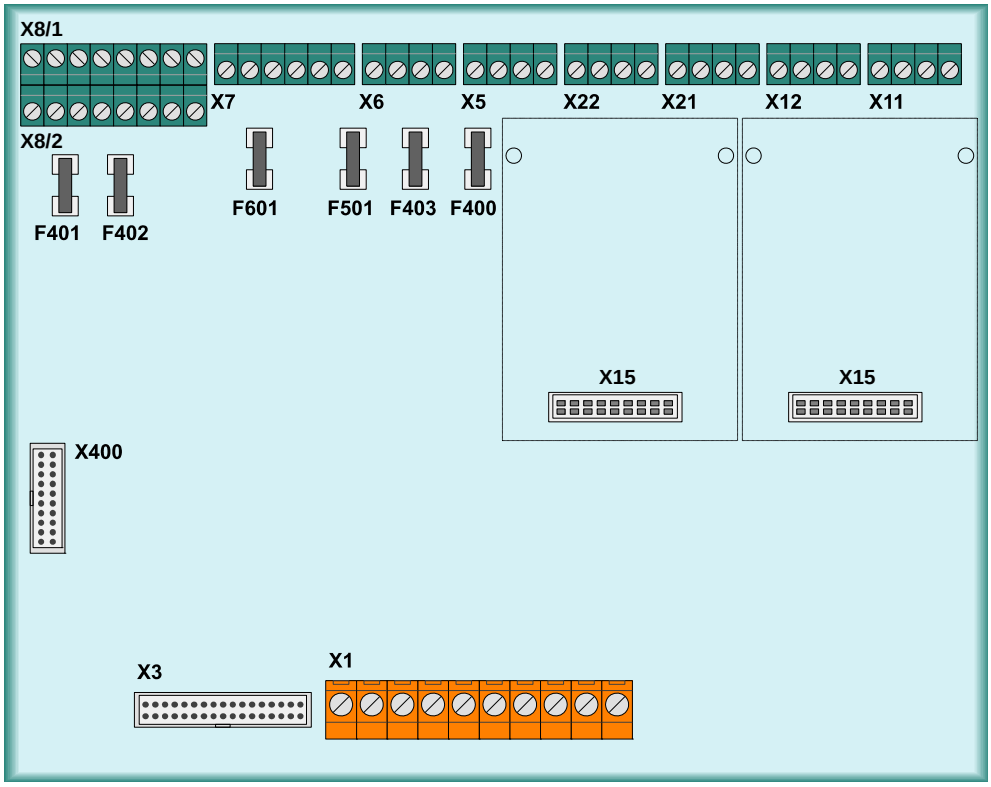
X11 C-NET loop 1 or stub 1+2

X12 C-NET loop 2 or stub 3+4

X400 Ribbon cable peripheral data bus

Fxxx SMD fuses T1A

Position of connection terminals on periphery board (4-loop) of FC724 fire control panel



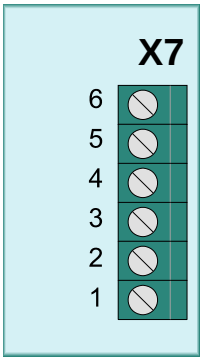
Periphery board, 4 loops (FC724)

X1	Connection of power unit	**X11**	C-NET loop 1 or stub 1+2
X3	Ribbon cable to PMI/mainboard (operating unit on pivot frame)	**X12**	C-NET loop 2 or stub 3+4
X5	Monitored outputs for acoustic signal transmitter	**X15**	2 x C-NET loop extension
X6	Monitored outputs for alarm and fault messages	**X21**	C-NET loop 3 or stub 5+6
X7	Changeover contacts for RT Alarm and RT Fault (remote transmission)	**X22**	C-NET loop 4 or stub 7+8
X8/1	Configurable inputs/outputs (1-8), supply voltage Ubexternal 1	**X400**	Ribbon cable peripheral data bus
X8/2	Configurable inputs/outputs (9-16), supply voltage Ubexternal 2	**Fxxx**	SMD fuses T1A

More details of the periphery board can be found in the 'System documentation'.

5.3.2 Relay for fault and alarm (RT activation)

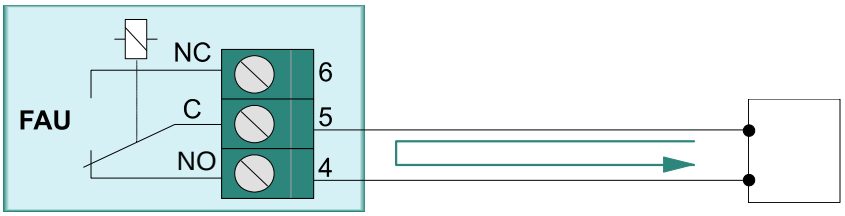
Assignment of connection terminals on periphery board (identical for FC 722 and FC724). Permitted cable cross-section: 0.2 ... 1.5mm².

FC722 and FC724				
	**X7**	**Designation**	**Description**	
	6	FAU_NC	Break contact fault (normally closed)	Potential-free directional contact Max. 24 V DC/1A
	5	FAU_COM	Center tap fault (common)	
	4	FAU_NO	Make contact fault (normally open)	
	3	AL_NC	Break contact alarm (normally closed)	Potential-free directional contact Max. 24 V DC/1A
	2	AL_COM	Center tap alarm (common)	
	1	AL_NO	Make contact alarm (normally open)	

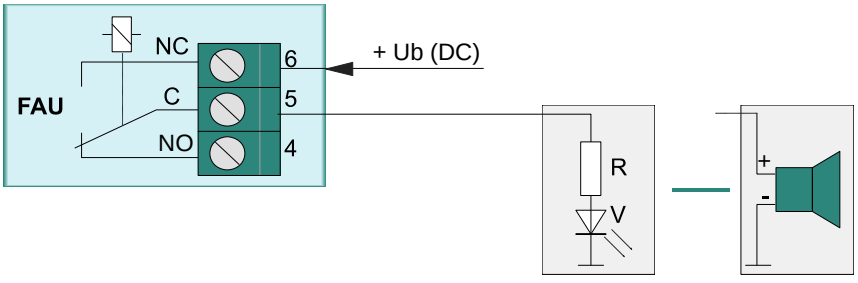
The relays can be used e.g. for non-monitored activation of remote transmission equipment 'RT' (e.g. phone dialing equipment).

Fault relay (inverse operation)

The fault relay is activated when at least one station fault has been detected. This relay is activated when the control panel is in idle mode (NC/C, inverse operation). In the event of a fault message, the relay changes the switching condition (to NO, C). Thanks to inverse operation, a fault message will still be sent in the event of the station losing all power.



Connection to an external monitoring input (example)

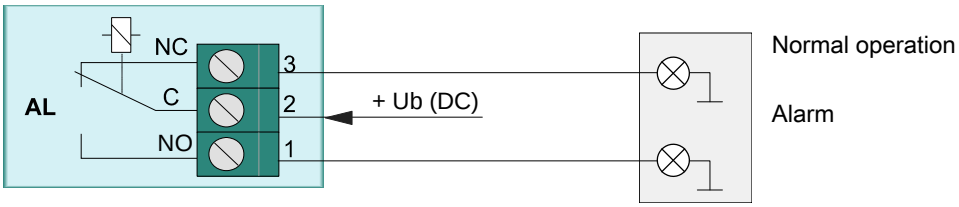


Connection of external control voltage e.g. for an acoustic or optical fault message (example)

Alarm relay

The alarm relay is activated when at least one station alarm message has been detected.

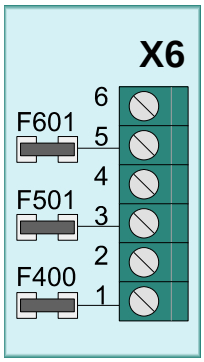
Example of connection with external signal transmitter, e.g. an optical normal operation/alarm message display.

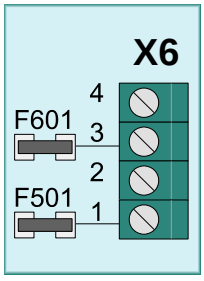


5.3.3 Monitored outputs for alarm and fault (FT activation)

Connection terminals on the FC722 or FC724 periphery board.

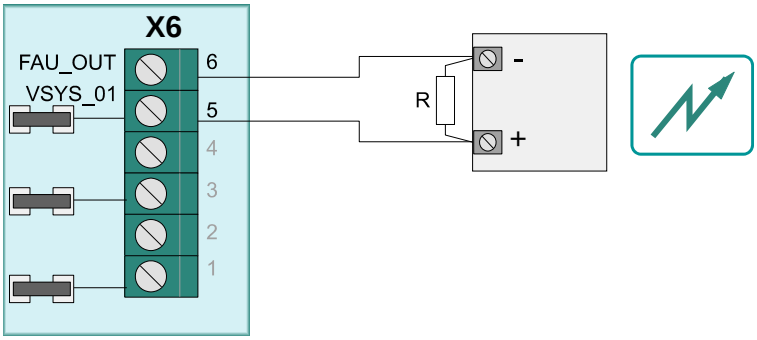
Permitted cable cross-section: 0.2 ... 1.5mm^2.

