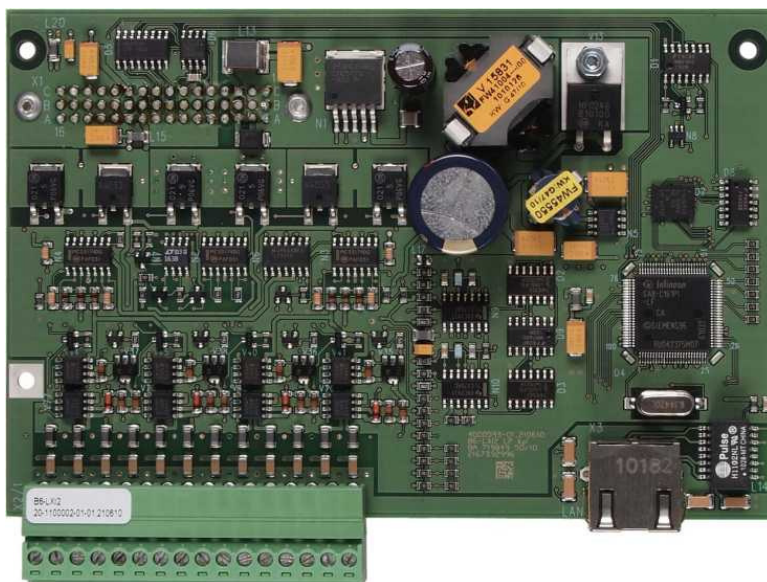


SecuriFire

SecuriLine Unit B6-LXI2

Technical Description



Imprint



Notice

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This document, T 811 067¹, is available in the following languages:

German	T 811 067 de
English	T 811 067 en
French	T 811 067 fr

Current edition: 06.09.2012 Rd

¹ Reference document: B6-LXI2, V 1.0

Safety information

Provided the product is deployed by trained and qualified persons in accordance with this document (T 811 067) and the hazard, safety and general information in this technical documentation is observed, there is no danger to persons or property under normal conditions and when used properly.

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

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



Danger

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

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



Warning

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

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



Notice

The product may malfunction if this notice is not observed.

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



Environmental protection / recycling

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

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

Document history

First edition Date 06.09.2012

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1 General

1.1 Validity

The following documentation is valid for the SecuriFire B6-LXI2 SecuriLine Unit with edition 20-1100002-01-01.

1.2 General

The B6-LXI2 ([Dialog Analog Interface](#)) can be fitted to the B6-BCB13 main control unit of the SCP2000 if required and serves to connect two additional SecuriLine eXtended loops with their associated detectors and modules. In addition, the module has a LAN interface.

1.3 Compatibility notice



Notice

The B6-LXI2 is supported beginning with SecuriFire Studio V 1.2.



Notice

The B6-LXI2 meets both the specification of SecuriLine eXtended as also that of SecuriLine.

2 Design and function

The B6-LXI2 SecuriLine Unit is used for power supply and evaluation of two addressable loops with the associated detectors and modules of the SecuriLine eXtended. Alternatively, an addressable loop and two stub lines or four stub lines can also be connected.

In addition, the module has a LAN interface. Thus even with 4 loops, all options of the LAN interface (ISP-IP for connecting alarm management systems, VirtualMIC, remote access, etc.) can be used.

2.1 Overview

The B6-LXI2 printed circuit board can be used as an option to the SCP2000. The system connection to the B6-BCB13 is on the rear side with a 48-pin male connector. The fire detection lines are connected on the front side with a 16-pin plug-in screw terminal.

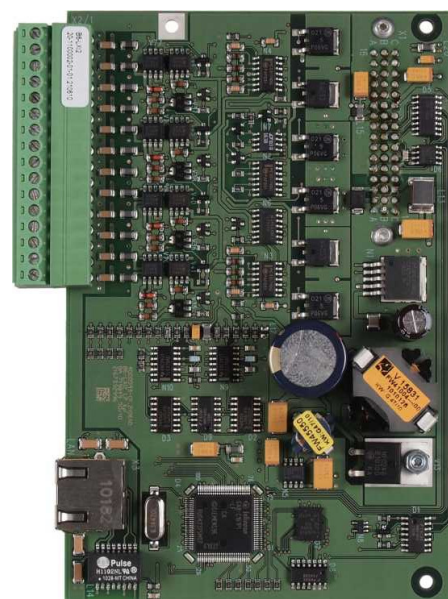


Fig. 1 B6-LXI2

Design and function

2.2 Interfaces

- X1** Interface for the B6-BCB13 main control unit
- X2** Connection plug for 2 addressable loops or 4 stub lines
- X3** Connection plug for the LAN-Interface (RJ45)

