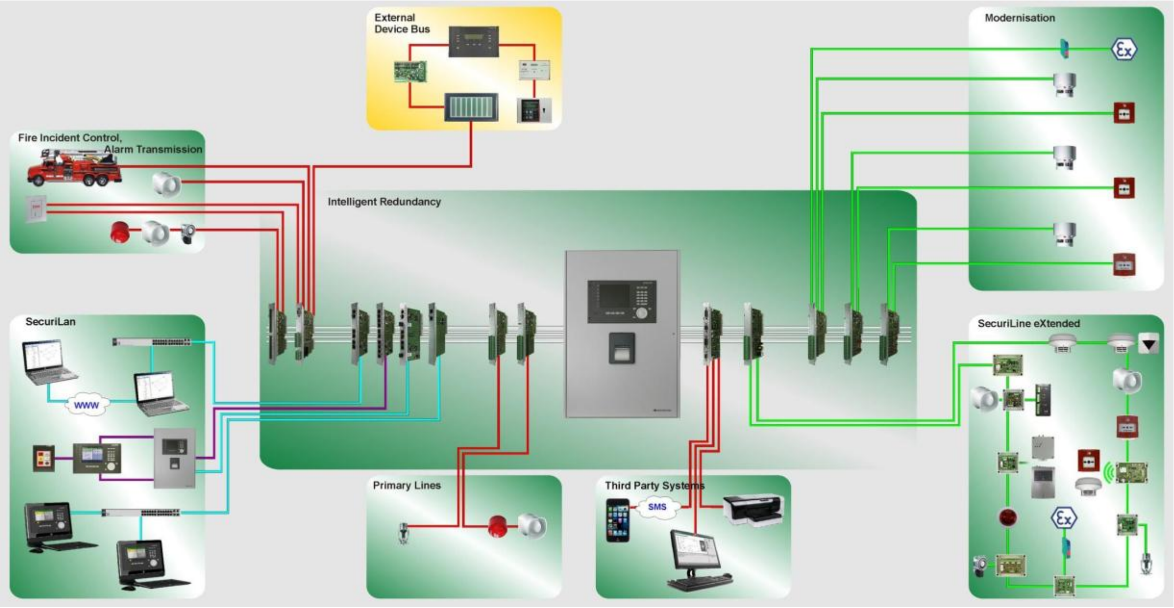
SECURITON

SecuriFire 3000

Mounting and installation

Technical Description


External Device Bus
Modernisation
Fire Incident Control, Alarm Transmission
Intelligent Redundancy
SecuriLan
www
SecuriLine eXtended
Primary Lines
Third Party Systems
SMS

Securiton AG Alpenstrasse 20 3052 Zollikofen Switzerland
T 811 044 en g

Imprint

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This document, T 811 044[1], is available in the following languages:

German	T 811 044 de
English	T 811 044 en
French	T 811 044 fr
Italian	T 811 044 it
Swedish	T 811 044 sv

Current edition:	Index g	07.04.2015	Rd

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[1] Reference document: MX-Handbuch V1.2, MMI&EPI Handbuch V2.1, LAN-Handbuch, X-Line Handbuch

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Document history

First edition: Date 26.11.2010

Index “a” Date 11.03.2011

Most important changes compared with first edition:

Section	New (n) / changed (c) / deleted (d)		What / Reason
• Fig. 94, Fig. 95, Fig. 96	c	Type neutral MMI participants	Correction

Index “b” Date 01.10.2011

Most important changes compared with previous edition:

Section	New (n) / changed (c) / deleted (d)		What / Reason
• 1	c	Line lengths, earthing concept	Text adjusted
• 1	c	Software	Software version adjusted
• 1.2	c	Overview of system limits	Table adjusted
• 1.3	n	Overview of SecuriLine eXtended limits	New notice
• 2.3, Fig. 5, 2.4, Fig. 6	n	B5-ADB 11, B6-ADB 10	New products
• 2.6, Fig. 9	c	DFC 21-1 frame spacers	Additions
• 3.1	n	Dimensions for external indication and control maps	New EHB 701
• 3.3, Fig. 30, 3.4, Fig. 31, Fig. 32	n	Surface mounting and flush mounting	New section
• Fig. 154	c	Connecting SecuriLine eXtended	Picture adjusted
• Fig. 157	n	RAL720X connection	New
• 11.11, Fig. 168	n	BX-O2I4 connection	New section
• 11.13	d	BX-IOM connection	Text removed and not replaced
• 11.16, 11.17	c	BX-SOL, BX-FOL connection	Software version adjusted
• Fig. 60	c	Connection of the SecuriStar detector series	Legend adjustment
• 7.3.2	c	MMI-BUS connection open	New sentence
• 7.4	c	B3-MMI-UIO	Text adaptation
• 7.6.4, 7.7.3, 8.4.3	c	Compatibility information	Adaptation
• 8.4	c	B5-EPI-FPC-GS	Text adaptation
• 9.3, Fig. 119	n	B5-NET2-FXM and B5-NET2-FXS	New section
• 9.5, Fig. 121, Fig. 122, Fig. 123, Fig. 124	n	MIC711	New section
• 9.6, 9.6.1	c	SecuriLan connection	Text adaptations
• 9.6.3	n	Overview of RS485 PIN assignments	New section
• 9.6.5, 9.6.6	c	SecuriLan connections	Table adaptations
• 9.6.7, Fig. 135	n	SecuriLan connection with fibre optics	New section
• 9.6.8, Fig. 136	c	Example of connecting a SecuriLan	Adaptations
• 9.7, Fig. 137, Fig. 139	n	SecuriFire VirtualMIC connection	New section
• Fig. 144	c	Plug assignment	Correction
• 10.4	d	ComBOX connection	Sentence removed and not replaced
• 13.2 • Fig. 192, Fig. 193	c n	SecuriLan cable specification Fibre-optic cable	Text adaptation New section
• 14	c	Article numbers / spare parts	Adaptations

Document history

Index “c” Date 13.02.2012

Most important changes compared with previous edition:

Section	New (n) / changed (c) / deleted (d)		What / Reason
• 1.3	c	Overview of SecuriLine eXtended	„BX-SOL, BX-SBL per loop“ changed
• Fig. 154	c	Connecting SecuriLine eXtended	Product name changed
• Fig. 155	c	Stub line connection	Change

Index „d” 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 T131458, new T811044	Administrative
• 1	c	System overview	Text adjusted
• 4.4	c	B5-PSU Power supply unit	Text adjusted
• 5.1	c	B5-MCB15 main control board	Text adjusted
• 5.2	c	B5-DXI2 SecuriLine eXtended board	Text adjusted
• 11.7	c	Connection of BX-AIM advanced input module	Text adjusted
• 11.8	c	BX-OI3 output/input module connection	Text adjusted
• 11.12	c	BX-REL4 relay module connection	Text adjusted
• 11.13	c	BX-IOM input/output module connection	Text adjusted
• 11.14	c	BX-IM4 input module connection	Text adjusted
• 11.15	c	BX-RGW radio module connection	Text adjusted
• 11.18	c	Connection end switch module eXtended Line BX-ESL	Text adjusted
• 11.20	c	Connection for BX-MDH door holding magnet	Text adjusted
• 5.4	c	B3-REL10 relay board with 230 V contacts	Text adjusted
• 5.7	c	B3-REL16E relay board with 24 V contacts	Text adjusted
• 5.10	c	B5-MRI16 relay board with 24 V contacts	Text adjusted
• 5.11	c	B3-IM8 board with monitored inputs	Text adjusted
• 5.12	c	BX-O2I4 output / input module connection	Text adjusted
• 6.1	c	B3-DCI6 direct current technique board	Text adjusted
• 6.2	c	B3-LEE23 alarm lines board for HX 140	Text adjusted
• 6.3	c	B3-LEE24 alarm loop board for HX 150	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	B5-NET4-485 network-board	Text adjusted
• 9.2	c	B5-NET2-485 network-board	Text adjusted
• 9.3	c	B5-NET2-FXM and B5-NET2-FXS network boards	Text adjusted
• 9.4	c	B5-LAN interface board	Text adjusted
• 9.5	c	MIC711	Text adjusted
• 9.6	c	SecuriLan connection	Text adjusted
• 9.6.7	c	SecuriLan connection with fibre optics	Text adjusted
• 10.1	c	B3-USI4 universal interface board	Text adjusted

Index „e” Date 22.11.2013

Most important changes compared with previous edition:

Section	New (n) / changed (c) / deleted (d)		What / Reason
• 1.2, 1.3	c	Overview of system limits, Limits overview of SecuriLine eXtended	Table adjusted
• 3.1, 3.2	c	Dimensions for external indication and control maps, Drilling planes for external indication and control maps	Additions
• 4.1	c	Emergency power supply (batteries)	Additions
• 11.9, 11.10, 11.19	n	BX-I2 input module connection, BX-O1 output module connection, Connection for SDI81X / SDI82X addressing module	New section
• 11.11	n	BX-O2I4 output / input module connection	New section
• 7.1	c	MMI-BUS schematic	Picture adjusted
• 7.3	c	Connecting MMI BUS participants	Text adjusted
• 7.4, 7.5	n	B5-MMI-FIP floor panel, B5-MMI-FPS-S Fire brigade panel Sweden	New section
• 8.1, 8.2, 8.3, 8.5, 8.6, 8.7, 8.8, 8.9, 8.10	n	Schematic of an EPI bus, EPI bus features, Connection of EPI bus participants, B5-EPI-ASP-GS alarm scrolling panel for the Netherlands, B5-EPI-FPS-S fire brigade operating panel for Sweden, B5-EPI-PCM partial indication and control map, B5-EPI-PIM partial indication map, B5-EPI-FAT fire brigade indicator board, B5-EPI-FPD fire brigade control panel	New section
• 10.2.1	c	Connecting management system / ESPA to RS232 interface	Text adjusted
• 10.5.2	c	External parallel printer on RS422 interface with converter	Text adjusted, picture adjusted
• 14	c	Article numbers / spare parts	Corrections

Index „f” Date 23.10.2014

Most important changes compared with previous edition:

Section	New (n) / changed (c) / deleted (d)		What / Reason
• 11.20, 11.21	n	Connection for BX-MDH door holding magnet, Connection for BX-MDI8 input module	New section
• 7.8	n	B5-MMI-FPCZ Fire brigade panel Czechia	New section
• 9.6.4	n	Ground potential design of RS 485 LAN connection	New section

Index „g” Date 07.04.2015

Most important changes compared with previous edition:

Section	New (n) / changed (c) / deleted (d)		What / Reason
• 11.1	n	General	New section
• 11.2	n	Max. number of participants per line interface and mode of operation	New section

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1 System overview

The SecuriFire 3000 system is a modularly designed fire detection system which consists of individual components and is planned and programmed based on the individual system requirements. A detailed description of the SecuriFire 3000 fire detection system is in the document “SecuriFire system description”, T 811 057.

Control panel and SecuriLan

The fire alarm control panel consists of 1 to 16 control units (SCPs) which can be distributed in the building as needed. Operation is 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 control panel, it is called a “SecuriLan”.

External indication and control map and BUS devices

The external SecuriFire MIC711 main indication and control maps are 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 SecuriLan 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 3000 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 concept protects the electronics by means of a zone concept, Transzorp diodes, filters and broadband decoupling of the power supply. Thus when the system is used in buildings with installed basic and medium protection (lightning protection, mains overvoltage arresters), no further measures (e.g. overvoltage arresters) are required.

Earthing concept

The earthing concept used in SecuriFire 3000 with central protection earthing to protect persons and electronics requires that all electrically charged components connected to the GND line of the SecuriFire 3000 control unit 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 unit and may endanger people.

Software

The SecuriFire 3000 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 version 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.
- Fully redundant system design to ensure unrestricted functioning, even if a processor half fails or in the event of a fault.
- Continual, automatic check routines for all system components and programs.
- Units connected easily with spade connector (euroconnector).
- Up to 31 remote 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 units without superordinate central computer.
- Superordinate networking of nearly any number of fire alarm control panels (also subsequently).
- Local mesh network using TCP/IP.
- A maximum of 250 participants per ring and ring 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 on any control unit.
- Because of the special redundancy concept, the SecuriFire 3000 is suitable for actuation of more than one extinguishing area according to VdS.
- This corresponds to the following standards and directives: European standards EN 54, DIN, ÖNORM, ÖVE and VDE.
- VdS device and system approval (G298029, S298029, G204087).

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 / 38...45 Ah in series
Emergency supply with batteries:	according to current calculation
Alarm current:	max. 7 A
Ambient temperature:	-5°C to +50°C, measured at natural convection
Heat output performance:	typically 20 W max. 40 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 by means of a zone concept, Transzorp diodes, filters and broad-band decoupling of the power supply to protect the electronics.
Dimensions:	
Control unit	470 x 670 x 230 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):	24 kg

1.2 Overview of system limits

	Each control unit	Each SecuriLan
Control units (SCP2000/SCP3000)	--	max. 16
Main indication and control map (MIC711)	--	max. 31
∑ SCP+MIC711	--	max. 32
Operating panels internal (MIC11)	max. 1	max. 16
Printer (external, internal)	max. 3	max. 16 x 3
Operating panels (all types)	max. 16	max. 16 x 16
Fire brigade panels	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-MMI1)) + 2*(B3-MMI2)) + 3*(EPI3)) ≤ 16	
Detection zones, inputs, outputs	total max. 256	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	

1.3 Limits overview of SecuriLine eXtended

	X-Line High Power HP	**X-Line Long Range LR**	**DAI Mode**
Participants per ring	max. 250	max. 250	max. 128
Participants per stub	max. 64	max. 64	max. 64
BX-SOL, BX-SBL per ring	max. 64 LOW, 32 HIGH	max. 64 LOW, 16 HIGH	max. 32 LOW, 16 HIGH
BX-FOL per ring	max. 23	max. 23	max. 23
Ring length	max. 1’500 m	max. 3’500 m	max. 2’000 m
Max. line resistance (loop)	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 3000 control unit

2.1 Map case design and dimensions

All variants of the SecuriFire 3000 control units differ from each other only mechanically in terms of the door design. Rear wall, unit rack, map case etc. are the same for all SecuriFire 3000 control units.

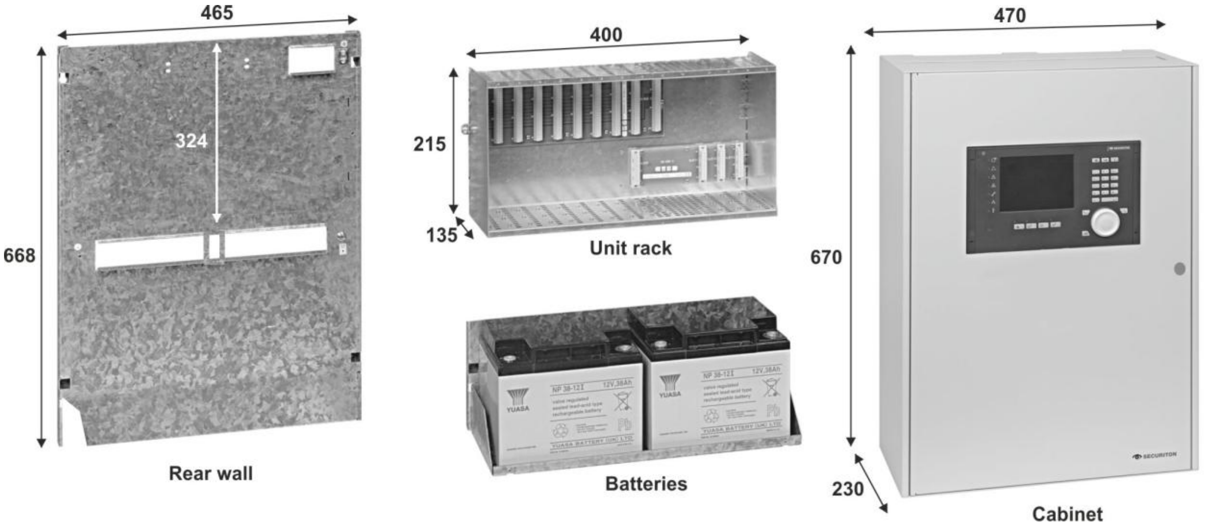

465
324
668
Rear wall
400
215
135
Unit rack
Batteries
470
670
230
Cabinet

Fig. 1 Map case design and dimensions

2.2 Basic design

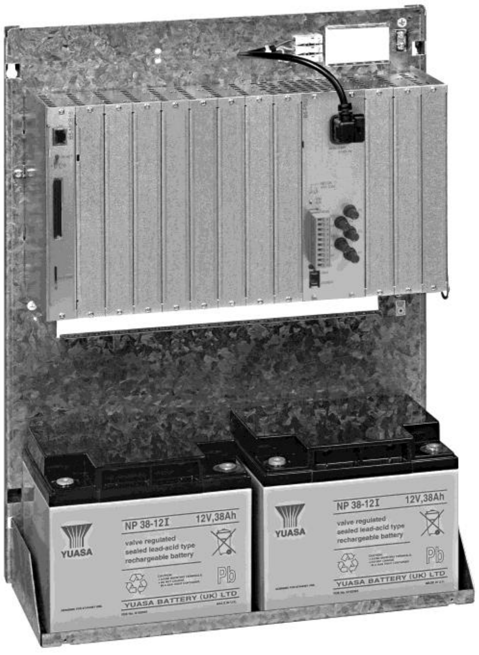

NP 38-12I
12V,38Ah
YUASA
NP 38-12I
12V,38Ah
YUASA

Fig. 2 Basic design of the SecuriFire 3000 control unit without map case

The basic design of each SecuriFire 3000 control unit includes:

- Map case with door (depending on version)
- Unit rack with B5-BUS connection board
- B5-MCB15 main control board
- 7 A B5-PSU power supply unit
- Place for 2 x 12 V / 38...45 Ah emergency batteries
- Mains terminals and battery cable

All other functions are planned customer-specifically. This is accomplished by fitting the required boards in the slots of the unit rack and by planning with the SecuriFire software.

2.2.1 Unit rack

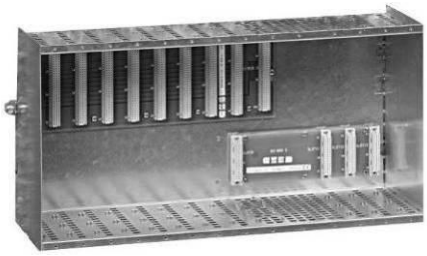


Fig. 3 Empty unit rack with BUS printed circuit boards

The unit rack contains the entire electronics of a SecuriFire 3000 control unit except for the indication and control map and protocol printer. It is attached to the rear wall of each SecuriFire 3000 map case and contains 13 board slots intended to house boards.
The bus circuit boards on the rear side of the unit rack are for power supply and data communication between the individual boards (via plug and socket connections).

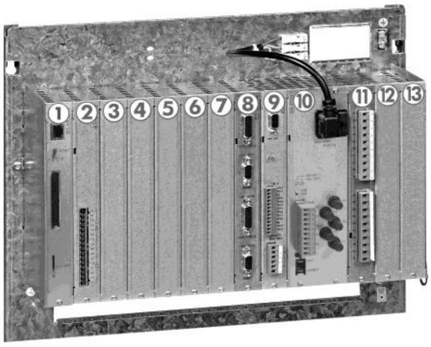


Fig. 4 Equipped unit rack

Slot 1

Only for B5-MCB15 main control board.

Slot 2

Available for all of the boards described below. When using a B5-NET2-485, B5-NET4-485 network board or B5-LAN interface board, it is imperative that this slot is used.

Slots 3 to 8

Available for all boards described below with the exception of the B3-REL10, B3-REL16 and B3-REL16E relay boards.

Slot 9

If relay boards are required (slots 11 to 13), either the B5-BAF or B5-MRI16 board must be on slot 9, since only these two boards are suitable for actuating the relay bus. If no relay boards are required, this slot is freely available.

Slot 10

Exclusively for the B5-PSU power supply unit.

Slots 11 to 13

Only for B3-REL10, B3-REL16 and B3-REL16E relay boards.

2.3 B5-ADB 11 additional box

Fig. 5 B5-ADB 11

Empty SCP3010 housing for integrating the SecuriLine eXtended modules, remote alerting devices, two 12 V/45 Ah emergency power accumulators or other devices.

2.4 B6-ADB 10 additional box

Fig. 6 B6-ADB 10

Empty SCP2010 housing for integrating the SecuriLine eXtended modules, remote alerting devices, two 12 V/18 Ah emergency power accumulators or other devices.

2.5 B5-MIC11 mounting main indication and control map

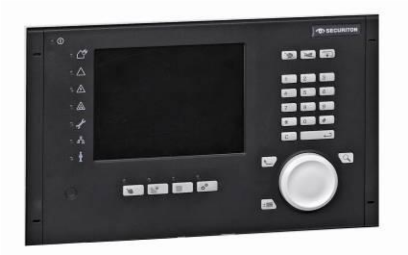


Fig. 7 B5-MIC11

The B5-MIC11 is language neutral and can be mounted in the door of the SecuriFire 3000 map cases B5-SCP-3020, B5-SCP-3030, B5-SCP-3040. It is connected to the B5-MCB15 main control board with a ribbon cable and also controls the protocol printer.

2.6 Mounting a control unit

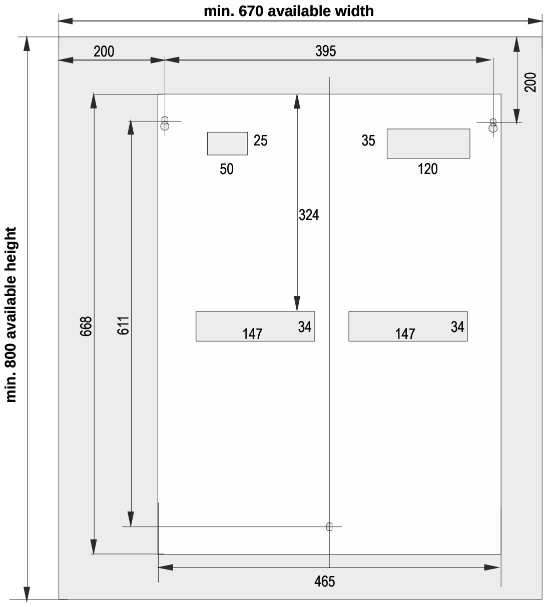

min. 670 available width
200
395
200
min. 800 available height
668
611
25
50
35
120
324
147
34
147
34
465

Fig. 8 Drilling plan for all SecuriFire 3000 map case variants (all dimensions in mm)

- 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. 50 kg.
- Insert cable and use cable fastener for strain relief.
- Attach unit rack and fit boards.
- Wire mains connection and plug of the boards.
- Position map case and fix in place with two screws.
- Place batteries and connect.
- Connect the ribbon cable of the indication and control map to the B5-MCB15.
- Connect earth cable of the door to the map case.

Distancing frame DFC 21-1

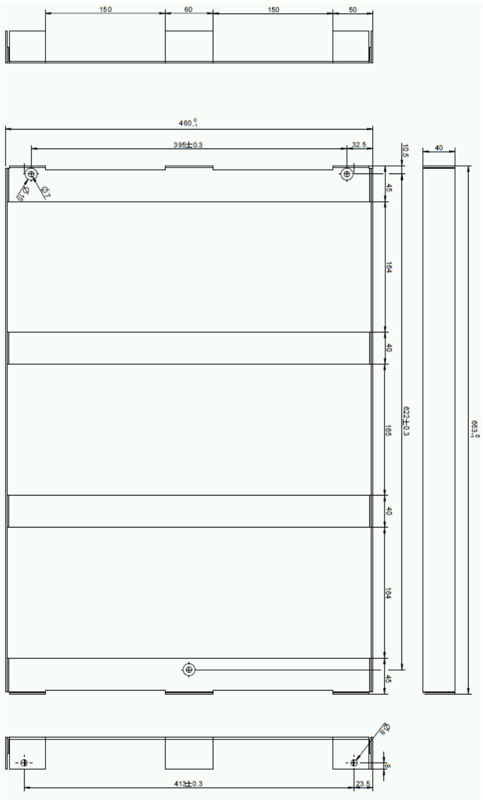

150
60
150
50
460 0 -1
395±0.3
32.5
10.5
40
Ø15
Ø7
45
164
40
165
622±0.3
663 0 -1
40
164
45
Ø8
8
413±0.3
23.5

Fig. 9 Dimensioned drawing DFC 21-1

The optional distancing frames are suitable for all SecuriFire 3000 map cases; they provide the control unit with an extra 4 cm from the wall. The required holes for attachment are already on the map cases. Longer screws have to be used (at least 5 x 80 mm).

Fig. 10 Distancing frame DFC 21-1

Notice

Rating plates

Each SecuriFire 3000 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 unit and has to be attached in access level 1 (outside on the map case) before commissioning where it can be easily seen.

3 External main indication and control maps

3.1 Dimensions for external indication and control maps

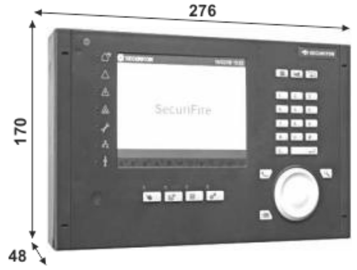


Fig. 11 MIC711

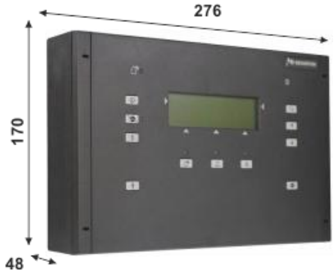


Fig. 12 B5-MMI-FIP

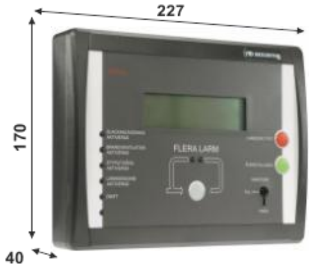


Fig. 13 B5-MMI-FPS / B5-EPI-FPS

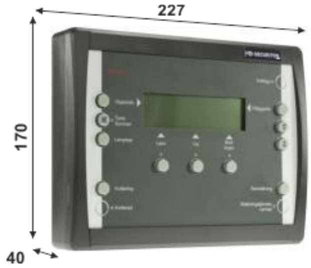


Fig. 14 B5-MMI-IPS

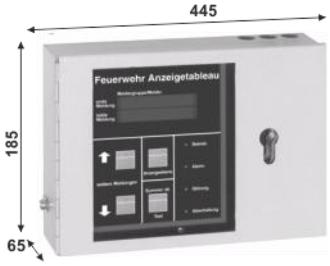

445
185
65
Feuerwehr Anzeigetableau

Fig. 15 B3-MMI-FAT / B5-EPI-FAT

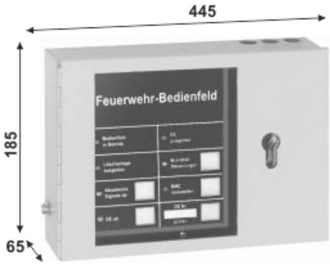

445
185
65
Feuerwehr-Bedienfeld

Fig. 16 B5-MMI-FPD / B5-EPI-FPD

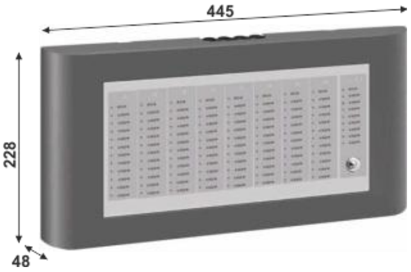


Fig. 17 B3-MMI-IPEL

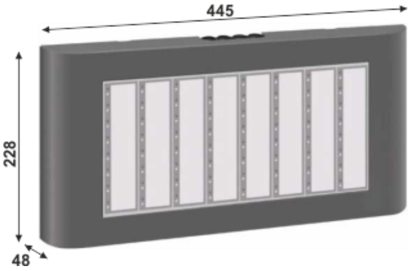


Fig. 18 B3-MMI-EAT 64

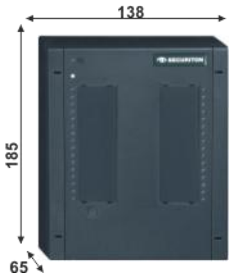


Fig. 19 B5-MMI-PIM

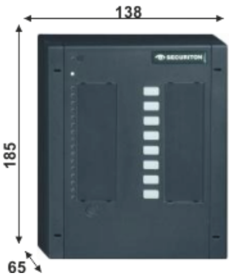


Fig. 20 B5-MMI-PCM

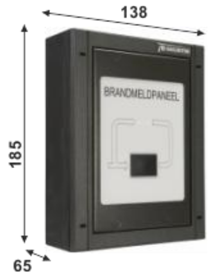

138
185
65
BRANDMELDPANEEL

Fig. 21 B5-EPI-ASP

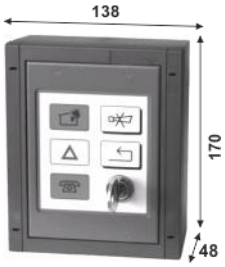


Fig. 22 B5-EPI-FPC

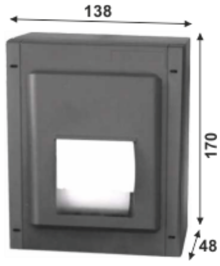


Fig. 23 B5-MIC-PPE

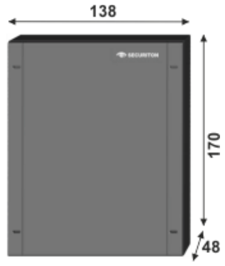


Fig. 24 EHB 701

All dimensions in mm

3.2 Drilling planes for external indication and control maps

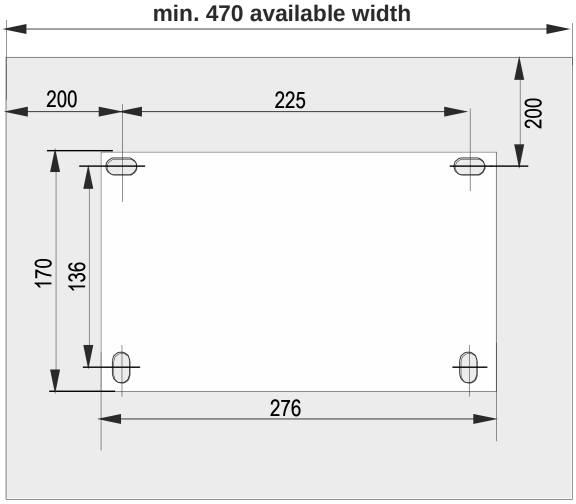

min. 470 available width
200
225
200
170
136
276

Fig. 25 MIC711

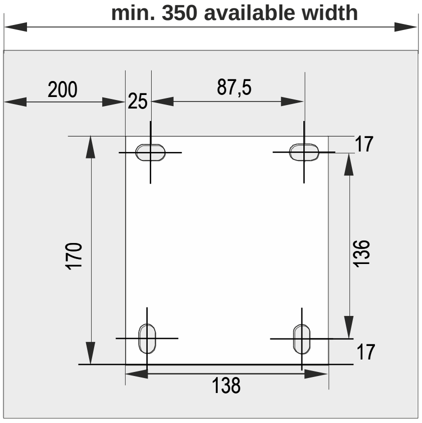

min. 350 available width
200
25
87,5
17
170
136
17
138

Fig. 26 B5-MIC-PPE / B5-EPI-FPC / EHB 701

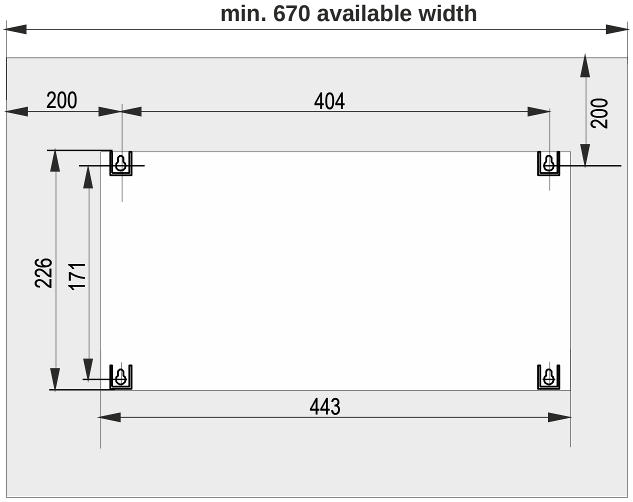

min. 670 available width
200
404
200
226
171
443

Fig. 27 B3-MMI-IPEL / B3-MMI-EAT64

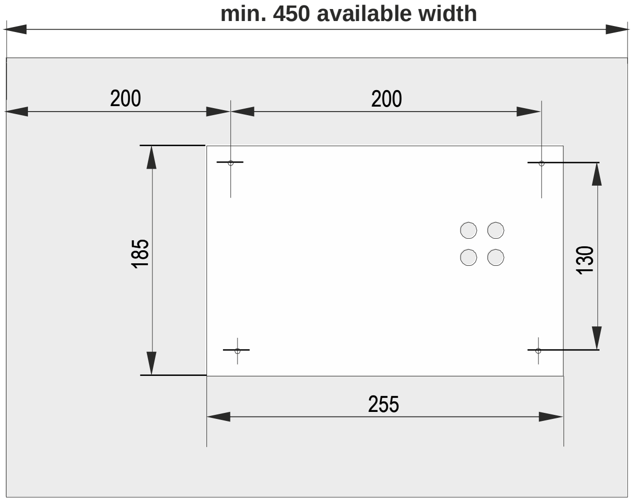

min. 450 available width
200
200
185
130
255

Fig. 28 B3-MMI-FAT

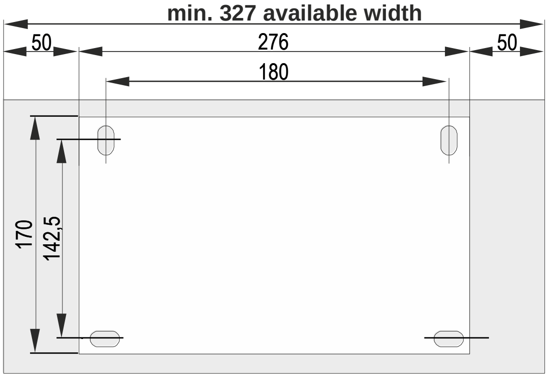

min. 327 available width
50
276
50
180
170
142,5

Fig. 29 B5-MMI-FPS / B5-MMI-IPS / B5-EPI-FPS

All dimensions in mm

3.3 MIC711 surface mounting with plan box

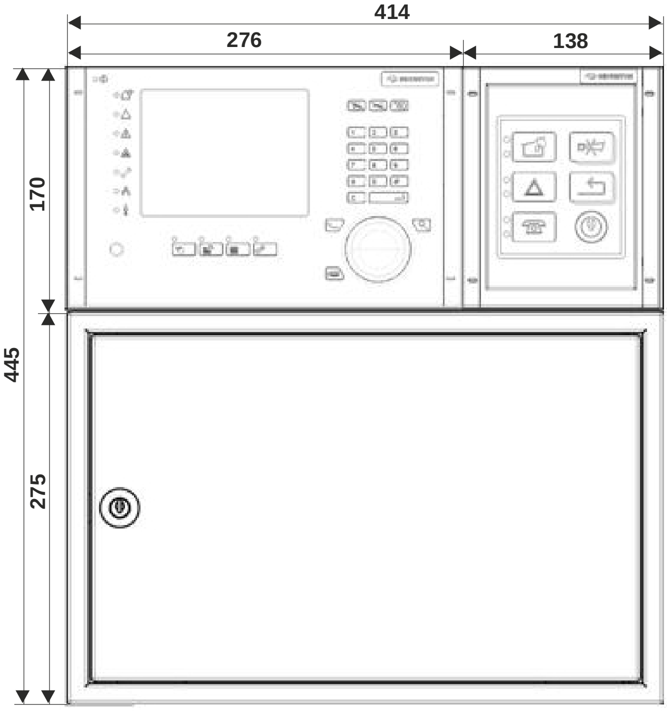


Fig. 30 MIC711 / B5-EPI-FPC-GS with PLB 70-1

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

3.4 Flush mounting

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

Mounting MIC711

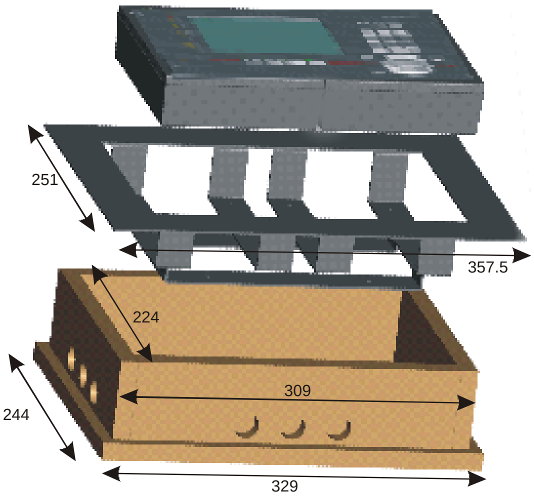


Fig. 31 FME73 with MIC711

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

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

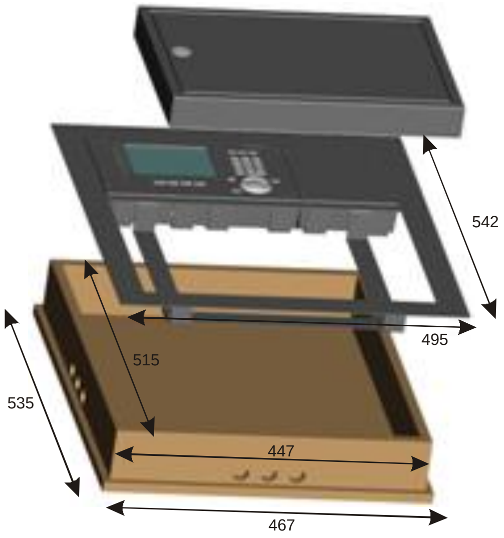


Fig. 32 FME70 with MIC711 and PLB 70-1

4 Power supply

For the power supply from the electric 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 3000 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 driven 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 3000 control unit. If there is a mains failure, they provide the power for the control unit. The batteries are located below in each SecuriFire 3000 map case.

Notice

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

Battery type	VdS approval		Battery type	VdS approval
WP 45-12	G105087		Yuasa NP 7-12	G189099
CTM CT38-12i	G103053		Yuasa NP 17-12	G197022
Excide Powerfit S312/40G5	G102109		Yuasa NP 24-12	G182026
Genesis NP38-12R	G106045		Yuasa NP 38-12	G182024
Sauseng SB 40-12I	G105017		Yuasa NP 65-12	G183008

4.2 Mains and battery connection

In the rear wall of each SecuriFire 3000 map case there is an opening above for introducing the mains cable. The edges of the opening have holes so that cable strain relief can be attached.

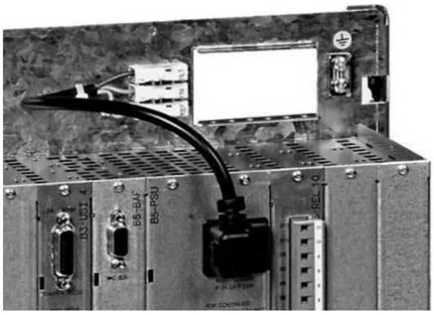


Fig. 33 Mains connection

4.3 Connection

The battery connection cable is delivered with crimped eye rings. The eye rings can be screwed onto the battery. To do this, it is best to remove the screwed on flat plug of the battery. If the connection is a plug-in, replace the ring eye on the cable with a flat blade receptacle.

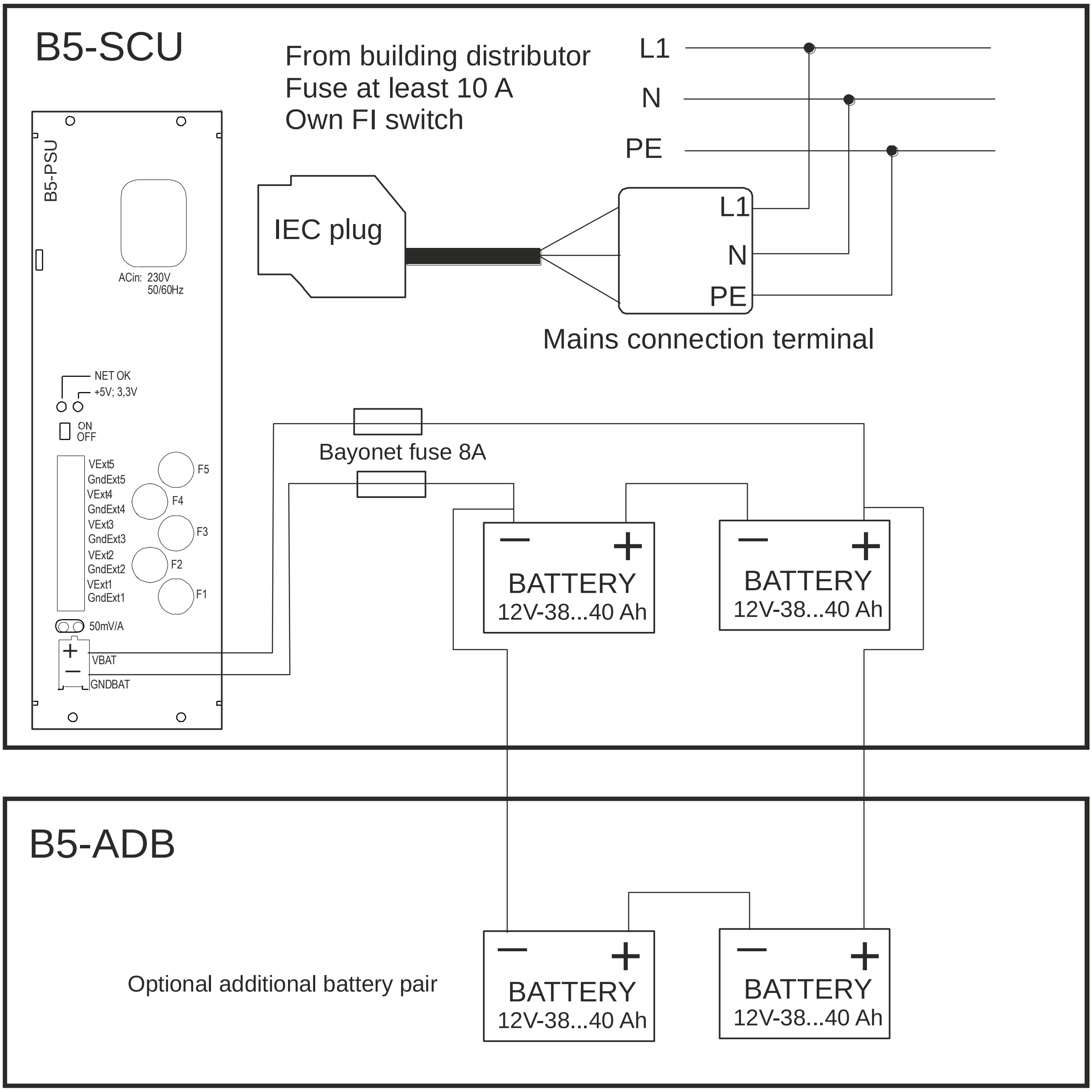

B5-SCU
From building distributor
Fuse at least 10 A
Own FI switch
L1
N
PE
B5-PSU
ACin: 230V
50/60Hz
IEC plug
L1
N
PE
Mains connection terminal
NET OK
+5V; 3,3V
ON
OFF
VExt5
GndExt5
VExt4
GndExt4
VExt3
GndExt3
VExt2
GndExt2
VExt1
GndExt1
F5
F4
F3
F2
F1
50mV/A
+
−
VBAT
GNDBAT
Bayonet fuse 8A
− +
BATTERY
12V-38...40 Ah
− +
BATTERY
12V-38...40 Ah
B5-ADB
Optional additional battery pair
− +
BATTERY
12V-38...40 Ah
− +
BATTERY
12V-38...40 Ah

Fig. 34 Mains and battery connection

4.4 B5-PSU Power supply unit

The internal 7 A power supply unit delivers the required output voltages of 3.3 V, 5 V and 27 V required in every SecuriFire 3000. The system connection is implemented by means of a plug connection on the rear side over the bus connection print (B5-BUS) fastened to the unit rack. On the front side of the power supply unit is a 10-pin plug-in screw terminal to which external consumers can be connected via 5 separately fused outputs.

More information about the B5-PSU can be found in the Technical Description T 811 114.

4.4.1 Interfaces

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

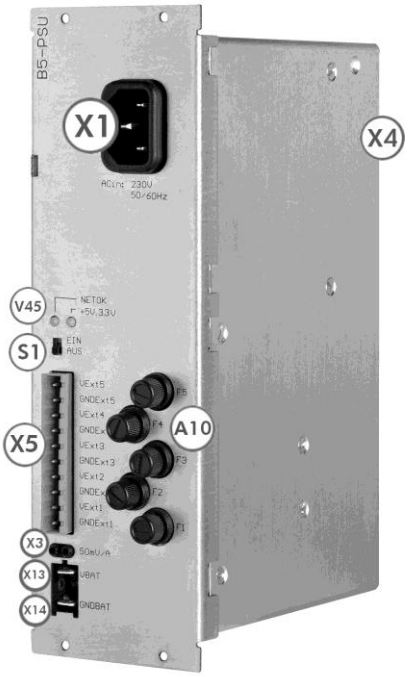


Fig. 35 B5-PSU interfaces

4.4.2 Technical data

Mains voltage / mains frequency:	230 VAC +15%/-20% 47-63 Hz
Power consumption:	max. 350 VA
Mains fuse protection:	with 10 A current surge resistant
Mains fuses in the power unit:	2 x 2.0 A
Outputs for internal consumers:	3.3 V/3 A, 5 V/1 A, 27 V/7 A
Outputs for external consumers:	5 x 27 V, 2.5 A
Alarm current:	max. 7 A
Replacement fuses F1 to F5:	2.5 A FF (super quick acting), glass tube 5 x 20 mm

4.4.3 Compatibility information

Possible slot in the unit rack:	10
Compatible main control board:	B5-MCB15 from edition state EG072970--
Compatible system bus:	B5-BUS (all edition states)
SecuriFire-Studio:	from release 1.0

4.4.4 Connection of external consumers

The B5-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; otherwise, switching off in the event of a short-circuit cannot be guaranteed.

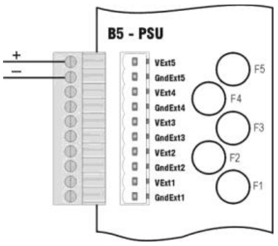


Fig. 36 Connection of external consumers

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 7 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 the acoustic alarming from working.

4.4.5 Battery measurement with a connected battery pair

- During normal operation, pull out the cold device plug on the B5-PSU of the SCP: 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. 10–350 m V DC.
- Attach the battery power cable (art. no. FG81720) on the B5-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 SCP.
- Read and note the measurement value (= alarm current) on the measuring instrument.
- Convert measurement value: Measurement value [mV] / 50 = battery current [A].
- Charging up to 80% of the battery capacity[2] within 24 hours is guaranteed if the quiescent current is less than 6 A (= 250 mV).

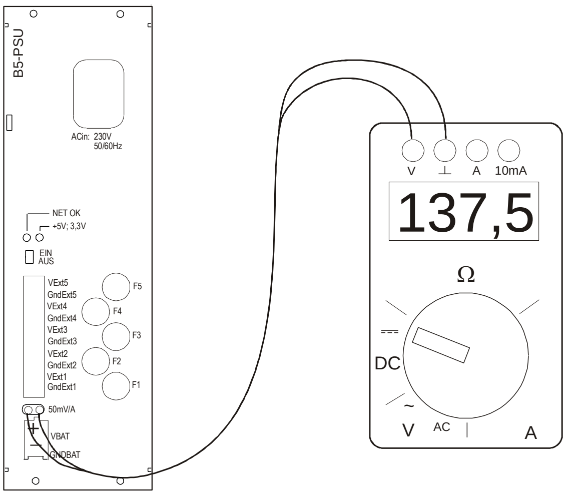


Fig. 37 Battery current measurement

---

[2] Presently 2 x 12 V / 40 Ah batteries

4.4.6 Battery current measurement with two connected battery pairs

- Charging up to 80% of the battery capacity[3] within 24 hours is guaranteed if the quiescent current is less than 4.6 A (= 192 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 80 Ah, if the quiescent current is less than 0.99 A (= 49.5 mV). If the quiescent current is greater than 0.99 A, you have to perform the following calculation:
- (quiescent current x bridging time) + (alarm current x bridging time) < effective battery capacity.

If the results of the battery current measurement (example with a 40 Ah battery pair) is not in line with the power requirement calculation (±5%), notify your Securiton Support point immediately.

---

[3] Presently 2x 2 12 V / 40 Ah batteries

5 Line and control boards

5.1 B5-MCB15 main control board

The B5-MCB15 processes all data prepared by other boards, carries out all processing necessary for the logical behaviour of the system and manages planning data and system time.
System states are displayed by LEDs. All programming and configuration procedures are performed via the LAN interface (X3) by the service PC and SecuriFire Studio.

