SIEMENS

XC10
Extinguishing control unit

XC1001-A / XC1005-A / XC1003-A

Installation
Commissioning
Maintenance

A6V10257473_e_en_--

2015-03-04

Building Technologies

Control Products and System

1 About this document

Purpose of the document
This document describes the installation, the commissioning and the maintenance of the XC100x-A equipment. It provides an overview of the structure and functions of the system as a whole as well as of the individual devices.
While following the instructions, a reliable operation is assured.

Scope
The information contained in this document is valid for the market package MP2.3. The document also contains information on country-specific components. Country-specific components are marked with square brackets, e. g. [FR], and may not be sold/used in your country.

Target audience
This document and the information contained therein are aimed at the target groups defined below:

Personnel	Activity	Qualification
Product manager	– Performs local product management – Responsible for exchanging information between the headquarters and his/her Regional Company (RC) for his/her product range	– Has suitable specialist training for the function and for the product range – Has attended the PM training courses
Project manager	– Performs project management – Coordinates the use of all persons and resources involved in the project according to schedule – Continuously supplies information necessary for project realisation	– Has suitable specialist training for the – function, scale of the project and product range – Has attended the training courses for Project Managers
Installer	– Assembles and installs the components at the place of installation – Performs a subsequent check of the installation	– Has received specialized 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 – Search for and correct malfunctions	– Has suitable specialist training for the function and for the product range – Have attended the training courses for commissioning personnel
Maintenance personnel	– Carry out all maintenance work and check for correct functioning	– Has suitable specialist training for the function and for the product range

Reference documents

Designation	Heading
A6V10257477	XC10 Extinguishing control unit Operating manual
001204	Fire alarm signal in areas at risk of explosion Principles, applications, installation, maintenance

Identification of the document

Location	Definition
Title page	– Short name – Name in full – Document purpose
Last page bottom left-hand side	– Document no. (number-modification index-language-country) – Date of issue
Last page bottom right-hand side	– User's guide – Register

Revision history

Document no.	Edition date	Brief description
A6V10257473_e_en_--	03.2015	- MP2.3 SR2
A6V10257473_d_en_--	04.2012	- MP2.3 SR1
A6V10257473_c_en_--	09.2010	- chap. 4.5 updated (fig. 5 and table) - chap 7.2.1 added: method for calculation of the battery capacity - chap. 7.3: fig. 7.15 updated - chap. 8 updated - chap. 8.3: fig. 31 updated (loss of agent is normally closed) - chap 9.4 added: description of repeater display and repeater terminal - chap 12.1: procedure step 5 updated - chap 12.2: country pre-settings updated - chap 12.9: step 30 option 04 updated - chap 12.18 added (step 60) - chap 13.1 updated (paragraph number) - chap 13.2 updated: warning for the calibration added - chap 14.1 updated - chap 14.2 updated (10s instead of 5s) - chap. 15, 16, 17 updated: several wording - chap 18 added - chap. 19, 20 updated - CE marking papers added at the end of the document
A6V10257473_b_en_--	01/2010	Corrections after field tests: - Chap. 3: Standards / 4.19 monitoring the status of components (spelling mistake) - Chap.4: fig 4 updated - Chap. 6.3 label for XC1003-A is Pos. 8 not Pos.4 - Chap. 7.6.2 …. “to equipment outside” (spelling mistake) - Chap 7.8: 24V polarity output was wrong. 24V(+) is on X5-3 and 24V(-) is on X5-4 - Chap. 8.2: note added for the connection of the 24V power supply - Chap 8.3: fig 31 modified: resistor 3.3k on RS485 line removed - Chap 11: fig 33 and 34 updated - Chap 14.2: PMI picture is added on the top of the description table, for an easier checking - Chap. 16.2: access code for the alarm counter was wrong - Spelling mistakes
A6V10257473_a_en_--	11/2009	First edition MP2.1

2 Safety instructions

2.1 Danger levels

The following pictograms indicate the possible danger levels, their severity and consequences.

DANGER	Imminent danger! ➔ Serious injuries or death.
WARNING	Potentially dangerous situation ➔ Serious injuries or death.
CAUTION	Potentially dangerous situation ➔ Light injuries or material damage.
NOTE	Important information requiring special attention.

2.2 Safety instructions

Products are developed and manufactured in accordance with the applicable international and European security standards.
The local rules of installation, exploitation and destruction of the product apply and must be respected just like the safety instructions which appear in the documentation of the product.

Electric installations

CAUTION	Interventions on wiring should be carried out only by qualified personnel.
CAUTION	Respect the safety instructions in explosive zone.

- Hardware must not be powered during commissioning and maintenance
- Affix an external label “DANGER external voltage” on the terminals connected to an external voltage source
- Separately lay the power lines towards the control unit. They must be fitted with their own, clearly identified fuses
- Ground in accordance with the local security standards

Assembly, installation, commissioning and maintenance

- If any tools or accessories such as ladders are required, safe and suitable devices must be used
- When the extinguishing control panel is started up, it must be ensured that no instable conditions can occur
- Controls may only be set to normal function when the product operability has been completely tested and the system has been handed over to the customer.
- Control release for testing should not damage the installation
- Avoid the inopportune release of RT-alarm
- Inform the reception station before an RT-alarm test
- Installation and commissioning shall be performed by trained personal

Product operation check
- Inform the personnel of the formation of a smoke cloud and presence of noise
- Inform the personnel before alarm devices check and anticipate possible panic reactions
- Warn the alarm reception centers and the fault reception stations connected to the system before carrying out the tests

Design modifications of systems and products
- Modifications to the system and to individual products may lead to faults, malfunctioning and safety risks
- Intended system modifications or extensions require written approval from Siemens and the relevant safety authorities

Components and spare parts
- Components and spare parts must comply with the technical specifications defined by Siemens. Only use products recommended or prescribed 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 type recommended by Siemens
- Batteries must be disposed of in an environmentally friendly manner. Country specific directives and regulations must be observed. They must be deposited at the collection places assigned to this purpose.
- Note that the cylinders containing the extinguishing agent are under pressure and that they must consequently be replaced in accordance with the safety instructions in force

Disregard of the safety regulations

Before they are delivered, 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:
- 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

2.3 Standards and directives complied with

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

3 Standards

In addition to the requirements of EN12094-1 and EN54-2, the XC100x-A control panel complies with the following optional functions:

EN 12094-1	
Clause	**Description**
4.17	Delay of extinguishing signal
4.18	Signal representing the flow of extinguishing agent
4.19	Monitoring the status of components
4.20	Emergency hold device
4.21	Control of flooding time
4.23	Manual only mode
4.24	Triggering signals to equipment within the system
4.26	Triggering of equipment outside the system
4.27	Emergency abort device
4.29	Release of the extinguishing media for selected flooding zones (only for XC1003-A)
4.30	Activation of alarm device with different signals

EN 54-2 / A1	
Clause	**Description**
7.8	Output to fire alarm devices (Item C – EN54-1)
7.9.1	Control of fire alarm routing equipment (Item E – EN54-1)
7.12.1	Dependencies on more than one alarm signal (Type A)
7.13	Alarm counter (only with XC1005-A)
8.3	Fault signals from point
8.4	Total loss of the power supply
8.9	Output to fault warning routing equipment (Item J – EN54-1)
10	Test condition

Following additional functions are also available:

- transmission of information's outside the panel:
  - 8 programmable digital outputs
  - programmable relay contacts
- reception of information's from outside:
  - control inputs (3 are programmable)
- 24V power supply output

4 Overview

The equipment is declined in 3 versions:

- Wall mounting cabinet: XC1001-A / XC1005-A
- 19” rack cabinet: XC1003-A

4.1 XC1001-A

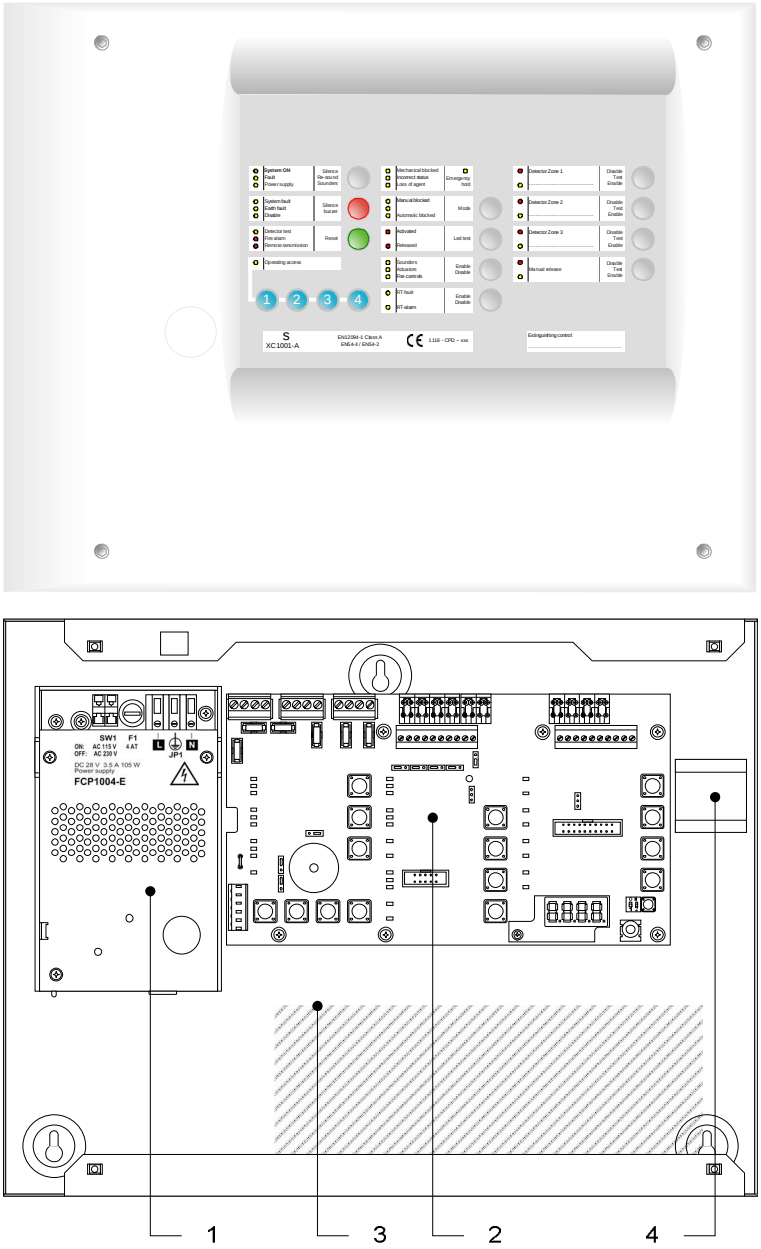


Fig. 1 XC1001-A

1 FCP1004-E power supply unit with charger
2 XCM1002 mainboard
3 4.5 A/h batteries
4 DIN rail for accessory mounting (Z3B171 relay module)

4.2 XC1005-A

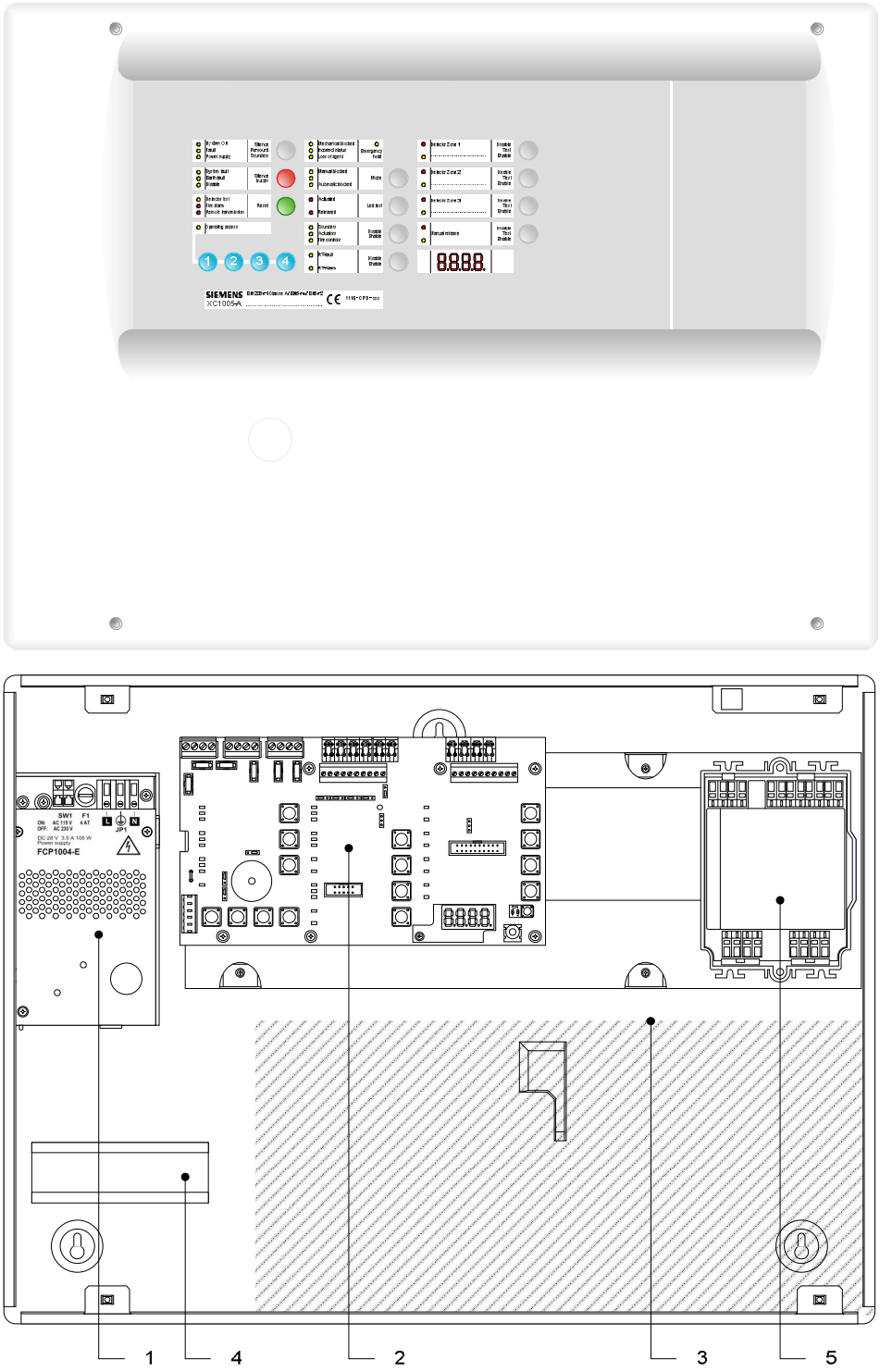


Fig. 2 XC1005-A

1 FCP1004-E power supply unit with charger
2 XCM1002 mainboard
3 17 A/h batteries
4 DIN rail for accessory mounting (Z3B171 relay module)
5 FDCI / FDCIO222 module for the connection to a fire detection system (option)

4.3 XC1003-A

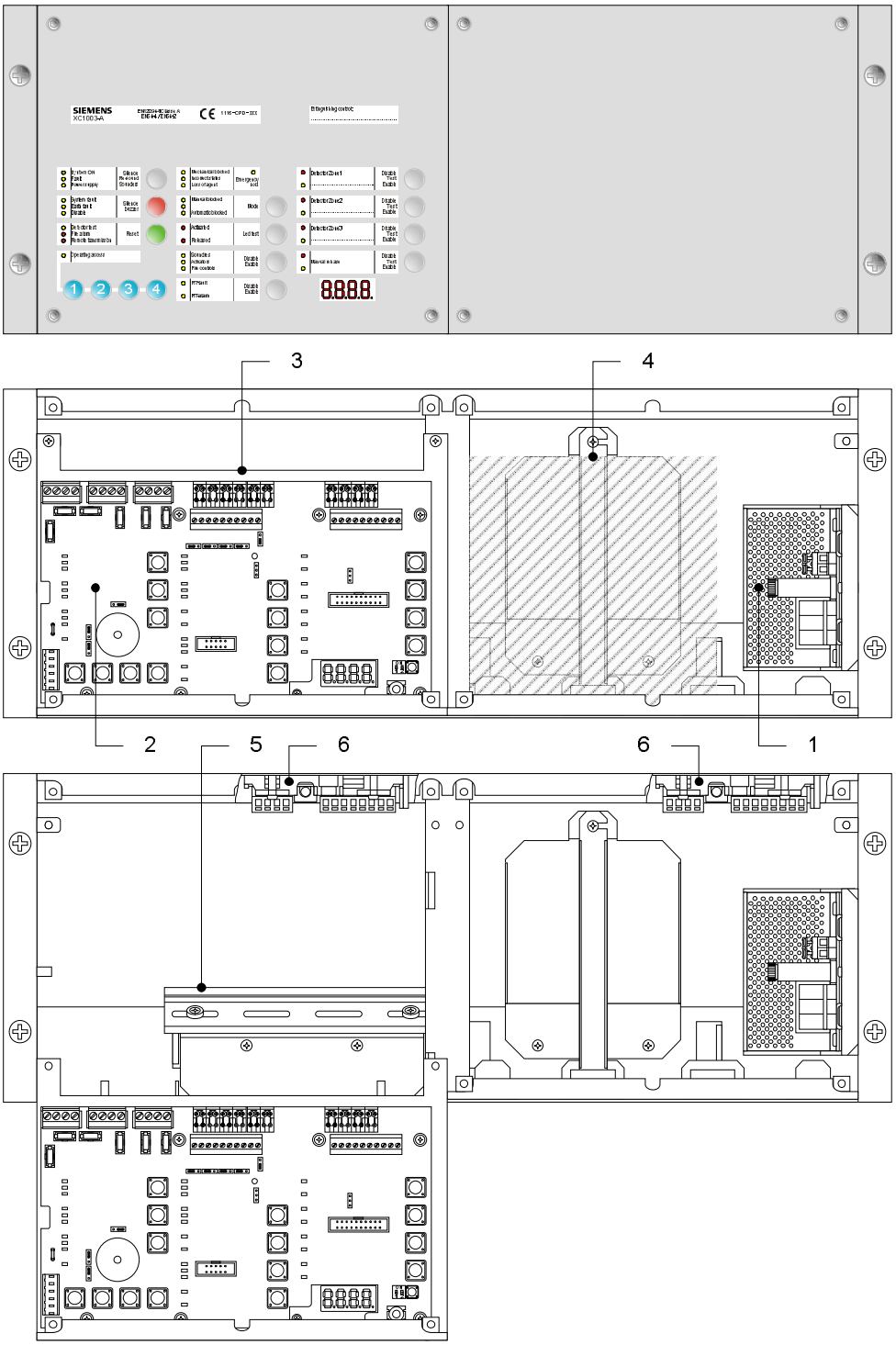


Fig. 3 XC1003-A

1 FCP1004-E power supply unit with charger
2 XCM1002 mainboard
3 Removable mainboard holder
4 4.5 A/h or 7.2 A/h batteries
5 DIN rail for accessory mounting (Z3B171 relay module, XCA1030 multi-sector modules, etc.)
6 FDCI / FDCIO222 module for the connection to a fire detection system (option)

4.4 FCP1004-E

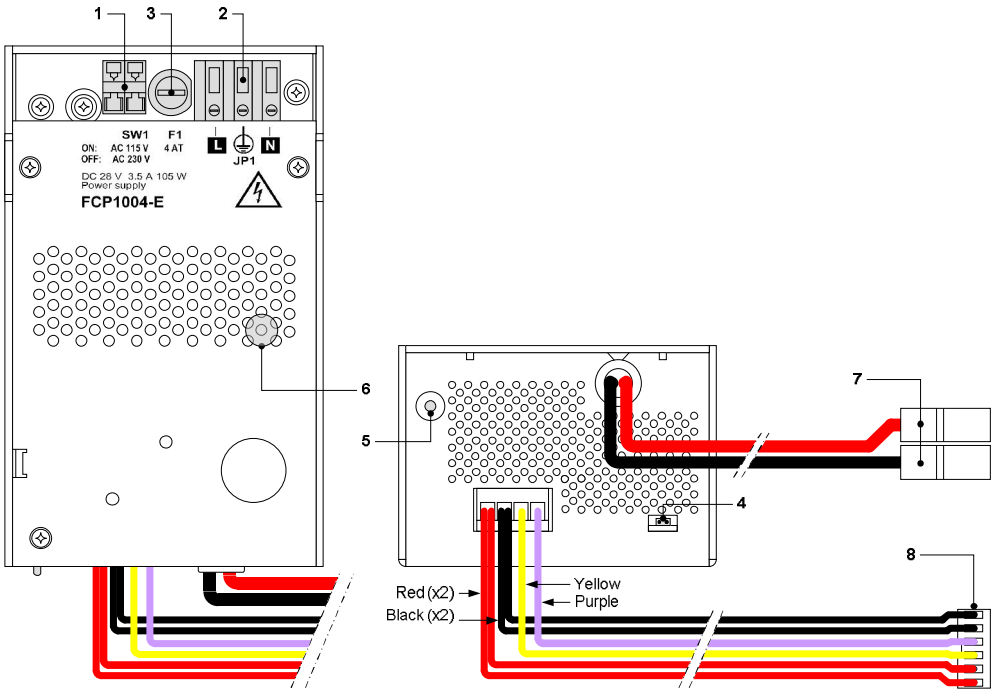


Fig. 4 FCP1004-E power supply unit

Mark	Function	Remarks
1	Mains voltage setting	Shunt ON = 115VCA, shunt OFF = 230VCA
2	Mains terminal block	
3	Mains fuse 4A / 250V	
4	System start without mains power	Shunt the 2 terminals with a jumper and remove after system start
5	Temperature sensor for battery charging voltage compensation	Do not cover
6	Internal green LED «Mains operation» but visible from the front	Not lit if no mains voltage
7	Battery connection	
8	XCM1002 main board connection	

Security level of terminal blocks 1 and 2:	Dangerous voltage
Security level of other terminal blocks:	SELV (Safety Extra Low Voltage)

4.5 XCM1002

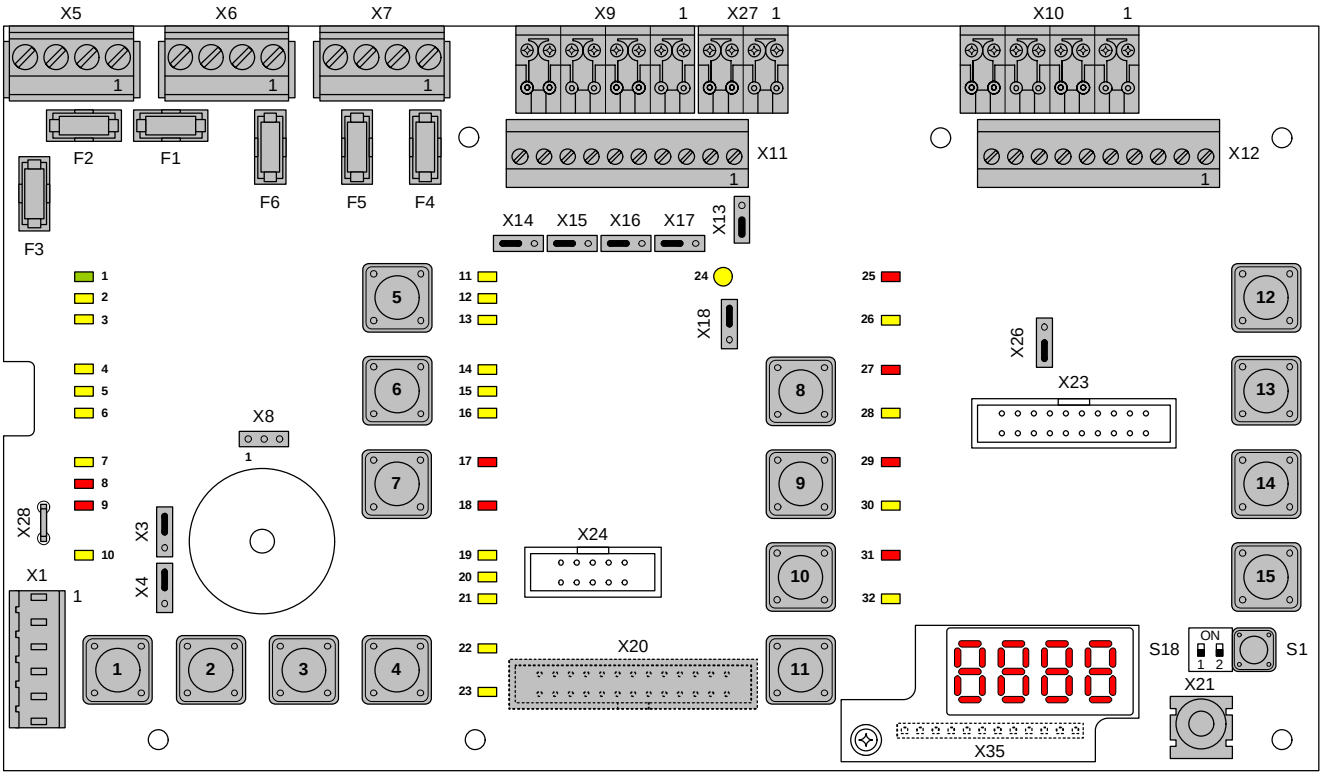


Fig. 5 XCM1002 board

Setting elements			
X3	Internal buzzer Enable/Disable		Jumper up (factory setting) : buzzer enabled Jumper down : buzzer disabled (only for servicing)
X4	Type of power supply		Jumper up (factory setting) : FCP1004-E Jumper down : do not use (for further use of external power supply)
X8	Operating access Level 2		Jumper on the left: Level 2 permanent access 1 – 2: external key switch (option)
X13	Relay contact type 1 (NO or NC)		Jumper up : NC contact Jumper down (factory setting) : NO contact
X14	Relay contact type 5 (NO or NC)		Jumper on the right : NC contact Jumper on the left (factory setting) : NO contact
X15	Relay contact type 4 (NO or NC)		Jumper on the right : NC contact Jumper on the left (factory setting) : NO contact
X16	Relay contact type 3 (NO or NC)		Jumper on the right : NC contact Jumper on the left (factory setting) : NO contact
X17	Relay contact type 2 (NO or NC)		Jumper on the right : NC contact Jumper on the left (factory setting) : NO contact
X18	Repeater (RTNet end of line element)		Jumper up (factory setting) : EOL connected Jumper down : do not use
X26	Serial connection (not used)		Jumper down (factory setting) : do not change the position
Other elements			
F1 / F2	Pluggable fuse 2 AF	Fuse for protection of control outputs 4 (F1) and 5 (F2)	
F3	Pluggable fuse 1 AT	Fuse for protection of 24V output	
F4 / F5 / F6	Pluggable fuse 1 AT	Fuse for protection of control outputs 1 (F4), 2 (F5) and 3 (F6)	
S1	Reset	—	
S18-1 / S18-2	Not used	Do not change (factory setting : OFF)	

PCB terminal blocks			
X1	Plug-in block 6 points (1.5 mm^2 max.)	1-2 (–) / 5-6 (+)	24V power supply
		3-4 (+)	Power supply monitoring
X5	Plug-in block 4 points (2.5 mm^2 max.)	1 (+) / 2 (–)	Monitored output 5
		3 (+) / 4 (–)	24V use output
X6	Plug-in block 4 points (2.5 mm^2 max.)	1 (+) / 2 (–)	Monitored output 3 (control polarities, reversed in standby)
		3 (+) / 4 (–)	Monitored output 4
X7	Plug-in block 4 points (2.5 mm^2 max.)	1 (+) / 2 (–)	Monitored output 1 (control polarities, reversed in standby)
		3 (+) / 4 (–)	Monitored output 2 (control polarities, reversed in standby)
X9	Plug-in block 8 points (1.5 mm^2 max.)	1 (+) / 2 (–)	Monitored input 1
		3 (+) / 4 (–)	Monitored input 2
		5 (+) / 6 (–)	Monitored input 3
		7 (+) / 8 (–)	Monitored input 4
X10	Plug-in block 8 points (1.5 mm^2 max.)	1 (+) / 2 (–)	Fire detectors zone 1
		3 (+) / 4 (–)	Fire detectors zone 2
		5 (+) / 6 (–)	Fire detectors zone 3
		7 (+) / 8 (–)	Extinguishing manual control
X11	Plug-in block 10 points (1.5 mm^2 max.)	1 / 2	Potential-free contact relay 1 (NO or NC)
		3 / 4	Potential-free contact relay 2 (NO or NC)
		5 / 6	Potential-free contact relay 3 (NO or NC)
		7 / 8	Potential-free contact relay 4 (NO or NC)
		9 / 10	Potential-free contact relay 5 (NO or NC)
X12	Plug-in block 10 points (1.5 mm^2 max.)	1 … 8 (–)	Logical outputs 1 to 8
		9 (–) / 10 (+)	Repeater display / Repeater terminal RTNet connection
X21	Jack 2.5 mm	—	Maintenance PC
X27	Plug-in block 4 points (1.5 mm^2 max.)	1 (+)	Reset
		2 … 4 (+)	Unmonitored inputs 2 to 4
X28	Faston 5.3 mm	(+)	To positive of battery (to provide “Total loss of power supply” function (see note 1)
X20 (*)	Flat cable 26 points	—	Connection for multi-sector module XCA1030
X35	Terminal 12 points	—	Connection for 4 digits display
X23, 24	Not used	—	—

(*) on welding side

Note 1: The XC10 provides the EN54-2 option with requirement 8.4 called “Total loss of power”. This option when selected activates the system fault LED and the buzzer continuously, for at least 1 hour after a low discharge battery disconnection. The option can be selected by wiring the +BAT terminal to the positive voltage of batteries (use of remaining power after battery disconnection).