FC722			
	**X6**	**Designation**	**Description**
	6	FAU_OUT	Output fault
	5	VSYS_O	Supply output for consumer fault
	4	AL_OUT-	Alarm output (-)
	3	AL_OUT+	Alarm output (+)
	2	*SOUND1-*	*Output for acoustic signal transmitter (-)*
	1	*SOUND1+*	*Output for acoustic signal transmitter (+)*

FC724			
	**X6**	**Designation**	**Description**
	4	FAU_OUT	Output fault
	3	VSYS_O	Supply output for consumer fault
	2	AL_OUT-	Alarm output (-)
	1	AL_OUT+	Alarm output (+)

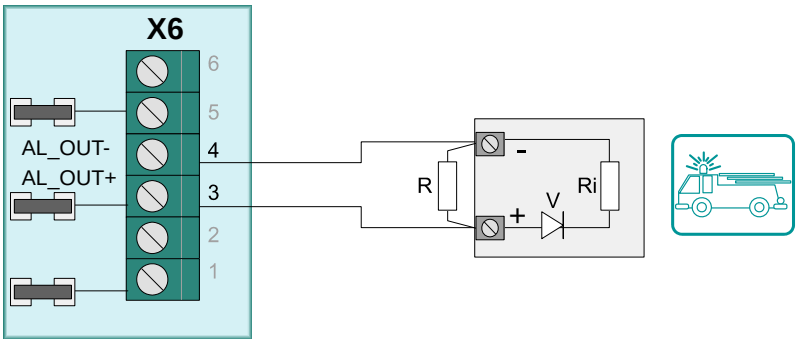
The outputs can be used e.g. for monitored activation of remote transmission equipment 'RT' (e.g. phone dialing equipment).

The connection lines are switched with a monitoring resistor (termination resistor). The resistance value stated corresponds to monitored normal operation. All resistance values outside this range result in a fault message.



Enabling example for transmitting a fault message

Termination resistor
R = 1.6 kOhm – 2.3 kOhm



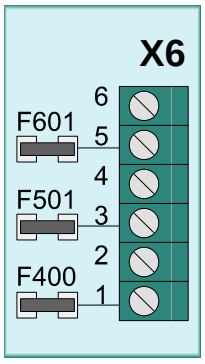
Enabling example for transmitting an alarm message

Monitoring resistor (R + Ri)
Rges = 2.3 kOhm – 5.5 kOhm

5.3.4 Connection of monitored acoustic signal transmitters

Assignment of connection terminals on the FC722 or FC724 periphery board.

Permitted cable cross-section: 0.2 ... 1.5mm².

FC722				
	**X6**	**Designation**	**Description**	
	6	FAU_OUT	Output fault	
	5	VSYS_O	Supply output for consumer fault	
	4	AL_OUT-	Alarm output (-)	
	3	AL_OUT+	Alarm output (+)	
	2	SOUND1-	Output for acoustic signal transmitter (-)	Potential-free directional contact Max. 24 V DC/1A
	1	SOUND1+	Output for acoustic signal transmitter (+)	

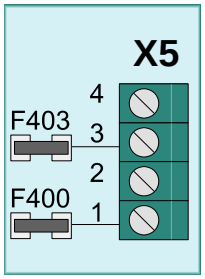
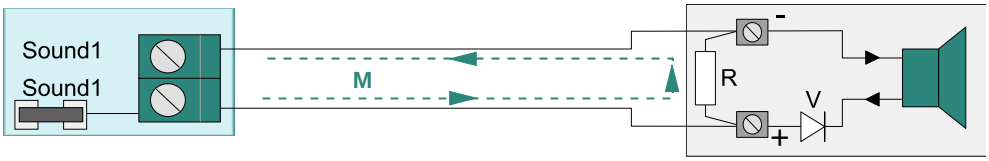
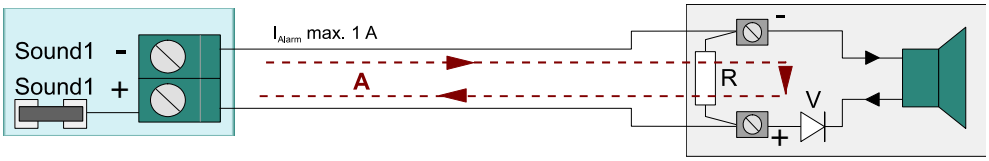
FC724				
	**X5**	**Designation**	**Description**	
	4	SOUND2-	Output for acoustic signal transmitter 2 (-)	Monitored/switching positive Max. 24 V DC/1A
	3	SOUND2+	Output for acoustic signal transmitter 2 (+)	
	2	SOUND1-	Output for acoustic signal transmitter 1 (-)	Monitored/switching positive Max. 24 V DC/1A
	1	SOUND1+	Output for acoustic signal transmitter 1 (+)	

Diagram showing principle

In normal operation, the connection is monitored for wire breaks and short-circuits on the connection line. A monitoring current flows through the termination resistor R (2.3 kOhm to 5.5 kOhm). All resistance values outside this range are recognized as faults. The termination resistor should be connected directly to the connection terminals of the monitored signal transmitter.



In the event of an alarm (with output activated), the polarity on the connection terminal is reversed and the blocking diode is switched in the conducting direction. The external signal transmitter is activated with the output voltage (+24 V DC).



Fx ⇒ SMD fuse 1AT (on the periphery board)

R ⇒ termination resistor (monitoring range 2.3 kOhm – 5.5 kOhm)

V ⇒ blocking diode type 1N 4xxxx

M ⇒ flow of current in normal operation (monitoring)

A ⇒ flow of current during an alarm

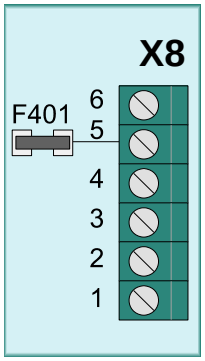
Note the station's total current (e.g. for the 70W power unit max. 2.5A)!

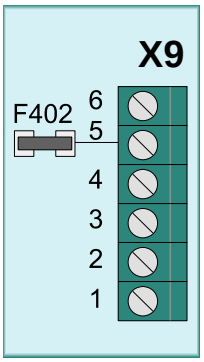
5.3.5 Configurable inputs/outputs and supply voltage Ubexternal

The assignment of connection terminals on the FC722 and FC 724 periphery boards are not the same.

Assignment on FC722 periphery board

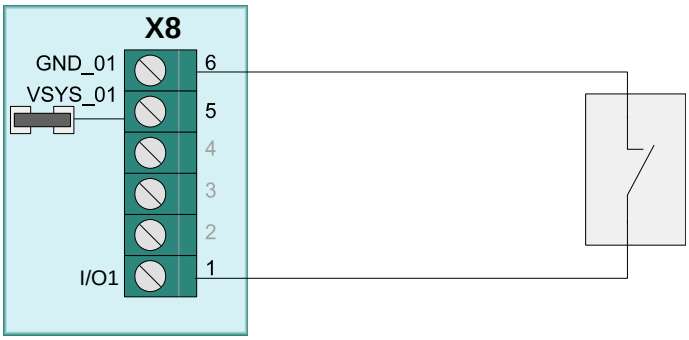
Permitted cable cross-section: 0.2 ... 1.5mm².

FC722				
	**X8**	**Designation**	**Description**	
	6	GND_01	(–) supply output 1	21 V DC – 28.6V DC /1A
	5	VSYS_01	(+) supply output 1	
	4	I/O4	Configurable input/output 4	Individual current max. 300mA total current max. 1 A
	3	I/O3	Configurable input/output 3	
	2	I/O2	Configurable input/output 2	
	1	I/O1	Configurable input/output 1	

FC722			
	**X9**	**Designation**	**Description**
	6	GND_02	(–) supply output 2	21 V DC – 28.6V DC /1A
	5	VSYS_02	(+) supply output 2	
	4	I/O8	Configurable input/output 8	Individual current max. 300mA total current max. 1 A
	3	I/O7	Configurable input/output 7	
	2	I/O6	Configurable input/output 6	
	1	I/O5	Configurable input/output 5	

Each of these freely configurable inputs/outputs can either be configured in the station's customer data as an input or output. The function and external circuit needed depend on the mode of operation selected.

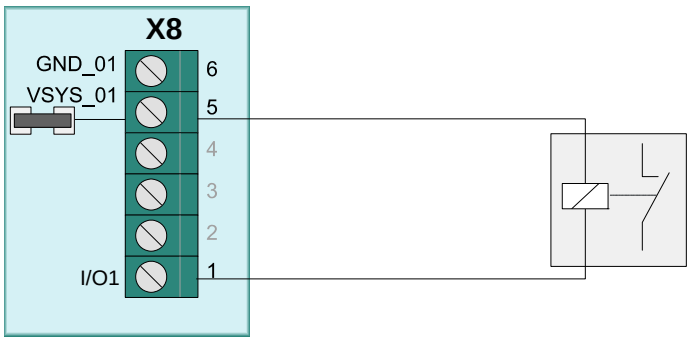
Example of basic circuit with input/output I/O 1-1.



'Input' type

The input can be triggered with a potential-free, external switching contact. In such cases, the corresponding input is switched to GND.

Depending on the programming, a permanent or sensing contact can be connected. The activated input can be used to program one of the station's control functions.