More information about the B5-MCB15 can be found in the Technical Description T 811 116.

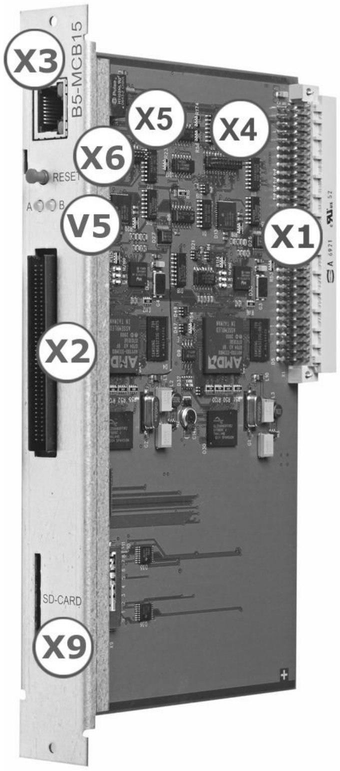


Fig. 38 B5-MCB15 interfaces

5.1.1 Interfaces

X1	Connector plug for B5-BUS	
X2	Control panel interface to the B5-MIC11	
X3	Ethernet 100BASE-TX service interface	
v5	Status LEDs for master processors A and B	
	LED is dark	fault
	LED is lit	start up
	LED flashes rapidly	active
	LED flashes slowly	passive
X4	Debugging and programming interface	
X5	Debugging and programming interface	
X6	Reset pin (in the pulled state the system is reset)	
X9	SD card interface	

5.1.2 Technical data

Power supply:	internal via B5-BUS
Quiescent power consumption:	66 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

Possible slot in the unit rack:	1
Compatible power supply unit:	B5-PSU from edition EG072918
SecuriFire Studio:	from release 1.0 (115.242594 / EG072970) from release 2.0.4 (115.249 755 / EG072970-A)

5.2 B5-DXI2 SecuriLine eXtended board

The B5-DXI2 is for power supply and evaluation of two ring circuits with the associated detectors and modules of the SecuriLine eXtended. Alternatively, a ring circuit and two X-LINE stub lines or four stub lines can also be connected. The digitised states of the detectors and modules are further processed by the B5-DXI2 and forwarded via the B5-BUS to the B5-MCB15 Main Control Board.

More information about the B5-DXI2 can be found in the Technical Description T 811 113.

5.2.1 Interfaces

X1	Connector plug for B5-BUS
X2	Connection plug for 2 ring circuits or 4 stub lines

Ring no.	Designation	Function
2	G4	Screen
	C4	GND ring end
	L4	+24V ring end
	G3	Screen
	C3	GND ring beginning
	L3	+24V ring beginning
1	G2	Screen
	C2	GND ring end
	L2	+24 V ring end
	G1	Screen
	C1	GND ring beginning
	L1	+24 V ring beginning

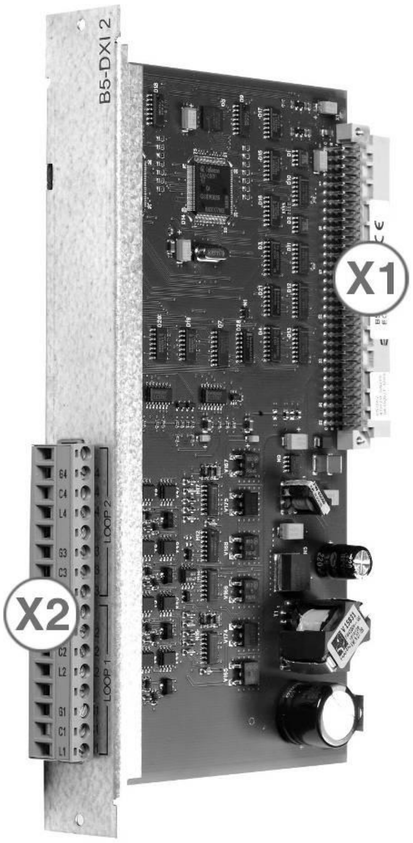


Fig. 39 B5-DXI2 interfaces

5.2.2 Technical data

Voltage supply:	internal via B5-BUS
Power consumption:	35 mA
Ambient temperature:	-5 °C to +50 °C
Extension:	2 ring circuits, each max. 250 participants or 4 stub lines, each max. 125 participants
Short-circuit isolator:	integrated in detectors and control components
Individual detector identification:	standard integrated
Ring and stub line lengths:	max. 3,500 m

Notice

The properties of the SecuriLine eXtended (e.g. 250 participants per ring) 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 ring.

5.2.3 Compatibility information

Possible slots in the unit rack:	2 to 9
Compatible main control board:	B5-MCB15 (all editions and variants)
SecuriFire Studio:	from release V 1.0
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 ring circuit:	J-Y(ST)Y 1 x 2 x 0.8 mm screened

5.3 B5-BAF control board

The B5-BAF includes the basic functions of a fire alarm control panel. It comprises two surveyed outputs which are for connecting transmission and alarm units among others. In addition, there is an interface for controlling a parallel FBM compliant with DIN 14661 and SN 054002 and controlling 3 relay boards (B3-REL10, B3-REL16, B3-REL16E) as well as the interface for the MMI BUS, which is for connecting all external B3 indication and control maps and MMI BUS modules. Communication with the B5-MCB15 main control board is via the B5-BUS.

More information about the B5-BAF can be found in the Technical Description T 811 101.

5.3.1 Interfaces

X1 B5-BUS connector plug

X2 Relay BUS connector plug

X3 Interface for 2 monitored outputs

Terminal	Designation	Function
1	CFM2	Feedback-
2	OM2-	GND
3	OM2+	+24V
4	CFM1	Feedback-
5	OM1-	GND
6	OM1+	+24V

X4 Interface for FBM compliant with DIN 14661 or FBA compliant with SN 054002

Terminal	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

X6 Interface for MMI BUS

Terminal	Designation
1	MMIA+
2	MMIA-
3	
4	MMIB+
5	MMIB-
6	GNDISA
7	GNDISA
8	GNDISB
9	GNDISB

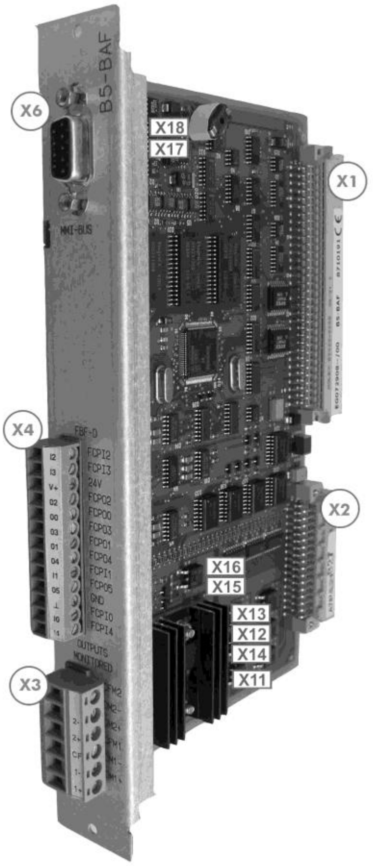


Fig. 40 B5-BAF interfaces

X11–16	Jumper for adjusting the load range for the monitored outputs of interface X3
X17, X18	Jumpers for MMI-BUS connection; inserting jumpers X17 and X18 terminates the MMI-BUS.

5.3.2 Technical data

Voltage supply:	internal via B5-BUS
Power consumption:	35 mA typical with switched on output driver, but without peripheral current, without MMI-BUS and without FBM or FBA
Ambient temperature:	-5°C to +50°C
Extension:	MMI-BUS, 2 monitored outputs Fire brigade panel compliant with DIN 14661, FBA compliant with SN 054002
Relay bus interface:	for B3-REL10 or B3-REL16(E)
FWB interface compliant with DIN 14661:	12-pin plug-in screw terminal
Transmission type:	parallel, bi-directional
Coverage:	max. 5 m
OM1 interface:	transmission unit or monitored output, max. 28 V/1.5 A
OM2 interface:	monitored output, max. 28 V/1.5 A
MMI-BUS interface:	galvanically isolated RS485
MMI-BUS length:	max. 1,200 m

5.3.3 Compatibility information

Possible slots in the unit rack:	9 if relay bus is to be actuated, otherwise 2 to 8
SecuriFire Studio:	from release 1.0
Elements connectable to MMI-BUS:	all B3-MMI buses from -A/ B5-MMI bus participants
Recommended cable types for MMI-BUS:	LF-2YY 2 x 2 x 0.5 (red, unscreened) LF-2YACVY 1 x 2 x 0.5 (red, screened)

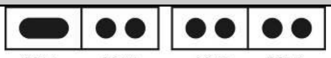
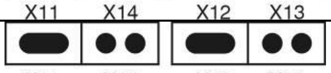
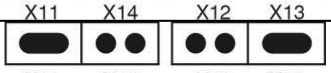
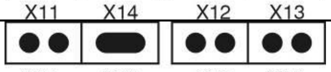
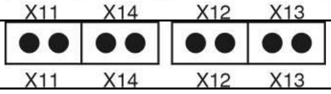
Warning

If participants up to version -E are connected to a B5-BAF MMI-BUS, the jumpers must **NOT** be connected.

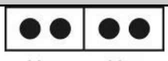
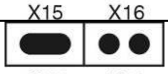
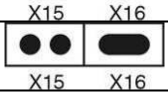
5.3.4 Jumper assignment X11 to X16 for monitored outputs

When delivered the jumpers for outputs OM1 and OM2 are each set to load range 160-1,000 Ω.

Monitored output OM1

Load range	Output current	Quiescent current	Short-circuit current	Line resistance	Jumper
160–1,000 Ω	max. 1.5 A	890 µA	typical 2.17 A	max. 50 Ω	 X11 X14 X12 X13
57–375 Ω	max. 1.5 A	2.5 mA	typical 2.17 A	max. 20 Ω	 X11 X14 X12 X13
20–80 Ω	max. 1.5 A	12.8 mA	typical 2.17 A	max. 5 Ω	 X11 X14 X12 X13
TUS	100 mA	16 mA	typical 137 mA	max. 20 Ω	 X11 X14 X12 X13
MDL-F	100 mA	890 µA	typical 137 mA	max. 50 Ω	 X11 X14 X12 X13

Monitored output OM2

Load range	Output current	Quiescent current	Short-circuit current	Line resistance	Jumper
160–1,000 Ω	max. 1.5 A	890 µA	typical 2.17 A	max. 50 Ω	
57–375 Ω	max. 1.5 A	2.5 mA	typical 2.17 A	max. 20 Ω	
20–75 Ω	max. 1.5 A	12.8 mA	typical 2.17 A	max. 5 Ω	

5.3.5 Connection of monitored outputs

Quiescent current monitored output

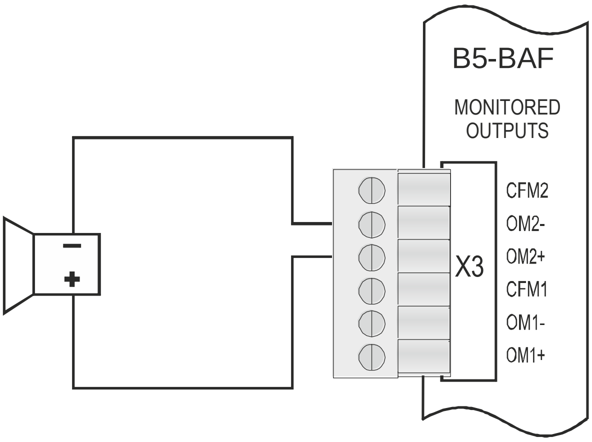

B5-BAF
MONITORED OUTPUTS
X3
CFM2
OM2-
OM2+
CFM1
OM1-
OM1+
−
+

Fig. 41 B5-BAF, quiescent current monitored output

Connection with feedback

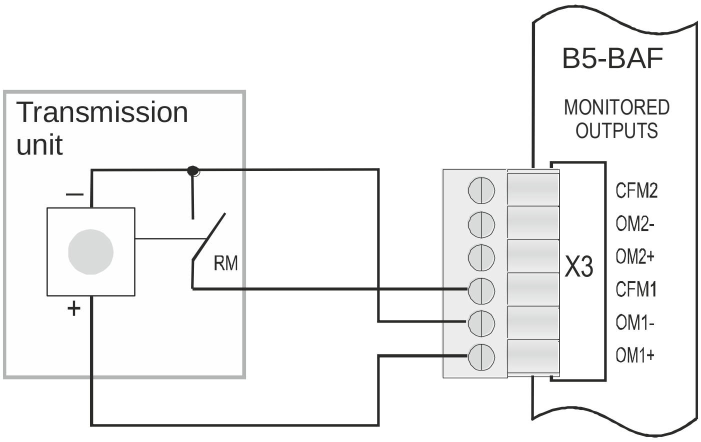

Transmission unit
−
+
RM
B5-BAF
MONITORED OUTPUTS
X3
CFM2
OM2-
OM2+
CFM1
OM1-
OM1+

Fig. 42 B5-BAF, connection with feedback

"Electronic loads"

An electronic load is a device or board used as a replacement for a conventional ohmic load resistance. Electronic loads include, for example, precise loading of power supplies, battery checks and DC source tests. The electronic load involves a current sink. When loading a current source with a fixed resistor, only a certain load current at a certain resistance value can be set; but what is special about the electronic load is that the load current can be adjusted within a defined range. Further, an electronic load designates that for a 1 V voltage supply the power consumption is 0 mA.

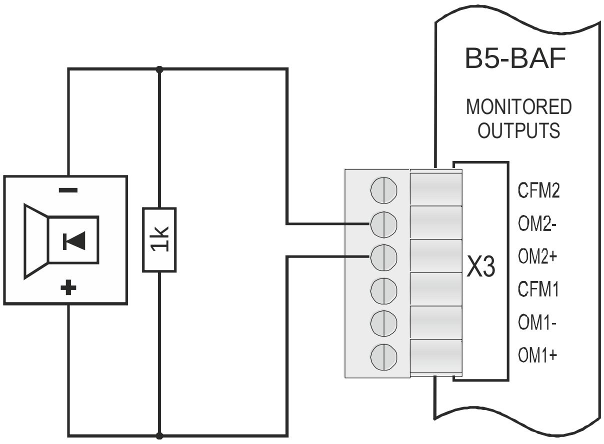

B5-BAF
MONITORED OUTPUTS
X3
CFM2
OM2-
OM2+
CFM1
OM1-
OM1+
1k
−
+

Fig. 43 B5-BAF, electronic loads

5.3.6 Connection of transmission unit in accordance with EN 54-1

Because of the number of different transmission unit systems, their description is not included in this document. Please contact the responsible sales representative for further information.

5.3.7 Connection of FBF 0720 fire brigade map (Wiesmeier)

Warning

When connecting the German fire brigade map to the B5-BAF, the supply voltage range in the control panel must be set to +24 V.

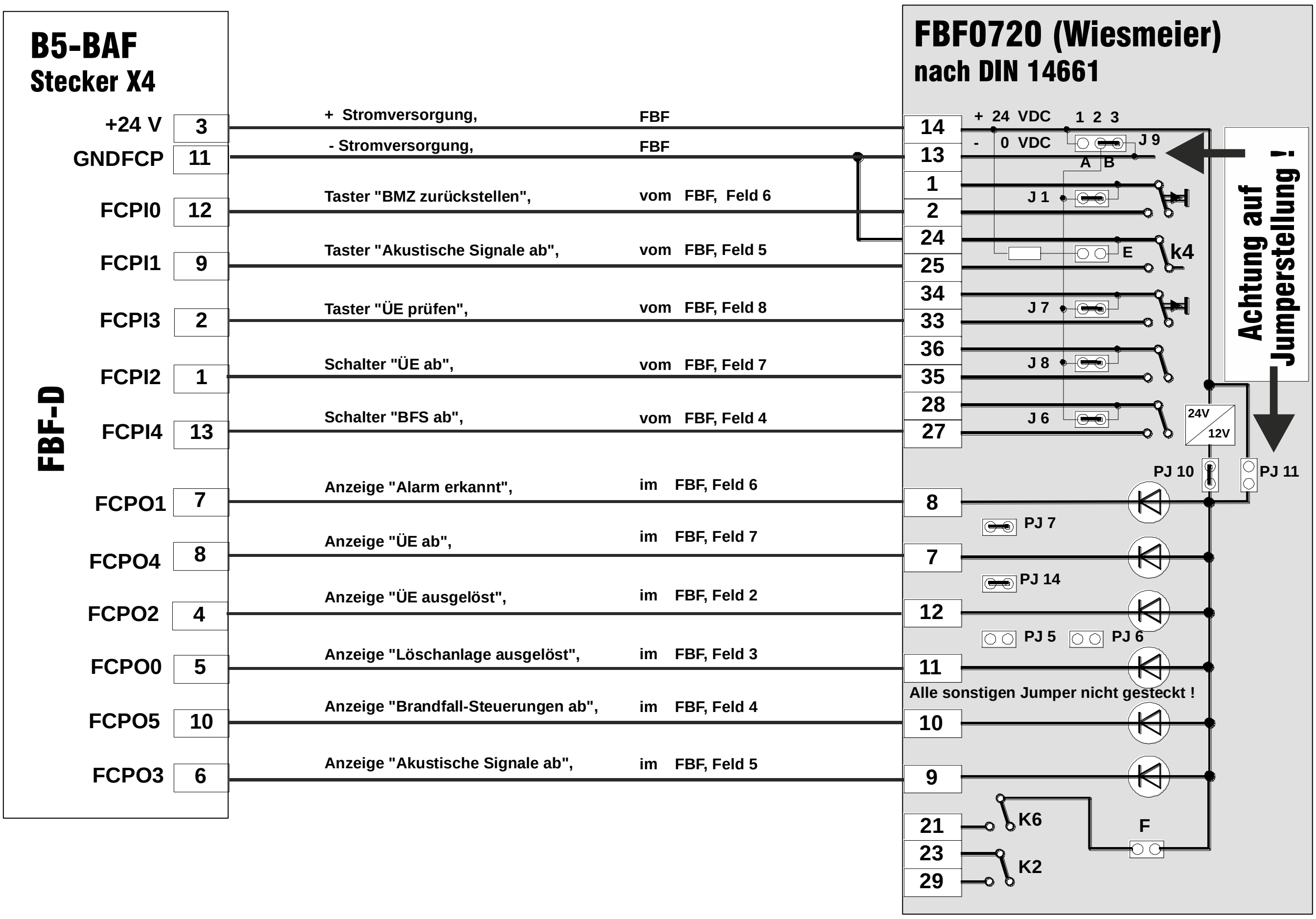

B5-BAF
Stecker X4
FBF-D
+24 V 3
GNDFCP 11
FCPI0 12
FCPI1 9
FCPI3 2
FCPI2 1
FCPI4 13
FCPO1 7
FCPO4 8
FCPO2 4
FCPO0 5
FCPO5 10
FCPO3 6
+ Stromversorgung, FBF
- Stromversorgung, FBF
Taster "BMZ zurückstellen", vom FBF, Feld 6
Taster "Akustische Signale ab", vom FBF, Feld 5
Taster "ÜE prüfen", vom FBF, Feld 8
Schalter "ÜE ab", vom FBF, Feld 7
Schalter "BFS ab", vom FBF, Feld 4
Anzeige "Alarm erkannt", im FBF, Feld 6
Anzeige "ÜE ab", im FBF, Feld 7
Anzeige "ÜE ausgelöst", im FBF, Feld 2
Anzeige "Löschanlage ausgelöst", im FBF, Feld 3
Anzeige "Brandfall-Steuerungen ab", im FBF, Feld 4
Anzeige "Akustische Signale ab", im FBF, Feld 5
FBF0720 (Wiesmeier)
nach DIN 14661
+ 24 VDC
- 0 VDC
1 2 3
J 9
A B
14
13
1
2
24
25
34
33
36
35
28
27
J 1
E
k4
J 7
J 8
J 6
Achtung auf Jumperstellung !
24V
12V
PJ 10
PJ 11
8
PJ 7
7
PJ 14
12
PJ 5
PJ 6
11
Alle sonstigen Jumper nicht gesteckt !
10
9
21
23
29
K6
K2
F

Fig. 44 B5-BAF, connection FBM 0720 fire brigade map

Wiesmeier, applies only to Germany, only in German

5.3.8 Connection of various fire brigade maps compliant with DIN 14661

Because of the number of different fire brigade maps, a description of other types is not included in this document. Please contact the responsible branch office for further information.

5.3.9 Connection FBA CH compliant with SN 054002

B5-BAF plug X4		**Swiss FBM (internal)**	
Terminal	Designation	Terminal	Designation
1	FCPI2		
2	FCPI3		
3	+24 V	9	24 V
4	FCPO2	1	“Remote alarm” display
5	FCPO0		
6	FCPO3	8	“Fault” display
7	FCPO1	2	“Alarm” display
8	FCPO4		
9	FCPI1	7	“Audible off” key
10	FCPO5		
11	GND	10	GND
12	FCPI0	6	“Reset FACP” key
13	FCPI4		

5.4 B3-REL10 relay board with 230 V contacts

The B3-REL10 has 10 freely programmable bistable 230 V / 3 A relay contacts. Defining whether the contact is a working or normally closed contact is done with planning software. 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 SCP. For actuating the relay BUS, a B5-BAF or B5-MRI16 board must be fitted to slot 9 of the unit rack.

More information about the B3-REL10 can be found in the Technical Description T 811 106.

5.4.1 Interfaces

X1 Relay BUS connector plug

X2 and X3 Relay contacts (230 V / 3 A)

Plug X2

Designation	Terminal
Relay R10	1
	2
Relay R9	3
	4
Relay R8	5
	6
Relay R7	7
	8
Relay R6	9
	10

Plug X3

Designation	Terminal
Relay R5	1
	2
Relay R4	3
	4
Relay R3	5
	6
Relay R2	7
	8
Relay R1	9
	10

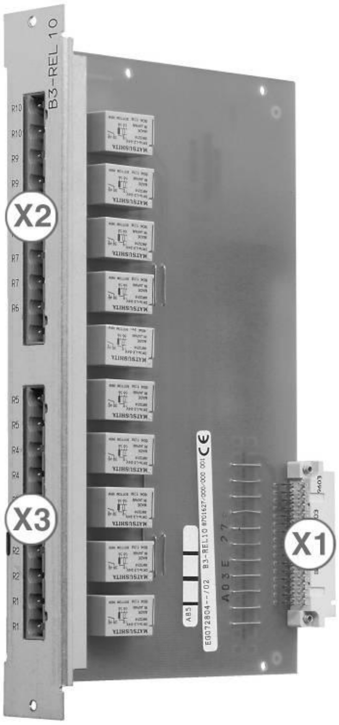


Fig. 45 B3-REL10 interfaces

5.4.2 Technical data

Voltage supply: internal via B5-/relay BUS
Ambient temperature: -5°C to +50°C
Relay design: bistable
Contact resistance: 30 mΩ
Max. switching voltage: 230 VAC / 125 VDC
Max. switching current: 3 A, both pins on terminals
Max. breaking capacity: 300 W /2,500 VA

5.4.3 Compatibility information

Possible slots in the unit rack: 11 to 13
SecuriFire Studio: all releases

Connecting working / normally closed contact

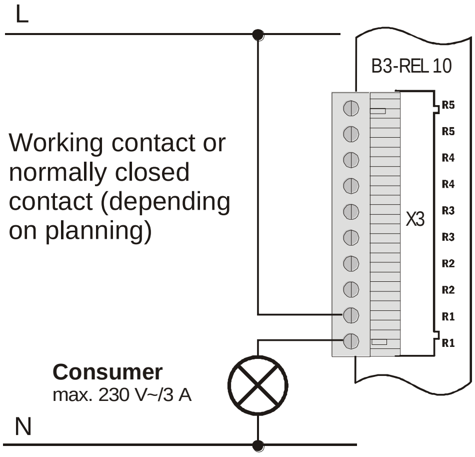

L
B3-REL 10
R5
R5
R4
R4
R3
R3
R2
R2
R1
R1
X3
Working contact or normally closed contact (depending on planning)
Consumer
max. 230 V~/3 A
N

Fig. 46 B3-REL10, connection working/normally closed contact

5.5 B3-REL16 relay board with 24 V contacts

The B3-REL16 has 16 freely programmable bistable 24 V/3 A relay contacts and serves to actuate sirens, permanent magnets, relays, etc. Defining whether the contact is a working or normally closed contact is done with planning software. 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 SCP. The B3-REL16 can be fitted only on slots 11 to 13 of the unit rack. For actuating the relay BUS, a B5-BAF or B5-MRI16 board must be fitted to slot 9 of the unit rack.

More information about the B3-REL16 can be found in the Technical Description T 141 443.

5.5.1 Interfaces

X1	Relay BUS connector plug
X17	Wire bridge for “Relay contact” operation mode for relay R9
X2, X3	Relay contacts (24 V / 3 A)

Plug X2

Designation	Terminal
Relay R16	1
	2
Relay R15	3
	4
Relay R14	5
	6
Relay R13	7
	8
Relay R12	9
	10
Relay R11	11
	12
Relay R10	13
	14
Relay R9	15
	16

Plug X3

Designation	Terminal
Relay R8	1
	2
Relay R7	3
	4
Relay R6	5
	6
Relay R5	7
	8
Relay R4	9
	10
Relay R3	11
	12
Relay R2	13
	14
Relay R1	15
	16

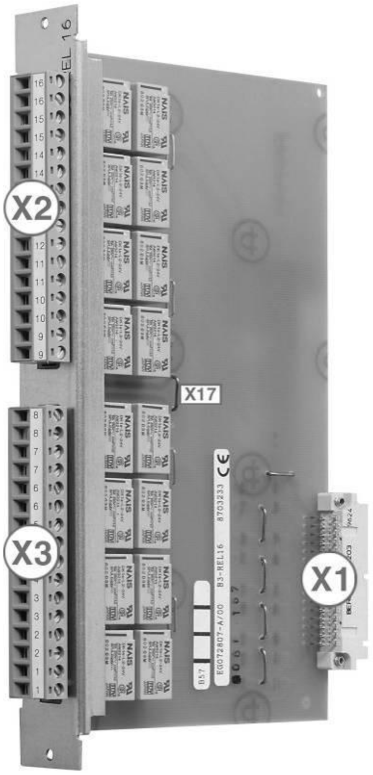


Fig. 47 B3-REL16 interfaces

5.5.2 Technical data

Voltage supply:	internal via B5-/relay BUS
Power consumption:	0 mA static 9 mA for 10 ms per relay and switching action
Relay design:	bistable
Contact resistance:	30 mΩ max.
Max. switching voltage:	30 VAC / 30 VDC
Max. switching current:	3 A
Max. breaking capacity:	60 W (2 A at 30 V)
Contact service life:	min. $5*10^7$ (mechanical); min. 10^5 (electrical)
Ambient temperature:	-5°C to +50°C

5.5.3 Compatibility information

Possible slots in the unit rack:	11 to 13
SecuriFire Studio:	all releases

5.5.4 Connecting working / normally closed contact

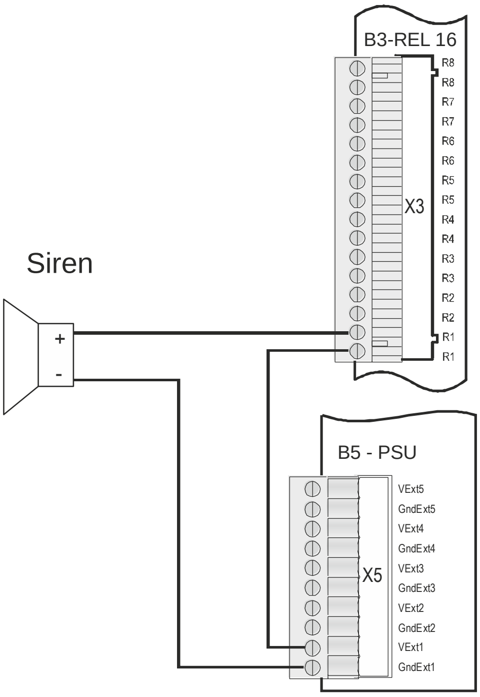
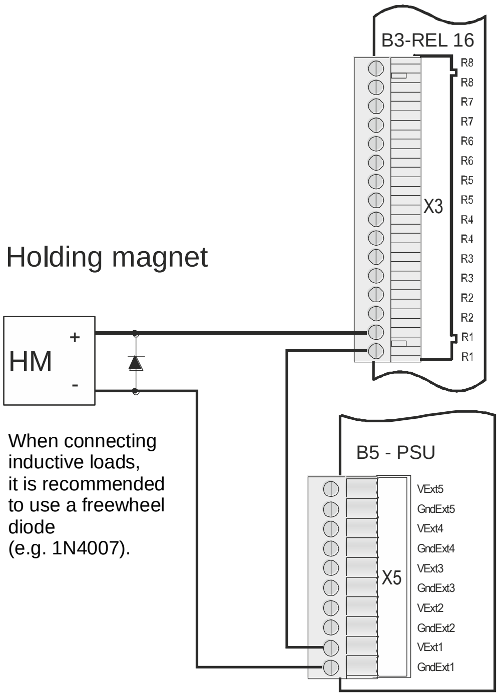

B3-REL 16
R8
R8
R7
R7
R6
R6
R5
R5
R4
R4
R3
R3
R2
R2
R1
R1
X3
Siren
+
-
B5 - PSU
VExt5
GndExt5
VExt4
GndExt4
VExt3
GndExt3
VExt2
GndExt2
VExt1
GndExt1
X5

Fig. 48 B3-REL16, working contact


B3-REL 16
R8
R8
R7
R7
R6
R6
R5
R5
R4
R4
R3
R3
R2
R2
R1
R1
X3
Holding magnet
HM
+
-
B5 - PSU
VExt5
GndExt5
VExt4
GndExt4
VExt3
GndExt3
VExt2
GndExt2
VExt1
GndExt1
X5

When connecting
inductive loads,
it is recommended
to use a freewheel
diode
(e.g. 1N4007).

Fig. 49 B3-REL16, normally closed contact

5.6 “Extinguishing” standard interface 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!

The R9 relay contact of each B3-REL16 (beginning with version -A) can be modified to be used as an extinguishing interface. In this case the X17 wire bridge is removed and the R1 alarm resistor (680R) and the R2 monitoring resistor (3k3) are added. In addition, an input (any one) must be planned on a B3-IM8 as an extinguishing input by positioning the jumper of the input to “VdS extinguishing input”.

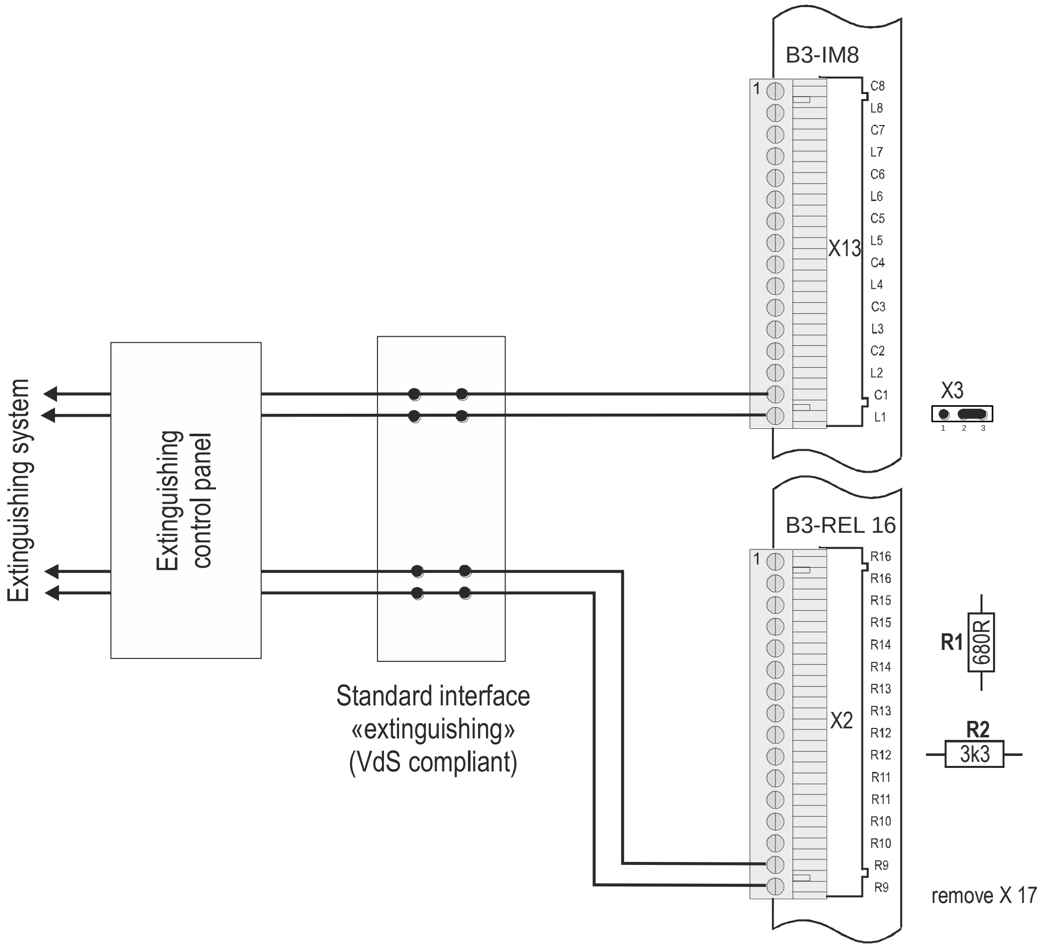

B3-IM8
1
C8
L8
C7
L7
C6
L6
C5
L5
C4
L4
C3
L3
C2
L2
C1
L1
X13
X3
1 2 3
Extinguishing system
Extinguishing control panel
Standard interface «extinguishing» (VdS compliant)
B3-REL 16
1
R16
R16
R15
R15
R14
R14
R13
R13
R12
R12
R11
R11
R10
R10
R9
R9
X2
R1
680R
R2
3k3
remove X 17

Fig. 50 B3-REL16, “Extinguishing” standard interface compliant with VdS

5.6.1 “Fault” standard interface compliant with VdS

Notice

The “Fault” standard interface is a VdS-compliant interface (a surveyed output and a surveyed input) for connecting a fire alarm control panel to a transmission unit for reporting faults.

The R9 relay contact of each B3-REL16 (beginning with version -A) can be modified to be used as a fault interface. In this case the X17 wire bridge is removed and the R1 alarm resistor (680R) and the R2 monitoring resistor (3k3) are added. In addition, an input (any one) must be planned on a B3-IM8 as an extinguishing input (jumper of the input on position “VdS extinguishing input”). For the relay contact, the following condition must be met: it is actuated even if there is a total failure of the power supply (mains and battery). It must therefore be programmed to the state “Active in Fail-Safe-Position”.

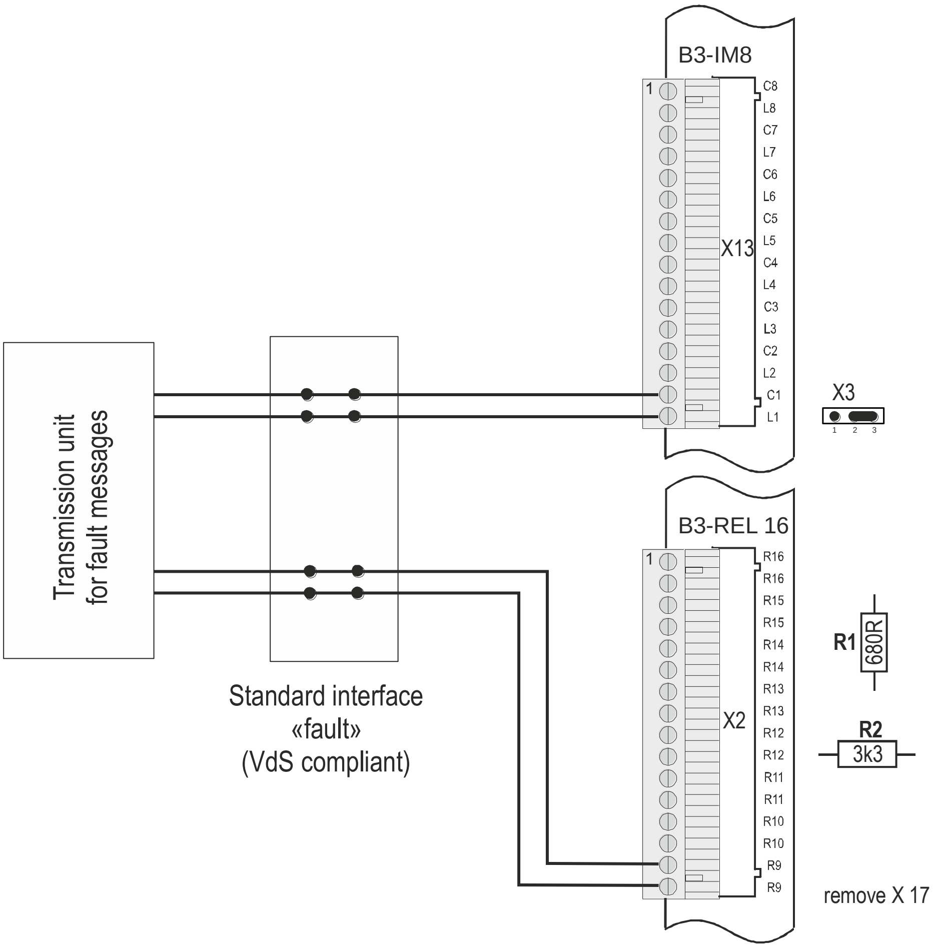

B3-IM8
1
X13
C8
L8
C7
L7
C6
L6
C5
L5
C4
L4
C3
L3
C2
L2
C1
L1
X3
1 2 3
Transmission unit
for fault messages
Standard interface
«fault»
(VdS compliant)
B3-REL 16
1
X2
R16
R16
R15
R15
R14
R14
R13
R13
R12
R12
R11
R11
R10
R10
R9
R9
R1
680R
R2
3k3
remove X 17

Fig. 51 B3-REL16, “Fault” standard interface compliant with VdS

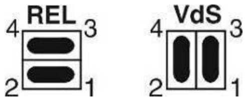
5.7 B3-REL16E relay board with 24 V contacts

The B3-REL16E has 16 freely programmable bistable 24 V/3 A relay contacts and serves to actuate sirens, permanent magnets, relays, etc. Defining whether the contact is a working or normally closed contact is done with planning software. The contacts are protected against overload with a 3 A fuse. 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 SCP. For actuating the relay BUS, a B5-BAF or B5-MRI16 board must be fitted to slot 9 of the unit rack.

More information about the B3-REL16E can be found in the Technical Description T 811 108.

5.7.1 Interfaces

X1 Relay BUS connector plug
BR1-16 Jumper for setting operation mode “Relay contact” or “VdS-compliant interface”



X2 and X3 Relay contacts (30 V / 3A)

Plug X2

Designation	Terminal	Jumper
Relay R16	1	BR 16
	2	
Relay R15	3	BR 15
	4	
Relay R14	5	BR 14
	6	
Relay R13	7	BR 13
	8	
Relay R12	9	BR 12
	10	
Relay R11	11	BR 11
	12	
Relay R10	13	BR 10
	14	
Relay R9	15	BR 9
	16	

Plug X3

Designation	Terminal	Jumper
Relay R8	1	BR 8
	2	
Relay R7	3	BR 7
	4	
Relay R6	5	BR 6
	6	
Relay R5	7	BR 5
	8	
Relay R4	9	BR 4
	10	
Relay R3	11	BR 3
	12	
Relay R2	13	BR 2
	14	
Relay R1	15	BR 1
	16	

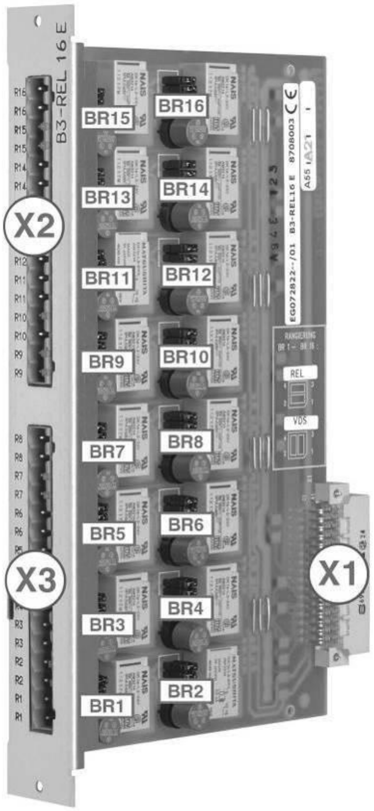


Fig. 52 B3-REL16E interfaces

5.7.2 Technical data

Voltage supply:	internal via B5-/relay BUS
Power consumption:	0 mA static; 9 mA for 10 ms per relay and switching action
Relay design:	bistable
Contact resistance:	30 mΩ max.
Max. switching voltage:	30 VAC / 30 VDC
Max. switching current:	3 A
Max. breaking capacity:	60 W (2 A at 30 V)
Contact service life:	min. $5*10^7$ (mechanical); min. 10^5 (electrical)
Ambient temperature:	-5°C to +50°C
Contact protection:	Small 3.15 A fuse with slow acting triggering

5.7.3 Compatibility information

Possible slots in the unit rack:	11 to 13
SecuriFire Studio:	all releases

5.8 “Extinguishing” standard interface 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!

The interface consists in command direction of any output with monitored resistance (parallel to the relay contact a 3k3 monitored resistance and in series to the relay contact a 680R alarm resistor) which is configured with the trigger criterion and with jumpers BR1 to BR16 as a VdS-compliant interface.
In message direction, the VdS-compliant standard interface “Extinguish” consists of a monitored input (B3-IM8 or B3-DCI6) which is planned and set as a “VdS-compliant interface”. It reports the extinguishing trigger to the SecuriFire SCP.

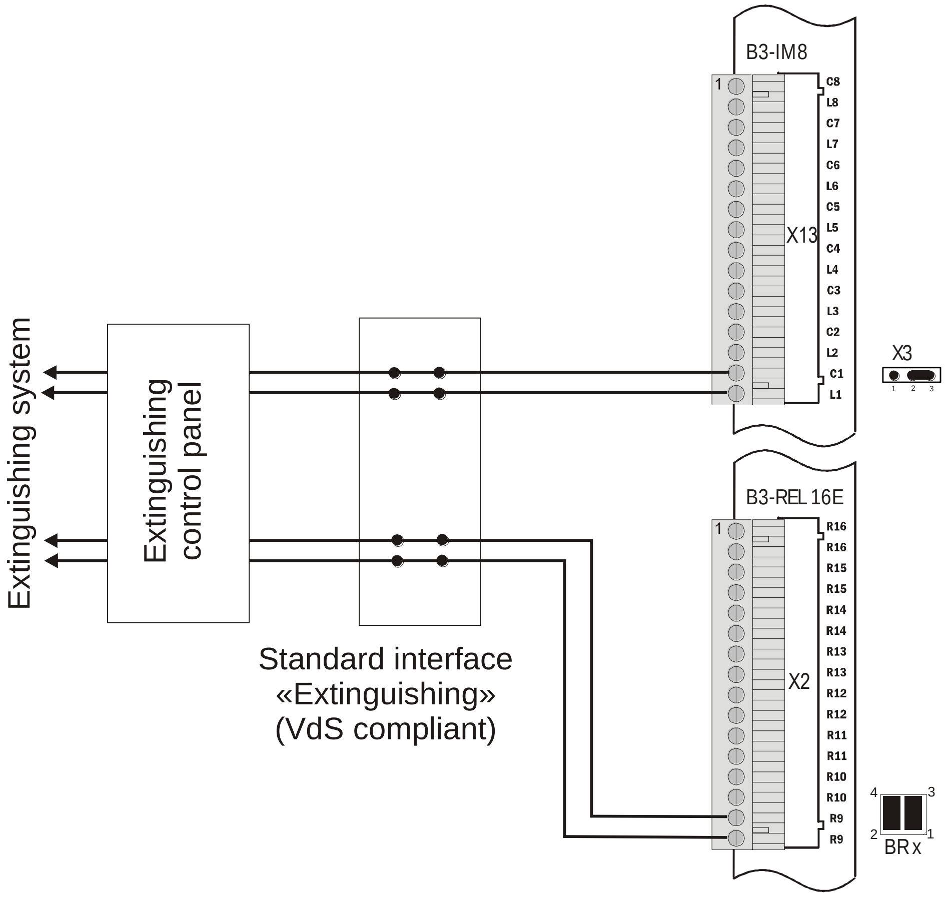

B3-IM8
1
X13
C8
L8
C7
L7
C6
L6
C5
L5
C4
L4
C3
L3
C2
L2
C1
L1
X3
1 2 3
Extinguishing system
Extinguishing control panel
B3-REL 16E
1
X2
R16
R16
R15
R15
R14
R14
R13
R13
R12
R12
R11
R11
R10
R10
R9
R9
4 3
2 1
BRx
Standard interface
«Extinguishing»
(VdS compliant)

Fig. 53 B3-REL16E, “Extinguishing” standard interface compliant with VdS

5.9 “Fault” standard interface 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.

The interface consists in command direction of any output with monitored resistance (3k3 and 680R of the B3-REL16E) which is configured with the fault criterion and with jumpers BR1 to BR16 as a VdS-compliant interface.
In addition, 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 message direction, the VdS-compliant standard interface “Fault” consists of a monitored input (B3-IM8 or B3-DCI6) which is planned and set as a “VdS-compliant interface”. It reports an external fault to the SecuriFire SCP.

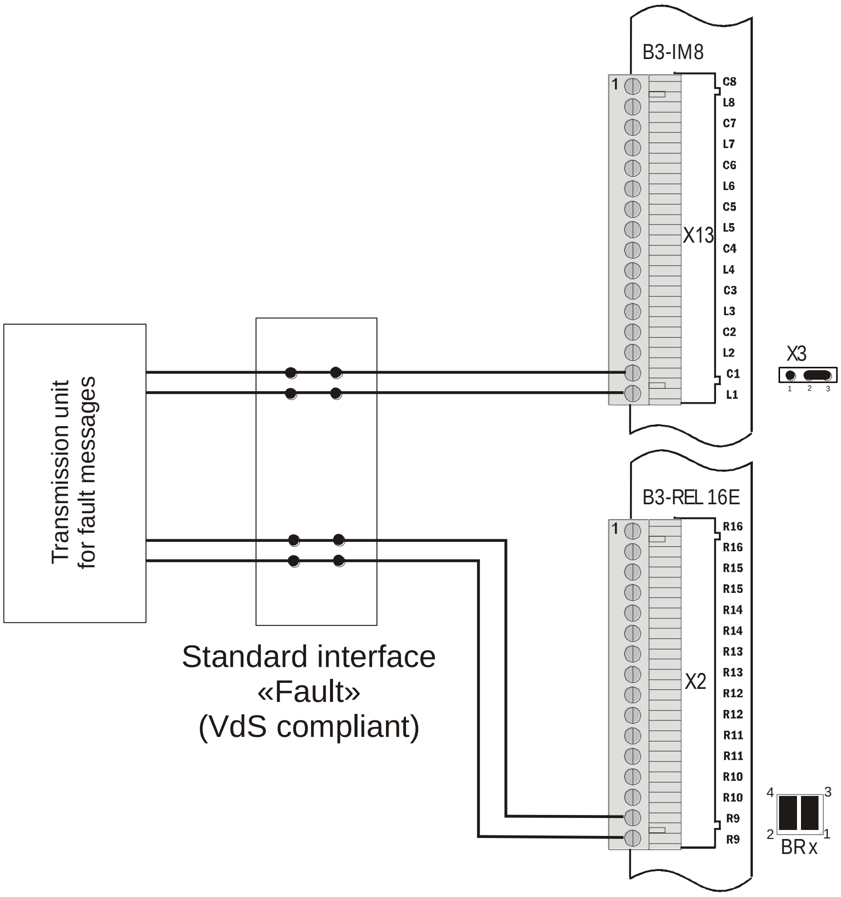

B3-IM8
1
C8
L8
C7
L7
C6
L6
C5
L5
C4
L4
C3
L3
C2
L2
C1
L1
X13
X3
1 2 3
Transmission unit
for fault messages
B3-REL 16E
1
R16
R16
R15
R15
R14
R14
R13
R13
R12
R12
R11
R11
R10
R10
R9
R9
X2
4
3
2
1
BRx
Standard interface
«Fault»
(VdS compliant)

Fig. 54 B3-REL16E, “Fault” standard interface compliant with VdS

5.10 B5-MRI16 relay board with 24 V contacts

The B5-MRI16 includes 16 freely programmable bistable 24 V / 3 A relay contacts. Defining whether the contact is a working or normally closed contact is done with planning software. 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 control unit. The B5-MRI16 can be fitted in any slot from 2 to 9 in the SecuriFire 3000 unit rack and, in addition, includes an interface for actuating the SecuriFire 3000 relay bus. Thus, when fitted at slot 9, then also the B3-REL10, B3-REL16 and B3-REL16E relay boards can be actuated.

