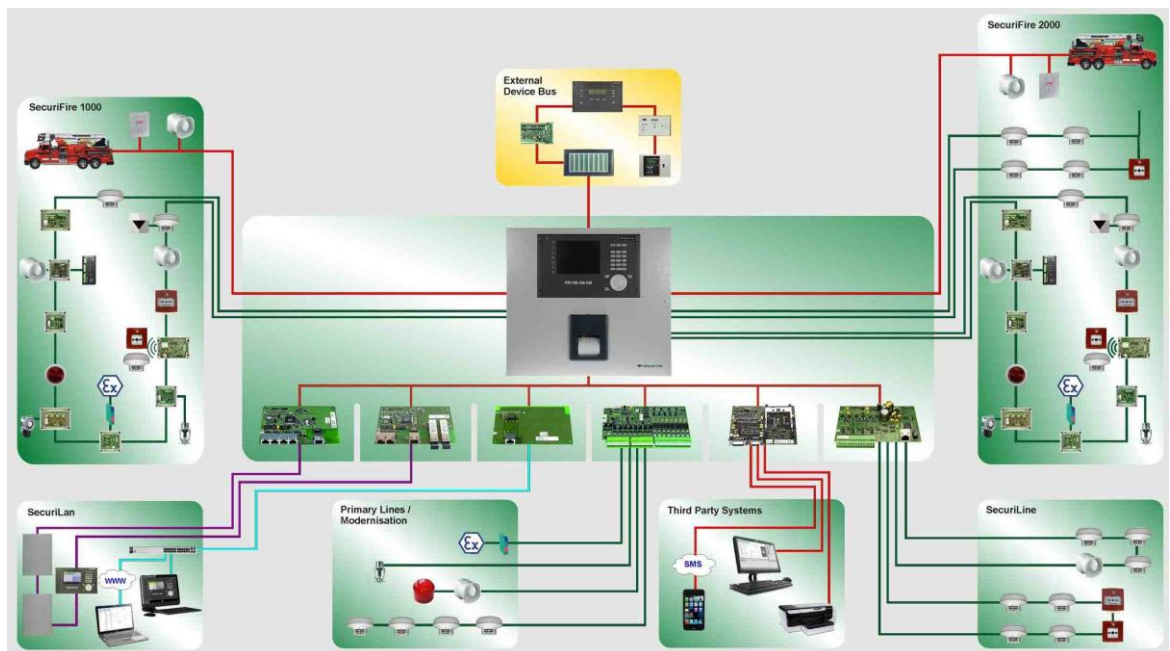# SecuriFire 1000/2000
Mounting and installation

Technical Description

Imprint

> **Notice**
>
> This document, T 811 086, is valid only for the product described in Section 1.
>
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This document, T 811 086[1], is available in the following languages:

Language	Document number
German	T 811 086 de
English	T 811 086 en
French	T 811 086 fr
Italian	T 811 086 it
Swedish	T 811 086 sv

Current edition: Index e   07.04.2015   Rd

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[1] Reference document: CX-Handbuch V1.1, MMI&EPI Handbuch V2.1, LAN-Handbuch, X-Line Handbuch

Safety information

Provided the product is deployed by trained and qualified persons in accordance with technical document T 811 086 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 guidelines 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

If the Danger notice is not properly observed, the product and other system parts may present a hazard for persons and property, or the product and other system parts may be damaged to the extent that malfunctioning results in danger to persons and property.

- Description of which dangers can 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

Environmental protection / recycling

Neither the product nor product 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 free of charge to the seller or brought to a designated recycling point (e.g. to a communal collection point or retailer). You may also send them back to the seller by post. The seller refunds the postage when you return your old batteries.

Document history

First edition   Date 01.07.2011

Index „a"   Date 01.10.2011
Most important changes compared with first edition:

Section		New (n) / changed (c) / deleted (d)	What / Reason
• 1.3	c	Overview of system limits	Table adjusted
• 1.4	n	Overview of SecuriLine eXtended limits	New notice
• 2.3, Fig. 2	n	B6-ADB 10	New product
• 0	n	Dimensions for external indication and control maps	New EHB 701
• 3.3, Fig. 24, 3.4, Fig. 25, Fig. 26	n	Surface mounting and flush mounting	New section
• 10.3.6, Fig. 136	n	BX-O2I4 connection	New section
• Fig. 73	c	SecuriFire VirtualMIC connection	New section
• 6.22	d	ComBOX connection	Sentence removed and not replaced
• 9.4, Fig. 109, Fig. 110, Fig. 111, Fig. 112	n	MIC711	New section
• 9.5.3	n	Overview of RS485 PIN assignments	New section
• 9.5.5	c	SecuriLan connection	Text adaptations

Index „b"   Date 13.02.2012
Most important changes compared with previous edition:

Section		New (n) / changed (c) / deleted (d)	What / Reason
• 1.4	c	Overview of SecuriLine eXtended limits	„BX-SOL, BX-SBL per loop" changed
• Fig. 37	c	B6-BCB, connection of inputs	For „unmonitored inputs" bridge removed
• Fig. 122	c	Connecting SecuriLine eXtended	Product name changed
• Fig. 123	c	Stub line connection	Change

Index „c"   Date 14.05.2013
Most important changes compared with previous edition:

Section		New (n) / changed (c) / deleted (d)	What / Reason
• all	c	Languages de, en, fr, it: Document number previously T131470, new T811086	Administrative
• 10.3.4	c	Connection of BX-AIM advanced input module	Text adjusted
• 10.3.5	c	BX-OI3 output/input module connection	Text adjusted
• 10.3.10	c	BX-IOM input/output module connection	Text adjusted
• 10.3.11	c	BX-IM4 input module connection	Text adjusted
• 10.3.12	c	BX-RGW radio module connection	Text adjusted
• 10.3.15	c	Connection of end switch module eXtended Line BX-ESL	Text adjusted
• 7.4	c	B5-MMI-FIP floor panel	Text adjusted
• 8.4	c	B5-EPI-FPC-GS Swiss fire brigade panel	Text adjusted
• 9.1	c	B6-NET2-485 network unit	Text adjusted
• 9.2	c	B6-NET2-FXM and B6-NET2-FXS network units	Text adjusted
• 9.3	c	B6-LAN interface unit	Text adjusted
• 9.4	c	MIC711	Text adjusted
• 9.5	c	SecuriLan connection	Text adjusted
• 9.5.6	c	SecuriLan connection with fibre optics	Text adjusted

Document history

Index „d"   Date 15.01.2014
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
• 10.3.6	n	BX-I2 input module connection	New section
• 10.3.7	n	BX-O1 output module connection	New section
• 10.3.16	n	Connection for SDI81X / SDI82X addressing module	New section
• 6.1	n	B6-LXI2 SecuriLine unit	New section
• 6.3	n	B6-EIO input/output unit	New section
• 6.13	n	MMD130 Ex-i in Ex-areas with safety barrier Z787	New section
• 6.14	n	MMD130 Ex-i in Ex-areas with direct current isolating transformer GTW 01	New section
• 6.23.2	c	External parallel printer on RS422 interface with converter	Text and graphic adjusted
• 7.4	n	B5-MMI-FIP	New section
• 7.5	n	B5-MMI-FPS-S Fire brigade panel Sweden	New section
• 8.5	n	B5-EPI-ASP-GS alarm scrolling panel for the Netherlands	New section
• 8.6	n	B5-EPI-FPS-S fire brigade operating panel for Sweden	New section
• 8.7	n	B5-EPI-PCM partial indication and control map	New section
• 8.8	n	B5-EPI-PIM partial indication map	New section

Index „e"   Date 07.04.2015
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

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SECURITON

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1   System overview

SecuriFire 1000

The SecuriFire 1000 system is a non-modular fire alarm control panel for small scale systems. A maximum of 250 elements can be connected to the addressable loop. The SecuriFire 1000 cannot be integrated into a SecuriLan and is not network capable.

SecuriFire 2000

The SecuriFire 2000 system is a fire alarm control panel for mid to small scale systems. A maximum of 500 elements can be connected to the two addressable loops. It also has an interface to which either 2 additional addressable loops or interface units can be connected (for integration in SecuriLan, networks, for connecting to management systems, etc.).

For further information about SecuriFire 1000/2000 fire detection systems, please refer to the document "SecuriFire system description", T 811 024.

Control panel and SecuriLan

The fire alarm control panel consists of 1 to 16 control panels (SCPs) which can be distributed in the building as needed. Straightforward operation is provided from one location. Despite its decentral design, from outside the system it appears to behave as if it were a "central" fire alarm control panel. When several SCPs are joined to a fire alarm system it is called a "SecuriLan".

External indication and control maps and BUS devices

The external SecuriFire MIC711 main indication and control map is connected directly to the SecuriLan.

Every SecuriFire MIC and some MMI devices have an EPI bus interface. Up to 3 non-redundant indication and control maps can be connected to this data bus. They can be mounted up to 1 m from the interface. This means that the additional main indication and control maps must be integrated into the map case of the control unit or positioned directly next to or near the MIC711.

External indication and control maps and other devices are connected to the indication and control map via the MMI -BUS. Up to 15 participants can be connected to this serial bus and they can be up to 1,200 m from the control unit. Repeaters are not required. Data communication is by means of redundant, digital communication lines. The devices can be freely combined with each other and are not restricted to location. For normative and security reasons, the data line and power supply are redundantly implemented, whereby they are separately conveyed.

Line lengths

The maximum distance between two SecuriFire participants can be up to 1,200 m. Neither repeaters nor other devices such as modems are necessary. Only the cable type and ambient conditions must be taken into consideration. If the distance has to be more than 1,200 m, fibre-optic connections must be implemented.

Overvoltage protection

The SecuriFire 1000/2000 system 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 -61000-6-2 (Immunity for industrial environments). 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.

System overview

Earthing concept

The earthing concept used in the SecuriFire 1000/2000 with central protection earthing to protect persons and electronics requires that all electrically charged components connected to the GND line of the SecuriFire 1000/2000 control panel may be installed only in areas and buildings which have regulation-complaint potential equalization.

⚠️	**Warning**
	Non-observance can cause malfunctions and/or damage the control panel and may endanger people.

Software

The SecuriFire 1000/2000 microprocessor-controlled system 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.

Important features

- Microprocessor-controlled and monitored system technology.
- Continual, automatic check routines for all system components and programs.
- Units connected easily with blade connector.
- Up to 31 external main indication and control maps per SecuriLan with graphic display; up to 4 languages can be toggled during operation.
- Integrated protocol printer with emergency power supply and event memory with message filter.
- Suitable for connection to the public alarm system of the fire brigade.
- Can be connected to superordinate computer systems and fire alarm deployment management systems via a serial interface protocol with full functional scope (alarm/command directions).
- Fully redundant interconnection of up to 16 control panels without superordinate central computer.
- Superordinate networking of nearly any number of fire alarm control panels (also subsequently).
- A maximum of 250 participants per loop and loop length of up to 3,500 m.
- Main indication and control maps, protocol printers, parallel indicator boards and other system components are connected by digital communication lines and can be deployed in any combination irrespective of location with any control panel.
- This complies with the following standards and directives: European standards EN 54, DIN, ÖNORM, ÖVE and VDE.
- VdS devices and system approval (G209049, S209049, G209047, G209048, S209047).

1.1 Technical data

Mains voltage:	230 V AC
Operating voltage:	typically 27 V depending on the ambient temperature and charge state
Usable batteries:	2 pcs. 12 V / 15...17 Ah in series
Emergency current supply with batteries:	according to current calculation
Alarm current:	max. 3.5 A
Ambient temperature:	-5°C to +50°C, measured at natural convection
Heat output performance:	typically <10 W
	max. 20 W (at full load)
Colour:	grey RAL 7035
Relative air humidity:	5% to 95%, without condensation
Air pressure:	<= 80 kPa, up to 2,000 m above sea level
Protection type:	IP 30
Electrical protection:	EMC using a zone concept, Transzorp diodes, filters and broadband decoupling of the power supply of the electronics protective earth to protect persons and electronics.
Dimensions:	
Control panel:	445 x 400 x 140 mm
External indication and control map:	276 x 170 x 52 mm
External protocol printer:	170 x 138 x 62 mm
Weight (basic configuration without batteries):	8 kg

1.2 Overview of control panels

	SCP1000	SCP2000
Main control unit with LAN service interface and SD card interface	B6-BCB12	B6-BCB13
Power supply unit	B6-PSU	B6-PSU
Network capable	no	yes
Addressable loops	1	2 (4 with B4-DAI2 or B6-LXI)
Monitored output OM 1 with feedback input (Main detector, transmission unit)	yes	yes
Monitored output OM 2 (alarm unit)	yes	yes
2 monitored inputs	yes	yes
Relay outputs (230 V / 3 A)	5	5
Parallel FW control panel (DIN 14661)	yes	yes
MMI-BUS connection	yes	yes
Blackbox variant available	yes	no
Free slot for additional unit	yes	no
Protocol printer (depending on variant)	yes	yes

1.3 Overview of system limits

	SCP1000	SCP2000	per SecuriLan
Control panels (SCP2000/SCP3000)	--	--	max. 16
Main indication and control map (MIC711)	--	--	max. 31
∑ SCP2000/SCP3000+MIC711	--	--	max. 32
Mounting main indication and control map (MIC711)	max. 1	max. 1	max. 16
Printer (external, internal)	max. 3	max. 3	max. 16 x 3
Operating panels (all types)	max. 16	max. 16	max. 16 x 16
Fire brigade panels	max. 8	max. 8	max. 16 x 8
MMI-devices [1] HighSpeed-participants (96 kbit/s) [2] LowSpeed-participants (38,4 kbit/s) [3] EPI devices and MMI devices	max. 15 devices per MMI base interface, additional condition: $(B5\text{-}MMI^{1)}) + 2*(B3\text{-}MMI^{2)}) + 3*(EPI^{3)}) \leq 16$		
Detection zones inputs, outputs	total max. 768	total max. 768	each max. 4096
External (e.g. sprinkler systems)	max. 256		
Delay layers	max. 16		
Customer-specific texts	6,500 if average is 25 characters per element		

> **Notice**
>
> According to EN 54, a maximum of 512 detectors may be connected to the SCP2000.

1.4 Overview of SecuriLine eXtended limits

	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)	106 Ω	255 Ω	142 Ω

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 SecuriFire 1000/2000 control panels

2.1 Map case design and dimensions

All variants of the SecuriFire 1000/2000 control panels differ mechanically only in terms of door design, which may or may not have a cut-out for a built-in control panel MIC, EPI/MMI-device or a protocol printer.
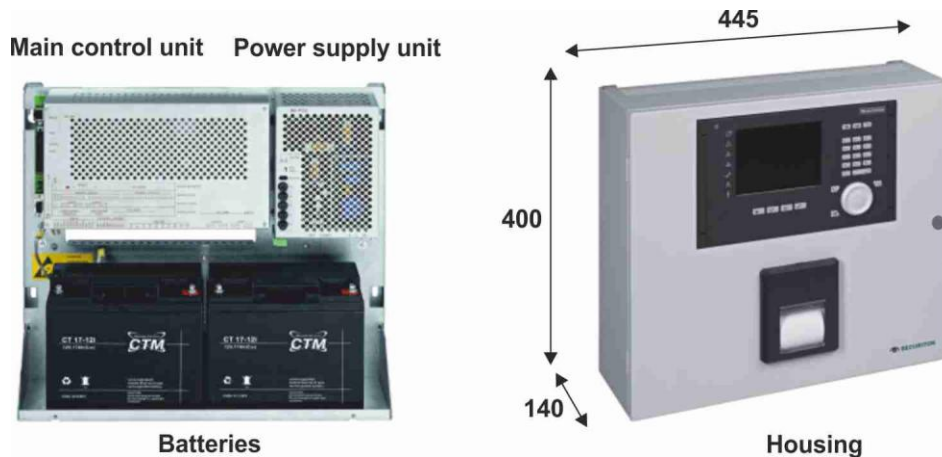
Fig. 1 Map case design and dimensions

The rear wall of the SecuriFire 1000/2000 control panels serves as a holding element for the electronics, power supply unit and batteries and is mounted on site. Cable entry for the peripheral connections is through an opening in the rear wall, which rests on the foundation so that the cables can be conveyed from above, below or the rear. All cables are connected using plug-in terminals.

During commissioning, the emergency power batteries are inserted and the plug-in terminals are plugged into the electronics and power supply unit. The map case with the door is then mounted and, if present, the control panel is connected to the electronics. Even when the map case is mounted, accessibility to all essential parts is assured through the door.

2.2 Basic design

The basic design of each
SecuriFire 1000 control panel includes:
- Map case with door (depending on version)
- B6-BCB12 main control unit
- 4 A B6-PSU power supply unit
- Place for 2 x 12 V / 15...17 Ah emergency batteries
- Mains terminals and battery cable

No additional units can be plugged into the B6-BCB12 main control unit.

The basic design of each
SecuriFire 2000 control panel includes:
- Map case with door (depending on version)
- B6-BCB13 main control unit
- 4 A B6-PSU power supply unit
- Place for 2 x 12 V / 15...17 Ah emergency batteries
- Mains terminals and battery cable

On the X5 interface of each B6-BCB13 main control unit, one of the following units can mounted:
- B4-DAI2   SecuriLine unit
- B6-LXI2   SecuriLine unit
- B4-EIO/ B6-EIO   Input/output unit
- B4-USI   Universal interface unit
- B6-NET2-485   Network unit
- B6-NET2-FX   Network unit
- B6-LAN   Interface unit

2.3   B6-ADB 10 additional box

Empty B6-ADB10 housing for integrating the SecuriLine eXtended modules, remote alerting devices, two 12 V/18 Ah emergency power accumulators or other devices.

Fig. 2   B6-ADB 10

2.4   B6-MIC11 built-in control panel

The B6-MIC11 is language neutral and is located in the door of the Securi-Fire 1000/2000 map case B6-SCP1020, B6-SCP1030, B6-SCP2020, B6-SCP2030, B6-SCP2040 and B6-SCP2050. It is connected to the main control unit with a ribbon cable and also controls the protocol printer.

Fig. 3   B6-MIC11

2.5   Mounting a control panel
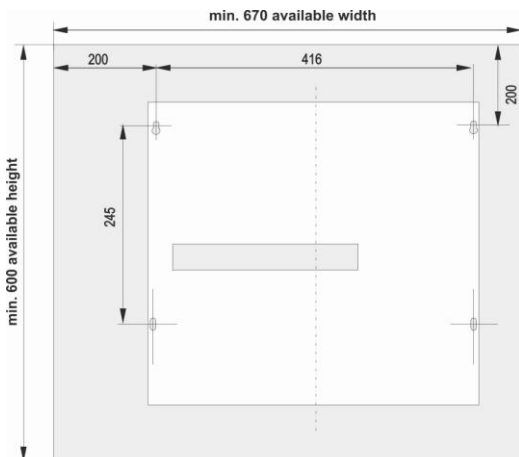
- Mount rear wall according to drill plan with 4 pcs. 5 x 40 round screws and 4 pcs. S 8 dowels. When mounting on plaster board, appropriate dowels and reinforcement may be necessary. Weight including batteries: approx. 20 kg.
- Insert cable and use cable fastener for strain relief.
- Place batteries and connect.
- Wire mains connection and plug of the units.
- Mount map case and fix in place with two screws.
- Connect the ribbon cable of the indication and control map to the main control unit.
- Connect earth cable of the door to the map case.

Fig. 4   Drilling plan for all SecuriFire 1000/2000 map case variants (all dimensions in mm)

Notice

Rating plates

Each SecuriFire 1000/2000 map case is delivered with two rating plates. One of them is attached at the factory on the right inside in the map case over the batteries. The second rating plate is packaged with the control panel and has to be attached before commissioning in access level 1 (outside on the map case) where it can be easily seen.

---

3 External main indication and control maps

> **Notice**
>
> According to EN 54, neither the B6-MIC11 nor the B6-MIC711 can be used as the primary control unit if the SecuriLan has more than 512 detectors.
>
> In this case, it is absolutely necessary that a redundant B5-MIC11 or B5-MIC711 is used (fire brigade operation).

3.1 Dimensions for external indication and control maps (all dimensions in mm)

Fig. 5   MIC711

Fig. 6   B5-MMI-FIP

Fig. 7   B5-MMI-FPS / B5-EPI-FPS

Fig. 8   B5-MMI-IPS

Fig. 9   B3-MMI-FAT / B5-EPI-FAT

Fig. 10   B5-MMI-FPD / B5-EPI-FPD

Fig. 11   B3-MMI-IPEL

Fig. 12   B3-MMI-EAT 64
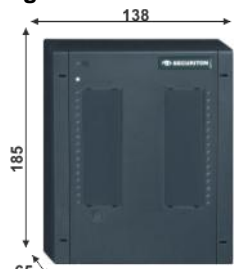
Fig. 13   B5-MMI-PIM
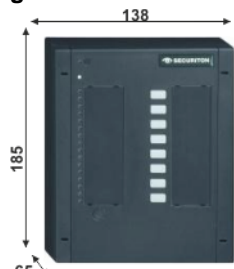
Fig. 14   B5-MMI-PCM

Fig. 15   B5-EPI-ASP
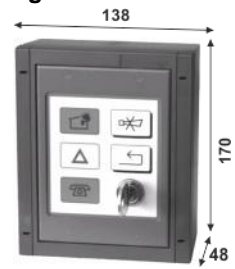
Fig. 16   B5-EPI-FPC
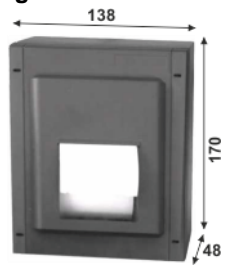
Fig. 17   B5-MIC-PPE
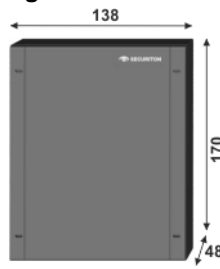
Fig. 18   EHB 701

3.2 Drilling plans for external indication and control maps
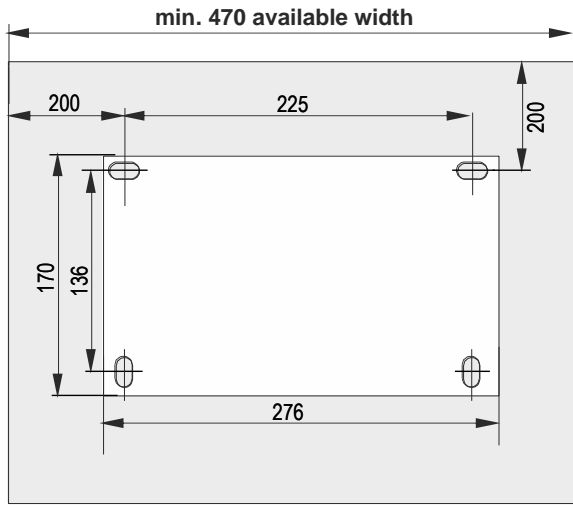
Fig. 19 MIC711
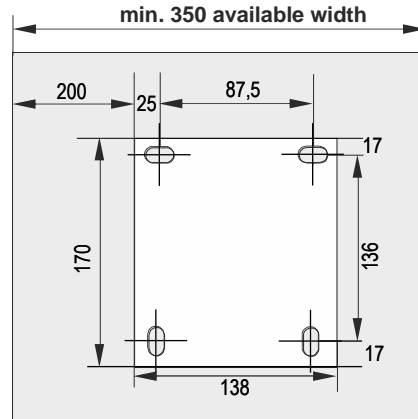
Fig. 20 B5-MIC-PPE / B5-EPI-FPC / EHB 701
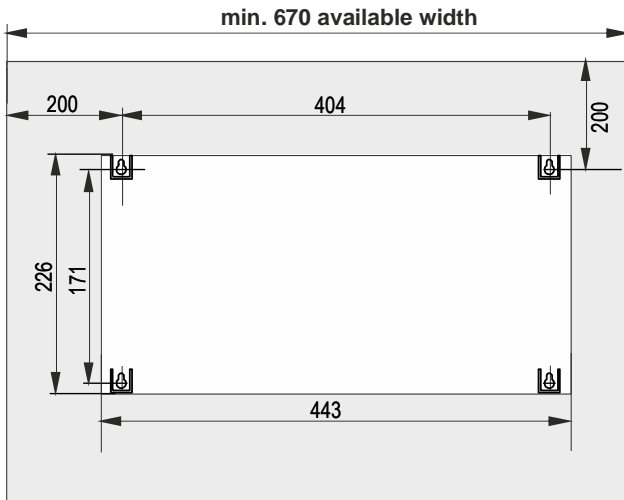
Fig. 21 B3-MMI-IPEL / B3-MMI-EAT64
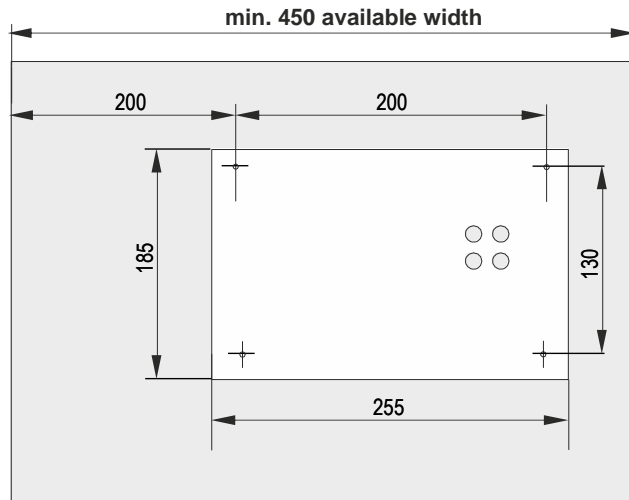
Fig. 22 B3-MMI-FAT
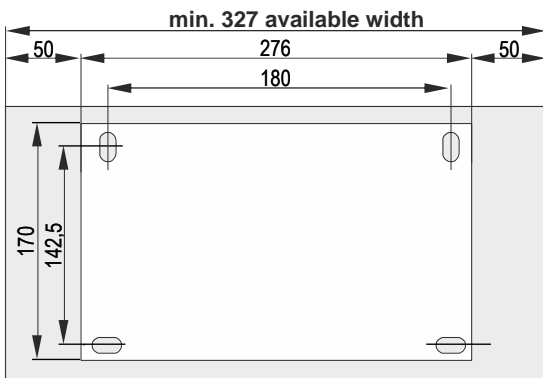
Fig. 23 B5-MMI-FPS / B5-MMI-IPS / B5-EPI-FPS

All dimensions in mm.

3.3   MIC711 surface mounting with plan box
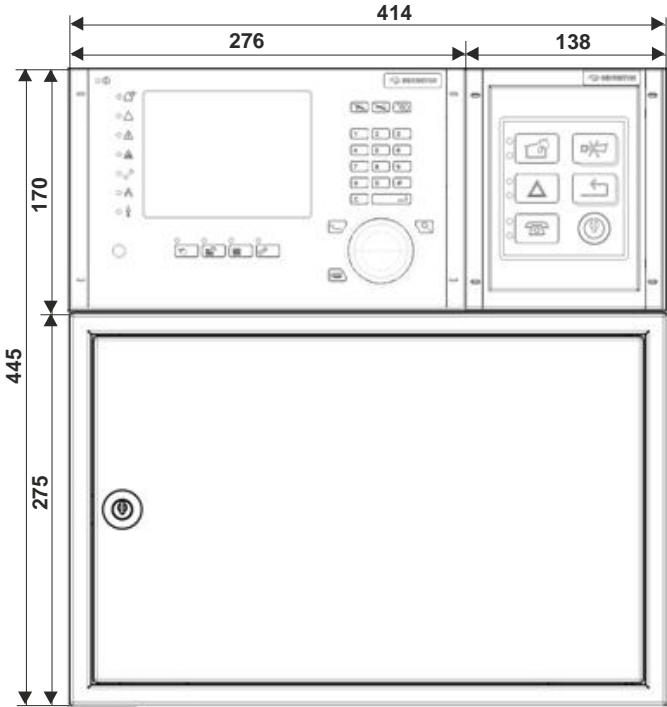
Example for mounting MIC711 with B5-EPI-FPC-GS and PLB 70-1 plan box.

Fig. 24 MIC711 / B5-EPI-FPC-GS with PLB 70-1

3.4   Flush mounting

FME73 flush mounting equipment for control map consisting of FMC73 flush mounting case and FFM73 frame for flush mounting equipment.

FME70 flush mounting equipment for control map consisting of FMC70 flush mounting case and FFM70 frame for flush mounting equipment.
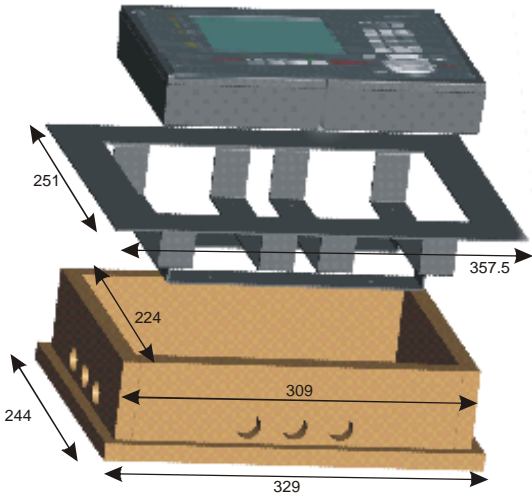
Mounting MIC711

Mounting MIC711 + small indication and map case + PLB 70-1 plan box

Fig. 25 FME73 with MIC711
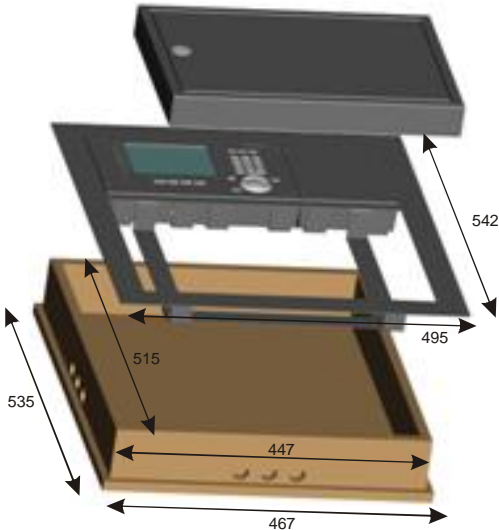
Fig. 26 FME70 with MIC711 and PLB 70-1

4 Power supply

For the power supply from the mains network, a circuit of 230 V / 50 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 1000/2000 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 must be carried out in a de-energized state (mains and battery) and without external voltage.
> When manipulating the individual boards, it is imperative that you observe the regulations regarding precautions against static charge (ESD protective measures).

4.1 Emergency power supply (batteries)

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 1000/2000 control panel. In the event of a mains failure, they provide the power for the control panel. The batteries are located below in each SecuriFire 1000/2000 map case.

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

Battery type	VdS approval
WP 18-12	G103064
CTM CT17-12i	G103051
Excide Powerfit S312/18G5	G103016
Yuasa NP 17-12	G197022

4.2 Mains and battery connection

The mains cable is introduced into the control panel through the opening in the rear wall and is connected to the B6-PSU power supply 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.
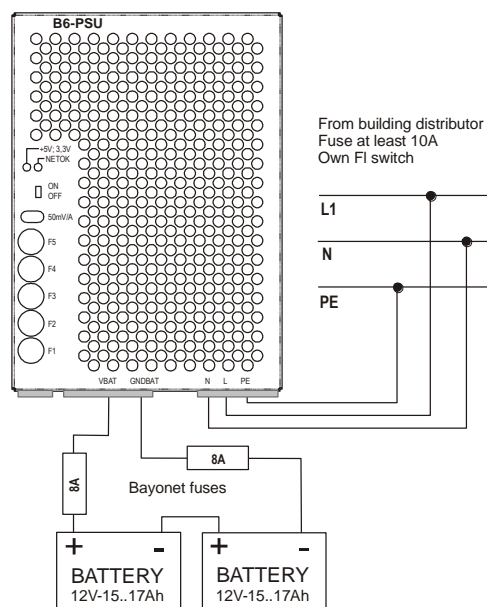
Fig. 27 230 V and battery connection

4.3 B6-PSU power supply unit

The internal 4 A power supply unit delivers the output voltages of 3.3 V, 5 V and 27 V required in every SecuriFire 1000/2000 control panel. It is fitted in the map case of every SecuriFire 1000/2000 on the right, next to the main control unit and is connected to it by means of a 64-pin male connector. On the bottom of the power supply unit is a 2-pin terminal for connecting the battery and a 10-pin plug-in screw terminal to which external consumers can be connected via separately fused outputs.

Further information about the B6-PSU can be found in the technical description T 811 039.

Fig. 28 B6-PSU interfaces

4.3.1 Interfaces

X1	Mains connection
X3	Connector for battery current measurement
X4	Connection to the main control unit
X5	Output voltage for external consumers
X13	VBAT battery connection
X14	GNDBAT battery connection
S1	On/Off switch (mains switch)
V45	LED displays
A10	Output fuses F1 to F5

4.3.2 Technical data

Mains voltage / mains frequency:	230 VAC +15%/-20% 47-63 Hz
Power consumption:	max. 200 VA, max 160 W
Mains fuse protection:	with 10 A current surge resistant
Mains fuses in the power unit:	4.0 A T
Outputs for internal consumers:	3.3 V/3 A, 5 V/1 A, 27 V/4 A
Outputs for external consumers:	5 x 27 V, 2.5 A FF
Charging output for battery connection:	max. 7 A
Replacement fuses F1 to F5:	2.5 A FF (super quick-acting), glass tube 5 x 20 mm

4.3.3 Compatibility information

Compatible main control units:	B6-BCB12
	B6-BCB13
SecuriFire-Studio:	from release 1.1

4.3.4 Connection of external consumers

The B6-PSU has five (each 2.5 A FF fuse protected) outputs (plug X5) to which external consumers such as devices of the MMI-BUS, sirens, flashing beacons, fire brigade key safe, interface converter, work magnets etc. can be connected.

Only the named 2.5 A super quick-action, glass tube 5 x 20 fuses may be used to guarantee switching off in the event of a short-circuit.
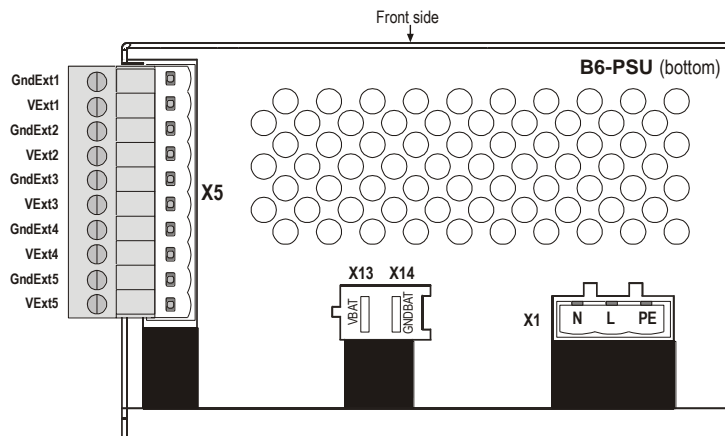
Fig. 29 Connection of external consumers

> ⚠️ **Warning**
>
> When connecting external consumers, all national regulations must be observed.
> No system external consumers are permitted to be connected to the batteries or to the power supply unit.
>
> The total output current (external consumers and own requirement) must not exceed the rated current of the power supply unit of 4 A under any circumstances, since in pure mains operation (without battery) this would cause an overload of the power supply unit and endanger the functioning of the fire alarm control panel.
>
> For reasons related to failure protection, sirens are not permitted to be connected together with other consumers on an output, since a possible short-circuit of one device could prevent audible alarming.

4.3.5 Battery current measurement

- During normal operation, remove the mains plug of the B6-PSU power supply unit of the SecuriFire 1000/2000: There must be no pending alarms or deactivations; the batteries must be connected and charged.
- Mains fault is displayed (after a delay time): the batteries now supply power to SCP without exception.
- Switch on the measuring instrument (multimeter, voltmeter) and set to the "DC" measurement range. The expected measurement value is approx. 10–200 m V DC.
- Attach the battery power cable (art. no. FG81720) on the B6-PSU to the battery power connector and connect to the measuring instrument.
- Read and note the measurement value (= quiescent current) on the measuring instrument.
- Trigger armed alarm for all (if possible) activated fire incident controls supplied by the control panel.
- Read and note the measurement value (= alarm current) on the measuring instrument.

Fig. 30 Battery current measurement

- Convert measurement value: measurement value [mV] / 50 = battery current [A].
- The calculation of the available minimum charging current must be performed using the formula $C_{(nominal\ battery\ capacity)}$ x 0.05. For 2x 12 V / 18 Ah batteries, this corresponds to a charging current of 0.9 A; this results in a maximum battery current of 3.1 A (= 155 mV).
- A bridging time of 72 hours of buffered quiescent current plus 30 min of buffered alarm current is guaranteed with a battery capacity of 18 Ah, if the quiescent current is less than 0.23 A (= 11.5 mV).
- When using other battery capacities or bridging times, the following calculation must be performed: (quiescent current x quiescent bridging time) + (alarm current x alarm time) < effective battery capacity.
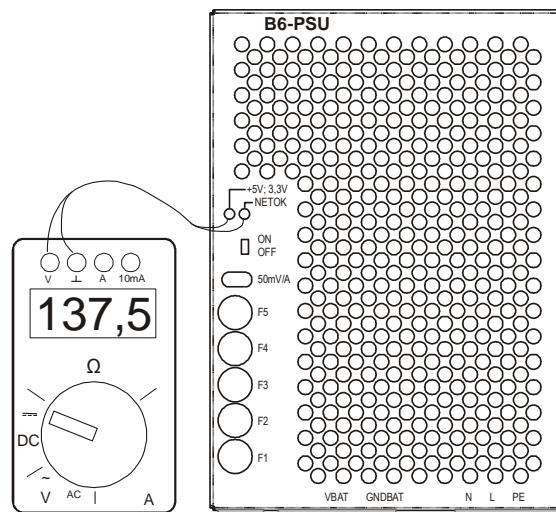
5 Main control units

5.1 B6-BCB12 main control unit SecuriFire 1000

The B6-BCB12 main control unit is a component of every SecuriFire 1000 control panel and is screwed onto the rear wall of the map case. It includes all interfaces for connecting peripherals, relay contacts, MMI-BUS, monitored outputs and service PC.