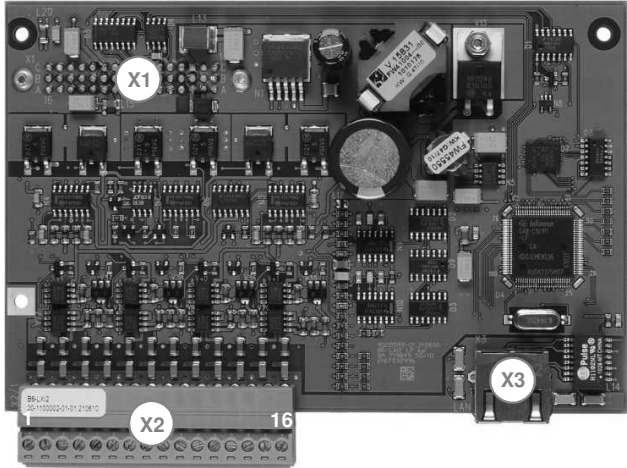


Fig. 2 Interfaces to the B6-LXI2

2.2.1 Loop interface (X2)

The B6-LXI2 is designed for connecting 2 addressable loops. Each loop interface has its own current-limited output driver which supplies the connected loop with power. There is only one transmission and reception part per loop. When it is operated as a stub, communication alternates between the two stubs.

Logical limitations:

The number of elements per loop depends on the type of used/connected elements and is logically limited. One panel can manage in sum 768 zones, outputs and inputs.

Physical limitations:



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.

Connection

	SecuriLine eXtended	SecuriLine
Addressable loops per board:	max. 2	
Stubs per board:	max. 4	
Main processing units:	B6-BCB13	
Participants per loop:	max. 250	max. 128
Participants per stub:	max. 64	max. 64
Logical elements:	max. 768 / B6-LXI2	
Modules: ¹⁾	BX-AIM, BX-IM4, BX-IOM, BX-OI3, BX-O1, BX-I2, BX-REL4, BX-RGW SDI81X, SDI82X	BA-AIM, BA-IM4, BA-IOM, BA-OI3, BA-REL4, BA-RGW SDI81, SDI82, COM81, SLI51A, SLM35
Detectors:	MCD 573X, MCP 535X, MCP 545X	MCD 573, STD 531, SSD 531, UTD 531, MCP 535, MCP 545
Alarm units:	BX-SOL, BX-FOL, BX-SBL 501, BX-SBL 502, BX-API	BA-SOL, BA-FOL, SBL 501, SBL 502, BA-API
Loop length:	max. 3'500 m	max. 2'000 m
Max. line resistance:	255 Ω	150 Ω

¹⁾ The maximum number of connectable modules is found in these documentations: SF-AI-04 or SF-Release-Notes



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.

Loop connector plug (X2)

“Loop” mode of operation

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

“Stub” mode of operation

Stub no.	Designation	Function
4		Not available
	G4	Screen
	C4	GND stub 4
	L4	+24 V stub 4
3		Not available
	G3	Screen
	C3	GND stub 3
	L3	+24 V stub 3
2		Not available
	G2	Screen
	C2	GND stub 2
	L2	+24 V stub 2
1		Not available
	G1	Screen
	C1	GND stub 1
	L1	+24 V stub 1

Design and function

Electrical:	Loop voltage: +30 V \pm 3 %
	Loop current: 150mA max.
	Short-circuit current: 232mA typ.
Loop length:	max. 3500m (according to loop length calculation)
	max. line resistance 255 Ω
Transmission type:	Start-stop operation, 8 data bits
	Manchester format
Baud rate:	9'600 Baud / 4'800 b/s
Direction:	Bidirectional
Cable:	J-Y(St)Y 1x2X0.8 rt; 1 pair, screened, twisted
	Capacity: max. 120 nF / km
Line capacity:	max. 350 nF
Protection:	EMC, ESD by means of Transzorp diodes and high-voltage capacitors
Mechanical design:	16-pin plug-in screw terminal, max. 1.5mm ²

LAN Interface (X3)

Pin	Function
1	TX+
2	TX-
3	RX+
4	Termination
5	Termination
6	RX-
7	Termination
8	Termination

Connection:	Ethernet 10/100 BaseTx
Transmission type:	TCP/IP
Direction:	Bidirectional, full duplex
Protection:	EMC, ESD by means of high-voltage capacitors
Mechanical design:	RJ-45 connector, 8 pin

3 Programming and planning

SecuriFire software documentation for programming and planning is in preparation.