More information about the B5-MRI16 can be found in the Technical Description T 811 105.

5.10.1 Interfaces

X1	Connector plug for B5-BUS
X2	Relay BUS connector plug
X3 and X4	Relay contact interfaces (24 V / 3 A)

Plug X4

Designation	Terminal
Relay R16	1
	2
Relay R15	3
	4
Relay R14	5
	6
Relay R13	7
	8
Relay R12	9
	10
Relay R11	11
	12
Relay R10	13
	14
Relay R9	15
	16

Plug X3

Designation	Terminal
Relay R8	1
	2
Relay R7	3
	4
Relay R6	5
	6
Relay R5	7
	8
Relay R4	9
	10
Relay R3	11
	12
Relay R2	13
	14
Relay R1	15
	16

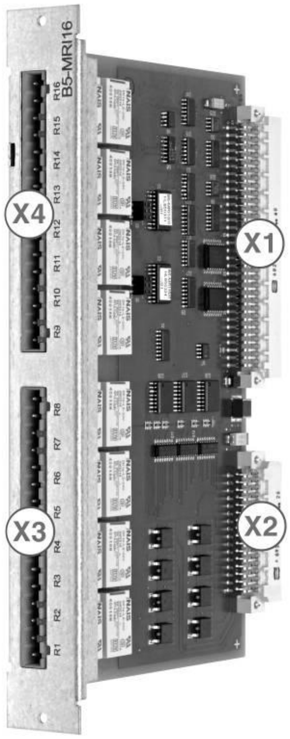


Fig. 55 B5-MRI16 interfaces

5.10.2 Technical data

Voltage supply:	internal via B5-BUS
Power consumption:	6 mA typical (battery current)
Ambient temperature:	-5°C to +50°C
Relay design:	bistable
Contact resistance:	30 mΩ max.
Max. switching voltage:	30 VAC / 30 VDC
Max. switching current:	3 A
Max. breaking capacity:	60 W (2 A at 30 V)

5.10.3 Compatibility information

Possible slots in the unit rack:	9 if relay bus is to be actuated, otherwise 2 to 8
SecuriFire Studio:	from release 1.0

5.10.4 Connecting sirens (working contact)

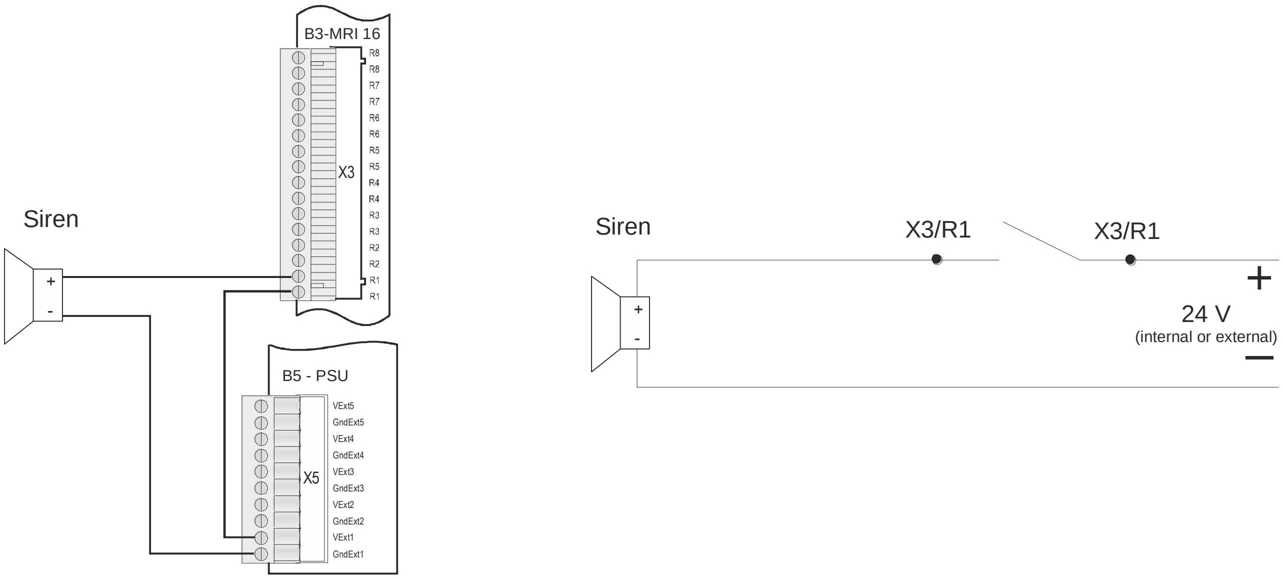
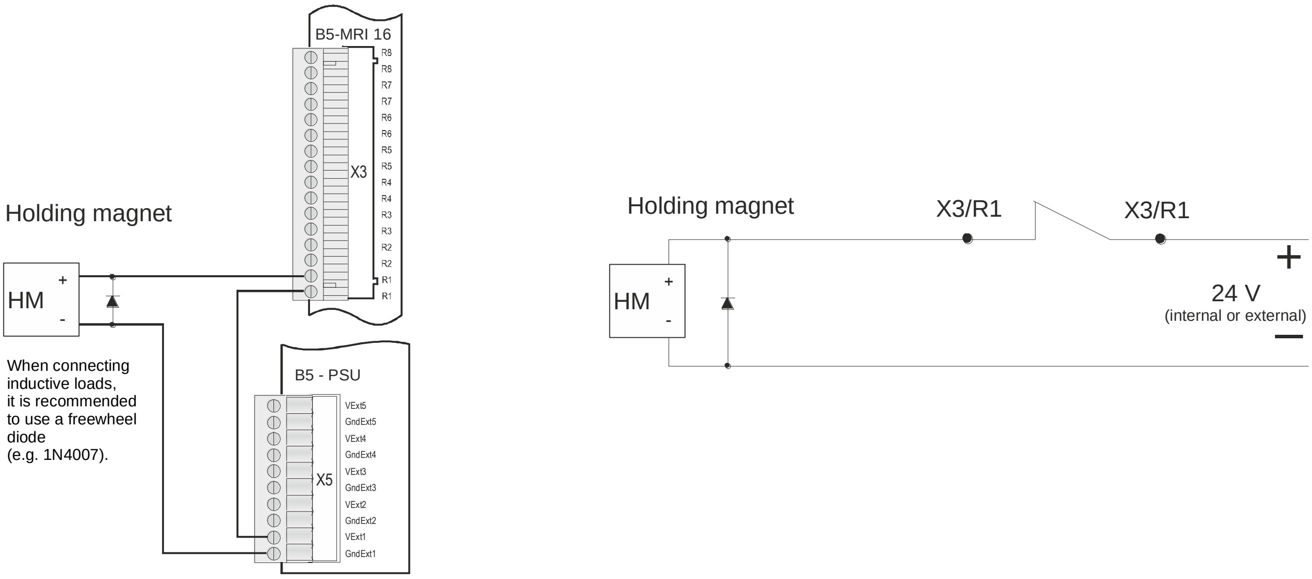

B3-MRI 16
R8
R8
R7
R7
R6
R6
R5
R5
R4
R4
R3
R3
R2
R2
R1
R1
X3
Siren
+
-
B5 - PSU
VExt5
GndExt5
VExt4
GndExt4
VExt3
GndExt3
VExt2
GndExt2
VExt1
GndExt1
X5
Siren
X3/R1
X3/R1
+
-
24 V
(internal or external)

Fig. 56 B5-MRI16, connecting sirens (working contact)

5.10.5 Connecting permanent magnets (normally closed contact)


B5-MRI 16
R8
R8
R7
R7
R6
R6
R5
R5
R4
R4
R3
R3
R2
R2
R1
R1
X3
Holding magnet
HM
+
-
B5 - PSU
VExt5
GndExt5
VExt4
GndExt4
VExt3
GndExt3
VExt2
GndExt2
VExt1
GndExt1
X5
Holding magnet
X3/R1
X3/R1
HM
+
-
24 V
(internal or external)

When connecting
inductive loads,
it is recommended
to use a freewheel
diode
(e.g. 1N4007).

Fig. 57 B5-MRI16, connection permanent magnets (normally closed contact)

5.11 B3-IM8 board with monitored inputs

The B3-IM8 is designed for connecting a total of 8 detection zones or monitored inputs. Each detection zone or monitored input connection has its own current-limited output driver which supplies the connected peripheral devices with power. The B3-IM8 is suitable for combining any monitored inputs as well as for connecting the SecuriStar detector series 521 / 523 / 563, HX 130, Hochiki Ex-i detectors and the sabotage line technology.

More information about the B3-IM8 can be found in the Technical Description T 811 103.

5.11.1 Interfaces

X1	Connector plug for B5-BUS
X3 to X10	Jumpers for setting the inputs
X13	Connector plug for detection zones and inputs

Input	Designation	Function	Jumper
8	C8	GND	X10
	L8	+24V	
7	C7	GND	X9
	L7	+24V	
6	C6	GND	X8
	L6	+24V	
5	C5	GND	X7
	L5	+24V	
4	C4	GND	X6
	L4	+24V	
3	C3	GND	X5
	L3	+24V	
2	C2	GND	X4
	L2	+24V	
1	C1	GND	X3
	L1	+24V	

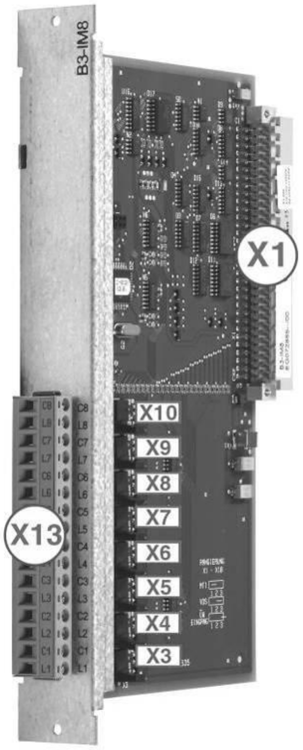


Fig. 58 B3-IM8 interfaces

5.11.2 Technical data

Voltage supply:	internal via B5-BUS
Power consumption:	9 mA typical (battery current without peripheral)
Ambient temperature:	-5°C to +50°C
Extension:	8 detection zones or 8 monitored inputs

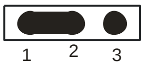
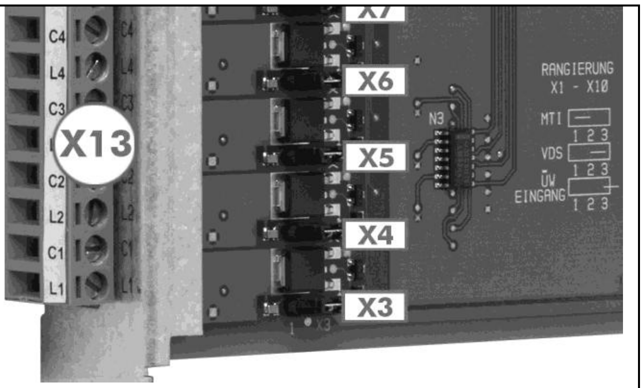
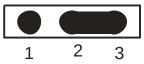
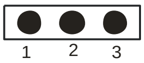
5.11.3 Compatibility information

Possible slots in the unit rack:	2 to 9
SecuriFire Studio:	from release 1.0

5.11.4 Jumper settings

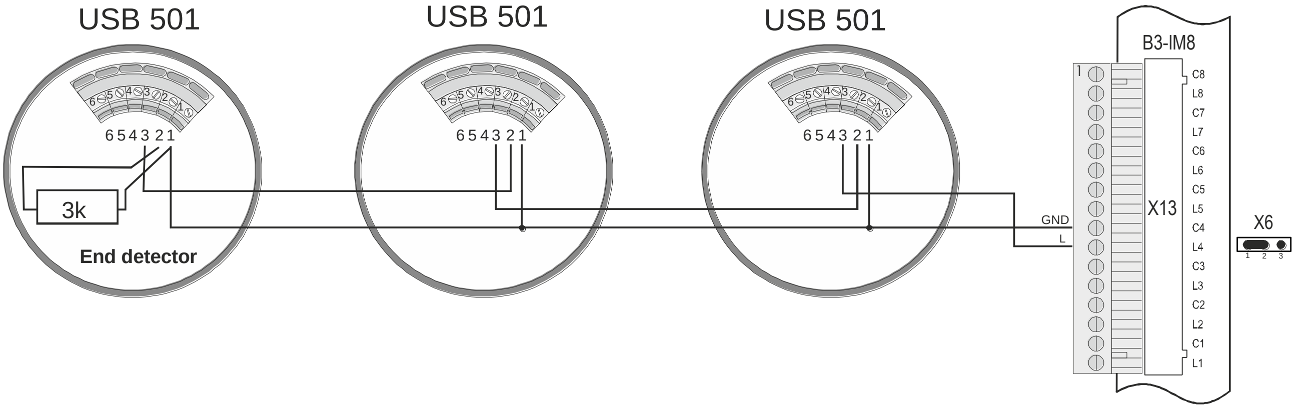
The operating mode of the inputs can be set using jumpers X3 to X10. At the same time the corresponding operating mode has to be planned with software (SecuriFire Studio).

The following applies to all jumpers from X3 to X10:

 Jumpers 1-2 connected	- Detection zones - SecuriStar 521 / 523 / 563 - Collective MCP - HX 130, HX 130 Ex-i,	 X7 X6 X5 X4 X3 X13 C4 L4 C3 C2 L2 C1 L1 N3 RANGIERUNG X1 - X10 MTI 1 2 3 VDS 1 2 3 ÜV EINGANG 1 2 3 **Fig. 59 B3-IM8, jumper setting**
 Jumpers 2-3 connected	- Monitored input 3k - VdS extinguishing input - Valve monitoring - Hochiki Ex-i detector: SLR-E-IS, DCD-1E-IS	
 Jumper open	- Monitored input 26k7	

5.11.5 Detector series SecuriStar 521 / 523 / 563 and MCP 521 / 525

Connecting detector base USB 501



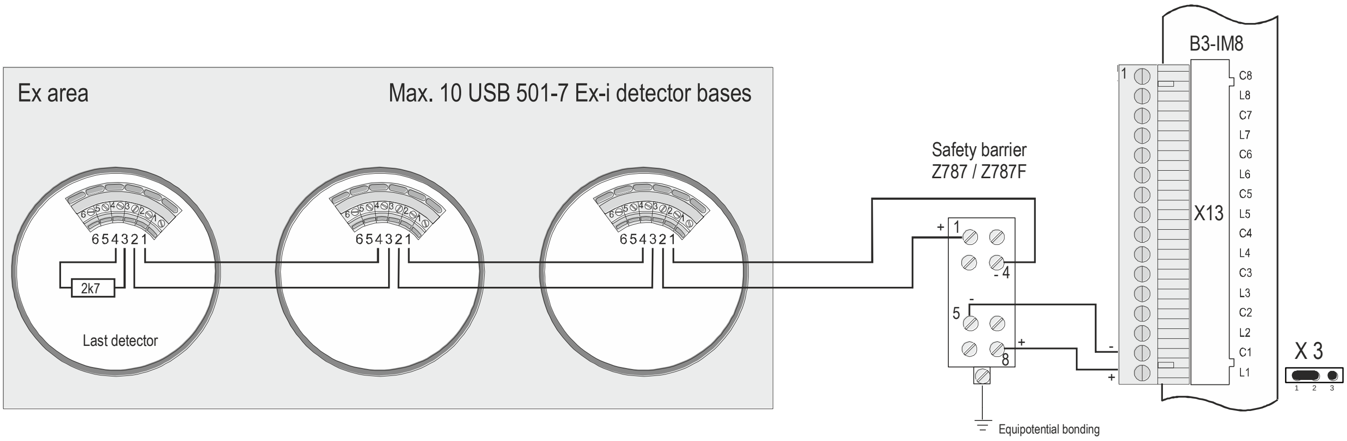
USB 501
USB 501
USB 501
6 5 4 3 2 1
3k
End detector
B3-IM8
1
X13
C8
L8
C7
L7
C6
L6
C5
L5
C4
L4
C3
L3
C2
L2
C1
L1
GND
L
X6
1 2 3

Fig. 60 Connection of detector series SecuriStar 521 / 523 / 563

5.11.6 Detector base USB 501-7 Ex-i with safety barrier Z787 / Z787F (MMD130 Ex-i)

Notice

This connection fulfils the requirements of VdS Directive 2489.

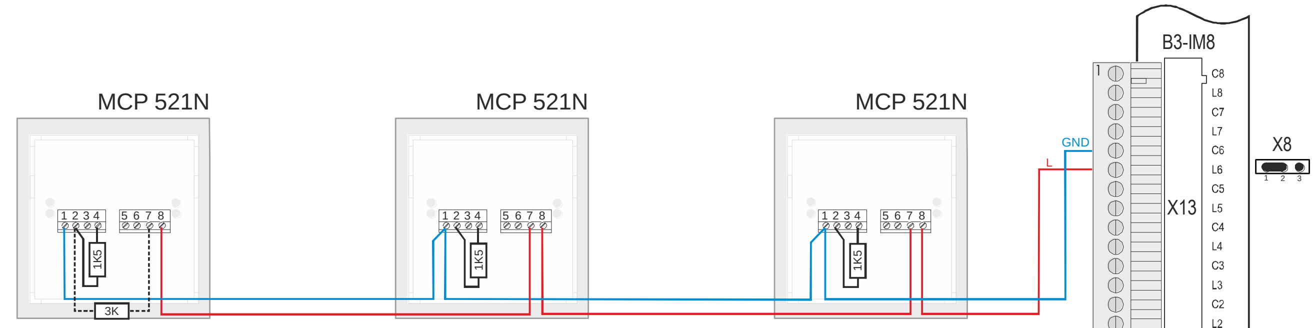


Ex area
Max. 10 USB 501-7 Ex-i detector bases
654321
2k7
Last detector
Safety barrier Z787 / Z787F
+ 1
- 4
5
-
+
8
Equipotential bonding
B3-IM8
1
X13
C8
L8
C7
L7
C6
L6
C5
L5
C4
L4
C3
L3
C2
L2
C1
L1
-
+
X 3
1 2 3

Fig. 61 Connecting detector base USB 501-7 Ex-i with safety barrier Z787 / Z787F

5.11.7 MCP 521 / 525 manual call points

Connecting manual call point MCP 521N


MCP 521N
MCP 521N
MCP 521N
1 2 3 4
5 6 7 8
1K5
3K
B3-IM8
GND
L
X13
X8
1 2 3
C8
L8
C7
L7
C6
L6
C5
L5
C4
L4
C3
L3
C2
L2
C1
L1

last manual call point

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

Fig. 62 B3-IM8, connection MCP 521N manual call points

Connecting manual call point MCP 525

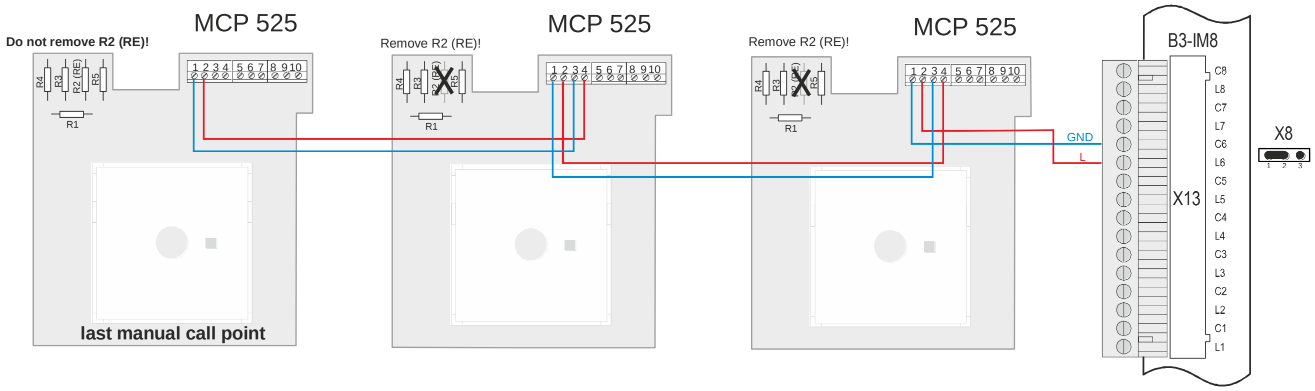

Do not remove R2 (RE)!
MCP 525
Remove R2 (RE)!
MCP 525
Remove R2 (RE)!
MCP 525
R4
R3
R2 (RE)
R5
R1
1 2 3 4 5 6 7 8 9 10
last manual call point
B3-IM8
GND
L
X13
X8
1 2 3
C8
L8
C7
L7
C6
L6
C5
L5
C4
L4
C3
L3
C2
L2
C1
L1

Fig. 63 B3-IM8, connection MCP 525 manual call points

5.11.8 Connecting detector base 143 and 143K

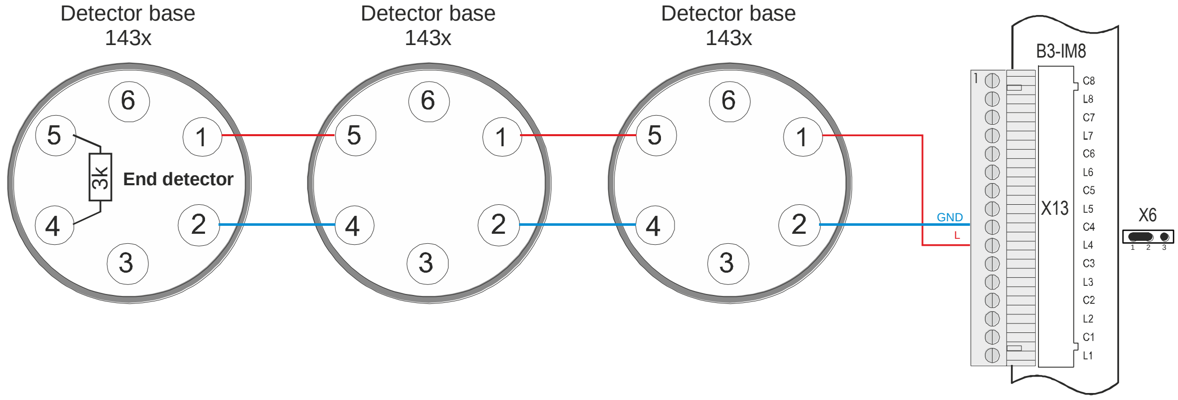

Detector base
143x
Detector base
143x
Detector base
143x
6
5
1
4
2
3
3k
End detector
B3-IM8
GND
L
X13
X6
1 2 3
C8
L8
C7
L7
C6
L6
C5
L5
C4
L4
C3
L3
C2
L2
C1
L1

Fig. 64 B3-IM8, connection detector base 143 and 143K

5.11.9 Detector base 143 Ex-i with safety barrier Z787

Notice

This connection fulfils the requirements of VdS Directive 2489.

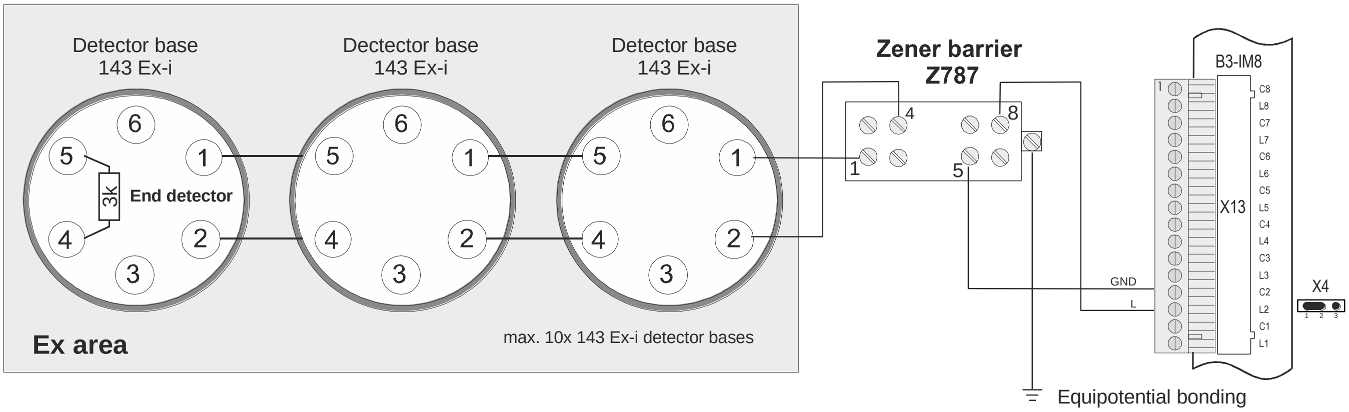

Detector base
143 Ex-i
Dectector base
143 Ex-i
Detector base
143 Ex-i
6
5
1
3k
End detector
4
2
3
Ex area
max. 10x 143 Ex-i detector bases
Zener barrier
Z787
4
8
1
5
B3-IM8
1
X13
C8
L8
C7
L7
C6
L6
C5
L5
C4
L4
C3
L3
C2
L2
C1
L1
GND
L
X4
1 2 3
Equipotential bonding

Fig. 65 B3-IM8, detector base 143 Ex-i with safety barrier Z787

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

Notice

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

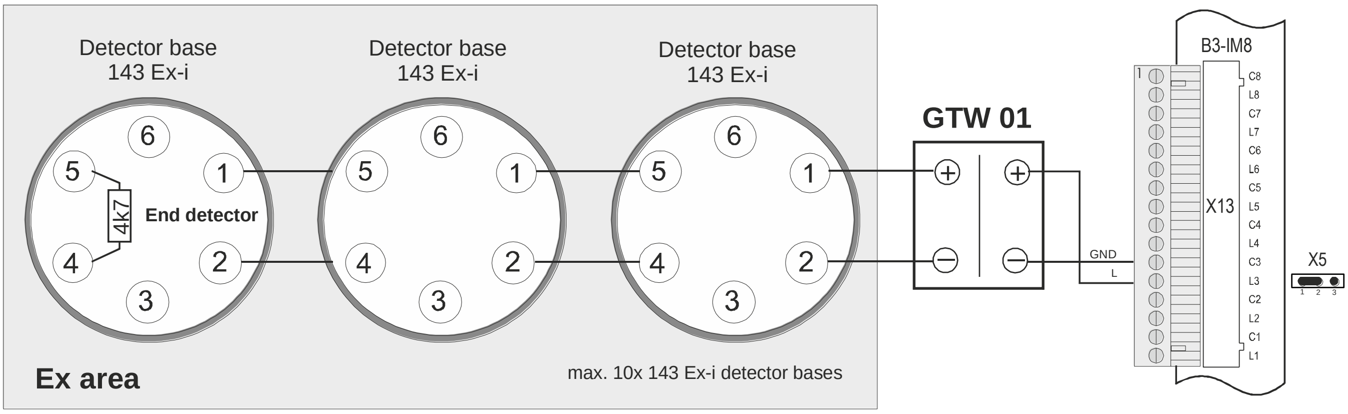

Detector base
143 Ex-i
Detector base
143 Ex-i
Detector base
143 Ex-i
6
5
1
4k7
End detector
4
2
3
Ex area
max. 10x 143 Ex-i detector bases
GTW 01
B3-IM8
1
X13
C8
L8
C7
L7
C6
L6
C5
L5
C4
L4
C3
L3
C2
L2
C1
L1
GND
L
X5
1 2 3

Fig. 66 B3-IM8, detector base 143 Ex-i with direct voltage isolating transformer GTW 01

5.11.11 Connecting Hochiki Ex-i detectors in Ex areas

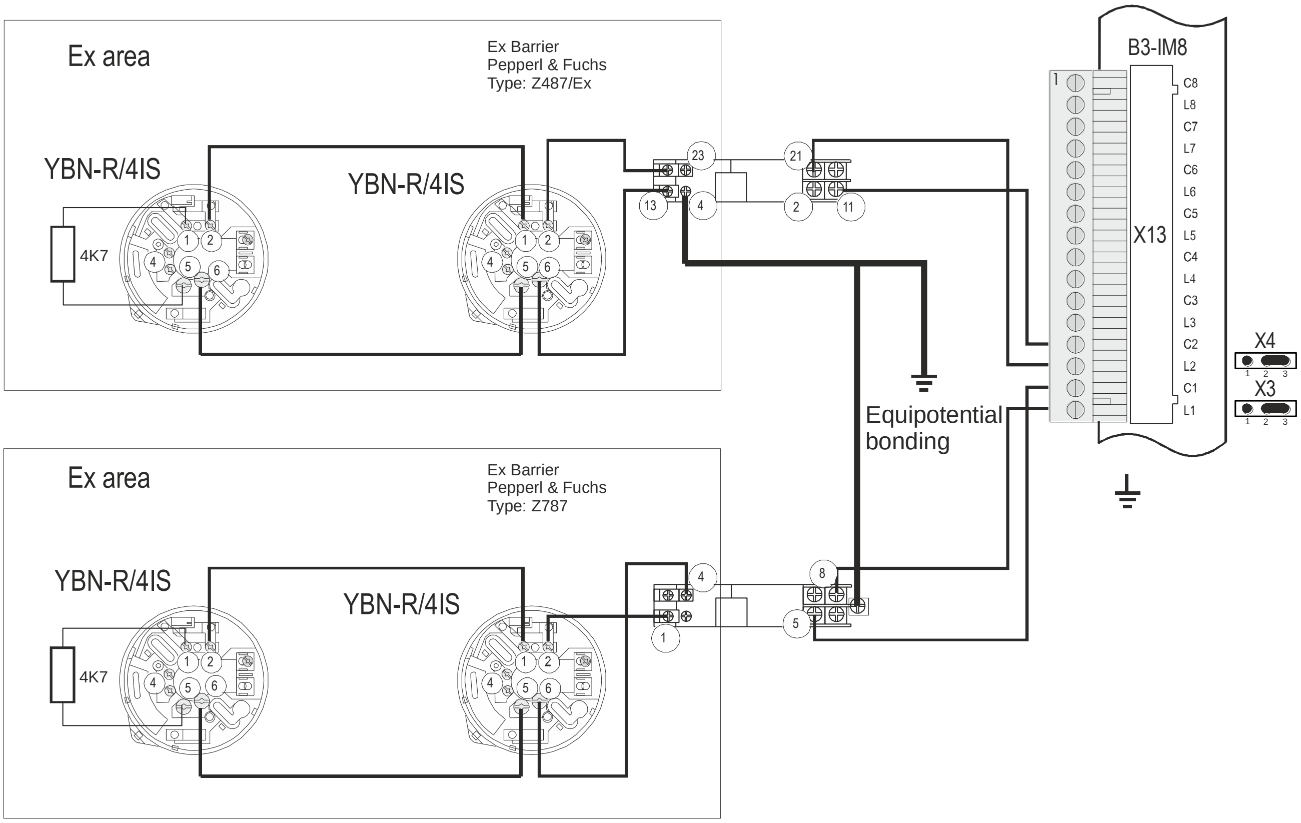

Ex area
Ex Barrier
Pepperl & Fuchs
Type: Z487/Ex
YBN-R/4IS
YBN-R/4IS
4K7
1
2
4
5
6
23
13
4
21
2
11
Equipotential bonding
B3-IM8
X13
C8
L8
C7
L7
C6
L6
C5
L5
C4
L4
C3
L3
C2
L2
C1
L1
X4
X3
1 2 3
Ex area
Ex Barrier
Pepperl & Fuchs
Type: Z787
YBN-R/4IS
YBN-R/4IS
4K7
4
1
8
5

Fig. 67 B3-IM8, connection of Hochiki Ex-i detectors in Ex areas

5.11.12 Connecting monitored inputs

Monitored input 26k7

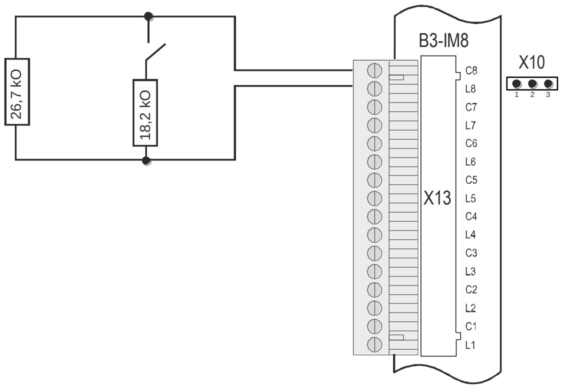

26,7 kO
18,2 kO
B3-IM8
X10
1 2 3
X13
C8
L8
C7
L7
C6
L6
C5
L5
C4
L4
C3
L3
C2
L2
C1
L1

Fig. 68 B3-IM8, monitored input 26k7

Monitored input 3k

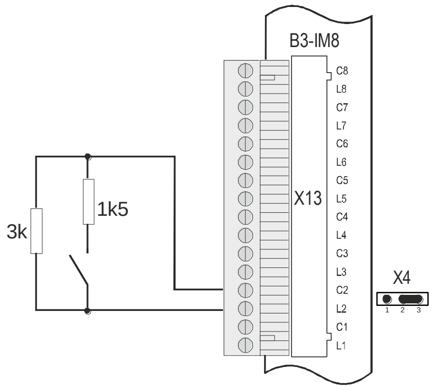

B3-IM8
3k
1k5
X13
C8
L8
C7
L7
C6
L6
C5
L5
C4
L4
C3
L3
C2
L2
C1
L1
X4
1 2 3

Fig. 69 B3-IM8, monitored input 3k

5.11.13 Connecting extinguishing systems

Extinguishing input compliant with VdS

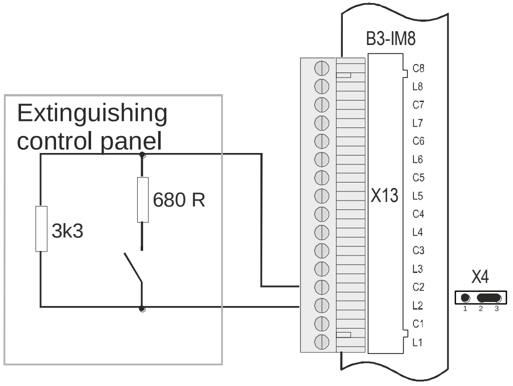

Extinguishing
control panel
3k3
680 R
B3-IM8
X13
C8
L8
C7
L7
C6
L6
C5
L5
C4
L4
C3
L3
C2
L2
C1
L1
X4
1 2 3

Fig. 70 Extinguishing input compliant with VdS

Valve monitoring

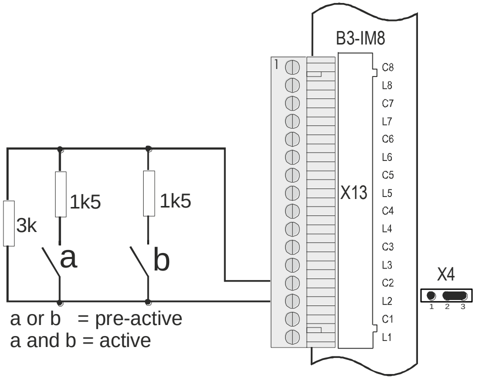

B3-IM8
1
3k
1k5
1k5
a
b
a or b = pre-active
a and b = active
X13
C8
L8
C7
L7
C6
L6
C5
L5
C4
L4
C3
L3
C2
L2
C1
L1
X4
1 2 3

Fig. 71 Valve monitoring

5.12 B5-OM8 board with monitored outputs

The B5-OM8 is for connecting up to 8 peripheral devices (sirens, flashing lights, etc.). It includes 8 quiescent current monitored control outputs for max. 1.5 A and for loads of 20 Ω to 1,000 Ω in 3 load ranges. It is important to note that the monitored consumers are supplied with power directly from the B5-PSU power supply unit (maximal current 7 A). This must be taken into account when planning the simultaneously actuated surveyed outputs.

More information about the B5-OM8 can be found in the Technical Description T 811 070.

Warning

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

5.12.1 Interfaces

X1	Connector plug for B5-BUS
X2	Plug for monitored outputs

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

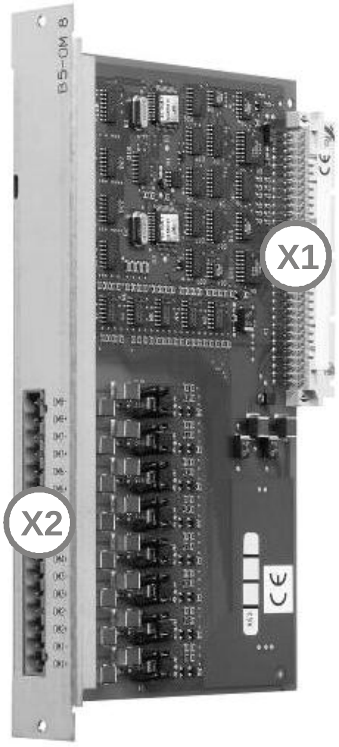


Fig. 72 B5-OM8 interfaces

5.12.2 Technical data

Voltage supply:		internal via B5-BUS	
Power consumption:		typical 28 mA	
Ambient temperature:		-5°C to +50°C	
Output voltage:		22 V min. / 24 V typical / 28 V max.	
Output current:		max. 1.3 A	
Short-circuit current:		1,45 A min. / 2,76 A max.	
Load range:		Monitoring current	Line resistance
Range 1	106–1000 Ω	1 mA	max. 50 Ω
Range 2	57–375 Ω	3 mA	max. 20 Ω
Range 3	20–75 Ω	15 mA	max. 5 Ω

5.12.3 Compatibility information

Possible slots in the unit rack:	2 to 9
SecuriFire Studio:	from V 1.2

5.12.4 Load ranges

The setting of the load range, individual for each output, has to be planned exclusively with SecuriFire Studio.

5.12.5 Connection of monitored outputs

Quiescent current monitored output

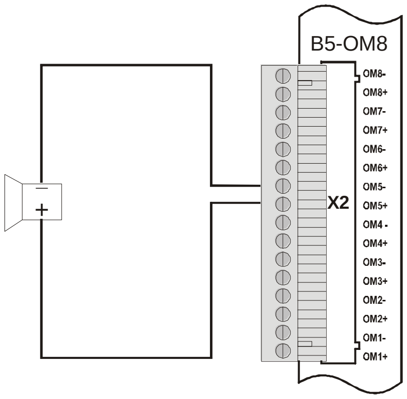

B5-OM8
OM8-
OM8+
OM7-
OM7+
OM6-
OM6+
OM5-
OM5+
OM4 -
OM4+
OM3-
OM3+
OM2-
OM2+
OM1-
OM1+
X2
−
+

Fig. 73 Quiescent current monitored output

Electronic loads

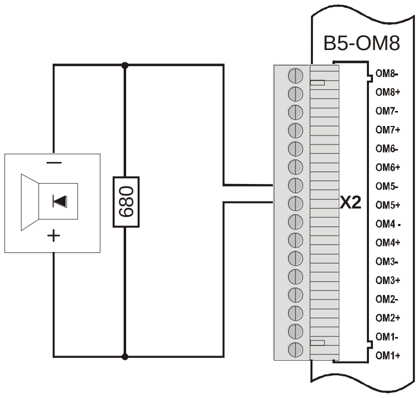

B5-OM8
OM8-
OM8+
OM7-
OM7+
OM6-
OM6+
OM5-
OM5+
OM4 -
OM4+
OM3-
OM3+
OM2-
OM2+
OM1-
OM1+
X2
680
−
+

Fig. 74 Electronic loads

5.13 B3-OM8 board with monitored outputs

The B3-OM8 is for connecting up to 8 peripheral devices (sirens, flashing lights, etc.). It includes 8 quiescent current monitored control outputs for max. 1.5 A and for loads of 20 Ω to 1,000 Ω in 3 load ranges. It is important to note that the monitored consumers are supplied with power directly from the B5-PSU power supply unit (maximal current 7 A). This must be taken into account when planning the simultaneously actuated surveyed outputs.

More information about the B3-OM8 can be found in the Technical Description T 811 104.

Warning

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

5.13.1 Interfaces

X1	Connector plug for B5-BUS
X2	Plug for monitored outputs
X3 to X18	Jumper setting of the load ranges (for outputs OM1 to OM8)
X19	Service pin

Designation	Output no.	Terminal	Jumper
OM8-	8	1	X17, X18
OM8+		2	
OM7-	7	3	X15, X16
OM7+		4	
OM6-	6	5	X13, X14
OM6+		6	
OM5-	5	7	X11, X12
OM5+		8	
OM4-	4	9	X9, X10
OM4+		10	
OM3-	3	11	X7, X8
OM3+		12	
OM2-	2	13	X5, X6
OM2+		14	
OM1-	1	15	X3, X4
OM1+		16	

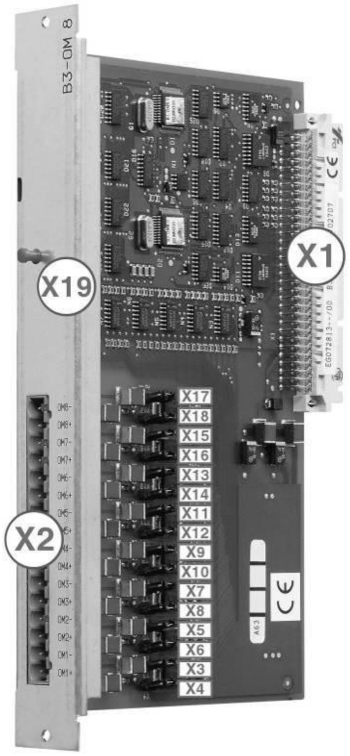


Fig. 75 B3-OM8 interfaces

5.13.2 Technical data

Voltage supply:		internal via B5-BUS	
Power consumption:		typical 9 mA	
Ambient temperature:		-5°C to +50°C	
Output voltage:		22 V min. / 24 V typical / 28 V max.	
Output current:		max. 1.5 A	
Short-circuit current:		1.77 A min. / 2.17 A typical / 3.14 A max.	
Load range:		Monitoring current	Line resistance
Range 1	354–1000 Ω	1 mA	max. 50 Ω
Range 2	85–354 Ω	3 mA	max. 20 Ω
Range 3	16–85 Ω	15 mA	max. 5 Ω

5.13.3 Compatibility information

Possible slots in the unit rack:	2 to 9
SecuriFire Studio:	from V 1.0

5.13.4 Service pin

Pulling the service pin changes the surveyed outputs on the board to the QUIESCENT state. The physical state of the controls is re-adjusted to the logical state after inserting the pin. This is how logical tests for checking fire incident controls can be performed. In addition, the service pin provides protection against unintentional triggering during service work.

5.13.5 Jumper setting of the load ranges

Jumper setting X3 to X18 for monitored outputs:

Delivered with outputs OM1 to OM8 set to load range 354-1,000 Ω (no jumper).

Output	Load range	Line resistance	Jumper inserted
OM1	354-1000 Ω	max. 50 Ω	none
	85-354 Ω	max. 20 Ω	X3
	16–85 Ω	max. 5 Ω	X4
OM2	354-1000 Ω	max. 50 Ω	none
	85-354 Ω	max. 20 Ω	X5
	16–85 Ω	max. 5 Ω	X6
OM3	354-1000 Ω	max. 50 Ω	none
	85-354 Ω	max. 20 Ω	X7
	16–85 Ω	max. 5 Ω	X8
OM4	354–1,000 Ω	max. 50 Ω	none
	85–354 Ω	max. 20 Ω	X9
	16-85 Ω	max. 5 Ω	X10
OM5	354–1,000 Ω	max. 50 Ω	none
	85–354 Ω	max. 20 Ω	X11
	16-85 Ω	max. 5 Ω	X12
OM6	354–1,000 Ω	max. 50 Ω	none
	85–354 Ω	max. 20 Ω	X13
	16-85 Ω	max. 5 Ω	X14
OM7	354–1,000 Ω	max. 50 Ω	none
	85–354 Ω	max. 20 Ω	X15
	16-85 Ω	max. 5 Ω	X16
OM8	354–1,000 Ω	max. 50 Ω	none
	85–354 Ω	max. 20 Ω	X17
	16–85 Ω	max. 5 Ω	X18

5.13.6 Connection of monitored outputs

Quiescent current monitored output

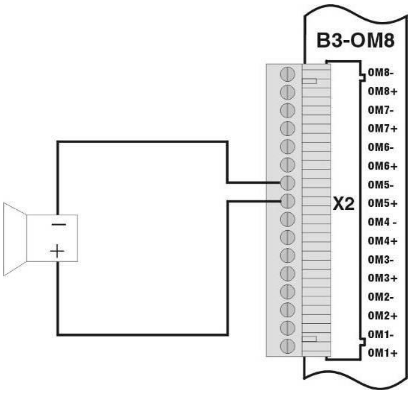


Fig. 76 Quiescent current monitored output

Electronic loads

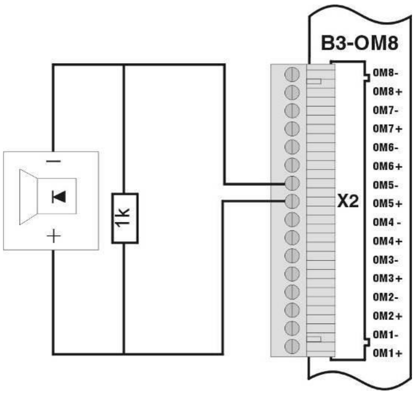


Fig. 77 Electronic loads

6 Modernisation boards

Notice

These boards may be used only for modernisation purposes for approval reasons.

6.1 B3-DCI6 direct current technique board

The B3-DCI6 is for the power supply and evaluation of 6 inputs which are either planned as detection zones in direct current technique or as monitored inputs (e.g. VdS extinguishing interface, valve monitoring) via jumper and programming. A maximum of 10 detection areas can be differentiated by means of optional 3-wire wiring.

More information about the B3-DCI6 can be found in the Technical Description T 811 102.

6.1.1 Interfaces

X1	Connector plug for B5-BUS
X2	Connector for detection zones and inputs

Input no.	Designation	Function
6	Z6	+24V MBK
	C6	GND
	L6	+24V alarm
5	Z5	+24V MBK
	C5	GND
	L5	+24V alarm
4	Z4	+24V MBK
	C4	GND
	L4	+24V alarm
3	Z3	+24V MBK
	C3	GND
	L3	+24V alarm
2	Z2	+24V MBK
	C2	GND
	L2	+24V alarm
1	Z1	+24V MBK
	C1	GND
	L1	+24V alarm

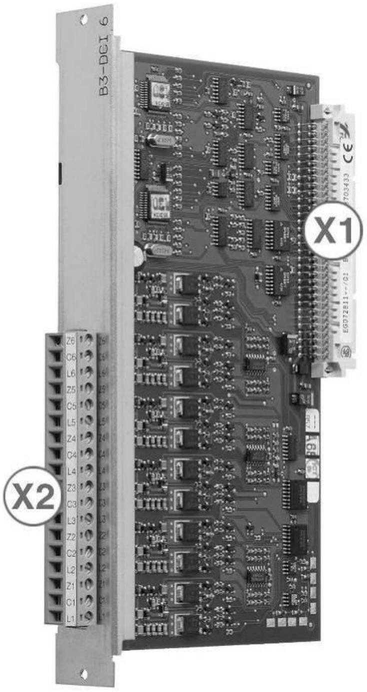


Fig. 78 B3-DC16 interfaces

6.1.2 Technical data

Voltage supply:	internal via B5-BUS
Power consumption:	30 mA max. current limited
Ambient temperature:	-5°C to +50°C
Extension:	6 conventional detection zones or monitored inputs
Termination resistance:	11k8
Alarm resistance:	560 R
Line resistance:	max. 71.5 Ω per wire
Individual detector identification:	with detection area identification optional possible of 0–9
Repeat signal output:	Ignition voltage +48 V; voltage supply 22 V to 30 V output current 200 mA, short-circuit current < 310 mA

6.1.3 Compatibility information

Possible slots in the unit rack:	2 to 9
SecuriFire Studio:	from release 1.0
Elements connectable for operation mode Direct current line:	Detector base YBF-RL/4H3H for connecting the SLK-EN, DCC-1E, DFE-60E, DFE-90E, HF-24E automatic detectors and RAL 72x repeat signal Manual call points DKM, DCI and 1702 3 pcs. repeat signals per detector with incandescent lamp version 24 V/2 W; 50 pcs. per detector with RAL 72x
Monitored input 11k8 mode of operation:	Potential-free contacts, monitoring resistance 11k8, initialisation resistance 560 R
Operation mode DC line 3k3, valve monitoring, VdS extinguishing input:	Potential-free contacts, monitoring resistance 3k3 Initialisation resistance 680R to 1k5
Recommended cable types:	Red fire detector cable, 3 x 0.6, LF-XYY Red fire detector cable, 2 x 0.6, LF-XYY
Coverage:	With 0.6 mm cable diameter: max. 700 m With 0.8 mm cable diameter: max. 2,000 m

6.1.4 Connecting detection zones

Detection zones which are connected to the B3-DCI6 using the direct current technique are switched parallel in succession; termination resistance (11 kΩ) in the last base enables quiescent current monitoring. The alarm evaluation is by means of electrical increase in the detection zone. For this purpose, alarm resistance (560 kΩ) is built into each YBF detector base. For the optional possible addressing of the individual detectors there is a third wire (Z wire) which is used for setting detection area identifications (MBK).

