SIEMENS

FC361-xx, FC362-xx

Fire control panel

Technical Manual

A6V10421795_en--_k

2021-04-28

Smart Infrastructure

Imprint

Technical specifications and availability subject to change without notice.

Issued by:
Siemens Switzerland Ltd.
Smart Infrastructure
Global Headquarters
Theilerstrasse 1a
CH-6300 Zug
Tel. +41 58 724-2424
www.siemens.com/buildingtechnologies

Edition: 2021-04-28
Document ID: A6V10421795_en--_k

Table of Contents

1 About this document

	• Specialist electrical engineering knowledge is required for installation. • Only an expert is permitted to carry out installation work. Incorrect installation can take safety devices out of operation unbeknown to a layperson.

Goal and purpose

The information provided in this manual is a summary of the key procedures and functions required to assemble, install, operate, commission and maintain the system.

It is intended to provide experienced and qualified personnel a guide on the required processes.

Scope

The technical manual applies to fire control panel of FC360 series.

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.
Commissioning personnel	• Configure the product at the place of installation according to customer-specific requirements. • Check the product operability and release the product for use by the operator. • Searches for and corrects malfunctions.	• Has obtained suitable specialist training for the function and for the products. • Has attended the training courses for commissioning personnel.
Operating personnel	• Carries out procedures to correctly operate the product.	• No particular basic training is needed. • Has been instructed by the commissioning personnel.
Maintenance personnel	• Carries out all maintenance work. • Checks that the products are in perfect working order. • Searches for and corrects malfunctions.	• Has obtained suitable specialist training for the function and for the products.

Document identification

The document ID is structured as follows:

A6Vxxxxxxxx_aaAA_vv

A6Vxxxxxxxx_--AA_vv

A6Vxxxxxxxx_aa--_vv

A6Vxxxxxxxx_----_vv

ID coding[1]	Description
A6Vxxxxxxxx	STEP-ID generated by the STEP system
_	Separator
aa	Language abbreviation in accordance with ISO 639-1
AA	Country abbreviation in accordance with ISO-3166-1
--	Multilingual or international
vv	Document version, single or double digit: a, b, …z; aa, ab, …az; ba, bb, …bz; etc.

[1] Some documents have different IDs that are generated by an earlier system. There are also documents with up-to date ID codes along with additional features in the designation.

ID code	Examples
ID_languageCOUNTRY_version -- = multilingual or international	A6V10215123_deDE_a A6V10215123_en--_a A6V10315123_----_a

Date format

The date format in the document corresponds to the recommendation of international standard ISO 8601 (format YYYY-MM-DD).

Reference document and source language

- The source language of this document is English (en).
- 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_en--_x

x = version, en = English, -- = international

Conventions for text marking

Markups

Special markups are shown in this document as follows:

▻	Requirement for a behavior instruction
1. 2.	Behavior instruction with at least two operation sequences
–	Intermediate step of a behavior instruction
⇨	Intermediate result of a behavior instruction
⇨	End result of a behavior instruction
●	Numbered lists and behavior instructions with an operation sequence
[→X]	Reference to a page number
'Text'	Quotation, reproduced identically
<Key>	Identification of keys
>	In addition to relation symbols and for identification between steps in a sequence, e.g., 'Menu bar' > 'Help' > 'Help topics'
↑ Text	Identification of a glossary entry

Supplementary information and tips

The 'i' symbol identifies supplementary information and tips for an easier way of working.

1.1 Applicable documents

The list below is used as a reference for the FC360 fire control panel and as a supplement to this document.

Document ID	Name
008250	Operation manual FDUL221 line tester
A6V10210416	FS720 Fire Detection System, Commissioning, Maintenance, Troubleshooting
A6V10419665	Datasheet, Fire control panel FC360
A6V10421797	Operation manual (short), Fire control panel FC360
A6V10878675	Operation manual (short) with EVAC, Fire control panel FC360
A6V10450595	Operation manual for configuration tools, Fire control panel FC360
A6V10450593	Mounting instructions, FCM3601-Z1 and FCM3601-Z2
A6V10421792	Mounting instructions, Fire control panel FC360
A6V10431013	Mounting instructions, FCA3601-Z1 / FCA3603-Z1 key switch
A6V10431015	Mounting instructions, FCA3602-Z1 output card (4M)
A6V10893024	Mounting instructions, FHA3602-Z1 semi flush mount bezel
A6V10450591	Mounting instructions, FHD3601-Z1 door incl. PMI
A6V10431009	Mounting instructions, FTO3601-H1 evacuation module (NL)
A6V11777319	Mounting instructions, FTO3603-Z1 LED indicator (32 zones)
A6V10885143	Quantities tool, Fire control panel FC360
A6V10882301	List of compatibility, Fire control panel FC360
A6V12080979	Cybersecurity Guidelines, Fire control panel FC360

1.2 Download center

You can download various types of documents, such as data sheets, installation instructions, and license texts via the following Internet address:

http://siemens.com/bt/download

1. Enter the document ID in the 'Find by keyword' input box.
2. Contact Siemens if a document is unavailable in http://siemens.com/bt/download.

You will also find information about search variants and links to mobile applications (apps) for various systems on the home page.

1.3 Abbreviations

Abbreviations	Explication
AVC	Alarm Verification Concept
EOL	End of Line
MCP	Manual Call Point
PSU	Power Supply Unit
↑ PMI	Person Machine Interface
EVAC	Evacuation
GUI	Graphical User Interface
EMC	Electro Magnetic Compatibility
DMS	Danger Management System
UFP	Universal Fire Protocol
DAR	Delayed Alarm Reset

1.4 History of changes

The reference document's version applies to all languages into which the reference document is translated.

The first edition of a language version or a country variant may, for example, be version 'd' instead of 'a' if the reference document is already this version.

The table below shows this document's history of changes:

Version	Edition date	Brief description
k	2021-04-28	Some minor editorial changes.
j	2021-02-02	Add DAR use case. Add descriptions of the 'Door holder' function. Add synchronization descriptions of voice alarm devices.
i	2020-12-16	Add Chapter 3. Add RS485 communication parameters in Chapter 6.11.5. Change LED indicators (16 zones) to LED indicators (32 zones) throughout the whole document. Add information about FC362-xx to the whole document. Remove unsupported functions such as device deletion and brightness adjustment. Change terms, e.g., change **section** to **zone**.
h	2020-09-03	Add a note to the reset key in chapter 5.10.
g	2016-11-18	Add information on mainboard FCM3601-Z1 and door incl. PMI FHD3601-Z1 in chapter 5.12 and chapter 12. Change default setting of relay 3 in chapters 5.9 and 5.5.

Version	Edition date	Brief description
		Add ‘Intended use’ sub-chapter in chapter 2.1. Some minor editorial changes.
f	2016-08-23	Add technical information on output card (4M) concerning creeping open/short when the output is configured as 'RT Fault' in chapter 5.11.4.
e	2016-08-18	Add technical information on output card (4M) concerning creeping open/short in chapter 3.4.2 and 5.11.4.
d	2016-07-22	Completely update the document.
c	2016-04-08	Add RS485/RS232 communication parameters in chapter 5.11.5. Change name of ‘FC360 Tool’ to ‘FC360 Panel Configurator’. Change name of ‘FC360 Editor’ to ‘FC360 Desktop Editor 2.0’. Change password of access level 3.1 in chapter 6.1. Add information of updating firmware of FT2010/FT2011/FDUL221 in chapter 9.7.
b	2016-02-23	Add sticker information in chapter 5.2. Add description to quit replace mode in chapter 8.3.4.3. Add how to adjust brightness in chapter 11.2. Update information in chapter 3.4.2 and chapter 5.8 about the total output current of configurable IOs and Aux power output is max. 0.2 A. Add access level 3.1 in chapter 6.1. Add action of P2 line overload in chapter 11.2. Add ‘Shielded cable is required.’ for RS485 application in chapter 5.11.5.
a	2015-06-08	First version

The table below shows the published language versions and country variants with the corresponding modification index:

Modification index	en_--	de_--	fr_--	it_--	es_--
k	X	X	X	X	X
j	X	-	-	-	-
i	X	-	-	-	-
h	X	X	X	X	X
g	X	X	X	X	X
f	X	-	-	X	-
e	X	-	-	-	-
d	X	-	-	X	-
c	X	-	-	-	-
b	X	-	-	-	-
a	X	-	-	-	-

X = published

- = no publication with this modification index

2 Safety

2.1 Intended use

The panel is intended to be mounted in a building to detect, evaluate and alarm in the event of fire, together with ↑ C-NET ↑ detector line.

2.2 Safety instructions

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

 Explosive atmosphere

 Voltage/electric shock

 Laser light

 Battery

 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 is 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

2.3 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 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.

⚠ CAUTION

Noncompliance with the following safety regulations

Risk of injury to persons and damage to property

- Compliance with the following regulations is required.

- Specialist electrical engineering knowledge is required for installation.
- Only an expert is permitted to carry out installation work.

Incorrect installation can take safety devices out of operation unbeknown to a layperson.

Mounting, 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 alarm 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 design and the 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

2.4 Release notes

Limitations to the configuration or use of devices in a fire detection installation with a particular firmware version are possible.

⚠ WARNING

Limited or non-existent fire detection

Personal injury and damage to property in the event of a fire.

- Read the 'Release Notes' before you plan and/or configure a fire detection installation.
- Read the 'Release Notes' before you carry out a firmware update to a fire detection installation.

NOTICE

Incorrect planning and/or configuration

Important standards and specifications are not satisfied.

Fire detection installation is not accepted for commissioning.

Additional expense resulting from necessary new planning and/or configuration.

- Read the 'Release Notes' before you plan and/or configure a fire detection installation.
- Read the 'Release Notes' before you carry out a firmware update to a fire detection installation.

2.5 Cyber security disclaimer

Siemens provides a portfolio of products, solutions, systems and services that includes security functions that support the secure operation of plants, systems, machines and networks. In the field of Building Technologies, this includes building automation and control, fire safety, security management as well as physical security systems.

In order to protect plants, systems, machines and networks against cyber threats, it is necessary to implement – and continuously maintain – a holistic, state-of-the-art security concept. Siemens' portfolio only forms one element of such a concept.

You are responsible for preventing unauthorized access to your plants, systems, machines and networks which should only be connected to an enterprise network or the internet if and to the extent such a connection is necessary and only when appropriate security measures (e.g. firewalls and/or network segmentation) are in place. Additionally, Siemens' guidance on appropriate security measures should be taken into account. For additional information, please contact your Siemens sales representative or visit https://www.siemens.com/global/en/home/company/topic-areas/future-of-manufacturing/industrial-security.html.

Siemens' portfolio undergoes continuous development to make it more secure. Siemens strongly recommends that updates are applied as soon as they are available and that the latest versions are used. Use of versions that are no longer supported, and failure to apply the latest updates may increase your exposure to cyber threats. Siemens strongly recommends to comply with security advisories on the latest security threats, patches and other related measures, published, among others, under https://www.siemens.com/cert/en/cert-security-advisories.htm.

3 Notes

3.1 Open Source Software (OSS)

Software license overview

These devices use Open Source Software (OSS). All Open Source Software components used in the product (to include copyrights and licensing agreement) are available at http://siemens.com/bt/download.

Firmware version	OSS document ID	Device
02.01.01	A6V12190258	FC361-xx, FC362-xx

4 System description

4.1 System overview

The panel is a compact panel with an integrated operating unit for processing signals from FD720 and FD360 devices. See list of compatibility (document A6V10882301) in chapter 'Applicable documents [➙ 9]'.

The panel is operated as a standalone fire control panel.

The panel supports operation of the ↑ C-NET ↑ detector line in a ↑ loop or ↑ stub.

Automatic fire detectors (e.g. smoke and heat detectors), manual call points, alarm devices, voice alarm devices, I/O modules and other ↑ C-NET devices are connected to the C-NET detector line(s).

The picture below shows the FC360 system overview.

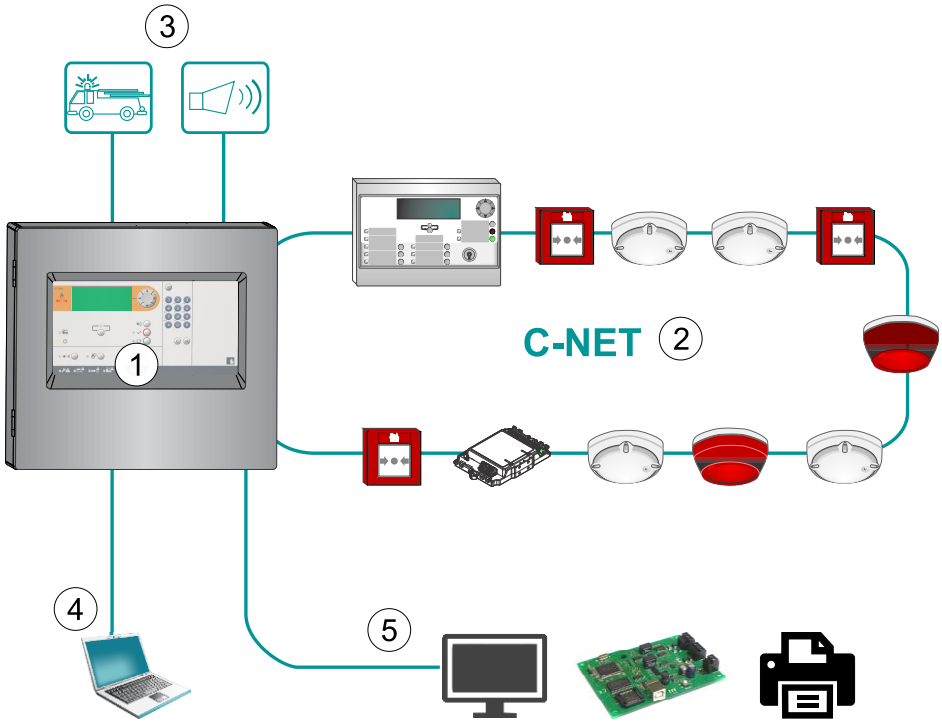


Fig. 1: Overview of FC360 system

1	FC360 fire control panel
2	C-NET detector line. FC361-xx supports one detector line while FC362-xx supports two.
3	Alarm devices, RT fire, RT fault, Fire control, configurable IOs
4	FC360 configuration tools (i.e.,'FC360 Panel Configurator', 'FC360 Desktop Editor 2.0') for configuration via PC
5	Third-party devices such as DMS, ESPA and event printer

4.2 Features

System

- Monitors detectors and sounder lines
- FC361-xx: One loop or two stubs with 126 addresses
- FC362-xx: Two loops or four stubs with 252 addresses
- LCD with 7 lines, max. 21 characters per line
- Up to 2000 events can be stored in history log with date and time stamp
- Alarm counter for up to 999 alarms
- Integrated configuration tool 'FC360 Panel Configurator'
- Automatic summer/winter time change
- Country specific settings
- Multilingual

4.3 Panel types

Overview of panels and options

Fire control panels FC361-xx (1 loop)	
FC361-ZZ	**FC361-ZA**
Battery: Max. battery capacity 12 Ah	Battery: Max. battery capacity 25 Ah
	

Fire control panels FC362-xx (2 loops)	
FC362-ZZ	**FC362-ZA**
Battery: Max. battery capacity 12 Ah	Battery: Max. battery capacity 25 Ah
	

FC361-YZ and FC361-YA are replaced with FC361-ZZ and FC361-ZA respectively. Besides, option module LED indicator (16 zones) is not available. It is replaced with LED indicator (32 zones).

More options

- Output card (4M)
- Evacuation module (NL)
- LED indicator (32 zones)
- Key switch
- Key switch (Nordic)
- RS232/RS485 module
- Ext. printer DL3750+
- Output module FCA1209-Z1
- Semi flush mounting bezel

4.4 Technical data

Information on approvals and the relevant EU directives for this device (these devices) is available in the following document(s); see chapter 'Applicable documents [➞ 9]':

- Document A6V10419665

4.4.1 General data

↑ **Detector line**		
Number of detector lines ● Loops or ● Stub lines	**FC361-xx** Max. 1 Max. 2	**FC362-xx** Max. 2 Max. 4
Number of addresses per loop	Max. 126	Max. 126
Number of addresses per stub	Max. 32	Max. 32
Inputs/outputs		
Number of sounder circuits	2	
Number of relay outputs	3	
Number of configurable inputs/outputs	4	
Options		
RS232/RS485 module	Max. 1	
Ext. printer DL3750+	Max. 1	
LED indicator (32 zones)	Max. 1	
Evacuation module (NL)	Max. 1	
Key switch/Key switch (Nordic)	Max. 1	
Output card (4M)	Max. 1	
Alarm counter	Max. 999 alarms	
Event memory	Max. 2000 events	

4.4.2 Electrical data

Rating detector line	
Operating voltage	DC 12…33 V
Operating current	Max. 0.5 A
Line resistance/capacitance	Max. 240 Ω/Max. 500 nF
Monitored for earth fault	Yes
Monitored for open/short circuit	Yes
Sounder lines on mainboard	
Voltage/current	DC 24 V/0.5 A[1]
EOL element	Resistor 2.2 kΩ/1 W/0.5 %
AUX. power output	DC 24 V/0.2 A
Configurable IOs on mainboard	
Voltage/current	DC 24 V/0.1 A[2]
Outputs on output card (4M) FCA3602-Z1	
Voltage/current (max. per output)	DC 24 V/1.0 A[3]
EOL element	Resistor 2.2 kΩ/1 W/0.5 %
Additionally for outputs on output card (4M) FCA3602-Z1 with the functionality 'creeping open/short'	
Line resistance	Max. 74.3 Ω
Sounder voltage	Min. DC 16 V
Relay outputs on mainboard	DC 60 V/2.0 A
Power supply	
Mains voltage	AC 97…127 V AC 196…253 V
Mains fuse	AC 250 V/2.5 AT
Power consumption	70 W
Max. nominal output current with battery charging, $I_{max\ a}$	0.9 A
Max. nominal output current without battery charging, $I_{max\ b}$	2.5 A
Min. output current	0.05 A
System supply voltage	DC 20.5…28.6 V
Mains failure delay	1 min., 5 min., 10 min., 29 min.
Battery low discharge cut off	DC 20.5…21 V
Temperature compensation	Yes

Batteries	
Operating time	Up to 72 h
Battery capacity	2x 12 V, 7 Ah/12 Ah/25 Ah, sealed lead acid
Voltage	DC 20.5…28.6 V
Charging current	Max. 1.6 A
Load resistance R_{imax}	Max. 1 Ω

[1] Each sounder line has an output current of max. 0.5 A. The total output current of both sounder lines is max. 0.5 A.

[2] Each configurable IO on the mainboard has an output current of max. 0.1 A. The total output current of configurable IOs and aux. power output is max. 0.2 A.

[3] Each output on the output card (4M) has the capability of max. 1.0 A. The total output current of output card (4M) is max. 2.0 A.

4.4.3 Mechanical data

	FC361-ZZ/FC362-ZZ	FC361-ZA/FC362-ZA
Terminals	0.2…2.5 mm^2	
Dimensions (W x H x D)	402 x 372 x 132 mm	402 x 372 x 211 mm
Weight (without batteries)	5.13 kg/5.15 kg	6.32 kg/6.34 kg
Color - Housing, Cover	~RAL 7035, light gray	

4.4.4 Environmental conditions

Operating temperature	-5…+40 °C
Storage temperature	-20…+60 °C
Air humidity (no condensation permitted)	≤95 % rel.
Protection category (IEC 60529)	IP30

4.5 Structure

The figure below shows the structure of the panel with open front cover.

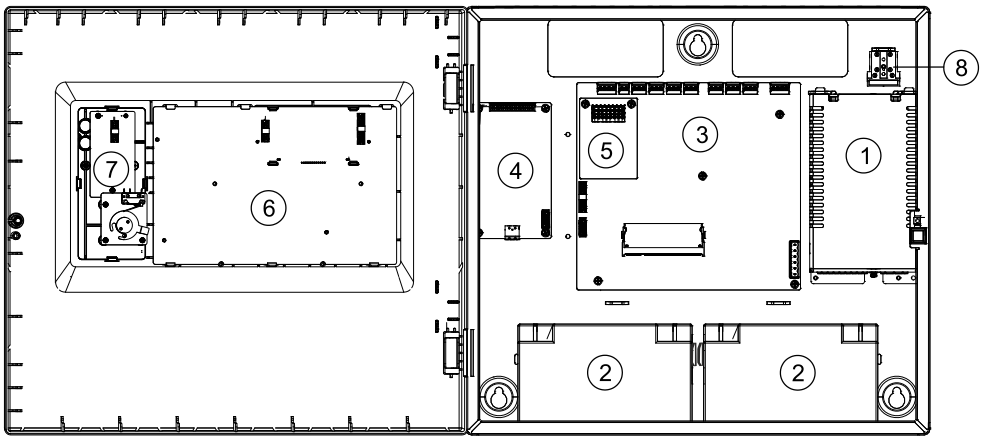


Fig. 2: Structure of FC360 panel

1 Power supply
2 Batteries
3 Mainboard
4 Optional output card (4M)
5 RS232/RS485 module
6 ↑ PMI board
7 Space for options (e.g. Evacuation module (NL), LED indicator (32 zones), key switch)
8 Mains fuse holder

5 Options with requirements

The following options with requirements as defined in EN 54-2/A1 are available.

The table below explains how to realize these options in the panel.

The relevant sections according to EN 54-2/A1 are specified in the left column of the table.

EN 54-2 Options with requirements		Function in FC360 series		
		Installation	Configuration[1]/Operation	Chapter
7.8	Output C to fire alarm devices according to EN 54-1	Monitored output Sounder lines C-NET devices	Sounder control	6 7 8
7.9.1	Output E to fire alarm routing equipment according to EN 54-1	Monitored output card (4M)	RT fire	6.11.4
7.9.2	Alarm confirmation input from fire alarm routing equipment	Input	↑ RT device confirmation signal; LED fire brigade activated via input	6.8
7.10.1	Outputs G to fire protection equipment according to EN 54-1	Monitored output card (4M)	Fire output	6.11.4
7.11	Delays to outputs	-	Alarm Verification Concept Delayed Alarm Reset ↑ 'Manned'/↑ 'Unmanned'	15, 16
7.12.1	Dependencies on more than one alarm signal, type A dependency	-	Type A inhibit time 30…60 sec. Reset of the first alarm after 90 sec.	-
7.13	Alarm counter	-	Alarm counter	-
8.3	Fault signals from points	-	RT fault	6.11.4
8.8	Output to fault warning routing equipment	Relay 2	RT fault	6.5
8.9	Output J to fault warning routing equipment according to EN 54-1	Monitored output card (4M)	RT fault	6.11.4
9.5	Disablement of addressable points	-	Disable	-
10	Test condition	-	Test	-

[1] Find more information about configuration in document A6V10450595.

6 Installation

6.1 Instruction

⚠ WARNING

Voltage

Electric shock

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

NOTICE

Electrostatics

Damage to electronics

- Suitable protective measures must be taken when working with electronics modules.

- Specialist electrical engineering knowledge is required for installation.
- Only an expert is permitted to carry out installation work.

Incorrect installation can take safety devices out of operation unbeknown to a layperson.

The installation must comply with all applicable national and local regulations.

- The panel must be installed in a dry, clean and well vented room.
- The panel and its components must be protected against dampness and interfering external influences such as dust, great temperature fluctuations and mechanical stress.
- The panel must be installed in a place freely accessible to authorized staff and the emergency services.
- The panel must be fitted to a level, non-vibrating wall surface with load bearing capacity using suitable mounting materials (e.g. screws and plugs).
- The installation surface and selected wall must be suitable for the weight of the panel including the batteries used.
- Installation is not permitted in rooms with high levels of electromagnetic interference, e.g. in control rooms or right next to power cables and inductive loads.

Mounting options

There are two options for mounting the panel:

- 'Surface mounting'
- Semi flush mounting, refer to document A6V10893024, see chapter 'Applicable documents [➙ 9]'

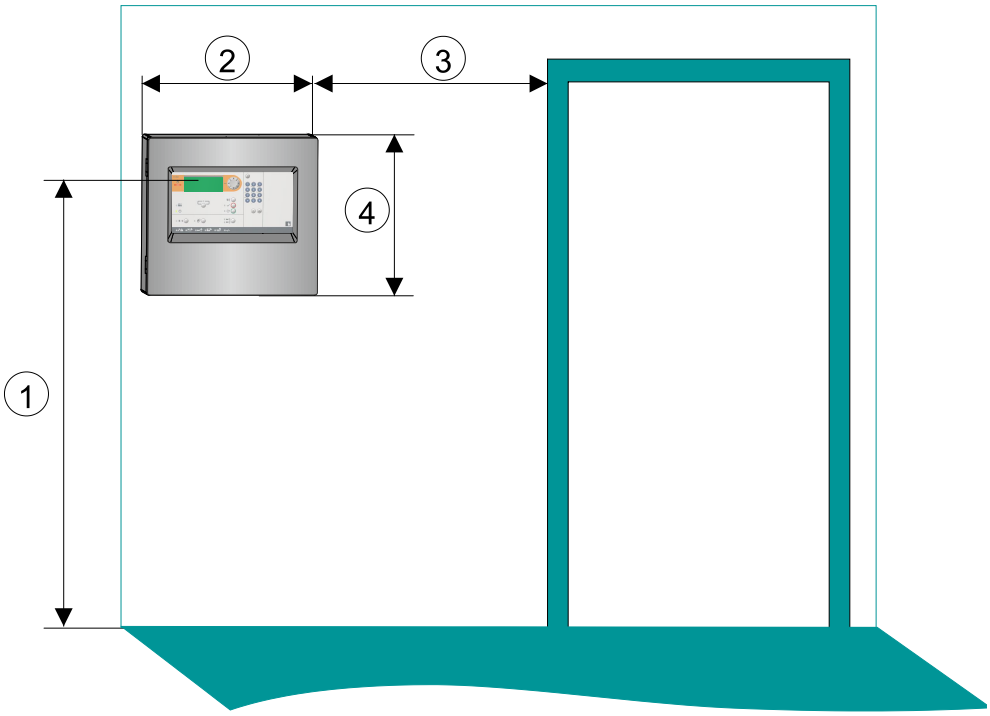


Fig. 3: Mounting the panel

1	Recommended display height approx. 1.6 to 1.7 m
2	Panel width: 402 mm
3	Distance from door of at least one door leaf in width
4	Panel height: 372 mm

6.2 Surface mounting

Steps:

1. Define the mounting location.
2. Open the door of the panel using a screw driver.
3. Break out the required cable entries (A).
   - Screw cable glands (B) for all open entries. The cable glands are not included.
   - The mains cable must be fed into housing on the right from above. Signal and control cables can be fed into housing through the remaining entries.
4. Mark position of mounting holes (D) on the wall.
5. Drill the holes and insert rawl plugs (not included).
6. Attach and fasten the panel using screws (Ø ≥5 mm, not included).
7. Stick the supplied aluminum stickers over all holes for wall mounting.
8. Optional: Mounting accessories (C). See 'Accessories [➙ 46]'.
9. Switch off the mains supply AC 230 V and connect the mains cable. See 'Power supply - mains voltage [➙ 30]'.
10. Connect signal and control cable (↑ detector lines, sounder lines, inputs/outputs and relays). See 'C-NET detector line [➙ 33]', 'Sounder lines [➙ 40]', 'Inputs/outputs [➙ 41]', 'Relay [➙ 43]'.
11. Switch on mains supply AC 230 V.
12. Connect batteries. See 'Battery [➙ 31]'.
    ⇨ The panel is ready for commissioning. See 'Commissioning [➙ 109]'.
13. Test the functionality of the panel.
14. Close the door of the panel.