The power is supplied via the X1 interface to the B6-PSU power supply unit. The built-in control panel is connected to the X2 interface. System states are indicated by LEDs (V 50). All programming and configuration procedures are performed via the LAN interface (X3) by the service PC and SecuriFire Studio.

Further information about the B6-BCB12 can be found in the technical description T 811 032.
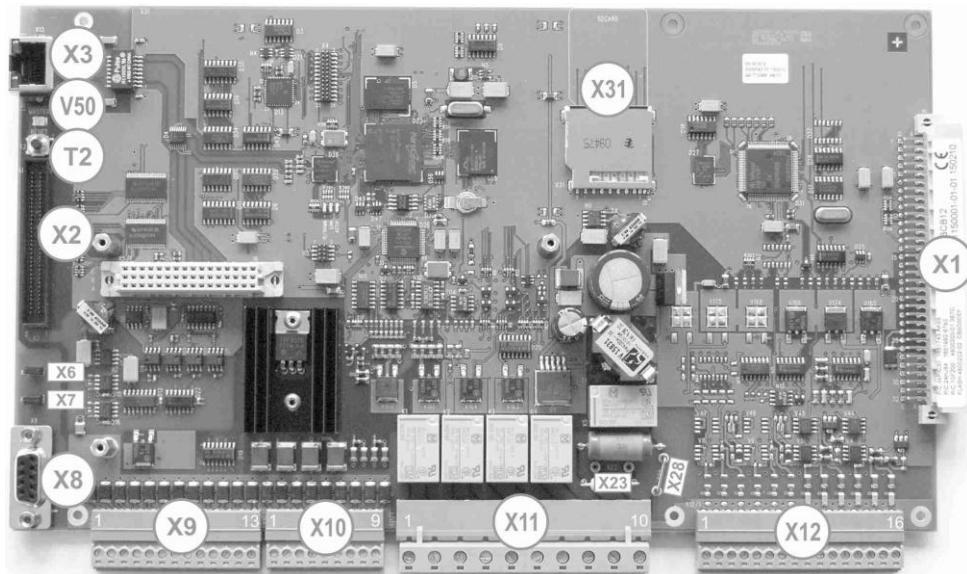
Fig. 31 B6-BCB12 interfaces

5.1.1 Interfaces

X1   Interface for the B6-PSU power supply unit

X2   Control panel interface to the B6-MIC11

X3   Ethernet 100BASE-TX service interface

X6/X7   Jumpers for MMI-Bus termination

X8   Interface for MMI-Bus

X9   Interface for the German fire brigade map in accordance with DIN 14661

X10   Interface for monitored inputs and outputs

X11   Interface of the relay contacts

X12   Interface for 1 addressable loop or 2 stub lines (SecuriLine eXtended)

X23/28   Jumpers for relay no. 5
             X23 open, X28 closed = relay output
             X23 closed, X28 open = extinguishing or fault interface

X31   Interface for SD card (event memory expansion)

T2   Button for control panel reset

V50   State LEDs for master processor
             LED is dark   fault
             LED is lit   start-up
             LED flashes rapidly   normal operation

5.1.2 Technical data

Power supply:	via B6-PSU power supply unit
Quiescent power consumption:	47 mA typical (battery current)
Supply voltage:	battery voltage VL +22 V .. 30 V
	logic voltage VCC +5.0 V ±5%
	logic voltage VCC +3.3 V ±5%
Ambient temperature:	-5°C to +50°C
Rel. air humidity:	5% to 95% without condensation

5.1.3 Compatibility information

Compatible power supply unit:	B6-PSU beginning with edition EG072950--
SecuriFire-Studio:	from release 1.1

5.2 SecuriFire 2000 B6-BCB13 main control unit

The B6-BCB13 main control unit is a component of every SecuriFire 2000 control panel and is screwed onto the rear wall of the map case. It includes all interfaces for connecting peripherals, relay contacts, MMI-BUS, monitored outputs and service-PC, as well as a slot for an additional optional unit.

The power is supplied via the X1 interface to the B6-PSU power supply unit. The built-in control panel is connected to the X2 interface. System states are indicated by LEDs (V 50). All programming and configuration procedures are performed via the LAN interface (X3) by the service PC and SecuriFire Studio.

Further information about the B6-BCB13 can be found in the technical description T 811 031.
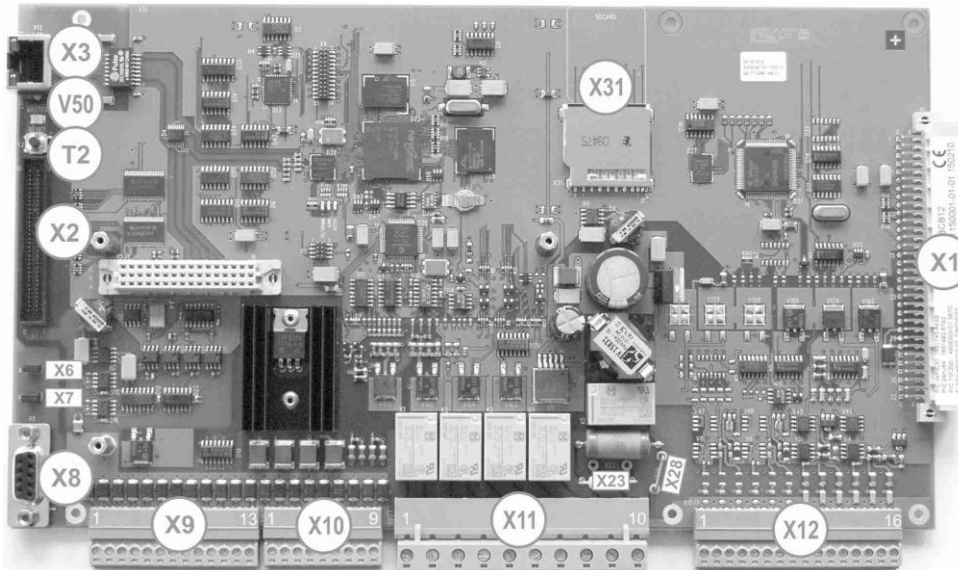
Fig. 32 B6-BCB13 interfaces

5.2.1 Interfaces

X1	Interface for the B6-PSU power supply unit
X2	Control panel interface to the B6-MIC11
X3	Ethernet 100BASE-TX service interface
X5	Slot for 1 expansion unit (B6-LAN, B6-NET2-485, B6-NET2-FXS, B6-NET-FXS, B4-DAI2, B4-USI, B6-EIO, B4-EIO)
X6/X7	Jumpers for MMI-Bus termination
X8	Interface for MMI-Bus
X9	Interface for German fire brigade map in accordance with DIN 14661
X10	Interface for monitored inputs and outputs
X11	Interface of the relay contacts
X12	Interface for 2 addressable loops or 4 stub lines (SecuriLine eXtended)
X23/28	Jumpers for relay no. 5 X23 open, X28 closed = relay output X23 closed, X28 open = extinguishing or fault interface
X31	Interface for SD card (event memory expansion)
T2	Button for control panel reset
V50	State LEDs for master processor LED is dark fault LED is lit start up LED flashes rapidly normal operation

5.2.2 Technical data

Power supply:	via B6-PSU power supply unit
Quiescent power consumption:	48 mA typical (battery current)
Supply voltage:	battery voltage VL +22 V .. 30 V
	logic voltage VCC +5.0 V ±5%
	logic voltage VCC +3.3 V ±5%
Ambient temperature:	-5°C to +50°C
Rel. air humidity:	5% to 95% without condensation

5.2.3 Compatibility information

Compatible power supply unit:	B6-PSU beginning with edition EG072950--
SecuriFire-Studio:	from release 1.1

SECURITON

5.3 Connection of monitored inputs and outputs

The X10 connector plug on the B6-BCB13 and B6-BCB12 main control units is for connecting the transmission unit (main detector) and alarm unit (sirens) for loads between 16 Ω and 1 kΩ. The interface includes two 1.5 A control outputs monitored for short-circuit and wire breakage and two monitored inputs. The OM1 output has a feedback input for external trigger confirmation.

Notice

Due to the fusing of the internal peripheral voltage (27 V) with quick-action 4 A, the maximum total output current of all simultaneously actuated monitored outputs must not exceed a continuous current of 4 A per control panel.

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
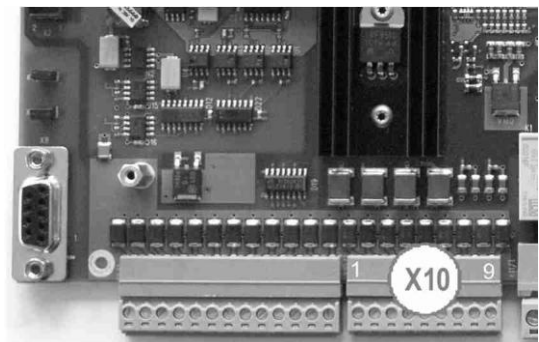
Fig. 33 B6-BCB, input and output interface

5.3.1 Technical data

Monitored outputs OM1 and OM2

Output voltage:	22 V min., 24 V typical, 28 V max.
Output current:	max. 1.3 A (TUS max. 0.1 A)
OM modes of operation:	monitored output with range 1 to 3 or TUS (only 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	Mode of opera-tion	Load range	Output current	Quiescent cur-rent	Short-circuit current	Line resistance
OM1	Range 1	160-1000 Ω	max. 1.3 A	1 mA	typically 1.75 A	max. 50 Ω
	Range 2	57-375 Ω	max. 1.3 A	3 mA	typically 1.75 A	max. 20 Ω
	Range 3	20-80 Ω	max. 1.3 A	13 mA	typically 1.75 A	max. 5 Ω
	TUS	max. 220 Ω	max. 0.1 A	15 mA	typically 0.137 A	max. 20 Ω
OM2	Range 1	160-1000 Ω	max. 1.3 A	1 mA	typically 1.75 A	max. 50 Ω
	Range 2	57-375 Ω	max. 1.3 A	3 mA	typically 1.75 A	max. 20 Ω
	Range 3	20-75 Ω	max. 1.3 A	13 mA	typically 1.75 A	max. 5 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.

5.3.2 Connection of monitored outputs to B6-BCB

Quiescent current monitored loads
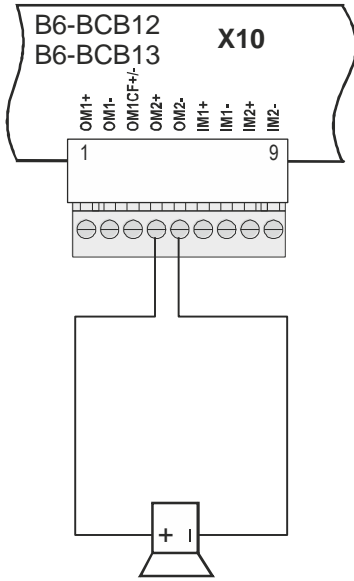
Fig. 34 B6-BCB, quiescent current monitored loads

"Electronic loads"
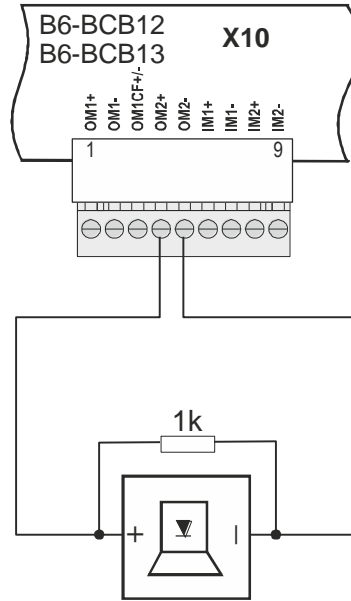
Fig. 35 B6-BCB, electronic loads

Connection with feedback
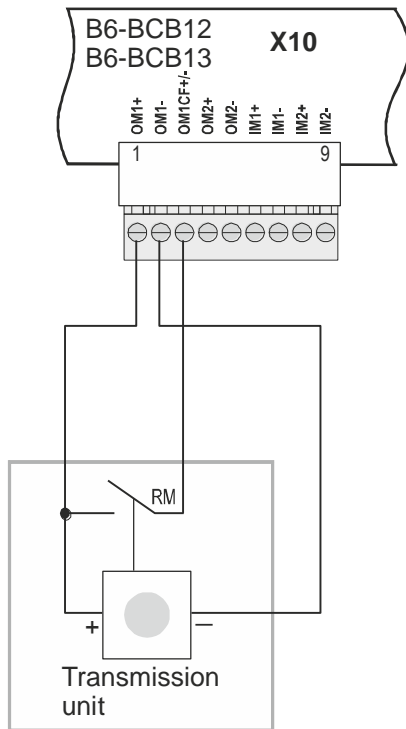
Fig. 36 B6-BCB, connection with feedback

	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.

5.3.3   Connection of inputs to B6-BCB

Monitored inputs

B6-BCB12
B6-BCB13   **X10**

OM1+ OM1- OM1CF+/- OM2+ OM2- IM1+ IM1- IM2+ IM2-

1   9

220 R

220 R

Unmonitored inputs

B6-BCB12
B6-BCB13   **X10**

OM1+ OM1- OM1CF+/- OM2+ OM2- IM1+ IM1- IM2+ IM2-

1   9
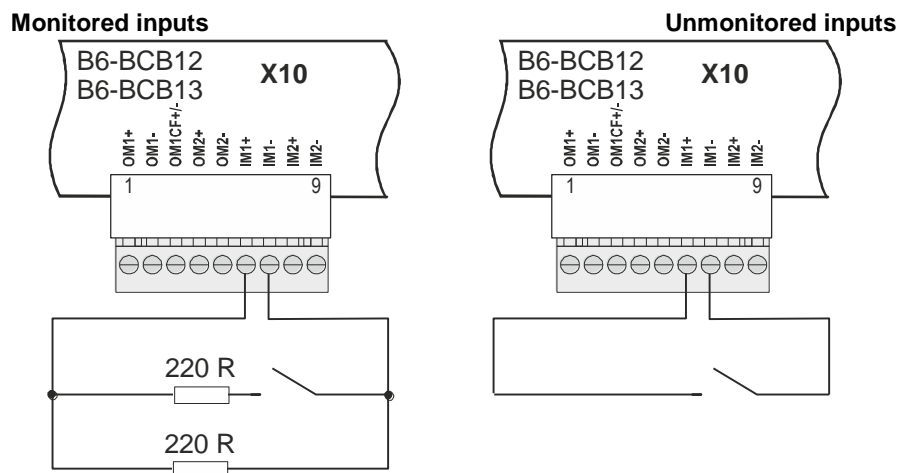
Fig. 37 B6-BCB, connection of inputs

5.3.4   Connection of relay outputs to B6-BCB

The X11 connector plug to the B6-BCB12 and B6-BCB13 main control units has 5 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.

X11 connector plug

Pin	Designation	Relay
1	R1	
2	R1	1
3	R2	
4	R2	2
5	R3	
6	R3	3
7	R4	
8	R4	4
9	R5	
10	R5	5
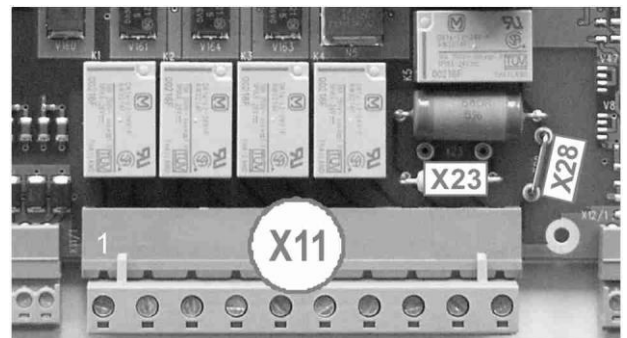
Fig. 38 B6-BCB, interface for relay outputs

5.3.5   Technical data

Relay outputs:	5
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 / 2,500 VA
Monitoring voltage:	typically 24 V
Monitoring current:	typically 3.1 mA
Short-circuit current:	typically 3.63 mA
Termination resistance:	220 Ω

5.3.6 Connection examples
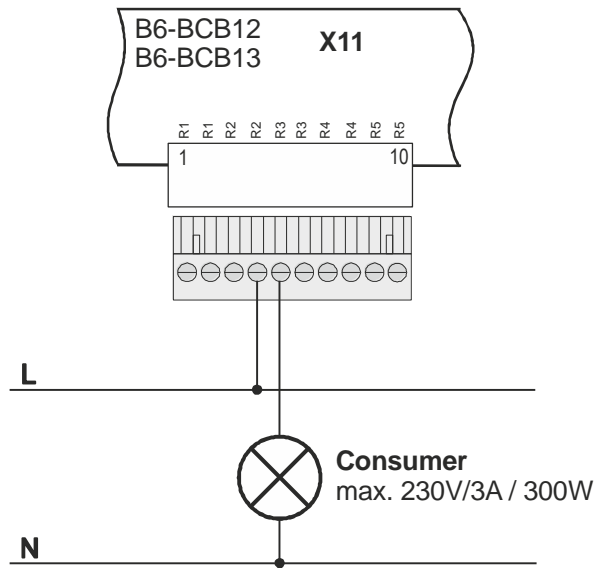
Fig. 39 B6-BCB, relay output (connection of 230 V consumers)
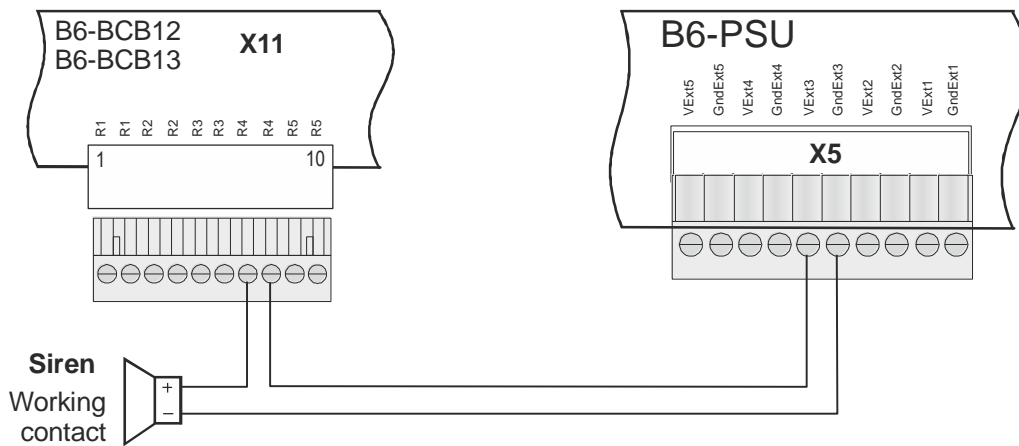
Fig. 40 B6-BCB, relay output (siren connection)
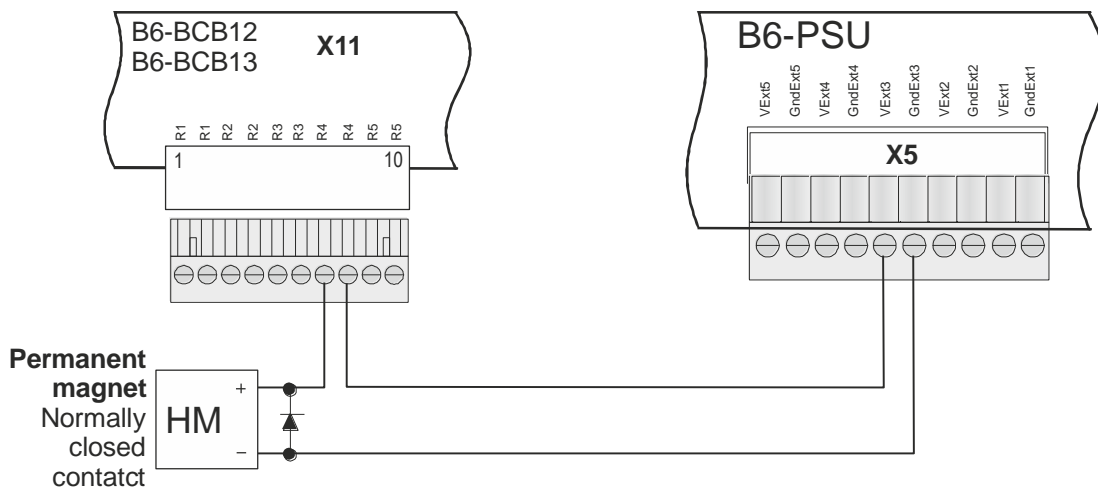
When connecting inductive loads, it is recommended to use a freewheel diode (e.g. 1N40007)

Fig. 41 B6-BCB, relay output (permanent magnet connection)

5.3.7 "Extinguishing" standard interface connection compliant with VdS

> **Notice**
>
> The "Extinguishing" standard interface is a VdS-compliant interface for connecting a fire alarm control panel to an extinguishing control panel. It is NOT for directly actuating an extinguishing system!

Relay 5 with its R5 contacts can be used as an extinguisher interface when jumper X28 is open and X23 is closed. A monitoring resistance of 3.3 k Ω (R184) is then parallel-connected to the contacts; and in the event of an alarm, 680 Ω (R183) is series-connected to the contacts.

For use as extinguisher interface, you need in addition a direct current line branch (BX-AIM) on an addressable loop. It must be planned as an extinguisher input.
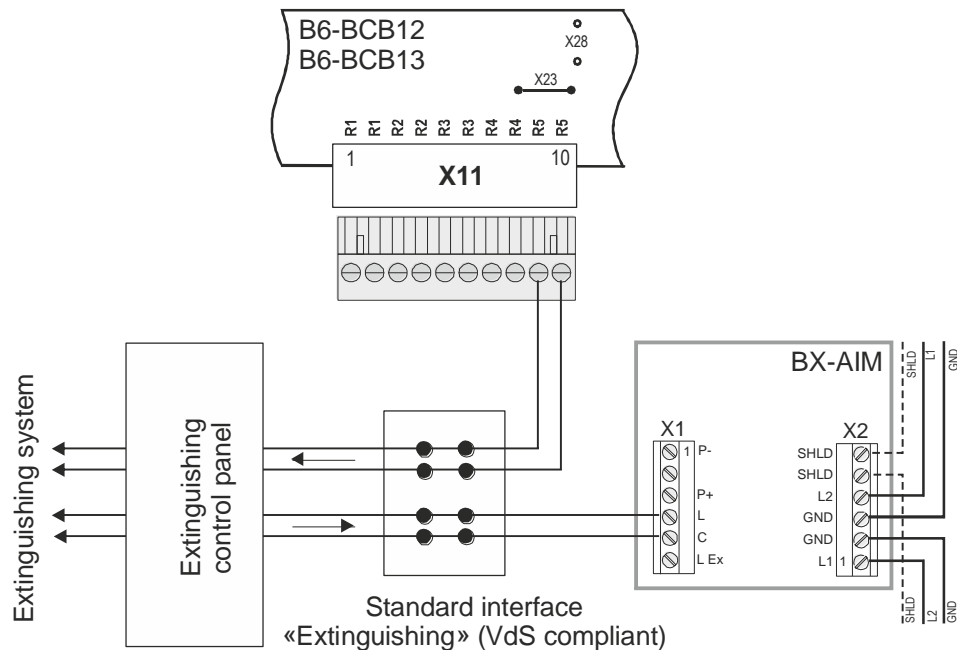
Fig. 42 "Extinguishing" standard interface connection

5.3.8 "Fault" standard interface connection compliant with VdS

> **Notice**
>
> 👉 The "Fault" standard interface is a VdS-compliant interface for connecting a fire alarm control panel to a transmission unit for fault messages.

In command direction the interface consists of either the relay contact R5 with the internal transmission resistors shunted (opening bridge X28 and closing X23) or any output (e.g. BX-OI3) which is switched externally with the monitoring resistances (3k3 and 680R).

For use as fault interface, the concerned relay contact has to be programmed to the state "Active in fail-safe position" so that it reports a fault in the event of a power failure.

In alarm direction, the VdS-compliant standard interface "Fault" consists of a monitored input (BX-AIM or B6/B4-EIO) which is planned and shunted as a VdS-compliant interface. It reports an external fault to the FACP.
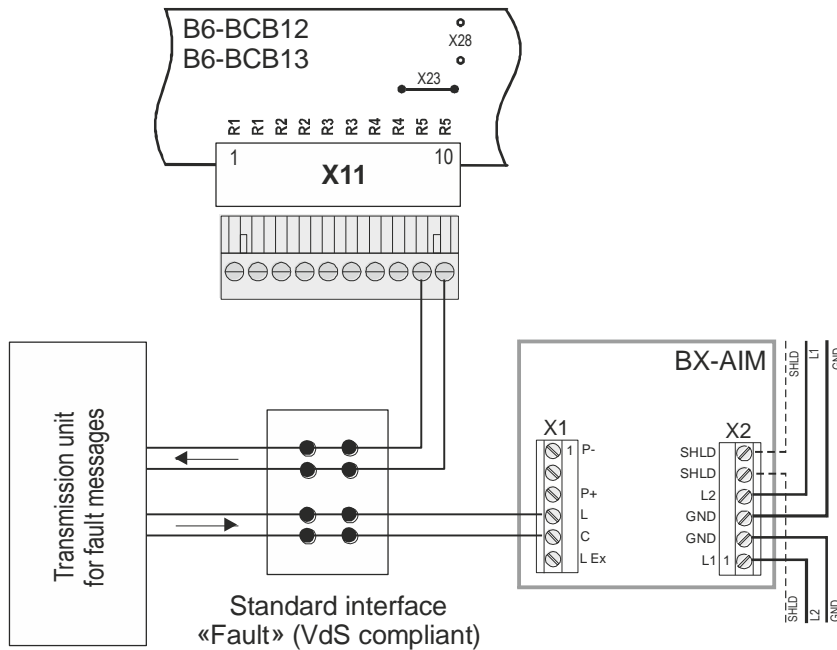
Fig. 43 "Fault" standard interface connection (variant 1)
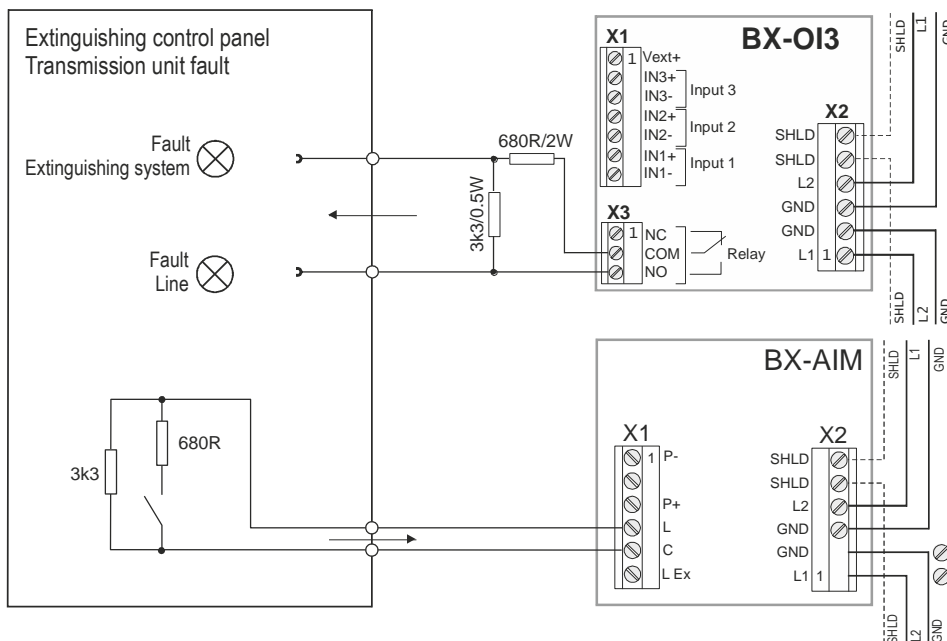
Fig. 44 "Fault" standard interface connection (variant 2)

5.3.9 Fire brigade map connection to B6-BCB compliant with DIN 14661

X9 connector plug

Pin	Designation
1	FCPI2
2	FCPI3
3	24V
4	FCPO2
5	FCPO0
6	FCPO3
7	FCPO1
8	FCPO4
9	FCPI1
10	FCPO5
11	GND
12	FCPI0
13	FCPI4
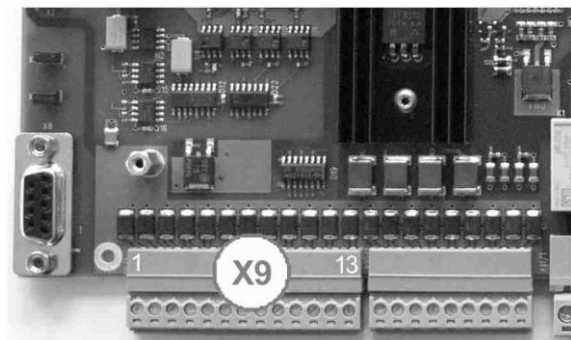
Fig. 45 B6-BCB, fire brigade panel interface

Connection of fire brigade map 0720 (Wiesmeier)

> ⚠️ **Warning**
>
> When connecting the German fire brigade map to the B6-BCB12 or B6-BCB13 main control units, the supply voltage range in the control panel must be set to +24 V!
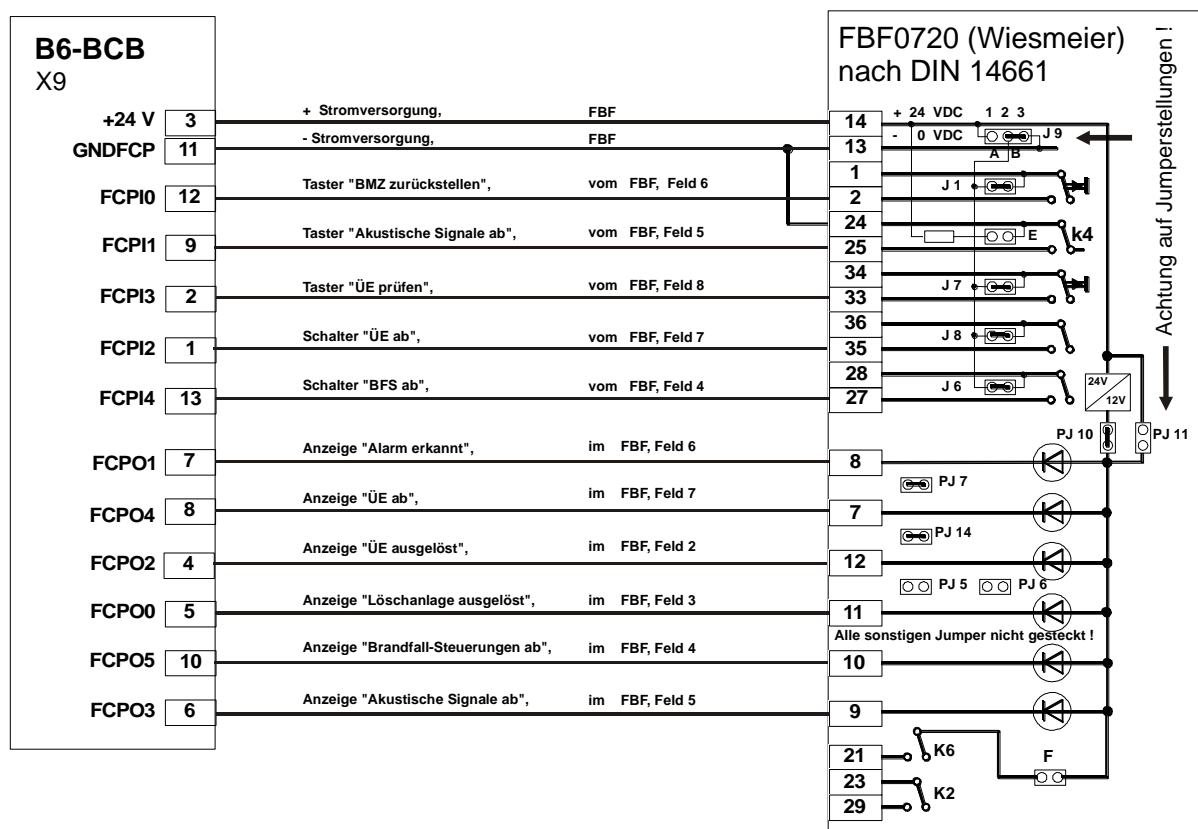
Fig. 46 Connection of fire brigade map 0720 (Wiesmeier)

Wiesmeier applies only to Germany; only in German

> ☞ **Notice**
>
> Because of the number of different fire brigade panels, they are not described in this document. See the manufacturer's documentation for more information.

5.3.10   SecuriLine eXtended

One or two addressable loops and the associated detectors and modules of the SecuriLine eXtended technology can be connected to each SecuriFire 1000/2000 main control unit (B6-BCB12 and B6-BCB13) as well as to the B4-DAI2 and B6-LXI2 SecuriLine unit.

Further information about the main control units or unit can be found in the following technical documentation:

B6-BCB12   T 811 032
B6-BCB13   T 811 031
B4-DAI2   T 811 035
B6-LXI2   T 811 067

Notice

The B4-DAI2 meets the specification of the SecuriLine but not that of the SecuriLine eXtended. In addition to the SecuriLine modules, SecuriLine eXtended modules which support the SecuriLine mode can be operated on the B4-DAI2 trouble-free.

Warning:
- Some BX modules cannot be operated on a SecuriLine (e.g. BX-O2I4).
- The SecuriLine specifications always apply.

There is no reference to the BA modules in this document, since at the time of this product release only BX modules are being sold.

5.3.11   Connector plug for SecuriLine eXtended

B6-BCB12 and B6-BCB13 (X12) or B4-DAI2 (X2)

Loop no.	Designation	Function
2	V4	Not present
	G4	Screen
	C4	GND loop end
	L4	+24V loop end
	V3	Not present
	G3	Screen
	C3	GND loop beginning
	L3	+24V loop beginning
1	V2	Not present
	G2	Screen
	C2	GND loop end
	L2	+24 V loop end
	V1	Not present
	G1	Screen
	C1	GND loop beginning
	L1	+24 V loop beginning

5.3.12   Technical data

Connection:	2 addressable loops, each max. 250 participants or 4 stub lines, each max. 125 participants
Short-circuit isolator:	integrated in detectors and modules
Line voltage:	30 V ±5%
Rated current:	max. 150 mA (addressable loop), max. 75 mA (stub line)
Short-circuit current:	max. 232 mA
Loop interface:	16-pin plug-in screw termination on the front side
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 the 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!

5.3.13   Compatibility information

SecuriFire-Studio:	from release 1.1
Connectable elements:	Detector base USB 501 for automatic detector MCD 573X / CCD 573X or base siren BX-API and repeat signal RAL720X
	MCP 535x and MCP 545x manual call points
	SecuriLine eXtended modules BX-AIM, BX-IM4, BX-IOM, BX-OI3, BX-O2I4, BX-O1, BX-I2, XLM35, BX-REL4, BX-RGW, BX-ESL, BX-SOL, BX-FOL, SDI81X, SDI82X
Recommended cable type for addressable loop:	J-Y(ST)Y 1 x 2 x 0.8 mm screened

6 Expansion units for SecuriFire 2000

6.1 B6-LXI2 SecuriLine unit

The B4-DAI2 can be fitted to the B6-BCB13 main control unit of the SCP2000 if required and serves to connect two additional SecuriLine eXtended loops with their associated detectors and modules.

The unit also has a LAN interface.

Further information about the B6-LXI2 can be found in the technical description T 811 067.

6.1.1 Interfaces

X1　　　Interface for the B6-BCB13 main control unit
X2　　　Connector plug for 2 addressable loops
X3　　　Connection plug for the LAN-Interface (RJ45)

Loop connector plug (X2)

Loop	Pin	Designation	Function
	1		Not present
	2	G4	Screen
	3	C4	GND loop end
2	4	L4	+24 V loop end
	5		Not present
	6	G3	Screen
	7	C3	GND loop beginning
	8	L3	+24 V loop beginning
	9		Not present
	10	G2	Screen
	11	C2	GND loop end
1	12	L2	+24 V loop end
	13		Not present
	14	G1	Screen
	15	C1	GND loop beginning
	16	L1	+24 V loop beginning

Fig. 47 B6-LXI2 interfaces

6.1.2 Technical data

Voltage supply:　　　　　　　　　via SecuriFire 2000 main control unit
Supply voltage:　　　　　　　　　VCC 1　　　+3,4 V ±2 %
　　　　　　　　　　　　　　　　　VCC 2　　　+5,1 V ±2 %
　　　　　　　　　　　　　　　　　loop voltage　+27 V ±5%
Power consumption:　　　　　　　ICC　　　　approx. 35 mA
Ambient temperature:　　　　　　-5°C to +50°C
Rel. air humidity:　　　　　　　　5% to 95%, without condensation

6.1.3 Compatibility information

Compatible main control unit:　　　B6-BCB13
SecuriFire-Studio:　　　　　　　　from release 1.2

6.2 B4-DAI2 SecuriLine unit

The B4-DAI2 can be fitted to the B6-BCB13 main control unit of the SCP2000 if required and serves to connect two additional SecuriLine loops with their associated detectors and modules.

