SecuriFire

BX-OI3

Output/input module for SecuriLine eXtended

Beginning with edition number 20-2100001-01-02

The BX-OI3 output/input module can be used as either O/I module or as detector/detection zone for connecting special detectors.

It meets the SecuiLine eXtended specification for operation on the ring circuit of the SecuriFire fire detection system.

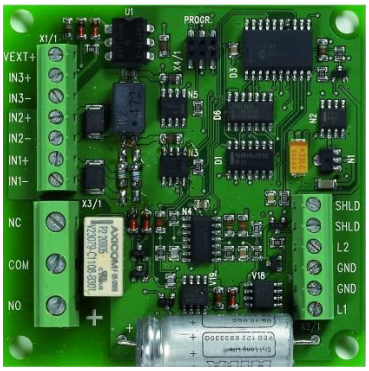

Fig. 1 BX-OI3

Description

The BX-OI3 can be connected to the SecuriLine eXtended ring circuit of the SecuriFire fire detection system.
The BX-OI3 can be used as either an O/I module (1 relay output, 2 monitored inputs, 1 opto-isolator) or as detector/detection zone for connecting special detectors.
Input 1 can be programmed as checkback.

Addressing and parameter assignment for the BX-OI3 is performed with PC software via the fire alarm control panel.
The BX-OI3 includes a short-circuit isolator. In the event of wire breakage or a short-circuit, this functionality ensures that the fault is localised and at the same time maintains the full operability of the ring circuit.

Interfaces

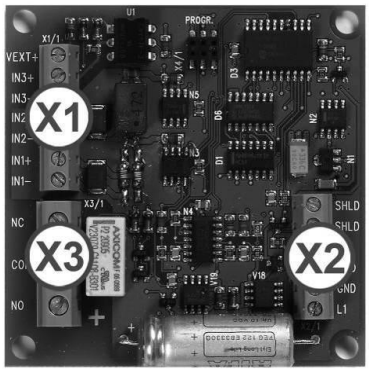

Fig. 2 BX-OI3 interfaces

Inputs (X1)

Terminal	Designation	Description
1	VEXT+	Monitored ext. Power supply
2	IN3+	Input 3+
3	IN3-	Input 3-
4	IN2+	Input 2+
5	IN2-	Input 2-
6	IN1+	Input 1+
7	IN1-	Input 1-

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

Relay output (X3)

Terminal	Designation	Description
1	NC	Data A
2	COM	GND A
3	NO	GND B

Areas of application

Use as O/I module

- 1x relay output for actuating fire incident control (e.g. lift control system)
- 2x monitored inputs*) for polling potential-free contacts (e.g. sprinklers)
- 1 opto-isolator input for polling external voltages (e.g. 5 V, 12 V)

Use for connecting special detectors

- 1x relay output for resetting the special detector
- 2x monitored inputs for polling the alarm and fault contact
- 1x opto-isolator input for monitoring the voltage supply of the special detector

***** Input is always implemented as monitored, i.e. termination resistance and alarm resistance are always required.

To be able to connect a special detector (aspirating smoke detector, line type smoke detector etc.) to the BX-OI3, it must have at least one potential-free contact each for alarm and fault. Resetting the special detector is done by interrupting the voltage supply via the BX-OI3 relay output. If a suitable reset input is available on the special detector, it can be actuated directly via the relay outputs. The voltage supply of the special detector is monitored via the opto-isolator input. This also enables connecting devices whose fault contact does not become active when there is no power supply.

Use for connecting special detectors

In principle, any special detector can be connected to the BX-OI3 provided it has two potential-free contacts for alarm and fault and that it can be reset by interrupting its voltage supply or via its own reset input. To ensure reliable operation, each special detector has to be checked and then implemented with a fixed defined parameter set in SecuriFire Studio. The following table shows the checked special detectors to be connected and the parameter sets of the SecuriFire Studio to be used (SecuriFire Studio V2.1).