4.6 User interface

All display and control elements, except 4-digit display for XC1001-A version, are accessible to the user:

- Led 1 to 32 indicators for operating condition,
- Keys 1 to 15 allowing :
  ➔ operating access
  ➔ operation (reset, off, test, etc)
  ➔ system test
  ➔ user functions programming
- 4-digit display showing:
  ➔ programming steps and options
  ➔ pre-discharged warning time count down
  ➔ other information's (calibration states, alarm counter, etc)

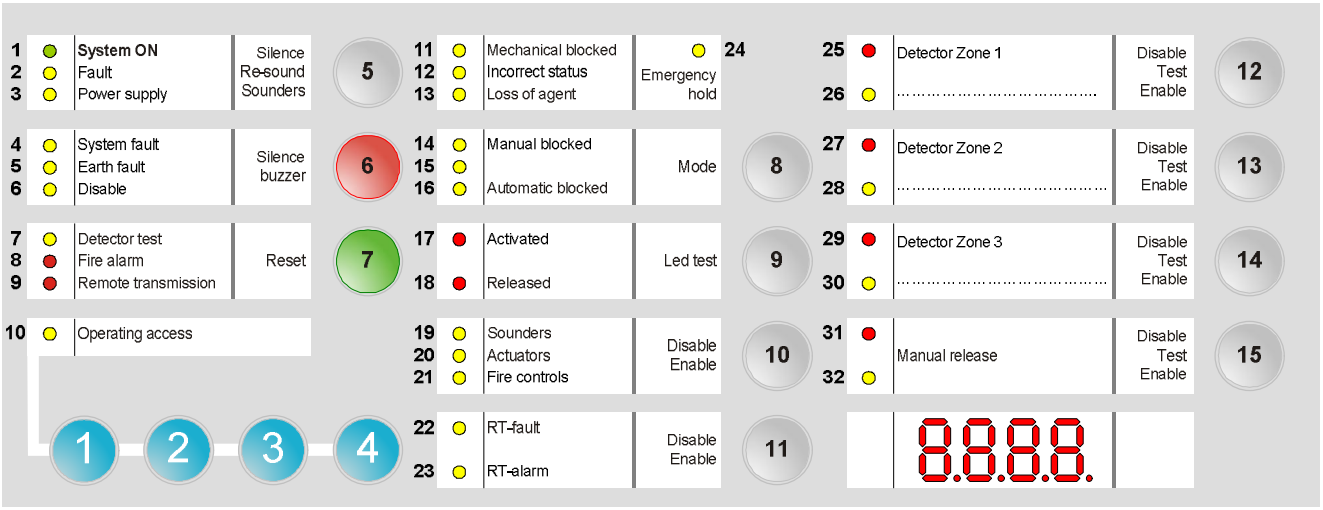


Fig. 6 XC100x-A, user interface

Indicators		State	Description
N°	Color		
1	Green	Fixed	The control panel is in operation
2	Yellow	Fixed	The control panel is not able to function any more
		Fast	Fault on at least one component in the system (see paragraph 14.2 for the detail) Or, Non-monitorred Control Input 3 is in active state, assuming it is programmed as "External device fault" (Step50 – Option7)
3	Yellow	Slow	Mains fault
		Fast	Batteries fault
4	Yellow	Fixed	Microprocessor fault
		Slow	Jumper buzzer (X3 - XCM1002 board) not connected (remainder)
5	Yellow	Fast	At least one component connected to the control panel is grounded
6	Yellow	Fixed	– At least one component in the system is disabled – Calibration in progress or error – Programming in progress
7	Yellow	Slow	At least one detection zone and/or extinguishing manual control is being tested
8	Red	Fixed	At least one detection zone is in alarm
9	Red	Fixed	Remote transmission activated (according to programming)
10	Yellow	Fixed	Level 2 operating access granted
		Slow	System test activated
11	Yellow	Fixed	Mechanical blocking device is in the blocked position
12	Yellow	Fast	– Mechanical blocking device is in a wrong position – Selector valve is in a wrong position (used for multi-sector applications)
13	Yellow	Fast	Loss of agent

Indicators		State	Description
N°	**Color**		
14	Yellow	Fixed	– Manual release is blocked or being tested
15	Yellow	Fixed	– Standard = not used – Alternative = automatic and manual release granted (UK)
16	Yellow	Fixed	– Automatic release is blocked – At least one detection zone which starts the extinguishing is off or being tested
17	Red	Fixed	– All detection zones which start the extinguishing are in alarm condition – One of the electrical manual triggering device (DM1103-L) is actuated
		Fast	One of the detection zones which start the extinguishing is in alarm condition
18	Red	Fixed	Extinguishing agent is released
		Slow / Fast	Discharged contact is not activated within 30 seconds after actuators control (according to programming)
19	Yellow	Fixed	Sounders are disabled
		Slow	Sounders test is in progress (real activation)
		Fast	At least, an output programmed as Sounders is in fault condition (break or short-circuit)
20	Yellow	Fixed	Actuators are disabled
		Slow	Actuators test is in progress (simulated activation)
		Fast	– At least, one output programmed as actuators is in fault condition (break or short-circuit) – Calibration in progress or error or no calibration data
21	Yellow	Fixed	Fire controls are disabled
		Slow	Warning panels test is in progress (real activation)
		Fast	At least, one output programmed as fire controls is in fault condition (break or short-circuit)
22	Yellow	Fixed	RT-fault is disabled
		Slow	RT-fault test is in progress (real activation)
23	Yellow	Fixed	RT-alarm is disabled
		Slow	RT-alarm test is in progress (real activation)
		Fast	At least, one output programmed as RT-alarm is in fault condition (break or short-circuit)
24	Yellow	Fixed	Emergency abort is activated
		Slow	Emergency hold is activated (DM1103-S)
		Fast	At least, one input programmed as emergency hold/abort is in fault condition (break or short-circuit)
25	Red	Fixed	Detection zone 1 is in alarm condition
		Slow	Detection zone 1 is in alarm condition (first alarm)
26	Yellow	Fixed / Slow	Detection zone 1 is disabled (fixed) / being tested (slow)
		Fast	Detection zone 1 is in fault condition (break or short-circuit)
27	Red	Fixed	Detection zone 2 is in alarm condition
		Slow	Detection zone 2 is in alarm condition (first alarm)
28	Yellow	Fixed / Slow	Detection zone 2 is disabled (fixed) / being tested (slow)
		Fast	Detection zone 2 is in fault condition (break or short-circuit)
29	Red	Fixed	Detection zone 3 is in alarm condition
		Slow	Detection zone 3 is in alarm condition (first alarm)
30	Yellow	Fixed / Slow	Detection zone 3 is disabled (fixed) / being tested (slow)
		Fast	Detection zone 3 is in fault condition (break or short-circuit)
31	Red	Fixed	Manual release is activated (DM1103-L line)
		Slow	Manual release is activated (DM1103-L line) – First alarm
32	Yellow	Fixed / Slow	Manual release is disabled (fixed) / being tested (slow)
		Fast	Manual release is in fault condition (break or short-circuit)

Keys	Description
1 … 4	Operating access code input (level 2, programming, system test, etc.) ➔ When operating access level 2 is selected, if the code is entered again, the system returns to the level 1, without waiting for the end of the 4 minutes timeout
5	Silence / Restart sounders by successive pressing: – 1st pressing: silence sounders – 2nd pressing: restart sounders etc… ➔ Operating access level required for this operation = level 2 (silence sounders is not possible during pre-discharged warning time)
6	Silence buzzer ➔ Operating access level required for this operation = level 1 or 2 or 2 only (according to programming) ➔ If a Repeater Terminal is connected to the XC10, and if option 61 step 02 is selected, silence buzzer on XC10 silences also buzzer on repeater
7	1) Reset of the system. Reset is not possible : – during pre-discharged warning time, emergency stop and flooding time – if buzzer and/or sounders are not silenced – if manual release button and/or discharged contact are not reset (according to programming) ➔ Operating access level required for this operation = level 2
	2) Fault reset ➔ Operating access level required for this operation = level 2
8	Mode of operating, by successive pressing: – 1st pressing: automatic blocked – 2nd pressing: automatic and manual blocked – 3rd pressing: normal mode ➔ Operating access level required for these operations = level 2
9	Led and buzzer test (duration = 6 seconds) : All led indicators are activated and the buzzer sounds continuously (during the first three seconds, all the segments of the display are activated, then the SW version is displayed) ➔ Operating access level required for this operation = level 1
10	Disable / Enable by successive pressing: – 1st pressing: actuators are disabled – 2nd pressing: sounders and actuators are disabled – 3rd pressing: fire controls are disabled – 4th pressing: all is disabled – 5th pressing: all is enabled ➔ Operating access level required for these operations = level 2
11	Disable / Enable by successive pressing: – 1st pressing: RT-fault is disabled – 2nd pressing: RT-fault is enabled / RT-alarm is disabled – 3rd pressing: RT-fault and RT-alarm are disabled – 4th pressing: all are enabled ➔ Operating access level required for these operations = level 2
12	Disable / Enable by successive pressing (not possible in case of fault or alarm): – 1st pressing: zone 1 is disabled – 2nd pressing: zone 1 is tested – 3rd pressing: zone 1 is in normal condition ➔ Operating access level required for these operations = level 2
13	Disable / Enable by successive pressing (not possible in case of fault or alarm): – 1st pressing: zone 2 is disabled – 2nd pressing: zone 2 is tested – 3rd pressing: zone 2 is in normal condition ➔ Operating access level required for these operations = level 2
14	Disable / Enable by successive pressing (not possible in case of fault or alarm): – 1st pressing: zone 3 is disabled – 2nd pressing: zone 3 is tested – 3rd pressing: zone 3 is in normal condition ➔ Operating access level required for these operations = level 2
15	Disable / Enable by successive pressing (not possible in case of fault or alarm): – 1st pressing: manual release is disabled – 2nd pressing: manual release is tested – 3rd pressing: manual release is in normal condition ➔ Operating access level required for these operations = level 2

5 Features

Power supply (FCP1004-E)	**Primary source (mains)**		
	Voltage		115 / 230 VCA +10 …-15% – 50 / 60 Hz
	Current		1.75 A max.
	Power		150 VA max.
	Secondary source (batteries)		
	Connectable batteries		2 x 12 V / 4.5 … 17 Ah
	Voltage		23.4 … 27.6 V
	Charging current max.		1.3 A (with temperature compensation)
	Internal resistance max.		1 Ω
	Deep discharge (disconnection threshold)		20 V +/-3%
	Output		
	Voltage		27.3 V +/- 0.3 V (25°C)
	Max. available current		Imax a : 2 A (batteries loading) Imax b : 3.5 A (batteries loaded)
	Min. current		0.05 A
	Power		105 W max.
	Switching frequency / Ripple		132kHz / 70 mVpp max.
XCM1002	Input voltage		22.5 … 27.6 V (25°C)
	Current consumption		190 mA max. without primary source
	I/Os security level		SELV (Safety Extra Low Voltage)
Detection lines	Type / number of detectors		Collective / 32 max. (according to detector type)
	Compatible detectors		Siemens (Algorex, Sinteso, Synova, Cerberus FD110 series)
	End of line element (EOL)		Transzorb 18 V (P6KE18CA)
	Standby condition voltage / current		17.1 … 19.3 V (fixed by EOL) / 11 mA max.
	Alarm condition voltage / current		5.5 … 16.5 V / 11 … 57.1 mA max.
	Line resistance		80 Ω max.
Manual release line	Type / number of manual actuators		DM1103-L / 32 max.
	End of line element (EOL)		Transzorb 18 V (P6KE18CA)
	Voltage / standby line current		17.1 … 19.3 V (fixed by EOL) / 11 mA max.
	Voltage / alarm line current		5.5 … 16.5 V / 11 … 57.1 mA max.
	Line resistance		80 Ω max.
Monitored inputs	4		
	Activation resistance		680 Ω or 1.2 kΩ
	End of line element (EOL)		3.3 kΩ resistance
	Line resistance		80 Ω max.
Control inputs (non monitored)	4		Activation +24 V, via contact
Monitored control outputs **Outputs 1 to 3**	**Outputs 1 to 3**		
	Control voltage / current		24 V / 1 A max.
	End of line element		3.3 kΩ resistance
	Outputs 4 and 5		
	Control voltage / current		24 V / 2 A max.
	End of line element		No EOL (line calibration)
Driver outputs	8 (programmable)		24 V / 40 mA max.
Relay outputs (contacts)	5 (4 programmable)		30 V / 1 A max. / NO or NC
Connections	**XCM1002**		
	Inputs - outputs type / section		Plug-in screw terminal blocks 2.5 mm^2 max. (X5, X5, X7) 1.5 mm^2 max. (all others)
	FCP1004-E		
	mains input type / section		Plug-in screw terminal block / 2.5 mm^2 max.
Environmental conditions	Operating / Storage temperature		-5 ... +40° C / -20 ... +60° C
	Humidity relative at 40 ± 2° C		93% max., without condensation
Mechanical data	XC1001-A	Cabinet / Protection index	Metal frame with plastic cover / IP30
		Color	RAL9003 (cover), RAL9006 (user interface)
		Dimensions (l x h x p) / Weight	370 x 286 x 90 mm / 4.1 kg
	XC1005-A	Cabinet / Protection index	Metal case with plastic cover / IP40
		Color	RAL9003 (cover), RAL9006 (user interface)
		Dimensions (l x h x p) / Weight	505 / 375 / 125 mm / 6.5 kg
	XC1003-A	Cabinet / Protection index	Rack 19'' 4U / IP30
		Color	RAL9006
		Dimensions (l x h x p) / Weight	482.6 (19'') x 177.8 (4U) x 187 mm / 6.6 kg
Conformity	EN 12094-1, EN 54-2/A1, EN 54-4/A2		—

6 Installation

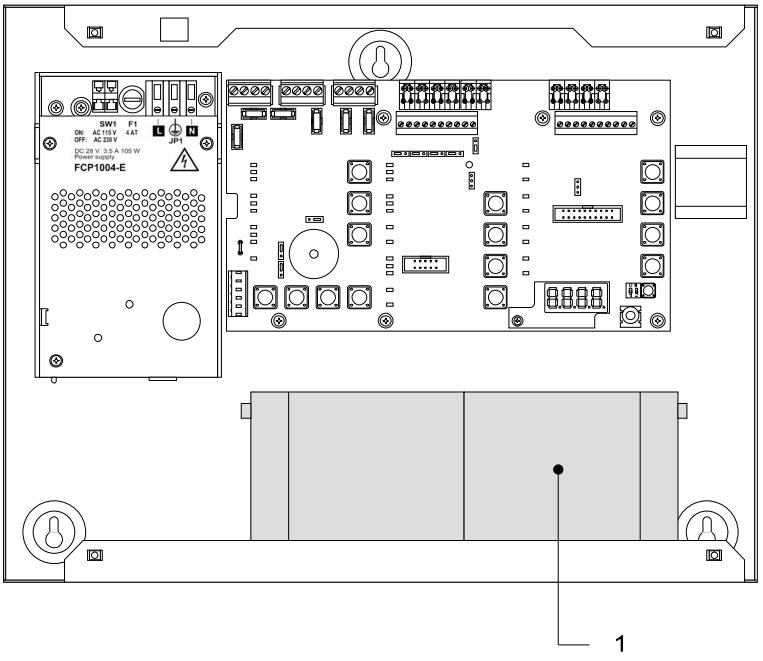
Generally, the XC10 must be easily accessible and installed:

- outside the protected area
- protected from mechanical shocks and bad weather

6.1 XC1001-A / XC1005-A

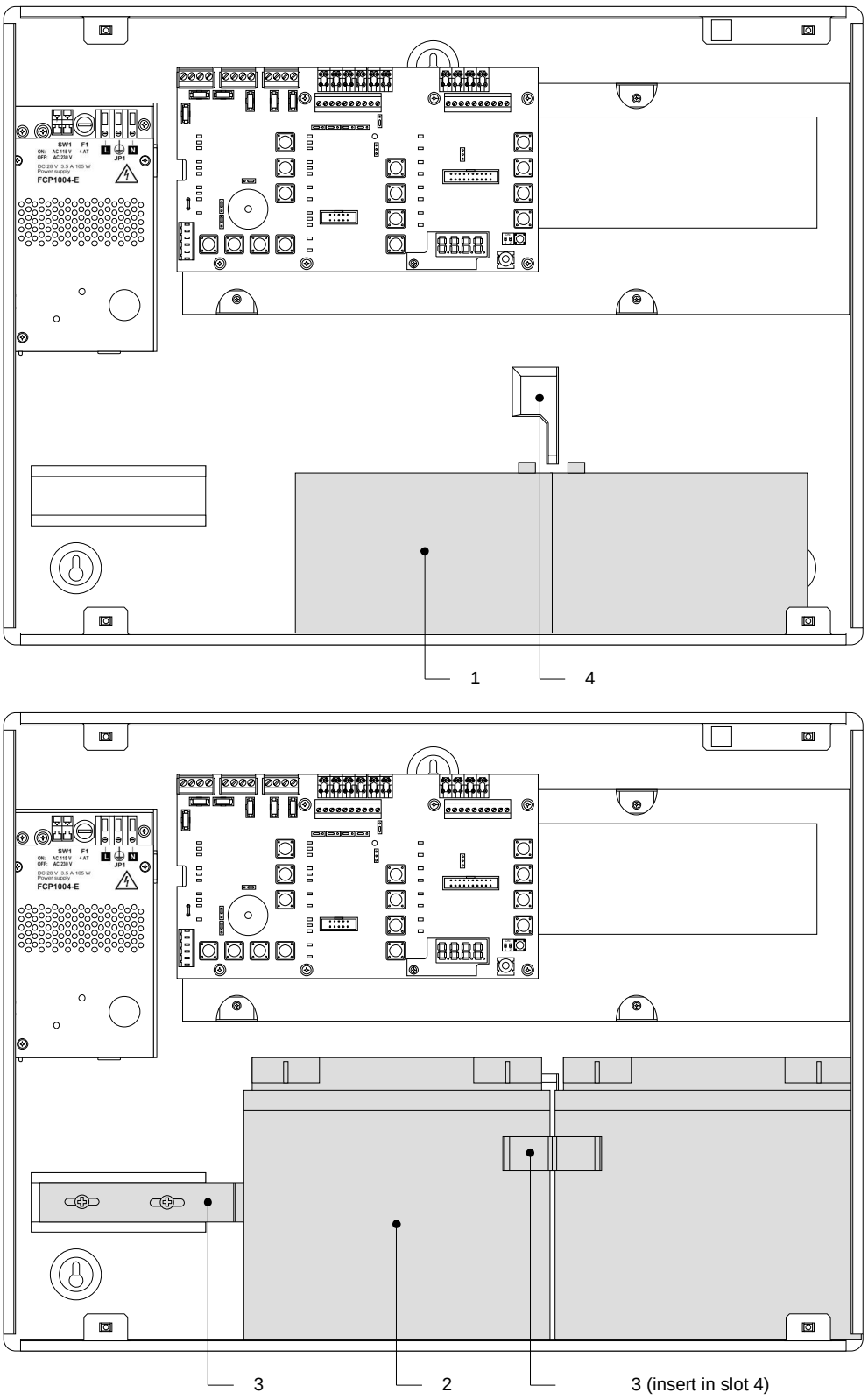
The XC10 must be installed on a fixed and stable support, with a height ranging between 1.60 m and 1.70 m (eliminate the irregularities from the mounting surface ≥ 5 mm).

1. Remove the front cover
2. Mark and drill the mounting holes using the drilling template provided (start with the hole for the top central screw)
3. Fix the chassis using 3 screws Ø 4 x 50 mm (not provided)
4. Cut out the cable entries
5. Cut out the plastic housing according to the cable inputs (XC1001-A)
6. Mount the cable glands if necessary (required for protection rating IP30)
7. Install the batteries and fix the battery holders



1 12 V – 4.5 Ah batteries

Fig. 7 XC1001-A, battery installation



1 12 V – 12 Ah batteries
2 12 V – 17 Ah batteries
3 FCA1014 battery holder (option)
4 Slot for battery holder

Fig. 8 XC1005-A, battery installation

6.2 XC1003-A

Fix the XC1003-A into a 19" housing cabinet with a protection rating IP ≥ 30.

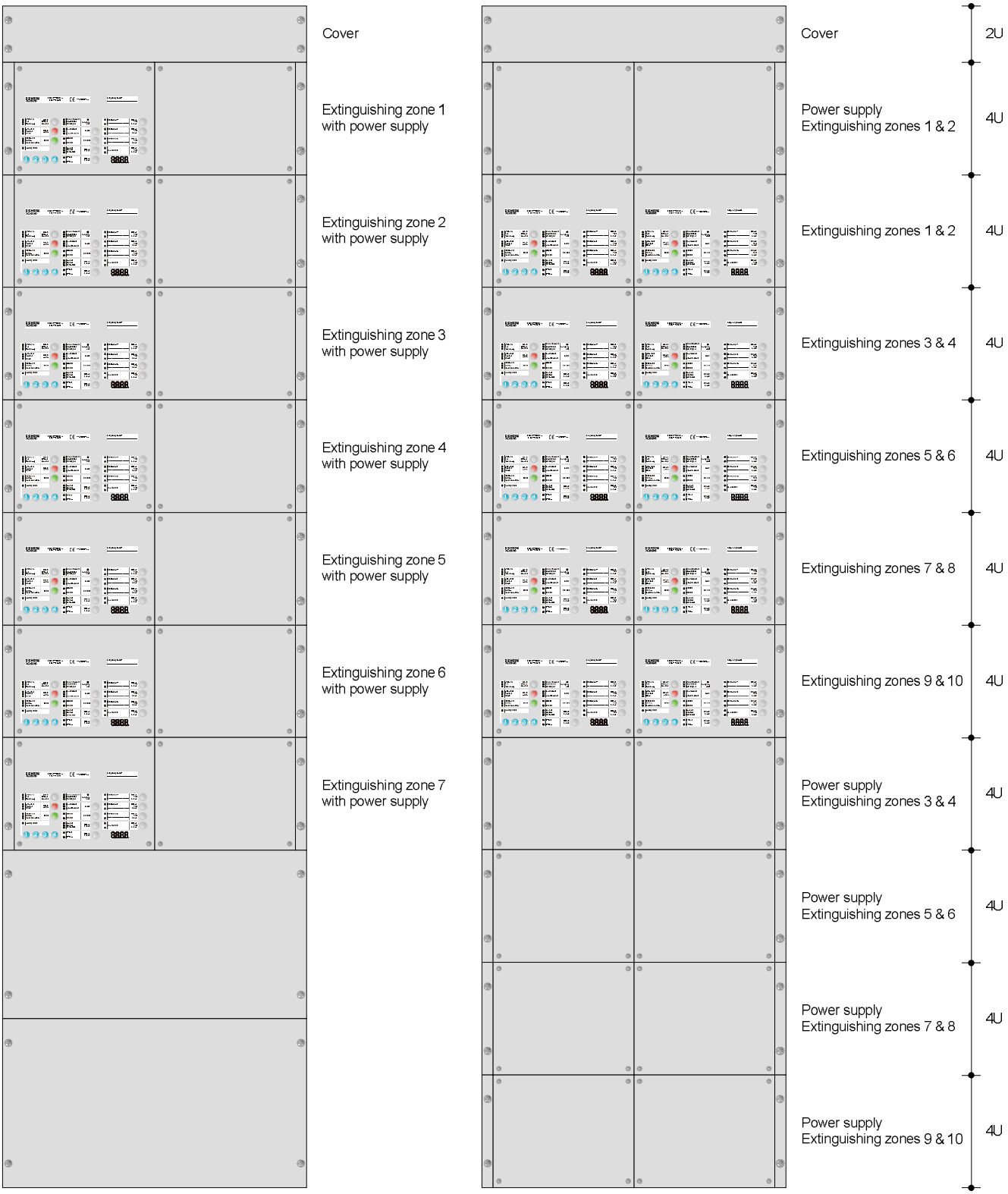


Fig. 9 XC1003-A, mounting examples

The interval between 2 extinguishing racks and there power supply rack should not exceed 12U.

XC1003-A, mounting adaptation

The 19” rack is symmetrical. This allows, with some mounting/unmounting operations, to adapt it to various configurations (2 racks minimum are necessary).

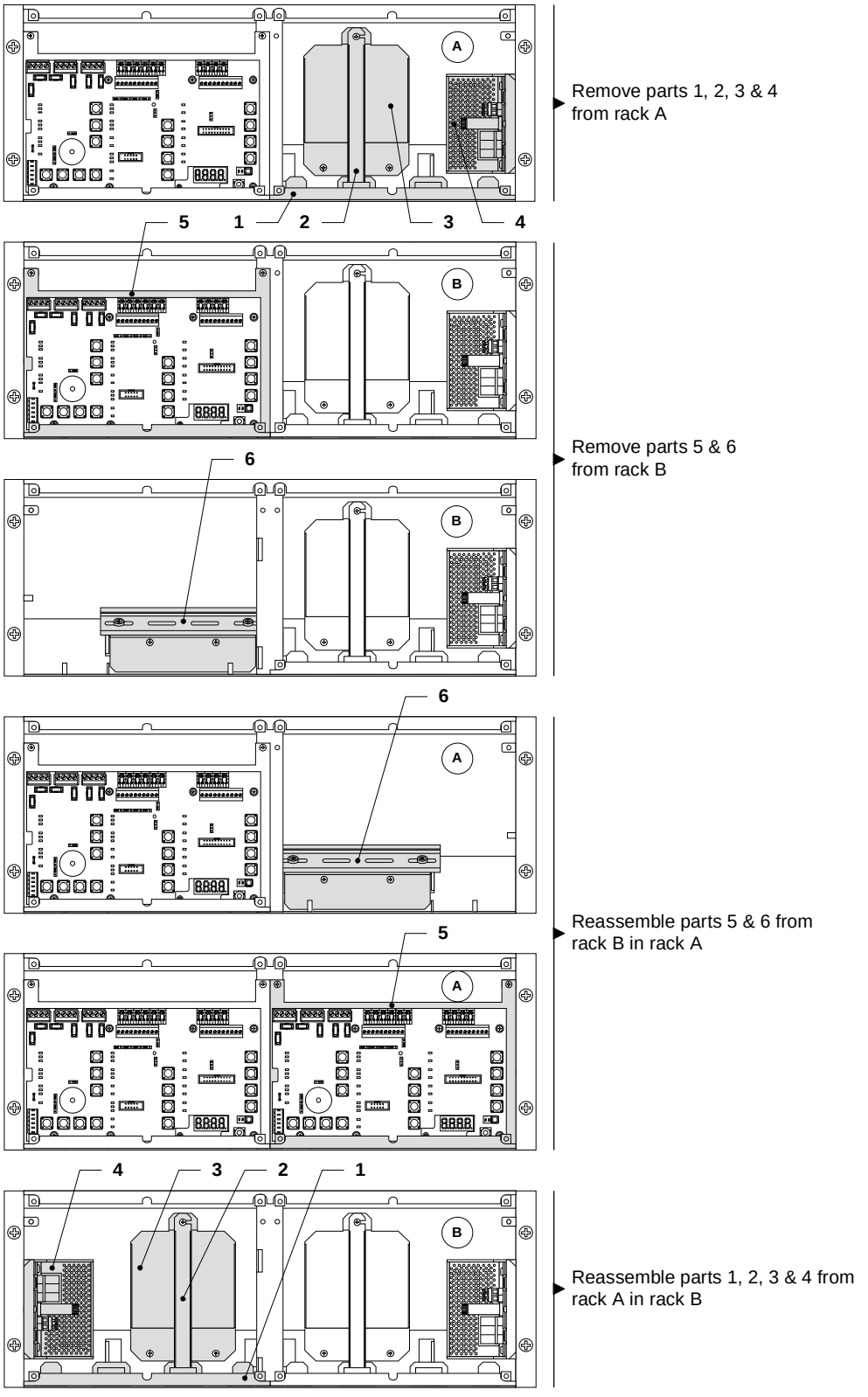


Fig. 10 XC1003-A, mounting adaptation

XC1003-A, commissioning / connection / maintenance
The removable board holder (1) can be positioned, after screw unmounting (3), as indicated below to reach the DIN rail (2).

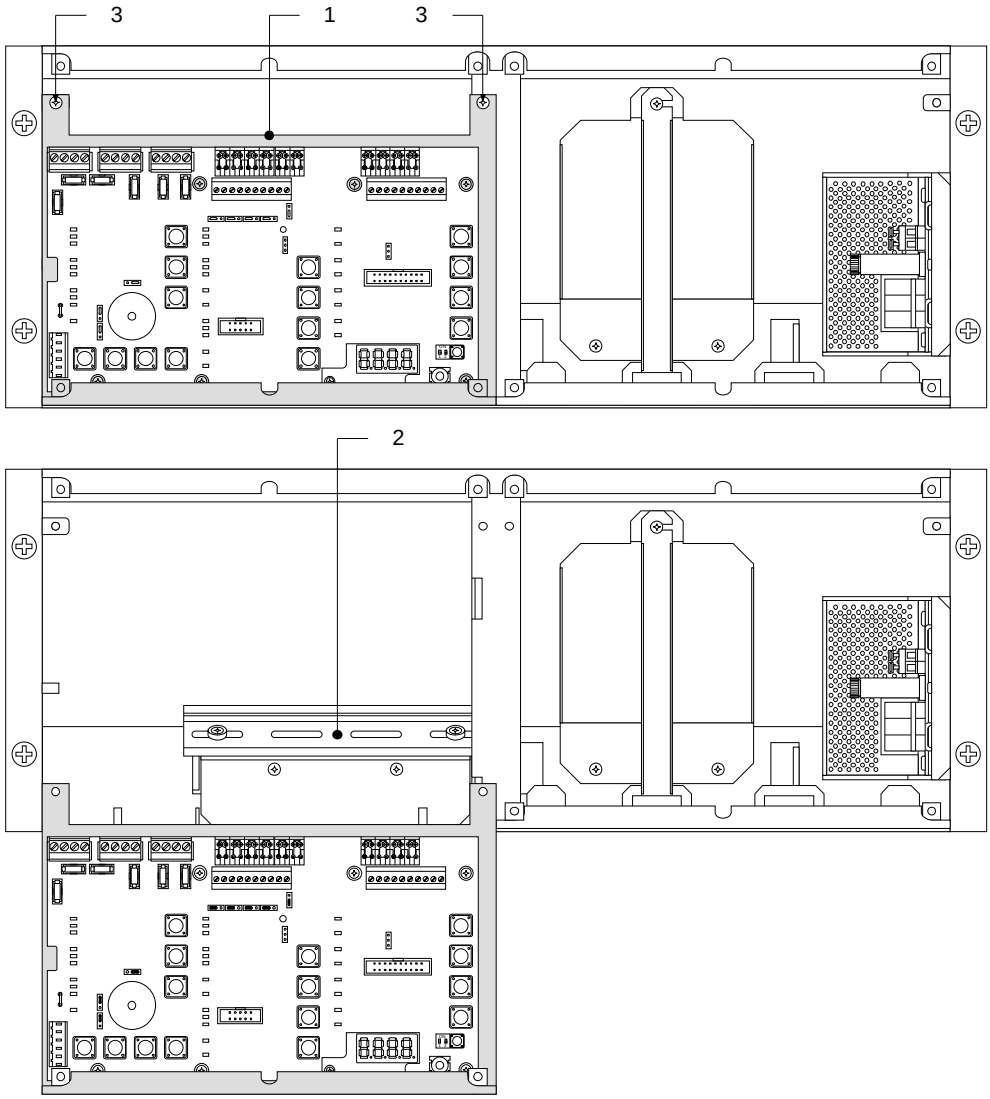


Fig. 11 XC1003-A, removable stand in “Commissioning” position

XC1003-A, batteries installation

4.5 Ah batteries:
1. Remove the holder (1)
2. Install the batteries (3) as shown below
3. Remount the holder (1)

7.2 Ah batteries:
1. Remove the parts (1) and (2)
2. Install the batteries (4) as shown below

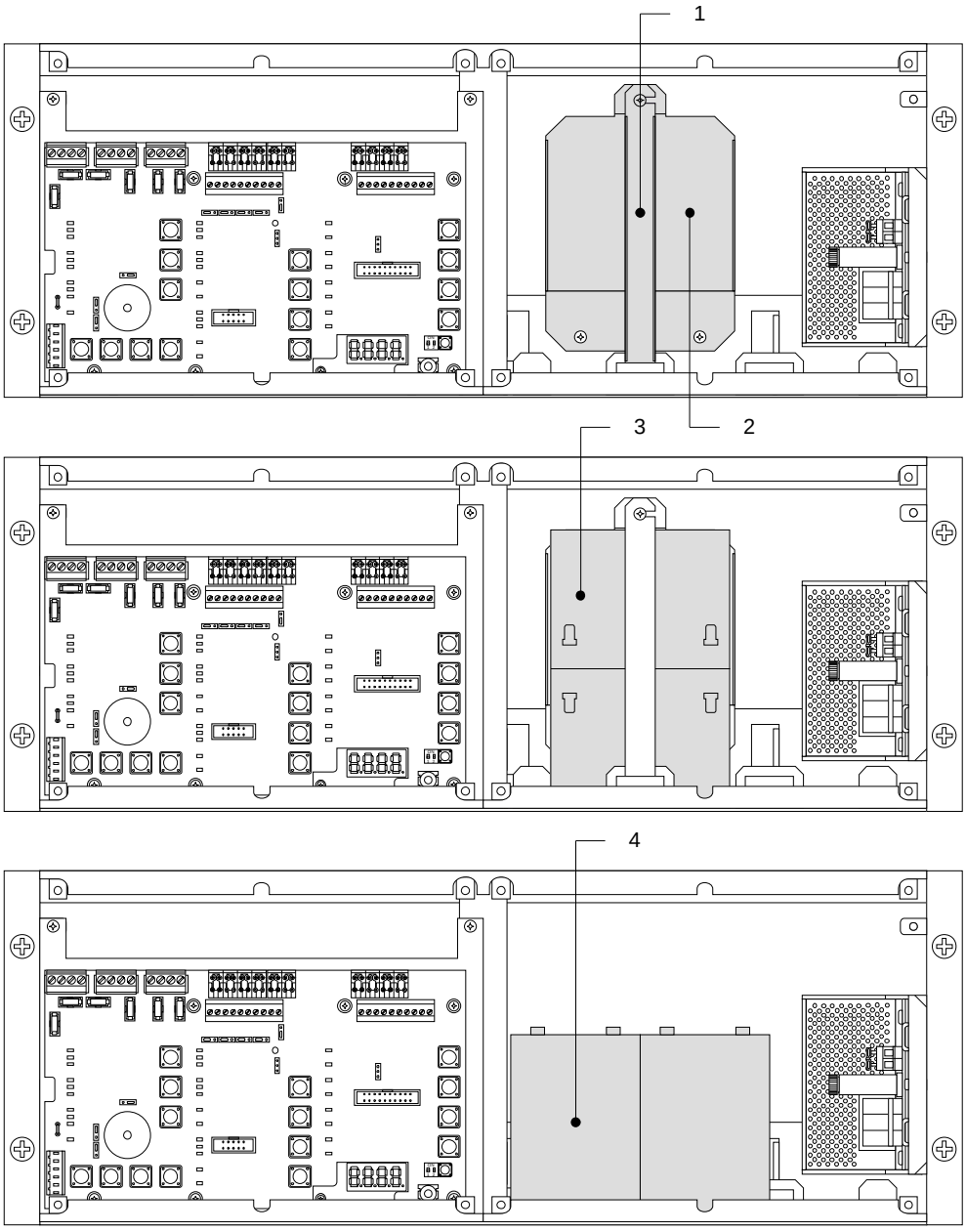


Fig. 12 XC1003-A, battery installation

6.3 User interface labels

Insert the labels following the instructions on the board provided with the equipment.

