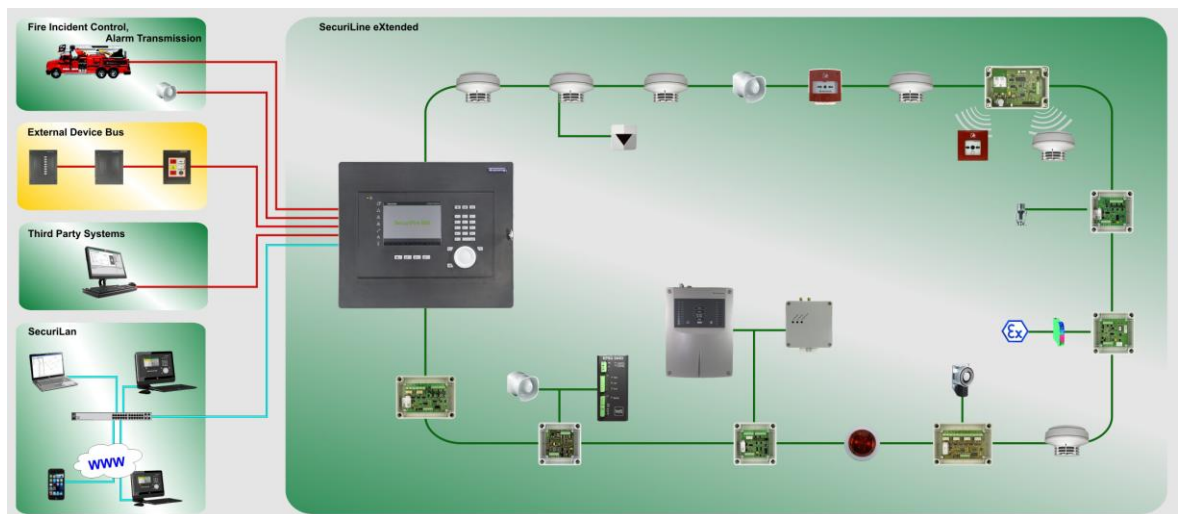


SecuriFire 500

Mounting and Installation

Technical Description



Imprint



Notice

This document, T 811 065, is valid only for the product described in Section 1.

This documentation is subject to change or withdrawal without prior notice. The validity of the statements made in this document applies until the statements are revised by a new edition of the document (T number with new index). The user of this document is responsible for staying up to date with its current status through the editor/publisher. We accept no responsibility for claims against any incorrect statements in this document which were unknown to the publisher at the time of publication. Handwritten changes and additions are not valid. This document is protected by copyright.

Foreign language documentation as listed in this document is always released or changed at the same time as the German edition. If there are inconsistencies between the foreign language documentation and the German documentation, the German documentation is binding.

Some words in this document are highlighted in blue. These are terms and designations which are the same in all languages and are not translated.

Users are encouraged to contact the editor/publisher if there are statements which are unintelligible, misleading, incorrect, or if there are errors.

© Securiton AG, Alpenstrasse 20, 3052 Zollikofen, Switzerland

This document, T 811 065¹, is available in the following languages:

German	T 811 065 de
English	T 811 065 en
French	T 811 065 fr
Italian	T 811 065 it
Swedish	T 811 065 sv

Current edition: Index b 08.04.2015 Rd

¹ Reference document: BX-Handbuch V1.1, MMI&EPI Handbuch V2.1, X-Line Handbuch

Safety information

Provided the product is deployed by trained and qualified persons in accordance with technical document T 811 065 and the danger, safety and general information notices in this technical documentation are observed, there is no danger to persons or property under normal conditions and when used properly.

National and state-specific laws, regulations and directives must be observed and adhered to in all cases.

Below are the designations, descriptions and symbols of danger, safety and general information notices as found in this document.



Danger

Danger to persons and/or property may result from the product and any system parts if danger notices are not heeded. If the product and/or its parts become damaged and cause malfunctions there is also the risk of injury to persons and damage to property.

- Description of which dangers may occur;
- Measures and preventative actions;
- How dangers can be averted;
- Other safety-relevant information.



Warning

The product may be damaged if the safety information is not heeded.

- Description of which damage can occur;
- Measures and preventative actions;
- How dangers can be averted;
- Other safety-relevant information.



Notice

The product may malfunction if this notice is not observed.

- Description of which malfunctions can be expected
- Measures and preventative actions;
- Other safety-relevant information.



Recycling / Environmental protection

Neither the product nor its components present a hazard to the environment provided they are handled properly.

- Description of which parts have environmental protection issues
- Description of how devices and their parts have to be disposed of in an environmentally-friendly way;
- Description of the recycling possibilities.



Batteries

It is not permitted to dispose of batteries in the domestic rubbish. As the end user you are legally obliged to return used batteries. Used batteries can be returned to the seller or brought to a designated recycling centre (e.g. a communal collection point or retailer) at no cost. You may also send them back to the seller by post. The seller will refund the postage when you return your old batteries.

Document history

First edition **Date 24.10.2012**

Index „a“ **Date 18.01.2014**

Most important changes compared with first edition:

Section		New (n) / changed (c) / deleted (d)	What / Reason
general	n	Update to SecuriFire release R 2.0	Actualisation
• 4.6	n	B5-EPI-FPC-GS Swiss fire brigade panel	New section
• 4.7	n	B5-EPI-ASP-GS alarm scrolling panel for the Netherlands	New section
• 4.8	n	B5-EPI-FPS-S fire brigade operating panel for Sweden	New section
• 4.9	n	B5-EPI-PCM partial indication and control map	New section
• 4.10	n	B5-EPI-PIM partial indication map	New section
• 4.11	n	B5-EPI-FAT fire brigade indicator board	New section
• 4.12	n	B5-EPI-FPD fire brigade control panel	New section
• 5.3.5	n	BX-OI3 output/input module connection	New section
• 5.3.6	n	BX-I2 input module connection	New section
• 5.3.7	n	BX-O1 output module connection	New section
• 5.3.16	n	Connection for SDI81X / SDI82X addressing module	New section

Index „b“ **Date 08.04.2015**

Most important changes compared with previous edition:

Section		New (n) / changed (c) / deleted (d)	What / Reason
general	n	Update to SecuriFire release R 2.0	Actualisation

Contents

1	System overview	9
1.1	Technical data	11
1.2	System limits	11
1.2.1	SecuriFire 500	11
1.2.2	SecuriLine eXtended	11
2	Housing design & mounting	12
2.1	Integrated B7-MIC11 indication and control map	13
2.2	Drilling plan	13
3	External main indication and control maps	14
3.1	Dimensions for external indication and control maps	14
3.2	Drilling planes for external indication and control maps	14
4	Interfaces & connections	15
4.1	B7-CPB11 main control unit	15
4.1.1	Interfaces	15
4.1.2	Technical data	15
4.1.3	Compatibility notice	15
4.2	Power supply	16
4.2.1	Mains connection	16
4.2.2	Technical data	16
4.2.3	Emergency power supply (batteries) connection X14	17
4.2.4	Technical data	17
4.2.5	Connection of external consumers	17
4.2.6	Technical data	17
4.2.7	Connection of relay outputs to B7-CPB11	18
4.2.8	Technical data	18
4.2.9	Connection examples	19
4.3	Connection of monitored inputs and outputs	20
4.3.1	Technical data	20
4.3.2	Connection of monitored outputs to B7-CPB11	21
4.3.3	Connection of inputs to B7-CPB11	21
4.4	SecuriLine eXtended	22
4.4.1	SecuriLine eXtended (x12) connection	22
4.4.2	Technical data	22
4.4.3	Compatibility information	22
4.5	EPI bus for external indication and control maps (X6)	23
4.5.1	EPI bus (X6) connection	23
4.5.2	Technical data	23
4.6	B5-EPI-FPC-GS Swiss fire brigade panel	24
4.6.1	Interfaces	24
4.6.2	Technical data	24
4.6.3	Compatibility information	24
4.7	B5-EPI-ASP-GS alarm scrolling panel for the Netherlands	25
4.7.1	Interfaces	25
4.7.2	Technical data	25
4.7.3	Compatibility information	25
4.8	B5-EPI-FPS-S fire brigade operating panel for Sweden	26
4.8.1	Interfaces	26
4.8.2	Technical data	26
4.8.3	Compatibility information	26
4.8.4	Instructions for opening and mounting the B5-EPI-FPS-S	27
4.9	B5-EPI-PCM partial indication and control map	28
4.9.1	Interfaces	28
4.9.2	Technical data	28
4.9.3	Compatibility information	28
4.10	B5-EPI-PIM partial indication map	29
4.10.1	Interfaces	29
4.10.2	Technical data	29
4.10.3	Compatibility information	29

Contents

4.11	B5-EPI-FAT fire brigade indicator board	30
4.11.1	Interfaces	30
4.11.2	Technical data	30
4.11.3	Compatibility information	30
4.12	B5-EPI-FPD fire brigade control panel	31
4.12.1	Interfaces	31
4.12.2	Technical data	31
4.12.3	Compatibility information	31
5	SecuriLine eXtended	32
5.1	General	32
5.2	Max. number of participants per line interface and mode of operation	33
5.3	Connection of SecuriLine eXtended modules	34
5.3.1	Stub line connection	35
5.3.2	Connecting detector base USB 501	35
5.3.3	Connection of MCP 535x and MCP 545x manual call points	36
5.3.4	Connection of BX-AIM advanced input module	36
5.3.5	BX-OI3 output/input module connection	37
5.3.6	BX-I2 input module connection	38
5.3.7	BX-O1 output module connection	39
5.3.8	BX-O2I4 output / input module connection	39
5.3.9	BX-REL4 relay module connection	40
5.3.10	BX-IOM input/output module connection	40
5.3.11	BX-IM4 input module connection	41
5.3.12	BX-RGW radio module connection	41
5.3.13	Connection of the BX-SOL loop siren	42
5.3.14	Loop flashlight BX-FOL connection	42
5.3.15	Connection of end switch module eXtended Line BX-ESL	43
5.3.16	Connection for SDI81X / SDI82X addressing module	43
5.3.17	Connection for BX-MDH door holding magnet	44
5.3.18	Connection for BX-MDI8 input module	44
5.3.19	Recommended cable type for addressable loop	47
6	Programming and software	48
7	Planning	49
7.1	Loop length	49
7.2	Current consumption and bridging time	49
7.3	Typical power consumption values for B7-CPB11	49
7.4	Power requirement calculation	49
7.5	Battery current measurement with a connected battery pair	50
8	Commissioning	51
8.1	Program	51
8.2	SecuriLine eXtended addressable loop	51
8.3	Object-specific texts	51
8.4	Possible displays & fault patterns	52
8.5	Simple troubleshooting	52
8.5.1	General	52
8.5.2	Contaminated detector	52
8.5.3	Possible causes of faults	52
9	Article numbers / spare parts	52
10	List of figures	53

1 System overview

The SecuriFire 500 1-loop small control panel consists of a plastic housing and a B7-MIC11 control panel integrated in the door. Labelling of the control panel is language neutral.

The built-in main control unit with integrated power supply unit includes all interfaces for connecting peripherals. The lower area of the housing provides enough space for installing two 7.2 Ah batteries.

Fire brigade maps and remote external display panels are connected by means of the EPI bus. A 100 Mbit TX LAN interface can be used for remote access to the control panel.

The control panel has VdS approval compliant with EN 54-2 and EN 54-4 and is suitable for connecting a 110 V voltage supply (e.g. for markets in South America).

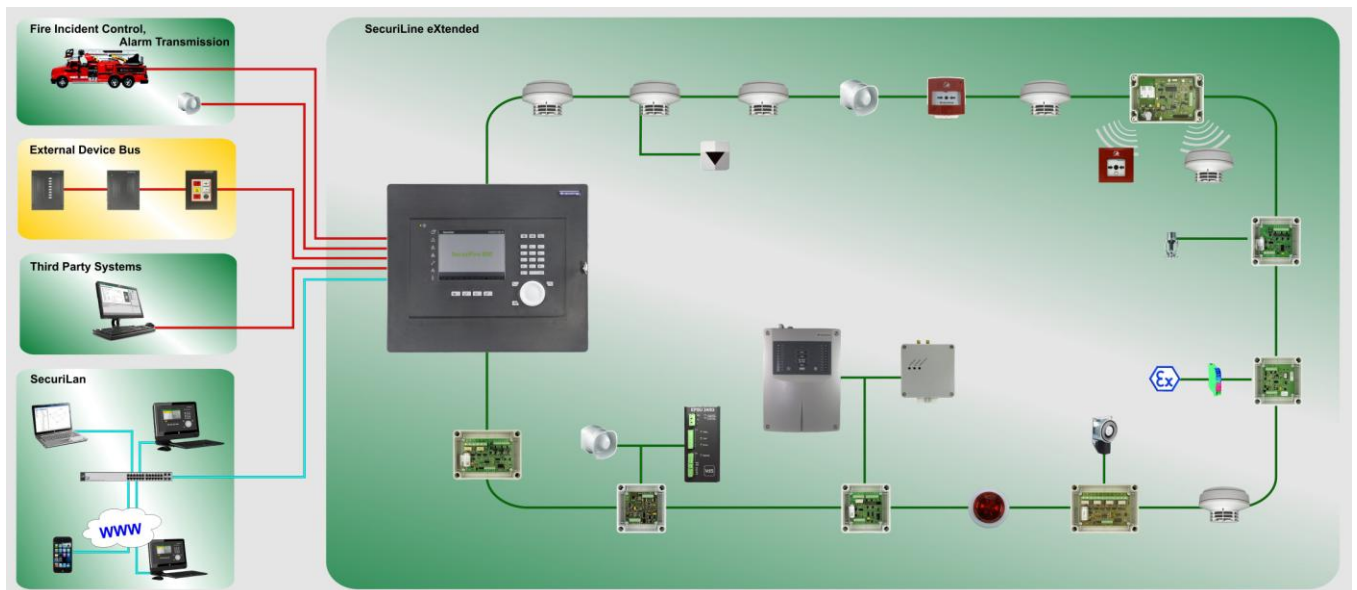


Fig. 1 System overview of SecuriFire 500

Important features

- A maximum of 250 participants on the loop and loop length up to 3,500 m.
- Up to 3 indication and control maps (e.g. fire brigade maps) can be connected via EPI bus
- 3 relay outputs
- Alphanumeric display (320 x 240 pixels) in plain text, in German or in the language of the country of use, up to four languages can be toggled during operation. Thanks to the pictograms, the control panel user interface is not language specific.
- Connection for access using TCP/IP with mobile terminals via Internet/intranet
- Connection to management system
- Customer-specific software for freely programmable inputs and outputs
- Suitable for connection to the public alarm system of the fire brigade.
- Continual, automatic check routines for all system components and programs.
- Microprocessor-controlled and monitored system technology.
- Free assignment of detection zones and individual detectors
- Adjustable survey and delay times
- Alphanumeric, individual alarm display and group display of all alarm states
- Individually programmable auxiliary texts for each element
- Complies with the following relevant standards and directives: European standards EN 54, DIN and VDE.
- VdS devices and system approval (G212112, S212006), CPD certificate 0786-CPD-21185

System overview

Overvoltage protection

The SecuriFire 500 is equipped with a comprehensive and integrated overvoltage protection design which protects all peripheral inputs, including the mains power supply in compliance with EN 50130-4 (EMC) and EN 50082-2 (resistance to interference for industry). The EMC protection design protects the electronics by means of a zone concept, Transzorp diodes, filters and broadband decoupling of the power supply. Thus, when the system is used in buildings with installed basic and medium protection (lightning protection, mains overvoltage arresters), no further measures (e.g. overvoltage arresters) are required.

Earthing concept

The earthing concept used in the SecuriFire 500 with central protection earthing to protect persons and electronics requires that all electrically charged components connected to the GND line of the SecuriFire 500 control panel may be installed exclusively in areas and buildings which have regulation-complaint potential equalization with this sub-control unit.



Warning

Non-observance can cause malfunctions and/or damage the control panel and may endanger people!

Software

The SecuriFire 500 control panel is equipped with a multitasking-capable, real-time operating system. A basic function program is loaded into the system and is adjusted to the object to be protected by means of customer-specific programming while taking into consideration relevant applicable standards.



Notice

This document applies to SRP 2.0 (SecuriFire Release Package) and later.
It is always recommended to use the most recent SecuriFire Studio release.