Parameter-Set in Studio	Manufacturer designation
ARDEA IP65 / EX	Setronic ARDEA IP65 S-SF and ARDEA EEX S
ARDEA J	ECO 25/50
ASD 51x	Securiton SecuriRAS ASD 51x
PM-5MPX	Det-Tronics IR-flame detector PM-5MPX
U7698B	Det-Tronics IR- flame detector U7698B
MINIBOOM	Setronic Miniboomerang 2S
RAS 51B	Securiton RAS 51B and RAS 52B
RAS 54	Securiton RAS 54
RAS 51B/53B	Securiton RAS 51B/53B
SPB-E	Hochiki SPB-E
ADW 511	Securiton Transafe ADW 511 And ADW 511A
UNILASER XL	Kidde-Deugra UNILASER & RAS XL
MHD/TSC	Securiton SecuriSense MHD535
U7652B/WMX5000	UV/IR- flame detector Det-Tronics U7652B Minimax WMX5000
ILIA	Setronic ILIA
SPB 651	Securiton Sprinker-test box SPB 651
BSD 535	Securiton SecuriBeam BSD 535
LISTEC	Listec sensor cable

Planning

Use as O/I module

It is imperative that the technical data are strictly observed.

- Inputs 1 and 2 can be operated as monitored or unmonitored inputs when using termination and alarm resistance in each case.
- The maximum number of BX-OI3s per ring depends on the total number of connected detectors and modules, on the line length and on the wire cross-section of the concerned ring.

Use for connecting special detectors

- If the BX-OI3 is used to connect a special detector, a corresponding detector address must be designated for it in SecuriFire Studio. As a result, the BX-OI3 is shown and operated like an automatic detector on the indication and control map of the fire alarm control panel (e.g. MG 14/7). Multiple BX-OI3s can be grouped into a detection zone in order to simplify operation.
- During first-time commissioning the fixed predefined parameter set of the connected special detector must be assigned to the BX-OI3 via SecuriFire Studio from a selection list. If your special detector is not listed, please contact the Securiton support centre.
- The maximum number of special detectors per ring is identical to the maximum possible number of BX-OI3s. This depends on the total number of connected detectors and modules, on the line length and on the wire cross-section of the concerned ring.
- Only four different types of special detectors can be connected per ring. If they are already planned in SecuriFire Studio, these four special detectors appear in the selection list for this ring.
- Because most special detectors have high power requirements, a power requirement calculation should always be carried out for the fire alarm control panel. If it is determined that direct power supply from the power supply unit of the FACP is not possible, then either another FACP or an external power supply unit must be used.
- If an external power supply unit is used, ensure that country-specific standards and directives concerning battery capacity, approval (e.g. VdS) etc. are observed.

If power is supplied directly to the special detectors from the power supply unit of the FACP, some special detectors can be operated only a few hundred metres from the fire alarm control panel due to their high quiescent current (dependent on the wire cross-section of the supply lines and the minimum operating voltage).

The BX-OI3 can be mounted up to 30 m from the special detector and interface of the special detector.

Connection examples

The voltage supply of the special detector is monitored by means of an opto-isolator on the BX-OI3 output/input module. This also enables connecting devices whose fault contact does not become active when there is no power supply. When connecting the voltage supply, ensure that it is conveyed from the power supply unit via the reset contact of the BX-OI3 directly to the special detector and then from this back to the voltage monitor on the BX-OI3. Only in this way can it be ensured that also the voltage supply between BX-OI3 and special detector is monitored.

Use as O/I module

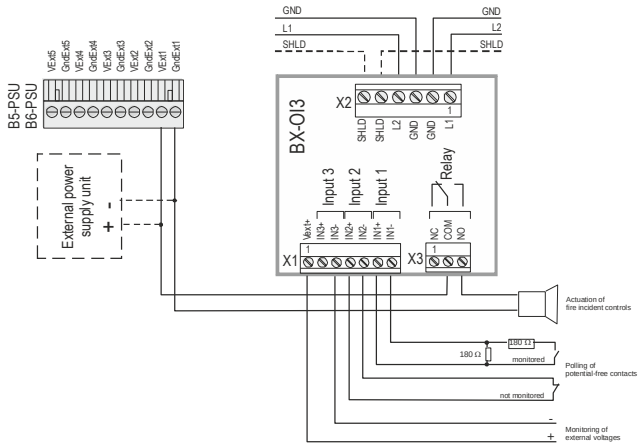

Fig. 3 Use as O/I module

ADW 511/ADW 511A (ADW 511 parameter set)