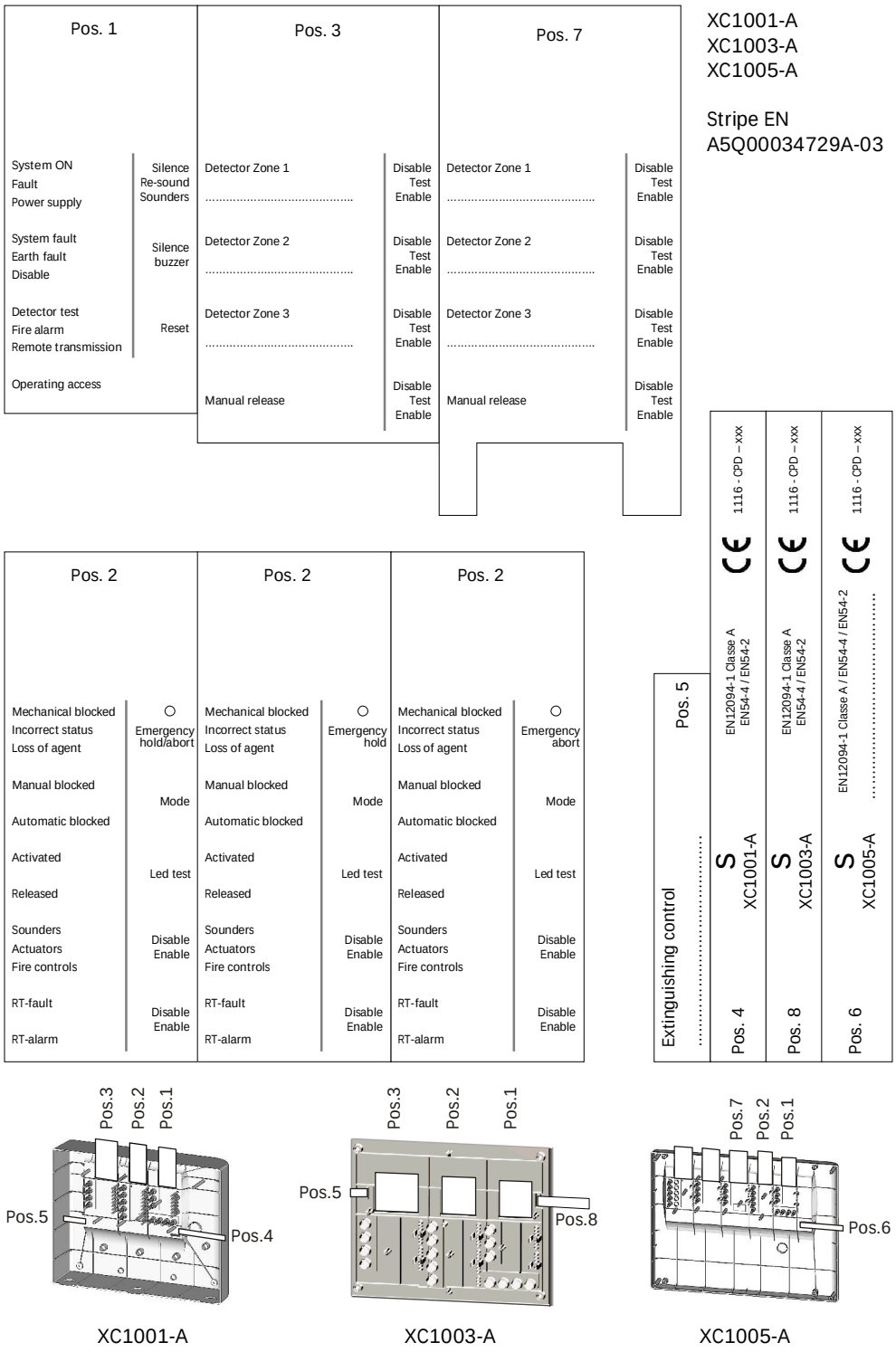


Fig. 13 XC100x-A, user interface labels

The label to be inserted in position 2 is different whether the stop/emergency hold function is used or not.

7 Connections

The installation must be realised by qualified personnel and in conformity with the applicable national electric standard.

7.1 Mains

Connection with the mains must be established through an external circuit breaker (bipolar circuit breaker 1 A).

3. Make sure that the mains voltage is switched off
4. Connect the mains cable to the PSU terminals according to the pin assignment specified onto the PSU:
   – Protection ground (⏚), neutral (N) and phase (L)
5. Fix the cable with two fasteners and check, during installation, that these fixings are well in place

The XC100x-A equipment is not designed to be connected according to an IT earth network.
If such a network must be used, a separation transformer will have to be installed.

Danger - Electrical voltage
Mortal danger due to electric shock
- Before laying the mains cable, make sure that it is not connected to the power supply.
- Check to make sure that the mains are secured against inadvertently being switched on.

Danger - Short circuit
Potential damage to hardware
- Before installing or dismantling the power supply unit, remove the wire jumper between the two batteries.
- This ensures that the secondary side is current-free and that no modules can be damaged due to a short circuit.

7.2 Batteries

Two 12 V batteries, connected in series, can be connected with the FCP1004-E power supply. According to the control units, the following batteries can be installed:

- XC1001-A : 4.5 Ah
- XC1005-A : 4.5 Ah, 7.2 Ah, 12 Ah or 17 Ah
- XC1003-A : 4.5 Ah or 7.2 Ah

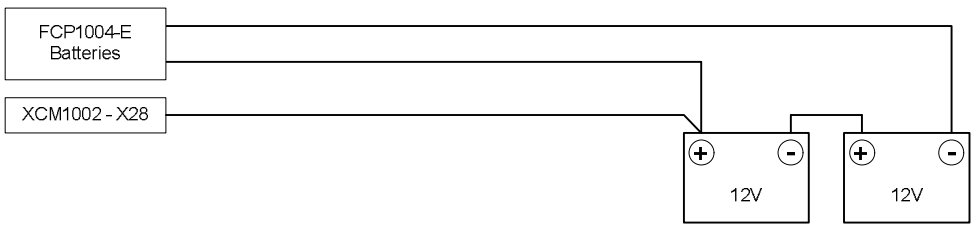


Fig. 14 Battery connection

In some countries i.e. [FR], it is required to indicate the total loss of power supply (option with requirement EN54-2). In such case, connect the wire provided between + of the batteries and the X28 terminal of XCM1002 mainboard.

If this option is not required in your country, do not connect the wire from +batteries to X28

7.2.1 Battery capacity calculation

Battery capacity must be calculated according to the following formula:

$K_{Batt} = ((I_{R\ total} * t_R) + (I_{A\ total} * t_A)) * K_{dis} * K_{age}$

K_{Batt}: battery capacity (Ah)
$I_{R\ total}$: operating current, internal and external in standby condition (A)
$I_{A\ total}$: operating current, internal and external in alarm condition (A)
t_R: required backup time in standby condition (hours)
t_A: required backup time in alarm condition (hours)
K_{dis}: = 1.1 drops in capacity, applicable only for 12 hours backup time or less
K_{age}: = 1.25 safety factor, applicable only for 24 hours backup time or less

To define the operating current, all internal and external devices connected to the XC10 shall be taken into account:

- all components installed inside the XC100x-A are considered as internal devices, i.e.: XCA1030, XCA1031, relay modules, etc.
- all components installed outside the XC100x-A are considered as external devices, i.e.: actuator, sounders, warning panels, repeater terminals (when supplied by the XC10), etc.

Components	**Current consumption (A) / 24 VDC**	
	Standby condition	**Alarm condition**
XCM1002	0.168	0.247
Actuator	0	See component datasheet
Warning panel	0	See component datasheet
Sounder	0	See component datasheet
Fire controls	0	See component datasheet
XT1001-A1 powered by XC10	0.012	0.020
XCA1031	0.114	0.141

Single-sector installation example:

– 2 actuators (POUSSAX24) activated during 10 seconds (360mA each)
– 6 warning panels (70mA each)
– 10 sounders (20mA each)
– 2 repeaters XT1001-A1 powered by XC10

Battery capacity calculation for 12, 24 and 72 hours backup time, followed by an alarm condition during 15 mn:

➔ $I_{R\ total}$ = 0.168 + (0.012 x 2) = 0.192 A
➔ $I_{A\ total}$ = 0.247 + (0.020 x 2) + ((0.360 x 2) x (10 / (15 x 60))) + (0.070 x 6) + (0.020 x 10) = 0.915 A

➔ 12 hours : K_{Batt} = ((0.192 x 12) + (0.915 x 0.25)) x 1.1 x 1.25 = 3.48 Ah
➔ 24 hours : K_{Batt} = ((0.192 x 24) + (0.915 x 0.25)) x 1.25 = 6.04 Ah
➔ 72 hours : K_{Batt} = ((0.192 x 72) + (0.91 x 0.25)) = 14.05 Ah

Multi-sector installation example:

– 4 solenoid valves (DEMAFM or DEMADEM) activated during 10 seconds (400mA each)
– 1 actuator POUSSAX24 connected to XCA1031
– 12 warning panels (70mA each)
– 10 sounders (20mA each)

– 2 fire controls, solenoid 3 W → door contact for ex.(125mA each)
– 2 repeaters XT1001-A1 powered by XC10

Battery capacity calculation for 12, 24 and 72 hours backup time, followed by an alarm condition during 15 mn:

→ $I_{R\ total}$ = 0.168 + 0.114 + (0.012 x 2) = 0.306 A
→ $I_{A\ total}$ = 0.247 + 0.141 + ((0.400 x 4) * (10 / (15 x 60))) + 0.360 + (0.070 x 12) + (0.020 x 10) + (0.125 x 2) + (0.020 x 2) = 2.095 A

→ 12 hours : K_{Batt} = ((0.306 x 12) + (2.095 x 0.25)) x 1.1 x 1.25 = 5.77 Ah
→ 24 hours : K_{Batt} = ((0.306 x 24) + (2.095 x 0.25)) x 1.25 = 9.83 Ah
→ 72 hours : K_{Batt} = ((0.306 x 72) + (2.095 x 0.25)) = 22.55 Ah → not possible with the XC10 power supply

Installed batteries shall have a capacity > K_{Batt} calculated

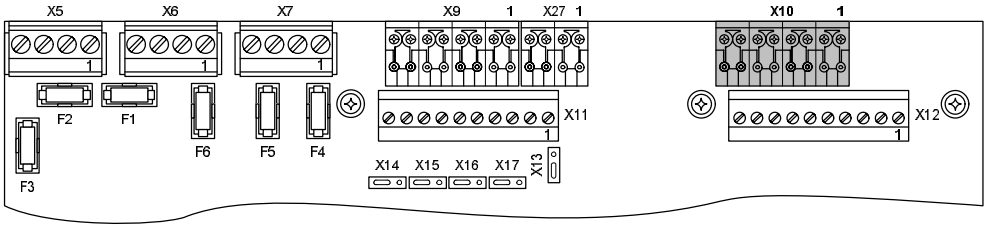
7.3 Fire detectors/Manual release control buttons

7.3.1 Standard wiring

Four monitored inputs are available on the X10 terminal block for the connection of fire detectors or alarm contact (i.e. contact from FDCIO222) and electrical manual triggering devices (DM1103-L)

- Detection zones 1 to 3 operation is defined at programming steps 52 to 55 (see paragraph 12.14)
- Extinguishing manual release control operation is defined at programming step 65 (see paragraph 12.21). Up to 32 buttons DM1103-L can be connected

Technical data common to the 4 inputs
EOL: transzorb 18V connected at the end of the line
Line resistance max.: 80 Ω



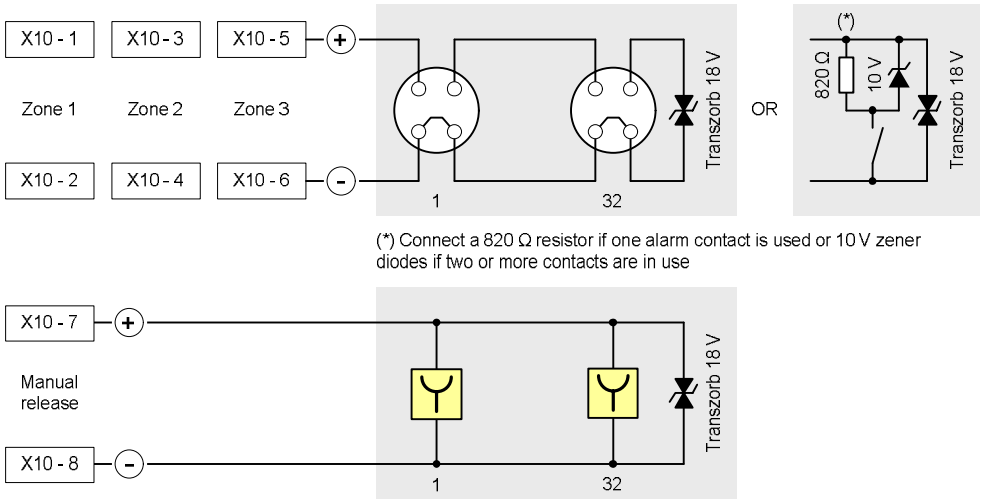


Fig. 15 XC100x-A, connection of detectors and manual triggering devices

The number of detectors which can be connected is determined by dividing the collective system line connection factor (KLK = 32) by the collective element load factor (KMK = see table below).

Series of detectors	**Designation**	**KMK**	**Nb**
ALGOREX	DO1101A / DO1102A / DO1104A	1	32
	DT1101A / DT1102A	1	32
	DF1191 / DF1192	6	5
SINTESO	FDOOT241-9 / FDOOT241-A9	2 … 1.25 (*)	16 … 25
	FDF221-9 / FDF241-9	5	6
	FDL241-9	10	3
SYNOVA	OP320C / OH320C	1	32
	HI320C / HI322C	1	32
CERBERUS FD110 series	OH110, OP110, HI110, HI112	1	32

(*) Depends on detector index and set of parameters

For Sinteso and Cerberus FD110 series detectors, select an appropriate set of parameters.

7.3.2 Wiring for explosion hazard areas

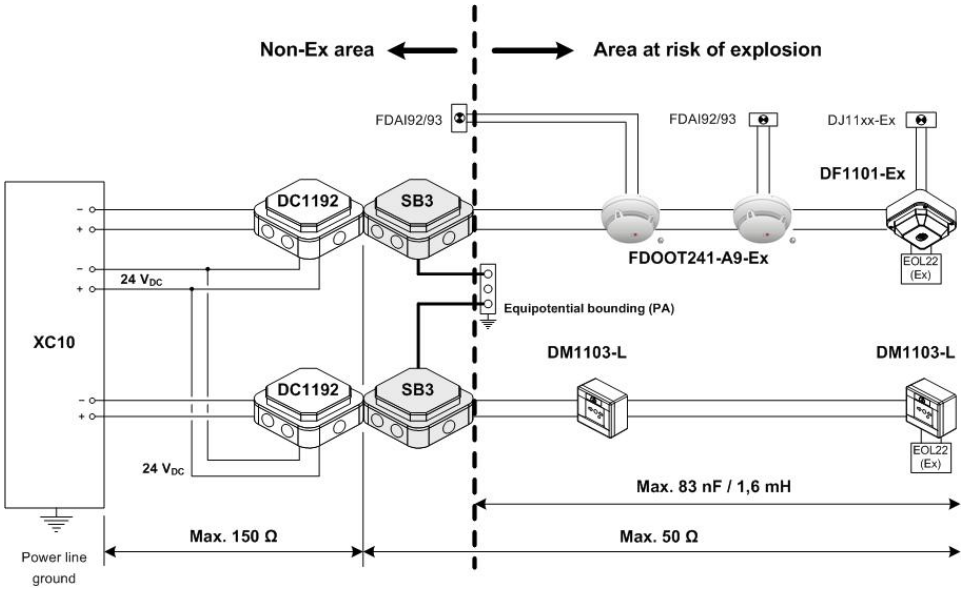


Fig. 16 Wiring for explosion hazard areas

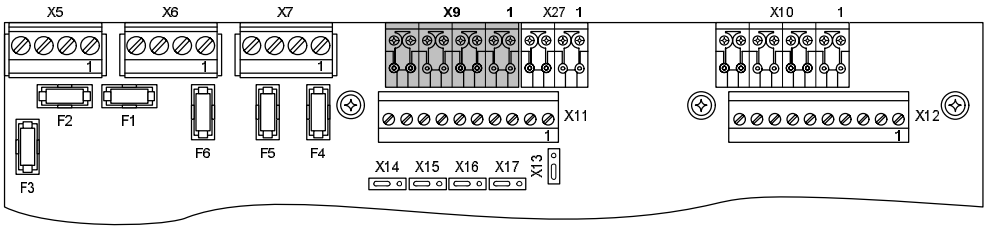
In ex-areas, use only fire detectors that are approved for ex-areas. Between the explosion-hazard area and the non-ex-area, the detector line must be galvanically insulated (DC1192) and laid via a safety barrier (SB3). The termination element EOL22Ex must be provided as line terminator.

Country-specific regulations always apply to installation in ex-areas.

The following document provides further informations:
Fire alarm signal in areas at risk of explosion - Principles, applications, installation, maintenance (001204).

7.4 Monitored inputs

Four monitored inputs are available on X9 terminal block for the connection of various devices. Operation is defined at programming steps 28 to 31 (see paragraph 12.9).



Technical data common to the 4 inputs
EOL: 3.3 kΩ resistance connected at the end of the line
Line resistance max.: 80 Ω

7.4.1 Monitored input 1

This input is exclusively reserved for the connection of the extinguishing discharged contact. Operation is defined at programming step 28.

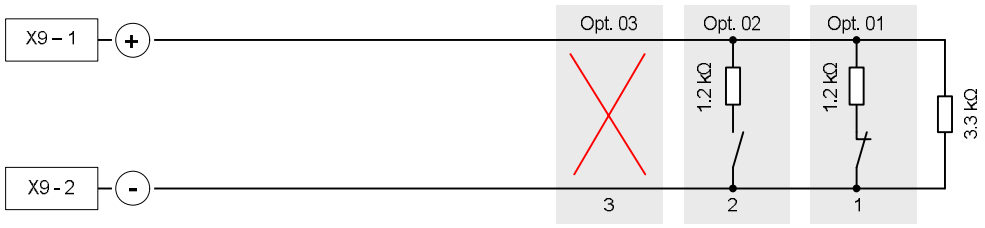


Fig. 17 XC100x-A, monitored input 1 connection

1 Discharged contact normally closed (NC)
2 Discharged contact normally open (NO)
3 No contact connected (3.3kΩ EOL is not required)

7.4.2 Monitored input 2

This input is exclusively reserved for the connection of the loss of agent devices (manometer or weighing device). Operation is defined at programming step 29.

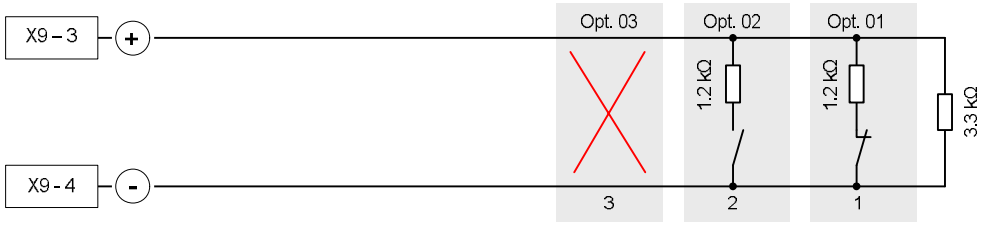


Fig. 18 XC100x-A, monitored input 2 connection

1 Loss of agent contact normally closed (NC)
2 Loss of agent contact normally open (NO)
3 Not used (3.3kΩ EOL is not required)

7.4.3 Monitored input 3

This input can be used for several purposes. Operation is defined at programming step 30.

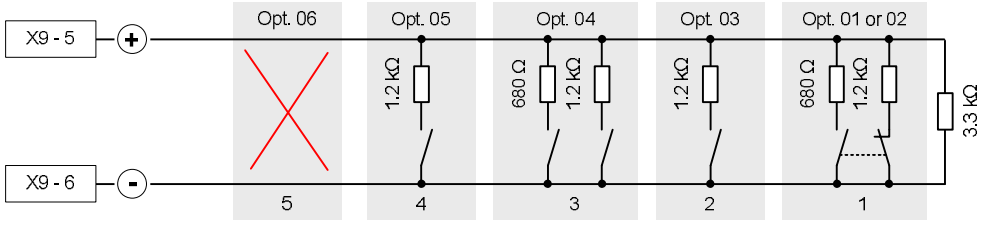


Fig. 19 XC100x-A, monitored input 3 connection

1 Mechanical blocking device
2 Extinguishing remote activation
3 Automatic blocked / Manual blocked / Automatic and manual blocked
4 Emergency abort
5 Not used (3.3kΩ EOL is not required)

7.4.4 Monitored input 4

This input can be used for several purposes. Operation is defined at programming step 31.

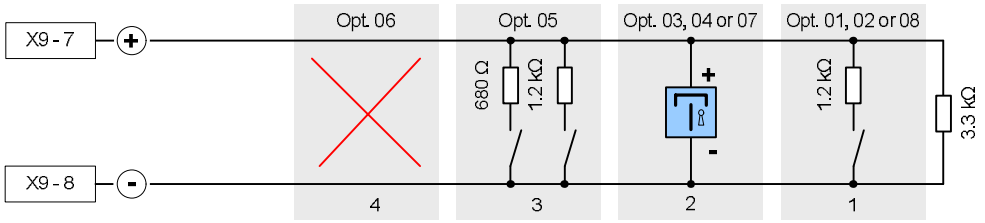


Fig. 20 XC100x-A, monitored input 4 connection

1 Emergency abort
2 Emergency hold
3 Automatic blocked / Manual blocked / Automatic and manual blocked
4 Not used (3.3kΩ EOL is not required)

When monitored inputs 3 and 4 are programmed respectively as « Emergency hold » and « Emergency abort », emergency abort has the priority

7.5 Control inputs

Four control inputs, including three programmable (2 to 4), are available on X27 terminal block to receive controls or information via relay contacts. Operation is defined at programming steps 48 to 51 (see paragraph 12.13).

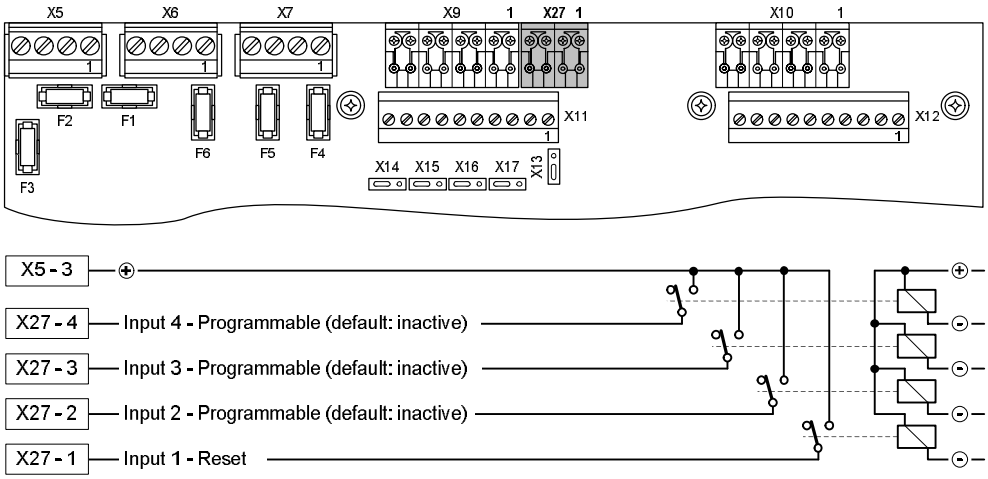
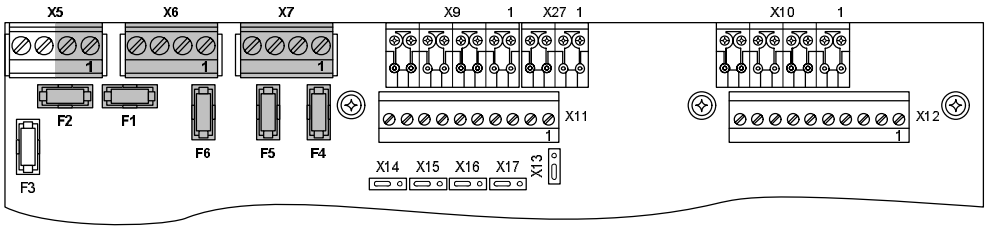


Fig. 21 XC100x-A, control inputs connection

- These inputs shall not be activated by an external +24 V
- Relays must be installed inside the equipment
- When a control input is programmed as « Reset » or « Level 2 access » or « Manual blocked » or « Automatic blocked » or « Automatic and manual blocked » or « Silence / Restart Sounders », theses controls must only be possible through an operating level 2 access device.

7.6 Monitored control outputs

Five monitored control outputs are available on terminal blocks X7, X6 and X5 for the connection of various devices.



Technical data for control outputs 1 to 3
- activation by reverse polarity (polarities indicated are “activated” polarities, according to connected device, a diode can be necessary)
- line monitoring: 3.3 kΩ resistance connected at the end of the line
- protection: 1 AT fuse (F4 / F5 / F6)

Technical data for control outputs 4 and 5
- activation polarity is not reversed
- line monitoring: by calibration, within a range between 1 and 900 Ω
- protection: 2 AF fuse (F1 / F2)

Technical data common to the 5 control outputs
The maximum number of devices per output is determined by calculation, in 2 steps (see example below), depending on:

- minimum/maximum XC10 operating voltage = 22.5 V / 27.6 V
- nominal current consumption per device (@24V, see device technical data’s)
- minimum device operating voltage (see device technical data’s)
- protection fuse rating = 1 A or 2 A
- cable resistance (2x1.5 mm2 = 24.2 Ω / km, 2x2.5 mm2 = 14.8 Ω / km)

Calculation example for a device consuming 0.35 A at 24 V and having a minimum operating voltage of 17 V:

1. From maximum system voltage ($V_{SYS\ MAX}$) in order to make sure that device consumption does not exceed fuse rating.

- Device current consumption at Vsys max = (27.6 x 0.35) ÷ 24 = 0.402 A
- Maximum number of devices: 0.402 A x n ≤ 1 A or 2 A
  => n ≤ 1 ÷ 0.402 ≤ 2.48, i.e. 2 devices (outputs 1 to 3)
  => n ≤ 2 ÷ 0.402 ≤ 4.96, i.e. 4 devices (outputs 4 and 5)

2. From minimum system voltage (Vsys min) in order to make sure, that in spite of the cable resistance voltage drop, device minimum operation voltage is respected:

- Device consumption at Vsys min = (17 x 0.35) ÷ 24 = 0.248 A
- Maximum voltage drop = 22.5 - 17 = 5.5 V
- Maximum line resistance (outputs 1 to 3) = 5.5 ÷ (0.248 x 2) = 11.08 Ω
- Maximum line resistance (outputs 4 and 5) = 5.5 ÷ (0.248 x 4) = 5.54 Ω
- Maximum line length (1.5 mm2) = (11.08 x 1000) ÷ 24.2 = 456 meters (outputs 1 to 3), = (5.54 x 1000) ÷ 24.2 = 228 meters (outputs 4 and 5)
- Maximum line length (2.5 mm2) = (11.08 x 1000) ÷ 14.8 = 748 meters (outputs 1 to 3), = (5.54 x 1000) ÷ 14.8 = 374 meters (outputs 4 and 5)

7.6.1 Monitored control output 1

This output is exclusively reserved for the connection of the Sounders. Operation is defined at programming steps 05 and 10 (see paragraphs 12.4 and 12.6).

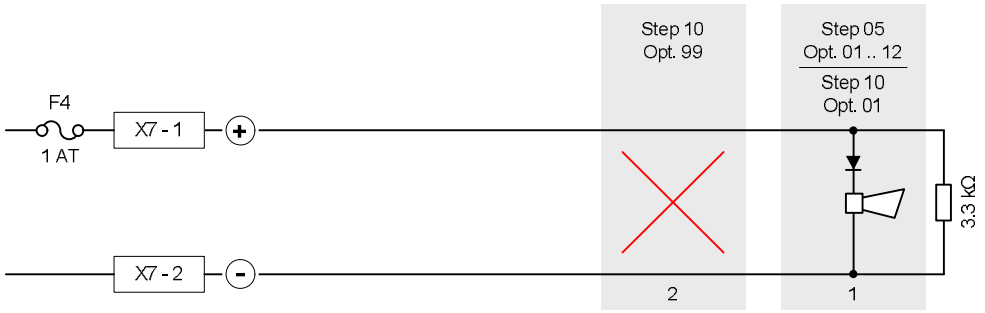


Fig. 22 XC100x-A, monitored control output 1 connection

1 Sounders
2 Control output not used (no EOL required)

7.6.2 Monitored control output 2

This output can be used for several purposes. Operation is defined at programming step 11 (see paragraph 12.6).

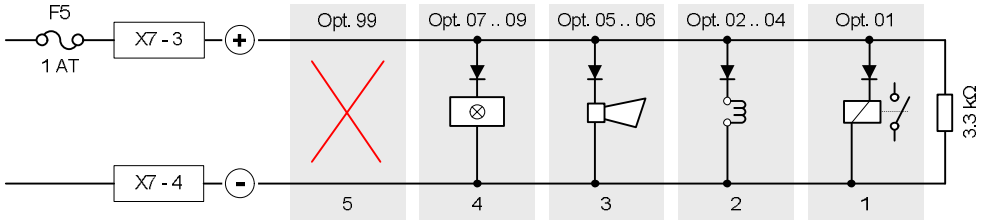


Fig. 23 XC100x-A, monitored control output 2 connection

1 RT-alarm
2 Fire control(s): signal triggering to equipment outside the system, according to EN12094-1 option with requirements 4.26
3 Sounder(s)
4 Warning panel(s) « Mechanical blocked » or « Automatic or manual blocked » or « Automatic and manual blocked »
5 Control output not used (no EOL required)

7.6.3 Monitored control output 3

This output is exclusively reserved for the connection of the warning panels. Operation is defined at programming step 12 (see paragraph 12.6).

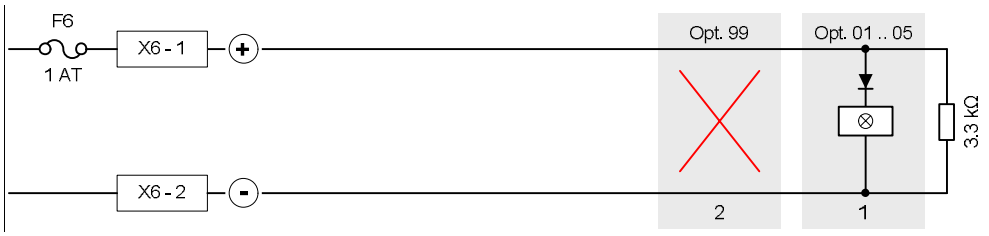


Fig. 24 XC100x-A, monitored control output 3 connection

1 Warning panel
2 Control output not used (no EOL required)

7.6.4 Monitored control output 4

This output is exclusively reserved for the connection of the actuator release. These devices can be either electromagnetic or pyrotechnic actuators. Operation is defined at programming steps 01, 02 and 13 (see paragraphs 12.3 and 12.6).