Further information about the B4-DAI2 can be found in the technical description T 811 035.

6.2.1 Interfaces

X1   Interface for the B6-BCB13 main control unit
X2   Connector plug for 2 addressable loops

Loop	Pin	Designation	Function
2	1		Not present
	2	G4	Screen
	3	C4	GND loop end
	4	L4	+24 V loop end
	5		Not present
	6	G3	Screen
	7	C3	GND loop beginning
	8	L3	+24 V loop beginning
1	9		Not present
	10	G2	Screen
	11	C2	GND loop end
	12	L2	+24 V loop end
	13		Not present
	14	G1	Screen
	15	C1	GND loop beginning
	16	L1	+24 V loop beginning
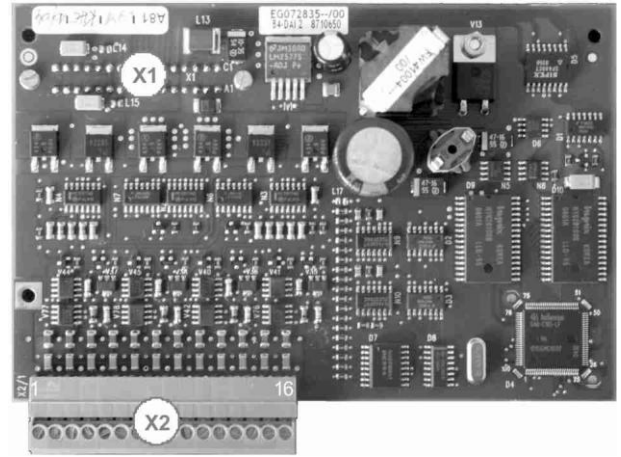
Fig. 48 B4-DAI2 interfaces

6.2.2 Technical data

Voltage supply:	via SecuriFire 2000 main control unit	
Supply voltage:	VCC	+5.0 V ±5%
	loop voltage	+27 V ±5%
Power consumption:	ICC	approx. 35 mA
Ambient temperature:	-5°C to +50°C	
Rel. air humidity:	5% to 95%, without condensation	

6.2.3 Compatibility information

Compatible main control unit: B6-BCB13
SecuriFire-Studio: from release 1.1

Notice

The B4-DAI2 meets the specification of the SecuriLine but not that of the SecuriLine eXtended. In addition to the SecuriLine modules, SecuriLine eXtended modules which support the SecuriLine mode can be operated on the B4-DAI2 trouble-free.

Warning:

- Some BX modules cannot be operated on a SecuriLine (e.g. BX-O2I4).
- The SecuriLine specifications always apply.

6.3 B6-EIO input/output unit

If required, the B6-EIO can be fitted on the B6-BCB13 main control unit of the SCP2000.
The B6-EIO includes 10 monitored inputs and 8 monitored outputs as well as the control electronics for a LED display panel.

6.3.1 Interfaces

X1	B6-BCB13 connector plug
X2, X3	Connector plug for detection zones and inputs
X4	Connector plug for monitored outputs
X5	Connector plug for LED display panel
X11 – X20	Jumpers for setting the inputs
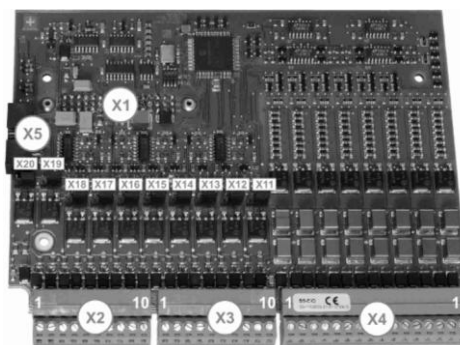
Fig. 49 B6-EIO interfaces

6.4 Connector plugs for detection zones and inputs (X2, X3)

On interfaces X2 and X3, 10 primary inputs or 10 detection zones can be connected (any combination). Every input/line has its own current-limited output driver which supplies the connected peripheral devices with power.

The operation mode and subtype selection is carried out individually for each detection zone and input. This is accomplished by means of planning software (SecuriFire Studio) and with jumper settings on the unit. If the jumper setting does not match the planning, a fault is reported on the SCP after startup.

The following functions can be planned for each input:

- Input monitored 26k7
- VdS interface
- Input DFG-60 BLK3
- Valve monitoring
- Input monitored 3k
- Series 130/A with pre-alarm
- Series 130 Ex-i
- SecuriStar 521 / 523 / 563, LKM583, with pre-alarm
- Series 130A, MCP, without pre-alarm
- SecuriStar 521 / 523 / 563, LKM583, without pre-alarm
- SLR-E-IS
- DCD-1E-IS

Jumper setting

The operating mode of the inputs can be set using jumpers X11 to X20. At the same time the corresponding operating mode has to be planned with software (SecuriFire Studio).

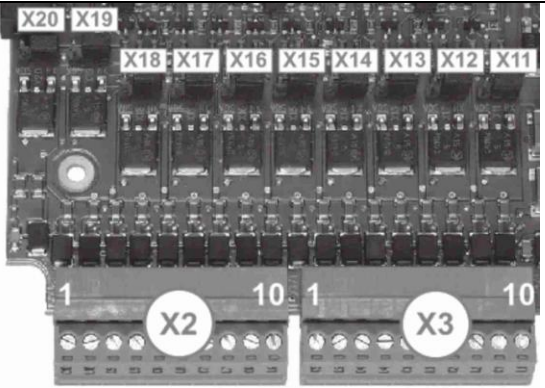**The following applies to all jumpers from X11 to X20:**

VDS HX **Jumper HX connected**	• Detection zones • SecuriStar 521 / 563 • MCP collective • MMD130 Ex-i • HX 130, HX 130 Ex-i	
VDS HX **Jumper VDS connected**	• Monitored input 3k • VdS extinguishing input • Valve monitoring • Hochiki Ex-i detector SLR-E-IS, DCD-1E-IS	
VDS HX **Jumper open**	• Monitored input 26k7	

Fig. 50 Jumper setting

Connection assignment for plug (X2)

Input	Terminal	Designation	Function	Jumper
10	1	C10	GND	X20
	2	L10	+24 V	
9	3	C9	GND	X19
	4	L9	+24 V	
8	5	C8	GND	X18
	6	L8	+24 V	
7	7	C7	GND	X17
	8	L7	+24 V	
6	9	C6	GND	X16
	10	L6	+24 V	

Connection assignment for plug (X3)

Input	Terminal	Designation	Function	Jumper
5	1	C5	GND	X15
	2	L5	+24 V	
4	3	C4	GND	X14
	4	L4	+24 V	
3	5	C3	GND	X13
	6	L3	+24 V	
2	7	C2	GND	X12
	8	L2	+24 V	
1	9	C1	GND	X11
	10	L1	+24 V	

6.5　Connector plug for monitored outputs (X4)

The B6-EIO input/output unit is suitable for connecting 8 primary outputs. Every output has its own current-limited output driver which supplies the connected output with power. The outputs are selectively monitored for short-circuits and wire breakage (according to EN54-13). The setting of the load range has to be planned exclusively with software (SecuriFire Studio).

Connection: loads 20 Ω to 1000 Ω, divided into 3 load ranges
Output voltage: 24 VDC (22 VDC …28 VDC)
Output current: max. 1.3 A

6.5.1　Connection assignment for plug (X4)

Output no.	Designation	Terminal
8	OM8 -	1
	OM8+	2
7	OM7 -	3
	OM7+	4
6	OM6 -	5
	OM6+	6
5	OM5 -	7
	OM5+	8
4	OM4 -	9
	OM4+	10
3	OM3 -	11
	OM3+	12
2	OM2 -	13
	OM2+	14
1	OM1 -	15
	OM1+	16

6.6 B4-EIO input/output unit

If required, the B4-EIO can be fitted on the B6-BCB13 main control unit of the SCP2000.
The B4-EIO includes 10 monitored inputs and 8 monitored outputs as well as the control electronics for a LED display panel.

6.6.1 Interfaces

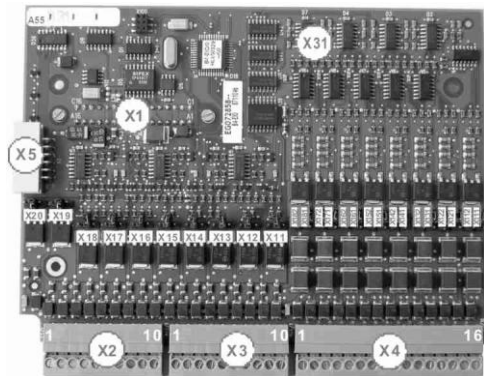|	
X1	B6-BCB13 connector plug
X2, X3	Connector plug for detection zones and inputs
X4	Connector plug for monitored outputs
X5	Connector plug for LED display panel
X11 – X20	Jumpers for setting the inputs
X111 – X182	Jumpers for adjusting the monitored outputs

Fig. 51 B4-EIO interfaces

6.7 Connector plugs for detection zones and inputs (X2, X3)

On interfaces X2 and X3, 10 primary inputs or 10 detection zones can be connected (any combination). Every input/line has its own current-limited output driver which supplies the connected peripheral devices with power.

The operation mode and subtype selection is carried out individually for each detection zone and input. This is accomplished by means of planning software (SecuriFire Studio) and with jumper settings on the unit. If the jumper setting does not match the planning, a fault is reported on the SCP after startup.

The following functions can be planned for each input:
- Input monitored 26k7
- VdS interface
- Input DFG-60 BLK3
- Valve monitoring
- Input monitored 3k
- Series 130/A with pre-alarm
- Series 130 Ex-i
- SecuriStar 521 / 523 / 563, LKM583, with pre-alarm
- Series 130A, MCP, without pre-alarm
- SecuriStar 521 / 523 / 563, LKM583, without pre-alarm
- SLR-E-IS
- DCD-1E-IS

Expansion units for SecuriFire 2000

Jumper setting

The operating mode of the inputs can be set using jumpers X11 to X20. At the same time the corresponding operating mode has to be planned with software (SecuriFire Studio).
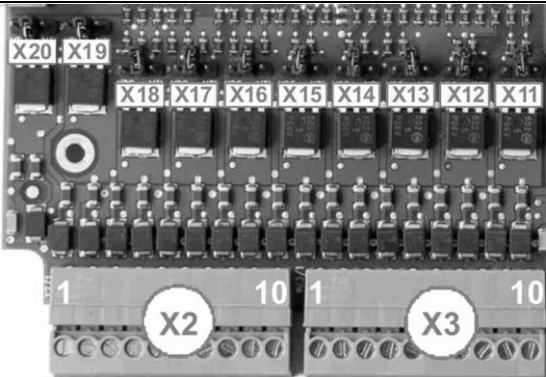
The following applies to all jumpers from X11 to X20:

VDS ⋈ HX **Jumper HX connected**	• Detection zones • SecuriStar 521 / 563 • MCP collective • MMD130 Ex-i • HX 130, HX 130 Ex-i	
VDS ⋈ HX **Jumper VDS connected**	• Monitored input 3k • VdS extinguishing input • Valve monitoring • Hochiki Ex-i detector SLR-E-IS, DCD-1E-IS	
VDS ⋈ HX **Jumper open**	• Monitored input 26k7	

Fig. 52 Jumper setting

Connection assignment for plug (X2)

Input	Terminal	Designation	Function	Jumper
10	1	C10	GND	X20
	2	L10	+24 V	
9	3	C9	GND	X19
	4	L9	+24 V	
8	5	C8	GND	X18
	6	L8	+24 V	
7	7	C7	GND	X17
	8	L7	+24 V	
6	9	C6	GND	X16
	10	L6	+24 V	

Connection assignment for plug (X3)

Input	Terminal	Designation	Function	Jumper
5	1	C5	GND	X15
	2	L5	+24 V	
4	3	C4	GND	X14
	4	L4	+24 V	
3	5	C3	GND	X13
	6	L3	+24 V	
2	7	C2	GND	X12
	8	L2	+24 V	
1	9	C1	GND	X11
	10	L1	+24 V	

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6.8 Connector plug for monitored outputs (X4)

The B4-EIO input/output unit is suitable for connecting 8 primary outputs. Every output has its own current-limited output driver which supplies the connected output with power. The outputs are selectively monitored for short-circuits, wire break-age and overload. You can adjust the strength of the monitoring current (load range) with jumpers. The output current is consistently limited to 1.5 A (typically).

Connection: loads 20 Ω to 1000 Ω, divided into 3 load ranges
Output voltage: 24 VDC (22 VDC …28 VDC)
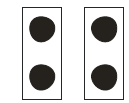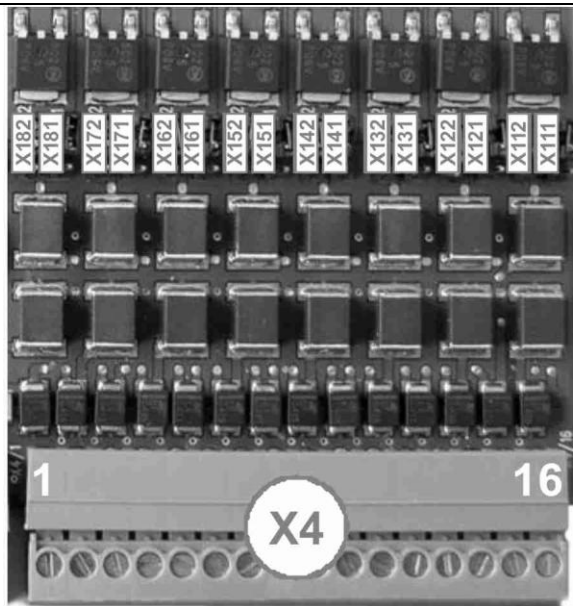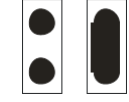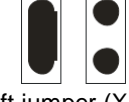Output current: max. 1.5 A

Jumper setting

Jumper open	**Load range 1** • 354–1000 Ω • Line resistance max. 50 Ω • Quiescent current 1 mA	
Right jumper (X1x1) connected	**Load range 2** • 85–354 Ω • Line resistance max. 20 Ω • Quiescent current 3 mA	
Left jumper (X1x2) connected	**Load range 3** • 20–85 Ω • Line resistance max. 5 Ω • Quiescent current 15 mA	**Fig. 53 Jumper setting**

6.8.1 Connection assignment for plug (X4)

Output no.	Designation	Terminal	Jumper for LB1	Jumper for LB2	Jumper for LB3
8	OM8 -	1	X182	X182	X182
	OM8+	2	X181	X181	X181
7	OM7 -	3	X172	X172	X172
	OM7+	4	X171	X171	X171
6	OM6 -	5	X162	X162	X162
	OM6+	6	X161	X161	X161
5	OM5 -	7	X152	X152	X152
	OM5+	8	X151	X151	X151
4	OM4 -	9	X142	X142	X142
	OM4+	10	X141	X141	X141
3	OM3 -	11	X132	X132	X132
	OM3+	12	X131	X131	X131
2	OM2 -	13	X122	X122	X122
	OM2+	14	X121	X121	X121
1	OM1 -	15	X112	X112	X112
	OM1+	16	X111	X111	X111

6.9 Connecting the detector series SecuriStar 521 / 523 / 563 and MCP 521, 525

6.9.1 Connecting detector base USB 501
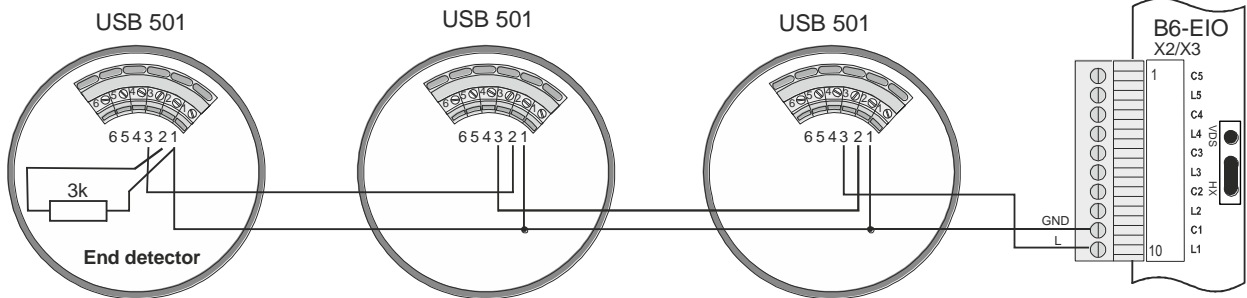
Fig. 54 Connecting the detector series SecuriStar 521 / 523 / 563

6.9.2 Connecting MCP 521N manual call points

last manual call point
In the last manual call point
a 3K resistor must be used4
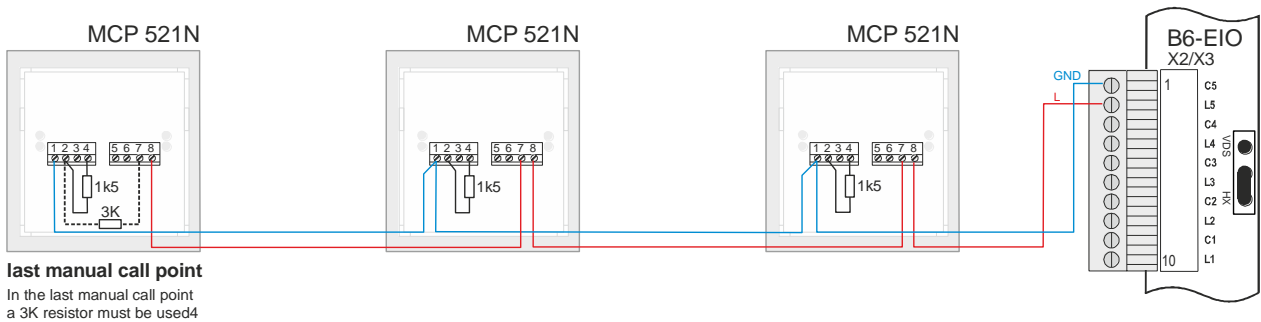
Fig. 55 Connecting MCP 521N manual call points

6.9.3 Connecting MCP 525 manual call points
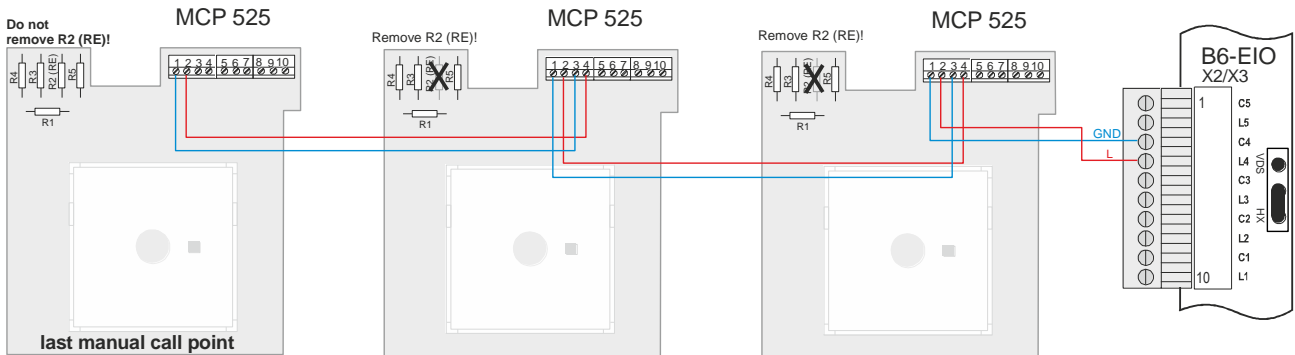
Fig. 56 Connecting MCP 525 manual call points

6.10 Connecting detector base 143 and 143K
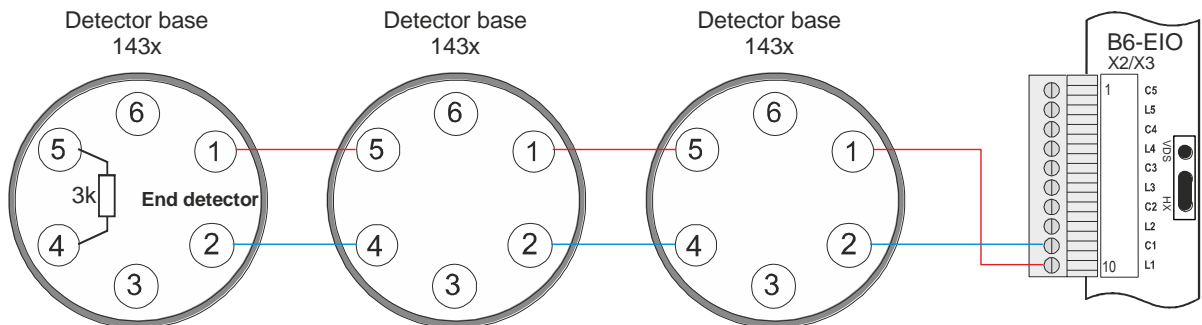
Fig. 57 Connecting detector base 143 and 143K

6.11 Detector base 143 Ex-i with safety barrier Z787

> **Notice**
> This connection fulfils the requirements of VdS Directive 2489.
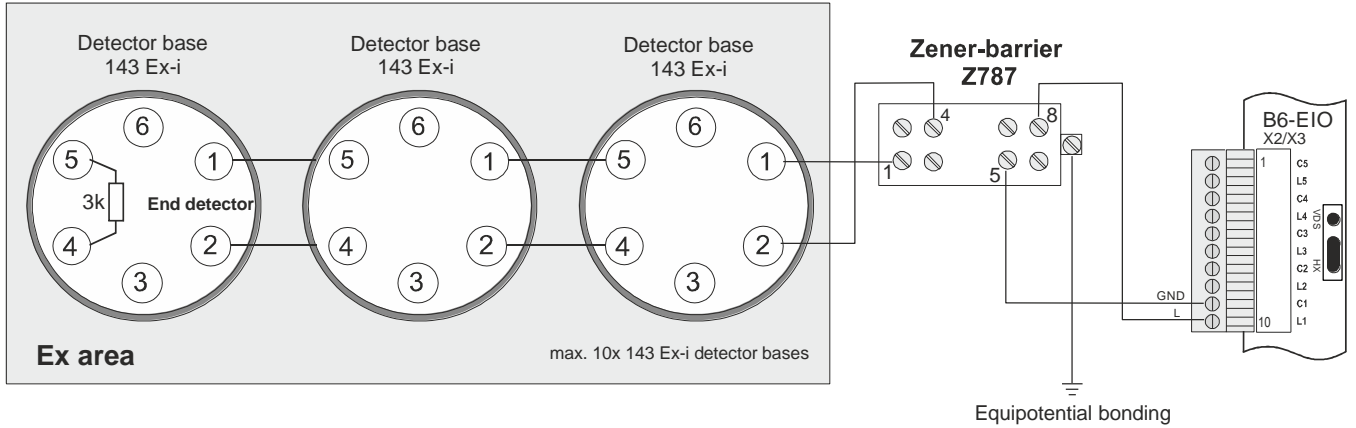
Fig. 58 Detector base 143 Ex-i with safety barrier Z787

6.12 Detector base 143 Ex-i with direct current isolating transformer GTW 01

> **Notice**
> This connection does **NOT** fulfil the requirements of VdS Directive 2489.
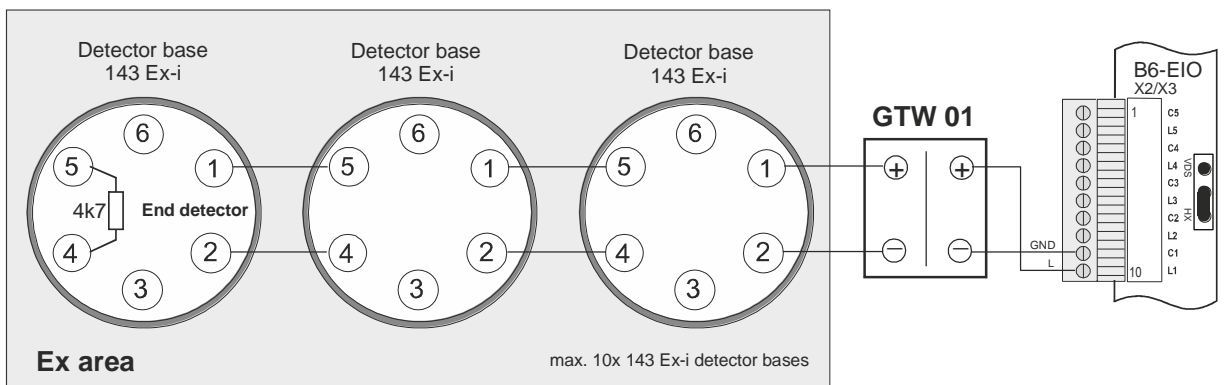
Fig. 59 143 Ex-i detector base with GTW 01 direct current isolating converter

6.13 MMD130 Ex-i in Ex-areas with safety barrier Z787

🖒	**Notice**
	This connection does **NOT** fulfil the requirements of VdS Directive 2489.
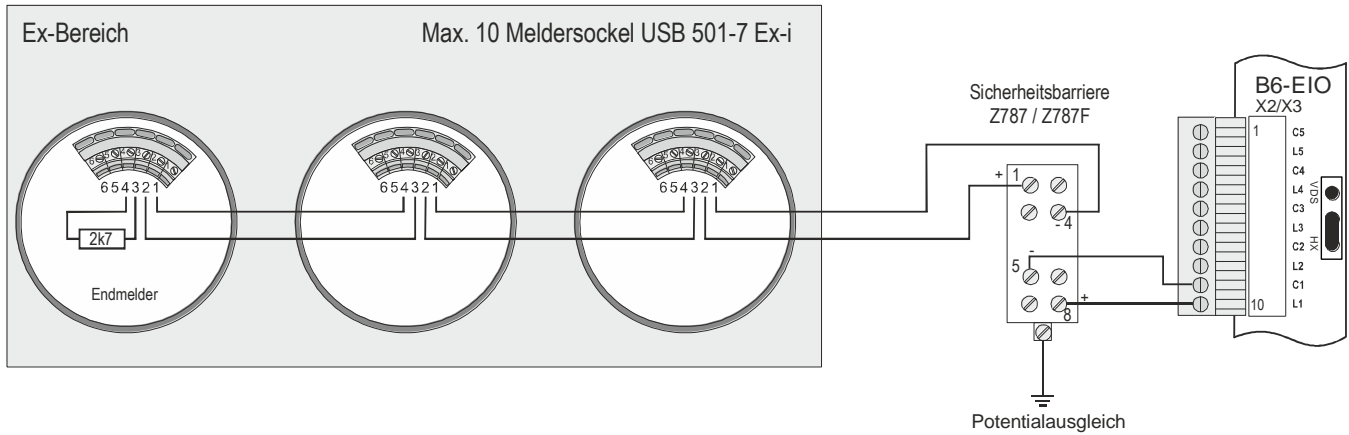
Fig. 60 Connecting MMD130 Ex-i detectors in Ex areas with safety barrier Z787

6.14 MMD130 Ex-i in Ex-areas with direct current isolating transformer GTW 01

🖒	**Notice**
	This connection does **NOT** fulfil the requirements of VdS Directive 2489.
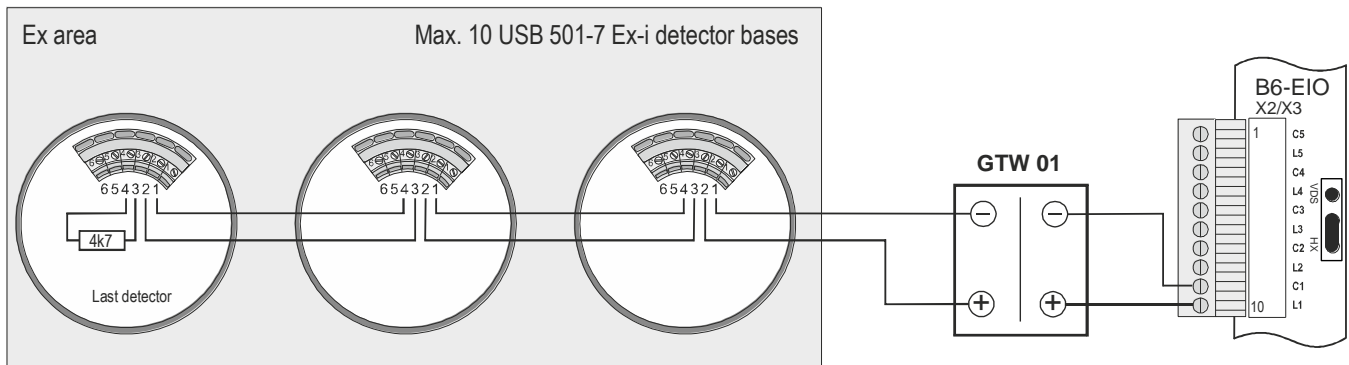
Fig. 61 Connecting MMD130 Ex-i detectors in Ex areas with GTW 01 direct current isolating converter

6.15 Connecting Hochiki Ex-i detectors in Ex areas
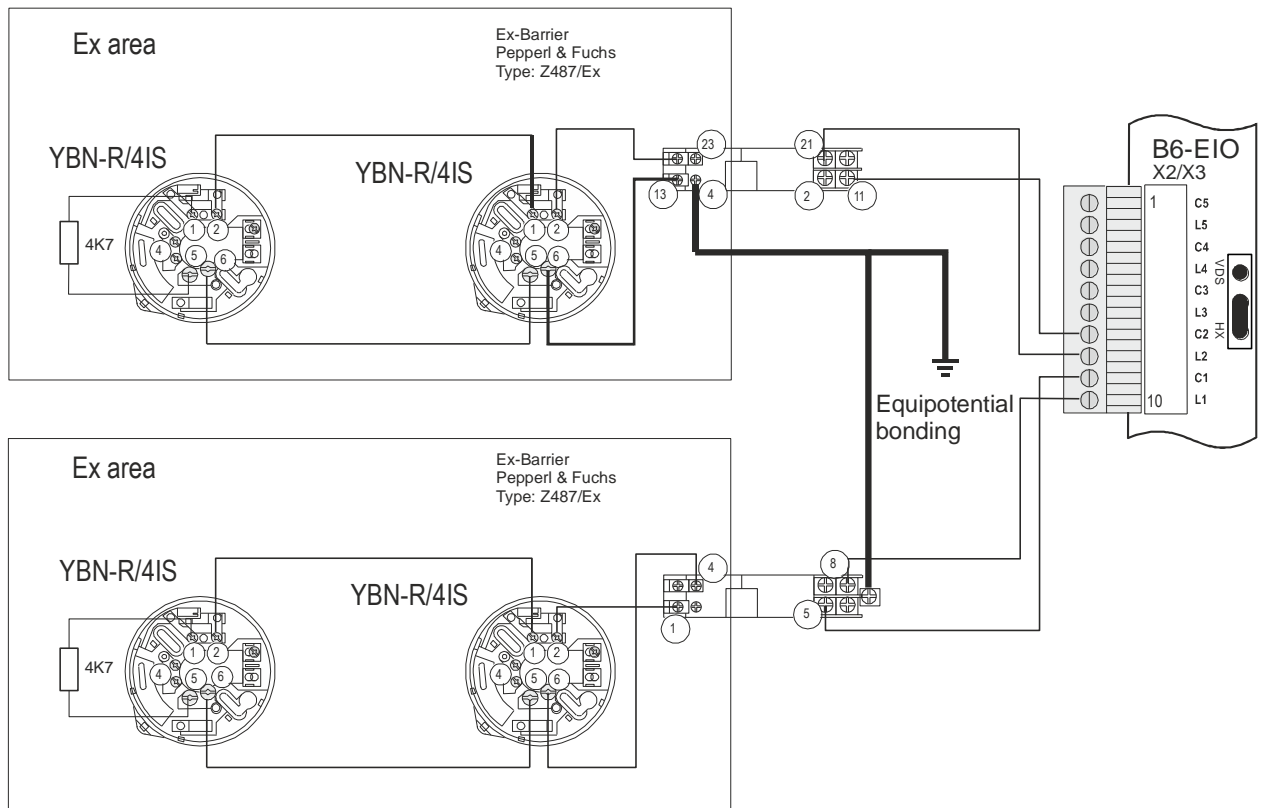
Fig. 62 Connecting Hochiki Ex-i detectors in Ex areas

6.16 Connecting monitored inputs

6.16.1 Monitored input 26k7
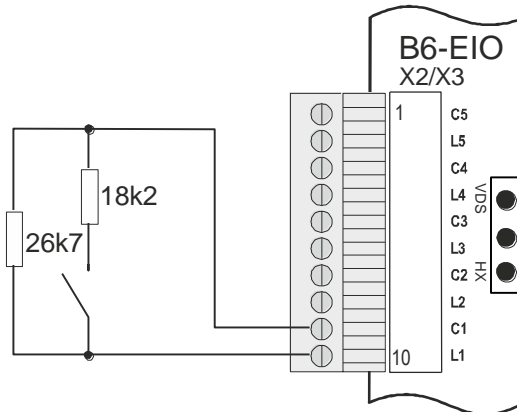
Fig. 63 Monitored input 26k7 connection

6.16.2 Monitored input 3k
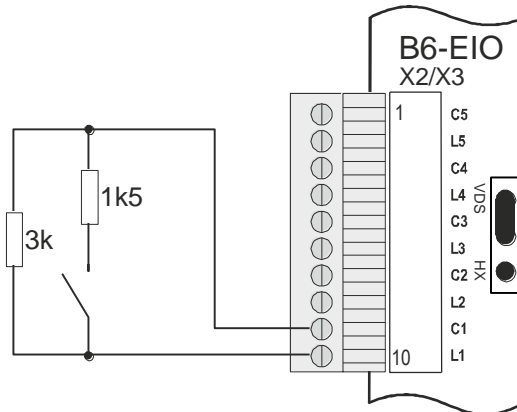
Fig. 64 Connection of monitored input 3k

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6.17   Connecting extinguishing inputs

6.17.1   Valve monitoring

a or b = pre-active
a and b = active
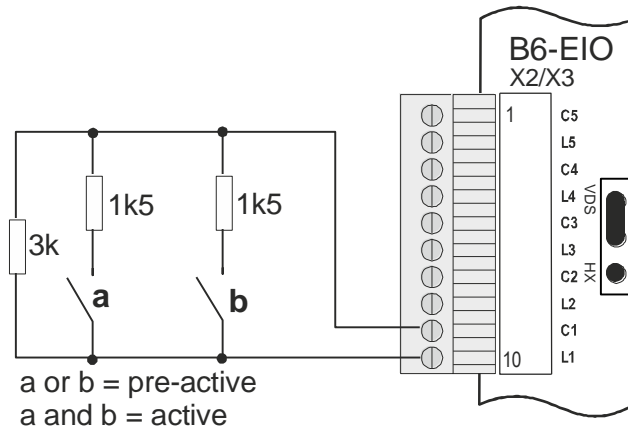
Fig. 65 Valve monitoring

6.17.2   Extinguishing input in accordance with VdS
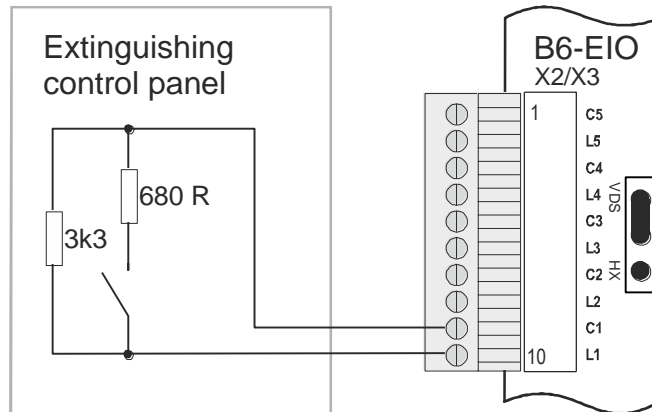
Fig. 66 Extinguishing input in accordance with VdS

6.18   Connection of monitored outputs
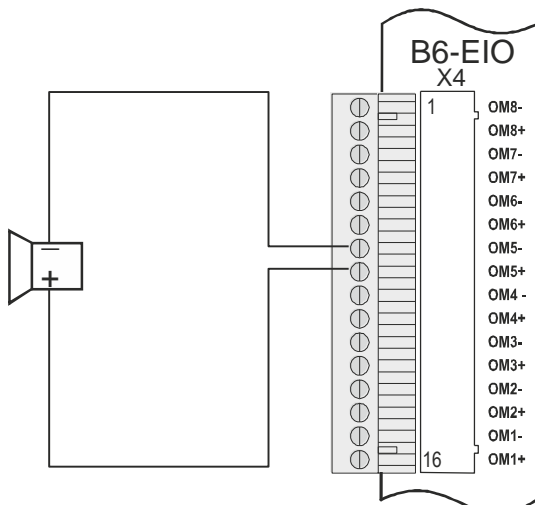
Fig. 67 Quiescent current monitored outputs
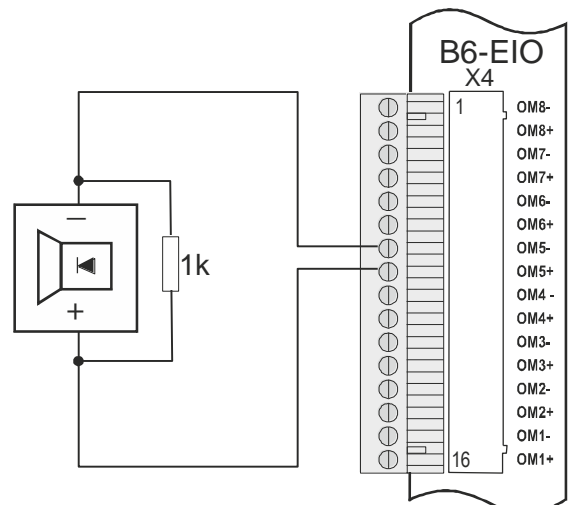
Fig. 68 "Electronic loads"

Expansion units for SecuriFire 2000

6.18.1   Technical data

Unit

Voltage supply:	via SecuriFire 2000 main control unit
Supply voltage:	+22 V to +30 V
Power consumption:	1.35 mA (without detector)
Monitored outputs:	8
Monitored inputs / detection zones:	
Number	10
Line length	max. 1000 m
Ambient temperature:	-5°C to +50°C
Rel. air humidity:	5% to 95%, without condensation

Monitored inputs / detection zones

Supply voltage:	min. 22 V	typically 24 V	max. 28 V
Short-circuit current:	min. 170 mA	typically 199 mA	max. 288 mA
Cable resistance:	50 Ω max.		
Cable capacity:	120 nF max.		
Coverage:	$\varnothing$ = 1.0 mm	1,100 m max.	
	$\varnothing$ = 0.8 mm	720 m max.	
	$\varnothing$ = 0.6 mm	400 m max.	