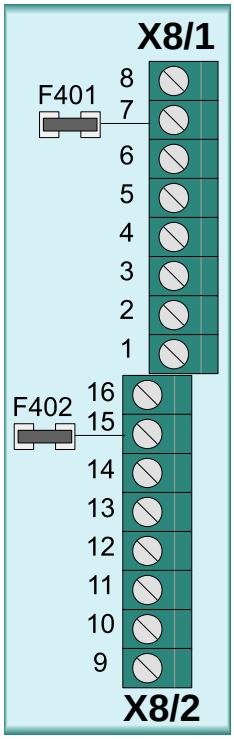
'Output' type

Configuration as 'output' allows for the activation of external devices (e.g. relays) with 'Vsys' voltage should certain events arise. In such cases, the corresponding output is switched to GND.

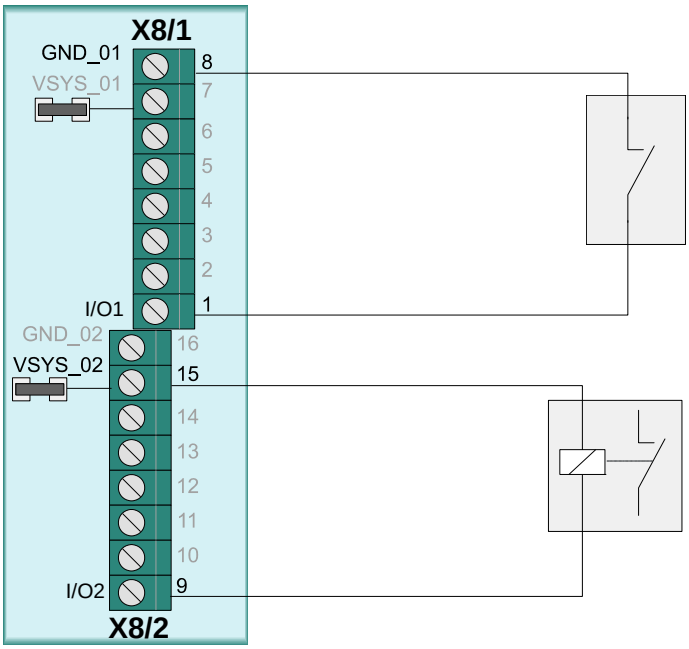
The output's activation condition (e.g. alarm, fault, isolation etc.) is defined in the customer data programming.

Assignment on FC724 periphery board

Permitted cable cross-section: 0.2 ... 1.5mm².

FC724			
	**X8/1**	**Designation**	**Description**
	8	GND_01	(-) supply output 1	21 V DC – 28.6V DC /1A
	7	VSYS_01	(+) supply output 1	
	6	I/O6	Configurable input/output 6	Individual current max. 300mA Total current max. 1 A
	5	I/O5	Configurable input/output 5	
	4	I/O4	Configurable input/output 4	
	3	I/O3	Configurable input/output 3	
	2	I/O2	Configurable input/output 2	
	1	I/O1	Configurable input/output 1	
	X8/2	**Designation**	**Description**	
	16	GND_02	(-) supply output 2	21 V DC – 28.6V DC /1A
	15	VSYS_02	(+) supply output 2	
	14	I/O12	Configurable input/output 12	Individual current max. 300mA Total current max. 1 A
	13	I/O11	Configurable input/output 11	
	12	I/O10	Configurable input/output 10	
	11	I/O9	Configurable input/output 9	
	10	I/O8	Configurable input/output 8	
	9	I/O7	Configurable input/output 7	

Example of basic circuit with input/output I/O 1-1 or I/O2-9



'Input' type (example with I/O 1-1)

The input can be triggered with a potential-free, external switching contact. In such cases, the corresponding input is switched to GND.

Depending on the programming, a permanent or sensing contact can be connected. The activated input can be used to program one of the station's control functions.

'Output' type (example with I/O 2-9)

Configuration as 'output' allows for the activation of external devices (e.g. relays) with 'Vsys' voltage should certain events arise. In such cases, the corresponding output is switched to GND.

The output's activation condition (e.g. alarm, fault, isolation etc.) is defined in the customer data programming.

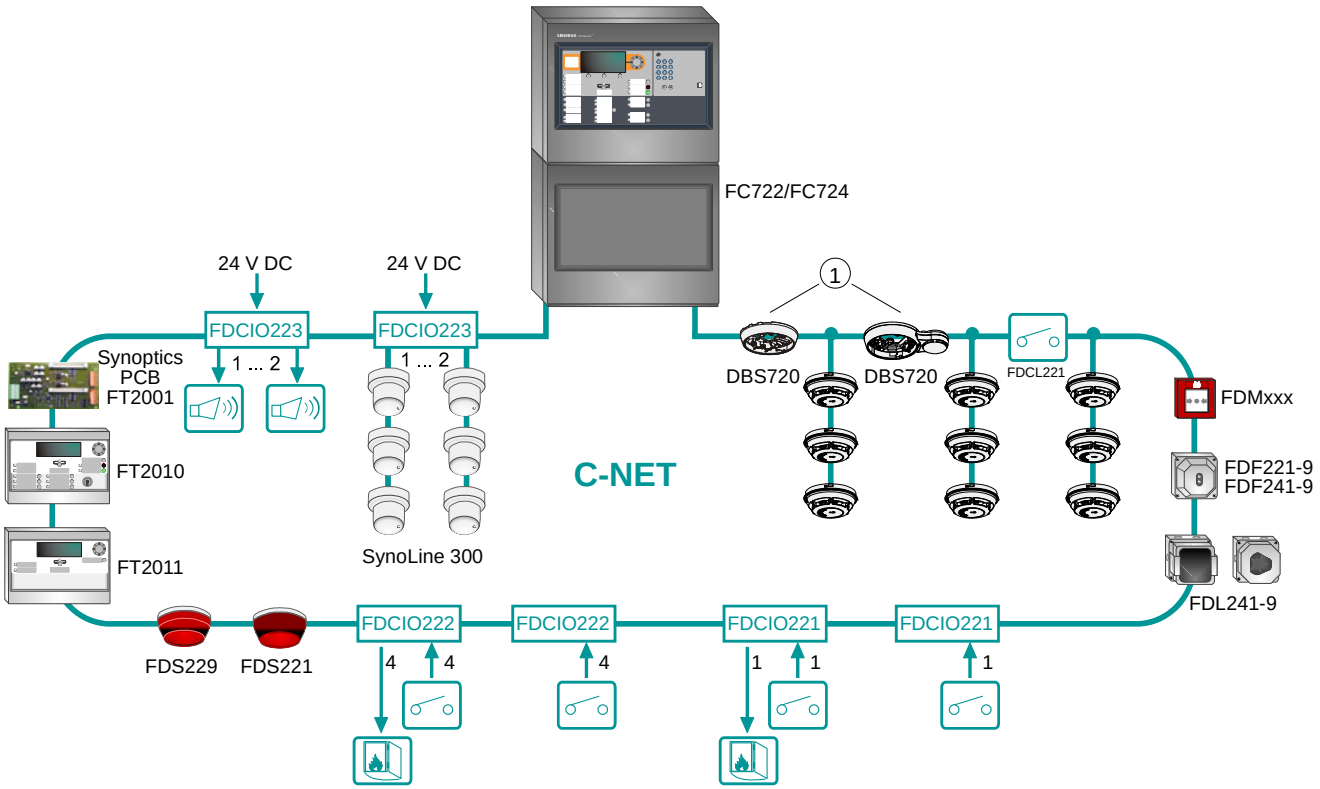
5.4 C-NET detector line

Up to 126 users, such as automatic fire detectors, manual call points, transponders and other C-NET components can be connected to one C-NET detector line.

The C-NET connection is on the periphery board.

Depending on the control panel type (2 or 4 loops), 252 or 504 bus users can be operated on a station.

Most C-NET line devices, such as fire detectors, are supplied with the operating voltage required directly by the C-NET. An external power supply is always needed for the FDCIO223 transponder.



C-NET with various line devices

1 Automatic fire detectors (see table below)

C-NET loop extension card

The number of C-NET connections can be doubled. The C-NET loop extension is needed for this.

The maximum number of addressable line devices per station remains limited to 252 or 504.

The loop extension has no electrical isolation between the two loops.

Line separator

All C-NET devices have an integrated line separator. In the event of a fault, e.g. a short-circuit or wire break in the C-NET wiring, the separator is opened and the C-NET segment in which the fault was found is **shut down**. The C-NET devices remain functional and ready to detect. The fault is displayed on the station.

Connection factor (AK, RK, MK)

The number of connectable C-NET devices and the max. line length depend on the device connection factor. The maximum number of 126 C-NET devices per loop and the max. length of line of 3300m can be greatly reduced depending on the type and volume of line devices used.

5.5 Connectable C-NET devices

The following table shows examples of C-NET devices. The number of individual devices depends on the type-specific AK, RK, MK connection factor (calculated using "Quantities Tool" software). The table also lists which devices have an integrated alarm indicator (AI) and to which devices an external alarm indicator (ext. AI) can be connected.

Note the specifications of the individual C-NET devices in the 'List of Compatibility' document.