1.1 Technical data

Mains voltage / mains frequency:	230 V or 110 VAC (+/-15%), 47 Hz - 63 Hz
Operating voltage:	Typically 27.3 V, depending on ambient temperature and loading state
Usable batteries:	2 pcs. 7.2 Ah in series
Emergency current supply with batteries:	According to power calculation
Alarm current:	Max. 1.7 A
Ambient temperature:	-5°C to +50°C, measured at natural convection
Colour:	Charcoal grey RAL 7016
Relative air humidity:	5% to 95%, without condensation
Air pressure:	<= 80 kPa, up to 2,000 m above sea level
Protection class:	IP 30
Electrical protection:	EMC using a zone concept, Transzorp diodes, filters and broadband de-coupling of the power supply of the electronics protective earth to protect persons and electronics.
Dimensions:	300 x 360 x 100 mm
Weight without batteries:	2.5 kg
Weight with batteries:	7.8 kg

1.2 System limits

1.2.1 SecuriFire 500

Main indication and control map (MIC)	1 internal, max. 4 VirtualMIC
Interfaces to management systems	4 incl. message server and SMS server
External indication and control maps including fire brigade panels	max. 3 EPI devices with max. 1 metre line length
Detection zones, inputs, outputs	max. 756, dynamically divided
External (e.g. sprinkler systems)	max. 256
Delay layers	max. 16
Customer-specific texts	6,500 if average is 25 characters per element

1.2.2 SecuriLine eXtended

	X-Line High Power HP	X-Line Long Range LR	DAI Mode
Participants per ring	max. 250	max. 250	max. 128
Participants per stub	max. 64	max. 64	max. 64
BX-SOL, BX-SBL per ring	max. 64 LOW, 32 HIGH	max. 64 LOW, 16 HIGH	max. 32 LOW, 16 HIGH
BX-FOL per ring	max. 23	max. 23	max. 23
Ring length	max. 1'500 m	max. 3'500 m	max. 2'000 m
Max. line resistance (loop)	according to loop length calculation		

Detailed specifications are included in the release notes of SecuriFire Studio.



Notice

The actual loop length depends on the number and type (power consumption, inner resistance) of participants, on additional power load (number of switched on alarm LEDs, telegram current), and on the cable cross-section. This means that for the optimal configuration the number of participants and the coverage range of the loop must be matched to each other.

A tool is available for calculating the maximum possible loop length and the maximum number of participants.

2 Housing design & mounting

The B7-CPB11 main control unit of the SecuriFire 500 contains interfaces for connecting an addressable loop, 2 monitored inputs and outputs for each alarm transmission and transmission unit compliant with EN 54, and 3 relay outputs. The power supply unit is integrated on the main control unit.

Every SecuriFire 500 control panel consists of:

- Housing for wall mounting with door (with control panel, without printer)
- B7-CPB11 main control unit with
 - 1 SecuriLine eXtended loop (max. 250 participants, max. 3,500 m)
 - 2 primary outputs
 - 2 primary inputs
 - 3 relay outputs
 - 1 EPI bus connection (max. 3 devices, max. 1 m)
- 24 V / 2.5 A power supply unit (integrated)
- 2 pcs. 12 V / 7.2 Ah emergency power batteries in series
- Mains terminals and battery cable
- Integrated indication and control map (B7-MIC11)

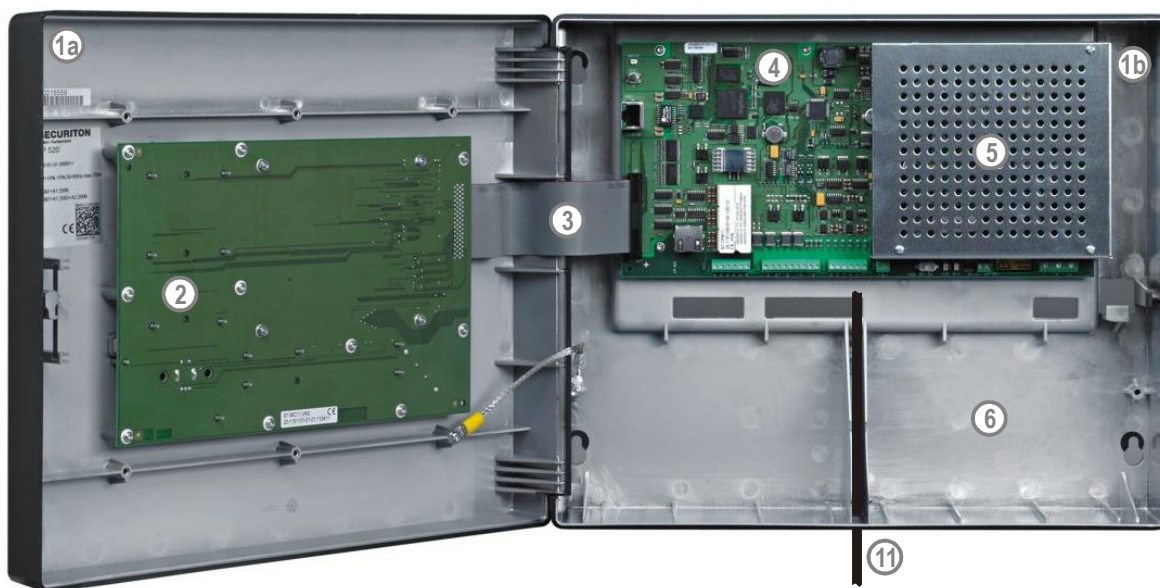


Fig. 2 Inside view of housing

- 1a Plastic housing / door
- 1b Plastic housing / rear wall
- 2 Mounting main indication and control map
- 3 Main indication control map connection
- 4 Main control unit
- 5 Integrated power supply unit
- 6 Batteries
- 7 Holes for wall mounting
- 8 Mains connection entry
- 9 Loop line and input/output entry
- 10 EPI bus and Ethernet entry
- 11 The cable can also be conveyed through the bottom side of the housings on surface mounting. To do so, it is necessary to drill out the prepared location with a so-called tapered bit. The cable can then be conveyed through the centre part between the batteries to the connection on the main control unit.



Fig. 3 Rear view of housing

2.1 Integrated B7-MIC11 indication and control map



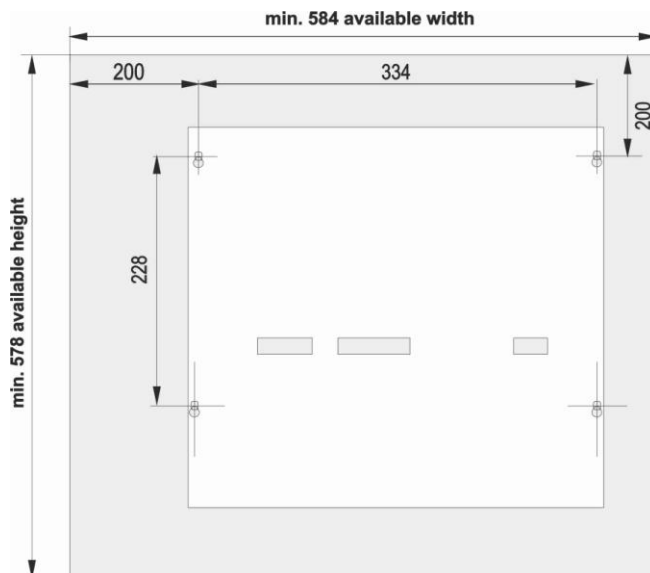
Fig. 4 Front view of housing

The B7-MIC11 indication and control map is language-neutral and a permanently integrated component of the SecuriFire 500.

The connection to the main control unit is by means of a ribbon cable.

SecuriFire 500 has the same operating concept as the corresponding devices of the SecuriFire system family. The SecuriFire operating instructions are applicable.

2.2 Drilling plan



All dimensions in mm.

Fig. 5 SecuriFire 500 drilling plan

- Mount rear wall according to drill plan with 4 pcs. 5 x 40 round head screws and 4 pcs. S 8 dowels. When mounting on plaster board, appropriate dowels and reinforcement may be necessary. Weight incl. batteries: 7.8 kg!
- Place batteries and connect
- Wire mains connection



Rating plates

Each SecuriFire 500 map case is delivered with two rating plates. One of them is already attached at the factory on the right inside in the map case over the batteries. The second rating plate is packaged with the control unit and has to be attached in access level 1 (outside on the map case) before commissioning where it can be easily seen.

Notice

3 External main indication and control maps

3.1 Dimensions for external indication and control maps

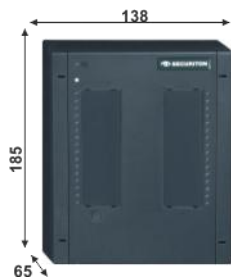


Fig. 6 B5-EPI-PIM

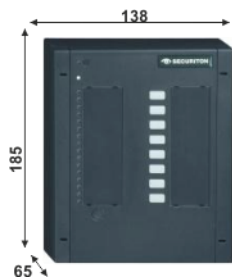


Fig. 7 B5-EPI-PCM

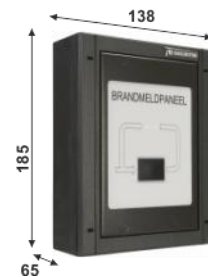


Fig. 8 B5-EPI-ASP

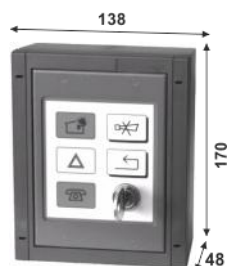


Fig. 9 B5-EPI-FPC



Fig. 10 B5-EPI-FPS

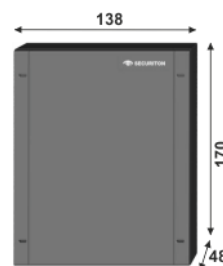


Fig. 11 EHB 701

All dimensions in mm

3.2 Drilling planes for external indication and control maps

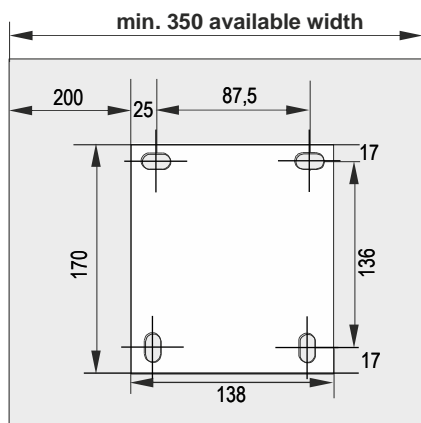


Abb. 12 B5-EPI-ASP / B5-EPI-FPC / EHB 701

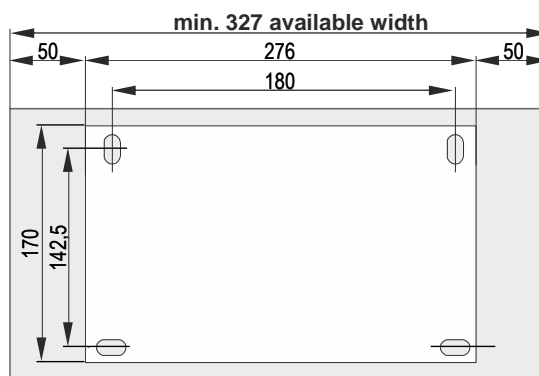


Abb. 13 B5-EPI-FPS

All dimensions in mm

4 Interfaces & connections

4.1 B7-CPB11 main control unit

The B7-CPB11 (Controller and Power Supply Board) main control unit is a component of every SecuriFire 500 control panel and includes all interfaces for connecting peripherals, monitored inputs and outputs, service PC and the integrated power supply unit. The mounting main indication and control map is connected to the main control unit using a ribbon cable.

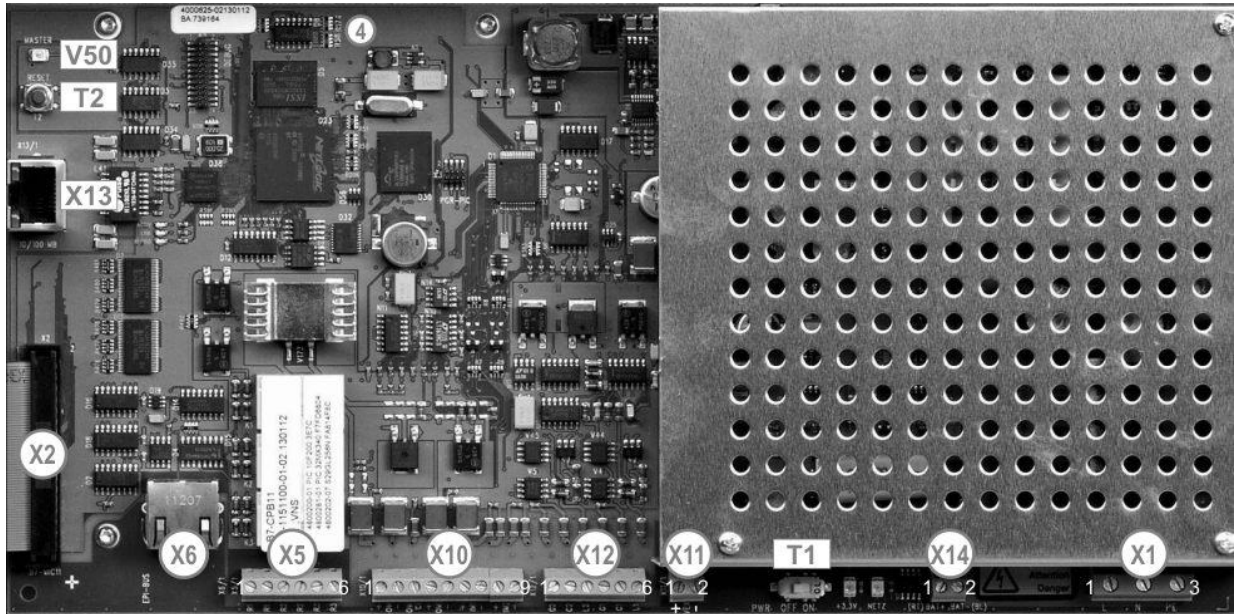


Fig. 14 B7-CPB11 main control unit

System states are indicated by LEDs (V 50). All programming and configuration procedures are performed via the LAN interface (X13) by means of the service PC and SecuriFire Studio.

4.1.1 Interfaces

X1	Mains connection 110 V - 230 V	X13	Ethernet 100BASE-TX service interface for loading program and planning data and for system diagnostics
X2	Control panel interface to the B7-MIC11	X14	Battery connection
X5	Interface of the relay contacts	T2	Button for control panel reset
X6	Interface for EPI bus (extended bus)	V50	State LEDs for master processor
X10	Interface for monitored inputs and outputs	LED dark	fault
X11	Output voltage for external consumers	LED lit	startup
X12	Interface for 1 addressable loop or 2 stub lines (SecuriLine eXtended)	LED flashing	normal operation
		T1	On/Off switch (power)

4.1.2 Technical data

Quiescent power consumption:	62.9 mA (battery current)
Supply voltage:	Battery voltage VL; VP +22 V .. 30 V
	Logic voltage VCC +3.3V ± 5%
Rel. air humidity:	5% to 95%, without condensation
Ambient temperature:	-5° to +50°C

4.1.3 Compatibility notice

The B7-CPB11 main control unit as of version 20-1151100-01-01 is supported as of SecuriFire Studio Rel. 1.2.0.

4.2 Power supply

For the power supply from the mains network, a circuit of 230V / 50 Hz (110 V / 60 Hz) must be planned; it must have automatic cut-outs (min. 10 A surge resistant) and have its own FI safety switch (U characteristic).



Notice

Installation of the SecuriFire 500 system components and the mains connection may be performed only by technicians trained specifically for this purpose; installation must always adhere to the applicable rules and regulations of the country concerned (e.g. DIN, VDE).
The fire alarm system must be operated via its own line network. All work is to be carried out in a de-energized state (mains and battery) and without external voltage.
When manipulating the individual units, it is imperative that you observe the regulations regarding precautions against static charges (ESD protective measures).

