

# SecuriFire BX-AIM

Advanced input module for  
SecuriLine eXtended

from edition EG072947--<sup>1</sup>

The BX-AIM [advanced input module](#) can be used either as a monitored input or for connecting a collective alarm line or third-party detectors for special applications.

The BX-AIM also has an output for a repeat indicator.

It meets the specifications of SecuriLine eXtended for operation on the ring circuit of the SecuriFire fire detection system.

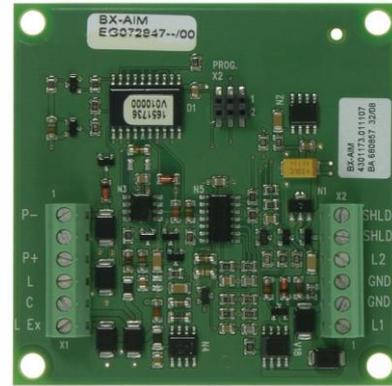


Fig. 1 BX-AIM

## Description

The BX-AIM can be connected to the SecuriLine eXtended ring circuit of the SecuriFire fire detection systems.

The BX-AIM can be used either as monitored input for polling potential-free contacts or as detection zone for connecting collective detectors.

It serves, among other things, to connect intrinsically safe detectors (Ex-i) with intermediate switching of a [Zener](#) barrier.

An output for a repeat signal is also available. Addressing and assigning BX-AIM parameters is performed with PC software via the fire alarm control panel.

The BX-AIM includes a short-circuit isolator. In the event of wire breakage or short-circuit this functionality ensures that the fault is localised and that operation of the ring circuit remains fully functional.

## Interfaces

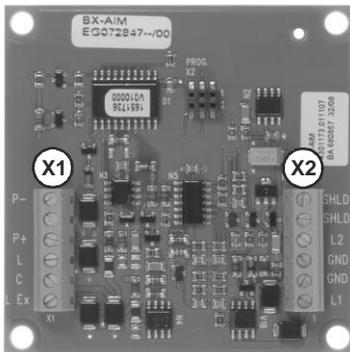


Fig. 2 BX-AIM interfaces

### Peripheral (X1)

Terminal	Designation	Description
1	P-	GND repeat indicator
2		Free
3	P +	+24 V repeat indicator
4	L	L wire (+24 V) DC-line branch without Ex barrier
5	C	C wire DC-line branch
6	L Ex-i	L wire (+24 V) DC-line branch with Ex barrier

### SecuriLine eXtended (X2)

Terminal	Designation	Description
1	L1	Data A
2	GND	GND A
3	GND	GND B
4	L2-	Data B
5	SHLD	Screen
6	SHLD	Screen

## Planning

### General information

- Assigning the use of the BX-AIM as input or detection zone is performed as with addressing/parameterisation using SecuriFire Studio ([loop configuration](#)) during commissioning. During planning the subsequent use of the BX-AIM must be taken into account and an appropriate address planned.
- When used as a detection zone, the BX-AIM can be used in two different modes of operation, namely in "Standard operation" or in "Optional operation". The operation mode can be planned and applies to the entire ring; thus, a mixed operation mode is possible on a ring. The selected operation mode has no effect for use as input.

### Standard operation mode

When an alarm or fault occurs, the entire DC-line branch is de-energised; when a fault (wire breakage, short-circuit) occurs, the current is switched on again every 30 s and the detection zone is re-evaluated. An alarm is consequently NOT indicated by the alarm LED built into the detector base or detector but rather only by the repeat indicator connected to the BX-AIM.

When the applicable standards and regulations are observed, then in most cases a maximum of 1 detector can be connected per BX-AIM in this mode of operation (e.g. in Switzerland, Germany).

## Optional operation

Only when there is a fault (wire breakage, short-circuit) is the entire DC-line branch de-energised; the current is switched on again every 30 s and the detection zone re-evaluated.

In the event of an alarm, the alarm LED built into the detector base or detector is actuated; the repeat indicator output of the BX-AIM is also activated. In this case, several detectors can be connected per BX-AIM. Hekatron Ex-i and Hochiki Ex-i detectors can also be operated in this optional operation mode.

- The connected detectors are addressable only collectively as detectors (MG 17/4). In the event of an alarm, only one alarm per detection zone is recognized, i.e. in the optional operation mode a maximum of one alarm LED can be actuated.
- A RAL 72x repeat indicator can be connected to the BX-AIM. The repeat indicator output is actuated by the fire alarm control panel in both operation modes if there is a fire.