2-wire detector connection without detection area identification

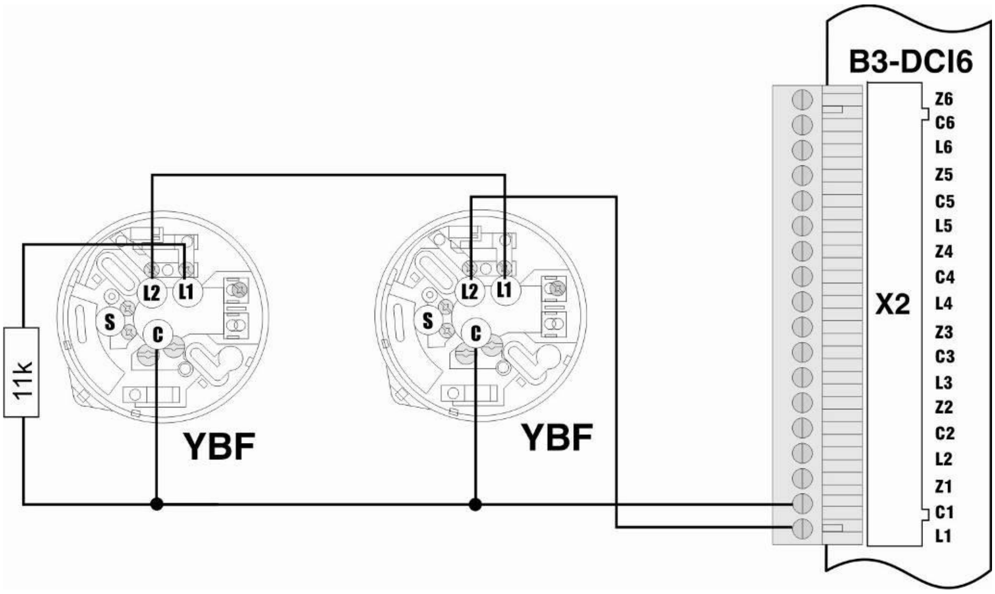


Fig. 79 B3-DCI6, 2-wire detector connection without detection area identification

3-wire detector connection with detection area identification

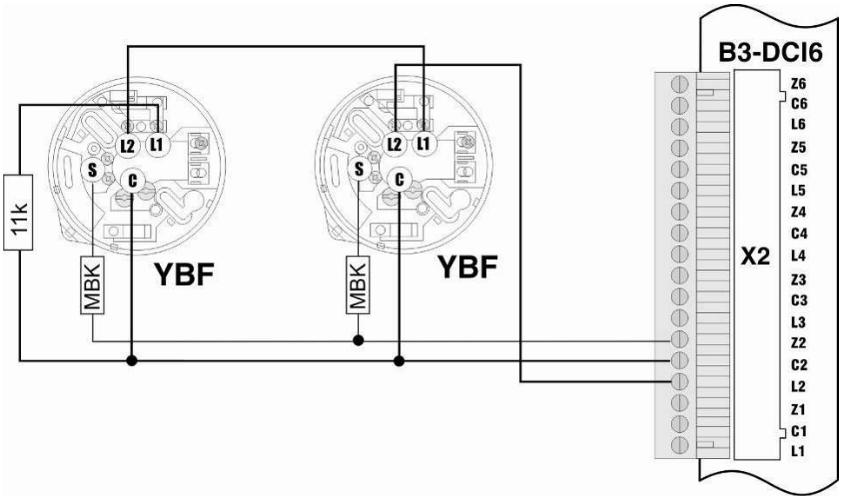
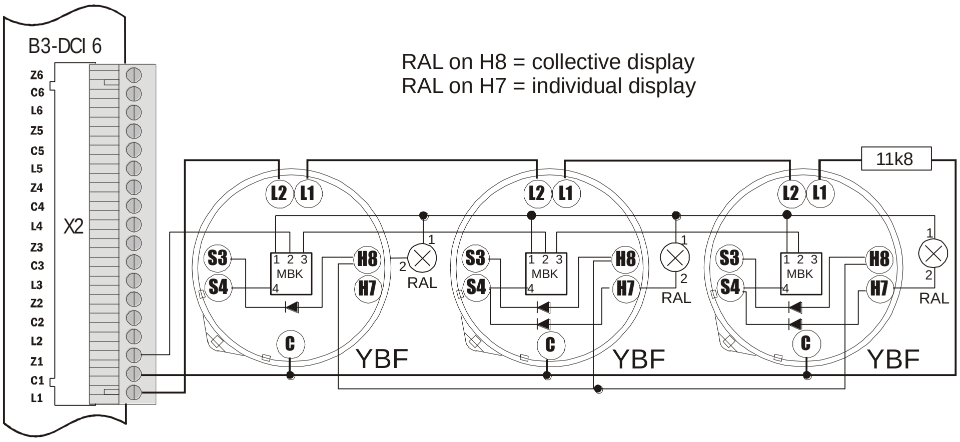

B3-DCI6
Z6
C6
L6
Z5
C5
L5
Z4
C4
L4
Z3
C3
L3
Z2
C2
L2
Z1
C1
L1
X2
11k
MBK
YBF
L2
L1
S
C
MBK
YBF
L2
L1
S
C

Fig. 80 B3-DCI6, 3-wire detector connection with detection area identification

3-wire detector connection with detection area identification


RAL on H8 = collective display
RAL on H7 = individual display

B3-DCI 6
Z6
C6
L6
Z5
C5
L5
Z4
C4
L4
Z3
C3
L3
Z2
C2
L2
Z1
C1
L1
X2
11k8
L2
L1
S3
S4
1 2 3
MBK
4
H8
H7
C
1
2
RAL
YBF

Fig. 81 B3-DCI6, 3-wire detector connection with detection area identification

Connecting manual call points

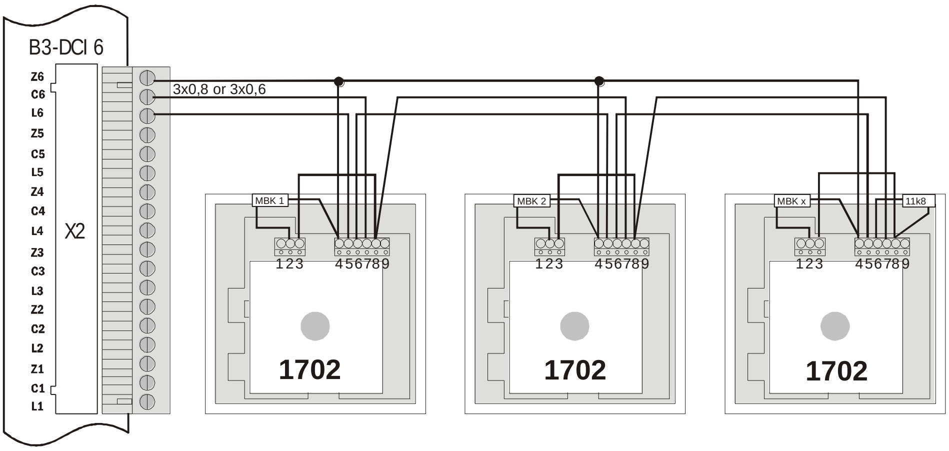

B3-DCI 6
Z6
C6
L6
Z5
C5
L5
Z4
C4
L4
Z3
C3
L3
Z2
C2
L2
Z1
C1
L1
X2
3x0,8 or 3x0,6
MBK 1
MBK 2
MBK x
11k8
123
456789
1702
1702
1702

Fig. 82 B3-DCI6, connection of manual call points

6.1.5 Connecting Hochiki Ex-i detectors in Ex areas

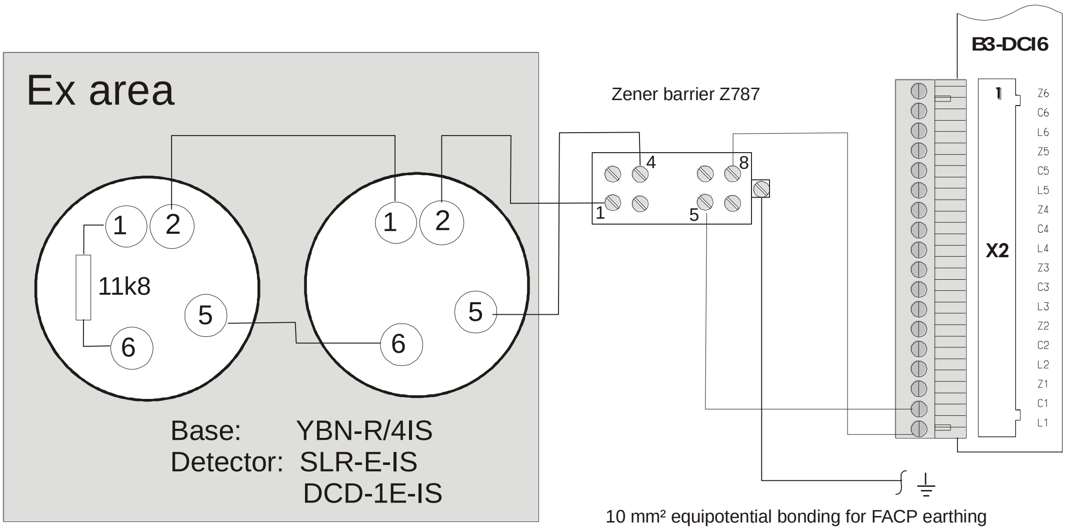

Ex area
1
2
11k8
5
6
1
2
5
6
Base: YBN-R/4IS
Detector: SLR-E-IS
DCD-1E-IS
Zener barrier Z787
4
8
1
5
B3-DCI6
1
X2
Z6
C6
L6
Z5
C5
L5
Z4
C4
L4
Z3
C3
L3
Z2
C2
L2
Z1
C1
L1
10 mm² equipotential bonding for FACP earthing

Fig. 83 B3-DCI6, connection of Hochiki Ex-i detectors in Ex areas

6.1.6 Connecting monitored inputs

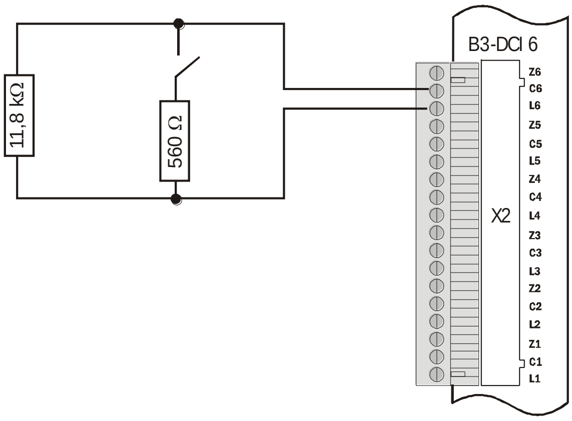
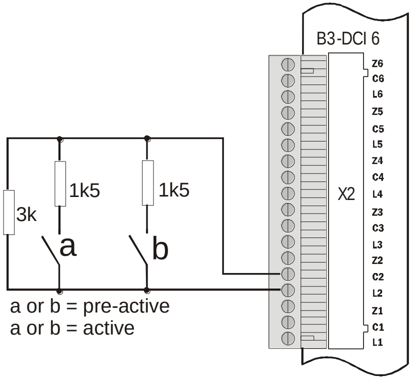

11,8 kΩ
560 Ω
B3-DCI 6
X2
Z6
C6
L6
Z5
C5
L5
Z4
C4
L4
Z3
C3
L3
Z2
C2
L2
Z1
C1
L1

Fig. 84 B3-DCI6, connecting monitored input 11k8

6.1.7 Connection of extinguishing inputs

Valve monitoring


B3-DCI 6
X2
Z6
C6
L6
Z5
C5
L5
Z4
C4
L4
Z3
C3
L3
Z2
C2
L2
Z1
C1
L1
1k5
1k5
3k
a
b

a or b = pre-active
a or b = active

Fig. 85 Valve monitoring

Extinguishing input compliant with VdS

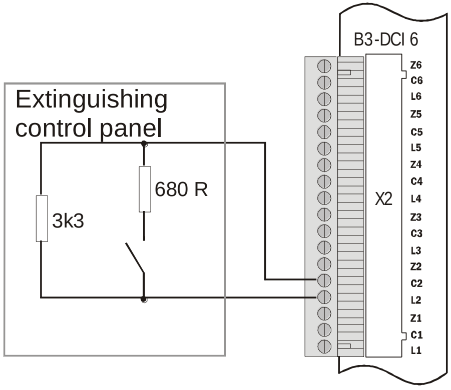

Extinguishing
control panel
680 R
3k3
B3-DCI 6
X2
Z6
C6
L6
Z5
C5
L5
Z4
C4
L4
Z3
C3
L3
Z2
C2
L2
Z1
C1
L1

Fig. 86 Extinguishing input compliant with VdS

Monitored input 3k

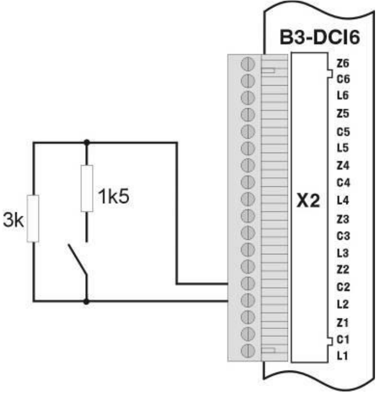

3k
1k5
B3-DCI6
X2
Z6
C6
L6
Z5
C5
L5
Z4
C4
L4
Z3
C3
L3
Z2
C2
L2
Z1
C1
L1

Fig. 87 Monitored input 3K

6.2 B3-LEE23 alarm lines board for HX 140

The B3-LEE23 supplies power to and monitors up to 8 stub lines each with a maximum of 30 detectors of the HX 140 detector series. Each stub line has its own current-limited output driver which supplies it with power and generates the voltage modulated telegram.
The purpose of the board is to replace existing fire alarm systems with detectors of the HX 140 series by the SecuriFire 3000 and to be able to connect the peripherals unchanged. Max. 5 B3-LEE23 boards can be fitted on slots 2 to 9 of the unit rack of an SCP.

More information about the B3-LEE23 can be found in the Technical Description T 811 110.

6.2.1 Interfaces

X1	Connector plug for B5-BUS
X2	Connector plug for stub lines

Input no.	Designation	Function
8	L8-	GND
	L8+	+24V
7	L7-	GND
	L7+	+24V
6	L6-	GND
	L6+	+24V
5	L5-	GND
	L5+	+24V
4	L4-	GND
	L4+	+24V
3	L3-	GND
	L3+	+24V
2	L2	GND
	L2+	+24V
1	L1-	GND
	L1+	+24V

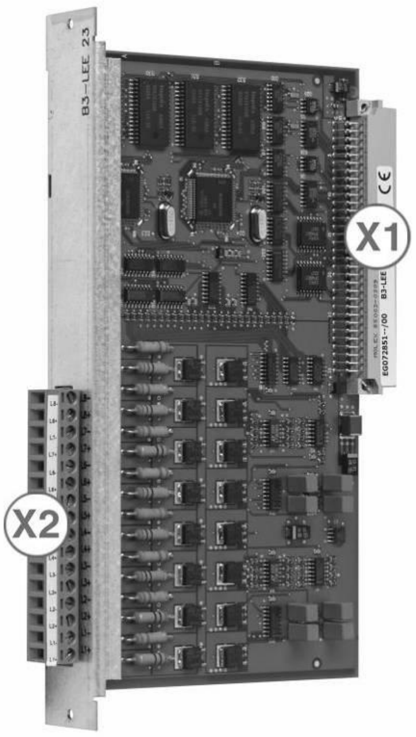


Fig. 88 B3-LEE23 interfaces

6.2.2 Technical data

Voltage supply:	internal via B5-BUS
Power consumption:	22 mA
Ambient temperature:	-5°C to +50°C
Extension:	8 stub lines with max. 30 detectors per group
Addressing:	any logical SW address can be assigned to the HW address set on the detector
Stub line length:	max. 1,000 m

6.2.3 Compatibility information

Possible slots in the unit rack:	2 to 9 (max. 5 pcs. B3-LEE23 per SecuriFire 3000 control unit)
SecuriFire Studio:	from release 1.0
Connectable elements:	detector base 143 and 143K for connecting automatic detectors ORM 140 and ORM 140K, WDM 240, WMM 241, UFM 840 and IFM 841 DFM 155 manual call point ADX 156 addressing module

6.2.4 Connecting automatic detectors

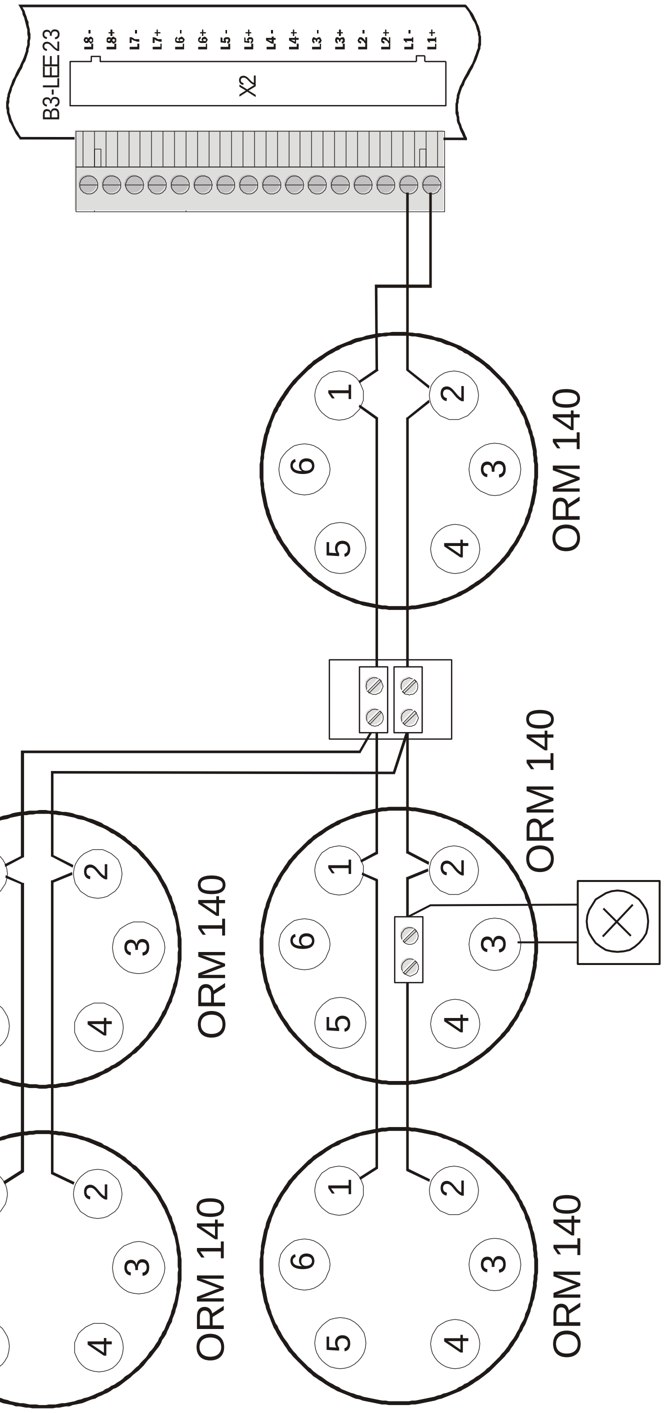

B3-LEE 23
L8 -
L8+
L7 -
L7+
L6 -
L6+
L5 -
L5+
L4 -
L4+
L3 -
L3+
L2 -
L2+
L1 -
L1+
X2
ORM 140
ORM 140
ORM 140
ORM 140
ORM 140
1
2
3
4
5
6

Fig. 89 B3-LEE23, connecting automatic detectors

By means of parallel detector switching, derivation of the stub line is possible.

6.2.5 Connecting non-automatic detectors

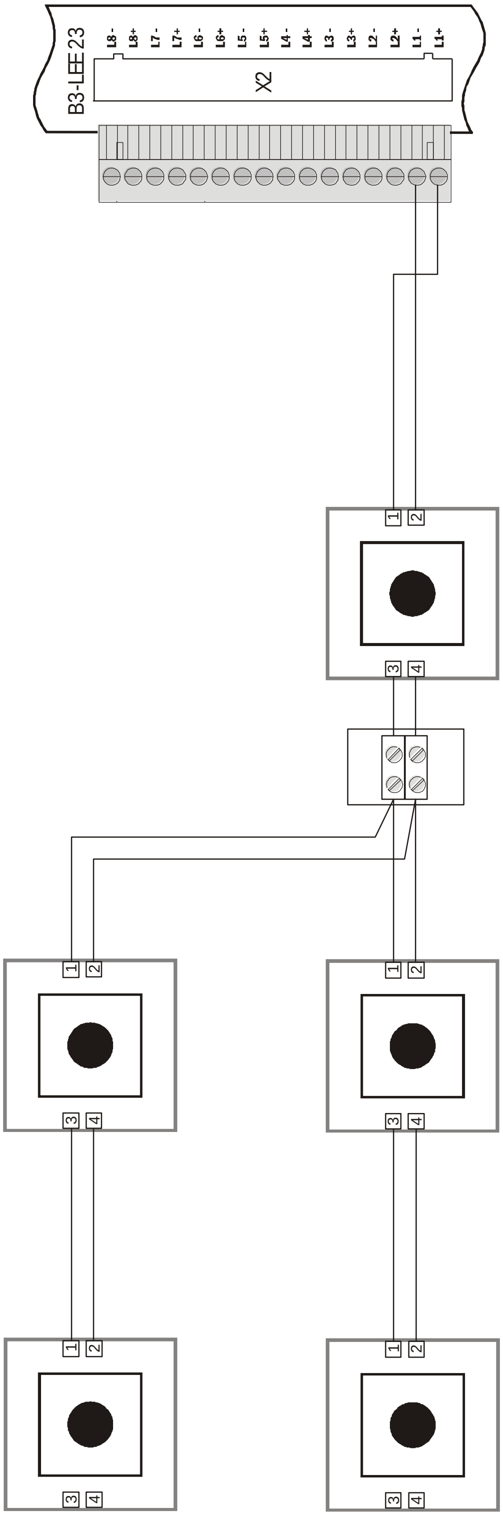

B3-LEE 23
L8 -
L8+
L7 -
L7+
L6 -
L6+
L5 -
L5+
L4 -
L4+
L3 -
L3+
L2 -
L2+
L1 -
L1+
X2
1
2
3
4

Fig. 90 B3-LEE23, connection of non-automatic detectors

By means of parallel detector switching, derivation of the stub line is possible.

6.3 B3-LEE24 alarm loop board for HX 150

The B3-LEE24 supplies power to and monitors up to four ring circuits each with a maximum of 127 detectors of the HX 150 detector series. It is possible to install addressable stubs on the ring without an additional branching module. The max. number of detectors on stubs must be taken into account. Each ring circuit has its own current-limited output driver which supplies it with power and generates the voltage modulated telegram. The line current is evaluated by an analogue/digital converter.
The purpose of the B3-LEE24 is to replace existing fire alarm systems with detectors of the HX 150 series by the SecuriFire 3000 and to be able to connect the peripherals unchanged.
Max. 5 pcs. B3-LEE24 can be fitted on slots 2 to 9 of the unit rack of an SCP.

More information about the B3-LEE24 can be found in the Technical Description T 131 447.

6.3.1 Interfaces

X1	Connector plug for B5-BUS
X2	Connector plug for the ring circuits

Input no.	Designation	Function
8	L4B-	GND
	L4B+	+24V
7	L4A-	GND
	L4A+	+24V
6	L3B-	GND
	L3B+	+24V
5	L3A-	GND
	L3A+	+24V
4	L2B-	GND
	L2B+	+24V
3	L2A-	GND
	L2A+	+24V
2	L1B-	GND
	L1B+	+24V
1	L1A-	GND
	L1A+	+24V

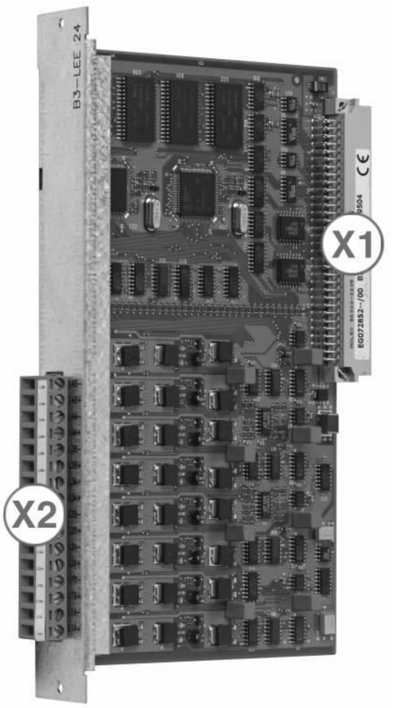


Fig. 91 B3-LEE24 interfaces

6.3.2 Technical data

Voltage supply:	internal via B5-BUS
Power consumption:	27 mA
Ambient temperature:	-5°C to +50°C
Extension:	4 ring circuits, each max. 127 participants
Addressing:	any logical SW address can be assigned to the HW address set on the detector
Coverage:	max. 1,000 m

6.3.3 Compatibility information

Possible slots in the unit rack:	2 to 9 (max. 5 B3-LEE24 per SecuriFire 3000 control unit!)
Compatible main control board:	B5-MCB15 (all editions and variants)
SecuriFire Studio:	from release 1.0
Connectable elements:	detector bases 158A and 158K for connecting automatic detectors ORM 150, ORM 150K, WDM 152, WMM 153 DFM155 manual call point addressing/control modules ADX 156, SBS 157, UAS 159 RKM150 ring coupler module

6.4 Connecting automatic detectors

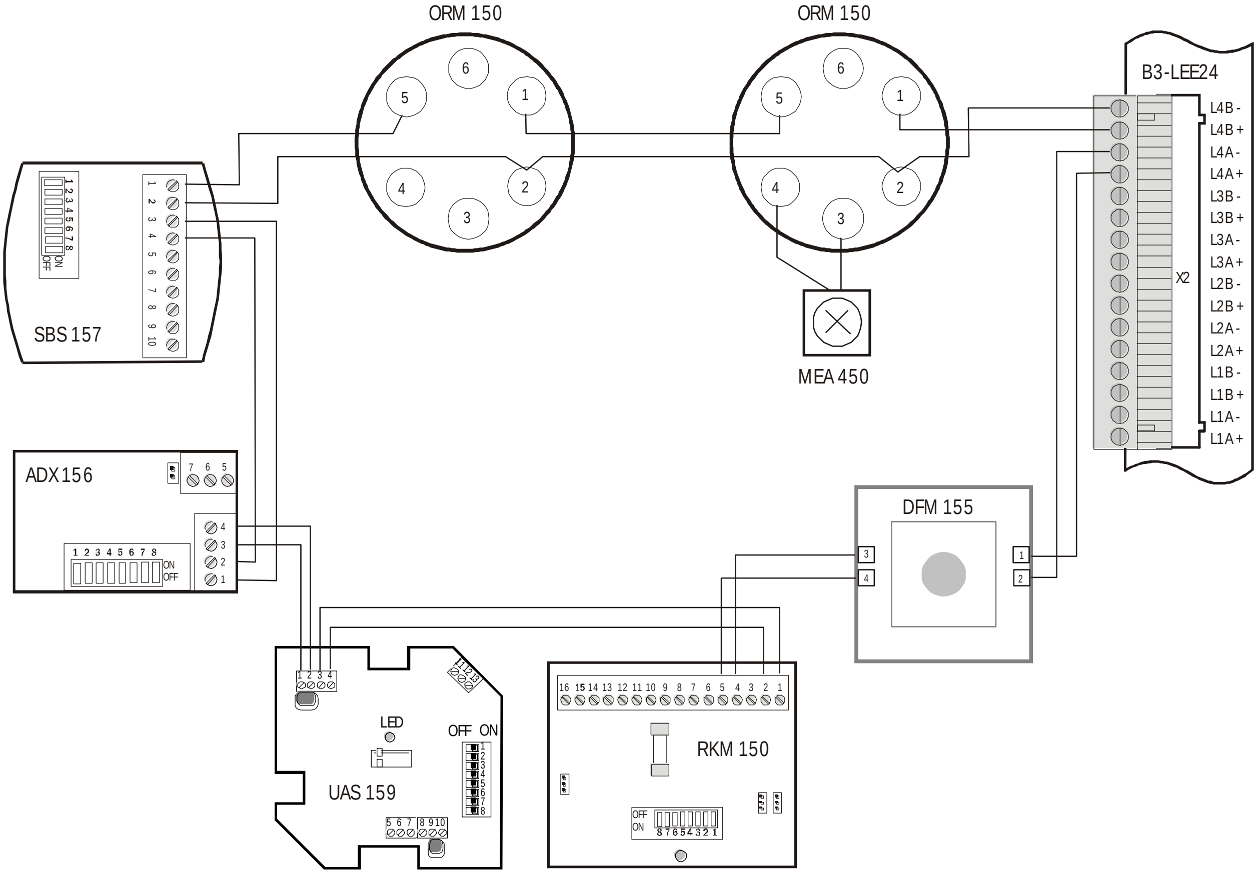
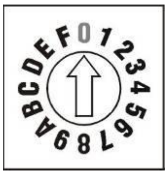

ORM 150
ORM 150
B3-LEE24
L4B -
L4B +
L4A -
L4A +
L3B -
L3B +
L3A -
L3A +
L2B -
L2B +
L2A -
L2A +
L1B -
L1B +
L1A -
L1A +
X2
SBS 157
MEA 450
ADX156
DFM 155
UAS 159
LED
OFF ON
RKM 150

Fig. 92 B3-LEE24, connecting automatic detectors

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 unit. 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 unit 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

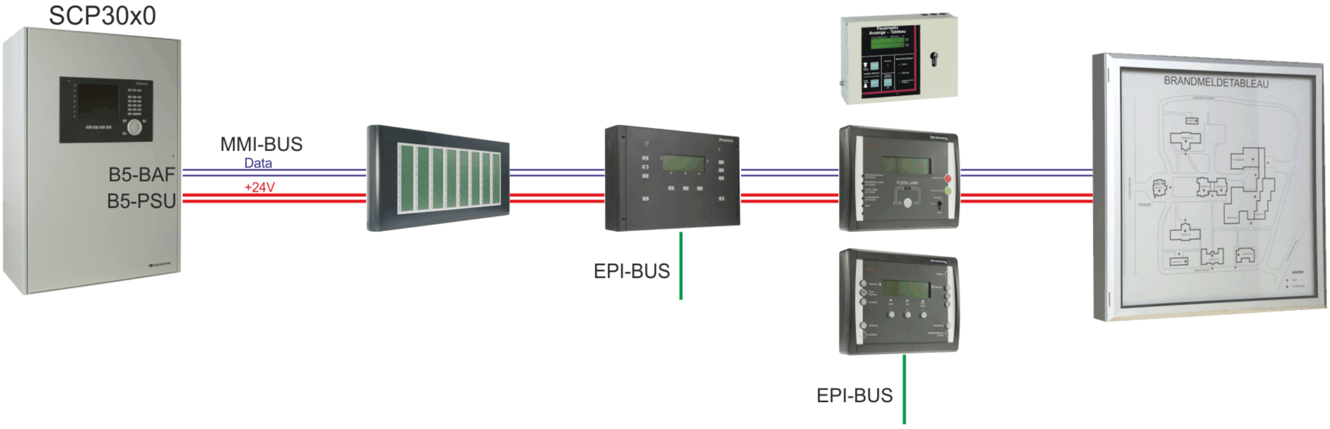


Fig. 93 Schematic drawing

7.2 MMI-BUS technical data

Length:	max. 1,200 m
Subscribers:	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 Connecting 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 B5-BAF control board and every MMI BUS device has 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 (B5-BAF, jumper X17 and X18) 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

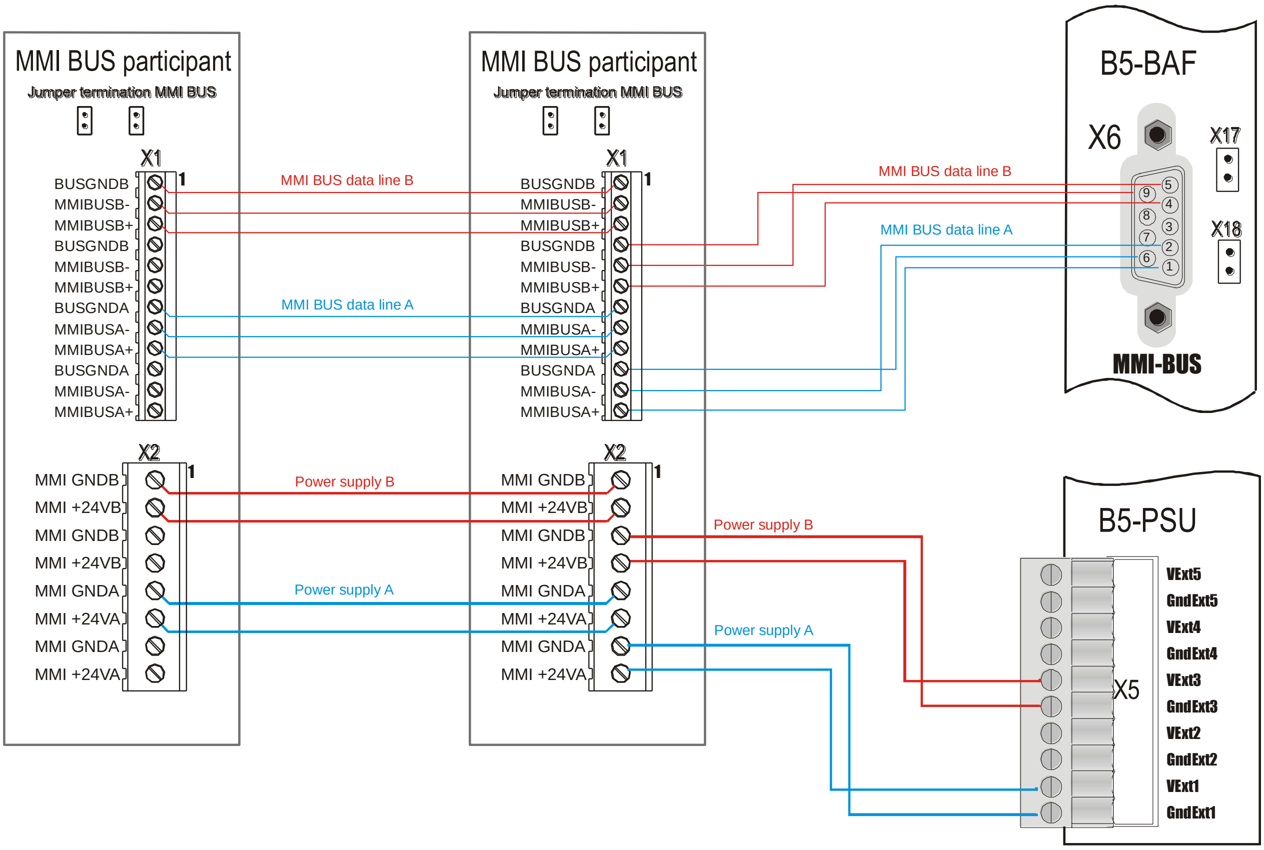

MMI BUS participant
Jumper termination MMI BUS
X1
1
BUSGNDB
MMIBUSB-
MMIBUSB+
BUSGNDB
MMIBUSB-
MMIBUSB+
BUSGNDA
MMIBUSA-
MMIBUSA+
BUSGNDA
MMIBUSA-
MMIBUSA+
X2
MMI GNDB
MMI +24VB
MMI GNDB
MMI +24VB
MMI GNDA
MMI +24VA
MMI GNDA
MMI +24VA
MMI BUS data line B
MMI BUS data line A
Power supply B
Power supply A
MMI BUS participant
Jumper termination MMI BUS
B5-BAF
X6
X17
X18
9
8
7
6
5
4
3
2
1
MMI-BUS
B5-PSU
X5
VExt5
GndExt5
VExt4
GndExt4
VExt3
GndExt3
VExt2
GndExt2
VExt1
GndExt1

Fig. 94 MMI BUS connection open

Warning

If participants up to version -E are connected to a B5-BAF control board, the jumpers must **NOT** be connected! The open connection is not recommended for new projects!

7.3.3 MMI BUS connection terminated

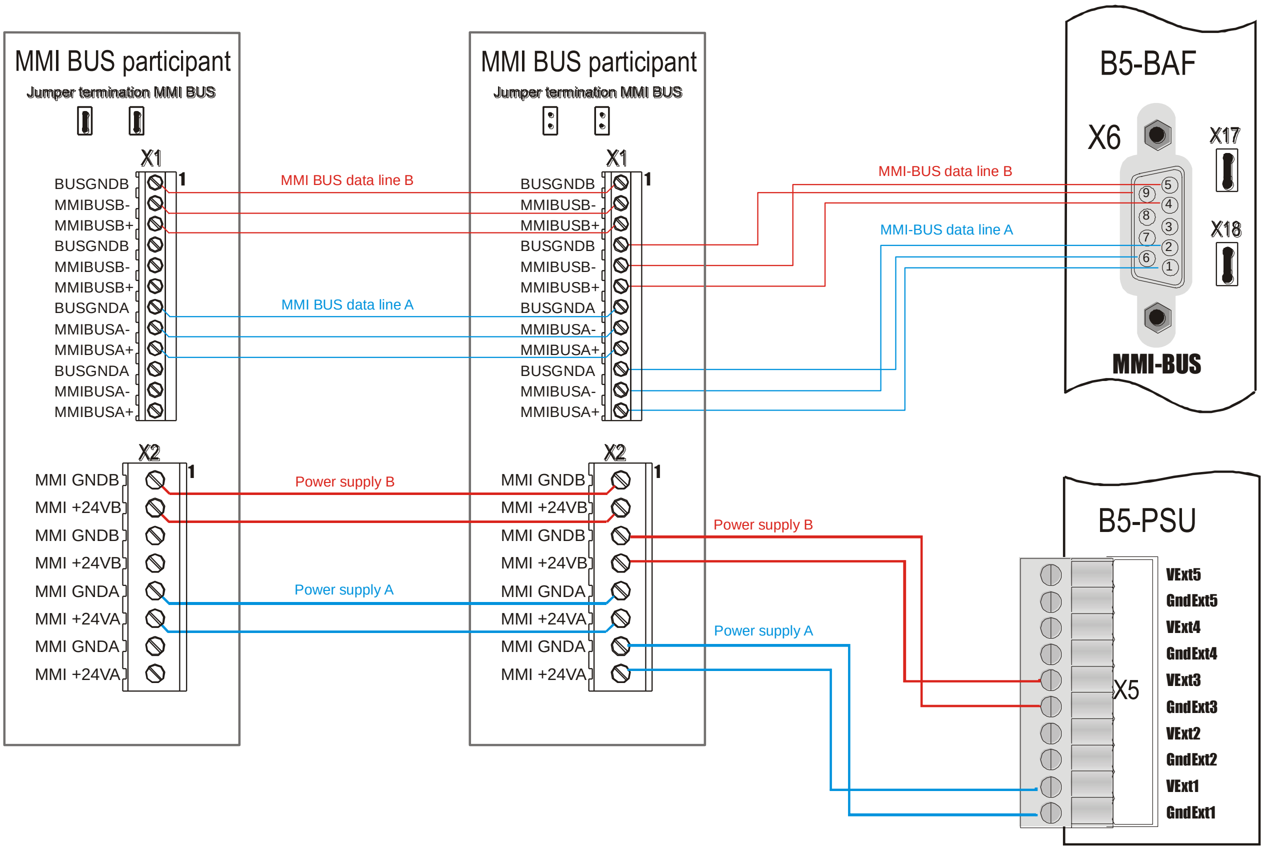

MMI BUS participant
Jumper termination MMI BUS
X1
1
BUSGNDB
MMIBUSB-
MMIBUSB+
BUSGNDB
MMIBUSB-
MMIBUSB+
BUSGNDA
MMIBUSA-
MMIBUSA+
BUSGNDA
MMIBUSA-
MMIBUSA+
X2
MMI GNDB
MMI +24VB
MMI GNDB
MMI +24VB
MMI GNDA
MMI +24VA
MMI GNDA
MMI +24VA
MMI BUS data line B
MMI BUS data line A
Power supply B
Power supply A
MMI BUS participant
Jumper termination MMI BUS
MMI-BUS data line B
MMI-BUS data line A
Power supply B
Power supply A
B5-BAF
X6
X17
X18
9
8
7
6
5
4
3
2
1
MMI-BUS
B5-PSU
X5
VExt5
GndExt5
VExt4
GndExt4
VExt3
GndExt3
VExt2
GndExt2
VExt1
GndExt1

Fig. 95 MMI BUS connection terminated

Warning

If MMI participants beginning with version -F are connected to a B5-BAF control unit, the jumpers on B5-BAF and on the last MMI-BUS participant **can** be connected.

7.3.4 MMI-BUS connection with star-shaped power supply

To be able to achieve the highest possible range for the conductor cross-section in use for MMI BUS devices with high power consumption, MMI BUS devices can be supplied with power from the B5-PSU power supply unit also using a star shape configuration. 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.

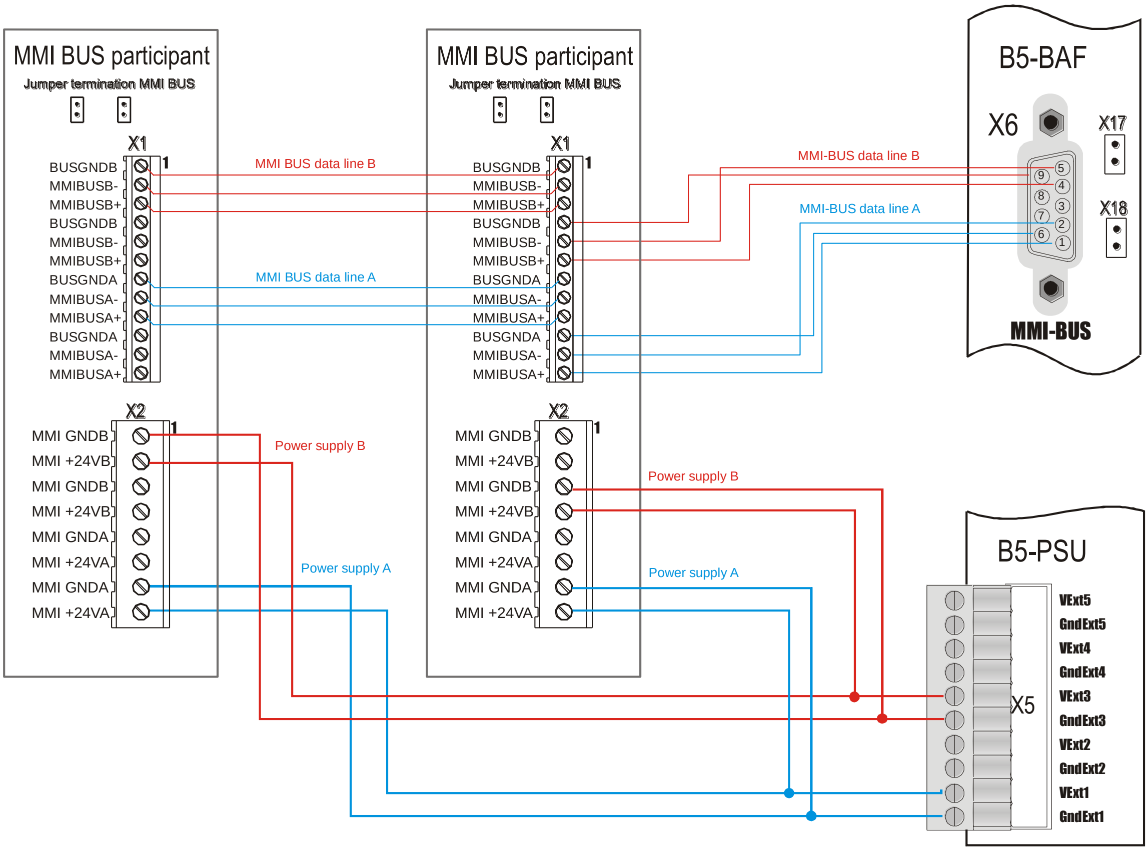

MMI BUS participant
Jumper termination MMI BUS
X1
1
BUSGNDB
MMIBUSB-
MMIBUSB+
BUSGNDB
MMIBUSB-
MMIBUSB+
BUSGNDA
MMIBUSA-
MMIBUSA+
BUSGNDA
MMIBUSA-
MMIBUSA+
X2
MMI GNDB
MMI +24VB
MMI GNDB
MMI +24VB
MMI GNDA
MMI +24VA
MMI GNDA
MMI +24VA
MMI BUS data line B
MMI BUS data line A
Power supply B
Power supply A
MMI BUS participant
Jumper termination MMI BUS
X1
X2
B5-BAF
X6
X17
X18
5
9
4
8
3
7
2
6
1
MMI-BUS data line B
MMI-BUS data line A
MMI-BUS
B5-PSU
X5
VExt5
GndExt5
VExt4
GndExt4
VExt3
GndExt3
VExt2
GndExt2
VExt1
GndExt1

Fig. 96 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 B5-BAF board of the SecuriFire 3000.
The B5-MMI-FIP can be remotely mounted up to 1200 m from the SecuriFire 3000.
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.

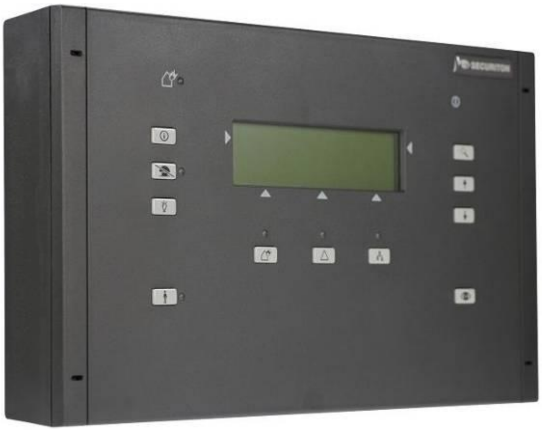


Fig. 97 B5-MMI-FIP

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

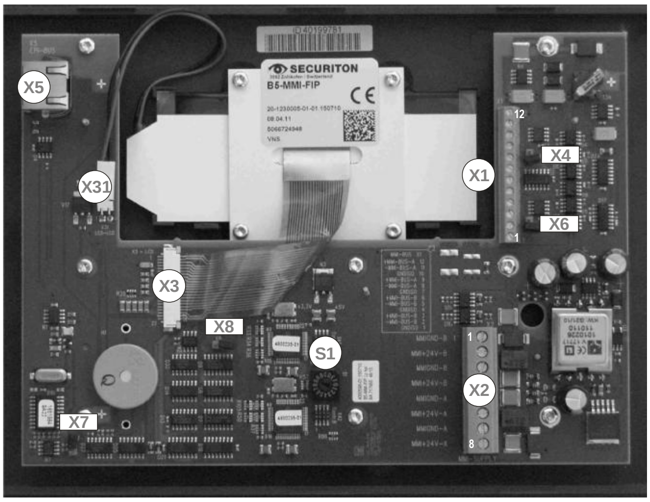

X5
X31
X1
12
X4
X6
1
X3
X8
S1
X2
8
X7

Fig. 98 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

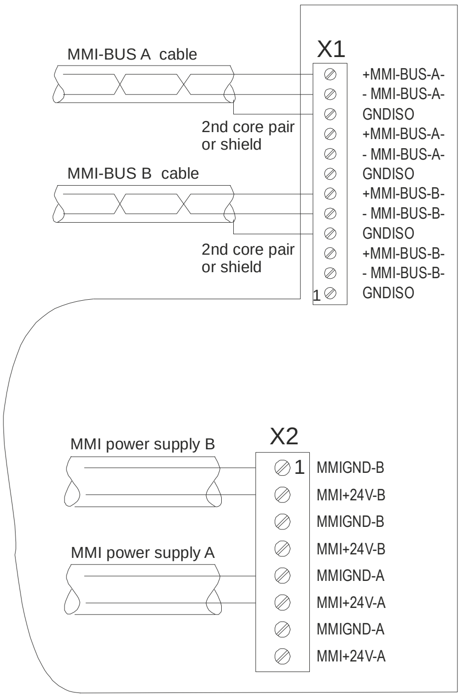

X1
MMI-BUS A cable
2nd core pair or shield
MMI-BUS B cable
2nd core pair or shield
+MMI-BUS-A-
- MMI-BUS-A-
GNDISO
+MMI-BUS-A-
- MMI-BUS-A-
GNDISO
+MMI-BUS-B-
- MMI-BUS-B-
GNDISO
+MMI-BUS-B-
- MMI-BUS-B-
GNDISO
1
X2
MMI power supply B
MMI power supply A
1
MMIGND-B
MMI+24V-B
MMIGND-B
MMI+24V-B
MMIGND-A
MMI+24V-A
MMIGND-A
MMI+24V-A

Fig. 99 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.