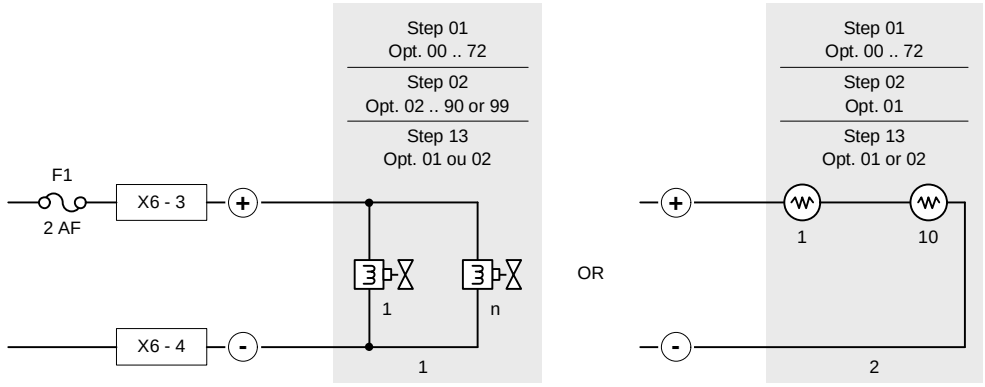


Fig. 25 XC100x-A, monitored control output 4 connection

1 Electromagnetic actuators
2 Pyrotechnic actuators

Electromagnetic actuators

- One or more actuators, connected in parallel, can be connected (see example at paragraph 7.6 to calculate the maximum number of devices per line as well as maximum line length).

Pyrotechnic actuators

- 1 to 10 actuators maximum, connected in series, can be connected.
- The table below indicates max. line lengths, in meters, according to cable section for the Siemens Monopist pyrotechnic actuator :

	MONOPIST / code A6E60200462									
	1	2	3	4	5	6	7	8	9	10
1.5 mm^2	1067	972	877	782	687	592	497	402	307	212
2.5 mm^2	1745	1590	1434	1279	1123	968	813	657	502	346

Option 01 at step 02 must be imperatively selected in case of pyrotechnic actuator and not be selected in case of electromagnetic actuator.

7.6.5 Monitored control output 5

This output can be used for several purposes. Operation is defined at programming steps 01, 03, 14, 63 and 64 (see paragraphs 12.3, 12.6 and 12.6).

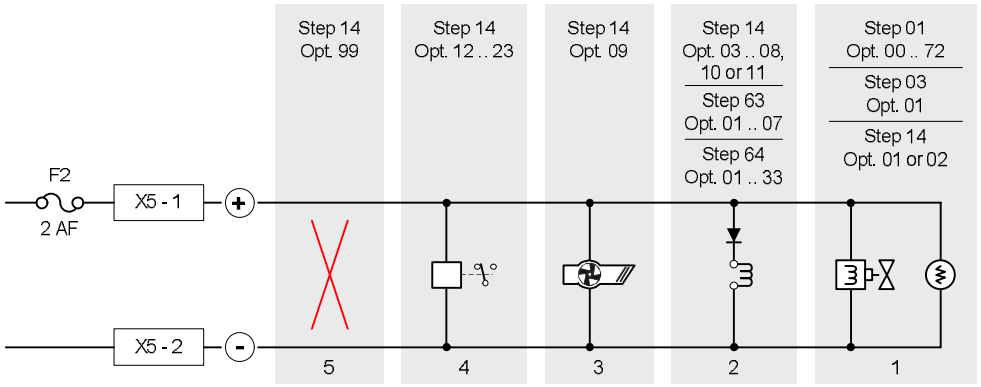


Fig. 26 XC100x-A, monitored control output 5 connection

1 Actuators (electromagnetic or pyrotechnic)
2 Fire control(s): signal triggering to equipment outside the system according to EN12094-1 option with requirements 4.26
3 Extract fan
4 Others (example: relay)
5 Output not used (no EOL required)

If this output is used to connect actuators, characteristics of the monitored output 4 (line length, programming options, etc.) apply.

7.7 Programmable outputs

An output, among those described in this chapter, must obligatorily be programmed to transmit the following information's:

- « Emission » (in all cases)
- « Mechanical blocking » (1)
- « Emergency hold/abort » (1)
- « Automatic blocked » (in all cases)

(1) When these options with requirements are used.

7.7.1 Driver outputs

Eight programmable drivers outputs (non-monitored), are available on X12 terminal block. Operation is defined at programming steps 20 to 27 (see paragraph 12.8).

Technical data
Open collector type 24 Vcc – 40mA max.

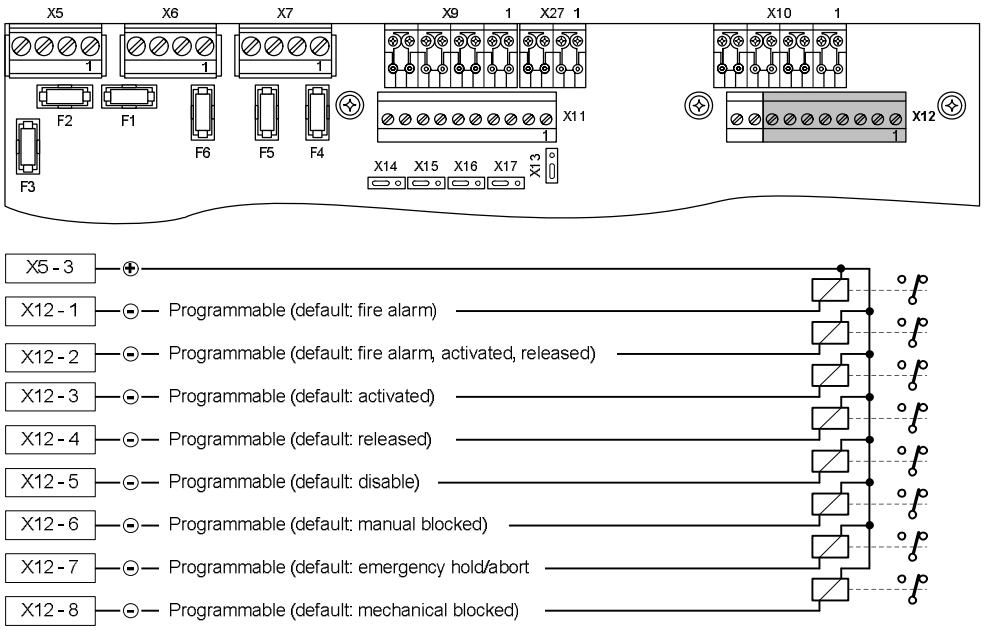


Fig. 27 XC100x-A, driver outputs connection

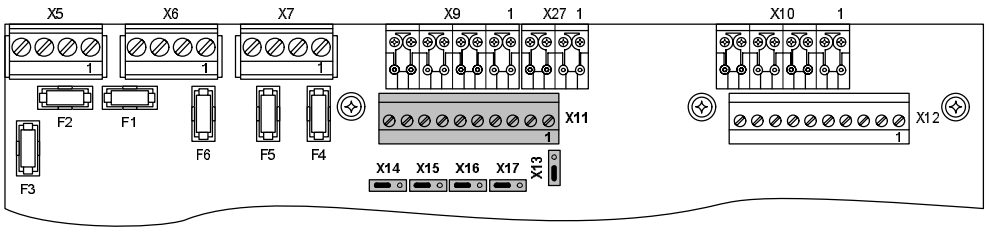
Theses outputs are intended to control external relays like Z3B171, for example:
- Shutting down the ventilation system
- Closing the extinguishing area doors
- Closing the fire dampers
- Status information's

All relays must be installed inside the control unit.

7.7.2 Relay outputs

Five potential-free contacts, including 4 programmable (1, 2, 4 and 5), are available on X11 terminal block to forward the event states to a remote transmission device or to a fire detection system. Operation is defined at programming steps 15 to 19 (see paragraph 12.7). X13 and X17 jumpers make it possible to use either the NO or NC contact.

Technical data
Contact breaking rating: 30V – 1 A (resistive circuit)



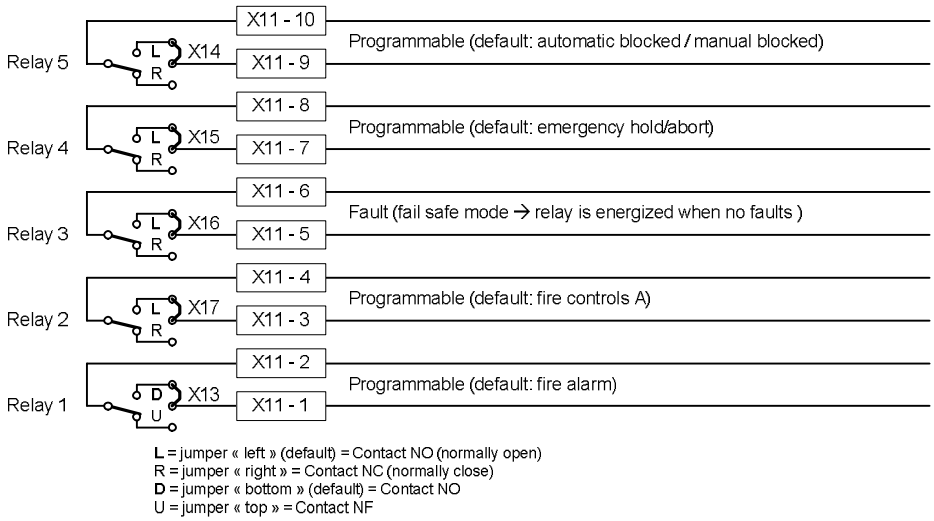
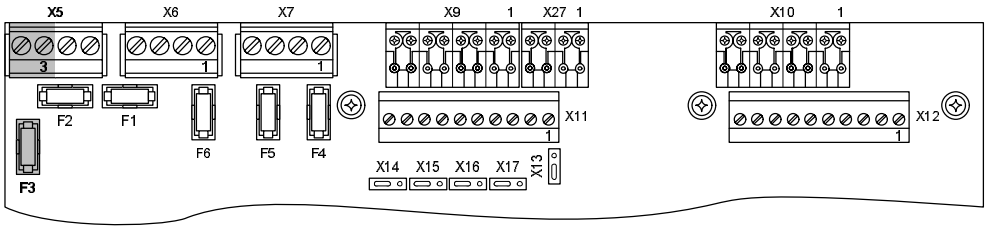


Fig. 28 XC100x-A, relay outputs connection

7.8 24V power supply output

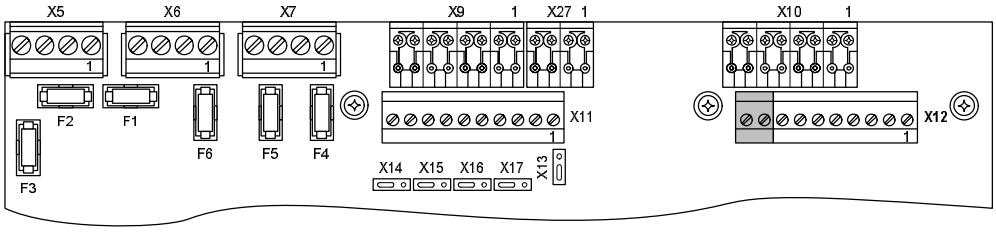
A 24V power supply output, protected by fuse 1 AT (F3), is available on terminal block X5-3 (+) / X5-4 (-) to power various devices (internal or external).



When the fuse F3 is blown, a general fault indication is displayed (see paragraph 14.2 for details).

7.9 Repeater terminal and repeater display

The repeater terminal/display must be connected to X12-9/10 (RS485 RTnet connection).



For more information's about repeater terminal and repeater display, see paragraph 9.4.

8 Multi-sector installation

Multi-sector extinguishing systems are capable of protecting several flooding zones. The basic setup consists of one common cylinder bank. To this cylinder bank, a piping network is connected to every flooding zone by means of selector valves. By opening the relevant selector valve, the extinguishing agent is guided to the desired flooding area.

Up to 16 extinguishing panels (XC1003-A exclusively) can be inter-connected via there individual modules (XCA1030) to a common module (XCA1031). This application and its operation are defined at programming step 58 (see paragraph 12.16).

8.1 Functional description

Each extinguishing control panel controls everything from one flooding zone. Panels are networked so that information's can be exchanged from one panel to the other.

As soon as an extinguishing control panel is activated (either automatically or manually), the common pilot cylinder is released. Then, the corresponding sector valve is opened and the number of cylinders that correspond to the flooding zone is released.

After having released the extinguishing in one flooding zone, the automatic release of other flooding zones can be automatically blocked in order to keep the concentration in the first flooding zone or to prevent unwanted fire detection in the others.

All connected devices are monitored like the single-sector application. In addition, the common cylinder loss of agent information is reported to all linked panels.

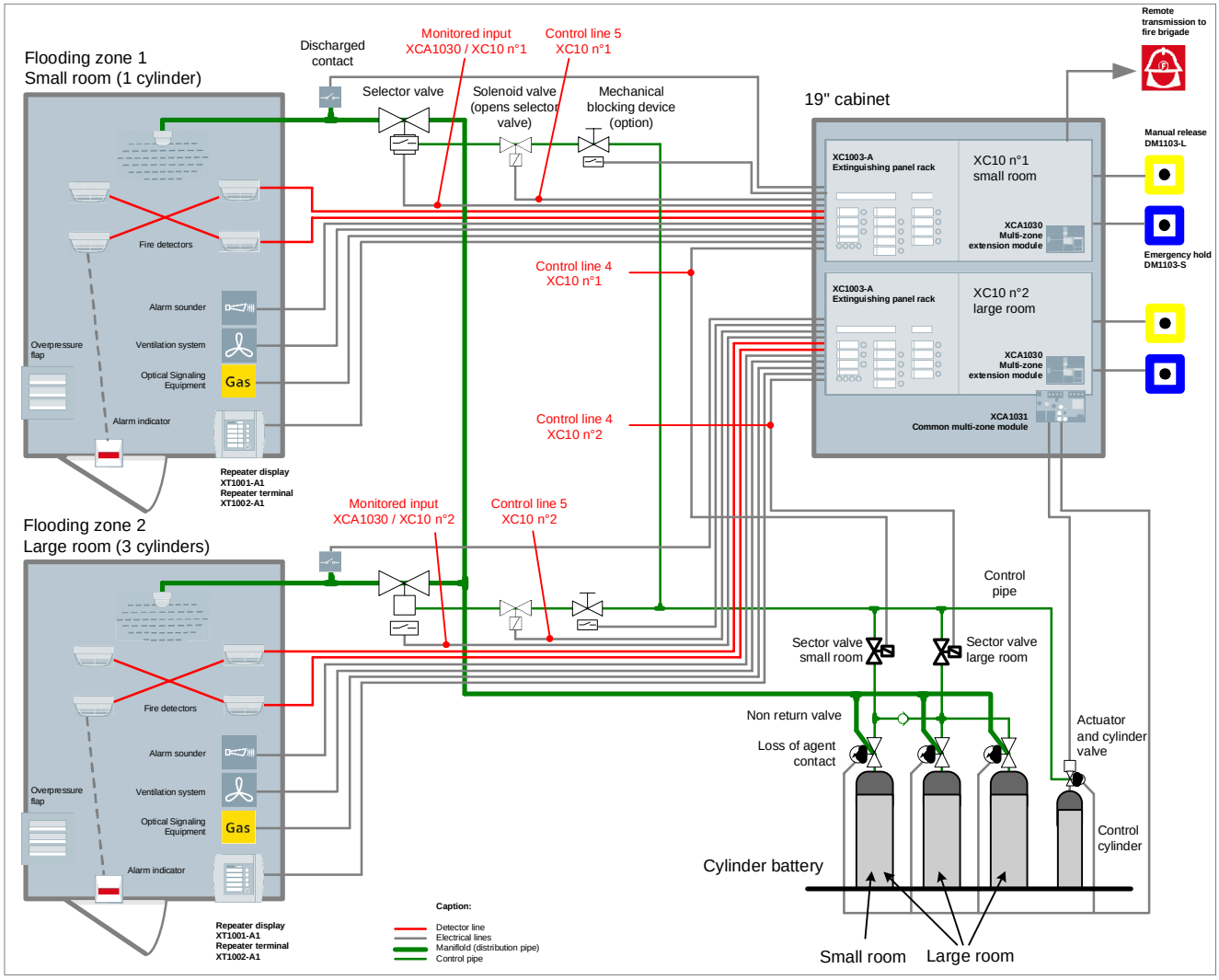


Fig. 29 XC1003-A, typical multi-sector installation

The example above describes the operation of a typical multi-zone installation on the basis of the assumption that flooding zone 1 “small room” is activated:

1. XC10 n°1 “small room” is activated

At the beginning of the pre-discharged warning time:

2. control cylinder is released into the control pipe
3. XC10 n°1 control line 5 is activated

➔ consequence: the selector valve from the flooding zone 1 “small room” is opening

At the end of the pre-discharged warning time:

4. XC10 n°1 control line 4 is activated
5. sector valve “small room” is opening
6. thanks to the non-return valve, only the left cylinder is released into the “small room” flooding zone
7. XC10 n°2 “large room” is automatically blocked (if selected in programming) according to EN12094-1 option with requirements 4.29

At the begening of the floodingtime:

8. discharged contact from the flooding zone 1 “small room” is activated and “Discharged” led is indicated on XC10 n°1

8.2 Detailed description

8.2.1 XCA1030 & XCA1031 connection

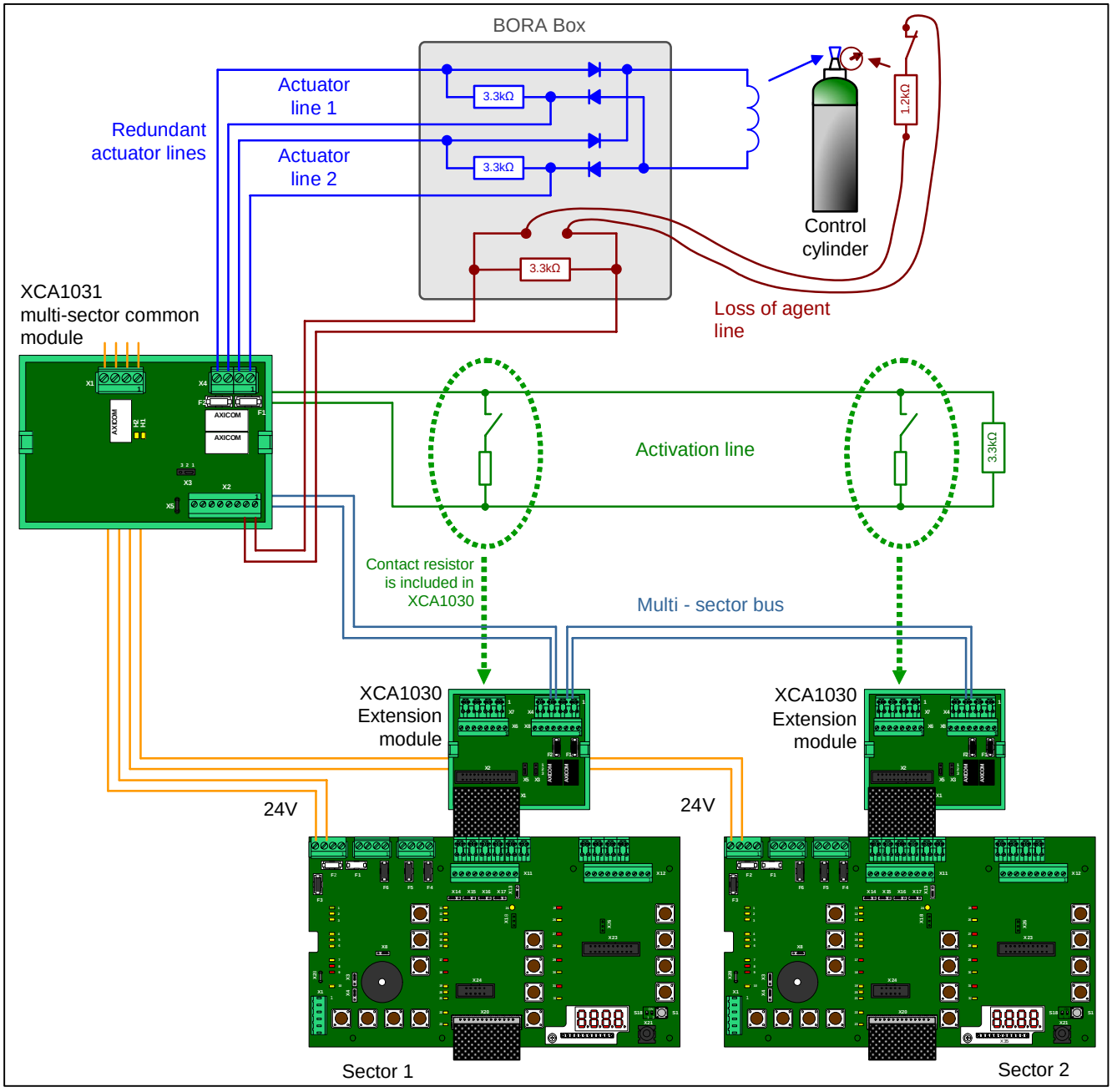


Fig. 30 XC1003-A, typical multi-sector installation

8.2.2 XCA1030 module description

The XCA1030 module is connected to the XC1003-A mainboard. Each extinguishing panel, part of a multi-sector application, must be equipped with this module.

The selector valve input monitors the position of the selector valve (if the selector valve is equiped with contact switches). During standby condition, if the selector valve in not closed, the led « Incorrect status » is turned on. If a line fault (short-circuit or disconnection) is detected, the led « Fault » is turned on.

The activation line output (contact resistor) is activated as soon as the XC10 is switched to the activated condition. This output is used to inform the XCA1031 common module that one XC10 is activated.

The multi-sector bus is a one way RS485 communication from the XCA1031 module to XCA1030 modules. It is used to send status informations and inter-blocking messages from the XCA1031 module to XCA1030 modules

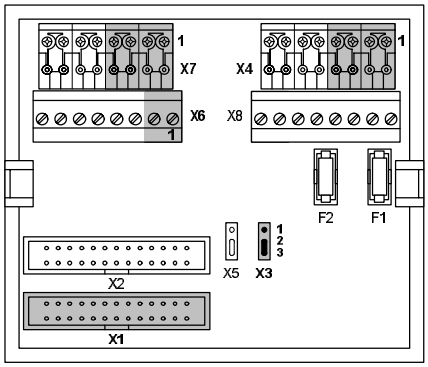


Fig. 31 XCA1030, multiple flooding zones individual module

Mark	Pin	Function
X1	—	XCM1002 main board flat cable connection
X2	—	Not used
X3	—	Multi-sector bus configuration jumper (see paragraph 8.3)
X4	1 (+) / 3 (–)	Multi-sector bus (RS485)
	2 (+) / 4 (–)	
X5	—	Not used
X6	1 (+) / 2 (–)	Selector valve position monitoring input
X7	1 (+) / 3 (–)	Activation line
	2 (+) / 4 (–)	
X8		
F1 / F2	—	Unused fuses

8.2.3 XCA1031 module description

In normal standby condition, the XCA1031 module sends polling messages to all XCA1030's connected on the multi-sector bus, so that each XC10 knows that the XCA1031 is working correctly. The polling message contains the following informations:

- loss of agent
- short circuit or disconnection of actuator line
- short circuit or disconnection of loss of agent line
- short circuit or disconnection of activation line
- multi-sector inter blocking
- earth fault

Due to EN12094-1 requirement (any fault on a transmission path shall not affect the function of more than one flooding zone), the actuator line is redundant. No calibration is required (reverse reverse polarity operation). If the actuator line is in fault condition, the XCA1031 sends a fault message via the multi-sector bus and all XC10's "Actuator fault" leds are turned on.

Due to redundancy again, the XCA1031 must be powered with two different 24V power supplies. LEDs H1 and H2 indicates the presence of these 24V power supplies. Usually, the first and the last XC10s connected on the multi-sector bus are used to power the XCA1031 module. If one power supply is missing, the XCA1031 sends a fault message via the multi-sector-bus and all XC10's "Fault" leds are activated. However, in such condition, the system operation is not

affected.

All manometer or weighing devices must be connected to the XCA1031 loss of agent line (control cylinder and main cylinder bank). All contacts must be connected in series (special cables connection are available: TOR-UNIT, TOR-MULTI, TOR-END). Normally closed contact must be used (i.e pressure or quantity of gas is correct when the contact is closed). If one contact opens, the XCA1031 sends a fault message via the multi-sector bus and all XC10's "Loss of agent" leds are turned on. If the line is in fault condition, the XCA1031 sends a fault message via the multi-sector bus and all XC10's "Fault" leds are turned on.

The activation line informs the XCA1031 module that one of the XC10s connected in the system is activated. If the activation line is in fault condition (short-circuit or disconnection), the XCA1031 sends a fault message via the multi-sector bus and all XC10's "Actuator fault" leds are turned on.

Once a sector is activated, the new condition is transferred to the XCA1030 module, which closes the activation line resistor switch. The "Alarm" condition of the activation line informs the XCA1031 module that one of the extinguishing sectors is activated. Then, the XCA1031 activates the redundant actuator line, which causes the release of the control cylinder. The inter-blocking information is automatically sent from the XCA1031 to all connected XC10s via the Multi-sector bus, and all XC10's which are in standby condition, are blocked (only the actuator control line is blocked).

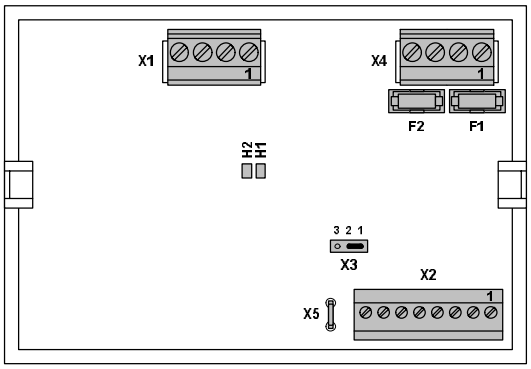


Fig. 32 XCA1031 multi-sector common module

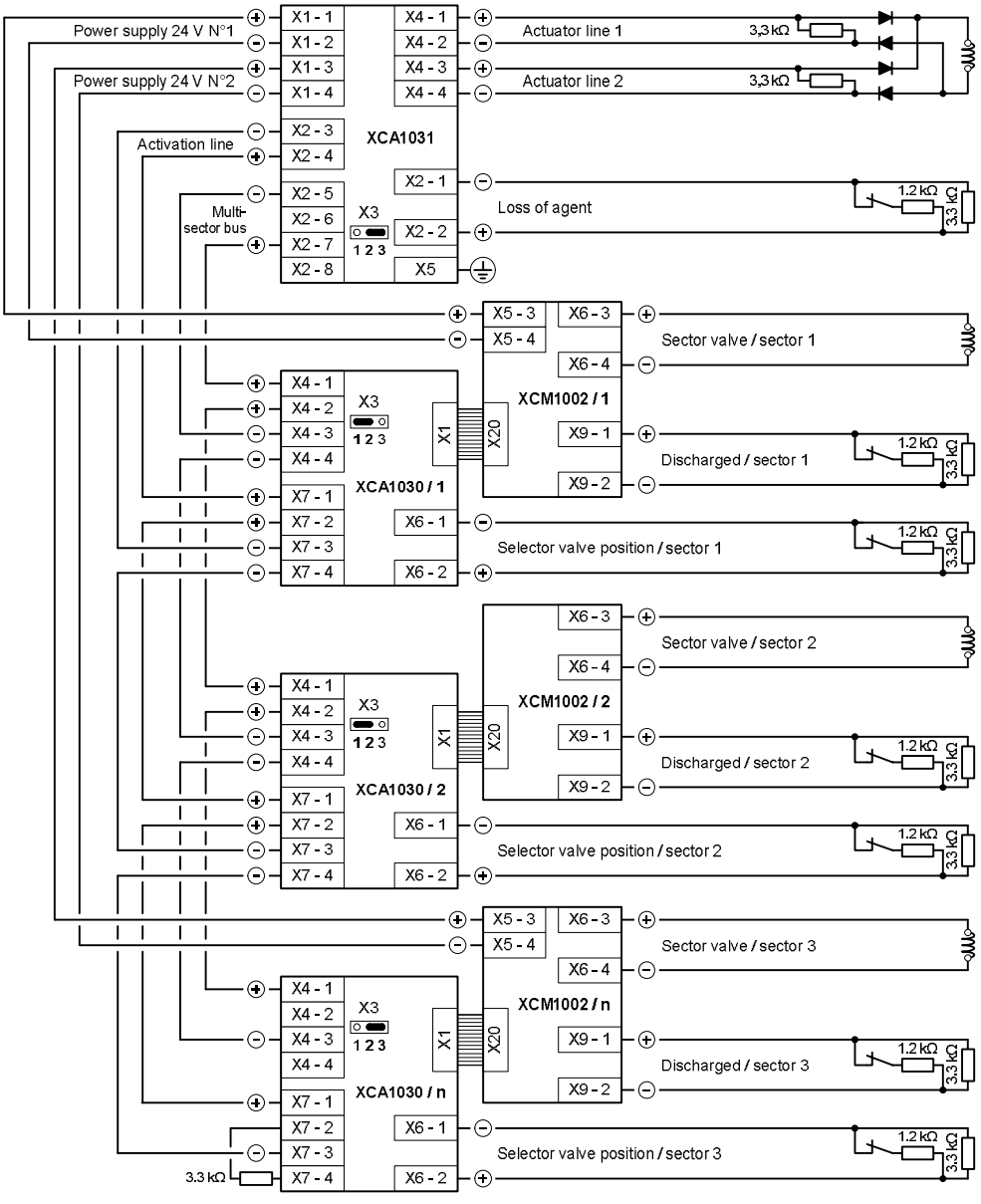
Mark	Pin	Function
X1	1 (+) / 2 (–)	24 V power supply input N° 1
	3 (+) / 4 (–)	24 V power supply input N° 2
X2	1 (–) / 2 (+)	Loss of agent monitored input
	3 (–) / 4 (+)	Activation line
	5 (–) / 7 (+)	Multi-sector bus (RS485)
	6 (–) / 8 (+)	
X3	—	RS485 bus configuration jumper (see paragraph 8.3)
X4	1 (+) / 2 (–)	Actuator line 1 (indicated polarities are control polarities)
	3 (+) / 4 (–)	Actuator line 2 (indicated polarities are control polarities)
X5	—	Ground connection
H1 / H2	—	24V power supply input indications (H1: input 1, H2: input 2)
F1 / F2	—	1 AF fuse protection for actuator lines 1 (F1) and 2 (F2)

8.3 Installation and wiring

Multiple flooding zones modules are mounted on a DIN rail:
- XCA1031 : in the 19" cabinet where XC1003-A control units are installed
- XCA1030 : in each XC1003-A (see Fig. 3)

The drawing below shows a connection example between XCA1030 modules and the XCA1031 for a 3 flooding zones installation.

Note: to ensure power supply redundancy, connect the 24V power supply to the XCA1031 module from two XC10 panels. Otherwise, a fault message is displayed on all XC10 panels.



X3 jumpers for RS485 configuration must be on position 2 / 3 for the first and the last modules, on 1 / 2 for the others (see example above).

Fig. 33 XC1003-A, multi-sector installation connection

8.4 Modules technical specification

XCA1030:
Selector valve position monitoring input:
- line monitoring: 3.3 kΩ resistance connected at the end of the line
- contact resistor: 1.2 kΩ
- line resistance: 80 Ω max.

XCA1031:
Actuator line 1 and 2:
- device can be either electromagnetic or pyrotechnic actuator
- activation by reverse polarity (polarities indicated are “activated” polarities, according to connected device, a diode can be necessary)
- line monitoring: 3.3 kΩ resistance connected at the end of the line
- protection: 1 AF fuse (F1 / F2)
- cable type: 2 x 2.5mm^2 max.
- length / resistance of the line: see paragraph 7.6

Loss of agent input:
- line monitoring: 3.3 kΩ resistance connected at the end of the line
- contact resistor: 1.2 k Ω
- line resistance: 80 Ω max.

– See paragraph 14.2 for detailed display of faults and states related to multi-sector application.
– See paragraph 8.3 for assembly and connection details.

9 Accessories

9.1 FCA1007 – Key switch

This device, only usable with XC1001-A and XC1005-A control panel, is connected to the terminal block X8 of XCM1002 mainboard (see paragraph 4.5) and allows operating access level 2 access per key rather than by code:
- the use must be defined by programming (see paragraph 12.15)
- mounting instructions are delivered with the product.