4.2.1 Mains connection

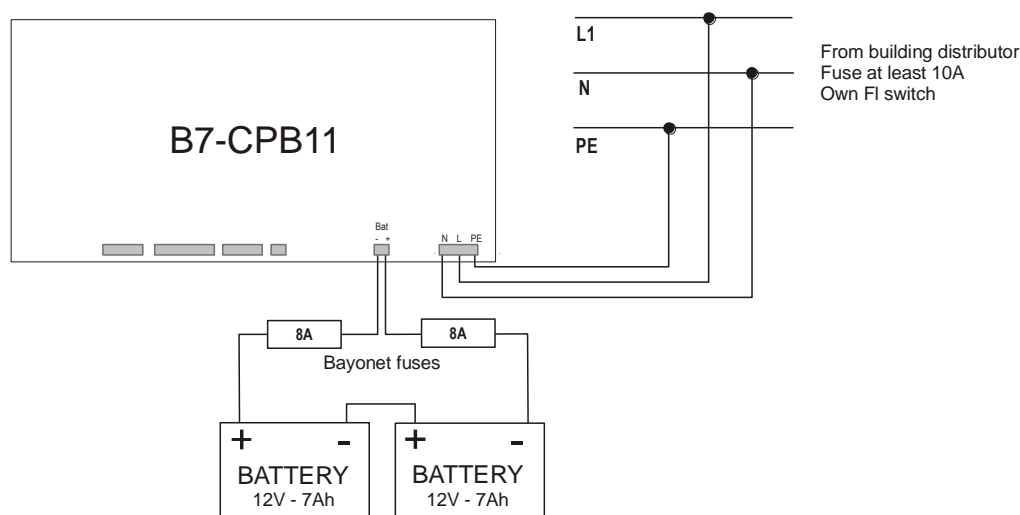


Fig. 15 Mains connection

X1 connector plug

Designation	Pin
L	1
N	2
PE	3



The mains cable is introduced into the control panel through the opening in the rear wall and is connected to the B7-CPB11 main control unit on the terminal for this purpose. The PE protective earth is connected to the marked earth screw; the battery cable set is packaged with each control panel and is connected to the power supply unit and batteries.

4.2.2 Technical data

Connection: 110 V/230 VAC ($\pm 15\%$) 47-63 Hz
Mechanical design: 3-pin screw terminal, RM 3.81
cable cross-section of 0.14 to 2.5 mm²

4.2.3 Emergency power supply (batteries) connection X14

Designation	Pin
Bat+	1
Bat-	2



4.2.4 Technical data

Connection: Battery 7 Ah
 Mechanical design: 2-pin screw terminal, RM 3.81
 cable cross-section of 0.14 to 2.5 mm²

To ensure the fire alarm system continues to function even when there is a brief interruption of the power supply, two batteries connected in series are built into each SecuriFire 500. If there is a mains failure, they provide the power for the control unit. The batteries are mounted below in SecuriFire 500 map case.

Notice

Only the following VdS tested and Securiton approved battery types can be used; if others are used, trouble-free functioning of the system cannot be assured:

Battery type	VdS approval
CTM CT7-12	G103049

4.2.5 Connection of external consumers

X11 connector plug

Designation	Pin
VEXT +	1
VEXT -	2



For connecting external consumers such as key safe etc. The output voltage is 24 V; maximum output current is 0.5 A. The output is short-circuit-proof with a self-healing fuse.

4.2.6 Technical data

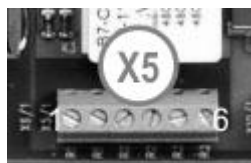
Connection: Output voltage +20 V to +30 V, max. 0.5 A
 Mechanical design: 2-pin screw terminal, RM 3.81
 cable cross-section of 0.14 to 2.5 mm²

4.2.7 Connection of relay outputs to B7-CPB11

The X5 connector plug on the B7-CPB11 main control unit has 3 freely programmable bistable 240 V/3 A relay contacts for actuating sirens, permanent magnets, relays, etc. With planning software you can define whether the contact is a working contact or normally closed contact. By programming an “Active in fail-safe position”, the state of each individual relay can be defined for power supply failure or shut down of the control panel.

X5 connector plug

Pin	Designation	Relays
1	R1	1
2	R1	
3	R2	2
4	R2	
5	R3	3
6	R3	



4.2.8 Technical data

Relay outputs:	3
Relay design:	Bistable
Contact resistance:	30 mΩ max.
Max. switching voltage:	240 VAC / 125 VDC
Max. switching current:	3 A
Max. switching capacity:	300 W / 2500 VA
Monitoring voltage:	Typically 24 V
Monitoring current:	Typically 3.1 mA
Short-circuit current:	Typically 3.63 mA
Termination resistance:	220 Ω

4.2.9 Connection examples

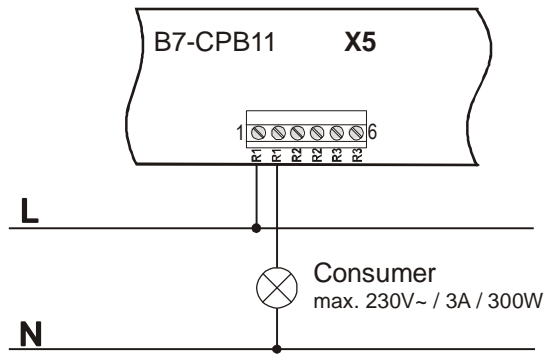


Fig. 16 B7-CPB11, relay output (connection of 230 V consumers)

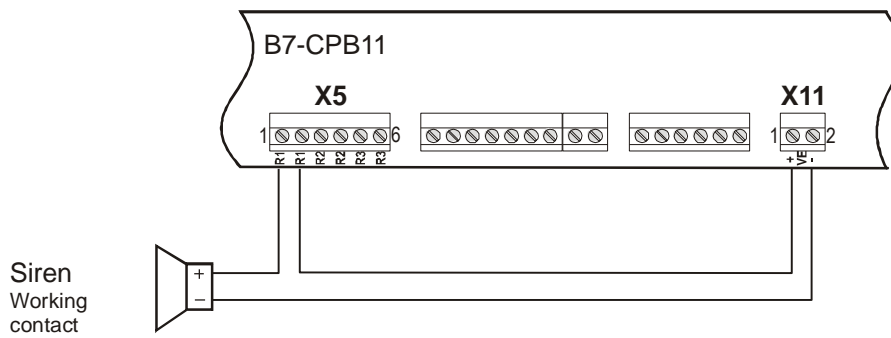


Fig. 17 B7-CPB11, relay output (siren connection)

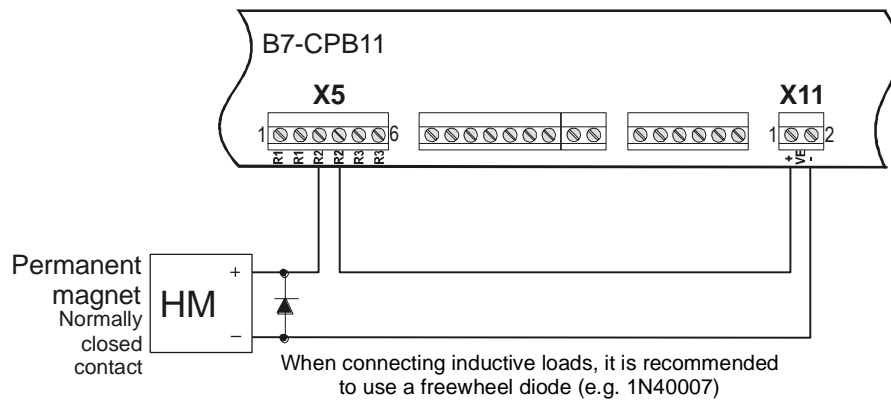


Fig. 18 B7-CPB11, relay output (permanent magnet connection)

4.3 Connection of monitored inputs and outputs

The X10 connector plug on the B7-CPB11 main control unit is for connecting the transmission unit (main detector) and alarm unit (sirens) for loads between 16 Ω and 1 k Ω . The interface includes two 1.5 A control outputs monitored for short-circuit and wire breakage and 2 monitored inputs. The OM1 output has a feedback input for external trigger confirmation.

X10 connector plug

Pin	Designation	Function
1	OM1+	+24V
2	OM1-	GND
3	OM1CF+/-	Feedback input
4	OM2+	+24V
5	OM2-	GND
6	IM1+	Input 1
7	IM1-	GND
8	IM2+	Input 2
9	IM2-	GND



4.3.1 Technical data

Monitored outputs OM1 and OM2

Output voltage:	20.4 V min., 24 V typical, 28 V max.
Output current:	max. 0.5 A (TUS max. 0.1 A)
OM modes of operation:	Monitored output with area 1 and 2 or TUS (TUS only for OM1), Planning with software; see table for values
Feedback input:	Feedback from MDLF
Input current	3.1 mA
Polarity	Feedback contact can switch to plus and minus

Output voltage	Mode of operation	Load range	Output current	Quiescent current	Short-circuit current	Line resistance
22V to 28V	Range 1	160-1000 Ω	max. 0.5 A	1 mA	Typically 1.75 A	max. 50 Ω
	Range 2	57-375 Ω	max. 0.5 A	3 mA	Typically 1.75 A	max. 20 Ω
	TUS (only OM1)		max. 0.1 A		Typically 0.137 A	max. 20 Ω

Monitored inputs IM1 and IM2

Purpose:	Polling galvanically isolated contacts or key safes and isolating facilities
Monitoring voltage:	Typically 24 V
Monitoring current:	Typically 3.1 mA
Short-circuit current:	Typically 3.63 mA
Termination resistance:	220 Ω
Initiating resistance:	220 Ω
Line resistance:	50 Ω max.

4.3.2 Connection of monitored outputs to B7-CPB11

Quiescent current monitored loads

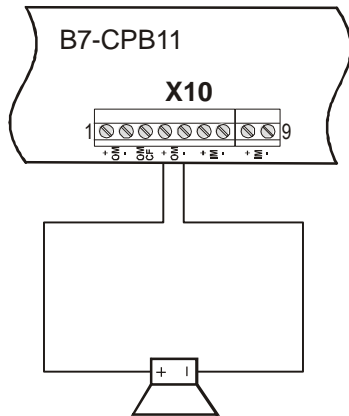


Fig. 19 B7-CPB11, quiescent current monitored loads

“Electronic loads”

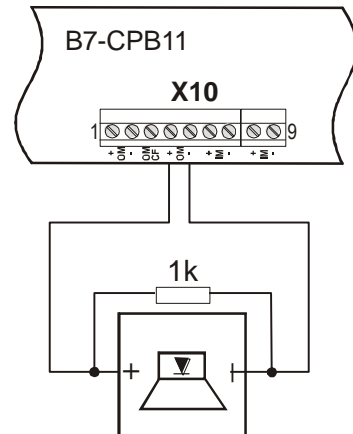


Fig. 20 B7-CPB11, electronic loads

Connection with feedback

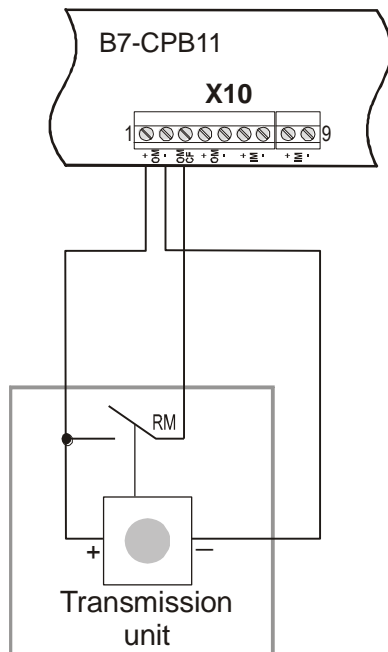
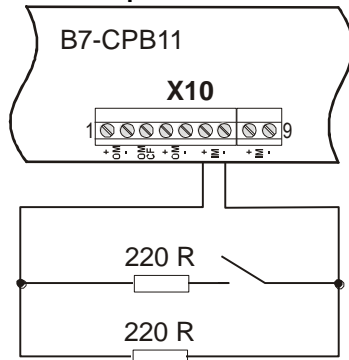


Fig. 21 B7-CPB11, connection with feedback

Notice
Because of the number of different transmission unit systems, their description is not included in this document. See the manufacturer's documentation for more information.

4.3.3 Connection of inputs to B7-CPB11

Monitored inputs



Unmonitored inputs

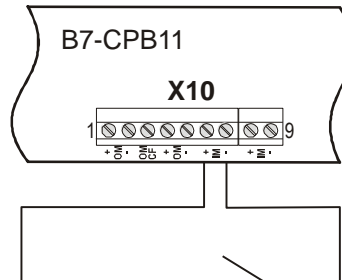


Fig. 22 B7-CPB11, connection of inputs

4.4 SecuriLine eXtended

On the SecuriFire 500 main control unit (B7-CPB11) an addressable loop with associated detectors and modules of the SecuriLine eXtended technology can be connected.

4.4.1 SecuriLine eXtended (x12) connection

Pin	Designation	Function
1	GND	Screen
2	C2	GND loop end
3	L2	+24V loop end
4	GND	Screen
5	C1	GND loop beginning
6	L1	+24V loop beginning



4.4.2 Technical data

Connection:	1 addressable loop, max. 250 participants or 2 stub lines, each max. 125 participants
Short-circuit isolator:	integrated in detectors and modules
Line voltage:	30 V \pm 3%
Rated current:	max. 150 mA (addressable loop), max. 75 mA (stub line)
Short-circuit current:	max. 232 mA
Loop interface:	6-pin screw terminal
Loop and stub line lengths:	max. 3,500 m



Notice

The properties of the SecuriLine eXtended (e.g. 250 participants per loop) apply only when SecuriLine eXtended elements are used. Since most SecuriLine eXtended elements are backwards compatible, mixed operation with elements of SecuriLine is also possible; in this case, however, the performance features of the conventional SecuriLine apply to the loop.

4.4.3 Compatibility information

Connectable elements:	Automatic detectors: MCD573X, MCD573X-S, MCD573X-SCT, MCD 573X-SP, MCD 573X-SPCT, CCD 573X, detector base USB 501-x Manual call points: MCP 535X und MCP 545X Modules and interfaces: BX-AIM, BX-ESL, BX-FOL, BX-I2, BX-IM4, BX-IOM, BX-MDH, BX-MDI8, BX-O1, BX-O2I4, BX-OI3, BX-REL4, BX-RGW, BX-SOL, BX-SOL-CT, SDI81X, SDI82X XLM35
Recommended cable type for addressable loop:	J-Y(ST)Y 1 x 2 x 0.8 mm screened, twisted

4.5 EPI bus for external indication and control maps (X6)

The EPI bus is a data bus for connecting external indication and control panels. Up to 3 participants can be connected to the EPI bus and operated up to 1 m from the SF500.



4.5.1 EPI bus (X6) connection

Designation	Pin	Pin	Designation
GNDP	1	2	VP
EXTBUS+	3	4	EXTBUS-
+3V3	5	6	+3V3
GND	7	8	GND



4.5.2 Technical data

Electrical:	RS485
Range:	max. 1 m
Transmission type:	9.6 kBaud asynchronous, bidirectional, half-duplex
Mechanical design:	RJ-45 connector, 8-pin

4.6 B5-EPI-FPC-GS Swiss fire brigade panel

Via the [Extended Bus](#) (EPI-BUS) by means of a patch cable and an 8-pin RJ45 plug, the Swiss fire brigade panel can be connected to the integrated indication and control map B7-MIC11 of the SecuriFire 500.

Additional EPI devices can be connected to the second RJ45.

The B5-EPI-FPC-GS is mounted immediately next to a SecuriFire 500 control panel.

Via the hex coding switch you can set one of the three possible EPI-BUS addresses. For each MMI-BUS participant with an EPI-BUS interface, up to three EPI devices can be connected.

More information about the B5-EPI-FPC-GS can be found in the Technical Description T 811 118.



Fig. 23 B5-EPI-FPC-GS

4.6.1 Interfaces

EPI Port A "INCOMING"

EPI Port B "OUTGOING"

Designation	Terminal	Terminal	Designation
GNDP	1	2	VP
EXTBUS+	3	4	EXTBUS-
+3V3	5	6	+3V3
GNE	7	8	GND



Notice

From which side the EPI bus "INCOMING" or "OUTGOING" is connected is not relevant.

For purposes of clarity, however, we recommend continuing with one connection system once begun.

4.6.2 Technical data

Operating voltage:	3.3 V
Quiescent current:	2 mA
Data transmission:	EPI-BUS
Electrical:	RS485
Distance to the MIC main indication and control map:	max. 1 m
Protection type:	IP 30
Ambient temperature:	-5°C to +50°C
Dimensions:	170 x 138 x 48 mm (W x H x D)
Dimensions without map case:	85 x 70 x 20 mm (W x H x D)
Map case colour:	grey

4.6.3 Compatibility information

SecuriFire Studio from release 1.2

4.7 B5-EPI-ASP-GS alarm scrolling panel for the Netherlands

Via the [Extended Bus](#) (EPI-BUS) by means of a patch cable and an 8-pin RJ45 plug, the Dutch fire brigade panel can be connected to the integrated indication and control map B7-MIC11 of the SecuriFire 500.

Additional EPI devices can be connected to the second RJ45.