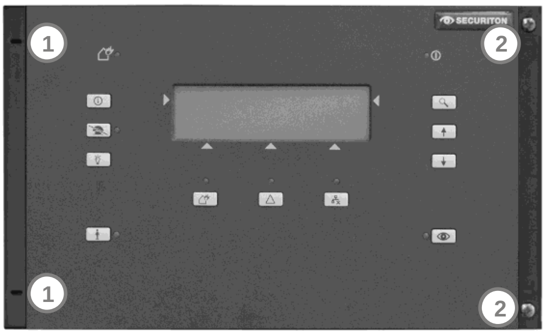


Fig. 100 Front side of B5-MMI-FIP

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 B5-BAF board of the SecuriFire 3000.
The B5-MMI-FPS-S can be remotely mounted up to 1200 m from the SecuriFire 3000.
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.

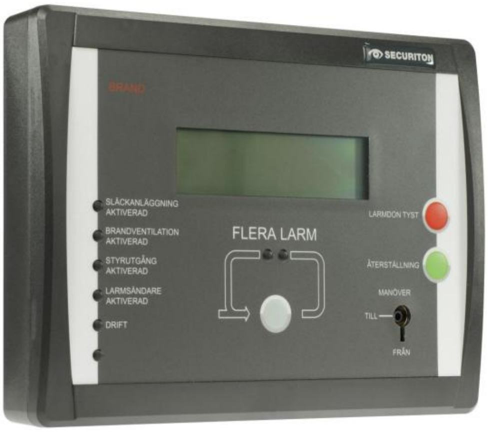

SECURITON
BRAND
SLÄCKANLÄGGNING AKTIVERAD
BRANDVENTILATION AKTIVERAD
STYRUTGÅNG AKTIVERAD
LARMSÄNDARE AKTIVERAD
DRIFT
FLERA LARM
LARMDON TYST
ÅTERSTÄLLNING
MANÖVER
TILL
FRÅN

Fig. 101 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

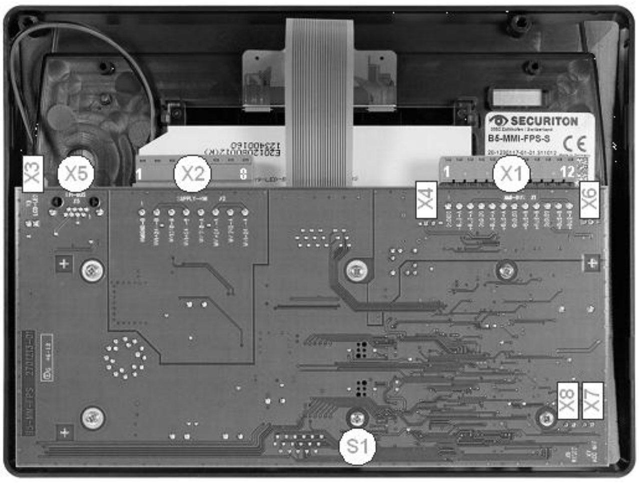

X3
X5
X2
1
8
X4
1
X1
12
X6
X8
X7
S1

Fig. 102 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

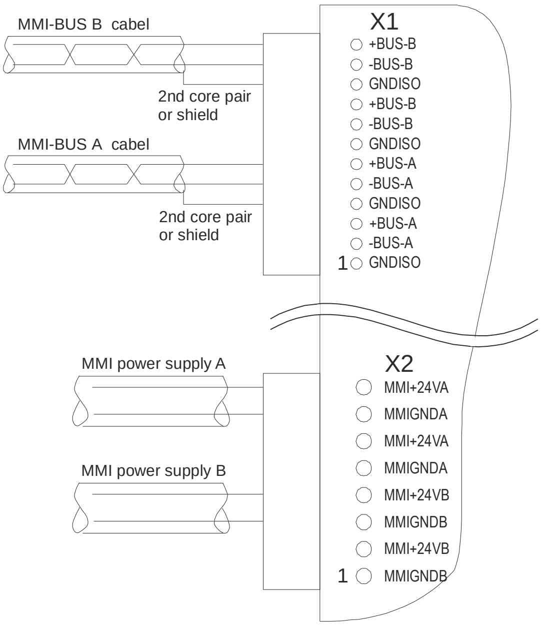

MMI-BUS B cabel
2nd core pair or shield
MMI-BUS A cabel
2nd core pair or shield
X1
+BUS-B
-BUS-B
GNDISO
+BUS-B
-BUS-B
GNDISO
+BUS-A
-BUS-A
GNDISO
+BUS-A
-BUS-A
1 GNDISO
MMI power supply A
MMI power supply B
X2
MMI+24VA
MMIGNDA
MMI+24VA
MMIGNDA
MMI+24VB
MMIGNDB
MMI+24VB
1 MMIGNDB

Fig. 103 MMI bus power supply connector plug (X1) and power supply (X2)

7.5.2 Instructions for opening and mounting the B5-MMI-FPS-S

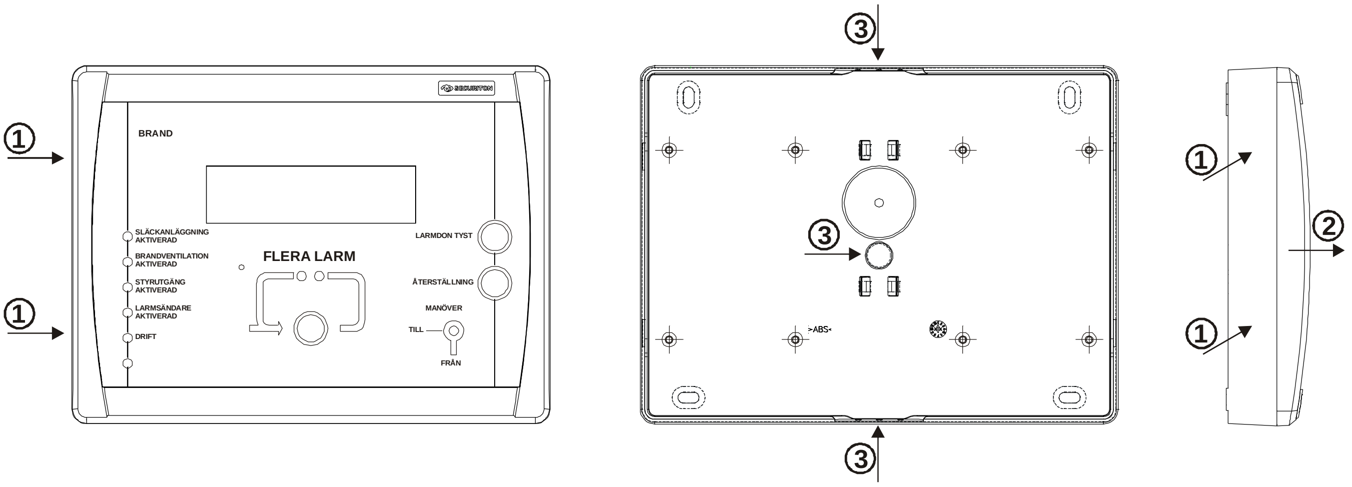

①
①
SECURITON
BRAND
SLÄCKANLÄGGNING AKTIVERAD
BRANDVENTILATION AKTIVERAD
STYRUTGÄNG AKTIVERAD
LARMSÄNDARE AKTIVERAD
DRIFT
FLERA LARM
LARMDON TYST
ÅTERSTÄLLNING
MANÖVER
TILL
FRÅN
③
③
③
>ABS<
①
②
①

Fig. 104 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

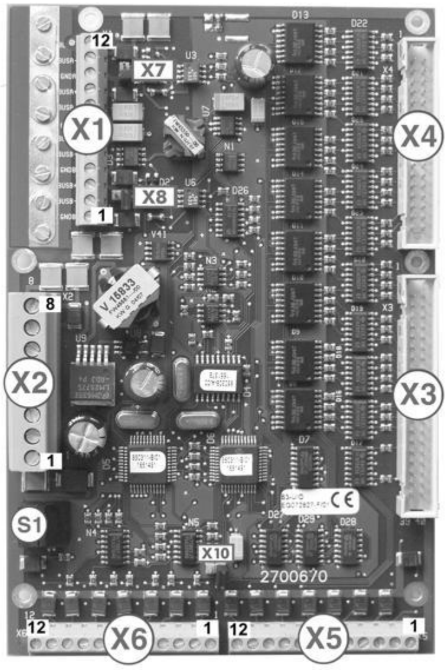

12
X7
X1
X8
1
X4
8
X2
1
X3
S1
X10
2700670
12
X6
1
12
X5
1

Fig. 105 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

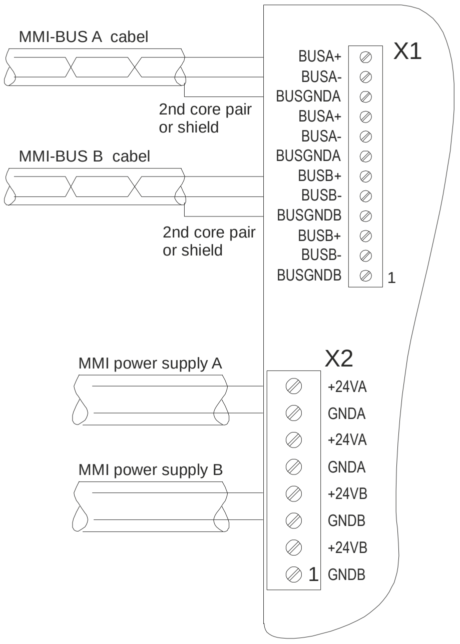

MMI-BUS A cabel
2nd core pair
or shield
MMI-BUS B cabel
2nd core pair
or shield
X1
BUSA+
BUSA-
BUSGNDA
BUSA+
BUSA-
BUSGNDA
BUSB+
BUSB-
BUSGNDB
BUSB+
BUSB-
BUSGNDB
1
X2
MMI power supply A
MMI power supply B
+24VA
GNDA
+24VA
GNDA
+24VB
GNDB
+24VB
1
GNDB

Fig. 106 MMI bus power supply connector plug (X1) and power supply (X2)

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

Plug X3

Terminal	Designation	Terminal	Designation
1	LED32-	2	LED33-
3	LED34-	4	LED35-
5	LED36-	6	LED37-
7	LED38-	8	LED39-
9	LED40-	10	LED41-
11	LED42-	12	LED43-
13	LED44-	14	LED45-
15	LED46-	16	LED47-
17	LED48-	18	LED49-
19	LED50-	20	LED51-
21	LED52-	22	LED53-
23	LED54-	24	LED55-
25	LED56-	26	LED57-
27	LED58-	28	LED59-
29	LED60-	30	LED61-
31	LED62-	32	LED63-
33	+5 V	34	+5 V
35	OUT7/ALARMAUDIBLE-	36	OUT6/FAULTAUDIBLE-
37	IN0/AUDIBLE OFF-	38	IN1/LAMP TEST-
39	GND	40	GND

Plug X4

Terminal	Designation	Terminal	Designation
1	LED0-	2	LED1-
3	LED2-	4	LED3-
5	LED4-	6	LED5-
7	LED6-	8	LED7-
9	LED8-	10	LED9-
11	LED10-	12	LED11-
13	LED12-	14	LED13-
15	LED14-	16	LED15-
17	LED16-	18	LED17-
19	LED18-	20	LED19-
21	LED20-	22	LED21-
23	LED22-	24	LED23-
25	LED24-	26	LED25-
27	LED26-	28	LED27-
29	LED28-	30	LED29-
31	LED30-	32	LED31-
33	+5 V	34	+5 V

X5 Transistor outputs
Open collector 30 V / 100 mA

Screw terminal X5

Terminal	Designation
1	SYNOUT-
2	GND
3	+5V
4	OUT0-/TMZ0-
5	OUT1-/TMZ1-
6	OUT2-/TMZ2-
7	OUT3-/TMZ3-
8	OUT4-/TMZ4-
9	OUT5-/TMZ5-
10	OUT6-/TMZ6-/ALARMAUDIBLE-
11	OUT7-/TMZ7-/FAULTAUDIBLE-
12	NC

X6 Opto-isolator inputs 5 V / 3.3 mA

Screw terminal X6

Terminal	Designation
1	SYNIN-
2	GND
3	+5V
4	IN0-/TMS0-/AUDIBLE OFF-
5	IN1-/LAMP TEST-
6	IN2-/TMS2-
7	IN3-/TMS3-
8	IN4-/TMS4-
9	IN5-/TMS5-
10	IN6-/TMS6-
11	IN7-/TMS7-
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

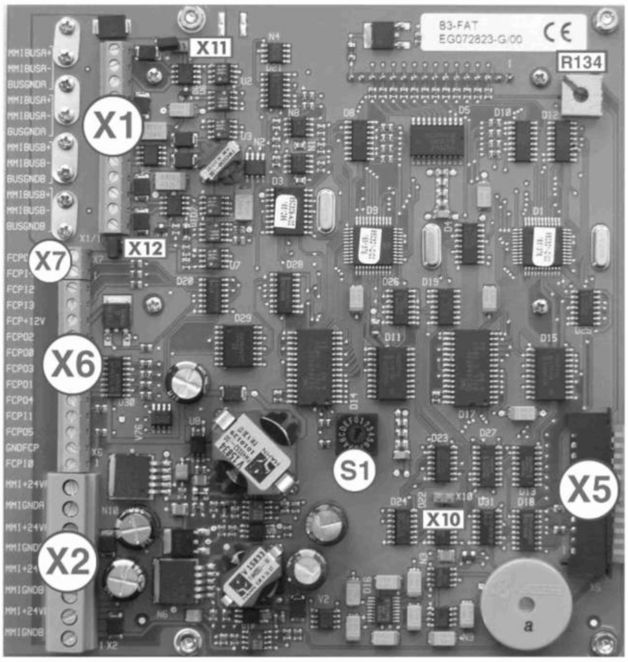


Fig. 107 B3-MMI-FAT interfaces

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
MMI bus total length:	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 B5-BAF board of the SecuriFire 3000. The B5-MMI-FPCZ can be remotely mounted up to 1200 m from the SecuriFire 3000. 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

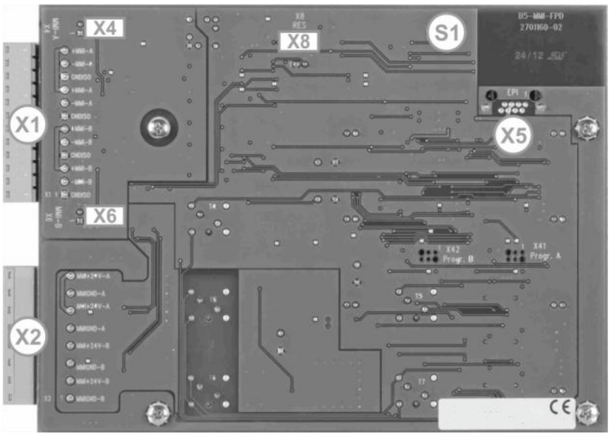


Fig. 108 B5-MMI-FPCZ interfaces

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

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

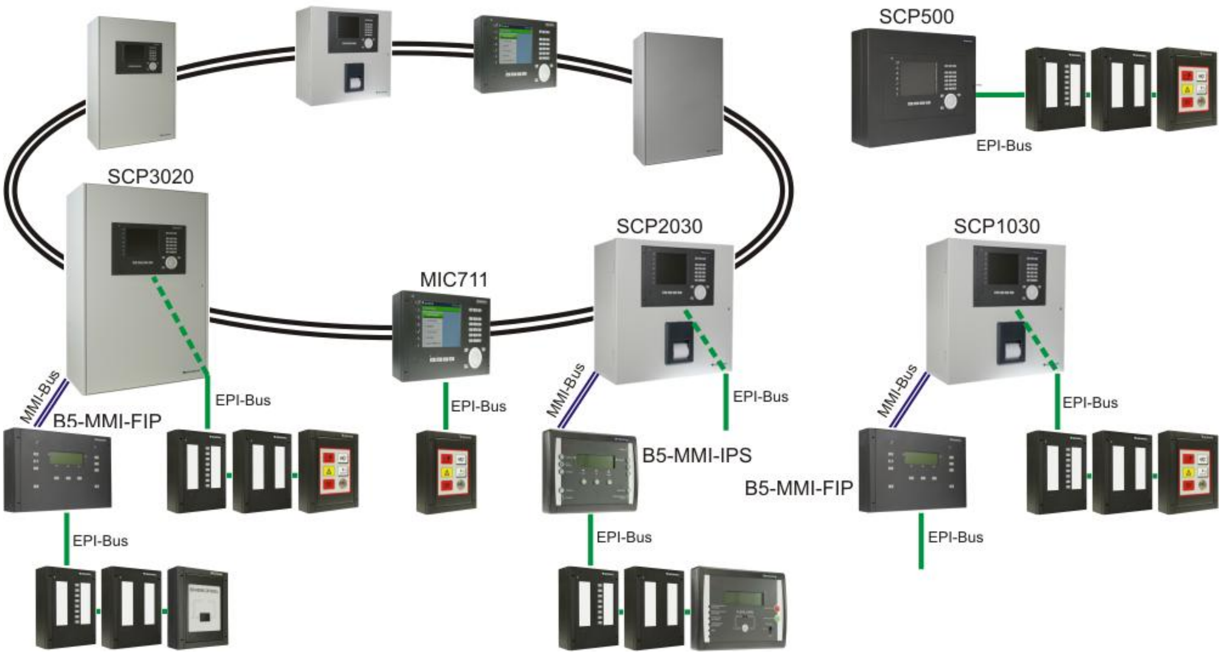
7.8.3 Compatibility information

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


SCP500
EPI-Bus
SCP3020
SCP2030
SCP1030
MIC711
MMI-Bus
B5-MMI-FIP
EPI-Bus
EPI-Bus
MMI-Bus
EPI-Bus
B5-MMI-IPS
B5-MMI-FIP
MMI-Bus
EPI-Bus
EPI-Bus
EPI-Bus
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 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-FPC-GS can be found in the Technical Description T 811 118.

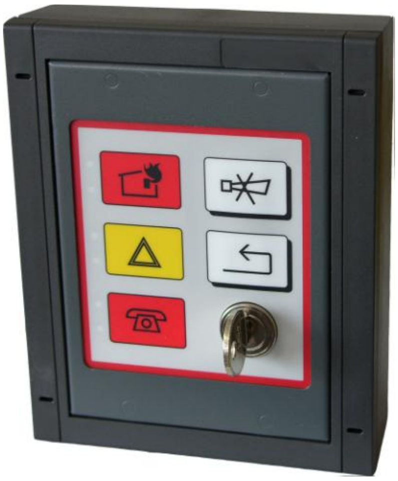


Fig. 109 B5-EPI-FPC-GS

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 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-ASP-GS can be found in the Technical Description T 811 090.

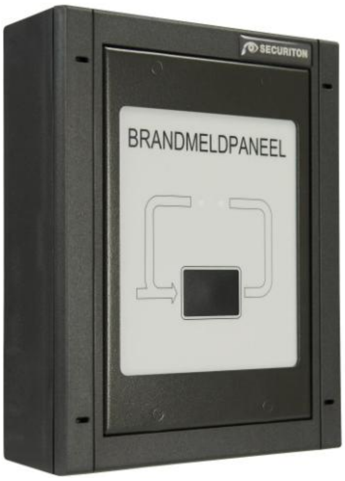


Fig. 110 B5-EPI-ASP-GS

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 begun.

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.

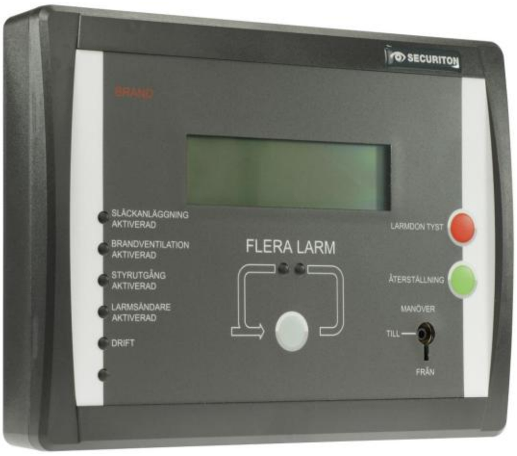

SECURITON
BRAND
SLÄCKANLÄGGNING AKTIVERAD
BRANDVENTILATION AKTIVERAD
STYRUTGÅNG AKTIVERAD
LARMSÄNDARE AKTIVERAD
DRIFT
FLERA LARM
LARMDON TYST
ÅTERSTÄLLNING
MANÖVER
TILL
FRÅN

Fig. 111 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 begun.

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

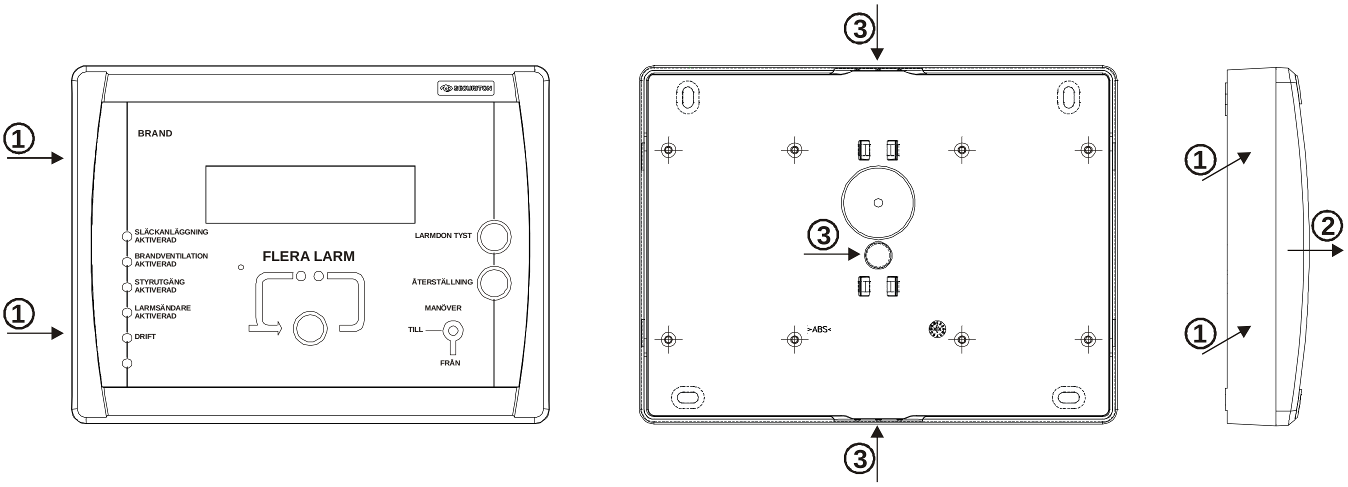

①
①
SECURITON
BRAND
SLÄCKANLÄGGNING AKTIVERAD
BRANDVENTILATION AKTIVERAD
STYRUTGÄNG AKTIVERAD
LARMSÄNDARE AKTIVERAD
DRIFT
FLERA LARM
LARMDON TYST
ÅTERSTÄLLNING
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Fig. 112 Mounting B5-EPI-FPS-S

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.

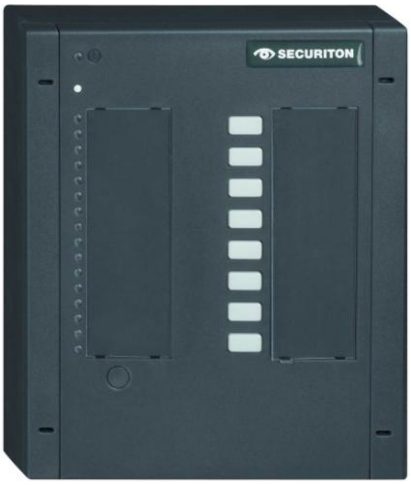


Fig. 113 B5-EPI-PCM

8.7.1 Interfaces

EPI Port A “INCOMING”
EPI Port B “OUTGOING”

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.

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

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.

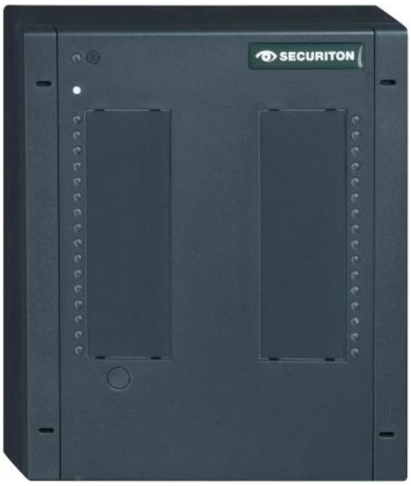


Fig. 114 B5-EPI-PIM

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.

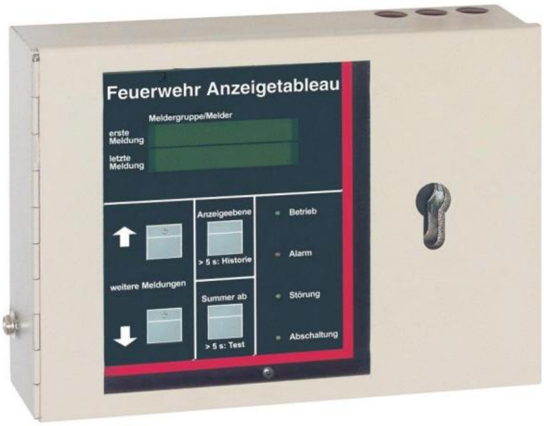

Feuerwehr Anzeigetableau
Meldergruppe/Melder
erste Meldung
letzte Meldung
Anzeigeebene
> 5 s: Historie
weitere Meldungen
Summer ab
> 5 s: Test
Betrieb
Alarm
Störung
Abschaltung

Fig. 115 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 Technical Description T 811 077.

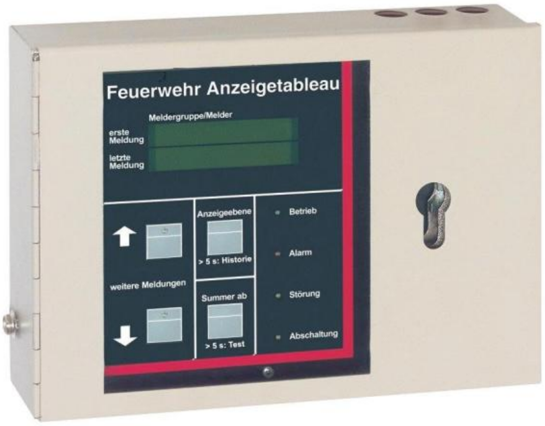

Feuerwehr Anzeigetableau
Meldergruppe/Melder
erste Meldung
letzte Meldung
Anzeigeebene
> 5 s: Historie
weitere Meldungen
Summer ab
> 5 s: Test
Betrieb
Alarm
Störung
Abschaltung

Fig. 116 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 begun.

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 boards and MIC711

9.1 B5-NET4-485 network-board

The B5-NET4-485 is for redundant networking of the SecuriFire 3000 and for connecting PC applications. It has four network ports which are implemented based on the RS485 standard and two 100BASE-TX ports.

More information about the B5-NET4-485 can be found in the Technical Description T 811 123.

9.1.1 Interfaces

X1	Connector plug for B5-BUS
X2	LAN interface (switch A / switch B) (RJ-45 connector)
X4	RS485 interface (switch B) (RJ-45 connector)
X4	RS485 interface (switch A) (RJ-45 connector)

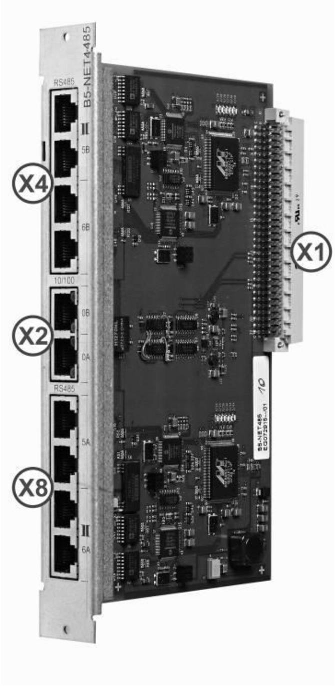


Fig. 117 B5-NET4-485 interfaces

LAN interface X2

Plug X2 port 0 of switch A

Terminal	Designation
A1	TX+
A2	TX-
A3	RX+
A4	NC
A5	NC
A6	RX-
A7	Termination
A8	Termination

Plug X2 port 0 of switch B

Terminal	Designation
A1	TX+
A2	TX-
A3	RX+
A4	NC
A5	NC
A6	RX-
A7	Termination
A8	Termination

RS485 interface X8 / X4

Plug X8 port 5 of switch A

Terminal	Designation
A1	NC
A2	NC
A3	NC
A4	GNDG
A5	GNDG
A6	NC
A7	TX/RX+
A8	TX/RX-

Line redundancy

Terminal	Designation
B1	NC
B2	NC
B3	NC
B4	GNDG
B5	GNDG
B6	NC
B7	TX/RX+
B8	TX/RX-

Plug X8 port 6 of switch A

Terminal	Designation
C1	NC
C2	NC
C3	NC
C4	GNDG
C5	GNDG
C6	NC
C7	TX/RX+
C8	TX/RX-

Line redundancy

Terminal	Designation
D1	NC
D2	NC
D3	NC
D4	GNDG
D5	GNDG
D6	NC
D7	TX/RX+
D8	TX/RX-

Plug X4 port 5 of switch B

Terminal	Designation
A1	NC
A2	NC
A3	NC
A4	GNDG
A5	GNDG
A6	NC
A7	TX/RX+
A8	TX/RX-

Line redundancy

Terminal	Designation
B1	NC
B2	NC
B3	NC
B4	GNDG
B5	GNDG
B6	NC
B7	TX/RX+
B8	TX/RX-

Plug X4 port 6 of switch B

Terminal	Designation
C1	NC
C2	NC
C3	NC
C4	GNDG
C5	GNDG
C6	NC
C7	TX/RX+
C8	TX/RX-

Line redundancy

Terminal	Designation
D1	NC
D2	NC
D3	NC
D4	GNDG
D5	GNDG
D6	NC
D7	TX/RX+
D8	TX/RX-

9.1.2 General technical data

Voltage supply:	internal via B5-BUS
Power consumption:	127 mA
Ambient temperature:	-5°C to +50°C
Mechanical design:	RJ-45 connector, 8-pin

9.1.3 LAN interface technical data

Connection:	Ethernet 100BASE-TX
Transmission type:	TCP/IP
Direction:	bidirectional, full-duplex operation
Speed:	max. 100 Mbit/s
Coverage:	max. 100 m

9.1.4 RS485 interface technical data

Connection:	RS485 no galvanic isolation
Transmission type:	Differential signal
Direction:	bidirectional, half-duplex operation
Speed:	max. 1.25 Mbit/s
Coverage:	max. 1,200 m

9.1.5 Compatibility information

Possible slots in the unit rack:	2
SecuriFire Studio:	from release 1.0
per SecuriFire 3000 control unit:	max. 1 B5-NET4-485

9.2 B5-NET2-485 network-board

The B5-NET2-485 is for redundant networking of the SecuriFire 3000 and for connecting PC applications. It has four network ports which are implemented based on the RS485 standard and two 100BASE-TX ports.

More information about the B5-NET2-485 can be found in the Technical Description T 811 123.

9.2.1 Interfaces

X1	Connector plug for B5-BUS
X2	LAN interface (switch A / switch B) (RJ-45 connector)
X4	RS485 interface (switch B) (RJ-45 connector)
X4	RS485 interface (switch A) (RJ-45 connector)

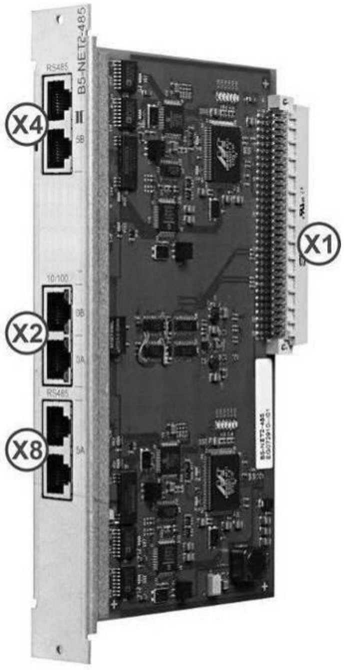


Fig. 118 B5-NET2-485 interfaces

LAN interface X2

Plug X2 port 0 of switch A

Terminal	Designation
A1	TX+
A2	TX-
A3	RX+
A4	NC
A5	NC
A6	RX-
A7	Termination
A8	Termination

Plug X2 port 0 of switch B

Terminal	Designation
A1	TX+
A2	TX-
A3	RX+
A4	NC
A5	NC
A6	RX-
A7	Termination
A8	Termination

RS485 interface X8 / X4

Plug X8 port 5 of switch A

Terminal	Designation
A1	NC
A2	NC
A3	NC
A4	GNDG
A5	GNDG
A6	NC
A7	TX/RX+
A8	TX/RX-

Line redundancy

Terminal	Designation
B1	NC
B2	NC
B3	NC
B4	GNDG
B5	GNDG
B6	NC
B7	TX/RX+
B8	TX/RX-

Plug X4 port 5 of switch B

Terminal	Designation
A1	NC
A2	NC
A3	NC
A4	GNDG
A5	GNDG
A6	NC
A7	TX/RX+

Line redundancy

Terminal	Designation
B1	NC
B2	NC
B3	NC
B4	GNDG
B5	GNDG
B6	NC
B7	TX/RX+

9.2.2 General technical data

Voltage supply:	internal via B5-BUS
Power consumption:	120 mA
Ambient temperature:	-5°C to +50°C
Mechanical design:	RJ-45 connector, 8-pin

9.2.3 LAN interface technical data

Extension:	Ethernet 100BASE-TX
Transmission type:	TCP/IP
Direction:	bidirectional, full-duplex operation
Speed:	max. 100 Mbit/s
Coverage:	max. 100 m

9.2.4 RS485 interface technical data

Extension:	RS485 no galvanic isolation
Transmission type:	Differential signal
Direction	bidirectional, half-duplex operation
Speed:	max. 1.25 Mbit/s
Coverage:	max. 1,200 m

9.2.5 Compatibility information

Possible slots in the unit rack:	2
SecuriFire Studio:	from release 1.0
Per SecuriFire 3000 control unit:	max. 1 B5-NET4-485

9.3 B5-NET2-FXM and B5-NET2-FXS network boards

The B5-NET2-FX network board is for redundant networking of the SecuriFire 3000 and for connecting PC applications. It has 2 network connections based on the RS485 standard, 2 optical network connections based on the FXM standard, and 2 100BASE-TX interfaces.

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

9.3.1 Interfaces

X1	Connector plug for B5-BUS
X2	LAN interface (switch A / switch B) (RJ-45 connector)
X3	100BASE-FX interface (switch B) (RJ-45 connector)
X4	RS485 interface (switch B) (RJ-45 connector)
X5	100BASE-FX interface (switch A) (RJ-45 connector)
X8	RS485 interface (switch A) (RJ-45 connector)

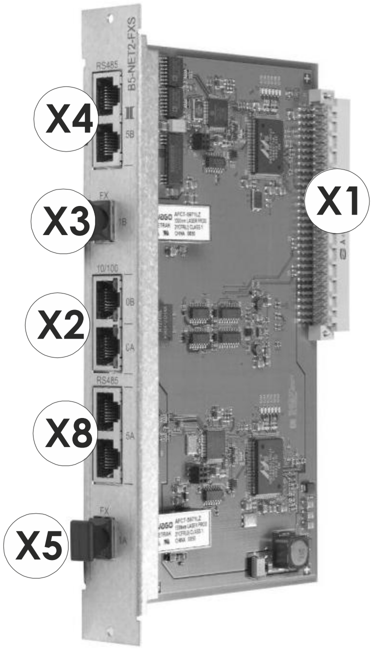
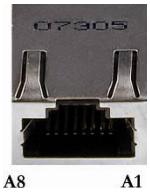


Fig. 119 B5-NET2-FX interfaces

PIN assignment (X2, X4, X8)

PIN	Signal RS485	Signal Ethernet	RJ-45 connector
A1	NC	TX+	
A2	NC	TX-	
A3	NC	RX+	
A4	GNDG	NC	
A5	GNDG	NC	
A6	NC	RX-	
A7	TX/RX+	NC	
A8	TX/RX-	NC	

PIN assignment X5

PIN	Signal
A1	Receive Data
A2	Transmit Data

PIN assignment X3

PIN	Signal
B1	Receive Data
B2	Transmit Data

9.3.2 General technical data

Voltage supply:	internal via B5-BUS
Power consumption:	295 mA (B5-NET2-FXM); 179,5 mA (B5-NET2-FXS)
Ambient temperature:	-5 °C to +50 °C

9.3.3 Technical data LAN interface

Connection:	Ethernet 100BASE-TX
Transmission type:	TCP/IP
Direction:	bidirectional, full-duplex operation
Protection:	EMC and ESD with high-voltage capacitors
Mechanical design:	EMC and ESD with high-voltage capacitors

9.3.4 Technical data RS485 interface

Connection:	RS485 no galvanic isolation
Transmission type:	Differential signal
Direction:	bidirectional, half-duplex operation
Speed:	max. 1,25 Mbit/s
Coverage:	max. 1,200 m

9.3.5 Technical data FXM interface

Connection:	Ethernet 100BASE-FXM
Transmission type:	TCP/IP
Direction:	bidirectional
Mechanical design:	MTRJ connector

9.3.6 Technical data FXS interface

Connection:	Ethernet 100BASE-FXS
Transmission type:	TCP/IP
Direction:	bidirectional
Mechanical design:	LC 2x5 connector

9.3.7 Compatibility information

Possible slots in the unit rack:	2
SecuriFire Studio:	from release 1.1
Per SecuriFire 3000 control unit:	max. 1 pce B5-NET2-FX

9.4 B5-LAN interface board

The B5-LAN is for non-redundant networking of PC applications and non-redundant networking of SecuriFire 3000; it is always fitted at slot 2 of the unit rack. There is the possibility that only the active processor establishes a connection to the Ethernet or both processors at the same time. This mode can be changed using a jumper.

More information about the B5-LAN can be found in the Technical Description T 811 123.

9.4.1 Interfaces

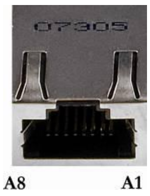
X1	Connector plug for B5-BUS
X2	LAN interface (RJ-45 connector)
X3	LAN interface (RJ-45 connector), only for test purposes
X4	Jumper

LAN interface X2

Plug X2/X3

Terminal	Designation
A1	TX+
A2	TX-
A3	RX+
A4	Termination
A5	Termination
A6	RX-
A7	Termination
A8	Termination

RJ-45 connector



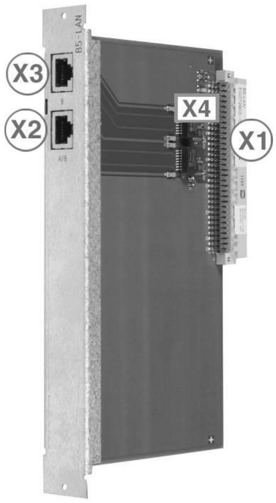


Fig. 120 B5-LAN interfaces

Jumper X4

Jumper closed	The active processor has access to the LAN via plug X2; connector X3 is inactive (normal operation).
Jumper open	Processor A has direct access to the LAN via plug X2. Processor B has access to the LAN via plug X3 (only for test and development purposes).

Warning

Jumper X4 must always be connected.

9.4.2 General technical data

Voltage supply:	internal via B5-BUS
Power consumption:	< 1 mA
Ambient temperature:	-5°C to +50°C
Mechanical design:	RJ-45 connector, 8-pin

9.4.3 LAN interface technical data

Extension:	Ethernet 100BASE-TX
Transmission type:	TCP/IP
Direction	bidirectional, full-duplex operation
Speed:	max. 100 Mbit/s
Coverage:	max. 100 m

9.4.4 Compatibility information

Possible slots in the unit rack:	2
SecuriFire Studio:	from release 1.0
Per SecuriFire 3000 control unit:	max. 1x B5-LAN

9.5 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.

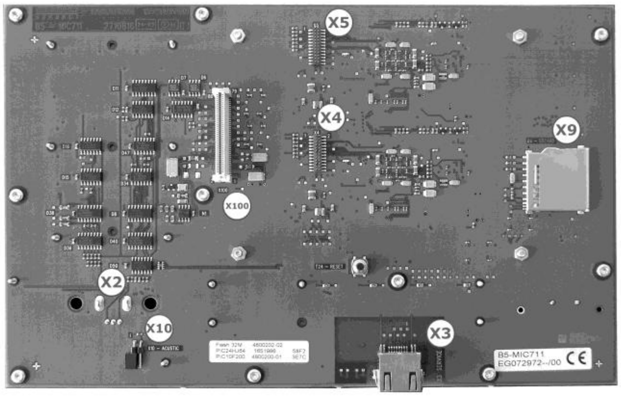

X5
X4
X9
X100
X2
X10
X3
B5-MIC711
EG072972--/00

Fig. 121 Rear side of B5-MIC711

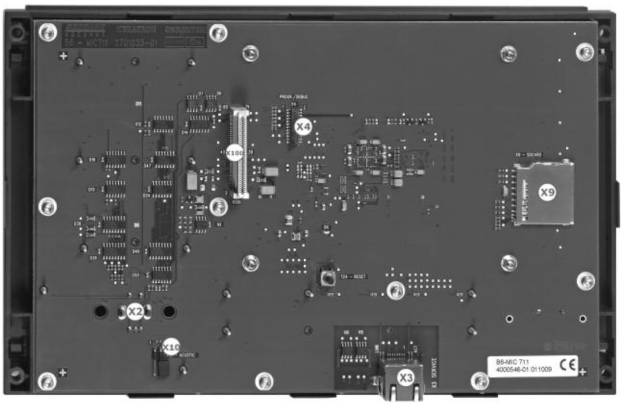

X4
X100
X9
X2
X10
X3

Fig. 122 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		

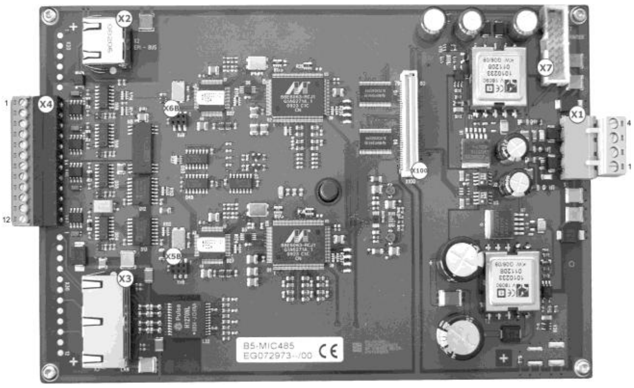

X2
X7
X4
X6B
X1
X100
X5B
X3
B5-MIC485
EG072973--/00

Fig. 123 Rear side of B5-MIC485 network module

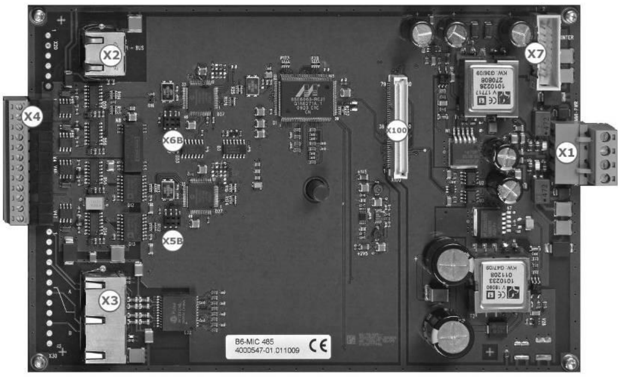

X2
X7
X4
X6B
X100
X1
X5B
X3
B6-MIC 485

Fig. 124 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

9.5.1.1 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

9.5.1.2 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-

9.5.2 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

9.6 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 control units.

Notice

In every SecuriFire 3000 a board suitable for the SecuriLan must be on slot 2 (B5-NET2-485, B5-NET4-485, B5-NET2-FXM, B5-NET2-FXS, B5-LAN). No settings can be carried out on the board itself.

The wiring of LAN connections is described in section 13 Annex.

Typical applications are described in the following. Please refer to the Technical Description “LAN network boards and units” T 811 123 for details.

9.6.1 Connection types

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

Type	Kind of connection	Description
RS485	Physical connection	RS485; direct connection between two SCP; 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 SCP; 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 board and used interface the following SecuriLan connections are possible:

- RS485 < 600 m high speed
- 10/100-TX not redundant
- LAN not redundant

These options are 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.

9.6.2 SecuriLan connection with RS485 interfaces

To achieve a greater fail-safe security when networking the SecuriFire control units, it is possible to add line redundancy to the ring networking (dotted lines). Here the connections (RS485) between the ports are doubled. 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 and B6-NET2-485.

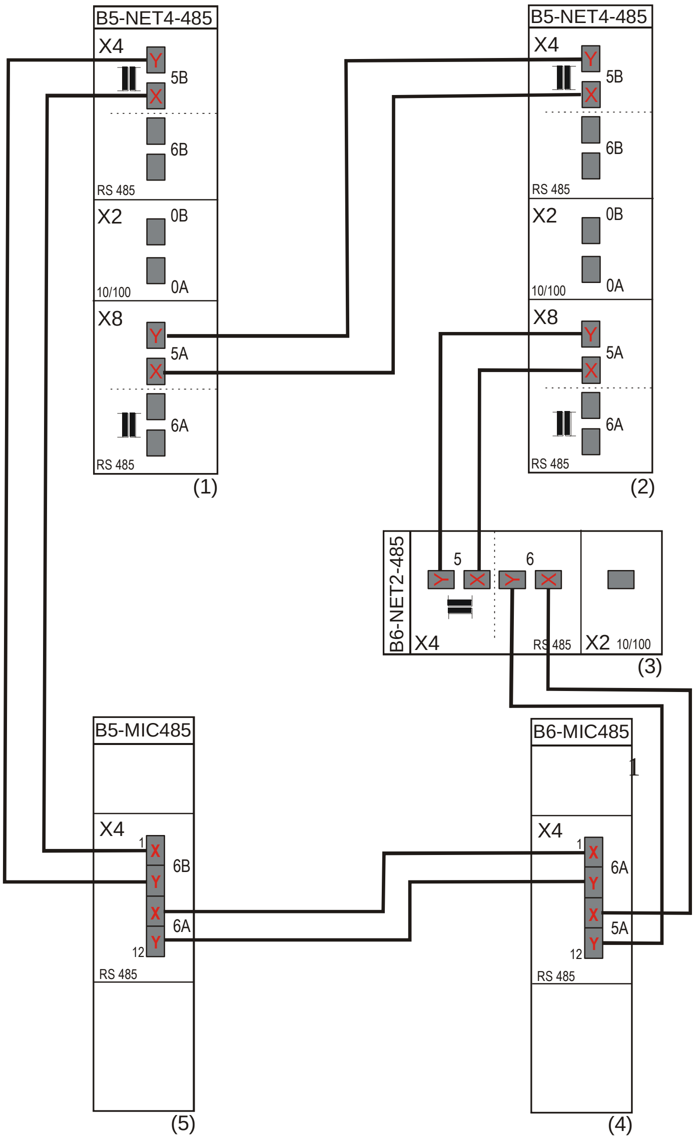

B5-NET4-485
X4
Y
X
5B
6B
RS 485
X2
0B
0A
10/100
X8
Y
X
5A
6A
RS 485
(1)
B5-NET4-485
X4
5B
6B
RS 485
X2
0B
0A
10/100
X8
5A
6A
RS 485
(2)
B6-NET2-485
5
6
X4
RS 485
X2 10/100
(3)
B5-MIC485
X4
1
6B
6A
12
RS 485
(5)
B6-MIC485
1
X4
1
6A
5A
12
RS 485
(4)

Fig. 125 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]

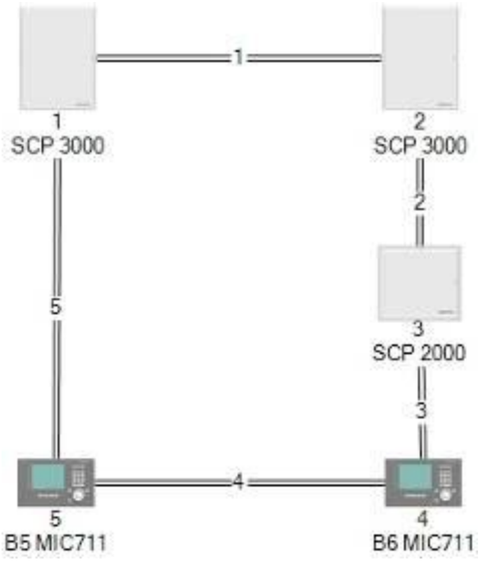

1
1
SCP 3000
2
SCP 3000
2
3
SCP 2000
3
5
4
5
B5 MIC711
4
B6 MIC711

Fig. 126 SecuriFire planning

Notice

Redundant connections must always be “X with X” and “Y with Y”. X/Y not permitted to cross-over (see Fig. 125).