9.2 FDCI222 / FDCIO222 – Input/output interfaces

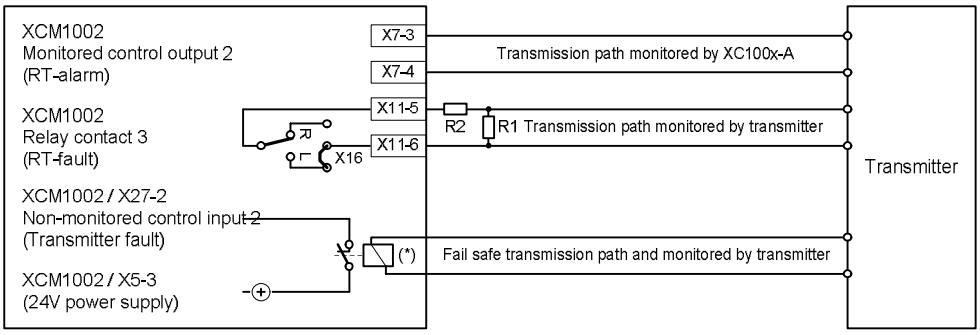
The XC100x-A control panels can be easily integrated into a large fire safety system to share the local status information and to receive controls. This ensures comfortable visibility of both fire detection and extinguishing at a central point.

FDCI222 / FDCIO222 module interfaces are used to connect the XC100x-A to the FDNet bus. The FDCI222 is used to transmit information's from the XC100x-A to the fire safety system. The FDCIO222 is used to transmit information's from the XC100x-A to the fire safety system and to receive controls from the fire safety system to the XC100x-A.

- with variants XC1005-A and XC1003-A, the module interface can be installed in the equipment (see fig. 2 and 3 for the locations)
- with variant XC1001-A, the module interface must be installed outside the equipment, close to it

9.3 Remote transmitter

A remote transmitter can be connected to the XC100x-A as described in the following drawing:



(*) Relay must be installed inside the XC10 equipment
Note : The value of resistances R1 and R2 depend on the transmitter (see transmitter datasheet)

Fig. 34 XC100x-A, remote transmitter connection

– In order to be compliant with EN54-2 / paragraph 8.1.2 and EN12094-1 paragraph 4.13.1 h), the transmission of the fault condition must be monitored and consequently, the transmitter device must include a dedicated monitored input
– Prog. step 49 option 09 must be selected to configure the control input 2 as transmitter fault input

9.4 Repeaters

9.4.1 Description

The repeater connects to the XC10 extinguishing control panel and provides remote status indication and remote control.

- Up to 16 repeaters can be connected to each XC10 control panel
- The number of repeaters connected to an XC10 is configured with programming step 60
- Data transmission path called RTNet is using RS485 physical layer
- Maximum line lengh: 1200 m
- Repeaters can be powered either from the XC10 24V output or from an external power supply
- Repeaters are supervised and the XC10 indicates a fault condition if one repeater is disconnected with identification address
- In case repeaters are accidentally disconnected, an audible signal is indicated thanks to a small battery inside each repeater
- 2 variants are available:
  - repeater display: XT/XTA1001-A1 provides remote status indication
  - repeater terminal: XT/XTA1002-A1 provides remote status indication and remote control
- Each variant can be delivered either in a plastic housing (XT100x-A1) or with a 19” mounting plate (XTA100x-A1)

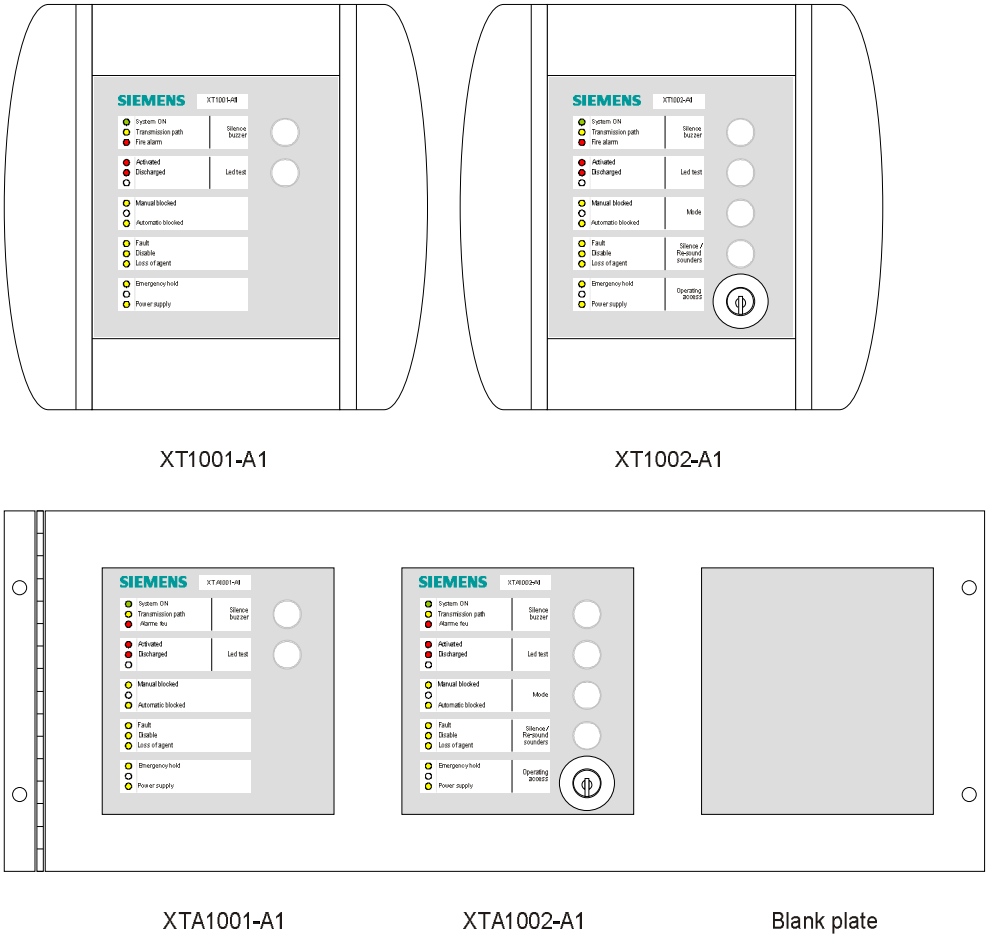


Fig. 35 XT/XTA1001-A1 – XT/XTA1002-A1 description

Technical data:
- Power supply voltage range: 8 … 30V
- Current consumption:
  - standby condition: 12 mA
  - alarm condition: 20 mA
- Operating / Storage temperature: -5°C … +40°C / -10°C … +60°C
- IP rating: IP40
- Dimensions (l x h x p) : 210 x 200 x 48 mm
- Weight : XT1001-A : 510 g / XT1002-A : 625 g

9.4.2 User interface

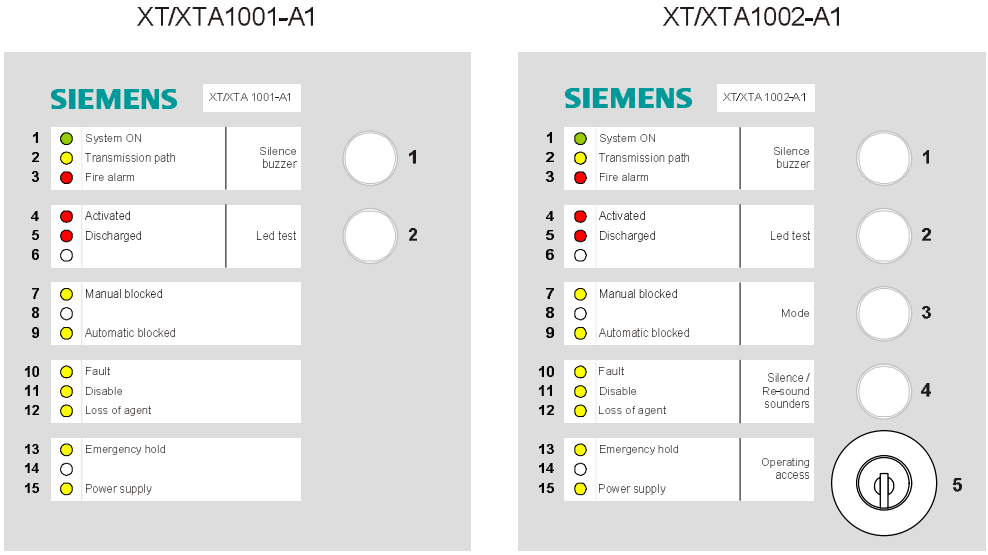


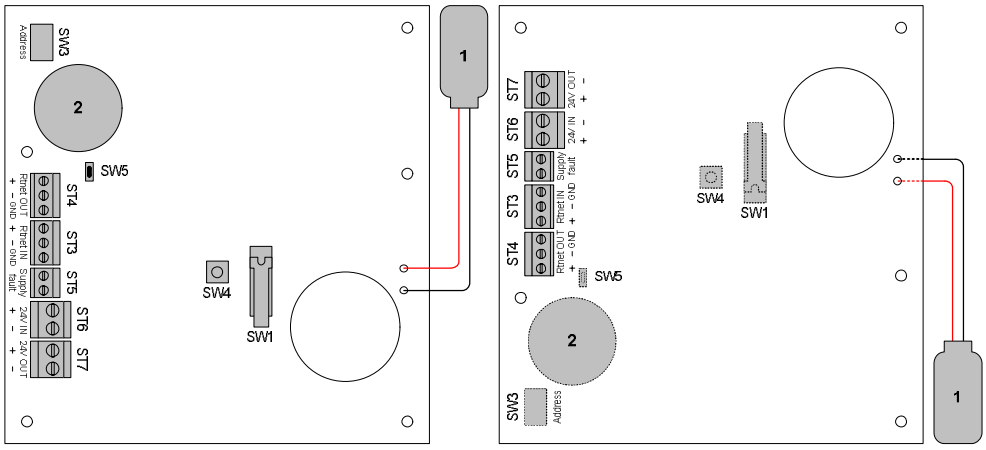
Fig. 36 XT/XTA1001-A1 – XT/XTA1002-A1 user interface

Led		Etat	Description
N°	Color		
1	Green	On	Repeater is powered
2	Yellow	On	Communication fault with the XC10
3	Red	-	Image of the led (8) of the XC10(1)
4	Red	-	Image of the led (17) of the XC10(1)
5	Red	-	Image of the led (18) of the XC10(1)
7	Yellow	-	Image of the led (14) of the XC10(1)
9	Yellow	-	Image of the led (16) of the XC10(1)
10	Yellow	-	Image of the led (2) of the XC10(1)
11	Yellow	-	Image of the led (6) of the XC10(1)
12	Yellow	-	Image of the led (13) of the XC10(1)
13	Yellow	-	Image of the led (24) of the XC10(1)
15	Yellow	On	Power supply fault

(1) see paragraph 4.6 « User interface »

Key N°	Description
1	Silence internal buzzer ➔ Operating access level required for this operation: level 1 or level 2 ➔ This operation silences the repeater buzzer only, not the XC10 buzzer
2	Led and buzzer test (duration = 5 seconds): All led indicators are switched on and the internal buzzer sounds continuously ➔ Operating access level required for this operation: level 1 or level 2 ➔ This operation starts the repeater led test only, not the XC10 led test
3	Remote control of the XC10 « Mode of operating », by successive pressing: – 1st pressing: automatic blocked – 2nd pressing: automatic and manual blocked – 3rd pressing: normal mode ➔ Operating access level required for this operation = level 2 ➔ Status indication on XC10 is automatically updated
4	Remote control of the XC10 « Silence / Re-sound sounders », by successive pressing: – 1st pressing: silence sounders – 2nd pressing: restart sounders – 3rd pressing: silence sounders – etc ➔ Operating access level required for this operation : level 2 (silence sounders is not possible during pre-discharged warning time) ➔ Status indication on XC10 is automatically updated
5	Operating access level is selected with the KABA key: - key on the vertical position: operating access level 1 - key on the horizontal position: operating access level 2 (in this position, the key cannot be removed)

9.4.3 Mainboard



XT1001-A1 / XT1002-A1 XTA1001-A1 / XTA1002-A1

Fig. 37 XT/XTA1001-A1 – XT/XTA1002-A1 mainboard

Id	Function
SW1	Switch for operating access level 2 (XT/XTA1002-A1 only)
SW3	Rotary switch for selection of the repeater address
SW4	Reset
SW5	RTNet end of line element (factory setting: ON)
ST3 / ST4	RTNet (RS485)
ST5	External power supply fault
ST6 / ST7	24V power supply
1	9V battery connector
2	Internal buzzer

9.4.4 Connections and configuration

Repeaters can be powered directly from the XC10 24V output or from an external power supply. Wiring depends on the type of power supply connection:

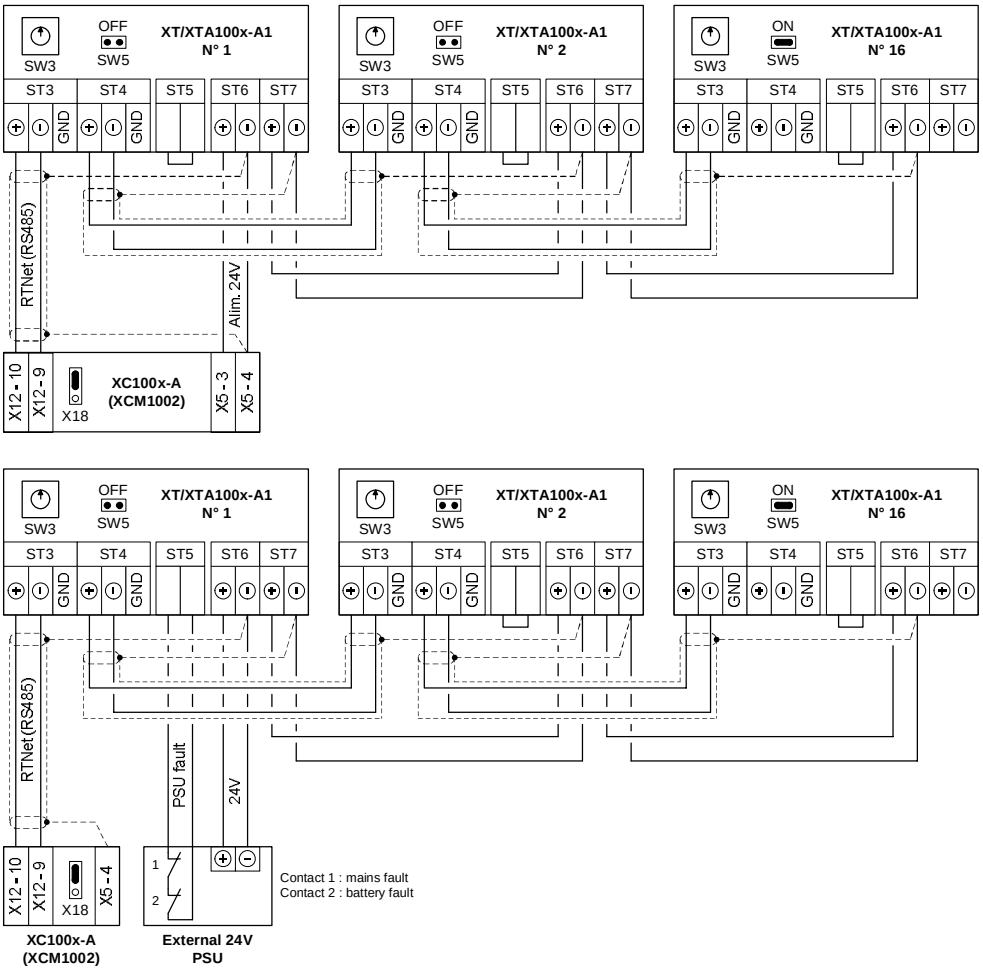


Fig. 38 XT/XTA1001-A1 – XT/XTA1002-A1 connection

Cable types :

➔ RTNet - Repeater powered from the XC10:
- 2 wires
- conductor cross section max.: 1.5mm^2
- twisted (at least 7 twists per meter) and shielded

➔ RTNet - Repeater powered from an external power supply:
- 3 wires between the power supply and the first repeater / 2 cores between other repeaters
- conductor cross section max.: 1.5 mm^2
- twisted (at least 7 twists per meter) and shielded

➔ Power supply fault:
- 2 wires between the power supply and the first repeater
- conductor cross section max.: 1.5 mm^2
- twisted (at least 7 twists per meter)

➔ Power supply (all cases) :
- 2 wires
- conductor cross section max. : 1.5 mm^2

– Maximun RTNet line lengh : 1200 m
– Sub-stubs are not permitted

Configuration

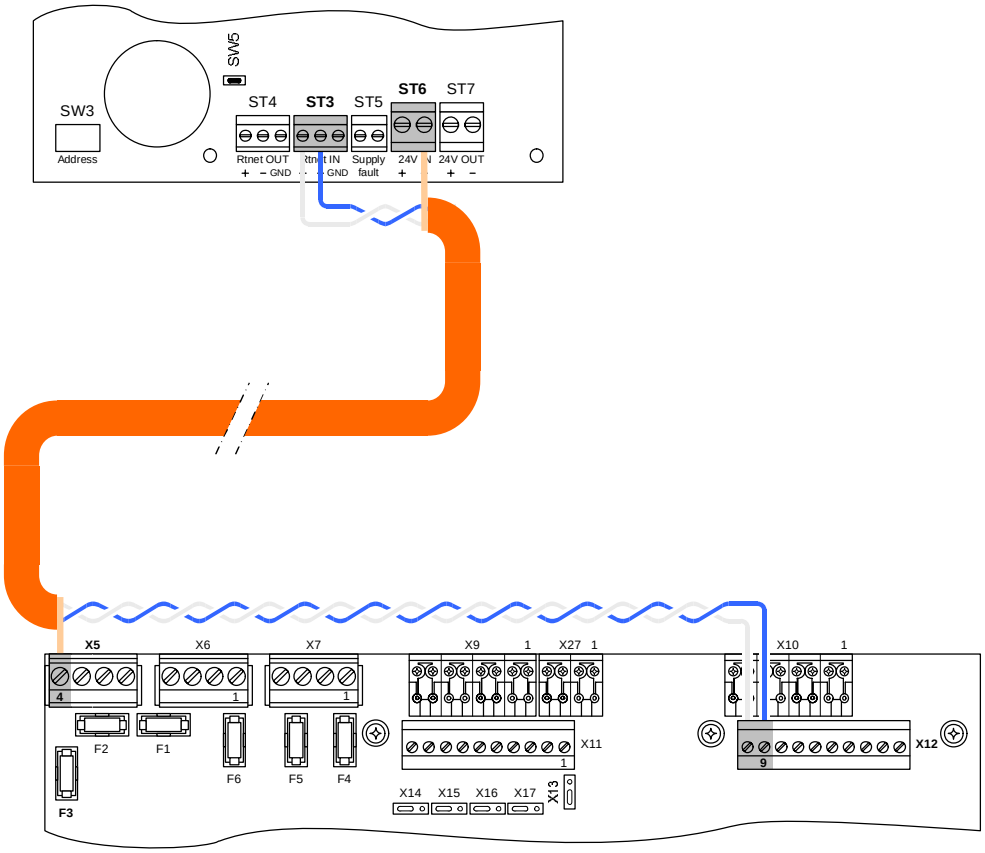
– SW5 : shall be switched to « ON » position on the last repeater of the RTNet line, shall be switched to « OFF » position on all others repeaters
– SW3 : rotary switch for setting the repeater address (any address change shall be followed by a reset of the repeater)

SW3 (pos.)	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
repeater N°	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16

9.4.5 Wiring recommandations

To guarantee a good EMC immunity, the following wiring recommandations must be respected:

1. Cut the cable drain at the insulating sleeve
2. Twist the shield and connect it to the ST6-0V (repeater terminal side) and to X5-4 (XC10 side) according to the drawing below
3. Twist the 2 cable wires and connect them to ST3 (repeater terminal side) and to X12-9..10 (XC10 side) according to the drawing below



10 Operating access levels

XC100x-A equipment operation is organised in several operating access levels.

10.1 Operating access level 1

This level gives access to:
- silence buzzer (see programming options in step 56)
- led test
- fault detailed display
- alarm counter display (XC1003-A and XC1005-A only)

10.2 Operating access level 2

This operating access level gives access, after code input on keyboard (**4 2 3 3** by default or personalised) or by key (option), to the following controls:
- silence buzzer (see programming options in step 56)
- silence / re-sound sounders
- automatic blocked / automatic and manual blocked
- disable / enable
- test of zones 1...4
- reset
- test of sounders, warning panels, RT-alarm and RT-fault

- Operating access level 2 is automatically disabled after 4 minutes if no handling is carried out for this period
- Operating access level 2 can be manually swiched back to level 1 after the same code input (For customers who don't want to wait 4 minutes)

10.3 Operating access level 3A

This operating access level gives access, after code input on the keyboard, to the “system test” function (see paragraph 15.6).

10.4 Operating access level 3B

This operating access level gives access, after removing the front plastic cover and codes input on the keyboard, to:
- user functions programming
- outputs individual test
- checksum display
- alarm counter display
- maintenance PC connection (no code is needed)

11 Extinguishing process diagrams

The following diagrams show the execution of an extinguishing process initiated by an automatic activation, a manual release and a mechanical release on the cylinders (optional).

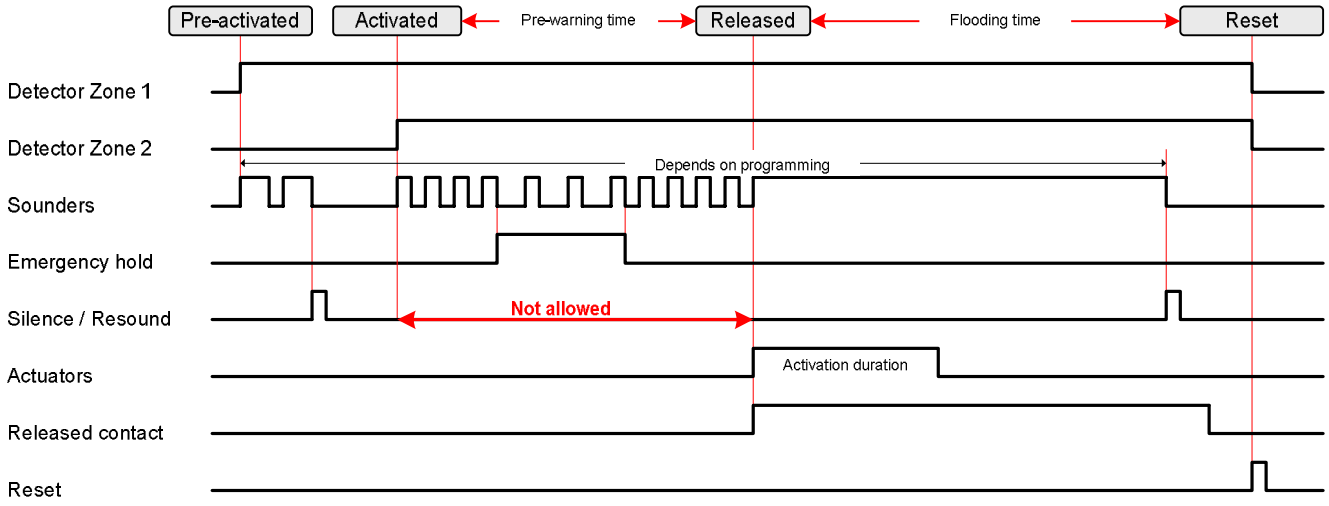


Fig. 39 Extinguishing process initiated by automatic detectors

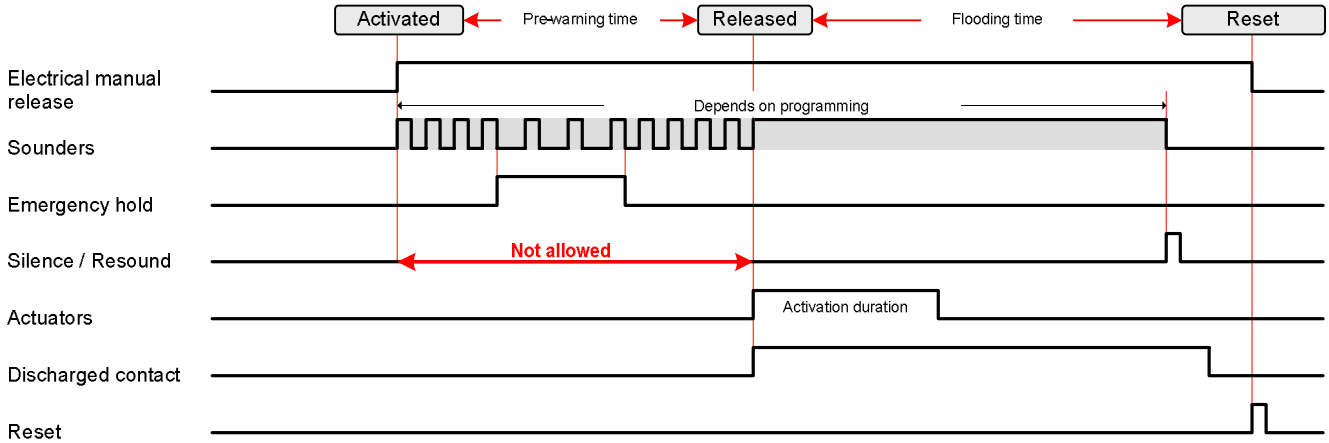


Fig. 40 Extinguishing process initiated by a manual release (DM1103-L)

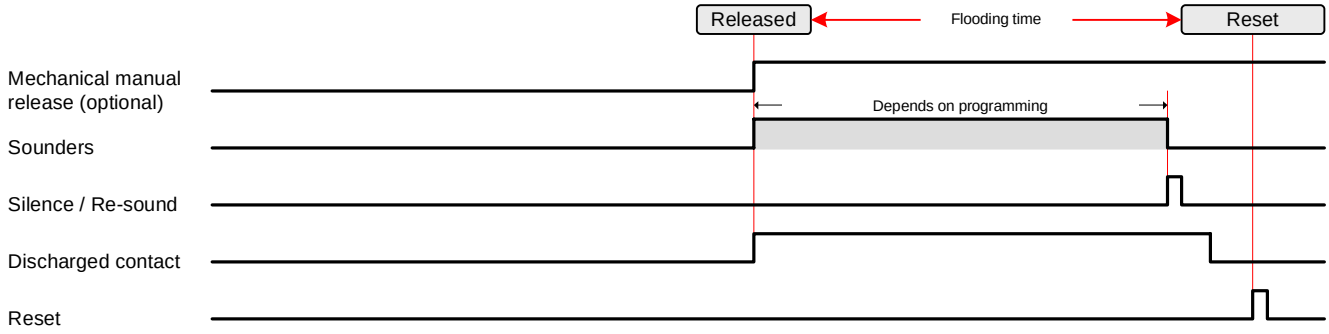


Fig. 41 Extinguishing process initiated by a mechanical release on the cylinders

12 Programming

12.1 Before starting

Some of the programming options are entitled « Processing as ». This means that an output, programmed with this option, will function in the same way:

Processing as :	**Description**
RT-alarm	Output can be disabled via key 11 (“Disable RT-Alarm”) Output line fault is reported on “RT-alarm” fault indicator (*)
RT-fault	Output can be disabled via key 11 (“Disable RT-Fault”) Output line fault is reported on “RT-fault” fault indicator (*)
Fire controls	Output can be disabled via key 10 (“Disable fire controls”) Output line fault is reported on “Fault” indicator (*) – Activated 5, 10 or 15 seconds before the end of the pre-discharged warning time until “Reset”
Fire controls A, B, C	Output can be disabled via key 10 (“Disable fire controls”) Output line fault is reported on “Fire controls” fault indicator (*) A controls = activated on pre-alarm until "Reset" B controls = activated on pre-alarm, activated, released until "Reset" C controls = activated on activated, released until "Reset"
Sounders	Output can be disabled via key 10 (“Disable Sounder/Actuator”) Output line fault is reported to “Sounders” fault indicator (*)
Actuators	Output can be disabled via key 10 (“Disable Sounder/Actuator”) Output line fault is reported to “Actuators” fault indicator (*)

Door holder	In order to maintain the gas concentration as long as possible, the flooded area must be as tight as possible. Doors are automatically closed before the release by de-energizing a solenoid holder.
	“Door holder” output is:
	- energized during standby condition
	- de-energized
	  - at the beginning of the pre-discharged warning time until “Reset”
	  - in case mains failure is longer than 15mn (to save battery capacity)
	  - in case zone fault/disable (zone which triggers extinguishing)
	  - in case manual release fault/disable condition
	  - in case extinguishing disabled
	Disable impossible
	Output line fault is reported on “Fault” indicator (*)

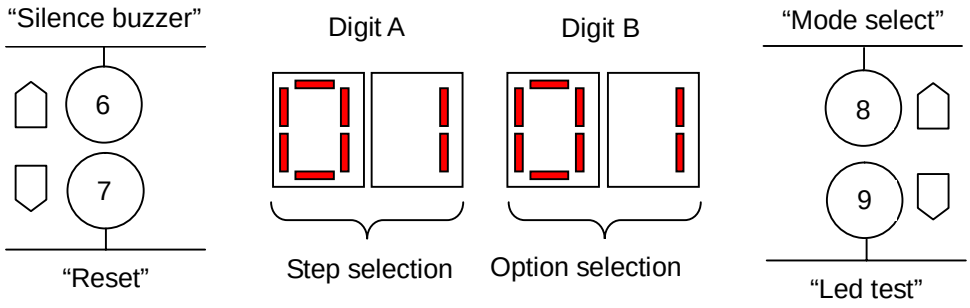
Fire damper	This output is used to connect a fire damper, which must be closed/opened a few seconds before the gas release and closed/opened once the gas is released. For safety reasons, it is not recommanded to connect an over-pressure flap to this output (In case the line is broken, damage may occur on the room structure). – Activated between 60 and 10 seconds before the end, or at the end of the pre-discharged warning time – De-activated after a duration reglable from 0 to 5 mn or on “Reset” Disable impossible Output line fault is reported on “Fault” indicator (*)
Extract fan	The extract fan provides a means to vent a room of extinguishing gases but prevents the gases from being vented during a discharge. - The extract fan can be activated only manually with the specific code "1231" (level 2 required) at any time except during “Pre-discharged warning time” and “Flooding time” - An activated extract fan shall be automatically de-activated if an extinguishing process is started The extract fan can be de-activated only with the “Reset” key Disable impossible Output line fault is reported on “Fault” indicator (*)
Not specified	Disable impossible Output line fault is reported on “Fault” indicator (*)

(*)Applies only to monitored outputs

Navigation in programming

Programming is carried out using the « Silence buzzer » (6), « Reset » (7), « Mode select » (8), « Led test » (9) keys and the 4-digit display:

- The “Silence buzzer” key (6) allows scrolling the steps ahead, the “Reset” (7) key scrolling back
- The “Mode select” (8) key allows scrolling the options ahead, the “Led test” (9) key scrolling back
- Both digits on the left indicate programming step, both digits on the right indicate options available for this step



Entering / leaving programming

1. Remove the front panel
2. Set the panel to operating access level 2
3. Press and hold down the key « Silence buzzer » (6) then enter the digit code **1 4 2 4 2 3 2 1** on the keyboard to enter programming:
➔ “Disable” LED(6) lights up (fixed), « Test » (7), « Fire alarm » (8) and « Remote transmission » (9) LED light up alternatively, « Operating access » (10) LED switch off
➔ the display indicates, for example, « 0130 » (=step 01, option 30)
4. Carry out the modifications, if necessary
5. Press simultaneously keys “1” and “4” to save and leave programming or key “Reset” (S1) on the XCM1002 mainboard to leave programming without saving.

If no further key is pressed for more than 4 minutes, programming mode is automatically terminated, with modifications saved.

12.2 Presettings

Sixteen country presettings and a factory presetting are available.