4 Fault displays

The plain text information of a fault code can be called up with the “Additional info” MIC button (magnifying glass).

5 Connection examples

5.1 SecuriLine connection extended

Notice

- All modules and detectors of the SecuriLine extended are fully symmetrical with respect to the input circuit and short-circuit isolators. When wiring, it is therefore unimportant from which side of the loop “INCOMING” and “OUTGOING” are connected. For purposes of clarity, however, we recommend continuing with one wiring system once begun.

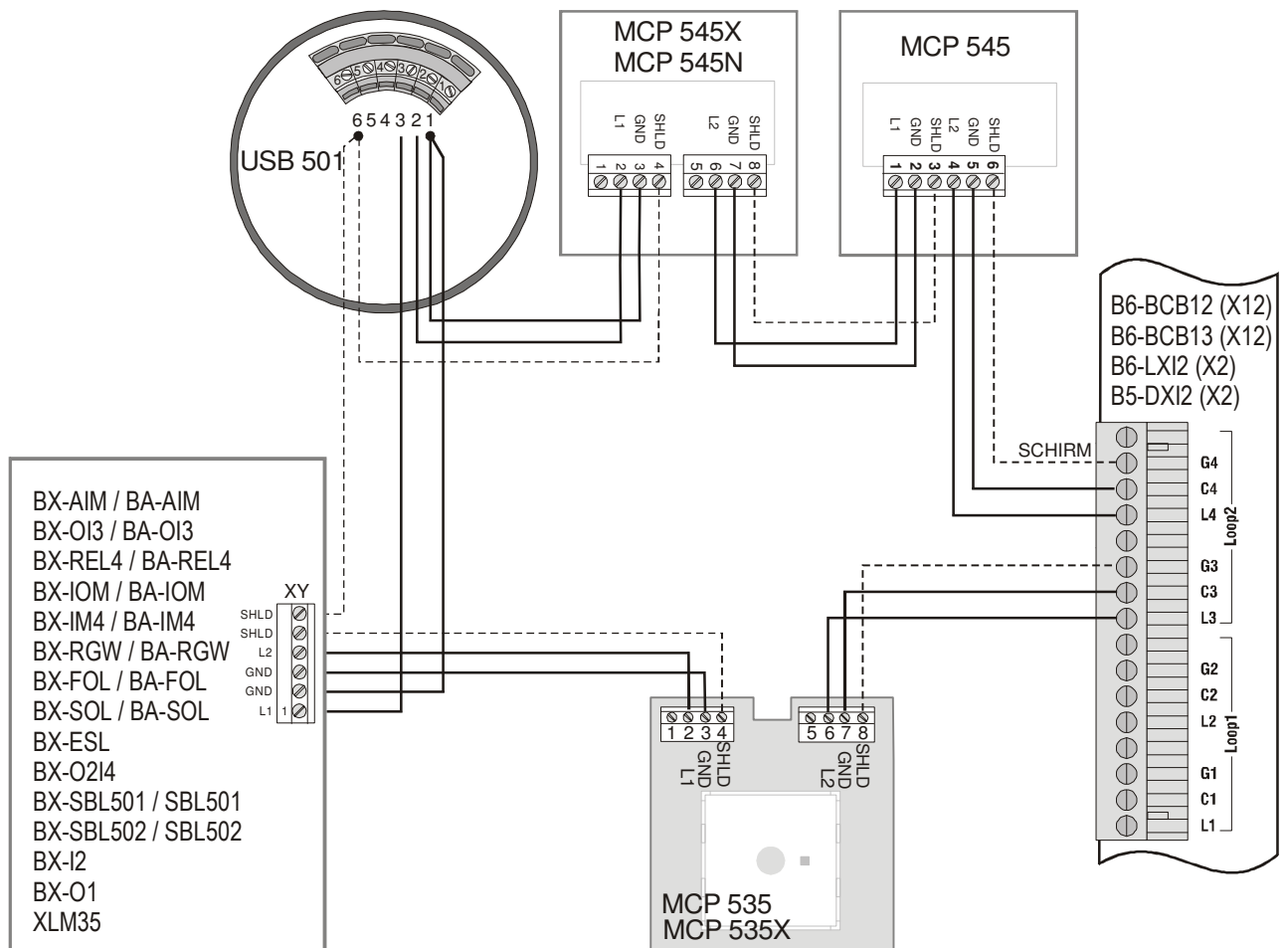


Fig. 3 SecuriLine extended connection

Connection examples

5.2 Stub line connection



Notice

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

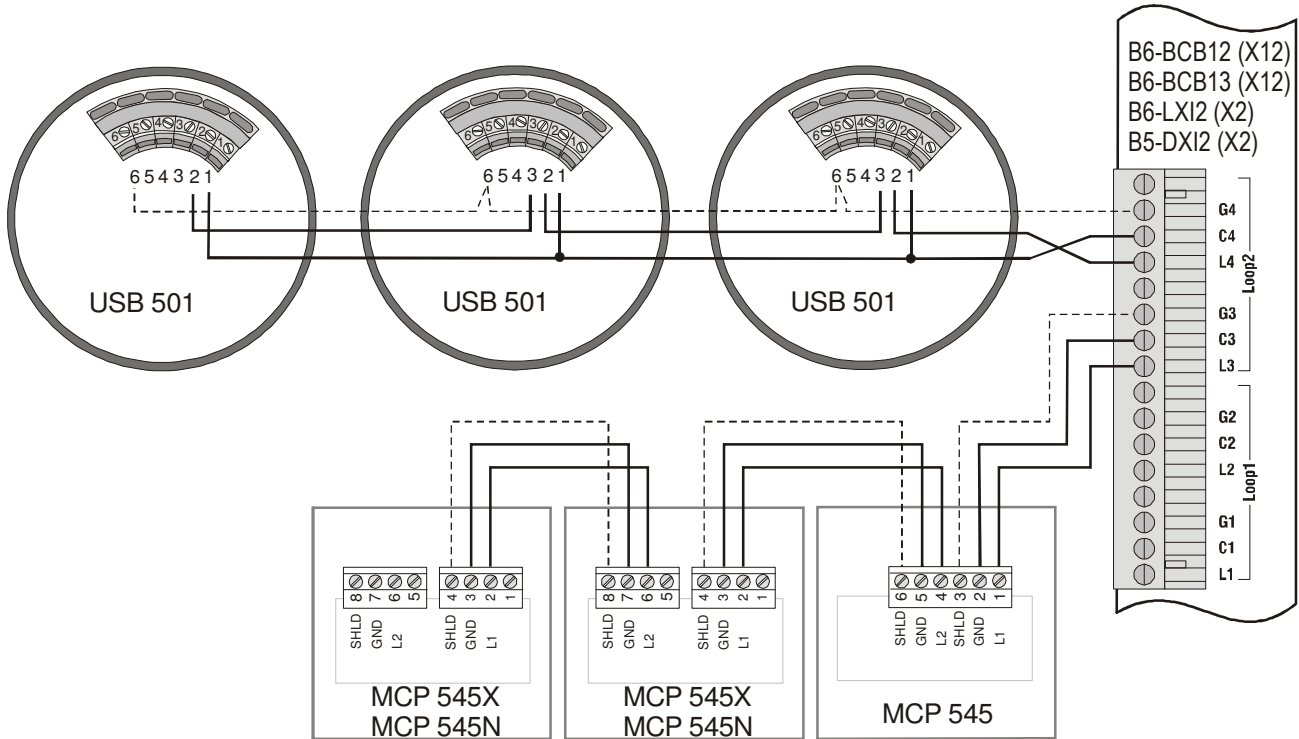


Fig. 4 Stub line connection

5.3 SecuriLine eXtended modules connection

- The **BX-AIM** advanced input module functions as a DC-line branch on the addressable loop and can be planned either as a monitored input for polling potential-free contacts or as a detection zone for connecting collective detectors. Among other things, it serves to connect intrinsically safe threshold detectors (Ex-i) with intermediate (in-line) switching of a Zener barrier; the module also has an output for a parallel indicator.
- The **BX-OI3** output/input module can be planned either as an output/input module (1x relay output, 2x monitored inputs, 1x opto-isolator) or as a detector or detection zone for connecting special detectors.
- The **BX-REL4** relay module has 4 potential-free relay outputs for switching loads. 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 "Aktiv in Fail-Safe-Lage" can be programmed in the event of loop voltage failure.