Device type	Type	Description	AI	Ext. AI
Smoke detector	OP720	Optical smoke detector	X	X
Heat detector	HI720	Heat detector for demanding applications	X	X
	HI722	Heat detector for standard applications	X	X
Multisensor detector	OH720	Multisensor detector with smoke and heat sensor	X	X
Manual call point	FDMxxx	Detector for direct, manual triggering of alarm messages	(X)	(X)
Flame detector	FDF241-9	Infrared flame detector with three sensors	X	X
	FDF221-9	Infrared flame detector with one sensor	X	X
Linear smoke detector	FDL241-9	Linear smoke detector	X	X
Input module (IN)	FDCI221	1 potential-free contact input	--	--
	FDCI222	4 potential-free contact inputs	--	--
Input/output module (IN/OUT)	FDCIO221	1 potential-free contact input and 1 control output	X	X
	FDCIO222	4 potential-free contact inputs and 4 control outputs	X	--
	FDCIO224	2 inputs/outputs can be alternatively used either for controlling acoustic signal transmitters or connecting collective detector lines. Mixed operation, i.e. 1 input channel and 1 output channel, is equally possible.	--	--
Transponder	FDCIO223	Connection of 2 conventional detector zones	X	--
Floor repeater terminal	FT2010	For the system-wide indication and operation of the most important information and functions	X	---
Floor repeater display	FT2011	For the system-wide indication of the most important information	X	---
Mimic display indication	FT2001	For the system-wide indication of events (mimic display driver)	---	---

Device type	Type	Description	AI	Ext. AI
Line separator	FDCL221	Line separator for branching stub lines to a C-NET loop	X	---
Acoustic signal transmitter	FDS221-R	Acoustic signal transmitter with different alarming signals and volume, red housing color	X	X
	FDS221-W	Acoustic signal transmitter with different alarming signals and volume, white housing color	X	X
Alarm sounder with beacon	FDS229-A	For acoustic and optical alarming. Tonalities and flashing sequences can be configured, amber cage color.	--	--
	FDS229-R	For acoustic and optical alarming. Tonalities and flashing sequences can be configured, red cage color.	--	--
External alarm indicator	FT2002	For optical indication in the event of alarm	---	---
Sounder base	DBS720	Detector base for holding automatic fire detectors, with integrated alarming equipment	---	---
Detector base	DB720	Detector base for holding automatic fire detectors	---	---

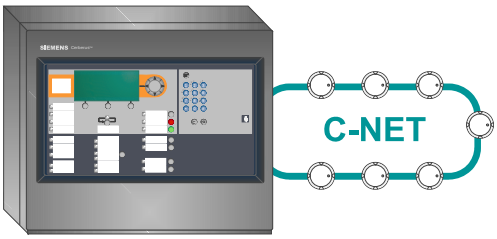
X = possible (X) = depends on type --- = not possible

5.6 C-NET topology and connection

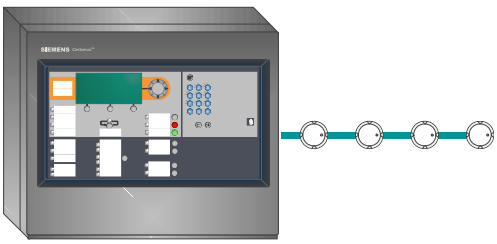
Permissible topology for the C-NET

The C-NET can only be wired in the topology shown below. Regardless of the topology (loop, stub or loop with sub-stubs), the C-NET system limits, such as length, cable resistor, number of users etc. must be observed.

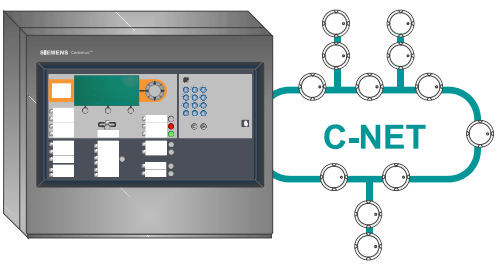
Either one loop or two stub lines can be connected to a C-NET connection (block of 4 terminals).



Loop
(max. 1 loop per block of 4 terminals)

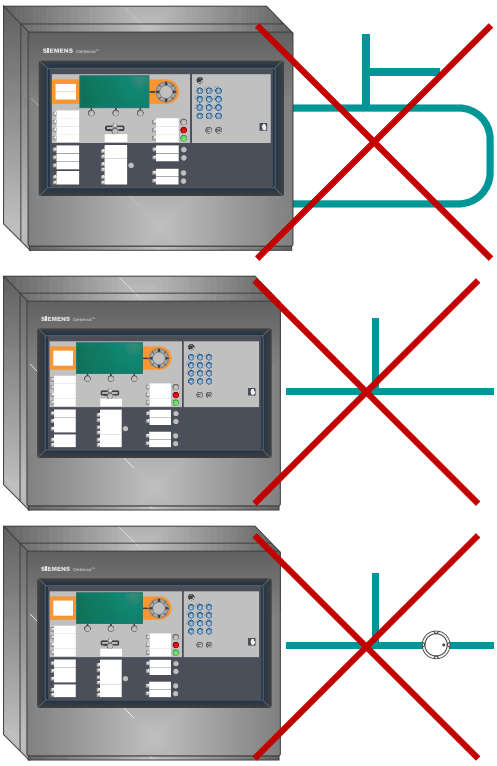


Stub line
(max. two per block of 4 terminals)



Sub-stubs on loop
A stub line may only be branched between two users or line separators.

Wiring NOT admissible



NOT admissible
Sub-stub on sub-stub with a loop

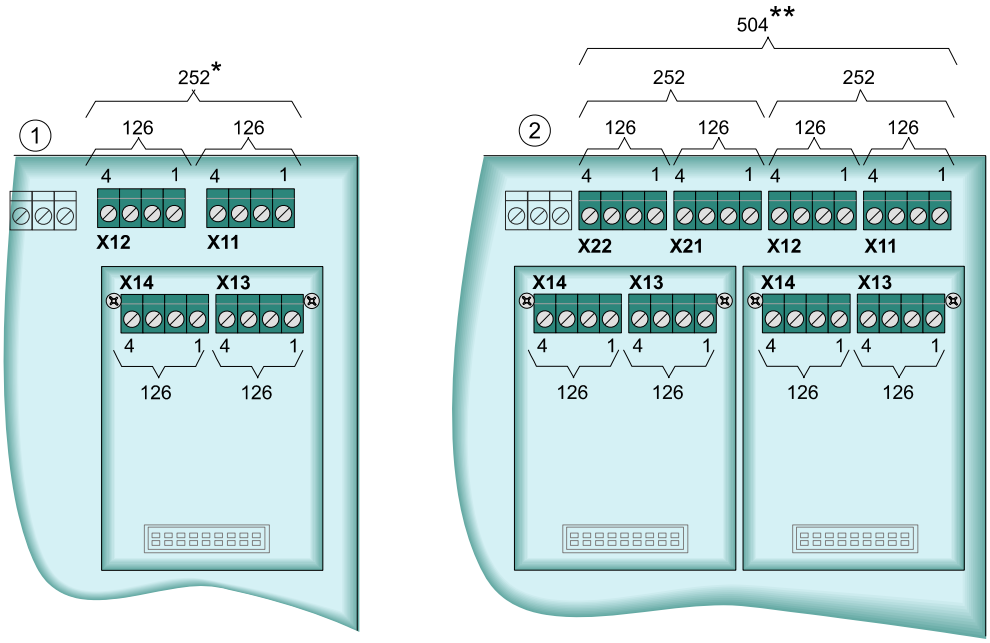
NOT admissible
Sub-stub on a stub

NOT admissible
Sub-stub straight after the connection terminal (sub-stub only possible between two users or line separators)

!	*NOTICE*
	Damage possible Before connecting the mains connection ensure that this cable is de-energized and cannot be switched back on by mistake when connecting.

The connection terminals for the C-NET are located on the periphery board or on the loop extension card.

C-NET connection terminals



Position of C-NET connection terminals (FC722 and FC724) incl. loop extension

1 Fire control panel FC722

A loop extension card can be fitted as an option.

* Connection of maximum 252 C-NET devices per fire control panel FC722 (also applies to fitted loop extension)

2 Fire control panel FC724

Two loop extension cards can be fitted as an option.

** Connection of maximum 504 C-NET devices per fire control panel FC724 (also applies to fitted loop extension)

One single C-NET connection (4 terminals) allows max. 126 C-NET users to be connected. These can be located on one single loop (max. 126 users) or spread over max. two stubs (max. 32 users per stub line). The total number per connection (4 terminals) must not exceed 126 C-NET devices.

Loop extension

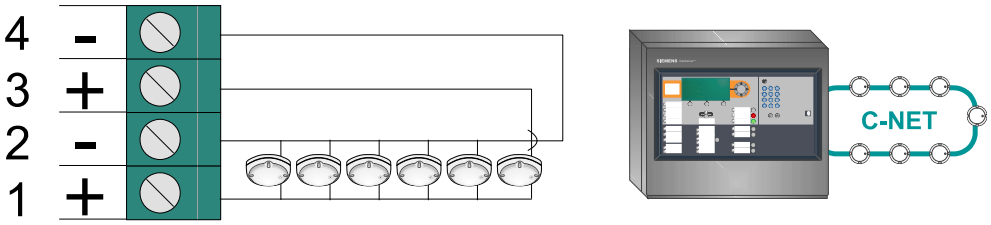
If using a loop extension, the total number of C-NET devices does not increase (max. 252 or 504). The line devices can be spread over several loops or stub lines. The extra connection terminals for the C-NET extension are on the loop extension card.

The loop extensions for the C-NET are mounted onto the periphery board. The installation of the two loop extensions on the periphery board (FC722 or FC724)) is identical. The two connections (X13/X14) on the loop extension card are not electrically isolated.