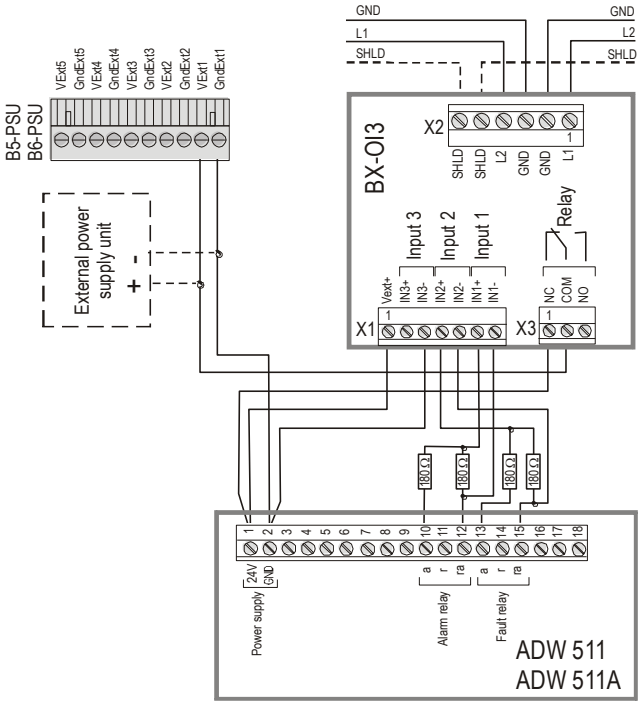

Fig. 5 Connection: ADW 511/ADW 511A

ASD 51x (ASD 51x parameter set)

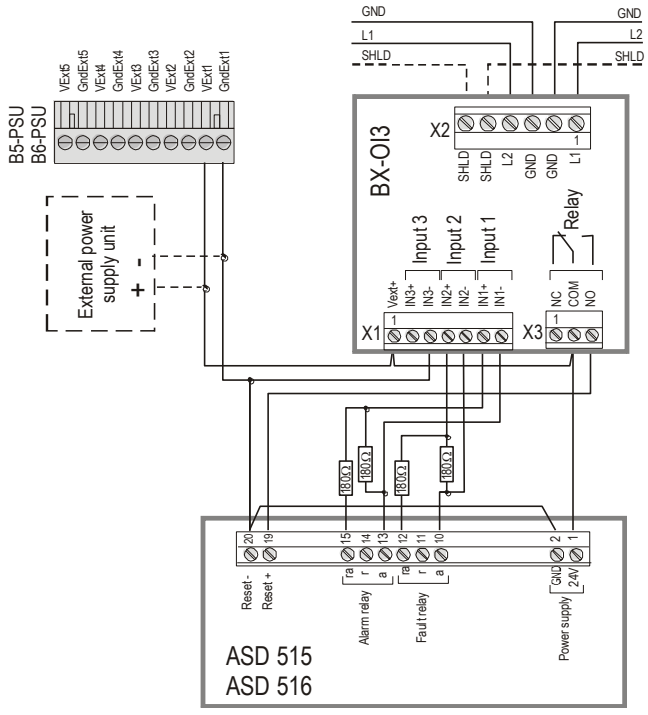

Fig. 4 ASD 51x connection

RAS 51B and RAS 52B (RAS 51B parameter set)

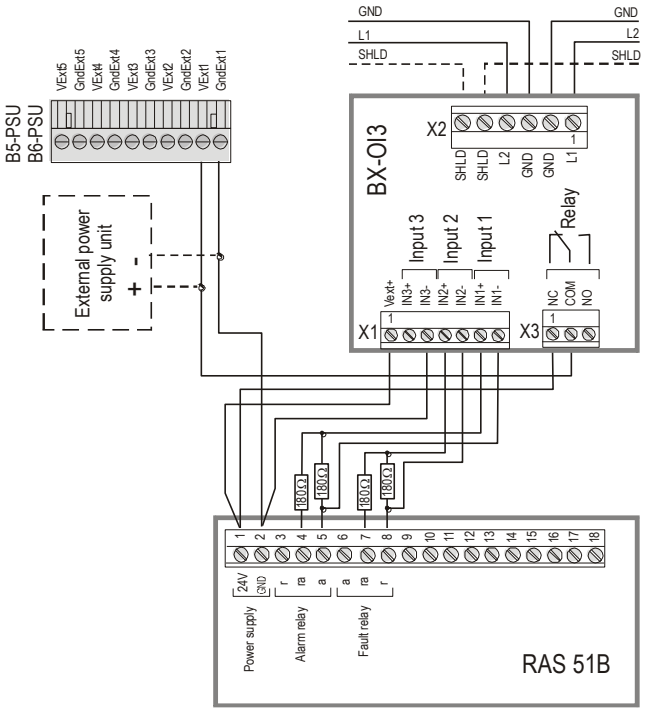

Fig. 6 Connection; RAS 51B und RAS 52B

RAS XL (UNILASER XL parameter set)