- The **BX-IOM** input/output module has a monitored output and a galvanically isolated input. It is for actuating monitored consumers (e.g. sirens) which are supplied with power from external voltage sources. The input can be used to poll potential-bound voltage sources.
- The **BX-IM4** input module has 4 inputs for monitored and unmonitored polling of potential-free contacts.

- The input module **BX-I2** contains one primary input for polling potential-free contacts and one opto-isolator input, which can be used for monitoring an external voltage if necessary.
- The output module **BX-O1** comprises a potential-free relay output for switching loads of up to 2 A and up to 230 V.
- The **BX-RGW** radio module serves to link radio detectors to the fire alarm control panel.
- The **BX-FOL** addressable loop flashlight serves to visually signal a fire alarm in interior rooms and is suitable for connecting directly to the X-LINE.
- The **BX-SOL** addressable loop siren serves to audibly signal a fire alarm in interior rooms.
- The **BX-SBL 501** loop design base and the **BX-SBL 502** loop ceiling siren audibly signal a fire alarm in interior rooms.

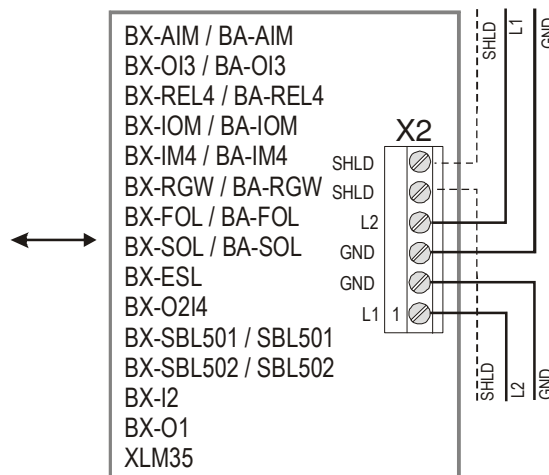


Fig. 5 Connecting SecuriLine eXtended modules



Notice

Further information and detailed descriptions of how to connect the SecuriLine eXtended modules are found in the relevant technical documentation.

6 Technical data

Power supply

The power supply of the B6-LXI2 SecuriLine unit is internal via the B6-BCB13 main control unit.