Procedure

1. Remove the front panel
2. Press the « Reset » key (S1) XCM1002 board:
➔ the display indicates « b » (= system boot) then a few seconds later the indicator « General fault » (2) flashes slowly
3. During this phase (≈ 30 seconds), press and hold down keys « 1 » to « 4 » of the keyboard until « b » disappears:
➔ the display indicates the presetting number (number between 00 and 16)
➔ LED « General fault » (2) and « Power supply fault » (3) light up (pulsating fast)
4. If the appropriate presetting is displayed (see table below), go to point 6, if not, go to point **5**
5. Press as many times as necessary the key « Mode » (8) to select the appropriate presetting

6. Press and hold down the keys “1” to “4” of the keyboard to validate

The validation of a country presetting (whatever it is) implies that any modification (of one or some of the programming options) will be cancelled and replaced by the options of this presetting.

Step	Presettings and corresponding options																
	00	**01**	**02**	**03**	**04**	**05**	**06**	**07**	**08**	**09**	**10**	**11**	**12**	**13**	**14**	**15**	**16**
	Default	**FR**	**DK**	**CH**	**SE**	**CZ**	**BE**	**NL**	**FI**	**SP**	**TR**	**Siemens Energy**	**Sinorix Compact**	**Reserve**	**Reserve**	**Reserve**	**Factory test**
01	30	30	30	20	30	30	30	30	30	30	30	30	20	30	30	30	00
02	01	01	01	04	02	01	01	01	01	01	01	04	04	01	01	01	60
03	01	01	01	04	02	01	01	01	01	01	01	04	04	01	01	01	60
04	01	01	15	01	01	01	01	01	01	01	01	10	01	01	01	01	01
05	09	08	10	01	03	09	09	03	09	02	09	09	01	09	09	09	06
06	03	03	05	02	05	02	03	02	03	02	03	02	02	03	03	03	02
07	01	02	01	02	02	05	02	02	01	01	01	02	02	01	01	01	01
08	01	03	01	03	01	01	03	02	01	01	01	02	03	01	01	01	01
09	01	01	01	01	01	01	01	01	01	01	01	01	01	01	01	01	01
10	01	01	01	01	01	01	01	01	01	01	01	01	01	01	01	01	01
11	01	03	01	02	09	01	02	06	01	04	01	99	02	01	01	01	01
12	01	01	04	01	03	04	01	01	01	01	01	01	01	01	01	01	01
13	01	01	01	01	01	01	01	01	01	01	01	01	01	01	01	01	01
14	03	09	01	01	04	03	09	05	03	01	03	99	01	03	03	03	01
15	18	04	18	06	18	18	14	18	18	18	06	06	06	18	18	18	09
16	01	05	01	04	07	01	06	19	01	19	04	04	04	01	01	01	09
17	01	01	01	01	01	01	01	01	01	01	01	01	01	01	01	01	01
18	12	06	20	17	14	12	04	16	12	14	17	17	17	12	12	12	09
19	16	11	17	11	17	17	11	11	16	17	11	11	11	16	16	16	09
20	04	04	04	04	02	04	04	07	04	05	01	04	04	04	04	04	09
21	07	14	07	07	03	07	08	08	07	06	07	07	07	07	07	07	09
22	05	05	05	05	04	05	04	04	05	07	05	05	05	05	05	05	09
23	06	06	06	06	05	06	05	05	06	08	06	06	06	06	06	06	09
24	11	11	11	14	06	11	06	06	11	11	11	14	14	11	11	11	09
25	15	15	15	17	14	15	14	14	15	14	15	17	17	15	15	15	09
26	12	12	12	11	17	12	17	16	12	13	12	11	11	12	12	12	09
27	13	13	21	22	11	13	11	11	13	09	13	22	22	13	13	13	09
28	01	03	01	02	01	01	01	02	01	01	01	02	03	01	01	01	02
29	01	01	01	01	01	01	01	02	01	01	01	01	01	01	01	01	02
30	01	06	01	02	01	01	06	01	01	01	04	02	06	01	01	01	04
31	03	06	03	03	05	01	03	03	03	03	03	04	06	03	03	03	03
32	01	01	01	01	01	01	01	01	01	01	01	01	01	01	01	01	01
33	01	01	01	01	01	01	01	01	01	01	01	01	01	01	01	01	01
34	01	01	01	02	02	01	01	02	01	02	01	02	02	01	01	01	01
35	01	01	02	02	02	02	02	01	01	01	01	02	02	01	01	01	01
36	01	02	01	01	01	02	01	01	01	01	01	01	01	01	01	01	01
37	02	02	02	02	02	02	02	02	02	02	01	03	02	02	02	02	01
38	02	02	02	02	02	02	02	02	02	02	01	02	02	02	02	02	01
39	01	02	01	01	01	01	01	01	01	01	01	02	01	01	01	01	01
40	01	02	02	02	02	01	01	01	01	01	01	02	02	01	01	01	01

Step	Presettings and corresponding options																
	00	**01**	**02**	**03**	**04**	**05**	**06**	**07**	**08**	**09**	**10**	**11**	**12**	**13**	**14**	**15**	**16**
	Default	**FR**	**DK**	**CH**	**SE**	**CZ**	**BE**	**NL**	**FI**	**SP**	**TR**	**Siemens Energy**	**Sinorix Compact**	**Reserve**	**Reserve**	**Reserve**	**Factory test**
41	01	01	02	01	01	02	01	01	01	01	01	01	01	01	01	01	01
42	01	04	02	01	01	01	01	01	01	01	01	01	01	01	01	01	01
43	02	02	02	02	02	02	02	02	02	02	02	01	02	02	02	02	01
44	01	01	01	01	01	01	01	01	01	01	01	01	01	01	01	01	01
45	01	01	01	01	02	01	01	01	01	01	01	01	01	01	01	01	01
46	01	01	01	01	01	01	01	01	01	01	01	01	01	01	01	01	01
47	03	03	04	04	04	02	03	02	03	03	02	02	04	03	03	03	01
48	01	01	01	01	01	01	01	01	01	01	01	01	01	01	01	01	01
49	12	08	01	01	01	04	01	01	12	07	12	12	07	12	12	12	11
50	12	12	12	02	07	12	11	08	12	11	04	02	02	12	12	12	11
51	12	12	12	12	12	12	02	12	12	12	02	12	12	12	12	12	11
52	01	01	01	01	01	01	01	01	01	01	01	01	01	01	01	01	01
53	01	01	01	01	01	01	01	01	01	01	01	01	01	01	01	01	01
54	01	01	01	01	01	01	01	01	01	01	01	01	01	01	01	01	01
55	01	01	01	01	01	01	01	01	01	01	01	01	01	01	01	01	01
56	01	01	01	01	01	01	01	01	01	01	01	01	01	01	01	01	01
57	01	01	01	01	01	01	01	01	01	01	01	01	01	01	01	01	01
58	01	01	01	01	01	01	01	01	01	01	01	01	01	01	01	01	02
59	01	01	01	01	01	01	01	01	01	01	01	01	01	01	01	01	01
60	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	01
61	02	02	02	02	02	02	02	02	02	02	02	01	02	02	02	02	02
62	01	01	01	01	01	01	01	01	01	01	01	01	01	01	01	01	01
63	01	01	01	01	01	01	01	01	01	01	01	01	01	01	01	01	01
64	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33
65	99	99	99	99	99	99	99	99	99	99	99	99	99	99	99	99	99
66	01	01	01	01	01	01	01	01	01	01	01	01	01	01	01	01	01
67	01	01	01	01	01	01	01	01	01	01	01	01	01	01	01	01	01

12.3 Steps 01 to 04 - Time duration settings

Step	Option	Description
01		**Pre-discharged warning time for automatic release (check programming step 65 for manual release)**
		The Pre-discharged warning time sets the countdown duration before the actuator extinguishing release triggering. During this time, the reset function is not possible. Adjustable from 0 to 120 seconds by step of 5 seconds Default : 30 s Values from 65 seconds to 120 seconds are not compliant to EN12094-1. This must be clearly indicated in the installation test report. (Application: activation of very slow dampers (100 - 120 seconds to open), during the pre-discharged warning time
	00	0 second
	05	5 seconds
	10	10 seconds
	15	15 seconds
	20	20 seconds
	25	25 seconds
	30	30 seconds
	35	35 seconds
	40	40 seconds
	45	45 seconds
	50	50 seconds
	55	55 seconds
	60	60 seconds
	61	65 seconds
	62	70 seconds
	63	75 seconds
	64	80 seconds
	65	85 seconds
	66	90 seconds
	67	95 seconds
	68	100 seconds
	69	105 seconds
	70	110 seconds
	71	115 seconds
	72	120 seconds
02		**Monitored output 4 : activation duration**
		The actuator activation time sets the duration of extinguishing release output to Control Line 4. During this time, the reset function is not possible. Adjustable: - from 5s to 300s (5mn) seconds by step of 5s - from 5mn30s to 10mn by step of 30s - from 11mn to 30mn by step of 1mn - until "Reset" operation Default: 5 s Note 1: For pyrotechnical actuators select an activation time of 5s Note 2: For solenoid actuators, select an activation time of at least 10s. Keep this time duration to a minimum in order to minimize current consumption According to EN12094-1 option with requirement 4.21, this duration can be cancelled by using code (operating access level 3). It is applicable only for installations using electrical valves where the gas concentration is directly function of the valve opening duration.
	01	5 seconds
	02	10 seconds
	03	15 seconds
	¦	
	58	290 seconds
	59	295 seconds

	60	300 seconds (5mn)
	61	5mn 30s
	62	6mn
	63	6mn 30s
	64	7mn
	65	7mn 30s
	66	8mn
	67	8mn 30s
	68	9mn
	69	9mn 30s
	70	10mn
	71	11mn
	72	12mn
	73	13mn
	74	14mn
	75	15mn
	76	16mn
	77	17mn
	78	18mn
	79	19mn
	80	20mn
	81	21mn
	82	22mn
	83	23mn
	84	24mn
	85	25mn
	86	26mn
	87	27mn
	88	28mn
	89	29mn
	90	30mn
	99	Until "Reset"
03	**Monitored output 5 : activation duration**	
	Applicable, with the same options as at step 02, only if this output is set to “Process as actuator” (see step 14).	
04	**Flooding time**	
	The flooding time sets the duration the gas concentration must be maintained. During this time, the reset function is not possible. Adjustable from 0 to 30 minutes by step of 1 minute Default: 1 minute	
	00	30 seconds
	01	1 minute
	02	2 minutes
	03	3 minutes
	⋮	
	28	28 minutes
	29	29 minutes
	30	30 minutes

12.4 Step 05 - Sounders

Step	Option	Description

05	**Sounders: program the pattern**				
		Fire alarm	**Activated**	**Emergency hold/abort**	**Released**
	01	Continuous	Pulsated fast	Pulsated slow	Pulsated fast
	02	Pulsated slow	Pulsated fast	Pulsated slow	Continuous
	03	Pulsated fast	Pulsated long	Pulsated fast	Continuous
	04	Pulsated slow	Continuous	Pulsated slow	Continuous
	05	Continuous	Continuous	Pulsated slow	Pulsated fast
	06	Continuous	Continuous	Continuous	Continuous
	07	Pulsated slow	Continuous	Continuous	Continuous
	08	Not activated	Continuous	Pulsated slow	Continuous
	09	Pulsated long	Pulsated fast	Pulsated slow	Continuous
	10	Pulsated fast	Continuous	Continuous	Continuous
	11	Pulsating fast	Continuous	Pulsating fast	Continuous
	12	Not activated	Pulsated fast	Not activated	Continuous
	Pulsated fast = Active 1 second / Inactive 1 second Pulsated slow = Active 1 second / Inactive 4 seconds Pulsated long = Active 4 seconds / Inactive 1 second Note: according to EN 12094-1 paragraph 4.30.2, sounders activation during released condition shall be continuous				

12.5 Steps 06 to 09 - Remote transmission

Step	Option	Description

06	**RT-alarm: program the activation**	
	01	Active in state fire alarm until "Reset"
	02	Active in state fire alarm, activated, released until "Reset"
	03	Active in state activated, released until "reset"
	04	Active in state released until "reset"
	05	Active in state fire alarm, activated, released, zone 4 in alarm condition, until "reste" *Application: transmit RT-Alarm as soon as the DM1103-L is activated, even if "Manual blocked" is selected*
07	**RT-fault : program the activation**	
	01	Activation : without delay on any fault Duration : until buzzer silence
	02	Activation : without delay on any fault Duration : until buzzer silence and fault elimination
	03	Activation : after 3 mn, on any fault, if buzzer is not silenced Duration : until buzzer silence
	04	Activation : after 3 mn, on any fault, if buzzer is not silenced Duration : until buzzer silence and fault elimination
	05	Activation : without delay on any fault, disable, mechanical blocking, loss of agent, incorrect status Duration : until activation cause disappears
08	**« Remote transmission » LED (9): activation and operation**	
	01	Lights up on RT-alarm (Enable/Disable, via key 11, possible)
	02	Lights up on RT-alarm and RT-fault (Enable/Disable, via key 11, possible)
	03	Unused (key 11 disabled) *Application: Remote transmission not used [FR] → outputs programmed as " Remote transmission" cannot be disabled*
	04	Lights up on Control Output 1 or 2 or 3 activated *Application: for Austria only*
09	**RT-Alarm and RT-Fault suppression when operating access level 2**	
	01	Remote transmission not blocked

	02	Remote transmission blocked *Application: avoid the remote transmission when the system is controlled by the operator*

12.6 Steps 10 to 14 - Monitored outputs 1 to 5

Step	Option	Description
10	**Monitored output 1 : select the operation**	
	01	Processing as “Sounders” (see step 05 and paragraph 12.1) Active until “Silence/Re-sound” or “Reset” via non-monitored control input 1
	99	Do not use this option
11	**Monitored output 2 : select the operation**	
	01	Processing as “RT-alarm” (see step 06 and paragraph 12.1)
	02	Processing as “Fire controls A” (see paragraph 12.1)
	03	Processing as “Fire controls B” (see paragraph 12.1)
	04	Processing as “Fire controls C” (see paragraph 12.1)
	05	Processing as “Sounders” (see steps 05 and 10 and paragraph 12.1)
	06	Processing as “Sounders” (see steps 05 and 10 and paragraph 12.1), except that: - is activated continuously in state “Activated” - is deactivated in state “Emergency Hold/Abort” *Application: additional wire for second tone sounder*
	07	Active in state “Mechanical blocked” *Application: use of a specific Warning Panel showing that extinguishing is blocked*
	08	Active in state “Automatic blocked” or “Manual blocked” *Application: specific Warning Panel for “Manual Blocked” or “Automatic Blocked”*
	09	Active in state “Automatic blocked” and “Manual blocked” *Application: specific Warning Panel for “Manual Blocked” and “Automatic Blocked”*
	99	Not used (no EOL required)
12	**Monitored output 3 : operation**	
		Fire alarm / **Evacuation** / **Released**
	01	Not activated / Continuous / Continuous until "Reset"
	02	Not activated / Pulsating / Continuous until "Reset"
	03	Not activated / Pulsating / Continuous until “key 4” is pressed after "Reset"
	04	Pulsating / Continuous / Continuous until "Reset"
	05	Not activated / Pulsating / Pulsating until "Reset"
	99	Not used (no EOL required)
13	**Monitored output 4 : operation**	
	01	Processing as “Actuators”, activated at the end of the pre-discharged warning time
	02	Processing as “Actuators”, activated at the beginning of the pre-discharged warning time *Application: activation of a pneumatic delay device*
14	**Monitored output 5 : operation**	
	01	Processing as “Actuators”, activated at the end of the pre-discharged warning time (see step 02 and paragraph 12.1)
	02	Processing as “Actuators”, activated at the beginning of the pre-discharged warning time (see step 02 and paragraph 12.1)
	03	Processing as “Fire controls A” (see paragraph 12.1)
	04	Processing as “Fire controsl B” (see paragraph 12.1)
	05	Processing as “Fire controls C” (see paragraph 12.1)
	06	Processing as “Fire control", activated 5s before the end of the pre-discharged warning time (see paragraph 12.1)
	07	Processing as “Fire control", activated 10s before the end of the pre-discharged warning time (see paragraph 12.1)
	08	Processing as “Fire control", activated 15s before the end of the pre-discharged warning time (see paragraph 12.1)
	09	Processing as "Extract fan" (see paragraph 12.1)
	10	Processing as "Fire damper" (see steps 63 and 64 and paragraph 12.1)
	11	Processing as "Door holder" (see paragraph 12.1)
	12	Active in state “Mechanical Blocked” *Application: use of a specific Warning Panel showing that extinguishing is blocked*

	13	Active in state “Automatic Blocked”
	14	Active in state "Manual blocked”
	15	Active in state "Automatic blocked” or "Manual blocked"
	16	Active in state "Automatic blocked” and "Manual blocked"
	17	Active in state "Emergency hold/abort"
	18	Processing as "Sounders", follows the activation of monitored output 1 (see steps 05 and 10 and paragraph 12.1)
	19	Active in state "Fire alarm" until “Reset”
	20	Active in state "Activated" until “Reset”
	21	Active in state "Released" until “Reset”
	22	Active in state "Fire alarm" or "Activated" or "Released" until “Reset”
	23	Active in state "Activated" or "Released" until “Reset” (same as option 20)
	99	Not used (no EOL required)

12.7 Steps 15 to 19 - Relay contact 1 to 5

Step	Option	Description
15	**Relay output 1 : select the function**	
	01	Processing as “Fire controls A” (see paragraph 12.1)
	02	Processing as “Fire controls B” (see paragraph 12.1)
	03	Processing as “Fire controls C” (see paragraph 12.1)
	04	Active in state ”Fire alarm” until “Reset”
	05	Active in state ”Activated” until “Reset”
	06	Active in state ”Released” until “Reset”
	07	Active in state “Fire alarm” or “Activated” or ”Released” until “Reset”
	08	Active in state “Activated” or ”Released” until “Reset” (same as option 05)
	09	Active in state “Loss of agent”
	10	Active in state “Detector test”
	11	Active in state “Disabled”
	12	Active in state “Emergency hold/abort”
	13	Active in state “Mechanical blocked”
	14	Active in state “Automatic blocked”
	15	Active in state “Manual blocked”
	16	Active in state “Automatic blocked” or “Manual blocked”
	17	Active in state “Automatic blocked” and “Manual blocked”
	18	Processing as "RT-alarm"(see step 06 and paragraph 12.1)
	19	Processing as "RT-fault"(see step 07 and paragraph 12.1)
	20	Inactive in state “Fault” or “Disable” or “Mechanical blocked” or “Loss of agent” or “Incorrect status” Active in all other states
	21	Active during 5 seconds when the key reset is pressed *Application: reset of an XC10 panel and reset of an ASD system within a single operation*
	22	Active in state: - “Manual blocked” - Zone 4 in fault condition - “Processing as actuator” control lines in fault condition - Actuator disabled
	23	Active in state Zone 1 alarm condition until “Reset”
	24	Active in state Zone 2 alarm condition until “Reset”
	25	Active in state Zone 3 alarm condition until “Reset”
	26	Active in state Zone 4 manual release activated condition until “Reset”
	27	Processing as "Extract fan"(see paragraph 12.1)
	28	Processing as "Fire damper"(see steps 63 and 64 and paragraph 12.1)
	29	Processing as “Door holder” (see paragraph 12.1)

	30	Processing as “Sounders” (see steps 05 and 10 and paragraph 12.1)
	31	Active in state "Selector valve opened" (XCA1030 multi-sector module)
	32	Active in state "Extinguishing activated from electrical manual release"
	33	Active in state "Extinguishing activated from automatic detectors"
	34	Active in state "Extinguishing activated from remote activation"
	35	Active in state "Fault" condition
	36	Active in state of LED test
	37	Processing as “Door holder” inverted
	38	Combined option 17 and option 11
16	**Relay contact 2 : select the function**	
	Same options as relay contact 1 – default = 01	
17	**Relay contact 3 : select the function**	
	01	Processing as "RT-fault"
18	**Relay contact 4 : select the function**	
	Same options as relay contact 1 – default = 12	
19	**Relay contact 5 : select the function**	
	Same options as relay contact 1 – default = 16	

12.8 Steps 20 to 27 - Driver outputs 1 to 8

Step	Option	Description
20	**Driver output 1 : select the function**	
	01	Processing as “Fire controls A” (see paragraph 12.1)
	02	Processing as “Fire controls B” (see paragraph 12.1)
	03	Processing as “Fire controls C” (see paragraph 12.1)
	04	Active in state ”Fire alarm” until “Reset”
	05	Active in state ”Activated” until “Reset”
	06	Active in state ”Released” until “Reset”
	07	Active in state “Fire alarm” or “Activated” or ”Released” until “Reset”
	08	Active in state “Activated” or ”Released” until “Reset” (same as option 05)
	09	Active in state “Loss of agent”
	10	Active in state “Detector test”
	11	Active in state “Disabled”
	12	Active in state “Emergency hold/abort”
	13	Active in state “Mechanical blocked”
	14	Active in state “Automatic blocked”
	15	Active in state “Manual blocked”
	16	Active in state “Automatic blocked” or “Manual blocked”
	17	Active in state “Automatic blocked” and “Manual blocked”
	18	Inactive in state “Pre-activated” or “Activated” or “Released” Active in all other condition *Application : use of a fail safe door magnetic solenoid*
	19	Inactive in state "Normal" with operating access level 1 only Active in all other states *Application: the customer needs a remote indication as soon as the panel is not anymore in a "Standby" condition and as soon as somebody is operating the panel*
	20	Inactive in state "Normal" with operating access level 1 or 2 Active in all other states *Application: the customer needs a remote indication as soon as the panel is not anymore in a "Standby" condition*
	21	Active during 5 seconds when the key reset is pressed *Application: reset of an XC10 panel and reset of an ASD system within a single operation*

	22	Active in state: - “Manual blocked” - Zone 4 in fault condition - “Processing as actuator” control lines in fault condition - Actuator disabled
	23	Active in state Zone 1 alarm condition until “Reset”
	24	Active in state Zone 2 alarm condition until “Reset”
	25	Active in state Zone 3 alarm condition until “Reset”
	26	Active in state Zone 4 manual release activated condition until “Reset”
	27	Processing as "Extract fan" (see paragraph 12.1)
	28	Processing as "Fire damper" (see steps 63 and 64 and paragraph 12.1)
	29	Processing as “Door holder” (see paragraph 12.1)
	30	Processing as “Sounders” (see steps 05 and 10 and paragraph 12.1)
	31	Active in state "selector valve opened" (XCA1030 multi-sector module)
	32	Active in state "Extinguishing activated from electrical manual release"
	33	Active in state "Extinguishing activated from automatic detectors"
	34	Active in state "Extinguishing activated from remote activation"
	35	Active in state "Fault" condition
	36	Active in state of monitored outputs 1 or 2 or 3 activated
	37	Active in state of monitored output 4 activated
	38	Active in state of monitored output 5 activated
	39	Processing as “RT-alarm” (like on step 15 option 18)
	40	Processing as “RT-fault” (like on step 15 option 19)
	41	Active in state of selector valve is blocked (in case of a multi sector system and an other sector is activated)
	42	Active in case of LED test is pressed during x seconds
	43	Processing as “Door holder” inverted
	99	Not used
21	**Driver output 2 : select the function**	
	Same options as unmonitored output 1 – default = 07	
22	**Driver output 3 : select the function**	
	Same options as unmonitored output 1 – default = 05	
23	**Driver output 4 : select the function**	
	Same options as unmonitored output 1 – default = 06	
24	**Driver output 5 : select the function**	
	Same options as unmonitored output 1 – default = 11	
25	**Driver output 6 : select the function**	
	Same options as unmonitored output 1 – default = 15	
26	**Driver output 7 : select the function**	
	Same options as unmonitored output 1 – default = 12	
27	**Driver output 8 : select the function**	
	Same options as unmonitored output 1 – default = 13	

12.9 Steps 28 to 31 - Monitored inputs 1 to 4

Step	Option	Description
28	**Monitored input 1 : released contact**	
	01	Contact (1.2 kΩ) normally closed when there is no gas in piping
	02	Contact (1.2 kΩ) normally opened when there is no gas in piping
	03	No contact, "Released" condition will be indicated as soon as actuators are activated (EOL resistor not required)
29	**Monitored input 2 : loss of agent contact**	
	01	Contact (1.2 kΩ) normally closed when cylinders pressure/weight is correct

	02	Contact (1.2 kΩ) normally opened when cylinders pressure/weight is correct
	03	No contact (EOL resistor not required)
30	**Monitored input 3 : select the function**	
	01	Mechanical blocking device: – Contact (1.2 kΩ) closed + contact (680 Ω) opened = "Normal" – Contact (1.2 kΩ) opened + contact (680 Ω) closed = "Mechanical blocked" Note: Any other combination (2 opened or closed contacts) = "Incorrect status"
	02	Mechanical blocking device: – Contact (1.2 kΩ) closed + contact (680 Ω) opened = "Normal" – Contact (1.2 kΩ) opened + contact (680 Ω) closed = "Mechanical blocked" + "Automatic blocked" + "Manual blocked" Note: Any other combination (2 opened or closed contacts) = "Incorrect status"
	03	Extinguishing remote activation: Contact (1.2 kΩ) closed = extinguishing process start ⚠ Care shall be taken using this option, as this input starts the extinguishing process
	04	Automatic blocked / Manual blocked / Automatic and manual blocked: – Contact (680 Ω) closed = "Manual blocked" – Contact (1.2 kΩ) closed = "Automatic blocked" – Contacts (680 Ω + 1.2 kΩ) closed = "Manual blocked" and "Automatic blocked"
	05	Emergency abort: – Contact (1.2 kΩ) closed during pre-discharged warning time = extinguishing process aborts (*) – Contact (1.2 kΩ) closed during flooding time = no effect – Contact (1.2 kΩ) closed at any other time = extinguishing process is stopped (*) (*)Until the system is reset and the contact opened
	06	Not used (EOL resistor not required)
	07	Automatic blocked – Contact (1.2 kΩ) opened = "Automatic blocked" – Return back to “Normal” condition is possible only with the “Mode” push buton or with external button connected to a control input configured with step 49. 51 option 13 *Application: for RU only*
31	**Monitored input 4 : select the function**	
	01	Emergency abort: – Contact (1.2 kΩ) closed during pre-discharged warning time = extinguishing process aborts (*) – Contact (1.2 kΩ) closed during flooding time = no effect – Contact (1.2 kΩ) closed at any other time = extinguishing process is stopped (*) (*)Until the system is reset and the contact opened
	02	Emergency abort: – Contact (1.2 kΩ) closed during pre-discharged warning time = extinguishing process aborts (*) – Contact (1.2 kΩ) closed during flooding time = extinguishing process stop + actuators de-activated (*) – Contact (1.2 kΩ) closed at any other time = extinguishing process is stopped (*) (*)Until the system is reset and the contact opened
	03	Emergency hold -EN 12094-1 4.20.3 b) compliant – Contact (1.2 kΩ) closed during pre-discharged warning time = extinguishing process is hold as long as the contact is maintained closed. When the contact is released, pre-discharged warning time restarts – Contact (1.2 kΩ) closed after actuator activation = no effect – Contact (1.2 kΩ) closed at any other time = extinguishing process is hold as long as the contact is maintained closed
	04	Emergency hold -EN 12094-1 4.20.3 a)compliant – Contact (1.2 kΩ) closed during pre-discharged warning time = extinguishing process is hold as long as the contact is maintained closed. When the contact is released, pre-discharged warning time continues – Contact (1.2 kΩ) closed after actuator activation = no effect Contact (1.2 kΩ) closed at any other time = extinguishing process is hold as long as the contact is maintained closed
	05	Automatic blocked / Manual blocked / Automatic and manual blocked: – Contact (680 Ω) closed = "Manual blocked" – Contact (1.2 kΩ) closed = "Automatic blocked" – Contacts (680 Ω + 1.2 kΩ) closed = "Manual blocked" and "Automatic blocked"
	06	Not used (EOL resistor not required)
	07	Emergency hold -EN 12094-1 4.20.3 b) compliant – Contact (1.2 kΩ) closed during pre-discharged warning time = extinguishing process is hold as long as the contact is maintained closed. When contact is released, pre-discharged warning time restarts – Contact (1.2 kΩ) closed after actuator activation = no effect – Contact (1.2 kΩ) closed at any other time = "Automatic blocked"
	08	Emergency abort: – Contact (1.2 kΩ) closed during pre-discharged warning time = extinguishing process aborts (*) – Contact (1.2 kΩ) closed during flooding time = no effect – Contact (1.2 kΩ) closed at any other time = "Automatic blocked" (*)Until the system is reset and the contact opened

	09	Emergency hold -EN 12094-1 4.20.3 b) compliant – Contact (1.2 kΩ) opened during pre-discharged warning time = extinguishing process is hold as long as the contact is maintained opened. When contact is released, pre-discharged warning time restarts – Contact (1.2 kΩ) opened after actuator activation = no effect – Contact (1.2 kΩ) opened at any other time = "Automatic blocked". Return back to “Normal” condition is possible only with the “Mode” push buton or with external button connected to a control input configured with step 49. 51 option 13 *Application: for RU only*

12.10 Steps 32 to 38 - Reset

Step	Option	Description
32		**Reset: zones 1 and 2 operation**
	01	Alarm < 15 seconds after reset = "Alarm"
	02	Alarm < 15 seconds after reset = "Fault" (If an alarm occurs in first 15secs after Reset, a fault will be raised (no matter in what condition the panel was before Reset).
33		**Reset: zone 3 operation**
	01	Alarm < 15 seconds after reset = "Alarm"
	02	Alarm < 15 seconds after reset = "Fault" (If an alarm occurs in first 15secs after Reset, a fault will be raised (no matter in what condition the panel was before Reset).
34		**Reset: manual control input operation**
	01	Input enabled < 15 seconds after reset = "Alarm"
	02	Input enabled < 15 seconds after reset = "Fault" (If a manual release occurs in first 15secs after Reset, a fault will be raised (no matter in what condition the panel was before Reset).
35		**Reset: monitored input 1 operation (discharged contact)**
	01	Input enabled < 15 seconds after reset = "Released"
	02	Input enabled < 15 seconds after reset = "Fault" (If a discharge contact activation occurs in first 15secs after Reset, a fault will be raised (no matter in what condition the panel was before Reset).
36		**Reset: front panel key operation**
	01	Reset possible only after: ➔ "Silence buzzer" and ➔ "Silence sounders" and ➔ "Flooding time"
	02	Reset possible only after: ➔ "Silence buzzer" and ➔ "Silence sounders" and ➔ "Flooding time" and ➔ "Manual release" is reset and ➔ "Discharged" contact is reset
37		**Reset: control input 1 operation**
	01	Reset possible at any time (not EN 12094-1 and EN 54-2 compliant)
	02	Reset possible only after: ➔ "Silence buzzer" and ➔ "Silence sounders" and ➔ "Flooding time" and ➔ "Manual release" is reset and ➔ "Discharged" contact is reset
	03	Reset possible only after flooding time
38		**Reset during emergency hold**
	01	Reset is possible during "Emergency hold" (not EN 12094-1 compliant)
	02	Reset is not possible during "Emergency hold"

12.11 Steps 39 to 43 - Operation

Step	Option	Description
39		**Buzzer in state "Emergency hold/abort" operation**

	01	One second beep at each "Emergency hold/abort" change
	02	Pulsated until "Silence buzzer"
40	**Pre-activated condition: select the function in case "Automatic blocked" operation**	
	01	Alarm on one of the extinguishing triggering zones = "Fire alarm" + "Pre-activated" until "Automatic blocked" condition is cancelled or "Reset"
	02	Alarm on one of the extinguishing triggering zones = "Fire alarm" until "Automatic blocked" condition is cancelled or "Reset"
41	**Automatic/Manual blocking: standard or alternative display**	
	01	Standard (EU) : LED 14 = "Manual blocked", LED 15 = not used, LED 16 = "Automatic blocked"
	02	Alternative (UK) : LED 14 = "Manual blocked", LED 15 = "Automatic & manual", LED 16 = "Automatic blocked"
42	**Discharged contact: select the display in case the contact is not activated within 30s after the gas release**	
	01	"Released" led flashes slow [1]
	02	"Released" led flashes fast [1] + "Fault" [1]
	03	"Released" led is not activated [2] + "Fault" [1]
	04	"Released" led is not activated [2]
	[1] The corresponding relay contacts and/or driver outputs are activated [2] The corresponding relay contacts and/or driver outputs are not enabled	
43	**Loss of agent: select the display during flooding time**	
	01	Indicated after "Released"
	02	Indicated after "Reset" *Application: "Loss of agent" is normal after a release and do not correspond to a gas leakage*