In the SecuriLan networking concept the control units can be networked as a ring 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 unit network. This type of network can be implemented only with the B5-NET4-485 network board.

9.6.3 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!

9.6.4 Ground potential design of RS 485 LAN connection

Notice

For the LAN connection between two SCP2000 or SCP3000 control panels the cable screen can be connected to ground potential only on one side; otherwise, there may equalizing currents along the cable screen, especially over long distances.

On network boards Net 2/4-485 and on B5/6-MIC711 the following applies:
- The GND of connections 5A and 6B are connected to ground.
- The GND of connections 6A and 5B are galvanically isolated.

This must be taken into account when using cable with screen.

With SecuriLan RS485 the following must also be taken into account:

9.6.4.1 SCP3000: There are RJ45 / snap-in versions with and without screen end.

The following RJ45 / snap-in connection modules are available.
- Snap-in / connection modules RJ45/u art. no. 456.249736

The cable screen is isolated and is not through-connected (left in the figure).

- Snap-in / connection modules RJ45/s art. no. 456.245720

The cable screen is connected to ground potential and through-connected. (right in the figure)

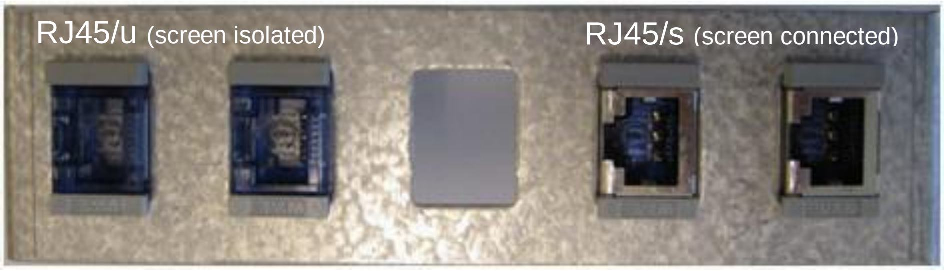


Fig. 127 RJ45 / snap-in connection modules

9.6.4.2 LAN connection to SCP 2000 or 3000 with and without screen connection.

Screen is connected to ground potential, left in the figure

1. Netport 5A/6B is not galvanically isolated from ground potential
2. Netport 5A/6B connects the cable screen with ground potential
3. Use patch cable with screening (metal RJ plug).
4. Snap-in RJ45s: Screen is through-connected and also connected to the housing

Screen is isolated, right in the figure

5. Netport 6A/5B is galvanically isolated from ground potential
6. Netport 6A/5B connects the cable screen with ground potential. This is a layout error on the network boards!
7. Use patch cable with screening (metal RJ plug).
8. Snap-in RJ45u: Screen is not through-connected and has no connection on the housing

The figure shows the connection and isolation of the cable screen for the SCP2000 and SCP3000 and is to be implemented in the following examples.

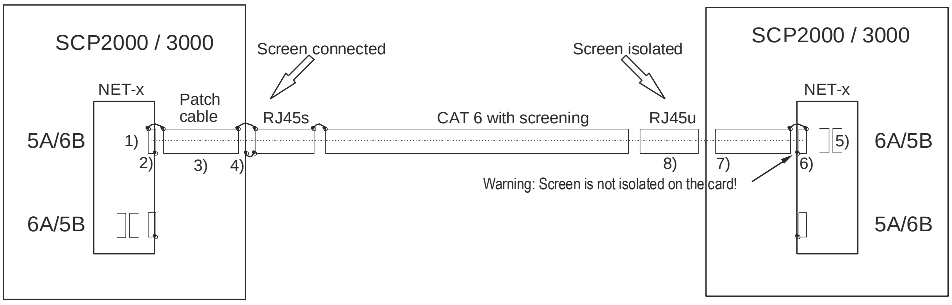

SCP2000 / 3000
Screen connected
Screen isolated
SCP2000 / 3000
NET-x
Patch cable
RJ45s
CAT 6 with screening
RJ45u
NET-x
5A/6B
1)
2)
3)
4)
8)
7)
6)
5)
6A/5B
Warning: Screen is not isolated on the card!
6A/5B
5A/6B

Fig. 128 LAN connection to SCP 2000 or 3000 with and without screen connection

Example 1: LAN connection between two SCP 2000 or 3000 control panels
Separation of the screen on the side of the galvanically isolated port 6A/5B.

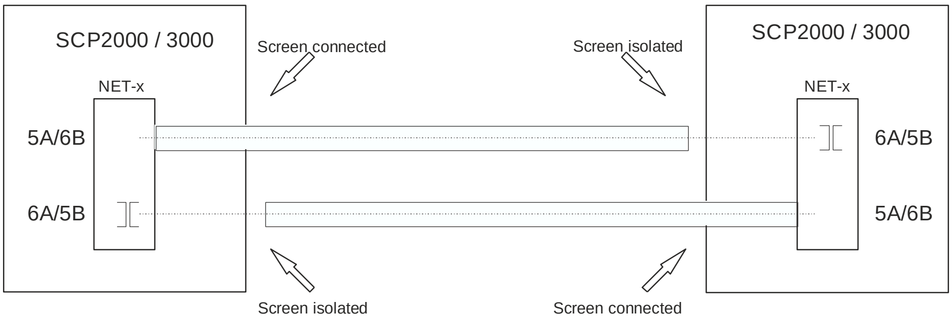

SCP2000 / 3000
Screen connected
Screen isolated
SCP2000 / 3000
NET-x
NET-x
5A/6B
6A/5B
6A/5B
5A/6B
Screen isolated
Screen connected

Fig. 129 LAN connection between two SCP 2000 or 3000 control panels

Example 2: LAN connection between two SCP 2000 or 3000 control panels and two MIC711s
Two SCP 2000/3000 with 2 MIC711s in between. Each MIC is supplied with power from the next SCP.
Left MIC711 is supplied with power from left SCP. The GND from left SCP reaches to right MIC711. For this reason the screen on right MIC711 is to be disconnected.

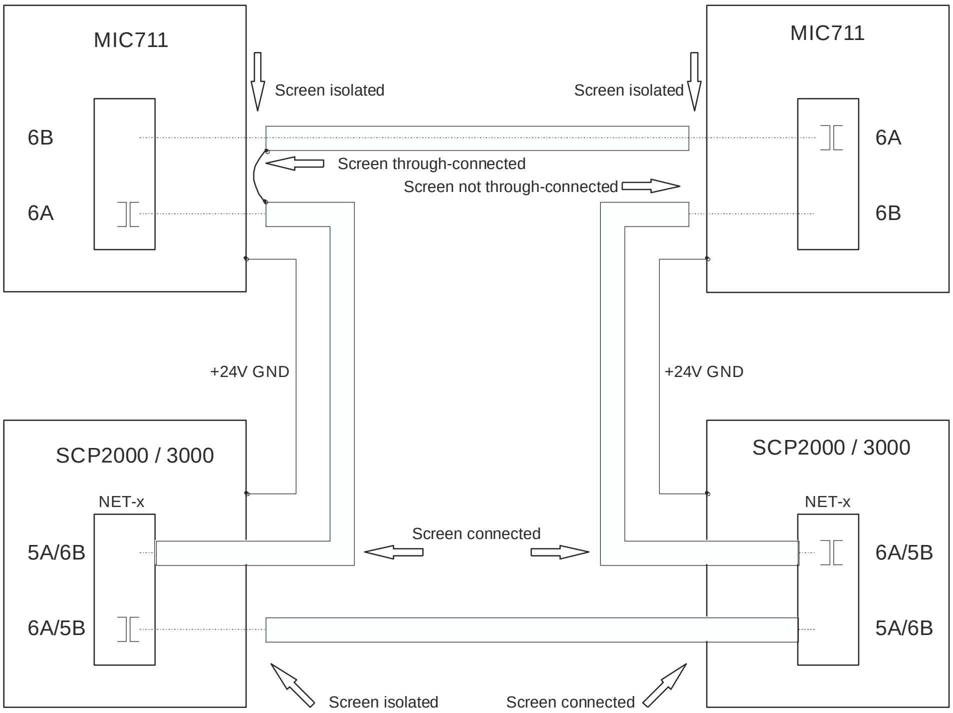

MIC711
6B
6A
Screen isolated
Screen isolated
MIC711
6A
6B
Screen through-connected
Screen not through-connected
+24V GND
+24V GND
SCP2000 / 3000
NET-x
5A/6B
6A/5B
Screen connected
SCP2000 / 3000
NET-x
6A/5B
5A/6B
Screen isolated
Screen connected

Fig. 130 LAN connection between two SCP 2000 or 3000 control panels and two MIC711s

Example 3: LAN connection between two SCP 2000 or 3000 control panels and one MIC711
The MIC711 is supplied with power from the left SCP. The GND of the left SCP via connection MIC711 6A-6B reaches to connection 5B of right SCP. Thus the screen must be isolated using Snap-in RJ45u when entering the right SCP.

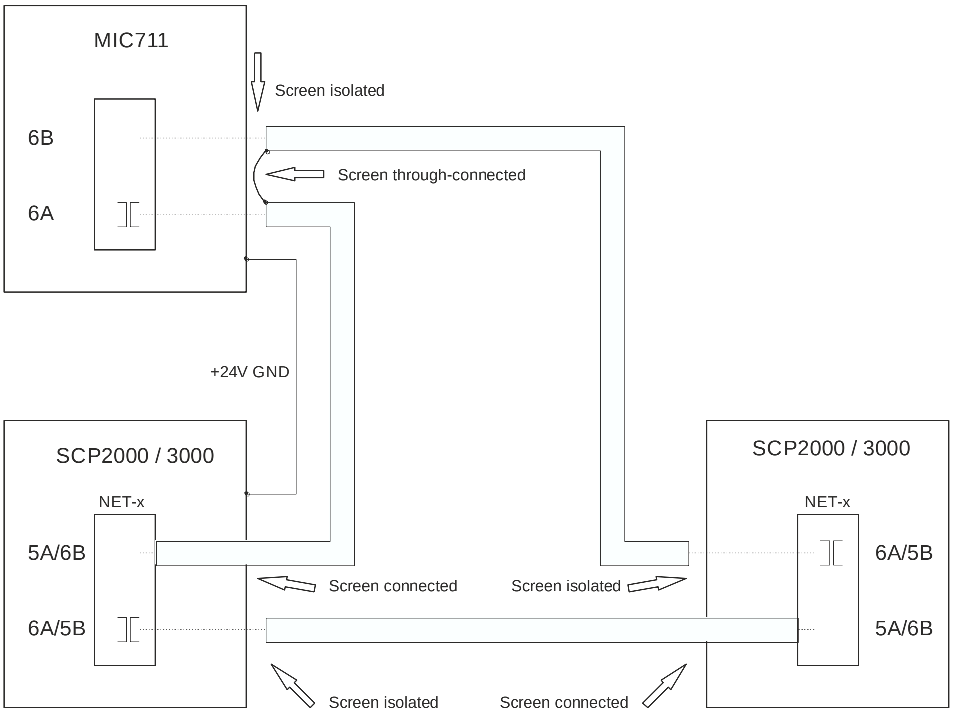

MIC711
Screen isolated
6B
6A
Screen through-connected
+24V GND
SCP2000 / 3000
NET-x
5A/6B
6A/5B
SCP2000 / 3000
NET-x
6A/5B
5A/6B
Screen connected
Screen isolated
Screen isolated
Screen connected

Fig. 131 LAN connection between two SCP 2000 or 3000 control panels and one MIC711

Example 4: LAN connection between two SCP 2000 or 3000 control panels and one MIC711

The MIC711 is supplied with power from the right SCP. The GND of the right SCP reaches only the MIC711.

The connection of left SCP to MIC711 is galvanically connected to GND of left SCP. The screen isolation is therefore on the MIC711.

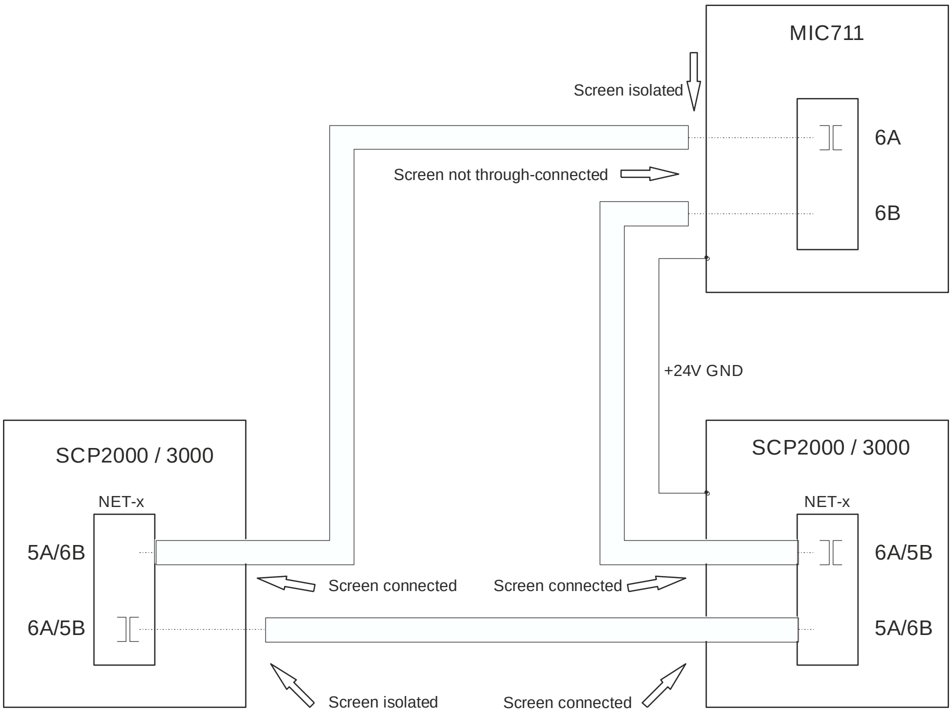

MIC711
Screen isolated
6A
Screen not through-connected
6B
+24V GND
SCP2000 / 3000
NET-x
5A/6B
6A/5B
Screen connected
Screen connected
SCP2000 / 3000
NET-x
6A/5B
5A/6B
Screen isolated
Screen connected

Fig. 132 LAN connection between two SCP 2000 or 3000 control panels and one MIC711

9.6.5 SecuriLan connection with 10/100TX interface

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

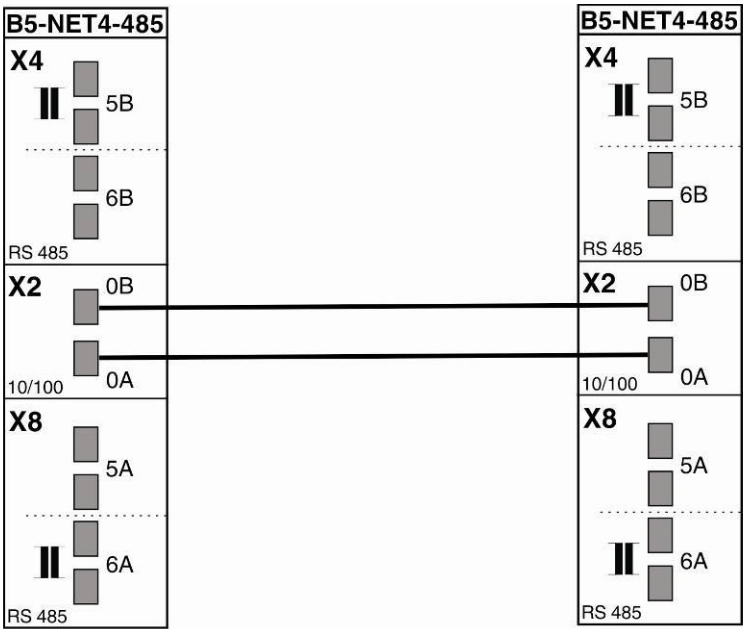

B5-NET4-485
X4
5B
6B
RS 485
X2
0B
10/100
0A
X8
5A
6A
RS 485
B5-NET4-485
X4
5B
6B
RS 485
X2
0B
10/100
0A
X8
5A
6A
RS 485

Fig. 133 SecuriLan connection with 10/100TX interface

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

Notice

A redundant connection is possible only with a B5-NET2-485 or B5-NET4-485.

9.6.6 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 networking is possible only when non-redundant.

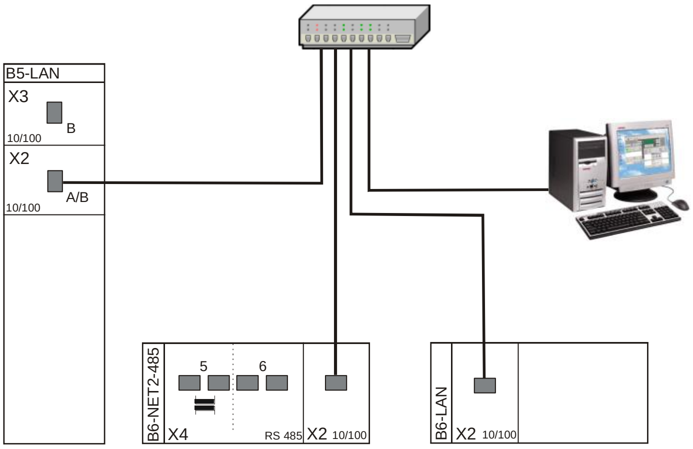

B5-LAN
X3
B
10/100
X2
A/B
10/100
B6-NET2-485
5
6
X4
RS 485
X2
10/100
B6-LAN
X2
10/100

Fig. 134 Non-redundant networking

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

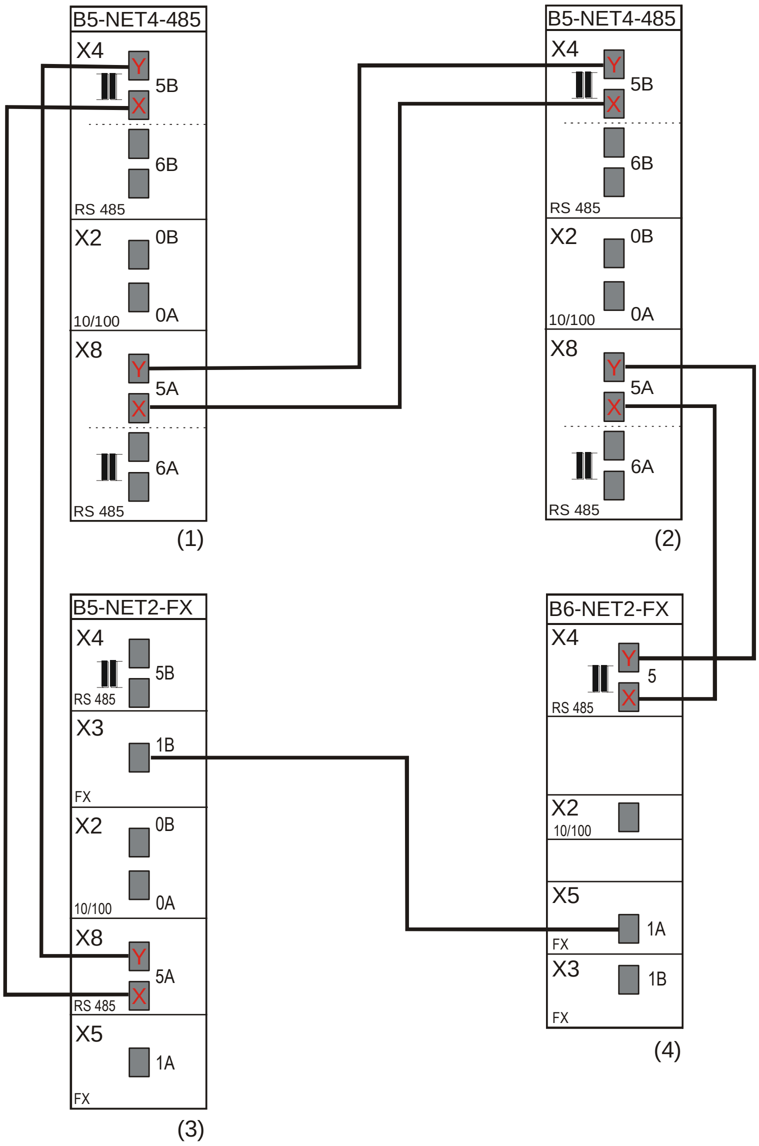
Notice

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.

9.6.7 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.


B5-NET4-485
X4
Y
X
5B
6B
RS 485
X2
0B
0A
10/100
X8
5A
6A
(1)
B5-NET4-485
(2)
B5-NET2-FX
X3
1B
FX
X5
1A
(3)
B6-NET2-FX
5
(4)

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	

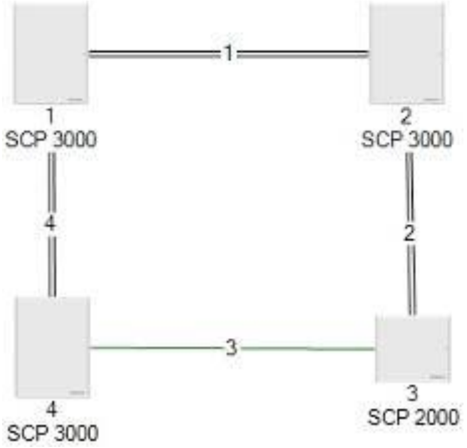

1
1
SCP 3000
2
SCP 3000
4
2
3
4
SCP 3000
3
SCP 2000

Fig. 135 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!

9.6.8 Example of connecting a SecuriLan

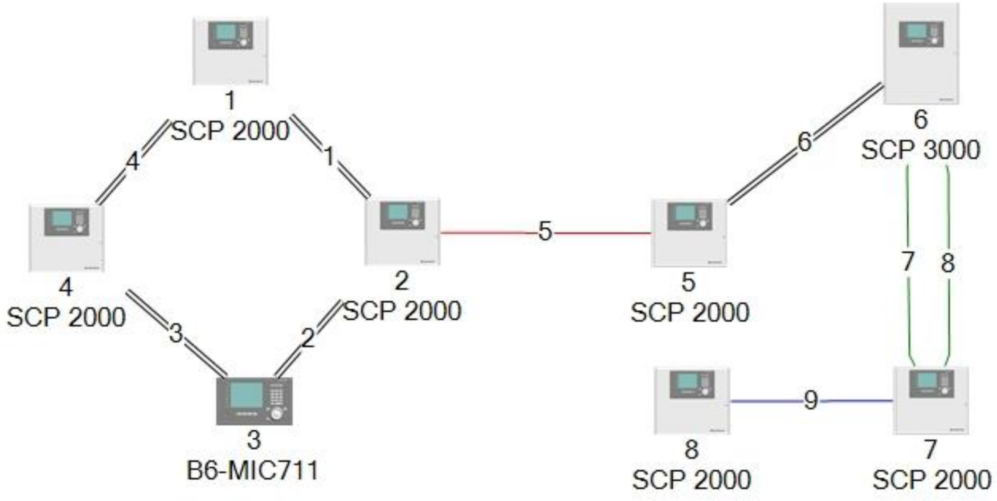


Fig. 136 Example of connecting a SecuriLan

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.

9.7 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 3000 is via the LAN interface of the network boards B5-MCB15, B5-NET2-485, B5-NET4-485, B5-NET2-FX or B5-LAN. In all cases VirtualMICs must be enabled on the corresponding control panels as planned.

Notice

The LAN interface of the MCB15 is inactive if a board is equipped with network function (B5-NET2-485, B5-NET4-485, B5-NET2-FX or B5-LAN).

9.7.1 Local SecuriFire VirtualMIC connection

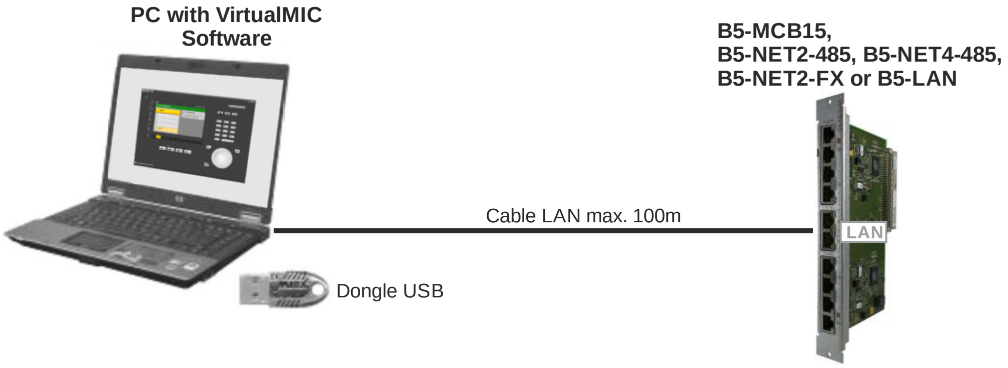

PC with VirtualMIC Software
B5-MCB15,
B5-NET2-485, B5-NET4-485,
B5-NET2-FX or B5-LAN
Cable LAN max. 100m
LAN
Dongle USB

Fig. 137 SecuriFire VirtualMIC, local access via LAN on B5-NET4-485

This connection is available as a cable. When connecting SecuriFire VirtualMIC (PC) via a LAN interface to the B5-MCB15, the max. distance between B5-MCB15 and PC is 100 m.

9.7.2 SecuriFire VirtualMIC connection via switch

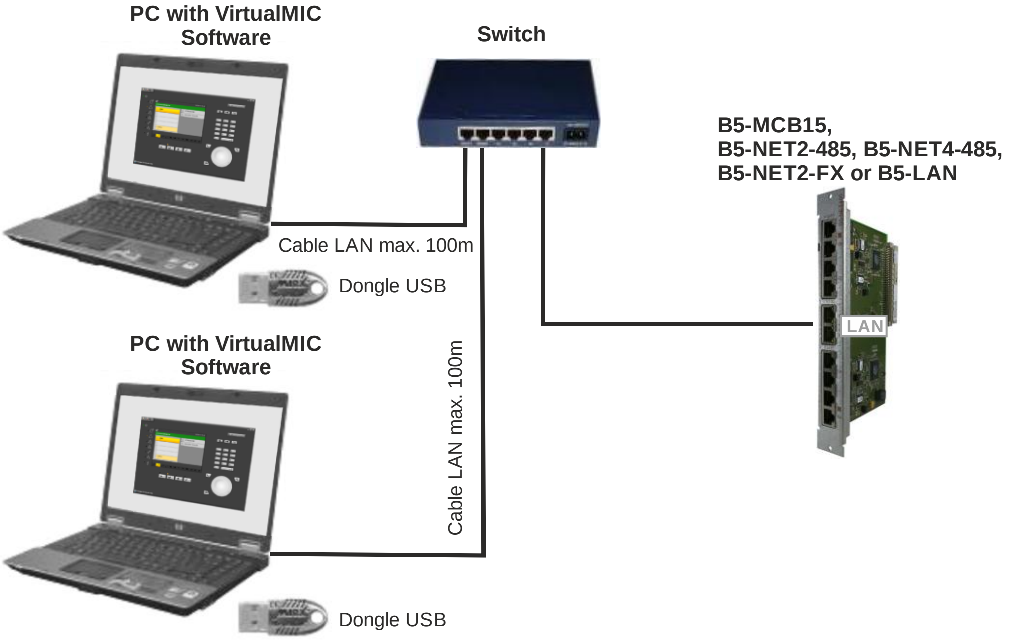

PC with VirtualMIC Software
Switch
B5-MCB15,
B5-NET2-485, B5-NET4-485,
B5-NET2-FX or B5-LAN
Cable LAN max. 100m
Dongle USB
LAN
PC with VirtualMIC Software
Cable LAN max. 100m
Dongle USB

Fig. 138 SecuriFire VirtualMIC, access via switch on B5-NET4-485

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

9.7.3 SecuriFire VirtualMIC access via intranet/internet

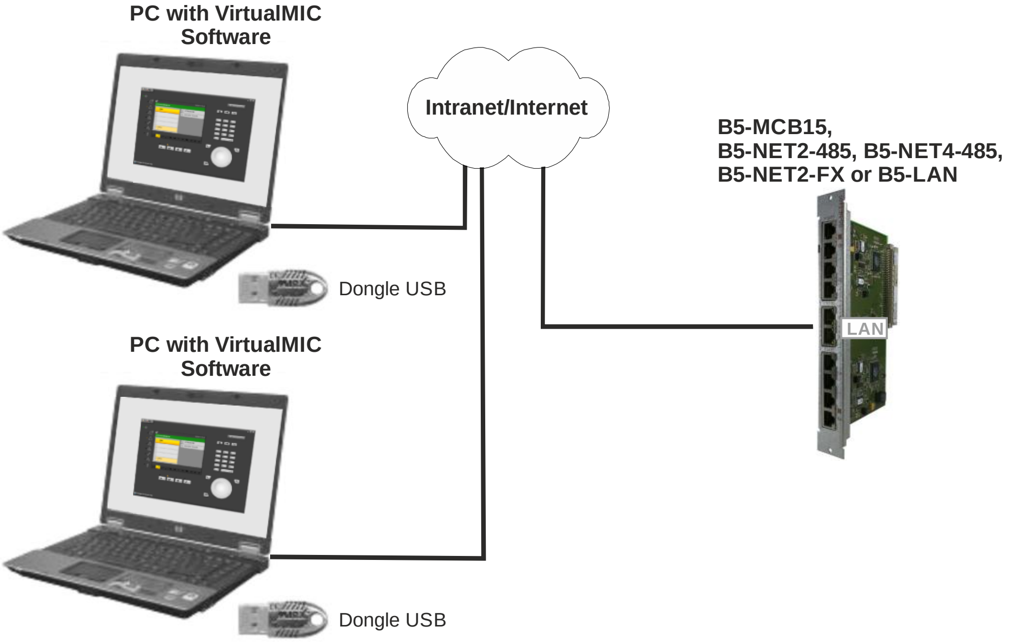

PC with VirtualMIC Software
Intranet/Internet
B5-MCB15,
B5-NET2-485, B5-NET4-485,
B5-NET2-FX or B5-LAN
Dongle USB
LAN
PC with VirtualMIC Software
Dongle USB

Fig. 139 SecuriFire VirtualMIC, access via intranet on B5-NET4-485

This connection must be configured accordingly. When connecting SecuriFire VirtualMIC (PC) via a LAN interface to the B5-NET2-485, B5-NET4-485, B5-NET2-FX or B5-LAN, the max. distance for a direct connection between control panel and PC is 100 m.

10 Interface board

10.1 B3-USI4 universal interface board

The B3-USI4 is a universal communication board and serves primarily to connect SecuriFire 3000 to management systems and to actuate external printers, pagers, ComBOX, telephone servers, etc. The connection to management systems can be in the form of a ring, redundant or single. The selection of operation mode of each interface pair is performed by programming.

Line 0: ISP or SPP
Line 1: ISP (if not yet Line 0 = ISP)

More information about the B3-USI4 can be found in the Technical Description T 811 109.

10.1.1 Interfaces

X1	Connector plug for B5-BUS
X2 and X4	Line/ring interface 0A/0B (RS485, RS422 or RS232)
X3 and X5	Line/ring interfaces 1A/1B (RS485 or RS422)
X6 to X10	Jumpers for setting the operating mode of interfaces X2 to X5

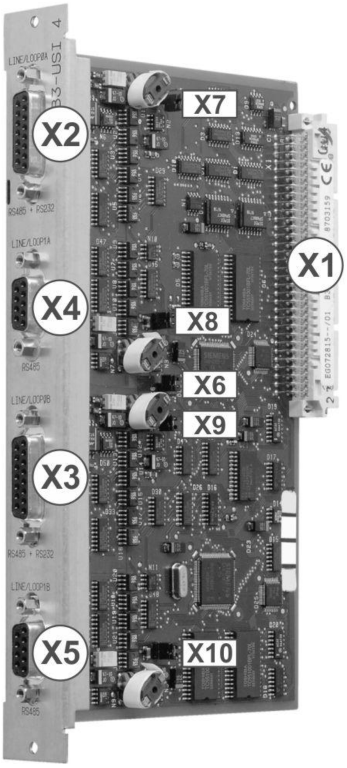


Fig. 140 B3-USI4 interfaces

10.1.2 Line/ring interfaces 0A/0B

Line/ring connection 0A (X2)

Mode					
RS422	RS485	RS232	Terminal	Terminal	Designation
TxD0A+	L0AX+		1	9	GND0A
TxD0A-	L0AX-		2	10	
RxD0A+	L0AY+		3	11	GND0A
RxD0A-	L0AY-		4	12	
		TXD0A-	5	13	GND0A
		RTS0A+	6	14	
		RXD0A-	7	15	
		CTS0A+	8		

Line/ring connection 0B (X4)

Mode					
RS422	RS485	RS232	Terminal	Terminal	Designation
TxD0B+	L0BX+		1	9	GND0B
TxD0B-	L0BX-		2	10	
RxD0B+	L0BY+		3	11	GND0B
RxD0B-	L0BY-		4	12	
		TXD0B-	5	13	GND0B
		RTS0B+	6	14	
		RXD0B-	7	15	
		CTS0B+	8		

Electrical:	RS485, RS422 or RS232
Coverage:	RS485 RS422 max. 1,200 m RS232 max. 15 m
Transmission type:	asynchronous serial
Baud rate:	57.6 kBaud
Direction:	Ring connection: bidirectional, half-duplex Line connection: bidirectional, full-duplex
Protection:	EMC, ESD by means of Transzorp diodes
Mechanical design:	15-pin Sub-D plug, metallised map case (screen connection)
Cable:	2 pairs twisted unscreened, or according to specification

10.1.3 Line/ring connection 1A/1B

Line/ring connection 1A (X3)

Mode				
RS422	RS485	Terminal	Terminal	Designation
TxD1A+	L1AX+	1	6	GND1A
TxD1A-	L1AX-	2	7	
RxD1A+	L1AY+	3	8	GND1A
RxD1A-	L1AY-	4	9	
		5		

Line/ring connection 1B (X5)

Mode				
RS422	RS485	Terminal	Terminal	Designation
TxD1B+	L1BX+	1	6	GND1B
TxD1B-	L1BX-	2	7	
RxD1B+	L1BY+	3	8	GND1B
RxD1B-	L1BY-	4	9	
		5		

Electrical:	RS485, RS422
Coverage:	max. 1,200 m
Transmission type:	asynchronous serial
Baud rate:	57.6 kBaud
Direction	Ring connection: bidirectional, half-duplex Line connection: bidirectional, full-duplex
Protection:	EMC, ESD by means of Transzorp diodes
Mechanical design:	15-pin Sub-D plug, metallised map case (screen connection)
Cable:	2 pairs twisted unscreened, or according to specification

10.1.4 Jumper setting X6 to X10

Jumpers X6 to X10 serve to set the required mode of operation of plug 0A/0B and/or 1A/1B and must be configured in accordance with their programmed function to LINE or RING. The LINE mode of operation is used exclusively for NON-REDUNDANT connection of superordinate and subordinate peripheral systems (management systems, printers, etc.). The RING mode of operation is used for REDUNDANT peripheral systems (management systems).

Function	**Jumper for plug 0A/0B**		**Jumper for plug 1A/1B**
	RS485/422	**RS232**	**RS485/422**
Integrated standard protocol, redundant	LOOP X6 ● ● X7 ● ● X9 ● ●		LOOP X8 ● ● X10 ● ●
Integrated standard protocol, non-redundant	LINE X6 ● ● X7 ▬ X9 ▬	LINE X6 ▬ X7 ● ● X9 ● ●	LINE X8 ▬ X10 ▬
SPP driver			Not possible

10.1.5 Technical data

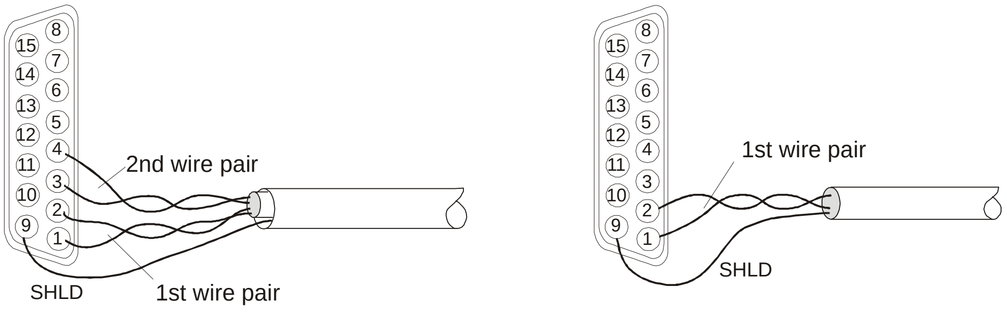
Voltage supply:	internal via B5-BUS	
Power consumption:	20 mA	
Ambient temperature:	-5°C to +50°C	
Interfaces:	2 x 2 redundant half-duplex RS 485, also full-duplex operation, galvanically isolated 2 redundant RS232 interfaces, galvanically isolated	
Line/ring interfaces 0A/0B (X2/X4)		
Electrical:	RS485, RS422 or RS232	
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)	
Line/ring interfaces 1A/1B (X3/X5)		
Electrical:	RS485, RS422	
Coverage:	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)	

10.1.6 Compatibility information

Possible slots in the unit rack:	2 to 8
SecuriFire Studio:	from release 1.0
Per SecuriFire 3000 control unit:	max. 5 pcs. B3-USI4

10.1.7 Plug assignment with screened cabling

15-pin plug X2/X4 (0A/0B)

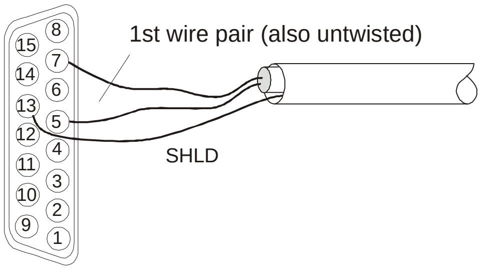


RS485 redundant connection or
RS422 non-redundant connection

RS485 non-redundant connection

8
15
7
14
6
13
5
12
4
11
3
10
2
9
1
2nd wire pair
SHLD
1st wire pair
1st wire pair
SHLD

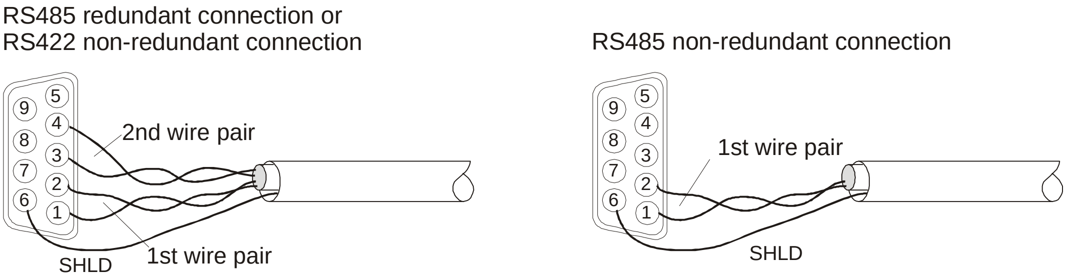
RS232 non-redundant connection



8
15
7
14
6
13
5
12
4
11
3
10
2
9
1
1st wire pair (also untwisted)
SHLD

Fig. 141 Plug assignment with screened cabling

9-pin plug X3/X5 (1A/1B)


RS485 redundant connection or
RS422 non-redundant connection

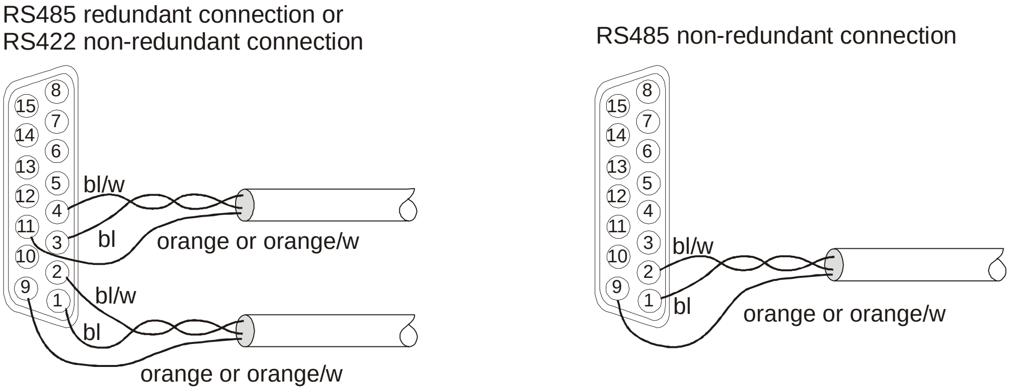
RS485 non-redundant connection

9
8
7
6
5
4
3
2
1
2nd wire pair
1st wire pair
SHLD
9
8
7
6
5
4
3
2
1
1st wire pair
SHLD

Fig. 142 Plug assignment with screened cabling

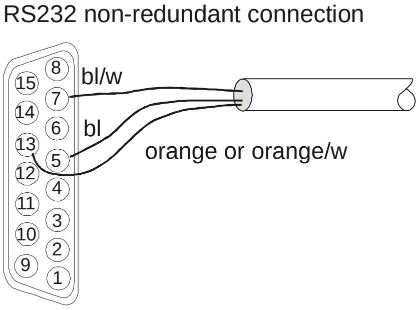
10.1.8 Plug assignment with unscreened cabling

15-pin plug X2/X4 (0A/0B)


RS485 redundant connection or
RS422 non-redundant connection

RS485 non-redundant connection

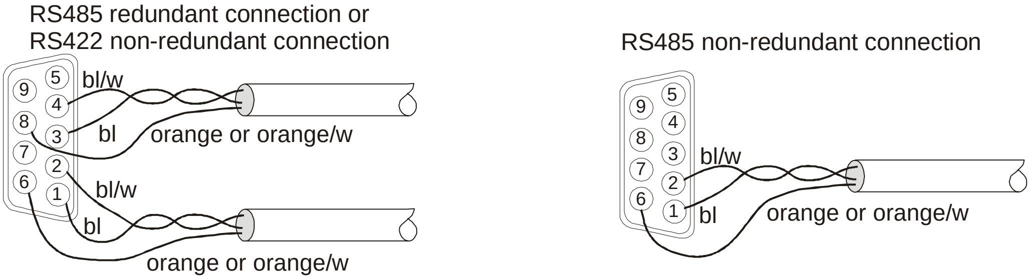
15
14
13
12
11
10
9
8
7
6
5
4
3
2
1
bl/w
bl
orange or orange/w
bl/w
bl
orange or orange/w
15
14
13
12
11
10
9
8
7
6
5
4
3
2
1
bl/w
bl
orange or orange/w


RS232 non-redundant connection

15
14
13
12
11
10
9
8
7
6
5
4
3
2
1
bl/w
bl
orange or orange/w

Fig. 143 Plug assignment with unscreened cabling

9-pin plug X3/X5 (1A/1B)


RS485 redundant connection or
RS422 non-redundant connection

RS485 non-redundant connection

9
8
7
6
5
4
3
2
1
bl/w
bl
orange or orange/w
bl/w
bl
orange or orange/w
9
8
7
6
5
4
3
2
1
bl/w
bl
orange or orange/w

Fig. 144 Plug assignment with unscreened cabling

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

10.2.1 Connecting management system / ESPA to RS232 interface

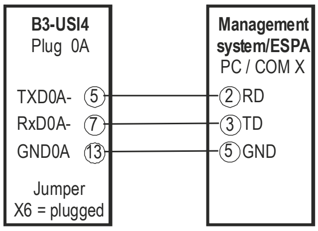

B3-USI4
Plug 0A
TXD0A- 5
RxD0A- 7
GND0A 13
Jumper
X6 = plugged
Management
system/ESPA
PC / COM X
2 RD
3 TD
5 GND

Fig. 145 Connecting management system to RS232 interface

This connection is optionally available as a cable. When connecting the management system / ESPA via an RS232 interface to the B3-USI4, the max. distance between B3-USI4 and PC/ESPA is 15 m.

10.2.2 Connecting management system via converter

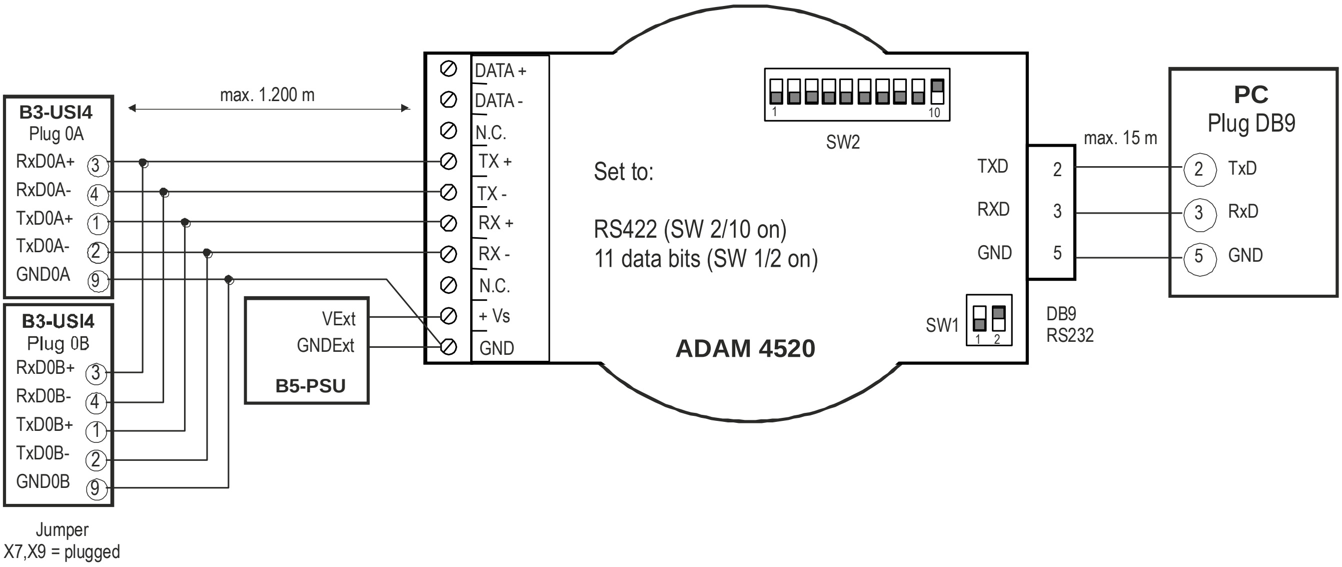

max. 1.200 m
B3-USI4
Plug 0A
RxD0A+ 3
RxD0A- 4
TxD0A+ 1
TxD0A- 2
GND0A 9
B3-USI4
Plug 0B
RxD0B+ 3
RxD0B- 4
TxD0B+ 1
TxD0B- 2
GND0B 9
Jumper
X7,X9 = plugged
VExt
GNDExt
B5-PSU
DATA +
DATA -
N.C.
TX +
TX -
RX +
RX -
N.C.
+ Vs
GND
1
10
SW2
Set to:
RS422 (SW 2/10 on)
11 data bits (SW 1/2 on)
ADAM 4520
TXD
RXD
GND
2
3
5
SW1
1 2
DB9
RS232
max. 15 m
PC
Plug DB9
2 TxD
3 RxD
5 GND

Fig. 146 Connecting management system via converter

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

10.3.1 Connection to an interface-redundant management system via RS232

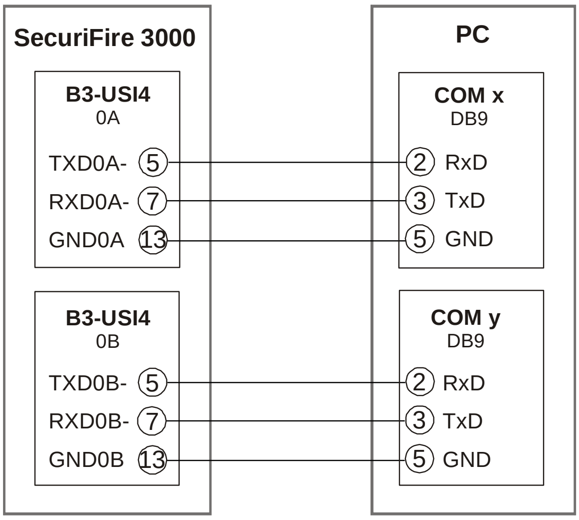

SecuriFire 3000
B3-USI4
0A
TXD0A- 5
RXD0A- 7
GND0A 13
B3-USI4
0B
TXD0B- 5
RXD0B- 7
GND0B 13
PC
COM x
DB9
2 RxD
3 TxD
5 GND
COM y
DB9
2 RxD
3 TxD
5 GND

Fig. 147 Connection to an interface-redundant management system via RS232

10.3.2 Connection to an interface-redundant management system via RS422

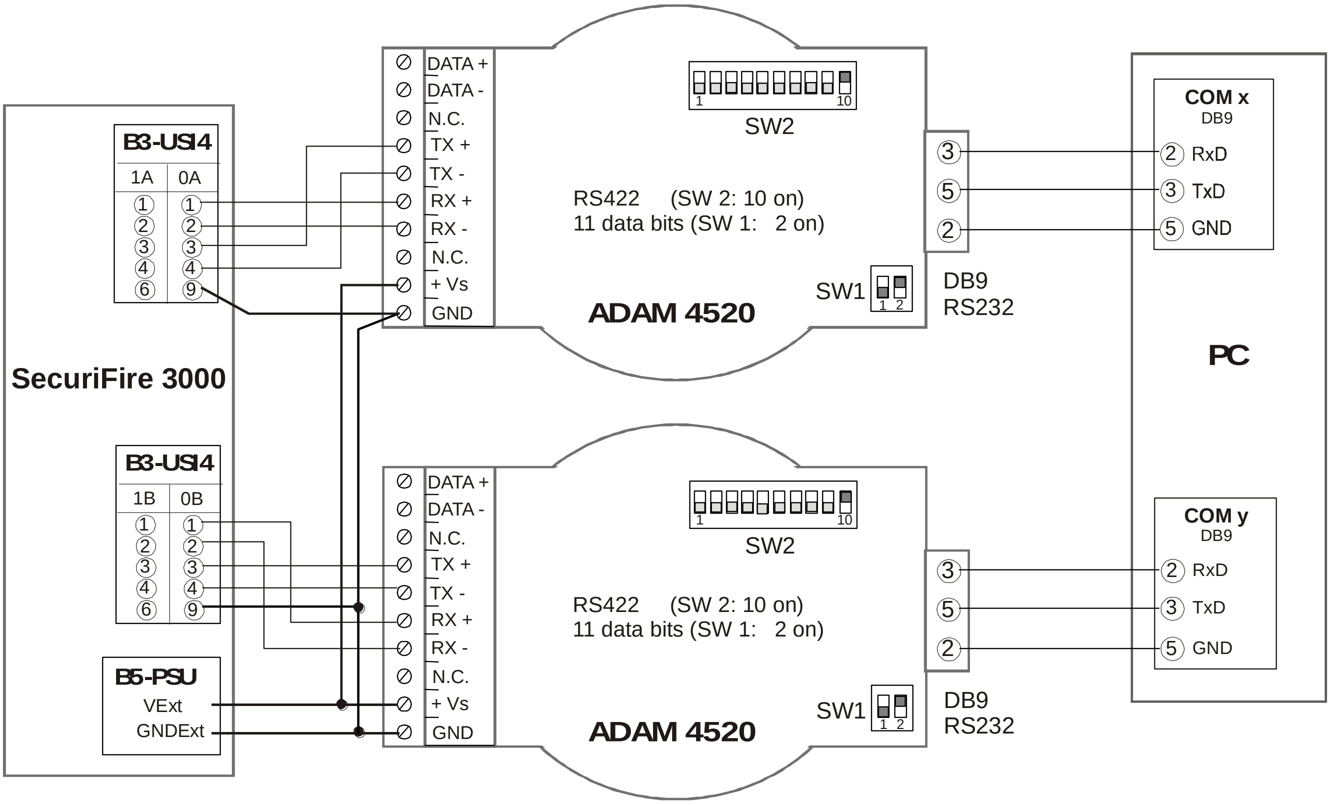

SecuriFire 3000
B3-USI4
1A
0A
B3-USI4
1B
0B
B5-PSU
VExt
GNDExt
DATA +
DATA -
N.C.
TX +
TX -
RX +
RX -
N.C.
+ Vs
GND
SW2
RS422 (SW 2: 10 on)
11 data bits (SW 1: 2 on)
SW1
ADAM 4520
DB9
RS232
PC
COM x
DB9
2 RxD
3 TxD
5 GND
COM y
DB9
2 RxD
3 TxD
5 GND

Fig. 148 Connection to an interface-redundant management system via RS422

10.4 ComBOX connection

The serial connection of the ComBOX to the SecuriFire 3000 is implemented exclusively via the B3-USI4 universal interface board. By using an ADAM 4520 interface converter between ComBOX and control unit, a coverage distance of 1,200 m can be achieved.