⇨ Hand over the system to the customer.

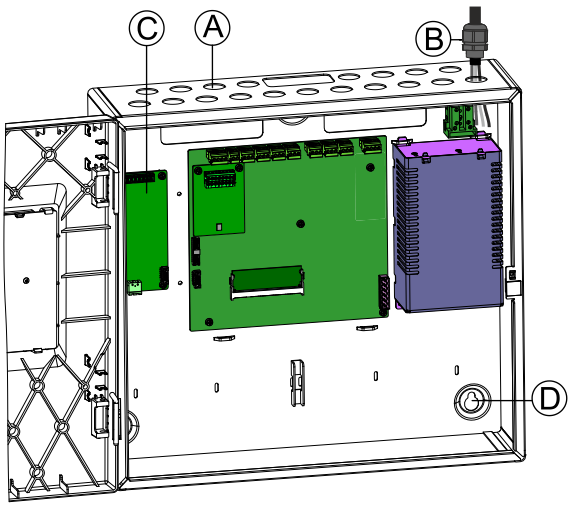


Fig. 4: Details of mounting

A	Cable entries	C	Accessories
B	Cable glands	D	Mounting holes

6.3 Power supply - mains voltage

	**⚠ WARNING**
	Electrical voltage! **Electric shock** Before connecting the mains voltage ensure that power is not switched on and is locked to prevent it from being switched on.

1. Insert the mains cable (1) into the housing from the top right side. Use mains cable with cross section of 3*1.5 mm^2 up to 3*2.5 mm^2.
2. Insulate the mains cable (1) as needed and connect to the mains fuse holder (4).
3. Secure the cable with a cable tie.

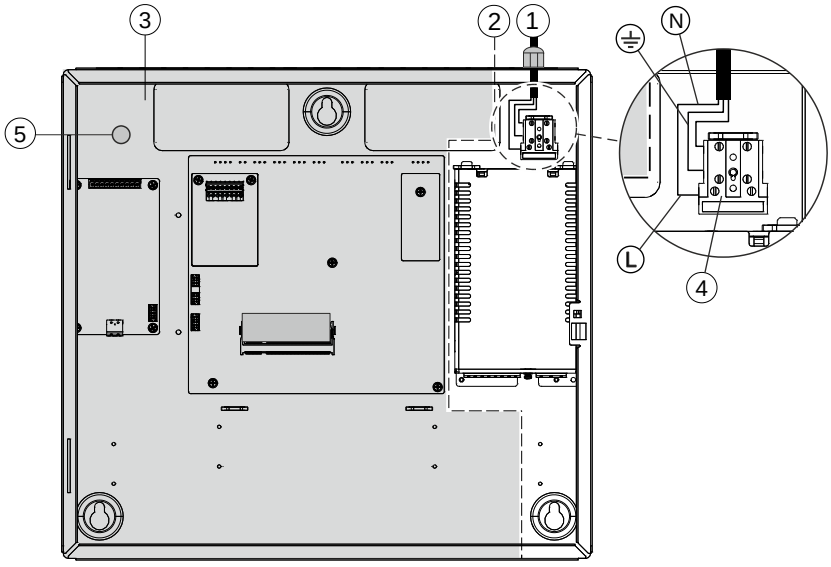


Fig. 5: Connection of power supply

1 Mains cable
2 Boundary of mains zone
3 Safety zone (no 230 V power permitted)
4 Mains fuse holder
5 Ground terminal

6.4 Battery

When the AC mains voltage fails, the emergency power supply is provided by the connected batteries with no interruption. The emergency power bridging time is based on the panel's quiescent and alarm current as well as battery capacity.

!	*NOTICE*
	Error during configuration detection Additional effort for troubleshooting ● Only connect the battery connection cables (1) once all installation work is complete.

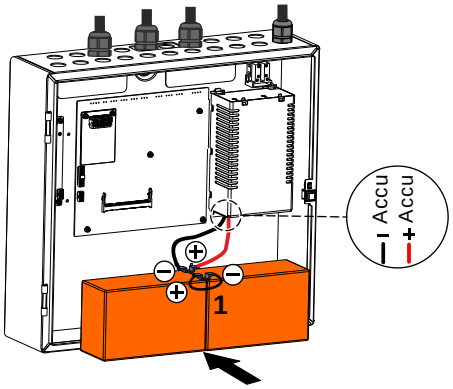


Fig. 6: Connection of batteries

Emergency power bridging time

National and local regulations may require a bridging time of up to 72 hours for the emergency power supply. Use the 'FC360 Cerberus FIT Quantities tool' to calculate the required battery capacity.

Fully discharged batteries may be unable to correctly recharge. Replace batteries that have been fully discharged.

Determining battery type

Determine the battery type based on the calculated battery capacity (see table below).

Designation	Type	Capacity	Order number
Battery (12 V, 7 Ah, VdS)	FA2003-A1	7 Ah	A5Q00019353
Battery (12 V, 12 Ah, VdS)	FA2004-A1	12 Ah	A5Q00019354
Battery (12 V, 25 Ah, VdS)	BAT12-25	25 Ah	S54302-Z102-A1

Notes:

- Two batteries must be connected in series to achieve the system voltage of 24 V.
- Batteries are not supplied with the panels and must be ordered separately.
- Battery capacity determines charging current. The charging current must be taken into account when calculating the power supply.
- Battery dimensions determines the housing type.
- Never switch batteries in parallel.
- If you need more power, you must use batteries with a higher capacity.

The fire control panel is approved with the batteries listed above, use only Siemens provided batteries.

6.5 Connection overview

The picture below shows the overview of the panel connection.

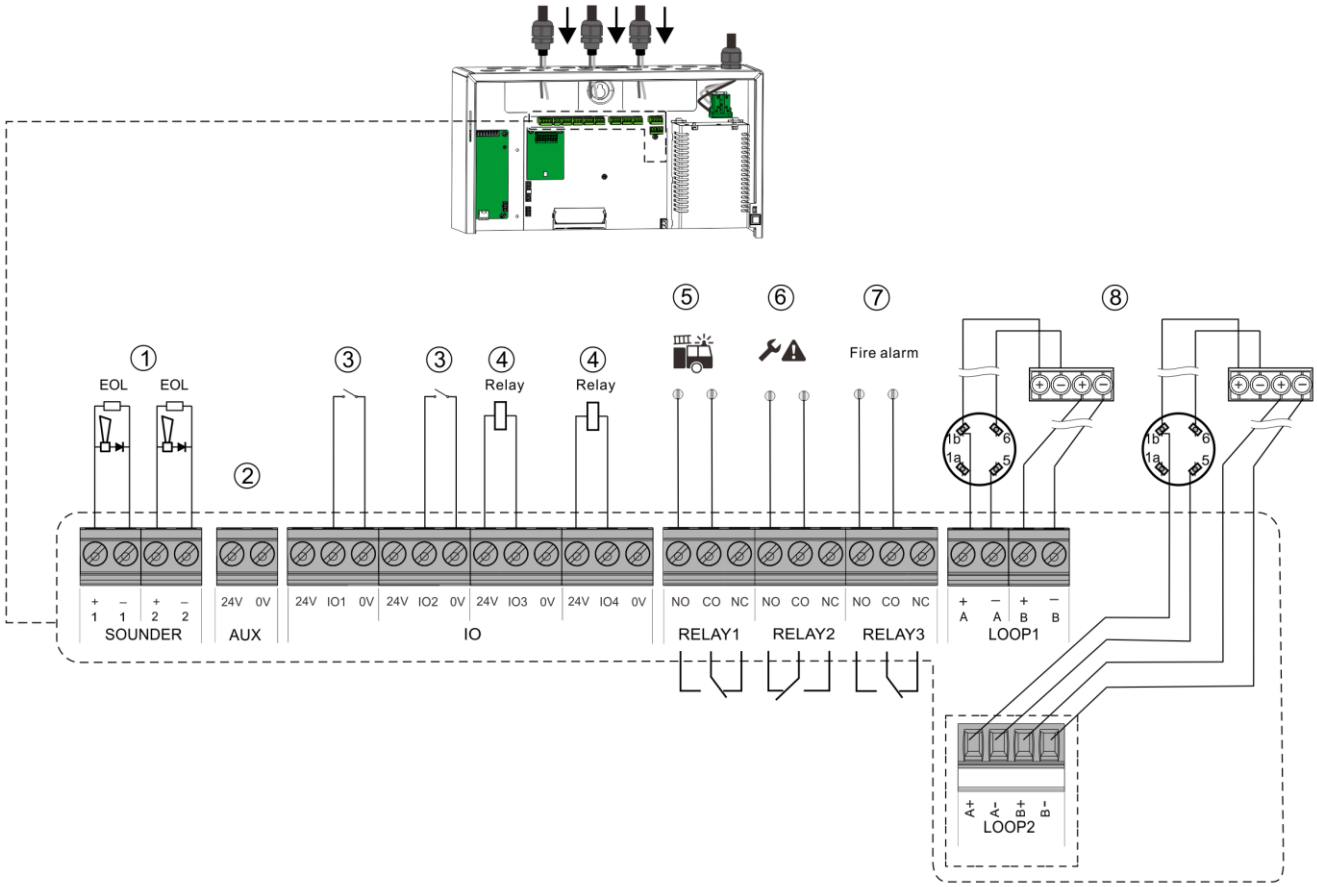


Fig. 7: Connection overview of FC360 fire control panel

⬚	Panel type specific. Only FC362-xx supports two loops.

EOL	Resistor 2.2 kΩ
Relay	Output module FCA1209-Z1
1	Connection of sounder lines
2	Aux. power supply DC 24 V/0.2 A
3	Configurable IO, default setting as 'Input'
4	Configurable IO, default setting as 'Unmonitored output'
5	Output relay, default setting as 'RT fire'
6	Output relay, default setting as 'RT fault'
7	Output relay, default setting as 'Fire alarm'
8	Connection of ↑ detector lines (FC361-xx: 1 loop/2 stubs; FC362-xx: 2 loops/4 stubs)

6.6 C-NET detector line

Up to 126 devices for FC361-xx and 252 devices for FC362-xx (126 devices per loop), such as automatic fire detectors (e.g. smoke or heat detectors), manual call points, I/O modules and other ↑ C-NET components, can be connected to the C-NET ↑ detector line.

The connection for the C-NET detector line is on the main board. Most line devices, such as fire detectors, are supplied directly by C-NET with the required operating voltage. FDCI723 and special applications with I/O modules require an external power supply.

The picture below shows the C-NET detector line connection with peripheral devices.

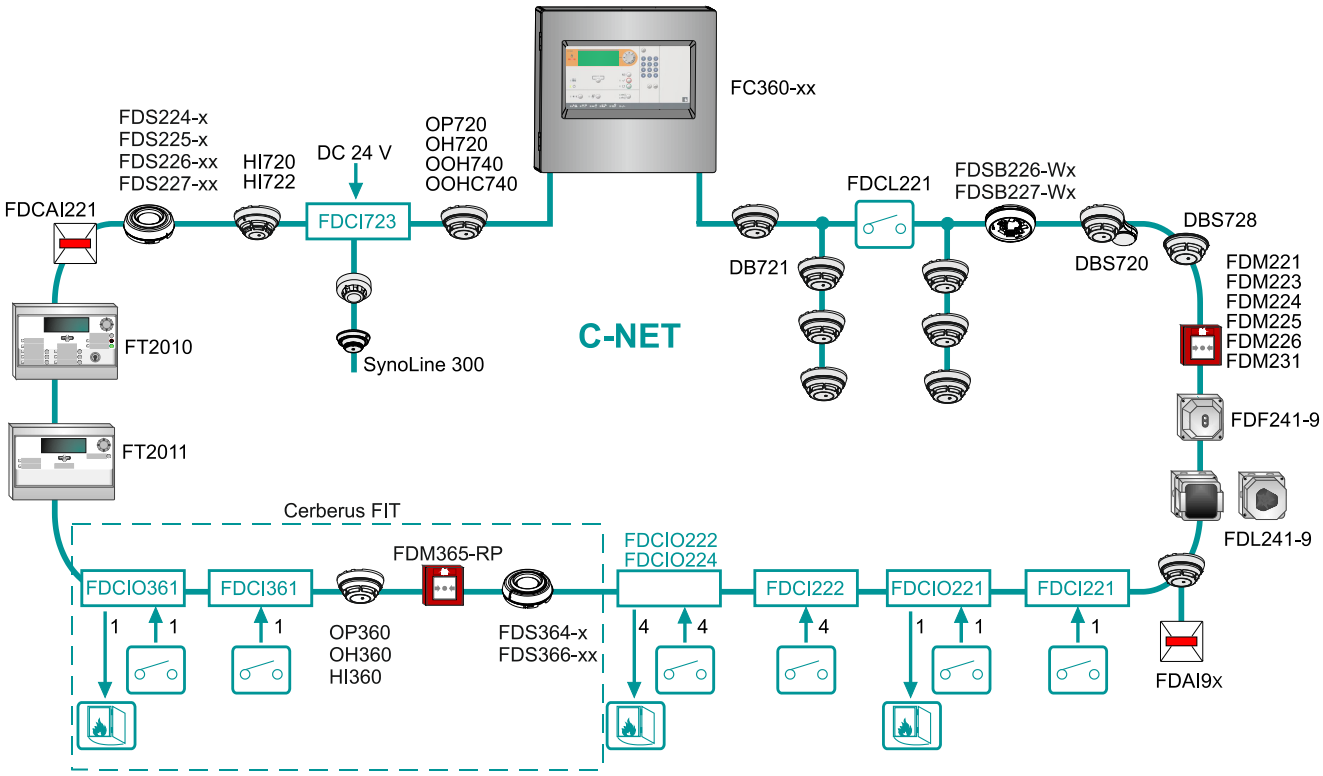


Fig. 8: Overview of FC360 C-NET detector line

!	***NOTICE***
	• Max. 252 devices can be connected to FC362-xx. Otherwise, the panel reports an overload fault. • Max. 32 devices can be connected to a single stub as per EN 54-2.

Line separator

All C-NET devices have an integrated ↑ line separator.

In the event of a short-circuit in the ↑ C-NET wiring, the line separators adjacent to the wiring fault are opened and the faulty cable segment is shut down. The ↑ C-NET devices remain functional and ready to detect. The fault is displayed on the panel.

Connection factor

The max. number of connectable C-NET peripherals (126 devices per loop) and the max. line length (3300 m) depend on the device connection factor. Calculation must be performed first using 'FC360 Cerberus FIT Quantities tool' (document ID: A6V10885143).

FC360 series don't support silent verification of the expected loop alarm current and voltage drop margin of an installation. Use 'FC360 Cerberus FIT Quantities tool' to calculate the load of the C-NET detector line(s).

6.6.1 Connectable C-NET devices

The table below lists all ↑ C NET devices which can be connected to the C-NET ↑ detector line(s). It also highlights the devices with an ↑ alarm indicator (AI), or with an ↑ external alarm indicator (EAI) or a sounder base (DBS720) that can be connected to the devices.

X possible/available

– not possible/not available

Device type	Type	Description	AI	EAI	DBS720
Point detectors	OP720	Smoke detector	X	X	X
	HI720	Heat detector (static+ROR)	X	X	X
	HI722	Heat detector (static) with temperature report support	X	X	X
	OH720	Multi-sensor smoke detector	X	X	X
	OOH740	Multi-sensor smoke detector; DualProtocol Collective	X	X	X
	OP360	Smoke detector	X	X	X
	HI360	Heat detector (static+ROR)	X	X	X
	OH360	Multi-sensor smoke detector	X	X	X
Special detectors	FDF241-9	Infrared flame detector (2 sensors/1 photo diode); DualProtocol Collective	X	X	–
	FDL241-9	Linear smoke detector; DualProtocol Collective	X	X	–
	OOHC740	Neural fire and CO detector with ambient supervision	X	X	X
Manual call points	FDM221 FDM231	Manual call point, direct action	X	–	–
	FDM223	Manual call point, indirect action	X	X	–
	FDM224	Manual call point, direct action	X	X	–
	FDM225	Manual call point, direct action	X	–	–
	FDM226	Manual call point, direct action	X	–	–
	FDM365-RP	Manual call point, direct action	X	–	–
Line modules	FDCI221	Input module (1 input)	X	–	–
	FDCI222	Input module (4 inputs)	X	–	–
	FDCI723	Zone module, ext. powered (1 collective line)	X	–	–
	FDCIO221	Input/output module (1 input and 1 output)	X	–	–

Device type	Type	Description	AI	EAI	DBS720
	FDCIO222 FDCIO224	Input/output module (4 inputs and 4 outputs)	X	–	–
	FDCL221	Line separator	X	–	–
	FDCL221-M	Multi line separator module (8…9 isolators)	X	–	–
	FDCI361	Input module (1 input)	X	–	–
	FDCIO361	Input/output module (1 input and 1 output)	X	–	–
Alarm device	DBS720	Sounder base	–	–	–
	FDS224-R	Sounder, red housing	–	–	–
	FDS224-W	Sounder, white housing	–	–	–
	FDS226-RW	Sounder beacon, red housing, white LED	–	–	–
	FDS226-WW	Sounder beacon, white housing, white LED	–	–	–
	FDS226-RR	Sounder beacon, red housing, red LED	–	–	–
	FDS226-WR	Sounder beacon, white housing, red LED	–	–	–
	FDSB226-WW	Sounder beacon base, white housing, white LED	–	–	–
	FDSB226-WR	Sounder beacon base, white housing, red LED	–	–	–
	FDS364	Sounder	–	–	–
	FDS366	Sounder beacon	–	–	–
Voice alarm device[1)]	FDS225-R	Voice sounder, red housing	–	–	–
	FDS225-W	Voice sounder, white housing	–	–	–
	FDS227-RW	Voice sounder beacon, red housing, white LED	–	–	–
	FDS227-WW	Voice sounder beacon, white housing, white LED	–	–	–
	FDS227-RR	Voice sounder beacon, red housing, red LED	–	–	–
	FDS227-WR	Voice sounder beacon, red housing, red LED	–	–	–
	FDS227-RW-C	Voice sounder beacon, red housing, white LED	–	–	–
	FDS227-WW-C	Voice sounder beacon, white housing, white LED	–	–	–
	FDS227-RR-C	Voice sounder beacon, red housing, red LED	–	–	–
	FDS227-WR-C	Voice sounder beacon, red housing, red LED	–	–	–
	FDSB227-WW	Voice sounder beacon base, white housing, white LED	–	–	–
	FDSB227-WR	Voice sounder beacon base, white housing, red LED	–	–	–
	FDSB227-WW-C	Voice sounder beacon base, white housing, white LED	–	–	–
	FDSB227-WR-C	Voice sounder beacon base, white housing, red LED	–	–	–
Base	DB721	Detector base with loop contact	X	X	–
Operation and indication devices	FT2010	↑ Floor repeater terminal (FRT)	X	–	–
	FT2011	↑ Floor repeater display (FRD)	X	–	–
	FDCAI221	Addressable alarm indicator	–	–	–

[1] Voice messages M1, M2 and M4 are supported, M3, M5, M6 and M7 are not. M1 (Evacuation Fire) and M2 (Evacuation Emergency) are selectable in FC360 Panel Configurator. M4 plays test message. See document A6V10725350 for detailed voice message content.

!	*NOTICE*
	Influencing the earth fault monitoring ● For devices on the C-NET with a separate supply, the supply must be electrically isolated.

The complete compatibility list is available in document A6V10882301. See chapter 'Applicable documents [➞ 9]'.

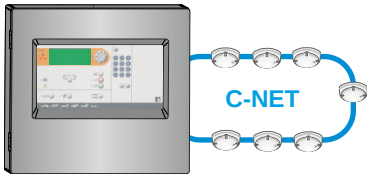
For more details about each connectable device, search the device type in http://siemens.com/bt/download and see the related technical manuals.

6.6.2 C-NET topology

Permissible topology for the C-NET

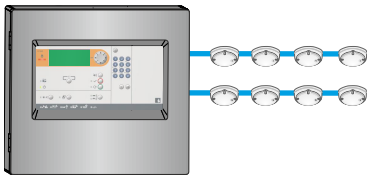
The ↑ C-NET can be wired in the topology shown below. Regardless of the topology (↑ loop, ↑ stub or loop with sub-stub), the C-NET system limits, such as length, cable resistance etc., must be observed.

For FC361-xx, either one loop or two stubs can be connected to the panel's C-NET ↑ detector line. FC362-xx supports connection of two loops or four stubs.



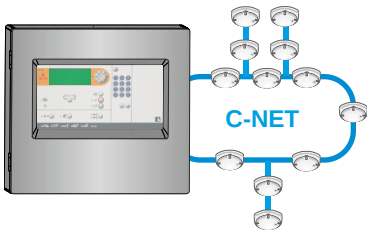
Loop
FC361-xx: 1 loop , max. 126 addressable devices

FC362-xx: 2 loops, max. 126 addressable devices per loop



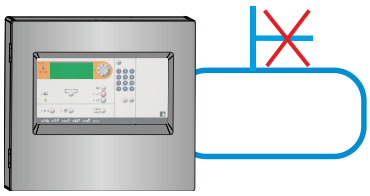
Stub
FC361-xx: 2 stubs, max. 32 addressable devices per stub as per EN 54-2

FC362-xx: 4 stubs, max. 32 addressable devices per stub as per EN 54-2

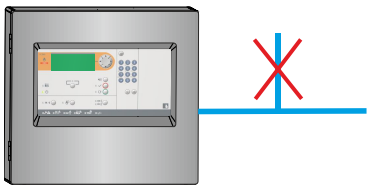


Sub-stubs on loop
A sub-stub must only be connected between two devices or line separators as well as directly to the terminal connection.

Wiring NOT permissible



NOT permissible
Sub-stub on sub-stub of loop



NOT permissible
Sub-stub on a stub

6.6.3 Wiring on C-NET devices

The connection terminals for the loop(s) (↑ detector line, C-NET) are on the mainboard. The position is shown as below.

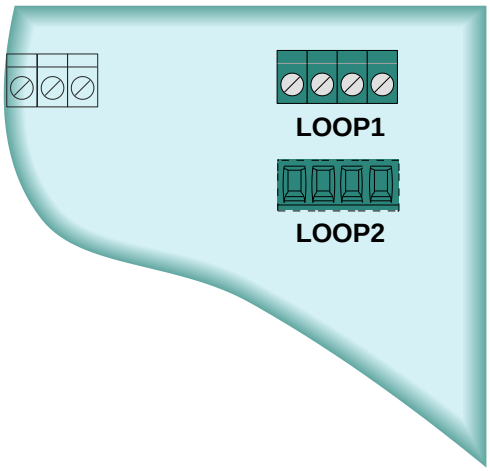
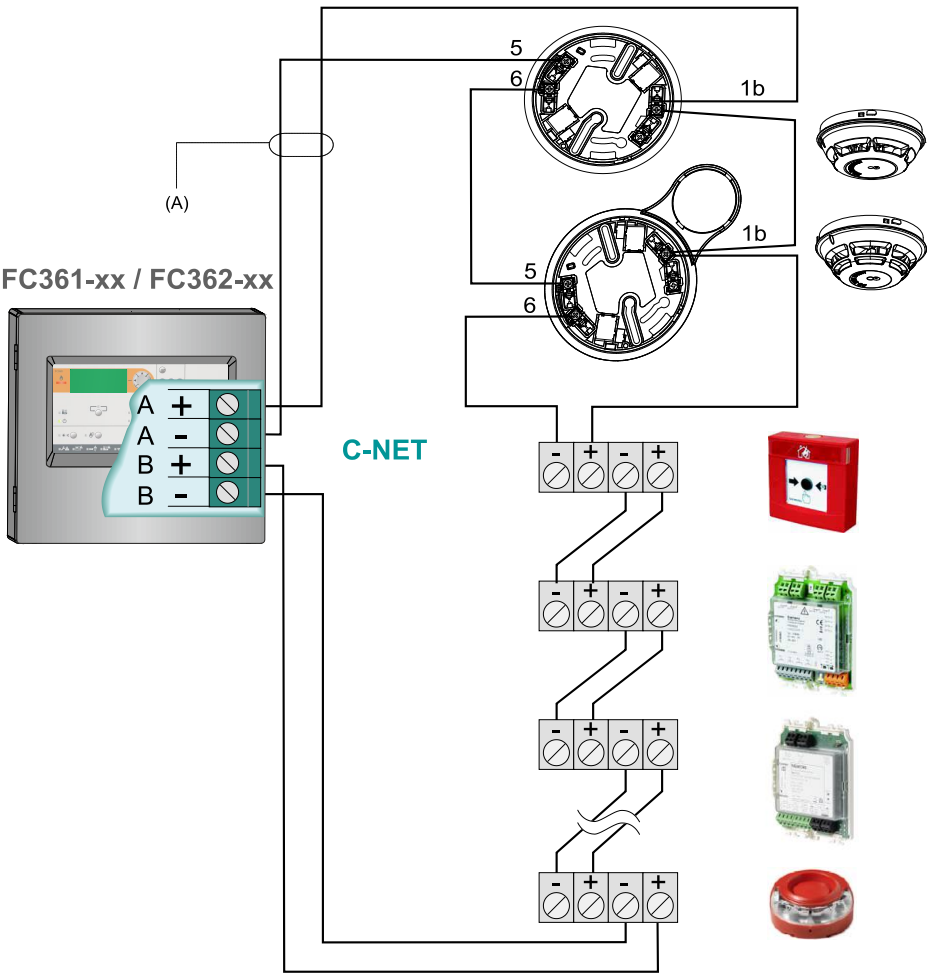


Fig. 9: Position of C-NET detector line terminal

⬚	Panel type specific. Only FC362-xx supports two loops.

Each C-NET device has the terminals for directly connecting the C-NET wire.

Loop wiring



Connection terminal

Detector base and sounder base

- 1b (corresponds to +, input/output)
- 5 (corresponds to input)
- 6 (corresponds to output)

Manual call point

Input/output modules

Zone module

Alarm device with supplementary optical indication

Loop connection of C-NET detector line

Stub wiring

FC361-xx / FC362-xx

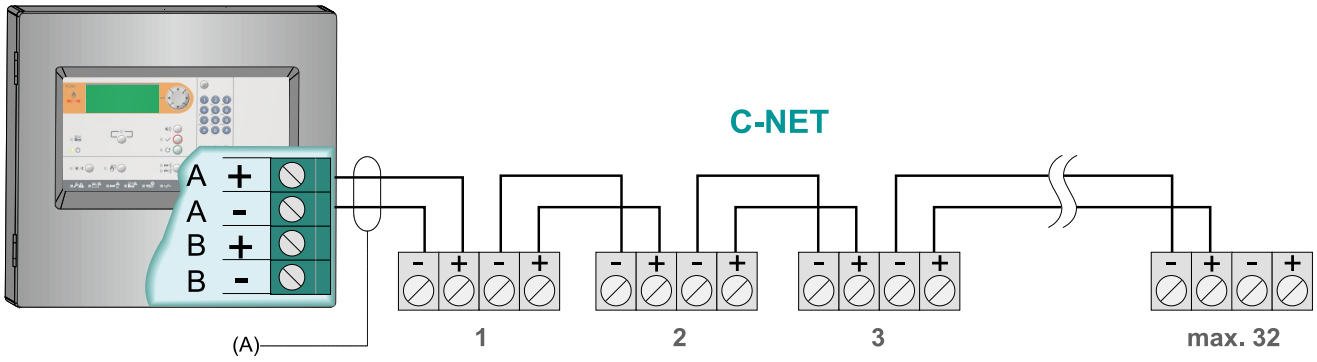


Fig. 10: Stub connection of C-NET detector line

(A) When using shielded connection cables: Cable shielding must be connected to the panel's earth terminal.