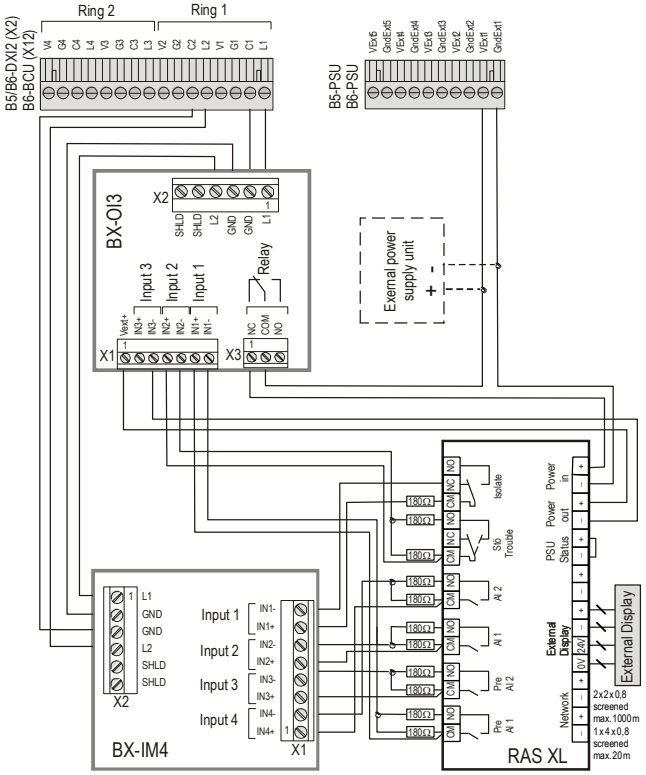

Fig. 7 Connection; RAS XL

ARDEA and BOOMERANG (ARDEA IP65/Ex parameter set)

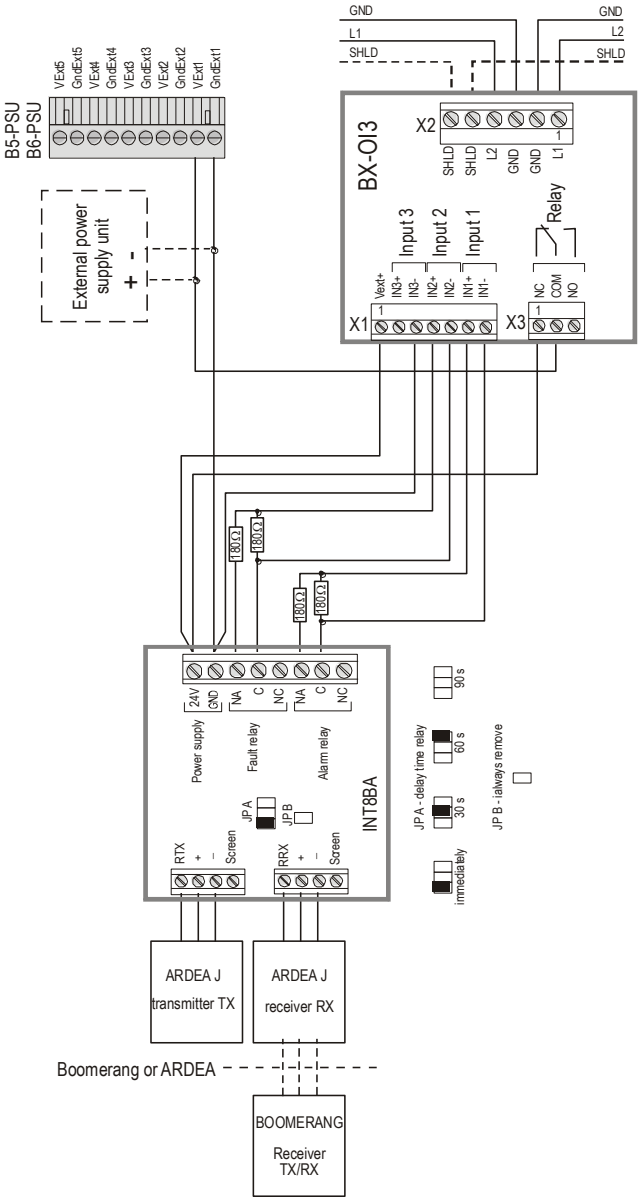

Fig. 9 Connection; ARDEA and BOOMERANG

MINIBOOMERANG (MINIBOOM parameter set)