10.4.1 Serial connection of the ComBOX to B3-USI4

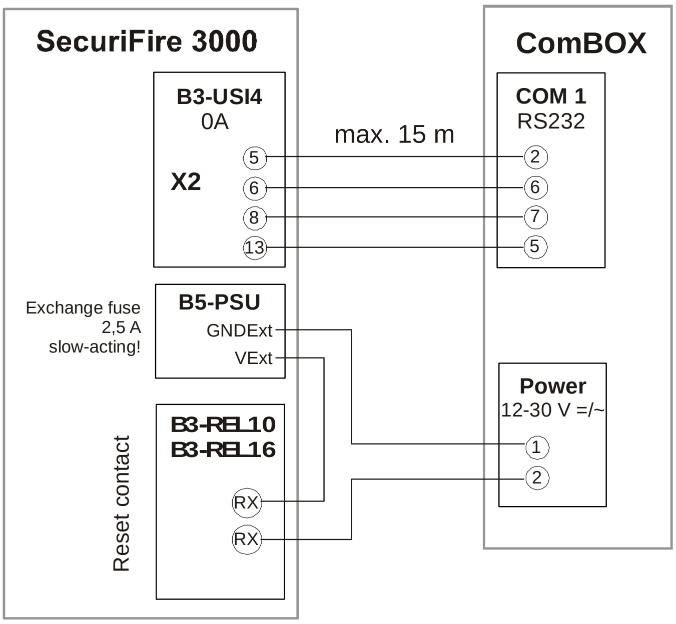

SecuriFire 3000
B3-USI4
0A
X2
5
6
8
13
max. 15 m
ComBOX
COM 1
RS232
2
6
7
5
Exchange fuse
2,5 A
slow-acting!
B5-PSU
GNDExt
VExt
B3-REL10
B3-REL16
Reset contact
RX
RX
Power
12-30 V =/~
1
2

Fig. 149 Serial connection of the ComBOX to B3-USI4

10.4.2 Serial connection of the ComBOX via ADAM 4520

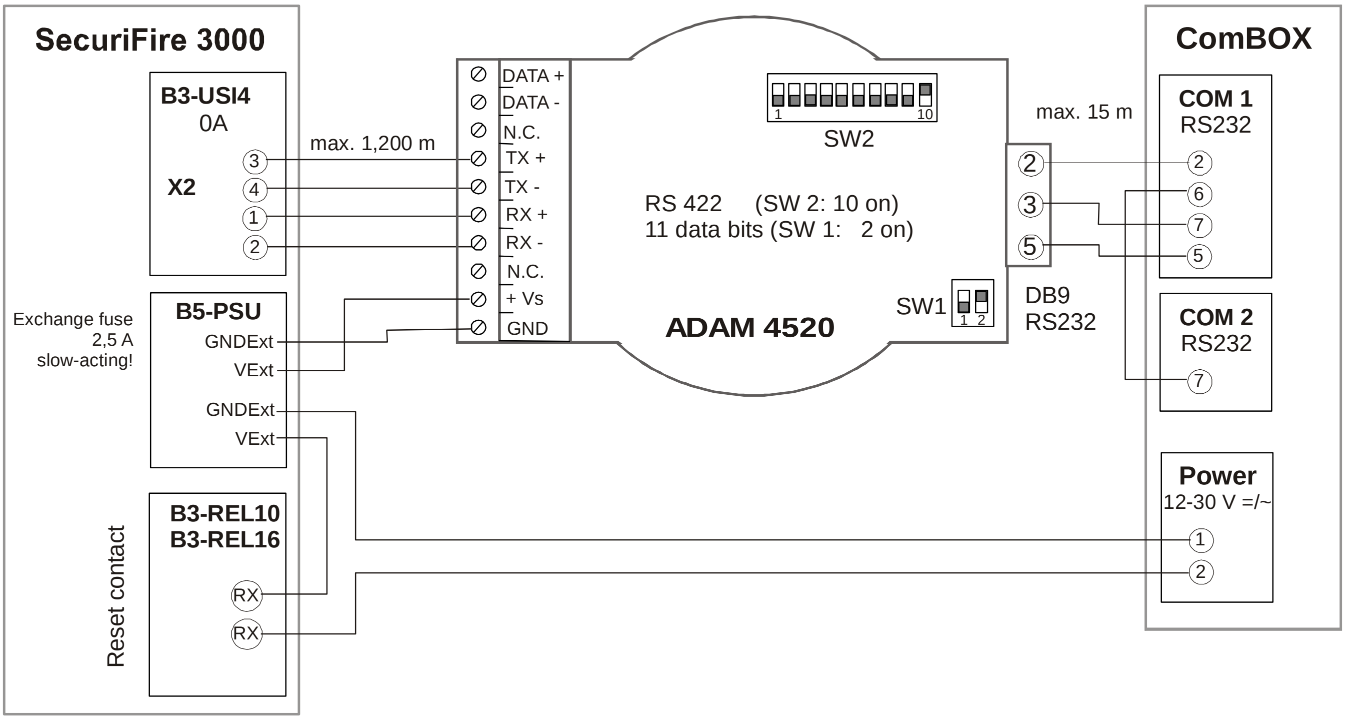

SecuriFire 3000
B3-USI4
0A
X2
3
4
1
2
max. 1,200 m
Exchange fuse
2,5 A
slow-acting!
B5-PSU
GNDExt
VExt
GNDExt
VExt
B3-REL10
B3-REL16
Reset contact
RX
RX
DATA +
DATA -
N.C.
TX +
TX -
RX +
RX -
N.C.
+ Vs
GND
1
10
SW2
RS 422 (SW 2: 10 on)
11 data bits (SW 1: 2 on)
ADAM 4520
SW1
1 2
2
3
5
DB9
RS232
max. 15 m
ComBOX
COM 1
RS232
2
6
7
5
COM 2
RS232
7
Power
12-30 V =/~
1
2

Fig. 150 Serial connection of the ComBOX via ADAM 4520

10.4.3 Connection of the ComBOX to SecuriFire via contacts

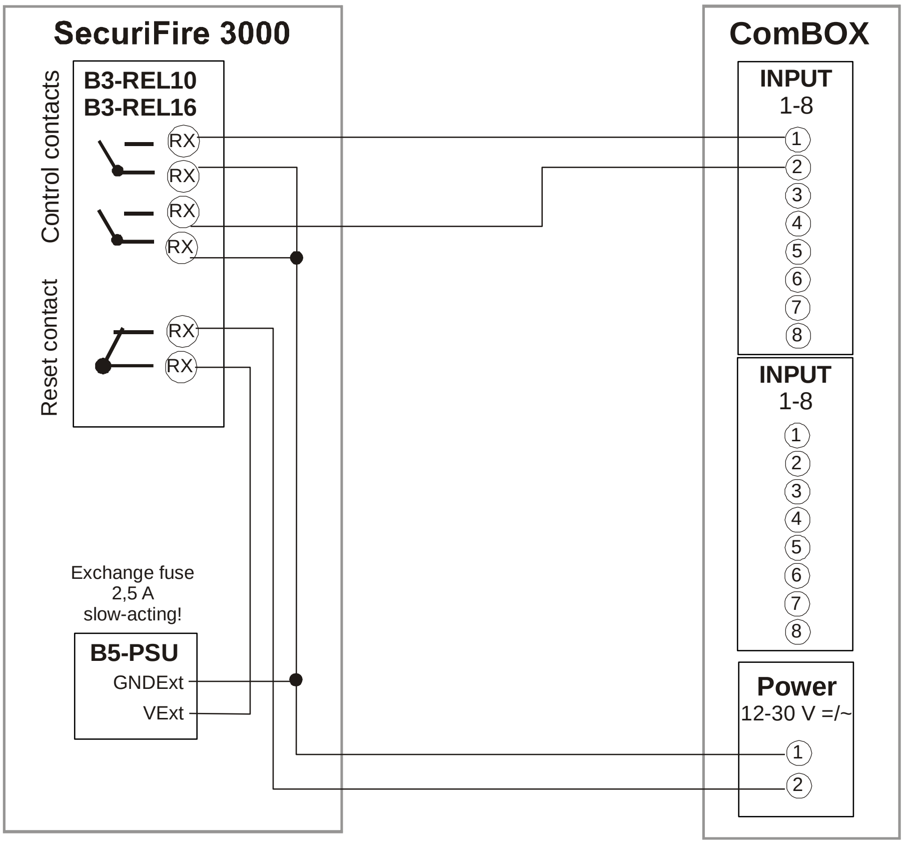

SecuriFire 3000
Control contacts
Reset contact
B3-REL10
B3-REL16
RX
Exchange fuse
2,5 A
slow-acting!
B5-PSU
GNDExt
VExt
ComBOX
INPUT
1-8
①
②
③
④
⑤
⑥
⑦
⑧
Power
12-30 V =/~

Fig. 151 Connection of the ComBOX to SecuriFire via contacts

10.5 Connecting external printer

Notice

External printers can be connected to the SecuriFire 3000 exclusively via B3-USI4 interfaces 0A and 0B that are programmed to “Printer” operation mode. The printer must have an RS232 (or Centronics) interface.

10.5.1 External printer on RS232 interface

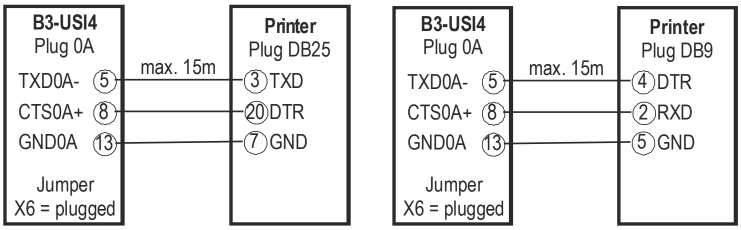

B3-USI4
Plug 0A
TXD0A- ⑤
CTS0A+ ⑧
GND0A ⑬
Jumper
X6 = plugged
max. 15m
Printer
Plug DB25
③TXD
⑳DTR
⑦GND
B3-USI4
Plug 0A
TXD0A- ⑤
CTS0A+ ⑧
GND0A ⑬
Jumper
X6 = plugged
max. 15m
Printer
Plug DB9
④DTR
②RXD
⑤GND

Fig. 152 External printer on RS232 interface

When connecting a printer via an RS232 interface to the B3-USI4, the max. distance between B3-USI4 and PC is 15 m.

10.5.2 External parallel printer on RS422 interface with converter

When connecting a parallel printer via RS422 interface with a data converter W&T to the B3-USI4, the max. distance between B3-USI4 and converter is 1,200 m.

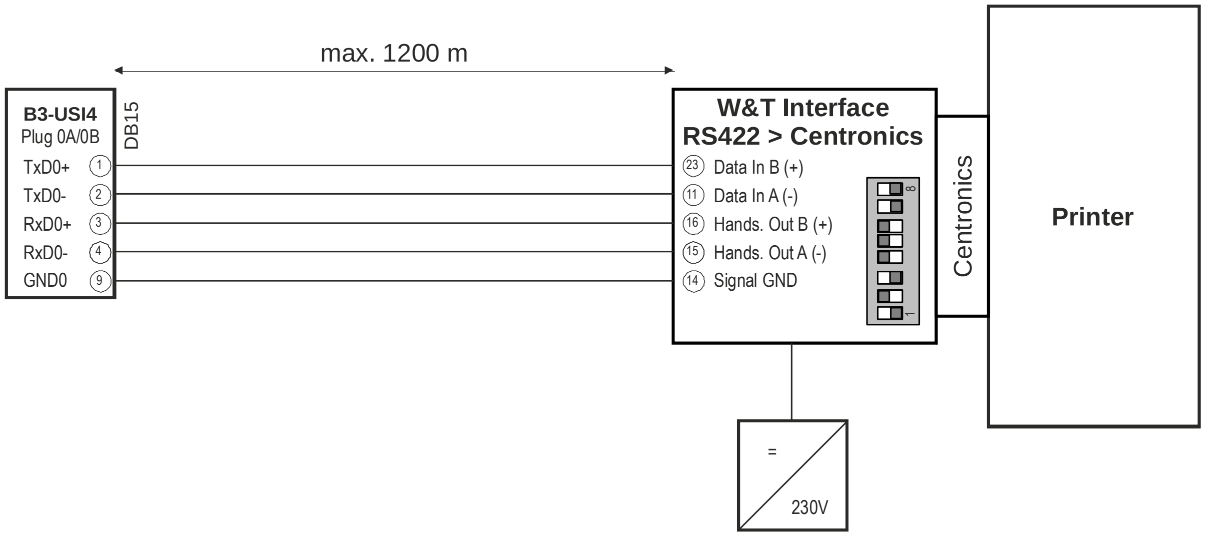

max. 1200 m
B3-USI4
Plug 0A/0B
TxD0+ 1
TxD0- 2
RxD0+ 3
RxD0- 4
GND0 9
DB15
W&T Interface
RS422 > Centronics
23 Data In B (+)
11 Data In A (-)
16 Hands. Out B (+)
15 Hands. Out A (-)
14 Signal GND
8
1
Centronics
Printer
=
230V

Fig. 153 External 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

11 SecuriLine eXtended

11.1 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)

11.2 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)	Sirens activatable simultaneously						
High 92dB(A) / Mid 81dB(A) / Low 69dB(A)	23/40/78	23/40/78	23/40/64	10/18/36	10/18/36	10/18/36	10/18/36
MCD573X-SP/CT (Speech)	Text messages activatable simultaneously						
	23	23	23	10	10	10	10
MCD573X	250	230	64	128	64	128	64
CCD573X	230	230	64	128	64	128	64
BA-FOL	not compatible			23	16	10	10
BA-SOL Low/High				32/16	16/8	29/14	16/8
BA-AIM (Opt.)				20/10	12/5	20/8	12/5
BA-IM4				32	16	32	16
BA-REL4							
BA-OI3							
BA-IOM							
BA-RGW				4	2	4	2
MCD573				128	64	128	64

11.3 Connecting SecuriLine eXtended

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.

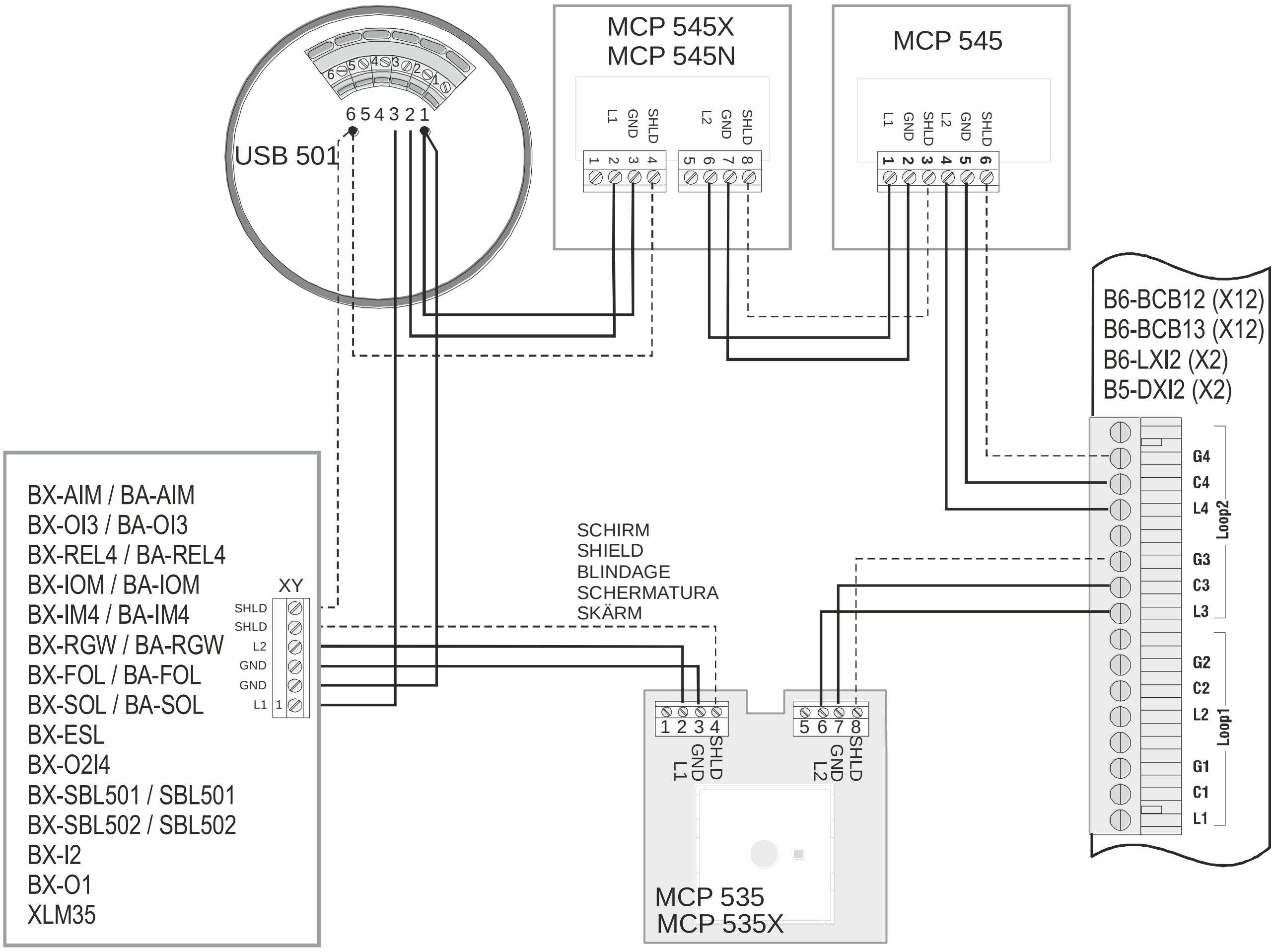

USB 501
6 5 4 3 2 1
MCP 545X
MCP 545N
L1
GND
SHLD
L2
GND
SHLD
1 2 3 4 5 6 7 8
MCP 545
L1
GND
SHLD
L2
GND
SHLD
1 2 3 4 5 6
B6-BCB12 (X12)
B6-BCB13 (X12)
B6-LXI2 (X2)
B5-DXI2 (X2)
G4
C4
L4
Loop2
G3
C3
L3
G2
C2
L2
Loop1
G1
C1
L1
BX-AIM / BA-AIM
BX-OI3 / BA-OI3
BX-REL4 / BA-REL4
BX-IOM / BA-IOM
BX-IM4 / BA-IM4
BX-RGW / BA-RGW
BX-FOL / BA-FOL
BX-SOL / BA-SOL
BX-ESL
BX-O2I4
BX-SBL501 / SBL501
BX-SBL502 / SBL502
BX-I2
BX-O1
XLM35
XY
SHLD
SHLD
L2
GND
GND
L1
1
SCHIRM
SHIELD
BLINDAGE
SCHERMATURA
SKÄRM
1 2 3 4
SHLD
GND
L1
5 6 7 8
SHLD
GND
L2
MCP 535
MCP 535X

Fig. 154 SecuriLine eXtended connection

11.4 Stub line connection

Notice

According to EN 54 standards max. 32 detectors (sum of automatic + manual detectors) must be installed on a stub line.

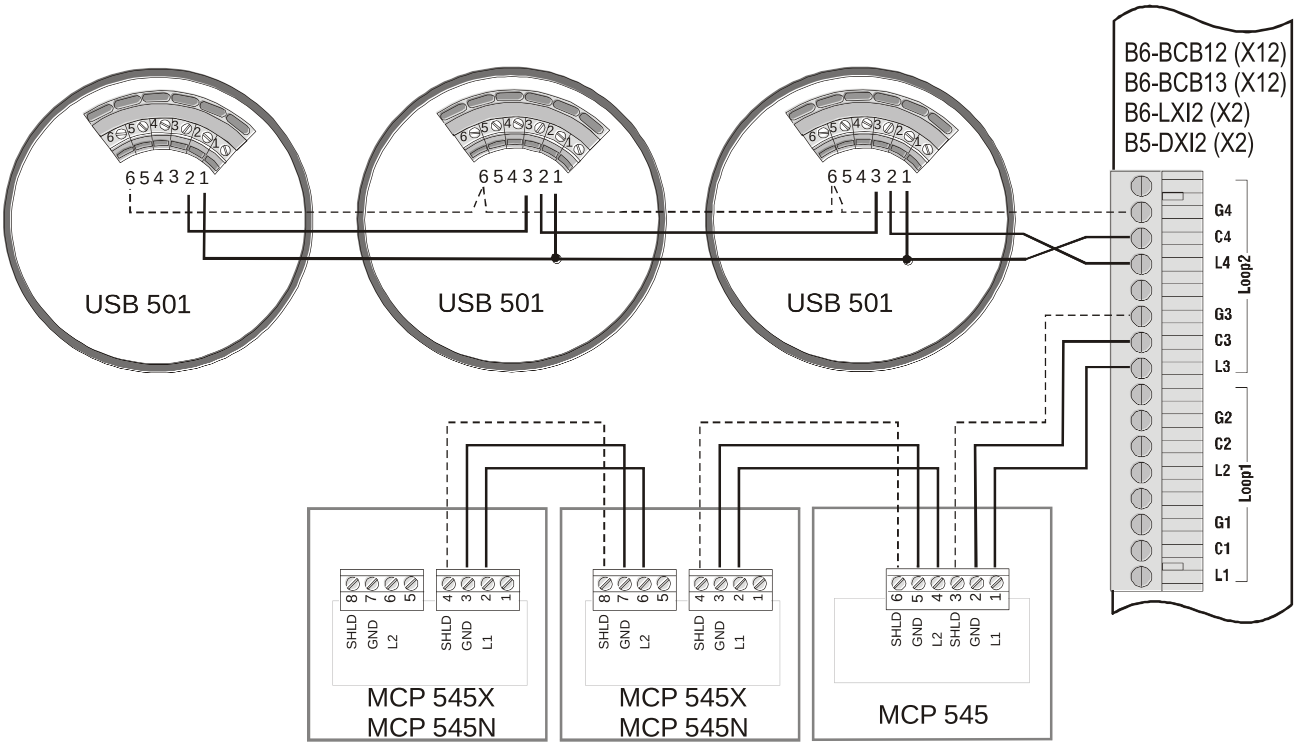

B6-BCB12 (X12)
B6-BCB13 (X12)
B6-LXI2 (X2)
B5-DXI2 (X2)
G4
C4
L4
Loop2
G3
C3
L3
G2
C2
L2
Loop1
G1
C1
L1
6 5 4 3 2 1
USB 501
USB 501
USB 501
8 7 6 5
4 3 2 1
SHLD
GND
L2
SHLD
GND
L1
MCP 545X
MCP 545N
MCP 545X
MCP 545N
6 5 4 3 2 1
SHLD
GND
L2
SHLD
GND
L1
MCP 545

Fig. 155 Stub line connection

11.5 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.

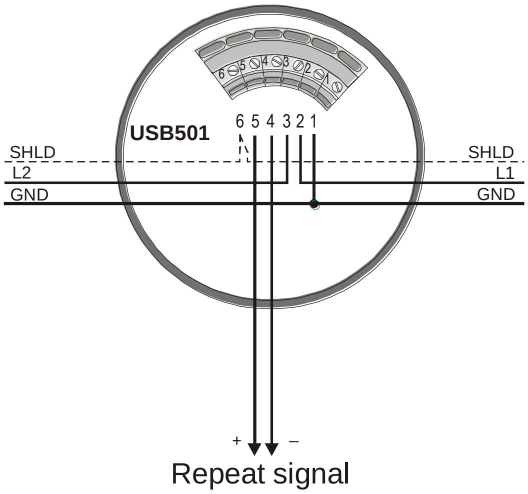

USB501
6 5 4 3 2 1
SHLD
L2
GND
SHLD
L1
GND
+
–
Repeat signal

Fig. 156 B5-DXI2, USB 501 connection

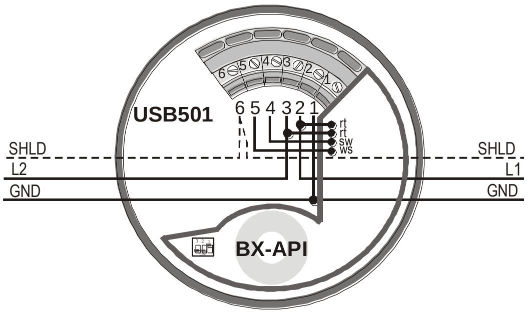

USB501
6 5 4 3 2 1
rt
rt
sw
ws
SHLD
L2
GND
SHLD
L1
GND
BX-API

Fig. 157 RAL720X connection

11.6 MCP 535X and MCP 545X manual call point connection

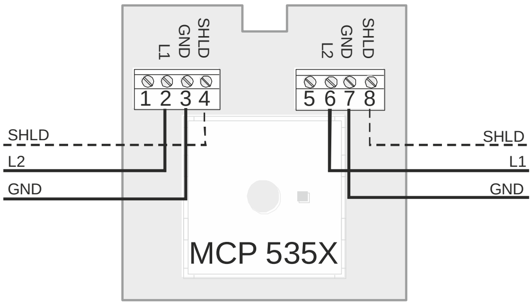

SHLD
GND
L1
SHLD
GND
L2
1 2 3 4
5 6 7 8
SHLD
L2
GND
SHLD
L1
GND
MCP 535X

Fig. 158 B5-DXI2, MCP 535x connection

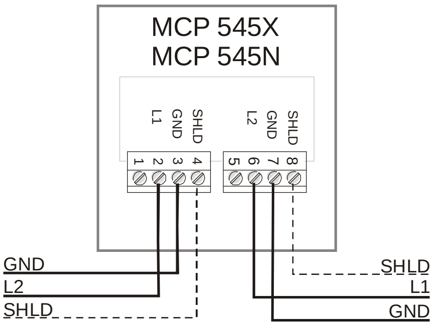

MCP 545X
MCP 545N
L1
GND
SHLD
L2
GND
SHLD
1 2 3 4
5 6 7 8
GND
L2
SHLD
SHLD
L1
GND

Fig. 159 B5-DXI2, MCP 545x connection

11.7 Connection of BX-AIM advanced input module

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

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

Collective detector and monitored input

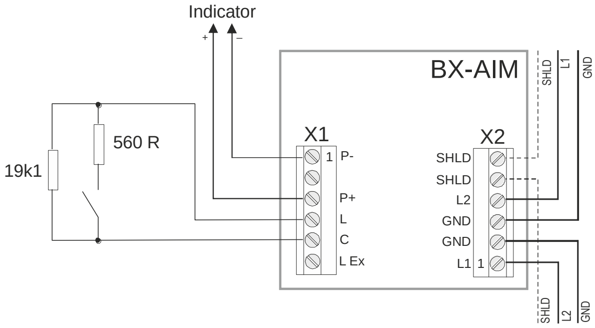

Indicator
+
–
560 R
19k1
BX-AIM
X1
1 P-
P+
L
C
L Ex
X2
SHLD
SHLD
L2
GND
GND
L1 1
SHLD
L1
GND
SHLD
L2
GND

Fig. 160 BX-AIM, collective detector and/or monitored input

Extinguishing input in accordance with VdS

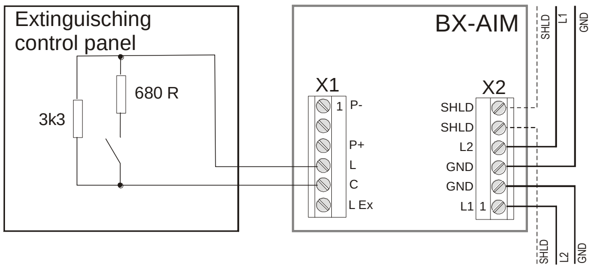

Extinguisching control panel
680 R
3k3
BX-AIM
X1
1 P-
P+
L
C
L Ex
X2
SHLD
SHLD
L2
GND
GND
L1 1
SHLD
L1
GND
SHLD
L2
GND

Fig. 161 BX-AIM extinguishing input in accordance with VdS

MMD130 Ex-i in Ex area

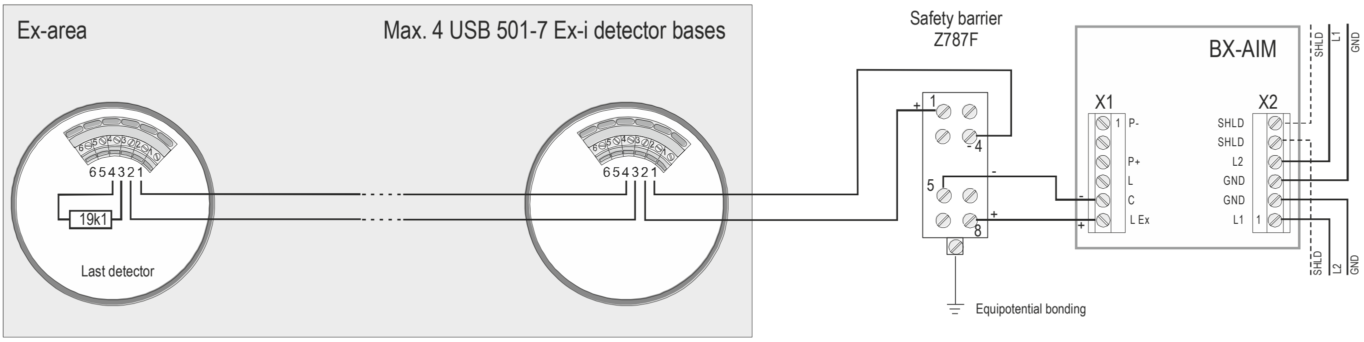

Ex-area
Max. 4 USB 501-7 Ex-i detector bases
654321
19k1
Last detector
654321
Safety barrier
Z787F
1
4
5
8
+
-
Equipotential bonding
BX-AIM
X1
1 P-
P+
L
C
L Ex
X2
SHLD
SHLD
L2
GND
GND
L1 1
SHLD
L1
GND
SHLD
L2
GND

Fig. 162 BX-AIM, MMD130 Ex-i in Ex area

11.8 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.

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

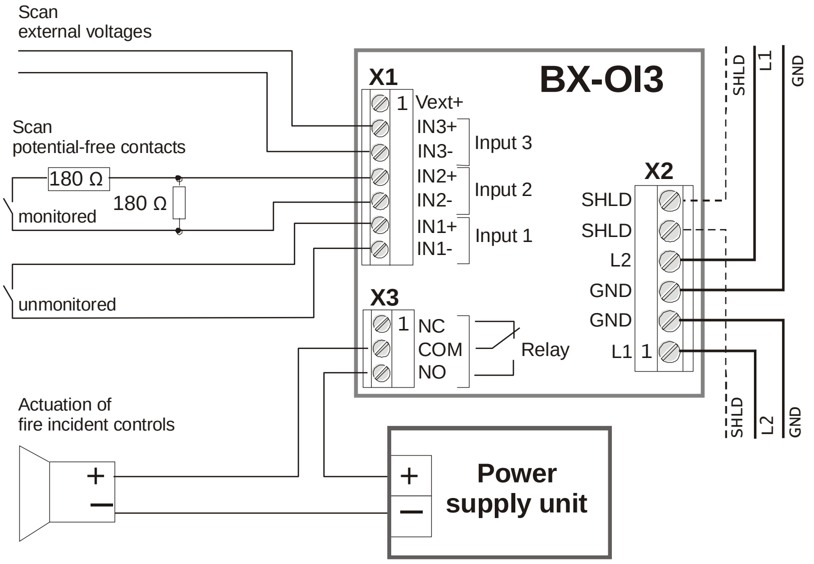

Scan
external voltages
Scan
potential-free contacts
180 Ω
180 Ω
monitored
unmonitored
Actuation of
fire incident controls
+
—
X1
BX-OI3
1 Vext+
IN3+
IN3-
Input 3
IN2+
IN2-
Input 2
IN1+
IN1-
Input 1
X2
SHLD
SHLD
L2
GND
GND
L1 1
X3
1 NC
COM
NO
Relay
SHLD
L1
GND
SHLD
L2
GND
+
—
Power
supply unit

Fig. 163 BX-OI3, input/output module connection

Connection of special detectors

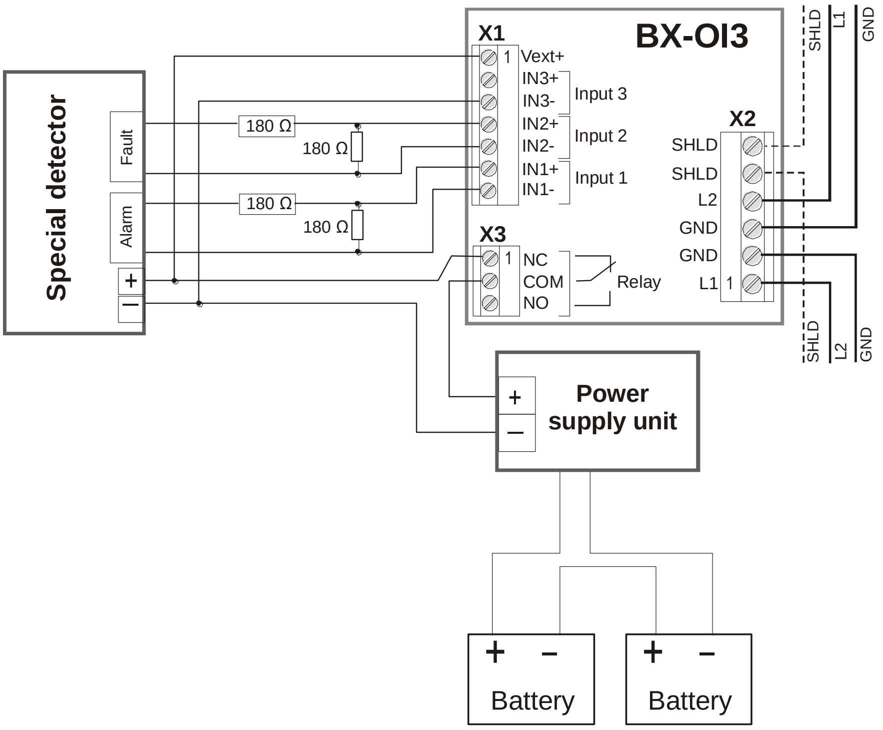

Special detector
Fault
Alarm
+
—
180 Ω
180 Ω
180 Ω
180 Ω
X1
BX-OI3
1 Vext+
IN3+
IN3-
Input 3
IN2+
IN2-
Input 2
IN1+
IN1-
Input 1
X2
SHLD
SHLD
L2
GND
GND
L1 1
X3
1 NC
COM
NO
Relay
SHLD
L1
GND
SHLD
L2
GND
+
—
Power
supply unit
+ –
Battery
+ –
Battery

Fig. 164 BX-OI3, connection of special detectors

11.9 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.

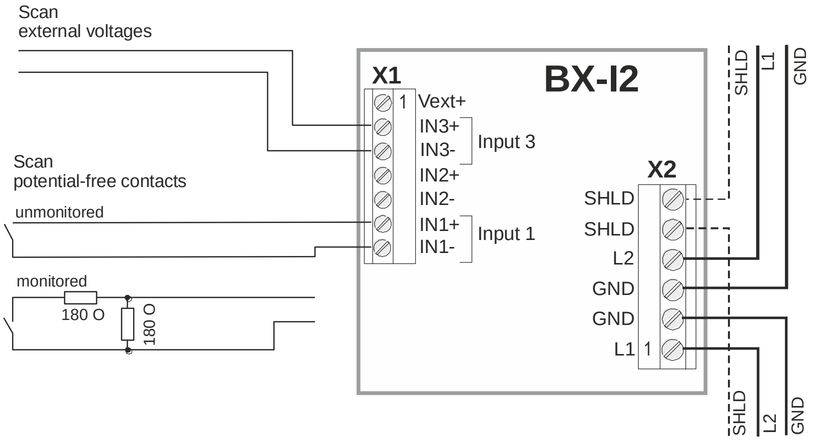

Scan
external voltages
Scan
potential-free contacts
unmonitored
monitored
180 O
180 O
X1
BX-I2
1
Vext+
IN3+
IN3-
Input 3
IN2+
IN2-
IN1+
IN1-
Input 1
X2
SHLD
SHLD
L2
GND
GND
L1
1
SHLD
L1
GND
SHLD
L2
GND

Fig. 165 BX-I2, input module connection

Connection of special detectors

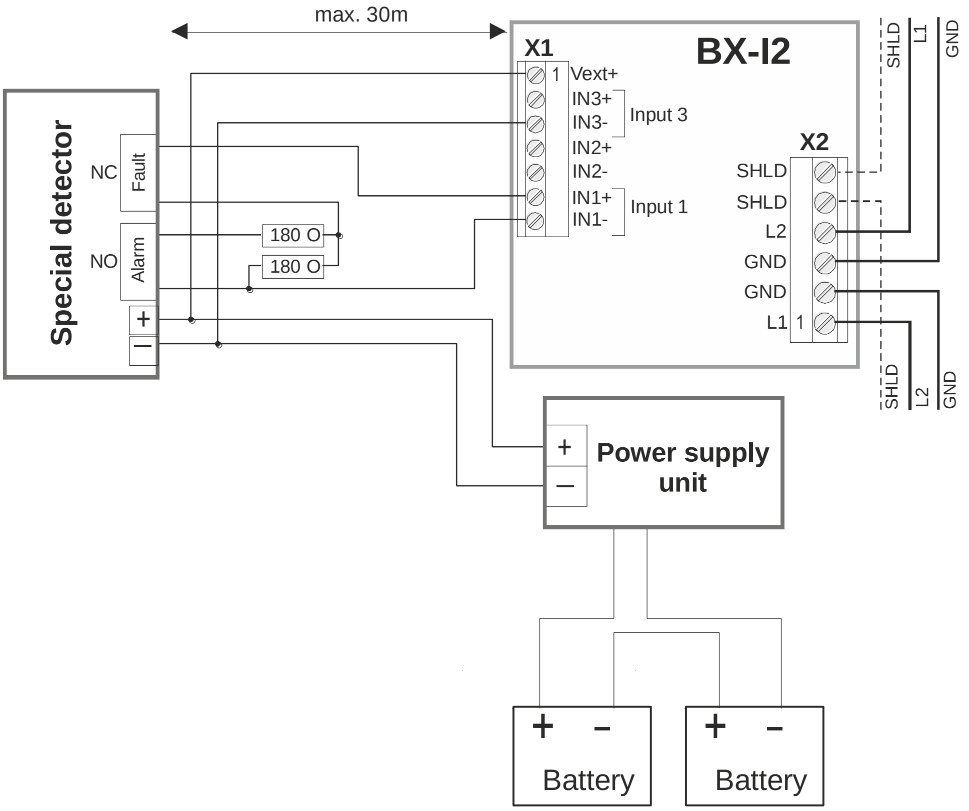

max. 30m
Special detector
NC
Fault
NO
Alarm
+
–
180 O
180 O
X1
BX-I2
1
Vext+
IN3+
IN3-
Input 3
IN2+
IN2-
IN1+
IN1-
Input 1
X2
SHLD
SHLD
L2
GND
GND
L1
1
SHLD
L1
GND
SHLD
L2
GND
+
–
Power supply unit
+
–
Battery
+
–
Battery

Fig. 166 BX-OI3, Connection of special detectors

11.10 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.

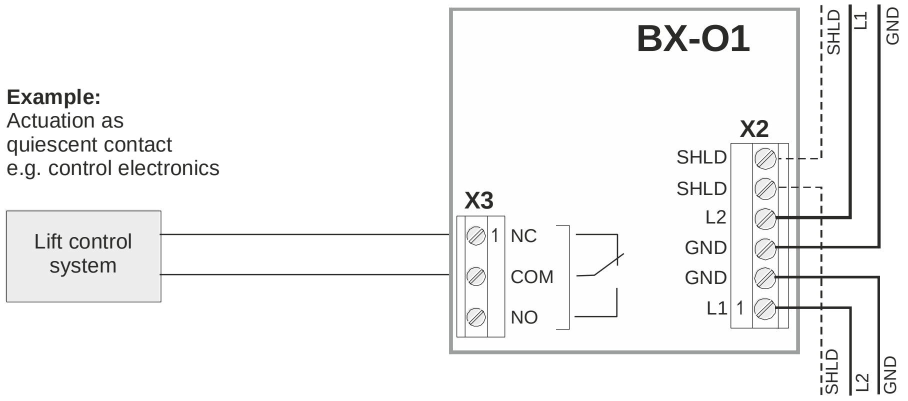

BX-O1
Example:
Actuation as
quiescent contact
e.g. control electronics
Lift control system
X3
1
NC
COM
NO
X2
SHLD
SHLD
L2
GND
GND
L1
1
SHLD
L1
GND
SHLD
L2
GND

Fig. 167 BX-O1, output module connection

11.11 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.

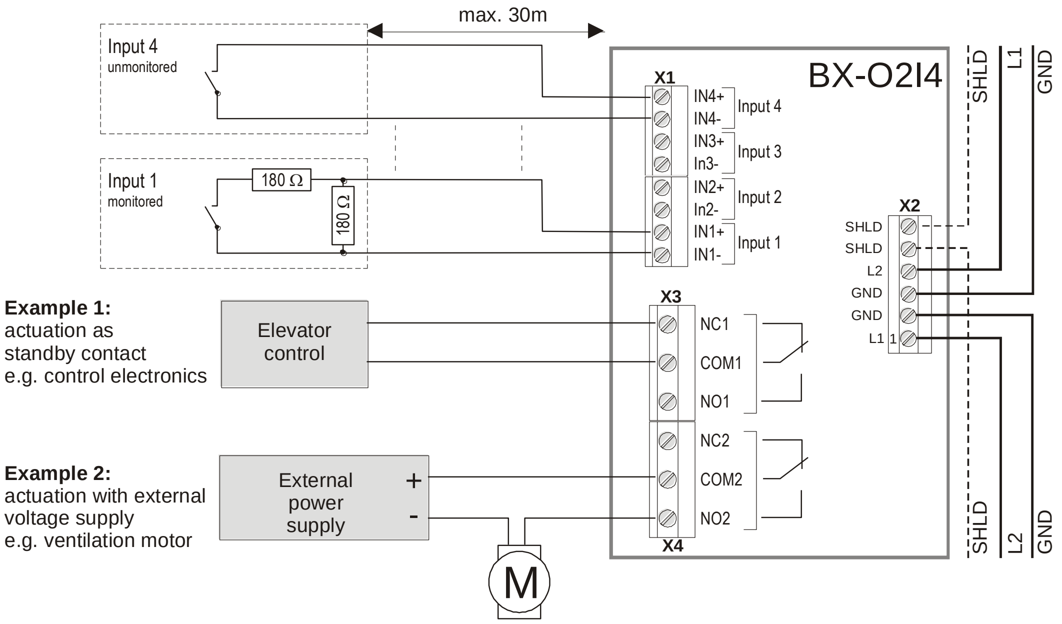

max. 30m
Input 4
unmonitored
Input 1
monitored
180 Ω
180 Ω
Example 1:
actuation as
standby contact
e.g. control electronics
Elevator control
Example 2:
actuation with external
voltage supply
e.g. ventilation motor
External power supply
+
-
M
BX-O2I4
X1
IN4+
IN4-
IN3+
In3-
IN2+
In2-
IN1+
IN1-
Input 4
Input 3
Input 2
Input 1
X3
NC1
COM1
NO1
NC2
COM2
NO2
X4
X2
SHLD
SHLD
L2
GND
GND
L1
1
SHLD
L1
GND
SHLD
L2
GND

Fig. 168 BX-O2I4, output/input module connection

11.12 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 ring voltage failure.

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

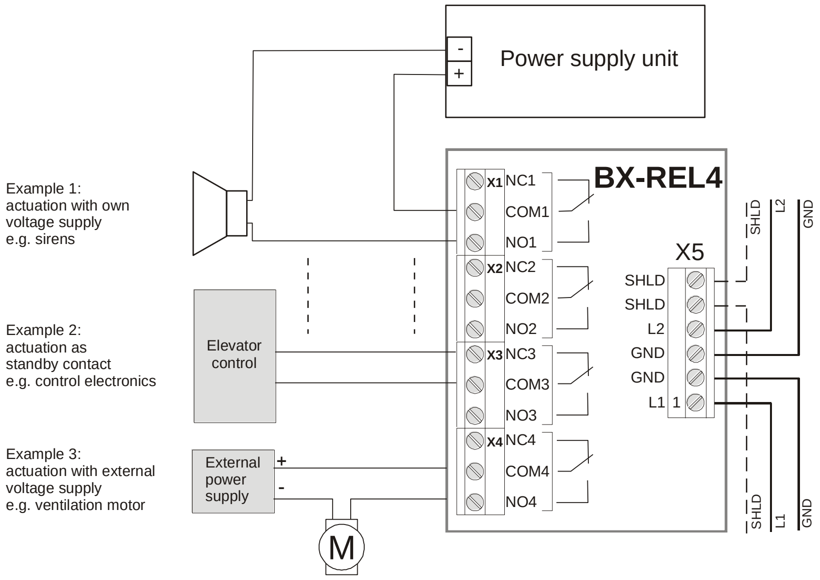

Power supply unit
-
+
BX-REL4
Example 1:
actuation with own
voltage supply
e.g. sirens
Example 2:
actuation as
standby contact
e.g. control electronics
Example 3:
actuation with external
voltage supply
e.g. ventilation motor
Elevator control
External power supply
+
-
M
X1
X2
X3
X4
NC1
COM1
NO1
NC2
COM2
NO2
NC3
COM3
NO3
NC4
COM4
NO4
X5
SHLD
SHLD
L2
GND
GND
L1
1
SHLD
L2
GND
SHLD
L1
GND

Fig. 169 BX-REL, relay module connection

11.13 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 scan potential-connected voltage sources. The monitored output is divided into three load ranges and can actuate and monitor a load between 20 Ω and 1 kΩ.