Monitored outputs:

Supply voltage:	min. 22 V	typically 24 V	max. 28 V
Output current:	max. 1.5 A		
Short-circuit current:	min. 1.77 A	typically 2.17 A	max. 3.14 A
Load range:	Range 1	354 Ω to 1,000 Ω	
	Range 2	70 Ω to 354 Ω	
	Range 3	20 Ω to 70 Ω	
Line resistance:	Range 1	50 Ω max.	
	Range 2	20 Ω max.	
	Range 3	5 Ω max.	

6.18.2   Compatibility information

Compatible main control unit:	B6-BCB13
SecuriFire-Studio:	from release 1.1

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6.19   B4-USI universal interface unit

The B4-USI is a universal communication unit and serves to connect SecuriFire 2000 to management systems and to actuate external printers, pagers, ComBOX, telephone servers, etc. The link to management systems is line type and may be redundant or single. The selection of operation mode of the interface pair parameters is performed by programming.

Further information about the B4-USI can be found in the technical description T 811 034.

6.19.1   Interfaces

X1   B6-BCB13 connector plug (rear side)

X2   Interface 0 (RS485, RS422 or RS232)

X3   PCMCIA slot (not supported)

X4   Interface 1 (RS485 or RS422)
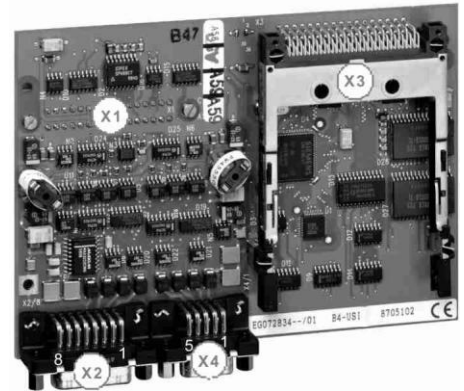
Fig. 69 B4-USI interfaces

Connection 1 (X4)

Designation		Terminal	Terminal	Designation
RS422	RS485			RS422/RS485
TxD1+	L1X+	1	6	GND1
TxD1-	L1X-	2	7	
RxD1+	L1Y+	3	8	GND1
RxD1-	L1Y-	4	9	
		5		

Connection 0 (X2)

Designation			Terminal	Terminal	Designation
RS422	RS485	RS232			RS422/RS485/RS232
TxD0+	L0X+		1	9	GND0
TxD0-	L0X-		2	10	
RxD0+	L0Y+		3	11	GND0
RxD0-	L0Y-		4	12	
		TXD0-	5	13	GND0
		RTS0+	6	14	
		RXD0-	7	15	
		CTS0+	8		

6.19.2   Technical data

Unit

Voltage supply:	via SecuriFire 2000 main control unit
Power consumption:	21 mA
Ambient temperature:	-5°C to +50°C
Rel. air humidity:	5% to 95%, without condensation

Interface 0 (X2)

Electrical:	redundant serial asynchr. interface with galvanic separation
Coverage:	RS485, RS422 max. 1,200 m
	RS232 max. 15 m
Transmission type:	asynchronous serial
Baud rate:	57.6 kBaud
Mechanical design:	15-pin sub-D plug, metallised map case (screen connection)

Interface 1 (X4)

Electrical:	redundant serial asynchr. interface with galvanic separation
Coverage:	RS485, RS422 max. 1,200 m
Transmission type:	asynchronous serial
Baud rate:	57.6 kBaud
Mechanical design:	9-pin sub-D plug, metallised map case (screen connection)

6.19.3   Compatibility information

Compatible main control unit: B6-BCB13
SecuriFire-Studio: from release 1.1

6.19.4   Plug assignment with screened cabling

15-pin X2 plug

RS485 redundant connection or
RS422 non-redundant connection
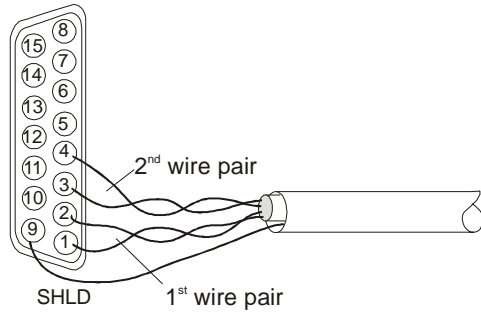
RS485 non-redundant connection
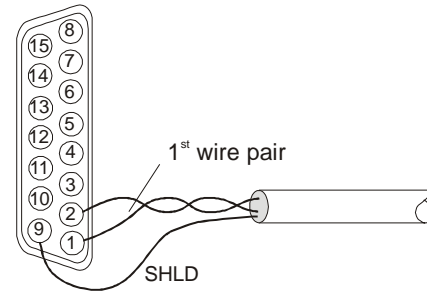
RS232 non-redundant connection
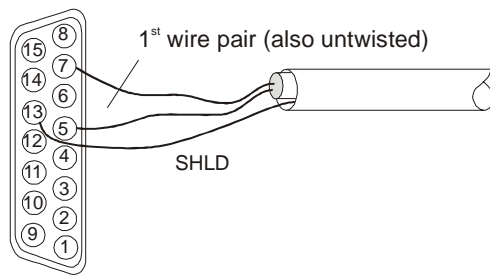
Fig. 70   Plug assignment with screened cabling

9-pin X4 plug

RS485 redundant connection or
RS422 non-redundant connection
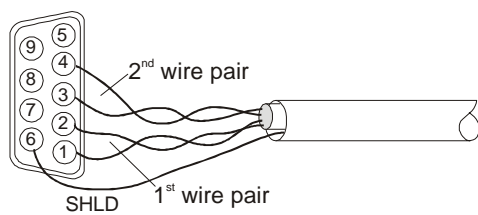
RS485 non-redundant connection
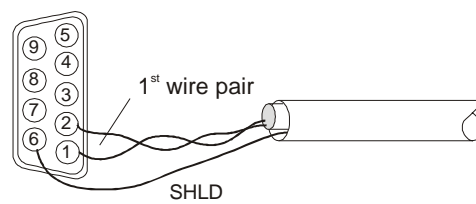
Fig. 71   Plug assignment with screened cabling

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6.19.5   Plug assignment with unscreened cabling

15-pin X2 plug

RS485 redundant connection or
RS422 non-redundant connection
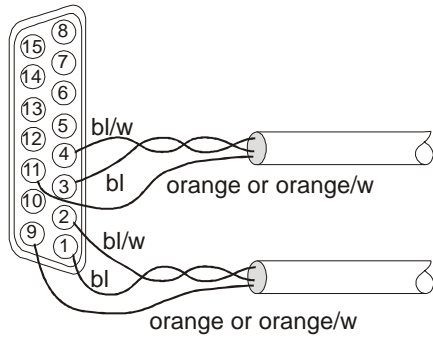
RS485 non-redundant connection
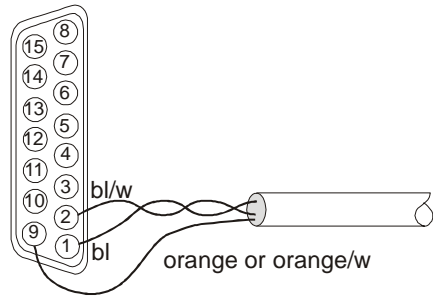
RS232 non-redundant connection
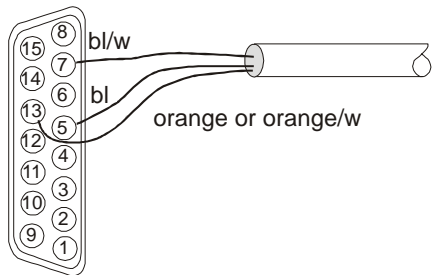
Fig. 72 Plug assignment with unscreened cabling

9-pin X4 plug

RS485 redundant connection or
RS422 non-redundant connection
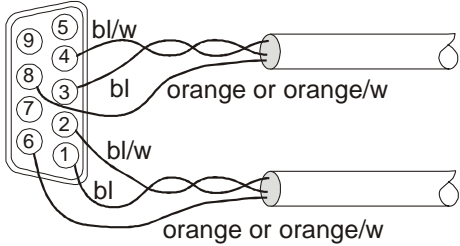
RS485 non-redundant connection
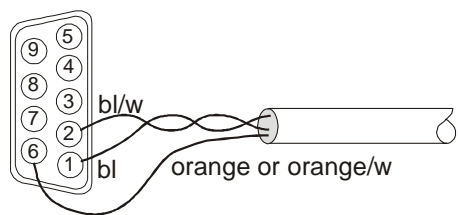
Fig. 73 Plug assignment with unscreened cabling

6.20 Connection to management and third-party systems (non-redundant)

6.20.1 Connecting management system / ESPA to RS232 interface

This connection is optionally available as a cable. When connecting the management system / ESPA via an RS232 interface to the B4-USI, the max. distance between B4-USI and PC is 15 m.
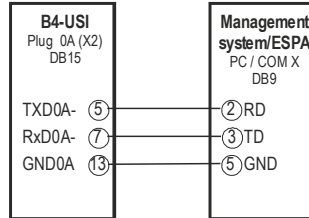
Fig. 74 Connecting management system to RS232 interface

6.20.2 Connecting management system /ESPA via converter
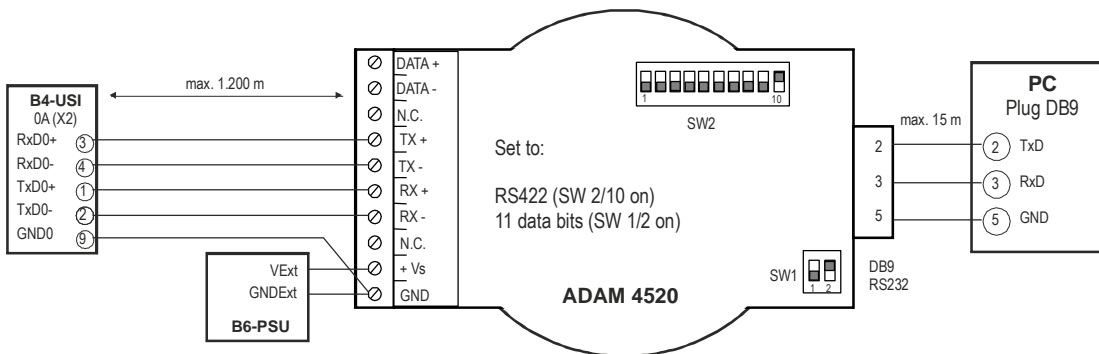
Fig. 75 Connecting management system / ESPA via converter

SECURITON

6.21 Connection to management and third-party systems (redundant)

6.21.1 Connection to an interface-redundant management system via RS422
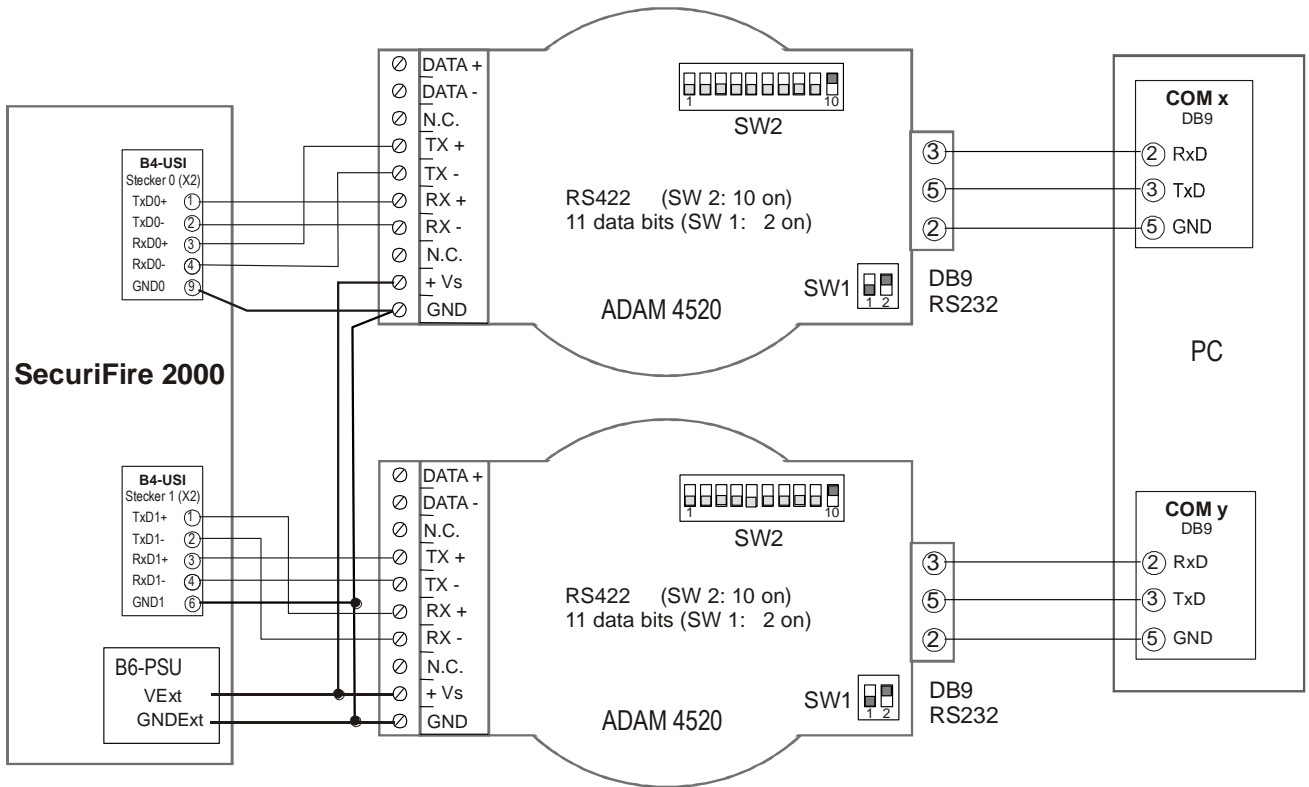
Fig. 76 Connecting interface-redundant management system to RS422 interface

6.22 ComBOX connection

The serial connection of the ComBOX to the SecuriFire 2000 is implemented exclusively via the B4-USI universal interface unit. By using an ADAM 4520 interface converter between ComBOX and control panel, a coverage distance of 1,200 m can be achieved.

6.22.1 Serial connection of the ComBOX to B4-USI
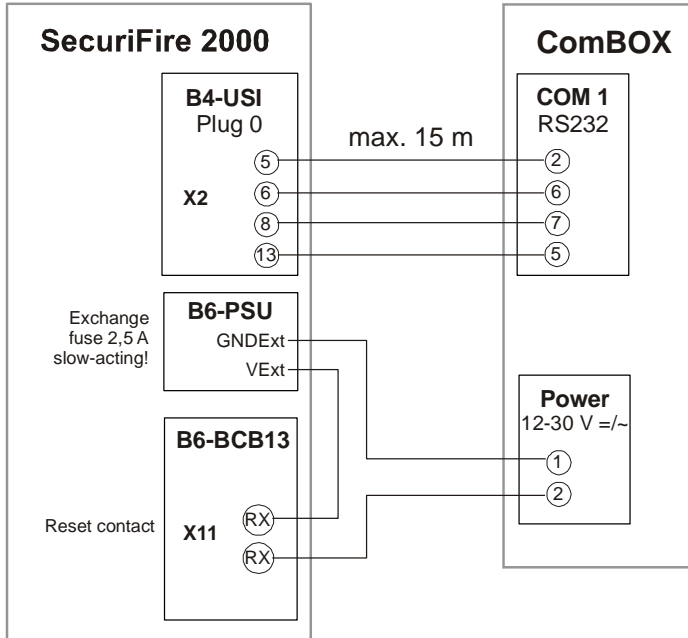
Fig. 77 Serial connection of the ComBOX to B4-USI

6.22.2 Serial connection of the ComBOX via ADAM 4520
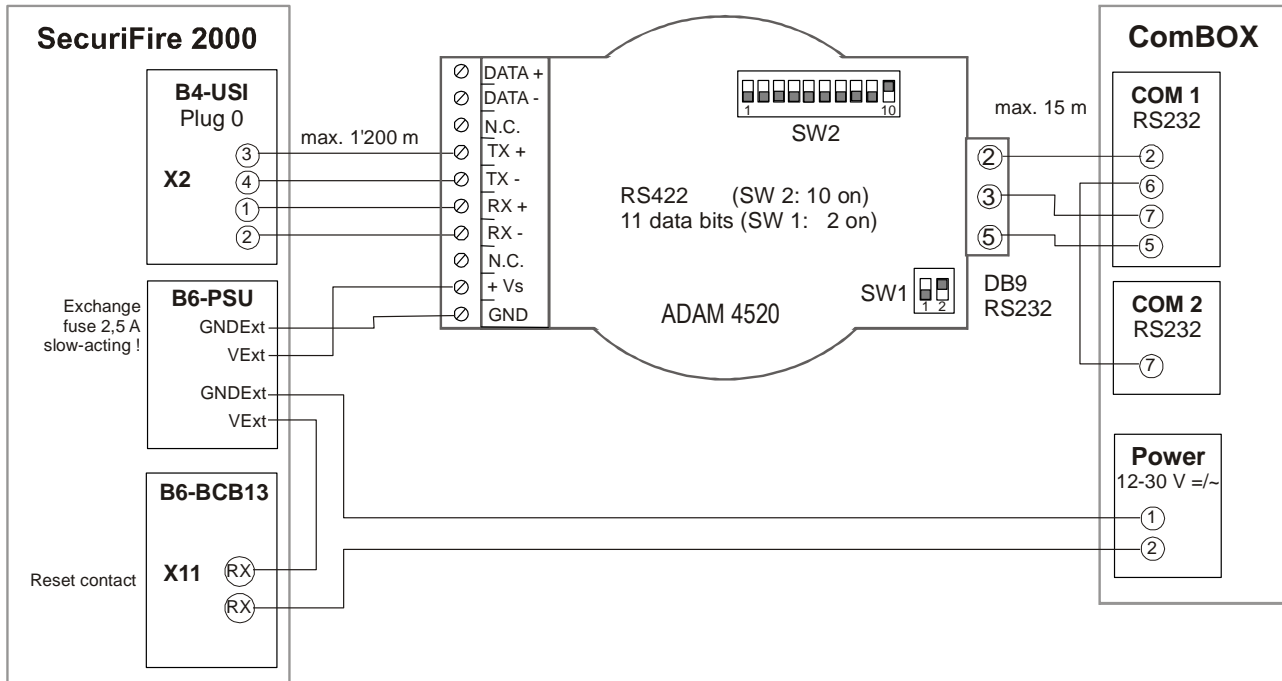
Fig. 78 Serial connection of the ComBOX via ADAM 4520

SECURITON

6.22.3   Connection of the ComBOX to SecuriFire via contacts
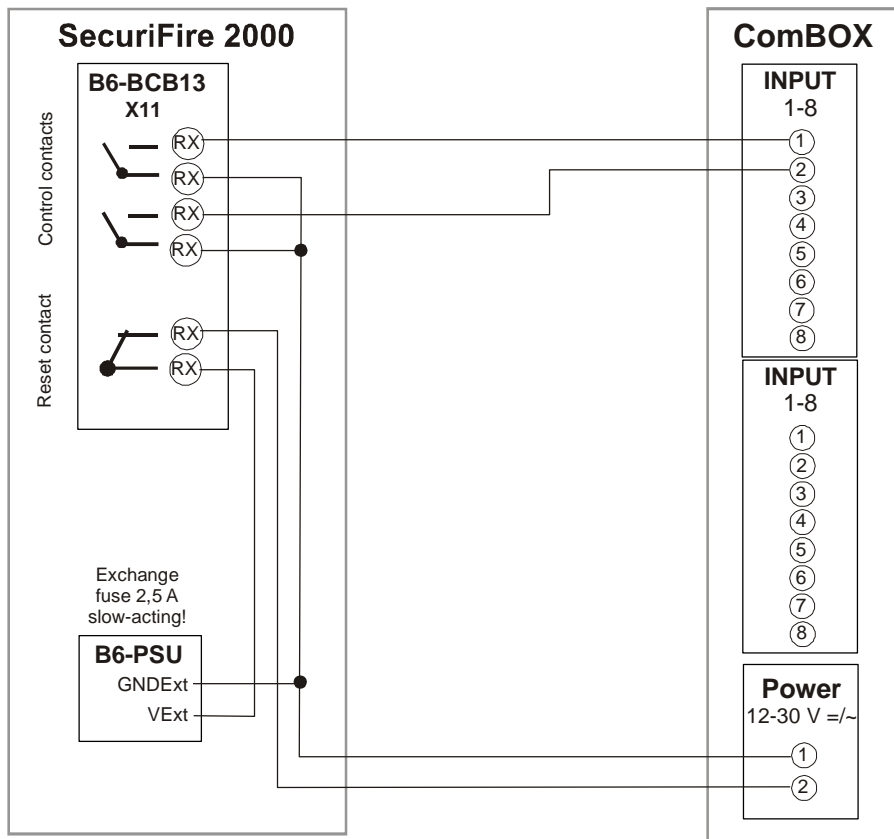
Fig. 79 Connection of the ComBOX to SecuriFire via contacts

6.23 External printer connection

> **Notice**
>
> External printers can be connected to the SecuriFire 2000 exclusively via X2 connections of the B4-USI that are programmed to "Printer" operation mode. The printer must have an RS232 (or Centronics) interface.

6.23.1 External printer to RS232 interface
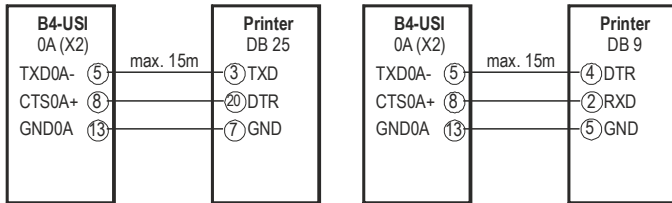
Fig. 80 External printer on RS232 interface

When connecting a printer via an RS232 interface to the B4-USI, the max. distance between B4-USI and printer is 15 m.

6.23.2 External parallel printer on RS422 interface with converter

When connecting a parallel printer via RS422 interface with a data converter W&T to the B4-USI4, the max. distance between B4-USI4 and converter is 1,200 m.
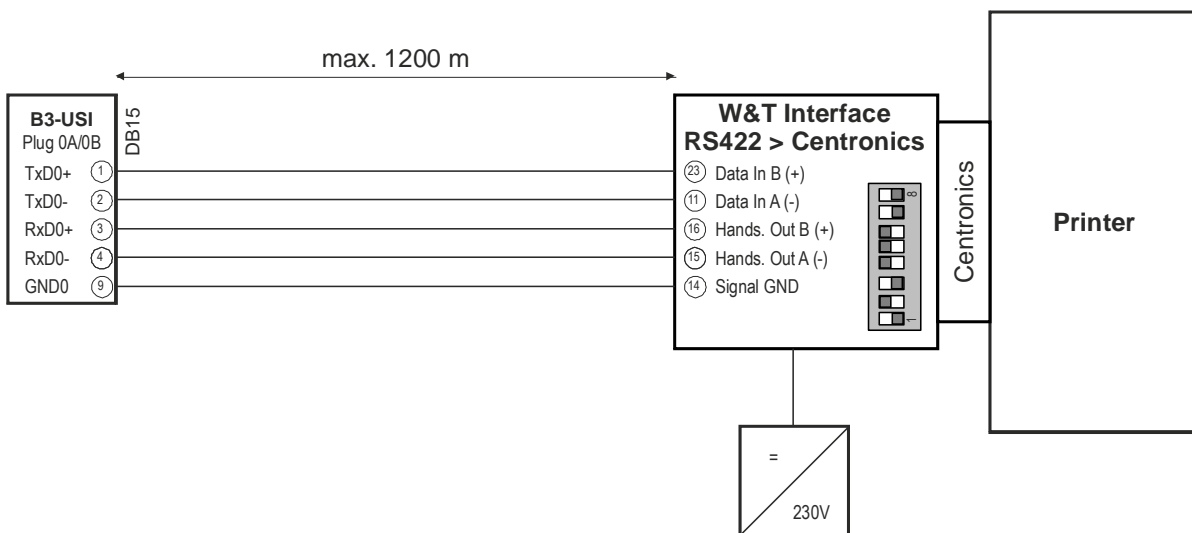
Fig. 81 External parallel printer on RS422 interface with converter

Connection cable

RS422 (USI) DB15 f		↔	W&T interface	
TxD0+	Pin1	↔	Pin23	Data In B (+)
TxD0-	Pin2	↔	Pin11	Data In A (-)
RxD0+	Pin3	↔	Pin16	Handshake Out B (+)
RxD0-	Pin4	↔	Pin15	Handshake Out A (-)
GND	Pin9	↔	Pin14	Signal GND

Settings on the interface

DIP-Switch ON → S1, S3, S7, S8:   Baud rate 19200 baud,
8 data bit,
Parity=learnmode

---

7   MMI-BUS devices

The MMI-BUS is a serial data bus for connecting external devices and indication and control maps. Up to 15 participants can be connected to each MMI-BUS and operated up to 1,200 m from a control panel. For security and reliability reasons, the data line and power supply are redundantly implemented, whereby they are separately conveyed.
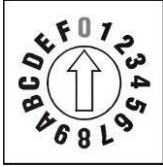
Using the address switch, you have to set the participant address (1 to F) on each participant of the MMI-BUS that has already been assigned with the software projection. The physical sequence of the devices is unimportant; however, each address can be allocated only once.

Notice

The defined features must be taken into account (e.g. per control panel max. 8 indication and control maps, max. 3 printers etc.). The maximum possible distance of the last MMI-BUS participant is derived from the power consumption of the connected participants and the cable cross-section of the power supply. Each MMI-BUS participant is potential decoupled and has to be locally earthed.

MMI-BUS participants in the first version are **NOT** supported.

7.1   MMI-BUS schematic drawing
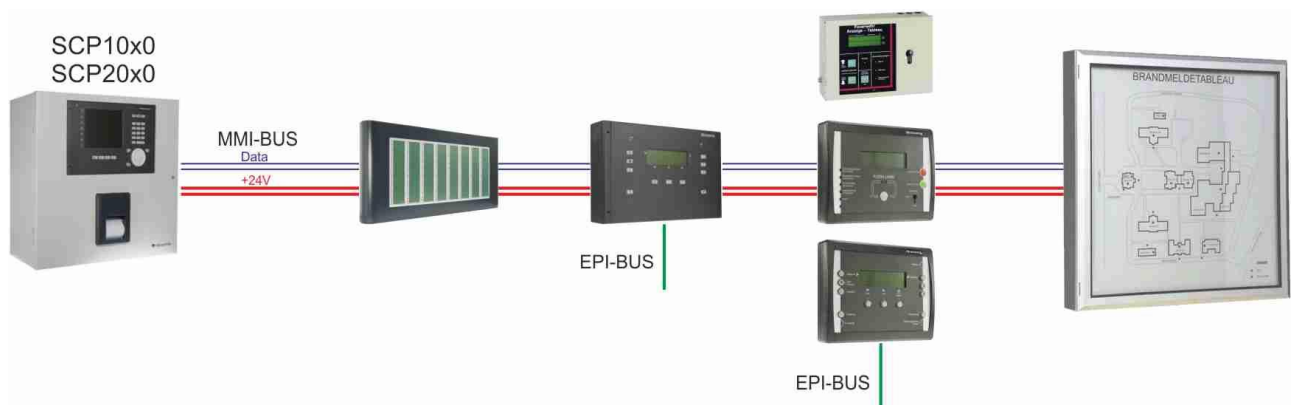
Fig. 82 MMI-BUS schematic drawing

7.2   MMI-BUS technical data

Length:	max. 1,200 m
Participants:	max. 15
Transmission type:	RS485 bidirectional, 38.4 kBd
Protection:	EMC, ESD by means of Transzorp diodes
Mechanical design:	sub-D plug, 9-pin, metallised map case (screen connection)
MMI-Bus cable (unscreened):	LF-2YY 2x2x0.5

7.3 Connection of MMI-BUS participants

The data line and the power supply are redundantly implemented. The power supply lines are laid out parallel to the data lines. Power can be supplied from the control panel or from an external energy supply source.

7.3.1 Jumper assignment for MMI-BUS termination

The B6-BCB main control units and all MMI-BUS devices have two jumpers for terminating the MMI-BUS (jumper connected = BUS terminated; jumper not connected = BUS open).

The MMI-BUS may be operated at normal speed (38.4 kBd) without BUS termination. On MMI-BUS devices with high data speeds (96 kBd), it is **IMPERATIVE** that the beginning of the BUS (main control unit) and the end of it (last participant of the MMI-BUS) are terminated with parallel resistance integrated on the printed circuit board.

7.3.2 MMI-BUS connection open
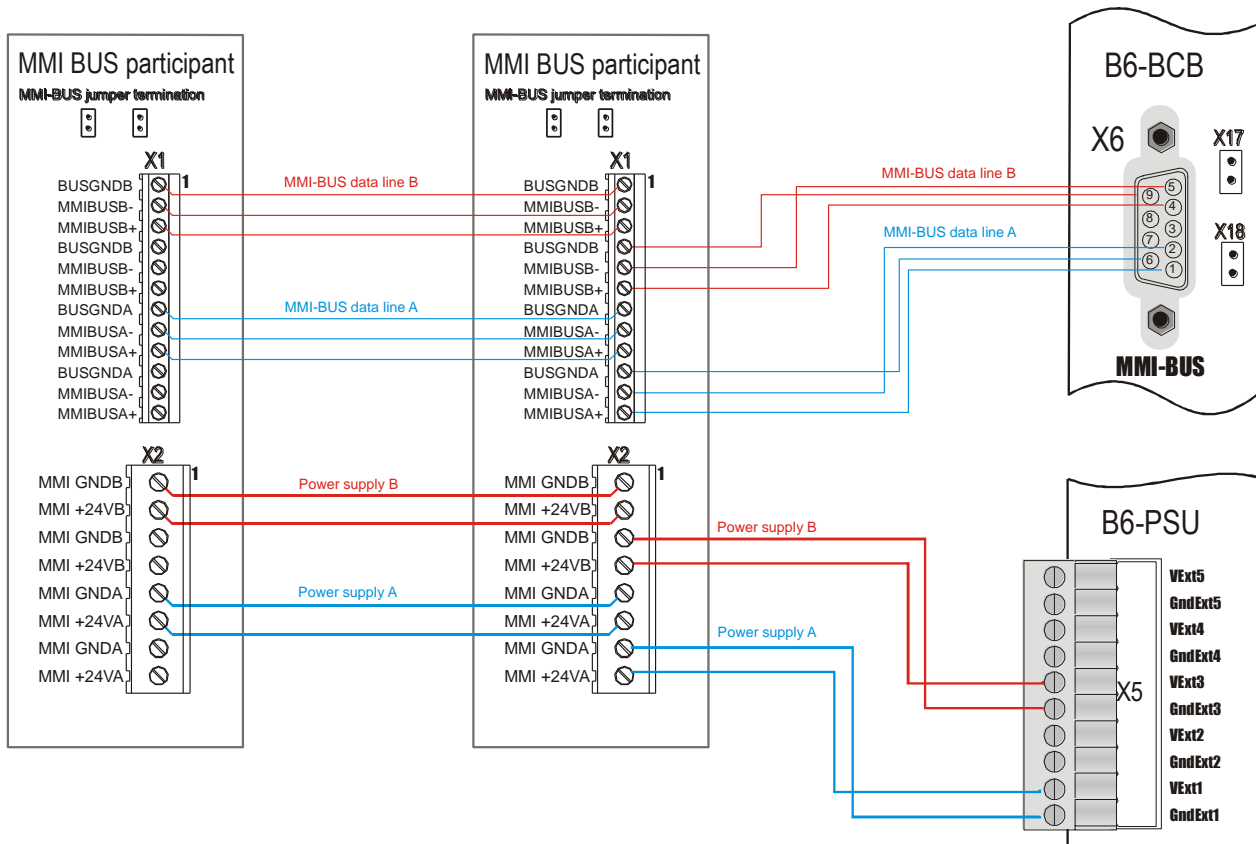
Fig. 83 MMI-BUS connection open

⚠️ **Warning**

If MMI participants up to version -E are connected to a B6-BCB main control unit, the jumpers must **NOT** be connected!
The open connection is not recommended for new projects!

7.3.3   MMI-BUS connection terminated
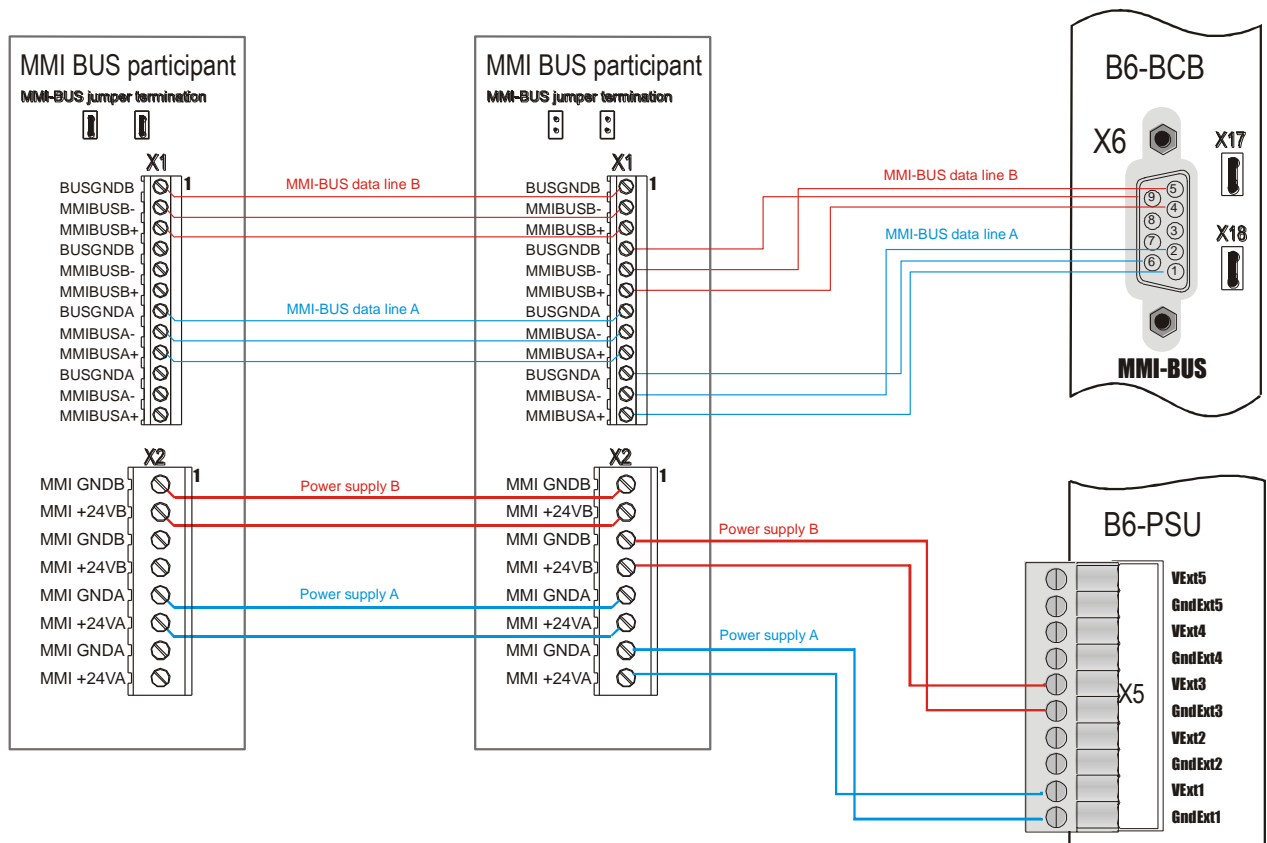
Fig. 84 MMI-BUS connection terminated

⚠️ **Warning**

If MMI participants beginning with version -F are connected to a B6-BCB main control unit, the jumpers on B6-BCB and on the last MMI-BUS participant **can** be connected.

7.3.4 MMI-BUS connection with star-shaped power supply

To achieve the highest possible coverage for the conductor cross-section in use for MMI-BUS devices with high current consumption, MMI-BUS devices can also be supplied with star-shaped power from the B6-PSU power supply unit. For the maximum possible distance of the devices, the distance specification of the individual device applies. Since the data line of the MMI-BUS is always serial wired, a star-shaped power supply has no influence on the maximum possible total length of the MMI-BUS (max. 1,200 m).