The B5-EPI-ASP-GS is mounted immediately next to a SecuriFire 500 control panel.

Via the hex coding switch you can set one of the three possible EPI-BUS addresses. For each MMI-BUS participant with an EPI-BUS interface, up to three EPI devices can be connected.

More information about the B5-EPI-ASP-GS can be found in the Technical Description T 811 090.



Fig. 24 B5-EPI-ASP-GS

4.7.1 Interfaces

EPI Port A “INCOMING”

EPI Port B “OUTGOING”

Designation	Terminal	Terminal	Designation
GNDP	1	2	VP
EXTBUS+	3	4	EXTBUS-
+3V3	5	6	+3V3
GNE	7	8	GND



Notice

From which side the EPI bus “INCOMING” or “OUTGOING” is connected is not relevant. For purposes of clarity, however, we recommend continuing with one connection system once begun.

4.7.2 Technical data

Operating voltage:	3.3 V
Quiescent current:	0 mA
Data transmission:	EPI bus
Electrical:	RS485
Distance to the MIC main indication and control map:	max. 1 m
Protection class:	IP30
Ambient temperature:	-5°C to +50°C
Dimensions:	170 x 138 x 48 mm (W x H x D)
Dimensions without map case:	85 x 70 x 20 mm (W x H x D)
Map case colour:	grey

4.7.3 Compatibility information

SecuriFire Studio

from release 1.2

4.8 B5-EPI-FPS-S fire brigade operating panel for Sweden

Via the [Extended Bus](#) (EPI-BUS) by means of a patch cable and an 8-pin RJ45 plug, the Swedish fire brigade panel can be connected to the integrated indication and control map B7-MIC11 of the SecuriFire 500.

Additional EPI devices can be connected to the second RJ45.

Via the hex coding switch you can set one of the three possible EPI-BUS addresses. For each MMI-BUS participant with an EPI-BUS interface, up to three EPI devices can be connected.

More information about the B5-EPI-FPS-S can be found in the Technical Description T 811 098.



Fig. 25 B5-EPI-FPS-S

4.8.1 Interfaces

EPI Port A "INCOMING"

EPI Port B "OUTGOING"

Designation	Terminal	Terminal	Designation
GNDP	1	2	VP
EXTBUS+	3	4	EXTBUS-
+3V3	5	6	+3V3
GNE	7	8	GND



Notice

From which side the EPI bus "INCOMING" or "OUTGOING" is connected is not relevant.

For purposes of clarity, however, we recommend continuing with one connection system once begun.

4.8.2 Technical data

Operating voltage:	3,3 V
Quiescent current:	11 mA
Data transmission:	EPI-BUS
Electrical:	RS485
Distance to the MIC main indication and control map:	max. 1 m
Protection class:	IP 30
Ambient temperature:	-5 °C bis +50 °C
Dimensions:	227 x 170 x 40 mm (W x H x D)
Dimensions without map case:	
Map case colour:	grey

4.8.3 Compatibility information

SecuriFire Studio

from release 1.2

4.8.4 Instructions for opening and mounting the B5-EPI-FPS-S

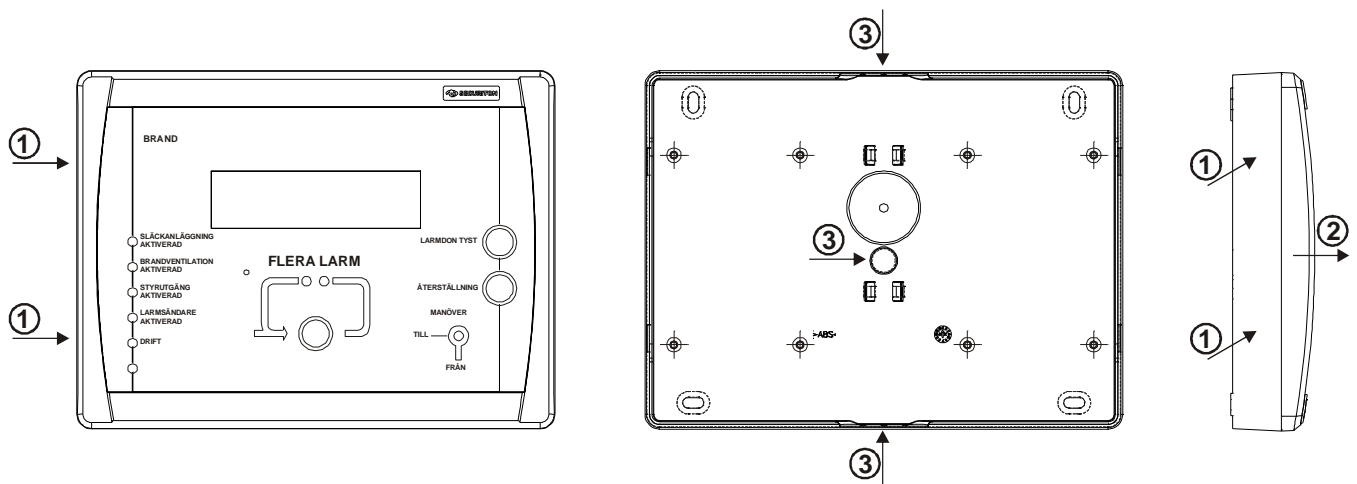


Fig. 26 Mounting B5-EPI-FPS-S

To detach the housing front from the housing rear, press the housing inwards on the right or left side **(1)**. Remove the housing front by pulling it upwards **(2)**. Using a tapered bit, drill the holes for the required cable inlets in the top, bottom or rear of the housing and attach the enclosed cable bushings **(3)**.

Insert the cables and screw the housing rear onto the mounting surface (four screws and dowels included in the scope of supply). The two recesses for cable ties in the housing rear can be used for strain relief. Connect the wires on the terminal block and set the EPI bus address. Position the housing front on the housing rear and push in until it snaps into place.

4.9 B5-EPI-PCM partial indication and control map

Via the [Extended Bus](#) (EPI-BUS) by means of a patch cable and an 8-pin RJ45 plug, the partial indication and control map can be connected to the integrated indication and control map B7-MIC11 of the SecuriFire 500.

Additional EPI devices can be connected to the second RJ45.

The B5-EPI-PCM is mounted immediately next to a SecuriFire 500 control panel.

Via the hex coding switch you can set one of the three possible EPI-BUS addresses. For each MMI-BUS participant with an EPI-BUS interface, up to three EPI devices can be connected.

More information about the B5-EPI-PCM can be found in the Technical Description T 811 085.



Fig. 27 B5-EPI-PCM

4.9.1 Interfaces

EPI Port A “INCOMING”

EPI Port B “OUTGOING”

Designation	Terminal	Terminal	Designation
GNDP	1	2	VP
EXTBUS+	3	4	EXTBUS-
+3V3	5	6	+3V3
GNE	7	8	GND



Notice

From which side the EPI bus “INCOMING” or “OUTGOING” is connected is not relevant.

For purposes of clarity, however, we recommend continuing with one connection system once begun.

4.9.2 Technical data

Operating voltage:	3.3 V
Quiescent current:	5 mA
Data transmission:	EPI bus
Electrical:	RS485
Distance to the MIC main indication and control map:	max. 1 m
Protection class:	IP30
Ambient temperature:	-5°C to +50°C
Dimensions:	170 x 138 x 48 mm (W x H x D)
Dimensions without map case:	85 x 70 x 20 mm (W x H x D)
Map case colour:	grey

4.9.3 Compatibility information

SecuriFire Studio

from release 1.2

4.10 B5-EPI-PIM partial indication map

Via the [Extended Bus](#) (EPI-BUS) by means of a patch cable and an 8-pin RJ45 plug, the partial indication map can be connected to the integrated indication and control map B7-MIC11 of the SecuriFire 500.

Additional EPI devices can be connected to the second RJ45. The B5-EPI-PIM is mounted immediately next to a SecuriFire 500 control panel.

Via the hex coding switch you can set one of the three possible EPI-BUS addresses. For each MMI-BUS participant with an EPI-BUS interface, up to three EPI devices can be connected.

More information about the B5-EPI-PCM can be found in the Technical Description T 811 084.



Fig. 28 B5-EPI-PIM

4.10.1 Interfaces

EPI Port A “INCOMING”

EPI Port B “OUTGOING”

Designation	Terminal	Terminal	Designation
GNDP	1	2	VP
EXTBUS+	3	4	EXTBUS-
+3V3	5	6	+3V3
GNE	7	8	GND



Notice

From which side the EPI bus “INCOMING” or “OUTGOING” is connected is not relevant. For purposes of clarity, however, we recommend continuing with one connection system once begun.

4.10.2 Technical data

Operating voltage:	3,3 V
Quiescent current:	5 mA
Data transmission:	EPI-BUS
Electrical:	RS485
Distance to the MIC main indication and control map:	max. 1 m
Protection class:	IP 30
Ambient temperature:	-5 °C to +50 °C
Dimensions:	170 x 138 x 48 mm (W x H x D)
Dimensions without map case:	85 x 70 x 20 mm (W x H x D)
Map case colour:	grey

4.10.3 Compatibility information

SecuriFire Studio

from release 1.2

4.11 B5-EPI-FAT fire brigade indicator board

Via the [Extended Bus](#) (EPI-BUS) by means of a patch cable and an 8-pin RJ45 plug, the fire brigade indicator board can be connected to the integrated indication and control map B7-MIC11 of the SecuriFire 500.

Additional EPI devices can be connected to the second RJ45.

Via the hex coding switch you can set one of the three possible EPI-BUS addresses. For each MMI-BUS participant with an EPI-BUS interface, up to three EPI devices can be connected.

More information about the B5-EPI-FAT can be found in the Technical Description T 811 078.



Fig. 29 B5-EPI-FAT

4.11.1 Interfaces

EPI Port A "INCOMING"

EPI Port B "OUTGOING"

Designation	Terminal	Terminal	Designation
GNDP	1	2	VP
EXTBUS+	3	4	EXTBUS-
+3V3	5	6	+3V3
GNE	7	8	GND



Notice

From which side the EPI bus "INCOMING" or "OUTGOING" is connected is not relevant.

For purposes of clarity, however, we recommend continuing with one connection system once begun.

4.11.2 Technical data

Operating voltage:	3,3 V
Quiescent current:	12 mA
Data transmission:	EPI-BUS
Electrical:	RS485
Distance to the MIC main indication and control map:	max. 1 m
Protection class:	IP 30
Ambient temperature:	-5 °C to +50 °C
Dimensions:	185 x 255 x 65 mm (W x H x D)
Dimensions without map case:	
Map case colour:	grey RAL 7032

4.11.3 Compatibility information

SecuriFire Studio

from release 1.2

4.12 B5-EPI-FPD fire brigade control panel

Via the [Extended Bus](#) (EPI-BUS) by means of a patch cable and an 8-pin RJ45 plug, the fire brigade control panel can be connected to the integrated indication and control map B7-MIC11 of the SecuriFire 500.

Additional EPI devices can be connected to the second RJ45.

Via the hex coding switch you can set one of the three possible EPI-BUS addresses. For each MMI-BUS participant with an EPI-BUS interface, up to three EPI devices can be connected.

More information about the B5-EPI-FPD can be found in the Technical Description T 811 077.



Fig. 30 B5-EPI-FPD

4.12.1 Interfaces

EPI Port A “INCOMING”

EPI Port B “OUTGOING”

Designation	Terminal	Terminal	Designation
GNDP	1	2	VP
EXTBUS+	3	4	EXTBUS-
+3V3	5	6	+3V3
GNE	7	8	GND



Notice

From which side the EPI bus “INCOMING” or “OUTGOING” is connected is not relevant. For purposes of clarity, however, we recommend continuing with one connection system once begun.

4.12.2 Technical data

Operating voltage:	3,3 V
Quiescent current:	6 mA
Data transmission:	EPI-BUS
Electrical:	RS485
Distance to the MIC main indication and control map:	max. 1 m
Protection class:	IP 30
Ambient temperature:	-5 °C to +50 °C
Dimensions:	185 x 255 x 65 mm (W x H x D)
Dimensions without map case:	
Map case colour:	grey RAL 7032

4.12.3 Compatibility information

SecuriFire Studio from release 1.2

5 SecuriLine eXtended

5.1 General

Safe operation of the SecuriLine eXtended (both loop and stub) is subject to the following conditions:

- No participants must fail in the event of wire breakage in the SecuriLine eXtended.
- The maximum voltage drop over the line (at maximum power consumption on the participants) may only be so great that the remaining loop voltage on the input of each participant is higher than its minimum supply voltage. This also applies to a wire breakage at any point in the loop.
- The maximum line resistance may only be so great that the short circuit current threshold is also reached in the most unfavourable circumstances in the event of a short circuit, thus ensuring that a correct short circuit isolation is carried out.
- The maximum possible number of sirens that can be simultaneously actuated (depending on the setting) must be taken into account in all cases.
- Each SecuriLine eXtended loop/stub must be operated in the correct mode (DAI/LRX/HPX) depending on the planned elements.

DAI mode (max. 128 detectors, max. 2000 m)

The backwards-compatible DAI mode is active when at least one of the following conditions is met:

- Use of a DAI board/unit (B3-DAI2, B4-DAI2)
- There is at least one device (detector/module) on the addressable loop that is not compatible with SecuriLine eXtended
- The "Backward Mode SecuriLine eXtended participant" option is set in SecuriFire Studio

In this mode, the features of the conventional SecuriLine apply (max. 128 detectors, max. 2000 m).

LRX mode (max. 250 detectors, max. 3500 m)

This mode of operation is only possible on DXI units and only with SecuriLine eXtended detectors/modules, and is designed for using a maximum of 250 detectors (or the equivalent number of modules) on loops of up to 3500 metres in length. Due to the higher detector equivalent of modules (compared to detectors), the number of module connections is limited.

HPX mode (max. 250 detectors, max. 1500 m)

This mode of operation is only possible on DXI units and only with SecuriLine eXtended detectors/modules, and is designed for providing the maximum operating current of 170 mA for consumers on loops of up to 1500 metres in length. HPX mode is not configured. Instead, it is activated automatically when the maximum detector equivalence in LRX mode is exceeded.

Detector equivalence

The detector equivalence MeQ or MeQ-X must be taken into account. Due to their physical properties (input impedance, power consumption), output modules and sirens must be calculated as a multiple of a detector. For example, the connection of a module with a MeQ = 4 is equated to four detectors. The detector equivalence MeQ is used for short loops (up to 1500 m) and in DAI mode. The detector equivalence MeQ-X is used for long loops (up to 3500 m). Under no circumstances must the total number of modules, sirens and detectors calculated using MeQ or MeQ-X exceed the permissible number of participants on the loop.

Alarm current pool

The value for the maximum alarm current which is adopted in the control panel is defined here. This alarm current is reserved in the control panel for activation of the detector LED and parallel indicator outputs. The control panel adds the necessary current when the detector LED or parallel indicator output is triggered. If the set alarm current is reached here, then no other detector LEDs or parallel indicators are activated.

Operating current

In order to guarantee the loop function in all possible (and permissible) operating states of the participants, the operating current of the installed participants must not exceed the following thresholds. The maximum operating current is calculated from the total power consumption for communication, the alarm current pool, the quiescent participant current, the active participant current for actuating the sirens and audible indicators, and the charging current for I/O modules.