Depending on the control panel type (2 or 4 loops), up to 4 C-NET loops or 8 stubs can be connected.

C-NET loop

- Max. 126 devices

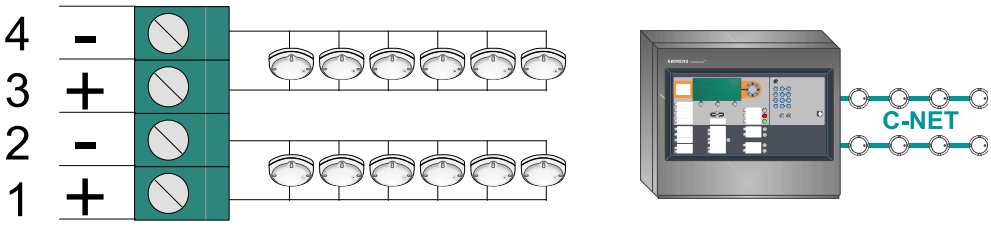


C-NET loop circuit

Alternatively two C-NET stubs can be connected in place of one C-NET loop.

C-NET stub

- Total of max. 64 users per connection (4 terminals)
- Max. 32 users per stub



C-NET stub circuit

Cable types

As a result of national standards and requirements, installation may require a particular cable type. The relevant requirements and planning documents should be taken into account here. The following cable types can always be used for cabling the detector line:

- twisted, with and without shielding (recommended)
- untwisted, with and without shielding

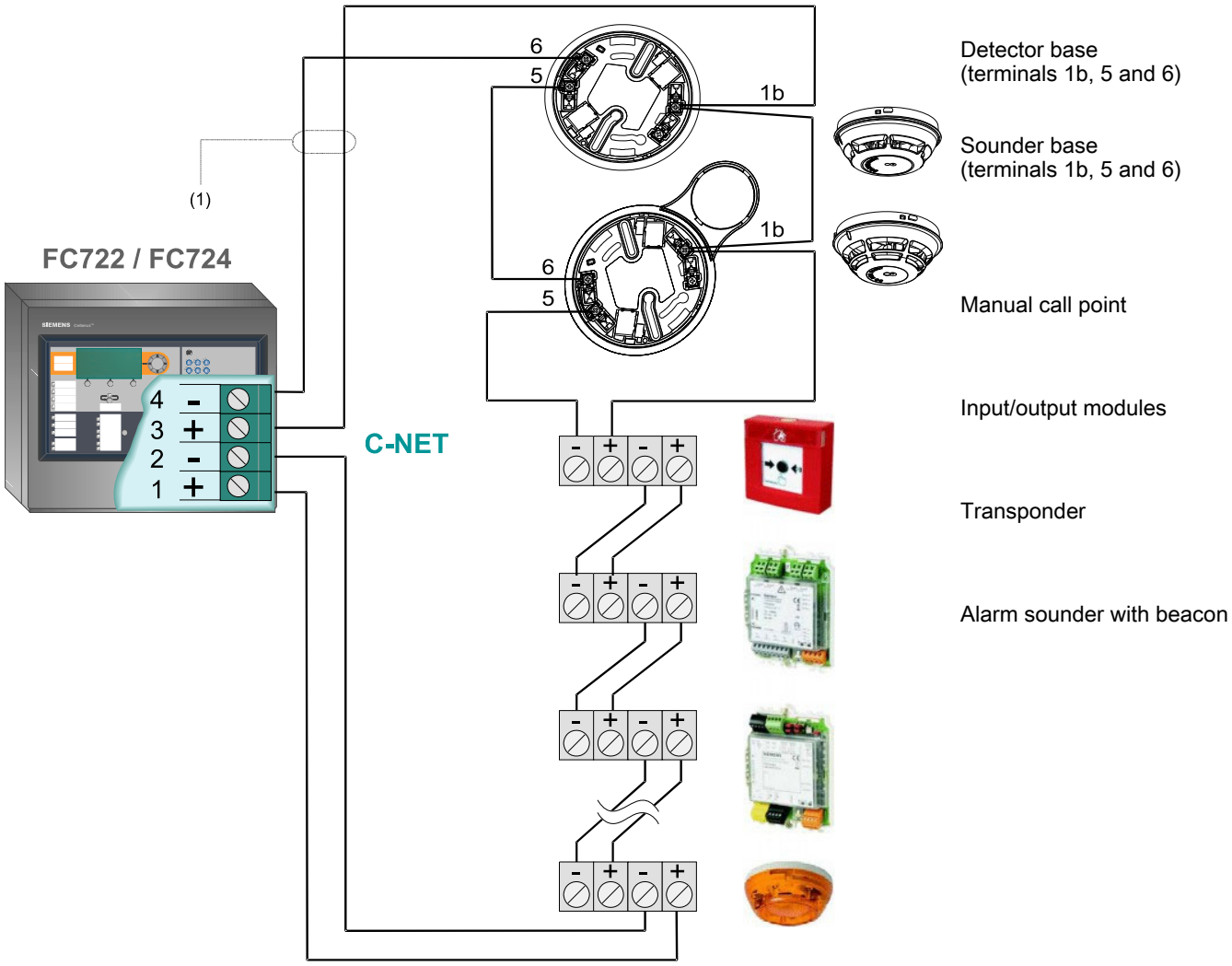
Cable shielding

When using shielded signal lines (e.g. fire detection cable J-Y(St)Y, n x 2 x 0.8 mm) ensure that the cable shielding is only connected on one side. The station's function may be impaired by a missing or incorrect cable shielding connection. The 'Cable shielding' option is available for the connection. Depending on the installation environment and requirements of relevant standards, cable shielding may have to be connected and merged at one central connection point.

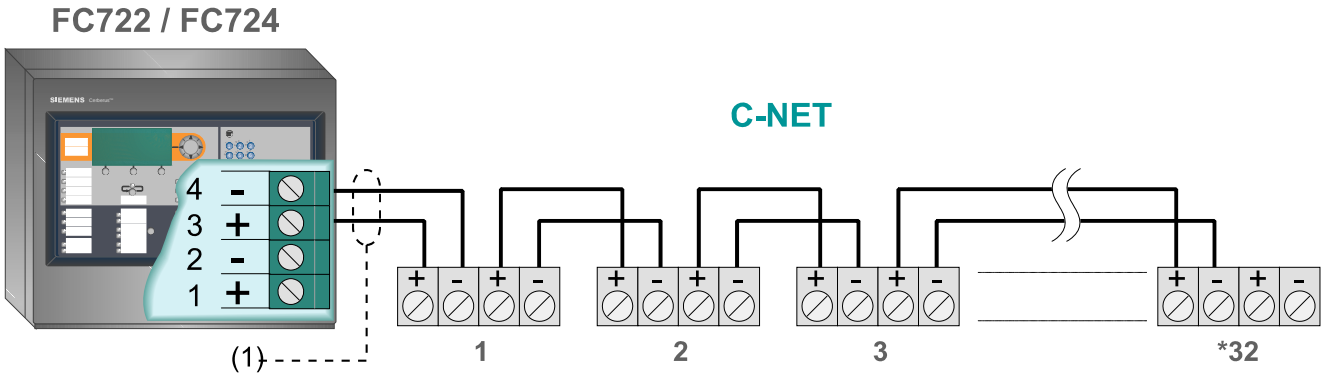
!	*NOTICE*
	Nature and origin of the danger In accordance with EN54 a maximum of 32 detectors may fail in one fire sector in the event a simple fault (e.g. wire breakage, short-circuit). Details of the cable specification for the C-NET can be found in the system documentation.

5.7 Wiring principle behind C-NET users

The screw terminals for directly connecting the C-NET cable are integrated in every C-NET line device. The connection terminals with input (+/-) and output (+/-) are the same for all line devices, with the exception of the detector base.



Wiring example for a C-NET loop



Wiring example for a C-NET stub line (2)

* The number of connectable C-NET devices and the max. line length depend on the device connection factor. The maximum number of 126 C-NET devices per loop and the max. length of line of 3300m can be greatly reduced depending on the type and volume of line devices used. (Calculation using 'Quantity Tool' software required).