Max. 32 devices may be connected to a single stub as per EN 54-2.

6.7 Sounder lines

The mainboard in the panel has two sounder lines. They are monitored from the terminal to the EOL for open and short circuits.

Application:

- Alarm device control (if a sounder line is configured as 'Sounder' in configuration tools)
- Fire control (if a sounder line is configured as 'Fire control' in configuration tools)

Technical:

- Current of each sounder line: max. 0.5 A @ DC 24 V
- Total available current of both sounder lines: max. 0.5 A @ DC 24 V
- Each line must be terminated with an EOL element (Resistor 2.2 kΩ)

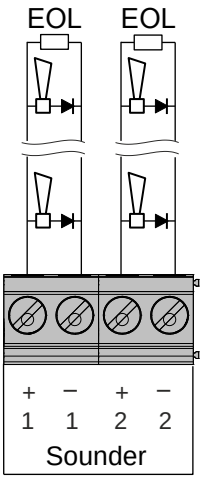


Fig. 11: Connection of sounder line

6.8 Inputs/outputs

The panel mainboard has four configurable inputs/outputs. Each one can be configured as an input or output.

The default settings are:

- IO1/IO2: input
- IO3/IO4: output

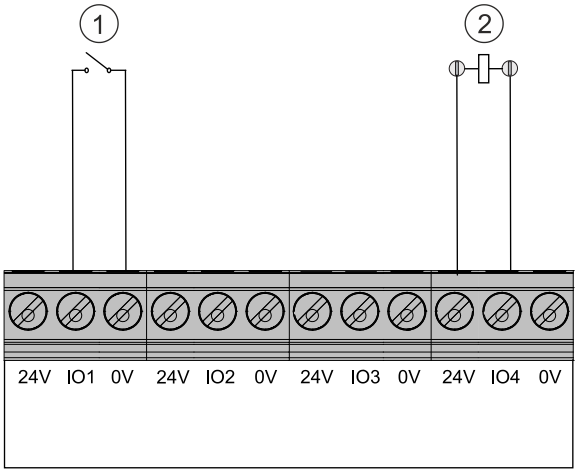


Fig. 12: Connection of configurable IOs

1 Configured as input (Connect to '0V' and IO)

2 Configured as output (Connect to '24V' and IO)

Configured as 'input'

The inputs can be triggered by a potential-free contact. They can be configured as one of the following usages:

- Class Change Usage
- Evacuation usage
- Reset command
- Access level 2
- Disable RT Fire and RT Fault devices
- Activate manned
- Toggle between manned/ unmanned
- Initiate extra PSU fault
- Dialer (RT Fire Device) Fault
- Initiate fire brigade is called
- Acknowledge command
- Voice test Usage
- Door holder off

See document A6V10450595 for detailed description of each usage.

Configured as 'output'

Configuration as 'output' allows the activation of external devices (e.g. relays) with 24 V voltage.
The line is not monitored.

Technical:

- Max. current of each output: 0.1 A
- Total max. current of four outputs (if configured) including AUX power output: 0.2 A.

IO1 is configured as output by default if the country selection is 'NL: With FTO3601 H1 (EVAC field)'.

6.9 Relay

The panel mainboard has three relay outputs used for controlling without line monitoring.

They can be freely configured as:

- Fire Control
- RT Fire
- RT Fault
- Fire alarm

The default settings are:

- Relay 1: RT Fire
- Relay 2: RT Fault
- Relay 3: Fire alarm

Technical:

Current of each relay: max. 2 A @ DC 60 V

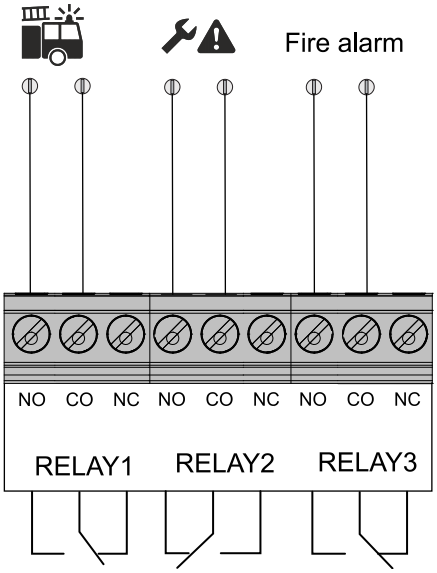


Fig. 13: Connection of relays

Default relay configuration of activating 'RT Fire' and 'RT Fault' outputs can be found in task card 'Other settings' in 'FC360 Panel Configurator'.

6.10 Terminals and switches

The picture below shows the position of terminals and switches.

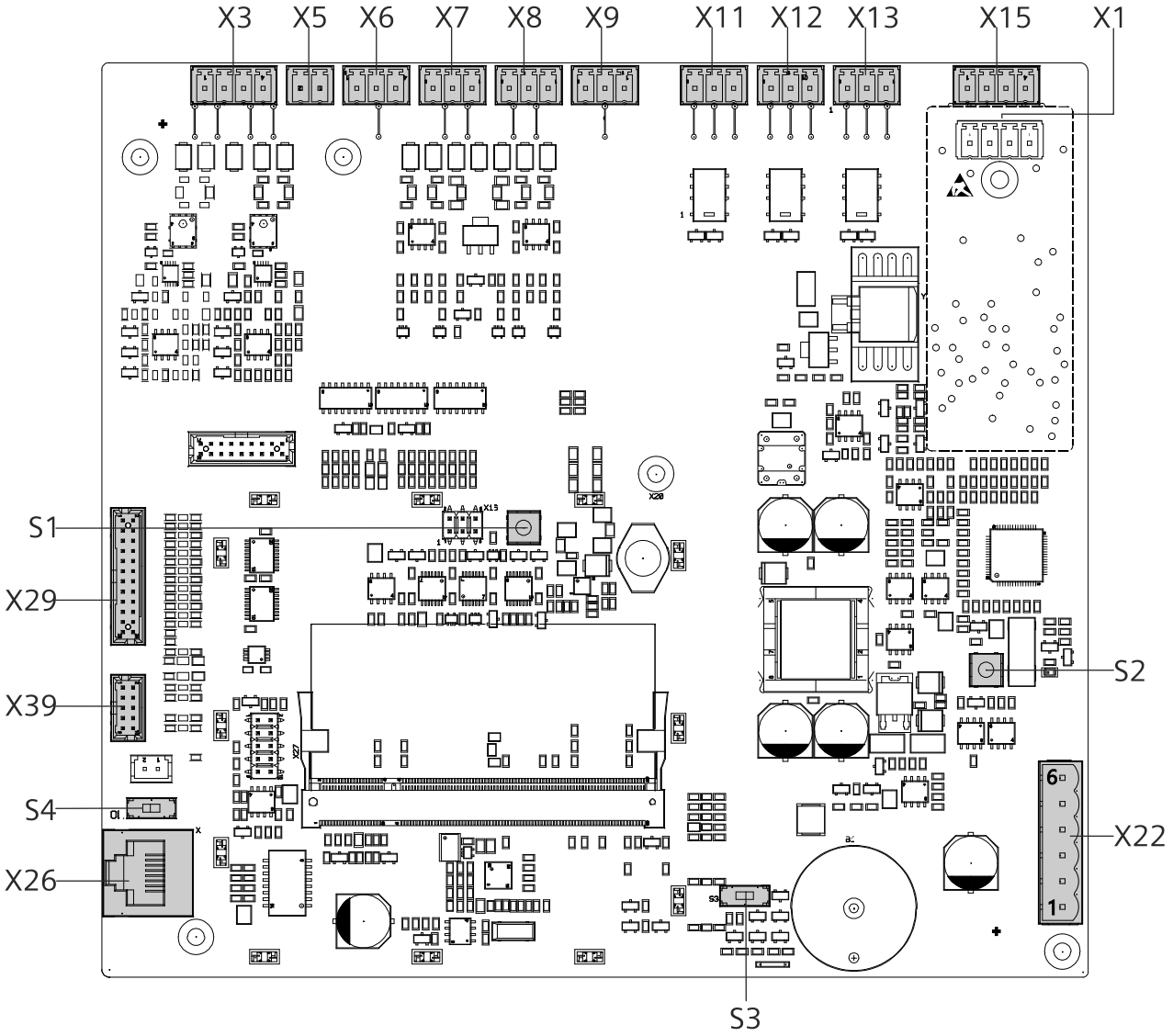


Fig. 14: Position of terminals and switches

Terminals	Description
X1	Loop 2 (↑ C-NET ↑ detector line), only for FC362-xx
X3	Sounder lines
X5	Supply output (24 V)
X6…X9	Configurable inputs/outputs
X11…X13	Relay outputs
X15	Loop 1 (C-NET detector line)
X29	Connection to ↑ PMI board
X39	Connection to output card (4M)
X26	Connection to PC
X22	Connection to power supply

X22 Pin assignment

Pin	Description
1	Message input from the power supply: Battery fault
2	Message input from the power supply: Mains fault
3	Supply input from the power supply (+)
4	Supply input from the power supply (+)
5	Supply input from the power supply (-)
6	Supply input from the power supply (-)

S1: Reset key for panel

Operation	Function
Press one time	Panel shuts down and restarts.

S2: Reset key for detection module (for factory use only)

Operation	Function
Press one time	The C-NET detector lines are powered off and the panel reports a fatal fault of detection module. You can power on the C-NET detector lines and remove the fatal fault by 'Reset detection module' function. See 'Reset detection module [→ 100]'. **NOTICE! Do not use! For factory use only! Otherwise a fatal error will occur!**

S3: Switch for buzzer

Position		Function
	On	Buzzer enabled (default).
	Off	Buzzer disabled. **Note:** Only disable the buzzer for commissioning purpose. Otherwise, keep it enabled to comply with EN 54-2.

S4: Switch for earth fault detection

Position		Function
	On	Earth fault monitoring activated (default).
	Off	Earth fault monitoring deactivated. **Note:** Only deactivate the earth fault detection for commissioning purpose. Otherwise, keep it activated to comply with EN 54-2.

6.11 Accessories

	⚠ WARNING
	Installing accessories without de-energizing the panel Always de-energize the panel before installing any accessory. Otherwise the panel may run into unexpected errors.

6.11.1 Key switch (FCA3601-Z1)/Key switch (Nordic) (FCA3603-Z1)

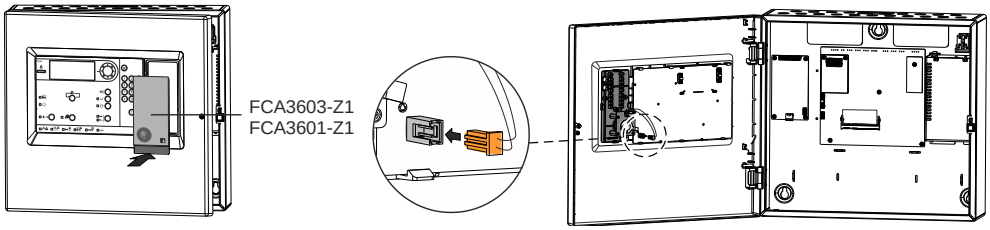


Fig. 15: Installation of key switch

Function:

The key switches directly enable access level 2 operations.

Installation:

Detailed information on installation is available in document A6V10431013. See chapter 'Applicable documents [→ 9]'.

Configuration:

No configuration is required.

6.11.2 Evacuation module (FTO3601-H1) [NL]

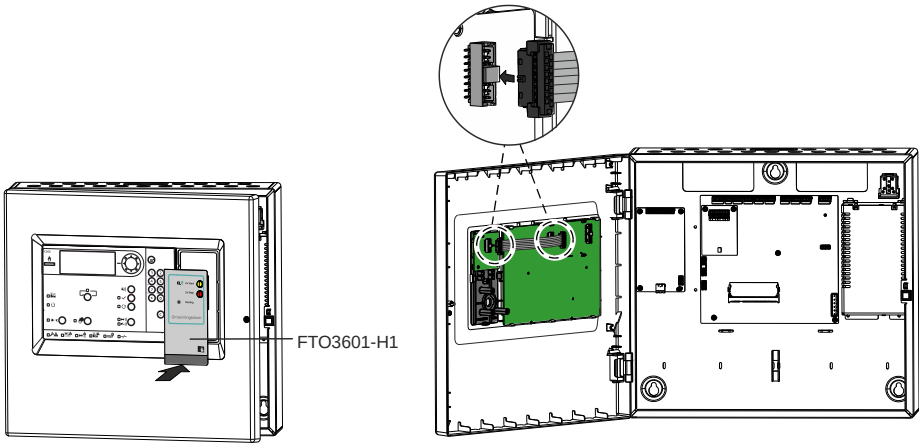


Fig. 16: Installation of evacuation module (NL)

Function:

The evacuation module (NL) provides the Dutch special function. It activates all sounder lines and alarm devices of 'EVAC siren' and 'EVAC voice' types by pressing the <START> button twice and deactivates these devices by pressing the <STOP> button twice. Once activated, alarm devices on sounder lines play the 'Continuous' tone, EVAC voice devices make the sound following the pre-set audio sequence ('Continuous' tone --> voice message), and EVAC siren devices play the tone configured in 'Addressable sounders tone 1' under task card ‘Site’ in FC360 Panel Configurator.

Installation:

Detailed information on installation is available in document A6V10431009. See chapter 'Applicable documents [➙ 9]'.

Configuration:

The evacuation module (NL) is configured by default when starting up with country setting 'NL: With FTO3601 H1 (EVAC field)'.

Operation:

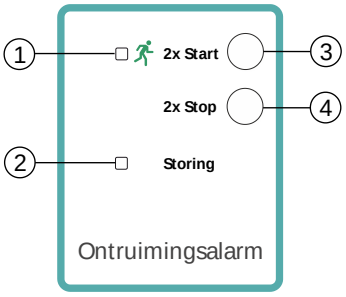


Fig. 17: PMI of evacuation module (NL)

No.	Description	Status	Function
1	LED: EVAC devices active	On	Devices of 'EVAC siren' and 'EVAC voice' types are activated.
2	LED: EVAC fault	Flashing	One or more alarm devices are in fault.
		On	All alarm devices are disabled.
3	Button: 'START'	-	Press twice quickly to start all alarm devices.
4	Button: 'STOP'	-	Press twice quickly to stop all alarm devices.

The LED and button 'Silence/Resound' on panel PMI are deactivated if the evacuation module (NL) is installed and configured.

6.11.3 LED indicator (32 zones) (FTO3603-Z1)

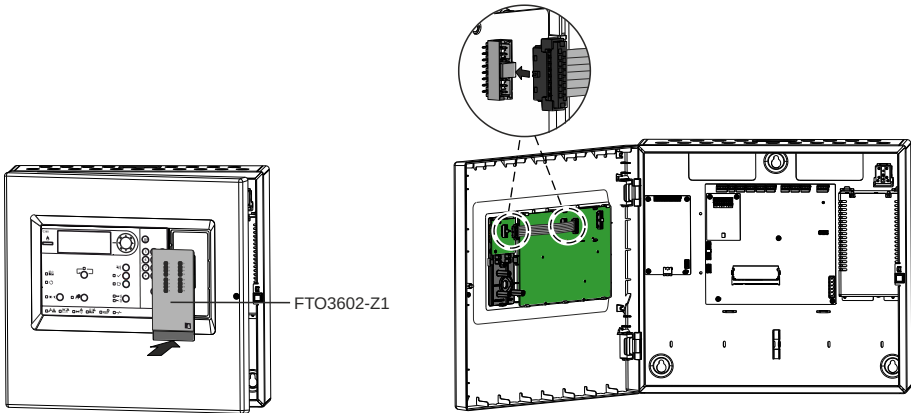


Fig. 18: Installation of LED indicator (32 zones)

Function:

The LED indicator (32 zones) shows the actual alarm status of each zone (max. 32 zones of a panel).

- Flashing LED indicates the first zone in alarm.
- Static LED on indicates other zones in alarm.

Installation:

Detailed information on installation is available in document A6V11777319. See chapter 'Applicable documents [→ 9]'.

Configuration:

No configuration is required.

!	*NOTICE*
	● Before installing the LED indicator (32 zones) on an old panel (FC361-xx), ensure that you've updated the panel software to the latest version. The first 16 LEDs function the same as the replaced LED indicator (16 zones). ● You can also install the LED indicator (32 zones) on FC361-YZ or FC361-YA if the originally-equipped LED indicator (16 zones) needs to be replaced. ● If you have an LED indicator (16 zones) at hand, you can install it on any panel, but don't assign a device to a zone number larger than 16. Otherwise, the panel displays no alarm status if the device is activated.

6.11.4 Output card (4M) (FCA3602-Z1)

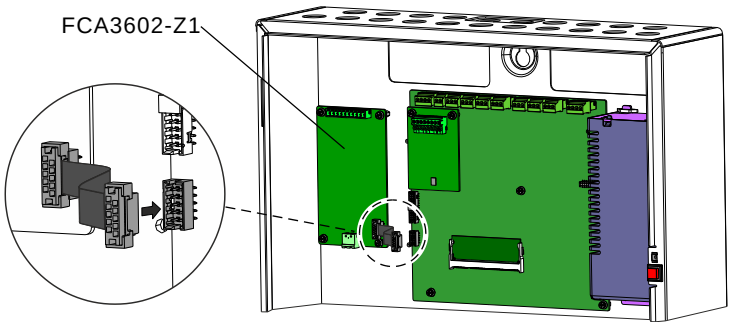


Fig. 19: Installation of output card (4M)

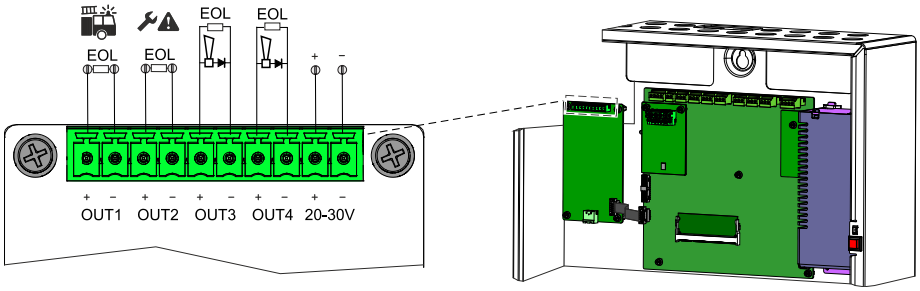


Fig. 20: Connection overview of output card (4M)

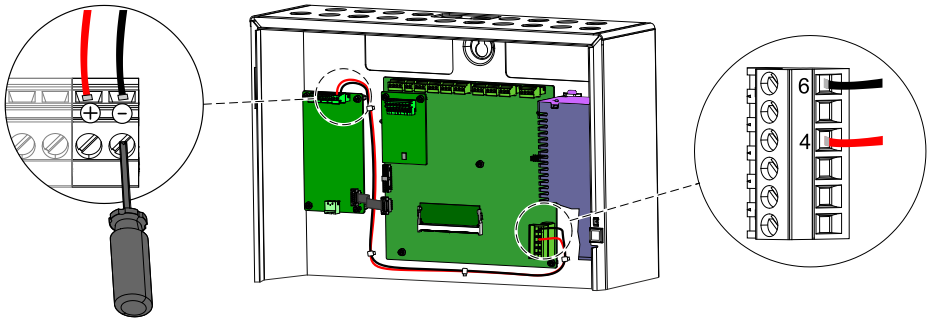


Fig. 21: Connection of internal power

Function:

The output card (4M) has four monitored outputs: OUT1…OUT4.

The default settings for the outputs are:

- OUT1: RT Fire
- OUT2:RT Fault
- OUT3/OUT4: Sounder line

DC 24 V @ 2 A power supply is required. There are two options for power connection:

- Internal connection. See Fig. 'Connection of internal power'.
- External connection. Power is provided via external power supply (FP120-Z1). For connection terminals on the output card (4M), see Fig. 'Connection overview of output card (4M)'.

  NOTICE! Output card (4M) doesn’t support multiple transmission paths in one cable!

In addition to the default monitoring (short and open), the outputs can be configured to monitor the output lines for creeping open and creeping short circuits.

Installation:

	**⚠ WARNING** **Electrical voltage** Before installation with output card (4M): ● Switch off the panel's power supply. ● Disconnect power cable at the terminal '20-30V' on the output card (4M)

Detailed information on installation is available in document A6V10431015. See chapter 'Applicable documents [→ 9]'.

Technical:

- Max. current of each output: 1.0 A @ DC 26 V
- Max. current of total outputs: 2.0 A @ DC 26 V
- Each line must be terminated with EOL element (Resistor 2.2 kΩ/1 W/0.5 %).
- Additional technical details if option creeping open/short is activated:
  - When the output is configured as 'RT Fire', 'Sounder line' or 'Fire control', max. line resistance is 74.3 Ω; min. sounder voltage is DC 16 V.
  - When the output is configured as 'RT Fault', the resistance scope is 350 Ω ~ 2500 Ω.

Configuration:

See 'Adding output card (4M) [→ 119]' and 'Calibrating output card (4M) [→ 105]'.

Checking the line resistance depending on the required current

It must be calculated to ensure the supply of the connected devices is met.
The picture shows the dependence of the line resistance (R Line) in relation to the device voltage (U_{min}), the available output current (I_{max}) and the minimum required current of the connected devices (I Load).

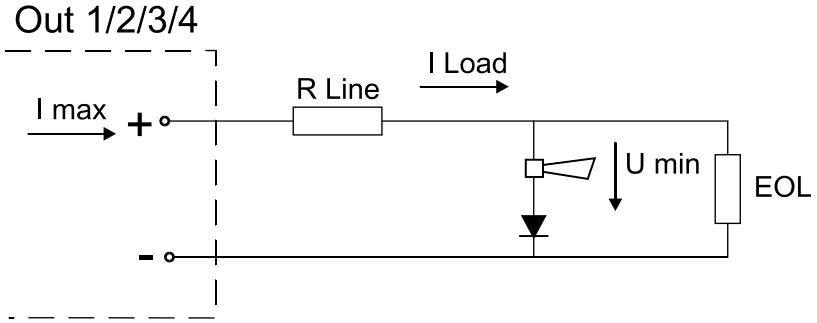


Fig. 22: Connection of the line resistance and EOL

Procedure for determining the maximum available device current (I Load):

1. Determine the line resistance R Line:
   - Configuring. See 'Calibrating output card (4M) [→ 105]'.
   - 'Engineering' > 'Calibrate 4M card line' > 'Output' 1-n > 'Calibrate EOL'
2. Detect the voltage U_{min} as per the device datasheet.
3. Verify if all parameters satisfy the correct operations.

The table below can be used for this check, they display the maximum values. Details must be calculated individually.

Imax	R Line [Ω] @ Umin = 16 V
0.1 A	0…74.3
0.2 A	0…34.1
0.4 A	0…14
0.6 A	0…7.2
0.8 A	0…3.9
1 A	0…1.9

Counteractive measures: Reduction of I Load or R Line

6.11.5 RS232/RS485 module (Optional)

- The RS232 module (isolated) FCA2001-A1 can connect an event printer.
- The RS485 module (isolated) FCA2002-A1 can connect an ESPA interface [NL] and a DMS.

Only one module can be installed on the mainboard simultaneously.

Installation:

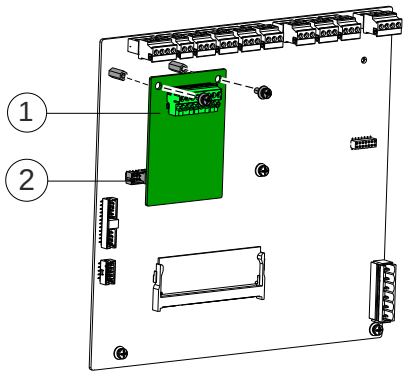


Fig. 23: Installation of RS232/RS485

1 RS232/RS485 module

2 X10, slot for connection of the modules

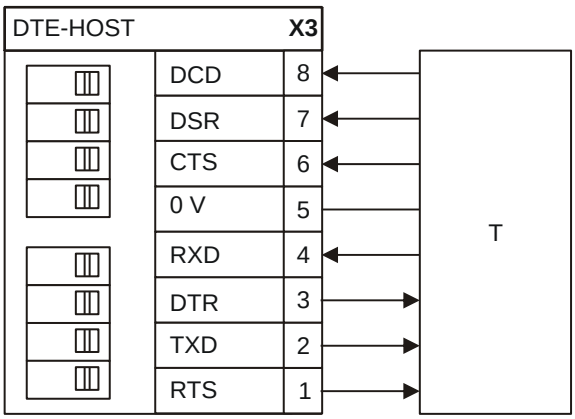
1. Insert the module into slot X10.
2. Secure the module to the mainboard using two screws.
3. Wire up the module with the intended components as per the pin assignment.

PIN assignment:

RS232 module

Pin	Designation	Description
8	← DCD	Data carrier detected
7	← DSR	Data set ready
6	← CTS	Clear to send
5	0 V	Ground
4	← RXD	Received data
3	DTR →	Data terminal ready
2	TXD →	Transmitted data
1	RTS →	Ready to send

Admissible cable cross-section: 0.2…1.5 mm²

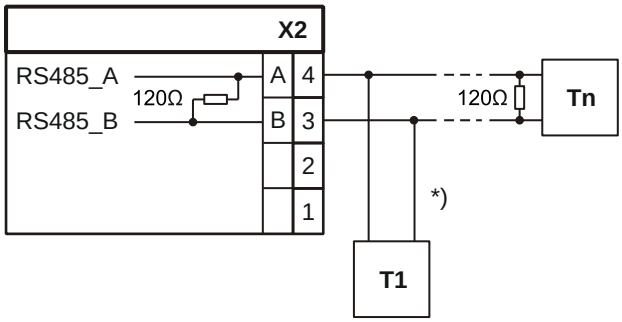


T Participant with RS232 interface

RS485 module

RS485		
PIN	**Designation**	**Description**
4	RS485_A	Line A
3	RS485_B	Line B
2	-	Not connected
1	-	Not connected

Admissible cable cross-section: 0.2…1.5 mm²



T1 First participant

Tn Last participant

*) Stub lines must not exceed 20 m!

- Do not forget about the polarity A, B!
- Up to eight participants are allowed.
- Terminate the line after the last participant with 120 Ω!
- Use shielded cables.

Configuration:

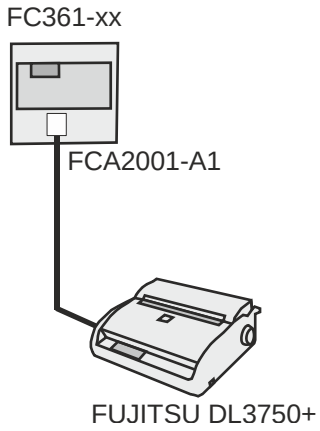
The participant address and communication trouble setting can be configured in ‘FC360 Panel Configurator’. See document A6V10450595 for more details. Other parameter settings are not configurable.