The power supply may also be provided by an EN-54-2 compliant external power supply unit on site.
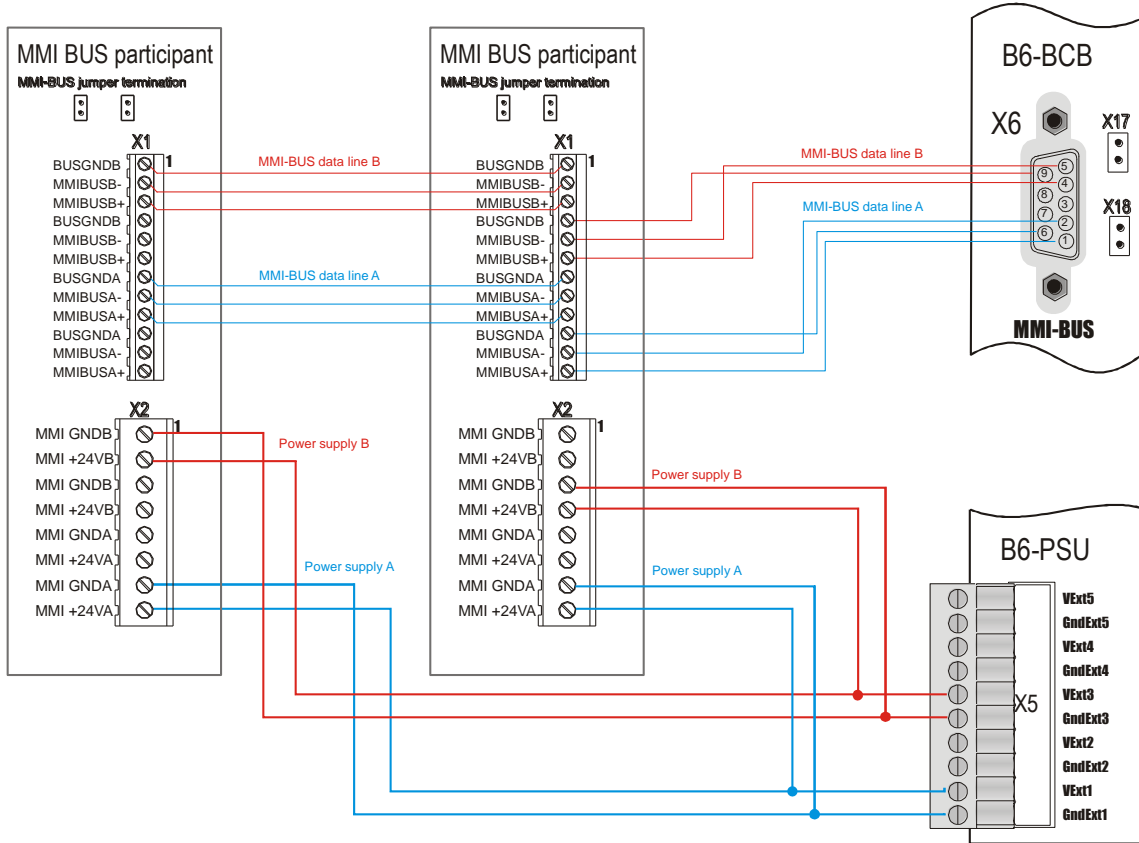
Fig. 85 MMI-BUS connection with star-shaped power supply

7.4 B5-MMI-FIP floor panel

The floor panel can be connected via the MMI bus to the main control unit board B6-BCB12/13 of the SecuriFire 1000/2000.
The B5-MMI-FIP can be remotely mounted up to 1200 m from the SecuriFire 1000/2000.
With the hex coding switch you can set one of fifteen possible MMI bus addresses.

More information about the B5-MMI-FIP can be found in Technical Description T 811 054.

Fig. 86 B5-MMI-FIP

7.4.1 Interfaces

X1   Connection for MMI bus data

X2   Connection for MMI bus power supply

X3   Connection for LC display

X31   Connection for LC display lighting

X4/X6 Jumper for MMI bus termination
           if jumpers are connected, the MMI bus is terminated

X5   EPI bus

X7   Jumper for audible of indication and control map
           if the jumper is connected the audible is deactivated

X8   Jumper for reset of indication and control map
           DO ALWAYS REMOVE !

S1   Rotary switch for MMI bus address

Fig. 87 B5-MMI-FIP interfaces

7.4.1.1 MMI bus power supply connector plug (X1) and power supply (X2)

X1 MMI bus connector plug

Terminal	Designation
1	GNDISO
2	-MMI-BUS-B-
3	+MMI-BUS-B-
4	GNDISO
5	-MMI-BUS-B-
6	+MMI-BUS-B-
7	GNDISO
8	-MMI-BUS-A-
9	+MMI-BUS-A-
10	GNDISO
11	-MMI-BUS-A-
12	+MMI-BUS-A-

X2 power supply

Terminal	Designation
1	MMIGND-B
2	MMI+24V-B
3	MMIGND-B
4	MMI+24V-B
5	MMIGND-A
6	MMI+24V-A
7	MMIGND-A
8	MMI+24V-A
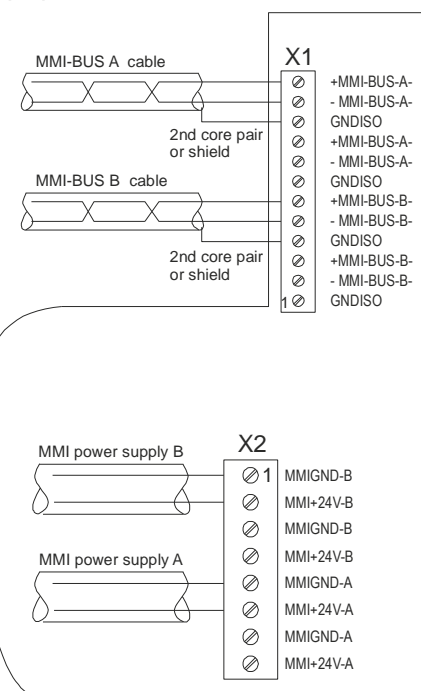
Fig. 88 MMI bus power supply connector plug (X1) and power supply (X2)

7.4.2 Instructions for opening and mounting the B5-MMI-FIP

1. Remove covers on both sides. Insert a screwdriver into the slit and lightly press to release the lock.
2. Unlock all four screws and lift the indication and control map to the front.
3. Holes for the required cable entries can be broken out on top, bottom, right, left and on the rear wall of the map case.
4. Cable strain relief is provided by two holders for cable fasteners in the rear wall of the map case. Screw terminal wires onto the terminal block, set the MMI bus address, and mount the map case on the rear wall.
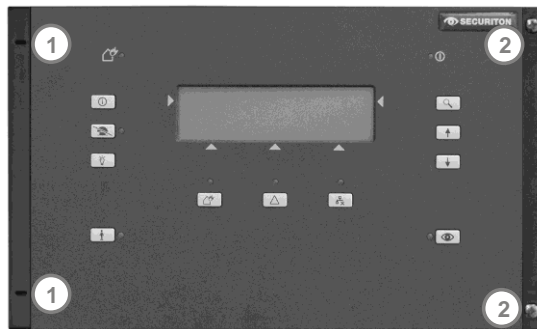
Fig. 89 Front side of B5-MMI-FIP

7.4.3 Technical data

Operating voltage:	3.3 V
Quiescent current:	49 mA
Data transmission:	MMI bus
Electrical:	galvanically isolated RS485
Protocol:	serial, DIN 19244-3
MMI bus total length:	max. 1,200 m
Protection class:	IP 42
Ambient temperature:	-5°C to +50°C
Dimensions:	170 x 276 x 48 mm (W x H x D)
Map case colour:	charcoal grey, RAL 7016

7.4.4 Compatibility information

SecuriFire Studio	from Release 1.1.3
MMI interface	SecuriFire 1000/2000 (B6-BCB12 / B6-BCB13)
	SecuriFire 3000 (B5-BAF, all versions)

7.5 B5-MMI-FPS-S Fire brigade panel Sweden

The fire brigade panel Sweden can be connected via the MMI bus to the main control unit board B6-BCB12/13 of the SecuriFire 1000/2000.

The B5-MMI-FPS-S can be remotely mounted up to 1200 m from the SecuriFire 1000/2000.

With the hex coding switch you can set one of fifteen possible MMI bus addresses.

More information about the B5-MMI-FPS-S can be found in Technical Description T 811 132.

Fig. 90 B5-MMI-FPS-S

7.5.1 Interfaces

X1   Connection for MMI bus data

X2   Connection for MMI bus power supply

X3   Connection for LC display

X31   Connection for LC display lighting

X4/X6 Jumper for MMI bus termination
           if jumpers are connected, the MMI bus is terminated

X5   EPI bus

X7   Jumper for audible of indication and control map
           if the jumper is connected the audible is deactivated

X8   Jumper for reset of indication and control map
           DO ALWAYS REMOVE !

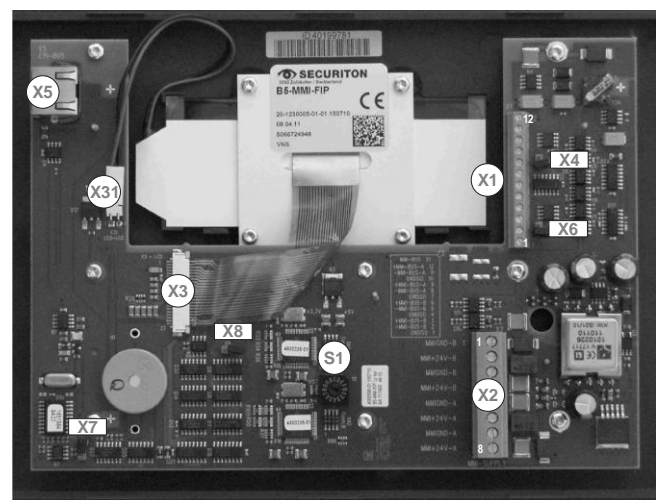**S1**   Rotary switch for MMI bus address

Fig. 91 B5-MMI-FPS interfaces

7.5.1.1 MMI bus power supply connector plug (X1) and power supply (X2)

X1 MMI bus connector plug

Terminal	Designation
1	GNDISO
2	-BUS-A
3	+BUS-A
4	GNDISO
5	-BUS-A
6	+BUS-A
7	GNDISO
8	-BUS-B
9	+BUS-B
10	GNDISO
11	-BUS-B
12	+BUS-B

X2 power supply

| Terminal	Designation
1	MMIGNDB
2	MMI+24VB
3	MMIGNDB
4	MMI+24VB
5	MMIGNDA
6	MMI+24VA
7	MMIGNDA
8	MMI+24VA
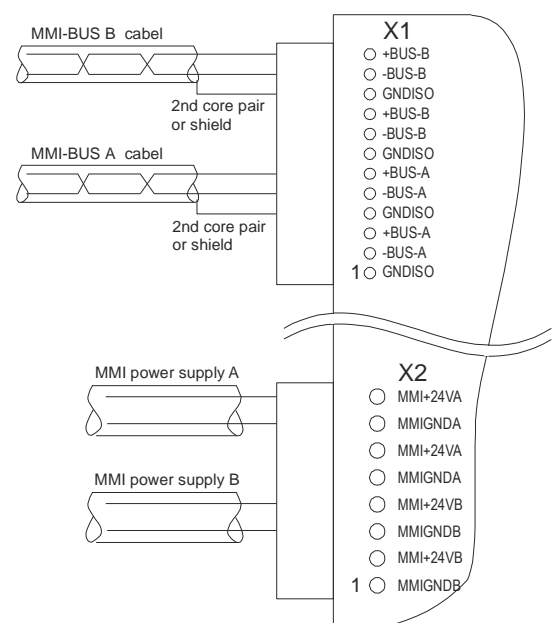
Fig. 92 MMI bus power supply connector plug (X1) and power supply (X2)

7.5.2 Instructions for opening and mounting the B5-MMI-FPS-S
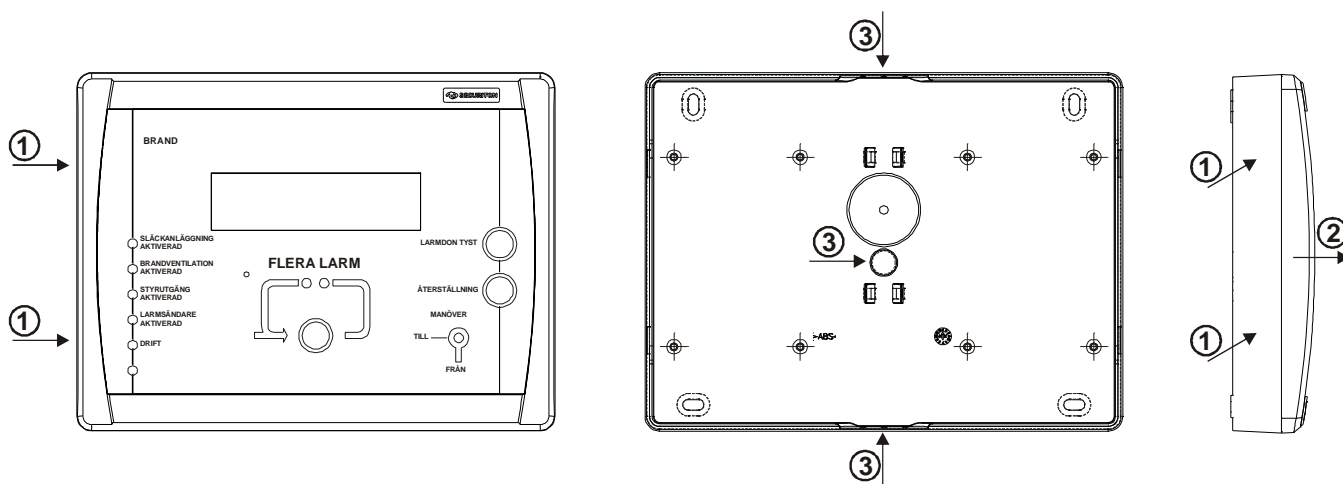
Fig. 93 Mounting B5-MMI-FPS-S

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 MMI bus address. Position the housing front on the housing rear and push in until it snaps into place.

7.5.3 Technical data

Operating voltage:	3.3 V
Quiescent current:	49 mA
Data transmission:	MMI bus
Electrical:	galvanically isolated RS485
Protocol:	serial, DIN 19244-3
MMI bus total length:	max. 1,200 m
Protection class:	IP 42
Ambient temperature:	-5°C to +50°C
Dimensions:	170 x 276 x 48 mm (W x H x D)
Map case colour:	charcoal grey, RAL 7016

7.5.4 Compatibility information

SecuriFire Studio	from Release 2.0
MMI interface	SecuriFire 1000/2000 (B6-BCB12 / B6-BCB13)
	SecuriFire 3000 (B5-BAF, all versions)

7.6 B3-MMI-UIO universal input/output module

The B3-MMI-UIO is primarily used for controlling layout plan and repeat signal boards of the SecuriFire system. It can also be used by the SCP remote input/output module for polling potential-free contacts and keys and for controlling unmonitored horns, lamps, relays etc. Depending on its use, the B3-MMI-UIO is integrated in the concerned boards or branch sockets. The system connection is via the MMI-BUS.

If the 64 possible LED outputs (type: repeat signal) of a B3-MMI-UIO are insufficient for actuation of a layout plan board or parallel indicator board, it is possible to cascade up to 8 pcs. B3-MMI-UIO on an MMI-BUS.

More information about the B3-MMI-UIO can be found in the Technical Description T 811 112.

7.6.1 Interfaces

X1   MMI bus connector plug

X2   Power supply

X3   Connection for layout plan board or parallel indicator board

X4   Connection for layout plan board or parallel indicator board

X5   Transistor outputs

X6   Opto-isolator inputs

X7   MMI bus A jumper

X8   MMI bus B jumper

X10   Jumper for audible reset

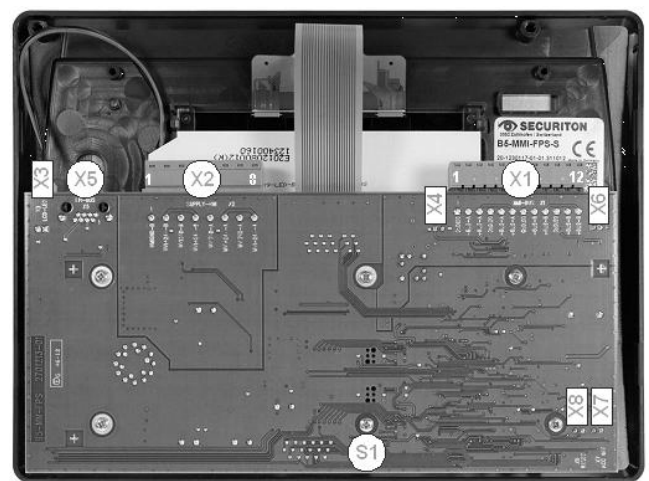**S1**   Rotary switch for MMI bus address
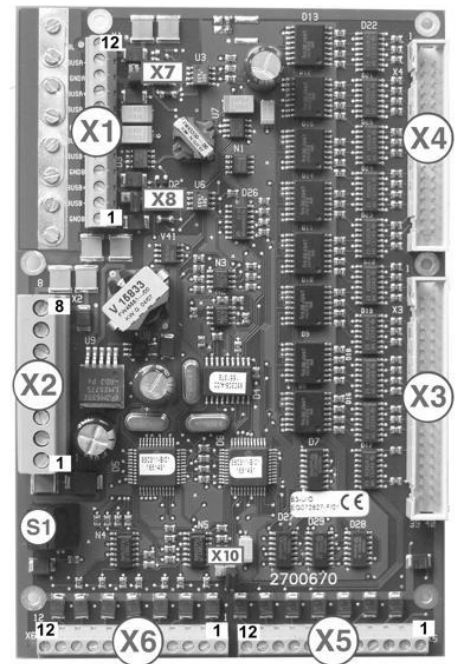
Fig. 94 B3-MMI-UIO interfaces

7.6.2 MMI bus power supply connector plug (X1) and power supply (X2)

X1 MMI bus connector plug

Terminal	Designation
1	BUSGNDB
2	MMIBUSB-
3	MMIBUSB+
4	BUSGNDB
5	MMIBUSB-
6	MMIBUSB+
7	BUSGNDA
8	MMIBUSA-
9	MMIBUSA+
10	BUSGNDA
11	MMIBUSA-
12	MMIBUSA+

X2 power supply

Terminal	Designation
1	MMIGNDB
2	MMI+24VB
3	MMIGNDB
4	MMI+24VB
5	MMIGNDA
6	MMI+24VA
7	MMIGNDA
8	MMI+24VA

Fig. 95 MMI bus power supply connector plug (X1) and power supply (X2)

SECURITON

MMI-BUS devices

X3 and X4 Connection of layout plan board or parallel indicator board (2 mA types) using 34/40 pin ribbon cable connector

Plug X3				Plug X4			
Terminal	Designation	Terminal	Designation	Terminal	Designation	Terminal	Designation
1	LED32-	2	LED33-	1	LED0-	2	LED1-
3	LED34-	4	LED35-	3	LED2-	4	LED3-
5	LED36-	6	LED37-	5	LED4-	6	LED5-
7	LED38-	8	LED39-	7	LED6-	8	LED7-
9	LED40-	10	LED41-	9	LED8-	10	LED9-
11	LED42-	12	LED43-	11	LED10-	12	LED11-
13	LED44-	14	LED45-	13	LED12-	14	LED13-
15	LED46-	16	LED47-	15	LED14-	16	LED15-
17	LED48-	18	LED49-	17	LED16-	18	LED17-
19	LED50-	20	LED51-	19	LED18-	20	LED19-
21	LED52-	22	LED53-	21	LED20-	22	LED21-
23	LED54-	24	LED55-	23	LED22-	24	LED23-
25	LED56-	26	LED57-	25	LED24-	26	LED25-
27	LED58-	28	LED59-	27	LED26-	28	LED27-
29	LED60-	30	LED61-	29	LED28-	30	LED29-
31	LED62-	32	LED63-	31	LED30-	32	LED31-
33	+5 V	34	+5 V	33	+5 V	34	+5 V
35	OUT7/ALARMAUDIBLE-	36	OUT6/FAULTAUDIBLE-				
37	IN0/AUDIBLE OFF-	38	IN1/LAMP TEST-				
39	GND	40	GND				

	X5	**Transistor outputs** **Open collector 30 V / 100 mA**		**X6**	**Opto-isolator inputs 5 V / 3.3 mA**

Screw terminal X5		Screw terminal X6	
Terminal	**Designation**	**Terminal**	**Designation**
1	SYNOUT-	1	SYNIN-
2	GND	2	GND
3	+5V	3	+5V
4	OUT0-/TMZ0-	4	IN0-/TMS0-/AUDIBLE OFF-
5	OUT1-/TMZ1-	5	IN1-/LAMP TEST-
6	OUT2-/TMZ2-	6	IN2-/TMS2-
7	OUT3-/TMZ3-	7	IN3-/TMS3-
8	OUT4-/TMZ4-	8	IN4-/TMS4-
9	OUT5-/TMZ5-	9	IN5-/TMS5-
10	OUT6-/TMZ6-/ALARMAUDIBLE-	10	IN6-/TMS6-
11	OUT7-/TMZ7-/FAULTAUDIBLE-	11	IN7-/TMS7-
12	NC	12	NC

X17 and X18   Jumpers for MMI-BUS termination (if jumper is connected, MMI-BUS is terminated)

X10   Jumper for audible reset (if jumper connected, the optionally programmable alarm and fault acoustic outputs OUT6, OUT7, LED56 and LED57 resettable with input IN0)

S1   Rotary switch for MMI-BUS address

7.6.3   Technical data

Operating voltage:	+10 to +30 V
Power consumption:	14 mA
Data transmission:	MMI-BUS
Electrical:	galvanically isolated RS485
Protocol:	serial, DIN 19244-3
MMI bus total length:	max. 1,200 m
Extension:	layout plan boards, parallel indicator boards, flashing lights, sirens, horns, sprinkler systems, etc.
Connection data:	64 LED outputs, 2 mA
	256 LED outputs per control unit
	8 open collector outputs up to max. 100 mA
	output voltage max. +30 V
	8 inputs with 8 outputs as 8 x 8 matrix can be connected together
	input voltage +5 V
	input current max. 3.3 mA
Ambient temperature:	-5°C to +50°C
Dimensions:	160 x 105 x 20 mm
VdS approval:	G200116

7.6.4   Compatibility information

SecuriFire Studio	from release 1.0
Hardware	SecuriFire 1000/2000 (B6-BCB12 / B6-BCB13)
	SecuriFire 3000 (B5-BAF all versions)

7.7 B3-MMI-FAT fire brigade indicator board

The B3-MMI-FAT is compliant with DIN 14662 and is for visually indicating the most important operating states of the fire alarm control panel. The B3-FAT module is screwed onto the rear side of the front plate of the fire brigade indication board and together they are built into the B3-MMI-FAT map case. The system connection is via the MMI-BUS and the power supply is from the fire alarm control panel. A fire brigade control unit can be connected to the B3-MMI-FAT fire brigade panel compliant with DIN 14661.

7.7.1 Interfaces

X1 MMI-BUS connector plug

Terminal	Designation
1	BUSGNDB
2	MMIBUSB-
3	MMIBUSB+
4	BUSGNDB
5	MMIBUSB-
6	MMIBUSB+
7	BUSGNDA
8	MMIBUSA-
9	MMIBUSA+
10	BUSGNDA
11	MMIBUSA-
12	MMIBUSA+

X2 power supply

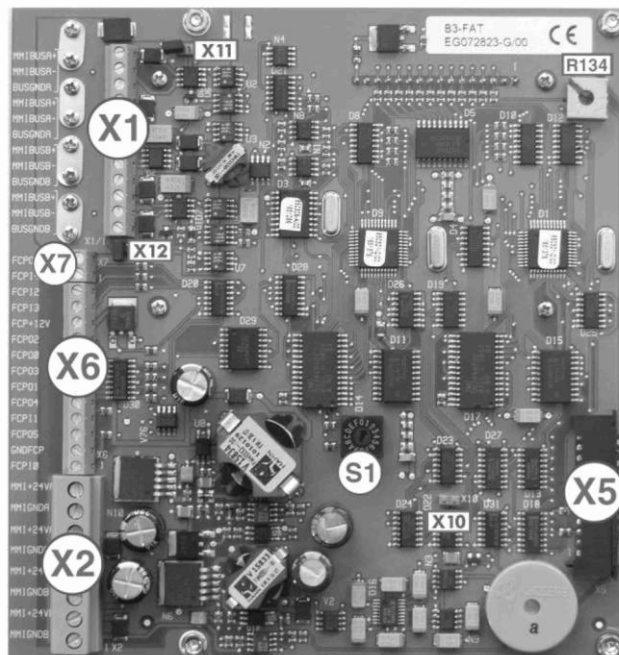| Terminal	Designation
1	MMIGNDB
2	MMI+24VB
3	MMIGNDB
4	MMI+24VB
5	MMIGNDA
6	MMI+24VA
7	MMIGNDA
8	MMI+24VA

Fig. 96 B3-MMI-FAT interfaces

X5 Foil keyboard connection.

X10 Jumper for indication and control map audible. If jumper connected, the audible is deactivated (permitted only for maintenance!).

X11/X12 Jumper for MMI-BUS termination (if jumpers connected, the MMI-BUS is terminated).

R134 Potentiometer for adjusting the LCD contrast voltage.

S1 Switch for MMI-BUS address.

X6/X7 Connection for fire brigade panel compliant with DIN 14661.

Screw terminal X6

Terminal	Designation	Function
1	FCPI0	"FACP RESET" button
2	FCPGND	Fire brigade panel power supply GROUND
3	FCPO5	"LOCAL AUDIBLE OFF" lamp
4	FCPI1	"AUDIBLE SIGNALS OFF" key
5	FCPO4	"TU OFF" lamp
6	FCPO1	"FACP RESET" lamp
7	FCPO3	"AUDIBLE SIGNALS OFF" lamp
8	FCPO0	"EXTINGUISHING SYSTEM TRIGGERED" lamp
9	FCPO2	"TU TRIGGERED" lamp
10	FCP+12V	Fire brigade panel power supply +12V
11	FCPI3	"TU CHECK" key
12	FCPI2	"TU OFF" key

Screw terminal X7

Terminal	Designation	Function
1	FCPI4	"LOCAL AUDIBLE OFF" key switch
2	FCPO6	Reserve output

7.7.2   Technical data

Operating voltage:	22 to 30 V
Quiescent current:	14 mA
Data transmission:	MMI-BUS galvanically isolated
Electrical:	RS485
Protocol:	serial, DIN 19244-3
Distance to the control panel:	max. 1,200 m
Protection type:	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:	180 x 240 x 40 mm (W x H x D)
Map case colour:	grey RAL 7032
VdS approval:	G206116

7.7.3   Compatibility information

SecuriFire-Studio:	from release 1.0
Hardware	SecuriFire 1000/2000 (B6-BCB12/B6-BCB13)
	SecuriFire 3000 (B5-BAF, all versions)

7.8 B5-MMI-FPCZ Fire brigade panel Czechia

The fire brigade panel Czechia can be connected via the MMI bus to the main control unit board B6-BCB12/13 of the SecuriFire 1000/2000. The B5-MMI-FPCZ can be remotely mounted up to 1200 m from the SecuriFire 1000/2000. With the hex coding switch you can set one of fifteen possible MMI bus addresses.

More information about the B5-MMI-FPCZ can be found in Technical Description T 811 149.

7.8.1 Interfaces

X1   MMI-BUS connector plug

Terminal	Designation
12	+MMI-A
11	-MMI-A
10	GNDISO
9	+MMI-A
8	-MMI-A
7	GNDISO
6	+MMI-B
5	-MMI-B
4	GNDISO
3	+MMI-B
2	-MMI-B
1	GNDISO
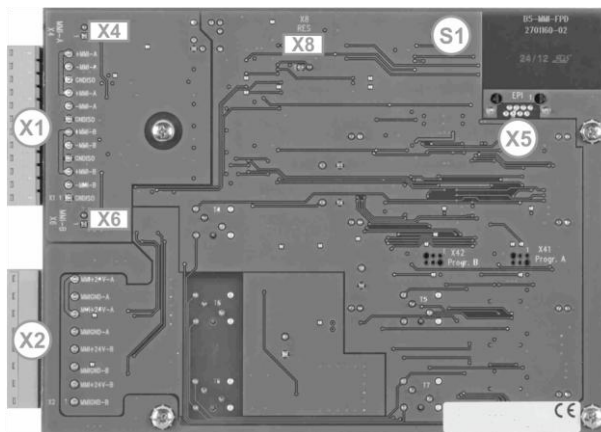
Fig. 97 B5-MMI-FPCZ interfaces

X2   power supply

Terminal	Designation
8	MMI+24V-A
7	MMIGND-A
6	MMI+24V-A
5	MMIGND-A
4	MMI+24V-B
3	MMIGND-B
2	MMI+24V-B
1	MMIGND-B

X4/X6   Jumper for MMI bus termination. If jumpers are connected, the MMI bus is terminated
X5   EPI bus
X8   Jumper for reset of indication and control map DO ALWAYS REMOVE !
S1   Rotary switch for MMI bus address

7.8.2 Technical data

|	
Operating voltage:	22 to 30 V
Quiescent current:	58 mA
Data transmission:	MMI bus galvanically isolated
Electrical:	RS485
Protocol:	serial, DIN 19244-3
MMI bus total length:	max. 1,200 m
Protection class:	IP 30
Ambient temperature:	0°C to +50°C
Dimensions:	185 x 255 x 65 mm (W x H x D)
Dimensions without map case:	180 x 240 x 40 mm (W x H x D)
Map case colour:	grey RAL 7032

7.8.3 Compatibility information

SecuriFire Studio	from Release 2.0
MMI interface	SecuriFire 1000/2000 (B6-BCB12 / B6-BCB13)
	SecuriFire 3000 (B5-BAF, all versions)

8   EPI-BUS devices

EPI devices can be connected via the EPI bus to any (internal or external) MIC11/711 or to MMI devices with an EPI bus interface. The max. total length of the EPI bus is 1 m.

8.1   Schematic of an EPI bus
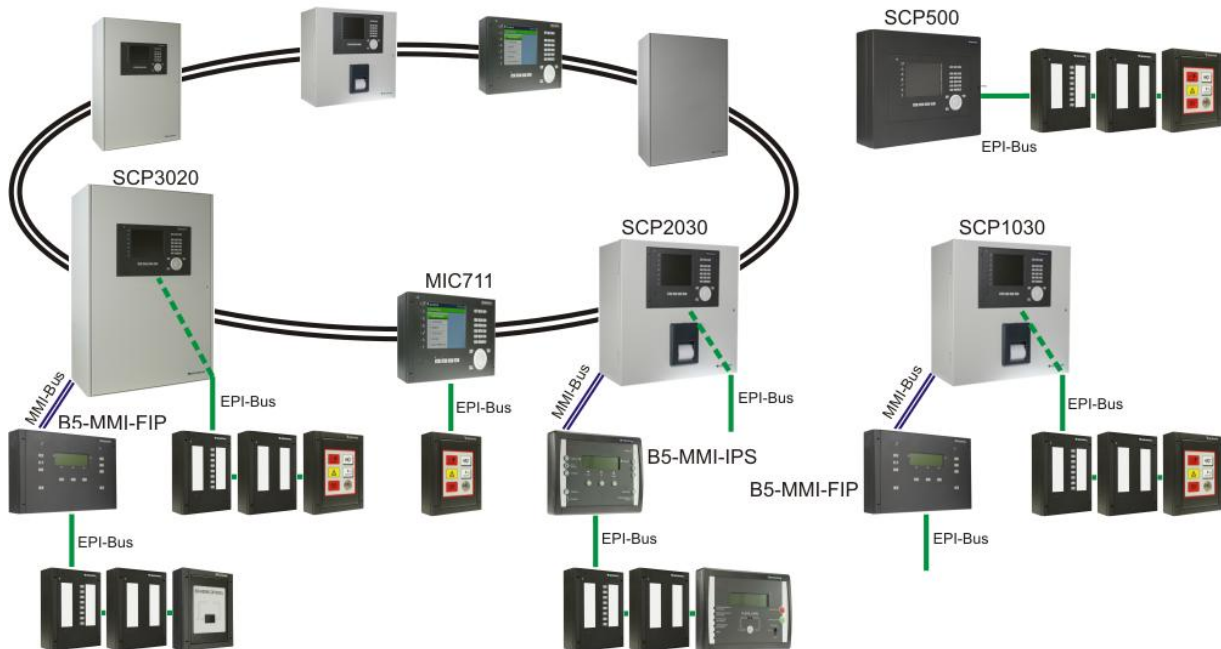
8.2   EPI bus features

- Up to 3 devices per EPI interface can be connected.
- Up to 1 m EPI bus total length
- Plug type: 8-pin RJ45
- Cable type: patch cable (Cat 5e or better)

8.3   Connection of EPI bus participants

The first EPI participant is connected via the first RJ45 plug (PORT A) to the EPI bus. Additional EPI devices can be connected to the second RJ45 plug (PORT B).

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.

8.4 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 B5-MIC11 or B6-MIC11 SecuriFire mounting main indication and control map as well as to the B5-MMI-FIP and B5-MMI-IPS devices.

Additional EPI devices can be connected to the second RJ45.

The B5-EPI-FPC-GS is mounted either on the door of the Securi-Fire or immediately next to a remote SecuriFire indication and control map.

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. 98 B5-EPI-FPC-GS

8.4.1 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.

8.4.2 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

8.4.3 Compatibility information

SecuriFire Studio	from release 1.0
EPI interface	B5-MIC (all versions), B6-MIC (all versions)
	B5-MMI-FIP, B5-MMI-IPS

8.5   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
any SecuriFire MIC11 / MIC711 as well as to the B5-MMI-FIP and
B5-MMI-IPS devices.
Additional EPI devices can be connected to the second RJ45.
The B5-EPI-ASP-GS is mounted either on the door of the Securi-
Fire or immediately next to a remote SecuriFire indication and con-
trol map.
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. 99   B5-EPI-ASP-GS

8.5.1   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 be-
> gun.

8.5.2   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

8.5.3   Compatibility information

SecuriFire Studio	from release 1.0
EPI interface	B5-MIC (all versions), B6-MIC (all versions)
	B5-MMI-FIP, B5-MMI-IPS

8.6 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 any SecuriFire MIC11 / MIC711 as well as to the B5-MMI-FIP
and B5-MMI-IPS devices.

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. 100 B5-EPI-FPS-S

8.6.1 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 be-
> gun.

8.6.2 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

8.6.3 Compatibility information

SecuriFire Studio	from release 1.2
EPI interface	B5-MIC (all versions), B6-MIC (all versions)
	B5-MMI-FIP, B5-MMI-IPS

8.6.4 Instructions for opening and mounting the B5-EPI-FPS-S
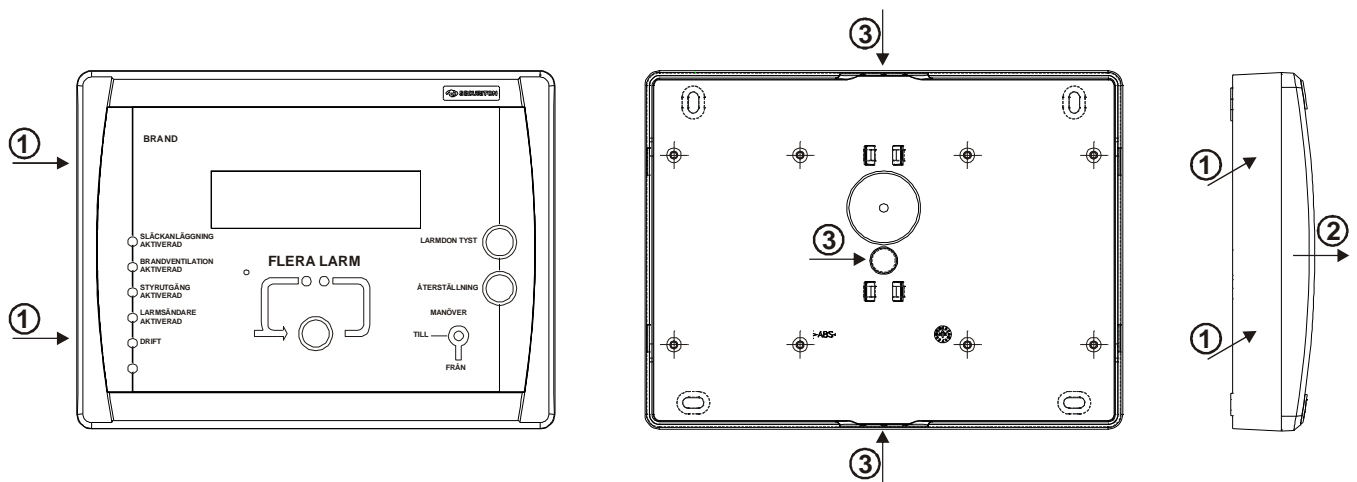
Fig. 101 Mounting B5-EPI-FPS-S

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.

8.7 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 any SecuriFire MIC11 / MIC711 as well as to the B5-MMI-FIP and B5-MMI-IPS devices.

Additional EPI devices can be connected to the second RJ45.

The B5-EPI-PCM is mounted either on the door of the SecuriFire or immediately next to a remote SecuriFire indication and control map.

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. 102 B5-EPI-PCM

8.7.1 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.

8.7.2 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

8.7.3 Compatibility information

SecuriFire Studio	from release 1.2
EPI interface	B5-MIC (all versions), B6-MIC (all versions)
	B5-MMI-FIP, B5-MMI-IPS

8.8 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 any SecuriFire MIC11 / MIC711 as well as to the B5-MMI-FIP and B5-MMI-IPS devices.

Additional EPI devices can be connected to the second RJ45.