Max. operating current:

LRX/HPX mode	DAI mode
170 mA in loop operation	90 mA in loop operation
140 mA in loop operation with output boards (charging capacitor)	60 mA in loop operation with output boards (charging capacitor)
85 mA in stub operation	45 mA in stub operation
70 mA in stub operation with output boards (charging capacitor)	30 mA in stub operation with output boards (charging capacitor)

5.2 Max. number of participants per line interface and mode of operation

HW type	B7-DXI2, B6-DXI2, B6-DXI2, B6-LXI2, B5-DXI2						B4-DAI2, B3-DAI2	
	DXI-mode			DAI-mode				
	Loop LRX (<3500m)	Loop HPX (<1500m)	Stub	Loop	Stub	Loop	Stub	
Max. number of participants	250	250	64	128	64	128	64	
BX-FOL	32	44	21	32	16	18	16	
BX-SOL Low/High	32/16	62/32	32/15	32/16	16/8	28/13	16/8	
BX-AIM (Opt./Input)	25 (10/10)	50 (19/16)	25 (9/9)	25 (10/9)	12 (4/4)	25 (7/7)	12 (5/5)	
XLM35	32	62	32	32	16	32	16	
BX-IM4								
BX-REL4								
BX-OI3								
BX-I2								
BX-O1								
BX-IOM								
BX-ESL								
BX-O2I4								
BX-MDH								
BX-MDI8								
BX-RGW	8	8	4	4	2	4	2	
MCD573X-S/CT (Siren)	Sirens activatable simultaneously							
High 92dB(A) / Mid 81dB(A) / Low 69dB(A)	23/40/78	23/40/78	23/40/64	10/18/36	10/18/36	10/18/36	10/18/36	
MCD573X-SP/CT (Speech)	Text messages activatable simultaneously							
	23	23	23	10	10	10	10	
MCD573X	250	230	64	128	64	128	64	
CCD573X	230	230	64	128	64	128	64	
BA-FOL	not compatible			23	16	10	10	
BA-SOL Low/High				32/16	16/8	29/14	16/8	
BA-AIM (Opt.)				20/10	12/5	20/8	12/5	
BA-IM4				32	16	32	16	
BA-REL4								
BA-OI3								
BA-IOM								
BA-RGW				4	2	4	2	
MCD573				128	64	128	64	

5.3 Connection of SecuriLine eXtended modules



Notice

- All modules and detectors of the X-LINE are fully symmetrical with respect to the input circuit and short-circuit isolators. When wiring, it is therefore unimportant from which side of the ring “INCOMING” and “OUTGOING” are connected. For purposes of clarity, however, we recommend retaining and continuing with a wiring system once begun.
- Mixing SecuriLine and X-LINE participants is possible, but X-LINE functions such as fast startup, self-sufficient short-circuit detection and high numbers of participants cannot be used.

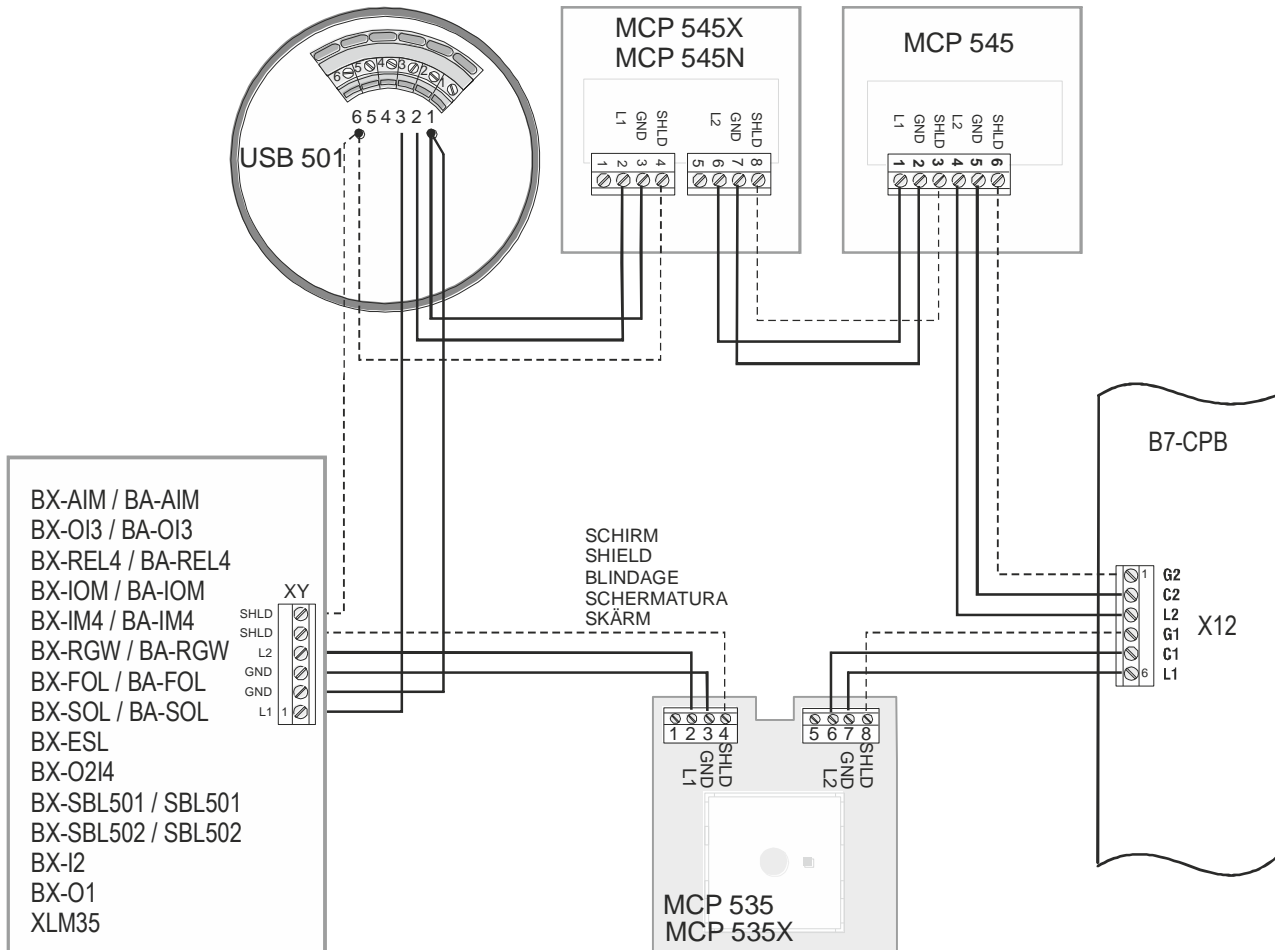


Fig. 31 SecuriLine eXtended connection

5.3.1 Stub line connection



Notice

According to EN 54, a maximum of 32 detectors (total of automatic + manual detectors) are permitted to be installed on one stub line.

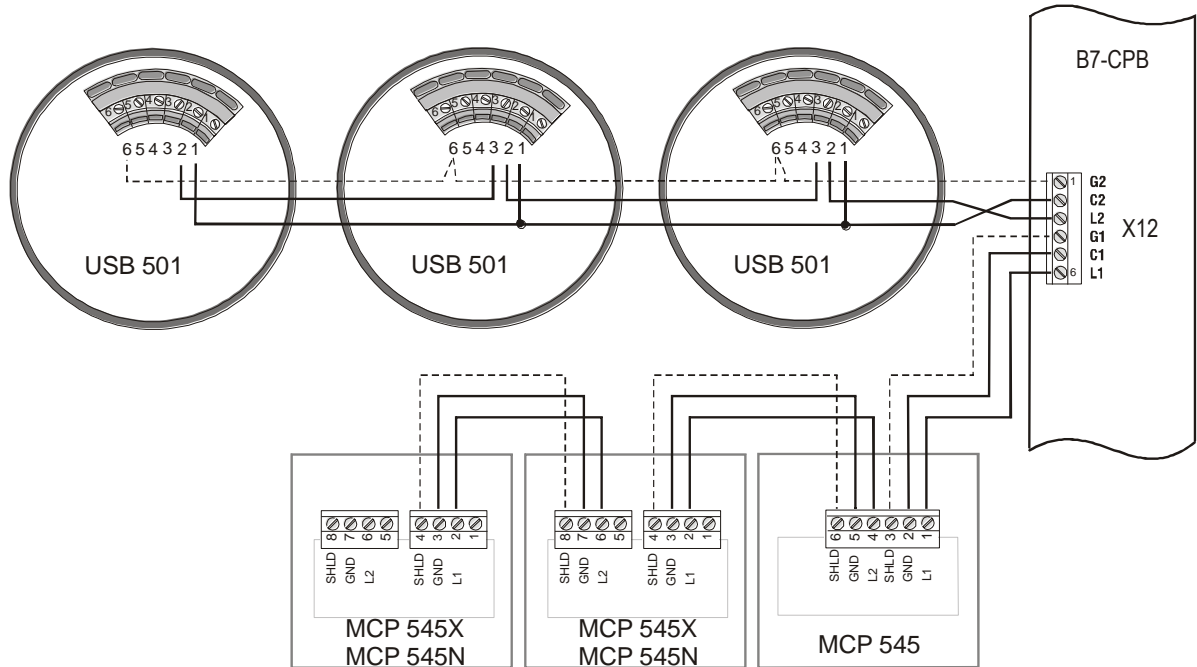


Fig. 32 Stub line connection

5.3.2 Connecting detector base USB 501

The MCD 573X(-x) / CCD573X automatic detectors can be used in the standard USB 501 detector base (and in its variants). Further, a RAL720X repeat signal or a BX-API base siren can be connected as required to any USB 501.

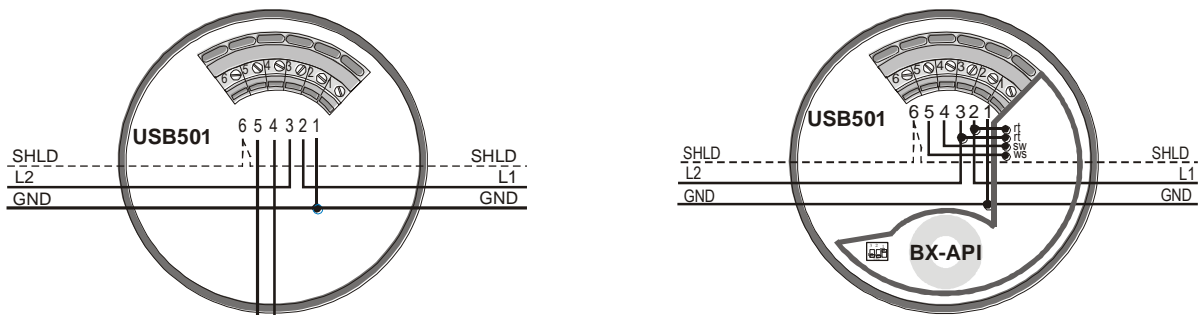


Fig. 34 BX-API connection

Fig. 33 USB 501 connection

5.3.3 Connection of MCP 535x and MCP 545x manual call points

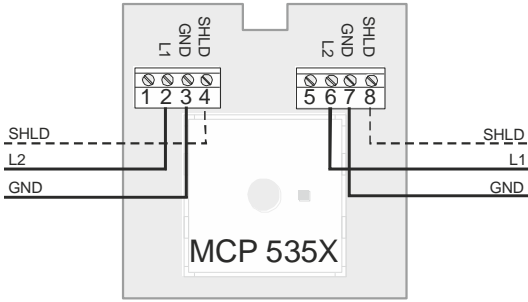


Fig. 35 MCP 535x connection

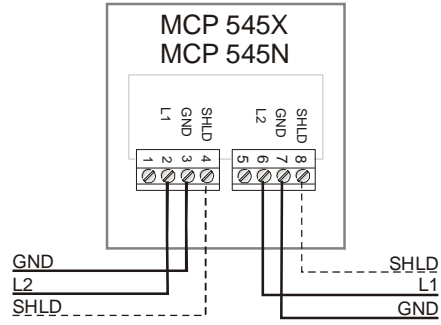


Fig. 36 MCP 545x connection

5.3.4 Connection of BX-AIM advanced input module

The BX-AIM advanced input module can be used as monitored input for polling potential-free contacts or as detection zone for connecting collective detectors. Among other things, it can be used to connect intrinsically safe detectors (Ex-i) with intermediate switching of a Zener barrier. An output for a repeat signal is also available.

More information about the BX-AIM can be found in the data sheet T 811 100.

Collective detector and monitored input

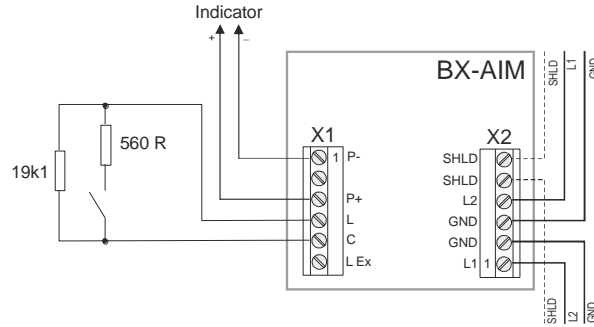


Fig. 37 BX-AIM, collective detector and monitored input

MMD130 Ex-i in Ex area

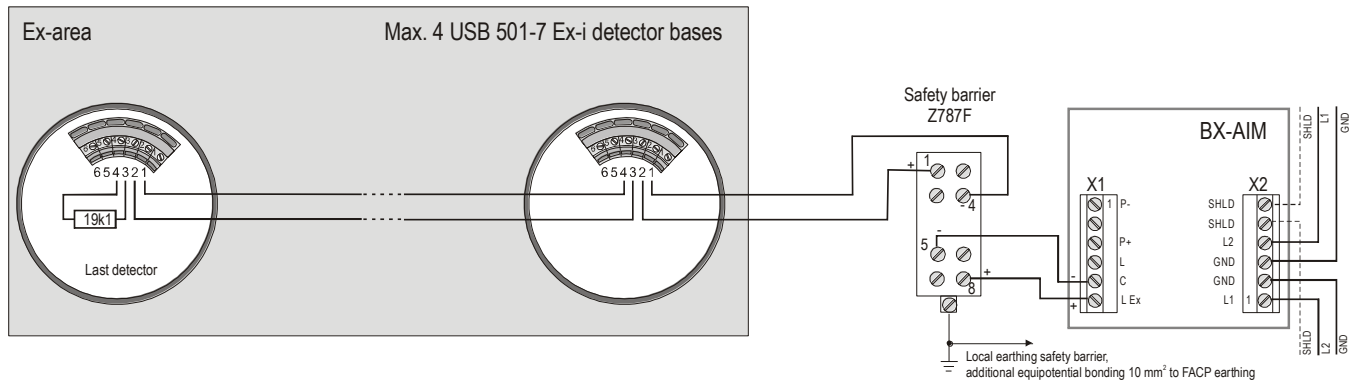


Fig. 38 BX-AIM, MMD130 Ex-i in Ex area

5.3.5 BX-OI3 output/input module connection

The BX-OI3 output/input module can be used either as I/O module (1x relay output, 2x monitored input, 1x opto-isolator input) or as detector/detection zone for connecting special detectors.

Further information about the BX-OI3 can be found in the data sheet T 811 128.

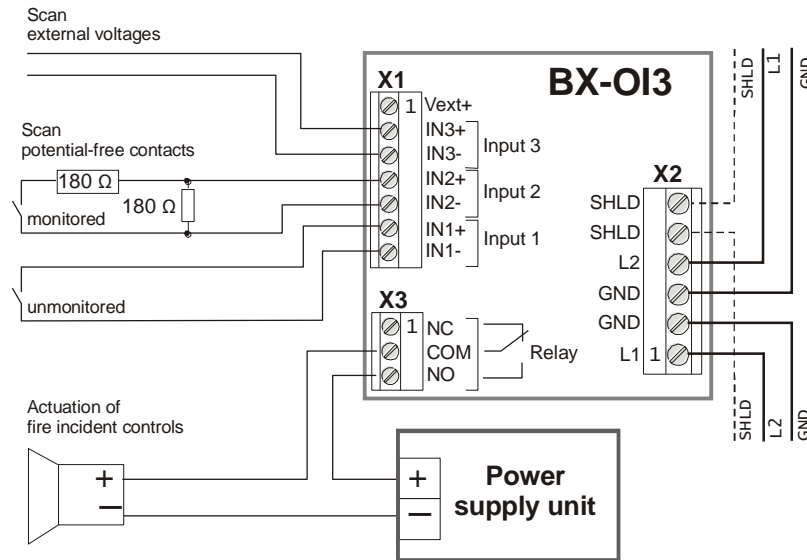


Fig. 39 BX-OI3, input/output module connection

Connection of special detectors

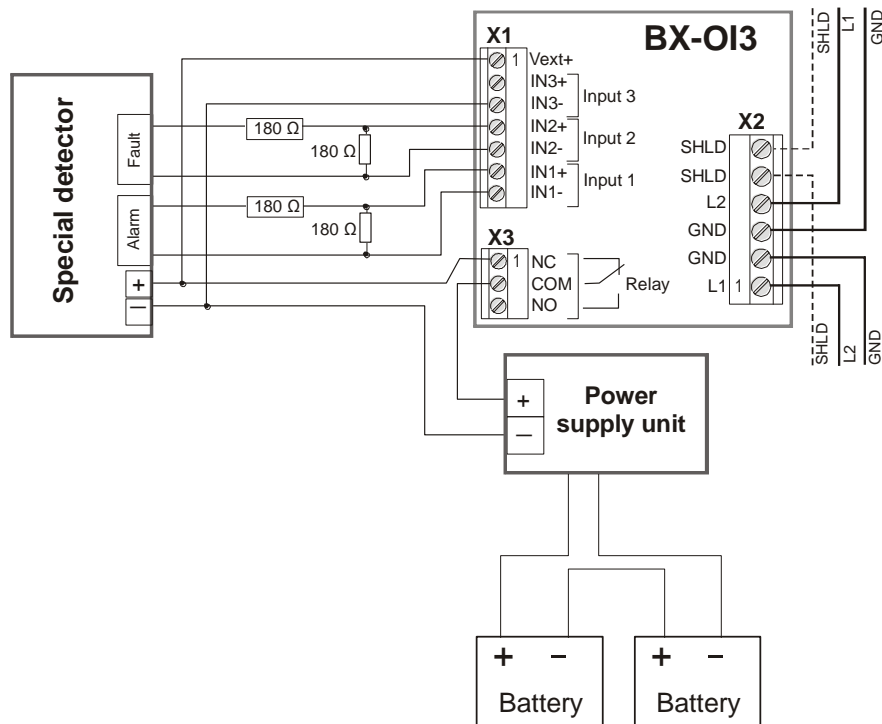


Fig. 40 BX-OI3, connection of special detectors

5.3.6 BX-I2 input module connection

The BX-I2 input module can be used either for scanning potential-free contacts or as detector/detection zone for connecting special detectors.