6.11.5.1 Event printer

The RS232 module connects one external printer Fujitsu DL3750+ to the panel.
Detailed information on the printer is available on the CD supplied with the printer.

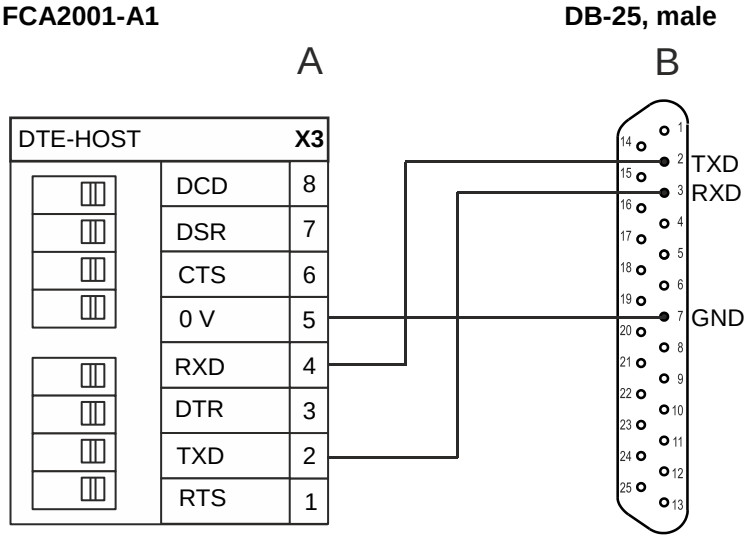
Connection:

Precondition: RS232 module is installed. See chapter 'RS232/RS485 module [→ 52]'.
The picture below shows the connection between the printer and panel.



The connection cable is wired as per the following connection diagram.

- The connection cable has a maximum length of 15 meters.
- Use shielded cables.



A: Screw connection on RS232 module (FCA2001-A1)

B: 25-pole connector (DB-25, male) for Fujitsu DL3750+ printer

Configuration:

No configuration is required.

6.11.5.2 ESPA interface [NL]

The ESPA interface is used for transmitting event messages from the fire detection installation to a pager system. The ESPA interface together with the installation instruction can be obtained from suppliers.

The transmittable event types are as follows:

- Alarm
- Fault
- Technical message
- Activation
- Isolation

Connection and configuration:

See chapter 'RS232/RS485 module (Optional) [→ 53]'.

6.11.5.3 Danger management system (DMS)

A DMS can be connected to the panel via UFP protocol using the physical RS485 module. Depending on DMS configuration and DMS manufacturers, the panel can send alarm and trouble events to the DMS, and the DMS can acknowledge, reset or silence/resound alarm events reported on the panel.

Connection and configuration:

See chapter 'RS232/RS485 module (Optional) [→ 53]'.

!	*NOTICE*
	A personnel must be trained and authorized to operate the panel via DMS system.

6.12 Spare parts

	**⚠ WARNING**
	Installing spare parts without de-energizing the panel Always de-energize the panel before installing any spare part. Otherwise the panel may run into unexpected errors.

6.12.1 Mainboards FCM3601-Z1 and FCM3601-Z2

Mainboards FCM3601-Z1 and FCM3601-Z2 are already mounted in FC361-xx and FC362-xx fire control panels respectively in the factory. They only can be replaced in the event of a repair.

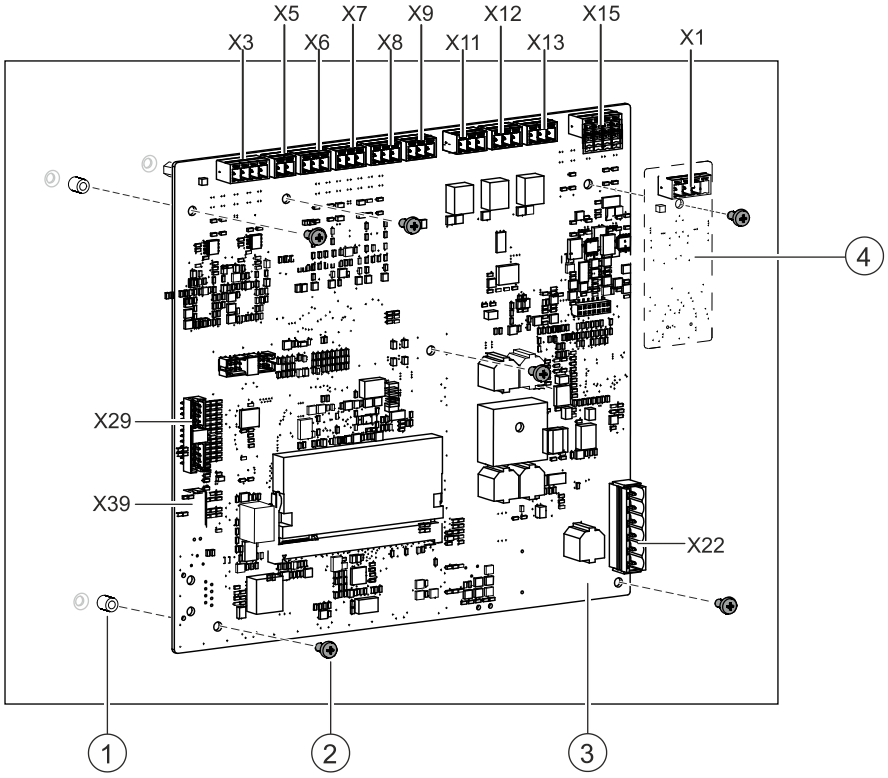


Fig. 24: Installation of mainboard

1	Threaded bolts
2	6 screws
3	Mainboard (FCM3601-Z1 or FCM3601-Z2)
4	Loop 2. Only available on FCM3601-Z2
X22	Connector for power supply
X29	Connector for cable to PMI
X39	Connector for output card (4M)
X3	Connector for sounder line
X5	Connector for Aux. power supply

X6-X9	Connectors for configurable IOs
X11-X13	Connectors for relays
X15	Connector for Loop 1
X1	Connector for Loop 2. Only available on FCM3601-Z2

▷ The current configurations have been backed up to a PC. See Backing up configurations to the PC [➞ 117].

▷ The power supplies (mains and battery) are disconnected.

▷ All connectors are disconnected (label cables before disconnecting them).

▷ RS232/RS485 module is removed if installed.

▷ The mainboard is removed. Refer to document A6V10450593, see chapter 'Applicable documents [➞ 9]'.

1. Mount the mainboard (3) with the 6 screws (2) to the threaded bolts (1) that are embedded in the rear panel.
2. Re-install RS232/RS485 module that may have been removed.
3. Connect all connectors according to the label.
4. Switch on power supply.

   ⇨ The panel starts up.
5. Set country and language, and then press C when an auto configuration message pops up on the screen.
6. Check firmware version and ensure the latest version is installed. It is an integral part of ‘FC360 Desktop Editor 2.0’ which can be downloaded from www.siemens.com/cerberus-fit.
7. Apply configuration to the panel if you have it on PC. See 'Applying configurations to the panel [➞ 117]'.
8. Perform function test. See 'Function test [➞ 113]'.
9. Execute completing work. See 'Completing work [➞ 113]'.

6.12.2 Door incl. PMI FHD3601-Z1

The door incl. PMI FHD3601-Z1 is already mounted in the fire control panel in the factory and only has to be replaced in the event of a repair.

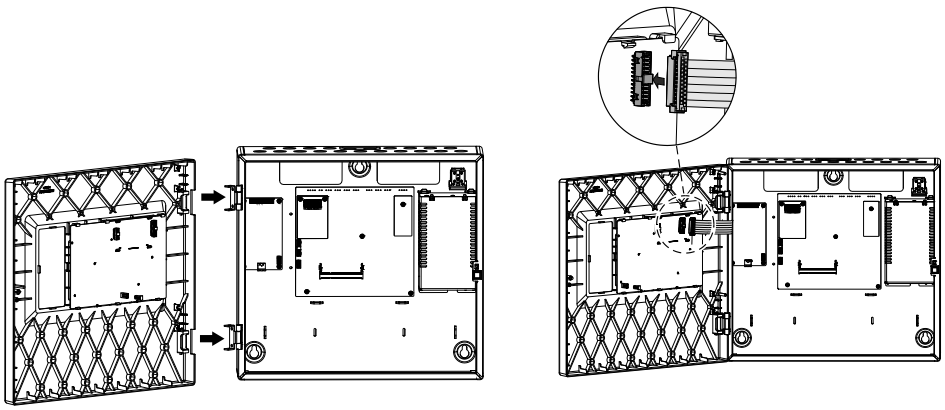


Fig. 25: Installation of door incl. PMI

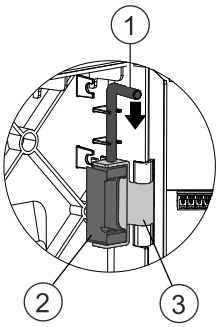


Fig. 26: Details view of installation

1	Bolt
2	Bolt pin
3	Hinge

▷ The power supplies (mains and battery) are disconnected.

▷ Connector to mainboard is disconnected.

▷ The old door incl. PMI is removed. Refer to document A6V10450591, see chapter 'Applicable documents [➙ 9]'.

1. From the right side insert the bolt pin on the door into the hinge (3) on the rear panel, aligning the hole on the bolt pin (2) with the hole on the hinge (3).

2. Secure the door with two bolts (1).

3. Insert the connector to the mainboard into the PCB board on the door.

The panel recovers the previous status after the new door incl. PMI is installed.

7 Function overview

7.1 Access levels

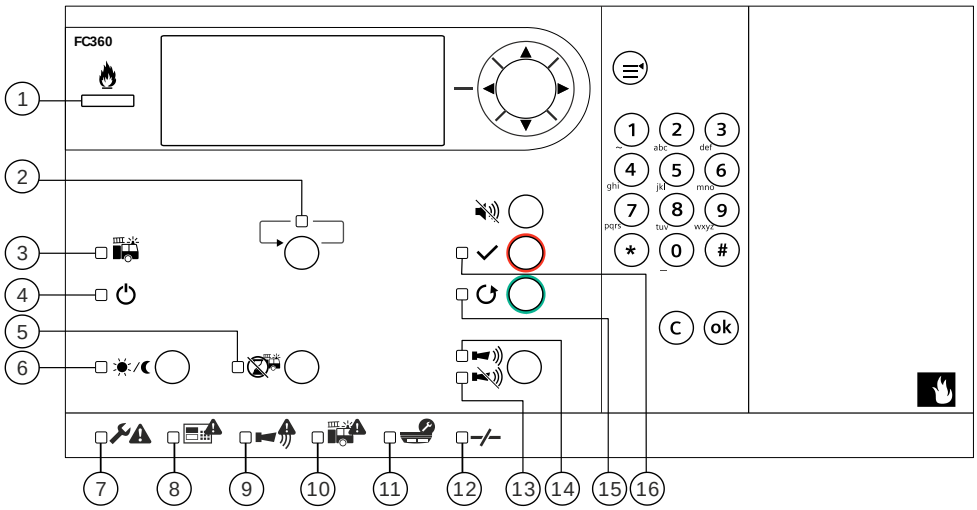
The panel is protected against unauthorized operation by access levels.

The authorization passwords for access level 2, access level 3 and access level 3.1 can be changed either directly on panel or with 'FC360 Panel Configurator'.

Access level	Personnel	Password (Default)	Function
1	Anybody	No	• View pending events.
2	Authorized user	1234 or key switch or input	Operate the system, e.g. • Acknowledge, operate and reset events. • Disable/enable ↑ zone, device, alarm devices, ↑ RT alarm, and RT fault. • Perform detection test, lamp test[1] and voice test • View event log and compensation value log. • Automatic logout after a period of no operation. • Access code is not necessary if a key switch is used. • Access code is not necessary if the input configured as ‘access level 2’ is activated.
3	Commissioning engineer	9999	• Configure system. • Automatic logout after a period of no operation.
3.1		9999	• Restart a ↑ detector line.
4		66666666	• Reset alarm counter.

[1] This function is available directly under Main menu for access level 1 if checkbox 'Lamp test activation possible at access level 1' is checked under task card 'Other settings' in 'FC360 Panel Configurator'.

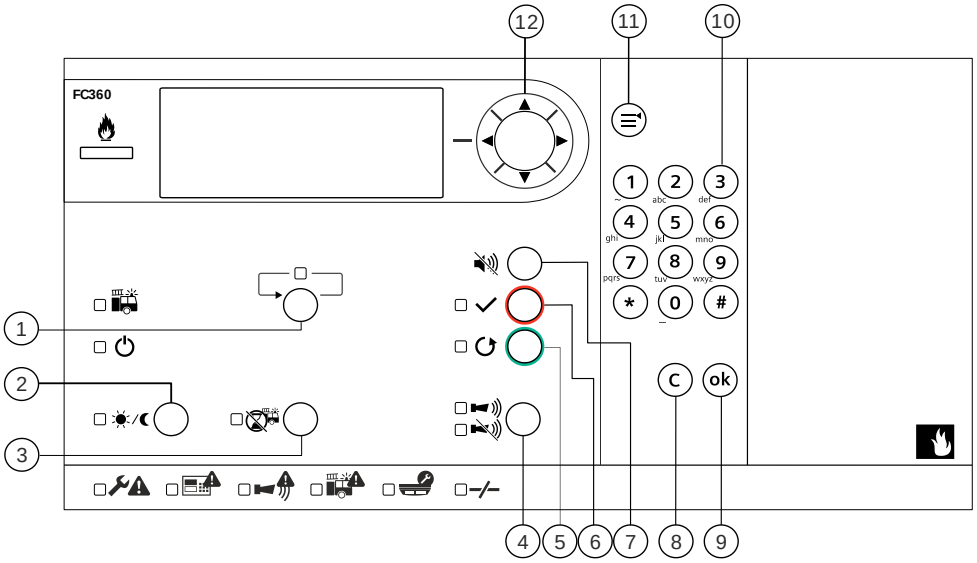
7.2 LED indicators



No.	Description	Color	Status	Function
1	Alarm	Red	On	The panel is in 'Alarm' condition.
2	More alarm	Red	Flashing	More than two alarm events happen.
3	Fire brigade	Red	On	Depends on the configuration: Option 1: Fire brigade was called. Option 2: RT fire output relay is activated. Call the fire brigade.
4	System on	Green	On	The panel is in operation.
5	Alarm delay off	Yellow	Flashing	The panel is in investigation time of AVC process.
6	Manned or Unmanned	Yellow	On	The panel is in 'Manned' operation.
			Off	The panel is in 'Unmanned' operation.
7	General fault	Yellow	On	Indicates any fault event in the system.
8	System fault	Yellow	On	Indicates CPU failure.
9	Sounder line and alarm device fault	Yellow	On	All alarm devices are disabled.
			Flashing	• One or more alarm devices are in fault. • Sounder circuits are in fault.
10	RT fire fault	Yellow	On	All RT fire devices are disabled.
			Flashing	One or more RT fire devices are in fault.
11	Test condition	Yellow	On	Indicates one or more devices are in test mode.
12	Isolation	Yellow	On	Indicates there are isolation events.

No.	Description	Color	Status	Function
13	Silence	Red	On	At least one alarm device is silenced.
14	Resound	Red	On	At least one alarm device is activated.
15	Reset	Yellow	Flashing	There are acknowledged events awaiting reset.
16	Acknowledge	Yellow	Flashing	• There are alarm/fault events awaiting acknowledgment. • Devices of Technical and/or Tech. latched types are activated.

7.3 Keys



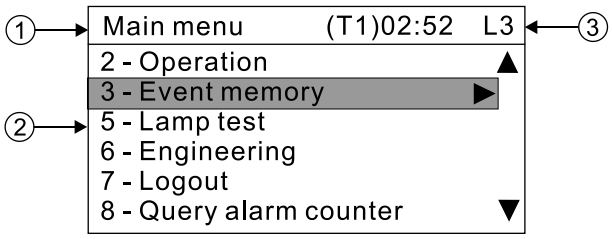
No.	Description	Function
1	More Alarm	Moves to the next 'fire alarm' event when the 'More Alarm' LED is flashing.
2	Manned/Unmanned[1]	Switches between 'Manned'/'Unmanned'.
3	Alarm Delay Off[1]	Stops the 'Alarm delay time'. The panel generates directly a global alarm.
4	Silence[1]	Silences alarm devices in the event of alarm.
	Resound[1]	• Manually re-activates alarm devices during alarming. • If configured, activation of all alarm devices.
5	Reset[1]	Resets the acknowledged events.
6	Acknowledge	• Acknowledges all unacknowledged events (alarm events and Tech. latched events) in system. • Starts the investigation time T2 (AVC). • Silences the buzzer if checkbox 'Acknowledge used as silence' is checked in task card 'Other settings' in FC360 Panel Configurator. • Silences alarm devices until a new event occurs (if programmed).
7	Silence buzzer	Silences the buzzer.

No.	Description	Function
8	Cancel	● In view mode: Returns to the previous entry. ● In input/edit mode: Cancels input and return to the previous entry
9	Ok	● In view mode: Jumps to selected sub menu or confirm the selection. ● In input/edit mode: Confirms the input and returns to the previous entry.
10	Keypad	● In view mode: Directly jumps to the selected sub menu. ● In input/edit mode: Enters digits.
11	Menu	Displays the main menu.
12	Navigation	▲: Scrolls up. ▼: Scrolls down. ◄: In view mode: Returns to the previous entry; In input/edit mode: Deletes last input; Edit time: Selects previous value. ►: In view mode: Jumps to sub menu. In input/edit mode: Confirms the input and returns to the previous entry.

[1] Only available in access level 2 and access level 3.

7.4 LCD

The LCD is divided into 3 areas.



1: Title

This line displays the title of the view window.

2: **View** window

This window displays the menu list, event list or its property.

'▼': Indicates that there are other items below the bottom item. (The bottom item is NOT the last item.)

'▲': Indicates that there are other items above the top item. (The top item is NOT the first item.)

'►': Indicates that there are further items to be extended to.

3: AVC timer/system time and access level

Normal status without fire alarm:

- Access level
- System time

Fire alarm:

- Countdown of the AVC timer T1 and T2
- Access level

LCD indication priority

Events	Priority (High [1] → Low [7])
Alarm	1
Operation at access level 2 and access level 3	2
Fault	3
Technical	4
Isolation	5
Test	6
Information	7

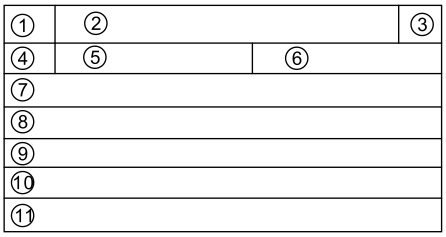
7.5 Operating menu overview

Main menu	Sub menu	Description	Access level	Section/Link
1. System status	1 - Alarms	Displays current first and last alarm.	1, 2, 3	Section 8.4.1 [→ 72]
	2 - Faults	Displays current faults events.	1, 2, 3	
	3 - Technical	Displays current technical messages.	1, 2, 3	
	4 - Isolations	Displays current isolation events.	1, 2, 3	
	5 - Test	Displays current test events.	1, 2, 3	
	6 - Information	Displays current information.	1, 2, 3	
2. Operation	1 - Isolation	Disables/enables the following: ● Zones and devices. ● All alarm devices ● RT fire and RT fault ● Fire controls ● Control devices ● Door holder devices	2, 3	Section 8.5.1 [→ 75]
	2 - Test	● Sets a zone or device to the Test mode. ● Tests LEDs, buzzers and LCD screen. ● Sets voice alarm devices to the 'Voice test' mode.	2, 3	Section 8.5.2 [→ 77]
3. Event memory	1 - Event log	Queries history events.	2, 3	Section 8.5.3.1 [→ 81]
	2 - Test log	Deletes test logs.	3	Section 8.6.1 [→ 86]
	3 - Compensation Value	Views compensation values of smoke detectors OP720, OH720, OOH740, OOHC740, OP360 and OH360.	2, 3	Section 8.5.3.2 [→ 83]
4. Login	-	Logs into a higher access level.	1, 2	Section 8.4.2 [→ 73]
5. Lamp test	-	Tests LEDs, buzzers and LCD screen. This menu is available under access level 1 only if checkbox 'Lamp test activation possible at access level 1' is checked under task card 'Other settings' in 'FC360 Panel Configurator'.	1, 2, 3	Section 8.5.2.2 [→ 79]
6. Engineering	1 -Set date & time	Sets system date and time.	3	Section 9.1 [→ 87]
	2 - Edit name / password	Edits customer text and changes password.	3	Section 9.2 [→ 88] Section 9.3 [→ 89]
	3 - Detector line	● Restarts and powers off a ↑ detector line ● Maintains a detector line, including device removal, device replacement, test and read-in.	3	Section 9.4 [→ 90]

Main menu	Sub menu	Description	Access level	Section/Link
		● Configures the system automatically with default settings. ● Views zone/device/element configurations and devices that have the typeA function enabled. ● Locates an element (single device) or devices in a zone or detector line. ● Calibrates C-NET detector line and views calibration reports.		
	4 - Calibrate 4M card line	Calibrates the output card (4M) to get the resistance.	3	Section 9.5 [→ 105]
	5 - Alarm counter reset	Sets the alarm counter to ‘0’.	3	Section 9.6 [→ 106]
	6 - Factory reset	Resets the system to factory settings.	3	Section 9.7 [→ 106]
7. Logout	-	Logs out from the current access level.	2, 3	Section 8.5.4 [→ 85]
8. Query alarm counter	-	Queries alarm counters.	1, 2, 3	Section 8.4.3 [→ 74]
9. About	-	Displays software versions of the fire control panel, configuration tool and output card (4M).	1, 2, 3	Section 8.4.4 [→ 74]

7.6 Event views

FC360 fire control panel displays different event views with different formats. The picture below is the event views format:



No.	Description	Samples
1	Serial number of the event and the total number of the events	1/1
2	Event type	Alarms
3	Access level	L3
4	Series number of the event	001
5	Detailed event type	ManualAlarm
6	Device number	Dev. 3
7	Optional, Customer text of device, line number, or 'Fire Control Panel'	Meeting room 808
8	Optional: Customer text of zone	8th Floor
9	Zone number	Zone 1
10	Date and time	12-08-2020 08:08:08
11	Optional: Device technical information (Line number + Logical number + Device ID)	1: Add 003/004A08B0

Device ID is only visible for access level 3 or above. It is hidden in access levels 1 and 2.

7.6.1 Sample of Alarm view

1/1 ①	Alarms ②	L3③
001④	Manual alarm⑤	Dev. 3⑥
Meeting room 808⑦		
8th floor⑧		
Zone 1⑨		
12-09-2015 08:08:08⑩		
1: Add 003/ 004A08B0⑪		

7.6.2 Sample of Fault view

1/1 ①	Faults②	L3 ③
001 ④	Manual alarm⑤	Dev. 3 ⑥
Meeting room 808 ⑦		
8th floor ⑧		
Zone 1 ⑨		
12-09-2015 08:08:08 ⑩		
1: Add 003/ 004A08B0 ⑪		

7.6.3 Sample of Isolation view

1/1 ①	Isolations②	L3 ③
001 ④	Manual alarm⑤	Zone 3 ⑥
Meeting room 808 ⑦		
8th floor ⑧		
Zone 1 ⑨		
12-09-2015 08:08:08 ⑩		

8 Operation

This chapter describes detailed operation workflow on important fire detection system functions.

8.1 Alarm procedure in unmanned mode

- Display provides fire information. See chapter 'Event views [→ 66]'.
- Immediate activation of panel states 'Any fire' and 'Global alarm'.
- If configured: RT fire is activated by 'Global alarm'.

1/1 Alarms	L2
001 Auto. ALARM Dev. 3	
Meeting room 808	
8th Floor	
Zone 1	
12-09-2020 08:08:08	
1:Addr 003/004A08B0	

Press <Acknowledge>  to confirm attendance.

(Access level 2 password is required.)

→ Buzzer is off.

1/1 Alarms	L2
001 Auto. ALARM Dev. 3	
Meeting room 808	
8th Floor	
Zone 1	
12-09-2020 08:08:08	
1:Addr 003/004A08B0	

Optional: Press <Silence/Resound>  to silence/resound all alarm devices.

1/1 Alarms	L2
001 Auto. ALARM Dev. 3	
Meeting room 808	
8th Floor	
Zone 1	
12-09-2020 08:08:08	
1:Addr 003/004A08B0	

Read the alarm event information on the LCD and go to the indicated fire location to verify the incident.

Examine the fire location and decide whether it is a MAJOR INCIDENT or MINOR INCIDENT.

MAJOR INCIDENT: A real fire emergency

1/1 Alarms	L2
001 Auto. ALARM Dev. 3 Meeting room 808 8th Floor Zone 1 12-09-2020 08:08:08 1:Addr 003/004A08B0	

Ensure the fire brigade is called.

Call fire brigade if no ↑ remote transmission is implemented!

If remote transmission to fire brigade is implemented, the ‘Fire Brigade’ LED  indicates 'RT fire' status. See chapter 'LED indicators [➙ 60]'.

MINOR INCIDENT: No fire alarm

16-06-2020 18:18:20	L1
SIEMENS King Garden Hotel +41 41 8787345	

Press <Reset>  to return into normal operation.

(Access level 2 password is required.)

If fire brigade was called automatically (i.e. RT fire), inform the fire brigade about the actual situation.

The fire alarm reoccurs if any device remains in fire condition.

8.2 Alarm procedure in manned mode

- Display provides fire information. See chapter 'Event views [→ 66]'.
- Immediate activation of panel states 'Any fire'.

In the event of an automatic fire alarm in ↑ manned mode, the attendance check countdown T1 starts if AVC is on.

The Alarm Verification Concept (AVC) for automatic detectors can be deactivated for special applications. In this case, the alarm procedure follows the description in chapter 'Alarm procedure in unmanned mode' (i.e. no attendance check T1 and no investigation time T2).

1/1 Alarms (T1)02:57 L2
001 Auto. ALARM Dev. 3 Meeting room 808 8th Floor Zone 1 12-09-2020 08:08:08 1:Addr 003/004A08B0

Press <Acknowledge>  to confirm attendance check.

(Access level 2 password is required.)

→ Buzzer is off.

1/1 Alarms (T2)04:59 L2
001 Auto. ALARM Dev. 3 Meeting room 808 8th Floor Zone 1 12-09-2020 08:08:08 1:Addr 003/004A08B0

The investigation time T2 starts.

Optional: Press <Silence/Resound>  to silence/resound all alarm devices.

1/1 Alarms (T2)04:59 L2
001 Auto. ALARM Dev. 3 Meeting room 808 8th Floor Zone 1 12-09-2020 08:08:08 1:Addr 003/004A08B0

Read the alarm event information on the LCD and go to the indicated fire location.

During the investigation time, examine the fire location and decide whether it is a **MAJOR INCIDENT** or **MINOR INCIDENT**.

MAJOR INCIDENT: A real fire emergency

1/1 Alarms	L2
001 Auto. ALARM Dev. 3 Meeting room 808 8th Floor Zone 1 12-09-2020 08:08:08 1:Addr 003/004A08B0	

Activate the nearest manual call point

OR

Press <Alarm Delay Off>  to cancel the investigation time and activate the panel state 'Global alarm' immediately.

(Access level 2 password is required.)

→ If configured, RT fire is activated by 'Global alarm'.

MINOR INCIDENT: No fire alarm

16-06-2020 18:18:20	L1
SIEMENS King Garden Hotel +41 41 8787345	

Press <Reset>  to return into normal operation.