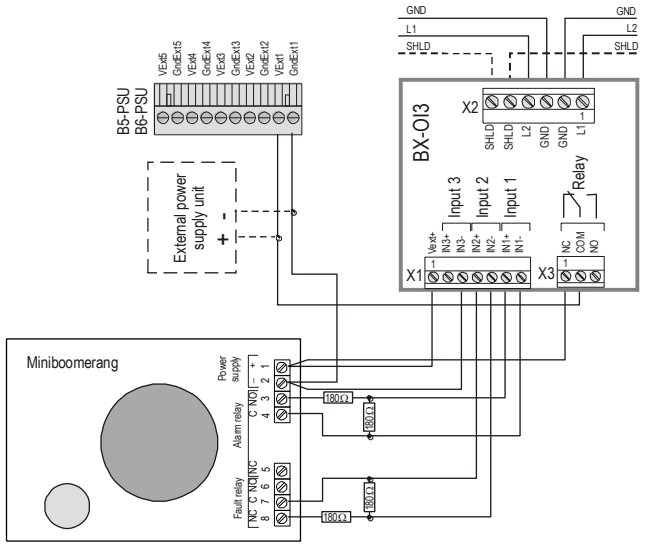

Fig. 8 Connection; MINIBOOMERANG

ECO 25/50/80 (ARDEA J parameter set)

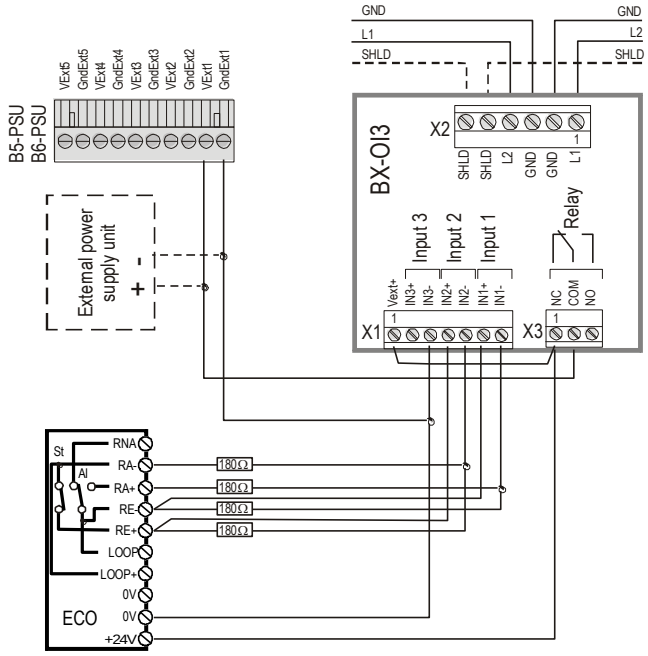

Fig. 10 Connection; ECO 25/50/80

REK 511 (ASD 51x parameter set)