12.12 Steps 44 to 47 - Faults

Step	Option	Description
44	**Fault display**	
	01	Immediate (any fault)
	02	Indication is 15 s delayed for zone, monitored IOs (except for “Emergency hold” and “Emergency abort”), loss of agent and incorrect position
45	**Fault reset**	
	01	Faults must not be reset
	02	Faults must be reset
	03	“Mains” fault and “Loss of agent” fault indication automatically disappear as soon as the fault is repaired, even if the buzzer was not acknowledged
46	**Batteries fault**	
	01	Indicated
	02	Not indicated (not EN 12094-1 and EN 54-2 compliant)
47	**Mains fault**	
	01	Indicated immediately
	02	Indicated after 3 minutes
	03	Indicated after 10 minutes
	04	Indicated after 30 minutes
	05	Indicated after 3 hours (not EN 12094-1 and EN 54-2 compliant)

12.13 Steps 48 to 51 - Non monitored control inputs 1 to 4

Step	Option	Description
48	**Non monitored control input 1**	
	01	"Reset" [2] [3]
49	**Non monitored control input 2**	
	01	"Silence buzzer" [2]
	02	"Automatic blocked" [1] [3]

	03	"Manual blocked" [1) 3)]
	04	"Automatic and manual blocked" [1) 3)]
	05	External device disabled [1)]
	06	"RT-Alarm" and "RT-Fault" disabled [1)]
	07	External device fault [1)] ("Reset" operation is required to eliminate the fault indication)
	08	External power supply fault [1)]
	09	Fault on "RT-Fault" line from external device remote transmission (transmitter, for example) [1)]
	10	Level 2 operating access [1) 3)]
	11	"Silence/Resound" sounders [2) 3)]
	12	No effect
	13	Toggle function between "Automatic blocked" condition and "Normal" condition [2) 3)] *Application: for RU only* *Not compliant to EN12094-1 chapter 4.23.2 because input is not monitored*
50	**Non monitored control input 3**	
	Same options as non monitored control input 2 – default = 12	
51	**Non monitored control input 4**	
	Same options as non monitored control input 2 – default = 12	

[1)] State is maintained as long as a potential +24V is applied
[2)] Pulse control (0.2 s minimum)
[3)] Control must be possible through a level 2 access device only

12.14 Steps 52 to 55 - Detection zones

Step	Option	Description

52	**Alarm verification: select zones (*)**	
	01	No alarm verification
	02	Zone 1
	03	Zone 2
	04	Zones 1 and 2
	05	Zone 3
	06	Zone 1, 2 and 3
	(*)The alarm condition is enabled only after 2 consecutive alarms in less than 60 seconds (the 1st one is reset automatically). The delay for the second alarm is 8 s. If the second alarm doesn't come within 60 s, the first alarm is automatically reset. The first alarm is indicated by the red led during 2 s.	
53	**Automatic release: select zones combination**	
	01	Alarm zone 1 AND Alarm zone 2
	02	(Alarm zone 1 AND Alarm zone 2) OR (Fault zone 1 AND Alarm zone 2) OR (Alarm zone 1 AND Fault zone 2)
	03	Alarm zone 1 AND Alarm zone 2 AND Alarm zone 3
	04	(Alarm zone 1 AND Alarm zone 2) OR Alarm zone 3
	05	(Alarm zone 1 AND Alarm zone 3) OR (Alarm zone 2 AND Alarm zone 3) OR (Alarm zone 1 AND Alarm zone 2)
	06	Alarm zone 1 OR Alarm zone 2
	07	Alarm zone 1
	⚠ Care shall be taken using option 04, 06 and 07 as it triggers the extinguishing process on a single alarm	
54	**Zones disabling**	
	01	Zone1 .. Zone 4 Disable/Test" is allowed
	02	Zone1 .. Zone 4 Disable/Test" is not allowed
	03	Zone 4 Disable/Test" is not allowed
	04	Zone1 .. Zone 3 Disable/Test" is not allowed
	05	Zone1 .. Zone 2 Disable/Test" is not allowed
55	**Zone 3 : Fire alarm condition**	
	01	"Fire alarm" condition indicated, RT-Alarm activated
	02	"Fire alarm" condition indicated, RT-Alarm not activated

12.15 Steps 56 to 57 - Operating access level

Step	Option	Description
56	**"Silence buzzer": change access level**	
	01	Possible at access levels 1 and 2
	02	Possible at access level 2 only
57	**Access level 2**	
	01	Default code = 4 2 3 3
	02	Individual access code: 1. Enter the desired code on the keyboard (4 to 6 digits) 2. Press the key (12) "Disable / Test zone 1" : ➔ red led zone 1 (25) flashes 3. Repeat operations 1 and 2 (code confirmation) : ➔ red led zone 1 (25) lights continuously = code accepted ➔ yellow led zone 1 (26) flashes = code not accepted (repeat operations 1 to 3)
	03	Operating access level 2 is provided with an external optional key (in this case, code access is not possible)

12.16 Step 58 - Multi-sector

Step	Option	Description
58	**Multi-sector operation**	
	01	The panel is not part of a multi-sector installation
	02	The panel is part of a multi-sector installation, including inter-blocking (see EN12094-1 option 4.29) / Valid only for XC1003-A
	03	The panel is part of a multi-sector installation, without inter-blocking / Valid only for XC1003-A
	04	Same as option 02 but actuators lines 1 and 2 from XCA1031 are de-activated in case of "Emergency Hold/Abort" during the pre-discharged warning time. *Application: for Austria only*

12.17 Step 59 - Detector type

Step	Option	Description
59	**Detector type**	
	01	Detectors without current limitation (Algorex / Sinteso)
	02	Detectors with current limitation (Synova)
	03	Detectors without current limitation (Algorex / Sinteso) BS5839Pt1 compliant
	04	Detectors with current limitation (Synova) BS5839Pt1 compliant

12.18 Steps 60 to 61 - Repeaters

Step	Option	Description
60	**Repeaters: configure the number of repeaters connected on the RTNet**	
	00	No repeaters
	01	1
	02	2
	03	3
	04	4
	05	5
	06	6

	07	7
	08	8
	09	9
	10	10
	11	11
	12	12
	13	13
	14	14
	15	15
	16	16
61	**Configure Repeater silence buzzer**	
	01	Silence buzzer on XC10 do not silence buzzer on repeater terminal
	02	Silence buzzer on XC10 silences buzzer on repeater terminal

12.19 Step 62 - Loss of agent in multi-sector application

Step	Option	Description
62		**XCA1031 loss of agent contact programming**
	01	Contact (1.2 kΩ) normally closed when cylinders pressure/weight is correct
	02	Contact (1.2 kΩ) normally opened when cylinders pressure/weight is correct

12.20 Steps 63 to 64 - Fire damper

Step	Option	Description
This output is used to connect a fire damper that must be that must be opened a few seconds before the gas release and closed once the gas is released. For safety reasons, it is not recommanded to connect an over-pressure flap to this output (In case the line is broken, damage may occur on the room structure).		
63		**Select start of activation** Example: if the configured “Pre-discharged warning time” is 30s, options 02..03 are automatically reduced to 30s
	01	Activated at the beginning of the “Pre-discharged warning time”
	02	Activated 50s before the end of the “Pre-discharged warning time”
	03	Activated 40s before the end of the “Pre-discharged warning time”
	04	Activated 30s before the end of the “Pre-discharged warning time”
	05	Activated 20s before the end of the “Pre-discharged warning time”
	06	Activated 10s before the end of the “Pre-discharged warning time”
	07	Activated at the end of the “Pre-discharged warning time”
64		**Select the activation duration after the end of the “Pre-discharged warning time"**
	01	0 second
	02	2 seconds
	03	4 seconds
	04	6 seconds
	05	8 seconds
	06	10 seconds
	07	15 seconds
	08	20 seconds
	09	25 seconds
	10	30 seconds
	11	35 seconds
	12	40 seconds
	13	45 seconds

	14	50 seconds
	15	55 seconds
	16	1 minute
	17	1 mn 10 s
	18	1 mn 20 s
	19	1 mn 30 s
	20	1 mn 40 s
	21	1 mn 50 s
	22	2 mn
	23	2 mn 10 s
	24	2 mn 20 s
	25	2 mn 30 s
	26	2 mn 40 s
	27	2 mn 50 s
	28	3 mn
	29	3 mn 30 s
	30	4 mn
	31	4 mn 30 s
	32	5 mn
	33	Until “Reset”

12.21 Step 65 to 66 - Pre-discharged warning time in manual release

Step	Option	Description
65		**Configure a different pre-discharged warning time in case of manual release (typically less than pre-discharged time of automatic release)**
		The Pre-discharged warning time sets the countdown duration before the actuator extinguishing release triggering. During this time, the reset function is not possible. Adjustable from 0 to 120 seconds by step of 5 seconds Default : 30 s Values from 65 seconds to 120 seconds are not compliant to EN12094-1. This must be clearly indicated in the installation test report. (Application: activate dampers during the pre-discharged warning time, which need 100 - 120 seconds to open)
	00	0 second
	05	5 seconds
	10	10 seconds
	15	15 seconds
	20	20 seconds
	25	25 seconds
	30	30 seconds
	35	35 seconds
	40	40 seconds
	45	45 seconds
	50	50 seconds
	55	55 seconds
	60	60 seconds
	61	65 seconds
	62	70 seconds
	63	75 seconds
	64	80 seconds
	65	85 seconds
	66	90 seconds
	67	95 seconds

	68	100 seconds
	69	105 seconds
	70	110 seconds
	71	115 seconds
	72	120 seconds
	99	Same as pre-discharged warning time of automatic release
66	Configure Manual Release “pre-discharge” warning time to overwrite Automatic release “pre-discharge” warning time	
	01	Manual release “pre-discharge” warning time does not overwrite Automatic release “pre-discharge” warning time
	02	Shorter Manual release “pre-discharge” warning time overwrite longer Automatic release “pre-discharge” warning time
	03	Following an automatic triggering signal, manual release overwrite emergency hold/abort (NFPA2001 compliant, EN12094-1 not compliant)

12.22 Step 67 – Operation if “Discharge” is activated in standby

67	Operation in case "Discharge contact" activated during standby condition	
	01	Actuators outputs are activated (concern XC10 lines 4 and 5, XCA1031 lines 1 and 2) *Note: cannot be used with Step8_Option4!!*
	02	Actuators outputs are not activated (concern XC10 lines 4 and 5, XCA1031 lines 1 and 2) *Application: for AT only*

13 Commissioning

Before commissioning, ensure that:
- the control unit is correctly mounted on a fixed support
- all detector bases are correctly connected
- all monitored lines are correctly connected and equipped with respective EOL
- all accessory or optional parts are present
- FCP1004-E power supply setting correspond to the mains voltage
- mains voltage is available
- batteries are installed, but not connected yet
- installation of extinguishing devices (piping, cylinders, manometers, discharged contact …) is completed

13.1 Powering

1. switch on the mains circuit breaker
2. connect the batteries and, if necessary, the total loss of power cable (see 7.2)
3. select presetting appropriate to your country need (see paragraph 12.2)
4. set, if necessary, user functions (see paragraphs 12.3 to 12.18)
5. calibrate monitored control outputs 4 and 5 (see paragraph 13.2)
6. eliminate possible faults (see paragraph 14.2)

13.2 Monitored control outputs 4 and 5 calibration

7. select operating access level 2
8. enter the code **2 1 4 3 2 3** on the keyboard then press "Enable/Disable actuators" (10) key within 5 seconds:
  – display shows "CAL", "Operating access" led goes out (= calibration process start)
9. wait until the buzzer sounds twice (=end of calibration process). Two possibilities can arise:
  ➔ calibration success:
  – "Fault" (2) and "Actuators" (20) led goes out
  – display shows "OK" for a few seconds, then goes out, "Disable" led (6) goes out, "Operating access" led lights up again
  ➔ calibration failure:
  – display shows "4E5E" or "4E.. " or " ..5E" for a few seconds then "ECAL"
  – “Fault” led (2), "Disable" led (6) and "Actuators" led (20) led remain lit up, "Operating access" lights up again
  – check the cable connections of the output concerned (4 and/or 5)
  – re-start the procedure at point 2

➔ At first commissioning, monitored control outputs 4 and 5 not being calibrated, will display a fault indication:
  – "Actuators" led (20) and “Fault” led (2) flash fast
  – "Disable" led (6) lit up fix
  – Display shows "ECAL" (= Error calibration)
➔ Calibration cannot be started if the XC10 is in alarm or activated condition
➔ Calibration fails if the resistance value measured during the calibration process is equal to 0 Ω or > 900 Ω
➔ Calibration of monitored output 5 is not carried out if this output is programmed “Not used”

13.3 System test

1. check the extinguishing process by automatic and manual activation
2. check display of "Released" condition
3. check the pre-discharged warning time
4. check sounders and warning panels operation
5. check RT-Alarm and RT-Fault
6. check fire controls operation
7. check the mechanical blocking device
8. check "Emergency hold/abort" and/or "Automatic blocked" functions
9. check display of "Loss of agent" condition by opening the corresponding contacts

13.4 Commissioning validation

Commissioning is completed, when:
- all functions were checked and system works perfectly
- each detector was tested
- RT-Alarm and/or RT-fault works correctly
- no fault is displayed
- internal buzzer is not disabled (jumper X3 / XCM1002 = ON)
- permanent “Level 2” operating access is disabled (jumper X8 / XCM1002 = OFF)
- all cylinders are connected and pressure or weight is correct
- mechanical blocking device is disabled
- all selector valves are closed (for multi-sector installation only)
- the responsible person in charge of the installation was trained and informed

14 Maintenance

14.1 Preventive maintenance

14.1.1 Performed by the customer

Once a week
Check that all leds and buzzer are activated with the "Led test"

14.1.2 Performed by the maintenance technician

The maintenance operation of an extinguishing installation must be performed by a qualified and trained technician who is familiar with XC10 control panel and knows all the risks relating to extinguishing.

Every year	
1 - Visual inspection of documents	
Ask the customer to provide the XC10 operating manual and ensure that he knows how to operate the panel.	
Check all events occurred on the installation since the last maintenance visit. Theses events must be recorded by the customer on a maintenance diary.	
Check the accuracy of all installation documents like electrical and mechanical drawings, components location drawings.	
2 - Visual inspection of the installation	
Check the conformity of the extinguishing installation, especially the adequation between the type of extinguishing agent and the risk to protect. Check any changes inside the protected room, performed by the customer.	
Check that the electrical installation is not damaged and is in a good condition.	
Check the structure and the air-tightness of the protected room, including false floors and false ceilings.	
Ensure that the volume of the protected room was not changed and the extinguishing agent concentration calculated during commissioning is still valid.	
Before starting any operation, assess the installation status with the customer who is in charge of the building security. Notice any Fault or Disablement condition.	
	Before starting the maintenance operation, the transmission of the extinguishing signal to the gaz cylinders must be disabled. This disabling shall be carried out with the presence of the custumer who is in charge of the building security and who will have to ensure of the re-enabling at the end of the maintenance operation.
	Check with the customer if there are any local instructions. Ensure that you are allowed to use your material without restriction (i.e; ATEX, chemical or nuclear zones). For example, in ATEX zones, detector exchanger and tester is usually not allowed.
3 - Maintenance operation	
3.1 - Preparation	

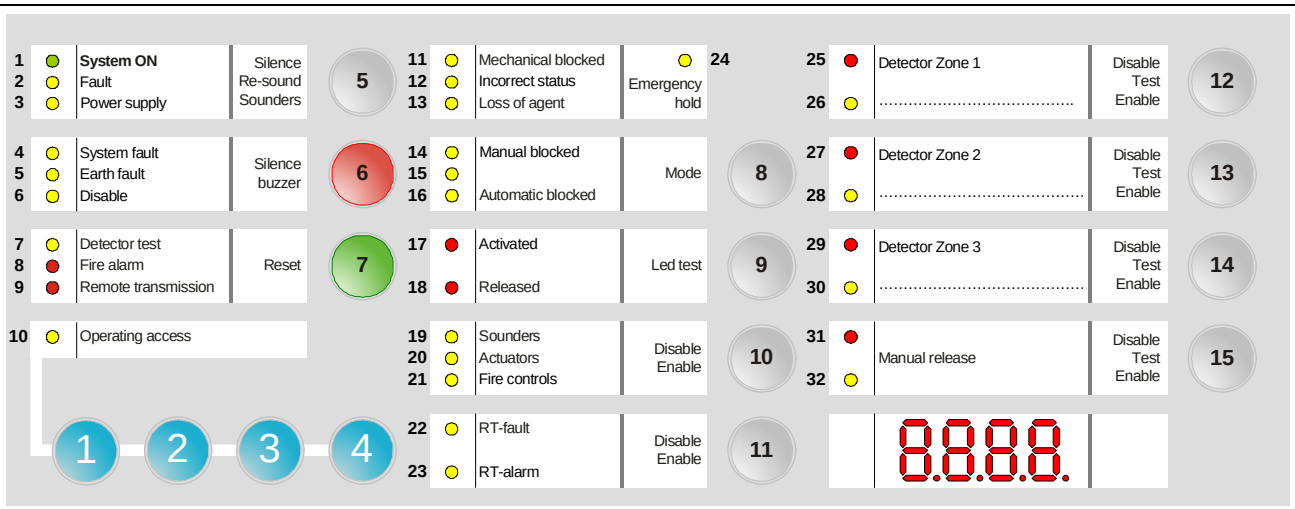
Inform the person in charge of the building security about the type of maintenance operation planned and the duration.
Switch the mechanical blocking device to the position "Blocked" (if existing).
Switch the XC10 to the "Test mode" (Z1 to Z4).
Disconnect the actuator electrical line by removing the connector from the BORA box (or equivalent).
3.2 – Inspection of the XC10
Check the accessibility of the control panel.
Check the good condition of XC10 housing, main-board and batteries.
Clean outside and inside the housing if necessary with a soft soap or an vacuum cleaner. Do not use any aggressive solvent or containing abrasive material.
Check the fixation of the metallic chassis to the wall and retighten the screws if necessary.
Check the connectors screws and retighten the screws if necessary.
Check accuracy and lisibility of the paper stripes (zone labeling …).
Upload the XC10 event memory in your PC and check for any abnormal event recording
3.3 – Inspection of the installation
Check the earth connection between the metallic chassis and the building ground.
Check the battery voltage level.
Turn off the mains power supply and check the intensity of the current delivered from the batteries. Ensure that the autonomy calculated correspond the the battery capacity.
Check all the componants of the installation: detectors, souders, warning panels, valve, cylinders, nozzle, pipe, over-pressure flaps …
Check the pressure of all cylinders taking into account the temperature room. Plan the replacement of the cylinders if the pressure is too low.
Check that warning panels and electrical manual release buttons are visible.
3.4 – Inspection of the functioning
Check that all leds and buzzer are activated with the "Led test".
Switch the XC10 to the "Test" mode (Z1 .. Z4) and activate detectors one by one. For each of them, verify the zone text on XC10 operating unit and the good operating of alarm indicators. Reset the XC10.
Disconnect each monitored output and input. For each of them, check the fault indication displayed on the XC10 operating unit.
Operate manually the shutoff valve, the selector valves and all over-pressure flaps (if existing) to verify the good operating. Check correct indication on the front of the XC10 operating unit and on the warning panels (if existing).
Disconnect a manometer or a weighing device and check the indication on the XC10 operating unit
Check with the person in charge of the building security the procedure for testing the fire controls (shutoff air conditioning, dampers, doors …). If any disturbance may be feared, on customer request, some tests may be simulated by disconnecting the end equipment.
Switch Zone 1 and Zone 2 to alam condition. Check indications on the XC10 operating unit. Ensure that detectors are programmed with the right set of

parameters. Activate the discharged contact (if existing) and reset the panel.
Activate the manual release with the DM1103-L button. Check the pre-discharged warning time, the activation of warning panels, sounders, and fire controls. Ensure that sounders are audible from each side of the room. Reset the panel.
During the pre-discharged warning time, check the emergency hold/abort DM1103-S button (if existing) and ensure that the extinguishing process is stopped.
3.5 – At the end of the inspection
Reset the XC10 control unit and ensure that all activation devices are reset (no activation pending).
Re-connect the actuator electrical line to the BORA box (or equivalent).
Switch back the mechanical blocking device to the normal position (if existing).
Check that no faults are displayed on the XC10 operating unit.
Fill in the maintenance test report.
Advise the customer or the person in charge of the building security of non-conformities founded and any installation improvement.

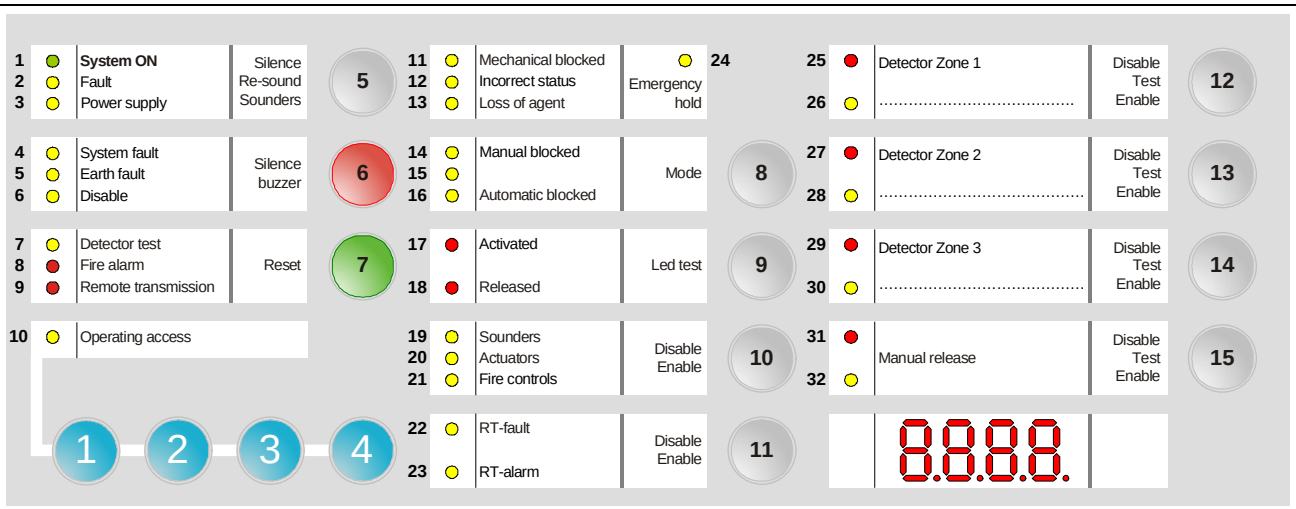
Every 4 years
Execute all yearly maintenance operations (see above).
Replace the XC10 batteries.
Replace all the pyrotechnical actuators (if existing).

14.2 Detailed fault display

Press simultaneously keys “1” and “3” of the numeric keypad:
➔ Faults appear for 10 seconds according to the table below
OL: Open Line
SC: Short Circuit



LED		Designation	State	Significance	
N°	Color				
2	Yellow	Fault	Fixed	Multi-sector function: individual module (XCA1030) disconnected	
			Slow	Multi-sector function: RS485 bus (OL / SC / communication fault)	
3	Yellow	Power supply fault	Fixed	Multi-sector function: loss of agent	
			Slow	Multi-sector function: loss of agent (OL / SC)	
5	Yellow	Earth fault	Fixed	Multi-sector function: earth fault	
6	Yellow	Disable	Fixed	Multi-sector function: actuator (OL / SC)	
			Slow	Multi-sector function: inter-blocking (OL / SC)	
			Fast	Multi-sector function: actuator + inter-blocking (OL / SC)	
7	Yellow	Test	Fixed	Multi-sector function: selector valve (SC)	
			Slow	Multi-sector function: selector valve (OL)	
			Fast	Multi-sector function: selector valve (incorrect status)	
8	Red	Fire alarm	Fixed	Multi-sector function: actuator blocked	
9	Red	Remote transmission	Fixed	Multi-sector function: power supply fault	
11	Yellow	Mechanical blocked	Fixed	SC	Monitored input 1
			Slow	OL	
12	Yellow	Incorrect status	Fixed	SC	Monitored input 2
			Slow	OL	
13	Yellow	Loss of agent	Fixed	SC	Monitored input 3
			Slow	OL	
			Fast	Incorrect status	
14	Yellow	Manual blocked	Fixed	SC	Monitored input 4
			Slow	OL	
15	Yellow	Not used	Fixed	24 V output fuse blown	
16	Yellow	Automatic blocked	Fixed	Key enabled more than 5 mn	
19	Yellow	Sounders	Fixed	SC	Monitored output 1
			Slow	OL	



LED		Designation	State	Significance	
N°	Color				
20	Yellow	Actuators	Fixed	SC	Monitored output 2
			Slow	OL	
21	Yellow	Fire controls	Fixed	SC	Monitored output 3
			Slow	OL	
22	Yellow	RT-Fault	Fixed	SC	Monitored output 4
			Slow	OL	
			Fast	Calibration error	
23	Yellow	RT-Alarm	Fixed	SC	Monitored output 5
			Slow	OL	
			Fast	Calibration error	
24	Yellow	Emergency hold	Fast	Repeater error. Digit display indicates the first repeater in fault/missing condition	
25	Red	Zone 1	Fixed	Alarm < 15 s after reset	Detection line 1
26	Yellow	Zone 1	Fixed	SC	
			Slow	OL	
27	Red	Zone 2	Fixed	Alarm < 15 s after reset	Detection line 2
28	Yellow	Zone 2	Fixed	SC	
			Slow	OL	
29	Red	Zone 3	Fixed	Alarm < 15 s after reset	Detection line 3
30	Yellow	Zone 3	Fixed	SC	
			Slow	OL	
31	Red	Manual release	Fixed	Enabled < 15 s after reset	Manual release line
32	Yellow	Manual release	Fixed	SC	
			Slow	OL	

CAUTION

Any electrical fault (break or short circuit) on the following lines may have a direct consequence on the extinguishing process, or in some cases prevent it.
- Detector lines
- Manual release line
- Monitored control output 1 to 5
- Monitored inputs 1 to 4

It is imperative to fix any fault in a short delay in order to not jeopardize an extinguishing process.

15 Test functions

Test functions described in this chapter are only possible when the equipment is in standby condition (=no alarm). If an alarm occurs, the test ends immediately.

In order to access the 4 digit display, the XC1001-A plastic cover must be removed.

15.1 Led test

Press the « Led test » key (9) and check:

- all leds light up
- internal buzzer sounds
- all segments of the display light up and software version is displayed

15.2 Sounder test

Procedure

1. Enable operating access level 2
2. Press and hold down key « 1 » on numeric keypad then press the « Silence / Re-sound sounder » key (5):
   ➔ sounders outputs are enabled for 30 seconds
   ➔ « Sounder » led (19) flashes slowly
3. Press the « Led test » key (9) to end the test before 30 seconds, if necessary

All outputs programmed as “Sounders” are enabled.

15.3 Warning panels test

Procedure

1. Enable operating access level 2
2. Press and hold down key « 2 » on numeric keypad then press the « Silence / Re-sound sounder » key (5):
   ➔ warning panels outputs are enabled for 30 seconds
   ➔ « Fire controls » led (21) flashes slowly
3. Press the « Led test » key (9) to end the test before 30 seconds, if necessary

Only the monitored control output 3 is enabled.

15.4 RT-alarm test

Procedure

1. Enable operating access level 2
2. Press and hold down key « 3 » on numeric keypad then press the « Silence / Re-sound sounder » key (5):
   - RT-alarm outputs are enabled for 30 seconds
   - « RT-alarm » led (23) flashes slowly
3. Press the « Led test » key (9) to end the test before 30 seconds, if necessary

All outputs programmed as « RT-alarm » are enabled.

15.5 RT-fault test

Procedure

1. Enable operating access level 2
2. Press and hold down key « 4 » on numeric keypad then press the « Silence / Re-sound sounder » key (5):
   - RT-fault output is enabled for 30 seconds
   - « RT-fault » led (22) flashes slowly
3. Press the « Led test » key (9) to end the test before 30 seconds, if necessary

Only the output relay 3 is enabled.

15.6 System test

The system test is used to check the extinguishing process.

During system test:
- All the outputs, except those programmed as actuators, are enabled
- « Actuators » led (20) flashes slowly to indicate the activation of the monitored output 4 and possibly 5 if programmed as « Actuators »

Procedure

1. Enable operating access level 2
2. Enter the code 2 1 1 2 4 3 on the keypad then press « Mode select » key (8) within 5 seconds to enable system test:
   - « Operating access » led (10) flashes slowly
3. Carry out the tests
4. Press the « Reset » key (7) then press « Mode » (8) within 5 seconds to disable system test:
   - « Operating access » led (10) lights up fixed

The system test remains enabled as long as point 4 of above procedure is not carried out.

15.7 Individual output test

All the outputs, except those programmed as actuators, can be tested individually:

- Each individual test, once enabled, automatically ends after 1 mn if no action is carried out for this period
- Outputs can be tested only one by one (duration = 3 mn max.)

During test phase:

- Alarms and faults are not indicated
- Extinguishing process cannot be started
- Programming access is not possible
- Connection with the maintenance PC cannot be enabled

Procedure

1. Remove the front plastic cover (XC1001-A)
2. Enable operating access level 2
3. Press and hold down the key « Silence buzzer » (6), then enter the code **3 4 2 1 1 2** on the keypad:
➔ Display indicates « 0101 »
➔ « System fault » (4), « Earth fault » (5) and « Disable » (6) led light up alternatively, « Operating access » led (10) goes out
4. Press the key « Silence buzzer » (6) to choose the category of the output to be tested (represented by both digits on the left of the display):
➔ 01 = monitored outputs
➔ 02 = relay outputs
➔ 03 = driver outputs
5. Press the « Mode select » key (8) to choose the number of the output to be tested (represented by both digits on the right of the display)
6. Press the « Led test » key (9) to start the test:
➔ The output is enabled for 3 mn (press the « Led test » (9) key again to disable it before 3 mn, if necessary)
7. Start operations 4. to 6. again to test another output
8. Press the « Reset » key (7) to leave the test

15.8 Zone test

Zone test is used to check each connected detector.

Procedure

1. Enable operating access level 2
2. Press 2 times the key "Disable/Test/Enable" (12 to 14) corresponding to the zone to be tested:
➔ The yellow led of the zone (26, 28, 30) and the yellow led "Test" (7) flash slowly
➔ The yellow led "Disable" (6) lights up fixed
3. Switch a detector to alarm condition and check that the red led (25, 27, 29) corresponding to the tested zone and the red led on the detector flash during 10s end go out automatically
4. Repeat operation 3 for each detector connected on the line
5. Press the key "Disable/Test/Enable" (12 to 14) to end the test

- During the test, no acoustic or output are activated
- When the extinguishing triggering zones are in test condition, the yellow led "Automatic blocked" (16) is activated

15.9 Manual release test

Manual release test is used to check each DM1103-L release button.

Procedure

1. Enable operating access level 2
2. Press 2 times the key "Disable/Test/Enable" (15):
➔ The yellow led of the manual release (32) and the yellow led "Test" (7) flash slowly
➔ The yellow led "Disable" (6) lights up fixed
3. Trigger a release button and check that the red led (31) corresponding to the tested zone and the red led on the release button flash during 10s end go out automatically
4. Reset the release button
5. Repeat operation 3 and 4 for each release button connected on the line
6. Press the key "Disable/Test/Enable" (15) to end the test

- During the test, no acoustic or output are activated
- When the manual release is tested, the yellow led "Manual blocked" (14) is activated

CAUTION Reset all release buttons before leaving the test condition, otherwise the extinguishing process may be triggered (depending on programming).

16 Advanced functions

The functions described in this chapter require to remove the front plastic cover of the XC1001-A variant .

16.1 Checksum

This function is used to check if a programming modification was carried out:

Procedure

1. Enable operating access level 2
2. Enter programming mode
3. Press simultaneously keys “2” and “3” of the numeric keypad:
➔ the checksum appears on the display for 5 seconds
4. Write down the indicated value
5. Leave the programming mode

16.2 Alarm counter

This function is used to show the number of fire alarms:

Procedure

1. Press simultaneously keys “1” and “2” of the numeric keypad:
➔ The number of alarms appears on the display for 5 seconds

According to standard EN54-2 (paragraph 7.13), this function shall be available at operating access level 1 or 2. Only XC1003-A and XC1005-A are compliant to this option.