More information about the BX-I2 can be found in the data sheet T 811 069.

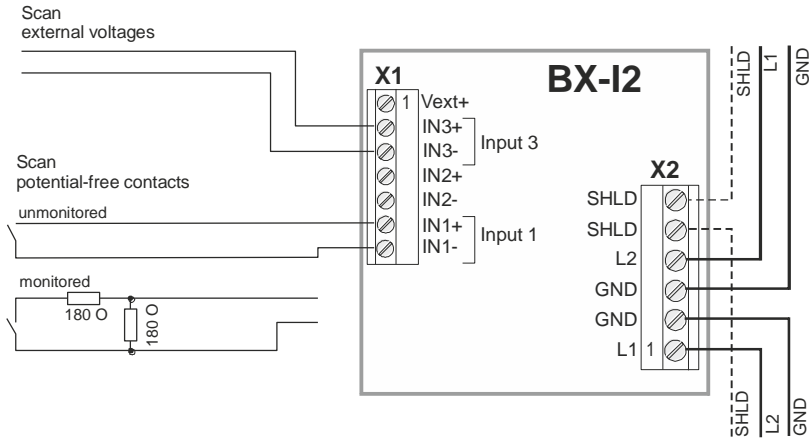


Fig. 41 BX-I2, input module connection

Connection of special detectors

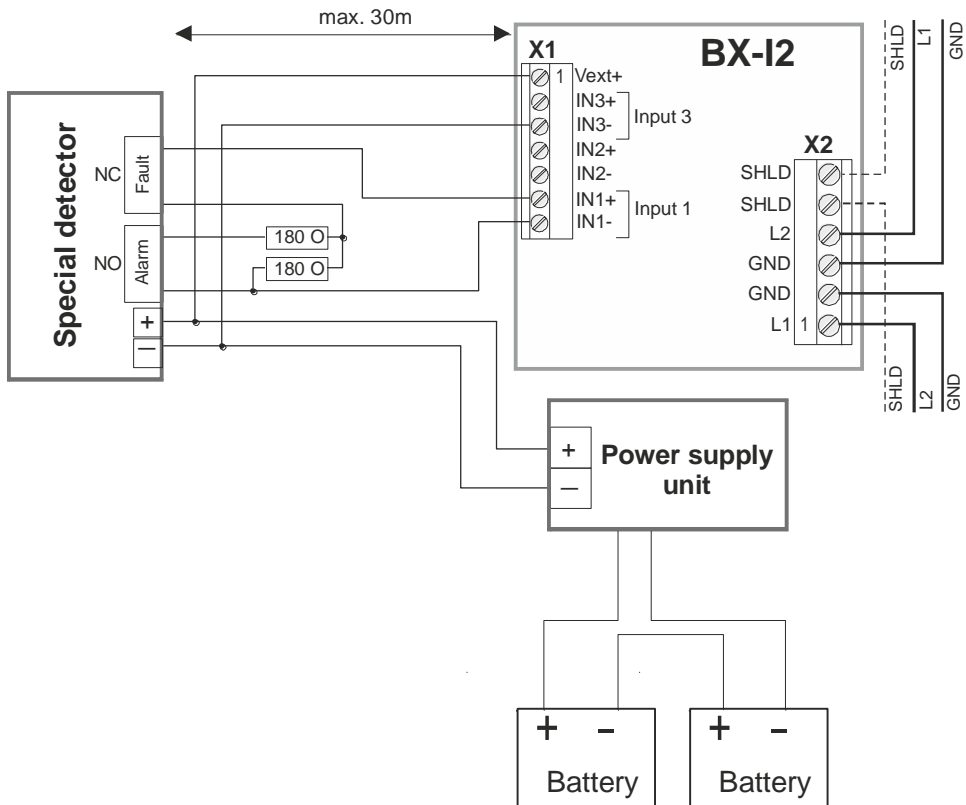


Fig. 42 BX-OI3, Connection of special detectors

5.3.7 BX-O1 output module connection

The BX-O1 output module (1x relay output) can be used for driving loads up to 230V and 2A
 More information about the BX-O1 can be found in the data sheet T 811 068.

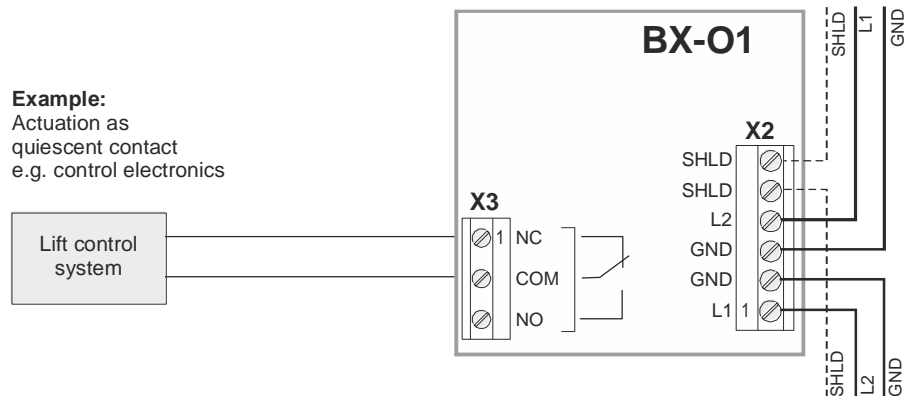


Fig. 43 BX-O1, output module connection

5.3.8 BX-O2I4 output / input module connection

The BX-O2I4 output/input module can be used either as an O/I module (2 relay outputs, 4 monitored inputs / unmonitored inputs) or as a fire incident control module.

Further information about the BX-O2I4 can be found in the data sheet T 811 030.

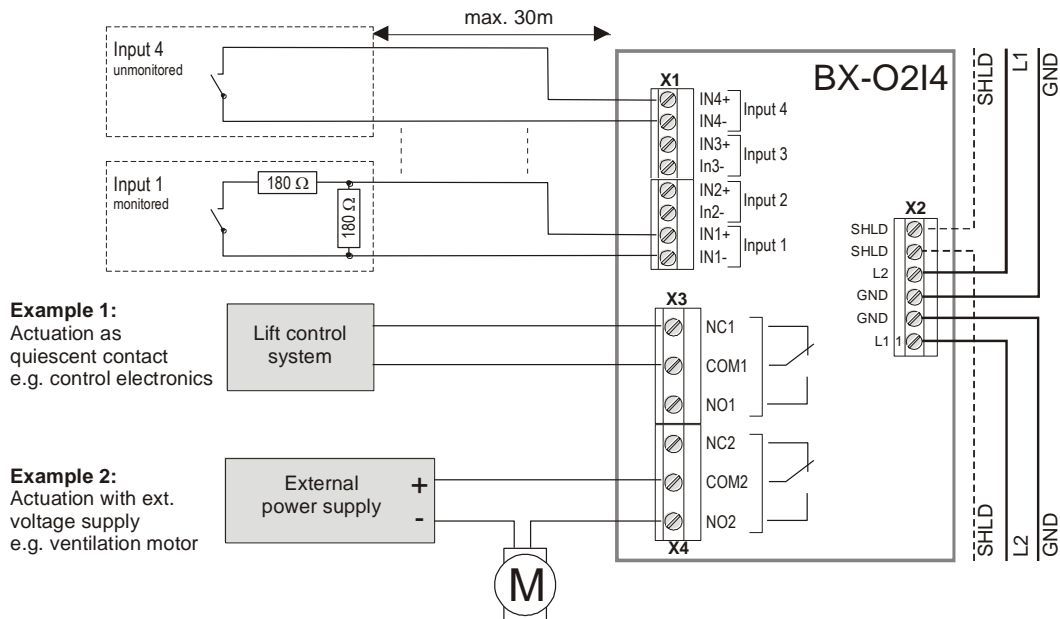


Fig. 44 BX-O2I4, output/input module connection

5.3.9 BX-REL4 relay module connection

There are four potential-free relay outputs available for switching loads up to 2 A and up to 230 V. All relays are bistable changeover contacts and each one has a screw terminal for the normally closed contact and normally open contact. For each output an “Active in Fail-Safe-Position” can be programmed in the event of loop voltage failure.

Further information about the BX-REL4 can be found in data sheet T 811 121.

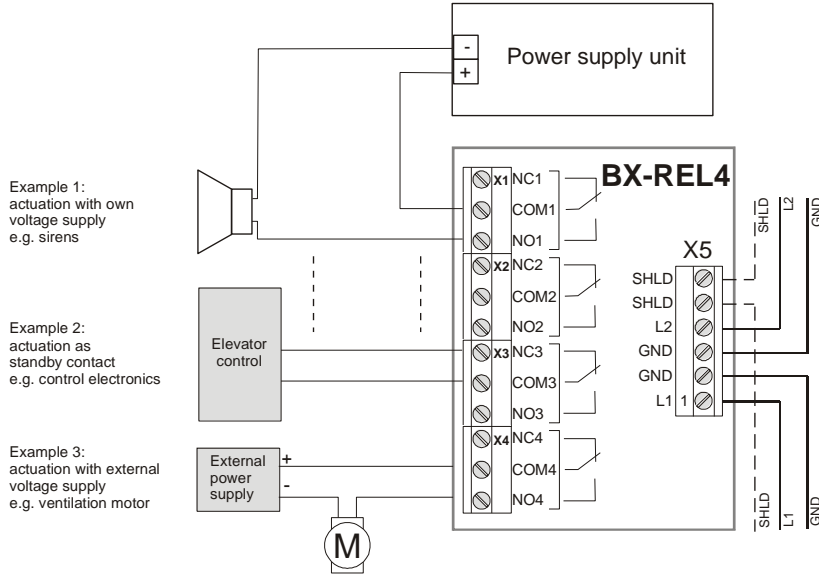


Fig. 45 BX-REL4, relay module connection

5.3.10 BX-IOM input/output module connection

The BX-IOM has a galvanically isolated output for actuating monitored consumers (e.g. sirens) which are supplied by external voltage sources. The input can be used to poll potential-bound voltage sources. The monitored output is divided into three load ranges and can actuate and monitor a load between 20 Ω and 1 kΩ.

Further information about the BX-IOM can be found in the data sheet T 811 125.

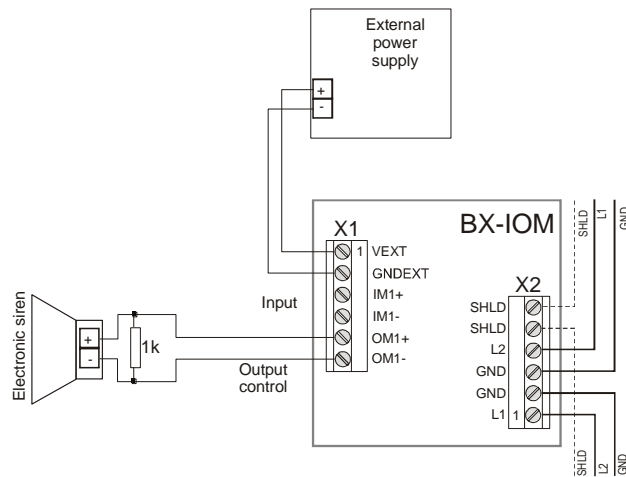


Fig. 46 BX-IOM, consumer with external voltage monitoring

5.3.11 BX-IM4 input module connection

The BX-IM4 has 4 primary inputs for scanning potential-free contacts. These inputs monitor the lines for creeping wire breakage and short-circuit. The “monitored” or “unmonitored” operation mode is separately planned for each input; further, each input can be programmed inverted.

Further information about the BX-IM4 can be found in the data sheet T 811 126.

Monitored inputs

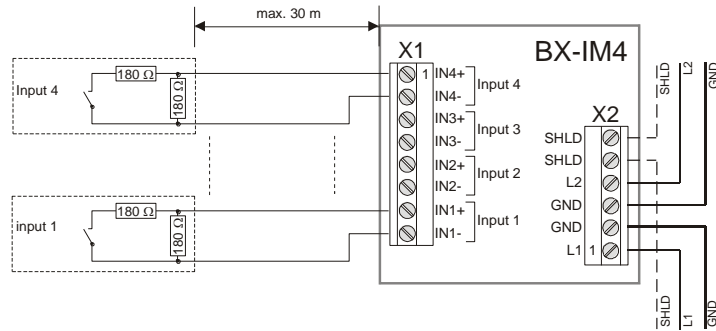


Fig. 47 BX-IM4 input module connection, monitored inputs

Unmonitored inputs

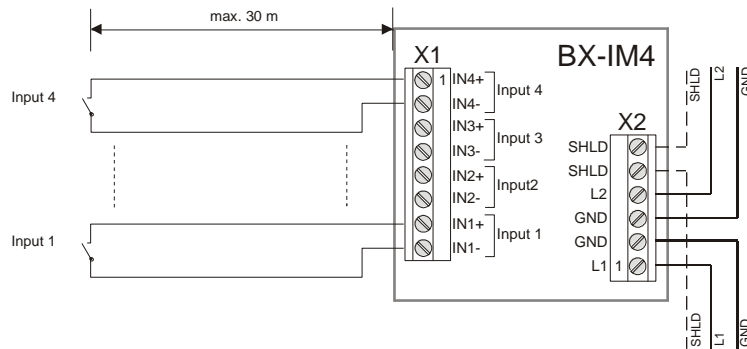


Fig. 48 BX-IM4 input module connection, unmonitored inputs

5.3.12 BX-RGW radio module connection

The BX-RGW serves to link radio detectors to the fire alarm control panel.

Notice

Before the batteries are placed in the BX-RGW, DOW 1171 and SMF6120, please note the relevant information in the radio module technical description T 811 120.

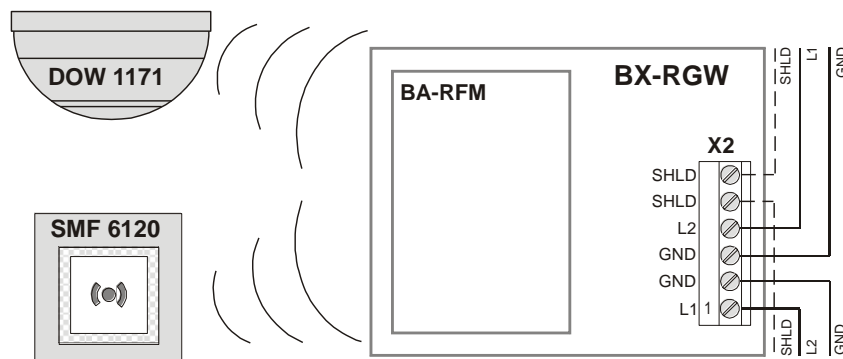


Fig. 49 BX-RGW, radio module connection

5.3.13 Connection of the BX-SOL loop siren

Further information about connecting and adjusting the BX-SOL loop siren can be found in the data sheet T 800 999.

Beginning with SecuriFire Studio R 1.1, the sound volume can be individually adjusted per loop siren using software.

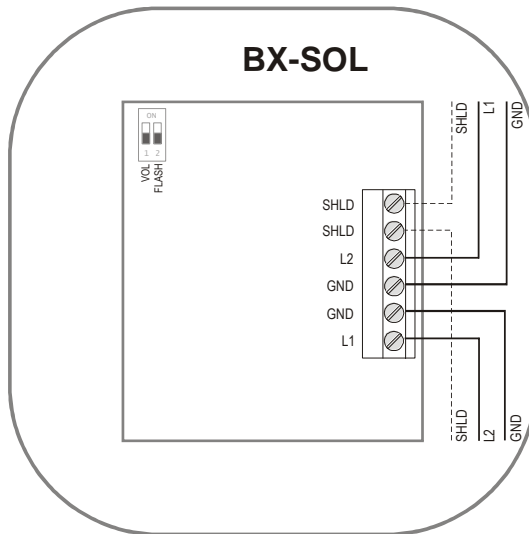


Fig. 50 BX-SOL, loop siren connection



Notice

The settings of the DIP switches are not relevant in the SecuriLine eXtended mode.