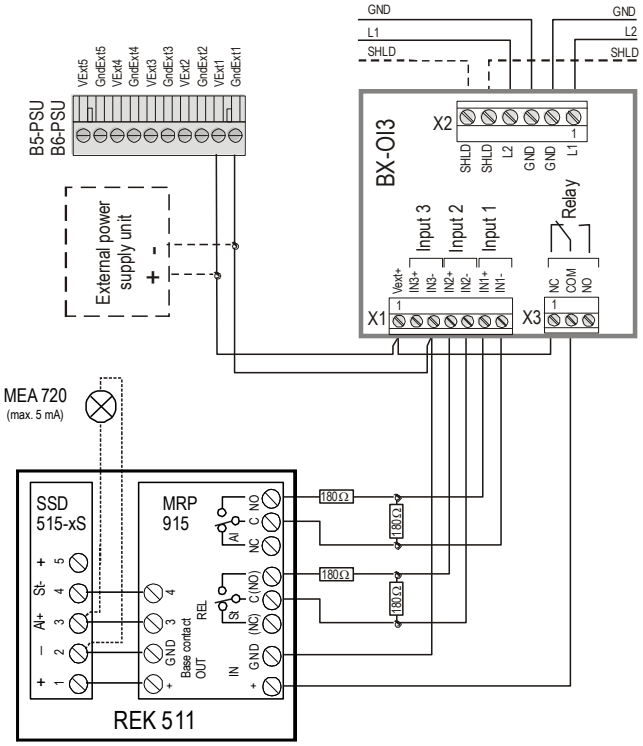

Fig. 11 Connection; REK 511

d-List, 1 detection zone per sensor cable (LISTEC parameter set)

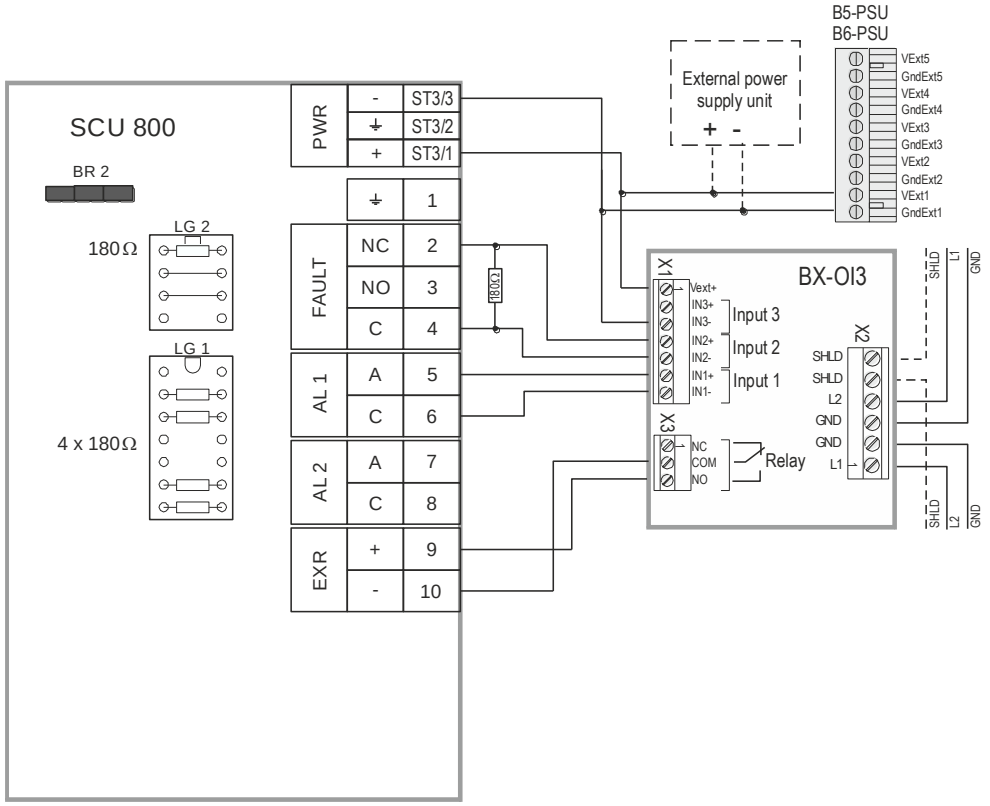

Fig. 12 Connection; d-List 1 detection zone

d-List, 2 detection zones per sensor cable (LISTEC parameter set)