Supply voltage::	VCC 1	+3,4 V \pm 2 %
	VCC 2	+5,1 V \pm 2 %
Power consumption:	ICC	approx. 31 mA

Power requirement



Notice

In the event of a power failure, the fire alarm control panel is powered by batteries. Depending on the configuration and connected peripheral devices (unit, detectors, sirens, etc.), it is important to ensure that the batteries have sufficient capacity to operate the fire alarm control panel for the specified time (e.g. according to a standard or directive).

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

Ambient conditions

Ambient temperature:	-5°C to +50°C, measured at natural convection under the unit	
Relative humidity:	5% to 95% without condensation	
Air pressure:	\geq 80 kPa, up to 2,000 m above sea level	
Contact protection:	IP00, no protection against contact, foreign matter or water	

EMC:	EN 50130-4	Electromagnetic compatibility
	EN 50081-1	Emission standard for residential environments
	EN 50082-2	Immunity for industrial environments
	EN 55022	Radio disturbance characteristics
	VdS 2110	Schutz gegen Umwelteinflüsse

Norms:	EN54-17, EN54-18
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Security:	VDE 0800	Telecommunications – Security
	VDE 0804	Telecommunications – Additional definitions
	EN60950-1	Safety Part 1: General Requirements

Dimensions

Unit (H x D x W):	142,5 x 93,5 x 18 mm
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7 Article numbers / spare parts

Short designation		Swiss art. number	Art. number
SecuriLine unit	B6-LXI2	115.248118	20-1100002-01-01
Connector plug	ST-LOOP/DAI	239.246131	YK130295

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