5.3.14 Loop flashlight BX-FOL connection

Further information about connecting and adjusting the BX-FOL flash on loop can be found in the data sheet T 811 029.

Beginning with SecuriFire Studio R 1.1, the flash frequency can be individually adjusted per loop flashlight using software.

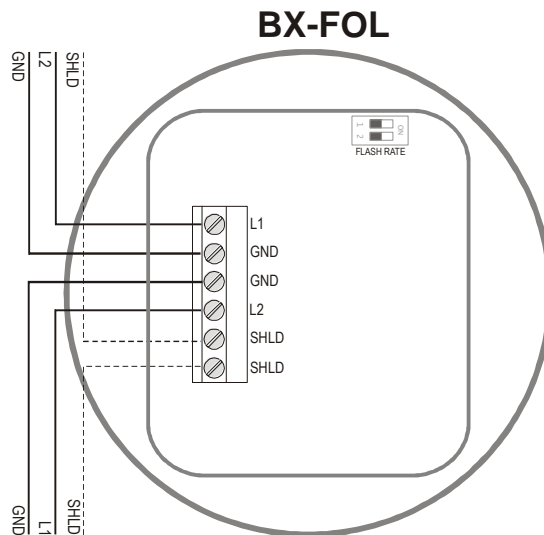


Fig. 51 BX-FOL, loop flashlight connection



Notice

The settings of the DIP switches are not relevant in the SecuriLine eXtended mode.

5.3.15 Connection of end switch module eXtended Line BX-ESL

The BX-ESL uses an internal light barrier to determine the position of the activation pin. The state active/passive is reported to the FAS and indicated on the BX-ESL by means of a LED.

Further information about the BX-ESL can be found in the data sheet T 811 124.

The BX-ESL is built into a plastic switch housing. The cables are conveyed through the PG screw-junction pieces. The connection to the SecuriLine eXtended is via the X1-X4 screw terminals.

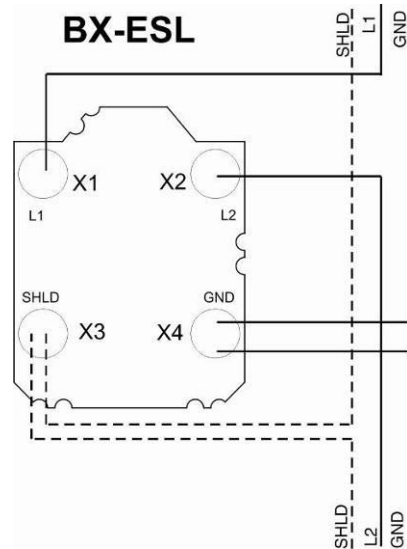


Fig. 52 BX-ESL, connection

5.3.16 Connection for SDI81X / SDI82X addressing module

The SDI8X has three inputs, an output, and can be used for connecting fire detectors without integrated addressing or for polling contacts. The output is for actuation of low-power consumers (e.g. LED, RAL).

Further information about the SDI81X is available in data sheet T 140 038 and about the SDI82X in data sheet T 140 039.

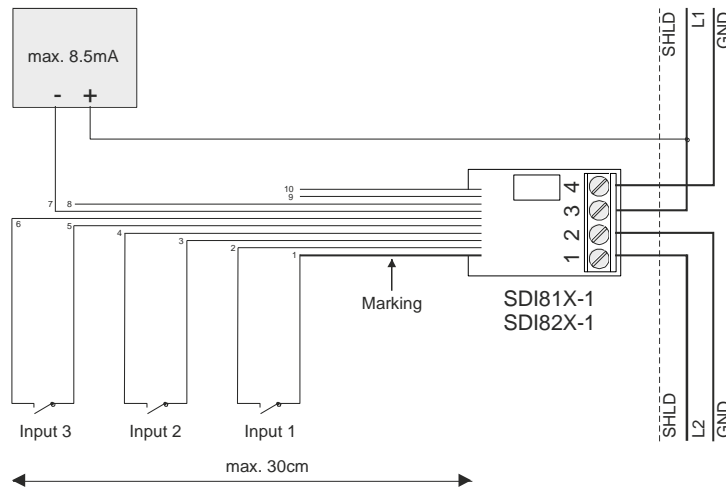


Fig. 53 SDI81X / SDI82X, addressing module connection

5.3.17 Connection for BX-MDH door holding magnet

The BX-MDH keeps fire protection doors open in the normal state and closes them in the event of an alarm. To operate, the module requires an internal battery but no external power supply.

More information about the BX-MDH can be found in the data sheet T 811 142.

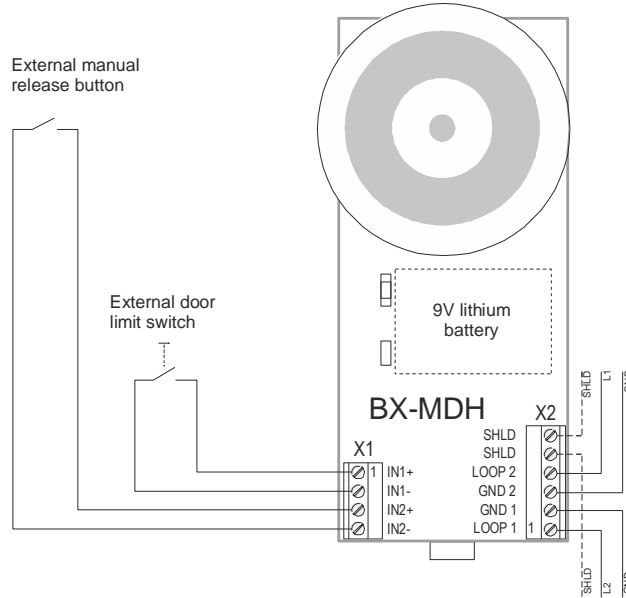


Fig. 54 BX-MDH, door holding magnet connection

5.3.18 Connection for BX-MDI8 input module

The BX-MDI8 has 8 monitored inputs for connecting detection zones or for polling potential-free contacts. The module requires a redundant, external power supply for operation.

More information about the BX-MDI8 can be found in the data sheet T 811 143.

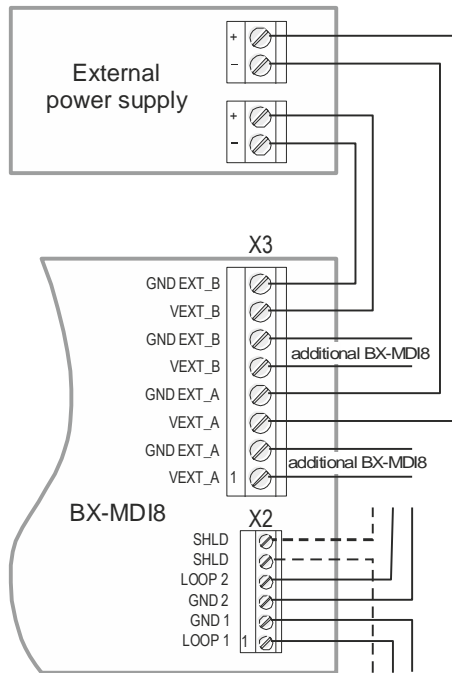


Fig. 55 BX-MDI8, input module connection

Connecting the detector series 521 / 523 / 563 and MCP 521 / 525

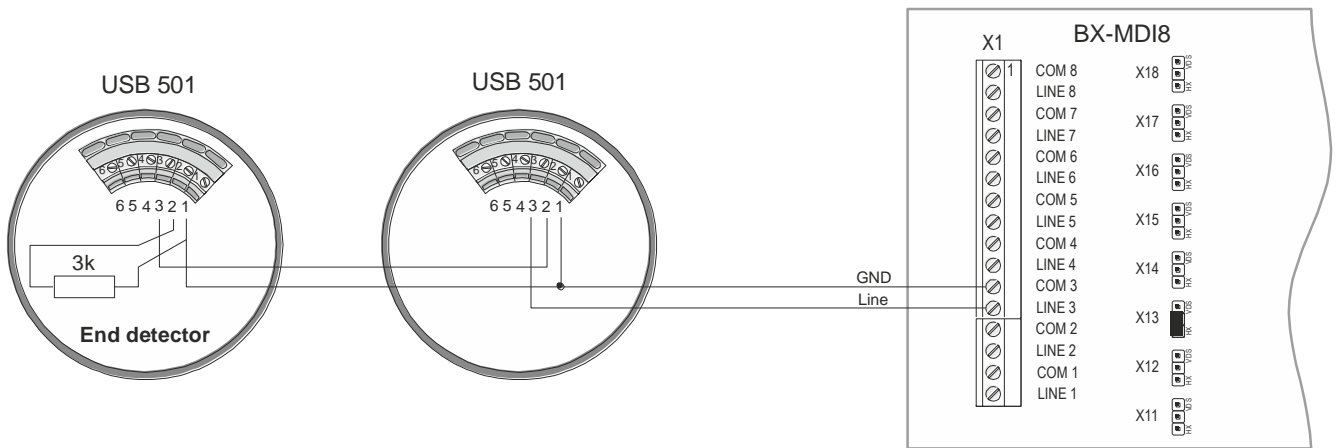
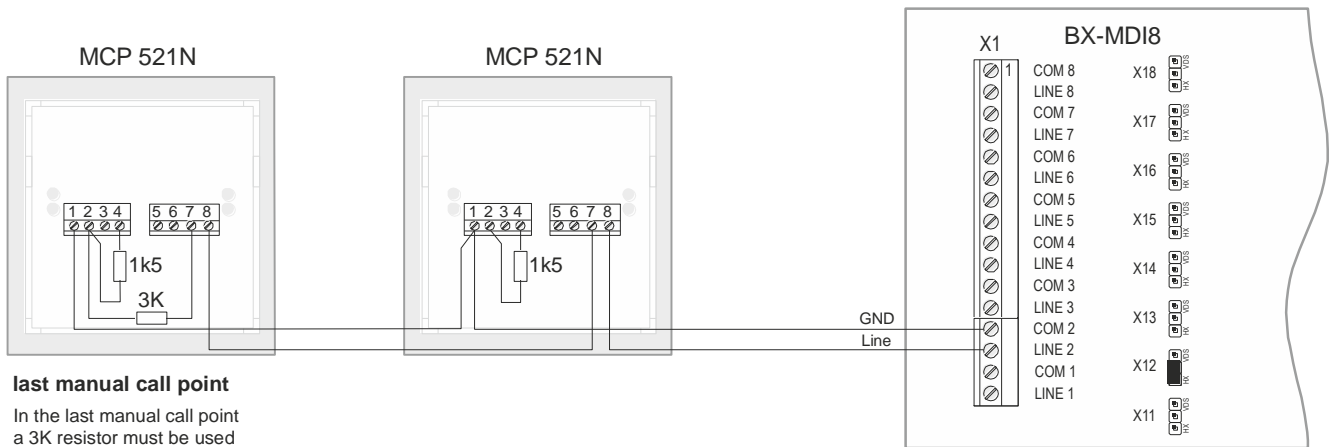
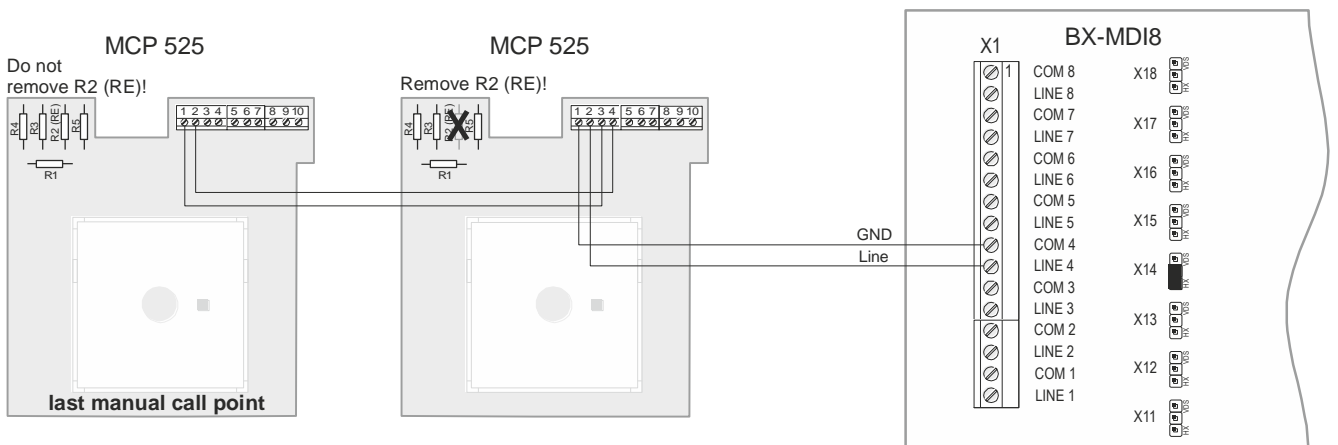


Fig. 56 BX-MDI8, connecting detector base USB 501



last manual call point
 In the last manual call point
 a 3K resistor must be used


Fig. 57 BX-MDI8, connecting MCP 521N manual call points



Do not remove R2 (RE)!
last manual call point

Fig. 58 BX-MDI8, Connecting MCP 525 manual call points

Connecting the detector series MMD130 Ex-i with direct current isolating transformer GTW 01

 **Notice**
This connection does **NOT** fulfil the requirements of VdS Directive 2489.

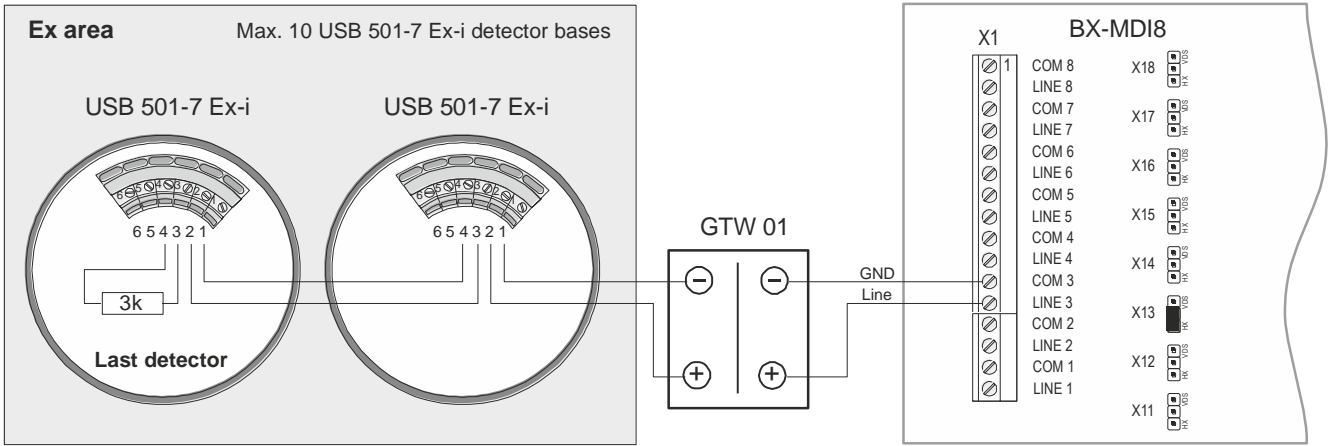



Fig. 59 BX-MDI8, connecting detector base USB501-7 Ex-i with direct current isolating transformer GTW 01

Connecting the detector base 143 Ex-i with direct current isolating transformer GTW 01