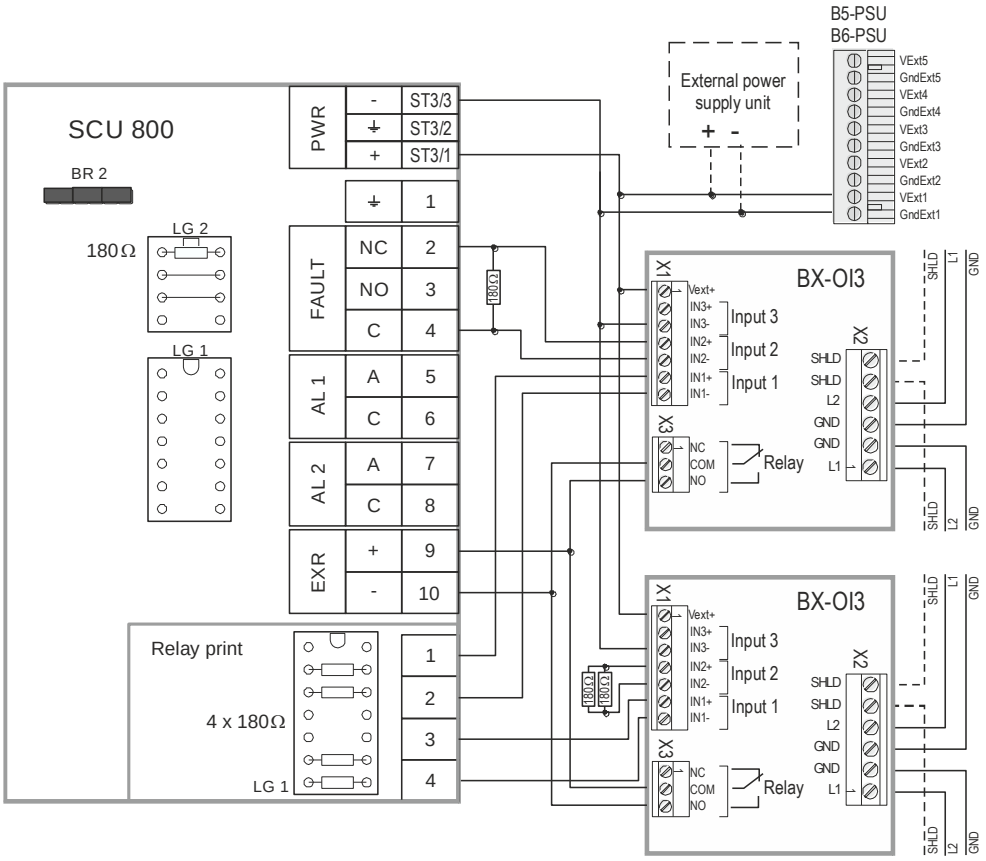

Fig. 13 Connection; d-List 2 detection zones

Article numbers / spare parts

Short designation		Art. number CH	Art. number
BX-OI3	Output/input module	115.249 774	20-2100001-01-03
GEH MOD IP66	IP66 map case for BX-OI3	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 counter-nut	--	MM000186

Technical data

Function	Output/input module	
Operating voltage	12 to 30	VDC
Power consumption (module's power consumption only)	0.55	mA
Signal transmission	Serial data transmission, 2-line technology	
Protection type	66 with map case	IP
Ambient temperature	-20 to +60	°C
Connection	Screw terminals max. 1.5	mm^2
VdS approval	G210133	
EU certificate of conformity (EN 54-17/18)	0786-CPD-21011	
Dimensions (H x W x D)	67 x 67 x 20	mm
Relay output	1	Pc.
Relay	Bistable, one coil	
Type of contact	Change-over contact	
Switching voltage	230	V
Switching current	0.1-2000	mA
Breaking capacity	60 (0.25 A at 230 V)	W
Switching frequency	max. 3.125	Hz
(a relay can change its state every 160 ms per ring, provided no other command has to be performed)		
Connection	Screw terminals max. 2.5	mm^2
Monitored inputs	2	Pc.
Connection	IN1- and IN1+, IN2- and IN2+, potential-free contacts	
Polling current	10	mA
Polling voltage	3-6	V
Termination resistance	180	Ω
Alarm resistance	180	Ω
Line resistance	Max. 30	Ω
Polling impulse	100	µs
Polling cycle	66	ms
Input filter	10	µs
Periodic duration	> 8	s
(switching states which last longer than 330 ms and whose repetition time is greater than 8 s are recorded)		
Line length	Max. 30	m
Connection	Screw terminals max. 1.5	mm^2
Opto-isolator input	1	Pc.
Connection	IN3- and IN3+, potential-dependent signals	
Voltage range	0 to 30	V
Input resistance	4,900	Ω
Input current	Max. 6	mA
Galvanic separation	By opto-isolator	
Line length	Max. 1,000	m
Connection	Screw terminals max. 1.5	mm^2
Input voltage monitoring	1	Pc.
Connection	IN3- and VEXT	
Voltage range	0 to 30	V
Input resistance	10	kΩ
Monitoring current	Approx. 1.9 at 24 V	mA
Galvanic separation	By opto-isolator	
Line length	Max. 1,000	m
Connection	Screw terminals max. 1.5	mm^2

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