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

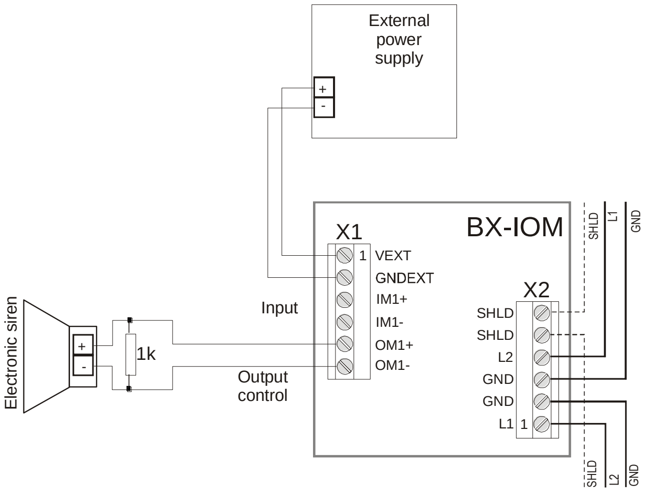

External
power
supply
+
-
BX-IOM
X1
1
VEXT
GNDEXT
IM1+
IM1-
OM1+
OM1-
Input
Output
control
Electronic siren
+
-
1k
X2
SHLD
SHLD
L2
GND
GND
L1
1
SHLD
L1
GND
SHLD
L2
GND

Fig. 170 BX-IOM, consumer with external voltage monitoring

11.14 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.

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

Monitored inputs

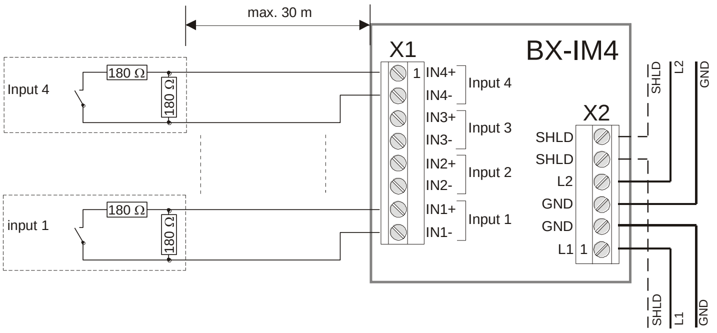

max. 30 m
Input 4
180 Ω
180 Ω
input 1
180 Ω
180 Ω
X1
BX-IM4
1
IN4+
IN4-
Input 4
IN3+
IN3-
Input 3
IN2+
IN2-
Input 2
IN1+
IN1-
Input 1
X2
SHLD
SHLD
L2
GND
GND
L1 1
SHLD
L2
GND
SHLD
L1
GND

Fig. 171 BX-IM4, input module BX-IM4 connection, monitored inputs

Unmonitored inputs

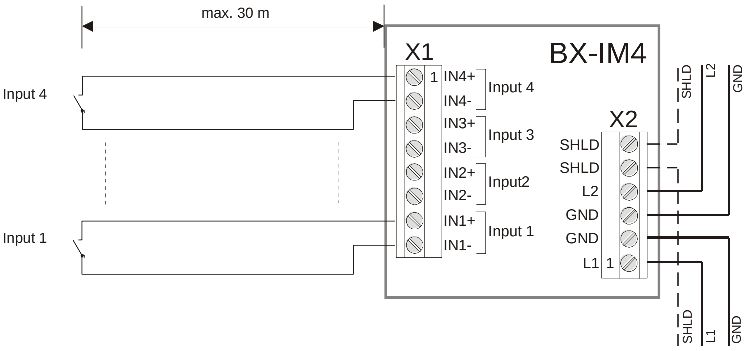

max. 30 m
Input 4
Input 1
X1
BX-IM4
1
IN4+
IN4-
Input 4
IN3+
IN3-
Input 3
IN2+
IN2-
Input2
IN1+
IN1-
Input 1
X2
SHLD
SHLD
L2
GND
GND
L1 1
SHLD
L2
GND
SHLD
L1
GND

Fig. 172 BX-IM4, input module BX-IM4 connection, unmonitored inputs

11.15 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.

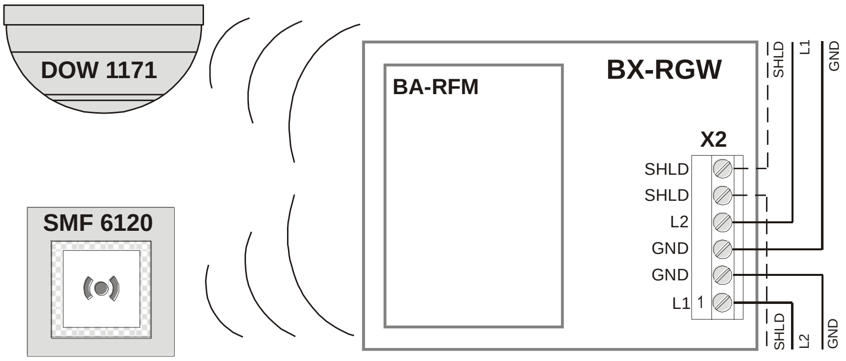

DOW 1171
SMF 6120
BA-RFM
BX-RGW
X2
SHLD
SHLD
L2
GND
GND
L1 1
SHLD
L1
GND
SHLD
L2
GND

Fig. 173 BX-RGW, radio module connection

11.16 BX-SOL loop siren connection

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

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

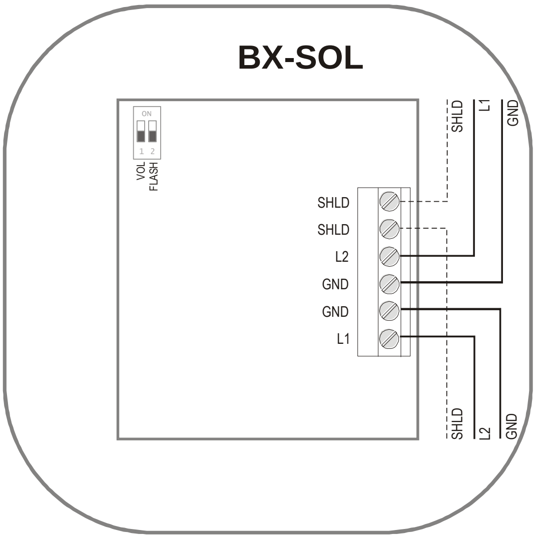

BX-SOL
ON
1 2
VOL
FLASH
SHLD
SHLD
L2
GND
GND
L1
SHLD
L1
GND
SHLD
L2
GND

Fig. 174 BX-SOL, loop siren connection

Notice

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

11.17 Loop flashlight BX-FOL connection

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

From SecuriFire version SRP V 1.1, the flash frequency can be individually adjusted per loop flashlight using software.

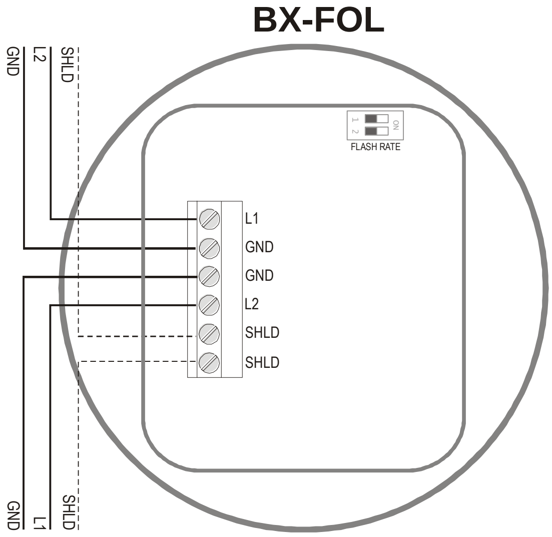

BX-FOL
GND
L2
SHLD
ON
1 2
FLASH RATE
L1
GND
GND
L2
SHLD
SHLD
GND
L1
SHLD

Fig. 175 BX-FOL, loop flashlight connection

Notice

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

11.18 Connection end switch module eXtended Line BX-ESL

The BX-ESL determines 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.

More 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 unions. The connection to the SecuriLine eXtended is by means of the X1–X4 screw terminals.

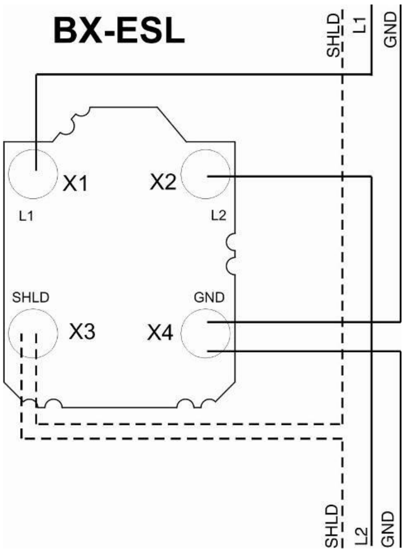

BX-ESL
SHLD
L1
GND
X1
X2
L1
L2
SHLD
GND
X3
X4
SHLD
L2
GND

Fig. 176 BX-ESL, connection

11.19 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.

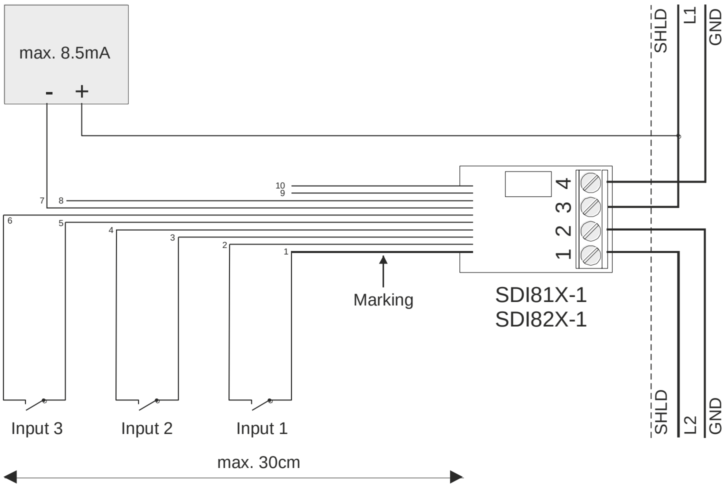

max. 8.5mA
-
+
SHLD
L1
GND
10
9
7
8
6
5
4
3
2
1
4
3
2
1
Marking
SDI81X-1
SDI82X-1
Input 3
Input 2
Input 1
max. 30cm
SHLD
L2
GND

Fig. 177 SDI81X / SDI82X, addressing module connection

11.20 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.

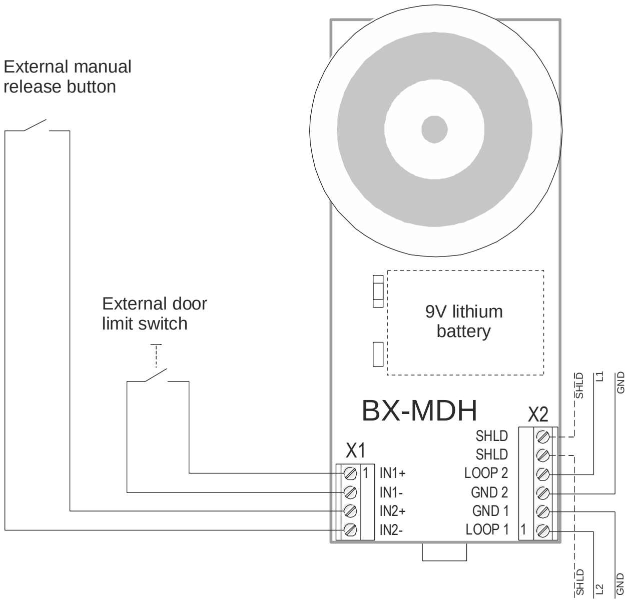

External manual
release button
External door
limit switch
9V lithium
battery
BX-MDH
X2
X1
1
IN1+
IN1-
IN2+
IN2-
SHLD
SHLD
LOOP 2
GND 2
GND 1
LOOP 1
1
SHLD
L1
GND
SHLD
L2
GND

Fig. 178 BX-MDH, door holding magnet connection

11.21 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.

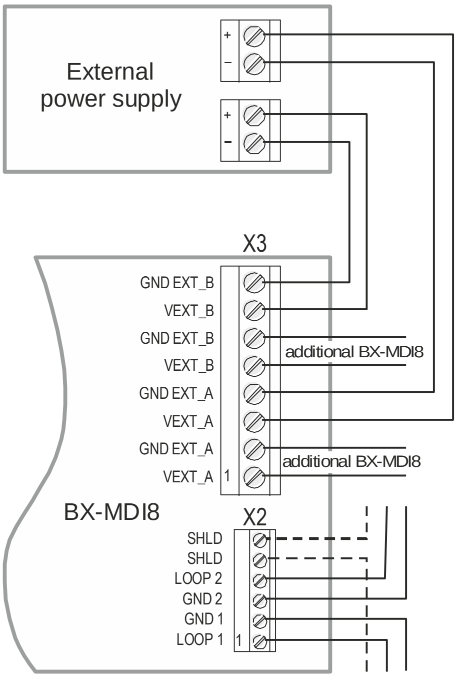

External
power supply
+
−
+
-
X3
GND EXT_B
VEXT_B
GND EXT_B
VEXT_B
GND EXT_A
VEXT_A
GND EXT_A
VEXT_A
1
additional BX-MDI8
additional BX-MDI8
BX-MDI8
X2
SHLD
SHLD
LOOP 2
GND 2
GND 1
LOOP 1
1

Fig. 179 BX-MDI8, input module connection

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

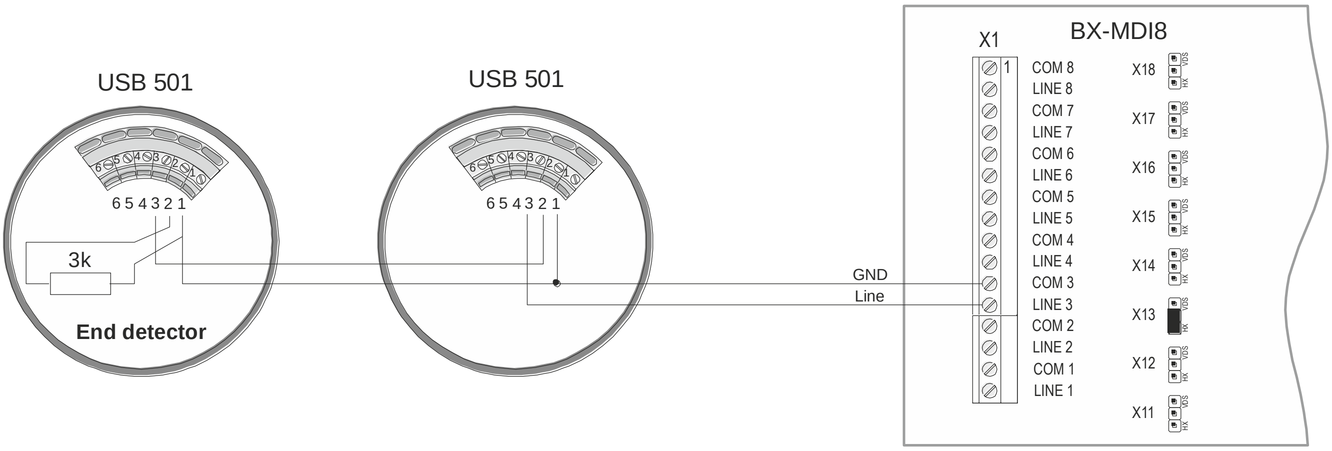
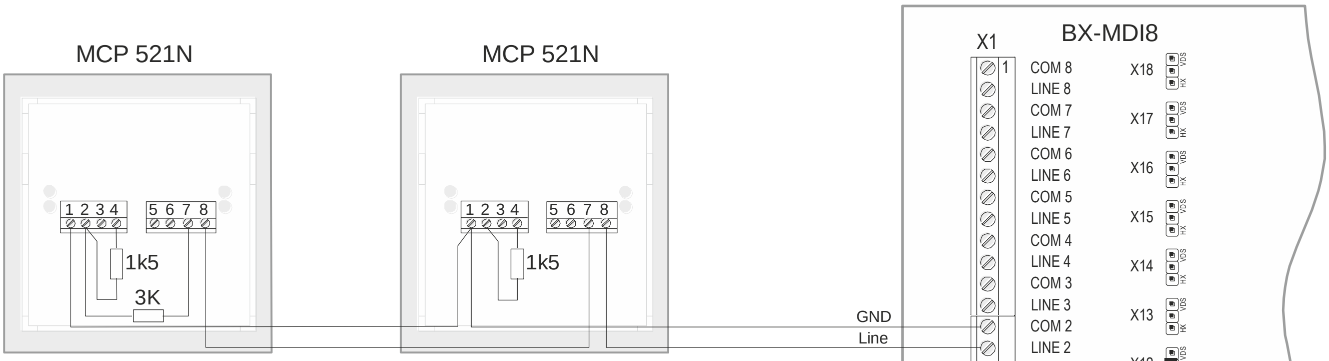

USB 501
USB 501
6 5 4 3 2 1
6 5 4 3 2 1
3k
End detector
GND
Line
X1
BX-MDI8
1
COM 8
LINE 8
COM 7
LINE 7
COM 6
LINE 6
COM 5
LINE 5
COM 4
LINE 4
COM 3
LINE 3
COM 2
LINE 2
COM 1
LINE 1
X18
X17
X16
X15
X14
X13
X12
X11
VDS
HX

Fig. 180 BX-MDI8, connecting detector base USB 501


MCP 521N
MCP 521N
1 2 3 4
5 6 7 8
1k5
3K
1 2 3 4
5 6 7 8
1k5
GND
Line
X1
BX-MDI8
1
COM 8
LINE 8
COM 7
LINE 7
COM 6
LINE 6
COM 5
LINE 5
COM 4
LINE 4
COM 3
LINE 3
COM 2
LINE 2
COM 1
LINE 1
X18
X17
X16
X15
X14
X13
X12
X11
VDS
HX

last manual call point

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

Fig. 181 BX-MDI8, connecting MCP 521N manual call points

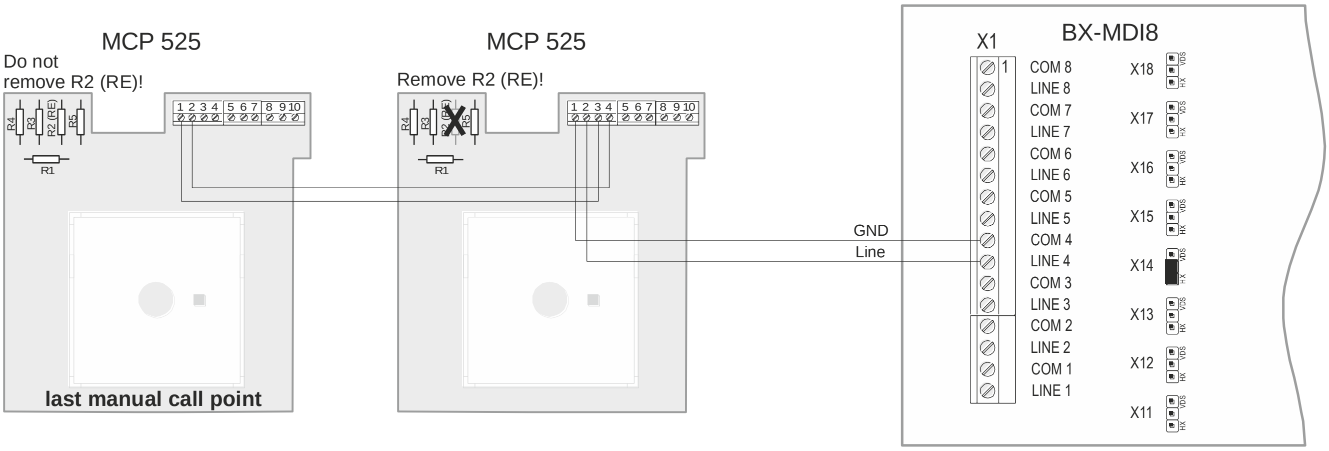

MCP 525
MCP 525
Do not
remove R2 (RE)!
Remove R2 (RE)!
R4
R3
R2 (RE)
R5
R1
1 2 3 4 5 6 7 8 9 10
last manual call point
GND
Line
X1
BX-MDI8
1
COM 8
LINE 8
COM 7
LINE 7
COM 6
LINE 6
COM 5
LINE 5
COM 4
LINE 4
COM 3
LINE 3
COM 2
LINE 2
COM 1
LINE 1
X18
X17
X16
X15
X14
X13
X12
X11
VDS
HX

Fig. 182 BX-MDI8, Connecting MCP 525 manual call points

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

Notice

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

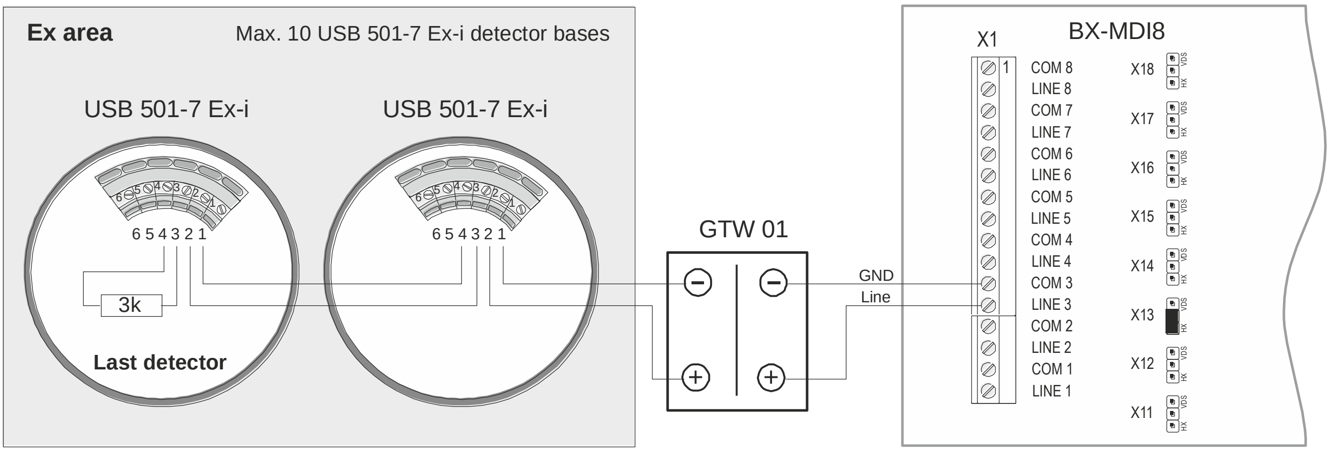

Ex area
Max. 10 USB 501-7 Ex-i detector bases
USB 501-7 Ex-i
USB 501-7 Ex-i
6 5 4 3 2 1
6 5 4 3 2 1
3k
Last detector
GTW 01
GND
Line
X1
BX-MDI8
1
COM 8
LINE 8
COM 7
LINE 7
COM 6
LINE 6
COM 5
LINE 5
COM 4
LINE 4
COM 3
LINE 3
COM 2
LINE 2
COM 1
LINE 1
X18
X17
X16
X15
X14
X13
X12
X11
VDS
HX

Fig. 183 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.

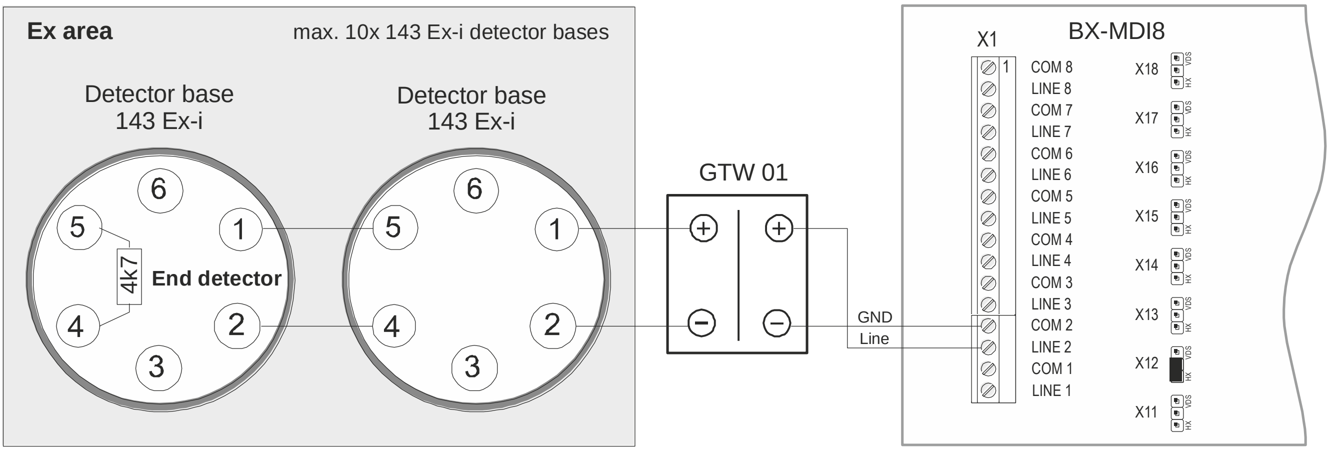

Ex area
max. 10x 143 Ex-i detector bases
Detector base 143 Ex-i
Detector base 143 Ex-i
6
5
1
4k7
End detector
4
2
3
GTW 01
GND
Line
X1
BX-MDI8
COM 8
LINE 8
COM 7
LINE 7
COM 6
LINE 6
COM 5
LINE 5
COM 4
LINE 4
COM 3
LINE 3
COM 2
LINE 2
COM 1
LINE 1
X18
X17
X16
X15
X14
X13
X12
X11
VDS
HX

Fig. 184 BX-MDI8, connecting the detector base 143 Ex-i with direct current isolating transformer GTW 01

Connecting surveyed inputs

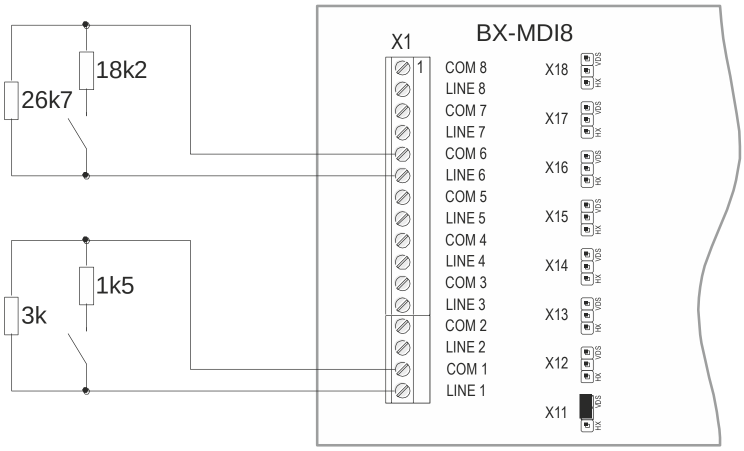

BX-MDI8
X1
1
26k7
18k2
3k
1k5
COM 8
LINE 8
COM 7
LINE 7
COM 6
LINE 6
COM 5
LINE 5
COM 4
LINE 4
COM 3
LINE 3
COM 2
LINE 2
COM 1
LINE 1
X18
X17
X16
X15
X14
X13
X12
X11
VDS
HX

Fig. 185 BX-MDI8, connecting surveyed input 26K7 / surveyed input 3K

Connecting extinguishing systems

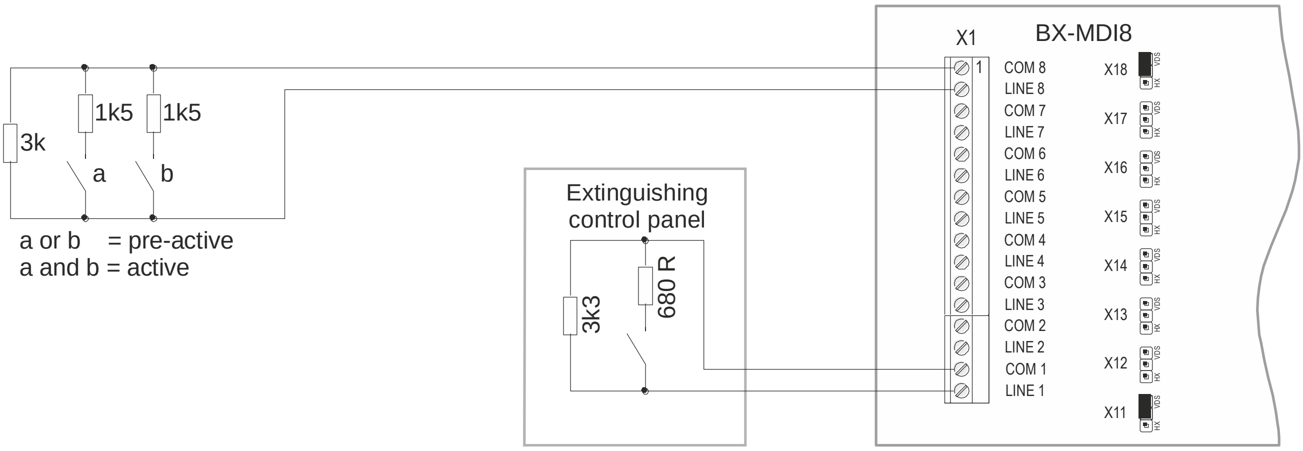

BX-MDI8
X1
1
3k
1k5
1k5
a
b
a or b   = pre-active
a and b = active
Extinguishing control panel
3k3
680 R
COM 8
LINE 8
COM 7
LINE 7
COM 6
LINE 6
COM 5
LINE 5
COM 4
LINE 4
COM 3
LINE 3
COM 2
LINE 2
COM 1
LINE 1
X18
X17
X16
X15
X14
X13
X12
X11
VDS
HX

Fig. 186 BX-MDI8, valve monitoring / Extinguishing input in accordance with VdS

12 Programming and software

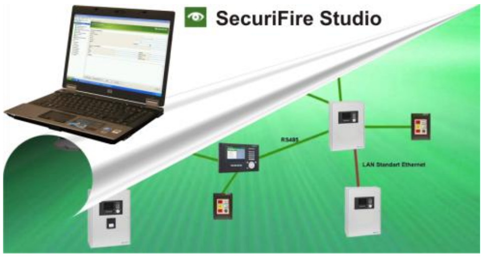


Fig. 187 SecuriFire Studio

The SecuriFire 3000 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 B5-MCB15 main control board; during startup they are distributed to all computer components of the other boards and then operate independently when being monitored by the B5-MCB15. All necessary software and system components are available as a “SecuriFire Studio" software package which contains planning, commissioning, maintenance and diagnostics for control units of the SecuriFire 3000 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.

13 Annex

13.1 Recommended cable types

13.1.1 Data cable for SecuriLan, unscreened

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

13.1.2 Data cable for MMI-BUS, unscreened

- Twisted pair
- ≥ 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

13.1.3 Data cable for MMI-BUS, screened

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

13.1.4 Ring circuit cable, screened

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

13.1.5 Power supply for MMI-BUS

Notice

For MMI-BUS devices a minimum cross-section of 0.5 mm² (diameter 0.8 mm) is generally recommended for the power supply lines.

Because the calculation of these factors is very complex and dependent on the type, number, distance and sequence of the devices on the MMI-BUS, we recommend the following implementation guidelines; staying within their limits guarantees trouble-free operation of all MMI-BUS devices:

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 mm^2	Cable A = 1.5 mm^2	Cable A = 2.5 mm^2
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

13.2 SecuriLan cable specification

Depending on the application, either an F-UTP Cat5e or UTP Cat5e data cable with red sheath is to be used for networking the SecuriLAN participants.

F-UTP (foiled unshielded twisted pair) Cat5e:

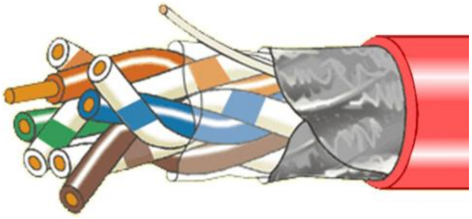


Fig. 188 F-UTP Cat5e

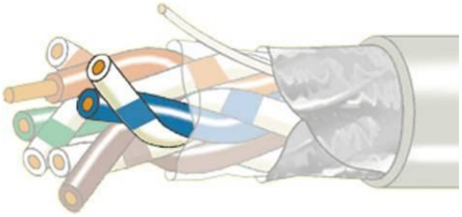


Fig. 189 F-UTP Cat5e

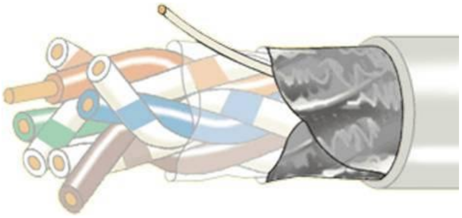


Fig. 190 F-UTP Cat5e

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** und **LAN** connections.

UTP (unshielded twisted pair) Cat5e:

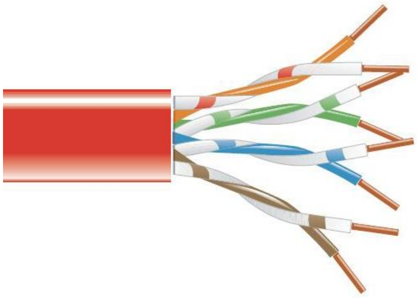


Fig. 191 UTP Cat5e

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

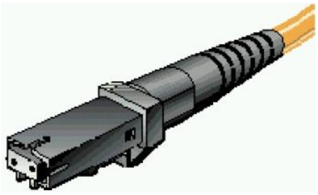


Fig. 192 Example of MTRJ type plug

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)

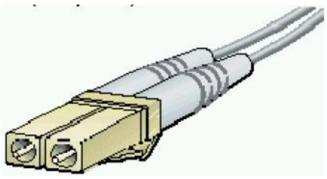


Fig. 193 Example of LC 2x5 type plug

13.3 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* with the 8 wires is subsequently put together with the RJ-45 plug and crimped with a suitable crimping tool as follows:

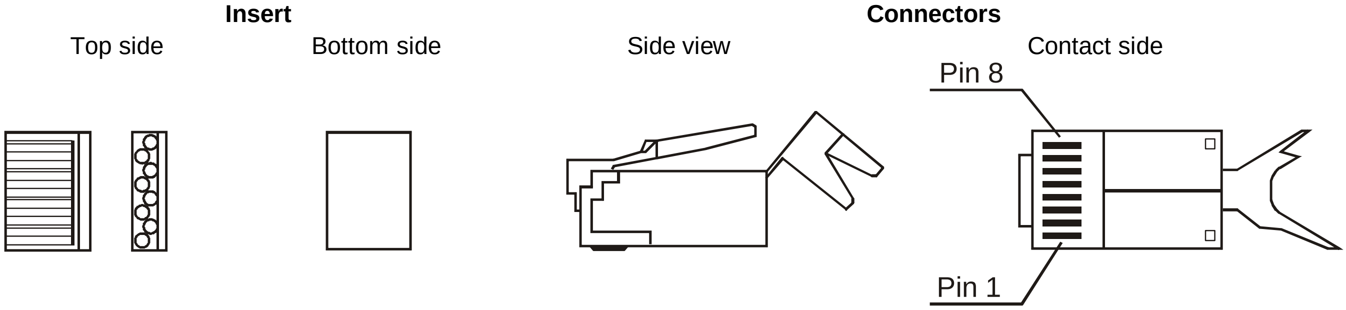


Fig. 194 RJ-45 plug and pin assignment

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

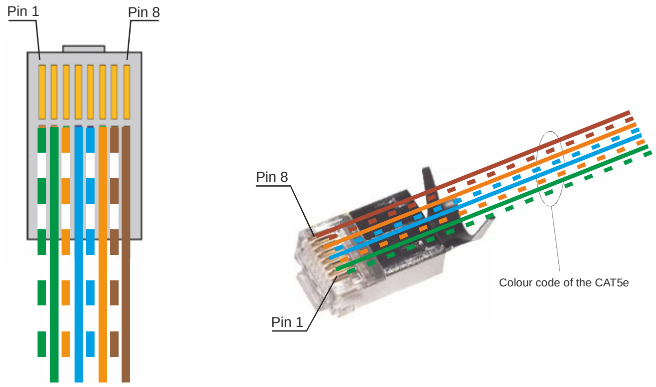


Fig. 195 RJ-45 plug assignment

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 cable shielding must remain undamaged.

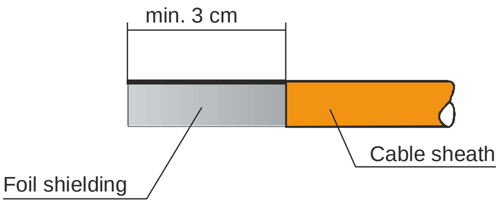

min. 3 cm
Cable sheath
Foil shielding

Fig. 196 Crimp plug

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

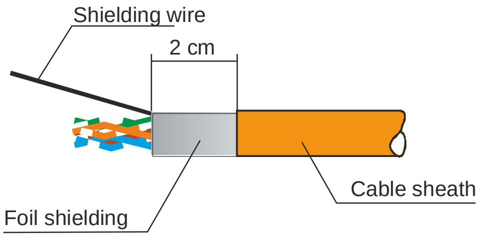

Shielding wire
2 cm
Cable sheath
Foil shielding

Fig. 197 Crimp plug

4 wire pairs, every pair twisted.

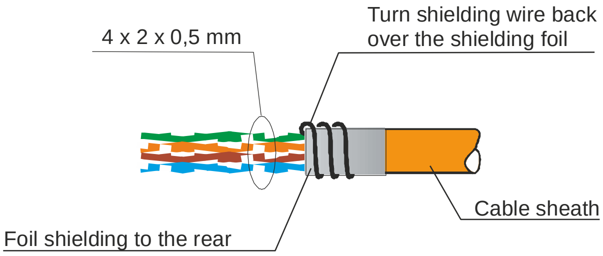

4 x 2 x 0,5 mm
Turn shielding wire back
over the shielding foil
Cable sheath
Foil shielding to the rear

Fig. 198 Crimp plug

Unplait wires and prepare as shown.

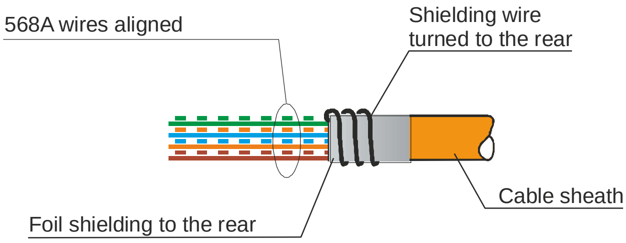

568A wires aligned
Shielding wire
turned to the rear
Cable sheath
Foil shielding to the rear

Fig. 199 Crimp plug

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

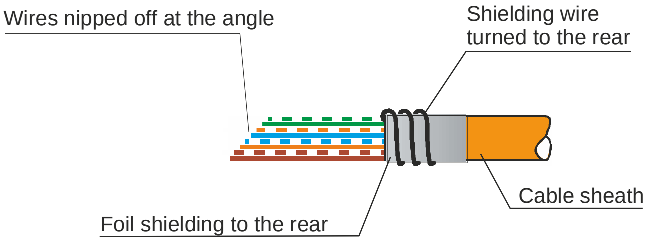

Wires nipped off at the angle
Shielding wire
turned to the rear
Cable sheath
Foil shielding to the rear

Fig. 200 Crimp plug

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

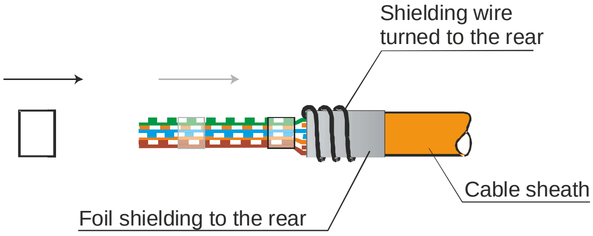

Shielding wire
turned to the rear
Cable sheath
Foil shielding to the rear

Fig. 201 Crimp plug

Nip off protruding wires flush.

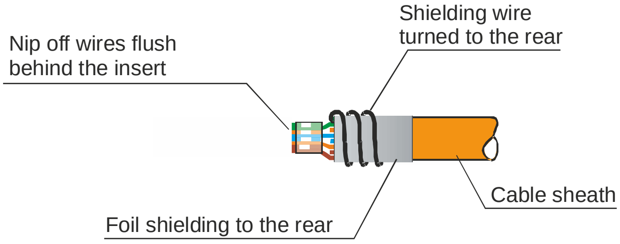

Nip off wires flush
behind the insert
Shielding wire
turned to the rear
Cable sheath
Foil shielding to the rear

Fig. 202 Crimp plug

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

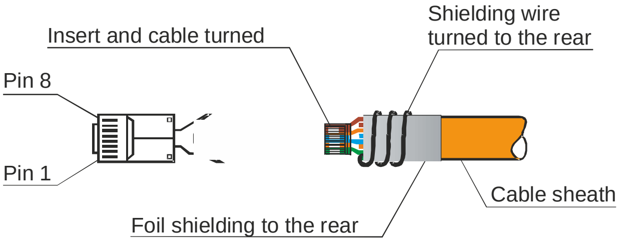

Insert and cable turned
Shielding wire
turned to the rear
Pin 8
Pin 1
Cable sheath
Foil shielding to the rear

Fig. 203 Crimp plug

Push cable with *insert* into the plug to the stop.

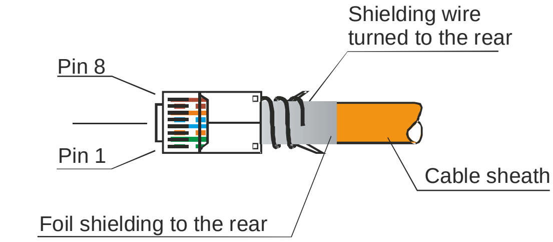

Shielding wire
turned to the rear
Pin 8
Pin 1
Cable sheath
Foil shielding to the rear

Fig. 204 Crimp plug

Bend the strain relief straight.

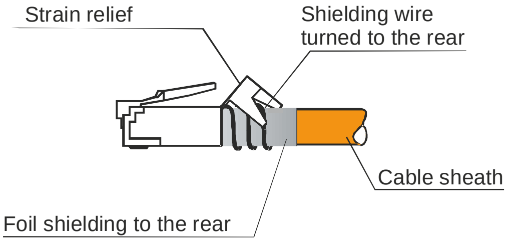

Strain relief
Shielding wire
turned to the rear
Cable sheath
Foil shielding to the rear

Fig. 205 Crimp plug

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

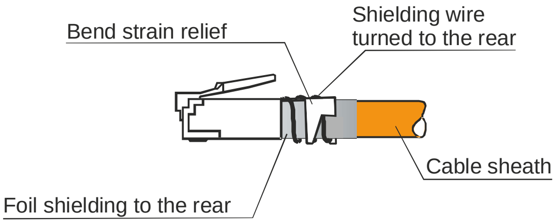

Bend strain relief
Shielding wire
turned to the rear
Cable sheath
Foil shielding to the rear

Fig. 206 Crimp plug

13.4 Power requirement calculation

The power requirement calculation is performed by entering the battery types in use and the necessary bridging time (according to the local standards and directives) in a power requirement tool.

13.5 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 functionally ready.
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 functionally ready.

Connection diagram

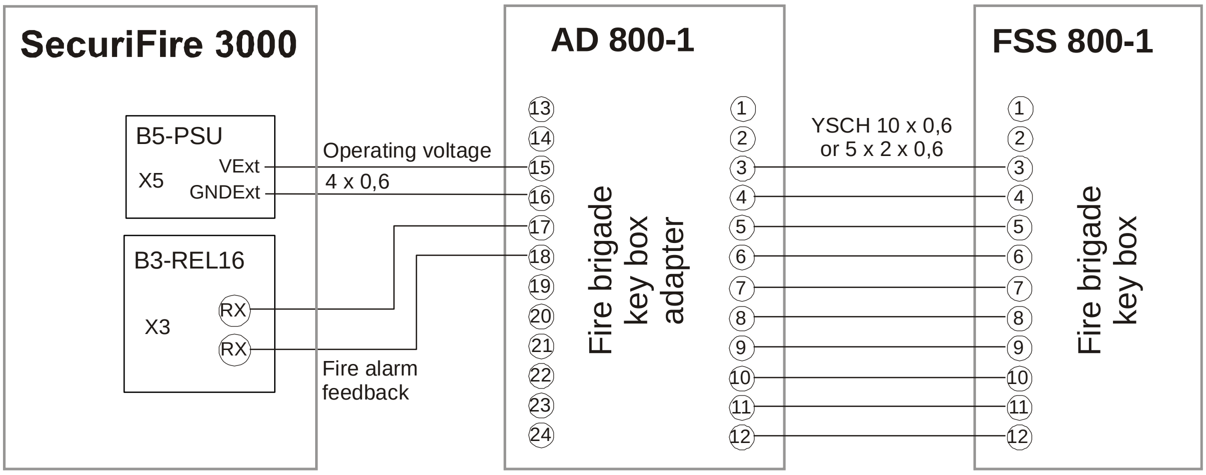

SecuriFire 3000
B5-PSU
X5
VExt
GNDExt
B3-REL16
X3
RX
RX
Operating voltage
4 x 0,6
Fire alarm
feedback
AD 800-1
13
14
15
16
17
18
19
20
21
22
23
24
Fire brigade
key box
adapter
1
2
3
4
5
6
7
8
9
10
11
12
YSCH 10 x 0,6
or 5 x 2 x 0,6
FSS 800-1
1
2
3
4
5
6
7
8
9
10
11
12
Fire brigade
key box

Fig. 207 FSS 800-1 connection diagram

Setting the jumpers on the AD 800-1 adapter

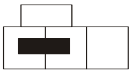


Fig. 208 JP1

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.

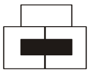


Fig. 209 JP2

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.

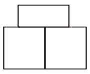


Fig. 210 JP3

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

13.6 Protocol printer

13.6.1 Change 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 **SecuriWheel**
- Insert paper through the slit in the cover
- Mount the printer cover again

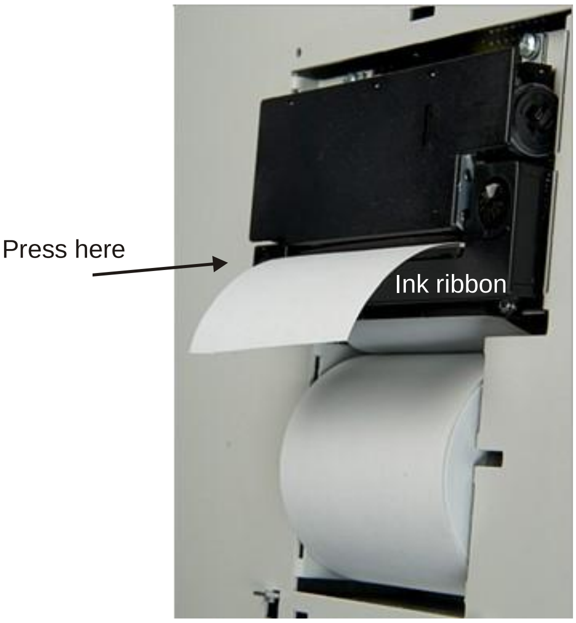


Fig. 211 Change printing paper

13.6.2 Replace 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
- Mount the printer cover again

13.7 Simple troubleshooting

Notice

Planning, mounting, commissioning and maintaining fire detection systems require special knowledge and may be carried out only be trained specialists. The product-specific training of specialists must be performed by Securiton or by persons expressly authorised by Securiton.

13.7.1 General

Faults are indicated on the indication and control map of the SecuriFire 3000 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.

13.7.2 Contaminated detector

This is displayed by the **Call service** pictogram and in a contamination list on the indication and control map of the SecuriFire 3000. 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** and 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.

13.7.3 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, end base lacking (monologue technology), programming (DZ) does not match jumper setting (input) etc.
Inputs	Short-circuit, wire breakage, programming (input) does 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.
Ring circuit	Logical fault (FAULT INIT, FAULT SYSTEM, FAULT ADDRESS), physical fault (wire breakage, short-circuit, earthing).

14 Article numbers / spare parts

Article numbers for detectors, special detectors, peripheral devices, accessories etc. are found in the current product catalogue for SecuriFire 3000.

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