17 Special functions

The functions described in this chapter must be used only during commissioning and/or maintenance. It is not allowed to use these functions during normal operation. The following access code shall not be delivered to the customer.

17.1 Anticipated Silence Sounders

This function is used to stop/start the Sounders during the pre-discharged warning time.

Procedure

1. Enable operating access level 2,
2. Press and hold down "Silence buzzer" key (6), then enter the code **2 1 1 2 4 3** on the numeric keypad:
➔ the sounders stop
3. Press the "Silence/Re-sound Sounders" key (5)
➔ the sounders start again

17.2 Anticipated Reset

This function is used to reset the system without having to wait the end of the programmed flooding time.

Procedure

1. Enable operating access level 2
2. Press and hold down the « Silence buzzer » key (6), then enter the code **2 4 4 2 1 3** on the numeric keypad:
➔ "Pre-discharged warning time" ends immediately and the reset can be carried out

17.3 Extract fan

This function allows starting / stopping the extract fan. The extract fan provides a means to vent a room of extinguishing gases but prevents the gases from being vented during a discharge. The extract fan can be de-activated only with the “Reset” key.

1. Enable operating access level 2
2. Enter the code **1 2 3 1** on the numeric keypad:
➔ Extract fan starts
3. Press the "Reset" key (7)
➔ Extract fan stops

– Extract fan cannont be started during the pre-discharged warning time and during the flooding time
– Extract fan is automatically switched off as soon as an extinguishing process is started

18 Connection to Sinteso / Cerberus PRO panels

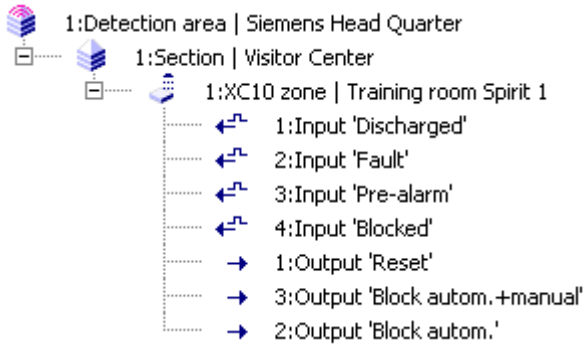
The XC10 control panel can be integrated into a Sinteso / Cerberus PRO fire detection system. This integration offers the possibility to:

- send XC10 status to the fire control panel
- transmit commands from the fire control panel to the XC10

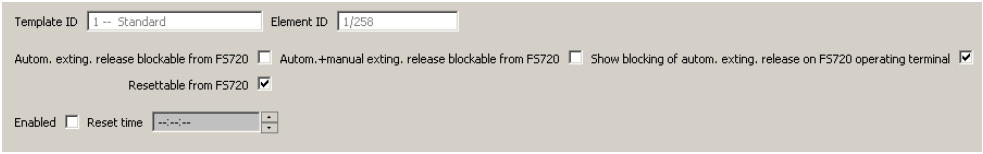
The integration uses IO modules connected to the FDnet (FDCI222 / FDCIO222 / FDCIO224).

18.1 XC10 zone

Sinteso / Cerberus PRO engineering tool FXS allows the creation of one or several “XC10 zones” (under “Section” level). Each “XC10 zone” is created with a pre-configured set of 4 inputs and 3 outputs elements:



An “XC10 zone” can be configured using 5 options check boxes:



- Autom. exting. release blockable from Sinteso / Cerberus PRO panel:

  If this option is selected, command “Autom. exting. ON/OFF” is available in the “XC10 zone / execute commands” menu. When this command is executed, the “XC10 zone” element 2:Output ‘Block autom.’ is activated and an acknowledge from XC10 is expected during 5 seconds (line open on FDCIO222 IN4, see table below). If it’s received in time, the isolation message “Aut.ext.OFF FC” is displayed. If it is not received in time, the “XC10 zone” element 2:Output ‘Block autom.’ is automatically de-activated and the information message “XC10 not blockable” is displayed.

- Autom.+manual exting. release blockable from Sinteso / Cerberus PRO panel:

  If this option is selected, command “Autom.+man. exting. ON/OFF” is available in the “XC10 zone / execute commands” menu. When this command is executed, the “XC10 zone” element 3:Output ‘Block autom.+manual’ is activated and an acknowledge from the XC10 is expected during 5 seconds (short-circuit on FDCIO 222 IN4, see table below). If it’s received in time, the isolation message “Aut+man ext.OFF FC” is displayed. If it is not received in time, the “XC10 zone” element 3:Output ‘Block autom.+manual’ is automatically de-activated and the information message “XC10 not blockable” is displayed.

- Show blocking of autom. Exting. release on Sinteso / Cerberus PRO operating terminal:

  If this option is selected, a message “Aut. Ext. OFF XC” can be displayed on the

Sinteso / Cerberus PRO operating terminal when the “XC10 zone” element 4:Input ‘Blocked’ is activated

- Resetable from Sinteso / Cerberus PRO

  If this option is selected, the “XC10 zone” element 1:Output ‘Reset’ is activated for 3 seconds each time a “Reset” command is operated from the Sinteso / Cerberus PRO panel.

- Enable / Reset time:

  If this option is selected, the Sinteso / Cerberus PRO panel checks inputs “Discharged” and “Pre-alarm” during the “Reset time”. If these inputs are back to the normal condition, the Sinteso / Cerberus PRO panel is reset. For a proper operation, “Reset time” must be always set to 10s.

Usually, “XC10 zone” input elements are assigned to FDCIO222 module inputs. Depending on FDCIO inputs status, the following messages are displayed on Sinteso / Cerberus PRO panel:

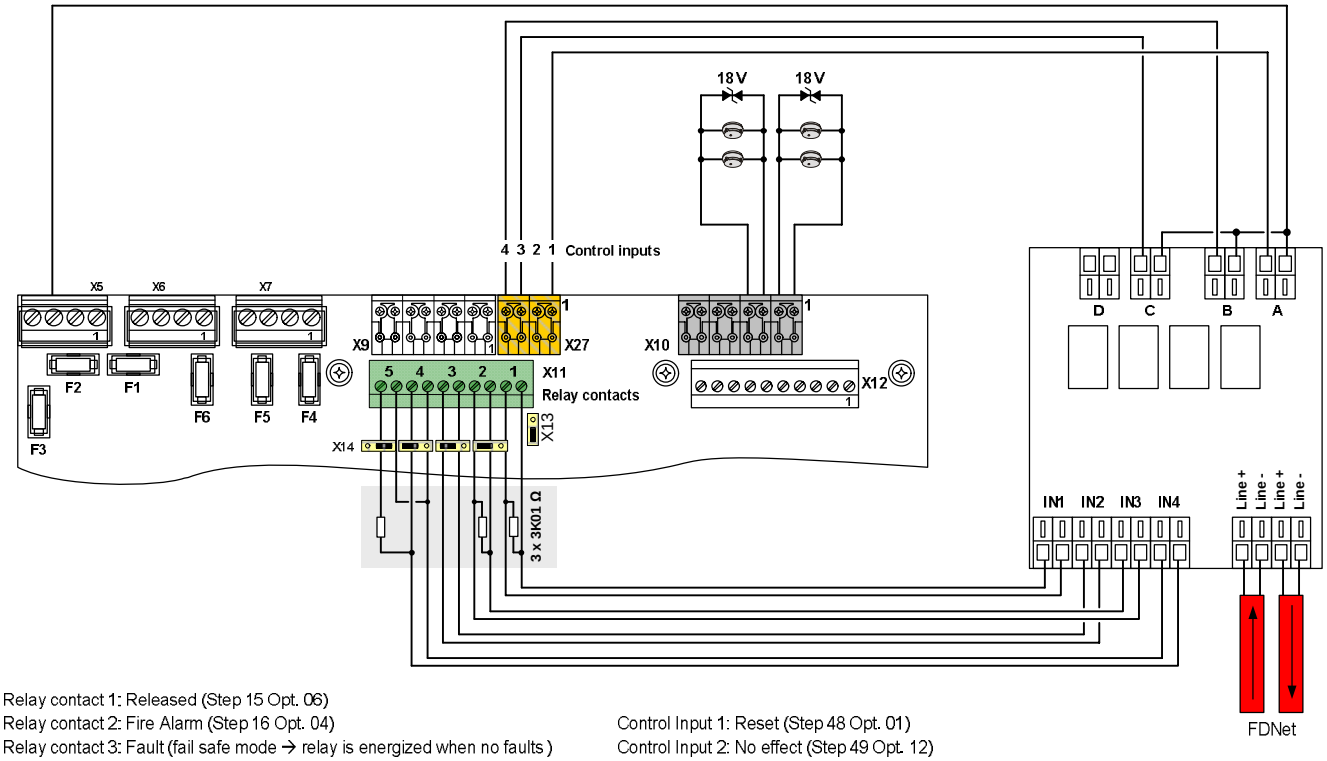
“XC10 zone” input	**FDCIO Input assigned**	**Message displayed on Sinteso / Cerberus PRO panel**				
		Short circuit	1k15	3k01	1k15 + 3k01	Line open
“Discharged”	IN1	“XC10 zone Exting. discharged”	“XC10 zone Exting. discharged”	*(normal)*	*(normal)*	“IN1 Fault”
“Fault”	IN2	*(normal)*	“XC10 zone Fault”	“XC10 zone Fault”	“XC10 zone Fault”	“XC10 zone Fault”
“Pre-alarm”	IN3	“XC10 zone Exting.pre-alarm”	“XC10 zone Exting.pre-alarm”	*(normal)*	*(normal)*	“IN3 Fault”
“Blocked”	IN4	“XC10 zone Aut+man ext.OFF XC”	“XC10 zone Aut+man ext.OFF XC”	*(normal)*	*(normal)*	“XC10 zone Aut.ext.OFF XC”

18.2 Detectors connected to XC10 panel

18.2.1 Connections variant 1

Following XC10 zone messages can be displayed:
- “Exting. discharged”
- “Fault”
- “Exting.pre-alarm”
- “Aut+man ext.OFF XC”
- “Aut.ext.OFF XC”
- “Aut+man ext.OFF FC” *(XC10 blocked from the Sinteso / Cerberus PRO panel)*
- “Aut.ext.OFF FC” *(XC10 blocked from the Sinteso / Cerberus PRO panel)*

Following controls are possible from the Sinteso / Cerberus PRO panel:
- Reset
- Block autom.+manual
- Block autom.



Relay contact 1: Released (Step 15 Opt. 06)
Relay contact 2: Fire Alarm (Step 16 Opt. 04)
Relay contact 3: Fault (fail safe mode → relay is energized when no faults)
Relay contact 4: Automatic blocked and Manual blocked (Step 18 Opt.17)
Relay contact 5: Disabled (Step 19 Opt. 11)

Control Input 1: Reset (Step 48 Opt. 01)
Control Input 2: No effect (Step 49 Opt. 12)
Control Input 3: Automatic and manual blocked (Step 50 Opt. 04)
Control Input 4: Automatic blocked (Step 51 Opt. 02)

Fig. 42 Detectors connected to XC10 control panel – Variant 1

Jumper X14 position (relay contact 5) must be changed from factory setting to the right position (NC contact)

CAUTION For this variant, step 37 option 01 must be selected (Reset at any time). Due to EN12094-1 clause 4.12.2, it is imperative to ensure that the reset operation from the Sinteso / Cerberus PRO panel is not allowed during flooding time. If this cannot be ensured, this connection variant is not allowed.

Configuration example using FXS engineering tool:

Create an XC10 zone:

1. create an area named “Siemens Training Center”
2. create a section named “Room Spirit 1”
3. under this section
    a. create an XC10 Zone named “Extinguishing”
    b. select “Autom. exting. release blockable from Sinteso / Cerberus PRO”
    c. select “Autom.+man. exting. release blockable from FS720”
    d. select “Show blocking of autom. Exting. release on Sinteso / Cerberus PRO operating terminal”
    e. select “Resetable from Sinteso /Cerberus PRO”
    f. select “Enable” and configure “Reset time” = 10 s

Assign XC10 zone inputs elements (an FDCIO222 is installed inside the XC10):

4. assign element 1:Input ‘Discharged’ to FDCIO IN1
5. assign element 2:Input ‘Fault’ to FDCIO IN2 and select “Input inverted” in Hardware tab
6. assign element 3:Input ‘Pre-alarm’ to FDCIO IN3
7. assign element 4:Input ‘Blocked’ to FDCIO IN14

Assign XC10 zone output element:

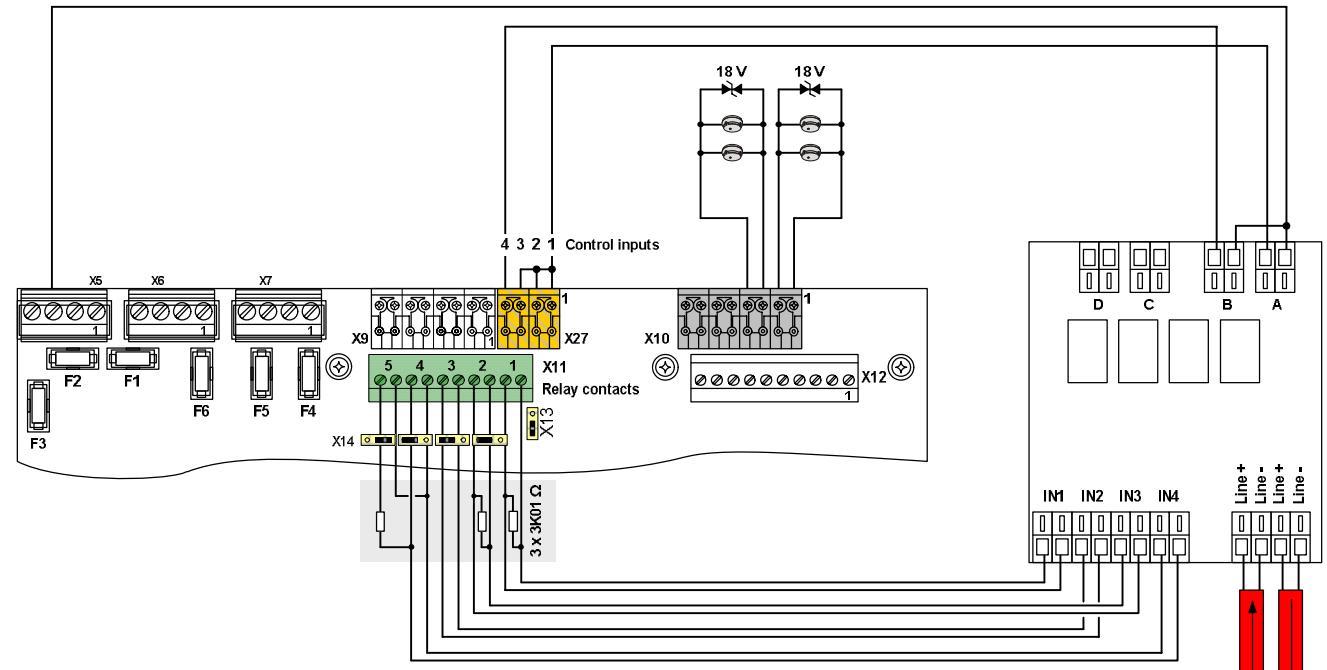
8. assign element 1:Output ‘Reset’ to FDCIO OUT 1 (Relay A)

9. assign element 2:Output ‘Block autom.” to FDCIO OUT 2 (Relay B)
10. assign element 3:Output ‘Block autom.+manual” to FDCIO OUT 3 (Relay C)

18.2.2 Connection variant 2:

Following XC10 zone messages can be displayed:
- “Exting. discharged”
- “Fault”
- “Exting.pre-alarm”
- “Aut+man ext.OFF XC”
- “Aut.ext.OFF XC”
- “Aut.ext.OFF FC” *(XC10 blocked from the Sinteso / Cerberus PRO panel)*

Following controls are possible from the Sinteso / Cerberus PRO panel:
- Reset
- Block autom.



Relay contact 1: Released (Step 15 Opt. 06)
Relay contact 2: Fire Alarm (Step 16 Opt. 04)
Relay contact 3: Fault (fail safe mode → relay is energized when no faults)
Relay contact 4: Automatic blocked and Manual blocked (Step 18 Opt.17)
Relay contact 5: Disabled (Step 19 Opt. 11)

Control Input 1: Reset (Step 48 Opt. 01)
Control Input 2: Silence Buzzer (Step 49 Opt. 01)
Control Input 3: Silence/Re-sound sounders (Step 50 Opt. 11)
Control Input 4: Automatic blocked (Step 51 Opt. 02)

Fig. 43 Detectors connected to XC10 control panel – Variant 2

Jumper X14 position (relay contact 5) must be changed from factory setting to the right position (NC contact)

For this variant, Step 37 option 02 must be selected

CAUTION

Configuration example using FXS engineering tool:

Create an XC10 zone:

1. create an area named “Siemens Training Center”
2. create a section named “Room Spirit 1”
3. under this section
    a. create an XC10 Zone named “Extinguishing”

b. select “Autom. exting. release blockable from Sinteso / Cerberus PRO”
c. select “Show blocking of autom. Exting. release on Sinteso / Cerberus PRO operating terminal”
d. select “Resetable from Sinteso /Cerberus PRO”
e. select “Enable” and configure “Reset time” = 10 s

Assign XC10 zone inputs elements (an FDCIO222 is installed inside the XC10):

4. assign element 1:Input ‘Discharged’ to FDCIO IN1
5. assign element 2:Input ‘Fault’ to FDCIO IN2 and select “Input inverted” in Hardware tab
6. assign element 3:Input ‘Pre-alarm’ to FDCIO IN3
7. assign element 4:Input ‘Blocked’ to FDCIO IN14

Assign XC10 zone “Block autom.” output element:

7. assign element 2:Output ‘Block autom.” to FDCIO OUT 2 (Relay B)

Assign XC10 zone “Reset” output element:

XC10 needs 2 reset pulses to reset completely. The first pulse resets the buzzer and sounders; the second pulse resets the panel. With the following configuration, a single Reset operation on the Sinteso / Cerberus PRO panel generates 2 reset pulses on the XC10.

8. create a fire control group named “Training Center - Room Spirit 1”
9. create a fire control named “XC10 Reset pulse 1”
    a. formula: “- - - ALL OR - - -“
    b. activation delay: 0s
    c. deactivation delay 0s
    d. activation timeout: Enable / 3s
    e. cause: 1:Output ‘Reset’ XC10 Zone “Extinguishing” activated
    f. effect: no effects
10. create a fire control named “XC10 Reset pulse 2”
    a. formula: “-1”
    b. activation delay: 3s
    c. deactivation delay 0s
    d. activation timeout: Enable / 3s
    e. cause: Fire Control “XC10 Reset pulse 1” activated
    f. effect: no effects
11. create a fire control named “XC10 Reset pulse 1+2”
    a. formula: “- - - ALL OR - - -”
    b. activation delay: 0s
    c. deactivation delay 0s
    d. activation timeout: Disabled
    e. cause1: Fire Control “XC10 Reset pulse 1” activated
    f. cause2: Fire Control “XC10 Reset pulse 2” activated
    g. effect: assign to FDCIO OUT 1 (Relay A)

18.3 Detectors connected to Sinteso / Cerberus PRO panel

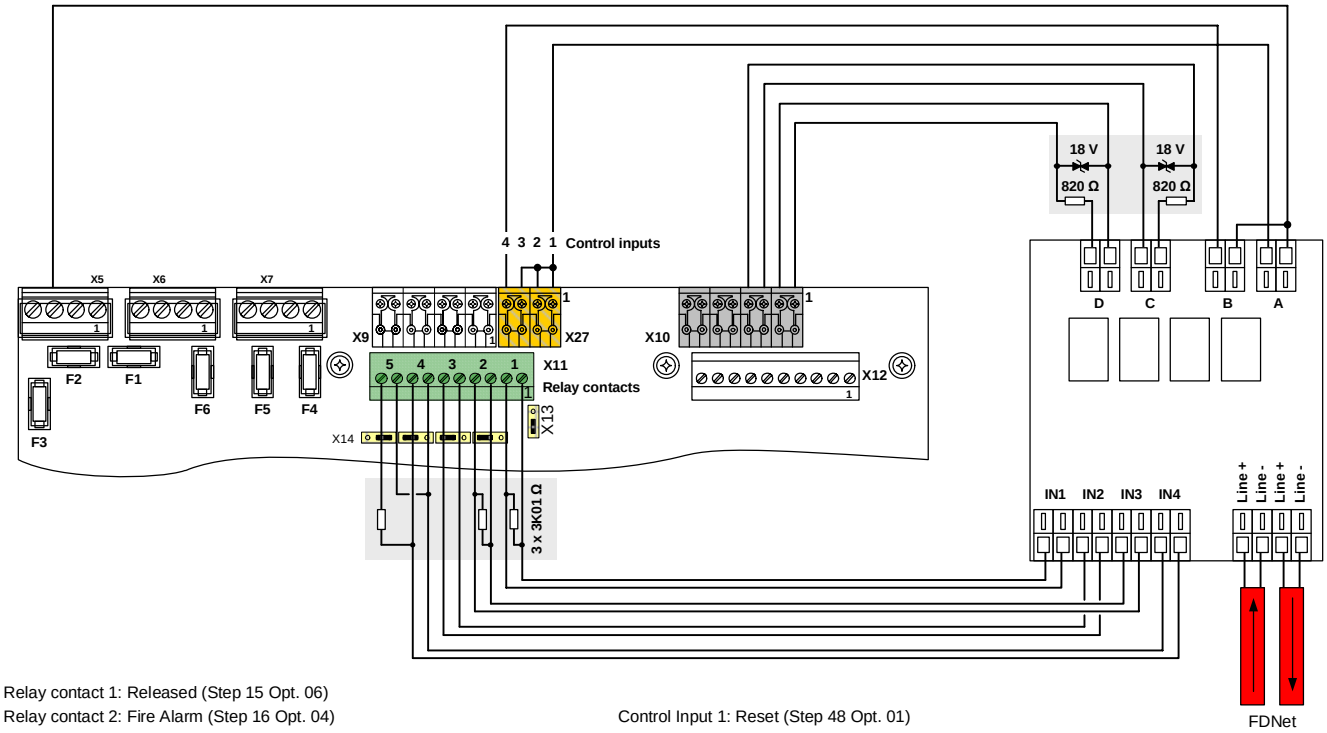
18.3.1 Connection variant 3:

Following XC10 zone messages can be displayed:
- “Exting. discharged”
- “Fault”
- “Exting.pre-alarm”
- “Aut+man ext.OFF XC”
- “Aut.ext.OFF XC”
- “Aut.ext.OFF FC” *(XC10 blocked from the Sinteso / Cerberus PRO panel)*

Following controls are possible from the Sinteso / Cerberus PRO panel:

- Reset
- Block autom.
- Alarm zone 1

- Alarm zone 2



Relay contact 1: Released (Step 15 Opt. 06)
Relay contact 2: Fire Alarm (Step 16 Opt. 04)
Relay contact 3: Fault (fail safe mode → relay is energized when no faults)
Relay contact 4: Automatic blocked and Manual blocked (Step 18 Opt.17)
Relay contact 5: Disabled (Step 19 Opt. 11)

Control Input 1: Reset (Step 48 Opt. 01)
Control Input 2: Silence Buzzer (Step 49 Opt. 01)
Control Input 3: Silence/Re-sound sounders (Step 50 Opt. 11)
Control Input 4: Automatic blocked (Step 51 Opt. 02)

Fig. 44 Detectors connected to Sinteso / Cerberus PRO panel – Variant 3

Configuration example using FXS engineering tool:

Create an XC10 zone:

1. create an area named “Siemens Training Center”
2. create a section named “Room Spirit 1”
3. under this section
    a. create an XC10 Zone named “Extinguishing”
    b. select “Autom. exting. release blockable from Sinteso / Cerberus PRO”
    c. select “Show blocking of autom. Exting. release on Sinteso / Cerberus PRO operating terminal”
    d. select “Resetable from Sinteso /Cerberus PRO”
    e. select “Enable” and configure “Reset time” = 10 s

Assign XC10 zone inputs elements (an FDCIO222 is installed inside the XC10):

4. assign element 1:Input ‘Discharged’ to FDCIO IN1
5. assign element 2:Input ‘Fault’ to FDCIO IN2 and select “Input inverted” in Hardware tab
6. assign element 3:Input ‘Pre-alarm’ to FDCIO IN3
7. assign element 4:Input ‘Blocked’ to FDCIO IN14

Assign XC10 zone “Reset” output element:

8. create a fire control group named “Training Center - Room Spirit 1”
9. create a fire control named “XC10 Reset pulse 1”
    a. formula: “- - - ALL OR - - -“
    b. activation delay: 0s
    c. deactivation delay 0s
    d. activation timeout: Enable / 3s
    e. cause: 1:Output ‘Reset’ XC10 Zone “Extinguishing” activated
    f. effect: no effects
10. create a fire control named “XC10 Reset pulse 2”
    a. formula: “-1”

   b. activation delay: 3s
   c. deactivation delay 0s
   d. activation timeout: Enable / 3s
   e. cause: Fire Control “XC10 Reset pulse 1” activated
   f. effect: no effects
11. create a fire control named “XC10 Reset pulse 1+2”
   a. formula: “- - - ALL OR - - -”
   b. activation delay: 0s
   c. deactivation delay 0s
   d. activation timeout: Disabled
   e. cause1: Fire Control “XC10 Reset pulse 1” activated
   f. cause2: Fire Control “XC10 Reset pulse 2” activated
   g. effect: assign to FDCIO OUT 1 (Relay A)

Create fire detection zones that trigger XC10:

12. under the section “Room Spirit 1”, create an automatic zone named “Zone 1”
13. under the section “Room Spirit 1”, create an automatic zone named “Zone 2”
14. under the fire control group “Training Center - Room Spirit 1”, create a fire control named “First alarm”
   a. cause: “--- General autom. fire ALARM ---“ assigned to section “Room Spirit 1”
   b. effect: assign to FDCIO OUT 3 (Relay C)
15. under the fire control group “Training Center - Room Spirit 1”, create a fire control named “Second alarm”
   a. cause: --- General autom. fire ALARM --- assigned to section “Room Spirit 1”
   b. select Threshold = 2 (2 alarm events)
   c. effect: assign to FDCIO OUT 4 (Relay D)

Assign XC10 zone “Block autom.” output element:

16. under the fire control group “Training Center - Room Spirit 1”, create a fire control named “Block autom.”
   a. cause1: “All test modes” assigned to automatic zone “Zone 1”
   b. cause2: “All test modes” assigned to automatic zone “Zone 2”
   c. cause3: “All isolations” assigned to automatic zone “Zone 1”
   d. cause4: “All isolations” assigned to automatic zone “Zone 2”
   e. cause5: “All activation” assigned to XC10 zone “Extinguishing” 2:Output ‘Block autom.’
   f. effect: assign to FDCIO OUT 2 (Relay B)

19 Maintenance PC

A PC can be connected with the XC100x-A equipment to carry out the following operations:

- Upload the configuration from the XC10 to the PC
- Download the configuration from the PC to the XC10
- Upload the event memory from the XC10 to the PC
- Reset the alarm counter
- Save/Print the configuration
- Save/Print the event memory

It is not possible to create/modify a configuration with the XC10 SW Tool

Hardware requirement and installation

- MCL-USB (FDUZ221) adapter connected between the PC (USB port) and connector X21 of XCM1002 mainboard (follow installation instructions of the drivers delivered with the product)
- XC10 SW Tool / available on STEP / part N° A6V10277118

20 Components and spare parts

	Reference	Part N°	Description
Complete product (*)	XC1001-A	S54390-C1-A1	XC1001-A Extinguishing panel Standard
	XC1005-A	S54390-C3-A1	XC1005-A Extinguishing panel Comfort
	XC1003-A	S54390-C2-A1	XC1003-A Extinguishing panel Rack
	XT1001	S54390-Z16-A1	XT1001-A1 Repeater display
	XT1002	S54390-Z15-A1	XT1002-A1 Repeater terminal
	XTA1001	S54390-Z13-A1	XTA1001-A1 Repeater display 19”
	XTA1002	S54390-Z14-A1	XTA1002-A1 Repeater terminal 19”
Accessories	FCA1014	A6E60500069	FCA1014 Battery holder (XC1005-A with 17A/h)
	XCA1030	S54390-A5-A1	XCA1030 Multi-zone extension module
	XCA1031	S54390-A6-A1	XCA1031 Common multi-zone module
	PF12	FR2:LBE60200447	Cover plate 1U (XC1003-A)
	PF13	FR2:LBE60200448	Cover plate 2U (XC1003-A)
	Z3B171	4843830001	Relay module / 1 changeover contact 250 VAC/10 A
	FCA1007	A6E60500026	FCA1007 kit key switch standard To provide operating access via key switch instead of password.
	FTH1001-F1	FR2:LB202560008	19” 4U adaptation plate for XTA1001-A1 / XTA1002-A1 repeaters
	FTH1002-F1	FR2:LB202270008	Blank plate for XTA1001-A1 / XTA1002-A1 19” adaptation plate
Spare parts	XCM1002	S54390-A4-A1	XCM1002 Main board for XC10
	FCP1004-E	A6E60500054	FCP1004-E power supply unit 3.5A
	XCH1001-A	S54390-B9-A1	XCH1001-A Cover set for XC1001-A
	XCH1003-A	S54390-B10-A1	XCH1003-A Cover set for XC1003-A
	XCH1005-A	S54390-B11-A1	XCH1005-A Cover set for XC1005-A
	XCA1002-1	S54390-B7-A1	XCA1002-1 Display adapter for XC1001-A
	XCA1002-2	S54390-B8-A1	XCA1002-2 Display adapter for XC1003-A and XC1005-A
	XCE1001	A6E60500065	XCE1001 Terminating resistor 3K3

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XC1001-A / XC1005-A

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EN12094-1:2003
Fixed firefighting systems - Components for gas extinguishing systems
Part 1: Requirements and test methods for electrical automatic control and delay devices

Environmental class A

Number of flooding zones : 1

Extinguishing agent : .....

4.17 : Delay of extinguishing signal
4.18 : Signal representing the flow of extinguishing agent
4.19 : Monitoring of the status of components
4.20 : Emergency hold device
4.21 : Control of flooding time
4.23 : Manual only mode
4.24 : Triggering signals to equipment within the system
4.26 : Triggering of equipment outside the system
4.27 : Emergency abort device
4.30 : Activation of alarm devices with different signals
Response delay activated condition: maximum 3 s
Response delay triggering of outputs: maximum 1s

EN54-2/A1:2007
Fire detection and fire alarm systems - Part 2 : Control and indicating equipment

7.8 : Output to fire alarm devices
7.9 : Control of fire alarm routing equipment (7.9.1)
7.12 : Dependencies on more than one alarm signal – Type A (7.12.1)
7.13 : Alarm counter (XC1005-A)
8.3 : Fault signals from points
8.4 : Total loss of the power supply
8.9 : Output to fault warning routing equipment
10 : Test condition

XC1003-A

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EN12094-1:2003
Fixed firefighting systems - Components for gas extinguishing systems
Part 1: Requirements and test methods for electrical automatic control and delay devices

Environmental class A

Number of flooding zones : 1..16

Flooding zone n° .....

Extinguishing agent : .....

4.17 : Delay of extinguishing signal
4.18 : Signal representing the flow of extinguishing agent
4.19 : Monitoring of the status of components
4.20 : Emergency hold device
4.21 : Control of flooding time
4.23 : Manual only mode
4.24 : Triggering signals to equipment within the system
4.26 : Triggering of equipment outside the system
4.27 : Emergency abort device
4.29 : Release of the extinguishing media for selected flooding zones
4.30 : Activation of alarm devices with different signals
Response delay activated condition: maximum 3 s
Response delay triggering of outputs: maximum 1s

EN54-2/A1:2007
Fire detection and fire alarm systems - Part 2 : Control and indicating equipment

7.8 : Output to fire alarm devices
7.9 : Control of fire alarm routing equipment (7.9.1)
7.12 : Dependencies on more than one alarm signal – Type A (7.12.1)
8.3 : Fault signals from points
8.4 : Total loss of the power supply
8.9 : Output to fault warning routing equipment
10 : Test condition