 **Notice**
This connection does **NOT** fulfil the requirements of VdS Directive 2489.

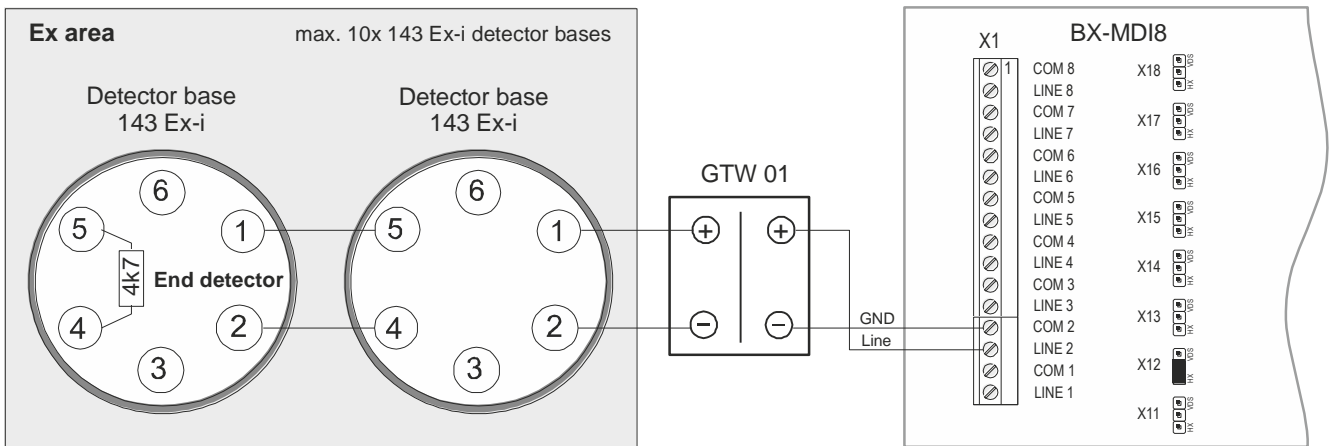


Fig. 60 BX-MDI8, connecting the detector base 143 Ex-i with direct current isolating transformer GTW 01

Connecting surveyed inputs

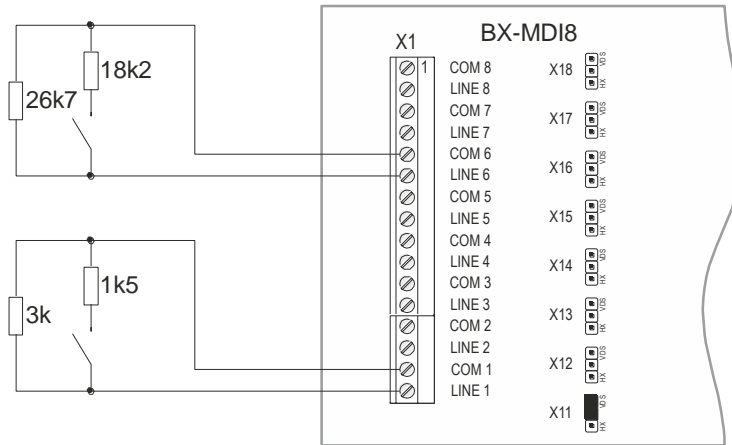


Fig. 61 BX-MDI8, connecting surveyed input 26K7 / surveyed input 3K

Connecting extinguishing systems

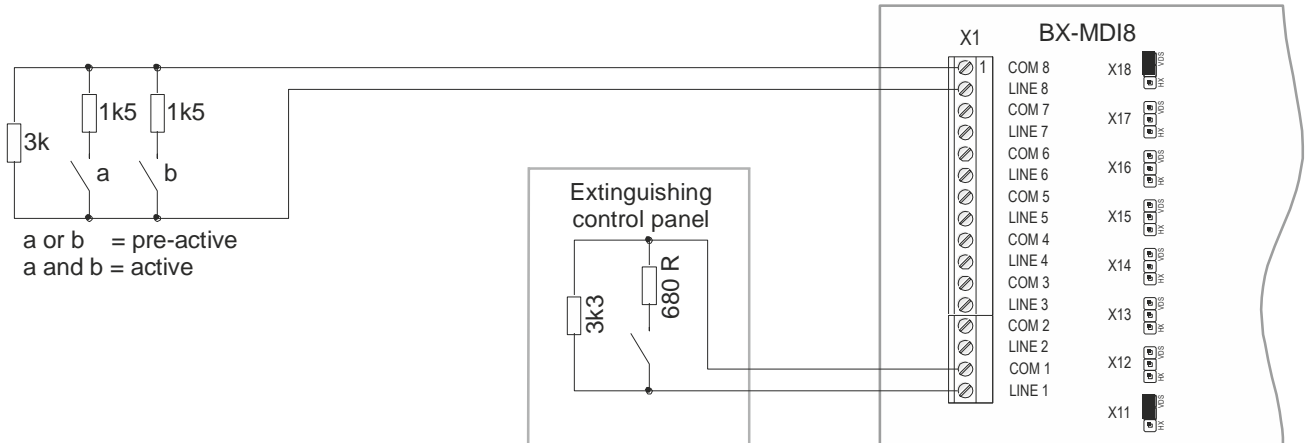


Fig. 62 BX-MDI8, valve monitoring / Extinguishing input in accordance with VdS

5.3.19 Recommended cable type for addressable loop

- Twisted pair (minimum number of twists = 17 / m)
- Braided screen or foil shielding with wire shielding
- ≥ 1 wire pair
- Diameter: 0.8 mm (standard)
- Capacity: Wire/wire < 100 pF/m

6 Programming and software



Fig. 63 SecuriFire Studio

The SecuriFire 500 is a modern microprocessor-controlled system equipped with a multitasking-capable, real-time operating system. A basic function program is loaded into the system which is then adjusted to the object to be protected by means of customer-specific programming while taking into account relevant applicable standards.

All necessary software and system components are available as a "SecuriFire Studio" software package which contains planning, commissioning, maintenance and diagnostics for control units of the SecuriFire 500 system.

Information about programming, please refer to the SecuriFire Studio manual T811093.



Notice

It is always recommended to use the most recent SecuriFire Studio release. A software update is necessary only when there are changes on the FAS; otherwise, Securiton will inform if required.

7 Planning



Notice

Programming and planning of the unit is described in the current SecuriFire software documentation.

7.1 Loop length

Information about the maximum number of loop lengths can be found in Section 1.2.2 SecuriLine eXtended.

Because of the large number of parameters, the loop length calculations are made with a PC program (Loop Length Calculator). For each loop the cable diameter and the number and participants per type are entered. The result is the maximum loop length from interface side 1 (beginning) to the last detector on the loop, and the loop length from interface side 2 (end) to the first detector.

7.2 Current consumption and bridging time



Notice

- In the event of a power failure, the fire alarm control panel is powered by batteries. Depending on the connected peripheral devices (EPI devices, detectors, sirens, etc.), it is important to ensure that the batteries have sufficient capacity to operate the fire alarm control panel for the specified time (possibly according to a standard or directive).
- Moreover, the consumer current has to be dimensioned so that batteries which have become empty can be charged to 80% of their capacity within 24 hours.

7.3 Typical power consumption values for B7-CPB11

The power consumption of the unit must also be taken into account when calculating the power requirement:

Type	Designation	Quiescent current	Alarm current
B7-CPB11	Main control unit, 1 loop	57 mA	1.7 A

7.4 Power requirement calculation

For the SecuriFire 500 power requirement calculation, a power calculation tool is available in which the battery types in use and the necessary bridging time (according to local standards and directives) are entered.

7.5 Battery current measurement with a connected battery pair

After the system has been successfully commissioned, it is necessary to perform a battery current measurement (mains fault under full load, dropped holding magnet, display lighting off, service PC cable disconnected from the SCP) in order to guarantee that the battery capacity meets the requirements.

If the results of the battery current measurement (example with a 7.2 Ah battery pair) are not in line with the power requirement calculation ($\pm 5\%$), notify your Securiton Support point immediately.

Observe the following procedure precisely:

- During normal operation, interrupt the battery cable at an appropriate point and loop the measuring instrument (multimeter, voltmeter) in the battery cable. There must be no pending alarms or disablements; the batteries must be connected and charged.
- Switch on measuring instrument and set to “direct current line”. The expected measurement value is approx. 60–500 mA DC.
- Interrupt the mains voltage during normal operation.
- Mains fault is displayed (after a delay time): The batteries now supply power to the SCP without exception.
- Read the measurement value on the measuring instrument and note (= quiescent current).
- Trigger armed alarm for all (if possible) activated fire incident controls supplied by the SCP.
- Read the measurement value (= alarm current) on the measuring instrument and note.

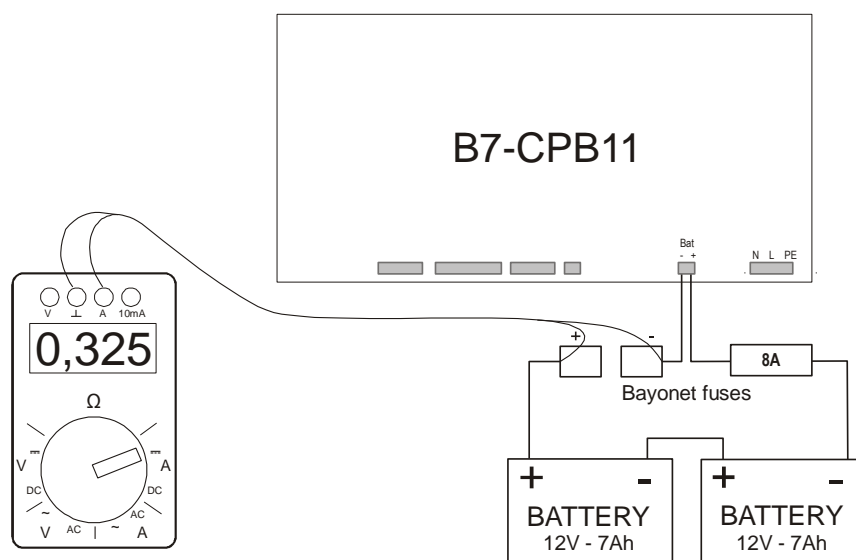


Fig. 64 Battery current measurement

8 Commissioning



Notice

Planning, mounting, commissioning and maintaining fire detection systems require special knowledge and may be carried out only by trained specialists. The product-specific training of qualified personnel is to be provided by Securiton or by persons expressly authorised to do so by Securiton.

8.1 Program

The SecuriFire 500 is delivered with a simple operating program compliant with EN 54. This program contains all necessary standard parameters required for operating the control panel. Object-specific changes can be programmed with SecuriFire Studio and transferred to the control panel.

A wizard developed specifically for SecuriFire 500 is available which provides guidance for fast commissioning in 8 steps. The “EasyConfig SecuriFire 500” wizard is integrated in SecuriFire Studio.

8.2 SecuriLine eXtended addressable loop

The following steps are performed with the SecuriFire 500 control panel and SecuriFire Studio: electricians check and read-out of the addressable loop, parameterisation and addressing of individual participants, loading the addressable loop data to the control panels.

When checking the electricians of an installed addressable loop without SecuriFire 500 control panel, the “SecuriLine Test Board” STB 01X testing device is used.

8.3 Object-specific texts

Predefined default texts can be changed and new texts created with SecuriFire Studio. Country-specific regulations concerning minimum texts must be observed.

8.4 Possible displays & fault patterns

8.5 Simple troubleshooting

After a successful commissioning, no faults appear on the control panel. As soon as something is not OK, fault patterns may occur.

8.5.1 General

Faults are indicated on the indication and control map of the SecuriFire both optically (collective malfunction indication) and audibly (warning sound). In addition, the type and number of faults are displayed in the fault list in the display.

You can select the fault list via the MIC and browse in the display of the indication and control map.

If you want to view additional information about a particular fault, you must select the concerned message with the **SecuriWheel**.

Pressing the **More info** button shows the information in the display. With the **More info** button you can select either SITE INFO or INFO in plain text.

8.5.2 Contaminated detector

This is displayed by the **Call service** pictogram and in a contamination list on the indication and control map of the SecuriFire. The following procedure is recommended for contaminated detectors:

- Press the **Lists** button, select the WARNINGS entry, press the **Enter** key.
- The detector contamination list displays and can be browsed with the **SecuriWheel**.
- Contaminated detectors must be replaced.
- In user level 3 (password entry required) the detector contaminations can be reset.

8.5.3 Possible causes of faults

System	Defect on the B7-CPB11 main control unit, on the B7-MIC11 indication and control map, or on the integrated power supply unit etc. (detailed information can be displayed on the Service monitor).
Detectors / detection zones	Short-circuit, wire breakage, lacking end base (monologue technology), programming (DZ) do not match jumper setting (input) etc.
Inputs	Short-circuit, wire breakage, programming (input) do not match jumper setting (DZ) etc.
Outputs	Short-circuit, wire breakage, wrong load size or load range set etc.
Addressable loop	Logical fault (INIT FAULT, SYSTEM FAULT, ADDRESS FAULT), physical fault (wire breakage, short-circuit, earthing).

9 Article numbers / spare parts

Article numbers for detectors, special detectors, peripheral devices, accessories etc. are found in the current product catalogue for SecuriFire 500.

10 List of figures

Fig. 1 System overview of SecuriFire 500	9
Fig. 2 Inside view of housing.....	12
Fig. 3 Rear view of housing	12
Fig. 4 Front view of housing.....	13
Fig. 5 SecuriFire 500 drilling plan.....	13
Fig. 6 B5-EPI-PIM.....	14
Fig. 7 B5-EPI-PCM.....	14
Fig. 8 B5-EPI-ASP	14
Fig. 9 B5-EPI-FPC.....	14
Fig. 10 B5-EPI-FPS	14
Fig. 11 EHB 701	14
Abb. 12 B5-EPI-ASP / B5-EPI-FPC / EHB 701	14
Abb. 13 B5-EPI-FPS.....	14
Fig. 14 B7-CPB11 main control unit.....	15
Fig. 15 Mains connection.....	16
Fig. 16 B7-CPB11, relay output (connection of 230 V consumers).....	19
Fig. 17 B7-CPB11, relay output (siren connection).....	19
Fig. 18 B7-CPB11, relay output (permanent magnet connection).....	19
Fig. 19 B7-CPB11, quiescent current monitored loads	21
Fig. 20 B7-CPB11, electronic loads	21
Fig. 21 B7-CPB11, connection with feedback	21
Fig. 22 B7-CPB11, connection of inputs	21
Fig. 23 B5-EPI-FPC-GS.....	24
Fig. 24 B5-EPI-ASP-GS.....	25
Fig. 25 B5-EPI-FPS-S.....	26
Fig. 26 Mounting B5-EPI-FPS-S.....	27
Fig. 27 B5-EPI-PCM	28
Fig. 28 B5-EPI-PIM.....	29
Fig. 29 B5-EPI-FAT	30
Fig. 30 B5-EPI-FPD	31
Fig. 31 SecuriLine eXtended connection	34
Fig. 32 Stub line connection	35
Fig. 33 USB 501 connection.....	35
Fig. 34 BX-API connection	35
Fig. 35 MCP 535x connection.....	36
Fig. 36 MCP 545x connection.....	36
Fig. 37 BX-AIM, collective detector and monitored input	36
Fig. 38 BX-AIM, MMD130 Ex-i in Ex area	36
Fig. 39 BX-OI3, input/output module connection	37
Fig. 40 BX-OI3, connection of special detectors	37
Fig. 41 BX-I2, input module connection.....	38
Fig. 42 BX-OI3, Connection of special detectors	38
Fig. 43 BX-O1, output module connection.....	39
Fig. 44 BX-O2I4, output/input module connection.....	39
Fig. 45 BX-REL4, relay module connection	40
Fig. 46 BX-IOM, consumer with external voltage monitoring	40
Fig. 47 BX-IM4 input module connection, monitored inputs.....	41
Fig. 48 BX-IM4 input module connection, unmonitored inputs.....	41
Fig. 49 BX-RGW, radio module connection.....	41
Fig. 50 BX-SOL, loop siren connection	42
Fig. 51 BX-FOL, loop flashlight connection.....	42
Fig. 52 BX-ESL, connection	43
Fig. 53 SDI81X / SDI82X, addressing module connection	43
Fig. 54 BX-MDH, door holding magnet connection	44
Fig. 55 BX-MDI8, input module connection	44
Fig. 56 BX-MDI8, connecting detector base USB 501	45
Fig. 57 BX-MDI8, connecting MCP 521N manual call points.....	45

List of figures

Fig. 58 BX-MDI8, Connecting MCP 525 manual call points.....	45
Fig. 59 BX-MDI8, connecting detector base USB501-7 Ex-i with direct current isolating transformer GTW 01	46
Fig. 60 BX-MDI8, connecting the detector base 143 Ex-i with direct current isolating transformer GTW 01.....	46
Fig. 61 BX-MDI8, connecting surveyed input 26K7 / surveyed input 3K	47
Fig. 62 BX-MDI8, valve monitoring / Extinguishing input in accordance with VdS	47
Fig. 63 SecuriFire Studio	48
Fig. 64 Battery current measurement.....	50