The B5-EPI-PIM is mounted either on the door of the SecuriFire or immediately next to a remote SecuriFire indication and control map.

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. 103 B5-EPI-PIM

8.8.1 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.

8.8.2 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

8.8.3 Compatibility information

SecuriFire Studio	from release 1.2
EPI interface	B5-MIC (all versions), B6-MIC (all versions)
	B5-MMI-FIP, B5-MMI-IPS

8.9 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 any SecuriFire MIC11 / MIC711 as well as to the B5-MMI-FIP and B5-MMI-IPS devices.

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. 104 B5-EPI-FAT

8.9.1 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.

8.9.2 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

8.9.3 Compatibility information

SecuriFire Studio	from release 1.2
EPI interface	B5-MIC (all versions), B6-MIC (all versions)
	B5-MMI-FIP, B5-MMI-IPS

8.10   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
any SecuriFire MIC11 / MIC711 as well as to the B5-MMI-FIP and
B5-MMI-IPS devices.
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 Tech-
nical Description T 811 077.

Fig. 105 B5-EPI-FPD

8.10.1   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 be-
> gun.

8.10.2   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

8.10.3   Compatibility information

SecuriFire Studio   from release 1.2
EPI-Interface   B5-MIC (all versions), B6-MIC (all versions)
                                                      B5-MMI-FIP, B5-MMI-IPS

9 SecuriLan network units and MIC711

9.1 B6-NET2-485 network unit

The B6-NET2-485 is for redundant networking of the SecuriFire 2000 and for connecting PC applications. It has two network ports based on the RS485 interface standard and one 100BASE-TX interface.
The unit is fitted on the expansion slot of the B6-BCB13.

Further information about the B6-NET2-485 can be found in the technical description T 811 123.

9.1.1 Interfaces

X1   B6-BCB13 connector plug (rear side)

X2   LAN interface (switch A / switch B)

X4   RS485 interface
        Port 5X, 5Y, 6X, 6Y

PIN assignment (X2, X4)

PIN	X2 Ethernet signal	X4 RS485 signal
1	TX+	NC
2	TX-	NC
3	RX+	NC
4	NC	GNDG
5	NC	GNDG
6	RX-	NC
7	NC	TX/RX+
8	NC	TX/RX-
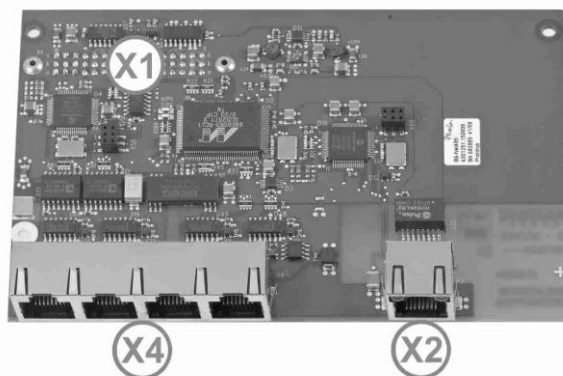
Fig. 106 B6-NET2-485 interfaces

9.1.2 Technical data

Unit

Power supply:	via SecuriFire 2000 main control unit
Power consumption:	53 mA
Ambient temperature:	0°C to +50°C

LAN interface 10/100

Connection:	Ethernet 100BASE-TX
Transmission type:	TCP/IP
Direction:	bidirectional, full-duplex operation
Speed:	max. 100 Mbit/s
Coverage:	max. 100 m
Mechanical design:	RJ-45 connector, 8-pin

RS485 interface

Connection:	RS485 No galvanic isolation
Transmission type:	differential signal
Direction:	bidirectional, full-duplex operation
Speed:	max. 100 Mbit/s
Coverage:	max. 1,200 m
Mechanical design:	RJ-45 connector, 8-pin

9.1.3 Compatibility information

Compatible main control unit:	SecuriFire 2000 B6-BCB13
SecuriFire-Studio:	from release 1.1

SECURITON

9.2 B6-NET2-FXM and B6-NET2-FXS network units

The B6-NET2-FX is for redundant networking of the SecuriFire 2000 and for connecting PC applications. It has 1 network connection based on the RS485 standard, 2 optical network connections (multi-mode variant FXM with a coverage of 2 km or single-mode FXS with up to 10 km coverage), and a 100BASE-TX interface.
The unit is fitted on the expansion slot of the B6-BCB13.

Further information about the B6-NET2-FXM and B5-NET2-FXS can be found in the technical description T 811 123.

9.2.1 Interfaces

X1	B6-BCB13 connector plug (rear side)
X2	LAN Ethernet (switch A / switch B)
X3	LAN fibre optics (switch B)
X4	LAN RS485 (switch B)
X5	LAN fibre optics (switch A)
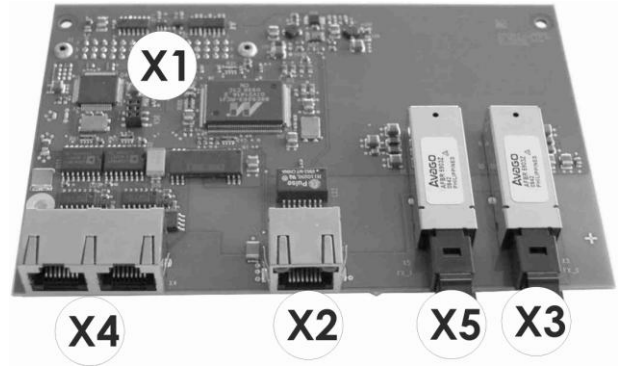
Fig. 107 B6-NET2-FX interfaces

PIN assignment (X2, X4)

PIN	X2 Ethernet signal	X4 RS485 signal
1	TX+	NC
2	TX-	NC
3	RX+	NC
4	NC	GNDG
5	NC	GNDG
6	RX-	NC
7	NC	TX/RX+
8	NC	TX/RX-

PIN assignment X5

PIN	Signal
A1	Receive data
A2	Transmit data

PIN assignment X3

PIN	Signal
B1	Receive data
B2	Transmit data

9.2.2   Technical data

Unit

Power supply:	via SecuriFire 2000 main control unit
Power consumption:	53 mA
Ambient temperature:	0°C to +50°C

LAN interfaces	**10/100**	**RS485 interface**
Connection:	Ethernet 100BASE-TX	RS485, no galvanic isolation
Transmission type:	TCP/IP	differential signal
Direction:	bidirectional, full-duplex operation	bidirectional, full-duplex operation
Speed:	max. 100 Mbit/s	max. 100 Mbit/s
Coverage:	max. 100 m	max. 1,200 m
Mechanical design:	RJ-45 connector, 8-pin	RJ-45 connector, 8-pin

Fibre optic interfaces	**BASE-FXM interface**	**BASE-FXS interface**
Connection:	Ethernet 100BASE-FXS	Ethernet 100BASE-FXS
Transmission type:	TCP/IP	TCP/IP
Direction:	bidirectional	bidirectional
Mechanical design:	MTRJ connector	LC 2x5 connector
Coverage:	max. 2,000 m	max. 10,000 m
Mechanical design:	RJ-45 connector, 8-pin	RJ-45 connector, 8-pin

9.2.3   Compatibility information

Compatible main control unit:	SecuriFire 2000 B6-BCB13
SecuriFire-Studio:	from release 1.1

SECURITON

9.3   B6-LAN interface unit

The B6-LAN is for non-redundant networking of PC applications with SecuriFire 2000 or for non-redundant networking of SecuriFire participants. It has one Ethernet network interface.
The unit is fitted on the expansion slot of the B6-BCB13.

Further information about the B6-LAN can be found in the technical description T 811 123.

9.3.1   Interfaces

X1   B6-BCB13 connector plug (rear side)

X2   LAN Ethernet interface (RJ-45 connector)

PIN assignment (X2)

PIN	X2 Ethernet signal
1	TX+
2	TX-
3	RX+
4	Termination
5	Termination
6	RX-
7	Termination
8	Termination
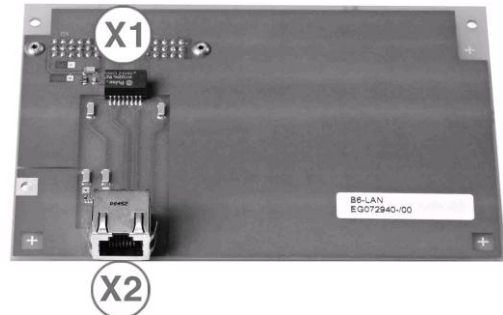
Fig. 108 B6-LAN interfaces

9.3.2   Technical data

Unit

Power supply:	via SecuriFire 2000 main control unit
Power consumption:	<1 mA
Ambient temperature:	0°C to +50°C

LAN interfaces 10/100   **10/100**

Connection:	Ethernet 100BASE-TX
Transmission type:	TCP/IP
Direction:	bidirectional, full-duplex operation
Speed:	max. 100 Mbit/s
Coverage:	max. 100 m
Mechanical design:	RJ-45 connector, 8-pin

9.3.3   Compatibility information

Compatible main control unit:	SecuriFire 2000 B6-BCB13
SecuriFire-Studio:	from release 1.1

9.4   MIC711

The MIC711 main indication and control map consists of the MIC711 and MIC485 modules and can be connected as a participant directly in the SecuriLan. In contrast to the B6-MIC711, the B5-MIC711 is designed to be redundant.

Further information about the B5-MIC711 and B6-MIC711 can be found in the technical description T 811 119.
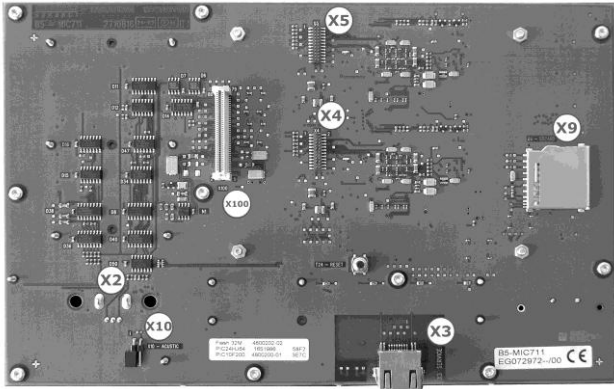
Fig. 109 Rear side of B5-MIC711
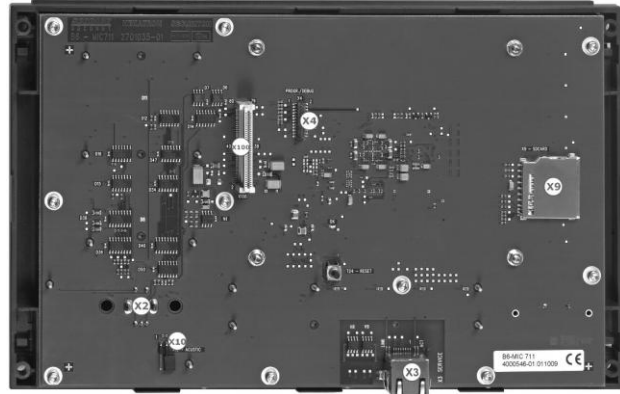
Fig. 110 Rear side of B6-MIC711

X2	Display connection (rear side)	**X9**	SD card slot
X3	Ethernet 100BASE-TX service interface	**X10**	Jumper of indication and control map audible
X4	Programming interface	**X100**	Interface MIC711 to MIC485
X5	Programming interface		
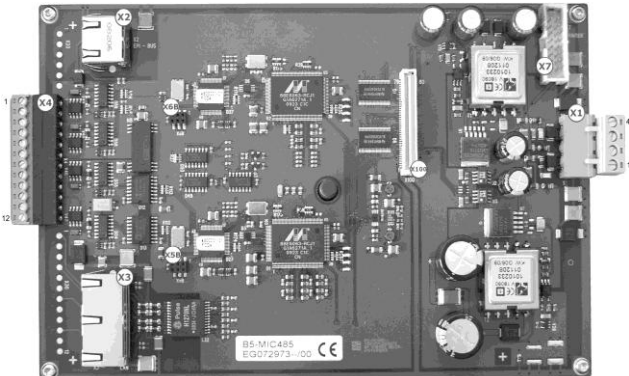
Fig. 111 Rear side of B5-MIC485 network module
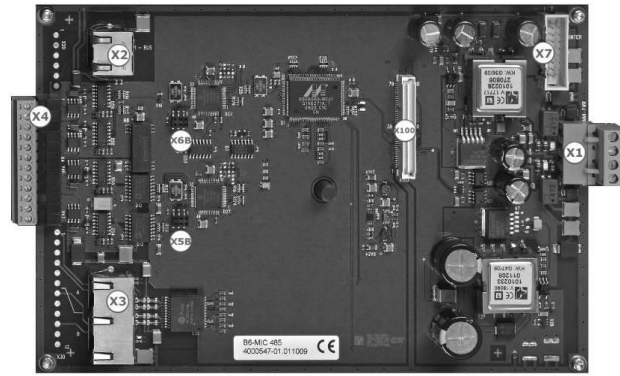
Fig. 112 Rear side of B6-MIC485 network module

X1	Power supply connection	**X5B**	Programming interface (production)
X2	EPI-BUS	**X6B**	Programming interface (production)
X3	10/100BASE-TX network connection	**X7**	B5-MIC-PPE protocol printer connection
X4	RS485 network connection	**X100**	Interface of B5-MIC711 to B5-MIC485

9.4.1.1 Power supply connection plug (X1)

Terminal	Designation
1	Positive connection A +26V =
2	Negative connection A GND
3	Positive connection B +26V =
4	Negative connection B GND

Connection:	SecuriFire SCP power supply
Voltage:	26 VDC
Current:	200 mA
Distance:	max. 1,200 m
Mechanical design:	4-pin phoenix screw terminal RM 5.08
	Cable cross-section of 0.14 to 2.5 mm^2

9.4.1.2 RS485 plug network connection (X4)

Terminal	B5-MIC485 designation	B6-MIC485 designation
1	Port6 B Transceiver X TX/RX+	Port6 A Transceiver X TX/RX+
2	GND	GND
3	Port6 B Transceiver X TX/RX-	Port6 A Transceiver X TX/RX-
4	Port6 B Transceiver Y TX/RX+	Port6 A Transceiver Y TX/RX+
5	GND	GND
6	Port6 B Transceiver Y TX/RX-	Port6 A Transceiver Y TX/RX-
7	Port6 A Transceiver X TX/RX+	Port5 A Transceiver X TX/RX+
8	GND	GND
9	Port6 A Transceiver X TX/RX-	Port5 A Transceiver X TX/RX-
10	Port6 A Transceiver Y TX/RX+	Port5 A Transceiver Y TX/RX+
11	GND	GND
12	Port6 A Transceiver Y TX/RX-	Port5 A Transceiver Y TX/RX-

9.4.2 Technical data

MIC711

Supply voltage:	+22 V to +30 V
Quiescent current consumption:	B5-MIC711 typ. 213 mA, B6-MIC711 typ. 165 mA
Ambient temperature:	-5°C to +50°C

LAN interfaces	**10/100**	**RS485**
Connection:	Ethernet 100BASE-TX	High Speed RS485
Transmission type:	TCP/IP	asynchronous serial
Speed:	max. 100 Mbit/s	675/1,250 kBaud
Coverage:	max. 100 m	max. 1,200 m
Mechanical design:	RJ-45 connector, 8-pin	12-pin screw terminal, 0.14 to 1.5 mm^2

EPI-BUS

Connection:	RS485
Speed:	max. 9.6 kBaud
Coverage:	max. 1 m
Mechanical design:	RJ-45 connector, 8-pin

9.5   SecuriLan connection

A SecuriLan consists of up to 32 participants, whereby max. 16 control panels (SecuriFire 3000 or SecuriFire 2000) and max. 31 indication and control maps (B5-MIC711 or B6-MIC711) can be connected to each other in a loop or grid. There is at least one line between every two participants.

Notice

In every SecuriFire 2000 there must be a suitable unit (B6-NET2-485, B6-NET2-FXM, B6-NET2-FXS, B6-LAN) in the free slot for the SecuriLan. No settings can be carried out on the unit itself.

The wiring of LAN connections is described in Section 12 Annex.

Typical applications are described in the following. Please refer to the technical description "LAN network boards and units" T 811 123 for details.

9.5.1   Connection types

The connection type defines the kind of connection. The following types are currently available for local networking:

Type	Type of connection	Description
RS485	Physical connection	RS485; direct connection between two SCPs or MIC711; max. 1,200 m (high speed max. 600 m).
FXS/FXM	Physical connection	10/100BASE-TX; direct connection between two SCPs; FXM max. 2,000 m, FXS max. 10,000 m
10/100TX	Physical connection	10/100BASE-TX; direct connection between two SCPs or MIC711; max. 100 m
LAN	Logical connection	10/100BASE-TX; connection to the standard LAN, max. 100 m to the next network node

By default a redundant SecuriLan is established via two RS485 interfaces because this is prescribed by various standards and guidelines (e.g. ÖNORM). Additionally, depending on the unit and interface in use, the following SecuriLan connections are possible:
- RS485 < 600 m high speed
- 10/100-TX non-redundant
- LAN non-redundant

These options can be separately selected per line and must be programmed in the configuration. In practice this results in a variety of possible combinations of wiring types.

9.5.2 SecuriLan connection with RS485 interfaces

The first failure protection of the network is rendered by the loop topology. Additional failure protection is rendered by the line redundancy. Here the connections (RS485) between the ports are duplicated. If a line fails, the signal can still be transmitted via the second line. Line redundancy is supported by the following boards and units: B5-NET4-485, B5-NET2-485, B5-NET2-FXM, B5-NET2-FXS, B6-NET2-FXM, B6-NET2-FXS, B6-NET2-485 and MIC711.
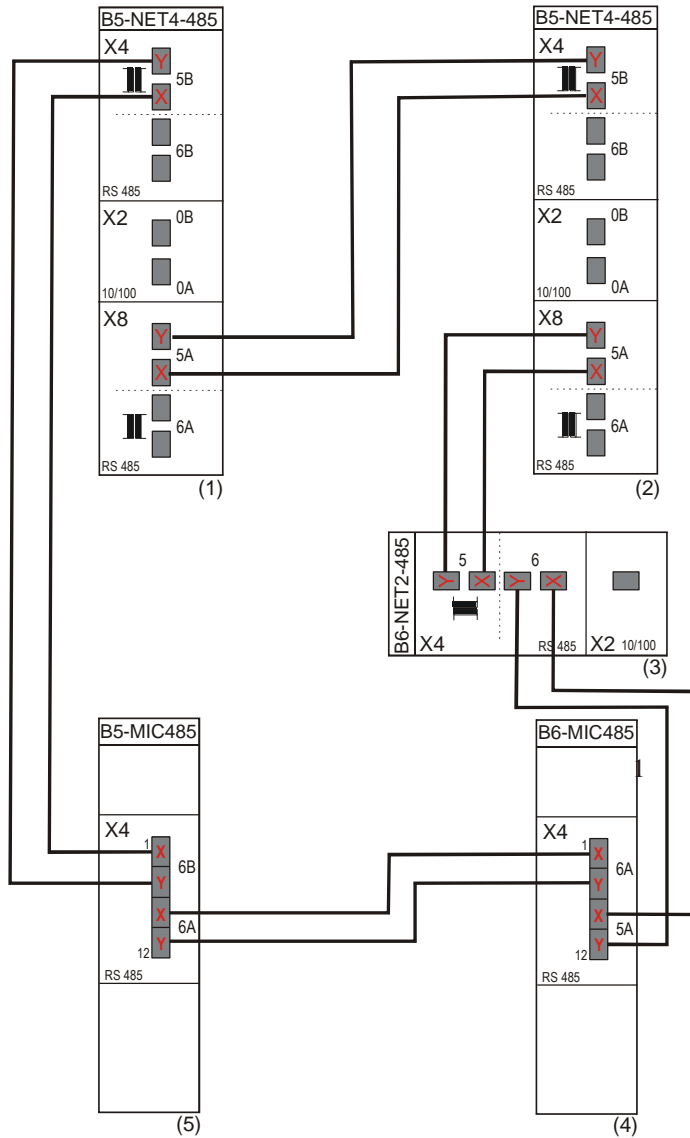
Fig. 113 Line-redundant connections

Board / Unit	Used interfaces
B5-NET4-485	X4 [5B] or X4 [6B] or X8 [5A] or X8 [6A]
B5-NET2-485	X4 [5B] or X8 [5A]
B6-NET2-485	X4 [5] or X4 [6]
B5-NET2-FX	X4 [5B] or X8 [5A] or X3 [1B] or X5 [1A]
B6-NET2-FX	X4 [5] or X3 [1B] or X5 [1A]
B5-LAN	-
B6-LAN	-
B5-MIC711	X4 [6B] or X4 [6A]
B6-MIC711	X4 [6A] or X4 [5A]
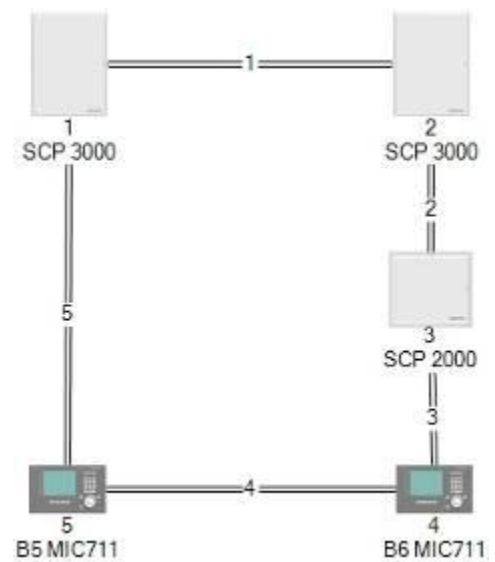
Fig. 114 SecuriFire- planning

Notice

Redundant connections must always be "X with X" and "Y with Y". X/Y are not permitted to cross-over (see Fig. 113).

In the SecuriLan network concept the control panels can be networked as a loop or as mesh network. This is not obligatory – the topology is freely selectable. The only limitation is that a max. of 4 ports of the network board can be used for this control panel network. This type of network can be implemented only with the B5-NET4-485 network board.

9.5.3 Overview of the PIN assignments of all SecuriLan participants

B5-MIC711 B5-MIC485 X4	
Terminal	**Designation**
1	Port 6 Bx TX/RX+
2	GND
3	Port 6 Bx TX/RX-
4	Port 6 By TX/RX+
5	GND
6	Port 6 By TX/RX-
7	Port 6 Ax TX/RX+
8	GND
9	Port 6 Ax TX/RX-
10	Port 6 Ay TX/RX+
11	GND
12	Port 6 Ay TX/RX-

B6-MIC711 B6-MIC485 X4	
Terminal	**Designation**
1	Port 6 Ax TX/RX+
2	GND
3	Port 6 Ax TX/RX-
4	Port 6 Ay TX/RX+
5	GND
6	Port 6 Ay TX/RX-
7	Port 5 Ax TX/RX+
8	GND
9	Port 5 Ax TX/RX-
10	Port 5 Ay TX/RX+
11	GND
12	Port 5 Ay TX/RX-

B5/B6 network board and units X4, X8. RJ45		
Port	**Terminal**	**Designation**
Port _	7	TX/RX+
	4,5	GNDG
	8	TX/RX-
Port _	7	TX/RX+
	4,5	GNDG
	8	TX/RX-
Port _	7	TX/RX+
	4,5	GNDG
	8	TX/RX-
Port _	7	TX/RX+
	4,5	GNDG
	8	TX/RX-

> **Notice**
> Take note of the different PIN assignments of plugs X4 of B5-MIC485 and B6-MIC485!

9.5.4 SecuriLan connection with 10/100TX interface

The distance between two directly connected control panels via the 10/100TX interface is limited to 100 m if no auxiliary devices are used.

Board / Unit	Used interfaces
B5-NET4-485	X2 [0B] or X2 [0A]
B5-NET2-485	X2 [0B] or X2 [0A]
B6-NET2-485	X2
B5-NET2-FX	X2 [0B] or X2 [0A]
B6-NET2-FX	X2
B5-LAN	X2
B6-LAN	X2
B5-MIC711	X3
B6-MIC711	X3

Fig. 115 SecuriLan connection with 10/100TX interface

Notice

A redundant connection with a B6-NET2-485, B6-NET2-FX and B6-LAN is not possible!

9.5.5 SecuriLan connection via Ethernet network (logical connection)

Integrating PC applications is possible via a standard Ethernet. Further, SecuriFire SCPs can also be networked via a standard Ethernet. This type of network is possible only when non-redundant.

Board / Unit	Used interfaces
B5-NET4-485	X2 [0B] or X2 [0A]
B5-NET2-485	X2 [0B] or X2 [0A]
B6-NET2-485	X2
B5-NET2-FX	X2 [0B] or X2 [0A]
B6-NET2-FX	X2
B5-LAN	X2
B6-LAN	X2
B5-MIC711	X3
B6-MIC711	X3
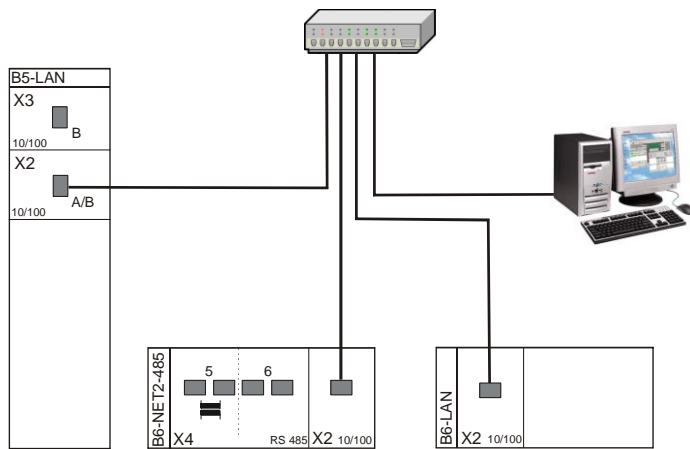
Fig. 116 Non-redundant network

Notice

This connection option is not standards-compliant for SCPs and therefore permitted only for PC applications, since components without VdS device approval (e.g. switches) are used.

9.5.6   SecuriLan connection with fibre optics

Fibre optic connections enable distances of more than 1,200 m between participants.
Up to 2,000 m is possible in multi-mode (FXM) and up to 10,000 m in single-mode (FXS).

These features are supported by the following boards and units:
B5-NET2-FXM, B5-NET2-FXS, B6-NET2-FXM and B5-NET2-FXS.

Board / Unit	Used interfaces
B5-NET4-485	
B5-NET2-485	
B6-NET2-485	
B5-NET2-FX	X3 [1B] or X5 [1A]
B6-NET2-FX	X3 [1B] or X5 [1A]
B5-LAN	
B6-LAN	
B5-MIC711	
B6-MIC711	
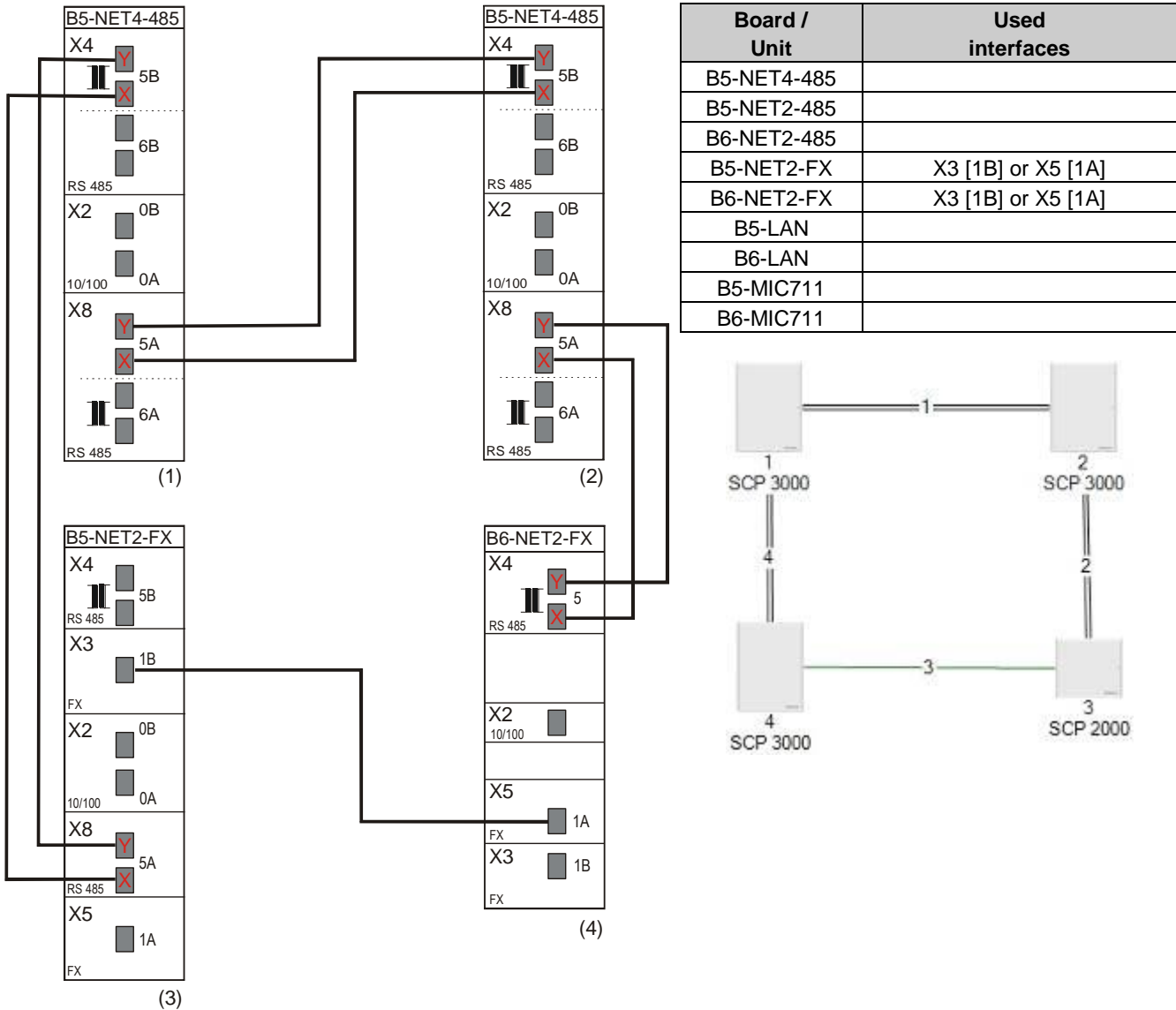
Fig. 117 SecuriLan connection with fibre optics

Depending on the type of transmission (single or multi-mode), different fibre optic types and connector types can be used.
Please refer to the technical description "LAN network boards and units" T 811 123 for details.

Notice

Due to the many possible uses of the fibre-optic connection, compliance to standards has to be checked on a case-by-case basis!

9.5.7 Example of connecting a SecuriLan
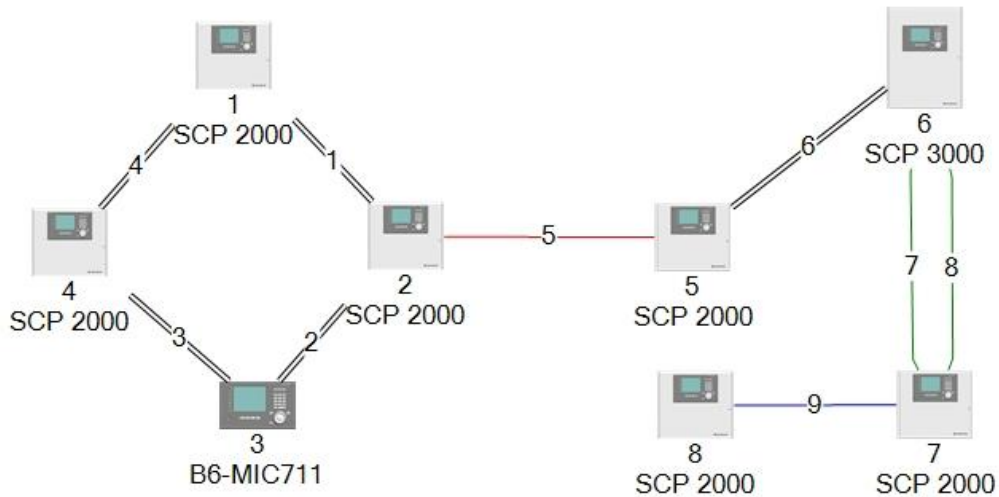
Fig. 118 Example of connecting a SecuriLan

Notice
Connection 5 (LAN) is not standards compliant because non-approved devices (e.g. switches) are used for the connection!

Line no.	Parameter	Value
1	Participant 1: Participant 2: Transmission parameters:	SCP2000(1), B6-NET2-485, plug X4, port 5A SCP2000(2), B6-NET2-485, plug X4, port 6A RS485 redundant
2	Participant 1: Participant 2: Transmission parameters:	SCP2000(2), B6-NET2-485, plug X4, port 5A B6-MIC711(3), B6-MIC485, plug X4, port 6A RS485 redundant
3	Participant 1: Participant 2: Transmission parameters:	B6-MIC711(3), B6-MIC485, plug X4, port 5A SCP2000(4), B6-NET2-485, plug X4, port 6A RS485 redundant
4	Participant 1: Participant 2: Transmission parameters:	SCP2000(1), B6-NET2-485, plug X4, port 6A SCP2000(4), B6-NET2-485, plug X4, port 5A RS485 redundant
5	Participant 1: Participant 2: Transmission parameters:	SCP2000(2), B6-NET2-485, plug X2 SCP2000(5), B6-NET2-485, plug X2 Logical connection switch required
6	Participant 1: Participant 2: Transmission parameters:	SCP2000(5), B6-NET2-485, plug X4, port 5A SCP3000(6), B5-NET2-FXM, plug X8, port 5A RS485 redundant
7	Participant 1: Participant 2: Transmission parameters:	SCP3000(6), B5-NET2-FXM, plug X5, port 1A SCP2000(7), B6-NET2-FXM, plug X5, port 1A Fibre-optic multi-mode, TCP/IP, non-redundant
8	Participant 1: Participant 2: Transmission parameters:	SCP3000(6), B5-NET2-FXM, plug X3, port 1B SCP2000(7), B6-NET2-FXM, plug X3, port 0A Fibre-optic multi-mode, TCP/IP, non-redundant
9	Participant 1: Participant 2: Transmission parameters:	SCP2000(7), B6-NET2-FXM, plug X2 SCP2000(8), B6-NET2-485, plug X2 Ethernet, non-redundant

SecuriFire Studio automatically generates assignment of the start port and destination port. The assignments cannot be changed.

9.6   SecuriFire VirtualMIC connection

A distinction is made between 3 different types of access.
- Local connection (directly from point to point)
- Connection via switch
- Connection via intranet/internet

The connection of SecuriFire VirtualMIC to the SecuriFire 2000 is via the LAN interface of the network boards B6-BCB, B6-NET2-485, B6-NET2-FX or B6-LAN. In all cases VirtualMICs must be enabled on the corresponding control panels as planned.

	Notice
🖚	The LAN interface of the BCB13 is inactive if a board is equipped with network function (B6-NET2-485, B6-NET2-FX, B6-LXI2 or B6-LAN).

9.6.1   Local SecuriFire VirtualMIC connection
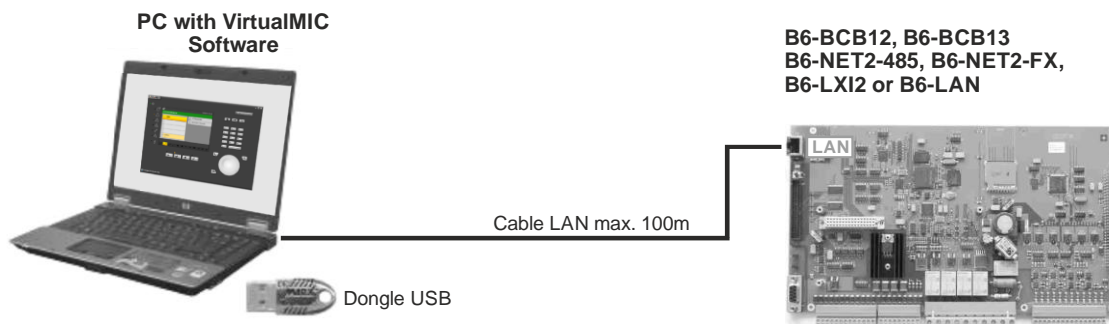
Fig. 119 SecuriFire VirtualMIC, local access via LAN

This connection is available as a cable. When connecting SecuriFire VirtualMIC (PC) via a LAN interface the max. distance is 100 m.