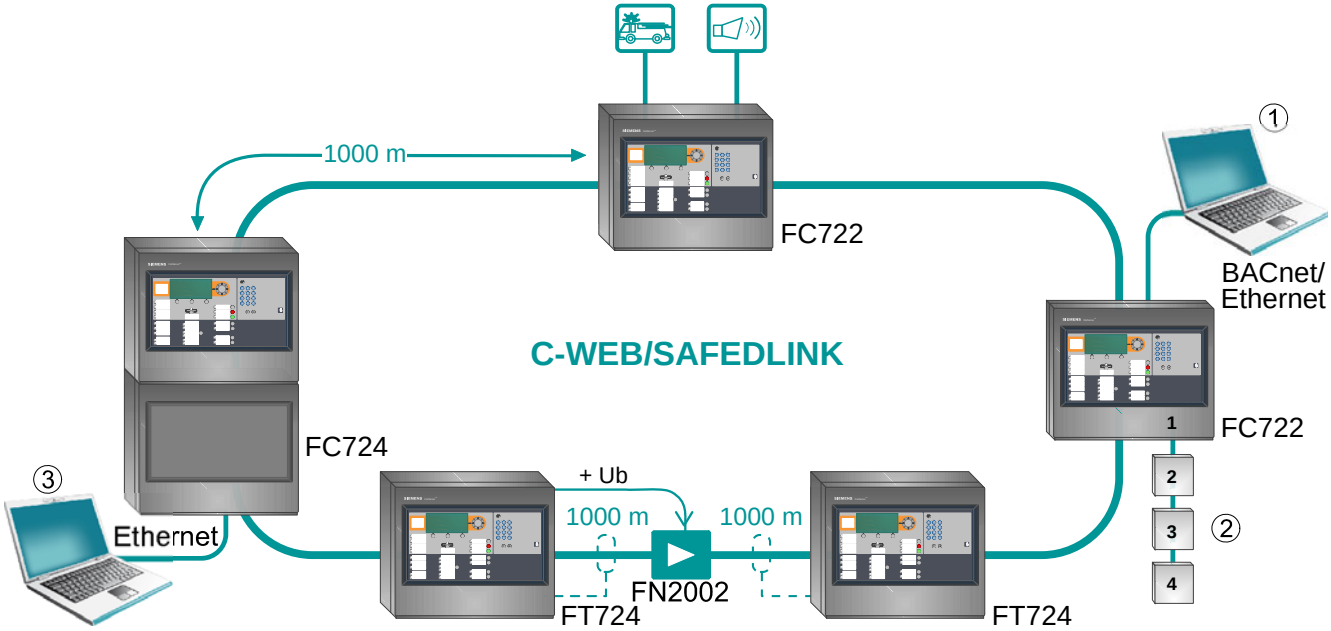
(1) If shielded connection cables are used, the cable shielding must be connected on one side.

5.8 C-WEB network

The C-WEB is a monitored 2-wire cable and allows 16 Cerberus stations such as FC722/724 type fire control panels and FT724 fire terminals to be networked.

A network card (option) is needed for networking via the C-WEB.

All stations networked via the C-WEB can communicate with one another, depending on configuration. This makes system-wide operation, control and alarming possible.



Networking by means of C-WEB/SAFEDLINK

1 Management station
2 Ethernet® (max. 4 stations)
3 Laptop

- Fire control panels with more than 512 fire detectors (irrespective of the remote transmission connection) must be equipped and operated with 2 networking modules (C-WEB/SAFEDLINK) (in accordance with EN54).
- Fire control panels with a central remote transmission connection (irrespective of the number of detectors in the system) must be equipped with 2 networking modules (C-WEB/SAFEDLINK) (in accordance with EN54).
- Fire control panels which monitor more than 12 000m² must be equipped with 2 network cards (C-WEB/SAFEDLINK).
- A network of up to four stations via the Ethernet is supported but does not meet the requirements of EN54.
- Furthermore, the fire detection system can be connected to a management station via BACnet/Ethernet.

Repeater

A FN2002 repeater can be used to increase the distance between two C-WEB stations from 1000m to 2000m.

- A total of 10 repeaters are permitted within a C-WEB network.
- A repeater is an intermediate amplifier and is not recognized as a user in the C-WEB.
- A repeater needs an external power supply and shielded wiring between the repeater and a C-WEB station.

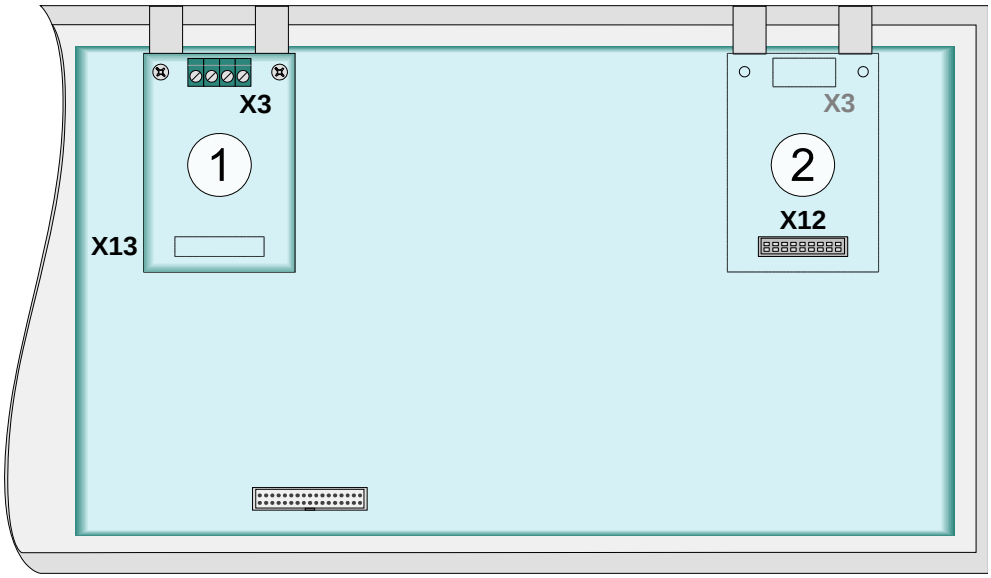
	C-WEB (2-wire bus)	Ethernet (not according to EN54)
Max. line length between two stations	1,093.61 yd	100 m (without switch or router)
Max. number of stations	16	4
Max. line length between the repeater and the station	1000 m each	---
Maximum nunber of Repeaters between 2 stations	1	---
Maximum number of repeaters in the C-WEB	10	---

C-WEB connection to network card

The C-WEB is connected to the connection terminals on the first network card.

A second network card (SAFEDLINK) can also be used for redundant network operation.

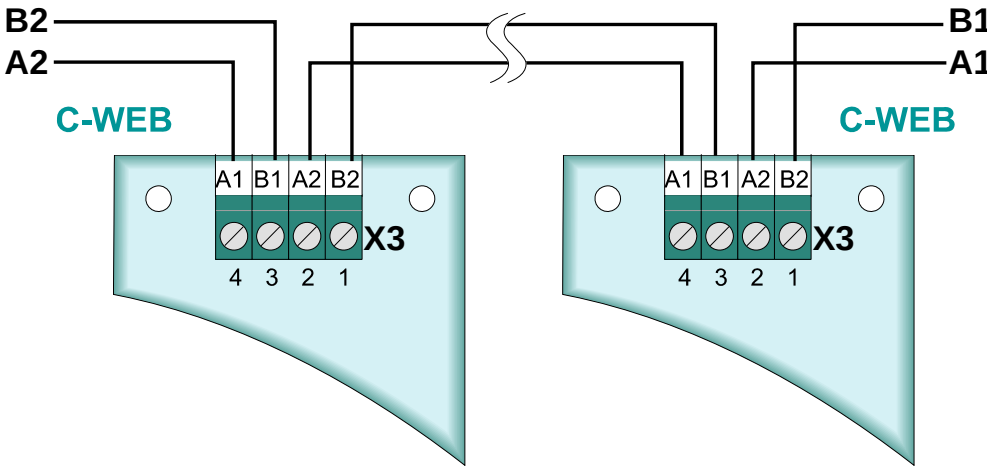
The first network card must always be fitted on the left space (connection strip X13) on the PMI/mainboard of the operator unit.



Position of network card(s) on PMI/mainboard of operator unit

1 First network card

2 Space for a second network card (redundant network operation)



Connection of two or more network cards

Cable type and transmission speed

Use only twisted pair cables with at minimum 10 twists per meter. Trouble-free operation cannot be guaranteed with any other cable types. Two wires are required.

Both shielded or unshielded cables can be used.

Data rate in the C-WEB

The speed of transmission in the C-WEB can be adjusted depending on the actual installation conditions. One example of application is a communication fault when the standard data rate of 312 kBit/s is set due to the installation cable being of low quality. In this case the system's speed of transmission can be changed from 'Standard' to 'Low'.

Details of the cable specification for the C-WEB can be found in the system documentation.