(Access level 2 password is required.)

Check  and ensure that the fire brigade was not called accidently.

The fire alarm reoccurs if any device remains in fire condition.

8.3 Procedure in case of fault

A fault event is displayed on LCD if a fault occurs.

As an option, the configured outputs can be activated (example, RT fault).

1. Press  on the ↑ PMI.
2. Read message/fault location on the display.
3. Go to the fault location.
4. Eliminate the cause of the fault.

A list of possible faults and solutions can be found in Chapter 'Troubleshooting [→ 124]'. Contact your service provider if the fault cannot be eliminated.

The fault is reported again if it is acknowledged but not eliminated.

8.4 Operations under access level 1

Functions in the sub-chapters are available without a password.

8.4.1 Viewing system status

The fire detection system evaluates received signals and indicates them as events.
There are the following event categories:

- Alarm
- Fault
- Technical
- Isolation
- Test
- Information

The 'System status' function is used to display all pending events.

1. Press  on the keypad.
   ⇨ The 'System status' window is open.
2. Select 'System status' and press ►.
   ⇨ The 'System status' window is open. All event types are listed with numbers of pending events.
3. Select one event type and press ►.

⇨ All pending events of the selected type are indicated. You can check each of the events by pressing ▼/▲.

The picture below shows the details of an event as an example.

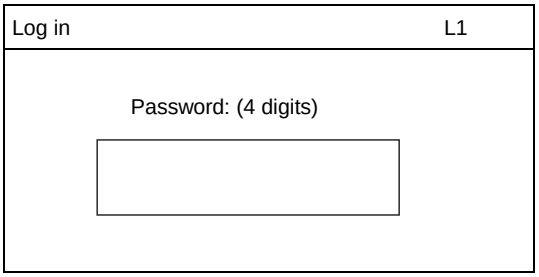
4/4 Faults	L1
Short	
Monitored output	
Output card 4M	
Circuit 02	
03-01-2015 18:08:08	

8.4.2 Logging into a higher access level

The 'Login' function is used to access a higher level using a password.

The password entry window displays automatically if you require a higher access level operation on the ↑ PMI.

The picture below shows the password entry window.



1. Press on the keypad.
   ⇨ The 'Main menu' window is open.
2. Select 'Login' and press ►.
   ⇨ The password entry window is open.
3. Enter password and confirm with ok.

⇨ The corresponding access level is enabled.

⇨ The main menu with corresponding commands opens.

For example, access level 1 can log into access level 2 or access level 3 with the appropriate password; access level 2 can log into access level 3 with the appropriate password.

8.4.3 Querying alarm counter

The panel counts all alarm events. The total number of alarm events is displayed by querying alarm counter.

1. Press  on the keypad.
   ⇨ The 'Main menu' window is open.
2. Select 'Query alarm counter' and press ►.

⇨ The total number of alarm events is indicated.

The picture below shows the alarm counter.

Query alarm counter	L1
Alarm count: 10	

8.4.4 About

The 'About' function displays software version for:

- Panel
- FC360 Panel Configurator
- Output card (4M)[1]

[1] If installed

1. Press  on the keypad.
   ⇨ The 'Main menu' window is open.
2. Select 'About' and press ►.

⇨ The following information is indicated.

About	L1
	FC362
IP :	192.168.251.100
FW version:	02.00.09(39)
Config. version:	02.00.11(25)

8.5 Operations under access level 2

These functions are available with an access level 2 password.

8.5.1 Isolation

The ↑ 'Isolation' function is used to enable/disable zone, device, alarm devices, RT outputs, fire controls, control devices and door holder devices.

In certain situations, e.g. maintenance or decoration etc., you can disable parts of a building to avoid ↑ false alarms or fault messages. The 'Isolation' LED is on if the part of the building is disabled.

⚠ WARNING

Disabling system parts render it impossible to acquire and process alarms or faults!

Fire may spread unhindered.

- Deploy staff to monitor the disabled area.
- You must enable the disabled area as soon as possible.
- Exit 'Test' mode if a zone/device is set to 'Test' mode before isolation. Otherwise, the LCD still displays test events in fire alarm situations.

The procedure below indicates steps to disable a zone as an example. Refer to the procedure to enable/disable devices, alarm devices, ↑ RT outputs, fire controls, control devices and door holder devices.

NOTICE

When disabling a device, note the following:

- You cannot disable an onboard relay if it is configured as 'Fire alarm'.
- You cannot disable devices of 'Technical' type if the related input is used as 'Voice test' or 'Door holder off'.

To disable a zone

1. Press  on the keypad. The 'Main menu' window is open.

Main menu	L2
1 - System status	
2 - Operation	
3 - Event memory	
4 - Login	
5 - Lamp test	
7 - Logout	

2. Select 'Operation' and press ►. The 'Operation' window is open.

Operation	L2
1 - Isolation	
2 - Test	

3. Select 'Isolation' and press ► .The 'Isolation' window is open.

Isolation	L2
1 - Detection	
2 - Sounders	
3 - RT outputs	
4 - Fire control	
5 - Control dev.	
6 - Door holder device	

4. Select 'Detection' and press ► . The 'Detection' window is open.

Isolation- Detection	L2
1 - Zone	
2 - Device	

5. Select 'Zone' and press ► . A list of all zones is displayed.

Detection - Zone	L2
01 Zone 1 (ON)	
02 Zone 2 (ON)	
T1 Zone T1 (ON)	

6. Select the desired zone and press ► . A confirmation dialog window is open.

Do you want to disable device?
Yes (OK) or No (C)

7. Press ok to confirm. The selected zone is disabled and the 'Isolation' LED is on.

Refer to steps 1~6 to enable a zone.

8.5.2 Test

8.5.2.1 Detection test

This function sets a zone or device to 'Test' mode. The panel provides two test modes:

- Silent: All alarm devices remain silent in fire alarm condition during testing. Only the LCD screen displays the test event.
- Audible: All alarm devices sound for a period of 10 seconds in fire alarm condition during testing. The LCD screen displays the test event.

The procedure below indicates how to set a zone to 'Test' mode as an example.

To set a zone to 'Test' mode

1. Press  on the keypad. The 'Main menu' window is open.

Main menu	L2
1 - System status	
2 - Operation	
3 - Event memory	
4 - Login	
5 - Lamp test	
7 - Logout	

2. Select 'Operation' and press ►. The 'Operation' window is open.

Operation	L2
1 - Isolation	
2 - Test	

3. Select 'Test' and press ►. The 'Test' window is open.

Test	L2
1 - Detection	
2 - Lamp test	
3 - Voice test	

4. Select 'Detection' and press ►. The 'Detection' window is open.

Test - Detection	L2
1 - Silent	
2 - Audible	

5. Select an item, e.g. 'Silent', and press ►. A list of all zones is displayed.

Detection - Silent	L2
01 Zone 1(OFF)	
02 Zone 2(OFF)	
T1 Zone T1(OFF)	

6. Select the desired zone and press ►. 'Entire zone' and a list of all devices under the zone are displayed.

Detection - Silent	L2
Entire zone (OFF)	
001 Manual alarm 1(OFF)	
002 Manual alarm 2(OFF)	
003 Manual alarm 3(OFF)	

7. Select e.g. 'Entire zone' and press ►. A confirmation dialog window is open.

(Warning):All programmed outputs are activated.
Do you want to activate zone test?
Yes (OK) or No (C)

8. Press ok. The selected zone is set to 'Test' mode and the 'Test' LED is on.
9. You can start testing devices installed in the zone.

Refer to the steps above to exit the 'Test' mode after testing is finished. Before exiting the 'Test' mode, ensure no element under a zone/device is activated.

If a zone/device is disabled after it is set to 'Test' mode, the zone/device is still under 'Test' mode after it is enabled. The LCD still displays test events in fire alarm situations. Exit 'Test' mode to normalize the zone/device function in fire alarm situations.

8.5.2.2 Lamp test

The lamp test checks the following functions:

- LEDs
- Buzzer
- LCD

This function is available directly under Main menu for access level 1 if checkbox 'Lamp test activation possible at access level 1' is checked under task card 'Other settings' in 'FC360 Panel Configurator'.

1. Press on the keypad. The 'Main menu' window is open.

Main menu	L2
1 - System status	
2 - Operation	
3 - Event memory	
4 - Login	
5 - Lamp test	
7 - Logout	

2. Select 'Operation' and press ►. The 'Operation' window is open.

Operation	L2
1 - Isolation	
2 - Test	

3. Select 'Test' and press ►. The 'Test' window is open.

Test	L2
1 - Detection	
2 - Lamp test	
3 - Voice test	

4. Select 'Lamp test ' and press ►. A confirmation dialog window is open.

Do you want to activate lamp test?
Yes (OK) or No (C)

5. Press ok to confirm. Test starts:

- LEDs: on 10 s
- Buzzer: on 10 s
- LCD: on 5 s, then off

The panel returns to the previous status after finishing check.

8.5.2.3 Voice test

This function checks if voice alarm devices play the voice test message (M4) in a specific language order defined under task card ‘Site’ in 'FC360 Panel Configurator'.

You can activate/deactivate voice test locally in the fire control panel via menu operation, or remotely in the configuration tool via input modules, I/O modules or digital inputs on the mainboard IO (see document A6V10450595 for more details).

If you want to deactivate voice test after you’ve activated it, the audio doesn’t stop at once unless the voice test sequence is completed. However, if a real fire event occurs during a voice test, the message with a higher priority is played automatically.

To activate/deactivate voice test in the fire control panel

1. Press  on the keypad. The 'Main menu' window is open.

Main menu	L2
1 - System status	
2 - Operation	
3 - Event memory	
4 - Login	
5 - Lamp test	
7 - Logout	

2. Select 'Operation' and press ►. The 'Operation' window is open.

Operation	L2
1 - Isolation	
2 - Test	

3. Select 'Test' and press ►. The 'Test' window is open.

Test	L2
1 - Detection	
2 - Lamp test	
3 - Voice test	

4. Select 'Voice test' and press ►. The 'Voice test' window is open.

Test - Voice test	L2
1 - Voice test (ON)	
2 - Voice test (OFF)	

5. Select '1 - Voice test (ON) ' and press ► to activate voice test, or select '2 - Voice test (OFF)' and press ► to deactivate voice test.

8.5.3 Viewing event memories

8.5.3.1 Viewing event logs

All events that happened in the fire detection system are stored in event logs. You can view them one by one on the panel or view them all in a PC after uploading. See 'Backing up event logs to the PC [→ 118]' for more information about viewing event logs in a PC.

There are 8 event categories:

- Alarm
- Fault
- Technical
- Isolation
- Test
- Activation
- Information
- Operation

The event lists are sorted chronologically and can be filtered by category and time.

When you view event logs, the displayed view is almost the same as 'Event views [→ 66]'. Device IDs in event logs are only visible for access level 3 or above, as is the case with device IDs in event views. In addition, the symbols '+', '-', 'c' are displayed in front of the event type to indicate the processing status of the event:

1. '+': event in
2. '-': event out
3. 'c': operation on ↑ PMI

To view all events

1. Press ☰ on the keypad. The 'Main menu' window is open.

Main menu	L2
1 - System status	
2 - Operation	
3 - Event memory	
4 - Login	
5 - Lamp test	
7 - Logout	

2. Select 'Event memory' and press ►. The 'Event memory' window is open.

Event memory	L2
1 - Event log	
3 - Compensation Value	

3. Select 'Event log' and press ►. The 'Event log' window is open.

Event log	L2
1 - Show log	
2 - Advanced	

4. Select 'Show log' and press ►. All events stored in the event log are displayed. Scroll by using ▼/▲.

Rec. 001 of 008	L2
+ Short	
Monitored output	
Output card 4M	
Circuit 02	
03-01-2020 18:08:08	

To view filtered events

1. Press  on the keypad. The 'Main menu' window is open.

Main menu	L2
1 - System status	
2 - Operation	
3 - Event memory	
4 - Login	
7 - Logout	
8 - Query alarm counter	

2. Select 'Event memory' and press ►. The 'Event memory' window is open.

Event memory	L2
1 - Event log	
3 - Compensation Value	

3. Select 'Event log' and press ►. The 'Event log' window is open.

Event log	L2
1 - Show log	
2 - Advanced	

4. Select 'Advanced' and press ►. The 'Advanced' window is open.

Advanced	L2
Type:	All
Start time:	08-01-2015
End time:	08-01-2015
Print:	×
	Query

5. Select 'Type:', enter 'Start time:'/'End time:', and then select 'Query' and press ► . All filtered events are displayed. Scroll by using ▼/▲.

Rec. 001 of 008	L2
+ Short	
Monitored output	
Output card 4M	
Circuit 02	
03-01-2020 18:08:08	

Explanation to number on the top line 'Record XXX of YYY':
XXX: Serial number of event, the first event is '001', the last event is 'YYY'.
YYY: Total number of all events.

For detailed information about the LCD display, see 'Event views [➙ 66]'.

To print filtered events, select 'Print:' with '√' in step 4.

8.5.3.2 Viewing compensation values

A compensation value in compensation logs/reports indicates dirt/dust level in chamber of smoke detector OP720, OH720, OOH740, OOHC740, OP360 or OH360. If it becomes larger, it means:

- The detector chamber is dirtier.
- The band of detection range is smaller.
- The possibility of initiating false fire detection is higher.

In order to avoid false fire detection due to chamber dust level, note the following compensation value range:

Compensation value	Indication
0 ~ 50	The dirt level is within a normal range.
50 ~ 80	Pay attention to value change.
80 ~ 120	Detector exchange is recommended.
150	Exchange the detector.

All compensation values are stored in the panel. You can view them one by one on the local panel or view them all in a PC after uploading. See 'Backing up compensation values to the PC [→ 118]' for more information about viewing compensation values from a PC.

To view compensation values from the panel

1. Press on the keypad. The 'Main menu' window is open.

Main menu	L2
1 - System status	
2 - Operation	
3 - Event memory	
4 - Login	
5 - Lamp test	
7 - Logout	

2. Select 'Event memory' and press ►. The 'Event memory' window is open.

Event memory	L2
1 - Event log	
3 - Compensation Value	

3. Select 'Compensation Value' and press ►. The 'Compensation Value' window is open.

Compensation Value	L2
1 - Show log	

4. Select 'Show log' and press ►. The detailed compensation log appears on the screen.

Device IDs in compensation value logs are only visible under access level 3 or above.

8.5.4 Logging out of the current access level

The 'Logout' function returns to access level 1 from access level 2 or 3.

1. Press on the keypad. The 'Main menu' window is open.

Main menu	L2
1 - System status	
2 - Operation	
3 - Event memory	
4 - Login	
5 - Lamp test	
7 - Logout	

2. Select 'Logout' and press ▶. A confirmation window is open.

Do you want to log out?
Yes (OK) or No (C)

3. Press ok to confirm. The panel returns to access level 1.

The panel automatically logs out and returns to access level 1 if no action is taken within 5 minutes. However, if a digital input on the panel mainboard is used to enable 'Access level 2', the automatic logout returns to access level 2 from a higher access level or stays in level 2.

8.6 Operations under access level 3

This function is available with access level 3 password.

8.6.1 Deleting test logs

The 'Test log' function deletes all test logs on the panel. Before performing this function, you can back up all the existing test logs to a PC. See 'Backing up test reports to the PC [→ 118]' for more information about test log backup.

1. Press ☰ on the keypad. The 'Main menu' window is open.

Main menu	L3
1 - System status	
2 - Operation	
3 - Event memory	
5 - Lamp test	
6 - Engineering	
7 - Logout	

2. Select 'Event memory' and press ►. The 'Event memory' window is open.

Event memory	L3
1 - Event log	
2 - Test log	
3 - Compensation Value	

3. Select 'Test log' and press ►. The 'Test log' window is open.

Test log	L3
1 - Delete log	

4. Select 'Delete log' and press ►. A confirmation dialog window is open.

Confirm delete?
Yes (OK) or No (C)

5. Press ok to confirm. All test logs are deleted.

9 Engineering

All 'Engineering' functions request access level 3 password.

9.1 Setting date & time

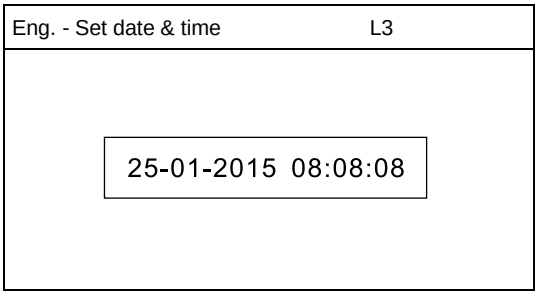
The 'Set date & time' function adjusts date and time.

In countries with central European summer time (CEST), the system clock automatically switches between daylight savings time and regular time.

1. Press on the keypad.
   ⇨ The 'Main menu' window is open.
2. Select 'Engineering' and press ►.
   ⇨ The 'Engineering' window is open.
3. Select 'Set date & time' and press ►.
   ⇨ The 'Set date & time' window is open.
4. Enter the correct date and time and confirm with ok.
   ⇨ A confirmation dialog window is open.
5. Press ok to confirm.

⇨ The date and time are set.

The picture below shows the 'Set date & time' window.



9.2 Editing zone and device name

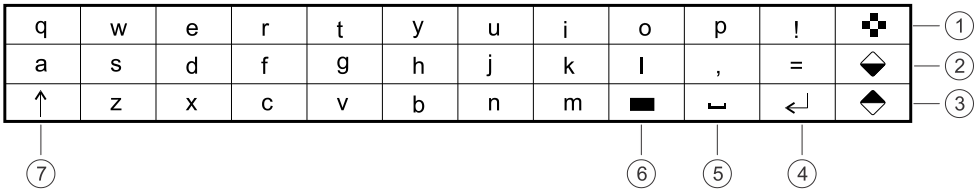
The 'Edit name' function is used to edit the name of a zone or device. The new name is shown when the zone or device is re-accessed.

1. Press on the keypad.
   ⇨ The 'Main menu' window is open.
2. Select 'Engineering' and press ►.
   ⇨ The 'Engineering' window is open.
3. Select 'Edit name / password' and press ►.
   ⇨ The 'Edit name / password' window is open.
4. Select 'Edit name' and press ►.
   ⇨ The 'Edit name' window is open. A list of all zones is displayed.
5. Select a desired zone and press ►.
   ⇨ The selected zone and the devices under the zone are listed.
6. Select the zone and press ►, or select a device and press ►.
   ⇨ A name entry dialog window is open.
7. Enter a name and confirm with ok.

⇨ The name of the zone or device is changed.

9.2.1 On-screen keyboard

Use the on-screen keyboard to enter letters, numbers and special characters.



1 Displays numbers, punctuation marks and common symbols.

2 Displays extra characters for specific languages.

3 Displays uncommon symbols.

4 Enters a carriage return.

5 Enters a space after the cursor.

6 Deletes a character before the cursor.

7 Switches between lower cases and upper cases.

9.2.2 Entering text

- Press ► or ◄ to select text.
- Select → for more symbols or characters.
- Select ↩ to go back to the default main page.
- Press ok to confirm text input.

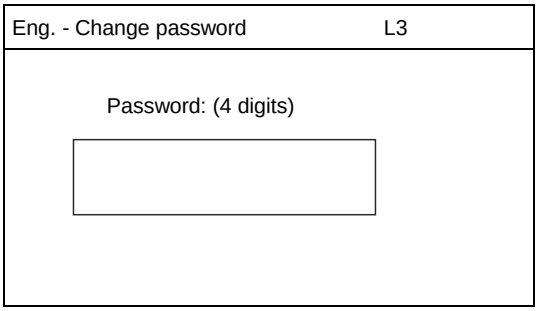
9.3 Changing password

This function is used to change the password for access level 2, access level 3 or access level 3.1.

1. Press ☰ on the keypad.
   ⇨ The 'Main menu' window is open.
2. Select 'Engineering' and press ►.
   ⇨ The 'Engineering' window is open.
3. Select 'Edit name / password' and press ►.
   ⇨ The 'Edit name / password' window is open.
4. Select 'Passwords' and press ►.
   ⇨ The 'Passwords' window is open.
5. Select one access level that you want to change the current password for, and then press ►.
   ⇨ The password entry window is open.
6. Enter a new password and confirm with ok.
   ⇨ A password verification window is open.
7. Repeat the entry and confirm with ok.

⇨ A new password is created.

The picture below shows the password entry window.



	**⚠ WARNING**
	Keep your password safe! If you forget the password of access level 3, you cannot retrieve it but change the mainboard to regain access to the panel.

9.4 Detector line

9.4.1 Restarting

The 'Restart' function is used to restart a ↑ detector line.

1. Press ☰ on the keypad.
   ⇨ The 'Main menu' window is open.
2. Select 'Engineering' and press ►.
   ⇨ The 'Engineering' window is open.
3. Select 'Detector line' and press ►.
   ⇨ The 'Detector line' window is open.
4. Select 'Restart' and press ►.
   ⇨ The 'Restart' window is open.
5. Select one desired detector line and press ►.
   ⇨ A confirmation dialog window is open.
6. Press ok to confirm.

⇨ The line is restarted.

⇨ The message 'Line startup is in progress...' is displayed. The panel returns to previous status after restart.

9.4.2 Powering off

The 'Power off' function is used to power off a ↑ detector line.

1. Press ☰ on the keypad.
   ⇨ The 'Main menu' window is open.
2. Select 'Engineering' and press ►.
   ⇨ The 'Engineering' window is open.
3. Select 'Detector line' and press ►.
   ⇨ The 'Detector line' window is open.
4. Select 'Power off' and press ►.
   ⇨ The 'Power off' window is open.
5. Select one desired detector line and press ►.
   ⇨ A confirmation dialog window is open.
6. Press ok to confirm.

⇨ The detector line is powered off.

Restart the detector line to power it on.

9.4.3 Maintenance

9.4.3.1 Deleting a device

Device deletion is not supported on the panel. It can only be done in the online configuration tool. See document A6V10450595 for detailed information on how to delete a device.

9.4.3.2 Accepting replaced/exchanged devices

After replacing faulty devices with new ones or exchanging device locations within the same ↑ detector line, perform the command of 'Accept replaced devices' to acknowledge device replacement or location exchange. The newly replaced or exchanged devices inherit all features and parameter settings from the old devices.

Before accepting newly replaced or exchanged devices, note the following:

- Ensure newly replaced devices are of the same type with devices to be replaced.
- Ensure newly exchanged devices are of the same type and within the same detector line with devices to be exchanged.
- Power off the detector line before uninstalling and replacing faulty devices.
- Ensure no devices are left out when exchanging device locations.
- Do not change the topology when replacing or exchanging devices.

To accept replaced/exchanged devices

▷ The detector line is powered off. See 'Power off [→ 90]'.

1. Press ☰ on the keypad.
   ⇨ The 'Main menu' window is open.
2. Select 'Engineering' and press ►.
   ⇨ The 'Engineering' window is open.
3. Select 'Detector line' and press ►.
   ⇨ The 'Detector line' window is open.
4. Select 'Maintenance' and press ►.
   ⇨ The 'Maintenance' window is open.
5. Select 'Accept replaced devices' and press ►.
   ⇨ A list of all lines is displayed.
6. Select a line and press ►.
   ⇨ A confirmation dialog window is open.
7. Press ok to confirm.

⇨ The replaced/exchanged devices are accepted.

9.4.3.3 Replacing and testing a detector

If a detector needs to be replaced with a new one of the same type, set the detector to replacement mode on the ↑ PMI as per the procedure below.

1. Press ☰ on the keypad.
   ⇨ The 'Main menu' window is open.
2. Select 'Engineering' and press ►.
   ⇨ The 'Engineering' window is open.
3. Select 'Detector line' and press ►.
   ⇨ The 'Detector line' window is open.
4. Select 'Maintenance' and press ►.
   ⇨ The 'Maintenance' window is open.
5. Select 'Replace & test device' and press ►.
   ⇨ A list of all lines is displayed.
6. Select a line and press ►.
   ⇨ A list of all detectors is displayed.
7. Select a detector and press ►.
   ⇨ A confirmation dialog window is open.
8. Press ok to confirm.
   ⇨ The detector is in replacement mode. The LED on the old detector is flashing.
   ⇨ The panel reports an **information** event and two **disable** events: the detector is disabled and all devices sharing the same device number with the detector are also disabled. You cannot enable the detector and the devices of the same device number manually before the detector exits the replacement mode.
9. Uninstall the old detector and wait for approximately 20 s, then install a new one of the same type.
   ⇨ The LED on the new detector flashes for 10 s.
10. After the LED stops flashing, exit the replacement mode. Refer to steps 1~8.

⇨ The information event and disable events disappear automatically.

The detector exits the replacement mode automatically if the old detector is not uninstalled within one hour.

A device missing message is reported in fault view if the old detector is uninstalled but the new one is not installed within one hour.

Device numbers can be found and edited in 'FC360 Panel Configurator'. Normally each device has a unique device number, but it might encounter the situation that several devices share the same device number for functions like DAR to work properly.

9.4.3.4 Reading in

The 'Read in' operation must be executed after performing one of the following actions:

- Change topology of ↑ detector line, e.g. merge two stubs into one loop.
- Add new device(s). Existing devices moving into another location within the existing topology cannot be read in again.

Before performing the 'Read in' operation on Loop 2, Stub 2_1 or Stub 2_2, always check if the related loop or stub is added in 'FC360 Panel Configurator'. If not, add the loop or stub manually, and then apply the changed configuration to the panel. For more information about detailed operations, see document A6V10450595.

To perform the 'Read in' operation

1. Press ☰ on the keypad.
   ⇨ The 'Main menu' window is open.
2. Select 'Engineering' and press ►.
   ⇨ The 'Engineering' window is open.
3. Select 'Detector line' and press ►.
   ⇨ The 'Detector line' window is open.
4. Select 'Maintenance' and press ►.
   ⇨ The 'Maintenance' window is open.
5. Select 'Read in' and press ►.
   ⇨ The 'Read in' window is open.
6. Select the first detector line and press ►.
   ⇨ A confirmation dialog window is open.
7. Press ok to confirm.

⇨ The detector line starts to read in.

⇨ The message 'Read in is ongoing...' is displayed. The panel returns to previous status after reading in.

⇨ The panel reports an 'Unassigned element' fault for each new device if new devices are connected. The new devices need to be assigned to device types in 'FC360 Panel Configurator'.

When two stubs are merged into one loop, always select the first stub in step 6. The second stub is adopted automatically.

When a sub-stub is connected to a loop, the topology is also detected as a loop. The 'Read in' operation is requested to add the new sub-stub.

Only the related detector line needs to be restarted manually after read-in. The other line, if any, isn't affected by the 'Read in' operation. See 'Restarting [➞ 90]' for information about how to restart a detector line.

The 'Read in' operation fails if a line or stub is in fault, e.g., a device is missing.

The 'Read in' function is also available in 'FC360 Panel Configurator'. See document A6V10450595 for more information.

9.4.4 Auto configuration

Use the 'Auto configuration' function to commission a newly installed panel automatically.

If you do an auto configuration on a configured panel, note the following changes:

- Customized device and zone texts are removed.
- Device numbers, device types, zone numbers and device properties are reset to defaults.
- Control logics of output channels and alarm devices of EVAC siren and EVAC voice types are reset to defaults. Control logics of other devices are removed.

!	*NOTICE*
	Save the old configuration before executing auto configuration.