The parallel indicator of the BX-AIM must be taken into account in the alarm power pool of the detector line.

## Number of detectors per BX-AIM

The detectors listed in the table below can be connected to the BX-AIM. The maximum number of detectors per DC branch is in some cases dependent on the observance of applicable standards and guidelines concerning actuation of alarm LEDs on-site in the event of an alarm.

Manufacturer	Type	Standard operation	Optional operation	Qty.	
Hekatron	MMD 130 Ex-i	X	X	3	
	WDM 215 Ex-i	X	X	3	
	WMM 216 Ex-i	X	X	3	
Siemens	DF1191/1192/1101-Ex	X		1	
Hochiki	SLK-EN, SLK-E, SLK-ED	X		10	
	SIH-E	X		10	
	DCC-E	X		10	
	DFE-90E, DFE-60E	X		10	
	HF-24-E	X		1	
	SLR-E-IS	X	X	8	
	DCD-1E-IS	X		10	
	Esser	DKM 1702	X	X	10
	Vershoven	DC21, C31	X	X	10

## Power requirement

For mixed operation of detectors and modules on the ring circuit, it is important to know that the BX-AIM has the power consumption of about 10 detectors. This reduces the number of connectable detectors by 10 for each BX-AIM. A maximum of 10 BX-AIMs are permitted per ring circuit.

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

## Connection examples

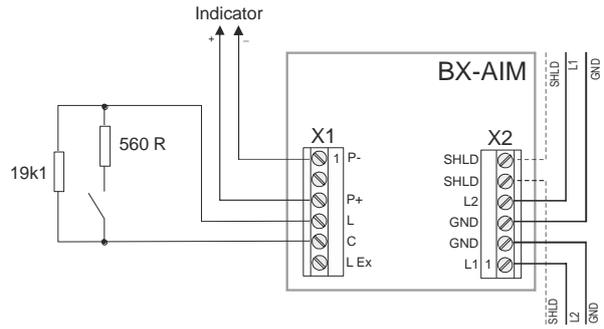


Fig. 3 Monitored input

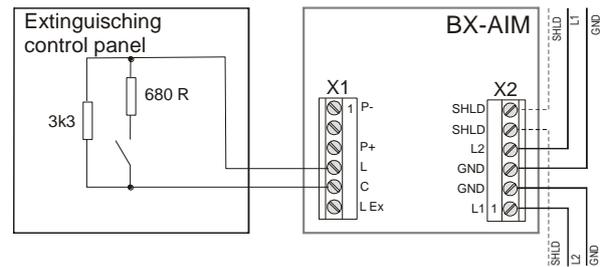
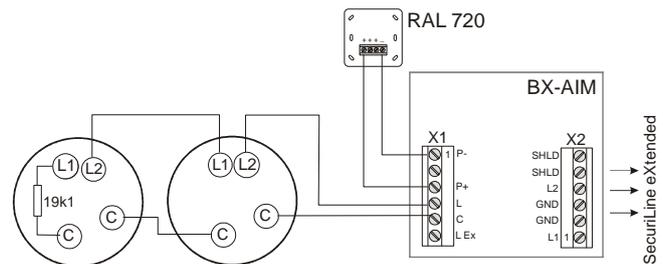


Fig. 4 Standard interface "Delete" input compliant with VdS



Base: YBF/RL-4H3H  
Detector: SLK-E, SLK-EN, SLK-ED, HF24 (max. 1 St.),  
SIH-E, DCC-E, DFE-90E, DFE-60E