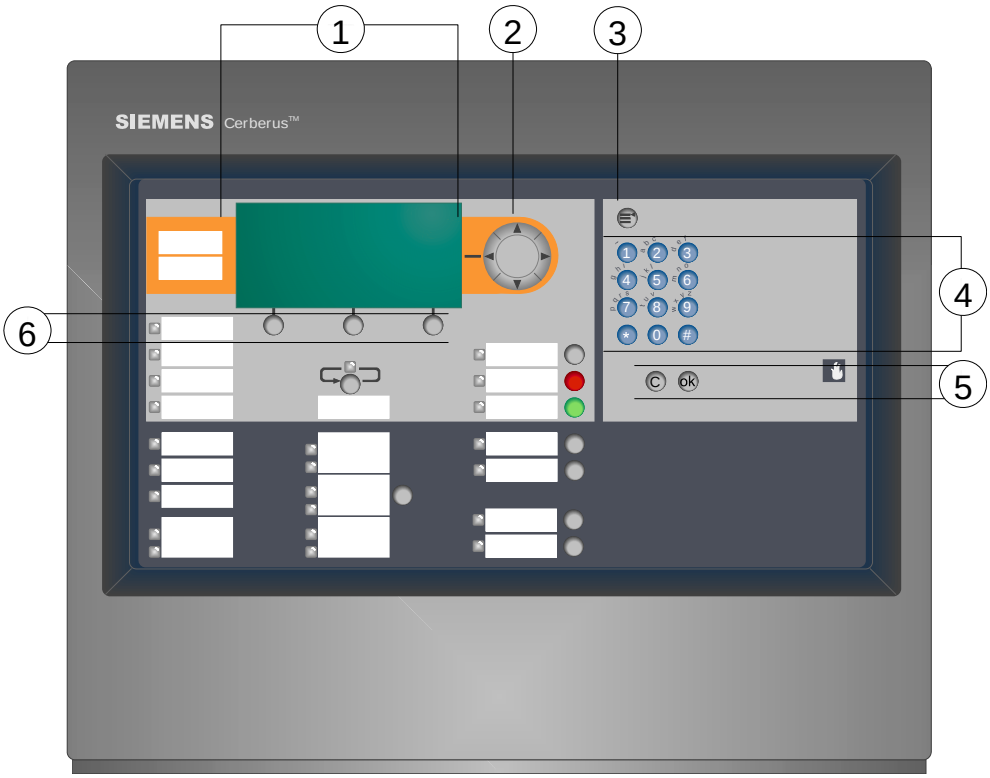
6 Indication and operating elements

	Fire control panel FC72x	Fire terminal FT724	LED indicator (internal) FTO2002	Floor repeater terminal FT2010	Floor repeater display FT2011	Cerberus Remote
Display						
Alarm	X	X	X	X	X	X
Pre-alarm	X	X	X	X	X	X
Fault	X	X	X	X	X	X
Isolation	X	X	X	X	X	X
Test mode	X	X	X	--	--	X
Technology	X	X	X	--	--	X
Activation	X	X	X	--	--	X
Information (Note)	X	X	X	--	--	X
Activated remote transmission (RT)	X	X	X	X	--	X
Operation						
Acknowledge	X	X	--	X	--	X
Reset	X	X	--	X	--	X
Scroll in event lists	X	X	--	X	X	X
Deactivate internal buzzer	X	X	--	X	X	X
Deactivate sounder	X	X	--	--	--	X

Functions of the individual operation and indication devices

X = possible/available

-- = not possible / not available



Operation and display front of Cerberus fire control panel

1 Display, illuminated with plain text display

2 Cursor keypad for navigation/selection of menu commands

3 Menu button

4 Keypad (for direct selections by entering numbers and/or entering and changing objects-specific display texts)

5 C button (Cancel) and OK button (confirmation of selection)

6 Menu-dependent function keys (softkeys)

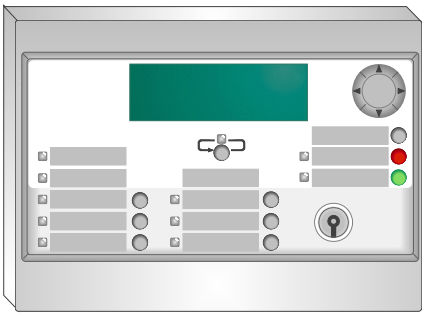
6.1 Extra indication and operating devices

The fire terminal is also provided for indication and operation as is the floor repeater terminal and floor repeater display although these two offer only restricted functions.

FT724 fire terminal

The fire terminal is an indication and operating unit without the functionality of a station. It makes possible all display and operating functions for a Cerberus fire control panel within a C-WEB network but does not normally have its own power unit or emergency power supply. A power unit (70W) or batteries can also be used. The person machine interface's power supply is usually provided by an external 24V power unit (acc. to EN54, monitored using a fault message contact).

The FT2010 floor repeater terminal and FT2011 floor repeater display allow for the decentralized indication of the most important events in the fire detection system and limited operation. Both devices can be connected to the C-NET directly as bus users. They can be powered via the C-NET or by an external power unit. (If supplied externally, the source of voltage requires electrical isolation.)



Floor repeater terminal FT2010

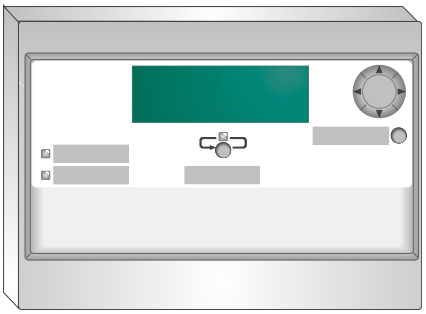
The following indications and operations are possible on the floor repeater terminal:

Display

- Alarm and fault messages of connected station(s)
- Activated remote transmission (RT)

Operation

- Acknowledge (start investigation time)
- Reset
- Scroll in event lists
- Deactivate buzzer
- Four freely programmable keys



Floor repeater display FT2011

The following indications and operations are possible on the floor repeater display:

Display

- Alarm and fault messages of connected station(s)

Operation

- Scroll in event lists
- Deactivate buzzer

7 Commissioning

This chapter describes initial commissioning of the Cerberus fire control panel (individual control panel, not networked).

- Activating access level
- Start automatic configuration
- Display C-NET users
- Enter customer texts for the control panel, C-NET and individual users via the control panel keypad

Line tester FDUL221

!	*NOTICE*
	Connecting C-NET and line tester to the station at the same time The line tester or station may be damaged. ● Do not connect C-NET and line tester to the station at the same time.

▷ C-NET is not yet connected to the station.

▷ Before commissioning and automatic configuration of the stations, the connected C-NET loop or stub lines must be checked for correct function using the FDUL221 line tester.

1. Connect the line test device FDUL221 to the C-NET line.
2. Test the C-NET line for short-circuits, open lines and earth faults.
3. Check the number of the devices on the C-NET line based on the display on the line tester.
4. Check the branch-off position of the stubs and the number of devices at the stubs.
5. Check the type of the respective C-NET user.
6. Remedy any errors/faults which may be active before commissioning or automatic configuration

You will find information about line tester FDUL221 in document 008250.

7.1 Activating access level

'Station' is protected against unauthorized operation by access levels.
Authorization for access level 3 is needed for the functions described below.

If the authorization code is not entered, only operation in access level 1 (guest) is possible, e.g. for acknowledging the control panel buzzer or scrolling through the display message.

The authorization code set in the factory is '0000'. This authorization code must be changed once the station has been configured.

Logout timeout

The 'Station' is provided with a time control function for the operation.

The operation enable for an 'Access level' expires after a configurable period of time has passed since the last entry.

7.1.1 Log in / Change access level

You can enable an 'Access level' by entering your PIN in the PIN entry dialog, or by pressing <ok>. As an alternative, you may release an 'Access level' by means of the key switch (optional).

When you actuate a button on the PMI the function of which requires a higher 'Access level', the PIN entry dialog is indicated automatically.

Login/logout
Enter PIN: ****
For guest-login no PIN required
Confirm with <ok>/Exit with <C>
Delete with <Cursor up>

PIN entry dialog box

Enabling an 'Access level' without a PIN

1. Press <Menu> on the keypad.
   ⇨ The PIN input dialog is indicated.
2. Do not enter a PIN and confirm with <ok>.

⇨ The lowest 'Access level' is enabled.

⇨ The main menu is open.

Enabling an 'Access level' with a PIN

1. Press <Menu> on the keypad or select the 'Login/logout' main menu item.
   ⇨ The PIN input dialog is indicated.
2. Enter your PIN and confirm with <ok>.

⇨ The corresponding 'Access level' is enabled.

⇨ The main menu is open.

The present 'Access level

is indicated in the main menu in the header of the display.

7.2 Automatic configuration of control panels

This function requires the control panel, components and C-NET to have been correctly installed. Once automatic configuration is complete, the control panel is ready for detection **with limitations**. A fire is recognized by the connected fire detectors and displayed on the control panel. Configuration with the FXS7212 Cerberus Engineering Tool is needed for the assignment of controls, definition of individual alarm responses and adaptation to object-specific requirements..

NOTICE

Overwriting an existing configuration

Parts of an existing customer-specific configuration are lost.

- First save an existing customer-specific configuration.

▷ Every loop or stub line is tested with the line tester FDUL221 to ensure it is functioning and installed correctly.

- Run automatic configuration as described in the ' Auto-configuring a line' chapter.

⇨ The station is ready to detect - with limitations. The C-NET users have been addressed. Should an event occur, e.g. a triggered fire detector and its C-NET address are displayed.

⚠ WARNING

Control panel is ready for detection - with limitations.

Alarm transmission to the fire brigade is not configured.

Activation of acoustic signal transmitters is not configured.

- Configure the controls needed.

	Customer text (e.g. message number, assembly location etc.) can be entered for each C-NET user for improved clarity.

7.2.1 Auto-configure line

The 'Line' element category in the 'Maintenance' menu facilitates the reading-in of the current topology, for example. This creates part of the elements in the 'Detection tree'.

	NOTICE
	Overwriting an existing configuration Parts of an existing customer-specific configuration are lost. ● First save an existing customer-specific configuration.

Auto-configuring a line:

1. In the main menu, select the 'Topology' menu item.
   ⇨ The 'Topology' window is open.
2. Select 'Hardware tree'.
   ⇨ The 'Element' window is open.
3. Select 'Station' and press the 'Lower level' <softkey>.
   ⇨ The elements of 'Station' are displayed.
4. Select the corresponding 'C-NET line card (onboard/FCL2001)' module and press the 'Lower level' <softkey>.
   ⇨ All lines of 'C-NET line card (onboard/FCL2001)' are indicated.
5. Select a line and press 'More Options' <softkey>.
   ⇨ The 'Select option' window is open.
6. Select 'Execute commands' and confirm with <ok>.
   ⇨ The window including the possible commands is displayed.
7. Select the 'Auto-configure line' command and confirm with <ok>.

⇨ The line is auto-configured.