To perform an auto configuration

1. Press ☰ on the keypad.
   ⇨ The 'Main menu' window is open.
2. Select 'Engineering' and press ►.
   ⇨ The 'Engineering' window is open.
3. Select 'Detector line' and press ►.
   ⇨ The 'Detector line' window is open.
4. Select 'Auto configuration' and press ►.
   ⇨ A warning window is open.
5. Press ok to confirm.

⇨ The ↑ detector line starts auto configuration.

⇨ All connected devices are found and added to the detector line(s) according to topology.

⇨ Set all the devices to the default settings (see chapter Appendix G: Default setting for panel/devices [→ 141]).

⇨ The devices are assigned to the corresponding device types automatically (see chapter Appendix E: Device type list [→ 138]).

⇨ The panel restarts automatically to bring the configuration into effect.

⇨ All the devices can be viewed on the ↑ PMI (see chapter Viewing a device on a detector line [→ 96]).

ⓘ	The 'Auto configuration' process may take a few minutes, depending on the installation size.

ⓘ	An FDCI723 zone module connected to the system is not automatically assigned to a device type after auto configuration. A corresponding fault is reported. It must be assigned to a device type manually in 'FC360 Panel Configurator'.

ⓘ	If the auto configuration process is terminated by fault, the old configuration is recovered on the panel!

9.4.5 Viewing devices and type A dependencies

9.4.5.1 Viewing a device in a zone

The 'View zone / device' function is used to view details of a device in a specific zone.

1. Press  on the keypad.
   ⇨ The 'Main menu' window is open.
2. Select 'Engineering' and press ►.
   ⇨ The 'Engineering' window is open.
3. Select 'Detector line' and press ►.
   ⇨ The 'Detector line' window is open.
4. Select 'View' and press ►.
   ⇨ The 'View' window is open.
5. Select 'View zone / device' and press ►.
   ⇨ A list of all zone numbers is displayed.
6. Select one zone number and press ►.
   ⇨ A list of all device numbers is displayed.
7. Select one device number and press ►.
   ⇨ A list of all devices sharing the same device number is displayed. Normally each device has a unique device number, but it might encounter the situation that several devices share the same device number in order for functions like DAR to work properly.
8. Select one desired device and press ►.

⇨ The device details are displayed as follows.

View zone / device	L3
FDM225_6 4E7A1FD	
Product ES: 4	
Device no.: 002	
Zone no.: 01	

Zone numbers and device numbers are defined in FC360 Panel Configurator. If zone and device texts are defined in the tool as well, they are displayed together with zone numbers and device numbers in Step 5 and Step 7. See document A6V10450595 for more details.

9.4.5.2 Viewing a single device on a detector line

The 'View element' function is used to view details of a single device on a ↑ detector line.

1. Press on the keypad.
   ⇨ The 'Main menu' window is open.
2. Select 'Engineering' and press ►.
   ⇨ The 'Engineering' window is open.
3. Select 'Detector line' and press ►.
   ⇨ The 'Detector line' window is open.
4. Select 'View' and press ►.
   ⇨ The 'View' window is open.
5. Select 'View element' and press ►.
   ⇨ A list of all lines is displayed.
6. Select one desired detector line and press ►.
   ⇨ A list of all devices on the line is displayed.
7. Select one desired device and press ►.
   ⇨ The device details are displayed as follows.

View zone / device	L3
FDM225_6 4E7A1FD	
Product ES: 4	
Device Nr. 002	
Zone nr. 01	

9.4.5.3 Viewing type A dependencies

The 'View typeA dependency' function is used to view all devices which have type A dependency activated.

1. Press on the keypad.
   ⇨ The 'Main menu' window is open.
2. Select 'Engineering' and press ►.
   ⇨ The 'Engineering' window is open.
3. Select 'Detector line' and press ►.
   ⇨ The 'Detector line' window is open.
4. Select 'View' and press ►.
   ⇨ The 'View' window is open.
5. Select 'View typeA dependency' and press ►.
   ⇨ A list of all devices with activated type A dependencies is displayed.
6. Select one device and press ►.

⇨ The details of the type A device are displayed as follows.

View typeA dependency	L3
Auto alarm 5	
Type A inhibit time(sec) 30	

The 'Type A function' can be configured by 'FC360 Panel Configurator'.

9.4.6 Locating devices

9.4.6.1 Locating all devices in a zone

Use this function to locate all the devices in a zone.

1. Press on the keypad.
   ⇨ The 'Main menu' window is open.
2. Select 'Engineering' and press ►.
   ⇨ The 'Engineering' window is open.
3. Select 'Detector line' and press ►.
   ⇨ The 'Detector line' window is open.
4. Select 'Locate' and press ►.
   ⇨ The 'Locate' window is open.
5. Select 'Zones' and press ►.
   ⇨ A list of all zones is displayed.
6. Select one zone and press ►.
   ⇨ Two commands are listed: 'Locate' and 'Quit locate'.

7. Select 'Locate' and press ►.
   ⇨ A confirmation window is displayed.
8. Press ok to confirm.

⇨ All the devices in the selected zone are located.

⇨ The LED indicators on the devices are flashing.

9.4.6.2 Locating devices of the same device numbers

Use this function to locate devices via device numbers configured in 'FC360 Panel Configurator'. One device number might match only one device, or multiple devices in order for functions like DAR to work properly.

1. Press ☰ on the keypad.
   ⇨ The 'Main menu' window is open.
2. Select 'Engineering' and press ►.
   ⇨ The 'Engineering' window is open.
3. Select 'Detector line' and press ►.
   ⇨ The 'Detector line' window is open.
4. Select 'Locate' and press ►.
   ⇨ The 'Locate' window is open.
5. Select 'Devices' and press ►.
   ⇨ A list of all device numbers is displayed.
6. Select one device number and press ►.
   ⇨ Two commands are listed: 'Locate' and 'Quit locate'.
7. Select 'Locate' and press ►.
   ⇨ A confirmation window is displayed.
8. Press ok to confirm.

⇨ The corresponding device or all the devices sharing the same device number are located.

⇨ The LED indicators on the devices are flashing.

Device numbers are configured in column 'Device Nr.' under task card 'Detection & Control' in 'FC360 Panel Configurator'. See document A6V10450595 for more details.

If device text is also defined in 'FC360 Panel Configurator', it is displayed together with the device number in Step 5.

9.4.6.3 Locating all devices on a detector line

The ↑ detector line location function is used to locate all the devices on a detector line.

1. Press ☰ on the keypad.
   ⇨ The 'Main menu' window is open.
2. Select 'Engineering' and press ►.
   ⇨ The 'Engineering' window is open.
3. Select 'Detector line' and press ►.
   ⇨ The 'Detector line' window is open.

4. Select 'Locate' and press ►.
   ⇨ The 'Locate' window is open.
5. Select 'Lines' and press ►.
   ⇨ A list of all detector lines is displayed.
6. Select one line and press ►.
   ⇨ Two commands are listed: 'Locate' and 'Quit locate'.
7. Select 'Locate' and press ►.
   ⇨ A confirmation window is displayed.
8. Press ok to confirm.

⇨ All the devices in the selected line are located.

⇨ The LED indicators on the devices are flashing.

9.4.6.4 Locating a single device

This function is used to find a single device (element) on site.

1. Press ☰ on the keypad.
   ⇨ The 'Main menu' window is open.
2. Select 'Engineering' and press ►.
   ⇨ The 'Engineering' window is open.
3. Select 'Detector line' and press ►.
   ⇨ The 'Detector line' window is open.
4. Select 'Locate' and press ►.
   ⇨ The 'Locate' window is open.
5. Select 'Element' and press ►.
   ⇨ A list of all single devices is displayed.
6. Select one desired element and press ►.
   ⇨ Two commands are listed: 'Locate' and 'Quit locate'.
7. Select 'Locate' and press ►.
   ⇨ A confirmation window is displayed.
8. Press ok to confirm.

⇨ 'ON' is displayed on the screen, indicating that the element is now being located.

⇨ The LED indicator on the element is flashing.

9.4.6.5 Quitting locating devices

1. Press ☰ on the keypad.
   ⇨ The 'Main menu' window is open.
2. Select 'Engineering' and press ►.
   ⇨ The 'Engineering' window is open.
3. Select 'Detector line' and press ►.
   ⇨ The 'Detector line' window is open.
4. Select 'Locate' and press ►.
   ⇨ The 'Locate' window is open.
5. Select 'Zones', 'Element', 'Devices' or 'Lines' and then press ►.
   ⇨ A list of all subparts is displayed.
6. Select one desired subpart and press ►.
   ⇨ Two commands are listed: 'Locate' and 'Quit locate'.

7. Select 'Quit locate' and press ►.
   ⇨ A confirmation window is displayed.
8. Press ok to confirm.

If the command of 'Quit locate' is not performed within one hour, the devices quit from the 'Locate' mode automatically.

9.4.7 Resetting detection module

Use the 'Reset detection module' function to reset the detection module from the menu when the detection module reports a fatal fault.

1. Press ☰ on the keypad.
   ⇨ The 'Main menu' window is open.
2. Select 'Engineering' and press ►.
   ⇨ The 'Engineering' window is open.
3. Select 'Detector line' and press ►.
   ⇨ The 'Detector line' window is open.
4. Select 'Reset detection module' and press ►.
   ⇨ A confirmation dialog window is open.
5. Press ok to confirm.

⇨ A message 'Line startup is in progress...' is displayed.

⇨ The detection module is reset and the fatal fault disappears once the above message disappears.

9.4.8 Calibrating an FDnet/C-NET detector line

⚠ WARNING

Impermissible line configuration

An impermissible line configuration can cause the alarm devices connected to this line to be supplied with insufficient power in the event of a fire. This prevents the alarm from sounding in the corresponding parts of a building. This can cause serious injuries or death.

- Make sure that **all lines** of a line card have a permissible line configuration by **calibrating** them **successfully**.

Line calibration enables users to check whether sufficient power is being supplied to all devices in an installed line during commissioning and ongoing operations; the power supply can even be checked in the event of an alarm. This is particularly helpful when the line topology or power-relevant configuration parameters of a line are changed.

Another objective of line calibration is to determine how much additional line resistance $\mathbf{\Delta R}_{max}$ is possible before the line devices fall below the required supply voltage in case of corrosion, gradual cable breakage, or thermal drift.

In the event of thermal drift, the line resistance $\mathbf{R}_{Line}$ increases by ≈ 0.4 %/ °C.

In an unheated warehouse, the difference in temperatures under the ceiling in summer and winter could amount to 50 °C. This could lead to the line resistance being ≈ 20 % higher in summer than it is in winter.

The line calibration also shows the maximum possible current consumption of all line devices per line card.

Time of a line calibration process

The duration of a line calibration consists of a 45-second base time plus about 1 second per installed 'Voice alarm sounder beacon/Voice al. sound. beacon base' device on the line to be calibrated. This means a line with 252 'Voice alarm sounder beacon/Voice al. sound. beacon base' devices can be calibrated in about 10 minutes.

Calibration mode

Calibration of the selected line can only be triggered manually on the ↑ PMI.

9.4.8.1 Manual line calibration

Calibrate all lines manually on the ↑ PMI in the following cases:

- The line topology has been changed.
- The configuration of the brightness level and/or the sound level of the alarm devices has changed.
- The PMI displays a calibration error for a line.

Calibrating lines manually

The panel blocks the execution of line calibration if there are faults on either ↑ detector line(s) or addressable devices on the line(s). The panel blocks line calibration too if the system is in alarm condition.

▷ The fire control panel has started up.

▷ There are no alarms or faults present on the fire control panel.

▷ Required access level: 3

1. Press ☰ on the keypad.
   ⇨ The 'Main menu' window is open.
2. Select 'Engineering' and press ►.
   ⇨ The 'Engineering' window is open.
3. Select 'Detector line' and press ►.
   ⇨ The 'Detector line' window is open.
4. Select 'Calibration' and press ►.
   ⇨ The 'Calibration' window is open.
5. Select 'Calibrate' and press ►.
   ⇨ A confirmation window is displayed.
6. Press ok to confirm.

⇨ The system calibrates lines and then stores the calibration report for the lines.

9.4.8.2 Calibration report

The calibration report contains the main measurement results or the calibration figures for all lines calculated from these results.

Displaying the calibration report on the ↑ PMI

▷ Required access level: 3

1. Press ☰ on the keypad.
   ⇨ The 'Main menu' window is open.
2. Select 'Engineering' and press ►.
   ⇨ The 'Engineering' window is open.
3. Select 'Detector line' and press ►.
   ⇨ The 'Detector line' window is open.
4. Select 'Calibration' and press ►.
   ⇨ The 'Calibration' window is open.
5. Select 'Calibration report' and press ►.
   ⇨ The display shows the calibration report.
6. Use the navigation keys to navigate through the entries in the calibration report. You will find more information about the individual entries in the section 'Calibration report' below.

Figures and calculation variables

In the following section, you will find the main figures and calculation variables needed to understand and interpret the calibration report.

Line calibration for lines with a stub topology has a reduced functional scope as certain calculation variables cannot be measured.

Figure / calculation variable	Description
I_{quiet}	The measured power consumption of a line in a quiescent condition.
R_{Line+}	The measured line resistance on the plus wire of the line.
R_{Line-}	The measured line resistance on the minus wire of the line.
ΔR_{max}	The calculated tolerance of the line when faced with a gradual cable break and thermal drift. The value reveals how much additional line resistance the line can still withstand without the individual line devices falling below their required supply voltage in an alarm scenario and in the worst assumed underlying conditions*. The following applies for a permitted line: $\Delta R_{max} > 0\ \Omega$
U_{Device}	The measured voltage on a 'Voice alarm sounder beacon/Voice al. sound. beacon base' line device in the worst assumed underlying conditions*.

* The worst possible underlying conditions include a gradual cable break directly on one of the line's connection terminals and a maximum assumed thermal drift of $\Delta T = 10\ °C$.

Entries in the calibration report

Entry in the calibration report	Possible content*	Description
1. Calibration status	Loop 1 state true Loop 1 state false	• **Calibrated:** There is data on a previously completed calibration process for lines in the system. The entry also shows whether the calibration was successful.
2. Time since last calibration	Date: Mon Jul 13 11:12:13 2020	The entry shows the last time the lines were calibrated.

Entry in the calibration report	Possible content*	Description
3. Power consumption of the lines while idling	Loop 1 I(mA) 1.00	The entry shows the measured power consumption of the line in an unloaded state.
4. Line resistance - Plus	Loop 2 R+(Ohm) 0.00	The entry shows the measured line resistance on the line's plus cable in ohm [Ω].
5. Line resistance - Minus	Loop 2 R-(Ohm) 0.00	The entry shows the measured line resistance on the line's minus cable in ohm [Ω].
6. Tolerance of the line resistance	Loop 1 DRmax(Ohm) 350.00	The entry shows the calculated value for the maximum tolerance of the line when faced with a gradual line break and thermal drift.

* The specified lines, devices, and values are only examples.

9.4.8.3 Troubleshooting

Troubleshooting during line calibration

The following table lists options for troubleshooting for possible fault entries in the calibration report or on the LCD:

Entry in the calibration report	Content*	Troubleshooting
1. Calibration status	Loop 1 state false	The last calibration of the lines failed. Check the other entries in the calibration report for the lines in order to narrow down the cause.
	Need calibrate (displayed on the LCD)	The line must be recalibrated. The data from the last calibration is no longer valid as the line topology and/or configuration parameters have been changed in a way that affects the power consumption of the line. Recalibrate the line. You will find more information on this in chapter 'Manual line calibration [→ 101]'.

Entry in the calibration report	Content*	Troubleshooting
2. Tolerance of the line resistance	Loop 1 DRmax(Ohm) - 2.1	The calculated difference to the current line resistance is ≤0 Ω. In an alarm scenario, individual devices may fail if a cable break occurs at the same time and/or a thermal drift increases the line resistance. ● The conductor cross-section is too low in relation to the laid length of line. ● Faulty wiring between two line devices. – Check the operating voltage of the individual devices in the calibration report. ● Too many line devices are connected to the line card. ● The configured settings for the 'Volume' and 'Beacon Intensity' properties are too high. – Reduce the sound level of the alarm device or the intensity of the beacons on the affected loop. You will find information on the configuration of the sound level of the alarm sounder or the intensity of the beacons in document A6V10450595.

*) The specified lines, devices, and values are only examples.

9.5 Calibrating output card (4M)

The transmission paths must be calibrated per EN 54-13. The 'Calibrate 4M card line' function is used to calibrate the line on output card (4M). Line calibration is needed to achieve supervision. The line resistance is indicated for calculation resulting from the calibration.

Configure the function 'Monitor creeping open / short' in 'Output card (4M)' tab by 'FC360 Panel Configurator' before the line of output card (4M) is calibrated.

To calibrate RT fault line

▷ EOL or relay needs to be connected at the end of the line.

1. Press on the keypad.
   ⇨ The 'Main menu' window is open.
2. Select 'Engineering' and press ►.
   ⇨ The 'Engineering' window is open.
3. Select 'Calibrate 4M card line' and press ►.
   ⇨ All outputs are listed.
4. Select one output and press ►.
   ⇨ A confirmation dialog window is open.
5. Press ok to start calibrating the output.

⇨ If calibration is successful, the resistance and/or line current is indicated.

⇨ The LCD automatically returns to the previous display.

To calibrate RT fire, Fire control and Sounder line

1. Connect EOL at the terminal of output card (4M).
2. Carry out calibration of the line. See above steps 1 to 5.
3. Disconnect the EOL from the terminal of output card (4M), and then connect it to the end of the line.
4. Carry out calibration of the line again. See above steps 1 to 5.

⇨ The calibration is finished.

9.6 Resetting alarm counter

The 'Alarm counter reset' function is used to reset the alarm counter to '0'.

1. Press ☰ on the keypad.
   ⇨ The 'Main menu' window is open.
2. Select 'Engineering' and press ►.
   ⇨ The 'Engineering' window is open.
3. Select 'Alarm counter reset' and press ►.
   ⇨ A password entry window is open.
4. Enter the password (66666666) and press ok.
   ⇨ A confirmation dialog window is open.
5. Press ok to confirm.

⇨ The alarm counter is reset to '0'.

9.7 Restoring factory settings

!	*NOTICE*
	Restoring factory settings on the panel The configuration of the panel is deleted! ● Save the configuration data for the panel before restoring to factory settings.

The 'Factory reset' operation must be executed in one of the following situations:

- Two loops are merged into one loop.
- Current country or language selection is not desired.

ⓘ The restoration process may take a few minutes, depending on the size of site.

1. Press ☰ on the keypad.
   ⇨ The 'Main menu' window is open.
2. Select 'Engineering' and press ►.
   ⇨ The 'Engineering' window is open.
3. Select 'Factory reset' and press ►.
   ⇨ A confirmation window is open.
4. Press ok to confirm.
   ⇨ A 'Factory set is ongoing...' message is displayed.
   ⇨ The panel restarts.
5. Select country and language, and then decide whether auto configuration on loops/stubs performs automatically during the startup process. See 'Starting up the panel [→ 110]'.

⇨ The panel is reset to factory settings.

9.8 Configuration tools

Two tools are used to configure the FC360 system easily and conveniently:

- FC360 Panel Configurator
- FC360 Desktop Editor 2.0

The following table describes the functions of the tools:

Tools	Functions
FC360 Panel Configurator	• Modifies, backs up and applies configuration. • Resets alarm counter. • Synchronizes system time. • Executes the 'Read in' operation. • Changes access level passwords. • Saves event logs, test reports, compensation reports and user documentation from the panel to a PC.
FC360 Desktop Editor 2.0	• Updates firmware • Modifies configuration file

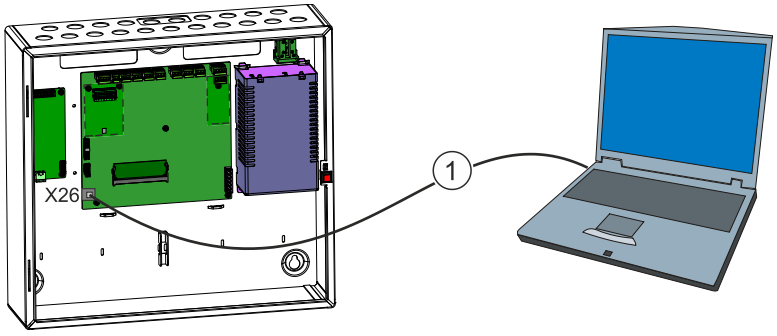
'FC360 Desktop Editor 2.0' is available at www.siemens.com/cerberus-fit.

'FC360 Panel Configurator' is integrated in the panel.

Detailed information about tool operations is available in document A6V10450595.

9.8.1 Connecting a PC to the panel

A PC is required for most commissioning, maintenance and repair work. The figure below shows the connection between the PC and the panel.



X26	Terminal of PC connection
1	Ethernet, shielded patch cable, type CAT 5, CAT 5e, CAT 6, CAT 6e or CAT 7, max. 100 m

⚠ WARNING

- Access to the panel only with direct PC connection.
- Ensure cable connection is stable.
- Connection to networks is expressly prohibited.

In case of connection failure (though the cable is firmly connected), do the following:

Tools	Solutions
FC360 Panel Configurator	• Check DHCP settings mentioned in document A6V10450595. • Clean up local cache if fc360.siemens.com is opened in Google Chrome. • Use panel IP address (e.g., 192.168.251.100) instead of fc360.siemens.com.
FC360 Desktop Editor 2.0	• Check Windows firewall rules mentioned in section Setting Windows firewall [→ 114].

10 Commissioning

This chapter describes initial commissioning of FC360 fire control panel.

10.1 Installing and checking a detector line

To install devices

Before installing or connecting a device, stick the ID number onto the layout plan. The adhesive strip with the ID number can be found at the bottom of the device.

▷ The ↑ detector line is not connected to the fire control panel.

▷ The power supply is disconnected from all devices with external power supply.

1. Install and wire the devices and stick the ID number for each device onto the layout plan.

2. Mount the detector dust caps on the optical point detector if necessary.

3. Install the designation plate if necessary.

To check the detector line

NOTICE

Simultaneous connection of line tester and detector line to the panel

Damage to line tester or panel

- Do not connect the line tester and the detector line to the panel at the same time.

▷ The detector line is not connected to the panel.

1. Connect the Line Tester FDUL221 to the newly installed detector line.

2. Test the detector line for short-circuits, open lines and earth faults.

3. Check the number of the devices on the detector line using 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 all devices.

6. Remedy all errors and carry out the acceptance test again.

Detailed information about the Line Tester FDUL221 is available in document 008250. See chapter 'Applicable documents [→ 9]'.

10.2 Installing panel

▷ FC360 fire control panel is mounted.

1. Insert the cables of the ↑ detector lines and the mains supply into the panel and connect them to the panel. See chapter 'Power supply - mains voltage [→ 30]'.
2. Place the batteries and connect them to the power supply. See chapter 'Battery [→ 31]'.

10.3 Starting up the panel

1. Connect the cables of the ↑ detector lines.
2. Connect the power supply (mains and batteries).
   ⇨ The panel executes the first startup.
   ⇨ During the startup, the fault LED and system fault LED are on and the display shows no information.
3. Wait until the display indicates the selection of the country and language.
4. Press ▼/▲ to select your country, press ► and confirm with ok.
5. Press ▼/▲ to select your language, press ► and confirm with ok.
6. Decide if auto configuration on loops/stubs performs automatically during the startup process.
   ⇨ Press ok to confirm the auto configuration. The display indicates the progress status. After the auto configuration is finished, all devices but FDCI723 (if installed) on loops/stubs are read in and assigned to corresponding device types. For more information about what happens after auto configuration, see 'Auto configuration [→ 94]'.
   ⇨ Press C to perform the auto configuration manually. After the startup progress is finished, the panel is ready for commissioning. See 'Auto configuration [→ 94]' for detailed steps.

!	*NOTICE*
	Report 'configuration fault' during the first system startup A detector line is detected as two stubs during the first system startup even if devices on the line are connected as a loop. ● Carry out 'Auto configuration' during commissioning and the fault disappears.

10.4 General commissioning steps

10.4.1 Configuring detector line automatically

See chapter Auto configuration [→ 94].

After finishing auto configuration:

- All devices on the ↑ detector line are read in and added to the detector line as per the topology.
- All the devices are configured with the default settings (see chapter Appendix G: Default setting for panel/devices [→ 141]).

- Some devices are assigned to corresponding device types automatically (see chapter Appendix E: Device type list [→ 138]).
- Create default control logics as per pre-definition.

10.4.2 Configuring the system manually

!	*NOTICE*
	Before configuring the system manually, make sure that the panel is in normal operation.

To modify using 'FC360 Panel Configurator'

1. Connect PC to the panel. See chapter 'Connecting a PC to the panel [→ 107]'.
2. Open a web browser.
3. Enter web address with 'fc360.siemens.com' and press <Enter>.
   ⇨ 'FC360 Panel Configurator' is open.
4. Enter access level 3 password to log into access level 3.
5. Modify configuration as needed.
   ⇨ Generally the following configuration may be modified in 'FC360 Panel Configurator':
   – Customer texts
   – Properties and parameter settings
   – Allocation of devices and zones
   – Control logics
6. After finishing modification, click 'Apply'.
   ⇨ A confirmation window is open.
7. Click 'OK' to download the modified configuration to the panel. (The panel is at access level 3.)

⇨ The panel restarts automatically.

⇨ The configuration finishes.

To modify using 'FC360 Desktop Editor 2.0'

1. Connect the panel to a PC installed with 'FC360 Desktop Editor 2.0'.
2. Back up configuration to the PC first. See chapter 'Backing up configurations to the PC [→ 117]'.
3. Open 'FC360 Desktop Editor 2.0'.
4. Select language and click 'Enter'.
5. Click 'Open an existing configuration'.
6. Browse to the backup configuration and click 'Open'.
   ⇨ The configuration is open in 'FC360 Desktop Editor 2.0'.
7. Modify configuration as needed.
   ⇨ Generally the following configuration needs to be modified:
   – Customer texts
   – Properties and parameters
   – Allocation of devices and zones
   – Control logics
8. After finishing modification, click 'Save' to save the modified configuration.
9. Apply the configuration to the panel by 'FC360 Panel Configurator'. See chapter 'Applying configurations to the panel [→ 117]'.

⇨ The panel restarts automatically if the panel is in access level 3.

⇨ The configuration finishes.

Detailed information about operation of 'FC360 Panel Configurator' and 'FC360 Desktop Editor 2.0' is available in document A6V10450595. See chapter 'Applicable documents [→ 9]'.

When using the 'FC360 Desktop Editor 2.0' to modify the configuration, don't change the topology (e.g., add devices to the ↑ detector line(s), or delete devices from the detector line(s) without uninstalling them from the line(s) first). Otherwise, you will fail in downloading the configuration to the panel.

10.4.3 Function test

⚠ WARNING

Alarming and ↑ RT transmission are activated during testing.

You must do the following:

- Inform fire brigade.
- Inform owner of the building.

1. Execute lamp test. See chapter 'Lamp test [→ 79]'.
2. Test each device (detector, MCP, etc.) individually and check the correctness of the system behavior (e.g. alarm device activation, RT fire, RT fault, Fire control, etc.). See chapter 'Detection test [→ 77]'.
3. Make sure that the panel is in normal operation, the buzzer and all system parts are enabled.

⇨ The function test is finished.