9.6.2   SecuriFire VirtualMIC connection via switch

**PC with VirtualMIC
Software**

Switch

**B6-BCB12, B6-BCB13
B6-NET2-485, B6-NET2-FX,
B6-LXI2 or B6-LAN**

Cable LAN max. 100m

Dongle USB

**PC with VirtualMIC
Software**

Cable LAN max. 100m

LAN

Dongle USB
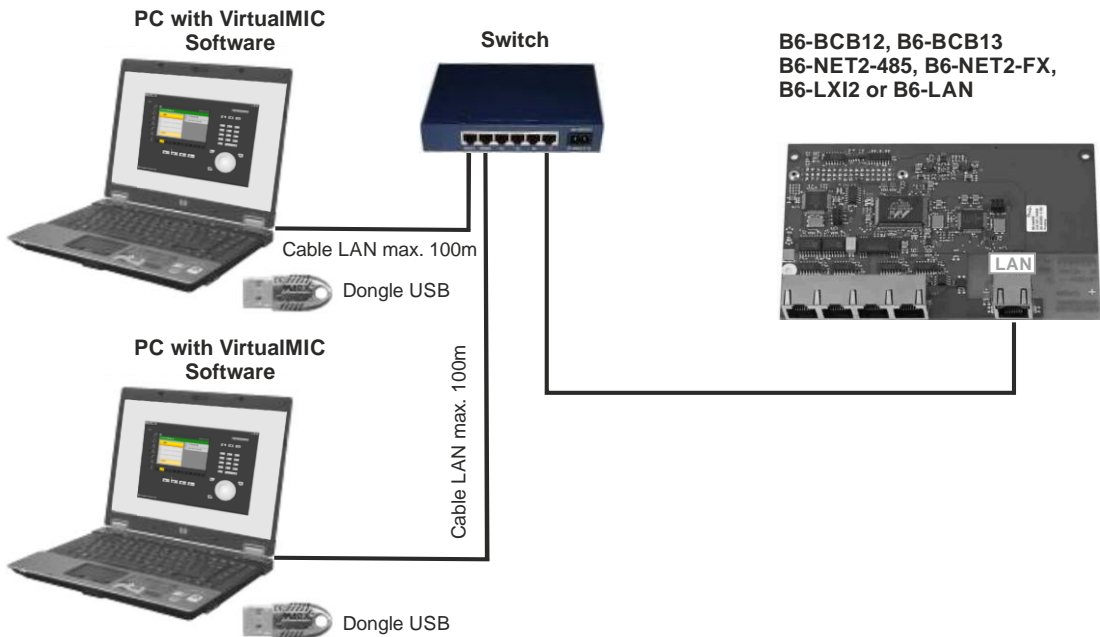
Fig. 120 SecuriFire VirtualMIC, access via switch on B6-NET2-485

When connecting SecuriFire VirtualMIC (PC) via switch to a LAN interface, the max. distance per segment is 100 m.

9.6.3   SecuriFire VirtualMIC access via intranet/internet

**PC with VirtualMIC
Software**

**B6-BCB12, B6-BCB13
B6-NET2-485, B6-NET2-FX,
B6-LXI2 or B6-LAN**

Intranet/Internet

Dongle USB

LAN

**PC with VirtualMIC
Software**

Dongle USB
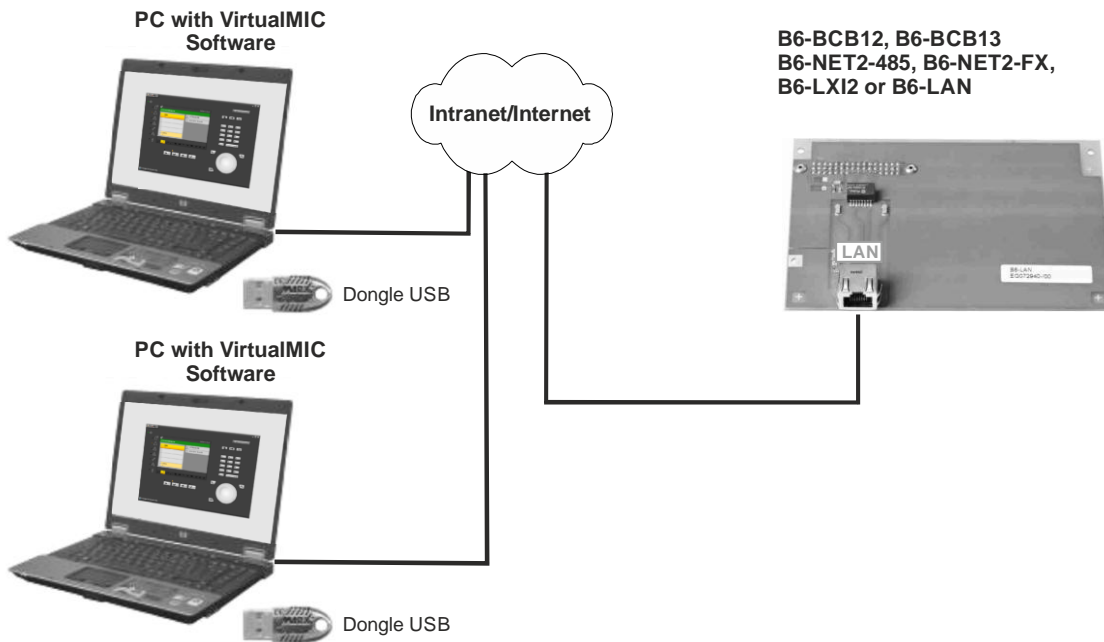
Fig. 121 SecuriFire VirtualMIC, access via intranet on B6-LAN

10   SecuriLine eXtended

10.1   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)

10.2   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	
Mode of operation	**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) High 92dB(A) / Mid 81dB(A) / Low 69dB(A)	Sirens activatable simultaneously						
	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

10.3   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.
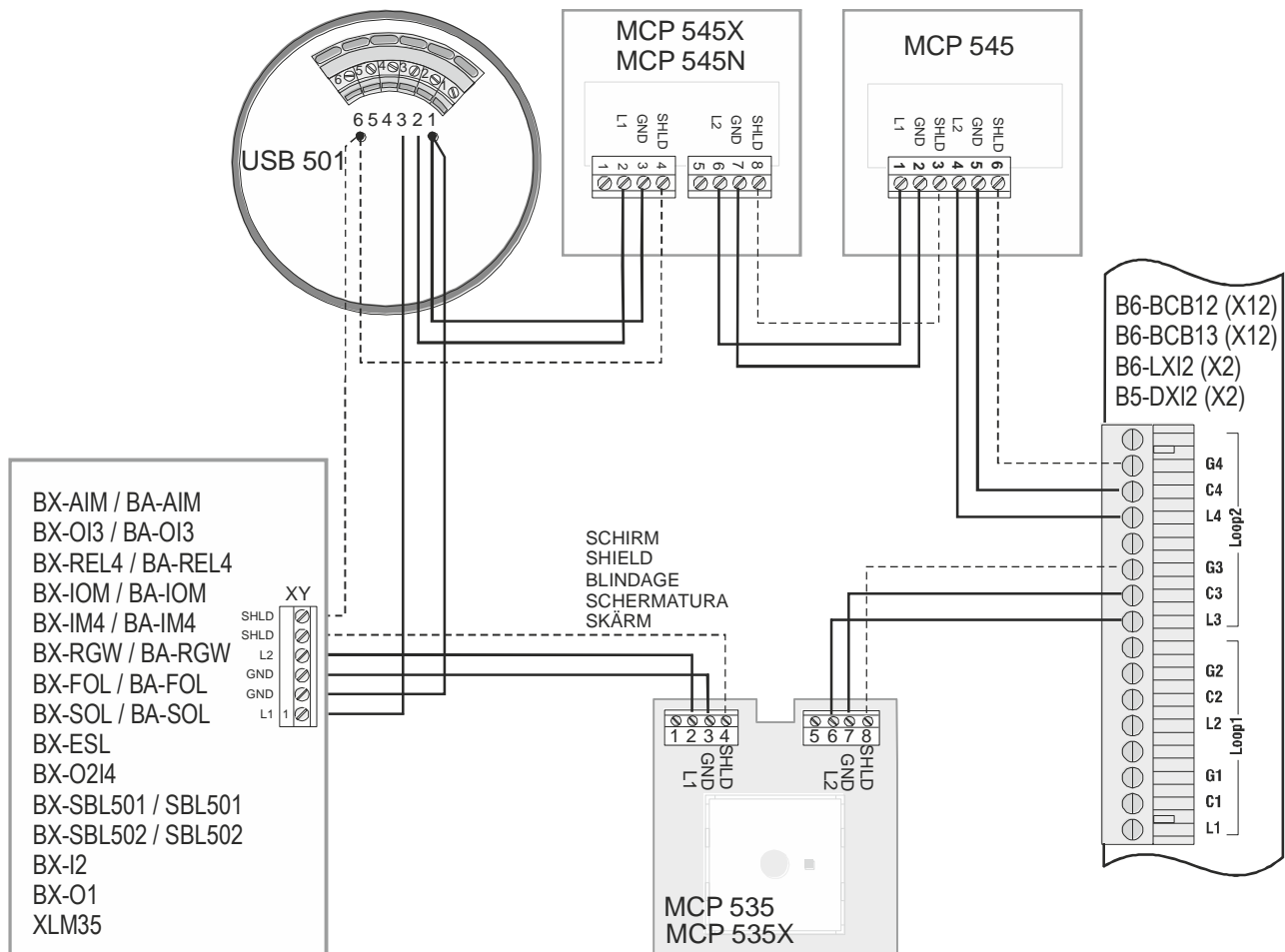
Fig. 122 Connecting SecuriLine eXtended

10.3.1 Stub line connection

> **Notice**
>
> According to EN 54 standards max. 32 detectors (sum of automatic + manual detectors) must be installed on a stub line.
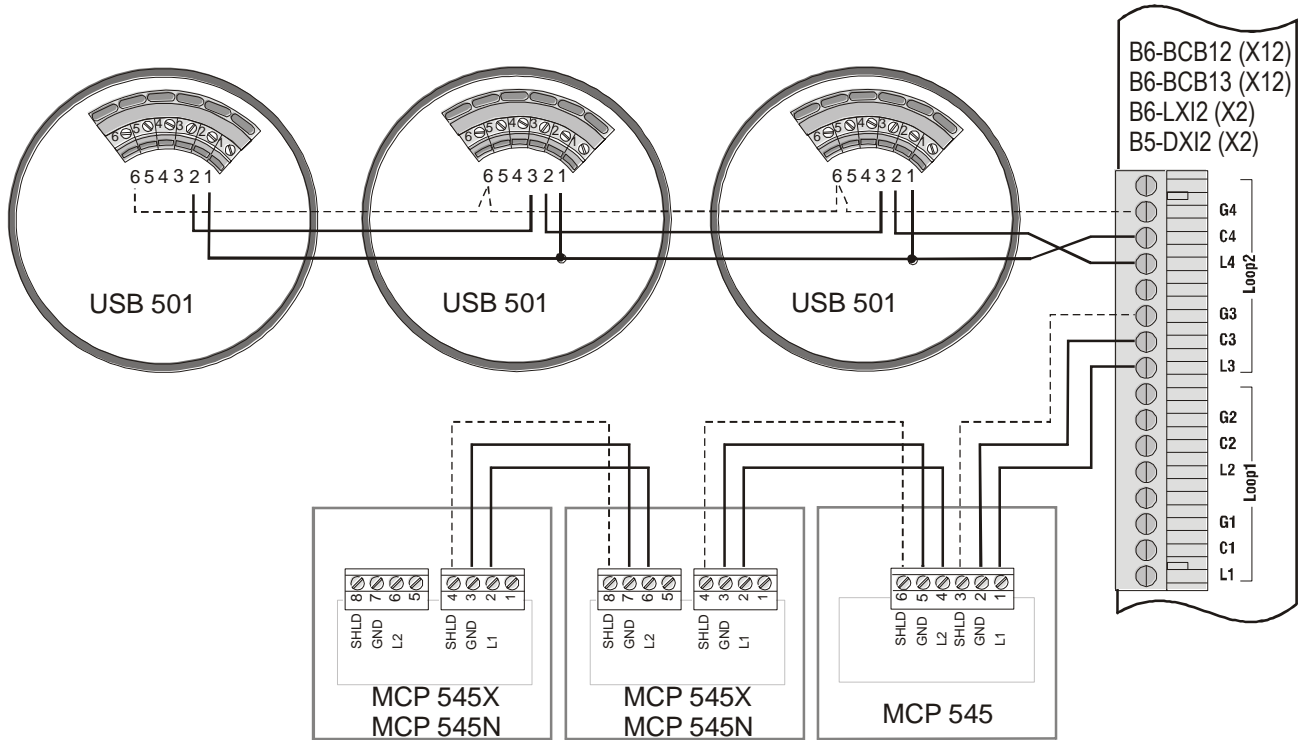
Fig. 123 Stub line connection

10.3.2 Connecting detector base USB 501

The MCD 573X 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.
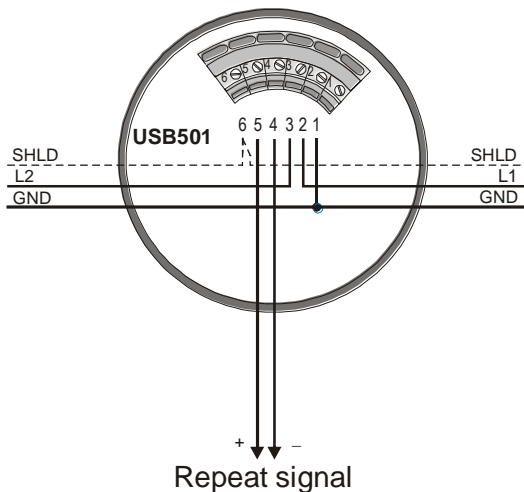
Fig. 124 USB 501 connection
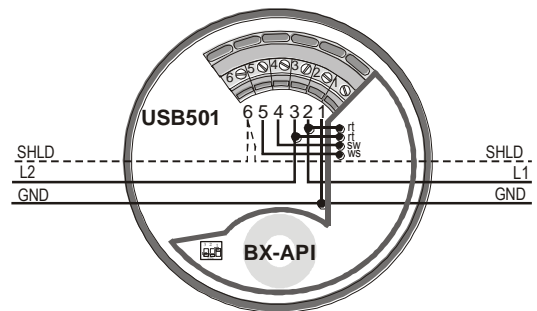
Fig. 125 RAL720X connection

10.3.3   Connection of MCP 535x and MCP 545x manual call points
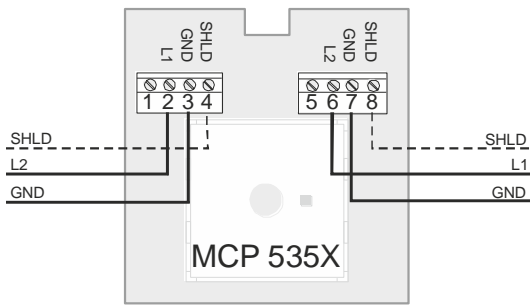
Fig. 126 MCP 535x connection
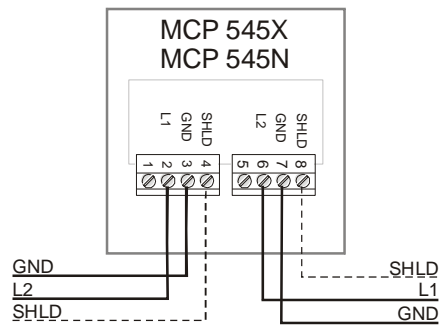
Fig. 127 MCP 545x connection

10.3.4   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.

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

Collective detector and monitored input
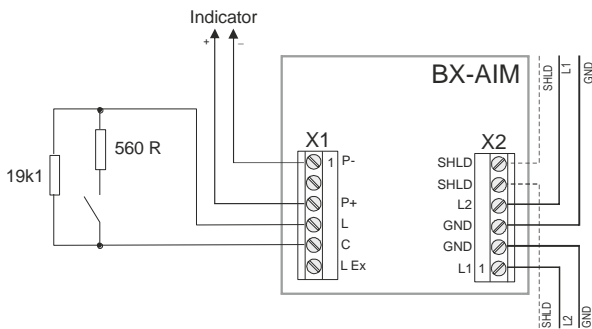
Fig. 128 BX-AIM, collective detector and monitored input

Extinguishing input in accordance with VdS
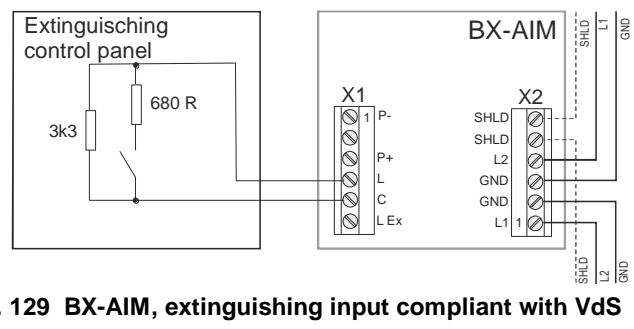
Fig. 129 BX-AIM, extinguishing input compliant with VdS

MMD130 Ex-i in Ex area
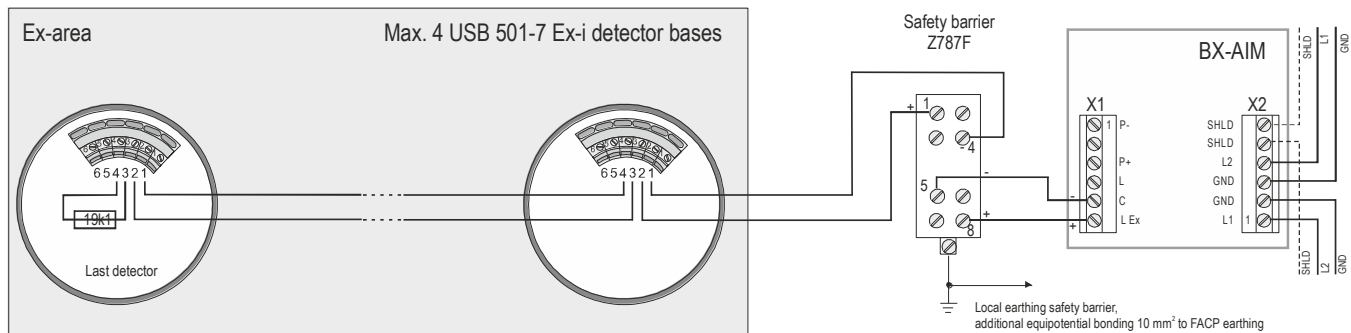
Fig. 130 BX-AIM, MMD130 Ex-i in Ex area

10.3.5 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.
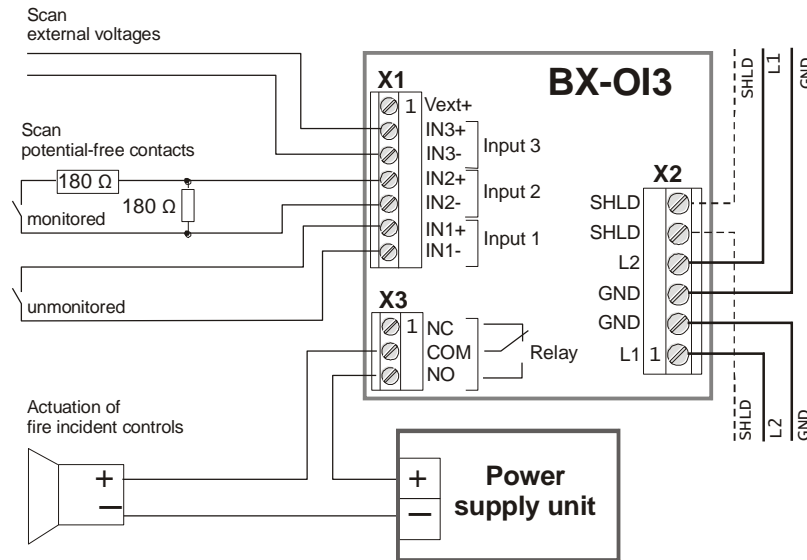
Fig. 131 BX-OI3, input/output module connection

Connection of special detectors
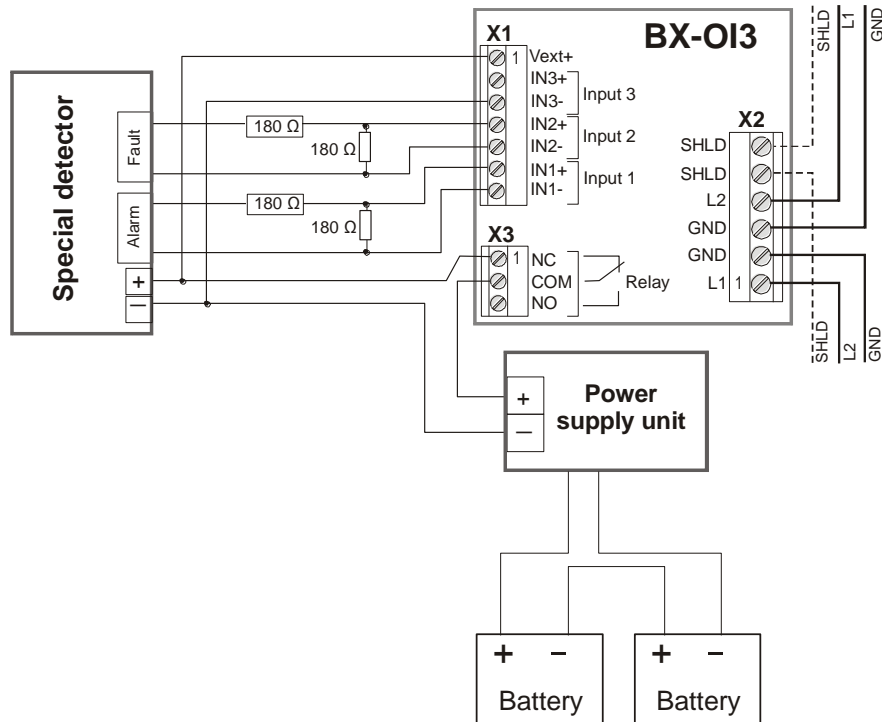
Fig. 132 BX-OI3, connection of special detectors

10.3.6   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.
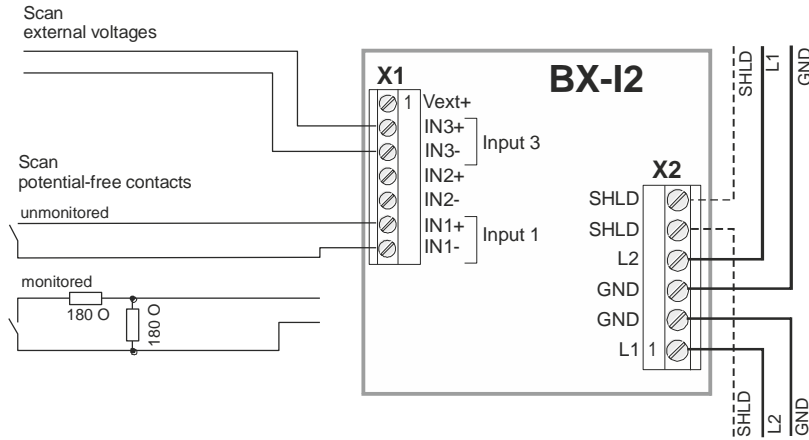
Fig. 133 BX-I2, input module connection

Connection of special detectors
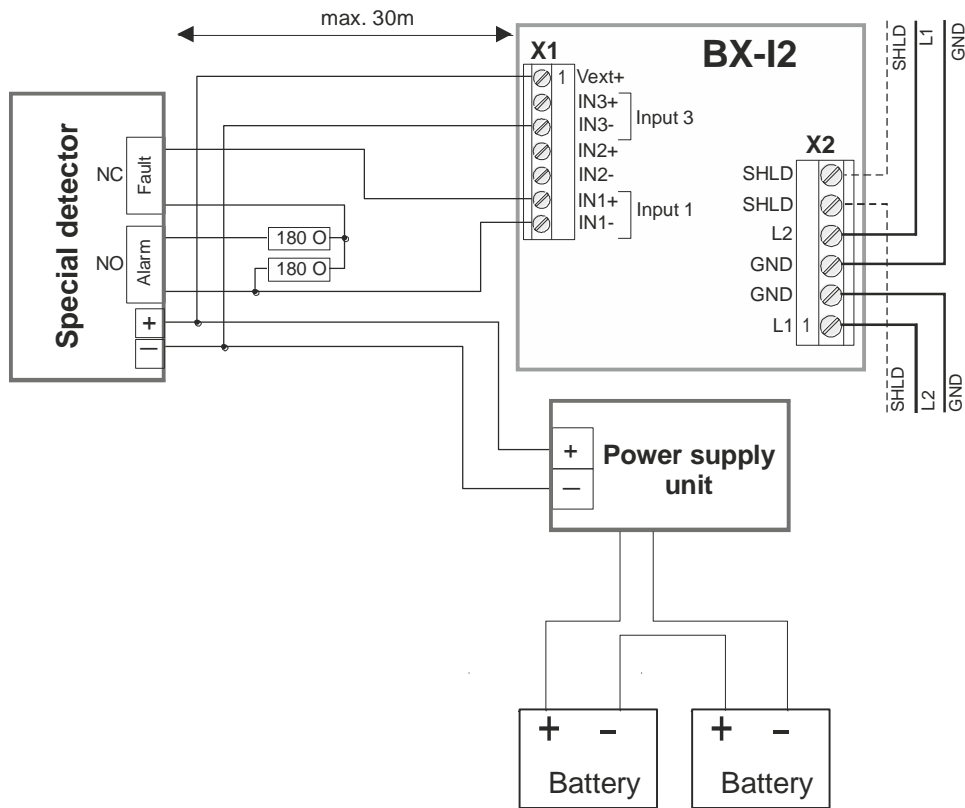
Fig. 134 BX-OI3, Connection of special detectors

10.3.7 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.
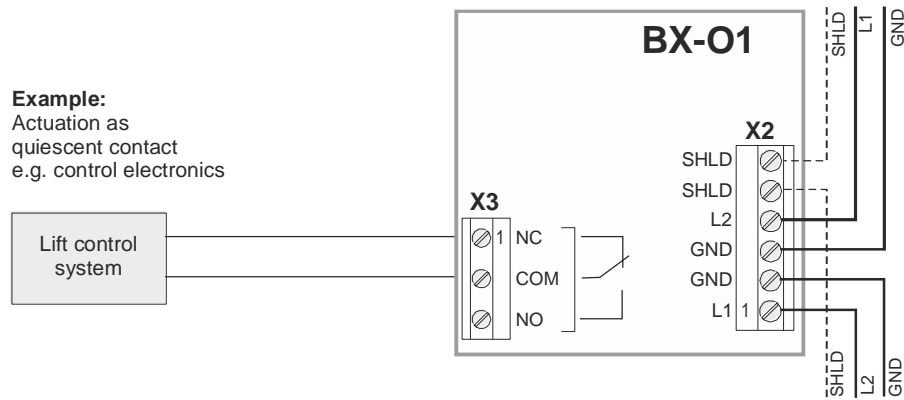
Fig. 135 BX-O1, output module connection

10.3.8 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.
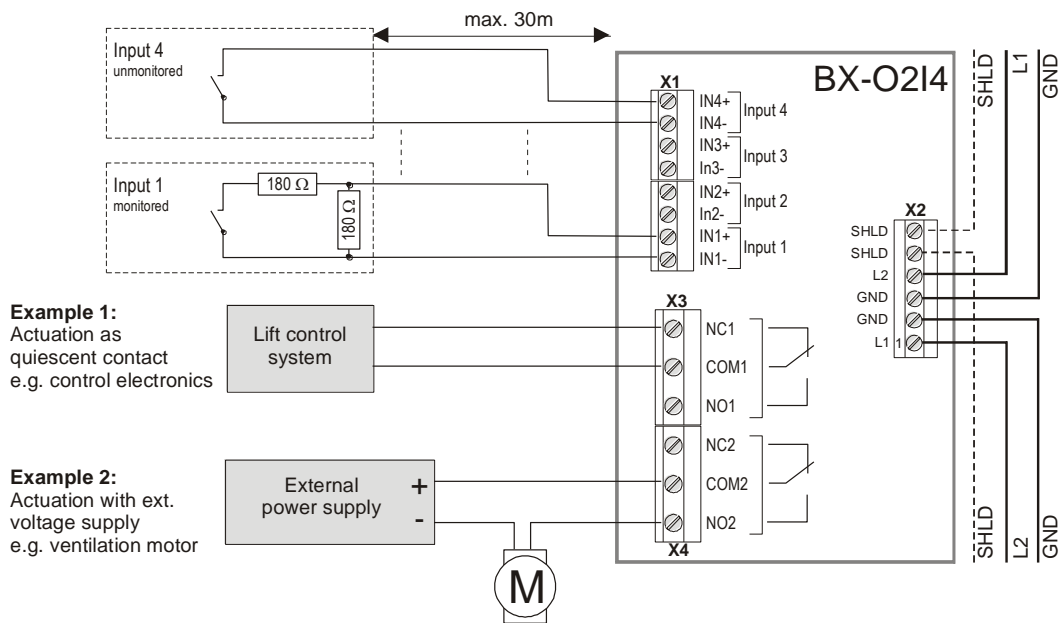
Fig. 136 BX-O2I4, output/input module connection

10.3.9 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.
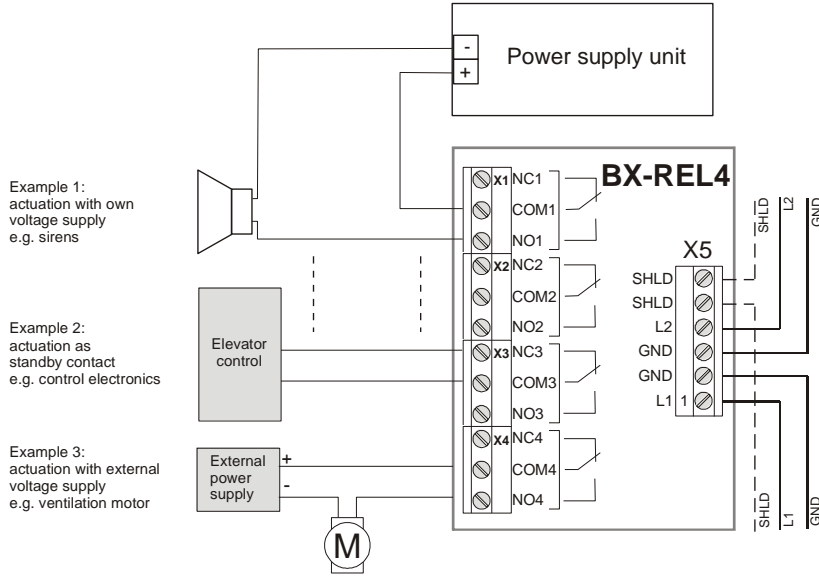
Fig. 137 BX-REL4, relay module connection

10.3.10 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.
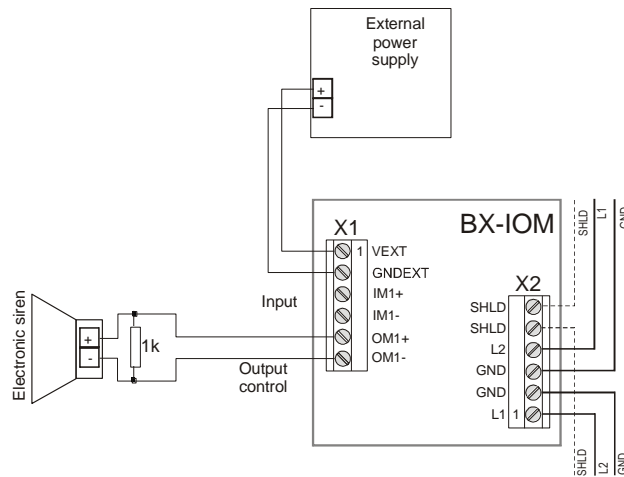
Fig. 138 BX-IOM, consumer with external voltage monitoring

10.3.11 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
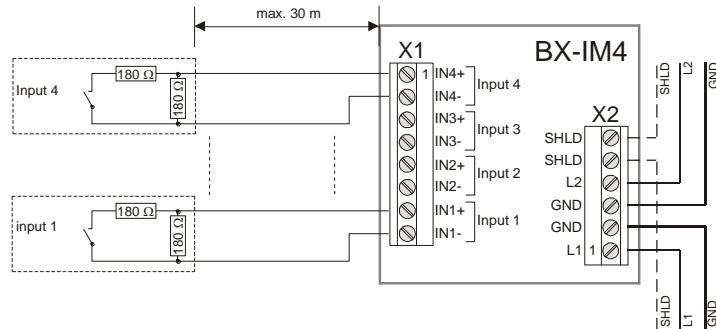
Fig. 139 BX-IM4 input module connection, monitored inputs

Unmonitored inputs
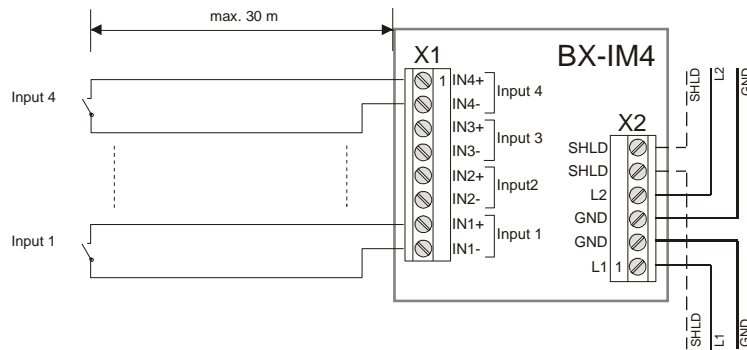
Fig. 140 BX-IM4 input module connection, unmonitored inputs

10.3.12 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.
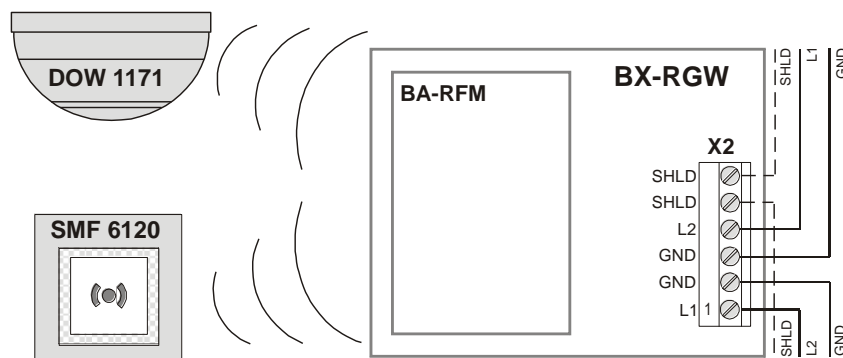
Fig. 141 BX-RGW, radio module connection

10.3.13   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.
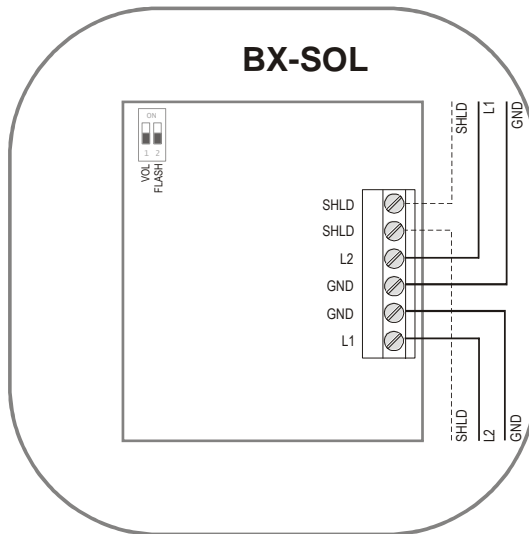
BX-SOL

Fig. 142 BX-SOL, loop siren connection

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

10.3.14   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.
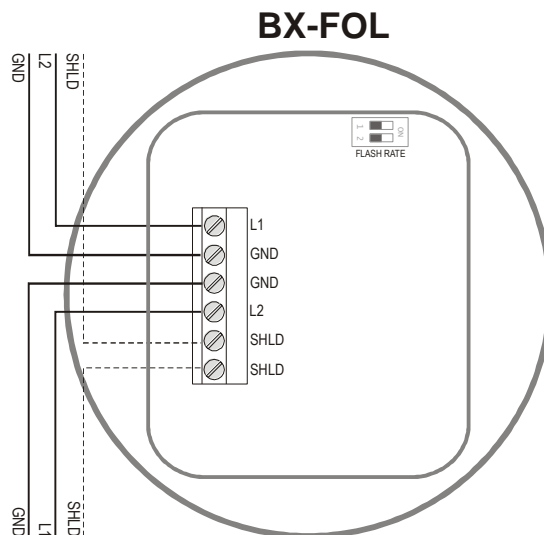
BX-FOL

Fig. 143 BX-FOL, loop flashlight connection

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

10.3.15   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.
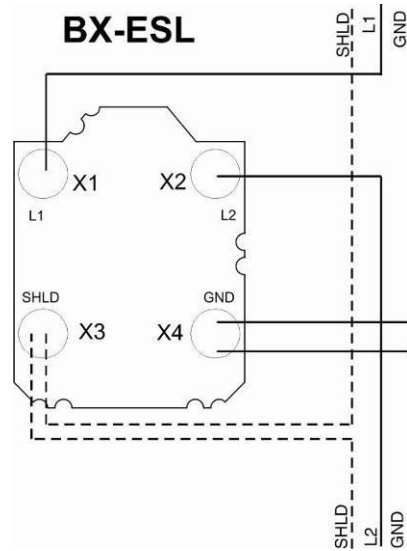
Fig. 144 BX-ESL, connection

10.3.16   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.
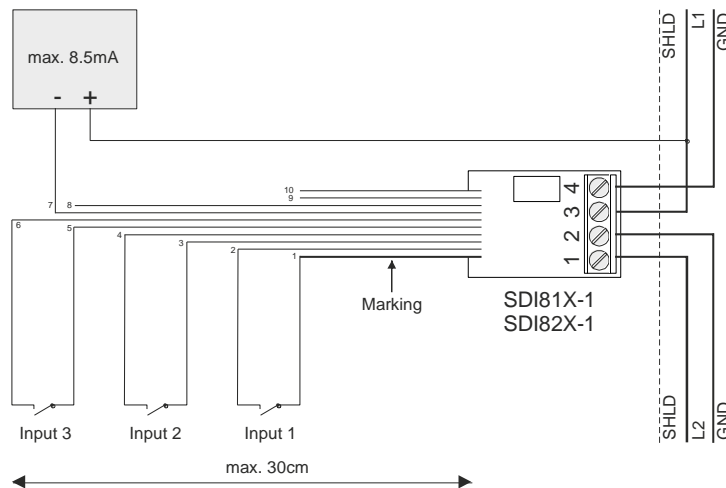
Fig. 145 SDI81X / SDI82X, addressing module connection