Display for automatic configuration

Main menu Exit with <C>			Access level 3
Message summary	(1)	Element search	(5)
Functions	(2)	Event memory	(6)
Favorites	(3)	Login/logout	(7)
Topology	(4)	Settings/administration	(8)

Function On/Off	Function All	Test LED

- Select 'Topology', continue with <ok>

Topology Exit with <C>		Access level 3
Detection tree	(1)	
Hardware tree	(2)	
Control tree	(3)	

Function On/Off	Function All	Test LED

- Select 'Hardware tree', continue with <ok>

001 Element		Hardware tree
Station	**1**	

	Lower level	More Options

- Select 'Station 1', continue with 'Lower level' <softkey 2>

005 FC721	Elements Main building		Station 1
Module	1	Onboard I/Os	
Module	**2**	Onboard I/Os	
Module	3	'C-NET line card (onboard/FCL2001)'	
Module	4	Communication interfaces	

Upper level	Lower level	More Options

- Select 'Module 2', continue with 'Lower level' <softkey 2>

007 Elements 'C-NET line card (onboard/FCL2001)'		Module 2
Line	11	Line
Line	12	Line
Line	21	Line
Line	22	Line
Upper level	Lower level	More Options

- Select 'Line 1', continue with 'More Options' <softkey 3>

Selecting option	
Execute commands	(3)
Show details	(5)

- Select 'Execute commands', continue with <ok>

Select command	
Read-in installed devices	(1)
Detector line OFF	(2)
Auto-configure line	(3)
Set customer text	(4)
Accept replaced devices	(6)

- Select 'Auto-configure line', continue with <ok>

⇨ The line is auto-configured.

7.3 Displaying C-NET devices

After automatic configuration, the individual C-NET lines and the associated C-NET devices of each line can be displayed and configured.

Depending on the control panel type (2 or 4 loops) and the control panel design, the depiction may vary and several lines may be displayed.

You can display the lines and devices as follows. The displays are depicted in the same way as those in the 'Auto-configuring a line' chapter with the exception of the 'Show details' command

▷ At least one line is configured.

1. In the main menu, select the 'Topology' menu item.

   ⇨ The 'Topology' window is open.

2. Select 'Hardware tree'.

   ⇨ The 'Element' window is open.

3. Select 'Station' and press the 'Lower level' <softkey>.
   ⇨ The elements of 'Station' are displayed.
4. Select the corresponding 'C-NET line card (onboard/FCL2001)' module and press the 'Lower level' <softkey>.
   ⇨ All lines of 'C-NET line card (onboard/FCL2001)' are indicated.
5. Select a line and press 'More Options' <softkey>.
   ⇨ The 'Select option' window is open.
6. Select 'Execute commands' and confirm with <ok>.
   ⇨ The window including the possible commands is displayed.
7. Select the 'Show details' command and confirm with <ok>.

⇨ The details are displayed.

Example of selecting a line

004 Elements C-NET line card (onboard/FCL2001)			Module 2
Line	11		Line
Line	12		Line
Line	21		Line
Line	22		Line
Upper level		Lower level	More Options

004 Elements			Line 12
Device	11		OH720
Device	12		HI720
Device	21		OP720
Device	22		OP720
Upper level		Lower level	More Options

- Check whether all devices of this C-NET line are displayed correctly. You can use the type designation to detect the type of device displayed (smoke detector, heat detector, manual call point etc.)

You will find a list of type designations in the 'C-NET users' chapter

7.4 Entering/Changing customer text

You can enter customer text for any element on the control panel, independently of Cerberus-Engineering-Tool.

Once customer text has been entered or changed, the updated display is only shown the next time the element is accessed.

Entering or changing customer text does not lead to a reboot.

'Set customer text'

1. Select an element
2. Press the 'Execute Commands' softkey.
3. Select the 'Set customer text' command.
4. Enter the desired customer text and confirm the entry with <ok>.

⇨ The customer text has been entered.

Changing customer text

Proceed in the same way as when entering customer text but change the existing customer text.

7.5 Setting the system time

The set system time is used to log all the control panel's messages, save them in the event memory and output them on a connected printer.

7.5.1 Setting time and date

In countries with Central European Summer Time (CEST) the system clock automatically switches between summer time and normal time.

The clock must also be set when the fire detection system has been disconnected from the power supply.

'Enter date / time'

1. In the 'Main menu', select the 'Settings/administration' menu item.
2. Select the 'System commands' menu item.

   ⇨ The 'System commands' window is open.
3. Select the 'Set system time' menu item.

   ⇨ The 'Enter date / time' window is open.

4. Enter the date and time and/or confirm with <ok>.
   ⇨ The cursor jumps to the next field and terminates the input after the last field.

⇨ Adjusted or confirmed date and time are set.

Enter date / time
25-04-09 12:42:58
(yy-mm-dd) (hh:mm:ss)
Confirm with <ok>/Exit with <C>
Delete with <Cursor up>

Input window for time and date

7.6 Changing access authorization PIN

After successful commissioning, the 4-digit access authorization (PIN) for the corresponding access level must be changed. Keep the new PIN in a safe place.

If the PIN is lost, a system reset must be undertaken to the station's factory setting. The control panel configuration, including all customer data, is cleared in the process.

The '0000' PIN set in the factory then applies again after a system reset.

7.6.1 PIN administration

You may change an existing PIN, as well as create or delete a new PIN if you have the necessary authorisation.

'Change PIN'

1. In the 'Main menu', select the 'Settings/administration' menu item.
2. Select the 'Change PIN' menu item.
3. Enter the PINs in accordance with the input fields and confirm with <ok>.

⇨ The PIN has been changed.

Change PIN
Old PIN: ****
New PIN: ****
Verify new PIN: ****
Confirm with <ok>/Exit with <C>
Delete with <Cursor up>

'Create PIN'

▷ You have the required authorisation level.

1. In the 'Main menu', select the 'Settings/administration' menu item.
2. Select the 'Create PIN' menu item.
3. Enter an admissible access level.
4. Enter the PIN in accordance with the input fields and confirm with <ok>.

⇨ A new PIN has been created.

Create PIN
Access level: __ Enter PIN: **** Verify PIN: **** Confirm with <ok>/Exit with <C> Delete with <Cursor up>

'Delete PIN'

▷ PIN is present.

▷ You have the required authorisation level.

1. In the 'Main menu', select the 'Settings/administration' menu item.
2. Select the 'Delete PIN' menu item.
3. Enter the PIN in accordance with the input fields and confirm with <ok>.

⇨ PIN has been deleted.

Delete PIN
Enter PIN: **** Verify PIN: **** Confirm with <ok>/Exit with <C> Delete with <Cursor up>

7.7 Restart the station

The configuration of the Station remains the same.

The Station can be rebooted in two ways:

- Via the menu on the display
- On the p.c.b. of the operator unit

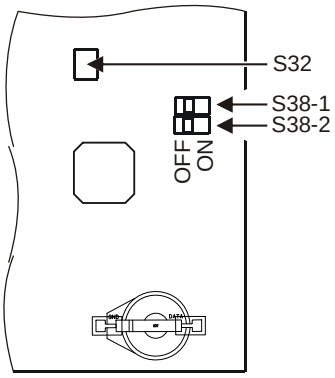
Via the menu on the display

1. Press <MENU>.
   ⇨ The PIN input dialog is indicated.
2. Enter a valid PIN and confirm with <ok>.
   ⇨ The 'User successfully logged in' message is displayed.
   ⇨ The main menu is displayed.
3. Select the 'Topology' > 'Hardware tree' > 'Station' menu items.
4. Press the 'More Options' softkey and select 'Execute commands'.
5. Select the 'Restart' command.

⇨ The 'Station' restarts.

On the p.c.b. of the operator unit

- On the PCB of the operator unit, press the button S32 until the Station restarts.



⇨ The Station restarts.

8 Testing the installation

The fire detection installation can be switched to 'Test' operating mode to check it is functioning properly.

8.1 Checking functions

The table below shows the recommended intervals for checking functions. National specifications always take priority.

For details of the function test, refer to 'Applicable documents' chapter.

Function	Activity	Interval (years)		
		1	2	2
Software	Check date and time.	X		
Detector lines: ● C-NET	Trigger an automatic detector and a manual call point per line.	X		
	Trigger all manual call points		X	
	Trigger all automatic fire detectors.		X	
	Check all detectors for soiling and application.	X		
	Check the function of the input/output modules.		X	
	On each line check whether short-circuit / open line triggers a 'Fault'. Check the loop line function. During short-circuit also check the separator function.			X
Fire controls	Check activation of the controls up to and with the interface.		X	
	Check isolations carried out by the customer. Arrange a time with the customer.		X	
Degraded function			X	
Mains failure	Check 'Delayed for in case of a mains failure' function.			
Alarm organization	Check the function of the delay times t1 and t2.	X		
	Alarm activation by automatic detector on 'unmanned' ⇒ Global alarm.	X		
	Alarm activation by manual call point on 'manned' and 'unmanned' ⇒ Local alarm / global alarm.	X		
	Check automatic switchover 'Manned' / 'Unmanned' on the basis of the event memory entry.	X		
	Check activation of the remote transmission equipment with 'Alarm'.	X		
	Actuate the corresponding danger level by activating a detector with the detector exchanger and tester	X		
Alarm devices	In emergency power operation check all alarm devices taking the event category into account: 'Pre-alarm' 'Alarm' 'Fault'	X		

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