Fig. 5 Hochiki collective detectors

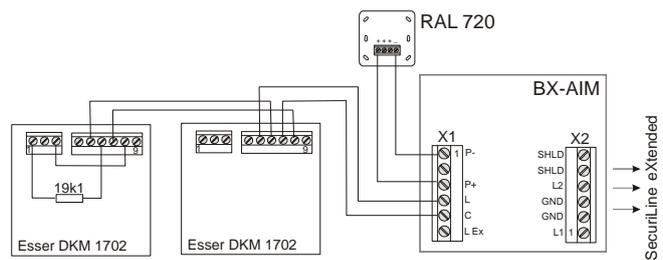


Fig. 6 Esser DMK 1702

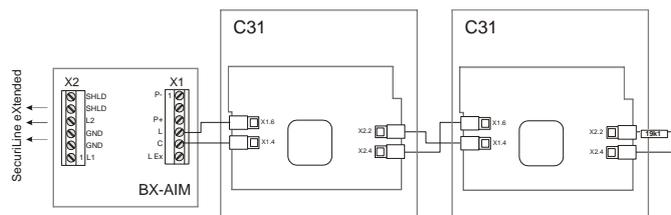


Fig. 7 Vershoven DKM C31

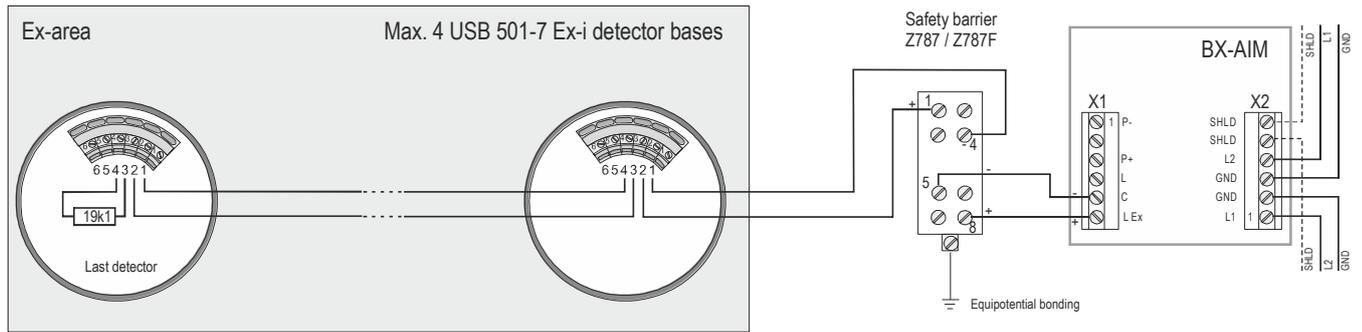


Fig. 8 MMD 130 Ex-i

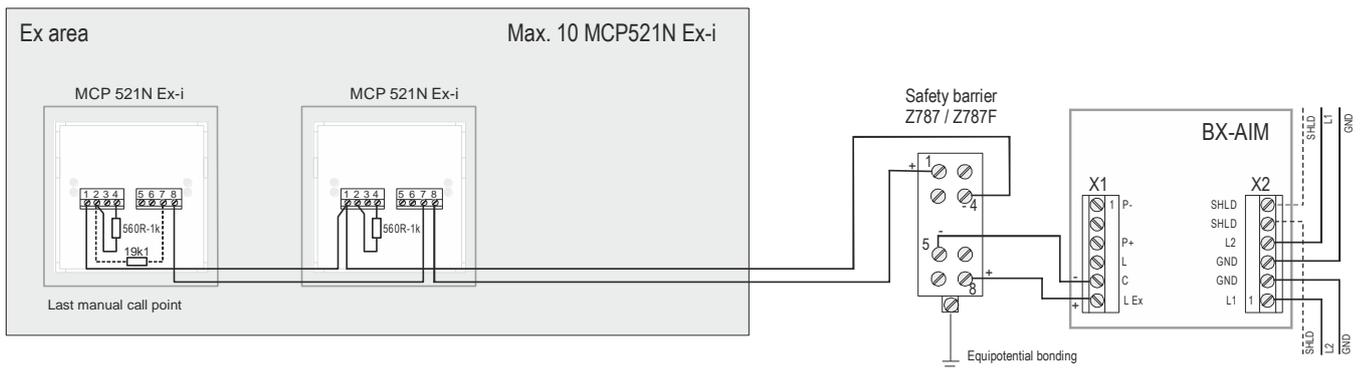


Fig. 9 MCP521N Ex-i

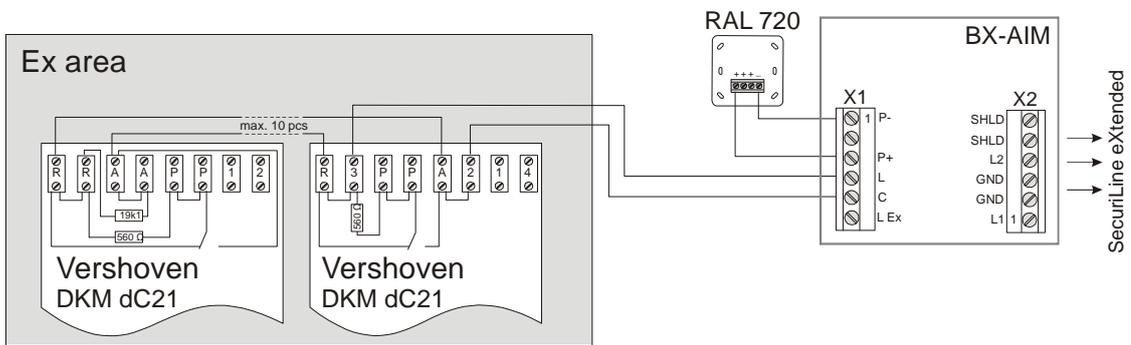


Fig. 10 Vershoven Ex DKM dC21

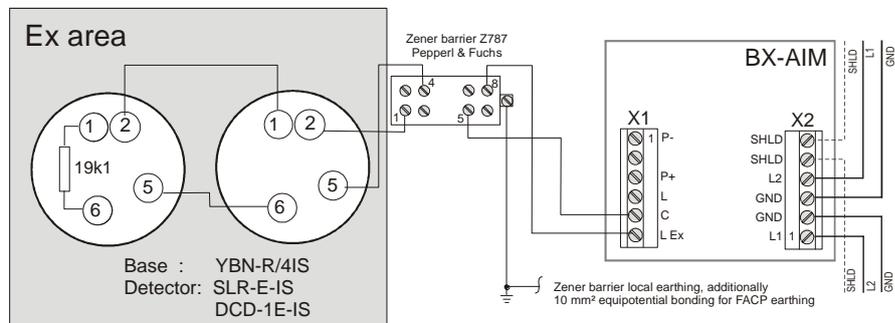


Fig. 11 Hochiki Ex-i smoke detector SLR-E-IS

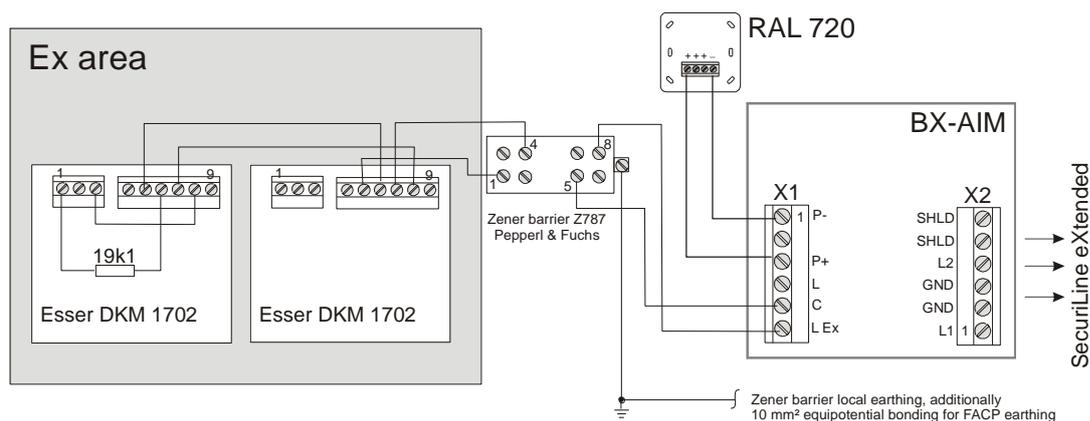


Fig. 12 Esser DKM 1702 in Ex area

## Article numbers / spare parts

Short designation		Art. number CH	Art. number
BX-AIM		115.249 709	20-2100005-01-03
GEH MOD IP66	IP66 housing for BX-AIM	403.239 917	FG020234
MM SM M20	M20 step nipple	428.242 578	MM000181
MM ANB M16	M16 mounting screw union	--	MM000185
MM GM M16	M16 counternut	--	MM000186

## Technical data

Type	BX-AIM	
Operating voltage	12 to 30	VDC
Current consumption		
without stub branch (module only)	0.45	mA
with stub branch	1.8	mA
optional operation alarm	9.0	mA
Signal transmission	Serial data transmission, 2-conductor technology	
Protection type	66 with housing	IP
Ambient temperature	-20 to +60 °C	
Dimensions (H x W x D)	67 x 67 x 20 mm	
Connection	Plug-in screw terminals, max. 1.5 mm <sup>2</sup>	
VdS approval	G 208138	
EU certificate of conformity (EN 54-17/18)	0786-CPD-20601	

### DC-line branch

Connection resistance	19.1	kΩ
Alarm resistance	560 to 780	Ω
Line resistance	max. 50	Ω
Alarm current	8.5	mA
Short circuit current	8.5 for approx. 400 ms	mA
Line length	max. 700	m

<sup>1</sup> Reference document: B-HB-035DE\_X-LINE-HB - V 2.1 (SRK)