10.3.17   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.
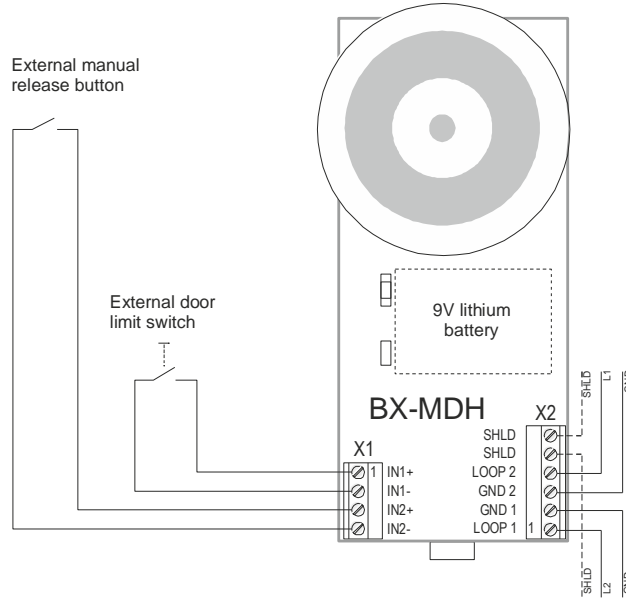
Fig. 146 BX-MDH, door holding magnet connection

10.3.18   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.
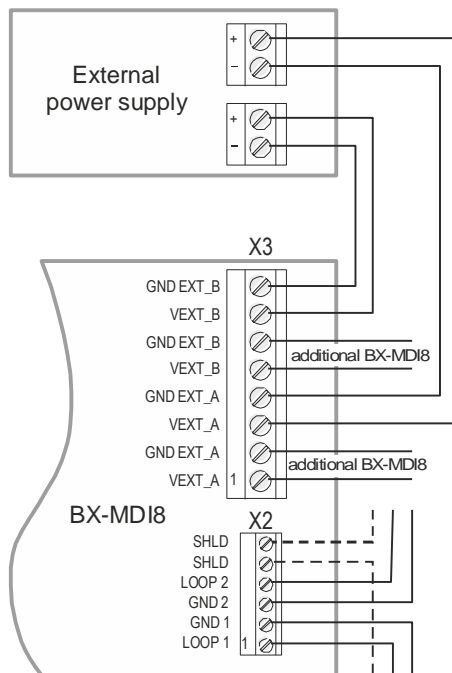
Fig. 147 BX-MDI8, input module connection

SECURITON

Connecting the detector series 521 / 523 / 563 and MCP 521 / 525
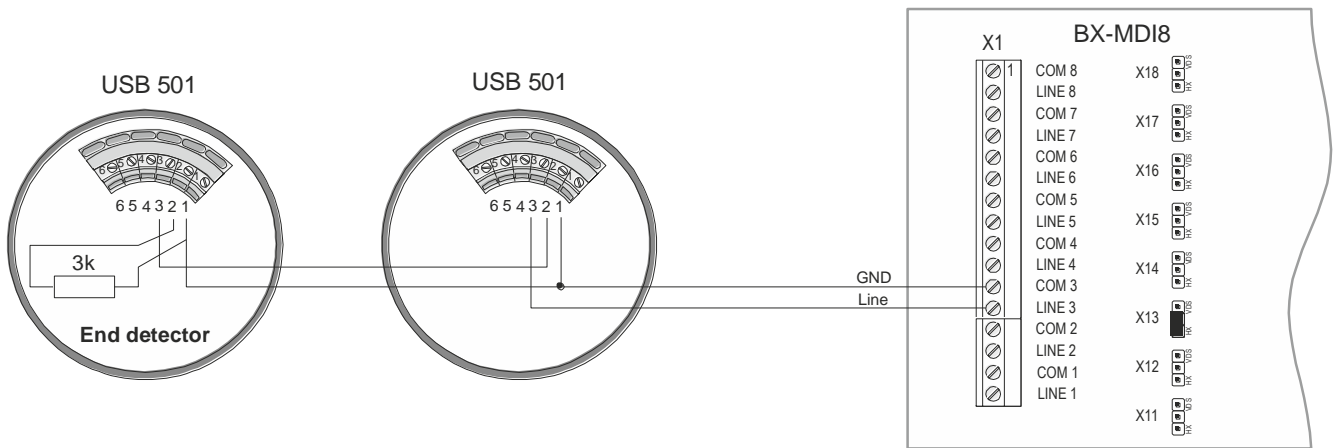
Fig. 148 BX-MDI8, connecting detector base USB 501
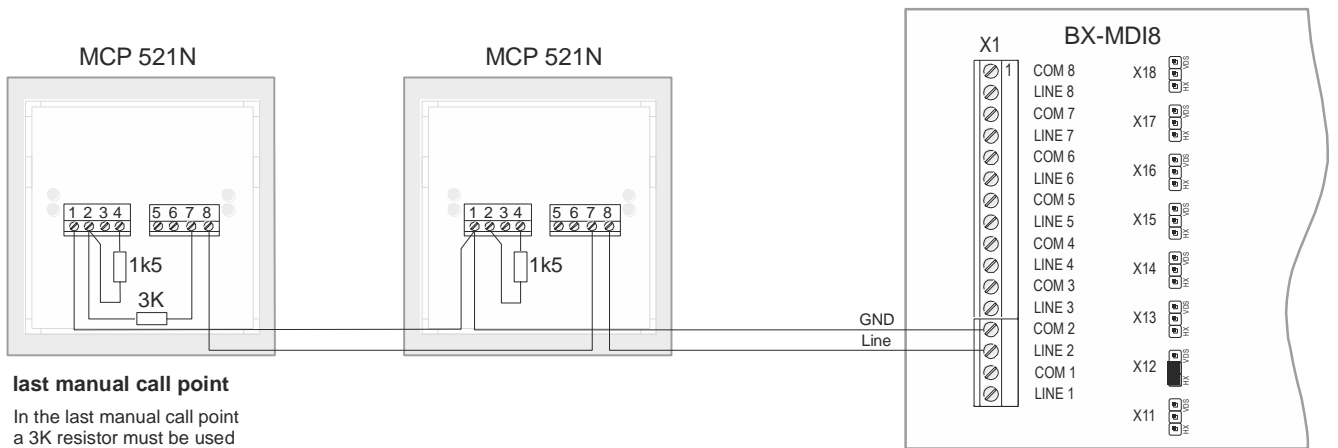
last manual call point

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

Fig. 149 BX-MDI8, connecting MCP 521N manual call points
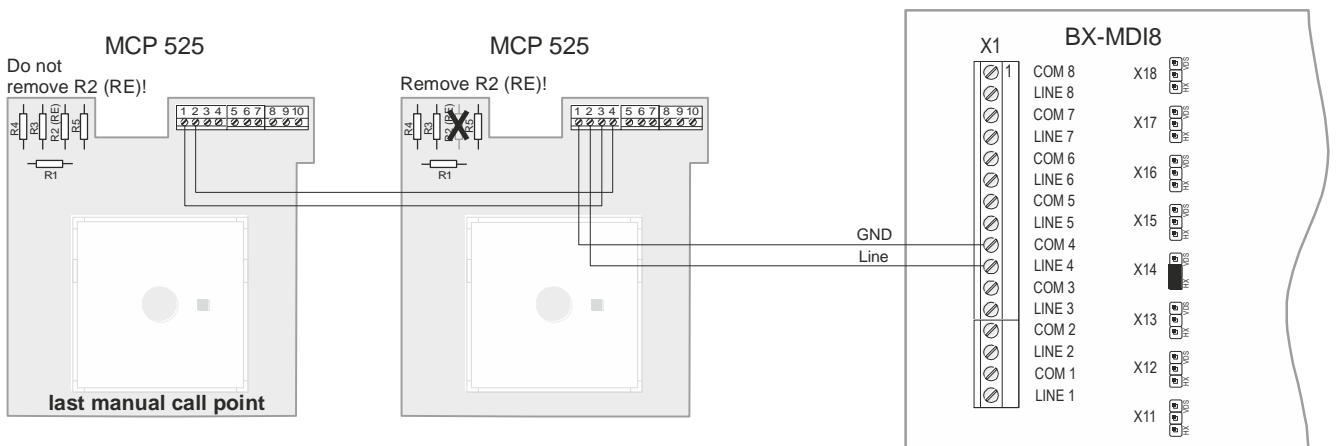
last manual call point

Fig. 150 BX-MDI8, Connecting MCP 525 manual call points

SecuriLine eXtended

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.
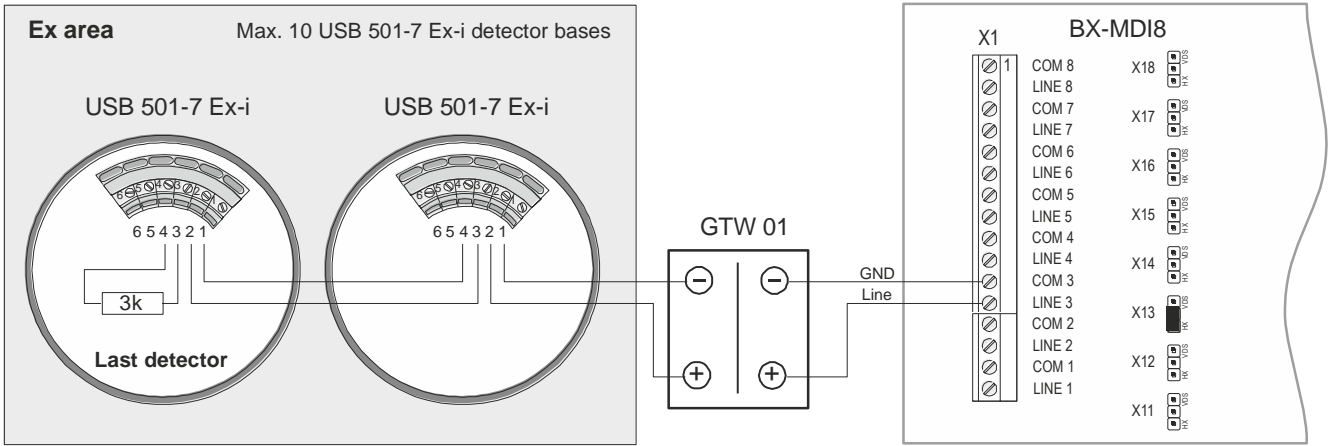
Fig. 151 BX-MDI8, connecting detector base USB501-7 Ex-i with direct current isolating transformer GTW 01

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.
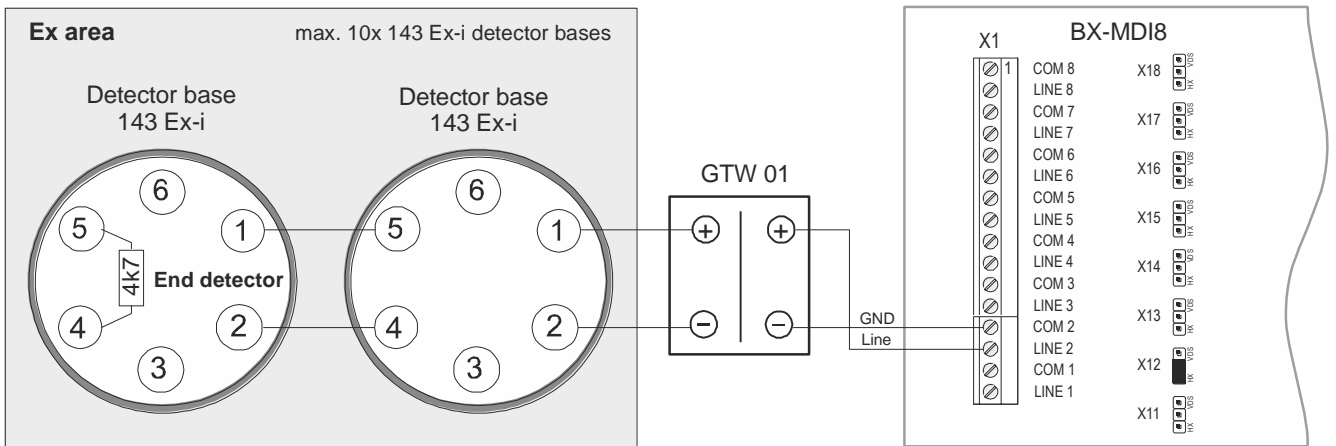
Fig. 152 BX-MDI8, connecting the detector base 143 Ex-i with direct current isolating transformer GTW 01

SECURITON

Connecting surveyed inputs
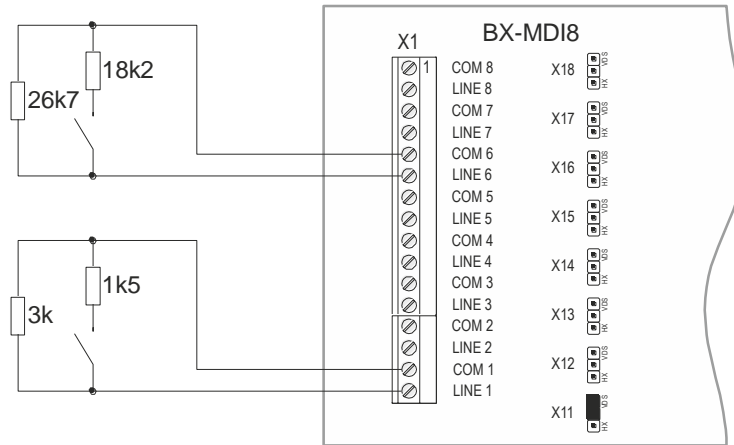
Fig. 153 BX-MDI8, connecting surveyed input 26K7 / surveyed input 3K

Connecting extinguishing systems
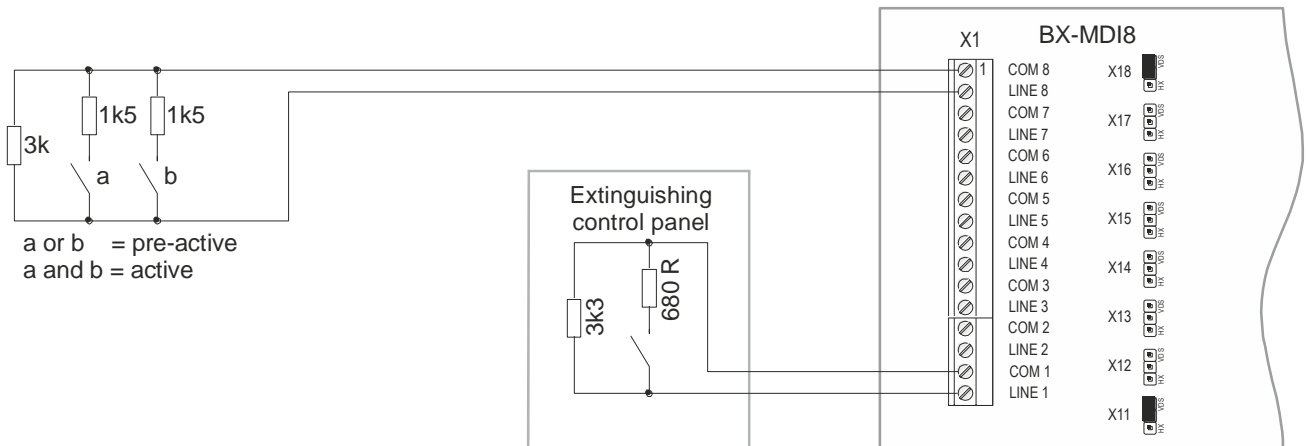
Fig. 154 BX-MDI8, valve monitoring / Extinguishing input in accordance with VdS

11　Programming and software

Fig. 155　SecuriFire Studio

The SecuriFire 1000/2000 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 program components are stored in the B6-BCB12 or B6-BCB13 main control unit; during startup they are distributed to all computer components of the other boards, which then operate independently and are monitored by the B6-BCB. All necessary software and system components are available as a "SecuriFire Studio" software package which contains planning, commissioning, maintenance and diagnostics for control panels of the SecuriFire 1000/2000 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.

12 Annex

12.1 Recommended cable types

12.1.1 Data cable for SecuriLan, unscreened

- Cat.5+
- Unscreened
- Halogen-free
- 4 x 2 x AWG 24/1
- CU factor 17,00 kg/km

12.1.2 Data cable for MMI-BUS, unscreened

- Twisted pair
- $\geq$ 2 wire pairs
- AWG 22 to AWG 24
- Capacity: wire/wire < 60 pF/m
- Characteristic impedance: $100 < Z < 150\ \Omega$ at $f \geq 1$ MHz
- Outer diameter: < 7 mm

12.1.3 Data cable for MMI-BUS, screened

- Twisted pair
- Braided screen or foil shielding with wire shielding
- $\geq$ 1 wire pair
- AWG 22 to AWG 24
- Capacity: wire/wire < 60 pF/m
                                   wire/screen < 100 pF
- Characteristic impedance: $100 < Z < 150\ \Omega$ at $f \geq 1$ MHz
- Outer diameter: < 7 mm

12.1.4 Screened addressable loop cable

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

Annex

12.1.5 Power supply for MMI-BUS

> **Notice**
>
> ☞ For MMI-BUS devices a minimum cross-section of 0.5 mm² (diameter 0.8 mm) is generally required for the power supply line.

For starting up the MMI-BUS devices, a sufficiently high switch-on current must be available. For this reason, when dimensioning the supply lines it is necessary to consider not only the power consumption of the devices but also the switch-on current.

Power supply lines with 0.5 mm² (0.8 mm diameter)
- max. 4 pcs. MMI-BUS devices
- max. 400 m line length to the last device
- max. one indication and control map

Power supply lines with 1.5 mm²
- max. 8 pcs. MMI-BUS devices
- max. 800 m line length to the last device
- max. 3 indication and control maps

Power supply lines with 2.5 mm²
- max. 8 pcs. MMI-BUS devices
- max. 1,200 m line length to the last device

The following distance table applies to individual devices:

Designation	Max. line resistance [Ohm]	Max. distance in metres		
		Cable ø = 0.8 mm A = 0.5 mm²	Cable A = 1.5 mm²	Cable A = 2.5 mm²
B3-MMI-FAT, B5-MMI-FPS B3-MMI-UIO ,B5-MMI-FIP B5-MMI-FPD B5-MMI-IPS	94,5	1'200	1'200	1'200
B3-MMI-IPEL, B3-MMI-EAT	75,6	1'058	1'200	1'200

12.2   SecuriLan cable specification

Depending on the application, either an F-UTP Cat5e or UTP Cat5e data cable with a red sheath or a fibre-optic cable (multi-mode or single-mode) is to be used for networking SecuriLAN participants.

F-UTP (foiled unshielded twisted pair) Cat5e:
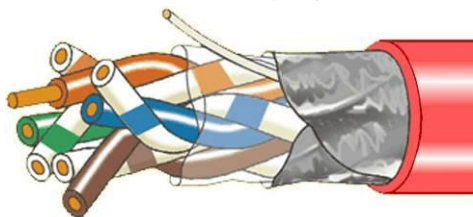
Fig. 156 F-UTP Cat5e
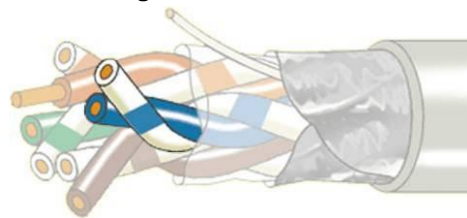
Fig. 157 F-UTP Cat5e
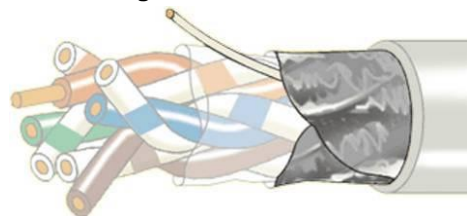
Fig. 158 F-UTP Cat5e

The cable consists of 8 wires, one foil shield and a shielding wire.

Every two wire pairs are twisted together. The colours are as follows:

- blue-white / blue
- green-white / green
- orange-white / orange
- brown-white / brown

This cable is used for **10/100BASE-TX** and **LAN** connections.

UTP (unshielded twisted pair) Cat5e:
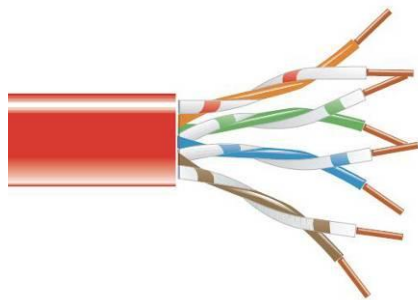
Fig. 159 UTP Cat5e

The cable consists of 8 wires and is unshielded.

Every two wire pairs are twisted together. The colours are as follows:

- blue-white / blue
- green-white / green
- orange-white / orange
- brown-white / brown

This cable is used for **RS485** connections.

Fibre-optic cable (multi-mode or single-mode) :

Depending on the concerned unit, these cables are used for FXM (multi-mode) or FXS (single-mode) connections.

The following requirements apply to fibre-optic cables:

FXM – fibre-optic multi-mode for B5-NET2-FXM and B6-NET2-FXM:
Speed: max. 100 Mbit/s
Distance: max. 2 km
Fibre-optic cable : multi-mode 62.5/125 µm or 50/125 µm
Plug: MTRJ
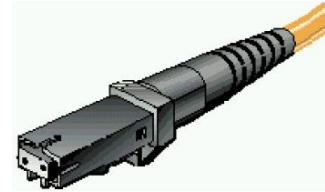
Fig. 160 Example of MTRJ type plug

FXS – fibre-optic single-mode for B5-NET2-FXS and B6-NET2-FXS:
Speed: max. 100 Mbit/s
Distance: max. 10 km
Fibre-optic cable : single-mode 9/125 µm
Plug: LC 2x5 (duplex)
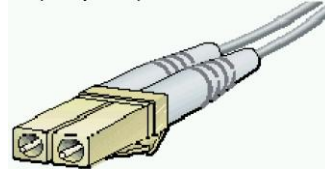
Fig. 161 Example of LC 2x5 type plug

12.3   Crimping the RJ-45 plug

RJ-45 plug and pin assignment:

There is an *insert* for the RJ-45 plug. This is a plastic piece in which the 4 wire pairs are threaded. The *insert* and 8 wires are subsequently put together inserted with the RJ-45 plug and crimped with a suitable crimping tool as follows:
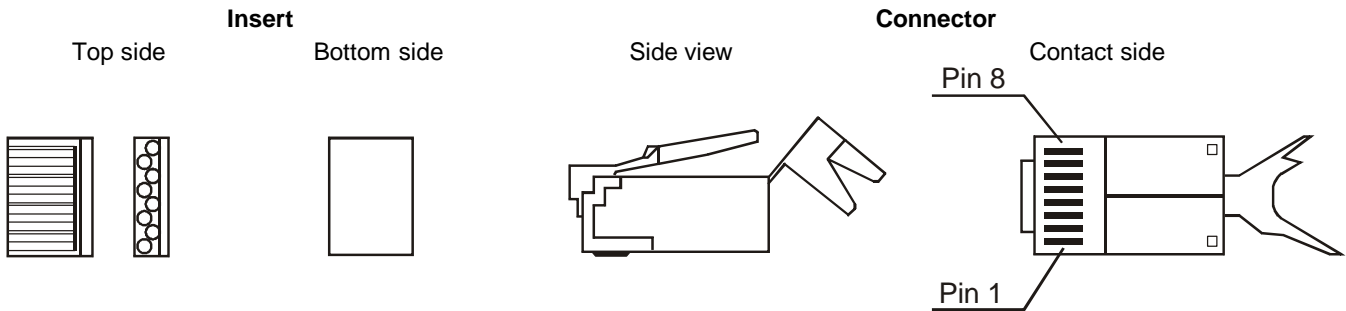
Fig. 162 RJ-45 plug and pin assignment

RJ-45 plug assignment (according to EIA/TIA – 568A):
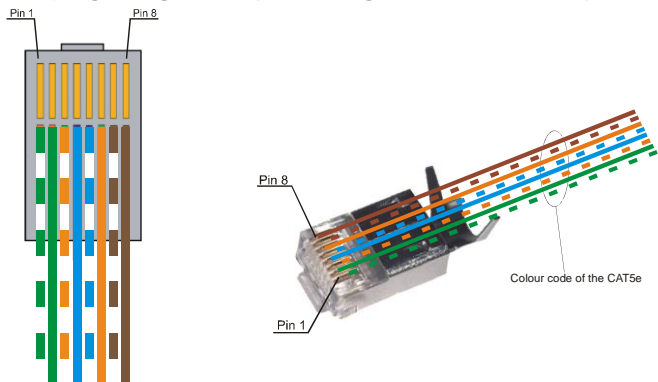
Fig. 163 RJ-45 plug assignment

PIN	Wire colour	Signal RS485	Signal Ethernet
1	white / green	NC	TX+
2	green	NC	TX-
3	white / orange	NC	RX+
4	blue	GNDG	NC
5	white / blue	GNDG	NC
6	orange	NC	RX-
7	white / brown	TX/RX+	NC
8	brown	TX/RX-	NC

Crimp plug:

Strip min. 3 cm of insulation. Foil shielding and shielding wire must remain undamaged.

min. 3 cm

Foil shielding
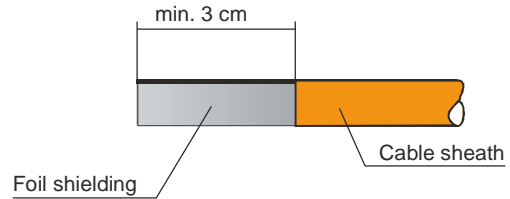
Cable sheath

Fig. 164 Crimp plug

Fold the foil shielding and shielding wire back over the cable sheath.

Shielding wire

2 cm

Foil shielding

Cable sheath
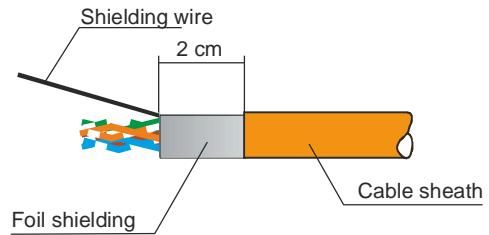
Fig. 165 Crimp plug

4 wire pairs, every pair twisted.

4 x 2 x 0,5 mm

Turn shielding wire back over the shielding foil

Foil shielding to the rear

Cable sheath
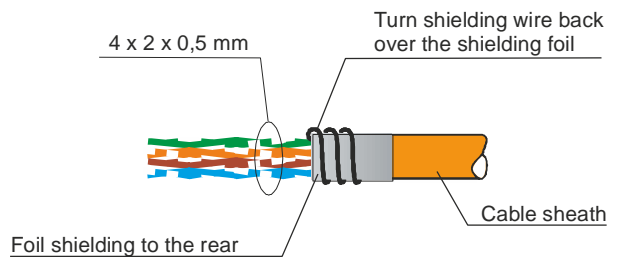
Fig. 166 Crimp plug

Unplait wires and prepare as shown.

568A wires aligned

Shielding wire turned to the rear

Foil shielding to the rear

Cable sheath
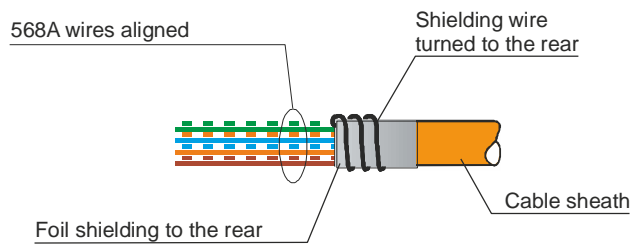
Fig. 167 Crimp plug

Nip off the wires at an angle of about 30°.

Wires nipped off at the angle

Shielding wire turned to the rear

Foil shielding to the rear

Cable sheath
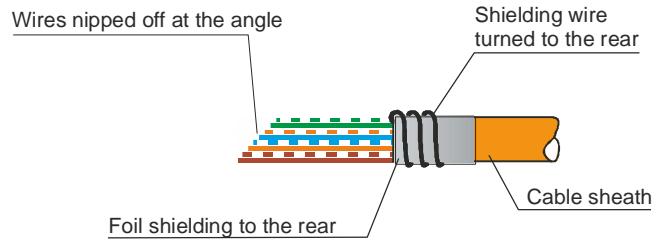
Fig. 168 Crimp plug

With the nose pointing down, push the *insert* onto the wires as close as possible to the cable insulation.

Shielding wire turned to the rear

Foil shielding to the rear

Cable sheath
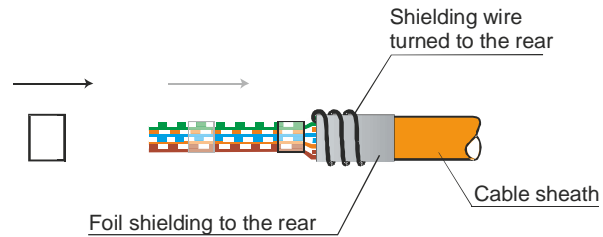
Fig. 169 Crimp plug

Nip off protruding wires flush.

Nip off wires flush behind the insert

Shielding wire turned to the rear

Foil shielding to the rear

Cable sheath
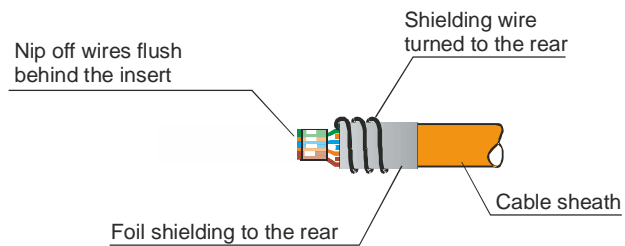
Fig. 170 Crimp plug

Turn the cable with *insert* 180° on the lengthwise axis and push on the plug.

Insert and cable turned

Shielding wire turned to the rear

Pin 8

Pin 1

Foil shielding to the rear

Cable sheath

Fig. 171 Crimp plug

SECURITON
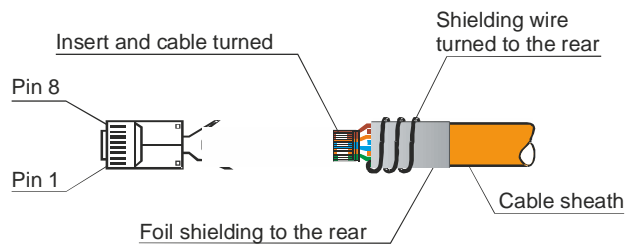
Push cable with *insert* into the plug to the stop.
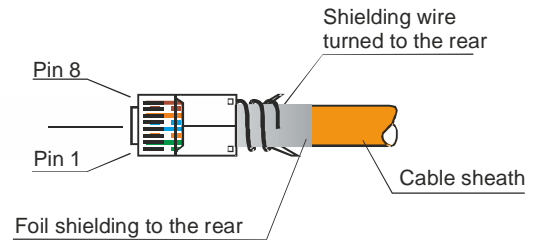
Fig. 172 Crimp plug

Bend the strain relief straight.
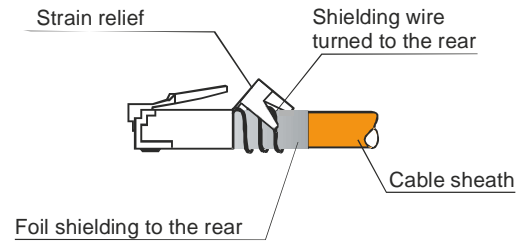
Fig. 173 Crimp plug

Use a crimping tool to crimp the plug. The RJ-45 plug is ready for use.
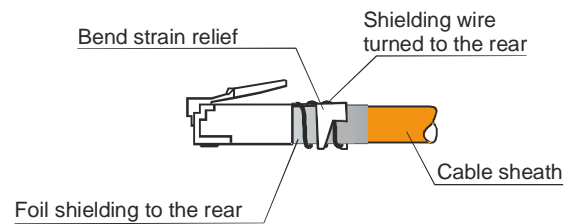
Fig. 174 Crimp plug

12.4   Power requirement calculation

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

12.5   Connection of FSS 800-1 fire brigade key box

Commissioning the safe and adapter is based on the mounting and commissioning instructions of the FSS 800-1 fire brigade key box.

Warning

Prior to commissioning, all closing cylinders must be deployed and their keys must be available. If this is not the case at the time of commissioning, suitable replacement cylinders must be used; they will then be exchanged later for the final cylinders.

The supplied conical arrester pin for the cover lid of the fire brigade lock is mounted only after the FSS 800-1 fire brigade key box and AD 800-1 adapter are fully functional.

The lock striker plate safeguard of the customer lock is a Z-angle made of plastic which is placed in the door. It can be removed only after the FSS 800-1 fire brigade key box and AD 800-1 adapter are fully functional.

Connection diagram
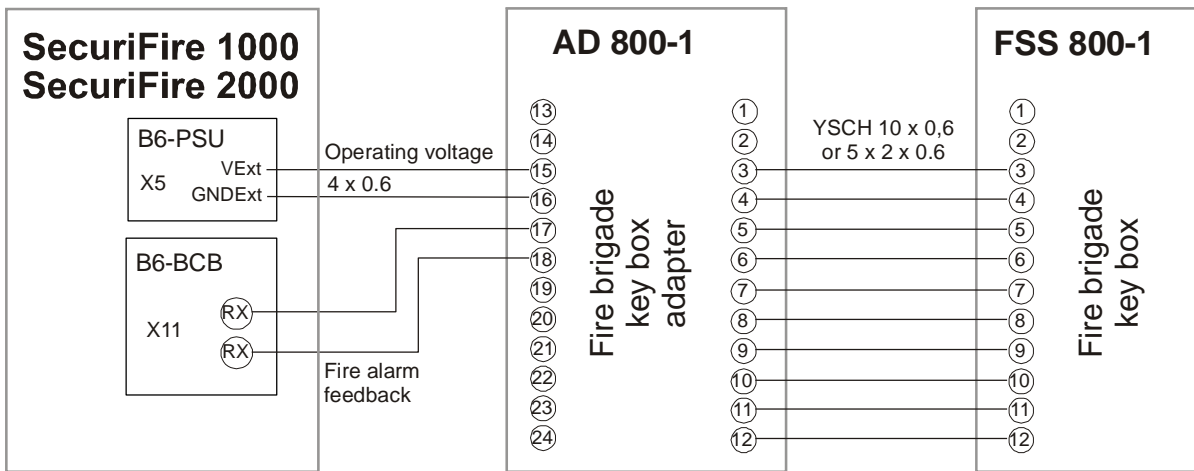
Fig. 175 FSS 800-1 connection diagram

Setting the jumpers on the AD 800-1 adapter
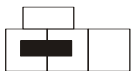
Fig. 176 JP1

Place jumper JP1 on position 1–2 (= factory setting). With jumper JP1 you can select whether the trigger contact on the fire alarm control panel is closed in the event of a trigger (position 1–2) or open (position 2-3). In any case, one of the positions must be selected; the jumper may not be removed.

Fig. 177 JP2

Place jumper JP2 (= factory setting). With jumper JP2 you can select whether for the trigger a potential-free contact (jumper closed) or a voltage of 11 to 30 VDC is used.

Fig. 178 JP3

Remove jumper JP3. If jumper JP3 is placed, the heating voltage display is included in the fault evaluation.

12.6 Protocol printer

12.6.1 Changing printer paper

- Tear off printed paper strips.
- Press down on the top edge of the printer cover and lift to the front.
- Slightly raise the roll holder with the old paper core and pull out to the front.
- Carefully remove old paper remnants.
- Place the roll holder in the new roll of paper and re-insert
- Insert the paper into the paper feed slit.
- Enter authorisation code.
- Press the **Element operation** key, select "PRINTER", enter printer number and confirm with **SecuriWheel**.
- Select the printer again, select "FORM FEED ON" and then wait until the paper strips are visible on the front side.
- Select "FORM FEED OFF" and confirm with the **Securi-Wheel**
- Insert paper through the slit in the cover.
- Re-mount the printer cover.

Press here

Ink ribbon

Fig. 179 Changing printing paper

12.6.2 Replacing ink ribbon

- Press down on the top edge the printer cover and lift to the front.
- Tear off paper strips and pull out about 3–5 cm.
- Remove old ink ribbon (press the left side).
- Insert paper through the new ink ribbon and re-insert.
- Tension the ink ribbon by turning the rotary knob (right) in the direction of the arrow.
- Insert paper through the slit in the cover.
- Re-mount the printer cover.

12.7 Simple troubleshooting

> **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 specialists must be performed by Securiton or by persons expressly authorised by Securiton.

12.7.1 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 control map.
If you want to view additional information about a particular fault, you must select the concerned message with the **SecuriWheel**.
Pressing the **Additional info** button shows the desired information in the display. With the **Additional info** button you can select either SITE INFO or INFO in plain text.

12.7.2 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 contaminated detector list is displayed and can be browsed with the **SecuriWheel**; it can be printed by pressing PRINT REPEAT on the internal protocol printer.
- Contaminated detectors must be replaced.
- In user level 3 (password entry required) the detector contaminations can be reset.

12.7.3 Possible causes of faults

System (board fault)	Wrong configuration, defective board, etc. (detailed information can be viewed with 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.
MMI-BUS devices	Interchanged data lines, incorrectly set participant addresses, fuses on the B5-PSU power supply unit are defective etc. Remark: error code specifies B5-BAF slot and participant number on the MMI-BUS.
Addressable loop	Logical fault (INIT FAULT, SYSTEM FAULT, ADDRESS FAULT), physical fault (wire breakage, short-circuit, earthing).

13 Article numbers / spare parts

Article numbers for detectors, special detectors, peripheral devices, accessories etc. are found in the current product catalogue for SecuriFire 1000/2000.

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