10.4.4 Completing work

1. Check date and time on the panel display. If they are not correct, modify them. See chapter 'Set date & time [→ 87]'.
2. Secure the housing cover with a screwdriver.
3. Complete the installation label (top right of the housing) with the commissioning date.

⇨ The system can now be handed over to the customer.

10.5 Setting Windows firewall

The aim of changing firewall settings is to establish a functioning Ethernet connection between FC360 Desktop Editor 2.0 and the panel.

The Windows firewall may prevent the PC from connecting to the panel, especially when FC360 Desktop Editor 2.0 is used to update firmware of FC361-xx from 01.02.xx to 02.xx.xx or higher. In this case, it is necessary to change the firewall rule settings (administrator rights are required).

To change firewall rules on Windows 10

There are different ways of adjusting firewall rules in Windows 10. The following settings apply for Siemens PCs which use group guidelines controlled by the domain.

▷ You have administrator rights on your PC.

▷ The PC is connected to the Siemens intranet.

1. Open the Windows start menu.

2. Select 'Windows System' > 'Control Panel' > 'Administrative Tools' > 'Local Security Policy' > 'Network List Manager Policies'.

- Right-click on 'Unidentified Networks', select 'Properties', choose 'Private' under 'Location Type' and then click 'OK'.
- Right-click on 'Identifying Networks', select 'Properties', choose 'Private' under 'Location Type' and then click 'OK'.

3. From the 'Local Security Policy' dialog window, select 'Windows Defender Firewall with Advanced Security'.

4. Expand the menu and its submenu.

5. Right-click on 'Inbound Rules' > 'New Rules'.

⇨ The 'New Inbound Rule Wizard' window is open.

6. Select 'Rule Type' and activate 'Program'.

7. Click 'Next' to confirm and enter the program path to 'WebEngineeringServer.exe'.

- Example: D:\Program Files\Siemens\FC360 Editor2.0\offline_server\api\thrift\WebEngineeringServer.exe

8. Click 'Next' to confirm and then confirm the default setting 'Allow the connection' in the next step ('Action').

9. In the next step 'Profile', remove the check mark from the 'Domain' checkbox.

⇨ The 'Private' and 'Public' checkboxes are checked.

10. Click 'Next' to confirm and enter an appropriate name in the next step ('Name'), such as 'FC360 Desktop Editor 2.0- application'.

11. Click 'Finish' to complete the process.

⇨ A 'New Rule' has now been set and appears in the 'Inbound Rules' list.

Additional settings are required for the new rule:

1. Right-click on the new rule and select 'Properties'.

2. Select the 'General' tab in the 'Rule Name Properties' window.

3. Set the following values:

- 'General': 'Enabled'

– 'Action': 'Allow the connection'

4. Select the 'Protocol and Ports' tab.
5. Set the following values:
   – 'Protocol type': 'UDP'
   – 'Local port': 'Specific Ports', and then enter the value range '69' in the box.
   – 'Remote port': 'All Ports'
6. Confirm with 'OK'.

⇨ The new firewall rule is now configured.

!	*NOTICE*
	● Deactivate the above configurations after firmware update.

Supported web browsers

Once there is a functioning Ethernet connection, 'FC360 Desktop Editor 2.0' and 'FC360 Panel Configurator' can be accessed via one of the following browsers:

- Google Chrome Version 71 (or above)
- Microsoft Edge Version 81 (or above)
- Firefox Standard Version 77 (or above)

10.6 Updating firmware

⚠ WARNING

Fire detection installation is deactivated during the firmware update

Fire may spread unhindered.

- Supervision by people is required.
- Re-activate the fire detection installation as soon as possible.

NOTICE

Firmware update on the panel

Firmware update may encounter errors!

The configuration of the panel may be affected depending on the update type!

- Use Windows default Ethernet connection for firmware update.
- Disable all other network adapter options that set IP address to 192.168.251.xxx before firmware update. Restore to the previous settings only after the firmware update is completed.
- Create **backups** of **configuration data** and **event logs** for the panel **before** firmware update. This is especially important before updating firmware of FC361-xx from 01.02.xx to 02.xx.xx or higher, otherwise all the previous configuration data and event logs are erased after firmware update! See chapters 'Backing up configurations to the PC [→ 117]' and 'Backing up event logs to the PC [→ 118]'.

▷ Ensure that the latest firmware version of 'FC360 Desktop Editor 2.0' is installed on the PC. Detailed information about where to download the installation file is available in document A6V10450595. See chapter 'Applicable documents [→ 9]'.

1. Connect the PC to the panel. See chapter 'Connecting a PC to the panel [→ 107]'.
2. Set Windows firewall. See chapter 'Setting Windows firewall [→ 114]'.
3. Enter access level 3 password to log into level 3 on the panel.
4. Open 'FC360 Desktop Editor 2.0'.
5. Click 'Update Firmware'.
   ⇨ The panel starts to update the firmware.
   ⇨ A successful message is indicated. Otherwise, a failure message is indicated.
6. Check the version on the panel. See menu item 'About [→ 74]'.
7. Disconnect the PC from the panel.

!	*NOTICE*
	• After firmware update completion, open the backed-up configuration file in FC360 Panel Configurator, check whether the original settings remain unchanged, apply the configuration file to the panel and then perform maintenance test including function and device tests. See chapters 'Applying configurations to the panel [→ 117]' and 'Maintenance [→ 120]' for more details. • Backed-up event logs cannot be restored to the panel. Keep them in the PC for necessary check/use in future. • Firmware update doesn't change alarm counter and display style on the LCD. See chapter 'Appendix F: Flash file behaviors [→ 140]' for more details.

After the panel firmware is updated, the firmware of output card (4M) (if installed) and the detection module are also updated automatically.

To update the firmware of FT2010/FT2011/FDUL221, see document A6V10210416 mentioned in chapter 'Applicable documents [→ 9]'.

10.7 Backing up configurations to the PC

1. Connect the PC to the panel. See 'Connecting a PC to the panel' for panel connection.
2. Open a web browser.
3. Enter 'fc360.siemens.com' in the address bar and press <enter>.
   ⇨ 'FC360 Panel Configurator' is open.
4. Enter access level 3 password to log into access level 3 on the panel.
5. Click 'Backup', and then click 'OK' to confirm the backup.
6. Select a backup option.
7. If prompted, enter a path and a file name, and then click 'OK'.
   ⇨ A configuration backup is stored to the PC.
8. Log out of 'FC360 Panel Configurator' and disconnect the PC from the panel.

10.8 Applying configurations to the panel

!	*NOTICE*
	Before configuring the system manually, make sure that the panel is in normal operation.

1. Connect the PC to the panel. See 'Connecting a PC to the panel' for panel connection.
2. Open a web browser.
3. Enter 'fc360.siemens.com' in the address bar and press <enter>.
   ⇨ 'FC360 Panel Configurator' is open.
4. Enter access level 3 password to log into access level 3 on the panel.

5. Modify the current configurations as needed. If modifications were already done in 'FC360 Desktop Editor 2.0', click 'Open', and then browse to the modified configuration file and confirm that the open configuration is overridden.
6. Click 'Apply', and then click 'OK' to confirm.
   ⇨ Configurations are downloaded to the panel.
7. Log out of 'FC360 Panel Configurator' and disconnect the PC from the panel.

10.9 Backing up event logs to the PC

1. Connect the PC to the panel. See 'Connecting a PC to the panel' for panel connection.
2. Open a web browser.
3. Enter 'fc360.siemens.com' in the address bar and press <enter>.
   ⇨ 'FC360 Panel Configurator' is open.
4. Click 'Administration'.
5. In the 'Event memory' field, click 'Upload to PC'.
6. If prompted, enter a path and a file name and click 'OK'.
   ⇨ The event log is stored to the PC.
7. Log out of 'FC360 Panel Configurator' and disconnect the PC from the panel.

10.10 Backing up compensation values to the PC

1. Connect the PC to the panel. See 'Connecting a PC to the panel' for panel connection.
2. Open a web browser.
3. Enter 'fc360.siemens.com' in the address bar and press <enter>.
   ⇨ 'FC360 Panel Configurator' is open.
4. Click 'Administration'.
5. In the 'Compensation report' field, click 'Upload to PC'.
6. If prompted, enter a path and a file name and click 'OK'.
   ⇨ The compensation value report is stored to the PC.
7. Log out of 'FC360 Panel Configurator' and disconnect the PC from the panel.

Upload the compensation value report after the detector line finishes startup.

10.11 Backing up test reports to the PC

1. Enter access level 3 password to log into level 3 on panel.
2. Connect the PC to the panel. See 'Connecting a PC to the panel' for panel connection.
3. Open a web browser.

4. Enter 'fc360.siemens.com' in the address bar and press <enter>.
   ⇨ 'FC360 Panel Configurator' is open.
5. Click 'Administration'.
6. In the 'Test report' field, click 'Upload to PC'.
7. If prompted, enter a path and a file name and click 'OK'.
   ⇨ The test report is stored to the PC.
8. Log out of 'FC360 Panel Configurator' and disconnect the PC from the panel.

10.12 Factory reset

If a wrong country or language setting was selected during the start-up of the panel, execute a factory reset to restart.

See chapter 'Restoring factory settings [➞ 106]'.

10.13 Adding output card (4M)

▷ Output card (4M) is installed correctly. See chapter 'Output card (4M) (FCA3602-Z1) [➞ 49]'.

1. Connect the PC to the panel.
2. Open a web browser.
3. Enter 'fc360.siemens.com' in the address bar and press <enter>.
   ⇨ 'FC360 Panel Configurator' is open.
4. Enter access level 3 password to log into access level 3 on the panel.
5. Configure output card (4M). See document A6V10450595 mentioned in chapter 'Applicable documents [➞ 9]'.
6. Check output card (4M) function.
7. Log out of 'FC360 Panel Configurator' and disconnect the PC from the panel.

11 Maintenance

11.1 General

Regular maintenance of the system is necessary to ensure the reliable operation.

The panel has a reminder function that can inform you of imminent maintenance. When the service reminder is displayed, regular maintenance by a service technician is required.

Maintenance intervals may differ from the maintenance recommendations depending on national regulations.

The reminder function can be configured through 'FC360 Panel Configurator'.

!	*NOTICE*
	Non-observance of rules during maintenance work Insufficient maintenance and damage to the site or parts thereof. ● Always de-energize the panel first before connecting, fitting or removing components. ● Prevent electrostatic discharge. ● An EMC mat must be used if working on components. ● Do not touch the modules with your bare hands where possible. ● Do not switch off the site or parts thereof for long periods of time.

11.2 Preparatory work

Inform system owner

Inform the system owner about the scope and expectation of maintenance work.

Disable system components

Disable the following system components as needed:

- Alarm transmission
- Fire controls and sounder lines

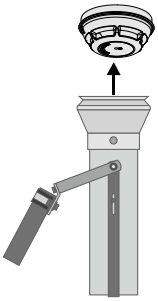
11.3 Function test

The following schedule is recommended for the function test. However, local regulations have higher priorities.

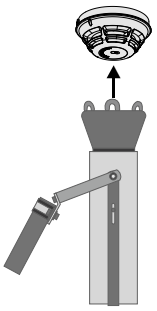
Function	Activity	Interval (years)		
		1	2	5
↑ Detector line	Activate all automatic detectors and all manual call points.		X	
	Activate a detector or manual call point per line	X		
	Check all detectors and manual call points for dirt and check that usage is in accordance with regulations.	X		
	Activate a fault, short circuit and open line, and check that usage is in accordance with regulations.			X
Outputs	Check sounder controls and all acoustic and optical alarm devices.	X		
	Activate fire outputs and check the application.	X		
	Activate ↑ RT alarm and check the RT transmission.	X		
Inputs	Activate each input and check the application.	X		
Alarm organization	Mode ↑ Manned. Activate a detector and manual call point and check the timer T1 and T2 and the RT transmission.	X		
	Mode ↑ unmanned. Activate a detector and check the RT transmission.	X		
	Check the DAR functionality for each input and output.	X		
Panel	Check date and time.	X		
	Check the display, button and LEDs.	X		
	Check earth connections.	X		
	Activate mains and battery fault condition and verify the application.	X		

11.4 Device test

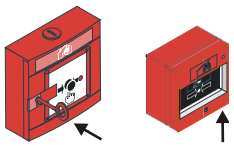
Smoke detector

1. Enable test mode for the line. 2. Place detector tester RE6 on detector head. 3. Release test gas. 4. Remove detector tester. 5. Confirm the alarm was triggered. Alarm indicator is flashing. 6. Wait until alarm indicator is off. 7. Set the line to normal mode operation.	

Heat detector

1. Enable test mode for the line. 2. Place detector tester RE6T on detector head and turn on heater. 3. Remove detector tester. 4. Confirm the alarm was triggered. Alarm indicator is flashing 5. Wait until alarm indicator is off. 6. Set the line to normal mode operation.	

Manual call point

1. Enable test mode for the line. 2. Depending on type of call point, insert test key or open cover to activate. 3. Confirm the alarm was triggered. Alarm indicator is flashing. 4. Remove test key or close door. 5. Wait until alarm indicator is off. 6. Set the line to normal mode operation.	

Upload a test report to PC to check whether all devices on the detector line(s) have been tested. See Backing up test reports to the PC [➔ 118] for more information about test report uploading.

Printer

1. Initiate a printer test and check the printout for legibility and correct printing.
2. Check whether the events are correctly printed out.

11.5 Calibrating lines

⚠ WARNING

Impermissible line configuration

An impermissible line configuration can cause the alarm devices connected to this line to be supplied with insufficient power in the event of a fire. This prevents the alarm from sounding in the corresponding parts of a building. This can cause serious injuries or death.

- Make sure that **all lines** of a line card have a permissible line configuration by **calibrating** them **successfully**.

Calibrate all lines manually on the ↑ PMI in the following cases:

- The line topology has been changed.
- The configuration of the brightness level and/or the sound level of the alarm devices has changed.
- The PMI displays a calibration error for a line.

The duration of a line calibration consists of a 45-second base time plus about 1 second per installed 'Voice alarm sounder beacon/Voice al. sound. beacon base' device on the line to be calibrated. This means a line with 252 'Voice alarm sounder beacon/Voice al. sound. beacon base' devices can be calibrated in about 5 minutes.

You will find more information on line calibration in chapter 'Calibrating an FDnet/C-NET detector line [➞ 100]'.

11.6 Completion of work

1. Activate a test alarm through the system operator with ↑ remote transmission.
2. Change all 'OFF' status to 'ON'.
3. Have the system owner confirm the revision.

12 Troubleshooting

12.1 Fault message indication

No.	Description	Cause	Action
1	General fault	The system has a fault.	Check whether another fault LED is flashing, if not: ● Check the display ● Check whether the fault control input is activated.
2	System fault	Failure of the main CPU	Visual check of the cable connections ● Switch power off and restart. If the fault is still displayed, replace the mainboard.
3	Sounder line and alarm device fault	Fault on sounder lines or alarm device fault on ↑ C-NET ↑ detector line(s)	● Check alarm device status on sounder lines and C-NET detector line(s). ● Check the sounder lines for the following: – Short circuit – Open circuit – Missing EOL element or defect
4	RT fire fault	Fault on RT fire line	Check remote transmission

12.2 Panel

Description	Cause/Action
Date and time fault	Power down, reset date and time. See chapter 'Set date & time [→ 87]'.
Buzzer not working	Check the position of the buzzer switch on the mainboard. If the buzzer still does not work, replace the mainboard.
↑ Detector line overload	1. Power off detector line first, then restart it. 2. If the error still occurs, check the load on the detector line by using the 'FC360 Cerberus FIT Quantities tool'

12.3 Accessories

Description	Cause/Action
DC 24 V too low	Check voltage input '24V' on the output card FCA3602-Z1.
Outputs from output card (4M) indicates a fault	Check the cable connection and output line.
EVAC fault	Check the cable connection. Replace the device if the fault still appears.
Key switch does not work	Check the cable connection. Replace the device if still not working.
LED indication module does not work	Check the cable connection. Replace the device if still not working.

Contact your service provider if you cannot eliminate a fault.

12.4 Recovering short fault of a detector line

▷ A short fault message is displayed.

1. Restart ↑ detector line. See chapter 'Restart [➙ 90]'.

2. Read the information event to find the two devices with open isolators. See chapter 'System status [➙ 72]'.

3. Go to the fault location to eliminate it.

4. Restart the detector line.

⇨ Short fault message and isolator open information message disappear.

13 Components and spare parts

Components

Type	Order number	Designation
FC361-ZZ	S54433-C112-A1	Fire control panel (1L, Compact)
FC361-ZA	S54433-C111-A1	Fire control panel (1L, Comfort)
FC362-ZZ	S54433-C119-A1	Fire control panel (2L, Comp.)
FC362-ZA	S54433-C120-A1	Fire control panel (2L, Comf.)

Extensions

Type	Order number	Designation
FTO3603-Z1	S54433-B118-A1	LED indicator (32 zones)
FCA3601-Z1	S54433-N113-A1	Key switch
FCA3603-Z1	S54433-N115-A1	Key switch (Nordic)
FTO3601-H1	S54433-B116-A1	Evacuation module (NL)
FCA2001-A1	A5Q00005327	RS232 module (isolated)
FCA2002-A1	A5Q00009923	RS485 module (isolated)
FCA3602-Z1	S54433-A114-A1	Output card (4M)
FCA1209-Z1	S54400-B124-A1	Output module (230 V)

Auxiliary power supply

Type	Order number	Designation
FP120-Z1	S54400-S122-A1	Power supply kit A 70 W

Batteries

Type	Order number	Designation
FA2003-A1	A5Q00019353	Battery (12 V, 7 Ah, VdS)
FA2004-A1	A5Q00019354	Battery (12 V, 12 Ah, VdS)
BAT12-25	S54302-Z102-A1	Battery (12 V, 25 Ah, VdS)

External printer

Type	Order number	Designation
DL3750+	A5Q00023962	Matrix printer (external)
–	A5Q00023963	Color ribbon for matrix printer DL3750+

Spare parts

Type	Order number	Designation
FP2015-A1	S54400-B121-A1	Power supply (70 W)
FCM3601-Z1	S54443-A115-A1	Mainboard
FCM3601-Z2	S54443-A116-A1	Mainboard (2L)
FHD3601-Z1	S54443-B118-A1	Door incl. PMI

Mounting accessories

Type	Order number	Designation
FHA3602-Z1	S54433-N118-A1	Semi-flush mount bezel

Tools

Type	Order number/Document ID	Comment
FC360 Panel Configurator	–	Scope of supply for FC360 fire control panels
FC360 Desktop Editor 2.0		
FC360 Cerberus FIT Quantities tool	A6V10885143	–

14 Environmental protection and disposal

This device is manufactured using materials and procedures which comply with current environmental protection standards as best as possible. More specifically, the following measures have been undertaken:

- Use of reusable materials
- Use of halogen-free plastics
- Electronic parts and synthetic materials can be separated

Larger plastic parts are labeled according to ISO 11469 and ISO 1043. The plastics can be separated and recycled on this basis.

Electronic parts and batteries must not be disposed of with domestic waste.

- Take electronic parts and batteries to local collection points or recycling centers.
- Contact local authorities for more information.
- Observe national requirements for disposing of electronic parts and batteries.

15 Appendix A: Alarm Verification Concept (AVC)

The ↑ 'Alarm Verification Concept' serves the purpose of delayed alarm transmission and takes into account the interaction of the operating personnel in the alarming sequence.

Operating personnel are able to examine the indicated fire location in the event of a fire alarm. Intervention by the fire brigade can be avoided in the event of a false alarm or minor incident.

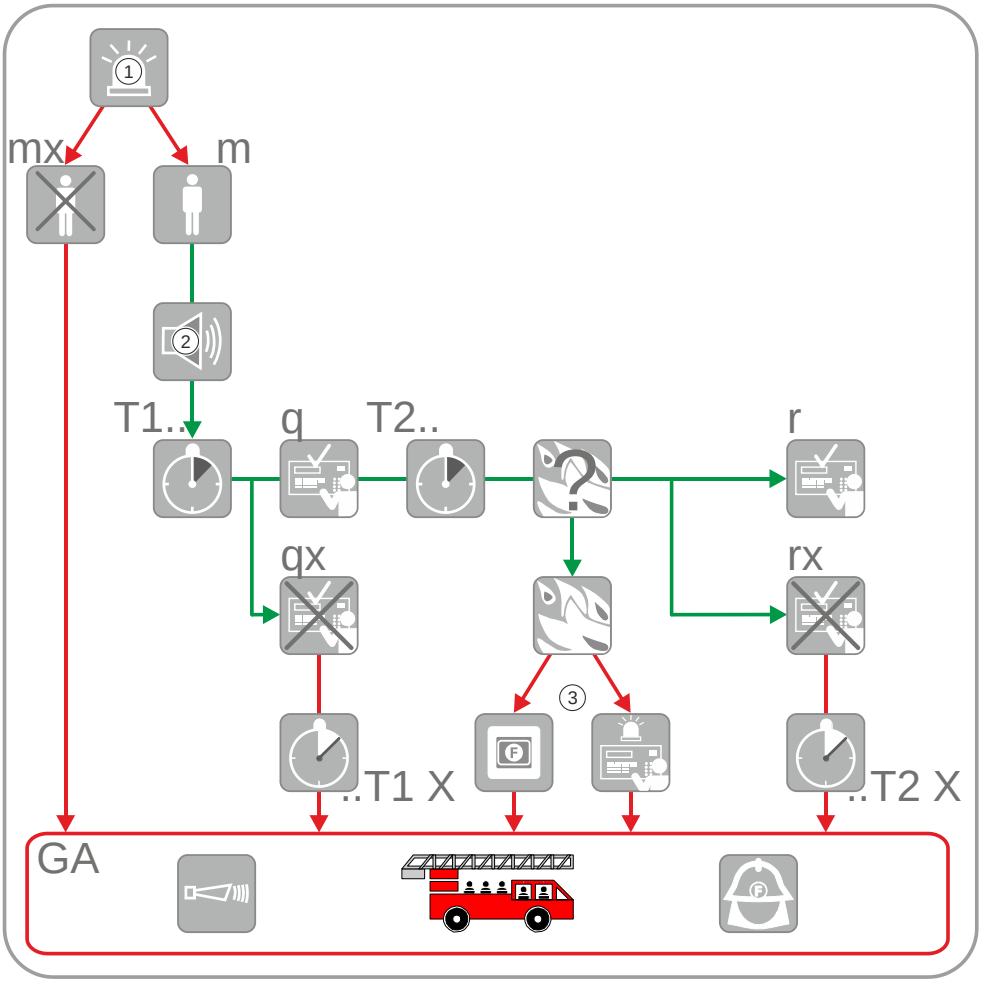


Fig. 27: Alarm verification

1	Alarm event	q	Acknowledge at panel
2	Alarming	qx	Not acknowledged
3	Manual call point or <Alarm delay off> on panel	T2..	Time T2 to investigate the source of alarm and the fire location
mx	'Unmanned operation' operation mode	..T2 X	Time T2 has expired
m	'Manned operation' operation mode	r	Reset on panel
T1..	Time T1 for attendance check	rx	Not reset
..T1 X	Time T1 has expired	GA	Alarming (Global alarm)

Alarm verification proceeds as follows:

- An alarm event activates local alarming and starts the time T1 for attendance check.
- Operating personnel acknowledges alarm event on the panel prior to the expiry of T1. Acknowledging normally silences local alarming.

If there is no acknowledgement, global alarming is activated after T1 expires.

- After acknowledgement, the investigation time T2 starts. During time T2 operating personnel investigates the fire location.
  - In the case of a minor incident the operator resets the alarm event at the nearest operating terminal. The alarming process stops, and no global alarming is activated.
  - In the event of a fire, the nearest MCP or <Alarm delay off> button on panel must be pressed.

Global alarming is also activated after T2 expiry if there is no reset.

Manned operation

Manned operation enables the responsible personnel to examine the fire alarm before initiating the intervention force. This may avoid hassles in case of false alarms.

Attendance check (T1)

In case of a fire incident, the responsible personnel may acknowledge the alert at the panel by pressing the acknowledge button (ACK) within time T1. After acknowledgement, the investigation time T2 starts.

Real 'ALARM' is activated if nobody confirms the alert state within the given time T1.

Investigation time (T2)

During the investigation time T2 the operating personnel may examine the indicated source of alarm and check the cause of the alarm:

- Is it a real fire (MAJOR INCIDENT)?
- Is it a smoldering waste-paper basket (MINOR INCIDENT)?
- Has the installation detected a deceptive phenomenon (MINOR INCIDENT)?

In the event of a major incident, the nearest manual call point or <Alarm delay off> must be pressed. Alarm is then triggered.

The operator may reset the panel for a minor incident or false alarm.

A real alarm is activated if the alarm is not reset within the given time T2. Allowed time per EN 54-2 is T1 + T2 ≤10 min.

16 Appendix B: Delayed Alarm Reset (DAR)

!	*NOTICE*
	The DAR function doesn't fulfill EN54-2. Check whether it is allowed in the country code of practices before using this function.

Field application

The DAR function can be used in apartment blocks for tenant/owner reaction on a false or minor incident by pressing a self-reset button and eliminating the root cause (e.g., ventilating the space) in the flat without triggering the global alarm in the first place and bothering neighbors especially at night.

Function overview

The DAR function serves the purpose of evacuating the affected zone only and delaying the building evacuation depending on the zone delay input functionality. By delaying the whole building's evacuation, it delays the alarm transmission as well.

In the event of a fire alarm, alarm devices in the affected zone rather than in the whole building are activated. If occupants know it is a false alarm or minor incident, building evacuation could be delayed or avoided.

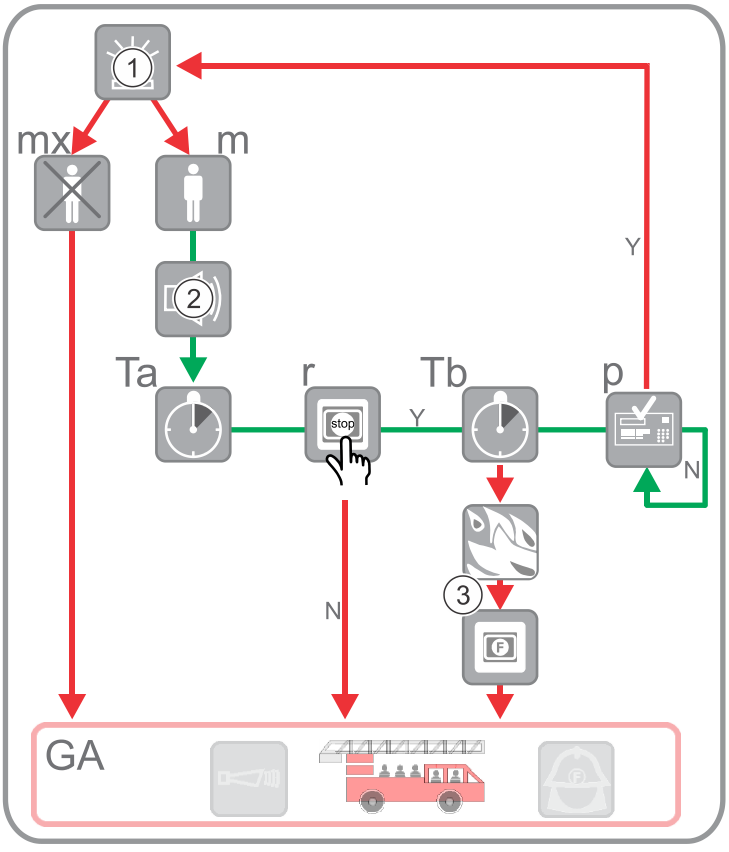


Fig. 28: Delayed alarm reset in manned mode in the period of T1

1	Alarm event	m	'Manned operation' operation mode
2	Local alarming	mx	'Unmanned operation' operation mode
3	Manual call point	GA	Alarming (Global alarm)

r Self-reset button installed and connected to the input or I/O module
- [Y]: The button is pressed before Ta expires.
- [N]: The button is not pressed before Ta expires.

Ta Time for alarm delay (max. 180 seconds)

Tb Time for alarm delay confirmation (max. 180 seconds)

p Panel state
- [Y]: Confirmation time Tb expires and additional alarm event is sensed. If another alarm verification attempt proceeds during 'Manned operation' operation mode, local alarming is activated again. If all attempts (max. three alarm verification attempts) have proceeded, AVC procedure is involved. See Appendix A: Alarm Verification Concept (AVC) [→ 129] for the detailed procedure.
- [N]: Confirmation time Tb expires and no more alarm event is sensed. The panel enters the normal operation mode.

Note: The graphic above also works in the period of T2 if operating personnel acknowledges alarm event on the panel. If T1 or sum of T1 and T2 is shorter than Ta, Ta shall be shortened. Otherwise, AVC enables the global alarm state.

In order for the DAR function to take effect in case of false alarms or minor incidents, the following preconditions must be fulfilled:

- 'Manned' operation mode is active (the 'Manned/Unmanned' LED before  is ON on the panel).
- At least an input or input/output module (any connectable input module but FDCI723), a detector and an alarming device are connected to a ↑ detector line in the occupied space and configured in 'FC360 Panel Configurator' as follows:
  - 'Element Type' of the input channel of the module is set to 'Auto alarm Dev.'.
  - 'Usage' of the input channel of the module is set to 'Trigger isolate'.
  - The AVC function is set to ON for the detector, and T1 is greater than Ta.
  - 'Device Nr.' is the same for the input channel and the detector. Normally 'Device Nr.' is unique for each device, but it has to be the same for different devices in order for the DAR function to take effect. See document A6V10450595 for more information about device numbers.
  - Control logics are configured between causes (input channels, detectors and so on) and control outputs.
  - See document A6V10450595 for the above configurations.
- An additional self-reset button is installed and connected to the input or input/output module so that occupants can push the button to isolate devices and deactivate local alarming in the occupied space in case of false alarms or minor incidents.

Alarm verification proceeds as follows if the DAR function takes effect:

- An alarm event activates local alarming and starts the time 'Time for delay alarm (Second)' for alarm cause check.
- Occupants identify it's a false alarm or minor incident on site and then push the self-reset button before the time 'Time for delay alarm (Second)' expires.
  - Devices in the occupied space are isolated.
  - Local alarming is deactivated.
  - The buzzer on the panel is silenced.
  - 'Time for delay alarm (Second)' stops counting down.
  - The time to confirm the alarm delay (Confirm for delay alarm (Second)) begins to count down.

  Note: Pushing the self-reset button after the expiry of 'Time for delay alarm (Second)' doesn't isolate devices or silence local alarming.
- After the confirmation time expires, the detection device resumes working. If it senses no alarm event, the panel returns to normal state. Otherwise, another attempt of alarm verification proceeds. At most three attempts are allowed. You can configure the attempt number ('Additional delay alarm') together with 'Time for delay alarm (Second)' and 'Confirm for delay alarm (Second)' in task card 'Other settings' in 'FC360 Panel Configurator'.

If no action is taken before the expiry of 'Time for delay alarm (Second)' and the alarm event still exists during the confirmation time, AVC procedure is involved. See Appendix A: Alarm Verification Concept (AVC) [➙ 129].

Fire incident check (Ta)

In case of a fire incident, alarm devices in the zone are activated. During the time Ta, occupants of the affected zone could check and decide:

- Is it a real fire (MAJOR INCIDENT)?
- Is it a minor or false incident (MINOR INCIDENT or NO INCIDENT)?

If it is a minor or false incident, push the self-reset button during the time Ta. The alarm devices in the affected zone are silent and the time Tb is activated for occupants to ventilate the zone. Early fire elimination in the zone allows delayed or unnecessary evacuation of the building.

!	*NOTICE*
	Don't push the self-reset button if it is a real alarm event or major incident! Instead, press the nearest MCP or inform operating personnel of pressing the <Alarm delay off> button on the panel.

Alarm delay confirmation time (Tb)

In the event of a minor or no incident and after long and good room ventilation, the detector normally goes to normal operation. In this case, the alarm deactivates automatically. If a new alarm is detected (some smoke may remain in detector chamber), the whole procedure proceeds again (max. three attempts) and ventilate the zone again. If all attempts have proceeded but the alarm event still exists, AVC procedure is involved. See Appendix A: Alarm Verification Concept (AVC) [➙ 129].

17 Appendix C: Door holder function

Use the 'Door holder' function to control fire door releasers or fire electromagnetic door holders via output channels of FDCIO221, FDCIO222, FDCIO224 and FDCIO361.

Once door releasers or door holders are connected to the output channels above via physical wiring and logic controls are configured in FC360 Panel Configurator, conditions like fire alarms can trigger the release of fire door releasers or door holders and then fire doors are activated in case of emergencies. When conditions like fire alarms are gone, fire doors are deactivated again.

If fire doors are normally open to facilitate people movement but closed under special conditions like fire alarms, fire door activation means closing of the doors while fire door deactivation means keeping the doors open.

To configure logic controls for fire door releasers or door holders in FC360 Panel Configurator

▷ Output channels connecting to fire door releasers or door holders are assigned to device type 'Door holder' in task card 'Detection & Control'.

▷ Device numbers of these output channels are changed based on specific layout plans in task card 'Detection & Control'. Note that a device number cannot be greater than 32 or the same with that of an output channel of 'Control' type.

1. Expand 'Control devices' and find the door holders to be configured in task card 'Cause & Effect'.
2. In the 'Panel' section, activate logic controls between the door holders and the following panel-reported states based on specific layout plans.
   - 'Any fire': Any fire event reported in the panel.
   - 'Global alarm': Any global alarm event reported in the panel.
   - 'Any automatic device': Any device of 'Auto alarm' type is activated and then a corresponding event is reported in the panel.
   - 'Any manual device': Any device of 'Manual alarm' type is activated and then a corresponding event is reported in the panel.
   - 'Any sprinkler device': Any device of 'Sprinkler' type is activated and then a corresponding event is reported in the panel.
   - 'Any 2 auto. devices': Any two devices of 'Auto alarm' type are activated and then corresponding events are reported in the panel.
   - 'Any 2 fire devices': Any two fire detection devices are activated and then corresponding events are reported in the panel.
   - 'Any fault': Any fault event reported in the panel.
   - 'Any disable': Any disable event reported in the panel.
   - 'AC power fault': Any mains voltage failure event reported in the panel.
   - 'Timed channel': Timed channel is activated and then a corresponding event is reported in the panel. See document A6V10450595 for more information about 'Timed channel'.
3. In the 'Zones' section, select one of the following options in the drop-down lists to configure logic controls between the door holders and zones having 'Auto alarm' or 'Manual alarm' devices. Expand the zones and do the same to configure the logic controls between the door holders and individual 'Auto alarm' or 'Manual alarm' devices.
   - 'Fire(F)'. Fire events detected by the corresponding caused devices or zones.
   - 'Trouble(T)'. Trouble events detected by the corresponding caused devices or zones.

- 'Disable(D)'. Disable events detected by the corresponding caused devices or zones.
- 'F&T'. Fire or trouble events detected by the corresponding caused devices or zones.
- 'F&D'. Fire or disable events detected by the corresponding caused devices or zones.
- 'T&D'. Trouble or disable events detected by the corresponding caused devices or zones.
- 'F&T&D'. Fire, disable or trouble events detected by the corresponding caused devices or zones.

⇨ Once a configured logic control is triggered, fire door releasers or door holders are activated accordingly.

Door holder off function

Use this function to disable the 'Door holder' function when an input is closed. All programmed fire door releasers or fire electromagnetic door holders are deactivated, even though some of them were already activated by configured logic controls.

Input modules, I/O modules or digital inputs on the mainboard IO can be used to turn off the 'Door holder' function if the input usage type is configured as 'Door holder off' in FC360 Panel Configurator.

To configure an input as 'Door holder off' in FC360 Panel Configurator

▷ If configuring an input module or input channel of an I/O module, ensure the configured module/channel is assigned to device type 'Technical Dev.' in task card 'Detection & Control'.

1. In task card 'Detection & Control', click an input module or an input channel of an I/O module, or click an onboard input under 'Onboard IO'.

2. In the pane of 'Element Properties', select 'Door holder off' from the usage drop-down list.

18 Appendix D: Voice alarm device synchronization

Two ways of voice alarm device synchronization are available in FC360 system: synchronization only within devices having the same device number and synchronization with devices having different device numbers.

- As a default setting in task card ‘Other settings’ in FC360 Panel Configurator, checkbox 'Synchronization between EVAC zones (max 3 devices per zone)' is not activated. This means synchronization happens only within voice alarm devices having the same device number. Voice alarm devices having different device numbers are not synchronized. See document A6V10450595 for more information about device numbers.

  The panel guarantees that the synchronization within the same device number works if no more than five device numbers are used.
- If checkbox 'Synchronization between EVAC zones (max 3 devices per zone)' is activated, synchronization happens with devices having different device numbers. Assign maximum three voice alarm devices to a device number in task card ‘Detection & Control’ to ensure the synchronization.

  The panel supports max. 64 device numbers if this synchronization way is adopted.

  Note: Only 'Global alarm' activates the synchronization of voice alarm devices having different device numbers. All other activation options, e.g., Any manual device, don’t activate the synchronization with voice alarm devices activated by 'Global alarm'.

!	*NOTICE*
	● If evacuation module (FTO3601-H1) (NL) is installed, pressing the <START> button twice activates all voice alarm devices, even though some voice alarm devices are configured to be triggered only by manual alarms. Synchronization happens within all voice alarm devices. ● Voice test activates all voice alarm devices. Synchronization happens within all voice alarm devices in voice test mode.

Configurations of voice alarm device synchronization in FC360 Panel Configurator

Checking the checkbox of 'Synchronization between EVAC zones (max 3 devices per zone)' in task card 'Other settings' enables synchronization within all voice alarm devices linked to 'Global alarm' in a global alarm state. Based on different used cases, device behaviors may be different:

- If all voice alarm devices are configured to be triggered by panel state 'Global alarm', synchronization happens within all voice alarm devices in a global alarm state.
- If some voice alarm devices are configured to be triggered only by manual alarms, synchronization within all voice alarm devices may or may not happen:
  - If an auto-alarm device is activated, only the voice alarm device linked to the specific auto-alarm device is activated during T1 and T2. All the others remain deactivated in this period.
  - If an auto-alarm device triggers a global alarm, voice alarm devices linked to manual-alarm devices are not activated. Synchronization only happens within voice alarm devices linked to 'Global alarm'.
  - If an auto-alarm device triggers a global alarm and a manual-alarm device is also activated later on, synchronization happens first within voice alarm devices linked to 'Global alarm', and then the voice alarm device linked to the activated manual-alarm device joins the synchronization.

– If a manual-alarm device triggers a global alarm, synchronization happens within the linked voice alarm device and the voice alarm devices linked to 'Global alarm'.

See chapter 'Appendix A: Alarm Verification Concept (AVC) [➞ 129]' for more information about global alarm, T1 and T2.

19 Appendix E: Device type list

You can number devices freely from 1 to 400 and assign them to the following zones:

- Zone (T1…T8): used for devices of Technical, Tech. latched, Fault and Gas types.
- Zone (1…32): used for devices of Auto alarm, Manual alarm and Sprinkler types.

Device types	Parameters	Values	Optional zone	Optional devices
Auto alarm Dev.	AVC function	ON (default)	Zone 1…32	FDF241-9, FDL241-9, HI722, HI720, OH720, OOH740, OP720, OP360, HI360, OH360; Fire sensor on OOHC740; Collective input on FDCI723; General input on FDCI221, FDCI361, FDCIO221, FDCI222, FDCIO222, FDCIO224, FDCIO361
		OFF		
	Type A function	ON		
		OFF (default)		
	Type A inhibit time(sec)	30…60		
		60 (default)		
	Latched	Yes (checked, default)		
		Yes (unchecked)		
Manual alarm	AVC function	ON	Zone 1…32	FDM221, FDM223, FDM224, FDM225, FDM226, FDM231, FDM365-RP; Collective input on FDCI723; General input on FDCI221, FDCI361, FDCIO221, FDCI222, FDCIO222, FDCIO224, FDCIO361
		OFF (default)		
Sprinkler Dev.	-	-	Zone 1…32	General input on FDCI221, FDCI361, FDCIO221, FDCI222, FDCIO222, FDCIO224, FDCIO361
Technical Dev.	Technical device with panel buzzer activation	-	Zone T1…T8	General input on FDCI221, FDCI361, FDCIO221, FDCI222, FDCIO222, FDCIO224, FDCIO361
Tech. latched	Technical Latched device with panel buzzer activation	-	Zone T1…T8	General input on FDCI221, FDCI361, FDCIO221, FDCI222, FDCIO222, FDCIO224, FDCIO361
Gas Dev.	-	-	Zone T1…T8	CO sensor on the OOHC740
Fault Dev.	-	-	Zone T1…T8	General input on FDCI221, FDCI361, FDCIO221, FDCI222, FDCIO222, FDCIO224, FDCIO361

Device types	Parameters	Values	Optional zone	Optional devices
Control Dev.[1]	-	-	-	General output on the FDCIO221, FDCIO222, FDCIO224, FDCIO361
Door holder[1]	-	-	-	General output on the FDCIO221, FDCIO222, FDCIO224, FDCIO361
EVAC siren Dev.[2]	-	-	-	Addressable alarm devices (without voice indication) and sounder bases on the detector line: FDS224-R, FDS224-W, FDS226-RW, FDS226-WW, FDS226-RR, FDS226-WR, FDSB226-WW, FDSB226-WR, FDS364, FDS366, DBS720, FDS221, FDS229, DBS721, DBS728, DBS729.
EVAC voice Dev.[2]				Addressable alarm devices (with voice indication) and sounder bases on the detector line: FDS225-R, FDS225-W FDS227-RW, FDS227-WW, FDS227-RR, FDS227-WR, FDS227-RW-C, FDS227-WW-C, FDS227-RR-C, FDS227-WR-C, FDSB227-WW, FDSB227-WR, FDSB227-WW-C, FDSB227-WR-C.

[1] Devices can only be numbered from 1 to 32. Besides, 'Control' and 'Door holder' devices cannot share the same device number.

[2] Devices can only be numbered from 1 to 64. Besides, 'EVAC siren' and 'EVAC voice' devices cannot share the same device number.

The FDCI723 CANNOT report a 'Glass broken' event even if it is assigned to 'Manual alarm'.

20 Appendix F: Flash file behaviors

Actions	Effects				
	Alarm Counter	**Configuration File**	**Event Log**	**↑ PMI Display**	**Password of 'FC360 Panel Configurator'**
Update firmware	Unchanged	Unchanged[1]	Unchanged[1]	Unchanged	Unchanged[1]
Download an existing configuration file	Unchanged	Modified	Unchanged	Unchanged	Unchanged
Download a new created configuration file	Unchanged	Modified	Unchanged	Modified	Unchanged
Reset to factory settings	Unchanged	Modified	Unchanged	Modified	Modified

[1] Depends on the update type. If firmware is updated from version 01.02.xx to 02.xx.xx or higher, the configuration data, event logs and customized login passwords are erased. Create **backups** of the **configuration data** and **event logs** for the panel **before** updating firmware.

21 Appendix G: Default settings for panel/devices

Panel site information:

Items	Default settings
Name	Site
Installer name	Siemens
Contact tel.	-
Service reminder enable	No
Service interval	24 months
Time channel enable	Yes
Timed channel active	23:00:00
Timed channel inactive	23:00:15
Addressable sounders tone 1	Continuous (970Hz)
Addressable sounders tone 2	Intermittent (950Hz)
Voice selection	No
AVC T1 time	3 mins
AVC T2 time	5 mins
Timed switching to unmanned	No

Inputs/Outputs on mainboard

Items	Programmable type	Input usage / Output usage	Tone	Activation condition (cause)
Sounder line 1	-	Sounder	Continuous	Any fire
Sounder line 2	-	Sounder	Continuous	Any fire
Configurable IO 1	Digital Input	Class Change Usage	-	-
Configurable IO 2	Digital Input	Initiate extra PSU fault	-	-
Configurable IO 3	Digital Output	Control Output	-	-
Configurable IO 4	Digital Output	Control Output	-	-
Relay 1	-	RT Fire	-	-
Relay 2	-	RT Fault	-	-
Relay 3	-	Fire alarm	-	-

Outputs on Output card (4M)

Items	Output usage	Monitor creeping open / short	Tone	Activation condition (cause)
Configurable OUT1	RT Fire	No	-	Global alarm
Configurable OUT2	RT Fault	No	-	Any fault
Configurable OUT3	Sounder line	No	Continuous	Any fire
Configurable OUT4	Sounder line	No	Continuous	Any fire

Communication interface

Items	Address	Trouble inhibited	Baud rate	Parity	Data bits	Stop bits	Flow control
ESPA	1	No	9600	None	8	1	None
DMS	4	No	9600	None	8	1	None
Ext. printer	-	-	9600	None	8	1	None

Special panel settings

Items	Default settings
MCP broken glass message [1]	Yes
MCP cannot be disabled	No
Sounder outputs activation via silence/resound button	No
Resound sounders on new alarm	Yes
Lamp test activation possible at access level 1	Yes
Acknowledge used as silence	No
Acknowledge availability at access level 1	No
Block ackn./reset if RT is active	No
RT Fire Relay, default activated (inverse driven)	OFF
RT Fire LED activated by	RT Fire
RT fault, default activated (inverse driven)	ON
Technical device with panel buzzer activation	No
Technical Latched device with panel buzzer activation	Yes
Synchronization between EVAC zones (max 3 devices per zone)	No
Internal AI operation in idle mode	Normal: Off
Ext. Alarm Indicator global setting (connected)	Yes
Main power fault delay function	ON
Main power delay time	10 mins
Time for delay alarm (Second)	60 s
Confirm for delay alarm (Second)	60 s

Items	Default settings
Additional delay alarm	1
Automatically adjust clock for daylight saving time	Yes
Panel display style	Style 1
Floor repeater display style	Style 1
Enable DHCP server	Yes
Panel IP address	192.168.251.100
Subnet mask	255.255.255.0
Default gateway	192.168.251.19

[1] The 'Glass broken' message from an activated MCP disappears automatically 15 seconds after reset (i.e. replacement of glass).

The default value of each item is based on the country selection.

Detector parameters

Devices	Sensitivity	Detection method	↑ Parameter set
OP360	-	-	-
OP720	01: Standard	-	-
HI360	-	02: A2R	-
HI720	-	02: A2R	-
HI722	-	01: A2S	-
OH360	-	-	-
OH720	01: Robust	-	-
OOH740	-	-	04 (OOT): Balanced
OOHC740 (fire sensor)	-	-	10 (OOT): Balanced CO
OOHC740 (CO sensor)	-	-	-
FDF241-9	01: Robust	-	-
FDL241-9	02: Standard	-	-

The default settings of the following parameters for the devices above are the same:

- Attach AI: Yes
- Activation of external AI: By the element
- AVC function: ON
- Type A function: OFF
- Latched: Yes

Manual call points parameters

Devices	Attach AI	Activation of external AI
FDM221	-	-
FDM223	Yes	By the element
FDM224	Yes	By the element
FDM225	-	-
FDM226	-	-
FDM231	-	-
FDM365	-	-

The default setting of AVC function is OFF for all the above devices.

Input parameters of input modules and I/O modules

Devices	Short circuit monitoring enabled	Inversion
FDCI221	Yes	Normal
FDCI222	Yes	Normal
FDCI361	Yes	-
FDCIO221	Yes	Normal
FDCIO222	Yes	Normal
FDCIO224	Yes	Normal
FDCIO361	Yes	-

The default settings of the following parameters for the above devices are the same:

- Not in use: No
- Usage: Standard
- Technical device with panel buzzer activation : No

FDCI723 zone module parameters

Items	Default settings
Response time setting	Alarm: 0s / Malfunction: 10s
Line type	Voltage limiting alarm load
EOL type	20V transzorb diode
Device Type	Auto alarm
Not in use	No
AVC function	ON
Latched	Yes

Outputs parameters of I/O modules

Devices	Output Mode	Fail safe	Output style
FDCIO221	Inactive: Off / Active: On	Freeze	Monitored output
FDCIO222	Inactive: Off / Active: On	Freeze	-
FDCIO224	Inactive: Off / Active: On	Freeze	-
FDCIO361	Inactive: Off / Active: On	Freeze	Monitored output

The default settings of 'Not in use' is 'No' for all the devices above.

Alarm device parameters

Devices	Volume	Beacon Intensity	Silent sounder
FDS224	High	-	-
FDSx226	High	Low	-
FDS225	High	-	-
FDSx227	High	Low	-
FDS364	-	-	-
FDS366	-	Medium	-

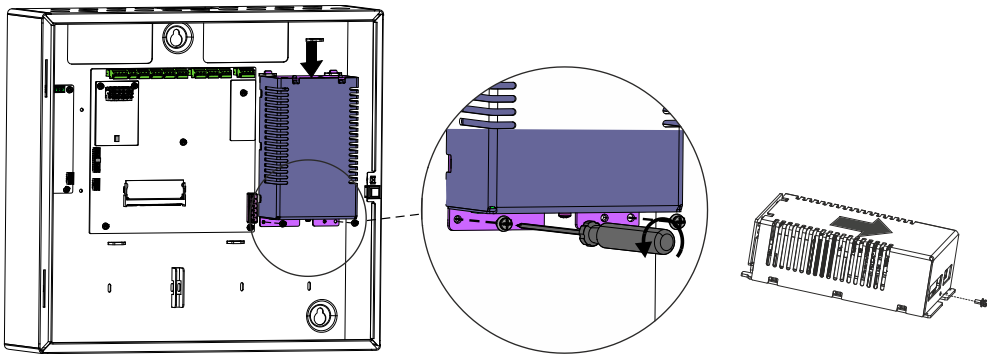
FT2010 floor repeater parameters

Items	Default settings[1]
1. List faults	No
2. Not used	No
3. List isolations	No
4. List technical messages	No
5. Activate/deactivate sounders	No
6. Isolate RT fire	No

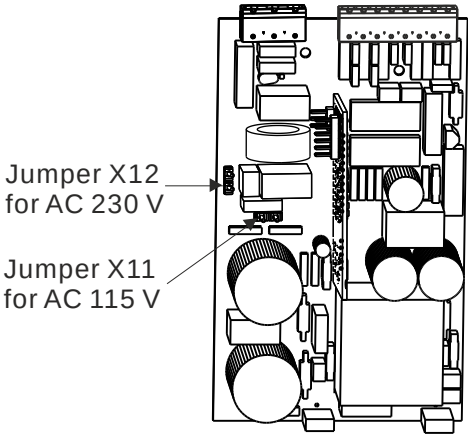
[1] By default, both function keys and LEDs are disabled. Change the default settings to Yes to enable function keys and LEDs.

22 Appendix H: Switch mains to AC 115 V

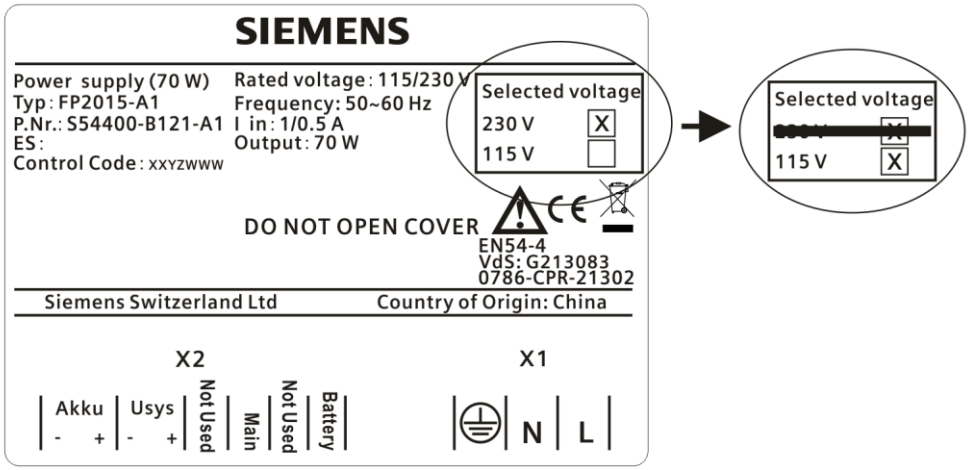
1. Remove power supply FP2015-A1 from the panel and open it.



2. Move the jumper from X12 to X11 on the PCB board.



3. Mark '115 V' with 'x' and '230 V' with '-------' on the label indicated as below.



Glossary

Alarm indicator

Visual display to signal an alarm or pre-alarm.

Alarm verification concept

Concept for preventing false alarms which takes into account the interaction of the operating personnel in the alarming sequence.

C-NET

Addressed detector line for C-NET devices.

C-NET device

A device connected to the C-NET detector line.

Detector line

Electrical connection between the detectors and the fire control panel. There are collective detector lines and addressed detector lines.

External alarm indicator

Optical element for displaying the fire location, which is at some distance from the detector. It is normally mounted in the room at the point where the corresponding detector is accessible.

False alarm

Alarm not triggered by a danger.

Floor repeater display

A display device without operating elements.

Floor repeater terminal

A display device with operating elements for acknowledging and resetting alarms and faults.

Isolation

Status of one part of the fire detection installation, which suppresses the evaluation of all signals.

Line separator

An electronic switch which automatically disconnects the defective part of the line in the event of a short-circuit.

Loop

Detector line topology which runs from the fire control panel via the fire detectors and back to improve operational reliability. This type of wiring allows all detectors to communicate with the control panel even in the event of an open line or short-circuit.

Manned

Switching status of the alarm organization, if operating personnel are present and can intervene should an event arise (alarm, fault).

Parameter set

Defined detector behavior, e.g. in terms of sensitivity, resistance to deceptive phenomena, response time. Detectors can be operated with different parameter sets.

PMI

The arrangement of operating and display elements on a fire control panel or on a fire terminal. Includes the LEDs, buttons, the display, and the operation options such as the key switch, fire brigade control and display (FBA), and the EVAC NL Person Machine Interface.

Remote transmission

Transmission of information based on events to a remote station, e.g. the fire brigade, by means of an RT device. This is usually performed via the public telephone network.

RT

The abbreviation for remote transmission.

Stub

Detector line which is only connected to the fire control panel on one side. In the event of an open line or short-circuit, it may no longer be possible for all fire detectors to communicate with the fire control panel.

Unmanned

Switching status of the alarm organization, if operating personnel are not present and cannot intervene should an event arise (alarm, fault).

Zone

Level in the detection tree. The zone has at least one fire detector. The decision on alarm is made at zone level. The zone is assigned to an area.

Index

Issued by
Siemens Switzerland Ltd
Smart Infrastructure
Global Headquarters
Theilerstrasse 1a
CH-6300 Zug
+41 58 724 2424
www.siemens.com/buildingtechnologies